

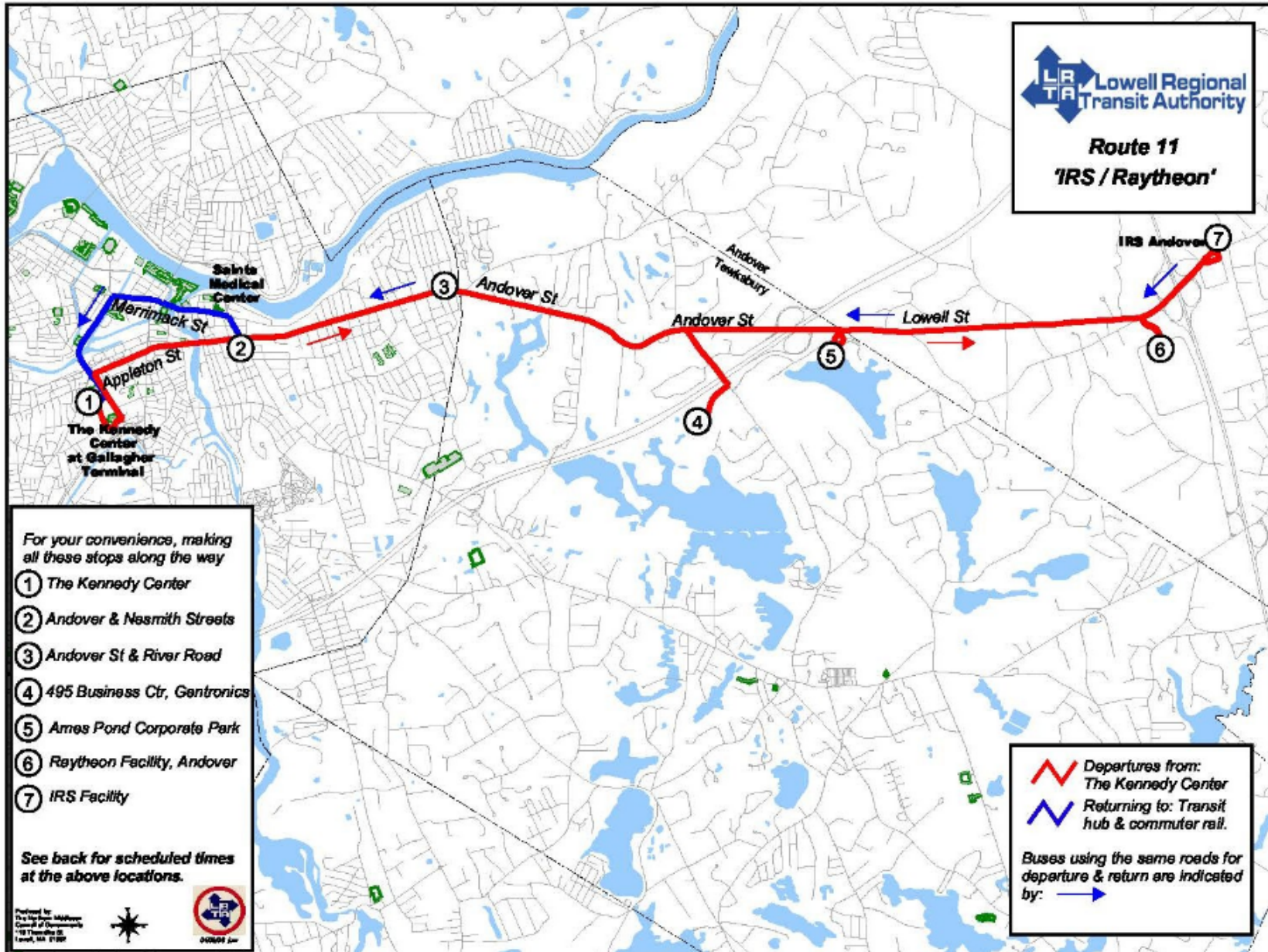
## **Appendix A**

Public Transportation Data





# Map of Route 11



11 IRS / Raytheon Via Rte 133

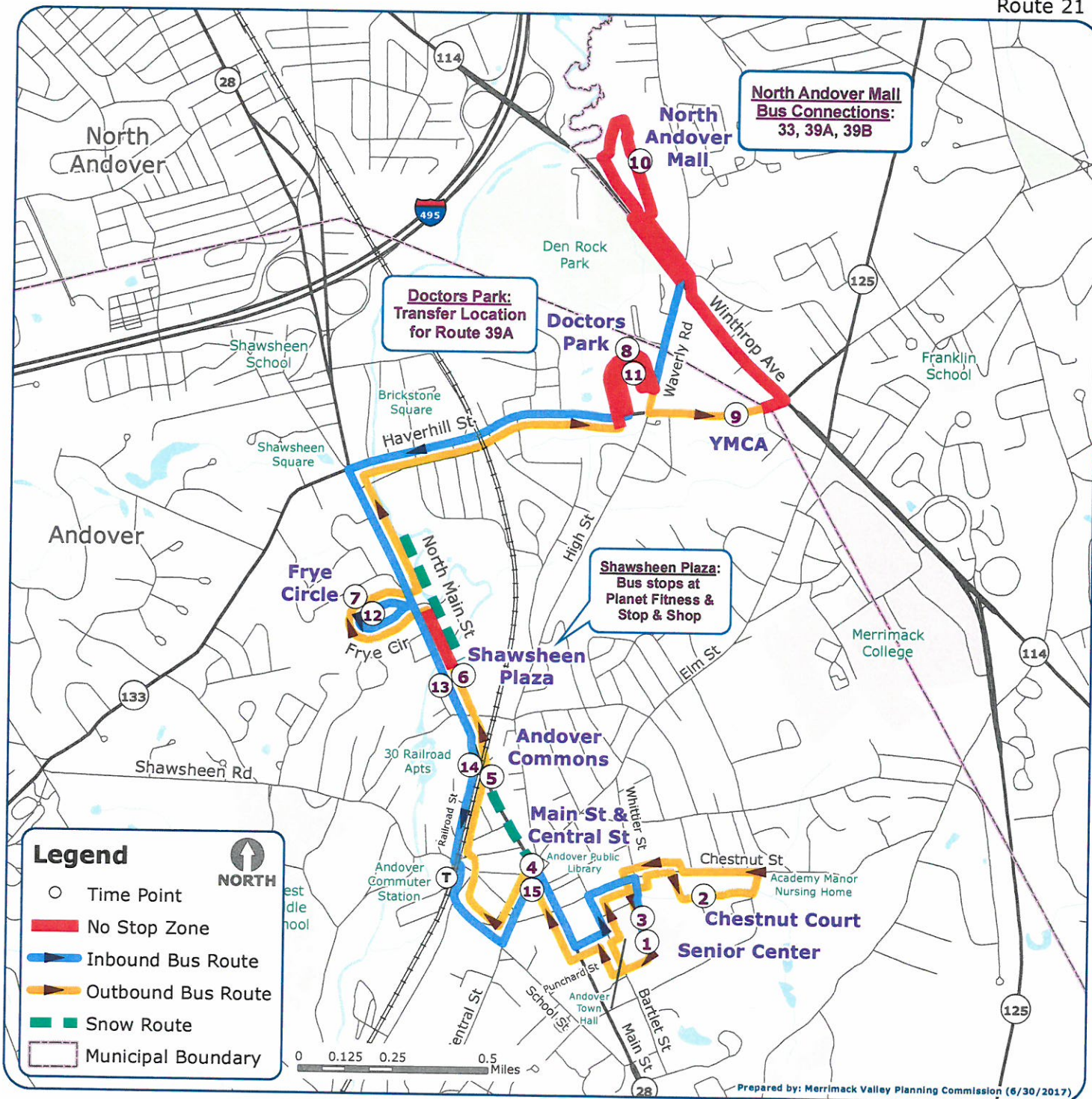
Weekday Schedule

	<b>Outbound</b>						
	1 Kennedy Center Departure	2 Andover St & High St	3 Andover St & River Rd	4 495 Business Center Gentronics	5 Ames Pond Corp Park	6 Raytheon Facility Andover	7 IRS Facility
<b>AM</b>	<b>6:00</b>	<b>6:05</b>	<b>6:09</b>	<b>6:14</b>	<b>6:19</b>	<b>6:22</b>	<b>6:25</b>
	<b>7:00</b>	<b>7:05</b>	<b>7:09</b>	<b>7:14</b>	<b>7:19</b>	<b>7:22</b>	<b>7:25</b>
<b>PM</b>	<b>3:00</b>	<b>3:05</b>	<b>3:09</b>	<b>3:14</b>	<b>3:19</b>	<b>3:22</b>	<b>3:25</b>
	<b>4:00</b>	<b>4:05</b>	<b>4:09</b>	<b>4:14</b>	<b>4:19</b>	<b>4:22</b>	<b>4:25</b>

Weekday Schedule

	<b>Inbound</b>						
	7 IRS Facility	6 Raytheon Facility Andover	5 Ames Pond Corp Park	4 495 Business Center Gentronics	3 Andover St & River Rd	2 Andover St & High St	1 Kennedy Center Arrival
<b>AM</b>	<b>6:30</b>	<b>6:33</b>	<b>6:37</b>	<b>6:41</b>	<b>6:46</b>	<b>6:50</b>	<b>6:55</b>
	<b>7:30</b>	<b>7:33</b>	<b>7:37</b>	<b>7:41</b>	<b>7:46</b>	<b>7:50</b>	<b>7:55</b>
<b>PM</b>	<b>3:30</b>	<b>3:33</b>	<b>3:37</b>	<b>3:41</b>	<b>3:46</b>	<b>3:50</b>	<b>3:55</b>
	<b>4:30</b>	<b>4:33</b>	<b>4:37</b>	<b>4:41</b>	<b>4:46</b>	<b>4:50</b>	<b>4:55</b>

\*\* Route 11 does not offer Saturday Service



# Timetables for **21** Andover Shuttle

Weekday

Saturday

Sunday

## OUTBOUND

[Scroll to see full schedule →](#)

Senior Center, Andover	8:10am	9:20am	10:30am	11:40am	12:50pm	2:00pm	3:10pm	4:20pm	5:30pm	6:37pm
Chestnut Court, Andover	8:13am	9:23am	10:33am	11:43am	12:53pm	2:03pm	3:13pm	4:23pm	5:33pm	6:40pm
Senior Center, Andover	8:16am	9:26am	10:36am	11:46am	12:56pm	2:06pm	3:16pm	4:26pm	5:36pm	
Main St and Central St, Andover	8:20am	9:30am	10:40am	11:50am	1:00pm	2:10pm	3:20pm	4:30pm	5:40pm	
Andover Commons, Andover	8:23am	9:33am	10:43am	11:53am	1:03pm	2:13pm	3:23pm	4:33pm	5:43pm	
Shawsheen Plaza, Andover	8:26am	9:36am	10:46am	11:56am	1:06pm	2:16pm	3:26pm	4:36pm	5:46pm	
Frye Circle, Andover	8:29am	9:39am	10:49am	11:59am	1:09pm	2:19pm	3:29pm	4:39pm	5:49pm	
Doctors' Park, Andover	8:34am	9:44am	10:54am	12:04pm	1:14pm	2:24pm	3:34pm	4:44pm	5:54pm	
YMCA, Andover	8:36am	9:46am	10:56am	12:06pm	1:16pm	2:26pm	3:36pm	4:46pm	5:56pm	
North Andover Mall (Market Basket)	8:45am	9:55am	11:05am	12:15pm	1:25pm	2:35pm	3:45pm	4:55pm	6:05pm	

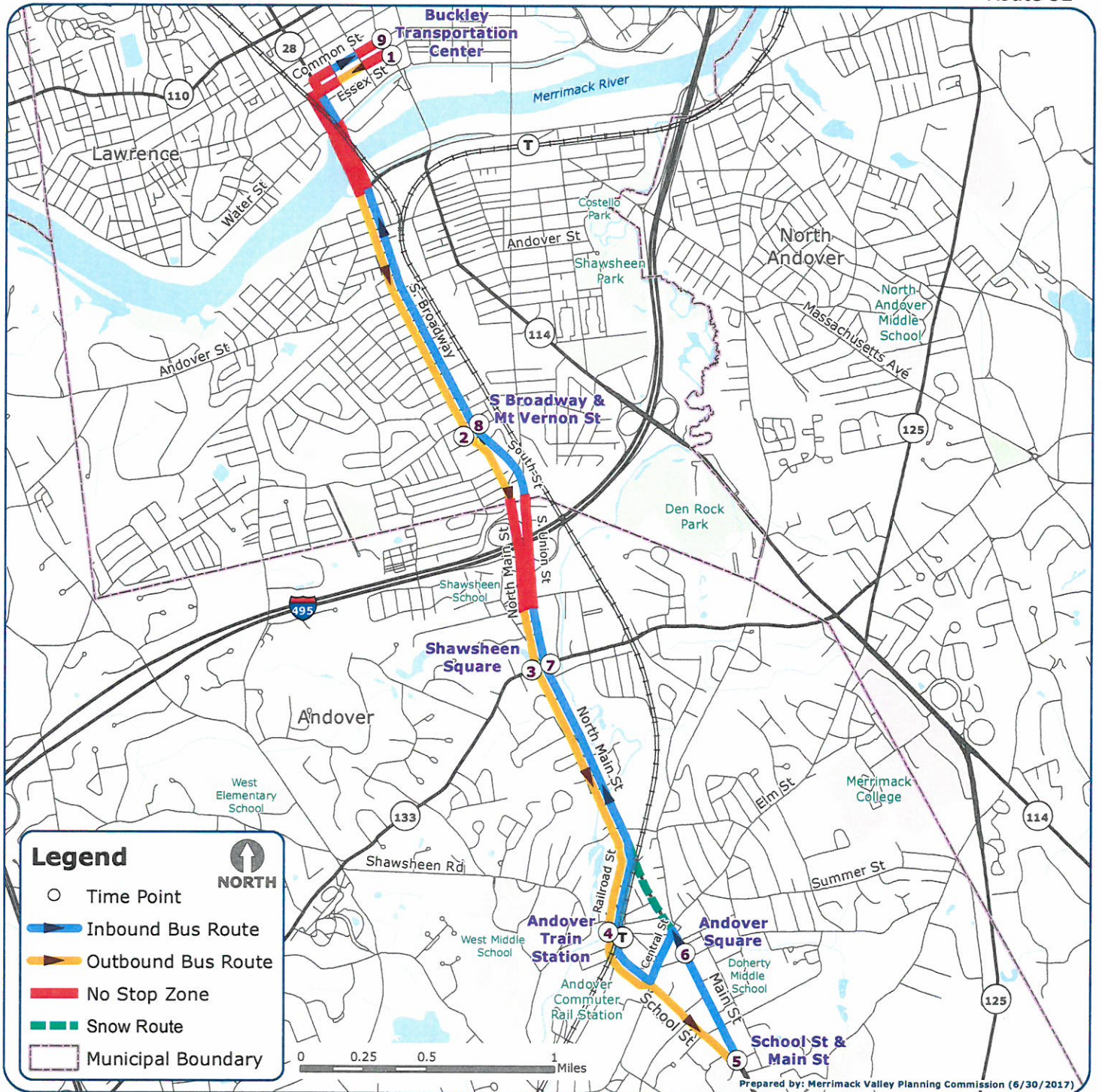
←

## INBOUND

[Scroll to see full schedule →](#)

North Andover Mall (Market Basket)	8:45am	9:55am	11:05am	12:15pm	1:25pm	2:35pm	3:45pm	4:55pm	6:05pm	
Doctors' Park, Andover	8:56am	10:06am	11:16am	12:26pm	1:36pm	2:46pm	3:56pm	5:06pm	6:16pm	
Frye Circle, Andover	9:01am	10:11am	11:21am	12:31pm	1:41pm	2:51pm	4:01pm	5:11pm	6:21pm	
Shawsheen Plaza, Andover	9:05am	10:15am	11:25am	12:35pm	1:45pm	2:55pm	4:05pm	5:15pm	6:25pm	
Andover Commons, Andover	9:08am	10:18am	11:28am	12:38pm	1:48pm	2:58pm	4:08pm	5:18pm	6:28pm	
Main St and Central St, Andover	9:12am	10:22am	11:32am	12:42pm	1:52pm	3:02pm	4:12pm	5:22pm	6:32pm	
Senior Center, Andover	9:17am	10:27am	11:37am	12:47pm	1:57pm	3:07pm	4:17pm	5:27pm	6:37pm	

←



# Timetables for 32 Andover

Weekday **Saturday** Sunday

**OUTBOUND** [Scroll to see full schedule →](#)

Buckley Transportation Center, Lawrence	5:30am	6:00am	6:30am	7:00am	7:30am	8:00am	9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm
Broadway and Mt. Vernon, Lawrence	5:38am	6:08am	6:38am	7:08am	7:38am	8:08am	9:08am	10:08am	11:08am	12:08pm	1:08pm	2:08pm
Shawsheen Square, Andover	5:43am	6:13am	6:43am	7:13am	7:43am	8:13am	9:13am	10:13am	11:13am	12:13pm	1:13pm	2:13pm
Andover Train Station	5:46am	6:16am	6:46am	7:16am	7:46am	8:16am	9:16am	10:16am	11:16am	12:16pm	1:18pm	2:18pm
Main and School, Andover	5:50am	6:20am	6:50am	7:20am	7:50am	8:20am	9:20am	10:20am	11:20am	12:20pm	1:23pm	2:23pm



**INBOUND** [Scroll to see full schedule →](#)

Main and School, Andover	5:50am	6:20am	6:50am	7:20am	7:50am	8:20am	9:20am	10:20am	11:20am	12:20pm	1:23pm	
Andover Square	5:23am	5:53am	6:23am	6:53am	7:23am	7:53am	8:23am	9:23am	10:23am	11:23am	12:23pm	1:26pm
Shawsheen Square, Andover	5:28am	5:58am	6:28am	6:58am	7:28am	7:58am	8:28am	9:28am	10:28am	11:28am	12:28pm	1:31pm
Broadway and Mt. Vernon, Lawrence	5:31am	6:01am	6:31am	7:01am	7:31am	8:01am	8:31am	9:31am	10:31am	11:31am	12:31pm	1:34pm
Buckley Transportation Center, Lawrence	5:41am	6:11am	6:41am	7:11am	7:41am	8:11am	8:41am	9:41am	10:41am	11:41am	12:41pm	1:44pm



Weekday **Saturday** Sunday

**OUTBOUND** [Scroll to see full schedule →](#)

Buckley Transportation Center, Lawrence	:00pm	1:00pm	2:00pm	2:30pm	3:00pm	3:30pm	4:00pm	4:30pm	5:00pm	5:30pm	6:00pm	7:00pm
Broadway and Mt. Vernon, Lawrence	:08pm	1:08pm	2:08pm	2:38pm	3:08pm	3:38pm	4:08pm	4:38pm	5:08pm	5:38pm	6:08pm	7:08pm
Shawsheen Square, Andover	:13pm	1:13pm	2:13pm	2:43pm	3:13pm	3:43pm	4:13pm	4:43pm	5:13pm	5:43pm	6:13pm	7:13pm
Andover Train Station	:16pm	1:18pm	2:18pm	2:48pm	3:18pm	3:48pm	4:18pm	4:48pm	5:18pm	5:48pm	6:18pm	7:18pm
Main and School, Andover	:20pm	1:23pm	2:23pm	2:53pm	3:23pm	3:53pm	4:23pm	4:53pm	5:23pm	5:53pm	6:23pm	7:23pm



**INBOUND** [Scroll to see full schedule →](#)

Main and School, Andover	:20pm	1:23pm	2:23pm	2:53pm	3:23pm	3:53pm	4:23pm	4:53pm	5:23pm	5:53pm	6:23pm	7:23pm
Andover Square	:23pm	1:26pm	2:26pm	2:56pm	3:26pm	3:56pm	4:26pm	4:56pm	5:26pm	5:56pm	6:26pm	7:26pm
Shawsheen Square, Andover	:28pm	1:31pm	2:31pm	3:01pm	3:31pm	4:01pm	4:31pm	5:01pm	5:31pm	6:01pm	6:31pm	
Broadway and Mt. Vernon, Lawrence	:31pm	1:34pm	2:34pm	3:04pm	3:34pm	4:04pm	4:34pm	5:04pm	5:34pm	6:04pm	6:34pm	
Buckley Transportation Center, Lawrence	:41pm	1:44pm	2:44pm	3:14pm	3:44pm	4:14pm	4:44pm	5:14pm	5:44pm	6:14pm	6:44pm	



# Timetables for 32 Andover

Weekday Saturday **Sunday**

## OUTBOUND

[Scroll to see full schedule →](#)

Buckley Transportation Center, Lawrence	7:00am	8:00am	9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm	3:00pm	4:00pm	5:00pm	6:00pm
Broadway and Mt. Vernon, Lawrence	7:08am	8:08am	9:08am	10:08am	11:08am	12:08pm	1:08pm	2:08pm	3:08pm	4:08pm	5:08pm	6:08pm
Shawsheen Square, Andover	7:13am	8:13am	9:13am	10:13am	11:13am	12:13pm	1:13pm	2:13pm	3:13pm	4:13pm	5:13pm	6:13pm
Andover Train Station	7:16am	8:16am	9:16am	10:16am	11:16am	12:16pm	1:16pm	2:16pm	3:16pm	4:16pm	5:16pm	6:16pm
Main and School, Andover	7:20am	8:20am	9:20am	10:20am	11:20am	12:20pm	1:20pm	2:20pm	3:20pm	4:20pm	5:20pm	6:20pm



## INBOUND

[Scroll to see full schedule →](#)

Main and School, Andover	7:20am	8:20am	9:20am	10:20am	11:20am	12:20pm	1:20pm	2:20pm	3:20pm	4:20pm	5:20pm	6:20pm
Andover Square	7:23am	8:23am	9:23am	10:23am	11:23am	12:23pm	1:23pm	2:23pm	3:23pm	4:23pm	5:23pm	6:23pm
Shawsheen Square, Andover	7:28am	8:28am	9:28am	10:28am	11:28am	12:28pm	1:28pm	2:28pm	3:28pm	4:28pm	5:28pm	6:28pm
Broadway and Mt. Vernon, Lawrence	7:31am	8:31am	9:31am	10:31am	11:31am	12:31pm	1:31pm	2:31pm	3:31pm	4:31pm	5:31pm	6:31pm
Buckley Transportation Center, Lawrence	7:41am	8:41am	9:41am	10:41am	11:41am	12:41pm	1:41pm	2:41pm	3:41pm	4:41pm	5:41pm	6:41pm



# Timetables for 32 Andover

Weekday Saturday **Sunday**

## OUTBOUND

[Scroll to see full schedule →](#)

Buckley Transportation Center, Lawrence	9:00am	10:00am	11:00am	12:00pm	1:00pm	2:00pm	3:00pm	4:00pm	5:00pm
Broadway and Mt. Vernon, Lawrence	9:08am	10:08am	11:08am	12:08pm	1:08pm	2:08pm	3:08pm	4:08pm	5:08pm
Shawsheen Square, Andover	9:13am	10:13am	11:13am	12:13pm	1:13pm	2:13pm	3:13pm	4:13pm	5:13pm
Andover Train Station	9:16am	10:16am	11:16am	12:16pm	1:16pm	2:16pm	3:16pm	4:16pm	5:16pm
Main and School, Andover	9:20am	10:20am	11:20am	12:20pm	1:20pm	2:20pm	3:20pm	4:20pm	5:20pm



## INBOUND

[Scroll to see full schedule →](#)

Main and School, Andover	9:20am	10:20am	11:20am	12:20pm	1:20pm	2:20pm	3:20pm	4:20pm	5:20pm
Andover Square	9:23am	10:23am	11:23am	12:23pm	1:23pm	2:23pm	3:23pm	4:23pm	5:23pm
Shawsheen Square, Andover	9:28am	10:28am	11:28am	12:28pm	1:28pm	2:28pm	3:28pm	4:28pm	5:28pm
Broadway and Mt. Vernon, Lawrence	9:31am	10:31am	11:31am	12:31pm	1:31pm	2:31pm	3:31pm	4:31pm	5:31pm
Buckley Transportation Center, Lawrence	9:41am	10:41am	11:41am	12:41pm	1:41pm	2:41pm	3:41pm	4:41pm	5:41pm



## **Appendix B**

Turning Movement Counts (TMCs)



PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars and Heavy Vehicles (Combined)**

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	104	120	0	224	103	9	0	112	17	132	0	149	485
7:15 AM	92	97	0	189	136	8	0	144	12	125	0	137	470
7:30 AM	100	131	0	231	157	10	0	167	8	118	0	126	524
7:45 AM	132	127	0	259	158	12	0	170	13	136	0	149	578
<b>Total</b>	<b>428</b>	<b>475</b>	<b>0</b>	<b>903</b>	<b>554</b>	<b>39</b>	<b>0</b>	<b>593</b>	<b>50</b>	<b>511</b>	<b>0</b>	<b>561</b>	<b>2057</b>
8:00 AM	141	135	0	276	122	8	0	130	6	129	0	135	541
8:15 AM	117	110	0	227	112	14	0	126	13	161	0	174	527
8:30 AM	114	110	0	224	112	6	0	118	13	113	0	126	468
8:45 AM	108	110	0	218	113	14	0	127	9	92	0	101	446
<b>Total</b>	<b>480</b>	<b>465</b>	<b>0</b>	<b>945</b>	<b>459</b>	<b>42</b>	<b>0</b>	<b>501</b>	<b>41</b>	<b>495</b>	<b>0</b>	<b>536</b>	<b>1982</b>
Grand Total	908	940	0	1848	1013	81	0	1094	91	1006	0	1097	4039
Approach %	49.1	50.9	0.0		92.6	7.4	0.0		8.3	91.7	0.0		
Total %	22.5	23.3	0.0	45.8	25.1	2.0	0.0	27.1	2.3	24.9	0.0	27.2	
Exiting Leg Total				2019				1031				989	4039
Cars	846	884	0	1730	967	70	0	1037	87	940	0	1027	3794
% Cars	93.2	94.0	0.0	93.6	95.5	86.4	0.0	94.8	95.6	93.4	0.0	93.6	93.9
Exiting Leg Total				1907				971				916	3794
Heavy Vehicles	62	56	0	118	46	11	0	57	4	66	0	70	245
% Heavy Vehicles	6.8	6.0	0.0	6.4	4.5	13.6	0.0	5.2	4.4	6.6	0.0	6.4	6.1
Exiting Leg Total				112				60				73	245

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	100	131	0	231	157	10	0	167	8	118	0	126	524
7:45 AM	132	127	0	259	158	12	0	170	13	136	0	149	578
8:00 AM	141	135	0	276	122	8	0	130	6	129	0	135	541
8:15 AM	117	110	0	227	112	14	0	126	13	161	0	174	527
Total Volume	490	503	0	993	549	44	0	593	40	544	0	584	2170
% Approach Total	49.3	50.7	0.0		92.6	7.4	0.0		6.8	93.2	0.0		
PHF	0.869	0.931	0.000	0.899	0.869	0.786	0.000	0.872	0.769	0.845	0.000	0.839	0.939
Cars	455	469	0	924	521	39	0	560	38	510	0	548	2032
Cars %	92.9	93.2	0.0	93.1	94.9	88.6	0.0	94.4	95.0	93.8	0.0	93.8	93.6
Heavy Vehicles	35	34	0	69	28	5	0	33	2	34	0	36	138
Heavy Vehicles %	7.1	6.8	0.0	6.9	5.1	11.4	0.0	5.6	5.0	6.3	0.0	6.2	6.4
Cars Enter Leg	455	469	0	924	521	39	0	560	38	510	0	548	2032
Heavy Enter Leg	35	34	0	69	28	5	0	33	2	34	0	36	138
Total Entering Leg	490	503	0	993	549	44	0	593	40	544	0	584	2170
Cars Exiting Leg				1031				507				494	2032
Heavy Exiting Leg				62				36				40	138
Total Exiting Leg				1093				543				534	2170

PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Cars-Combined (Motorcycles, Cars, Light Goods)**

Class:

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	99	118	0	217	99	5	0	104	17	121	0	138	459
7:15 AM	86	91	0	177	133	8	0	141	12	116	0	128	446
7:30 AM	91	121	0	212	148	9	0	157	8	110	0	118	487
7:45 AM	123	118	0	241	149	10	0	159	12	127	0	139	539
Total	399	448	0	847	529	32	0	561	49	474	0	523	1931
8:00 AM	133	129	0	262	117	7	0	124	6	119	0	125	511
8:15 AM	108	101	0	209	107	13	0	120	12	154	0	166	495
8:30 AM	110	105	0	215	107	5	0	112	11	108	0	119	446
8:45 AM	96	101	0	197	107	13	0	120	9	85	0	94	411
Total	447	436	0	883	438	38	0	476	38	466	0	504	1863
Grand Total	846	884	0	1730	967	70	0	1037	87	940	0	1027	3794
Approach %	48.9	51.1	0.0		93.2	6.8	0.0		8.5	91.5	0.0		
Total %	22.3	23.3	0.0	45.6	25.5	1.8	0.0	27.3	2.3	24.8	0.0	27.1	
Exiting Leg Total				1907				971				916	3794

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	91	121	0	212	148	9	0	157	8	110	0	118	487
7:45 AM	123	118	0	241	149	10	0	159	12	127	0	139	539
8:00 AM	133	129	0	262	117	7	0	124	6	119	0	125	511
8:15 AM	108	101	0	209	107	13	0	120	12	154	0	166	495
Total Volume	455	469	0	924	521	39	0	560	38	510	0	548	2032
% Approach Total	49.2	50.8	0.0		93.0	7.0	0.0		6.9	93.1	0.0		
PHF	0.855	0.909	0.000	0.882	0.874	0.750	0.000	0.881	0.792	0.828	0.000	0.825	0.942
Entering Leg	455	469	0	924	521	39	0	560	38	510	0	548	2032
Exiting Leg				1031				507				494	2032
Total				1955				1067				1042	4064

PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	5	2	0	7	4	4	0	8	0	11	0	11	26
7:15 AM	6	6	0	12	3	0	0	3	0	9	0	9	24
7:30 AM	9	10	0	19	9	1	0	10	0	8	0	8	37
7:45 AM	9	9	0	18	9	2	0	11	1	9	0	10	39
<b>Total</b>	<b>29</b>	<b>27</b>	<b>0</b>	<b>56</b>	<b>25</b>	<b>7</b>	<b>0</b>	<b>32</b>	<b>1</b>	<b>37</b>	<b>0</b>	<b>38</b>	<b>126</b>
8:00 AM	8	6	0	14	5	1	0	6	0	10	0	10	30
8:15 AM	9	9	0	18	5	1	0	6	1	7	0	8	32
8:30 AM	4	5	0	9	5	1	0	6	2	5	0	7	22
8:45 AM	12	9	0	21	6	1	0	7	0	7	0	7	35
<b>Total</b>	<b>33</b>	<b>29</b>	<b>0</b>	<b>62</b>	<b>21</b>	<b>4</b>	<b>0</b>	<b>25</b>	<b>3</b>	<b>29</b>	<b>0</b>	<b>32</b>	<b>119</b>
<b>Grand Total</b>	<b>62</b>	<b>56</b>	<b>0</b>	<b>118</b>	<b>46</b>	<b>11</b>	<b>0</b>	<b>57</b>	<b>4</b>	<b>66</b>	<b>0</b>	<b>70</b>	<b>245</b>
Approach %	52.5	47.5	0.0		80.7	19.3	0.0		5.7	94.3	0.0		
Total %	25.3	22.9	0.0	48.2	18.8	4.5	0.0	23.3	1.6	26.9	0.0	28.6	
Exiting Leg Total				112				60				73	245
Buses	4	1	0	5	2	4	0	6	0	3	0	3	14
% Buses	6.5	1.8	0.0	4.2	4.3	36.4	0.0	10.5	0.0	4.5	0.0	4.3	5.7
Exiting Leg Total				5				1				8	14
Single-Unit Trucks	23	38	0	61	25	4	0	29	2	31	0	33	123
% Single-Unit	37.1	67.9	0.0	51.7	54.3	36.4	0.0	50.9	50.0	47.0	0.0	47.1	50.2
Exiting Leg Total				56				40				27	123
Articulated Trucks	35	17	0	52	19	3	0	22	2	32	0	34	108
% Articulated	56.5	30.4	0.0	44.1	41.3	27.3	0.0	38.6	50.0	48.5	0.0	48.6	44.1
Exiting Leg Total				51				19				38	108

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	9	10	0	19	9	1	0	10	0	8	0	8	37
7:45 AM	9	9	0	18	9	2	0	11	1	9	0	10	39
8:00 AM	8	6	0	14	5	1	0	6	0	10	0	10	30
8:15 AM	9	9	0	18	5	1	0	6	1	7	0	8	32
<b>Total Volume</b>	<b>35</b>	<b>34</b>	<b>0</b>	<b>69</b>	<b>28</b>	<b>5</b>	<b>0</b>	<b>33</b>	<b>2</b>	<b>34</b>	<b>0</b>	<b>36</b>	<b>138</b>
% Approach Total	50.7	49.3	0.0		84.8	15.2	0.0		5.6	94.4	0.0		
PHF	0.972	0.850	0.000	0.908	0.778	0.625	0.000	0.750	0.500	0.850	0.000	0.900	0.885
Buses	2	1	0	3	2	2	0	4	0	3	0	3	10
Buses %	5.7	2.9	0.0	4.3	7.1	40.0	0.0	12.1	0.0	8.8	0.0	8.3	7.2
Single-Unit Trucks	8	23	0	31	16	1	0	17	1	14	0	15	63
Single-Unit %	22.9	67.6	0.0	44.9	57.1	20.0	0.0	51.5	50.0	41.2	0.0	41.7	45.7
Articulated Trucks	25	10	0	35	10	2	0	12	1	17	0	18	65
Articulated %	71.4	29.4	0.0	50.7	35.7	40.0	0.0	36.4	50.0	50.0	0.0	50.0	47.1
Buses	2	1	0	3	2	2	0	4	0	3	0	3	10
Single-Unit Trucks	8	23	0	31	16	1	0	17	1	14	0	15	63
Articulated Trucks	25	10	0	35	10	2	0	12	1	17	0	18	65
<b>Total Entering Leg</b>	<b>35</b>	<b>34</b>	<b>0</b>	<b>69</b>	<b>28</b>	<b>5</b>	<b>0</b>	<b>33</b>	<b>2</b>	<b>34</b>	<b>0</b>	<b>36</b>	<b>138</b>
Buses				5				1				4	10
Single-Unit Trucks				30				24				9	63
Articulated Trucks				27				11				27	65
<b>Total Exiting Leg</b>				<b>62</b>				<b>36</b>				<b>40</b>	<b>138</b>

PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Cars**

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	84	95	0	179	89	4	0	93	12	105	0	117	389
7:15 AM	72	81	0	153	109	6	0	115	8	100	0	108	376
7:30 AM	71	105	0	176	123	5	0	128	6	102	0	108	412
7:45 AM	104	101	0	205	118	8	0	126	11	117	0	128	459
Total	331	382	0	713	439	23	0	462	37	424	0	461	1636
8:00 AM	119	115	0	234	100	6	0	106	5	102	0	107	447
8:15 AM	98	87	0	185	98	10	0	108	9	135	0	144	437
8:30 AM	98	87	0	185	86	5	0	91	11	99	0	110	386
8:45 AM	81	83	0	164	87	10	0	97	6	73	0	79	340
Total	396	372	0	768	371	31	0	402	31	409	0	440	1610
Grand Total	727	754	0	1481	810	54	0	864	68	833	0	901	3246
Approach %	49.1	50.9	0.0		93.8	6.3	0.0		7.5	92.5	0.0		
Total %	22.4	23.2	0.0	45.6	25.0	1.7	0.0	26.6	2.1	25.7	0.0	27.8	
Exiting Leg Total				1643				822				781	3246

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	71	105	0	176	123	5	0	128	6	102	0	108	412
7:45 AM	104	101	0	205	118	8	0	126	11	117	0	128	459
8:00 AM	119	115	0	234	100	6	0	106	5	102	0	107	447
8:15 AM	98	87	0	185	98	10	0	108	9	135	0	144	437
Total Volume	392	408	0	800	439	29	0	468	31	456	0	487	1755
% Approach Total	49.0	51.0	0.0		93.8	6.2	0.0		6.4	93.6	0.0		
PHF	0.824	0.887	0.000	0.855	0.892	0.725	0.000	0.914	0.705	0.844	0.000	0.845	0.956
Entering Leg	392	408	0	800	439	29	0	468	31	456	0	487	1755
Exiting Leg				895				439				421	1755
Total				1695				907				908	3510

PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



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**Light Goods Vehicle**

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	15	23	0	38	10	1	0	11	5	16	0	21	70
7:15 AM	14	10	0	24	24	2	0	26	4	15	0	19	69
7:30 AM	20	16	0	36	25	4	0	29	2	8	0	10	75
7:45 AM	19	17	0	36	31	2	0	33	1	10	0	11	80
<b>Total</b>	<b>68</b>	<b>66</b>	<b>0</b>	<b>134</b>	<b>90</b>	<b>9</b>	<b>0</b>	<b>99</b>	<b>12</b>	<b>49</b>	<b>0</b>	<b>61</b>	<b>294</b>
8:00 AM	14	14	0	28	17	1	0	18	1	17	0	18	64
8:15 AM	10	14	0	24	9	3	0	12	3	18	0	21	57
8:30 AM	11	18	0	29	21	0	0	21	0	9	0	9	59
8:45 AM	15	18	0	33	20	3	0	23	3	11	0	14	70
<b>Total</b>	<b>50</b>	<b>64</b>	<b>0</b>	<b>114</b>	<b>67</b>	<b>7</b>	<b>0</b>	<b>74</b>	<b>7</b>	<b>55</b>	<b>0</b>	<b>62</b>	<b>250</b>
<b>Grand Total</b>	<b>118</b>	<b>130</b>	<b>0</b>	<b>248</b>	<b>157</b>	<b>16</b>	<b>0</b>	<b>173</b>	<b>19</b>	<b>104</b>	<b>0</b>	<b>123</b>	<b>544</b>
Approach %	47.6	52.4	0.0		90.8	9.2	0.0		15.4	84.6	0.0		
Total %	21.7	23.9	0.0	45.6	28.9	2.9	0.0	31.8	3.5	19.1	0.0	22.6	
Exiting Leg Total				261				149				134	544

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	15	23	0	38	10	1	0	11	5	16	0	21	70
7:15 AM	14	10	0	24	24	2	0	26	4	15	0	19	69
7:30 AM	20	16	0	36	25	4	0	29	2	8	0	10	75
7:45 AM	19	17	0	36	31	2	0	33	1	10	0	11	80
Total Volume	68	66	0	134	90	9	0	99	12	49	0	61	294
% Approach Total	50.7	49.3	0.0		90.9	9.1	0.0		19.7	80.3	0.0		
PHF	0.850	0.717	0.000	0.882	0.726	0.563	0.000	0.750	0.600	0.766	0.000	0.726	0.919
Entering Leg	68	66	0	134	90	9	0	99	12	49	0	61	294
Exiting Leg				139				78				77	294
Total				273				177				138	588

PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Buses**

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	2
7:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
7:45 AM	1	1	0	2	0	1	0	1	0	0	0	0	3
<b>Total</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>8</b>
8:00 AM	1	0	0	1	2	0	0	2	0	1	0	1	4
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>6</b>
<b>Grand Total</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>14</b>
Approach %	80.0	20.0	0.0		33.3	66.7	0.0		0.0	100.0	0.0		
Total %	28.6	7.1	0.0	35.7	14.3	28.6	0.0	42.9	0.0	21.4	0.0	21.4	
Exiting Leg Total				5				1				8	14

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
7:45 AM	1	1	0	2	0	1	0	1	0	0	0	0	3
8:00 AM	1	0	0	1	2	0	0	2	0	1	0	1	4
<b>Total Volume</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>10</b>
<b>% Approach Total</b>	<b>75.0</b>	<b>25.0</b>	<b>0.0</b>		<b>50.0</b>	<b>50.0</b>	<b>0.0</b>		<b>0.0</b>	<b>100.0</b>	<b>0.0</b>		
PHF	0.750	0.250	0.000	0.500	0.250	0.500	0.000	0.500	0.000	0.500	0.000	0.500	0.625
Entering Leg	3	1	0	4	2	2	0	4	0	2	0	2	10
Exiting Leg				4				1				5	10
<b>Total</b>				<b>8</b>				<b>5</b>				<b>7</b>	<b>20</b>

PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
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 Email: datarequests@pdillc.com

**Single-Unit Trucks**

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	3	1	0	4	1	2	0	3	0	4	0	4	11
7:15 AM	3	4	0	7	2	0	0	2	0	5	0	5	14
7:30 AM	2	6	0	8	7	0	0	7	0	4	0	4	19
7:45 AM	1	6	0	7	4	0	0	4	0	5	0	5	16
<b>Total</b>	<b>9</b>	<b>17</b>	<b>0</b>	<b>26</b>	<b>14</b>	<b>2</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>18</b>	<b>60</b>
8:00 AM	3	4	0	7	2	0	0	2	0	3	0	3	12
8:15 AM	2	7	0	9	3	1	0	4	1	2	0	3	16
8:30 AM	2	3	0	5	3	0	0	3	1	2	0	3	11
8:45 AM	7	7	0	14	3	1	0	4	0	6	0	6	24
<b>Total</b>	<b>14</b>	<b>21</b>	<b>0</b>	<b>35</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>13</b>	<b>2</b>	<b>13</b>	<b>0</b>	<b>15</b>	<b>63</b>
<b>Grand Total</b>	<b>23</b>	<b>38</b>	<b>0</b>	<b>61</b>	<b>25</b>	<b>4</b>	<b>0</b>	<b>29</b>	<b>2</b>	<b>31</b>	<b>0</b>	<b>33</b>	<b>123</b>
Approach %	37.7	62.3	0.0		86.2	13.8	0.0		6.1	93.9	0.0		
Total %	18.7	30.9	0.0	49.6	20.3	3.3	0.0	23.6	1.6	25.2	0.0	26.8	
Exiting Leg Total				56				40				27	123

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	2	6	0	8	7	0	0	7	0	4	0	4	19
7:45 AM	1	6	0	7	4	0	0	4	0	5	0	5	16
8:00 AM	3	4	0	7	2	0	0	2	0	3	0	3	12
8:15 AM	2	7	0	9	3	1	0	4	1	2	0	3	16
Total Volume	8	23	0	31	16	1	0	17	1	14	0	15	63
% Approach Total	25.8	74.2	0.0		94.1	5.9	0.0		6.7	93.3	0.0		
PHF	0.667	0.821	0.000	0.861	0.571	0.250	0.000	0.607	0.250	0.700	0.000	0.750	0.829
Entering Leg	8	23	0	31	16	1	0	17	1	14	0	15	63
Exiting Leg				30				24				9	63
Total				61				41				24	126

PDI File #: **186440 A**  
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 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
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**Articulated Trucks**

	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	2	1	0	3	3	0	0	3	0	7	0	7	13
7:15 AM	2	2	0	4	1	0	0	1	0	4	0	4	9
7:30 AM	7	4	0	11	2	0	0	2	0	3	0	3	16
7:45 AM	7	2	0	9	5	1	0	6	1	4	0	5	20
<b>Total</b>	<b>18</b>	<b>9</b>	<b>0</b>	<b>27</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>1</b>	<b>18</b>	<b>0</b>	<b>19</b>	<b>58</b>
8:00 AM	4	2	0	6	1	1	0	2	0	6	0	6	14
8:15 AM	7	2	0	9	2	0	0	2	0	4	0	4	15
8:30 AM	2	2	0	4	2	1	0	3	1	3	0	4	11
8:45 AM	4	2	0	6	3	0	0	3	0	1	0	1	10
<b>Total</b>	<b>17</b>	<b>8</b>	<b>0</b>	<b>25</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>1</b>	<b>14</b>	<b>0</b>	<b>15</b>	<b>50</b>
Grand Total	35	17	0	52	19	3	0	22	2	32	0	34	108
Approach %	67.3	32.7	0.0		86.4	13.6	0.0		5.9	94.1	0.0		
Total %	32.4	15.7	0.0	48.1	17.6	2.8	0.0	20.4	1.9	29.6	0.0	31.5	
Exiting Leg Total				51				19				38	108

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Dascomb Road				Shawsheen Street				East Street				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	7	4	0	11	2	0	0	2	0	3	0	3	16
7:45 AM	7	2	0	9	5	1	0	6	1	4	0	5	20
8:00 AM	4	2	0	6	1	1	0	2	0	6	0	6	14
8:15 AM	7	2	0	9	2	0	0	2	0	4	0	4	15
Total Volume	25	10	0	35	10	2	0	12	1	17	0	18	65
% Approach Total	71.4	28.6	0.0		83.3	16.7	0.0		5.6	94.4	0.0		
PHF	0.893	0.625	0.000	0.795	0.500	0.500	0.000	0.500	0.250	0.708	0.000	0.750	0.813
Entering Leg	25	10	0	35	10	2	0	12	1	17	0	18	65
Exiting Leg				27				11				27	65
Total				62				23				45	130

PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Bicycles (on Roadway and Crosswalks)**

	Dascomb Road						Shawsheen Street						East Street						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Dascomb Road						Shawsheen Street						East Street						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **186440 A**  
 Location: **S: Shawsheen Street**  
 Location: **E: Dascomb Road W: East Street**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Pedestrians**

	Dascomb Road						Shawsheen Street						East Street						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Dascomb Road						Shawsheen Street						East Street						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Cars and Heavy Vehicles (Combined)**

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	1	1	11	224	0	235	230	4	0	234	470
7:15 AM	0	0	0	0	6	183	0	189	261	3	0	264	453
7:30 AM	1	0	0	1	2	230	0	232	274	3	0	277	510
7:45 AM	0	1	0	1	4	264	0	268	294	2	0	296	565
<b>Total</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>23</b>	<b>901</b>	<b>0</b>	<b>924</b>	<b>1059</b>	<b>12</b>	<b>0</b>	<b>1071</b>	<b>1998</b>
8:00 AM	1	0	0	1	2	270	0	272	245	4	0	249	522
8:15 AM	2	0	0	2	6	218	0	224	274	3	0	277	503
8:30 AM	2	2	0	4	9	221	0	230	217	4	0	221	455
8:45 AM	0	1	0	1	5	220	0	225	205	6	0	211	437
<b>Total</b>	<b>5</b>	<b>3</b>	<b>0</b>	<b>8</b>	<b>22</b>	<b>929</b>	<b>0</b>	<b>951</b>	<b>941</b>	<b>17</b>	<b>0</b>	<b>958</b>	<b>1917</b>
Grand Total	6	4	1	11	45	1830	0	1875	2000	29	0	2029	3915
Approach %	54.5	36.4	9.1		2.4	97.6	0.0		98.6	1.4	0.0		
Total %	0.2	0.1	0.0	0.3	1.1	46.7	0.0	47.9	51.1	0.7	0.0	51.8	
Exiting Leg Total				75				2004				1836	3915
Cars	4	3	1	8	41	1716	0	1757	1890	29	0	1919	3684
% Cars	66.7	75.0	100.0	72.7	91.1	93.8	0.0	93.7	94.5	100.0	0.0	94.6	94.1
Exiting Leg Total				71				1893				1720	3684
Heavy Vehicles	2	1	0	3	4	114	0	118	110	0	0	110	231
% Heavy Vehicles	33.3	25.0	0.0	27.3	8.9	6.2	0.0	6.3	5.5	0.0	0.0	5.4	5.9
Exiting Leg Total				4				111				116	231

**Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:**

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	1	0	0	1	2	230	0	232	274	3	0	277	510
7:45 AM	0	1	0	1	4	264	0	268	294	2	0	296	565
8:00 AM	1	0	0	1	2	270	0	272	245	4	0	249	522
8:15 AM	2	0	0	2	6	218	0	224	274	3	0	277	503
Total Volume	4	1	0	5	14	982	0	996	1087	12	0	1099	2100
% Approach Total	80.0	20.0	0.0		1.4	98.6	0.0		98.9	1.1	0.0		
PHF	0.500	0.250	0.000	0.625	0.583	0.909	0.000	0.915	0.924	0.750	0.000	0.928	0.929
Cars	2	1	0	3	13	918	0	931	1024	12	0	1036	1970
Cars %	50.0	100.0	0.0	60.0	92.9	93.5	0.0	93.5	94.2	100.0	0.0	94.3	93.8
Heavy Vehicles	2	0	0	2	1	64	0	65	63	0	0	63	130
Heavy Vehicles %	50.0	0.0	0.0	40.0	7.1	6.5	0.0	6.5	5.8	0.0	0.0	5.7	6.2
Cars Enter Leg	2	1	0	3	13	918	0	931	1024	12	0	1036	1970
Heavy Enter Leg	2	0	0	2	1	64	0	65	63	0	0	63	130
Total Entering Leg	4	1	0	5	14	982	0	996	1087	12	0	1099	2100
Cars Exiting Leg				25				1025				920	1970
Heavy Exiting Leg				1				63				66	130
Total Exiting Leg				26				1088				986	2100

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Cars-Combined (Motorcycles, Cars, Light Goods)**

	HP Driveway				Dascomb Road				Dascomb Road				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
7:00 AM	0	0	1	1	10	217	0	227	214	4	0	218	446	
7:15 AM	0	0	0	0	5	171	0	176	251	3	0	254	430	
7:30 AM	1	0	0	1	2	212	0	214	255	3	0	258	473	
7:45 AM	0	1	0	1	4	248	0	252	277	2	0	279	532	
Total	1	1	1	3	21	848	0	869	997	12	0	1009	1881	
8:00 AM	0	0	0	0	2	256	0	258	230	4	0	234	492	
8:15 AM	1	0	0	1	5	202	0	207	262	3	0	265	473	
8:30 AM	2	1	0	3	9	211	0	220	208	4	0	212	435	
8:45 AM	0	1	0	1	4	199	0	203	193	6	0	199	403	
Total	3	2	0	5	20	868	0	888	893	17	0	910	1803	
Grand Total	4	3	1	8	41	1716	0	1757	1890	29	0	1919	3684	
Approach %	50.0	37.5	12.5		2.3	97.7	0.0		98.5	1.5	0.0			
Total %	0.1	0.1	0.0	0.2	1.1	46.6	0.0	47.7	51.3	0.8	0.0	52.1		
Exiting Leg Total					71				1893				1720	3684

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	HP Driveway				Dascomb Road				Dascomb Road				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
7:30 AM	1	0	0	1	2	212	0	214	255	3	0	258	473	
7:45 AM	0	1	0	1	4	248	0	252	277	2	0	279	532	
8:00 AM	0	0	0	0	2	256	0	258	230	4	0	234	492	
8:15 AM	1	0	0	1	5	202	0	207	262	3	0	265	473	
Total Volume	2	1	0	3	13	918	0	931	1024	12	0	1036	1970	
% Approach Total	66.7	33.3	0.0		1.4	98.6	0.0		98.8	1.2	0.0			
PHF	0.500	0.250	0.000	0.750	0.650	0.896	0.000	0.902	0.924	0.750	0.000	0.928	0.926	
Entering Leg	2	1	0	3	13	918	0	931	1024	12	0	1036	1970	
Exiting Leg					25				1025				920	1970
Total					28				1956				1956	3940

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	1	7	0	8	16	0	0	16	24
7:15 AM	0	0	0	0	1	12	0	13	10	0	0	10	23
7:30 AM	0	0	0	0	0	18	0	18	19	0	0	19	37
7:45 AM	0	0	0	0	0	16	0	16	17	0	0	17	33
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>53</b>	<b>0</b>	<b>55</b>	<b>62</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>117</b>
8:00 AM	1	0	0	1	0	14	0	14	15	0	0	15	30
8:15 AM	1	0	0	1	1	16	0	17	12	0	0	12	30
8:30 AM	0	1	0	1	0	10	0	10	9	0	0	9	20
8:45 AM	0	0	0	0	1	21	0	22	12	0	0	12	34
<b>Total</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>61</b>	<b>0</b>	<b>63</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>114</b>
<b>Grand Total</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>114</b>	<b>0</b>	<b>118</b>	<b>110</b>	<b>0</b>	<b>0</b>	<b>110</b>	<b>231</b>
Approach %	66.7	33.3	0.0		3.4	96.6	0.0		100.0	0.0	0.0		
Total %	0.9	0.4	0.0	1.3	1.7	49.4	0.0	51.1	47.6	0.0	0.0	47.6	
Exiting Leg Total				4				111				116	231
Buses	0	0	0	0	0	4	0	4	5	0	0	5	9
% Buses	0.0	0.0	0.0	0.0	0.0	3.5	0.0	3.4	4.5	0.0	0.0	4.5	3.9
Exiting Leg Total				0				5				4	9
Single-Unit Trucks	1	0	0	1	2	60	0	62	56	0	0	56	119
% Single-Unit	50.0	0.0	0.0	33.3	50.0	52.6	0.0	52.5	50.9	0.0	0.0	50.9	51.5
Exiting Leg Total				2				56				61	119
Articulated Trucks	1	1	0	2	2	50	0	52	49	0	0	49	103
% Articulated	50.0	100.0	0.0	66.7	50.0	43.9	0.0	44.1	44.5	0.0	0.0	44.5	44.6
Exiting Leg Total				2				50				51	103

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	18	0	18	19	0	0	19	37
7:45 AM	0	0	0	0	0	16	0	16	17	0	0	17	33
8:00 AM	1	0	0	1	0	14	0	14	15	0	0	15	30
8:15 AM	1	0	0	1	1	16	0	17	12	0	0	12	30
<b>Total Volume</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>64</b>	<b>0</b>	<b>65</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>63</b>	<b>130</b>
% Approach Total	100.0	0.0	0.0		1.5	98.5	0.0		100.0	0.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.250	0.889	0.000	0.903	0.829	0.000	0.000	0.829	0.878
Buses	0	0	0	0	0	2	0	2	5	0	0	5	7
Buses %	0.0	0.0	0.0	0.0	0.0	3.1	0.0	3.1	7.9	0.0	0.0	7.9	5.4
Single-Unit Trucks	1	0	0	1	1	30	0	31	32	0	0	32	64
Single-Unit %	50.0	0.0	0.0	50.0	100.0	46.9	0.0	47.7	50.8	0.0	0.0	50.8	49.2
Articulated Trucks	1	0	0	1	0	32	0	32	26	0	0	26	59
Articulated %	50.0	0.0	0.0	50.0	0.0	50.0	0.0	49.2	41.3	0.0	0.0	41.3	45.4
Buses	0	0	0	0	0	2	0	2	5	0	0	5	7
Single-Unit Trucks	1	0	0	1	1	30	0	31	32	0	0	32	64
Articulated Trucks	1	0	0	1	0	32	0	32	26	0	0	26	59
<b>Total Entering Leg</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>64</b>	<b>0</b>	<b>65</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>63</b>	<b>130</b>
Buses				0				5				2	7
Single-Unit Trucks				1				32				31	64
Articulated Trucks				0				26				33	59
<b>Total Exiting Leg</b>				<b>1</b>				<b>63</b>				<b>66</b>	<b>130</b>

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Cars**

	HP Driveway				Dascomb Road				Dascomb Road				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
7:00 AM	0	0	1	1	10	182	0	192	186	4	0	190	383	
7:15 AM	0	0	0	0	5	149	0	154	206	3	0	209	363	
7:30 AM	0	0	0	0	2	179	0	181	224	3	0	227	408	
7:45 AM	0	1	0	1	4	213	0	217	239	2	0	241	459	
Total	0	1	1	2	21	723	0	744	855	12	0	867	1613	
8:00 AM	0	0	0	0	2	223	0	225	199	4	0	203	428	
8:15 AM	0	0	0	0	5	178	0	183	233	3	0	236	419	
8:30 AM	1	1	0	2	9	181	0	190	174	2	0	176	368	
8:45 AM	0	0	0	0	4	165	0	169	159	6	0	165	334	
Total	1	1	0	2	20	747	0	767	765	15	0	780	1549	
Grand Total	1	2	1	4	41	1470	0	1511	1620	27	0	1647	3162	
Approach %	25.0	50.0	25.0		2.7	97.3	0.0		98.4	1.6	0.0			
Total %	0.0	0.1	0.0	0.1	1.3	46.5	0.0	47.8	51.2	0.9	0.0	52.1		
Exiting Leg Total					69				1622				1471	3162

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	HP Driveway				Dascomb Road				Dascomb Road				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
7:30 AM	0	0	0	0	2	179	0	181	224	3	0	227	408	
7:45 AM	0	1	0	1	4	213	0	217	239	2	0	241	459	
8:00 AM	0	0	0	0	2	223	0	225	199	4	0	203	428	
8:15 AM	0	0	0	0	5	178	0	183	233	3	0	236	419	
Total Volume	0	1	0	1	13	793	0	806	895	12	0	907	1714	
% Approach Total	0.0	100.0	0.0		1.6	98.4	0.0		98.7	1.3	0.0			
PHF	0.000	0.250	0.000	0.250	0.650	0.889	0.000	0.896	0.936	0.750	0.000	0.941	0.934	
Entering Leg	0	1	0	1	13	793	0	806	895	12	0	907	1714	
Exiting Leg					25				896				793	1714
Total					26				1702				1700	3428

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Light Goods Vehicle**

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	35	0	35	28	0	0	28	63
7:15 AM	0	0	0	0	0	22	0	22	44	0	0	44	66
7:30 AM	1	0	0	1	0	33	0	33	31	0	0	31	65
7:45 AM	0	0	0	0	0	35	0	35	38	0	0	38	73
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>125</b>	<b>0</b>	<b>125</b>	<b>141</b>	<b>0</b>	<b>0</b>	<b>141</b>	<b>267</b>
8:00 AM	0	0	0	0	0	33	0	33	31	0	0	31	64
8:15 AM	1	0	0	1	0	24	0	24	29	0	0	29	54
8:30 AM	1	0	0	1	0	29	0	29	34	2	0	36	66
8:45 AM	0	1	0	1	0	34	0	34	33	0	0	33	68
<b>Total</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>120</b>	<b>0</b>	<b>120</b>	<b>127</b>	<b>2</b>	<b>0</b>	<b>129</b>	<b>252</b>
Grand Total	3	1	0	4	0	245	0	245	268	2	0	270	519
Approach %	75.0	25.0	0.0		0.0	100.0	0.0		99.3	0.7	0.0		
Total %	0.6	0.2	0.0	0.8	0.0	47.2	0.0	47.2	51.6	0.4	0.0	52.0	
Exiting Leg Total				2				269				248	519

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:15 AM	0	0	0	0	0	22	0	22	44	0	0	44	66
7:30 AM	1	0	0	1	0	33	0	33	31	0	0	31	65
7:45 AM	0	0	0	0	0	35	0	35	38	0	0	38	73
8:00 AM	0	0	0	0	0	33	0	33	31	0	0	31	64
Total Volume	1	0	0	1	0	123	0	123	144	0	0	144	268
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.879	0.000	0.879	0.818	0.000	0.000	0.818	0.918
Entering Leg	1	0	0	1	0	123	0	123	144	0	0	144	268
Exiting Leg				0				144				124	268
Total				1				267				268	536

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Buses**

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
<b>Total</b>	0	0	0	0	0	2	0	2	1	0	0	1	3
8:00 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
<b>Total</b>	0	0	0	0	0	2	0	2	4	0	0	4	6
<b>Grand Total</b>	0	0	0	0	0	4	0	4	5	0	0	5	9
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	44.4	0.0	44.4	55.6	0.0	0.0	55.6	
Exiting Leg Total	0				5				4				9

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
7:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
<b>Total Volume</b>	0	0	0	0	0	3	0	3	4	0	0	4	7
<b>% Approach Total</b>	0.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.750	0.333	0.000	0.000	0.333	0.438
Entering Leg	0				3				4				7
Exiting Leg	0				4				3				7
<b>Total</b>	0				7				7				14

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Single-Unit Trucks**

	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	4	0	4	5	0	0	5	9
7:15 AM	0	0	0	0	0	7	0	7	6	0	0	6	13
7:30 AM	0	0	0	0	0	9	0	9	13	0	0	13	22
7:45 AM	0	0	0	0	0	6	0	6	9	0	0	9	15
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>26</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>59</b>
8:00 AM	0	0	0	0	0	8	0	8	5	0	0	5	13
8:15 AM	1	0	0	1	1	7	0	8	5	0	0	5	14
8:30 AM	0	0	0	0	0	6	0	6	4	0	0	4	10
8:45 AM	0	0	0	0	1	13	0	14	9	0	0	9	23
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>34</b>	<b>0</b>	<b>36</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>60</b>
<b>Grand Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>60</b>	<b>0</b>	<b>62</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>56</b>	<b>119</b>
Approach %	100.0	0.0	0.0		3.2	96.8	0.0		100.0	0.0	0.0		
Total %	0.8	0.0	0.0	0.8	1.7	50.4	0.0	52.1	47.1	0.0	0.0	47.1	
Exiting Leg Total				2				56				61	119

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	9	0	9	13	0	0	13	22
7:45 AM	0	0	0	0	0	6	0	6	9	0	0	9	15
8:00 AM	0	0	0	0	0	8	0	8	5	0	0	5	13
8:15 AM	1	0	0	1	1	7	0	8	5	0	0	5	14
<b>Total Volume</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>30</b>	<b>0</b>	<b>31</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>64</b>
<b>% Approach Total</b>	<b>100.0</b>	<b>0.0</b>	<b>0.0</b>		<b>3.2</b>	<b>96.8</b>	<b>0.0</b>		<b>100.0</b>	<b>0.0</b>	<b>0.0</b>		
PHF	0.250	0.000	0.000	0.250	0.250	0.833	0.000	0.861	0.615	0.000	0.000	0.615	0.727
Entering Leg	1	0	0	1	1	30	0	31	32	0	0	32	64
Exiting Leg				1				32				31	64
<b>Total</b>				<b>2</b>				<b>63</b>				<b>63</b>	<b>128</b>

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Articulated Trucks**

	HP Driveway				Dascomb Road				Dascomb Road				Total	
	from North				from East				from West					
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total		
7:00 AM	0	0	0	0	1	3	0	4	11	0	0	11	15	
7:15 AM	0	0	0	0	1	4	0	5	4	0	0	4	9	
7:30 AM	0	0	0	0	0	9	0	9	5	0	0	5	14	
7:45 AM	0	0	0	0	0	9	0	9	8	0	0	8	17	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>25</b>	<b>0</b>	<b>27</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>55</b>	
8:00 AM	1	0	0	1	0	5	0	5	7	0	0	7	13	
8:15 AM	0	0	0	0	0	9	0	9	6	0	0	6	15	
8:30 AM	0	1	0	1	0	4	0	4	5	0	0	5	10	
8:45 AM	0	0	0	0	0	7	0	7	3	0	0	3	10	
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>25</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>48</b>	
<b>Grand Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>50</b>	<b>0</b>	<b>52</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>49</b>	<b>103</b>	
Approach %	50.0	50.0	0.0		3.8	96.2	0.0		100.0	0.0	0.0			
Total %	1.0	1.0	0.0	1.9	1.9	48.5	0.0	50.5	47.6	0.0	0.0		47.6	
Exiting Leg Total				2				50					51	103

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	HP Driveway				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	9	0	9	5	0	0	5	14
7:45 AM	0	0	0	0	0	9	0	9	8	0	0	8	17
8:00 AM	1	0	0	1	0	5	0	5	7	0	0	7	13
8:15 AM	0	0	0	0	0	9	0	9	6	0	0	6	15
Total Volume	1	0	0	1	0	32	0	32	26	0	0	26	59
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.889	0.000	0.889	0.813	0.000	0.000	0.813	0.868
Entering Leg	1	0	0	1	0	32	0	32	26	0	0	26	59
Exiting Leg				0				26				33	59
<b>Total</b>				<b>1</b>				<b>58</b>				<b>59</b>	<b>118</b>

PDI File #: 186440 B  
 Location: N: HP Driveway  
 Location: E: Dascomb Road W: Dascomb Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Bicycles (on Roadway and Crosswalks)**

	HP Driveway						Dascomb Road						Dascomb Road						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	HP Driveway						Dascomb Road						Dascomb Road						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **186440 B**  
 Location: **N: HP Driveway**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Pedestrians**

	HP Driveway						Dascomb Road						Dascomb Road						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	HP Driveway						Dascomb Road						Dascomb Road						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Cars and Heavy Vehicles (Combined)**

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	104	53	0	157	87	147	0	234	145	74	0	219	610
7:15 AM	71	66	0	137	115	121	0	236	160	104	0	264	637
7:30 AM	92	71	0	163	123	159	0	282	183	94	0	277	722
7:45 AM	103	72	1	176	123	205	0	328	196	90	0	286	790
<b>Total</b>	<b>370</b>	<b>262</b>	<b>1</b>	<b>633</b>	<b>448</b>	<b>632</b>	<b>0</b>	<b>1080</b>	<b>684</b>	<b>362</b>	<b>0</b>	<b>1046</b>	<b>2759</b>
8:00 AM	103	67	0	170	125	184	0	309	159	97	0	256	735
8:15 AM	84	79	0	163	125	161	0	286	174	98	0	272	721
8:30 AM	96	69	0	165	121	163	0	284	146	91	0	237	686
8:45 AM	90	74	0	164	87	153	0	240	124	86	0	210	614
<b>Total</b>	<b>373</b>	<b>289</b>	<b>0</b>	<b>662</b>	<b>458</b>	<b>661</b>	<b>0</b>	<b>1119</b>	<b>603</b>	<b>372</b>	<b>0</b>	<b>975</b>	<b>2756</b>
Grand Total	743	551	1	1295	906	1293	0	2199	1287	734	0	2021	5515
Approach %	57.4	42.5	0.1		41.2	58.8	0.0		63.7	36.3	0.0		
Total %	13.5	10.0	0.0	23.5	16.4	23.4	0.0	39.9	23.3	13.3	0.0	36.6	
Exiting Leg Total				1641				1838				2036	5515
Cars	668	540	1	1209	894	1234	0	2128	1213	685	0	1898	5235
% Cars	89.9	98.0	100.0	93.4	98.7	95.4	0.0	96.8	94.3	93.3	0.0	93.9	94.9
Exiting Leg Total				1580				1753				1902	5235
Heavy Vehicles	75	11	0	86	12	59	0	71	74	49	0	123	280
% Heavy Vehicles	10.1	2.0	0.0	6.6	1.3	4.6	0.0	3.2	5.7	6.7	0.0	6.1	5.1
Exiting Leg Total				61				85				134	280

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	92	71	0	163	123	159	0	282	183	94	0	277	722
7:45 AM	103	72	1	176	123	205	0	328	196	90	0	286	790
8:00 AM	103	67	0	170	125	184	0	309	159	97	0	256	735
8:15 AM	84	79	0	163	125	161	0	286	174	98	0	272	721
Total Volume	382	289	1	672	496	709	0	1205	712	379	0	1091	2968
% Approach Total	56.8	43.0	0.1		41.2	58.8	0.0		65.3	34.7	0.0		
PHF	0.927	0.915	0.250	0.955	0.992	0.865	0.000	0.918	0.908	0.967	0.000	0.954	0.939
Cars	340	282	1	623	492	678	0	1170	672	353	0	1025	2818
Cars %	89.0	97.6	100.0	92.7	99.2	95.6	0.0	97.1	94.4	93.1	0.0	94.0	94.9
Heavy Vehicles	42	7	0	49	4	31	0	35	40	26	0	66	150
Heavy Vehicles %	11.0	2.4	0.0	7.3	0.8	4.4	0.0	2.9	5.6	6.9	0.0	6.0	5.1
Cars Enter Leg	340	282	1	623	492	678	0	1170	672	353	0	1025	2818
Heavy Enter Leg	42	7	0	49	4	31	0	35	40	26	0	66	150
Total Entering Leg	382	289	1	672	496	709	0	1205	712	379	0	1091	2968
Cars Exiting Leg				846				954				1018	2818
Heavy Exiting Leg				30				47				73	150
Total Exiting Leg				876				1001				1091	2968

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	101	53	0	154	86	141	0	227	133	71	0	204	585
7:15 AM	65	65	0	130	113	113	0	226	151	99	0	250	606
7:30 AM	82	70	0	152	122	150	0	272	171	85	0	256	680
7:45 AM	90	71	1	162	122	195	0	317	187	82	0	269	748
<b>Total</b>	<b>338</b>	<b>259</b>	<b>1</b>	<b>598</b>	<b>443</b>	<b>599</b>	<b>0</b>	<b>1042</b>	<b>642</b>	<b>337</b>	<b>0</b>	<b>979</b>	<b>2619</b>
8:00 AM	96	64	0	160	125	179	0	304	147	93	0	240	704
8:15 AM	72	77	0	149	123	154	0	277	167	93	0	260	686
8:30 AM	86	67	0	153	120	159	0	279	140	83	0	223	655
8:45 AM	76	73	0	149	83	143	0	226	117	79	0	196	571
<b>Total</b>	<b>330</b>	<b>281</b>	<b>0</b>	<b>611</b>	<b>451</b>	<b>635</b>	<b>0</b>	<b>1086</b>	<b>571</b>	<b>348</b>	<b>0</b>	<b>919</b>	<b>2616</b>
Grand Total	668	540	1	1209	894	1234	0	2128	1213	685	0	1898	5235
Approach %	55.3	44.7	0.1		42.0	58.0	0.0		63.9	36.1	0.0		
Total %	12.8	10.3	0.0	23.1	17.1	23.6	0.0	40.6	23.2	13.1	0.0	36.3	
Exiting Leg Total				1580				1753				1902	5235

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	82	70	0	152	122	150	0	272	171	85	0	256	680
7:45 AM	90	71	1	162	122	195	0	317	187	82	0	269	748
8:00 AM	96	64	0	160	125	179	0	304	147	93	0	240	704
8:15 AM	72	77	0	149	123	154	0	277	167	93	0	260	686
Total Volume	340	282	1	623	492	678	0	1170	672	353	0	1025	2818
% Approach Total	54.6	45.3	0.2		42.1	57.9	0.0		65.6	34.4	0.0		
PHF	0.885	0.916	0.250	0.961	0.984	0.869	0.000	0.923	0.898	0.949	0.000	0.953	0.942
Entering Leg	340	282	1	623	492	678	0	1170	672	353	0	1025	2818
Exiting Leg				846				954				1018	2818
<b>Total</b>				<b>1469</b>				<b>2124</b>				<b>2043</b>	<b>5636</b>

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	3	0	0	3	1	6	0	7	12	3	0	15	25
7:15 AM	6	1	0	7	2	8	0	10	9	5	0	14	31
7:30 AM	10	1	0	11	1	9	0	10	12	9	0	21	42
7:45 AM	13	1	0	14	1	10	0	11	9	8	0	17	42
<b>Total</b>	<b>32</b>	<b>3</b>	<b>0</b>	<b>35</b>	<b>5</b>	<b>33</b>	<b>0</b>	<b>38</b>	<b>42</b>	<b>25</b>	<b>0</b>	<b>67</b>	<b>140</b>
8:00 AM	7	3	0	10	0	5	0	5	12	4	0	16	31
8:15 AM	12	2	0	14	2	7	0	9	7	5	0	12	35
8:30 AM	10	2	0	12	1	4	0	5	6	8	0	14	31
8:45 AM	14	1	0	15	4	10	0	14	7	7	0	14	43
<b>Total</b>	<b>43</b>	<b>8</b>	<b>0</b>	<b>51</b>	<b>7</b>	<b>26</b>	<b>0</b>	<b>33</b>	<b>32</b>	<b>24</b>	<b>0</b>	<b>56</b>	<b>140</b>
Grand Total	75	11	0	86	12	59	0	71	74	49	0	123	280
Approach %	87.2	12.8	0.0		16.9	83.1	0.0		60.2	39.8	0.0		
Total %	26.8	3.9	0.0	30.7	4.3	21.1	0.0	25.4	26.4	17.5	0.0	43.9	
Exiting Leg Total				61				85				134	280
Buses	2	3	0	5	0	4	0	4	4	1	0	5	14
% Buses	2.7	27.3	0.0	5.8	0.0	6.8	0.0	5.6	5.4	2.0	0.0	4.1	5.0
Exiting Leg Total				1				7				6	14
Single-Unit Trucks	34	6	0	40	8	34	0	42	37	28	0	65	147
% Single-Unit	45.3	54.5	0.0	46.5	66.7	57.6	0.0	59.2	50.0	57.1	0.0	52.8	52.5
Exiting Leg Total				36				43				68	147
Articulated Trucks	39	2	0	41	4	21	0	25	33	20	0	53	119
% Articulated	52.0	18.2	0.0	47.7	33.3	35.6	0.0	35.2	44.6	40.8	0.0	43.1	42.5
Exiting Leg Total				24				35				60	119

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	10	1	0	11	1	9	0	10	12	9	0	21	42
7:45 AM	13	1	0	14	1	10	0	11	9	8	0	17	42
8:00 AM	7	3	0	10	0	5	0	5	12	4	0	16	31
8:15 AM	12	2	0	14	2	7	0	9	7	5	0	12	35
<b>Total Volume</b>	<b>42</b>	<b>7</b>	<b>0</b>	<b>49</b>	<b>4</b>	<b>31</b>	<b>0</b>	<b>35</b>	<b>40</b>	<b>26</b>	<b>0</b>	<b>66</b>	<b>150</b>
% Approach Total	85.7	14.3	0.0		11.4	88.6	0.0		60.6	39.4	0.0		
PHF	0.808	0.583	0.000	0.875	0.500	0.775	0.000	0.795	0.833	0.722	0.000	0.786	0.893
Buses	2	3	0	5	0	2	0	2	4	1	0	5	12
Buses %	4.8	42.9	0.0	10.2	0.0	6.5	0.0	5.7	10.0	3.8	0.0	7.6	8.0
Single-Unit Trucks	14	3	0	17	2	18	0	20	20	14	0	34	71
Single-Unit %	33.3	42.9	0.0	34.7	50.0	58.1	0.0	57.1	50.0	53.8	0.0	51.5	47.3
Articulated Trucks	26	1	0	27	2	11	0	13	16	11	0	27	67
Articulated %	61.9	14.3	0.0	55.1	50.0	35.5	0.0	37.1	40.0	42.3	0.0	40.9	44.7
Buses	2	3	0	5	0	2	0	2	4	1	0	5	12
Single-Unit Trucks	14	3	0	17	2	18	0	20	20	14	0	34	71
Articulated Trucks	26	1	0	27	2	11	0	13	16	11	0	27	67
<b>Total Entering Leg</b>	<b>42</b>	<b>7</b>	<b>0</b>	<b>49</b>	<b>4</b>	<b>31</b>	<b>0</b>	<b>35</b>	<b>40</b>	<b>26</b>	<b>0</b>	<b>66</b>	<b>150</b>
Buses				1				7				4	12
Single-Unit Trucks				16				23				32	71
Articulated Trucks				13				17				37	67
<b>Total Exiting Leg</b>				<b>30</b>				<b>47</b>				<b>73</b>	<b>150</b>

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Cars**

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	88	47	0	135	80	122	0	202	115	61	0	176	513
7:15 AM	58	60	0	118	108	99	0	207	120	78	0	198	523
7:30 AM	75	65	0	140	112	129	0	241	148	69	0	217	598
7:45 AM	77	57	1	135	120	172	0	292	153	70	0	223	650
<b>Total</b>	<b>298</b>	<b>229</b>	<b>1</b>	<b>528</b>	<b>420</b>	<b>522</b>	<b>0</b>	<b>942</b>	<b>536</b>	<b>278</b>	<b>0</b>	<b>814</b>	<b>2284</b>
8:00 AM	85	58	0	143	118	160	0	278	124	80	0	204	625
8:15 AM	66	63	0	129	117	139	0	256	148	83	0	231	616
8:30 AM	75	59	0	134	114	143	0	257	120	67	0	187	578
8:45 AM	69	65	0	134	78	122	0	200	98	68	0	166	500
<b>Total</b>	<b>295</b>	<b>245</b>	<b>0</b>	<b>540</b>	<b>427</b>	<b>564</b>	<b>0</b>	<b>991</b>	<b>490</b>	<b>298</b>	<b>0</b>	<b>788</b>	<b>2319</b>
Grand Total	593	474	1	1068	847	1086	0	1933	1026	576	0	1602	4603
Approach %	55.5	44.4	0.1		43.8	56.2	0.0		64.0	36.0	0.0		
Total %	12.9	10.3	0.0	23.2	18.4	23.6	0.0	42.0	22.3	12.5	0.0	34.8	
Exiting Leg Total				1424				1500				1679	4603

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	75	65	0	140	112	129	0	241	148	69	0	217	598
7:45 AM	77	57	1	135	120	172	0	292	153	70	0	223	650
8:00 AM	85	58	0	143	118	160	0	278	124	80	0	204	625
8:15 AM	66	63	0	129	117	139	0	256	148	83	0	231	616
Total Volume	303	243	1	547	467	600	0	1067	573	302	0	875	2489
% Approach Total	55.4	44.4	0.2		43.8	56.2	0.0		65.5	34.5	0.0		
PHF	0.891	0.935	0.250	0.956	0.973	0.872	0.000	0.914	0.936	0.910	0.000	0.947	0.957
Entering Leg	303	243	1	547	467	600	0	1067	573	302	0	875	2489
Exiting Leg				770				816				903	2489
<b>Total</b>				<b>1317</b>				<b>1883</b>				<b>1778</b>	<b>4978</b>

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Light Goods Vehicle**

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	13	6	0	19	6	19	0	25	18	10	0	28	72
7:15 AM	6	5	0	11	5	14	0	19	30	21	0	51	81
7:30 AM	7	5	0	12	10	21	0	31	23	16	0	39	82
7:45 AM	13	14	0	27	2	23	0	25	34	12	0	46	98
Total	39	30	0	69	23	77	0	100	105	59	0	164	333
8:00 AM	11	6	0	17	7	19	0	26	23	13	0	36	79
8:15 AM	6	14	0	20	6	15	0	21	19	10	0	29	70
8:30 AM	11	8	0	19	6	15	0	21	20	16	0	36	76
8:45 AM	7	8	0	15	5	21	0	26	18	11	0	29	70
Total	35	36	0	71	24	70	0	94	80	50	0	130	295
Grand Total	74	66	0	140	47	147	0	194	185	109	0	294	628
Approach %	52.9	47.1	0.0		24.2	75.8	0.0		62.9	37.1	0.0		
Total %	11.8	10.5	0.0	22.3	7.5	23.4	0.0	30.9	29.5	17.4	0.0	46.8	
Exiting Leg Total				156				251				221	628

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:15 AM	6	5	0	11	5	14	0	19	30	21	0	51	81
7:30 AM	7	5	0	12	10	21	0	31	23	16	0	39	82
7:45 AM	13	14	0	27	2	23	0	25	34	12	0	46	98
8:00 AM	11	6	0	17	7	19	0	26	23	13	0	36	79
Total Volume	37	30	0	67	24	77	0	101	110	62	0	172	340
% Approach Total	55.2	44.8	0.0		23.8	76.2	0.0		64.0	36.0	0.0		
PHF	0.712	0.536	0.000	0.620	0.600	0.837	0.000	0.815	0.809	0.738	0.000	0.843	0.867
Entering Leg	37	30	0	67	24	77	0	101	110	62	0	172	340
Exiting Leg				86				140				114	340
Total				153				241				286	680

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Buses**

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
7:45 AM	1	1	0	2	0	1	0	1	0	0	0	0	3
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>5</b>
8:00 AM	1	1	0	2	0	1	0	1	3	0	0	3	6
8:15 AM	0	1	0	1	0	0	0	0	1	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
<b>Total</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>9</b>
<b>Grand Total</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>14</b>
Approach %	40.0	60.0	0.0		0.0	100.0	0.0		80.0	20.0	0.0		
Total %	14.3	21.4	0.0	35.7	0.0	28.6	0.0	28.6	28.6	7.1	0.0	35.7	
Exiting Leg Total				1				7				6	14

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
7:45 AM	1	1	0	2	0	1	0	1	0	0	0	0	3
8:00 AM	1	1	0	2	0	1	0	1	3	0	0	3	6
8:15 AM	0	1	0	1	0	0	0	0	1	0	0	1	2
Total Volume	2	3	0	5	0	2	0	2	4	1	0	5	12
% Approach Total	40.0	60.0	0.0		0.0	100.0	0.0		80.0	20.0	0.0		
PHF	0.500	0.750	0.000	0.625	0.000	0.500	0.000	0.500	0.333	0.250	0.000	0.417	0.500
Entering Leg	2	3	0	5	0	2	0	2	4	1	0	5	12
Exiting Leg				1				7				4	12
Total				6				9				9	24

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



**Single-Unit Trucks**

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	2	0	0	2	1	3	0	4	4	1	0	5	11
7:15 AM	3	1	0	4	1	4	0	5	3	3	0	6	15
7:30 AM	4	1	0	5	1	6	0	7	11	4	0	15	27
7:45 AM	1	0	0	1	0	5	0	5	3	6	0	9	15
<b>Total</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>12</b>	<b>3</b>	<b>18</b>	<b>0</b>	<b>21</b>	<b>21</b>	<b>14</b>	<b>0</b>	<b>35</b>	<b>68</b>
8:00 AM	3	1	0	4	0	3	0	3	3	2	0	5	12
8:15 AM	6	1	0	7	1	4	0	5	3	2	0	5	17
8:30 AM	6	1	0	7	1	1	0	2	5	3	0	8	17
8:45 AM	9	1	0	10	3	8	0	11	5	7	0	12	33
<b>Total</b>	<b>24</b>	<b>4</b>	<b>0</b>	<b>28</b>	<b>5</b>	<b>16</b>	<b>0</b>	<b>21</b>	<b>16</b>	<b>14</b>	<b>0</b>	<b>30</b>	<b>79</b>
Grand Total	34	6	0	40	8	34	0	42	37	28	0	65	147
Approach %	85.0	15.0	0.0		19.0	81.0	0.0		56.9	43.1	0.0		
Total %	23.1	4.1	0.0	27.2	5.4	23.1	0.0	28.6	25.2	19.0	0.0	44.2	
Exiting Leg Total				36				43				68	147

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
8:00 AM	3	1	0	4	0	3	0	3	3	2	0	5	12
8:15 AM	6	1	0	7	1	4	0	5	3	2	0	5	17
8:30 AM	6	1	0	7	1	1	0	2	5	3	0	8	17
8:45 AM	9	1	0	10	3	8	0	11	5	7	0	12	33
Total Volume	24	4	0	28	5	16	0	21	16	14	0	30	79
% Approach Total	85.7	14.3	0.0		23.8	76.2	0.0		53.3	46.7	0.0		
PHF	0.667	1.000	0.000	0.700	0.417	0.500	0.000	0.477	0.800	0.500	0.000	0.625	0.598
Entering Leg	24	4	0	28	5	16	0	21	16	14	0	30	79
Exiting Leg				19				20				40	79
Total				47				41				70	158

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Articulated Trucks**

	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	1	0	0	1	0	3	0	3	8	2	0	10	14
7:15 AM	3	0	0	3	1	3	0	4	6	2	0	8	15
7:30 AM	6	0	0	6	0	3	0	3	1	4	0	5	14
7:45 AM	11	0	0	11	1	4	0	5	6	2	0	8	24
<b>Total</b>	<b>21</b>	<b>0</b>	<b>0</b>	<b>21</b>	<b>2</b>	<b>13</b>	<b>0</b>	<b>15</b>	<b>21</b>	<b>10</b>	<b>0</b>	<b>31</b>	<b>67</b>
8:00 AM	3	1	0	4	0	1	0	1	6	2	0	8	13
8:15 AM	6	0	0	6	1	3	0	4	3	3	0	6	16
8:30 AM	4	1	0	5	0	3	0	3	1	5	0	6	14
8:45 AM	5	0	0	5	1	1	0	2	2	0	0	2	9
<b>Total</b>	<b>18</b>	<b>2</b>	<b>0</b>	<b>20</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>10</b>	<b>12</b>	<b>10</b>	<b>0</b>	<b>22</b>	<b>52</b>
<b>Grand Total</b>	<b>39</b>	<b>2</b>	<b>0</b>	<b>41</b>	<b>4</b>	<b>21</b>	<b>0</b>	<b>25</b>	<b>33</b>	<b>20</b>	<b>0</b>	<b>53</b>	<b>119</b>
Approach %	95.1	4.9	0.0		16.0	84.0	0.0		62.3	37.7	0.0		
Total %	32.8	1.7	0.0	34.5	3.4	17.6	0.0	21.0	27.7	16.8	0.0	44.5	
Exiting Leg Total				24				35				60	119

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Frontage Road				Dascomb Road				Dascomb Road				Total
	from North				from East				from West				
	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	
7:00 AM	1	0	0	1	0	3	0	3	8	2	0	10	14
7:15 AM	3	0	0	3	1	3	0	4	6	2	0	8	15
7:30 AM	6	0	0	6	0	3	0	3	1	4	0	5	14
7:45 AM	11	0	0	11	1	4	0	5	6	2	0	8	24
Total Volume	21	0	0	21	2	13	0	15	21	10	0	31	67
% Approach Total	100.0	0.0	0.0		13.3	86.7	0.0		67.7	32.3	0.0		
PHF	0.477	0.000	0.000	0.477	0.500	0.813	0.000	0.750	0.656	0.625	0.000	0.775	0.698
Entering Leg	21	0	0	21	2	13	0	15	21	10	0	31	67
Exiting Leg				12				21				34	67
Total				33				36				65	134

PDI File #: 186440 C  
 Location: N: Frontage Road  
 Location: E: Dascomb Road W: Dascomb Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Bicycles (on Roadway and Crosswalks)**

	Frontage Road						Dascomb Road						Dascomb Road						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Frontage Road						Dascomb Road						Dascomb Road						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **186440 C**  
 Location: **N: Frontage Road**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Pedestrians**

	Frontage Road						Dascomb Road						Dascomb Road						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Approach %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	
Total %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	
Exiting Leg Total	0						1						0						1

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Frontage Road						Dascomb Road						Dascomb Road						Total
	from North						from East						from West						
	Right	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	U-Turn	CW-SB	CW-NB	Total	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Exiting Leg	0						1						0						1
Total	0						2						0						2

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Cars and Heavy Vehicles (Combined)**

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	54	1	85	0	140	12	133	3	0	148	1	1	6	0	8	0	131	14	0	145	441
7:15 AM	55	2	69	0	126	8	104	2	0	114	2	6	6	0	14	1	166	10	0	177	431
7:30 AM	60	1	56	0	117	12	172	2	0	186	1	1	1	0	3	3	184	10	0	197	503
7:45 AM	63	1	90	0	154	17	190	0	0	207	9	0	2	0	11	3	180	11	0	194	566
<b>Total</b>	<b>232</b>	<b>5</b>	<b>300</b>	<b>0</b>	<b>537</b>	<b>49</b>	<b>599</b>	<b>7</b>	<b>0</b>	<b>655</b>	<b>13</b>	<b>8</b>	<b>15</b>	<b>0</b>	<b>36</b>	<b>7</b>	<b>661</b>	<b>45</b>	<b>0</b>	<b>713</b>	<b>1941</b>
8:00 AM	50	0	75	0	125	16	172	1	0	189	3	0	4	0	7	5	175	14	0	194	515
8:15 AM	48	1	62	0	111	17	169	5	0	191	3	4	4	0	11	0	186	14	0	200	513
8:30 AM	47	9	47	0	103	15	190	2	0	207	1	4	1	0	6	1	177	13	0	191	507
8:45 AM	33	1	63	0	97	8	147	1	0	156	2	0	4	0	6	4	159	6	0	169	428
<b>Total</b>	<b>178</b>	<b>11</b>	<b>247</b>	<b>0</b>	<b>436</b>	<b>56</b>	<b>678</b>	<b>9</b>	<b>0</b>	<b>743</b>	<b>9</b>	<b>8</b>	<b>13</b>	<b>0</b>	<b>30</b>	<b>10</b>	<b>697</b>	<b>47</b>	<b>0</b>	<b>754</b>	<b>1963</b>
Grand Total	410	16	547	0	973	105	1277	16	0	1398	22	16	28	0	66	17	1358	92	0	1467	3904
Approach %	42.1	1.6	56.2	0.0		7.5	91.3	1.1	0.0		33.3	24.2	42.4	0.0		1.2	92.6	6.3	0.0		
Total %	10.5	0.4	14.0	0.0	24.9	2.7	32.7	0.4	0.0	35.8	0.6	0.4	0.7	0.0	1.7	0.4	34.8	2.4	0.0	37.6	
Exiting Leg Total	213					1927					49					1715					3904
Cars	403	13	539	0	955	98	1248	16	0	1362	22	16	28	0	66	17	1318	87	0	1422	3805
% Cars	98.3	81.3	98.5	0.0	98.2	93.3	97.7	100.0	0.0	97.4	100.0	100.0	100.0	0.0	100.0	100.0	97.1	94.6	0.0	96.9	97.5
Exiting Leg Total	201					1879					46					1679					3805
Heavy Vehicles	7	3	8	0	18	7	29	0	0	36	0	0	0	0	0	0	40	5	0	45	99
% Heavy Vehicles	1.7	18.8	1.5	0.0	1.8	6.7	2.3	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	2.9	5.4	0.0	3.1	2.5
Exiting Leg Total	12					48					3					36					99

**Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:**

7:45 AM	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:45 AM	63	1	90	0	154	17	190	0	0	207	9	0	2	0	11	3	180	11	0	194	566
8:00 AM	50	0	75	0	125	16	172	1	0	189	3	0	4	0	7	5	175	14	0	194	515
8:15 AM	48	1	62	0	111	17	169	5	0	191	3	4	4	0	11	0	186	14	0	200	513
8:30 AM	47	9	47	0	103	15	190	2	0	207	1	4	1	0	6	1	177	13	0	191	507
Total Volume	208	11	274	0	493	65	721	8	0	794	16	8	11	0	35	9	718	52	0	779	2101
% Approach Total	42.2	2.2	55.6	0.0		8.2	90.8	1.0	0.0		45.7	22.9	31.4	0.0		1.2	92.2	6.7	0.0		
PHF	0.825	0.306	0.761	0.000	0.800	0.956	0.949	0.400	0.000	0.959	0.444	0.500	0.688	0.000	0.795	0.450	0.965	0.929	0.000	0.974	0.928
Cars	206	8	270	0	484	62	709	8	0	779	16	8	11	0	35	9	700	49	0	758	2056
Cars %	99.0	72.7	98.5	0.0	98.2	95.4	98.3	100.0	0.0	98.1	100.0	100.0	100.0	0.0	100.0	100.0	97.5	94.2	0.0	97.3	97.9
Heavy Vehicles	2	3	4	0	9	3	12	0	0	15	0	0	0	0	0	0	18	3	0	21	45
Heavy Vehicles %	1.0	27.3	1.5	0.0	1.8	4.6	1.7	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	2.5	5.8	0.0	2.7	2.1
Cars Enter Leg	206	8	270	0	484	62	709	8	0	779	16	8	11	0	35	9	700	49	0	758	2056
Heavy Enter Leg	2	3	4	0	9	3	12	0	0	15	0	0	0	0	0	0	18	3	0	21	45
Total Entering Leg	208	11	274	0	493	65	721	8	0	794	16	8	11	0	35	9	718	52	0	779	2101
Cars Exiting Leg	119					986					25					926					2056
Heavy Exiting Leg	6					22					3					14					45
Total Exiting Leg	125					1008					28					940					2101

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	51	1	83	0	135	11	132	3	0	146	1	1	6	0	8	0	127	13	0	140	429
7:15 AM	55	2	68	0	125	7	101	2	0	110	2	6	6	0	14	1	161	10	0	172	421
7:30 AM	58	1	56	0	115	10	164	2	0	176	1	1	1	0	3	3	176	9	0	188	482
7:45 AM	62	1	89	0	152	17	189	0	0	206	9	0	2	0	11	3	177	10	0	190	559
Total	226	5	296	0	527	45	586	7	0	638	13	8	15	0	36	7	641	42	0	690	1891
8:00 AM	50	0	75	0	125	15	171	1	0	187	3	0	4	0	7	5	169	13	0	187	506
8:15 AM	47	1	60	0	108	16	165	5	0	186	3	4	4	0	11	0	182	13	0	195	500
8:30 AM	47	6	46	0	99	14	184	2	0	200	1	4	1	0	6	1	172	13	0	186	491
8:45 AM	33	1	62	0	96	8	142	1	0	151	2	0	4	0	6	4	154	6	0	164	417
Total	177	8	243	0	428	53	662	9	0	724	9	8	13	0	30	10	677	45	0	732	1914
Grand Total	403	13	539	0	955	98	1248	16	0	1362	22	16	28	0	66	17	1318	87	0	1422	3805
Approach %	42.2	1.4	56.4	0.0		7.2	91.6	1.2	0.0		33.3	24.2	42.4	0.0		1.2	92.7	6.1	0.0		
Total %	10.6	0.3	14.2	0.0	25.1	2.6	32.8	0.4	0.0	35.8	0.6	0.4	0.7	0.0	1.7	0.4	34.6	2.3	0.0	37.4	
Exiting Leg Total	201					1879					46					1679					3805

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:45 AM	62	1	89	0	152	17	189	0	0	206	9	0	2	0	11	3	177	10	0	190	559
8:00 AM	50	0	75	0	125	15	171	1	0	187	3	0	4	0	7	5	169	13	0	187	506
8:15 AM	47	1	60	0	108	16	165	5	0	186	3	4	4	0	11	0	182	13	0	195	500
8:30 AM	47	6	46	0	99	14	184	2	0	200	1	4	1	0	6	1	172	13	0	186	491
Total Volume	206	8	270	0	484	62	709	8	0	779	16	8	11	0	35	9	700	49	0	758	2056
% Approach Total	42.6	1.7	55.8	0.0		8.0	91.0	1.0	0.0		45.7	22.9	31.4	0.0		1.2	92.3	6.5	0.0		
PHF	0.831	0.333	0.758	0.000	0.796	0.912	0.938	0.400	0.000	0.945	0.444	0.500	0.688	0.000	0.795	0.450	0.962	0.942	0.000	0.972	0.919
Entering Leg	206	8	270	0	484	62	709	8	0	779	16	8	11	0	35	9	700	49	0	758	2056
Exiting Leg	119					986					25					926					2056
Total	603					1765					60					1684					4112

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	3	0	2	0	5	1	1	0	0	2	0	0	0	0	0	0	4	1	0	5	12
7:15 AM	0	0	1	0	1	1	3	0	0	4	0	0	0	0	0	0	5	0	0	5	10
7:30 AM	2	0	0	0	2	2	8	0	0	10	0	0	0	0	0	0	8	1	0	9	21
7:45 AM	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	7
<b>Total</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>10</b>	<b>4</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>3</b>	<b>0</b>	<b>23</b>	<b>50</b>
8:00 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	6	1	0	7	9
8:15 AM	1	0	2	0	3	1	4	0	0	5	0	0	0	0	0	0	4	1	0	5	13
8:30 AM	0	3	1	0	4	1	6	0	0	7	0	0	0	0	0	0	5	0	0	5	16
8:45 AM	0	0	1	0	1	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	11
<b>Total</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>3</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>2</b>	<b>0</b>	<b>22</b>	<b>49</b>
<b>Grand Total</b>	<b>7</b>	<b>3</b>	<b>8</b>	<b>0</b>	<b>18</b>	<b>7</b>	<b>29</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>5</b>	<b>0</b>	<b>45</b>	<b>99</b>
Approach %	38.9	16.7	44.4	0.0		19.4	80.6	0.0	0.0		0.0	0.0	0.0	0.0		0.0	88.9	11.1	0.0		
Total %	7.1	3.0	8.1	0.0	18.2	7.1	29.3	0.0	0.0	36.4	0.0	0.0	0.0	0.0	0.0	0.0	40.4	5.1	0.0	45.5	
Exiting Leg Total	12					48					3					36					99
Buses	3	0	5	0	8	4	6	0	0	10	0	0	0	0	0	0	8	1	0	9	27
% Buses	42.9	0.0	62.5	0.0	44.4	57.1	20.7	0.0	0.0	27.8	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	0.0	20.0	27.3
Exiting Leg Total	5					13					0					9					27
Single-Unit Trucks	4	3	3	0	10	2	17	0	0	19	0	0	0	0	0	0	24	4	0	28	57
% Single-Unit	57.1	100.0	37.5	0.0	55.6	28.6	58.6	0.0	0.0	52.8	0.0	0.0	0.0	0.0	0.0	0.0	60.0	80.0	0.0	62.2	57.6
Exiting Leg Total	6					27					3					21					57
Articulated Trucks	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	8	0	0	8	15
% Articulated	0.0	0.0	0.0	0.0	0.0	14.3	20.7	0.0	0.0	19.4	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	17.8	15.2
Exiting Leg Total	1					8					0					6					15

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	3	0	2	0	5	1	1	0	0	2	0	0	0	0	0	0	4	1	0	5	12
7:15 AM	0	0	1	0	1	1	3	0	0	4	0	0	0	0	0	0	5	0	0	5	10
7:30 AM	2	0	0	0	2	2	8	0	0	10	0	0	0	0	0	0	8	1	0	9	21
7:45 AM	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	7
<b>Total Volume</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>10</b>	<b>4</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>3</b>	<b>0</b>	<b>23</b>	<b>50</b>
% Approach Total	60.0	0.0	40.0	0.0		23.5	76.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	87.0	13.0	0.0		
PHF	0.500	0.000	0.500	0.000	0.500	0.500	0.406	0.000	0.000	0.425	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.750	0.000	0.639	0.595
Buses	2	0	3	0	5	2	1	0	0	3	0	0	0	0	0	0	2	0	0	2	10
Buses %	33.3	0.0	75.0	0.0	50.0	50.0	7.7	0.0	0.0	17.6	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	8.7	20.0
Single-Unit Trucks	4	0	1	0	5	1	8	0	0	9	0	0	0	0	0	0	13	3	0	16	30
Single-Unit %	66.7	0.0	25.0	0.0	50.0	25.0	61.5	0.0	0.0	52.9	0.0	0.0	0.0	0.0	0.0	0.0	65.0	100.0	0.0	69.6	60.0
Articulated Trucks	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	10
Articulated %	0.0	0.0	0.0	0.0	0.0	25.0	30.8	0.0	0.0	29.4	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	21.7	20.0
Buses	2	0	3	0	5	2	1	0	0	3	0	0	0	0	0	0	2	0	0	2	10
Single-Unit Trucks	4	0	1	0	5	1	8	0	0	9	0	0	0	0	0	0	13	3	0	16	30
Articulated Trucks	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	10
<b>Total Entering Leg</b>	<b>6</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>10</b>	<b>4</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>3</b>	<b>0</b>	<b>23</b>	<b>50</b>
Buses	2					5					0					3					10
Single-Unit Trucks	4					14					0					12					30
Articulated Trucks	1					5					0					4					10
<b>Total Exiting Leg</b>	<b>7</b>					<b>24</b>					<b>0</b>					<b>19</b>					<b>50</b>

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Cars**

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	48	1	68	0	117	11	117	3	0	131	0	1	6	0	7	0	114	12	0	126	381
7:15 AM	51	1	57	0	109	7	93	2	0	102	2	5	6	0	13	0	141	7	0	148	372
7:30 AM	52	1	50	0	103	9	148	2	0	159	1	1	1	0	3	1	153	9	0	163	428
7:45 AM	58	0	84	0	142	13	175	0	0	188	9	0	1	0	10	0	160	8	0	168	508
Total	209	3	259	0	471	40	533	7	0	580	12	7	14	0	33	1	568	36	0	605	1689
8:00 AM	50	0	63	0	113	13	156	1	0	170	3	0	4	0	7	4	154	11	0	169	459
8:15 AM	40	1	57	0	98	14	152	5	0	171	1	4	3	0	8	0	162	12	0	174	451
8:30 AM	46	5	42	0	93	11	169	2	0	182	1	4	0	0	5	1	155	13	0	169	449
8:45 AM	29	1	60	0	90	7	126	0	0	133	2	0	3	0	5	2	137	6	0	145	373
Total	165	7	222	0	394	45	603	8	0	656	7	8	10	0	25	7	608	42	0	657	1732
Grand Total	374	10	481	0	865	85	1136	15	0	1236	19	15	24	0	58	8	1176	78	0	1262	3421
Approach %	43.2	1.2	55.6	0.0		6.9	91.9	1.2	0.0		32.8	25.9	41.4	0.0		0.6	93.2	6.2	0.0		
Total %	10.9	0.3	14.1	0.0	25.3	2.5	33.2	0.4	0.0	36.1	0.6	0.4	0.7	0.0	1.7	0.2	34.4	2.3	0.0	36.9	
Exiting Leg Total	178					1676					33					1534					3421

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:45 AM	58	0	84	0	142	13	175	0	0	188	9	0	1	0	10	0	160	8	0	168	508
8:00 AM	50	0	63	0	113	13	156	1	0	170	3	0	4	0	7	4	154	11	0	169	459
8:15 AM	40	1	57	0	98	14	152	5	0	171	1	4	3	0	8	0	162	12	0	174	451
8:30 AM	46	5	42	0	93	11	169	2	0	182	1	4	0	0	5	1	155	13	0	169	449
Total Volume	194	6	246	0	446	51	652	8	0	711	14	8	8	0	30	5	631	44	0	680	1867
% Approach Total	43.5	1.3	55.2	0.0		7.2	91.7	1.1	0.0		46.7	26.7	26.7	0.0		0.7	92.8	6.5	0.0		
PHF	0.836	0.300	0.732	0.000	0.785	0.911	0.931	0.400	0.000	0.945	0.389	0.500	0.500	0.000	0.750	0.313	0.974	0.846	0.000	0.977	0.919
Entering Leg	194	6	246	0	446	51	652	8	0	711	14	8	8	0	30	5	631	44	0	680	1867
Exiting Leg	103					891					19					854					1867
Total	549					1602					49					1534					3734

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Light Goods Vehicle**

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	3	0	15	0	18	0	15	0	0	15	1	0	0	0	1	0	13	1	0	14	48
7:15 AM	4	1	11	0	16	0	8	0	0	8	0	1	0	0	1	1	20	3	0	24	49
7:30 AM	6	0	6	0	12	1	16	0	0	17	0	0	0	0	0	2	22	0	0	24	53
7:45 AM	4	1	5	0	10	4	14	0	0	18	0	0	1	0	1	3	17	2	0	22	51
<b>Total</b>	17	2	37	0	56	5	53	0	0	58	1	1	1	0	3	6	72	6	0	84	201
8:00 AM	0	0	12	0	12	2	15	0	0	17	0	0	0	0	0	1	15	2	0	18	47
8:15 AM	7	0	3	0	10	2	13	0	0	15	2	0	1	0	3	0	20	1	0	21	49
8:30 AM	1	1	4	0	6	3	14	0	0	17	0	0	1	0	1	0	17	0	0	17	41
8:45 AM	4	0	2	0	6	1	16	1	0	18	0	0	1	0	1	2	17	0	0	19	44
<b>Total</b>	12	1	21	0	34	8	58	1	0	67	2	0	3	0	5	3	69	3	0	75	181
<b>Grand Total</b>	29	3	58	0	90	13	111	1	0	125	3	1	4	0	8	9	141	9	0	159	382
Approach %	32.2	3.3	64.4	0.0		10.4	88.8	0.8	0.0		37.5	12.5	50.0	0.0		5.7	88.7	5.7	0.0		
Total %	7.6	0.8	15.2	0.0	23.6	3.4	29.1	0.3	0.0	32.7	0.8	0.3	1.0	0.0	2.1	2.4	36.9	2.4	0.0	41.6	
Exiting Leg Total	23					202					13					144					382

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	3	0	15	0	18	0	15	0	0	15	1	0	0	0	1	0	13	1	0	14	48
7:15 AM	4	1	11	0	16	0	8	0	0	8	0	1	0	0	1	1	20	3	0	24	49
7:30 AM	6	0	6	0	12	1	16	0	0	17	0	0	0	0	0	2	22	0	0	24	53
7:45 AM	4	1	5	0	10	4	14	0	0	18	0	0	1	0	1	3	17	2	0	22	51
<b>Total Volume</b>	17	2	37	0	56	5	53	0	0	58	1	1	1	0	3	6	72	6	0	84	201
% Approach Total	30.4	3.6	66.1	0.0		8.6	91.4	0.0	0.0		33.3	33.3	33.3	0.0		7.1	85.7	7.1	0.0		
PHF	0.708	0.500	0.617	0.000	0.778	0.313	0.828	0.000	0.000	0.806	0.250	0.250	0.250	0.000	0.750	0.500	0.818	0.500	0.000	0.875	0.948
Entering Leg	17	2	37	0	56	5	53	0	0	58	1	1	1	0	3	6	72	6	0	84	201
Exiting Leg	12					110					8					71					201
<b>Total</b>	68					168					11					155					402

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Buses**

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
7:00 AM	1	0	2	0	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
7:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	3
7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	2
<b>Total</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>10</b>
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	4	4
8:15 AM	1	0	2	0	3	1	0	0	0	1	0	0	0	0	0	0	2	1	0	0	0	3	0	0	3	7
8:30 AM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
<b>Total</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>17</b>
Grand Total	3	0	5	0	8	4	6	0	0	10	0	0	0	0	0	0	8	1	0	9	0	8	1	0	9	27
Approach %	37.5	0.0	62.5	0.0		40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	88.9	11.1	0.0		0.0	88.9	11.1	0.0		
Total %	11.1	0.0	18.5	0.0	29.6	14.8	22.2	0.0	0.0	37.0	0.0	0.0	0.0	0.0	0.0	0.0	29.6	3.7	0.0	33.3	0.0	29.6	3.7	0.0	33.3	
Exiting Leg Total						5					13					0					9		27			

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total					
	from North					from East					from South					from West										
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total						
7:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	0	4	0	0	4	4
8:15 AM	1	0	2	0	3	1	0	0	0	1	0	0	0	0	0	0	2	1	0	3	0	3	0	0	3	7
8:30 AM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total Volume	1	0	3	0	4	2	3	0	0	5	0	0	0	0	0	0	7	1	0	8	0	8	0	0	8	17
% Approach Total	25.0	0.0	75.0	0.0		40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	87.5	12.5	0.0		0.0	87.5	12.5	0.0		
PHF	0.250	0.000	0.375	0.000	0.333	0.500	0.250	0.000	0.000	0.313	0.000	0.000	0.000	0.000	0.000	0.000	0.438	0.250	0.000	0.500	0.000	0.607	0.000	0.000	0.607	
Entering Leg	1	0	3	0	4	2	3	0	0	5	0	0	0	0	0	0	7	1	0	8	0	8	0	0	8	17
Exiting Leg						3					10					0					4		17			
Total						7					15					0					12		34			

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Single-Unit Trucks**

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	7
7:15 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	6
7:30 AM	1	0	0	0	1	1	5	0	0	6	0	0	0	0	0	0	6	1	0	7	14
7:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3
<b>Total</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>16</b>	<b>30</b>
8:00 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	2	1	0	3	5
8:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
8:30 AM	0	3	1	0	4	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	10
8:45 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	7
<b>Total</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>12</b>	<b>27</b>
Grand Total	4	3	3	0	10	2	17	0	0	19	0	0	0	0	0	0	24	4	0	28	57
Approach %	40.0	30.0	30.0	0.0		10.5	89.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	85.7	14.3	0.0		
Total %	7.0	5.3	5.3	0.0	17.5	3.5	29.8	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	42.1	7.0	0.0	49.1	
Exiting Leg Total	6					27					3					21					57

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	2	0	0	0	2	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	7
7:15 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	6
7:30 AM	1	0	0	0	1	1	5	0	0	6	0	0	0	0	0	0	6	1	0	7	14
7:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3
<b>Total Volume</b>	<b>4</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13</b>	<b>3</b>	<b>0</b>	<b>16</b>	<b>30</b>
<b>% Approach Total</b>	<b>80.0</b>	<b>0.0</b>	<b>20.0</b>	<b>0.0</b>		<b>11.1</b>	<b>88.9</b>	<b>0.0</b>	<b>0.0</b>		<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>		<b>0.0</b>	<b>81.3</b>	<b>18.8</b>	<b>0.0</b>		
PHF	0.500	0.000	0.250	0.000	0.625	0.250	0.400	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.542	0.750	0.000	0.571	0.536
Entering Leg	4	0	1	0	5	1	8	0	0	9	0	0	0	0	0	0	13	3	0	16	30
Exiting Leg	4					14					0					12					30
<b>Total</b>	<b>9</b>					<b>23</b>					<b>0</b>					<b>28</b>					<b>60</b>

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Articulated Trucks**

	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
7:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
7:30 AM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	4
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
<b>Total</b>	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	10
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
8:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
<b>Total</b>	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
<b>Grand Total</b>	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	8	0	0	8	15
Approach %	0.0	0.0	0.0	0.0	0.0	14.3	85.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	6.7	40.0	0.0	0.0	46.7	0.0	0.0	0.0	0.0	0.0	0.0	53.3	0.0	0.0	53.3	
Exiting Leg Total	1					8					0					6					15

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Lovejoy Road					Dascomb Road					Acorn Drive					Dascomb Road					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
7:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
7:30 AM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	4
7:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
<b>Total Volume</b>	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	10
<b>% Approach Total</b>	0.0	0.0	0.0	0.0	0.0	20.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.625	0.625
Entering Leg	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	10
Exiting Leg	1					5					0					4					10
<b>Total</b>	1					10					0					9					20

PDI File #: **186440 D**  
 Location: **N: Lovejoy Road S: Acorn Drive**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Bicycles (on Roadway and Crosswalks)**

	Lovejoy Road							Dascomb Road							Acorn Drive							Dascomb Road							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Grand Total	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Approach %	0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total	0							1							0							0							1

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Lovejoy Road							Dascomb Road							Acorn Drive							Dascomb Road							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total Volume	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
% Approach Total	0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.250		
Entering Leg	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Exiting Leg	0							1							0							0							1
Total	1							1							0							0							2

PDI File #: 186440 D  
 Location: N: Lovejoy Road S: Acorn Drive  
 Location: E: Dascomb Road W: Dascomb Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Pedestrians**

	Lovejoy Road							Dascomb Road							Acorn Drive							Dascomb Road							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2			2	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1		1	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3			3	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3			3		
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	33.3						
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	33.3	100					
Exiting Leg Total	0							0							0							3							3

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Lovejoy Road							Dascomb Road							Acorn Drive							Dascomb Road							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2			2	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1			1	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3			3	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	33.3						
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.375			0.375		
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3			3		
Exiting Leg	0							0							0							3							3
Total	0							0							0							6							6

PDI File #: **186440 E**  
 Location: **N: Driveway S: Andover Street**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Wingate Driveway**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Cars and Heavy Vehicles (Combined)**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	84	50	0	0	134	1	0	0	0	0	1	0	29	0	2	0	31	13	0	71	0	0	84	250
7:15 AM	0	0	0	0	0	0	0	73	41	0	0	114	2	0	1	0	0	3	0	57	0	2	0	59	9	3	101	0	0	113	289
7:30 AM	0	0	0	0	0	0	0	123	69	0	0	192	1	0	0	0	0	1	0	27	0	8	0	35	15	0	94	0	0	109	337
7:45 AM	0	0	0	0	0	0	0	122	93	1	0	216	1	0	0	0	0	1	0	30	0	7	0	37	16	1	71	0	0	88	342
<b>Total</b>	0	0	0	0	0	0	0	402	253	1	0	656	5	0	1	0	0	6	0	143	0	19	0	162	53	4	337	0	0	394	1218
8:00 AM	0	0	0	1	0	1	0	119	63	0	0	182	0	0	0	0	0	0	0	22	0	10	0	32	26	1	73	0	0	100	315
8:15 AM	0	0	0	0	0	0	0	111	63	1	0	175	1	0	0	0	0	1	0	24	0	7	0	31	25	0	101	0	0	126	333
8:30 AM	0	0	0	0	0	0	0	111	43	1	0	155	0	0	0	0	0	0	0	28	0	6	0	34	9	0	87	0	0	96	285
8:45 AM	0	0	0	0	0	0	0	89	53	1	0	143	0	0	0	0	0	0	0	27	0	3	0	30	10	0	79	0	0	89	262
<b>Total</b>	0	0	0	1	0	1	0	430	222	3	0	655	1	0	0	0	0	1	0	101	0	26	0	127	70	1	340	0	0	411	1195
Grand Total	0	0	0	1	0	1	0	832	475	4	0	1311	6	0	1	0	0	7	0	244	0	45	0	289	123	5	677	0	0	805	2413
Approach %	0.0	0.0	0.0	100.0	0.0		0.0	63.5	36.2	0.3	0.0		85.7	0.0	14.3	0.0	0.0		0.0	84.4	0.0	15.6	0.0		15.3	0.6	84.1	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.5	19.7	0.2	0.0	54.3	0.2	0.0	0.0	0.0	0.0	0.3	0.0	10.1	0.0	1.9	0.0	12.0	5.1	0.2	28.1	0.0	0.0	33.4	
Exiting Leg Total	0						928						9						598						878						2413
Cars	0	0	0	1	0	1	0	812	465	4	0	1281	6	0	1	0	0	7	0	233	0	39	0	272	116	5	656	0	0	777	2338
% Cars	0.0	0.0	0.0	100.0	0.0	100.0	0.0	97.6	97.9	100.0	0.0	97.7	100.0	0.0	100.0	0.0	100.0	0.0	0.0	95.5	0.0	86.7	0.0	94.1	94.3	100.0	96.9	0.0	0.0	96.5	96.9
Exiting Leg Total	0						896						9						581						852						2338
Heavy Vehicles	0	0	0	0	0	0	0	20	10	0	0	30	0	0	0	0	0	0	0	11	0	6	0	17	7	0	21	0	0	28	75
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.1	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	13.3	0.0	5.9	5.7	0.0	3.1	0.0	0.0	3.5	3.1
Exiting Leg Total	0						32						0						17						26						75

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	123	69	0	0	192	1	0	0	0	0	1	0	27	0	8	0	35	15	0	94	0	0	109	337
7:45 AM	0	0	0	0	0	0	0	122	93	1	0	216	1	0	0	0	0	1	0	30	0	7	0	37	16	1	71	0	0	88	342
8:00 AM	0	0	0	1	0	1	0	119	63	0	0	182	0	0	0	0	0	0	0	22	0	10	0	32	26	1	73	0	0	100	315
8:15 AM	0	0	0	0	0	0	0	111	63	1	0	175	1	0	0	0	0	1	0	24	0	7	0	31	25	0	101	0	0	126	333
Total Volume	0	0	0	1	0	1	0	475	288	2	0	765	3	0	0	0	0	3	0	103	0	32	0	135	82	2	339	0	0	423	1327
% Approach Total	0.0	0.0	0.0	100.0	0.0		0.0	62.1	37.6	0.3	0.0		100.0	0.0	0.0	0.0	0.0		0.0	76.3	0.0	23.7	0.0		19.4	0.5	80.1	0.0	0.0		
PHF	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.965	0.774	0.500	0.000	0.885	0.750	0.000	0.000	0.000	0.750	0.000	0.858	0.000	0.800	0.000	0.912	0.788	0.500	0.839	0.000	0.000	0.839	0.970	
Cars	0	0	0	1	0	1	0	466	279	2	0	747	3	0	0	0	0	3	0	99	0	27	0	126	81	2	325	0	0	408	1285
Cars %	0.0	0.0	0.0	100.0	0.0	100.0	0.0	98.1	96.9	100.0	0.0	97.6	100.0	0.0	0.0	0.0	100.0	0.0	96.1	0.0	84.4	0.0	93.3	98.8	100.0	95.9	0.0	0.0	96.5	96.8	
Heavy Vehicles	0	0	0	0	0	0	0	9	9	0	0	18	0	0	0	0	0	0	0	4	0	5	0	9	1	0	14	0	0	15	42
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.9	3.1	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	15.6	0.0	6.7	1.2	0.0	4.1	0.0	0.0	3.5	3.2	
Cars Enter Leg	0	0	0	1	0	1	0	466	279	2	0	747	3	0	0	0	0	3	0	99	0	27	0	126	81	2	325	0	0	408	1285
Heavy Enter Leg	0	0	0	0	0	0	0	9	9	0	0	18	0	0	0	0	0	0	0	4	0	5	0	9	1	0	14	0	0	15	42
Total Entering Leg	0	0	0	1	0	1	0	475	288	2	0	765	3	0	0	0	0	3	0	103	0	32	0	135	82	2	339	0	0	423	1327
Cars Exiting Leg	0						428						4						360						493						1285
Heavy Exiting Leg	0						18						0						10						14						42
Total Exiting Leg	0						446						4						370						507						1327

PDI File #: **186440 E**  
 Location: **N: Driveway S: Andover Street**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Wingate Driveway**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	81	50	0	0	131	1	0	0	0	0	1	0	27	0	2	0	29	13	0	68	0	0	81	242
7:15 AM	0	0	0	0	0	0	0	69	41	0	0	110	2	0	1	0	0	3	0	54	0	2	0	56	6	3	99	0	0	108	277
7:30 AM	0	0	0	0	0	0	0	119	67	0	0	186	1	0	0	0	0	1	0	26	0	4	0	30	15	0	90	0	0	105	322
7:45 AM	0	0	0	0	0	0	0	122	89	1	0	212	1	0	0	0	0	1	0	29	0	7	0	36	15	1	69	0	0	85	334
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>391</b>	<b>247</b>	<b>1</b>	<b>0</b>	<b>639</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>136</b>	<b>0</b>	<b>15</b>	<b>0</b>	<b>151</b>	<b>49</b>	<b>4</b>	<b>326</b>	<b>0</b>	<b>0</b>	<b>379</b>	<b>1175</b>
8:00 AM	0	0	0	1	0	1	0	116	62	0	0	178	0	0	0	0	0	0	0	21	0	9	0	30	26	1	72	0	0	99	308
8:15 AM	0	0	0	0	0	0	0	109	61	1	0	171	1	0	0	0	0	1	0	23	0	7	0	30	25	0	94	0	0	119	321
8:30 AM	0	0	0	0	0	0	0	108	43	1	0	152	0	0	0	0	0	0	0	26	0	5	0	31	7	0	85	0	0	92	275
8:45 AM	0	0	0	0	0	0	0	88	52	1	0	141	0	0	0	0	0	0	0	27	0	3	0	30	9	0	79	0	0	88	259
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>421</b>	<b>218</b>	<b>3</b>	<b>0</b>	<b>642</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>97</b>	<b>0</b>	<b>24</b>	<b>0</b>	<b>121</b>	<b>67</b>	<b>1</b>	<b>330</b>	<b>0</b>	<b>0</b>	<b>398</b>	<b>1163</b>
Grand Total	0	0	0	1	0	1	0	812	465	4	0	1281	6	0	1	0	0	7	0	233	0	39	0	272	116	5	656	0	0	777	2338
Approach %	0.0	0.0	0.0	100.0	0.0		0.0	63.4	36.3	0.3	0.0		85.7	0.0	14.3	0.0	0.0		0.0	85.7	0.0	14.3	0.0		14.9	0.6	84.4	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	34.7	19.9	0.2	0.0	54.8	0.3	0.0	0.0	0.0	0.0	0.3	0.0	10.0	0.0	1.7	0.0	11.6	5.0	0.2	28.1	0.0	0.0	33.2	
Exiting Leg Total						0						896						9						581						852	2338

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	119	67	0	0	186	1	0	0	0	0	1	0	26	0	4	0	30	15	0	90	0	0	105	322
7:45 AM	0	0	0	0	0	0	0	122	89	1	0	212	1	0	0	0	0	1	0	29	0	7	0	36	15	1	69	0	0	85	334
8:00 AM	0	0	0	1	0	1	0	116	62	0	0	178	0	0	0	0	0	0	0	21	0	9	0	30	26	1	72	0	0	99	308
8:15 AM	0	0	0	0	0	0	0	109	61	1	0	171	1	0	0	0	0	1	0	23	0	7	0	30	25	0	94	0	0	119	321
Total Volume	0	0	0	1	0	1	0	466	279	2	0	747	3	0	0	0	0	3	0	99	0	27	0	126	81	2	325	0	0	408	1285
% Approach Total	0.0	0.0	0.0	100.0	0.0		0.0	62.4	37.3	0.3	0.0		100.0	0.0	0.0	0.0	0.0		0.0	78.6	0.0	21.4	0.0		19.9	0.5	79.7	0.0	0.0		
PHF	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.955	0.784	0.500	0.000	0.881	0.750	0.000	0.000	0.000	0.750	0.000	0.853	0.000	0.750	0.000	0.875	0.779	0.500	0.864	0.000	0.000	0.857	0.962	
Entering Leg	0	0	0	1	0	1	0	466	279	2	0	747	3	0	0	0	0	3	0	99	0	27	0	126	81	2	325	0	0	408	1285
Exiting Leg						0						428						4						360						493	1285
<b>Total</b>						<b>1</b>						<b>1175</b>					<b>7</b>						<b>486</b>						<b>901</b>	<b>2570</b>	

PDI File #: **186440 E**  
 Location: **N: Driveway S: Andover Street**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Wingate Driveway**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	2	0	0	0	2	0	0	3	0	0	3	8	
7:15 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	3	0	0	0	3	3	0	2	0	0	5	12	
7:30 AM	0	0	0	0	0	0	0	4	2	0	0	6	0	0	0	0	0	0	1	0	4	0	5	0	0	4	0	0	4	15	
7:45 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	3	8	
<b>Total</b>	0	0	0	0	0	0	0	11	6	0	0	17	0	0	0	0	0	0	7	0	4	0	11	4	0	11	0	0	15	43	
8:00 AM	0	0	0	0	0	0	0	3	1	0	0	4	0	0	0	0	0	0	1	0	1	0	2	0	0	1	0	0	1	7	
8:15 AM	0	0	0	0	0	0	0	2	2	0	0	4	0	0	0	0	0	0	1	0	0	0	1	0	0	7	0	0	7	12	
8:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	2	0	1	0	3	2	0	2	0	0	4	10	
8:45 AM	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3	
<b>Total</b>	0	0	0	0	0	0	0	9	4	0	0	13	0	0	0	0	0	0	4	0	2	0	6	3	0	10	0	0	13	32	
<b>Grand Total</b>	0	0	0	0	0	0	0	20	10	0	0	30	0	0	0	0	0	0	11	0	6	0	17	7	0	21	0	0	28	75	
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	66.7	33.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	64.7	0.0	35.3	0.0		25.0	0.0	75.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.7	13.3	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	14.7	0.0	8.0	0.0	22.7	9.3	0.0	28.0	0.0	0.0	37.3		
Exiting Leg Total	0						32						0						17						26						75
Buses	0	0	0	0	0	0	0	6	2	0	0	8	0	0	0	0	0	0	4	0	0	0	4	0	0	5	0	0	5	17	
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0	20.0	0.0	0.0	26.7	0.0	0.0	0.0	0.0	0.0	0.0	36.4	0.0	0.0	0.0	23.5	0.0	0.0	23.8	0.0	0.0	17.9	22.7	
Exiting Leg Total	0						9						0						2						6						17
Single-Unit Trucks	0	0	0	0	0	0	0	12	5	0	0	17	0	0	0	0	0	0	5	0	3	0	8	6	0	12	0	0	18	43	
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	50.0	0.0	0.0	56.7	0.0	0.0	0.0	0.0	0.0	0.0	45.5	0.0	50.0	0.0	47.1	85.7	0.0	57.1	0.0	0.0	64.3	57.3	
Exiting Leg Total	0						17						0						11						15						43
Articulated Trucks	0	0	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	2	0	3	0	5	1	0	4	0	0	5	15	
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	30.0	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	18.2	0.0	50.0	0.0	29.4	14.3	0.0	19.0	0.0	0.0	17.9	20.0	
Exiting Leg Total	0						6						0						4						5						15

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	2	0	0	0	2	0	0	3	0	0	3	8	
7:15 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	3	0	0	0	3	3	0	2	0	0	5	12	
7:30 AM	0	0	0	0	0	0	0	4	2	0	0	6	0	0	0	0	0	0	1	0	4	0	5	0	0	4	0	0	4	15	
7:45 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	0	1	1	0	2	0	0	3	8	
<b>Total Volume</b>	0	0	0	0	0	0	0	11	6	0	0	17	0	0	0	0	0	0	7	0	4	0	11	4	0	11	0	0	15	43	
<b>% Approach Total</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.7	35.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	63.6	0.0	36.4	0.0		26.7	0.0	73.3	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688	0.375	0.000	0.000	0.708	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.000	0.250	0.000	0.550	0.333	0.000	0.688	0.000	0.000	0.750	0.717	
Buses	0	0	0	0	0	0	0	4	2	0	0	6	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	9	
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.4	33.3	0.0	0.0	35.3	0.0	0.0	0.0	0.0	0.0	0.0	42.9	0.0	0.0	0.0	27.3	0.0	0.0	0.0	0.0	0.0	20.9		
Single-Unit Trucks	0	0	0	0	0	0	0	6	2	0	0	8	0	0	0	0	0	0	3	0	1	0	4	4	0	7	0	0	11	23	
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.5	33.3	0.0	0.0	47.1	0.0	0.0	0.0	0.0	0.0	0.0	42.9	0.0	25.0	0.0	36.4	100.0	0.0	63.6	0.0	0.0	73.3	53.5	
Articulated Trucks	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	1	0	3	0	4	0	0	4	0	0	4	11	
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	33.3	0.0	0.0	17.6	0.0	0.0	0.0	0.0	0.0	0.0	14.3	0.0	75.0	0.0	36.4	0.0	0.0	36.4	0.0	0.0	26.7	25.6	

PDI File #: **186440 E**  
 Location: **N: Driveway S: Andover Street**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Wingate Driveway**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



**Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total											
	from North						from East						from Southeast						from South						from West																	
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total												
Buses	0	0	0	0	0	0	0	4	2	0	0	6	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	9					
Single-Unit Trucks	0	0	0	0	0	0	0	6	2	0	0	8	0	0	0	0	0	0	0	3	0	1	0	4	4	0	7	0	0	11	0	0	0	0	0	0	23					
Articulated Trucks	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	1	0	3	0	4	0	0	4	0	0	4	0	0	0	0	0	0	11					
Total Entering Leg	0	0	0	0	0	0	0	11	6	0	0	17	0	0	0	0	0	0	0	7	0	4	0	11	4	0	11	0	0	15	0	0	0	0	0	0	43					
Buses																															0	3	0	2	4	9						
Single-Unit Trucks																																					0	10	0	6	7	23
Articulated Trucks																																					0	5	0	2	4	11
Total Exiting Leg																																					0	18	0	10	15	43

PDI File #: 186440 E  
 Location: N: Driveway S: Andover Street  
 Location: E: Dascomb Road W: Dascomb Road SE: Wingate Driveway  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



**Cars**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	70	47	0	0	117	1	0	0	0	0	1	0	22	0	2	0	24	11	0	62	0	0	73	215
7:15 AM	0	0	0	0	0	0	0	63	33	0	0	96	2	0	1	0	0	3	0	47	0	2	0	49	5	3	87	0	0	95	243
7:30 AM	0	0	0	0	0	0	0	111	62	0	0	173	1	0	0	0	0	1	0	22	0	3	0	25	14	0	79	0	0	93	292
7:45 AM	0	0	0	0	0	0	0	112	81	1	0	194	1	0	0	0	0	1	0	22	0	6	0	28	15	1	63	0	0	79	302
Total	0	0	0	0	0	0	0	356	223	1	0	580	5	0	1	0	0	6	0	113	0	13	0	126	45	4	291	0	0	340	1052
8:00 AM	0	0	0	1	0	1	0	108	57	0	0	165	0	0	0	0	0	0	0	19	0	9	0	28	21	1	67	0	0	89	283
8:15 AM	0	0	0	0	0	0	0	99	55	1	0	155	1	0	0	0	0	1	0	21	0	7	0	28	24	0	87	0	0	111	295
8:30 AM	0	0	0	0	0	0	0	101	36	1	0	138	0	0	0	0	0	0	0	21	0	3	0	24	7	0	77	0	0	84	246
8:45 AM	0	0	0	0	0	0	0	76	51	1	0	128	0	0	0	0	0	0	0	23	0	3	0	26	7	0	71	0	0	78	232
Total	0	0	0	1	0	1	0	384	199	3	0	586	1	0	0	0	0	1	0	84	0	22	0	106	59	1	302	0	0	362	1056
Grand Total	0	0	0	1	0	1	0	740	422	4	0	1166	6	0	1	0	0	7	0	197	0	35	0	232	104	5	593	0	0	702	2108
Approach %	0.0	0.0	0.0	100.0	0.0		0.0	63.5	36.2	0.3	0.0		85.7	0.0	14.3	0.0	0.0		0.0	84.9	0.0	15.1	0.0		14.8	0.7	84.5	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.1	20.0	0.2	0.0	55.3	0.3	0.0	0.0	0.0	0.0	0.3	0.0	9.3	0.0	1.7	0.0	11.0	4.9	0.2	28.1	0.0	0.0	33.3	
Exiting Leg Total						0						797						9						526						776	2108

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	111	62	0	0	173	1	0	0	0	0	1	0	22	0	3	0	25	14	0	79	0	0	93	292
7:45 AM	0	0	0	0	0	0	0	112	81	1	0	194	1	0	0	0	0	1	0	22	0	6	0	28	15	1	63	0	0	79	302
8:00 AM	0	0	0	1	0	1	0	108	57	0	0	165	0	0	0	0	0	0	0	19	0	9	0	28	21	1	67	0	0	89	283
8:15 AM	0	0	0	0	0	0	0	99	55	1	0	155	1	0	0	0	0	1	0	21	0	7	0	28	24	0	87	0	0	111	295
Total Volume	0	0	0	1	0	1	0	430	255	2	0	687	3	0	0	0	0	3	0	84	0	25	0	109	74	2	296	0	0	372	1172
% Approach Total	0.0	0.0	0.0	100.0	0.0		0.0	62.6	37.1	0.3	0.0		100.0	0.0	0.0	0.0	0.0		0.0	77.1	0.0	22.9	0.0		19.9	0.5	79.6	0.0	0.0		
PHF	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.960	0.787	0.500	0.000	0.885	0.750	0.000	0.000	0.000	0.750	0.000	0.955	0.000	0.694	0.000	0.973	0.771	0.500	0.851	0.000	0.000	0.838	0.970	
Entering Leg	0	0	0	1	0	1	0	430	255	2	0	687	3	0	0	0	0	3	0	84	0	25	0	109	74	2	296	0	0	372	1172
Exiting Leg						0						384						4						329						455	1172
Total						1						1071					7						438						827	2344	

PDI File #: **186440 E**  
 Location: **N: Driveway S: Andover Street**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Wingate Driveway**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Light Goods Vehicle**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total											
	from North						from East						from Southeast						from South						from West																	
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total												
7:00 AM	0	0	0	0	0	0	0	11	3	0	0	14	0	0	0	0	0	0	0	5	0	0	0	5	2	0	6	0	0	8	27											
7:15 AM	0	0	0	0	0	0	0	6	7	0	0	13	0	0	0	0	0	0	0	7	0	0	0	7	1	0	12	0	0	13	33											
7:30 AM	0	0	0	0	0	0	0	8	5	0	0	13	0	0	0	0	0	0	0	4	0	1	0	5	1	0	10	0	0	11	29											
7:45 AM	0	0	0	0	0	0	0	10	8	0	0	18	0	0	0	0	0	0	0	7	0	1	0	8	0	0	6	0	0	6	32											
<b>Total</b>	0	0	0	0	0	0	0	35	23	0	0	58	0	0	0	0	0	0	0	23	0	2	0	25	4	0	34	0	0	38	121											
8:00 AM	0	0	0	0	0	0	0	8	5	0	0	13	0	0	0	0	0	0	0	2	0	0	0	2	5	0	5	0	0	10	25											
8:15 AM	0	0	0	0	0	0	0	10	6	0	0	16	0	0	0	0	0	0	0	2	0	0	0	2	1	0	7	0	0	8	26											
8:30 AM	0	0	0	0	0	0	0	6	7	0	0	13	0	0	0	0	0	0	0	5	0	2	0	7	0	0	8	0	0	8	28											
8:45 AM	0	0	0	0	0	0	0	12	1	0	0	13	0	0	0	0	0	0	0	4	0	0	0	4	2	0	8	0	0	10	27											
<b>Total</b>	0	0	0	0	0	0	0	36	19	0	0	55	0	0	0	0	0	0	0	13	0	2	0	15	8	0	28	0	0	36	106											
Grand Total	0	0	0	0	0	0	0	71	42	0	0	113	0	0	0	0	0	0	0	36	0	4	0	40	12	0	62	0	0	74	227											
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.8	37.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.0	0.0	10.0	0.0	0.0	16.2	0.0	83.8	0.0	0.0	0.0	0.0											
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.3	18.5	0.0	0.0	49.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.9	0.0	1.8	0.0	17.6	5.3	0.0	27.3	0.0	0.0	32.6	0.0											
Exiting Leg Total	0						0						0						0						0						0	98	0	54	0						75	227

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total																	
	from North						from East						from Southeast						from South						from West																							
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total																		
7:00 AM	0	0	0	0	0	0	0	11	3	0	0	14	0	0	0	0	0	0	0	5	0	0	0	5	2	0	6	0	0	8	27																	
7:15 AM	0	0	0	0	0	0	0	6	7	0	0	13	0	0	0	0	0	0	0	7	0	0	0	7	1	0	12	0	0	13	33																	
7:30 AM	0	0	0	0	0	0	0	8	5	0	0	13	0	0	0	0	0	0	0	4	0	1	0	5	1	0	10	0	0	11	29																	
7:45 AM	0	0	0	0	0	0	0	10	8	0	0	18	0	0	0	0	0	0	0	7	0	1	0	8	0	0	6	0	0	6	32																	
Total Volume	0	0	0	0	0	0	0	35	23	0	0	58	0	0	0	0	0	0	0	23	0	2	0	25	4	0	34	0	0	38	121																	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.3	39.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.0	0.0	8.0	0.0	0.0	10.5	0.0	89.5	0.0	0.0	0.0	0.0																	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.795	0.719	0.000	0.000	0.806	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.821	0.000	0.500	0.000	0.781	0.500	0.000	0.708	0.000	0.000	0.731	0.917																	
Entering Leg	0	0	0	0	0	0	0	35	23	0	0	58	0	0	0	0	0	0	0	23	0	2	0	25	4	0	34	0	0	38	121																	
Exiting Leg	0						0						0						0						0						0	57	0	27	0						37	121						
Total	0						0						0						0						0						0						0	115	0	52	0						75	242

PDI File #: **186440 E**  
 Location: **N: Driveway S: Andover Street**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Wingate Driveway**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Buses**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3	
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	3	
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>		
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1		
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>8</b>			
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>17</b>			
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	75.0	25.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.3	11.8	0.0	0.0	47.1	0.0	0.0	0.0	0.0	0.0	0.0		0.0	23.5	0.0	0.0	23.5	0.0	0.0	29.4	0.0	29.4		
Exiting Leg Total	0						9						0						2						6						17

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	3		
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	3		
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
<b>Total Volume</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>			
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	66.7	33.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.750			
Entering Leg	0	0	0	0	0	0	0	4	2	0	0	6	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	9		
Exiting Leg	0						3						0						2						4						9
<b>Total</b>	<b>0</b>						<b>9</b>						<b>0</b>						<b>5</b>						<b>4</b>						<b>18</b>

PDI File #: **186440 E**  
 Location: **N: Driveway S: Andover Street**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Wingate Driveway**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Single-Unit Trucks**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	1	3	0	1	0	0	4	7
7:30 AM	0	0	0	0	0	0	0	3	1	0	0	4	0	0	0	0	0	0	1	0	1	0	2	0	0	3	0	0	3	9	
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	2	4	
<b>Total</b>	0	0	0	0	0	0	0	6	2	0	0	8	0	0	0	0	0	0	3	0	1	0	4	4	0	7	0	0	11	23	
8:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	4	
8:15 AM	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	6	
8:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	1	0	1	0	2	1	0	2	0	0	3	8	
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	
<b>Total</b>	0	0	0	0	0	0	0	6	3	0	0	9	0	0	0	0	0	0	2	0	2	0	4	2	0	5	0	0	7	20	
<b>Grand Total</b>	0	0	0	0	0	0	0	12	5	0	0	17	0	0	0	0	0	0	5	0	3	0	8	6	0	12	0	0	18	43	
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	70.6	29.4	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	62.5	0.0	37.5	0.0		33.3	0.0	66.7	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.9	11.6	0.0	0.0	39.5	0.0	0.0	0.0	0.0	0.0	0.0	11.6	0.0	7.0	0.0	18.6	14.0	0.0	27.9	0.0	0.0	41.9		
Exiting Leg Total	0						17						0						11						15						43

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	0	1	3	0	1	0	0	4	7	
7:30 AM	0	0	0	0	0	0	0	3	1	0	0	4	0	0	0	0	0	0	1	0	1	0	2	0	0	3	0	0	3	9	
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	2	4	
8:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	4	
<b>Total Volume</b>	0	0	0	0	0	0	0	7	2	0	0	9	0	0	0	0	0	0	4	0	2	0	6	4	0	5	0	0	9	24	
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	77.8	22.2	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	33.3	0.0		44.4	0.0	55.6	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.500	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.500	0.000	0.750	0.333	0.000	0.417	0.000	0.000	0.563	0.667	
Entering Leg	0	0	0	0	0	0	0	7	2	0	0	9	0	0	0	0	0	0	4	0	2	0	6	4	0	5	0	0	9	24	
Exiting Leg	0						9						0						6						9						24
<b>Total</b>	0						18						0						12						18						48

PDI File #: **186440 E**  
 Location: **N: Driveway S: Andover Street**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Wingate Driveway**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Articulated Trucks**

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	1	2
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	3	0	0	1	0	0	1	5	
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2		
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>11</b>	
8:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>		
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>15</b>	
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	60.0	0.0		20.0	0.0	80.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3	20.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	13.3	0.0	20.0	0.0	33.3	6.7	0.0	26.7	0.0	0.0	33.3		
Exiting Leg Total	0						6						0						4						5						15

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Driveway						Dascomb Road						Wingate Driveway						Andover Street						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	2	
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	3	0	3	0	0	1	0	0	1	5	
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2		
<b>Total Volume</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>11</b>	
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	33.3	66.7	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	75.0	0.0		0.0	0.0	100.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.500	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.333	0.000	0.000	1.000	0.000	0.000	1.000	0.550	
Entering Leg	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	1	0	3	0	4	0	0	4	0	0	4	11	
Exiting Leg	0						5						0						2						4						11
<b>Total</b>	<b>0</b>						<b>8</b>						<b>0</b>						<b>6</b>						<b>8</b>						<b>22</b>

PDI File #: 186440 E

Location: N: Driveway S: Andover Street

Location: E: Dascomb Road W: Dascomb Road SE: Wingate Driveway

City, State: Andover, MA

Client: TEC/ S. Gregorio

Site Code: T0525

Count Date: Thursday, September 13, 2018

Start Time: 7:00 AM

End Time: 9:00 AM

Class:



PRECISION  
DATA  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

### Bicycles (on Roadway and Crosswalks)

	Driveway								Dascomb Road								Wingate Driveway								Andover Street								Dascomb Road								Total
	from North								from East								from Southeast								from South								from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
Exiting Leg Total	0								2								0								0								0								2

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Driveway								Dascomb Road								Wingate Driveway								Andover Street								Dascomb Road								Total
	from North								from East								from Southeast								from South								from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250				
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
Exiting Leg	0								1								0								0								0								
Total	0								1								0								1								0								2

PDI File #: 186440 E  
 Location: N: Driveway S: Andover Street  
 Location: E: Dascomb Road W: Dascomb Road SE: Wingate Driveway  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 9:00 AM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

Pedestrians

	Driveway								Dascomb Road								Wingate Driveway								Andover Street								Dascomb Road								Total								
	from North								from East								from Southeast								from South								from West																
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total									
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Approach %	0	0	0	0	0	0	100		0	0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	0	0		0	0	0	0	0	0	0		
Total %	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total	1								0								0								0								0								1								

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

	Driveway								Dascomb Road								Wingate Driveway								Andover Street								Dascomb Road								Total								
	from North								from East								from Southeast								from South								from West																
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total									
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250								
Entering Leg	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Exiting Leg	1								0								0								0								0								1								
Total	2								0								0								0								0								0								2

PDI File #: **186440 F**  
 Location: **S: Smith Way**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars and Heavy Vehicles (Combined)**

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	240	17	0	257	4	1	0	5	5	222	0	227	489
7:15 AM	183	10	0	193	6	3	0	9	7	255	0	262	464
7:30 AM	227	19	0	246	8	3	0	11	3	269	0	272	529
7:45 AM	274	32	0	306	3	2	0	5	6	289	0	295	606
Total	924	78	0	1002	21	9	0	30	21	1035	0	1056	2088
8:00 AM	269	24	0	293	4	2	0	6	6	242	0	248	547
8:15 AM	221	22	0	243	14	3	0	17	5	263	0	268	528
8:30 AM	236	25	0	261	14	2	0	16	6	216	0	222	499
8:45 AM	218	28	0	246	13	2	0	15	7	198	0	205	466
Total	944	99	0	1043	45	9	0	54	24	919	0	943	2040
9:00 AM	173	21	0	194	21	3	0	24	7	182	0	189	407
9:15 AM	165	30	0	195	13	8	0	21	6	164	0	170	386
9:30 AM	166	22	0	188	13	2	0	15	10	158	0	168	371
9:45 AM	126	37	0	163	26	6	0	32	9	149	0	158	353
Total	630	110	0	740	73	19	0	92	32	653	0	685	1517
10:00 AM	142	18	1	161	23	10	0	33	6	138	0	144	338
10:15 AM	132	34	1	167	20	6	0	26	5	169	0	174	367
10:30 AM	134	17	0	151	22	4	0	26	6	143	0	149	326
10:45 AM	133	35	0	168	29	4	0	33	3	132	0	135	336
Total	541	104	2	647	94	24	0	118	20	582	0	602	1367
11:00 AM	121	20	0	141	25	3	0	28	5	140	0	145	314
11:15 AM	132	22	1	155	18	5	0	23	6	138	0	144	322
11:30 AM	142	23	0	165	32	2	0	34	3	149	0	152	351
11:45 AM	151	13	1	165	24	3	0	27	4	166	0	170	362
Total	546	78	2	626	99	13	0	112	18	593	0	611	1349
Grand Total	3585	469	4	4058	332	74	0	406	115	3782	0	3897	8361
Approach %	88.3	11.6	0.1		81.8	18.2	0.0		3.0	97.0	0.0		
Total %	42.9	5.6	0.0	48.5	4.0	0.9	0.0	4.9	1.4	45.2	0.0	46.6	
Exiting Leg Total				4118				584				3659	8361
Cars	3299	432	4	3735	294	69	0	363	101	3474	0	3575	7673
% Cars	92.0	92.1	100.0	92.0	88.6	93.2	0.0	89.4	87.8	91.9	0.0	91.7	91.8
Exiting Leg Total				3772				533				3368	7673
Heavy Vehicles	286	37	0	323	38	5	0	43	14	308	0	322	688
% Heavy Vehicles	8.0	7.9	0.0	8.0	11.4	6.8	0.0	10.6	12.2	8.1	0.0	8.3	8.2
Exiting Leg Total				346				51				291	688

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	227	19	0	246	8	3	0	11	3	269	0	272	529
7:45 AM	274	32	0	306	3	2	0	5	6	289	0	295	606
8:00 AM	269	24	0	293	4	2	0	6	6	242	0	248	547
8:15 AM	221	22	0	243	14	3	0	17	5	263	0	268	528
Total Volume	991	97	0	1088	29	10	0	39	20	1063	0	1083	2210
% Approach Total	91.1	8.9	0.0		74.4	25.6	0.0		1.8	98.2	0.0		
PHF	0.904	0.758	0.000	0.889	0.518	0.833	0.000	0.574	0.833	0.920	0.000	0.918	0.912
Cars	925	92	0	1017	25	9	0	34	17	997	0	1014	2065
Cars %	93.3	94.8	0.0	93.5	86.2	90.0	0.0	87.2	85.0	93.8	0.0	93.6	93.4
Heavy Vehicles	66	5	0	71	4	1	0	5	3	66	0	69	145
Heavy Vehicles %	6.7	5.2	0.0	6.5	13.8	10.0	0.0	12.8	15.0	6.2	0.0	6.4	6.6
Cars Enter Leg	925	92	0	1017	25	9	0	34	17	997	0	1014	2065
Heavy Enter Leg	66	5	0	71	4	1	0	5	3	66	0	69	145
Total Entering Leg	991	97	0	1088	29	10	0	39	20	1063	0	1083	2210
Cars Exiting Leg				1022				109				934	2065
Heavy Exiting Leg				70				8				67	145
Total Exiting Leg				1092				117				1001	2210

PDI File #: **186440 F**  
 Location: **S: Smith Way**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	233	15	0	248	3	1	0	4	5	205	0	210	462
7:15 AM	170	10	0	180	4	3	0	7	7	242	0	249	436
7:30 AM	208	19	0	227	5	2	0	7	2	251	0	253	487
7:45 AM	256	28	0	284	3	2	0	5	6	267	0	273	562
Total	867	72	0	939	15	8	0	23	20	965	0	985	1947
8:00 AM	256	24	0	280	3	2	0	5	5	227	0	232	517
8:15 AM	205	21	0	226	14	3	0	17	4	252	0	256	499
8:30 AM	226	21	0	247	12	2	0	14	6	205	0	211	472
8:45 AM	196	26	0	222	11	2	0	13	7	186	0	193	428
Total	883	92	0	975	40	9	0	49	22	870	0	892	1916
9:00 AM	159	17	0	176	18	2	0	20	6	171	0	177	373
9:15 AM	144	28	0	172	8	6	0	14	4	147	0	151	337
9:30 AM	156	21	0	177	12	2	0	14	10	141	0	151	342
9:45 AM	113	33	0	146	25	6	0	31	6	139	0	145	322
Total	572	99	0	671	63	16	0	79	26	598	0	624	1374
10:00 AM	125	15	1	141	20	10	0	30	5	121	0	126	297
10:15 AM	117	32	1	150	19	5	0	24	5	157	0	162	336
10:30 AM	116	17	0	133	20	4	0	24	4	119	0	123	280
10:45 AM	115	31	0	146	27	4	0	31	3	117	0	120	297
Total	473	95	2	570	86	23	0	109	17	514	0	531	1210
11:00 AM	112	19	0	131	23	3	0	26	4	120	0	124	281
11:15 AM	119	22	1	142	12	5	0	17	6	126	0	132	291
11:30 AM	131	22	0	153	32	2	0	34	3	138	0	141	328
11:45 AM	142	11	1	154	23	3	0	26	3	143	0	146	326
Total	504	74	2	580	90	13	0	103	16	527	0	543	1226
Grand Total	3299	432	4	3735	294	69	0	363	101	3474	0	3575	7673
Approach %	88.3	11.6	0.1		81.0	19.0	0.0		2.8	97.2	0.0		
Total %	43.0	5.6	0.1	48.7	3.8	0.9	0.0	4.7	1.3	45.3	0.0	46.6	
Exiting Leg Total				3772				533				3368	7673

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	208	19	0	227	5	2	0	7	2	251	0	253	487
7:45 AM	256	28	0	284	3	2	0	5	6	267	0	273	562
8:00 AM	256	24	0	280	3	2	0	5	5	227	0	232	517
8:15 AM	205	21	0	226	14	3	0	17	4	252	0	256	499
Total Volume	925	92	0	1017	25	9	0	34	17	997	0	1014	2065
% Approach Total	91.0	9.0	0.0		73.5	26.5	0.0		1.7	98.3	0.0		
PHF	0.903	0.821	0.000	0.895	0.446	0.750	0.000	0.500	0.708	0.934	0.000	0.929	0.919
Entering Leg	925	92	0	1017	25	9	0	34	17	997	0	1014	2065
Exiting Leg				1022				109				934	2065
Total				2039				143				1948	4130

PDI File #: **186440 F**  
 Location: **S: Smith Way**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Dascomb Road				Smith Way				Dascomb Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
7:00 AM	7	2	0	9	1	0	0	1	0	17	0	17	27	
7:15 AM	13	0	0	13	2	0	0	2	0	13	0	13	28	
7:30 AM	19	0	0	19	3	1	0	4	1	18	0	19	42	
7:45 AM	18	4	0	22	0	0	0	0	0	22	0	22	44	
<b>Total</b>	<b>57</b>	<b>6</b>	<b>0</b>	<b>63</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>70</b>	<b>0</b>	<b>71</b>	<b>141</b>	
8:00 AM	13	0	0	13	1	0	0	1	1	15	0	16	30	
8:15 AM	16	1	0	17	0	0	0	0	1	11	0	12	29	
8:30 AM	10	4	0	14	2	0	0	2	0	11	0	11	27	
8:45 AM	22	2	0	24	2	0	0	2	0	12	0	12	38	
<b>Total</b>	<b>61</b>	<b>7</b>	<b>0</b>	<b>68</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>49</b>	<b>0</b>	<b>51</b>	<b>124</b>	
9:00 AM	14	4	0	18	3	1	0	4	1	11	0	12	34	
9:15 AM	21	2	0	23	5	2	0	7	2	17	0	19	49	
9:30 AM	10	1	0	11	1	0	0	1	0	17	0	17	29	
9:45 AM	13	4	0	17	1	0	0	1	3	10	0	13	31	
<b>Total</b>	<b>58</b>	<b>11</b>	<b>0</b>	<b>69</b>	<b>10</b>	<b>3</b>	<b>0</b>	<b>13</b>	<b>6</b>	<b>55</b>	<b>0</b>	<b>61</b>	<b>143</b>	
10:00 AM	17	3	0	20	3	0	0	3	1	17	0	18	41	
10:15 AM	15	2	0	17	1	1	0	2	0	12	0	12	31	
10:30 AM	18	0	0	18	2	0	0	2	2	24	0	26	46	
10:45 AM	18	4	0	22	2	0	0	2	0	15	0	15	39	
<b>Total</b>	<b>68</b>	<b>9</b>	<b>0</b>	<b>77</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>68</b>	<b>0</b>	<b>71</b>	<b>157</b>	
11:00 AM	9	1	0	10	2	0	0	2	1	20	0	21	33	
11:15 AM	13	0	0	13	6	0	0	6	0	12	0	12	31	
11:30 AM	11	1	0	12	0	0	0	0	0	11	0	11	23	
11:45 AM	9	2	0	11	1	0	0	1	1	23	0	24	36	
<b>Total</b>	<b>42</b>	<b>4</b>	<b>0</b>	<b>46</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>66</b>	<b>0</b>	<b>68</b>	<b>123</b>	
<b>Grand Total</b>	<b>286</b>	<b>37</b>	<b>0</b>	<b>323</b>	<b>38</b>	<b>5</b>	<b>0</b>	<b>43</b>	<b>14</b>	<b>308</b>	<b>0</b>	<b>322</b>	<b>688</b>	
Approach %	88.5	11.5	0.0		88.4	11.6	0.0		4.3	95.7	0.0			
Total %	41.6	5.4	0.0	46.9	5.5	0.7	0.0	6.3	2.0	44.8	0.0	46.8		
<b>Exiting Leg Total</b>													<b>291</b>	<b>688</b>
Buses	7	0	0	7	0	0	0	0	0	9	0	9	16	
% Buses	2.4	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	2.9	0.0	2.8	2.3	
<b>Exiting Leg Total</b>													<b>7</b>	<b>16</b>
Single-Unit Trucks	159	18	0	177	21	2	0	23	12	177	0	189	389	
% Single-Unit	55.6	48.6	0.0	54.8	55.3	40.0	0.0	53.5	85.7	57.5	0.0	58.7	56.5	
<b>Exiting Leg Total</b>													<b>30</b>	<b>161</b>
Articulated Trucks	120	19	0	139	17	3	0	20	2	122	0	124	283	
% Articulated	42.0	51.4	0.0	43.0	44.7	60.0	0.0	46.5	14.3	39.6	0.0	38.5	41.1	
<b>Exiting Leg Total</b>													<b>21</b>	<b>123</b>

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
10:00 AM	17	3	0	20	3	0	0	3	1	17	0	18	41
10:15 AM	15	2	0	17	1	1	0	2	0	12	0	12	31
10:30 AM	18	0	0	18	2	0	0	2	2	24	0	26	46
10:45 AM	18	4	0	22	2	0	0	2	0	15	0	15	39
<b>Total Volume</b>	<b>68</b>	<b>9</b>	<b>0</b>	<b>77</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>68</b>	<b>0</b>	<b>71</b>	<b>157</b>
<b>% Approach Total</b>	<b>88.3</b>	<b>11.7</b>	<b>0.0</b>		<b>88.9</b>	<b>11.1</b>	<b>0.0</b>		<b>4.2</b>	<b>95.8</b>	<b>0.0</b>		
PHF	0.944	0.563	0.000	0.875	0.667	0.250	0.000	0.750	0.375	0.708	0.000	0.683	0.853
Buses	1	0	0	1	0	0	0	0	0	1	0	1	2
Buses %	1.5	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.4	1.3
Single-Unit Trucks	41	5	0	46	4	1	0	5	3	40	0	43	94
Single-Unit %	60.3	55.6	0.0	59.7	50.0	100.0	0.0	55.6	100.0	58.8	0.0	60.6	59.9

PDI File #: **186440 F**  
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 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**



PRECISION  
 D A T A  
 INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
Articulated Trucks	26	4	0	30	4	0	0	4	0	27	0	27	61
Articulated %	38.2	44.4	0.0	39.0	50.0	0.0	0.0	44.4	0.0	39.7	0.0	38.0	38.9
Buses	1	0	0	1	0	0	0	0	0	1	0	1	2
Single-Unit Trucks	41	5	0	46	4	1	0	5	3	40	0	43	94
Articulated Trucks	26	4	0	30	4	0	0	4	0	27	0	27	61
Total Entering Leg	68	9	0	77	8	1	0	9	3	68	0	71	157
Buses				1				0				1	2
Single-Unit Trucks				44				8				42	94
Articulated Trucks				31				4				26	61
Total Exiting Leg				76				12				69	157

PDI File #: **186440 F**  
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**Cars**

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	194	13	0	207	3	1	0	4	3	178	0	181	392
7:15 AM	148	8	0	156	3	3	0	6	6	198	0	204	366
7:30 AM	177	17	0	194	2	1	0	3	1	218	0	219	416
7:45 AM	217	23	0	240	2	2	0	4	5	228	0	233	477
Total	736	61	0	797	10	7	0	17	15	822	0	837	1651
8:00 AM	224	22	0	246	2	1	0	3	5	193	0	198	447
8:15 AM	185	17	0	202	10	3	0	13	4	224	0	228	443
8:30 AM	197	16	0	213	11	2	0	13	6	171	0	177	403
8:45 AM	167	22	0	189	11	2	0	13	6	154	0	160	362
Total	773	77	0	850	34	8	0	42	21	742	0	763	1655
9:00 AM	129	13	0	142	15	2	0	17	6	148	0	154	313
9:15 AM	122	21	0	143	7	4	0	11	4	121	0	125	279
9:30 AM	123	14	0	137	12	2	0	14	8	120	0	128	279
9:45 AM	85	28	0	113	21	5	0	26	5	109	0	114	253
Total	459	76	0	535	55	13	0	68	23	498	0	521	1124
10:00 AM	106	11	1	118	9	8	0	17	4	94	0	98	233
10:15 AM	97	24	1	122	15	5	0	20	5	117	0	122	264
10:30 AM	102	15	0	117	13	4	0	17	3	98	0	101	235
10:45 AM	96	23	0	119	20	3	0	23	1	93	0	94	236
Total	401	73	2	476	57	20	0	77	13	402	0	415	968
11:00 AM	92	17	0	109	18	2	0	20	4	98	0	102	231
11:15 AM	91	21	0	112	10	5	0	15	6	101	0	107	234
11:30 AM	98	16	0	114	26	2	0	28	3	110	0	113	255
11:45 AM	121	7	1	129	18	3	0	21	3	115	0	118	268
Total	402	61	1	464	72	12	0	84	16	424	0	440	988
Grand Total	2771	348	3	3122	228	60	0	288	88	2888	0	2976	6386
Approach %	88.8	11.1	0.1		79.2	20.8	0.0		3.0	97.0	0.0		
Total %	43.4	5.4	0.0	48.9	3.6	0.9	0.0	4.5	1.4	45.2	0.0	46.6	
Exiting Leg Total				3119				436				2831	6386

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	177	17	0	194	2	1	0	3	1	218	0	219	416
7:45 AM	217	23	0	240	2	2	0	4	5	228	0	233	477
8:00 AM	224	22	0	246	2	1	0	3	5	193	0	198	447
8:15 AM	185	17	0	202	10	3	0	13	4	224	0	228	443
Total Volume	803	79	0	882	16	7	0	23	15	863	0	878	1783
% Approach Total	91.0	9.0	0.0		69.6	30.4	0.0		1.7	98.3	0.0		
PHF	0.896	0.859	0.000	0.896	0.400	0.583	0.000	0.442	0.750	0.946	0.000	0.942	0.934
Entering Leg	803	79	0	882	16	7	0	23	15	863	0	878	1783
Exiting Leg				879				94				810	1783
Total				1761				117				1688	3566

PDI File #: **186440 F**  
 Location: **S: Smith Way**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Light Goods Vehicle**

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	39	2	0	41	0	0	0	0	2	27	0	29	70
7:15 AM	22	2	0	24	1	0	0	1	1	43	0	44	69
7:30 AM	31	2	0	33	3	1	0	4	1	33	0	34	71
7:45 AM	39	5	0	44	1	0	0	1	1	39	0	40	85
<b>Total</b>	<b>131</b>	<b>11</b>	<b>0</b>	<b>142</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>142</b>	<b>0</b>	<b>147</b>	<b>295</b>
8:00 AM	32	2	0	34	1	1	0	2	0	34	0	34	70
8:15 AM	20	4	0	24	4	0	0	4	0	27	0	27	55
8:30 AM	28	5	0	33	1	0	0	1	0	34	0	34	68
8:45 AM	29	4	0	33	0	0	0	0	1	31	0	32	65
<b>Total</b>	<b>109</b>	<b>15</b>	<b>0</b>	<b>124</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>1</b>	<b>126</b>	<b>0</b>	<b>127</b>	<b>258</b>
9:00 AM	29	4	0	33	3	0	0	3	0	22	0	22	58
9:15 AM	19	7	0	26	1	2	0	3	0	25	0	25	54
9:30 AM	33	7	0	40	0	0	0	0	2	20	0	22	62
9:45 AM	28	5	0	33	4	1	0	5	1	30	0	31	69
<b>Total</b>	<b>109</b>	<b>23</b>	<b>0</b>	<b>132</b>	<b>8</b>	<b>3</b>	<b>0</b>	<b>11</b>	<b>3</b>	<b>97</b>	<b>0</b>	<b>100</b>	<b>243</b>
10:00 AM	19	4	0	23	11	2	0	13	1	27	0	28	64
10:15 AM	19	8	0	27	4	0	0	4	0	39	0	39	70
10:30 AM	14	2	0	16	7	0	0	7	1	21	0	22	45
10:45 AM	19	8	0	27	7	1	0	8	2	23	0	25	60
<b>Total</b>	<b>71</b>	<b>22</b>	<b>0</b>	<b>93</b>	<b>29</b>	<b>3</b>	<b>0</b>	<b>32</b>	<b>4</b>	<b>110</b>	<b>0</b>	<b>114</b>	<b>239</b>
11:00 AM	20	2	0	22	5	1	0	6	0	22	0	22	50
11:15 AM	27	1	1	29	2	0	0	2	0	25	0	25	56
11:30 AM	32	6	0	38	6	0	0	6	0	28	0	28	72
11:45 AM	21	4	0	25	5	0	0	5	0	27	0	27	57
<b>Total</b>	<b>100</b>	<b>13</b>	<b>1</b>	<b>114</b>	<b>18</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>102</b>	<b>0</b>	<b>102</b>	<b>235</b>
Grand Total	520	84	1	605	66	9	0	75	13	577	0	590	1270
Approach %	86.0	13.9	0.2		88.0	12.0	0.0		2.2	97.8	0.0		
Total %	40.9	6.6	0.1	47.6	5.2	0.7	0.0	5.9	1.0	45.4	0.0	46.5	
Exiting Leg Total				644				97				529	1270

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:00 AM	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	39	2	0	41	0	0	0	0	2	27	0	29	70
7:15 AM	22	2	0	24	1	0	0	1	1	43	0	44	69
7:30 AM	31	2	0	33	3	1	0	4	1	33	0	34	71
7:45 AM	39	5	0	44	1	0	0	1	1	39	0	40	85
Total Volume	131	11	0	142	5	1	0	6	5	142	0	147	295
% Approach Total	92.3	7.7	0.0		83.3	16.7	0.0		3.4	96.6	0.0		
PHF	0.840	0.550	0.000	0.807	0.417	0.250	0.000	0.375	0.625	0.826	0.000	0.835	0.868
Entering Leg	131	11	0	142	5	1	0	6	5	142	0	147	295
Exiting Leg				147				16				132	295
Total				289				22				279	590

PDI File #: **186440 F**  
 Location: **S: Smith Way**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Buses**

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
7:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
Total	3	0	0	3	0	0	0	0	0	1	0	1	4
8:00 AM	0	0	0	0	0	0	0	0	0	3	0	3	3
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	0	0	0	0	0	4	0	4	5
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
9:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	2	0	0	0	0	0	1	0	1	3
10:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	1	0	1	2
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	0	0	0	0	2	0	2	2
Grand Total	7	0	0	7	0	0	0	0	0	9	0	9	16
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
Total %	43.8	0.0	0.0	43.8	0.0	0.0	0.0	0.0	0.0	56.3	0.0	56.3	
Exiting Leg Total				9				0				7	16

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:15 AM	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
7:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	3	0	3	3
Total Volume	3	0	0	3	0	0	0	0	0	4	0	4	7
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.375	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.333	0.000	0.333	0.583
Entering Leg	3	0	0	3	0	0	0	0	0	4	0	4	7
Exiting Leg				4				0				3	7
Total				7				0				7	14

PDI File #: **186440 F**  
 Location: **S: Smith Way**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Single-Unit Trucks**

	Dascomb Road				Smith Way				Dascomb Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
7:00 AM	3	2	0	5	0	0	0	0	0	0	7	0	7	12
7:15 AM	7	0	0	7	0	0	0	0	0	0	9	0	9	16
7:30 AM	9	0	0	9	2	0	0	2	0	0	13	0	13	24
7:45 AM	7	1	0	8	0	0	0	0	0	0	11	0	11	19
Total	26	3	0	29	2	0	0	2	0	0	40	0	40	71
8:00 AM	9	0	0	9	0	0	0	0	0	1	5	0	6	15
8:15 AM	8	1	0	9	0	0	0	0	0	1	5	0	6	15
8:30 AM	6	2	0	8	2	0	0	2	0	0	5	0	5	15
8:45 AM	15	2	0	17	2	0	0	2	0	0	9	0	9	28
Total	38	5	0	43	4	0	0	4	0	2	24	0	26	73
9:00 AM	9	1	0	10	1	0	0	1	1	8	0	9	20	
9:15 AM	10	0	0	10	5	1	0	6	1	10	0	11	27	
9:30 AM	6	0	0	6	0	0	0	0	0	11	0	11	17	
9:45 AM	7	1	0	8	0	0	0	0	3	7	0	10	18	
Total	32	2	0	34	6	1	0	7	5	36	0	41	82	
10:00 AM	9	2	0	11	1	0	0	1	1	10	0	11	23	
10:15 AM	8	0	0	8	1	1	0	2	0	10	0	10	20	
10:30 AM	13	0	0	13	1	0	0	1	2	13	0	15	29	
10:45 AM	11	3	0	14	1	0	0	1	0	7	0	7	22	
Total	41	5	0	46	4	1	0	5	3	40	0	43	94	
11:00 AM	1	1	0	2	2	0	0	2	1	9	0	10	14	
11:15 AM	9	0	0	9	3	0	0	3	0	8	0	8	20	
11:30 AM	8	0	0	8	0	0	0	0	0	7	0	7	15	
11:45 AM	4	2	0	6	0	0	0	0	1	13	0	14	20	
Total	22	3	0	25	5	0	0	5	2	37	0	39	69	
Grand Total	159	18	0	177	21	2	0	23	12	177	0	189	389	
Approach %	89.8	10.2	0.0		91.3	8.7	0.0		6.3	93.7	0.0			
Total %	40.9	4.6	0.0	45.5	5.4	0.5	0.0	5.9	3.1	45.5	0.0	48.6		
Exiting Leg Total				198				30				161	389	

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

10:00 AM	Dascomb Road				Smith Way				Dascomb Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
10:00 AM	9	2	0	11	1	0	0	1	1	10	0	11	23	
10:15 AM	8	0	0	8	1	1	0	2	0	10	0	10	20	
10:30 AM	13	0	0	13	1	0	0	1	2	13	0	15	29	
10:45 AM	11	3	0	14	1	0	0	1	0	7	0	7	22	
Total Volume	41	5	0	46	4	1	0	5	3	40	0	43	94	
% Approach Total	89.1	10.9	0.0		80.0	20.0	0.0		7.0	93.0	0.0			
PHF	0.788	0.417	0.000	0.821	1.000	0.250	0.000	0.625	0.375	0.769	0.000	0.717	0.810	
Entering Leg	41	5	0	46	4	1	0	5	3	40	0	43	94	
Exiting Leg				44				8				42	94	
Total				90				13				85	188	

PDI File #: **186440 F**  
 Location: **S: Smith Way**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Articulated Trucks**

	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	4	0	0	4	1	0	0	1	0	10	0	10	15
7:15 AM	5	0	0	5	2	0	0	2	0	4	0	4	11
7:30 AM	10	0	0	10	1	1	0	2	1	4	0	5	17
7:45 AM	9	3	0	12	0	0	0	0	0	11	0	11	23
Total	28	3	0	31	4	1	0	5	1	29	0	30	66
8:00 AM	4	0	0	4	1	0	0	1	0	7	0	7	12
8:15 AM	8	0	0	8	0	0	0	0	0	5	0	5	13
8:30 AM	4	2	0	6	0	0	0	0	0	6	0	6	12
8:45 AM	6	0	0	6	0	0	0	0	0	3	0	3	9
Total	22	2	0	24	1	0	0	1	0	21	0	21	46
9:00 AM	5	3	0	8	2	1	0	3	0	3	0	3	14
9:15 AM	9	2	0	11	0	1	0	1	1	7	0	8	20
9:30 AM	4	1	0	5	1	0	0	1	0	5	0	5	11
9:45 AM	6	3	0	9	1	0	0	1	0	3	0	3	13
Total	24	9	0	33	4	2	0	6	1	18	0	19	58
10:00 AM	7	1	0	8	2	0	0	2	0	7	0	7	17
10:15 AM	7	2	0	9	0	0	0	0	0	2	0	2	11
10:30 AM	5	0	0	5	1	0	0	1	0	10	0	10	16
10:45 AM	7	1	0	8	1	0	0	1	0	8	0	8	17
Total	26	4	0	30	4	0	0	4	0	27	0	27	61
11:00 AM	8	0	0	8	0	0	0	0	0	11	0	11	19
11:15 AM	4	0	0	4	3	0	0	3	0	4	0	4	11
11:30 AM	3	1	0	4	0	0	0	0	0	4	0	4	8
11:45 AM	5	0	0	5	1	0	0	1	0	8	0	8	14
Total	20	1	0	21	4	0	0	4	0	27	0	27	52
Grand Total	120	19	0	139	17	3	0	20	2	122	0	124	283
Approach %	86.3	13.7	0.0		85.0	15.0	0.0		1.6	98.4	0.0		
Total %	42.4	6.7	0.0	49.1	6.0	1.1	0.0	7.1	0.7	43.1	0.0	43.8	
Exiting Leg Total				139				21				123	283

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:00 AM	Dascomb Road				Smith Way				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	4	0	0	4	1	0	0	1	0	10	0	10	15
7:15 AM	5	0	0	5	2	0	0	2	0	4	0	4	11
7:30 AM	10	0	0	10	1	1	0	2	1	4	0	5	17
7:45 AM	9	3	0	12	0	0	0	0	0	11	0	11	23
Total Volume	28	3	0	31	4	1	0	5	1	29	0	30	66
% Approach Total	90.3	9.7	0.0		80.0	20.0	0.0		3.3	96.7	0.0		
PHF	0.700	0.250	0.000	0.646	0.500	0.250	0.000	0.625	0.250	0.659	0.000	0.682	0.717
Entering Leg	28	3	0	31	4	1	0	5	1	29	0	30	66
Exiting Leg				33				4				29	66
Total				64				9				59	132

PDI File #: 186440 F  
 Location: S: Smith Way  
 Location: E: Dascomb Road W: Dascomb Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



**Bicycles (on Roadway and Crosswalks)**

	Dascomb Road						Smith Way						Dascomb Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Exiting Leg Total	1						0						0						1

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

	Dascomb Road						Smith Way						Dascomb Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Exiting Leg	1						0						0						1
Total	1						0						0						2

PDI File #: 186440 F  
 Location: S: Smith Way  
 Location: E: Dascomb Road W: Dascomb Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Pedestrians**

	Dascomb Road						Smith Way						Dascomb Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:00 AM	Dascomb Road						Smith Way						Dascomb Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class: **Cars and Heavy Vehicles (Combined)**



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	159	34	0	193	28	81	0	109	83	116	0	199	501
7:15 AM	152	20	0	172	37	89	0	126	86	139	0	225	523
7:30 AM	214	23	0	237	38	74	0	112	91	165	0	256	605
7:45 AM	251	19	0	270	48	71	0	119	110	158	0	268	657
Total	776	96	0	872	151	315	0	466	370	578	0	948	2286
8:00 AM	235	22	0	257	56	77	0	133	76	150	0	226	616
8:15 AM	210	18	0	228	42	74	2	118	84	170	0	254	600
8:30 AM	219	28	0	247	47	65	0	112	71	146	0	217	576
8:45 AM	162	36	0	198	35	77	0	112	65	131	0	196	506
Total	826	104	0	930	180	293	2	475	296	597	0	893	2298
9:00 AM	130	15	0	145	25	80	0	105	72	96	0	168	418
9:15 AM	115	20	0	135	28	80	0	108	72	68	0	140	383
9:30 AM	83	18	0	101	26	70	0	96	60	70	0	130	327
9:45 AM	87	7	0	94	28	57	0	85	78	68	0	146	325
Total	415	60	0	475	107	287	0	394	282	302	0	584	1453
10:00 AM	69	15	0	84	23	59	0	82	70	57	0	127	293
10:15 AM	88	21	0	109	17	58	0	75	74	46	0	120	304
10:30 AM	59	24	0	83	23	47	0	70	70	56	0	126	279
10:45 AM	72	15	0	87	41	68	0	109	64	48	0	112	308
Total	288	75	0	363	104	232	0	336	278	207	0	485	1184
11:00 AM	75	10	0	85	15	59	0	74	77	62	0	139	298
11:15 AM	74	20	0	94	28	56	2	86	55	52	0	107	287
11:30 AM	77	22	0	99	35	49	1	85	87	62	0	149	333
11:45 AM	84	18	0	102	40	82	0	122	81	64	0	145	369
Total	310	70	0	380	118	246	3	367	300	240	0	540	1287
Grand Total	2615	405	0	3020	660	1373	5	2038	1526	1924	0	3450	8508
Approach %	86.6	13.4	0.0		32.4	67.4	0.2		44.2	55.8	0.0		
Total %	30.7	4.8	0.0	35.5	7.8	16.1	0.1	24.0	17.9	22.6	0.0	40.6	
Exiting Leg Total				2584				1936				3988	8508
Cars	2566	384	0	2950	636	1260	5	1901	1373	1842	0	3215	8066
% Cars	98.1	94.8	0.0	97.7	96.4	91.8	100.0	93.3	90.0	95.7	0.0	93.2	94.8
Exiting Leg Total				2478				1762				3826	8066
Heavy Vehicles	49	21	0	70	24	113	0	137	153	82	0	235	442
% Heavy Vehicles	1.9	5.2	0.0	2.3	3.6	8.2	0.0	6.7	10.0	4.3	0.0	6.8	5.2
Exiting Leg Total				106				174				162	442

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	214	23	0	237	38	74	0	112	91	165	0	256	605
7:45 AM	251	19	0	270	48	71	0	119	110	158	0	268	657
8:00 AM	235	22	0	257	56	77	0	133	76	150	0	226	616
8:15 AM	210	18	0	228	42	74	2	118	84	170	0	254	600
Total Volume	910	82	0	992	184	296	2	482	361	643	0	1004	2478
% Approach Total	91.7	8.3	0.0		38.2	61.4	0.4		36.0	64.0	0.0		
PHF	0.906	0.891	0.000	0.919	0.821	0.961	0.250	0.906	0.820	0.946	0.000	0.937	0.943
Cars	898	79	0	977	179	278	2	459	332	621	0	953	2389
Cars %	98.7	96.3	0.0	98.5	97.3	93.9	100.0	95.2	92.0	96.6	0.0	94.9	96.4
Heavy Vehicles	12	3	0	15	5	18	0	23	29	22	0	51	89
Heavy Vehicles %	1.3	3.7	0.0	1.5	2.7	6.1	0.0	4.8	8.0	3.4	0.0	5.1	3.6
Cars Enter Leg	898	79	0	977	179	278	2	459	332	621	0	953	2389
Heavy Enter Leg	12	3	0	15	5	18	0	23	29	22	0	51	89
Total Entering Leg	910	82	0	992	184	296	2	482	361	643	0	1004	2478
Cars Exiting Leg				800				413				1176	2389
Heavy Exiting Leg				27				32				30	89
Total Exiting Leg				827				445				1206	2478

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	155	34	0	189	27	78	0	105	75	112	0	187	481
7:15 AM	150	20	0	170	37	81	0	118	81	135	0	216	504
7:30 AM	208	21	0	229	36	71	0	107	85	159	0	244	580
7:45 AM	249	19	0	268	47	64	0	111	101	153	0	254	633
Total	762	94	0	856	147	294	0	441	342	559	0	901	2198
8:00 AM	234	22	0	256	56	73	0	129	68	143	0	211	596
8:15 AM	207	17	0	224	40	70	2	112	78	166	0	244	580
8:30 AM	216	24	0	240	46	60	0	106	67	141	0	208	554
8:45 AM	159	35	0	194	33	71	0	104	60	128	0	188	486
Total	816	98	0	914	175	274	2	451	273	578	0	851	2216
9:00 AM	127	15	0	142	25	74	0	99	64	92	0	156	397
9:15 AM	113	19	0	132	24	69	0	93	62	62	0	124	349
9:30 AM	83	16	0	99	26	68	0	94	52	64	0	116	309
9:45 AM	84	6	0	90	26	48	0	74	72	67	0	139	303
Total	407	56	0	463	101	259	0	360	250	285	0	535	1358
10:00 AM	67	15	0	82	21	50	0	71	57	52	0	109	262
10:15 AM	85	19	0	104	15	53	0	68	66	42	0	108	280
10:30 AM	57	24	0	81	23	42	0	65	62	49	0	111	257
10:45 AM	70	13	0	83	39	63	0	102	60	44	0	104	289
Total	279	71	0	350	98	208	0	306	245	187	0	432	1088
11:00 AM	73	9	0	82	15	56	0	71	64	59	0	123	276
11:15 AM	72	19	0	91	26	52	2	80	51	50	0	101	272
11:30 AM	75	21	0	96	35	43	1	79	80	61	0	141	316
11:45 AM	82	16	0	98	39	74	0	113	68	63	0	131	342
Total	302	65	0	367	115	225	3	343	263	233	0	496	1206
Grand Total	2566	384	0	2950	636	1260	5	1901	1373	1842	0	3215	8066
Approach %	87.0	13.0	0.0		33.5	66.3	0.3		42.7	57.3	0.0		
Total %	31.8	4.8	0.0	36.6	7.9	15.6	0.1	23.6	17.0	22.8	0.0	39.9	
Exiting Leg Total				2478				1762				3826	8066

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	208	21	0	229	36	71	0	107	85	159	0	244	580
7:45 AM	249	19	0	268	47	64	0	111	101	153	0	254	633
8:00 AM	234	22	0	256	56	73	0	129	68	143	0	211	596
8:15 AM	207	17	0	224	40	70	2	112	78	166	0	244	580
Total Volume	898	79	0	977	179	278	2	459	332	621	0	953	2389
% Approach Total	91.9	8.1	0.0		39.0	60.6	0.4		34.8	65.2	0.0		
PHF	0.902	0.898	0.000	0.911	0.799	0.952	0.250	0.890	0.822	0.935	0.000	0.938	0.944
Entering Leg	898	79	0	977	179	278	2	459	332	621	0	953	2389
Exiting Leg				800				413				1176	2389
Total				1777				872				2129	4778

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	4	0	0	4	1	3	0	4	8	4	0	12	20
7:15 AM	2	0	0	2	0	8	0	8	5	4	0	9	19
7:30 AM	6	2	0	8	2	3	0	5	6	6	0	12	25
7:45 AM	2	0	0	2	1	7	0	8	9	5	0	14	24
Total	14	2	0	16	4	21	0	25	28	19	0	47	88
8:00 AM	1	0	0	1	0	4	0	4	8	7	0	15	20
8:15 AM	3	1	0	4	2	4	0	6	6	4	0	10	20
8:30 AM	3	4	0	7	1	5	0	6	4	5	0	9	22
8:45 AM	3	1	0	4	2	6	0	8	5	3	0	8	20
Total	10	6	0	16	5	19	0	24	23	19	0	42	82
9:00 AM	3	0	0	3	0	6	0	6	8	4	0	12	21
9:15 AM	2	1	0	3	4	11	0	15	10	6	0	16	34
9:30 AM	0	2	0	2	0	2	0	2	8	6	0	14	18
9:45 AM	3	1	0	4	2	9	0	11	6	1	0	7	22
Total	8	4	0	12	6	28	0	34	32	17	0	49	95
10:00 AM	2	0	0	2	2	9	0	11	13	5	0	18	31
10:15 AM	3	2	0	5	2	5	0	7	8	4	0	12	24
10:30 AM	2	0	0	2	0	5	0	5	8	7	0	15	22
10:45 AM	2	2	0	4	2	5	0	7	4	4	0	8	19
Total	9	4	0	13	6	24	0	30	33	20	0	53	96
11:00 AM	2	1	0	3	0	3	0	3	13	3	0	16	22
11:15 AM	2	1	0	3	2	4	0	6	4	2	0	6	15
11:30 AM	2	1	0	3	0	6	0	6	7	1	0	8	17
11:45 AM	2	2	0	4	1	8	0	9	13	1	0	14	27
Total	8	5	0	13	3	21	0	24	37	7	0	44	81
Grand Total	49	21	0	70	24	113	0	137	153	82	0	235	442
Approach %	70.0	30.0	0.0		17.5	82.5	0.0		65.1	34.9	0.0		
Total %	11.1	4.8	0.0	15.8	5.4	25.6	0.0	31.0	34.6	18.6	0.0	53.2	
Exiting Leg Total	106				174				162				442
Buses	3	4	0	7	0	3	0	3	2	8	0	10	20
% Buses	6.1	19.0	0.0	10.0	0.0	2.7	0.0	2.2	1.3	9.8	0.0	4.3	4.5
Exiting Leg Total	8				6				6				20
Single-Unit Trucks	38	15	0	53	19	64	0	83	71	59	0	130	266
% Single-Unit	77.6	71.4	0.0	75.7	79.2	56.6	0.0	60.6	46.4	72.0	0.0	55.3	60.2
Exiting Leg Total	78				86				102				266
Articulated Trucks	8	2	0	10	5	46	0	51	80	15	0	95	156
% Articulated	16.3	9.5	0.0	14.3	20.8	40.7	0.0	37.2	52.3	18.3	0.0	40.4	35.3
Exiting Leg Total	20				82				54				156

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
9:15 AM	2	1	0	3	4	11	0	15	10	6	0	16	34
9:30 AM	0	2	0	2	0	2	0	2	8	6	0	14	18
9:45 AM	3	1	0	4	2	9	0	11	6	1	0	7	22
10:00 AM	2	0	0	2	2	9	0	11	13	5	0	18	31
Total Volume	7	4	0	11	8	31	0	39	37	18	0	55	105
% Approach Total	63.6	36.4	0.0		20.5	79.5	0.0		67.3	32.7	0.0		
PHF	0.583	0.500	0.000	0.688	0.500	0.705	0.000	0.650	0.712	0.750	0.000	0.764	0.772
Buses	0	0	0	0	0	2	0	2	1	1	0	2	4
Buses %	0.0	0.0	0.0	0.0	0.0	6.5	0.0	5.1	2.7	5.6	0.0	3.6	3.8
Single-Unit Trucks	6	3	0	9	5	17	0	22	14	15	0	29	60
Single-Unit %	85.7	75.0	0.0	81.8	62.5	54.8	0.0	56.4	37.8	83.3	0.0	52.7	57.1

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**



PRECISION  
 D A T A  
 INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
Articulated Trucks	1	1	0	2	3	12	0	15	22	2	0	24	41
Articulated %	14.3	25.0	0.0	18.2	37.5	38.7	0.0	38.5	59.5	11.1	0.0	43.6	39.0
Buses	0	0	0	0	0	2	0	2	1	1	0	2	4
Single-Unit Trucks	6	3	0	9	5	17	0	22	14	15	0	29	60
Articulated Trucks	1	1	0	2	3	12	0	15	22	2	0	24	41
Total Entering Leg	7	4	0	11	8	31	0	39	37	18	0	55	105
Buses				1				1				2	4
Single-Unit Trucks				20				17				23	60
Articulated Trucks				5				23				13	41
Total Exiting Leg				26				41				38	105

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



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**Cars**

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	143	32	0	175	26	67	0	93	62	103	0	165	433
7:15 AM	142	19	0	161	34	71	0	105	68	113	0	181	447
7:30 AM	194	17	0	211	31	58	0	89	74	141	0	215	515
7:45 AM	233	19	0	252	46	58	0	104	76	137	0	213	569
Total	712	87	0	799	137	254	0	391	280	494	0	774	1964
8:00 AM	227	22	0	249	52	63	0	115	56	128	0	184	548
8:15 AM	197	15	0	212	37	63	2	102	67	144	0	211	525
8:30 AM	207	21	0	228	43	52	0	95	55	127	0	182	505
8:45 AM	144	34	0	178	32	64	0	96	48	112	0	160	434
Total	775	92	0	867	164	242	2	408	226	511	0	737	2012
9:00 AM	116	14	0	130	21	62	0	83	52	83	0	135	348
9:15 AM	104	17	0	121	21	55	0	76	53	54	0	107	304
9:30 AM	80	12	0	92	22	53	0	75	44	56	0	100	267
9:45 AM	78	5	0	83	22	39	0	61	54	58	0	112	256
Total	378	48	0	426	86	209	0	295	203	251	0	454	1175
10:00 AM	62	13	0	75	19	35	0	54	38	42	0	80	209
10:15 AM	74	17	0	91	14	44	0	58	44	32	0	76	225
10:30 AM	46	21	0	67	19	35	0	54	49	42	0	91	212
10:45 AM	62	11	0	73	36	52	0	88	46	36	0	82	243
Total	244	62	0	306	88	166	0	254	177	152	0	329	889
11:00 AM	64	6	0	70	14	41	0	55	52	49	0	101	226
11:15 AM	61	11	0	72	22	40	1	63	36	39	0	75	210
11:30 AM	67	19	0	86	31	32	1	64	60	49	0	109	259
11:45 AM	76	14	0	90	36	58	0	94	50	53	0	103	287
Total	268	50	0	318	103	171	2	276	198	190	0	388	982
Grand Total	2377	339	0	2716	578	1042	4	1624	1084	1598	0	2682	7022
Approach %	87.5	12.5	0.0		35.6	64.2	0.2		40.4	59.6	0.0		
Total %	33.9	4.8	0.0	38.7	8.2	14.8	0.1	23.1	15.4	22.8	0.0	38.2	
Exiting Leg Total				2176				1427				3419	7022

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	194	17	0	211	31	58	0	89	74	141	0	215	515
7:45 AM	233	19	0	252	46	58	0	104	76	137	0	213	569
8:00 AM	227	22	0	249	52	63	0	115	56	128	0	184	548
8:15 AM	197	15	0	212	37	63	2	102	67	144	0	211	525
Total Volume	851	73	0	924	166	242	2	410	273	550	0	823	2157
% Approach Total	92.1	7.9	0.0		40.5	59.0	0.5		33.2	66.8	0.0		
PHF	0.913	0.830	0.000	0.917	0.798	0.960	0.250	0.891	0.898	0.955	0.000	0.957	0.948
Entering Leg	851	73	0	924	166	242	2	410	273	550	0	823	2157
Exiting Leg				716				348				1093	2157
Total				1640				758				1916	4314

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
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**Light Goods Vehicle**

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	12	2	0	14	1	11	0	12	13	9	0	22	48
7:15 AM	8	1	0	9	3	10	0	13	13	21	0	34	56
7:30 AM	14	4	0	18	5	13	0	18	11	18	0	29	65
7:45 AM	16	0	0	16	1	6	0	7	25	16	0	41	64
<b>Total</b>	<b>50</b>	<b>7</b>	<b>0</b>	<b>57</b>	<b>10</b>	<b>40</b>	<b>0</b>	<b>50</b>	<b>62</b>	<b>64</b>	<b>0</b>	<b>126</b>	<b>233</b>
8:00 AM	7	0	0	7	4	10	0	14	12	15	0	27	48
8:15 AM	10	2	0	12	3	7	0	10	11	21	0	32	54
8:30 AM	8	3	0	11	3	8	0	11	12	14	0	26	48
8:45 AM	15	1	0	16	1	7	0	8	12	15	0	27	51
<b>Total</b>	<b>40</b>	<b>6</b>	<b>0</b>	<b>46</b>	<b>11</b>	<b>32</b>	<b>0</b>	<b>43</b>	<b>47</b>	<b>65</b>	<b>0</b>	<b>112</b>	<b>201</b>
9:00 AM	10	1	0	11	4	12	0	16	12	8	0	20	47
9:15 AM	9	2	0	11	3	12	0	15	9	8	0	17	43
9:30 AM	3	4	0	7	4	15	0	19	8	8	0	16	42
9:45 AM	6	1	0	7	4	9	0	13	18	9	0	27	47
<b>Total</b>	<b>28</b>	<b>8</b>	<b>0</b>	<b>36</b>	<b>15</b>	<b>48</b>	<b>0</b>	<b>63</b>	<b>47</b>	<b>33</b>	<b>0</b>	<b>80</b>	<b>179</b>
10:00 AM	5	2	0	7	2	15	0	17	19	10	0	29	53
10:15 AM	11	2	0	13	1	9	0	10	21	10	0	31	54
10:30 AM	11	3	0	14	4	7	0	11	13	7	0	20	45
10:45 AM	8	2	0	10	3	11	0	14	14	7	0	21	45
<b>Total</b>	<b>35</b>	<b>9</b>	<b>0</b>	<b>44</b>	<b>10</b>	<b>42</b>	<b>0</b>	<b>52</b>	<b>67</b>	<b>34</b>	<b>0</b>	<b>101</b>	<b>197</b>
11:00 AM	8	3	0	11	1	15	0	16	12	10	0	22	49
11:15 AM	11	8	0	19	4	12	1	17	15	11	0	26	62
11:30 AM	8	2	0	10	4	11	0	15	20	12	0	32	57
11:45 AM	6	2	0	8	3	16	0	19	17	10	0	27	54
<b>Total</b>	<b>33</b>	<b>15</b>	<b>0</b>	<b>48</b>	<b>12</b>	<b>54</b>	<b>1</b>	<b>67</b>	<b>64</b>	<b>43</b>	<b>0</b>	<b>107</b>	<b>222</b>
Grand Total	186	45	0	231	58	216	1	275	287	239	0	526	1032
Approach %	80.5	19.5	0.0		21.1	78.5	0.4		54.6	45.4	0.0		
Total %	18.0	4.4	0.0	22.4	5.6	20.9	0.1	26.6	27.8	23.2	0.0	51.0	
Exiting Leg Total				297				333				402	1032

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	12	2	0	14	1	11	0	12	13	9	0	22	48
7:15 AM	8	1	0	9	3	10	0	13	13	21	0	34	56
7:30 AM	14	4	0	18	5	13	0	18	11	18	0	29	65
7:45 AM	16	0	0	16	1	6	0	7	25	16	0	41	64
Total Volume	50	7	0	57	10	40	0	50	62	64	0	126	233
% Approach Total	87.7	12.3	0.0		20.0	80.0	0.0		49.2	50.8	0.0		
PHF	0.781	0.438	0.000	0.792	0.500	0.769	0.000	0.694	0.620	0.762	0.000	0.768	0.896
Entering Leg	50	7	0	57	10	40	0	50	62	64	0	126	233
Exiting Leg				74				69				90	233
<b>Total</b>				<b>131</b>				<b>119</b>				<b>216</b>	<b>466</b>

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Buses**

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
Total	2	0	0	2	0	0	0	0	0	1	0	1	3
8:00 AM	0	0	0	0	0	0	0	0	0	4	0	4	4
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
8:30 AM	0	3	0	3	0	0	0	0	0	0	0	0	3
8:45 AM	1	1	0	2	0	0	0	0	0	0	0	0	2
Total	1	4	0	5	0	0	0	0	0	6	0	6	11
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	2	0	2	0	1	0	1	3
9:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	2	1	1	0	2	4
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	1	1
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	0	0	0	0	1	0	1	0	0	0	0	1
Grand Total	3	4	0	7	0	3	0	3	2	8	0	10	20
Approach %	42.9	57.1	0.0		0.0	100.0	0.0		20.0	80.0	0.0		
Total %	15.0	20.0	0.0	35.0	0.0	15.0	0.0	15.0	10.0	40.0	0.0	50.0	
Exiting Leg Total				8				6				6	20

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:45 AM	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total	
	from East				from South				from West					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
7:45 AM	1	0	0	1	0	0	0	0	0	0	1	0	1	2
8:00 AM	0	0	0	0	0	0	0	0	0	4	0	4	4	
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	2	
8:30 AM	0	3	0	3	0	0	0	0	0	0	0	0	3	
Total Volume	1	3	0	4	0	0	0	0	0	7	0	7	11	
% Approach Total	25.0	75.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0			
PHF	0.250	0.250	0.000	0.333	0.000	0.000	0.000	0.000	0.000	0.438	0.000	0.438	0.688	
Entering Leg	1	3	0	4	0	0	0	0	0	7	0	7	11	
Exiting Leg				7				3				1	11	
Total				11				3				8	22	

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
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**Single-Unit Trucks**

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	3	0	0	3	1	1	0	2	1	3	0	4	9
7:15 AM	1	0	0	1	0	5	0	5	1	3	0	4	10
7:30 AM	5	1	0	6	1	1	0	2	6	5	0	11	19
7:45 AM	1	0	0	1	0	3	0	3	2	3	0	5	9
<b>Total</b>	<b>10</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>12</b>	<b>10</b>	<b>14</b>	<b>0</b>	<b>24</b>	<b>47</b>
8:00 AM	1	0	0	1	0	3	0	3	2	2	0	4	8
8:15 AM	2	1	0	3	2	3	0	5	3	1	0	4	12
8:30 AM	3	1	0	4	1	2	0	3	3	3	0	6	13
8:45 AM	2	0	0	2	2	5	0	7	3	3	0	6	15
<b>Total</b>	<b>8</b>	<b>2</b>	<b>0</b>	<b>10</b>	<b>5</b>	<b>13</b>	<b>0</b>	<b>18</b>	<b>11</b>	<b>9</b>	<b>0</b>	<b>20</b>	<b>48</b>
9:00 AM	3	0	0	3	0	4	0	4	5	3	0	8	15
9:15 AM	2	0	0	2	1	6	0	7	4	5	0	9	18
9:30 AM	0	2	0	2	0	1	0	1	4	6	0	10	13
9:45 AM	2	1	0	3	2	5	0	7	3	0	0	3	13
<b>Total</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>10</b>	<b>3</b>	<b>16</b>	<b>0</b>	<b>19</b>	<b>16</b>	<b>14</b>	<b>0</b>	<b>30</b>	<b>59</b>
10:00 AM	2	0	0	2	2	5	0	7	3	4	0	7	16
10:15 AM	2	2	0	4	2	3	0	5	5	4	0	9	18
10:30 AM	2	0	0	2	0	4	0	4	2	6	0	8	14
10:45 AM	1	2	0	3	2	3	0	5	3	3	0	6	14
<b>Total</b>	<b>7</b>	<b>4</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>15</b>	<b>0</b>	<b>21</b>	<b>13</b>	<b>17</b>	<b>0</b>	<b>30</b>	<b>62</b>
11:00 AM	2	1	0	3	0	0	0	0	7	3	0	10	13
11:15 AM	2	1	0	3	2	2	0	4	1	1	0	2	9
11:30 AM	1	1	0	2	0	4	0	4	3	0	0	3	9
11:45 AM	1	2	0	3	1	4	0	5	10	1	0	11	19
<b>Total</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>11</b>	<b>3</b>	<b>10</b>	<b>0</b>	<b>13</b>	<b>21</b>	<b>5</b>	<b>0</b>	<b>26</b>	<b>50</b>
<b>Grand Total</b>	<b>38</b>	<b>15</b>	<b>0</b>	<b>53</b>	<b>19</b>	<b>64</b>	<b>0</b>	<b>83</b>	<b>71</b>	<b>59</b>	<b>0</b>	<b>130</b>	<b>266</b>
Approach %	71.7	28.3	0.0		22.9	77.1	0.0		54.6	45.4	0.0		
Total %	14.3	5.6	0.0	19.9	7.1	24.1	0.0	31.2	26.7	22.2	0.0	48.9	
Exiting Leg Total				78				86				102	266

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

10:00 AM	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
10:00 AM	2	0	0	2	2	5	0	7	3	4	0	7	16
10:15 AM	2	2	0	4	2	3	0	5	5	4	0	9	18
10:30 AM	2	0	0	2	0	4	0	4	2	6	0	8	14
10:45 AM	1	2	0	3	2	3	0	5	3	3	0	6	14
<b>Total Volume</b>	<b>7</b>	<b>4</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>15</b>	<b>0</b>	<b>21</b>	<b>13</b>	<b>17</b>	<b>0</b>	<b>30</b>	<b>62</b>
% Approach Total	63.6	36.4	0.0		28.6	71.4	0.0		43.3	56.7	0.0		
PHF	0.875	0.500	0.000	0.688	0.750	0.750	0.000	0.750	0.650	0.708	0.000	0.833	0.861
Entering Leg	7	4	0	11	6	15	0	21	13	17	0	30	62
Exiting Leg				23				17				22	62
<b>Total</b>				<b>34</b>				<b>38</b>				<b>52</b>	<b>124</b>

PDI File #: **186440 G**  
 Location: **S: I-93 NB Ramps**  
 Location: **E: Dascomb Road W: Dascomb Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Articulated Trucks**

	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	2	0	2	7	1	0	8	10
7:15 AM	1	0	0	1	0	3	0	3	4	1	0	5	9
7:30 AM	1	1	0	2	1	2	0	3	0	1	0	1	6
7:45 AM	0	0	0	0	1	4	0	5	7	1	0	8	13
Total	2	1	0	3	2	11	0	13	18	4	0	22	38
8:00 AM	0	0	0	0	0	1	0	1	6	1	0	7	8
8:15 AM	1	0	0	1	0	1	0	1	3	1	0	4	6
8:30 AM	0	0	0	0	0	3	0	3	1	2	0	3	6
8:45 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
Total	1	0	0	1	0	6	0	6	12	4	0	16	23
9:00 AM	0	0	0	0	0	2	0	2	3	1	0	4	6
9:15 AM	0	1	0	1	3	3	0	6	6	0	0	6	13
9:30 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
9:45 AM	1	0	0	1	0	4	0	4	3	1	0	4	9
Total	1	1	0	2	3	10	0	13	15	2	0	17	32
10:00 AM	0	0	0	0	0	4	0	4	10	1	0	11	15
10:15 AM	1	0	0	1	0	2	0	2	2	0	0	2	5
10:30 AM	0	0	0	0	0	1	0	1	6	1	0	7	8
10:45 AM	1	0	0	1	0	2	0	2	1	1	0	2	5
Total	2	0	0	2	0	9	0	9	19	3	0	22	33
11:00 AM	0	0	0	0	0	3	0	3	6	0	0	6	9
11:15 AM	0	0	0	0	0	2	0	2	3	1	0	4	6
11:30 AM	1	0	0	1	0	2	0	2	4	1	0	5	8
11:45 AM	1	0	0	1	0	3	0	3	3	0	0	3	7
Total	2	0	0	2	0	10	0	10	16	2	0	18	30
Grand Total	8	2	0	10	5	46	0	51	80	15	0	95	156
Approach %	80.0	20.0	0.0		9.8	90.2	0.0		84.2	15.8	0.0		
Total %	5.1	1.3	0.0	6.4	3.2	29.5	0.0	32.7	51.3	9.6	0.0	60.9	
Exiting Leg Total				20				82				54	156

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

9:15 AM	Dascomb Road				I-93 NB Ramps				Dascomb Road				Total
	from East				from South				from West				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
9:15 AM	0	1	0	1	3	3	0	6	6	0	0	6	13
9:30 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
9:45 AM	1	0	0	1	0	4	0	4	3	1	0	4	9
10:00 AM	0	0	0	0	0	4	0	4	10	1	0	11	15
Total Volume	1	1	0	2	3	12	0	15	22	2	0	24	41
% Approach Total	50.0	50.0	0.0		20.0	80.0	0.0		91.7	8.3	0.0		
PHF	0.250	0.250	0.000	0.500	0.250	0.750	0.000	0.625	0.550	0.500	0.000	0.545	0.683
Entering Leg	1	1	0	2	3	12	0	15	22	2	0	24	41
Exiting Leg				5				23				13	41
Total				7				38				37	82

PDI File #: 186440 G  
 Location: S: I-93 NB Ramps  
 Location: E: Dascomb Road W: Dascomb Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Bicycles (on Roadway and Crosswalks)**

	Dascomb Road						I-93 NB Ramps						Dascomb Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	4
Approach %	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		
Total %	25.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	0.0	0.0	0.0	75.0	
Exiting Leg Total	3						0						1						4

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

9:00 AM	Dascomb Road						I-93 NB Ramps						Dascomb Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.750	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
Exiting Leg	3						0						0						3
Total	3						0						3						6

PDI File #: 186440 G  
 Location: S: I-93 NB Ramps  
 Location: E: Dascomb Road W: Dascomb Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Pedestrians**

	Dascomb Road						I-93 NB Ramps						Dascomb Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:00 AM	Dascomb Road						I-93 NB Ramps						Dascomb Road						Total
	from East						from South						from West						
	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: 186440 H

Location: N: Driveway S: Clark Road

Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road

City, State: Andover, MA

Client: TEC/ S. Gregorio

Site Code: T0525

Count Date: Thursday, September 13, 2018

Start Time: 7:00 AM

End Time: 12:00 PM

Class:



PRECISION DATA INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Cars and Heavy Vehicles (Combined)

Table with columns for Driveway (from North, East, Southeast, South, West) and rows for time intervals (7:00 AM to 12:00 PM) and summary rows (Grand Total, Approach %, Total %, Exiting Leg Total, Cars, % Cars, Heavy Vehicles, % Heavy Vehicles, Exiting Leg Total).

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

Table for Peak Hour Analysis from 07:00 AM to 12:00 PM, showing volume and PHF for various time intervals (7:30 AM, 7:45 AM, 8:00 AM, 8:15 AM) and summary rows (Total Volume, % Approach Total, PHF).

PDI File #: **186440 H**  
 Location: **N: Driveway S: Clark Road**  
 Location: **E: Dascomb Road W: Dascomb Road SE: Bannister Road**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



**Cars and Heavy Vehicles (Combined)**

	Driveway						Dascomb Road						Bannister Road						Clark Road						Dascomb Road						Total						
	from North						from East						from Southeast						from South						from West												
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total							
Cars	0	0	0	0	0	0	0	516	7	0	0	523	1	0	0	0	0	1	1	7	1	250	0	259	644	16	332	2	0	994	1777						
Cars %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.9	100.0	0.0	0.0	97.9	100.0	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	98.0	0.0	98.1	98.9	94.1	95.7	100.0	0.0	97.7	97.9						
Heavy Vehicles	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	0	0	0	5	0	5	7	1	15	0	0	23	39						
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.9	1.1	5.9	4.3	0.0	0.0	2.3	2.1						
Cars Enter Leg	0	0	0	0	0	0	0	516	7	0	0	523	1	0	0	0	0	1	1	7	1	250	0	259	644	16	332	2	0	994	1777						
Heavy Enter Leg	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	0	0	0	5	0	5	7	1	15	0	0	23	39						
Total Entering Leg	0	0	0	0	0	0	0	527	7	0	0	534	1	0	0	0	0	1	1	7	1	255	0	264	651	17	347	2	0	1017	1816						
Cars Exiting Leg																																					
Heavy Exiting Leg																																					
Total Exiting Leg																																					

PDI File #: 186440 H

Location: N: Driveway S: Clark Road

Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road

City, State: Andover, MA

Client: TEC/ S. Gregorio

Site Code: T0525

Count Date: Thursday, September 13, 2018

Start Time: 7:00 AM

End Time: 12:00 PM

Class:



Cars-Combined (Motorcycles, Cars, Light Goods)

	Driveway						Dascomb Road						Bannister Road						Clark Road						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	80	1	0	0	81	0	0	0	0	0	0	1	0	0	51	0	52	148	1	69	0	0	218	351
7:15 AM	0	0	0	0	0	0	0	82	2	0	0	84	0	0	0	0	0	0	0	4	0	32	0	36	146	0	86	0	0	232	352
7:30 AM	0	0	0	0	0	0	0	134	3	0	0	137	0	0	0	0	0	0	0	0	0	49	0	49	152	0	81	0	0	233	419
7:45 AM	0	0	0	0	0	0	0	135	3	0	0	138	1	0	0	0	0	1	0	0	0	72	0	72	205	4	70	0	0	279	490
Total	0	0	0	0	0	0	0	431	9	0	0	440	1	0	0	0	0	1	1	4	0	204	0	209	651	5	306	0	0	962	1612
8:00 AM	0	0	0	0	0	0	0	124	1	0	0	125	0	0	0	0	0	0	1	7	1	64	0	73	146	10	86	0	0	242	440
8:15 AM	0	0	0	0	0	0	0	123	0	0	0	123	0	0	0	0	0	0	0	0	1	65	0	65	141	2	95	2	0	240	428
8:30 AM	0	0	0	0	0	0	0	123	2	0	0	125	0	0	1	0	0	1	0	1	0	67	0	68	133	2	84	0	0	219	413
8:45 AM	0	0	0	0	0	0	0	93	2	1	0	96	0	0	1	0	0	1	0	2	0	56	0	58	151	2	74	0	0	227	382
Total	0	0	0	0	0	0	0	463	5	1	0	469	0	0	2	0	0	2	1	10	1	252	0	264	571	16	339	2	0	928	1663
9:00 AM	0	0	0	0	0	0	0	81	1	0	0	82	0	0	0	0	0	0	3	0	34	0	37	91	3	49	0	0	143	262	
9:15 AM	0	0	0	0	0	0	0	65	3	0	0	68	0	0	0	0	0	0	1	0	43	0	44	53	0	49	0	0	102	214	
9:30 AM	0	0	0	0	0	0	0	57	2	0	0	59	0	0	0	0	0	0	1	0	29	0	30	37	1	44	0	0	82	171	
9:45 AM	1	0	0	0	0	1	0	56	1	0	0	57	0	0	0	0	0	0	1	0	29	0	30	43	0	58	0	0	101	189	
Total	1	0	0	0	0	1	0	259	7	0	0	266	0	0	0	0	0	0	6	0	135	0	141	224	4	200	0	0	428	836	
10:00 AM	0	0	0	0	0	0	0	52	2	0	0	54	0	0	0	0	0	0	1	0	28	0	29	31	2	49	0	0	82	165	
10:15 AM	0	0	0	0	0	0	0	47	1	0	0	48	0	0	0	0	0	0	0	0	48	0	48	33	0	34	0	0	67	163	
10:30 AM	0	0	0	0	0	0	0	45	0	0	0	45	0	0	0	0	0	0	1	0	37	0	38	24	1	46	0	0	71	154	
10:45 AM	0	0	0	0	0	0	0	48	0	0	0	48	0	0	0	0	0	0	1	0	25	0	26	32	2	50	0	0	84	158	
Total	0	0	0	0	0	0	0	192	3	0	0	195	0	0	0	0	0	0	3	0	138	0	141	120	5	179	0	0	304	640	
11:00 AM	0	0	0	0	0	0	0	53	1	1	0	55	0	0	0	0	0	0	1	0	23	0	24	19	1	50	0	0	70	149	
11:15 AM	0	0	0	0	0	0	0	58	3	0	0	61	0	0	0	0	0	0	1	0	37	0	38	21	0	53	0	0	74	173	
11:30 AM	0	0	0	2	0	2	0	43	2	0	0	45	0	0	0	0	0	0	0	0	48	0	48	30	0	64	1	0	95	190	
11:45 AM	0	0	0	0	0	0	0	59	1	1	0	61	0	0	0	0	0	0	1	0	38	0	39	28	0	76	0	0	104	204	
Total	0	0	0	2	0	2	0	213	7	2	0	222	0	0	0	0	0	0	3	0	146	0	149	98	1	243	1	0	343	716	
Grand Total	1	0	0	2	0	3	0	1558	31	3	0	1592	1	0	2	0	0	3	2	26	1	875	0	904	1664	31	1267	3	0	2965	5467
Approach %	33.3	0.0	0.0	66.7	0.0		0.0	97.9	1.9	0.2	0.0		33.3	0.0	66.7	0.0	0.0		0.2	2.9	0.1	96.8	0.0		56.1	1.0	42.7	0.1	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.1	0.0	28.5	0.6	0.1	0.0	29.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.5	0.0	16.0	0.0	16.5	30.4	0.6	23.2	0.1	0.0	0.0	54.2
Exiting Leg Total						4						1296						36					1695						2436	5467	

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Driveway						Dascomb Road						Bannister Road						Clark Road						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	134	3	0	0	137	0	0	0	0	0	0	0	0	0	49	0	49	152	0	81	0	0	233	419
7:45 AM	0	0	0	0	0	0	0	135	3	0	0	138	1	0	0	0	0	1	0	0	0	72	0	72	205	4	70	0	0	279	490
8:00 AM	0	0	0	0	0	0	0	124	1	0	0	125	0	0	0	0	0	0	1	7	1	64	0	73	146	10	86	0	0	242	440
8:15 AM	0	0	0	0	0	0	0	123	0	0	0	123	0	0	0	0	0	0	0	0	0	65	0	65	141	2	95	2	0	240	428
Total Volume	0	0	0	0	0	0	0	516	7	0	0	523	1	0	0	0	0	1	1	7	1	250	0	259	644	16	332	2	0	994	1777
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	98.7	1.3	0.0	0.0		100.0	0.0	0.0	0.0	0.0		0.4	2.7	0.4	96.5	0.0		64.8	1.6	33.4	0.2	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.956	0.583	0.000	0.000	0.947	0.250	0.000	0.000	0.000	0.250		0.250	0.250	0.250	0.868	0.000	0.887	0.785	0.400	0.874	0.250	0.000	0.891	0.907
Entering Leg	0	0	0	0	0	0	0	516	7	0	0	523	1	0	0	0	0	1	1	7	1	250	0	259	644	16	332	2	0	994	1777
Exiting Leg						3						340						17					651						766	1777	
Total						3						863						18					910						1760	3554	

PDI File #: 186440 H

Location: N: Driveway S: Clark Road

Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road

City, State: Andover, MA

Client: TEC/ S. Gregorio

Site Code: T0525

Count Date: Thursday, September 13, 2018

Start Time: 7:00 AM

End Time: 12:00 PM

Class:



PRECISION DATA INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

Table with columns for Driveway (from North, East, Southeast, South, West), traffic movements (Right, Thru, Bear Left, Left, U-Turn, Total), and vehicle counts for various times from 7:00 AM to 12:00 PM. Includes sub-totals for Grand Total, Approach %, Total %, and Exiting Leg Total.

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

Table showing peak hour analysis for 9:15 AM across the same road segments and traffic movements as the main table.

PDI File #: 186440 H  
 Location: N: Driveway S: Clark Road  
 Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



**Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Driveway						Dascomb Road						Bannister Road						Clark Road						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
9:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	2	3	0	3	0	0	6	11
9:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	0	0	3	0	0	3	7
10:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	3	0	3	2	0	4	0	0	6	13
Total Volume	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	0	1	0	8	0	9	6	0	20	0	0	26	46
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	0.0	88.9	0.0	0.0	23.1	0.0	76.9	0.0	0.0				
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.688	0.000	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.667	0.000	0.750	0.500	0.000	0.500	0.000	0.000	0.591	0.767		
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Single-Unit Trucks	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	1	0	7	0	8	5	0	17	0	0	22	40
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.9	0.0	0.0	0.0	90.9	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	87.5	0.0	88.9	83.3	0.0	85.0	0.0	0.0	84.6	87.0	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3	0	0	4	6
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	11.1	16.7	0.0	15.0	0.0	0.0	15.4	13.0	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	1	0	7	0	8	5	0	17	0	0	22	40
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	1	0	3	0	0	4	6
Total Entering Leg	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	0	1	0	8	0	9	6	0	20	0	0	26	46
Buses																															
Single-Unit Trucks																															
Articulated Trucks																															
Total Exiting Leg																															

PDI File #: 186440 H

Location: N: Driveway S: Clark Road

Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road

City, State: Andover, MA

Client: TEC/ S. Gregorio

Site Code: T0525

Count Date: Thursday, September 13, 2018

Start Time: 7:00 AM

End Time: 12:00 PM

Class:



PRECISION DATA INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Cars

Table with columns for Driveway (from North, from East, from Southeast, from South, from West) and rows for time intervals (7:00 AM to 11:45 AM) and Grand Total. Includes sub-columns for Right, Thru, Bear Left, Left, U-Turn, Total for each direction.

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

Table for Peak Hour Analysis (7:45 AM) with columns for Driveway (from North, from East, from Southeast, from South, from West) and rows for time intervals (7:45 AM to 8:30 AM), Total Volume, % Approach Total, PHF, Entering Leg, Exiting Leg, and Total. Includes sub-columns for Right, Thru, Bear Left, Left, U-Turn, Total for each direction.

PDI File #: 186440 H  
 Location: N: Driveway S: Clark Road  
 Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



Light Goods Vehicle

	Driveway						Dascomb Road					Bannister Road					Clark Road						Dascomb Road						Total								
	from North						from East					from Southeast					from South						from West														
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left		U-Turn	Total						
7:00 AM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	1	0	1	16	0	7	0	0	23	30						
7:15 AM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	2	0	2	17	0	11	0	0	28	37						
7:30 AM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	8	0	8	15	0	8	0	0	23	39						
7:45 AM	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	6	0	6	14	0	2	0	0	16	31						
Total	0	0	0	0	0	0	0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	17	0	17	62	0	28	0	0	90	137						
8:00 AM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	1	0	4	0	5	11	0	13	0	0	24	36						
8:15 AM	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	3	0	3	12	1	9	0	0	22	34						
8:30 AM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	6	0	6	9	0	11	0	0	20	32						
8:45 AM	0	0	0	0	0	0	0	7	1	1	0	9	0	0	0	0	0	0	0	0	0	8	0	8	14	0	6	0	0	20	37						
Total	0	0	0	0	0	0	0	29	1	1	0	31	0	0	0	0	0	0	0	1	0	21	0	22	46	1	39	0	0	86	139						
9:00 AM	0	0	0	0	0	0	0	11	0	0	0	11	0	0	0	0	0	0	0	0	0	6	0	6	11	0	7	0	0	18	35						
9:15 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0	3	8	0	5	0	0	13	18						
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	6	0	3	0	0	9	12						
9:45 AM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	3	0	3	9	0	5	0	0	14	22						
Total	0	0	0	0	0	0	0	18	0	0	0	18	0	0	0	0	0	0	0	0	0	15	0	15	34	0	20	0	0	54	87						
10:00 AM	0	0	0	0	0	0	0	4	1	0	0	5	0	0	0	0	0	0	0	0	0	6	0	6	6	0	8	0	0	14	25						
10:15 AM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	8	0	8	7	0	10	0	0	17	30						
10:30 AM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	9	0	9	2	0	6	0	0	8	24						
10:45 AM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	3	0	3	7	0	6	0	0	13	21						
Total	0	0	0	0	0	0	0	21	1	0	0	22	0	0	0	0	0	0	0	0	0	26	0	26	22	0	30	0	0	52	100						
11:00 AM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	1	0	7	0	8	3	0	3	0	0	6	22						
11:15 AM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	5	0	5	1	0	10	0	0	11	24						
11:30 AM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	7	0	7	5	0	12	0	0	17	31						
11:45 AM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	1	0	4	0	5	3	0	4	0	0	7	18						
Total	0	0	0	0	0	0	0	29	0	0	0	29	0	0	0	0	0	0	0	2	0	23	0	25	12	0	29	0	0	41	95						
Grand Total	0	0	0	0	0	0	0	127	2	1	0	130	0	0	0	0	0	0	0	3	0	102	0	105	176	1	146	0	0	323	558						
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	97.7	1.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	97.1	0.0	0.0	54.5	0.3	45.2	0.0	0.0								
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.8	0.4	0.2	0.0	23.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	18.3	0.0	18.8	31.5	0.2	26.2	0.0	0.0	57.9							
Exiting Leg Total							0						149						2						178						229						558

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:15 AM	Driveway						Dascomb Road					Bannister Road					Clark Road						Dascomb Road						Total			
	from North						from East					from Southeast					from South						from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left		U-Turn	Total	
7:15 AM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	0	2	0	2	17	0	11	0	0	28	37	
7:30 AM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	8	0	8	15	0	8	0	0	23	39	
7:45 AM	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	6	0	6	14	0	2	0	0	16	31	
8:00 AM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	1	0	4	0	5	11	0	13	0	0	24	36	
Total Volume	0	0	0	0	0	0	0	31	0	0	0	31	0	0	0	0	0	0	0	1	0	20	0	21	57	0	34	0	0	91	143	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	95.2	0.0	0.0	62.6	0.0	37.4	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.861	0.000	0.000	0.000	0.861	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.625	0.000	0.656	0.838	0.000	0.654	0.000	0.000	0.813	0.917		
Entering Leg	0						0						0						0						0						143	
Exiting Leg	0						31						0						20						21						57	143
Total	0						66						0						78						142						286	

PDI File #: 186440 H  
 Location: N: Driveway S: Clark Road  
 Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



**Buses**

	Driveway						Dascomb Road						Bannister Road						Clark Road						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	5
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
Total	0	0	0	0	0	0	0	5	1	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	5	11
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	4	4
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	4	0	0	4	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	5	0	5	2	1	5	0	0	8	16
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Grand Total	0	0	0	0	0	0	0	8	2	0	0	10	0	0	0	0	0	0	0	0	0	5	0	5	6	1	7	0	0	14	29
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	80.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	42.9	7.1	50.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.6	6.9	0.0	0.0	34.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.2	0.0	17.2	20.7	3.4	24.1	0.0	0.0	48.3	
Exiting Leg Total	0						7						1						8						13		29				

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:45 AM	Driveway						Dascomb Road						Bannister Road						Clark Road						Dascomb Road						Total
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru	Left	U-Turn	Total	
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	0	0	4	4
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	4	0	0	4	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	4	3	1	6	0	0	10	16
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	30.0	10.0	60.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.333	0.000	0.333	0.375	0.250	0.375	0.000	0.000	0.625	0.667
Entering Leg	0						2						0						4						10		16				
Exiting Leg	0						6						1						3						6		16				
Total	0						8						1						7						16		32				

PDI File #: 186440 H

Location: N: Driveway S: Clark Road

Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road

City, State: Andover, MA

Client: TEC/ S. Gregorio

Site Code: T0525

Count Date: Thursday, September 13, 2018

Start Time: 7:00 AM

End Time: 12:00 PM

Class:



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Single-Unit Trucks

	Driveway						Dascomb Road					Bannister Road					Clark Road					Dascomb Road						Total			
	from North						from East					from Southeast					from South					from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru		Left	U-Turn	Total
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	3
7:15 AM	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	1	0	4	0	0	5	8
7:30 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	2	0	4	0	0	6	10
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	0	4	1	0	0	5	0	0	0	0	0	0	0	0	0	3	0	3	3	0	11	0	0	14	22
8:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	1	0	2	0	0	3	6
8:30 AM	0	0	0	0	0	0	0	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	7
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	2	0	0	3	5
Total	0	0	0	0	0	0	0	7	0	1	0	8	0	0	0	0	0	0	0	0	0	3	0	3	2	0	7	0	0	9	20
9:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	2	1	0	3	0	0	4	7
9:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	2	1	0	9	0	0	10	13
9:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	2	2	0	3	0	0	5	10
9:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	0	0	2	5
Total	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	2	0	5	0	7	4	0	17	0	0	21	35
10:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	3	0	3	2	0	3	0	0	5	12
10:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2	0	2	0	0	4	6
10:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	4	5
10:45 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	1	1	0	4	0	0	5	9
Total	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	5	0	5	7	0	11	0	0	18	32
11:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2	1	0	1	0	0	2	6
11:15 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	2	7
11:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	3
11:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	2	0	1	0	0	3	5
Total	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	6	0	6	4	0	3	0	0	7	21
Grand Total	0	0	0	0	0	0	0	35	1	1	0	37	0	0	0	0	0	0	0	2	0	22	0	24	20	0	49	0	0	69	130
Approach %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	94.6	2.7	2.7	0.0		0.0	0.0	0.0	0.0	0.0		0.0	8.3	0.0	91.7	0.0		29.0	0.0	71.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.9	0.8	0.8	0.0	28.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	16.9	0.0	18.5	15.4	0.0	37.7	0.0	0.0	53.1	
Exiting Leg Total	0						51					1					21						57								

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

9:15 AM	Driveway						Dascomb Road					Bannister Road					Clark Road					Dascomb Road						Total			
	from North						from East					from Southeast					from South					from West									
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Right	Right	Thru	Left	U-Turn	Total	Right	Bear Right	Thru		Left	U-Turn	Total
9:15 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	2	1	0	9	0	0	10	13
9:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	2	2	0	3	0	0	5	10
9:45 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	0	0	2	5
10:00 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	3	0	3	2	0	3	0	0	5	12
Total Volume	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	1	0	7	0	8	5	0	17	0	0	22	40
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	12.5	0.0	87.5	0.0		22.7	0.0	77.3	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.583	0.000	0.667	0.625	0.000	0.472	0.000	0.000	0.550	0.769
Entering Leg	0						10					0					8						40								
Exiting Leg	0						18					0					5						40								
Total	0						28					0					13						80								

PDI File #: 186440 H

Location: N: Driveway S: Clark Road

Location: E: Dascomb Road W: Dascomb Road SE: Bannister Road

City, State: Andover, MA

Client: TEC/ S. Gregorio

Site Code: T0525

Count Date: Thursday, September 13, 2018

Start Time: 7:00 AM

End Time: 12:00 PM

Class:



46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

**Articulated Trucks**

Table with columns for Driveway, Dascomb Road, Bannister Road, Clark Road, and Dascomb Road. Rows include time intervals from 7:00 AM to 12:00 PM, Grand Total, and Approach/Total percentages. Includes sub-columns for Right, Thru, Bear Left, Left, U-Turn, and Total for each direction.

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

Table showing Peak Hour Analysis for 9:00 AM. Columns are similar to the main table, but include PHF (Peak Hour Factor) values for each direction and total. Rows include 9:00 AM, 9:15 AM, 9:30 AM, 9:45 AM, Total Volume, % Approach Total, PHF, Entering Leg, Exiting Leg, and Total.





PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars and Heavy Vehicles (Combined)**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	40	33	0	73	19	117	0	136	101	64	0	165	374
7:15 AM	41	41	0	82	8	96	0	104	138	77	0	215	401
7:30 AM	57	49	0	106	17	106	0	123	153	65	0	218	447
7:45 AM	51	18	0	69	16	126	0	142	152	66	0	218	429
<b>Total</b>	<b>189</b>	<b>141</b>	<b>0</b>	<b>330</b>	<b>60</b>	<b>445</b>	<b>0</b>	<b>505</b>	<b>544</b>	<b>272</b>	<b>0</b>	<b>816</b>	<b>1651</b>
8:00 AM	47	17	0	64	19	118	2	139	136	82	0	218	421
8:15 AM	59	31	0	90	24	105	0	129	154	73	0	227	446
8:30 AM	44	20	0	64	30	122	0	152	141	74	0	215	431
8:45 AM	40	9	0	49	21	126	0	147	110	61	0	171	367
<b>Total</b>	<b>190</b>	<b>77</b>	<b>0</b>	<b>267</b>	<b>94</b>	<b>471</b>	<b>2</b>	<b>567</b>	<b>541</b>	<b>290</b>	<b>0</b>	<b>831</b>	<b>1665</b>
9:00 AM	29	22	0	51	10	115	0	125	146	33	0	179	355
9:15 AM	21	8	0	29	13	90	0	103	130	29	0	159	291
9:30 AM	15	8	0	23	7	93	0	100	92	17	0	109	232
9:45 AM	12	6	0	18	9	100	0	109	105	18	0	123	250
<b>Total</b>	<b>77</b>	<b>44</b>	<b>0</b>	<b>121</b>	<b>39</b>	<b>398</b>	<b>0</b>	<b>437</b>	<b>473</b>	<b>97</b>	<b>0</b>	<b>570</b>	<b>1128</b>
10:00 AM	15	6	0	21	12	76	0	88	92	9	0	101	210
10:15 AM	8	11	0	19	7	77	0	84	115	16	0	131	234
10:30 AM	15	5	0	20	2	99	0	101	100	14	0	114	235
10:45 AM	13	4	0	17	1	67	0	68	93	9	0	102	187
<b>Total</b>	<b>51</b>	<b>26</b>	<b>0</b>	<b>77</b>	<b>22</b>	<b>319</b>	<b>0</b>	<b>341</b>	<b>400</b>	<b>48</b>	<b>0</b>	<b>448</b>	<b>866</b>
11:00 AM	21	5	0	26	4	66	0	70	95	10	0	105	201
11:15 AM	16	4	0	20	8	77	0	85	103	16	0	119	224
11:30 AM	43	9	0	52	6	76	0	82	93	20	0	113	247
11:45 AM	43	8	0	51	4	59	0	63	110	23	0	133	247
<b>Total</b>	<b>123</b>	<b>26</b>	<b>0</b>	<b>149</b>	<b>22</b>	<b>278</b>	<b>0</b>	<b>300</b>	<b>401</b>	<b>69</b>	<b>0</b>	<b>470</b>	<b>919</b>
Grand Total	630	314	0	944	237	1911	2	2150	2359	776	0	3135	6229
Approach %	66.7	33.3	0.0		11.0	88.9	0.1		75.2	24.8	0.0		
Total %	10.1	5.0	0.0	15.2	3.8	30.7	0.0	34.5	37.9	12.5	0.0	50.3	
Exiting Leg Total	1013				2675				2541				6229
Cars	601	309	0	910	230	1724	2	1956	2210	760	0	2970	5836
% Cars	95.4	98.4	0.0	96.4	97.0	90.2	100.0	91.0	93.7	97.9	0.0	94.7	93.7
Exiting Leg Total	990				2521				2325				5836
Heavy Vehicles	29	5	0	34	7	187	0	194	149	16	0	165	393
% Heavy Vehicles	4.6	1.6	0.0	3.6	3.0	9.8	0.0	9.0	6.3	2.1	0.0	5.3	6.3
Exiting Leg Total	23				154				216				393

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	57	49	0	106	17	106	0	123	153	65	0	218	447
7:45 AM	51	18	0	69	16	126	0	142	152	66	0	218	429
8:00 AM	47	17	0	64	19	118	2	139	136	82	0	218	421
8:15 AM	59	31	0	90	24	105	0	129	154	73	0	227	446
Total Volume	214	115	0	329	76	455	2	533	595	286	0	881	1743
% Approach Total	65.0	35.0	0.0		14.3	85.4	0.4		67.5	32.5	0.0		
PHF	0.907	0.587	0.000	0.776	0.792	0.903	0.250	0.938	0.966	0.872	0.000	0.970	0.975
Cars	204	114	0	318	75	416	2	493	573	284	0	857	1668
Cars %	95.3	99.1	0.0	96.7	98.7	91.4	100.0	92.5	96.3	99.3	0.0	97.3	95.7
Heavy Vehicles	10	1	0	11	1	39	0	40	22	2	0	24	75
Heavy Vehicles %	4.7	0.9	0.0	3.3	1.3	8.6	0.0	7.5	3.7	0.7	0.0	2.7	4.3
Cars Enter Leg	204	114	0	318	75	416	2	493	573	284	0	857	1668
Heavy Enter Leg	10	1	0	11	1	39	0	40	22	2	0	24	75
Total Entering Leg	214	115	0	329	76	455	2	533	595	286	0	881	1743
Cars Exiting Leg	359				689				620				1668
Heavy Exiting Leg	3				23				49				75
Total Exiting Leg	362				712				669				1743

PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Cars-Combined (Motorcycles, Cars, Light Goods)**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	39	33	0	72	19	115	0	134	97	63	0	160	366
7:15 AM	41	41	0	82	8	89	0	97	133	75	0	208	387
7:30 AM	55	49	0	104	17	96	0	113	146	65	0	211	428
7:45 AM	50	17	0	67	16	114	0	130	145	65	0	210	407
<b>Total</b>	<b>185</b>	<b>140</b>	<b>0</b>	<b>325</b>	<b>60</b>	<b>414</b>	<b>0</b>	<b>474</b>	<b>521</b>	<b>268</b>	<b>0</b>	<b>789</b>	<b>1588</b>
8:00 AM	42	17	0	59	18	113	2	133	132	82	0	214	406
8:15 AM	57	31	0	88	24	93	0	117	150	72	0	222	427
8:30 AM	42	19	0	61	29	112	0	141	134	73	0	207	409
8:45 AM	38	8	0	46	21	113	0	134	103	57	0	160	340
<b>Total</b>	<b>179</b>	<b>75</b>	<b>0</b>	<b>254</b>	<b>92</b>	<b>431</b>	<b>2</b>	<b>525</b>	<b>519</b>	<b>284</b>	<b>0</b>	<b>803</b>	<b>1582</b>
9:00 AM	27	22	0	49	9	101	0	110	139	33	0	172	331
9:15 AM	17	8	0	25	12	75	0	87	121	27	0	148	260
9:30 AM	14	8	0	22	7	85	0	92	86	17	0	103	217
9:45 AM	12	6	0	18	9	91	0	100	101	16	0	117	235
<b>Total</b>	<b>70</b>	<b>44</b>	<b>0</b>	<b>114</b>	<b>37</b>	<b>352</b>	<b>0</b>	<b>389</b>	<b>447</b>	<b>93</b>	<b>0</b>	<b>540</b>	<b>1043</b>
10:00 AM	13	5	0	18	11	64	0	75	84	9	0	93	186
10:15 AM	8	11	0	19	7	67	0	74	108	16	0	124	217
10:30 AM	15	4	0	19	2	86	0	88	86	13	0	99	206
10:45 AM	11	4	0	15	1	57	0	58	80	9	0	89	162
<b>Total</b>	<b>47</b>	<b>24</b>	<b>0</b>	<b>71</b>	<b>21</b>	<b>274</b>	<b>0</b>	<b>295</b>	<b>358</b>	<b>47</b>	<b>0</b>	<b>405</b>	<b>771</b>
11:00 AM	21	5	0	26	3	57	0	60	88	10	0	98	184
11:15 AM	16	4	0	20	8	72	0	80	94	15	0	109	209
11:30 AM	42	9	0	51	5	70	0	75	88	20	0	108	234
11:45 AM	41	8	0	49	4	54	0	58	95	23	0	118	225
<b>Total</b>	<b>120</b>	<b>26</b>	<b>0</b>	<b>146</b>	<b>20</b>	<b>253</b>	<b>0</b>	<b>273</b>	<b>365</b>	<b>68</b>	<b>0</b>	<b>433</b>	<b>852</b>
Grand Total	601	309	0	910	230	1724	2	1956	2210	760	0	2970	5836
Approach %	66.0	34.0	0.0		11.8	88.1	0.1		74.4	25.6	0.0		
Total %	10.3	5.3	0.0	15.6	3.9	29.5	0.0	33.5	37.9	13.0	0.0	50.9	
Exiting Leg Total				990				2521				2325	5836

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	55	49	0	104	17	96	0	113	146	65	0	211	428
7:45 AM	50	17	0	67	16	114	0	130	145	65	0	210	407
8:00 AM	42	17	0	59	18	113	2	133	132	82	0	214	406
8:15 AM	57	31	0	88	24	93	0	117	150	72	0	222	427
Total Volume	204	114	0	318	75	416	2	493	573	284	0	857	1668
% Approach Total	64.2	35.8	0.0		15.2	84.4	0.4		66.9	33.1	0.0		
PHF	0.895	0.582	0.000	0.764	0.781	0.912	0.250	0.927	0.955	0.866	0.000	0.965	0.974
Entering Leg	204	114	0	318	75	416	2	493	573	284	0	857	1668
Exiting Leg				359				689				620	1668
<b>Total</b>				<b>677</b>				<b>1182</b>				<b>1477</b>	<b>3336</b>

PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	1	0	0	1	0	2	0	2	4	1	0	5	8
7:15 AM	0	0	0	0	0	7	0	7	5	2	0	7	14
7:30 AM	2	0	0	2	0	10	0	10	7	0	0	7	19
7:45 AM	1	1	0	2	0	12	0	12	7	1	0	8	22
Total	4	1	0	5	0	31	0	31	23	4	0	27	63
8:00 AM	5	0	0	5	1	5	0	6	4	0	0	4	15
8:15 AM	2	0	0	2	0	12	0	12	4	1	0	5	19
8:30 AM	2	1	0	3	1	10	0	11	7	1	0	8	22
8:45 AM	2	1	0	3	0	13	0	13	7	4	0	11	27
Total	11	2	0	13	2	40	0	42	22	6	0	28	83
9:00 AM	2	0	0	2	1	14	0	15	7	0	0	7	24
9:15 AM	4	0	0	4	1	15	0	16	9	2	0	11	31
9:30 AM	1	0	0	1	0	8	0	8	6	0	0	6	15
9:45 AM	0	0	0	0	0	9	0	9	4	2	0	6	15
Total	7	0	0	7	2	46	0	48	26	4	0	30	85
10:00 AM	2	1	0	3	1	12	0	13	8	0	0	8	24
10:15 AM	0	0	0	0	0	10	0	10	7	0	0	7	17
10:30 AM	0	1	0	1	0	13	0	13	14	1	0	15	29
10:45 AM	2	0	0	2	0	10	0	10	13	0	0	13	25
Total	4	2	0	6	1	45	0	46	42	1	0	43	95
11:00 AM	0	0	0	0	1	9	0	10	7	0	0	7	17
11:15 AM	0	0	0	0	0	5	0	5	9	1	0	10	15
11:30 AM	1	0	0	1	1	6	0	7	5	0	0	5	13
11:45 AM	2	0	0	2	0	5	0	5	15	0	0	15	22
Total	3	0	0	3	2	25	0	27	36	1	0	37	67
Grand Total	29	5	0	34	7	187	0	194	149	16	0	165	393
Approach %	85.3	14.7	0.0		3.6	96.4	0.0		90.3	9.7	0.0		
Total %	7.4	1.3	0.0	8.7	1.8	47.6	0.0	49.4	37.9	4.1	0.0	42.0	
Exiting Leg Total				23				154				216	393
Buses	4	0	0	4	0	2	0	2	4	0	0	4	10
% Buses	13.8	0.0	0.0	11.8	0.0	1.1	0.0	1.0	2.7	0.0	0.0	2.4	2.5
Exiting Leg Total				0				4				6	10
Single-Unit Trucks	23	4	0	27	6	90	0	96	89	12	0	101	224
% Single-Unit	79.3	80.0	0.0	79.4	85.7	48.1	0.0	49.5	59.7	75.0	0.0	61.2	57.0
Exiting Leg Total				18				93				113	224
Articulated Trucks	2	1	0	3	1	95	0	96	56	4	0	60	159
% Articulated	6.9	20.0	0.0	8.8	14.3	50.8	0.0	49.5	37.6	25.0	0.0	36.4	40.5
Exiting Leg Total				5				57				97	159

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
8:30 AM	2	1	0	3	1	10	0	11	7	1	0	8	22
8:45 AM	2	1	0	3	0	13	0	13	7	4	0	11	27
9:00 AM	2	0	0	2	1	14	0	15	7	0	0	7	24
9:15 AM	4	0	0	4	1	15	0	16	9	2	0	11	31
Total Volume	10	2	0	12	3	52	0	55	30	7	0	37	104
% Approach Total	83.3	16.7	0.0		5.5	94.5	0.0		81.1	18.9	0.0		
PHF	0.625	0.500	0.000	0.750	0.750	0.867	0.000	0.859	0.833	0.438	0.000	0.841	0.839
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	9	2	0	11	3	28	0	31	21	6	0	27	69
Single-Unit %	90.0	100.0	0.0	91.7	100.0	53.8	0.0	56.4	70.0	85.7	0.0	73.0	66.3

PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**



PRECISION  
 D A T A  
 INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
Articulated Trucks	1	0	0	1	0	24	0	24	9	1	0	10	35
Articulated %	10.0	0.0	0.0	8.3	0.0	46.2	0.0	43.6	30.0	14.3	0.0	27.0	33.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	9	2	0	11	3	28	0	31	21	6	0	27	69
Articulated Trucks	1	0	0	1	0	24	0	24	9	1	0	10	35
Total Entering Leg	10	2	0	12	3	52	0	55	30	7	0	37	104
Buses				0				0				0	0
Single-Unit Trucks				9				23				37	69
Articulated Trucks				1				9				25	35
Total Exiting Leg				10				32				62	104

PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Cars**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	35	32	0	67	18	96	0	114	87	58	0	145	326
7:15 AM	40	38	0	78	8	73	0	81	121	66	0	187	346
7:30 AM	53	45	0	98	15	81	0	96	131	57	0	188	382
7:45 AM	47	16	0	63	16	83	0	99	131	61	0	192	354
<b>Total</b>	<b>175</b>	<b>131</b>	<b>0</b>	<b>306</b>	<b>57</b>	<b>333</b>	<b>0</b>	<b>390</b>	<b>470</b>	<b>242</b>	<b>0</b>	<b>712</b>	<b>1408</b>
8:00 AM	41	14	0	55	18	91	2	111	120	77	0	197	363
8:15 AM	53	30	0	83	23	79	0	102	137	69	0	206	391
8:30 AM	39	19	0	58	26	92	0	118	117	68	0	185	361
8:45 AM	36	6	0	42	20	93	0	113	91	55	0	146	301
<b>Total</b>	<b>169</b>	<b>69</b>	<b>0</b>	<b>238</b>	<b>87</b>	<b>355</b>	<b>2</b>	<b>444</b>	<b>465</b>	<b>269</b>	<b>0</b>	<b>734</b>	<b>1416</b>
9:00 AM	23	21	0	44	9	84	0	93	129	30	0	159	296
9:15 AM	16	6	0	22	10	60	0	70	104	23	0	127	219
9:30 AM	13	8	0	21	7	64	0	71	80	15	0	95	187
9:45 AM	10	5	0	15	8	72	0	80	83	13	0	96	191
<b>Total</b>	<b>62</b>	<b>40</b>	<b>0</b>	<b>102</b>	<b>34</b>	<b>280</b>	<b>0</b>	<b>314</b>	<b>396</b>	<b>81</b>	<b>0</b>	<b>477</b>	<b>893</b>
10:00 AM	11	4	0	15	10	47	0	57	70	4	0	74	146
10:15 AM	7	9	0	16	6	50	0	56	88	15	0	103	175
10:30 AM	15	4	0	19	2	71	0	73	71	11	0	82	174
10:45 AM	7	4	0	11	1	42	0	43	68	6	0	74	128
<b>Total</b>	<b>40</b>	<b>21</b>	<b>0</b>	<b>61</b>	<b>19</b>	<b>210</b>	<b>0</b>	<b>229</b>	<b>297</b>	<b>36</b>	<b>0</b>	<b>333</b>	<b>623</b>
11:00 AM	18	5	0	23	3	50	0	53	77	7	0	84	160
11:15 AM	11	4	0	15	8	61	0	69	84	12	0	96	180
11:30 AM	38	9	0	47	5	48	0	53	77	18	0	95	195
11:45 AM	36	7	0	43	4	41	0	45	84	21	0	105	193
<b>Total</b>	<b>103</b>	<b>25</b>	<b>0</b>	<b>128</b>	<b>20</b>	<b>200</b>	<b>0</b>	<b>220</b>	<b>322</b>	<b>58</b>	<b>0</b>	<b>380</b>	<b>728</b>
Grand Total	549	286	0	835	217	1378	2	1597	1950	686	0	2636	5068
Approach %	65.7	34.3	0.0		13.6	86.3	0.1		74.0	26.0	0.0		
Total %	10.8	5.6	0.0	16.5	4.3	27.2	0.0	31.5	38.5	13.5	0.0	52.0	
Exiting Leg Total				903				2238				1927	5068

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	53	45	0	98	15	81	0	96	131	57	0	188	382
7:45 AM	47	16	0	63	16	83	0	99	131	61	0	192	354
8:00 AM	41	14	0	55	18	91	2	111	120	77	0	197	363
8:15 AM	53	30	0	83	23	79	0	102	137	69	0	206	391
Total Volume	194	105	0	299	72	334	2	408	519	264	0	783	1490
% Approach Total	64.9	35.1	0.0		17.6	81.9	0.5		66.3	33.7	0.0		
PHF	0.915	0.583	0.000	0.763	0.783	0.918	0.250	0.919	0.947	0.857	0.000	0.950	0.953
Entering Leg	194	105	0	299	72	334	2	408	519	264	0	783	1490
Exiting Leg				336				626				528	1490
Total				635				1034				1311	2980

PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Light Goods Vehicle**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	4	1	0	5	1	19	0	20	10	5	0	15	40
7:15 AM	1	3	0	4	0	16	0	16	12	9	0	21	41
7:30 AM	2	4	0	6	2	15	0	17	15	8	0	23	46
7:45 AM	3	1	0	4	0	31	0	31	14	4	0	18	53
<b>Total</b>	<b>10</b>	<b>9</b>	<b>0</b>	<b>19</b>	<b>3</b>	<b>81</b>	<b>0</b>	<b>84</b>	<b>51</b>	<b>26</b>	<b>0</b>	<b>77</b>	<b>180</b>
8:00 AM	1	3	0	4	0	22	0	22	12	5	0	17	43
8:15 AM	4	1	0	5	1	14	0	15	13	3	0	16	36
8:30 AM	3	0	0	3	3	20	0	23	17	5	0	22	48
8:45 AM	2	2	0	4	1	20	0	21	12	2	0	14	39
<b>Total</b>	<b>10</b>	<b>6</b>	<b>0</b>	<b>16</b>	<b>5</b>	<b>76</b>	<b>0</b>	<b>81</b>	<b>54</b>	<b>15</b>	<b>0</b>	<b>69</b>	<b>166</b>
9:00 AM	4	1	0	5	0	17	0	17	10	3	0	13	35
9:15 AM	1	2	0	3	2	14	0	16	16	4	0	20	39
9:30 AM	1	0	0	1	0	21	0	21	6	2	0	8	30
9:45 AM	2	1	0	3	1	19	0	20	18	3	0	21	44
<b>Total</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>3</b>	<b>71</b>	<b>0</b>	<b>74</b>	<b>50</b>	<b>12</b>	<b>0</b>	<b>62</b>	<b>148</b>
10:00 AM	2	1	0	3	1	17	0	18	14	5	0	19	40
10:15 AM	1	2	0	3	1	17	0	18	20	1	0	21	42
10:30 AM	0	0	0	0	0	15	0	15	15	2	0	17	32
10:45 AM	4	0	0	4	0	15	0	15	12	3	0	15	34
<b>Total</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>64</b>	<b>0</b>	<b>66</b>	<b>61</b>	<b>11</b>	<b>0</b>	<b>72</b>	<b>148</b>
11:00 AM	3	0	0	3	0	7	0	7	10	3	0	13	23
11:15 AM	5	0	0	5	0	10	0	10	10	3	0	13	28
11:30 AM	4	0	0	4	0	21	0	21	11	2	0	13	38
11:45 AM	5	1	0	6	0	13	0	13	11	2	0	13	32
<b>Total</b>	<b>17</b>	<b>1</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>51</b>	<b>0</b>	<b>51</b>	<b>42</b>	<b>10</b>	<b>0</b>	<b>52</b>	<b>121</b>
Grand Total	52	23	0	75	13	343	0	356	258	74	0	332	763
Approach %	69.3	30.7	0.0		3.7	96.3	0.0		77.7	22.3	0.0		
Total %	6.8	3.0	0.0	9.8	1.7	45.0	0.0	46.7	33.8	9.7	0.0	43.5	
Exiting Leg Total				87				281				395	763

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:15 AM	1	3	0	4	0	16	0	16	12	9	0	21	41
7:30 AM	2	4	0	6	2	15	0	17	15	8	0	23	46
7:45 AM	3	1	0	4	0	31	0	31	14	4	0	18	53
8:00 AM	1	3	0	4	0	22	0	22	12	5	0	17	43
Total Volume	7	11	0	18	2	84	0	86	53	26	0	79	183
% Approach Total	38.9	61.1	0.0		2.3	97.7	0.0		67.1	32.9	0.0		
PHF	0.583	0.688	0.000	0.750	0.250	0.677	0.000	0.694	0.883	0.722	0.000	0.859	0.863
Entering Leg	7	11	0	18	2	84	0	86	53	26	0	79	183
Exiting Leg				28				64				91	183
Total				46				150				170	366

PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Buses**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	1	0	0	1	0	1	0	1	0	0	0	0	2
Total	1	0	0	1	0	1	0	1	0	1	0	0	3
8:00 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
8:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	0	0	3	0	0	0	0	0	0	0	0	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	1
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	3	0	0	3	3
Total	0	0	0	0	0	0	0	0	3	0	0	3	3
Grand Total	4	0	0	4	0	2	0	2	4	0	0	4	10
Approach %	100.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
Total %	40.0	0.0	0.0	40.0	0.0	20.0	0.0	20.0	40.0	0.0	0.0	40.0	
Exiting Leg Total				0				4				6	10

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
7:45 AM	1	0	0	1	0	1	0	1	0	0	0	0	2
8:00 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
8:15 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	4	0	0	4	0	1	0	1	0	1	0	1	6
% Approach Total	100.0	0.0	0.0		0.0	100.0	0.0		100.0	0.0	0.0		
PHF	0.500	0.000	0.000	0.500	0.000	0.250	0.000	0.250	0.250	0.000	0.000	0.250	0.750
Entering Leg	4	0	0	4	0	1	0	1	1	0	0	1	6
Exiting Leg				0				1				5	6
Total				4				2				6	12

PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Single-Unit Trucks**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	1	0	0	1	0	1	0	1	2	1	0	3	5
7:15 AM	0	0	0	0	0	4	0	4	2	2	0	4	8
7:30 AM	2	0	0	2	0	4	0	4	2	0	0	2	8
7:45 AM	0	1	0	1	0	2	0	2	5	0	0	5	8
Total	3	1	0	4	0	11	0	11	11	3	0	14	29
8:00 AM	2	0	0	2	0	2	0	2	2	0	0	2	6
8:15 AM	1	0	0	1	0	4	0	4	1	1	0	2	7
8:30 AM	2	1	0	3	1	6	0	7	2	1	0	3	13
8:45 AM	2	1	0	3	0	9	0	9	7	3	0	10	22
Total	7	2	0	9	1	21	0	22	12	5	0	17	48
9:00 AM	2	0	0	2	1	6	0	7	5	0	0	5	14
9:15 AM	3	0	0	3	1	7	0	8	7	2	0	9	20
9:30 AM	1	0	0	1	0	4	0	4	4	0	0	4	9
9:45 AM	0	0	0	0	0	4	0	4	3	1	0	4	8
Total	6	0	0	6	2	21	0	23	19	3	0	22	51
10:00 AM	2	1	0	3	1	4	0	5	6	0	0	6	14
10:15 AM	0	0	0	0	0	5	0	5	6	0	0	6	11
10:30 AM	0	0	0	0	0	9	0	9	10	0	0	10	19
10:45 AM	2	0	0	2	0	6	0	6	4	0	0	4	12
Total	4	1	0	5	1	24	0	25	26	0	0	26	56
11:00 AM	0	0	0	0	1	3	0	4	4	0	0	4	8
11:15 AM	0	0	0	0	0	4	0	4	6	1	0	7	11
11:30 AM	1	0	0	1	1	3	0	4	5	0	0	5	10
11:45 AM	2	0	0	2	0	3	0	3	6	0	0	6	11
Total	3	0	0	3	2	13	0	15	21	1	0	22	40
Grand Total	23	4	0	27	6	90	0	96	89	12	0	101	224
Approach %	85.2	14.8	0.0		6.3	93.8	0.0		88.1	11.9	0.0		
Total %	10.3	1.8	0.0	12.1	2.7	40.2	0.0	42.9	39.7	5.4	0.0	45.1	
Exiting Leg Total				18				93				113	224

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

8:30 AM	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
8:30 AM	2	1	0	3	1	6	0	7	2	1	0	3	13
8:45 AM	2	1	0	3	0	9	0	9	7	3	0	10	22
9:00 AM	2	0	0	2	1	6	0	7	5	0	0	5	14
9:15 AM	3	0	0	3	1	7	0	8	7	2	0	9	20
Total Volume	9	2	0	11	3	28	0	31	21	6	0	27	69
% Approach Total	81.8	18.2	0.0		9.7	90.3	0.0		77.8	22.2	0.0		
PHF	0.750	0.500	0.000	0.917	0.750	0.778	0.000	0.861	0.750	0.500	0.000	0.675	0.784
Entering Leg	9	2	0	11	3	28	0	31	21	6	0	27	69
Exiting Leg				9				23				37	69
Total				20				54				64	138

PDI File #: **186440 I**  
 Location: **N: Frontage Road S: Frontage Road**  
 Location: **E: I-93 SB Ramps**  
 City, State: **Andover, MA**  
 Client: **TEC/ S. Gregorio**  
 Site Code: **T0525**  
 Count Date: **Thursday, September 13, 2018**  
 Start Time: **7:00 AM**  
 End Time: **12:00 PM**  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Articulated Trucks**

	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	1	0	1	2	0	0	2	3
7:15 AM	0	0	0	0	0	3	0	3	3	0	0	3	6
7:30 AM	0	0	0	0	0	6	0	6	4	0	0	4	10
7:45 AM	0	0	0	0	0	9	0	9	2	1	0	3	12
Total	0	0	0	0	0	19	0	19	11	1	0	12	31
8:00 AM	1	0	0	1	1	3	0	4	2	0	0	2	7
8:15 AM	0	0	0	0	0	8	0	8	3	0	0	3	11
8:30 AM	0	0	0	0	0	4	0	4	5	0	0	5	9
8:45 AM	0	0	0	0	0	4	0	4	0	1	0	1	5
Total	1	0	0	1	1	19	0	20	10	1	0	11	32
9:00 AM	0	0	0	0	0	8	0	8	2	0	0	2	10
9:15 AM	1	0	0	1	0	8	0	8	2	0	0	2	11
9:30 AM	0	0	0	0	0	4	0	4	2	0	0	2	6
9:45 AM	0	0	0	0	0	5	0	5	1	1	0	2	7
Total	1	0	0	1	0	25	0	25	7	1	0	8	34
10:00 AM	0	0	0	0	0	7	0	7	2	0	0	2	9
10:15 AM	0	0	0	0	0	5	0	5	1	0	0	1	6
10:30 AM	0	1	0	1	0	4	0	4	4	1	0	5	10
10:45 AM	0	0	0	0	0	4	0	4	9	0	0	9	13
Total	0	1	0	1	0	20	0	20	16	1	0	17	38
11:00 AM	0	0	0	0	0	6	0	6	3	0	0	3	9
11:15 AM	0	0	0	0	0	1	0	1	3	0	0	3	4
11:30 AM	0	0	0	0	0	3	0	3	0	0	0	0	3
11:45 AM	0	0	0	0	0	2	0	2	6	0	0	6	8
Total	0	0	0	0	0	12	0	12	12	0	0	12	24
Grand Total	2	1	0	3	1	95	0	96	56	4	0	60	159
Approach %	66.7	33.3	0.0		1.0	99.0	0.0		93.3	6.7	0.0		
Total %	1.3	0.6	0.0	1.9	0.6	59.7	0.0	60.4	35.2	2.5	0.0	37.7	
Exiting Leg Total				5				57				97	159

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

7:30 AM	Frontage Road				I-93 SB Ramps				Frontage Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:30 AM	0	0	0	0	0	6	0	6	4	0	0	4	10
7:45 AM	0	0	0	0	0	9	0	9	2	1	0	3	12
8:00 AM	1	0	0	1	1	3	0	4	2	0	0	2	7
8:15 AM	0	0	0	0	0	8	0	8	3	0	0	3	11
Total Volume	1	0	0	1	1	26	0	27	11	1	0	12	40
% Approach Total	100.0	0.0	0.0		3.7	96.3	0.0		91.7	8.3	0.0		
PHF	0.250	0.000	0.000	0.250	0.250	0.722	0.000	0.750	0.688	0.250	0.000	0.750	0.833
Entering Leg	1	0	0	1	1	26	0	27	11	1	0	12	40
Exiting Leg				2				11				27	40
Total				3				38				39	80

PDI File #: 186440 I  
 Location: N: Frontage Road S: Frontage Road  
 Location: E: I-93 SB Ramps  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

**Bicycles (on Roadway and Crosswalks)**

	Frontage Road						I-93 SB Ramps						Frontage Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
Approach %	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		
Total %	50.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	50.0	
Exiting Leg Total	1						0						1						2

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

8:30 AM	Frontage Road						I-93 SB Ramps						Frontage Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Approach Total	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Exiting Leg	0						0						1						1
Total	1						0						1						2

PDI File #: 186440 I  
 Location: N: Frontage Road S: Frontage Road  
 Location: E: I-93 SB Ramps  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio  
 Site Code: T0525  
 Count Date: Thursday, September 13, 2018  
 Start Time: 7:00 AM  
 End Time: 12:00 PM  
 Class:



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdilic.com

**Pedestrians**

	Frontage Road						I-93 SB Ramps						Frontage Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Approach %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	100
Total %	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	100
Exiting Leg Total	0						0						1						1

Peak Hour Analysis from 07:00 AM to 12:00 PM begins at:

9:15 AM	Frontage Road						I-93 SB Ramps						Frontage Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Exiting Leg	0						0						1						1
Total	0						0						2						2

# Accurate Counts

978-664-2565

File Name : 05250001

Site Code : 05250001

Start Date : 9/20/2018

Page No : 1

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

### Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East		Shawsheen Rd From South		East St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	91	153	15	104	138	12	513
04:15 PM	105	145	26	130	139	8	553
04:30 PM	111	149	25	155	148	10	598
04:45 PM	129	159	13	117	129	3	550
Total	436	606	79	506	554	33	2214
05:00 PM	124	190	16	132	124	6	592
05:15 PM	120	148	8	152	144	8	580
05:30 PM	142	150	8	97	119	9	525
05:45 PM	100	168	11	101	101	11	492
Total	486	656	43	482	488	34	2189
Grand Total	922	1262	122	988	1042	67	4403
Apprch %	42.2	57.8	11	89	94	6	
Total %	20.9	28.7	2.8	22.4	23.7	1.5	
Cars	911	1236	121	981	1031	66	4346
% Cars	98.8	97.9	99.2	99.3	98.9	98.5	98.7
Trucks	11	26	1	7	11	1	57
% Trucks	1.2	2.1	0.8	0.7	1.1	1.5	1.3

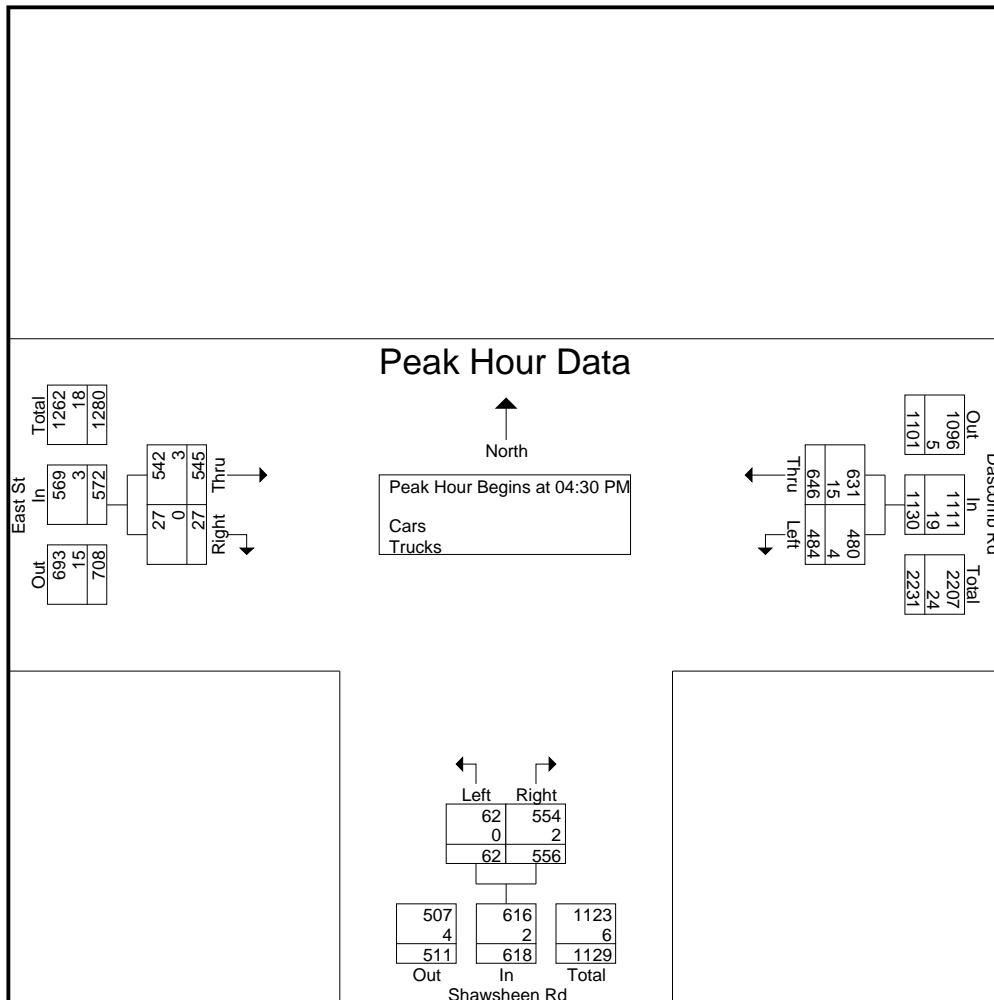
# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250001  
 Site Code : 05250001  
 Start Date : 9/20/2018  
 Page No : 2

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	111	149	260	25	155	180	148	10	158	598
04:45 PM	129	159	288	13	117	130	129	3	132	550
05:00 PM	124	190	314	16	132	148	124	6	130	592
05:15 PM	120	148	268	8	152	160	144	8	152	580
Total Volume	484	646	1130	62	556	618	545	27	572	2320
% App. Total	42.8	57.2		10	90		95.3	4.7		
PHF	.938	.850	.900	.620	.897	.858	.921	.675	.905	.970
Cars	480	631	1111	62	554	616	542	27	569	2296
% Cars	99.2	97.7	98.3	100	99.6	99.7	99.4	100	99.5	99.0
Trucks	4	15	19	0	2	2	3	0	3	24
% Trucks	0.8	2.3	1.7	0	0.4	0.3	0.6	0	0.5	1.0



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

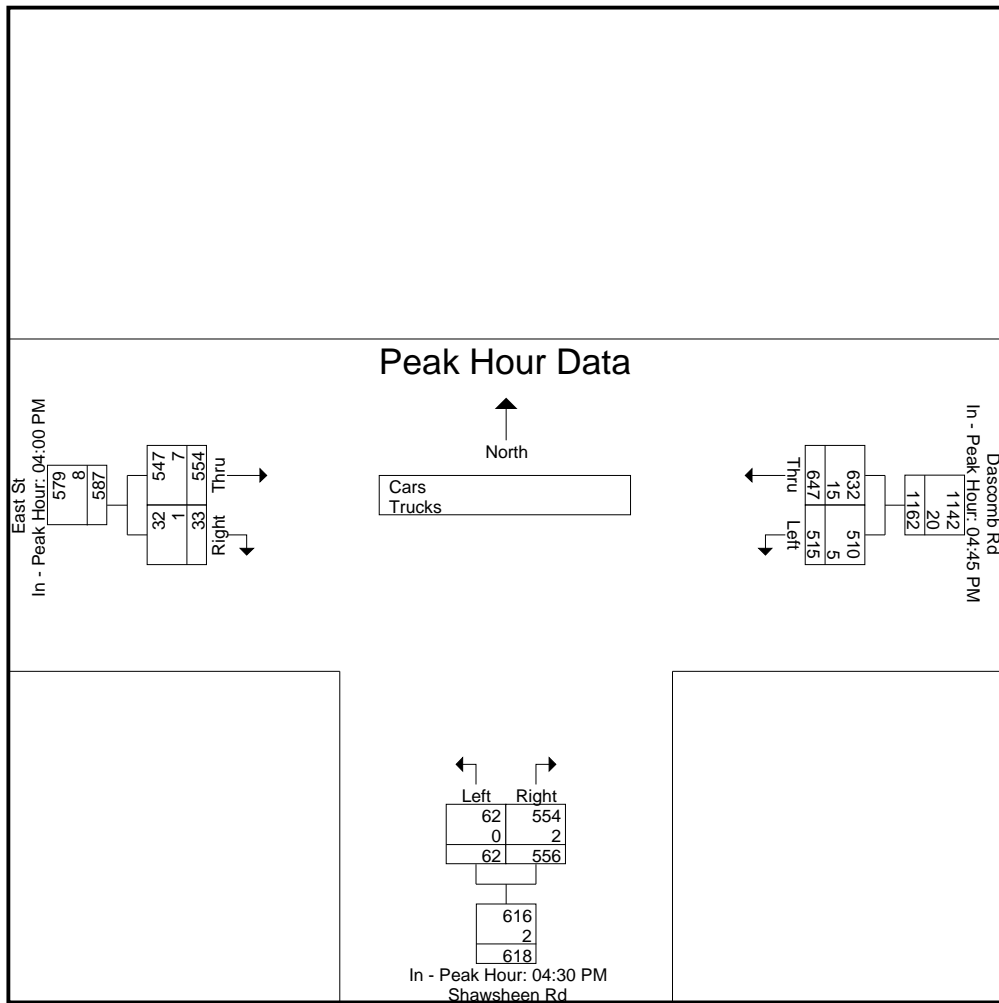
File Name : 05250001  
 Site Code : 05250001  
 Start Date : 9/20/2018  
 Page No : 3

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:30 PM			04:00 PM		
+0 mins.	129	159	288	<b>25</b>	<b>155</b>	<b>180</b>	138	<b>12</b>	150
+15 mins.	124	<b>190</b>	<b>314</b>	13	117	130	139	8	147
+30 mins.	120	148	268	16	132	148	<b>148</b>	10	<b>158</b>
+45 mins.	<b>142</b>	150	292	8	152	160	129	3	132
Total Volume	515	647	1162	62	556	618	554	33	587
% App. Total	44.3	55.7		10	90		94.4	5.6	
PHF	.907	.851	.925	.620	.897	.858	.936	.688	.929
Cars	510	632	1142	62	554	616	547	32	579
% Cars	99	97.7	98.3	100	99.6	99.7	98.7	97	98.6
Trucks	5	15	20	0	2	2	7	1	8
% Trucks	1	2.3	1.7	0	0.4	0.3	1.3	3	1.4



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250001  
 Site Code : 05250001  
 Start Date : 9/20/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Dascomb Rd From East		Shawsheen Rd From South		East St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	90	149	15	102	134	11	501
04:15 PM	103	143	25	129	137	8	545
04:30 PM	110	147	25	155	147	10	594
04:45 PM	127	149	13	117	129	3	538
Total	430	588	78	503	547	32	2178
05:00 PM	123	189	16	131	123	6	588
05:15 PM	120	146	8	151	143	8	576
05:30 PM	140	148	8	96	118	9	519
05:45 PM	98	165	11	100	100	11	485
Total	481	648	43	478	484	34	2168
Grand Total	911	1236	121	981	1031	66	4346
Apprch %	42.4	57.6	11	89	94	6	
Total %	21	28.4	2.8	22.6	23.7	1.5	

# Accurate Counts

978-664-2565

File Name : 05250001

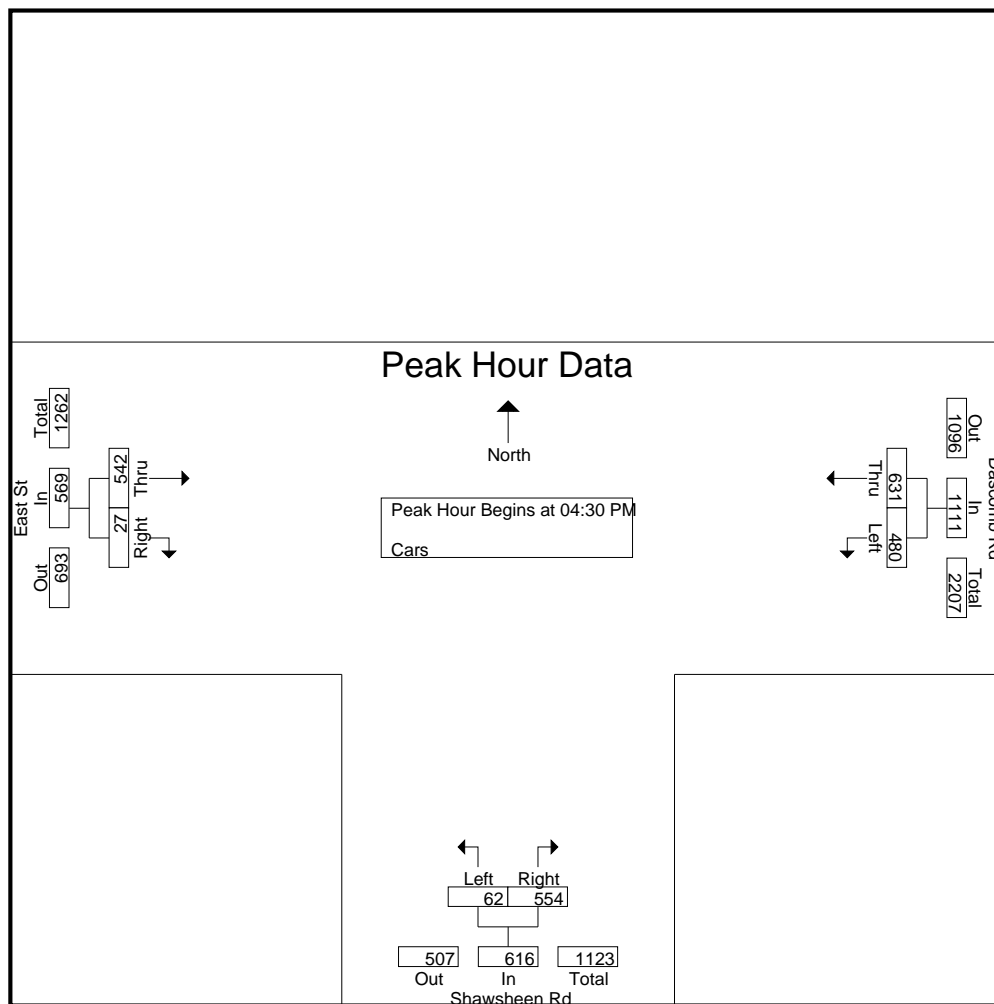
Site Code : 05250001

Start Date : 9/20/2018

Page No : 5

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	110	147	257	25	155	180	147	10	157	594
04:45 PM	127	149	276	13	117	130	129	3	132	538
05:00 PM	123	189	312	16	131	147	123	6	129	588
05:15 PM	120	146	266	8	151	159	143	8	151	576
Total Volume	480	631	1111	62	554	616	542	27	569	2296
% App. Total	43.2	56.8		10.1	89.9		95.3	4.7		
PHF	.945	.835	.890	.620	.894	.856	.922	.675	.906	.966



# Accurate Counts

978-664-2565

File Name : 05250001

Site Code : 05250001

Start Date : 9/20/2018

Page No : 6

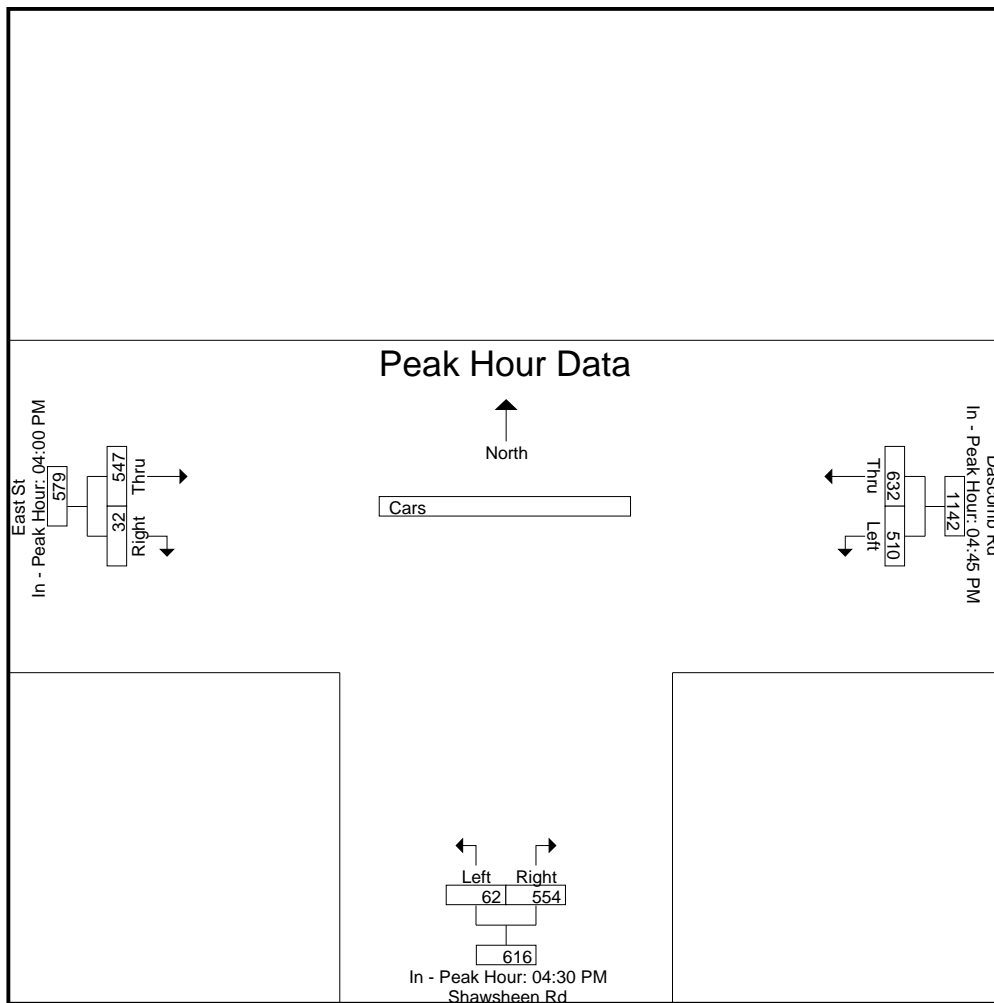
N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:30 PM			04:00 PM		
+0 mins.	127	149	276	<b>25</b>	<b>155</b>	<b>180</b>	134	<b>11</b>	145
+15 mins.	123	<b>189</b>	<b>312</b>	13	117	130	137	8	145
+30 mins.	120	146	266	16	131	147	<b>147</b>	10	<b>157</b>
+45 mins.	<b>140</b>	148	288	8	151	159	129	3	132
Total Volume	510	632	1142	62	554	616	547	32	579
% App. Total	44.7	55.3		10.1	89.9		94.5	5.5	
PHF	.911	.836	.915	.620	.894	.856	.930	.727	.922



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250001  
 Site Code : 05250001  
 Start Date : 9/20/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Dascomb Rd From East		Shawsheen Rd From South		East St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	1	4	0	2	4	1	12
04:15 PM	2	2	1	1	2	0	8
04:30 PM	1	2	0	0	1	0	4
04:45 PM	2	10	0	0	0	0	12
<b>Total</b>	<b>6</b>	<b>18</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>1</b>	<b>36</b>
05:00 PM	1	1	0	1	1	0	4
05:15 PM	0	2	0	1	1	0	4
05:30 PM	2	2	0	1	1	0	6
05:45 PM	2	3	0	1	1	0	7
<b>Total</b>	<b>5</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>21</b>
<b>Grand Total</b>	<b>11</b>	<b>26</b>	<b>1</b>	<b>7</b>	<b>11</b>	<b>1</b>	<b>57</b>
Apprch %	29.7	70.3	12.5	87.5	91.7	8.3	
Total %	19.3	45.6	1.8	12.3	19.3	1.8	

# Accurate Counts

978-664-2565

File Name : 05250001

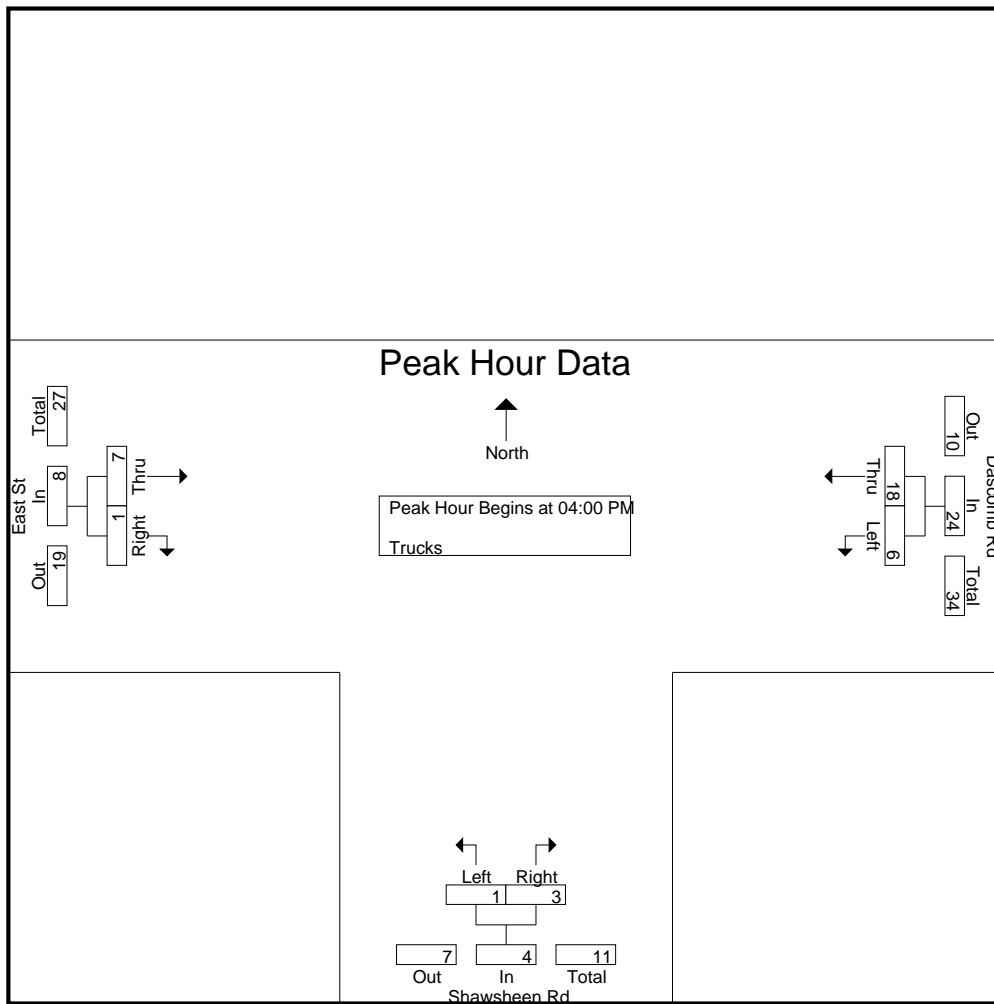
Site Code : 05250001

Start Date : 9/20/2018

Page No : 8

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	1	4	5	0	2	2	4	1	5	12
04:15 PM	2	2	4	1	1	2	2	0	2	8
04:30 PM	1	2	3	0	0	0	1	0	1	4
04:45 PM	2	10	12	0	0	0	0	0	0	12
<b>Total Volume</b>	6	18	24	1	3	4	7	1	8	36
<b>% App. Total</b>	25	75		25	75		87.5	12.5		
PHF	.750	.450	.500	.250	.375	.500	.438	.250	.400	.750



# Accurate Counts

978-664-2565

File Name : 05250001

Site Code : 05250001

Start Date : 9/20/2018

Page No : 9

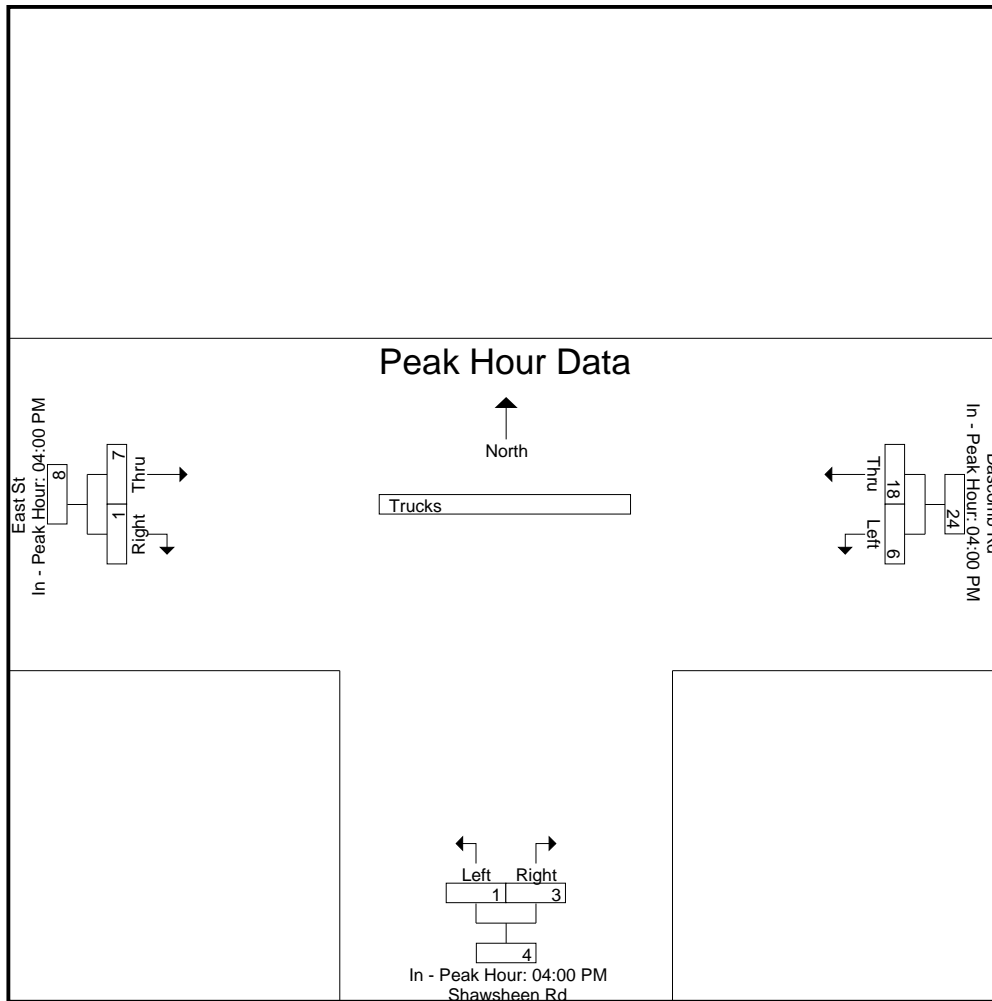
N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	1	4	5	0	2	2	4	1	5
+15 mins.	2	2	4	1	1	2	2	0	2
+30 mins.	1	2	3	0	0	0	1	0	1
+45 mins.	2	10	12	0	0	0	0	0	0
Total Volume	6	18	24	1	3	4	7	1	8
% App. Total	25	75		25	75		87.5	12.5	
PHF	.750	.450	.500	.250	.375	.500	.438	.250	.400



# Accurate Counts

978-664-2565

File Name : 05250001

Site Code : 05250001

Start Date : 9/20/2018

Page No : 10

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	1	0	0	0	0	0	0	0	0	0	1	1
<b>Grand Total</b>	1	0	0	0	0	0	0	0	0	0	1	1
Aprch %	100	0		0	0		0	0				
Total %	100	0		0	0		0	0		0	100	

# Accurate Counts

978-664-2565

File Name : 05250001

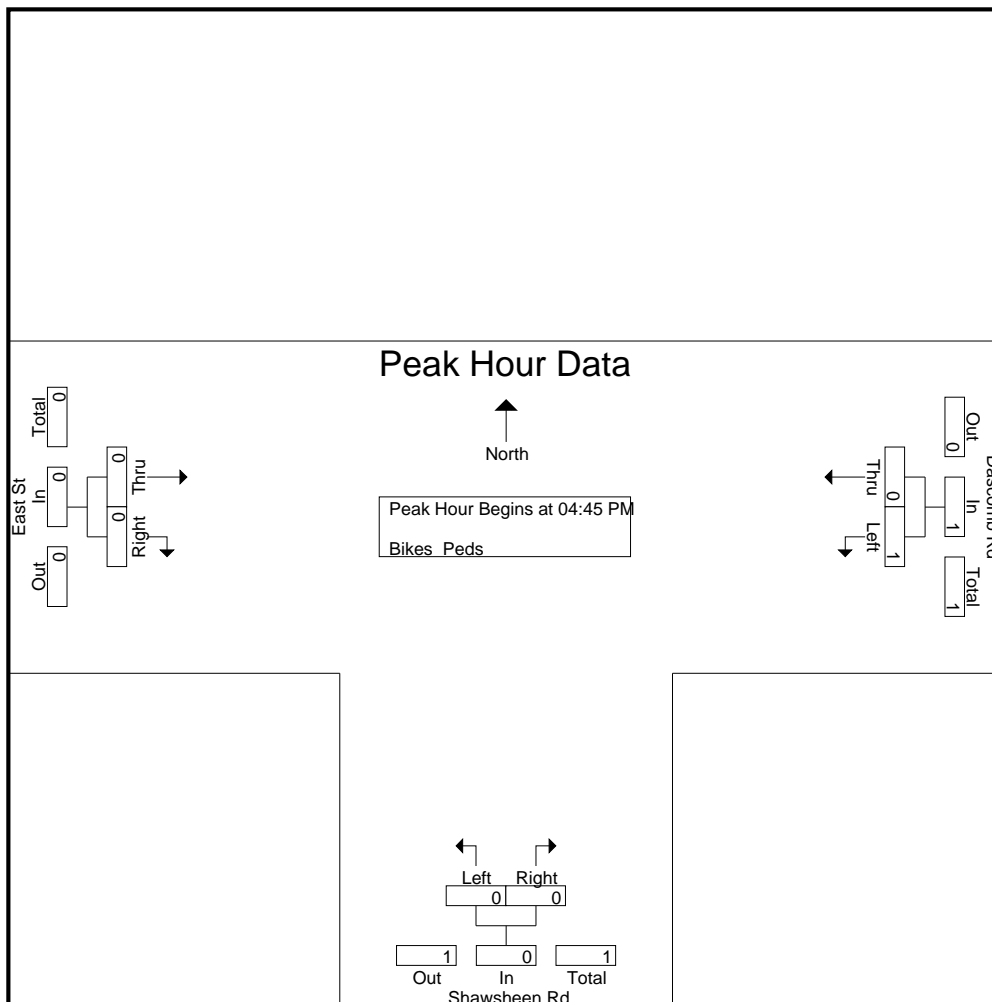
Site Code : 05250001

Start Date : 9/20/2018

Page No : 11

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	1	0	1	0	0	0	0	0	0	1
<b>Total Volume</b>	1	0	1	0	0	0	0	0	0	1
<b>% App. Total</b>	100	0		0	0		0	0		
<b>PHF</b>	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250



# Accurate Counts

978-664-2565

File Name : 05250001

Site Code : 05250001

Start Date : 9/20/2018

Page No : 12

N/S Street : Shawsheen Street

E/W Street: Dascomb Rd / East St

City/State : Andover, MA

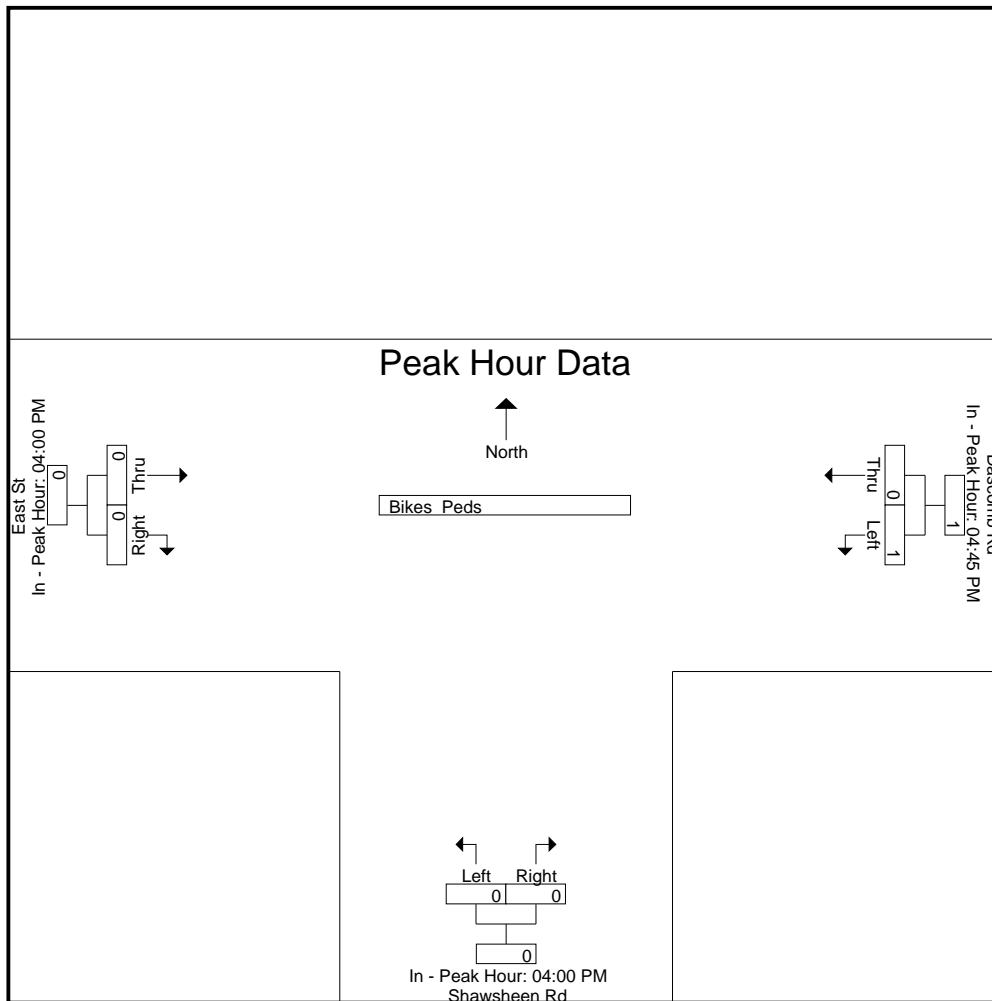
Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	1	0	1	0	0	0	0	0	0
Total Volume	1	0	1	0	0	0	0	0	0
% App. Total	100	0		0	0		0	0	
PHF	.250	.000	.250	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

File Name : 05250002

Site Code : 05250002

Start Date : 9/20/2018

Page No : 1

N/S Street : HP Driveway

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

## Groups Printed- Cars - Trucks

Start Time	HP Drwy From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:00 PM	0	2	251	1	0	252	506
04:15 PM	5	3	242	3	1	264	518
04:30 PM	3	5	245	0	2	291	546
04:45 PM	1	4	284	2	0	247	538
Total	9	14	1022	6	3	1054	2108
05:00 PM	1	7	307	1	1	241	558
05:15 PM	2	6	256	0	0	308	572
05:30 PM	1	1	294	0	2	207	505
05:45 PM	1	5	268	1	1	198	474
Total	5	19	1125	2	4	954	2109
Grand Total	14	33	2147	8	7	2008	4217
Apprch %	29.8	70.2	99.6	0.4	0.3	99.7	
Total %	0.3	0.8	50.9	0.2	0.2	47.6	
Cars	9	32	2110	4	7	1992	4154
% Cars	64.3	97	98.3	50	100	99.2	98.5
Trucks	5	1	37	4	0	16	63
% Trucks	35.7	3	1.7	50	0	0.8	1.5

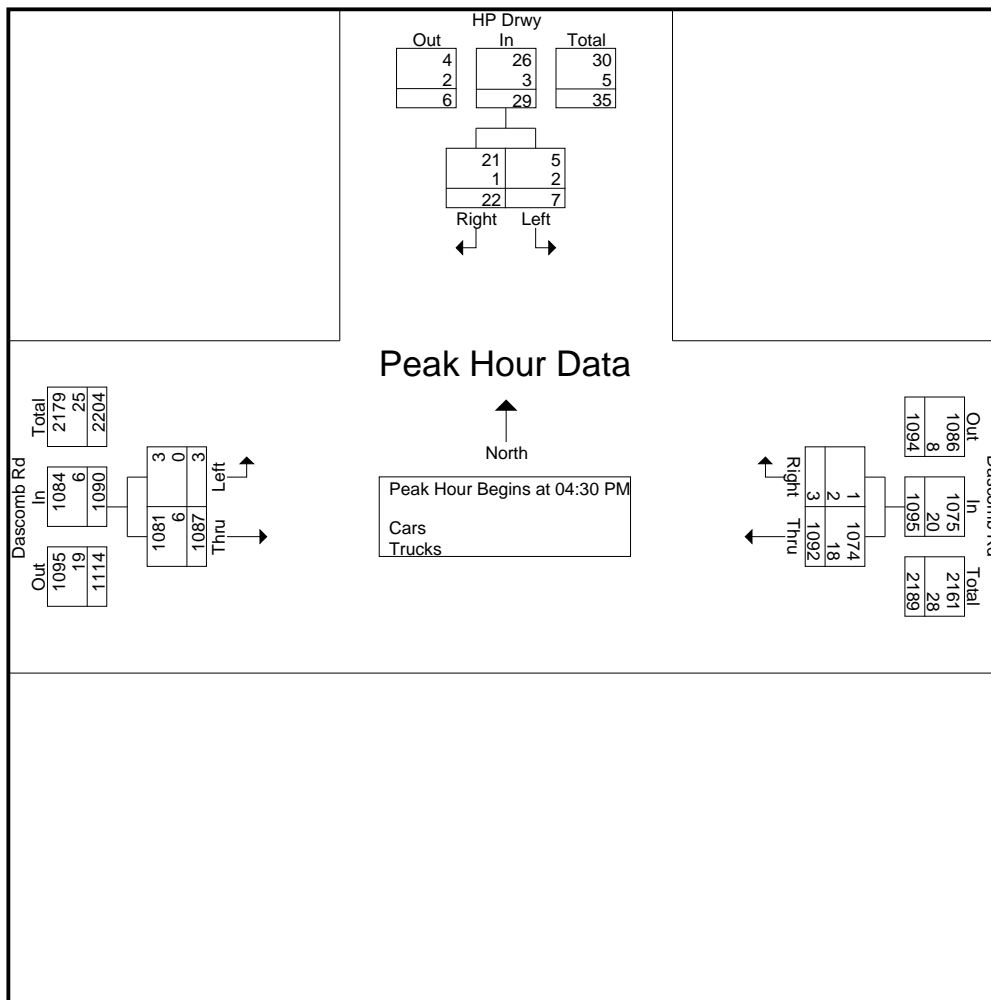
# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250002  
 Site Code : 05250002  
 Start Date : 9/20/2018  
 Page No : 2

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	3	5	8	245	0	245	2	291	293	546
04:45 PM	1	4	5	284	2	286	0	247	247	538
05:00 PM	1	7	8	307	1	308	1	241	242	558
05:15 PM	2	6	8	256	0	256	0	308	308	572
Total Volume	7	22	29	1092	3	1095	3	1087	1090	2214
% App. Total	24.1	75.9		99.7	0.3		0.3	99.7		
PHF	.583	.786	.906	.889	.375	.889	.375	.882	.885	.968
Cars	5	21	26	1074	1	1075	3	1081	1084	2185
% Cars	71.4	95.5	89.7	98.4	33.3	98.2	100	99.4	99.4	98.7
Trucks	2	1	3	18	2	20	0	6	6	29
% Trucks	28.6	4.5	10.3	1.6	66.7	1.8	0	0.6	0.6	1.3



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

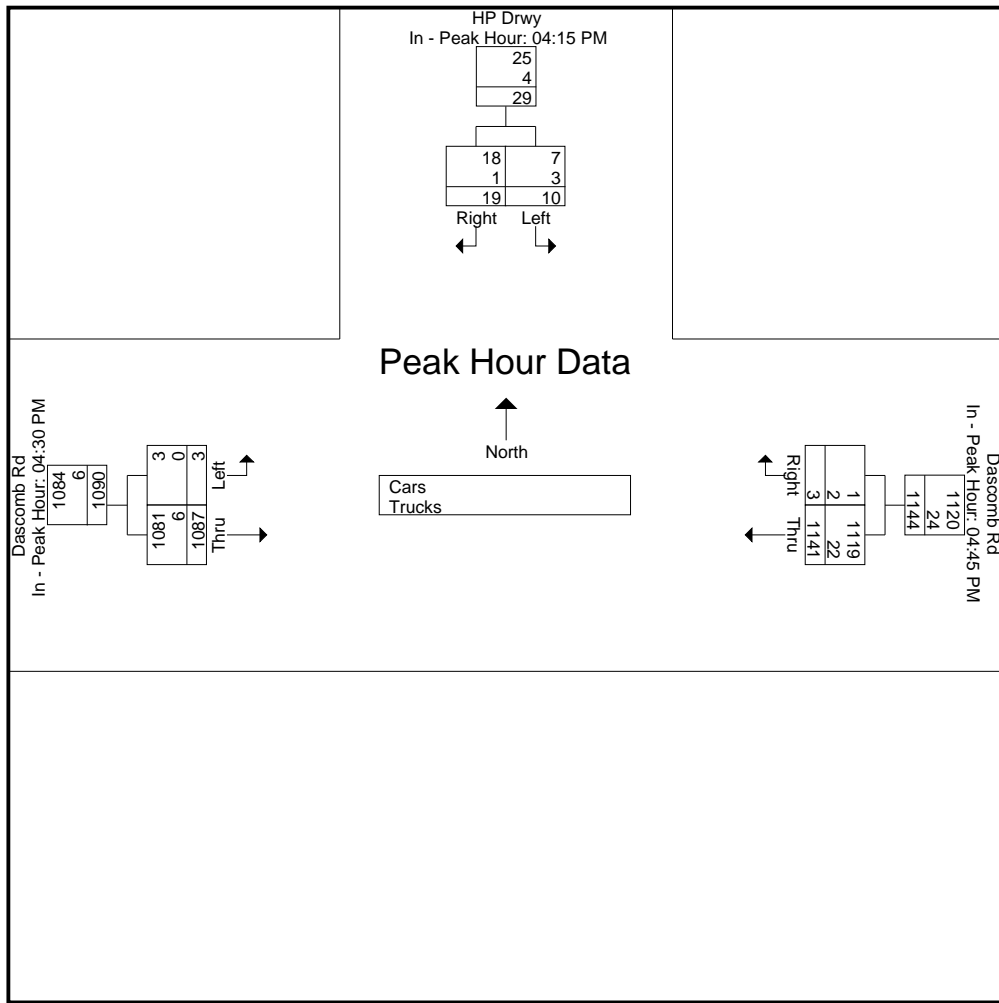
File Name : 05250002  
 Site Code : 05250002  
 Start Date : 9/20/2018  
 Page No : 3

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM			04:45 PM			04:30 PM		
+0 mins.	5	3	8	284	2	286	2	291	293
+15 mins.	3	5	8	307	1	308	0	247	247
+30 mins.	1	4	5	256	0	256	1	241	242
+45 mins.	1	7	8	294	0	294	0	308	308
<b>Total Volume</b>	10	19	29	1141	3	1144	3	1087	1090
<b>% App. Total</b>	34.5	65.5		99.7	0.3		0.3	99.7	
PHF	.500	.679	.906	.929	.375	.929	.375	.882	.885
Cars	7	18	25	1119	1	1120	3	1081	1084
% Cars	70	94.7	86.2	98.1	33.3	97.9	100	99.4	99.4
Trucks	3	1	4	22	2	24	0	6	6
% Trucks	30	5.3	13.8	1.9	66.7	2.1	0	0.6	0.6



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250002  
 Site Code : 05250002  
 Start Date : 9/20/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	HP Drwy From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:00 PM	0	2	245	1	0	247	495
04:15 PM	3	3	240	1	1	261	509
04:30 PM	2	4	243	0	2	290	541
04:45 PM	1	4	272	1	0	246	524
Total	6	13	1000	3	3	1044	2069
05:00 PM	1	7	305	0	1	239	553
05:15 PM	1	6	254	0	0	306	567
05:30 PM	0	1	288	0	2	207	498
05:45 PM	1	5	263	1	1	196	467
Total	3	19	1110	1	4	948	2085
Grand Total	9	32	2110	4	7	1992	4154
Apprch %	22	78	99.8	0.2	0.4	99.6	
Total %	0.2	0.8	50.8	0.1	0.2	48	

# Accurate Counts

978-664-2565

File Name : 05250002

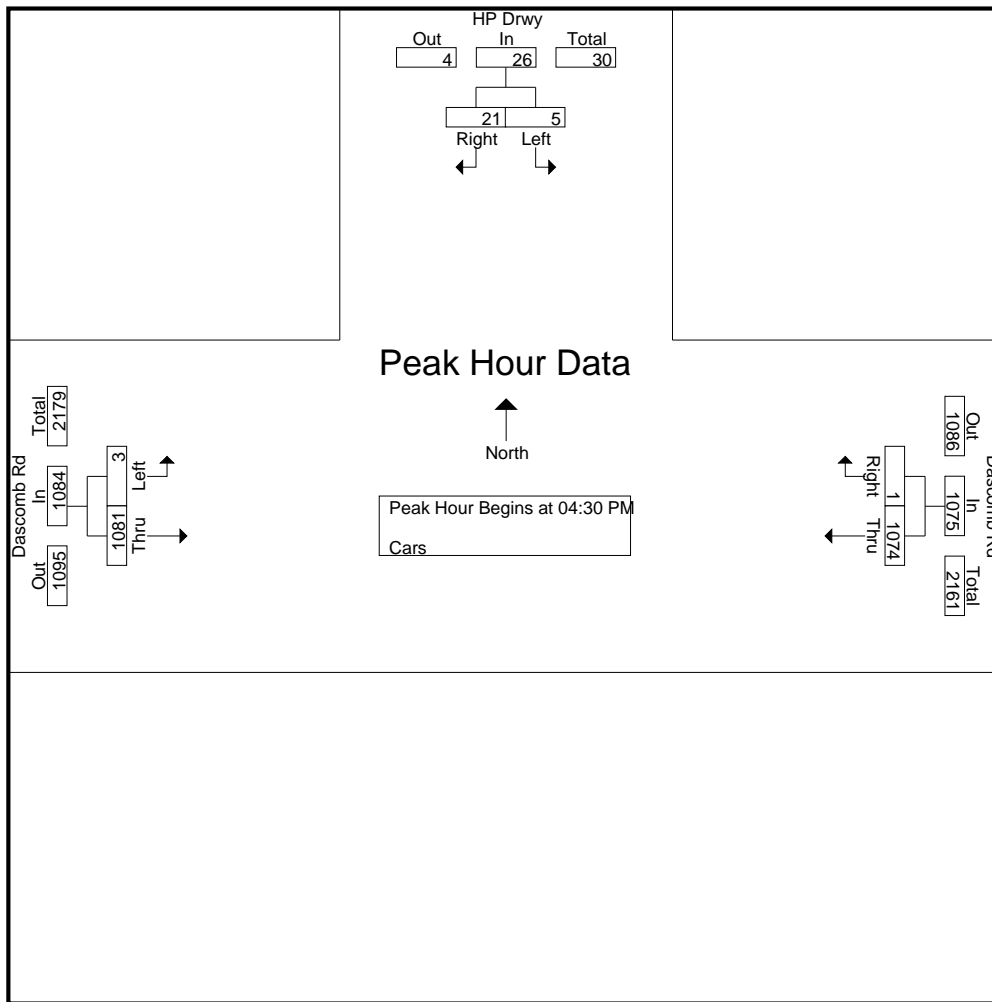
Site Code : 05250002

Start Date : 9/20/2018

Page No : 5

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	2	4	6	243	0	243	2	290	292	541
04:45 PM	1	4	5	272	1	273	0	246	246	524
05:00 PM	1	7	8	305	0	305	1	239	240	553
05:15 PM	1	6	7	254	0	254	0	306	306	567
<b>Total Volume</b>	5	21	26	1074	1	1075	3	1081	1084	2185
<b>% App. Total</b>	19.2	80.8		99.9	0.1		0.3	99.7		
PHF	.625	.750	.813	.880	.250	.881	.375	.883	.886	.963



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

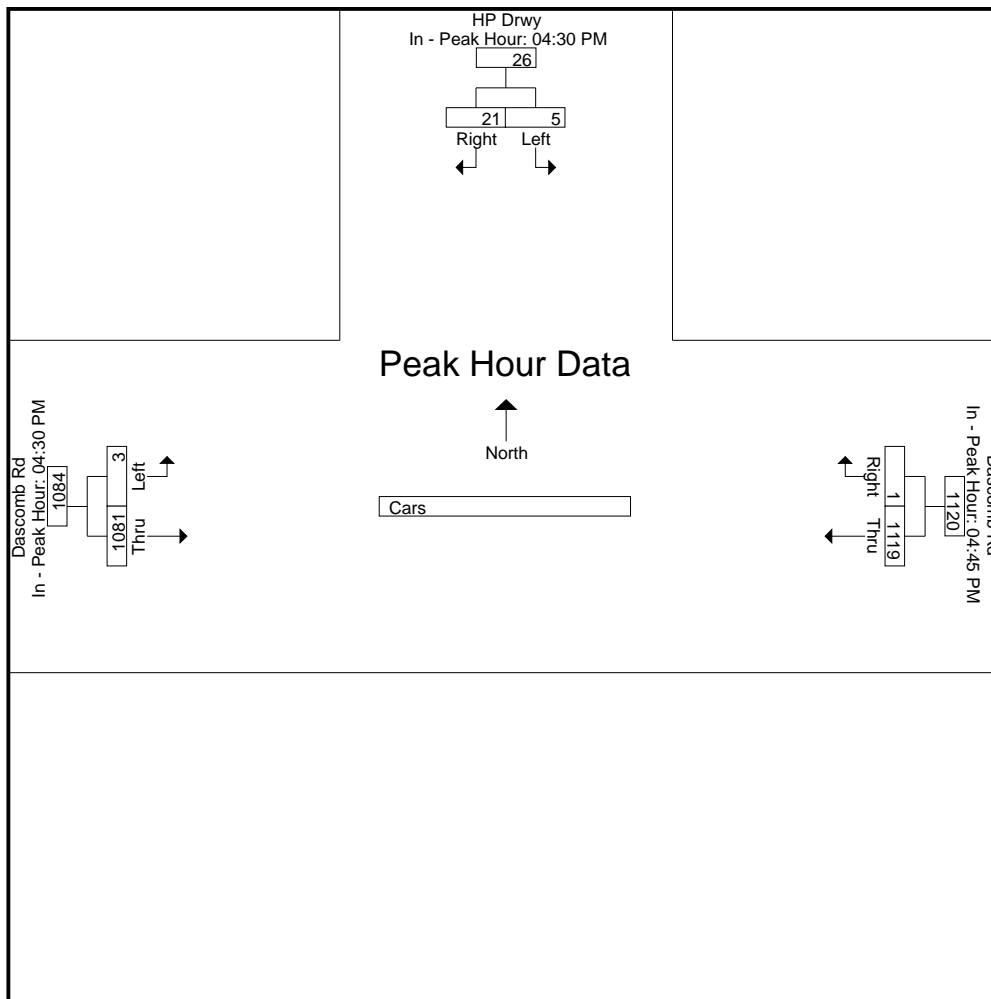
File Name : 05250002  
 Site Code : 05250002  
 Start Date : 9/20/2018  
 Page No : 6

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:30 PM		
+0 mins.	<b>2</b>	4	6	272	<b>1</b>	273	<b>2</b>	290	292
+15 mins.	1	4	5	<b>305</b>	0	<b>305</b>	0	246	246
+30 mins.	1	<b>7</b>	<b>8</b>	254	0	254	1	239	240
+45 mins.	1	6	7	288	0	288	0	<b>306</b>	<b>306</b>
Total Volume	5	21	26	1119	1	1120	3	1081	1084
% App. Total	19.2	80.8		99.9	0.1		0.3	99.7	
PHF	.625	.750	.813	.917	.250	.918	.375	.883	.886



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250002  
 Site Code : 05250002  
 Start Date : 9/20/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	HP Drwy From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:00 PM	0	0	6	0	0	5	11
04:15 PM	2	0	2	2	0	3	9
04:30 PM	1	1	2	0	0	1	5
04:45 PM	0	0	12	1	0	1	14
Total	3	1	22	3	0	10	39
05:00 PM	0	0	2	1	0	2	5
05:15 PM	1	0	2	0	0	2	5
05:30 PM	1	0	6	0	0	0	7
05:45 PM	0	0	5	0	0	2	7
Total	2	0	15	1	0	6	24
Grand Total	5	1	37	4	0	16	63
Apprch %	83.3	16.7	90.2	9.8	0	100	
Total %	7.9	1.6	58.7	6.3	0	25.4	

# Accurate Counts

978-664-2565

File Name : 05250002

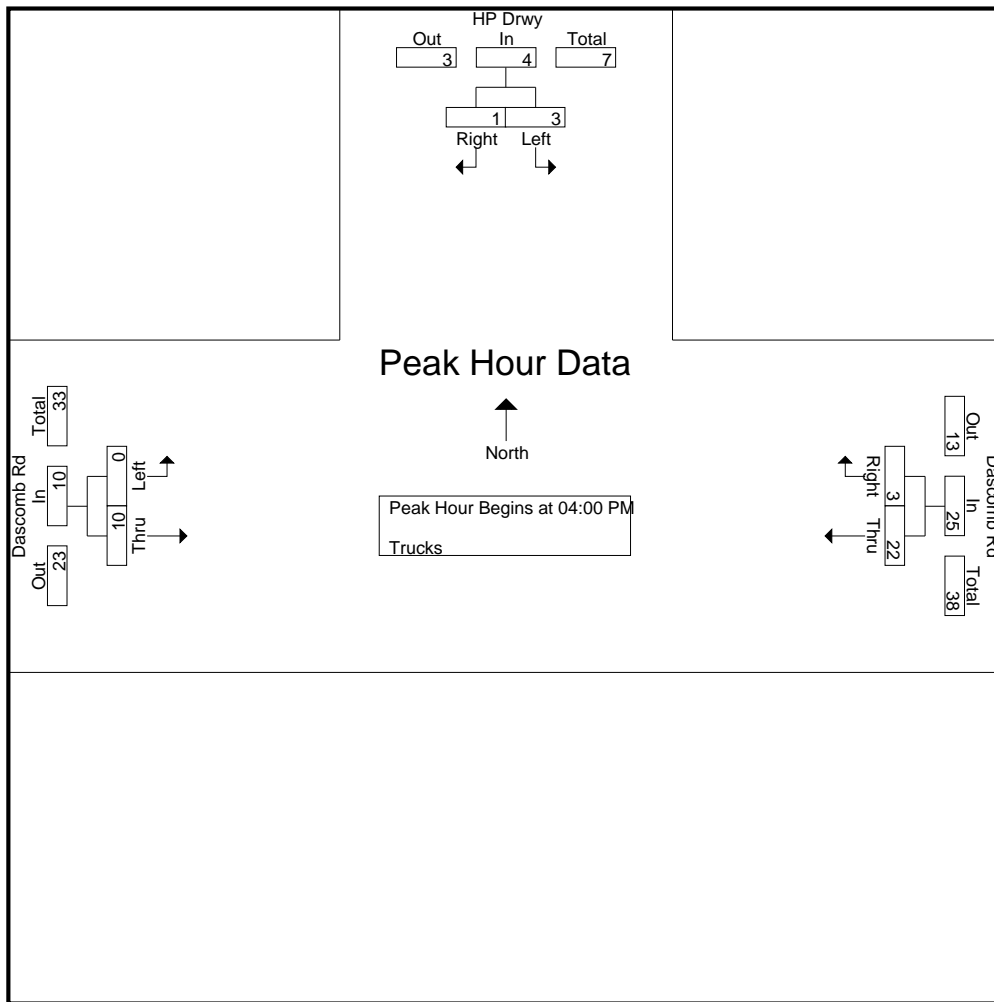
Site Code : 05250002

Start Date : 9/20/2018

Page No : 8

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	6	0	6	0	5	5	11
04:15 PM	2	0	2	2	2	4	0	3	3	9
04:30 PM	1	1	2	2	0	2	0	1	1	5
04:45 PM	0	0	0	12	1	13	0	1	1	14
<b>Total Volume</b>	3	1	4	22	3	25	0	10	10	39
<b>% App. Total</b>	75	25		88	12		0	100		
PHF	.375	.250	.500	.458	.375	.481	.000	.500	.500	.696



# Accurate Counts

978-664-2565

File Name : 05250002

Site Code : 05250002

Start Date : 9/20/2018

Page No : 9

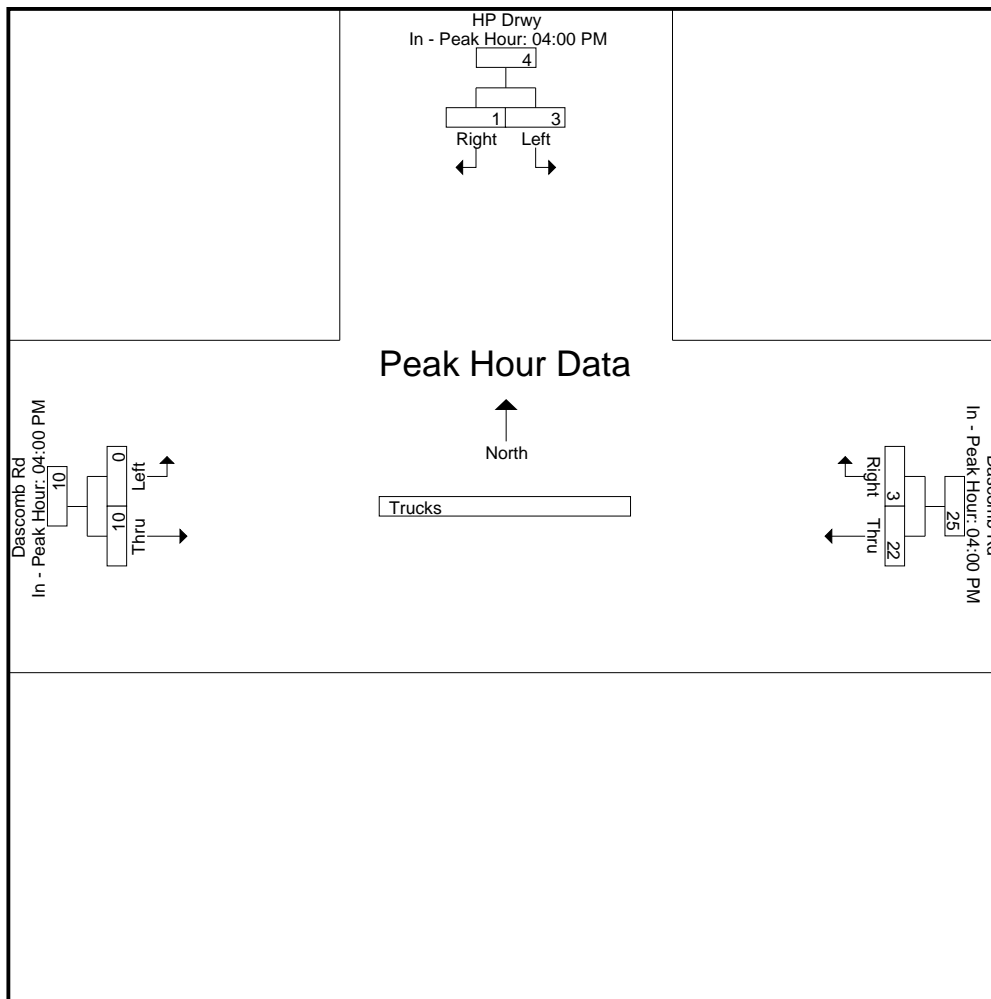
N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	6	0	6	0	<b>5</b>	<b>5</b>
+15 mins.	<b>2</b>	0	<b>2</b>	2	<b>2</b>	4	0	3	3
+30 mins.	1	<b>1</b>	2	2	0	2	0	1	1
+45 mins.	0	0	0	<b>12</b>	1	<b>13</b>	0	1	1
Total Volume	3	1	4	22	3	25	0	10	10
% App. Total	75	25		88	12		0	100	
PHF	.375	.250	.500	.458	.375	.481	.000	.500	.500



# Accurate Counts

978-664-2565

File Name : 05250002

Site Code : 05250002

Start Date : 9/20/2018

Page No : 10

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

## Groups Printed- Bikes Peds

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	1	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	1	0	0	0	0	0	0	1	1
<b>Grand Total</b>	0	0	0	1	0	0	0	0	0	0	1	1
<b>Apprch %</b>	0	0		100	0		0	0				
<b>Total %</b>	0	0		100	0		0	0		0	100	

# Accurate Counts

978-664-2565

File Name : 05250002

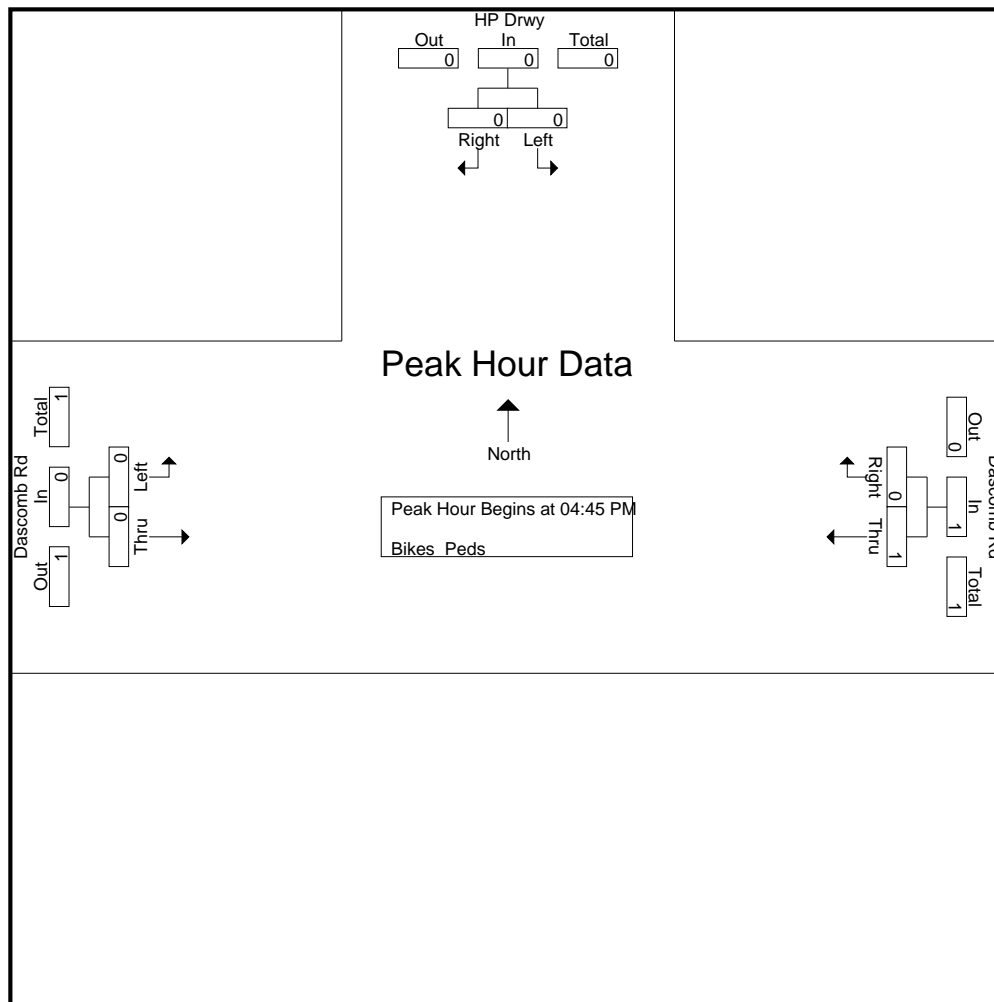
Site Code : 05250002

Start Date : 9/20/2018

Page No : 11

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	1	0	1	0	0	0	1
<b>Total Volume</b>	0	0	0	1	0	1	0	0	0	1
<b>% App. Total</b>	0	0		100	0		0	0		
<b>PHF</b>	.000	.000	.000	.250	.000	.250	.000	.000	.000	.250



# Accurate Counts

978-664-2565

File Name : 05250002

Site Code : 05250002

Start Date : 9/20/2018

Page No : 12

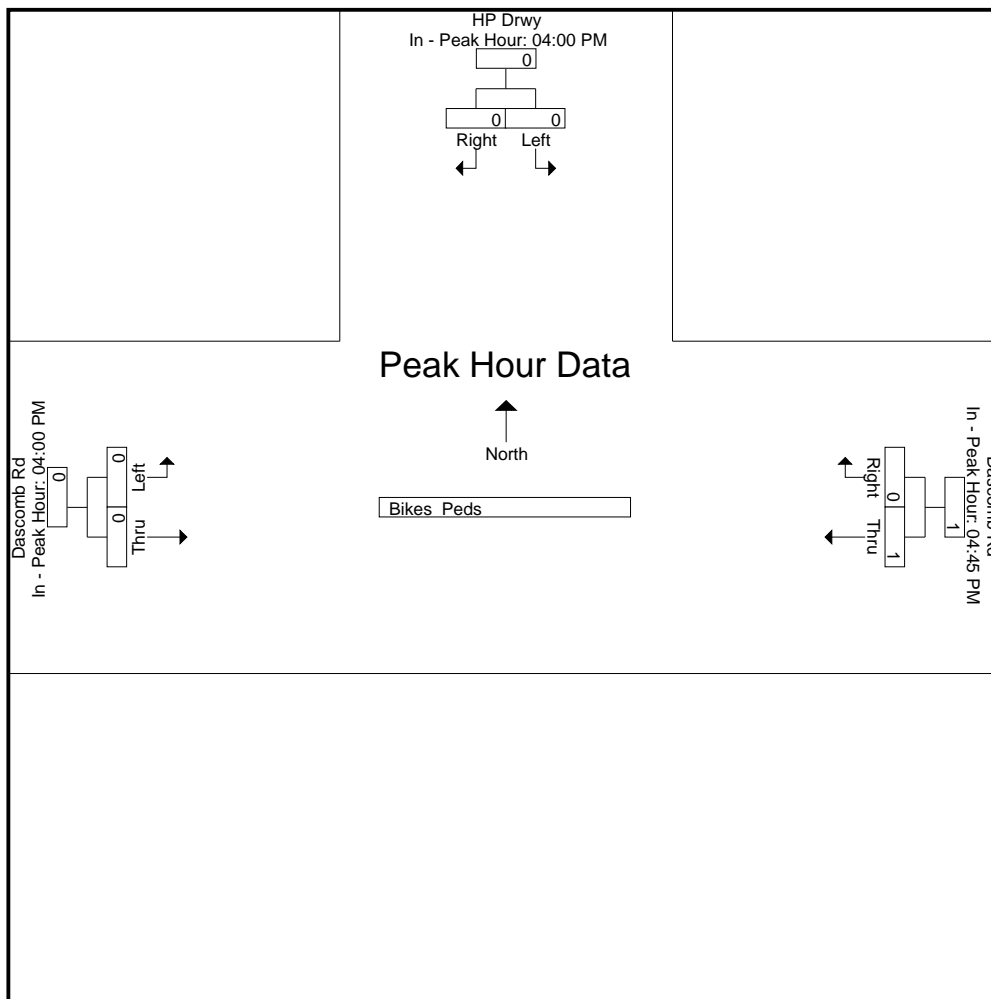
N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:45 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	1	0	1	0	0	0
Total Volume	0	0	0	1	0	1	0	0	0
% App. Total	0	0		100	0		0	0	
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250003  
 Site Code : 05250003  
 Start Date : 9/20/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Frontage Rd From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:00 PM	43	83	174	49	88	174	611
04:15 PM	48	82	171	56	98	196	651
04:30 PM	44	76	163	34	105	229	651
04:45 PM	63	108	163	46	83	165	628
Total	198	349	671	185	374	764	2541
05:00 PM	55	120	197	42	88	177	679
05:15 PM	42	114	162	56	96	222	692
05:30 PM	47	109	168	46	58	167	595
05:45 PM	48	95	174	39	70	162	588
Total	192	438	701	183	312	728	2554
Grand Total	390	787	1372	368	686	1492	5095
Apprch %	33.1	66.9	78.9	21.1	31.5	68.5	
Total %	7.7	15.4	26.9	7.2	13.5	29.3	
Cars	387	761	1358	365	670	1479	5020
% Cars	99.2	96.7	99	99.2	97.7	99.1	98.5
Trucks	3	26	14	3	16	13	75
% Trucks	0.8	3.3	1	0.8	2.3	0.9	1.5

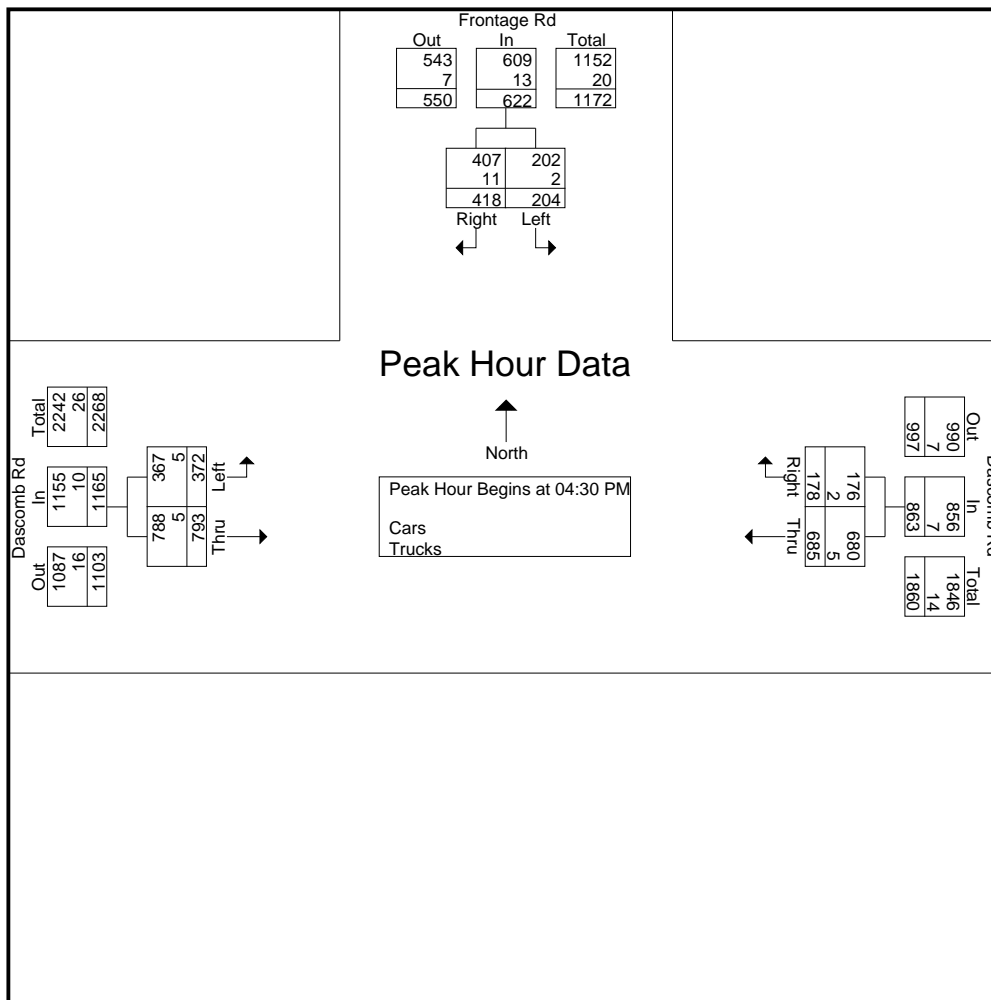
# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250003  
 Site Code : 05250003  
 Start Date : 9/20/2018  
 Page No : 2

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	44	76	120	163	34	197	<b>105</b>	<b>229</b>	<b>334</b>	651
04:45 PM	<b>63</b>	108	171	163	46	209	83	165	248	628
05:00 PM	55	<b>120</b>	<b>175</b>	<b>197</b>	42	<b>239</b>	88	177	265	679
05:15 PM	42	114	156	162	<b>56</b>	218	96	222	318	<b>692</b>
Total Volume	204	418	622	685	178	863	372	793	1165	2650
% App. Total	32.8	67.2		79.4	20.6		31.9	68.1		
PHF	.810	.871	.889	.869	.795	.903	.886	.866	.872	.957
Cars	202	407	609	680	176	856	367	788	1155	2620
% Cars	99.0	97.4	97.9	99.3	98.9	99.2	98.7	99.4	99.1	98.9
Trucks	2	11	13	5	2	7	5	5	10	30
% Trucks	1.0	2.6	2.1	0.7	1.1	0.8	1.3	0.6	0.9	1.1



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

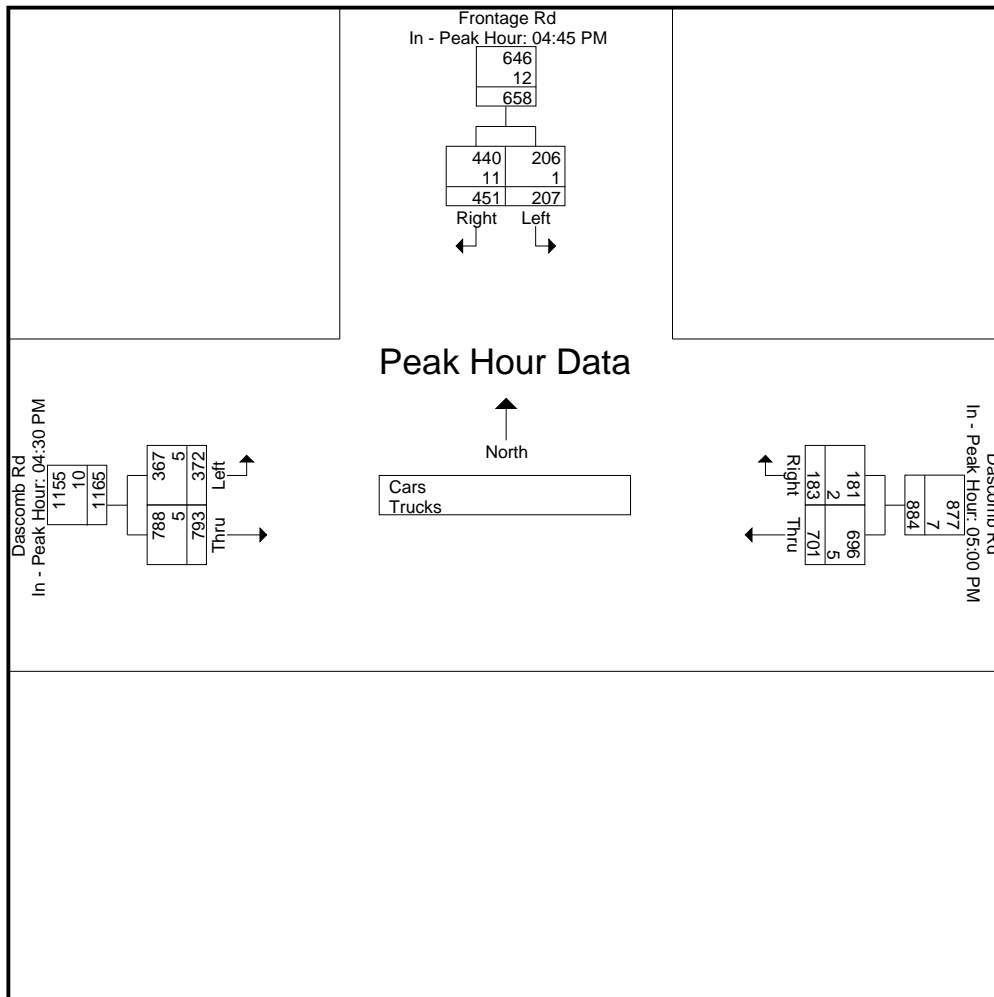
File Name : 05250003  
 Site Code : 05250003  
 Start Date : 9/20/2018  
 Page No : 3

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			05:00 PM			04:30 PM		
+0 mins.	<b>63</b>	108	171	<b>197</b>	42	<b>239</b>	<b>105</b>	<b>229</b>	<b>334</b>
+15 mins.	55	<b>120</b>	<b>175</b>	162	<b>56</b>	218	83	165	248
+30 mins.	42	114	156	168	46	214	88	177	265
+45 mins.	47	109	156	174	39	213	96	222	318
Total Volume	207	451	658	701	183	884	372	793	1165
% App. Total	31.5	68.5		79.3	20.7		31.9	68.1	
PHF	.821	.940	.940	.890	.817	.925	.886	.866	.872
Cars	206	440	646	696	181	877	367	788	1155
% Cars	99.5	97.6	98.2	99.3	98.9	99.2	98.7	99.4	99.1
Trucks	1	11	12	5	2	7	5	5	10
% Trucks	0.5	2.4	1.8	0.7	1.1	0.8	1.3	0.6	0.9



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250003  
 Site Code : 05250003  
 Start Date : 9/20/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Frontage Rd From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:00 PM	43	79	170	49	85	169	595
04:15 PM	47	77	170	55	93	194	636
04:30 PM	43	73	163	34	103	229	645
04:45 PM	63	103	159	46	83	165	619
Total	196	332	662	184	364	757	2495
05:00 PM	54	118	196	41	87	176	672
05:15 PM	42	113	162	55	94	218	684
05:30 PM	47	106	167	46	56	167	589
05:45 PM	48	92	171	39	69	161	580
Total	191	429	696	181	306	722	2525
Grand Total	387	761	1358	365	670	1479	5020
Apprch %	33.7	66.3	78.8	21.2	31.2	68.8	
Total %	7.7	15.2	27.1	7.3	13.3	29.5	

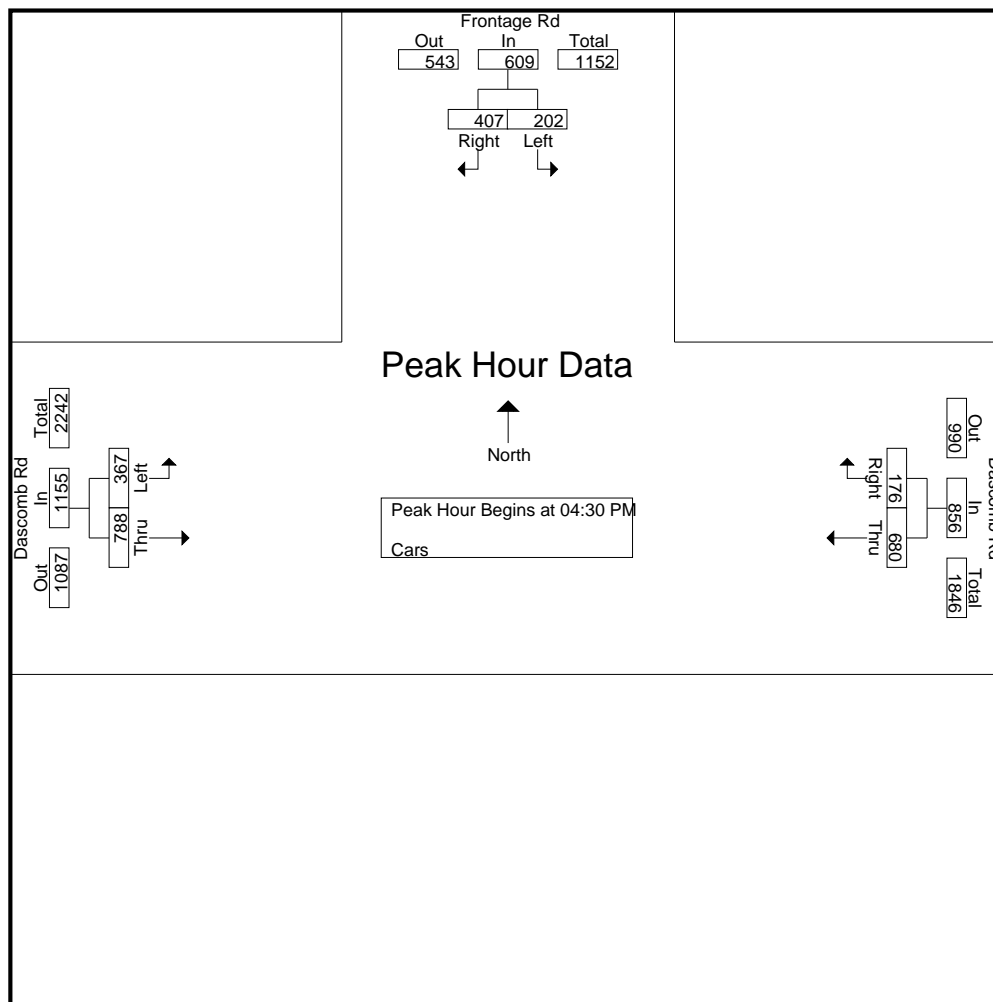
# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250003  
 Site Code : 05250003  
 Start Date : 9/20/2018  
 Page No : 5

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	43	73	116	163	34	197	<b>103</b>	<b>229</b>	<b>332</b>	645
04:45 PM	<b>63</b>	103	166	159	46	205	83	165	248	619
05:00 PM	54	<b>118</b>	<b>172</b>	<b>196</b>	41	<b>237</b>	87	176	263	672
05:15 PM	42	113	155	162	<b>55</b>	217	94	218	312	<b>684</b>
Total Volume	202	407	609	680	176	856	367	788	1155	2620
% App. Total	33.2	66.8		79.4	20.6		31.8	68.2		
PHF	.802	.862	.885	.867	.800	.903	.891	.860	.870	.958



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

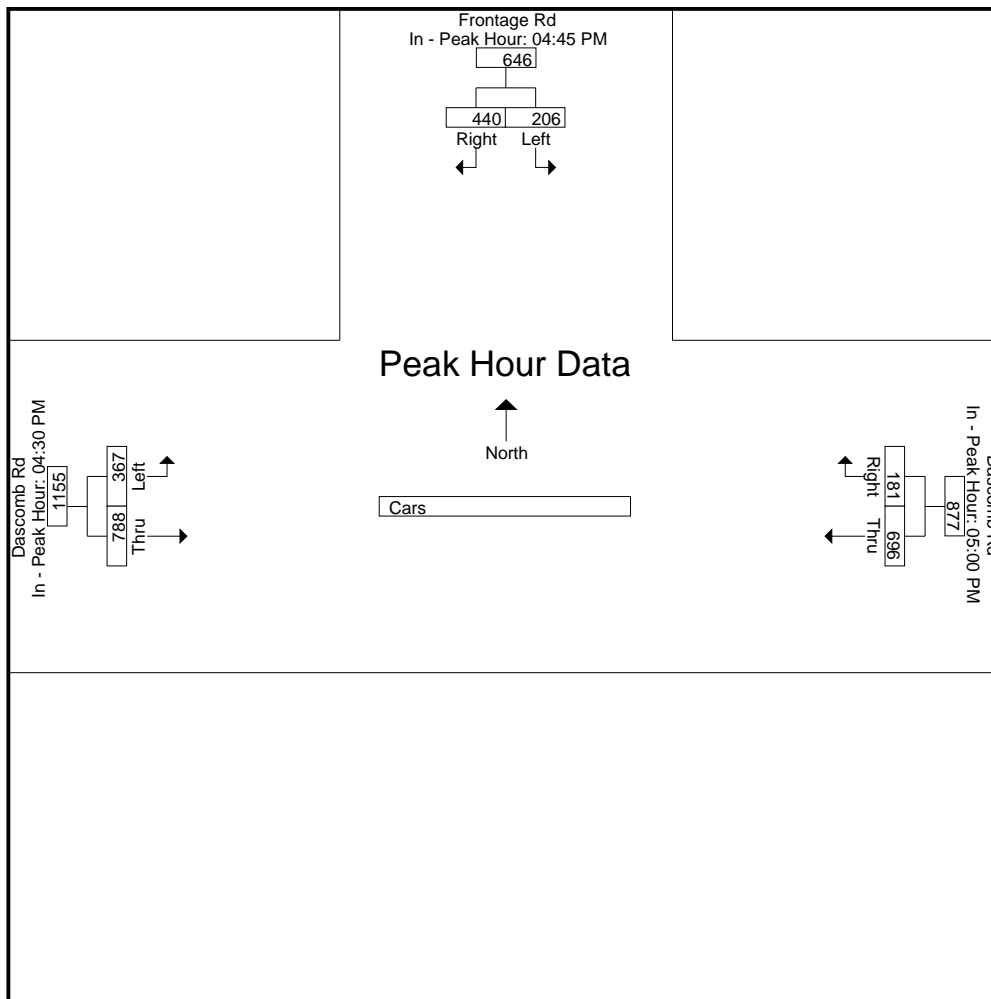
File Name : 05250003  
 Site Code : 05250003  
 Start Date : 9/20/2018  
 Page No : 6

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			05:00 PM			04:30 PM		
+0 mins.	<b>63</b>	103	166	<b>196</b>	41	<b>237</b>	<b>103</b>	<b>229</b>	<b>332</b>
+15 mins.	54	<b>118</b>	<b>172</b>	162	<b>55</b>	217	83	165	248
+30 mins.	42	113	155	167	46	213	87	176	263
+45 mins.	47	106	153	171	39	210	94	218	312
Total Volume	206	440	646	696	181	877	367	788	1155
% App. Total	31.9	68.1		79.4	20.6		31.8	68.2	
PHF	.817	.932	.939	.888	.823	.925	.891	.860	.870



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250003  
 Site Code : 05250003  
 Start Date : 9/20/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Frontage Rd From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:00 PM	0	4	4	0	3	5	16
04:15 PM	1	5	1	1	5	2	15
04:30 PM	1	3	0	0	2	0	6
04:45 PM	0	5	4	0	0	0	9
Total	2	17	9	1	10	7	46
05:00 PM	1	2	1	1	1	1	7
05:15 PM	0	1	0	1	2	4	8
05:30 PM	0	3	1	0	2	0	6
05:45 PM	0	3	3	0	1	1	8
Total	1	9	5	2	6	6	29
Grand Total	3	26	14	3	16	13	75
Apprch %	10.3	89.7	82.4	17.6	55.2	44.8	
Total %	4	34.7	18.7	4	21.3	17.3	

# Accurate Counts

978-664-2565

File Name : 05250003

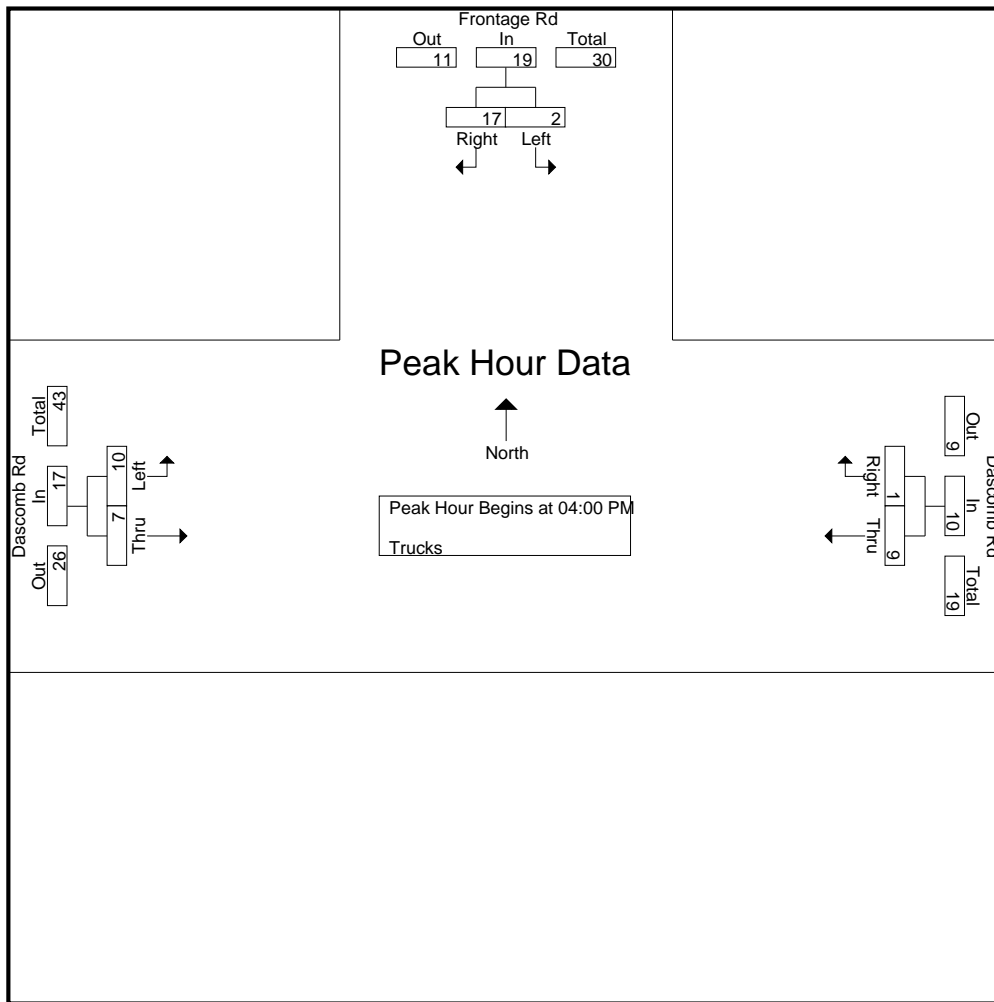
Site Code : 05250003

Start Date : 9/20/2018

Page No : 8

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	4	4	4	0	4	3	5	8	16
04:15 PM	1	5	6	1	1	2	5	2	7	15
04:30 PM	1	3	4	0	0	0	2	0	2	6
04:45 PM	0	5	5	4	0	4	0	0	0	9
<b>Total Volume</b>	<b>2</b>	<b>17</b>	<b>19</b>	<b>9</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>7</b>	<b>17</b>	<b>46</b>
<b>% App. Total</b>	<b>10.5</b>	<b>89.5</b>		<b>90</b>	<b>10</b>		<b>58.8</b>	<b>41.2</b>		
PHF	.500	.850	.792	.563	.250	.625	.500	.350	.531	.719



# Accurate Counts

978-664-2565

File Name : 05250003

Site Code : 05250003

Start Date : 9/20/2018

Page No : 9

N/S Street : Frontage Road

E/W Street: Dascomb Road

City/State : Andover, MA

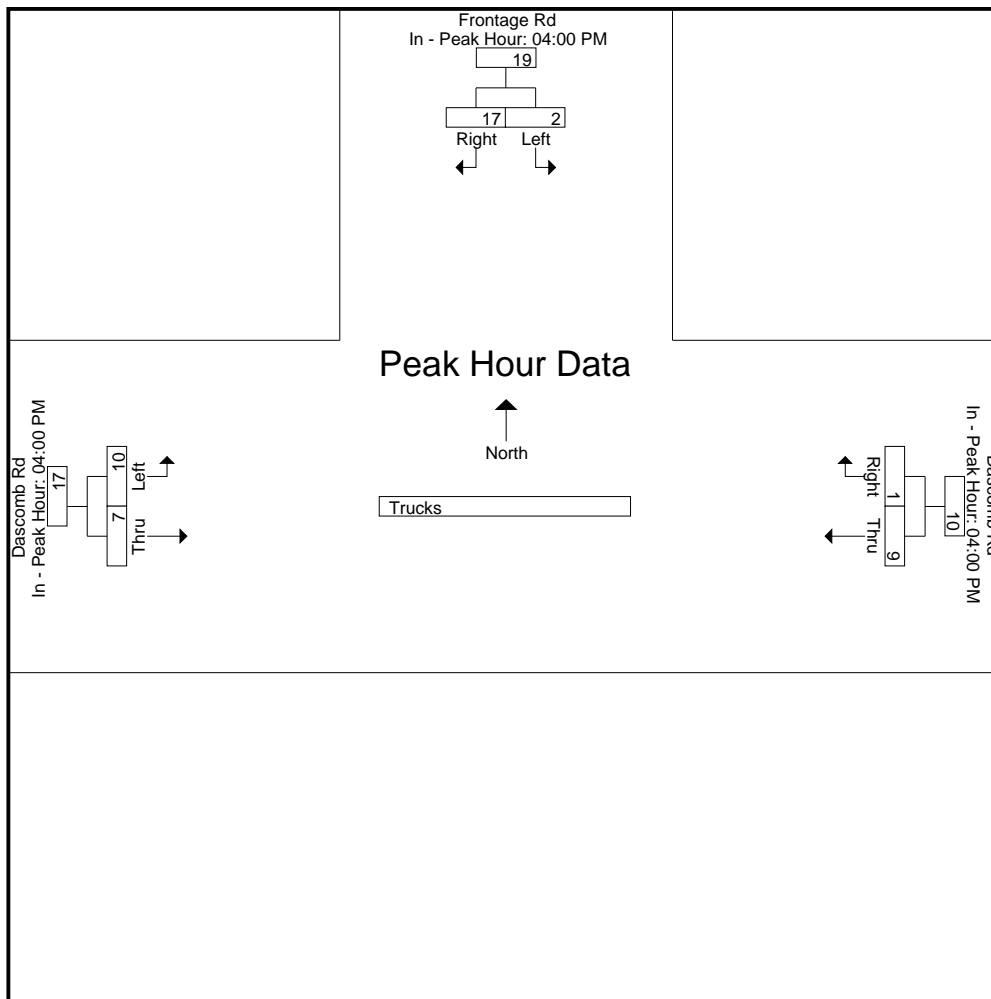
Weather : Clear

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	4	4	4	0	4	3	5	8
+15 mins.	1	5	6	1	1	2	5	2	7
+30 mins.	1	3	4	0	0	0	2	0	2
+45 mins.	0	5	5	4	0	4	0	0	0
<b>Total Volume</b>	<b>2</b>	<b>17</b>	<b>19</b>	<b>9</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>7</b>	<b>17</b>
<b>% App. Total</b>	<b>10.5</b>	<b>89.5</b>		<b>90</b>	<b>10</b>		<b>58.8</b>	<b>41.2</b>	
PHF	.500	.850	.792	.563	.250	.625	.500	.350	.531



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250003  
 Site Code : 05250003  
 Start Date : 9/20/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	1	0	0	0	0	0	1	0	0	0	2	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	1	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	1	0	0	1	0	0	1	0	0	0	3	3
<b>Grand Total</b>	1	0	0	1	0	0	1	0	0	0	3	3
Apprch %	100	0		100	0		100	0				
Total %	33.3	0		33.3	0		33.3	0		0	100	

# Accurate Counts

978-664-2565

File Name : 05250003

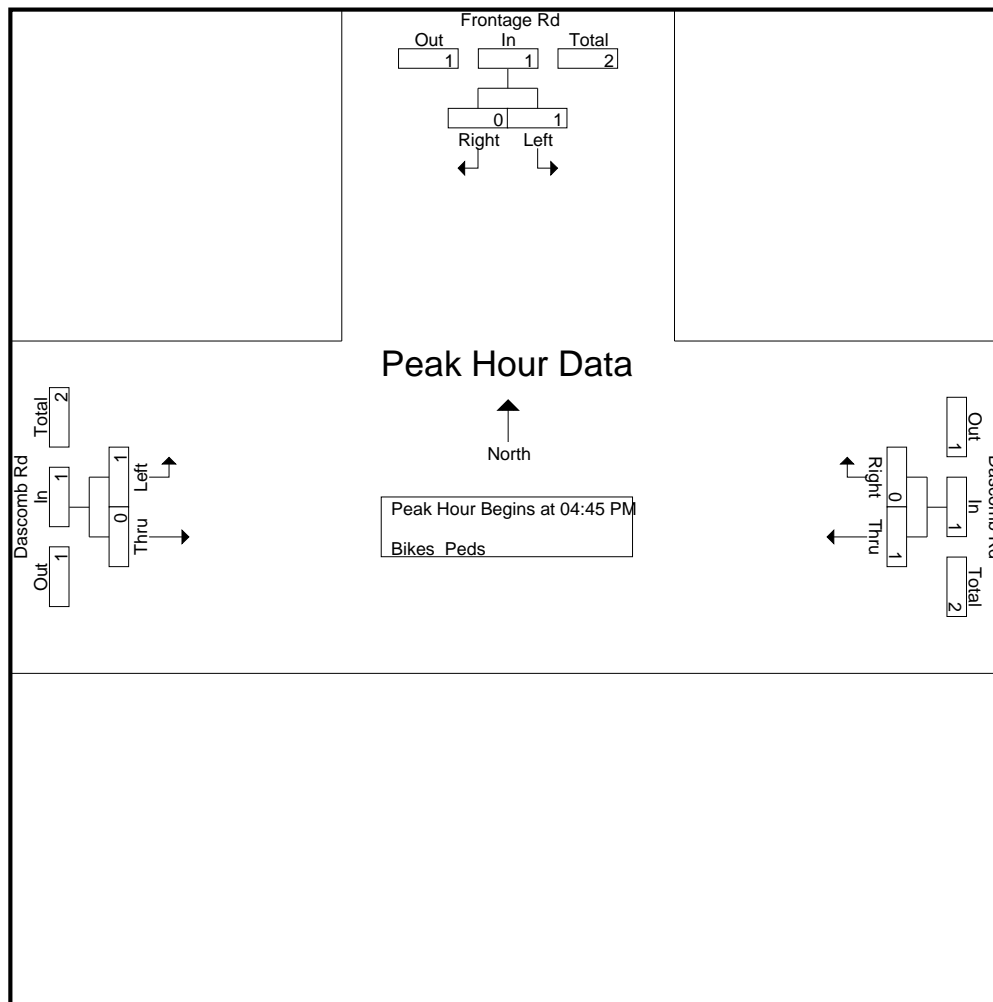
Site Code : 05250003

Start Date : 9/20/2018

Page No : 11

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	1	0	1	0	0	0	1	0	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	1	0	1	0	0	0	1
<b>Total Volume</b>	1	0	1	1	0	1	1	0	1	3
<b>% App. Total</b>	100	0		100	0		100	0		
PHF	.250	.000	.250	.250	.000	.250	.250	.000	.250	.375



# Accurate Counts

978-664-2565

File Name : 05250003

Site Code : 05250003

Start Date : 9/20/2018

Page No : 12

N/S Street : Frontage Road

E/W Street: Dascomb Road

City/State : Andover, MA

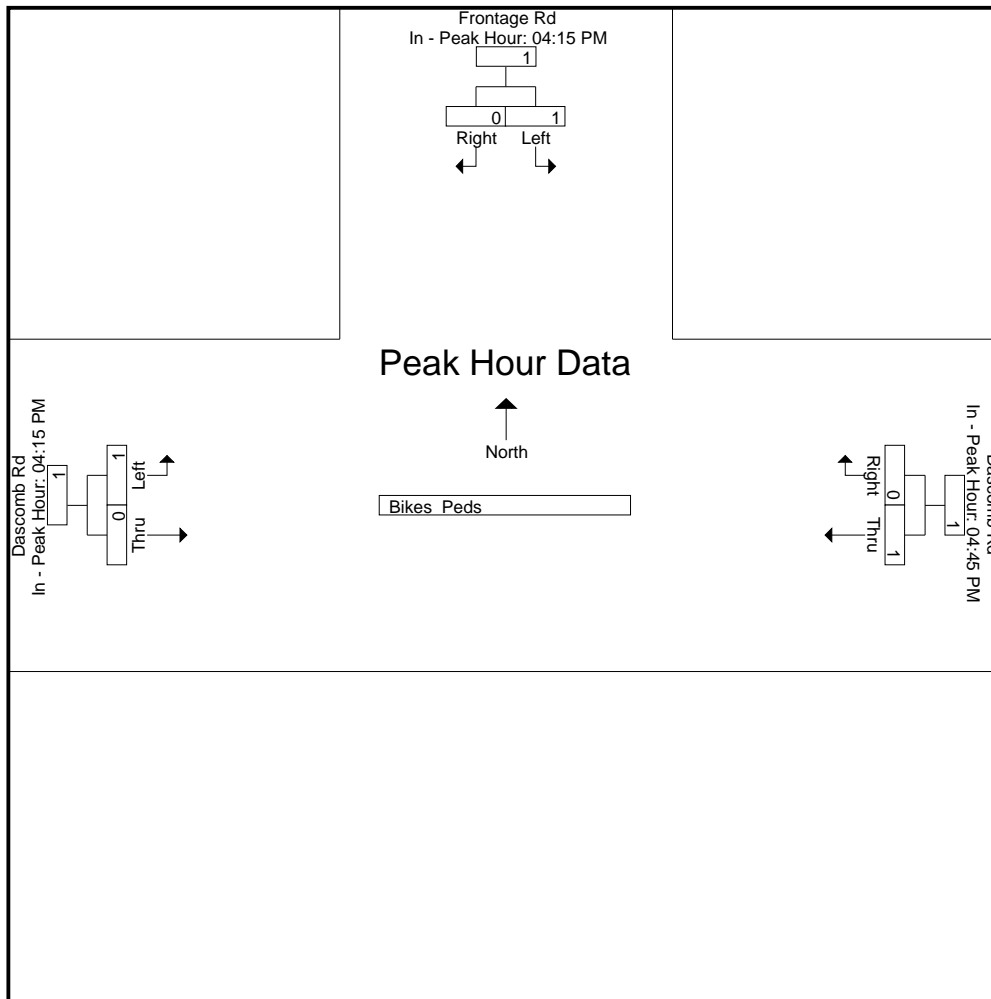
Weather : Clear

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM			04:45 PM			04:15 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	1	0	1	1	0	1	1	0	1
Total Volume	1	0	1	1	0	1	1	0	1
% App. Total	100	0		100	0		100	0	
PHF	.250	.000	.250	.250	.000	.250	.250	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

File Name : 05250004

Site Code : 05250004

Start Date : 9/20/2018

Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Lovejoy Rd From North			Dascomb Rd From East			Acorn Dr From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	19	0	14	1	128	42	3	1	2	28	105	6	349
04:15 PM	20	1	8	3	125	42	1	0	5	29	123	2	359
04:30 PM	21	0	24	2	123	39	2	0	1	31	119	2	364
04:45 PM	17	0	14	3	125	56	1	1	4	33	119	1	374
Total	77	1	60	9	501	179	7	2	12	121	466	11	1446
05:00 PM	43	0	15	0	99	36	0	1	4	28	127	3	356
05:15 PM	30	3	12	5	134	41	1	0	0	28	134	3	391
05:30 PM	24	1	15	2	111	39	1	0	2	21	120	1	337
05:45 PM	22	0	13	5	118	47	0	0	3	39	111	4	362
Total	119	4	55	12	462	163	2	1	9	116	492	11	1446
Grand Total	196	5	115	21	963	342	9	3	21	237	958	22	2892
Aprch %	62	1.6	36.4	1.6	72.6	25.8	27.3	9.1	63.6	19.5	78.7	1.8	
Total %	6.8	0.2	4	0.7	33.3	11.8	0.3	0.1	0.7	8.2	33.1	0.8	
Cars	193	5	115	21	956	342	9	3	21	236	956	22	2879
% Cars	98.5	100	100	100	99.3	100	100	100	100	99.6	99.8	100	99.6
Trucks	3	0	0	0	7	0	0	0	0	1	2	0	13
% Trucks	1.5	0	0	0	0.7	0	0	0	0	0.4	0.2	0	0.4

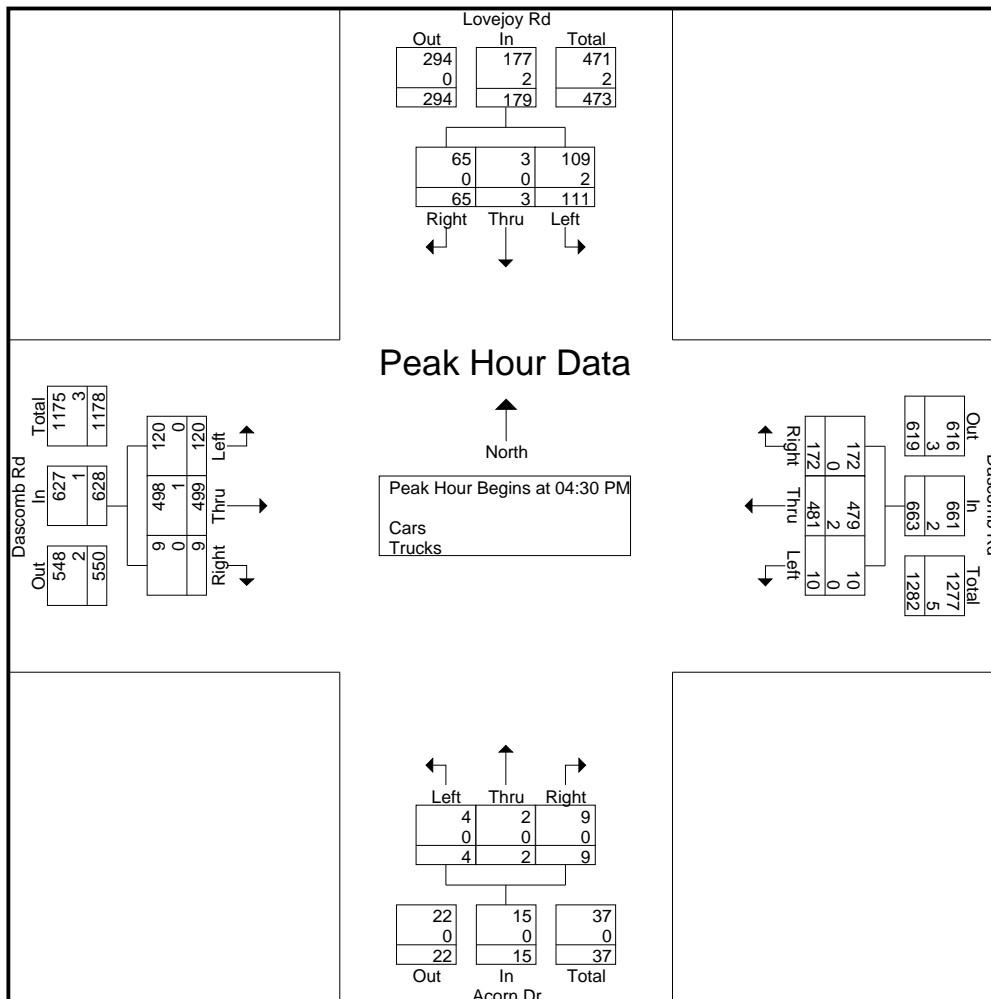
# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250004  
 Site Code : 05250004  
 Start Date : 9/20/2018  
 Page No : 2

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	21	0	<b>24</b>	45	2	123	39	164	<b>2</b>	0	1	3	31	119	2	152	364
04:45 PM	17	0	14	31	3	125	<b>56</b>	<b>184</b>	1	<b>1</b>	<b>4</b>	<b>6</b>	<b>33</b>	119	1	153	374
05:00 PM	<b>43</b>	0	15	<b>58</b>	0	99	36	135	0	1	4	5	28	127	<b>3</b>	158	356
05:15 PM	30	<b>3</b>	12	45	<b>5</b>	<b>134</b>	41	180	1	0	0	1	28	<b>134</b>	3	<b>165</b>	<b>391</b>
Total Volume	111	3	65	179	10	481	172	663	4	2	9	15	120	499	9	628	1485
% App. Total	62	1.7	36.3		1.5	72.5	25.9		26.7	13.3	60		19.1	79.5	1.4		
PHF	.645	.250	.677	.772	.500	.897	.768	.901	.500	.500	.563	.625	.909	.931	.750	.952	.949
Cars	109	3	65	177	10	479	172	661	4	2	9	15	120	498	9	627	1480
% Cars	98.2	100	100	98.9	100	99.6	100	99.7	100	100	100	100	100	99.8	100	99.8	99.7
Trucks	2	0	0	2	0	2	0	2	0	0	0	0	0	1	0	1	5
% Trucks	1.8	0	0	1.1	0	0.4	0	0.3	0	0	0	0	0	0.2	0	0.2	0.3



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

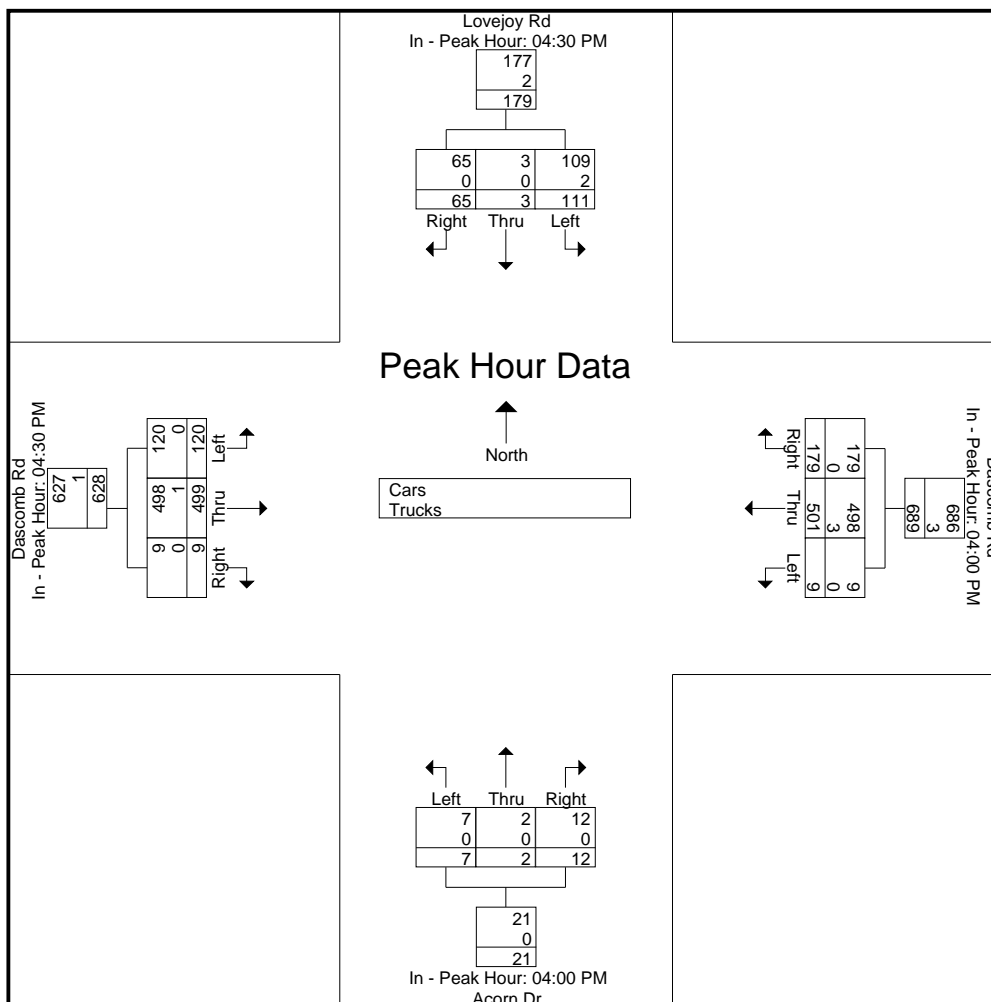
File Name : 05250004  
 Site Code : 05250004  
 Start Date : 9/20/2018  
 Page No : 3

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				04:00 PM				04:30 PM			
+0 mins.	21	0	<b>24</b>	45	1	<b>128</b>	42	171	<b>3</b>	<b>1</b>	2	<b>6</b>	31	119	2	152
+15 mins.	17	0	14	31	<b>3</b>	125	42	170	1	0	<b>5</b>	6	<b>33</b>	119	1	153
+30 mins.	<b>43</b>	0	15	<b>58</b>	2	123	39	164	2	0	1	3	28	127	<b>3</b>	158
+45 mins.	30	<b>3</b>	12	45	3	125	<b>56</b>	<b>184</b>	1	1	4	6	28	<b>134</b>	3	<b>165</b>
Total Volume	111	3	65	179	9	501	179	689	7	2	12	21	120	499	9	628
% App. Total	62	1.7	36.3		1.3	72.7	26		33.3	9.5	57.1		19.1	79.5	1.4	
PHF	.645	.250	.677	.772	.750	.979	.799	.936	.583	.500	.600	.875	.909	.931	.750	.952
Cars	109	3	65	177	9	498	179	686	7	2	12	21	120	498	9	627
% Cars	98.2	100	100	98.9	100	99.4	100	99.6	100	100	100	100	100	99.8	100	99.8
Trucks	2	0	0	2	0	3	0	3	0	0	0	0	0	1	0	1
% Trucks	1.8	0	0	1.1	0	0.6	0	0.4	0	0	0	0	0	0.2	0	0.2



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

File Name : 05250004

Site Code : 05250004

Start Date : 9/20/2018

Page No : 4

## Groups Printed- Cars

Start Time	Lovejoy Rd From North			Dascomb Rd From East			Acorn Dr From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	18	0	14	1	126	42	3	1	2	28	104	6	345
04:15 PM	20	1	8	3	125	42	1	0	5	29	123	2	359
04:30 PM	21	0	24	2	123	39	2	0	1	31	119	2	364
04:45 PM	17	0	14	3	124	56	1	1	4	33	118	1	372
Total	76	1	60	9	498	179	7	2	12	121	464	11	1440
05:00 PM	42	0	15	0	99	36	0	1	4	28	127	3	355
05:15 PM	29	3	12	5	133	41	1	0	0	28	134	3	389
05:30 PM	24	1	15	2	109	39	1	0	2	20	120	1	334
05:45 PM	22	0	13	5	117	47	0	0	3	39	111	4	361
Total	117	4	55	12	458	163	2	1	9	115	492	11	1439
Grand Total	193	5	115	21	956	342	9	3	21	236	956	22	2879
Apprch %	61.7	1.6	36.7	1.6	72.5	25.9	27.3	9.1	63.6	19.4	78.7	1.8	
Total %	6.7	0.2	4	0.7	33.2	11.9	0.3	0.1	0.7	8.2	33.2	0.8	

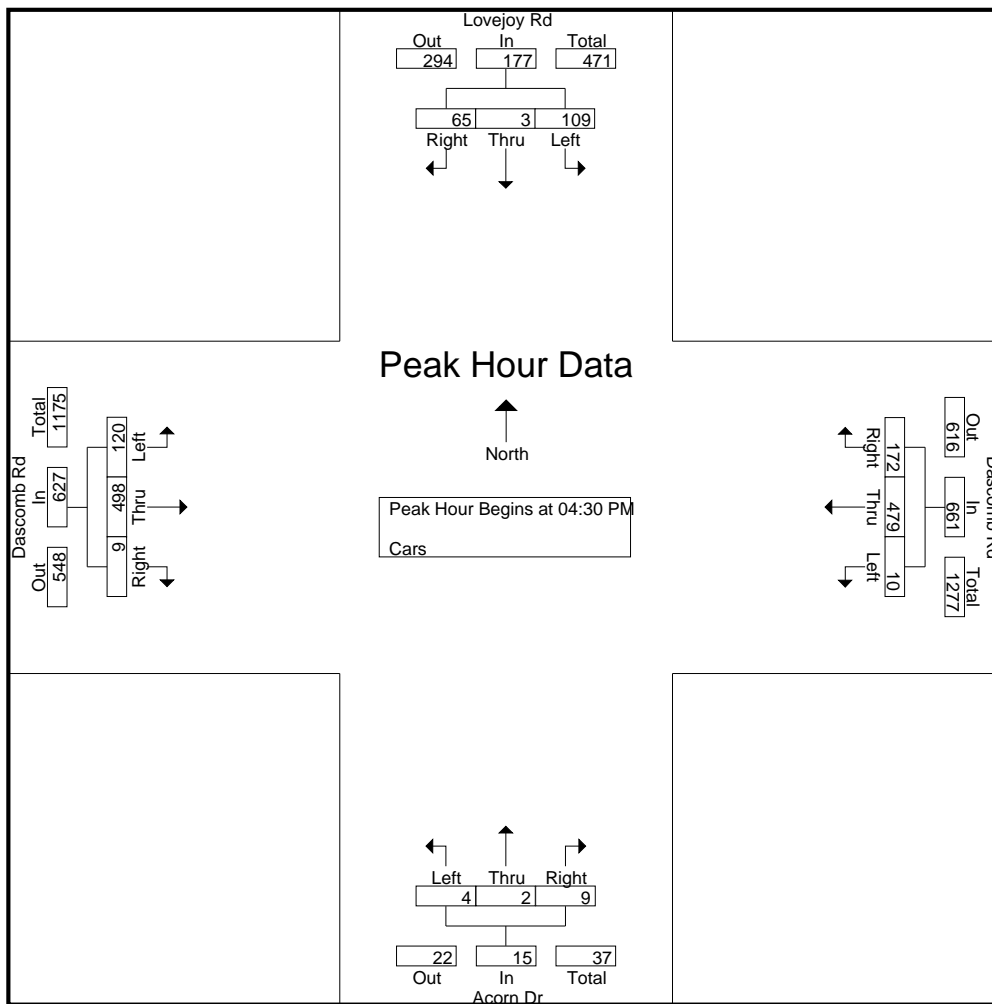
# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250004  
 Site Code : 05250004  
 Start Date : 9/20/2018  
 Page No : 5

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	21	0	<b>24</b>	45	2	123	39	164	<b>2</b>	0	1	3	31	119	2	152	364
04:45 PM	17	0	14	31	3	124	<b>56</b>	<b>183</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>6</b>	<b>33</b>	118	1	152	372
05:00 PM	<b>42</b>	0	15	<b>57</b>	0	99	36	135	0	1	4	5	28	127	<b>3</b>	158	355
05:15 PM	29	<b>3</b>	12	44	<b>5</b>	<b>133</b>	41	179	1	0	0	1	28	<b>134</b>	3	<b>165</b>	<b>389</b>
Total Volume	109	3	65	177	10	479	172	661	4	2	9	15	120	498	9	627	1480
% App. Total	61.6	1.7	36.7		1.5	72.5	26		26.7	13.3	60		19.1	79.4	1.4		
PHF	.649	.250	.677	.776	.500	.900	.768	.903	.500	.500	.563	.625	.909	.929	.750	.950	.951



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

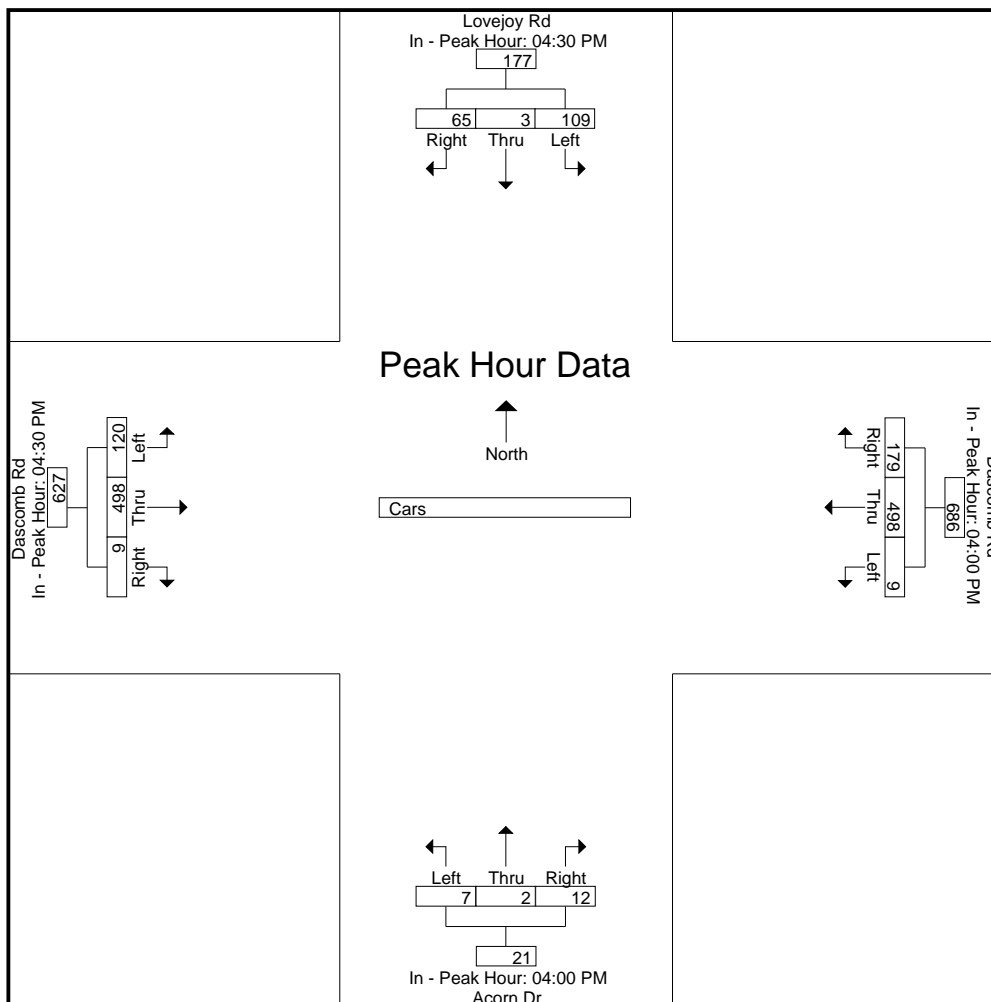
File Name : 05250004  
 Site Code : 05250004  
 Start Date : 9/20/2018  
 Page No : 6

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				04:00 PM				04:30 PM			
+0 mins.	21	0	24	45	1	126	42	169	3	1	2	6	31	119	2	152
+15 mins.	17	0	14	31	3	125	42	170	1	0	5	6	33	118	1	152
+30 mins.	42	0	15	57	2	123	39	164	2	0	1	3	28	127	3	158
+45 mins.	29	3	12	44	3	124	56	183	1	1	4	6	28	134	3	165
Total Volume	109	3	65	177	9	498	179	686	7	2	12	21	120	498	9	627
% App. Total	61.6	1.7	36.7		1.3	72.6	26.1		33.3	9.5	57.1		19.1	79.4	1.4	
PHF	.649	.250	.677	.776	.750	.988	.799	.937	.583	.500	.600	.875	.909	.929	.750	.950



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

File Name : 05250004

Site Code : 05250004

Start Date : 9/20/2018

Page No : 7

## Groups Printed- Trucks

Start Time	Lovejoy Rd From North			Dascomb Rd From East			Acorn Dr From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	1	0	0	0	2	0	0	0	0	1	0	0	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	1	0	0	0	0	1	0	0	2
Total	1	0	0	0	3	0	0	0	0	2	0	0	6
05:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	2	0	0	0	1	0	0	0	3
05:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	2	0	0	0	4	0	0	0	1	0	0	0	7
Grand Total	3	0	0	0	7	0	0	0	1	2	0	0	13
Apprch %	100	0	0	0	100	0	0	0	33.3	66.7	0	0	
Total %	23.1	0	0	0	53.8	0	0	0	7.7	15.4	0	0	

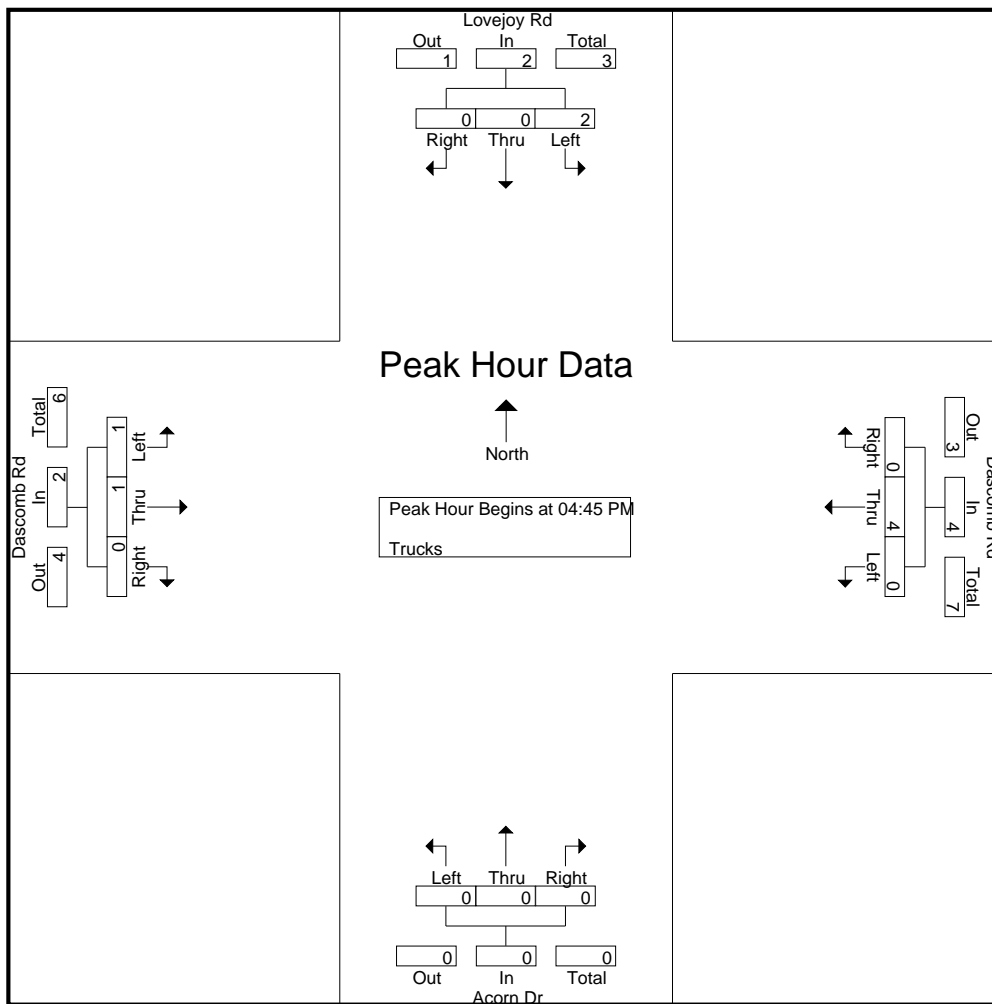
# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250004  
 Site Code : 05250004  
 Start Date : 9/20/2018  
 Page No : 8

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	1	0	0	1	3
<b>Total Volume</b>	2	0	0	2	0	4	0	4	0	0	0	0	1	1	0	2	8
<b>% App. Total</b>	100	0	0		0	100	0		0	0	0		50	50	0		
PHF	.500	.000	.000	.500	.000	.500	.000	.500	.000	.000	.000	.000	.250	.250	.000	.500	.667



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

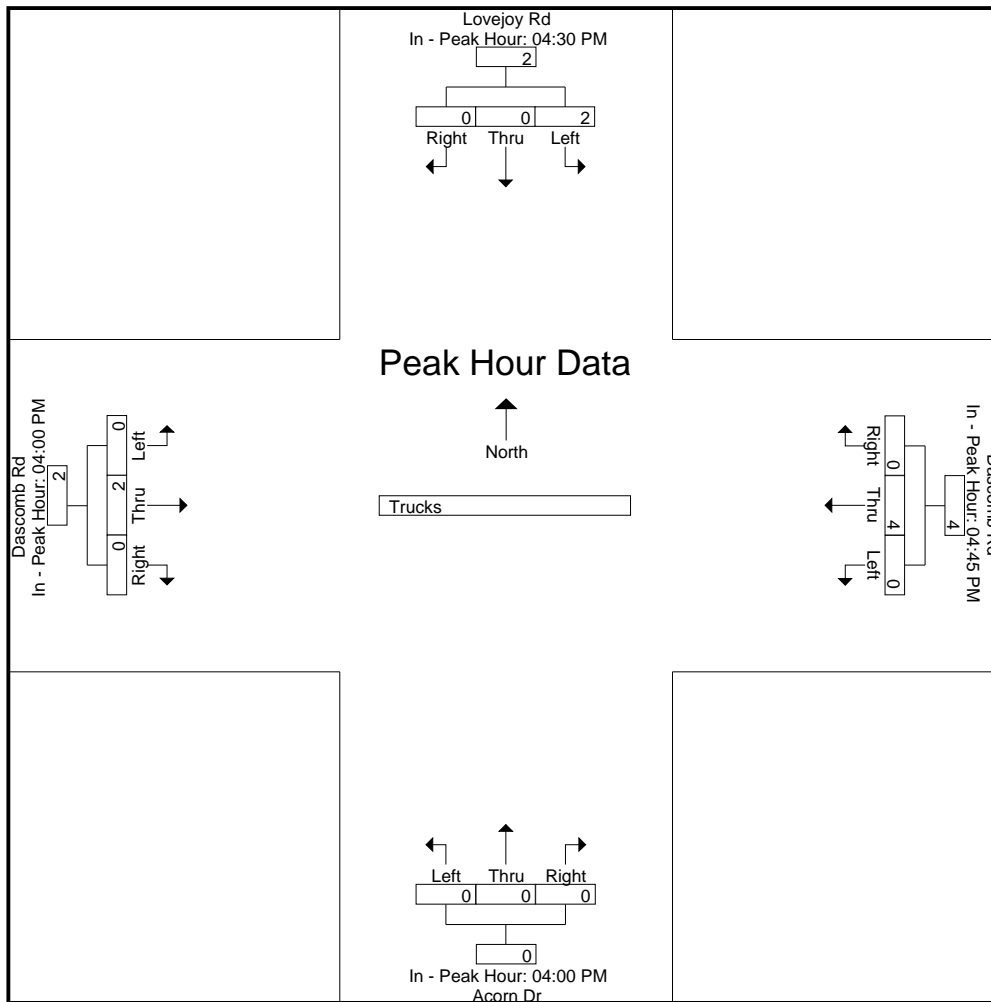
File Name : 05250004  
 Site Code : 05250004  
 Start Date : 9/20/2018  
 Page No : 9

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:45 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0
+45 mins.	1	0	0	1	0	2	0	2	0	0	0	0	0	1	0	1
Total Volume	2	0	0	2	0	4	0	4	0	0	0	0	0	2	0	2
% App. Total	100	0	0		0	100	0		0	0	0		0	100	0	
PHF	.500	.000	.000	.500	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

File Name : 05250004

Site Code : 05250004

Start Date : 9/20/2018

Page No : 10

## Groups Printed- Bikes Peds

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
05:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>4</b>
<b>Grand Total</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>5</b>
Apprch %	50	0	50		0	0	0		0	0	100		0	0	100				
Total %	25	0	25		0	0	0		0	0	25		0	0	25		20	80	

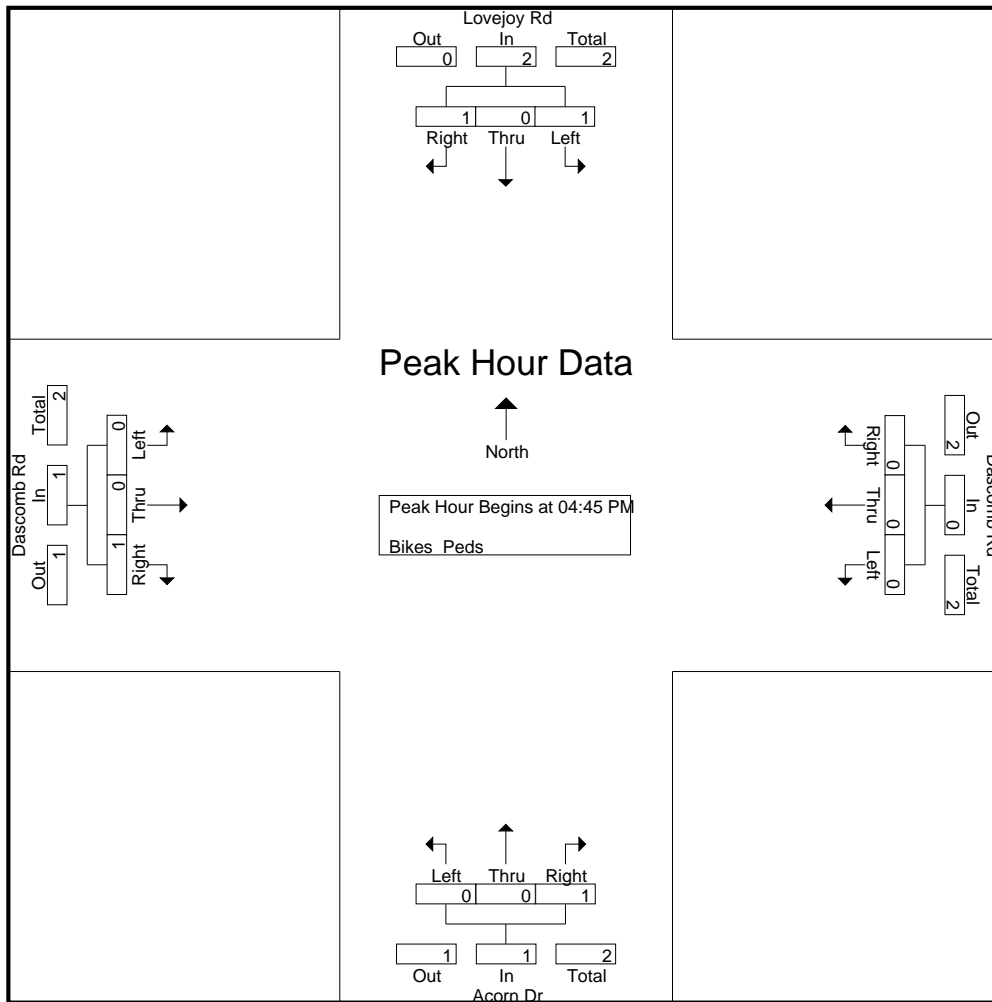
# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250004  
 Site Code : 05250004  
 Start Date : 9/20/2018  
 Page No : 11

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:45 PM																		
04:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
05:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	1	2
Total Volume	1	0	1	2	0	0	0	0	0	0	1	1	0	0	1	1	1	4
% App. Total	50	0	50		0	0	0		0	0	100		0	0	100			
PHF	.250	.000	.250	.500	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.250	.250	.500	



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

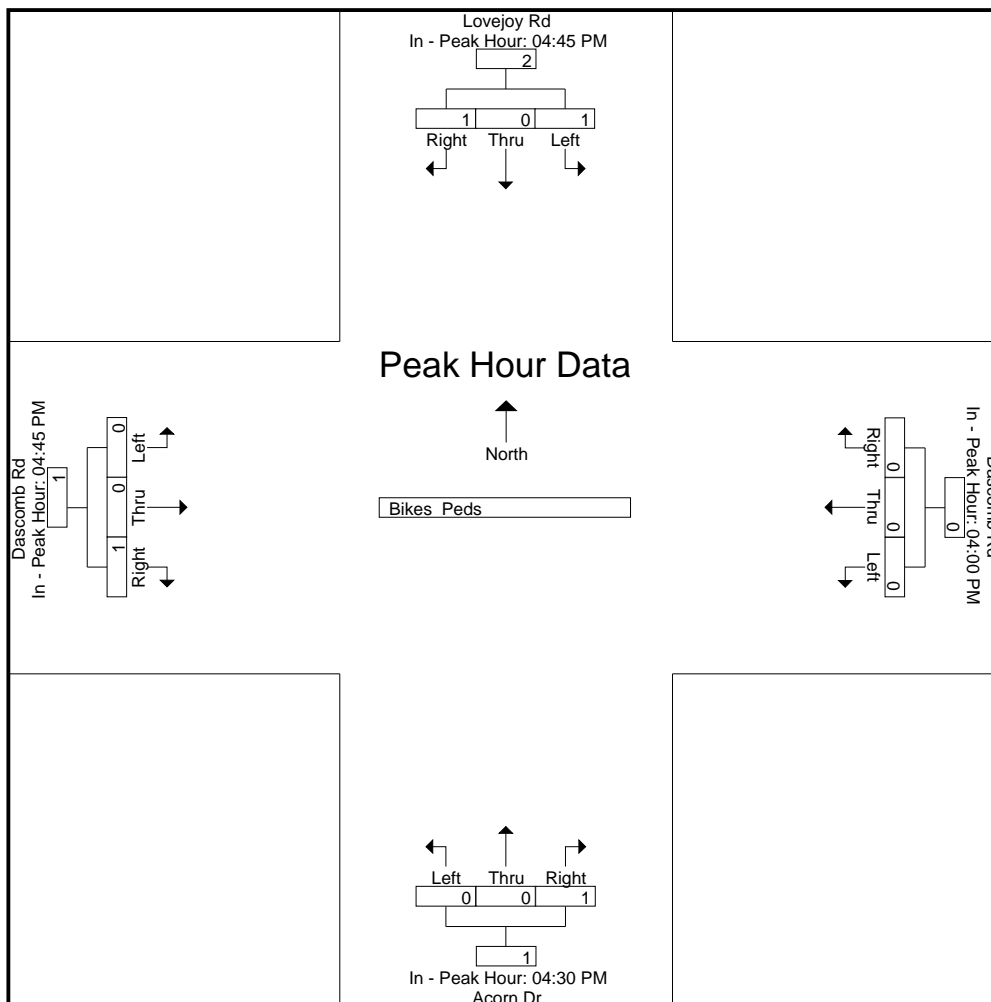
File Name : 05250004  
 Site Code : 05250004  
 Start Date : 9/20/2018  
 Page No : 12

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				04:30 PM				04:45 PM			
+0 mins.	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	1	1	0	0	0	0	0	0	1	1	0	0	1	1
Total Volume	1	0	1	2	0	0	0	0	0	0	1	1	0	0	1	1
% App. Total	50	0	50		0	0	0		0	0	100		0	0	100	
PHF	.250	.000	.250	.500	.000	.000	.000	.000	.000	.000	.250	.250	.000	.000	.250	.250



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250005  
 Site Code : 05250005  
 Start Date : 9/20/2018  
 Page No : 1

### Groups Printed- Cars - Trucks

Start Time	Andover St From North			Dwy From East			Andover St From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	1	24	73	0	0	3	16	75	0	87	1	4	284
04:15 PM	0	27	79	0	0	2	18	70	0	96	0	4	296
04:30 PM	0	27	71	1	0	0	33	97	0	85	1	4	319
04:45 PM	0	25	70	0	0	2	27	87	0	89	0	8	308
<b>Total</b>	<b>1</b>	<b>103</b>	<b>293</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>94</b>	<b>329</b>	<b>0</b>	<b>357</b>	<b>2</b>	<b>20</b>	<b>1207</b>
05:00 PM	0	19	63	0	0	1	30	61	0	109	0	3	286
05:15 PM	0	36	83	1	1	0	36	84	0	93	0	5	339
05:30 PM	0	32	80	0	0	2	32	80	0	87	1	6	320
05:45 PM	0	21	76	1	0	1	23	55	0	95	0	3	275
<b>Total</b>	<b>0</b>	<b>108</b>	<b>302</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>121</b>	<b>280</b>	<b>0</b>	<b>384</b>	<b>1</b>	<b>17</b>	<b>1220</b>
<b>Grand Total</b>	<b>1</b>	<b>211</b>	<b>595</b>	<b>3</b>	<b>1</b>	<b>11</b>	<b>215</b>	<b>609</b>	<b>0</b>	<b>741</b>	<b>3</b>	<b>37</b>	<b>2427</b>
Apprch %	0.1	26.1	73.7	20	6.7	73.3	26.1	73.9	0	94.9	0.4	4.7	
Total %	0	8.7	24.5	0.1	0	0.5	8.9	25.1	0	30.5	0.1	1.5	
Cars	1	210	595	3	1	11	211	607	0	741	3	35	2418
% Cars	100	99.5	100	100	100	100	98.1	99.7	0	100	100	94.6	99.6
Trucks	0	1	0	0	0	0	4	2	0	0	0	2	9
% Trucks	0	0.5	0	0	0	0	1.9	0.3	0	0	0	5.4	0.4

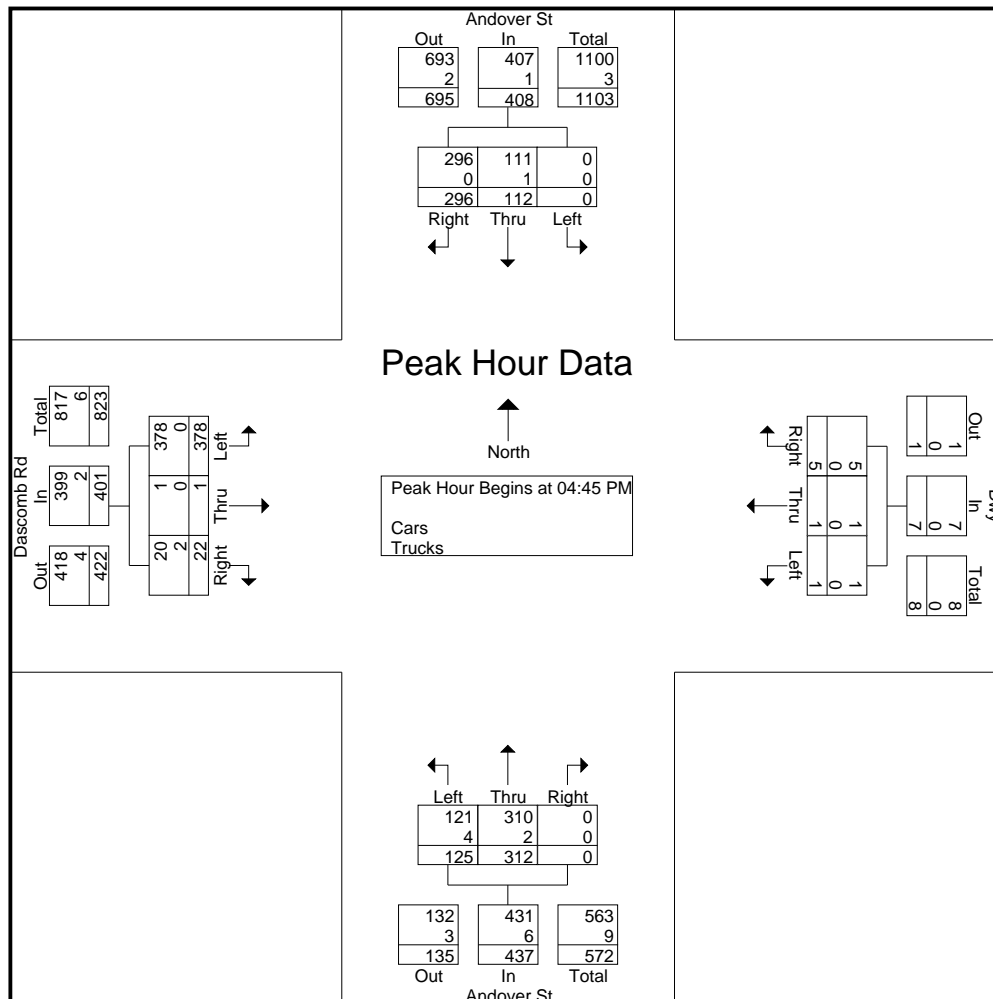
# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250005  
 Site Code : 05250005  
 Start Date : 9/20/2018  
 Page No : 2

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	25	70	95	0	0	<b>2</b>	<b>2</b>	27	<b>87</b>	0	114	89	0	<b>8</b>	97	308
05:00 PM	0	19	63	82	0	0	1	1	30	61	0	91	<b>109</b>	0	3	<b>112</b>	286
05:15 PM	0	<b>36</b>	<b>83</b>	<b>119</b>	<b>1</b>	<b>1</b>	0	2	<b>36</b>	84	0	<b>120</b>	93	0	5	98	<b>339</b>
05:30 PM	0	32	80	112	0	0	2	2	32	80	0	112	87	<b>1</b>	6	94	320
Total Volume	0	112	296	408	1	1	5	7	125	312	0	437	378	1	22	401	1253
% App. Total	0	27.5	72.5		14.3	14.3	71.4		28.6	71.4	0		94.3	0.2	5.5		
PHF	.000	.778	.892	.857	.250	.250	.625	.875	.868	.897	.000	.910	.867	.250	.688	.895	.924
Cars	0	111	296	407	1	1	5	7	121	310	0	431	378	1	20	399	1244
% Cars	0	99.1	100	99.8	100	100	100	100	96.8	99.4	0	98.6	100	100	90.9	99.5	99.3
Trucks	0	1	0	1	0	0	0	0	4	2	0	6	0	0	2	2	9
% Trucks	0	0.9	0	0.2	0	0	0	0	3.2	0.6	0	1.4	0	0	9.1	0.5	0.7



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

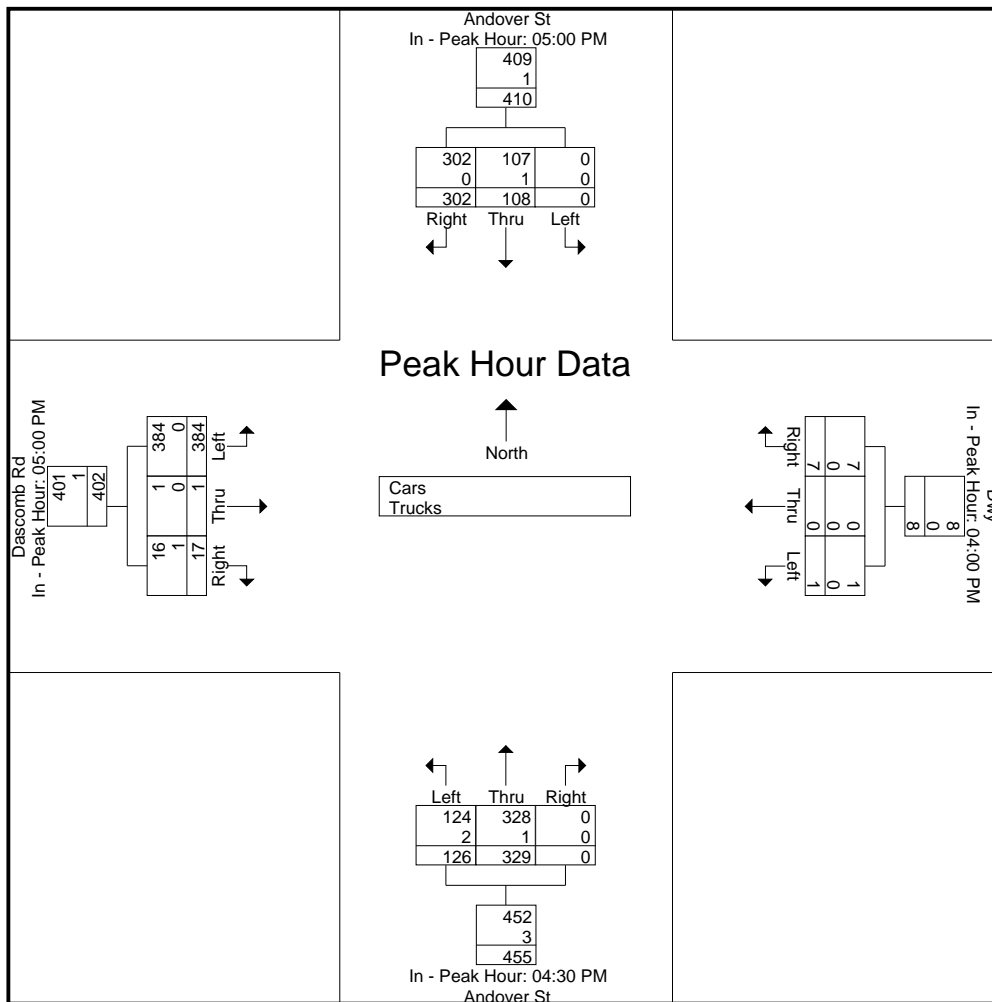
File Name : 05250005  
 Site Code : 05250005  
 Start Date : 9/20/2018  
 Page No : 3

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				04:30 PM				05:00 PM			
+0 mins.	0	19	63	82	0	0	3	3	33	97	0	130	109	0	3	112
+15 mins.	0	36	83	119	0	0	2	2	27	87	0	114	93	0	5	98
+30 mins.	0	32	80	112	1	0	0	1	30	61	0	91	87	1	6	94
+45 mins.	0	21	76	97	0	0	2	2	36	84	0	120	95	0	3	98
Total Volume	0	108	302	410	1	0	7	8	126	329	0	455	384	1	17	402
% App. Total	0	26.3	73.7		12.5	0	87.5		27.7	72.3	0		95.5	0.2	4.2	
PHF	.000	.750	.910	.861	.250	.000	.583	.667	.875	.848	.000	.875	.881	.250	.708	.897
Cars	0	107	302	409	1	0	7	8	124	328	0	452	384	1	16	401
% Cars	0	99.1	100	99.8	100	0	100	100	98.4	99.7	0	99.3	100	100	94.1	99.8
Trucks	0	1	0	1	0	0	0	0	2	1	0	3	0	0	1	1
% Trucks	0	0.9	0	0.2	0	0	0	0	1.6	0.3	0	0.7	0	0	5.9	0.2



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250005  
 Site Code : 05250005  
 Start Date : 9/20/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Andover St From North			Dwy From East			Andover St From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	1	24	73	0	0	3	16	75	0	87	1	4	284
04:15 PM	0	27	79	0	0	2	18	70	0	96	0	4	296
04:30 PM	0	27	71	1	0	0	33	97	0	85	1	4	319
04:45 PM	0	25	70	0	0	2	27	87	0	89	0	7	307
Total	1	103	293	1	0	7	94	329	0	357	2	19	1206
05:00 PM	0	19	63	0	0	1	30	61	0	109	0	3	286
05:15 PM	0	36	83	1	1	0	34	83	0	93	0	4	335
05:30 PM	0	31	80	0	0	2	30	79	0	87	1	6	316
05:45 PM	0	21	76	1	0	1	23	55	0	95	0	3	275
Total	0	107	302	2	1	4	117	278	0	384	1	16	1212
Grand Total	1	210	595	3	1	11	211	607	0	741	3	35	2418
Apprch %	0.1	26.1	73.8	20	6.7	73.3	25.8	74.2	0	95.1	0.4	4.5	
Total %	0	8.7	24.6	0.1	0	0.5	8.7	25.1	0	30.6	0.1	1.4	

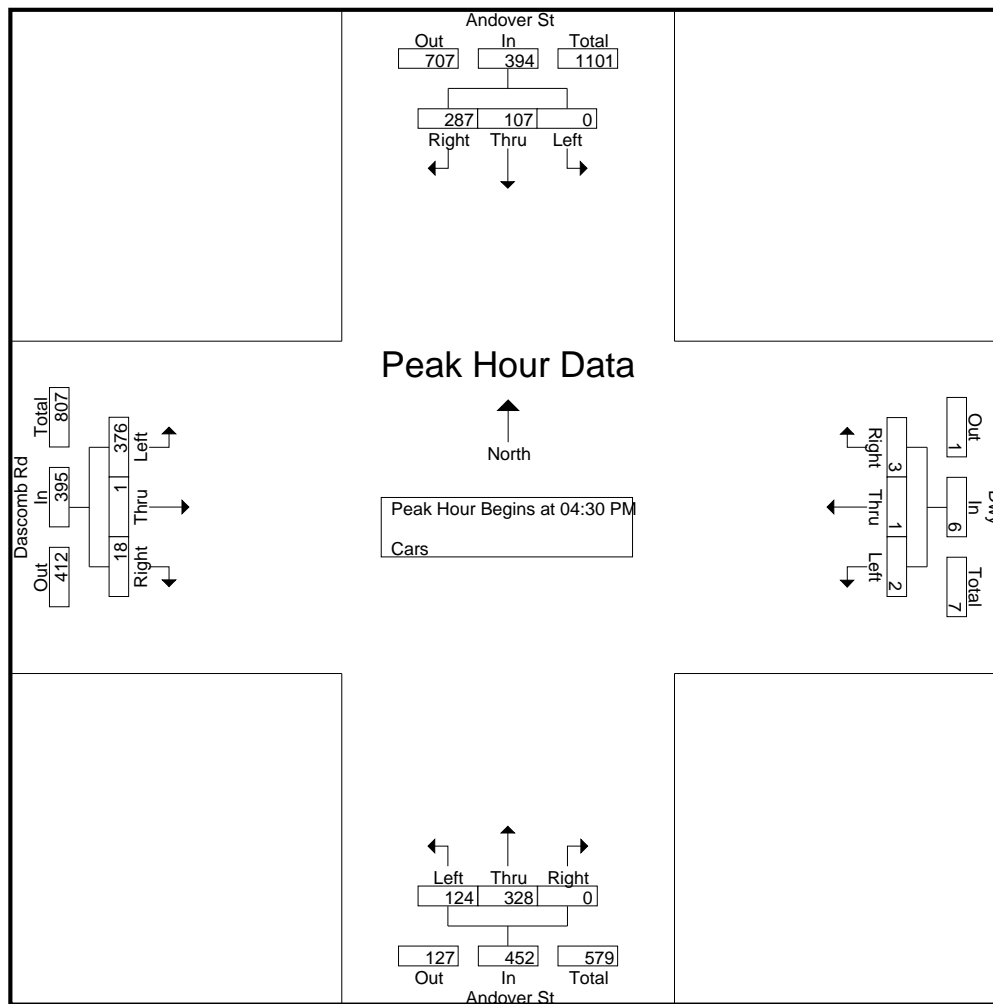
# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250005  
 Site Code : 05250005  
 Start Date : 9/20/2018  
 Page No : 5

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	27	71	98	1	0	0	1	33	97	0	130	85	1	4	90	319
04:45 PM	0	25	70	95	0	0	2	2	27	87	0	114	89	0	7	96	307
05:00 PM	0	19	63	82	0	0	1	1	30	61	0	91	109	0	3	112	286
05:15 PM	0	36	83	119	1	1	0	2	34	83	0	117	93	0	4	97	335
Total Volume	0	107	287	394	2	1	3	6	124	328	0	452	376	1	18	395	1247
% App. Total	0	27.2	72.8		33.3	16.7	50		27.4	72.6	0		95.2	0.3	4.6		
PHF	.000	.743	.864	.828	.500	.250	.375	.750	.912	.845	.000	.869	.862	.250	.643	.882	.931



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

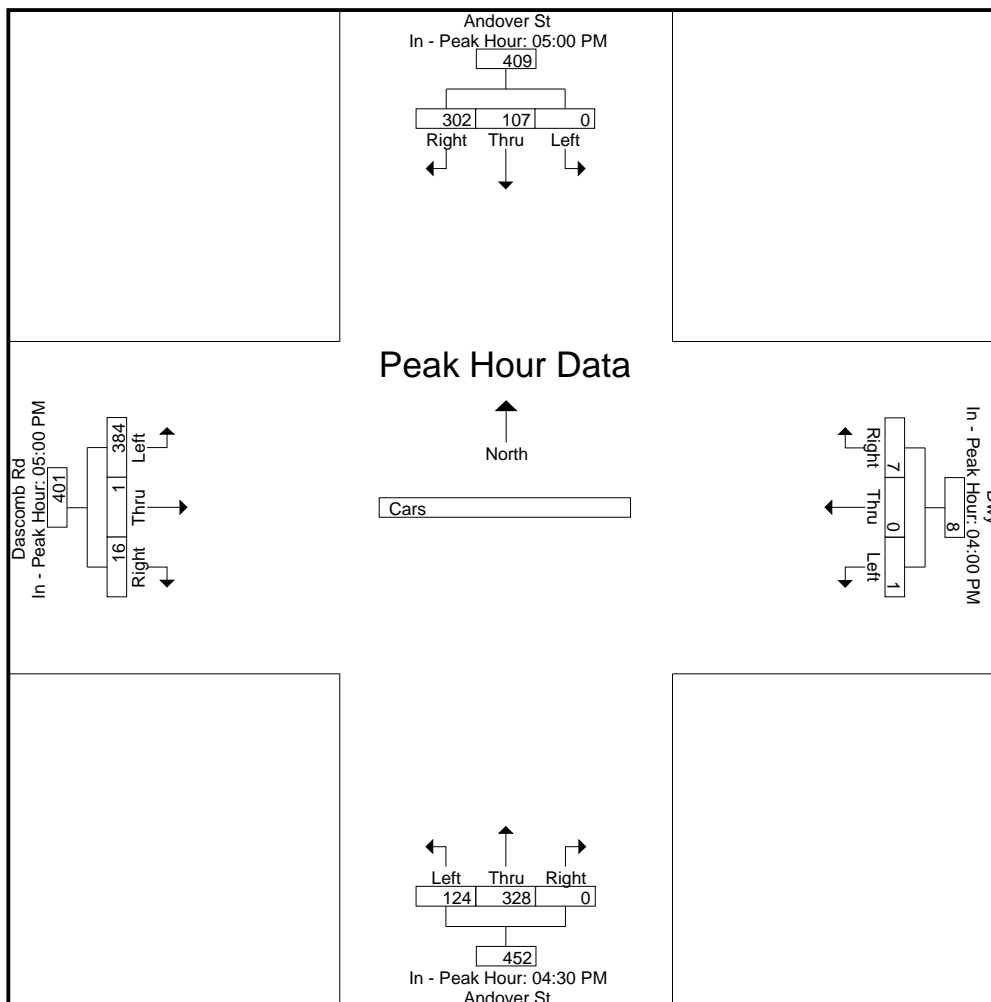
File Name : 05250005  
 Site Code : 05250005  
 Start Date : 9/20/2018  
 Page No : 6

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				04:30 PM				05:00 PM			
+0 mins.	0	19	63	82	0	0	3	3	33	97	0	130	109	0	3	112
+15 mins.	0	36	83	119	0	0	2	2	27	87	0	114	93	0	4	97
+30 mins.	0	31	80	111	1	0	0	1	30	61	0	91	87	1	6	94
+45 mins.	0	21	76	97	0	0	2	2	34	83	0	117	95	0	3	98
Total Volume	0	107	302	409	1	0	7	8	124	328	0	452	384	1	16	401
% App. Total	0	26.2	73.8		12.5	0	87.5		27.4	72.6	0		95.8	0.2	4	
PHF	.000	.743	.910	.859	.250	.000	.583	.667	.912	.845	.000	.869	.881	.250	.667	.895



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250005  
 Site Code : 05250005  
 Start Date : 9/20/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Andover St From North			Dwy From East			Andover St From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	2	1	0	0	0	1	4
05:30 PM	0	1	0	0	0	0	2	1	0	0	0	0	4
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	4	2	0	0	0	1	8
Grand Total	0	1	0	0	0	0	4	2	0	0	0	2	9
Apprch %	0	100	0	0	0	0	66.7	33.3	0	0	0	100	
Total %	0	11.1	0	0	0	0	44.4	22.2	0	0	0	22.2	

# Accurate Counts

978-664-2565

File Name : 05250005

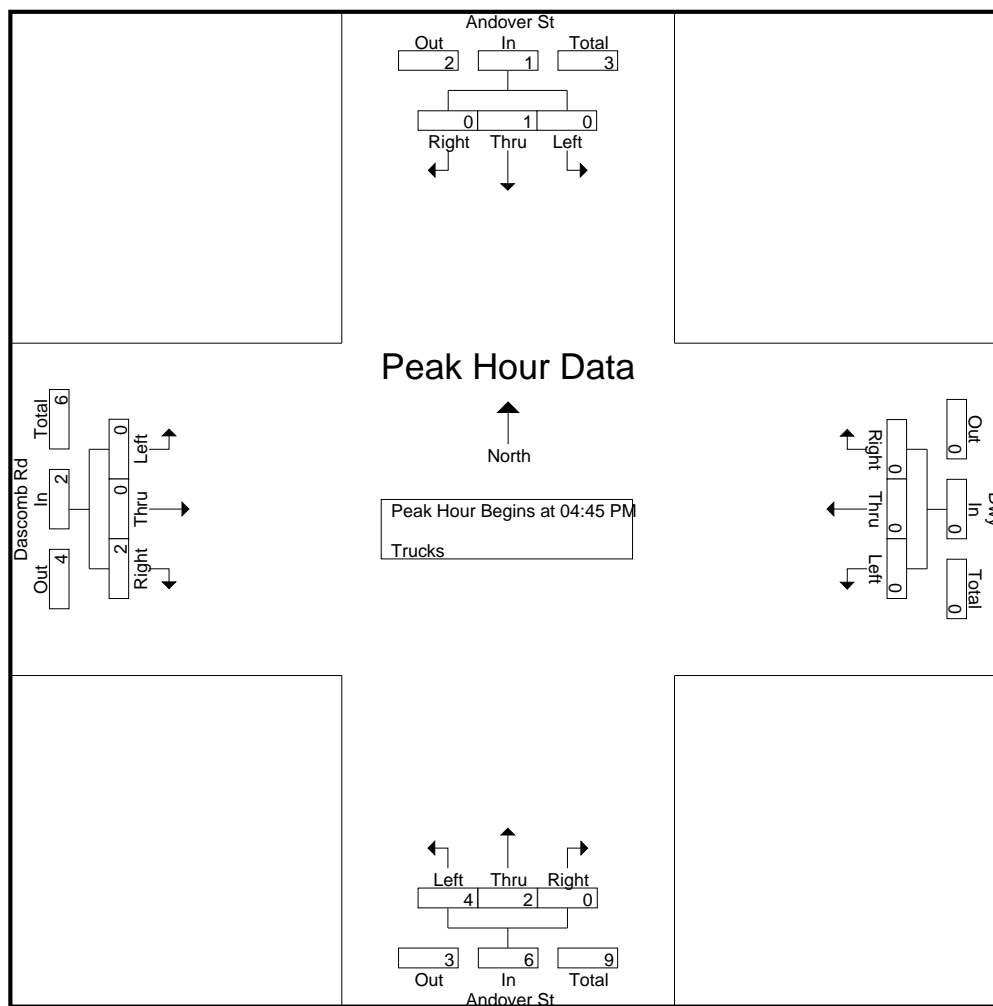
Site Code : 05250005

Start Date : 9/20/2018

Page No : 8

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	2	1	0	3	0	0	1	1	4
05:30 PM	0	1	0	1	0	0	0	0	2	1	0	3	0	0	0	0	4
Total Volume	0	1	0	1	0	0	0	0	4	2	0	6	0	0	2	2	9
% App. Total	0	100	0		0	0	0		66.7	33.3	0		0	0	100		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.500	.500	.000	.500	.000	.000	.500	.500	.563



# Accurate Counts

978-664-2565

File Name : 05250005

Site Code : 05250005

Start Date : 9/20/2018

Page No : 9

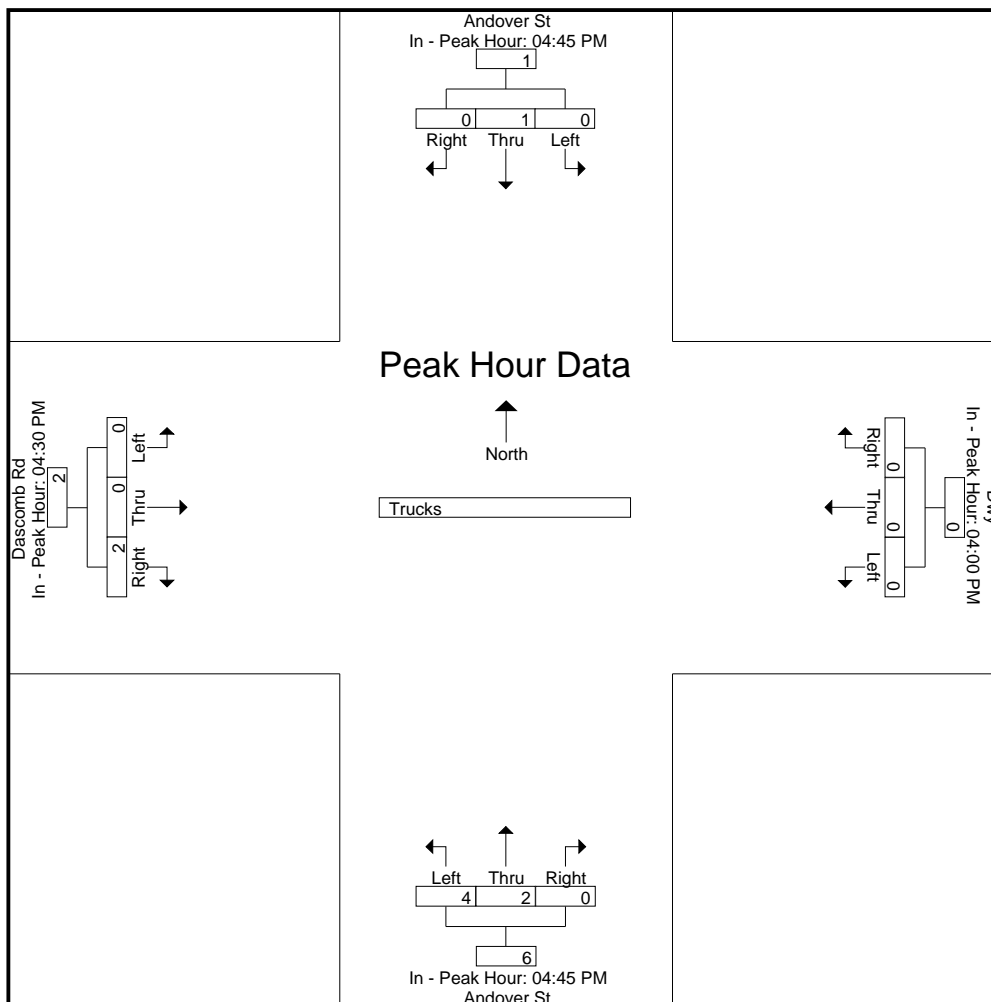
N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM				04:00 PM				04:45 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	2	1	0	3	0	0	1	1
Total Volume	0	1	0	1	0	0	0	0	4	2	0	6	0	0	2	2
% App. Total	0	100	0		0	0	0		66.7	33.3	0		0	0	100	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.500	.500	.000	.500	.000	.000	.500	.500



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250005  
 Site Code : 05250005  
 Start Date : 9/20/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
<b>Total</b>	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
<b>Grand Total</b>	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1
Apprch %	0	0	0		0	0	0		0	100	0		0	0	0				
Total %	0	0	0		0	0	0		0	100	0		0	0	0		0	100	

# Accurate Counts

978-664-2565

File Name : 05250005

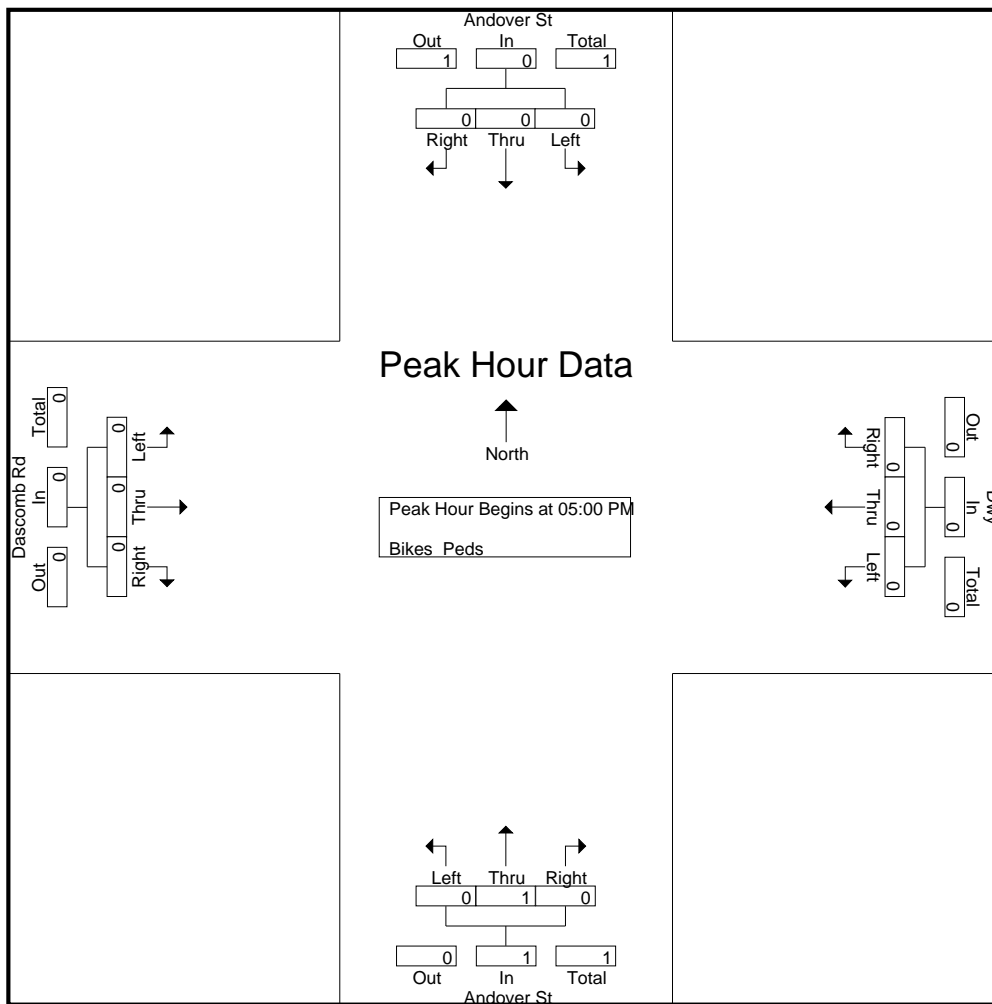
Site Code : 05250005

Start Date : 9/20/2018

Page No : 11

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% App. Total	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250



# Accurate Counts

978-664-2565

File Name : 05250005

Site Code : 05250005

Start Date : 9/20/2018

Page No : 12

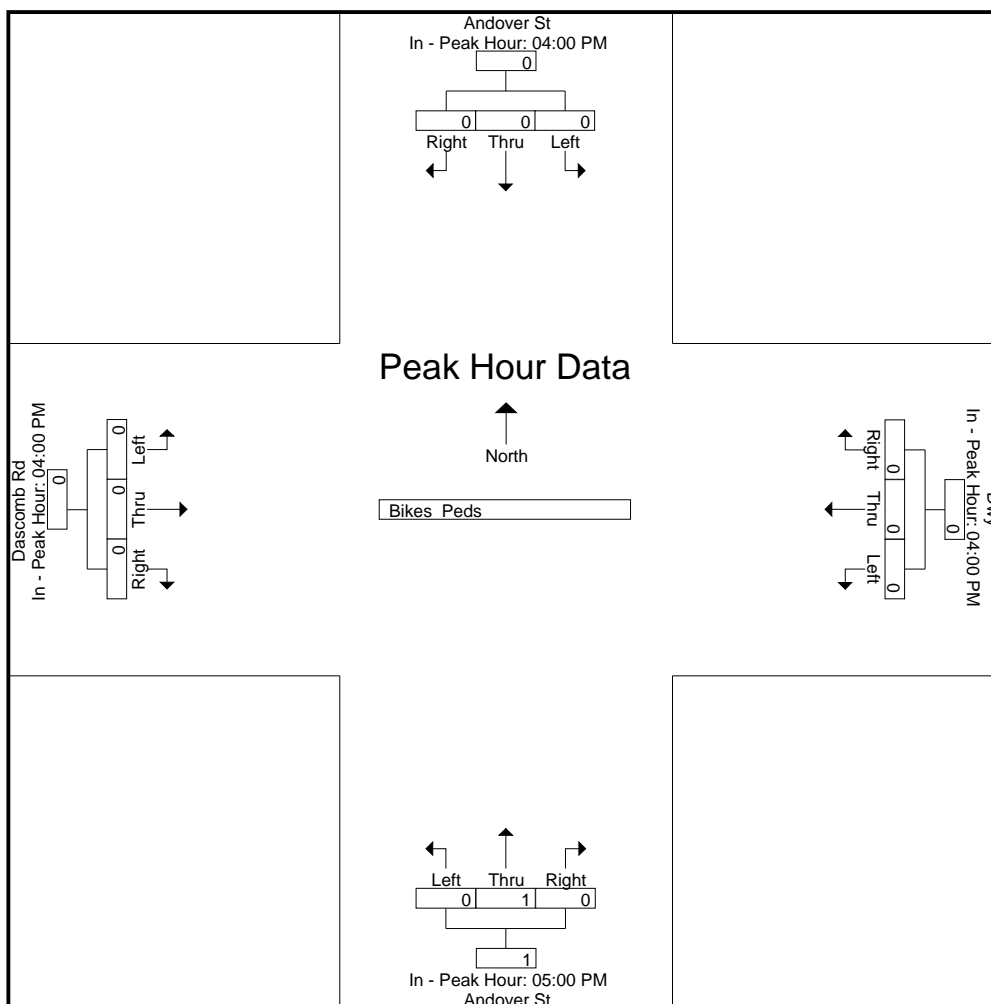
N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				05:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	18	182	9	24	180	5	418
12:15 PM	20	197	6	18	147	6	394
12:30 PM	21	156	5	22	176	10	390
12:45 PM	21	159	5	16	159	5	365
Total	80	694	25	80	662	26	1567
01:00 PM	22	167	9	23	169	9	399
01:15 PM	19	169	2	21	166	8	385
01:30 PM	17	167	7	22	164	5	382
01:45 PM	22	169	1	22	179	7	400
Total	80	672	19	88	678	29	1566
02:00 PM	19	180	6	28	182	3	418
02:15 PM	14	218	3	9	198	5	447
02:30 PM	13	223	8	24	209	1	478
02:45 PM	18	217	6	22	192	8	463
Total	64	838	23	83	781	17	1806
03:00 PM	10	202	7	28	235	2	484
03:15 PM	19	257	5	23	239	5	548
03:30 PM	13	208	1	22	271	3	518
03:45 PM	15	255	5	19	230	4	528
Total	57	922	18	92	975	14	2078
04:00 PM	12	241	9	20	239	4	525
04:15 PM	16	235	4	23	274	4	556
04:30 PM	4	237	9	23	293	1	567
04:45 PM	8	279	11	15	247	1	561
Total	40	992	33	81	1053	10	2209

# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 2

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	7	295	8	20	235	2	567
05:15 PM	8	273	3	13	309	2	608
05:30 PM	5	261	2	20	200	0	488
05:45 PM	9	267	6	18	206	0	506
Total	29	1096	19	71	950	4	2169
06:00 PM	4	218	7	10	189	5	433
06:15 PM	7	251	5	10	251	5	529
06:30 PM	8	233	3	6	222	1	473
06:45 PM	2	186	3	8	164	2	365
Total	21	888	18	34	826	13	1800
Grand Total	371	6102	155	529	5925	113	13195
Apprch %	5.7	94.3	22.7	77.3	98.1	1.9	
Total %	2.8	46.2	1.2	4	44.9	0.9	
Cars	349	5951	154	501	5817	110	12882
% Cars	94.1	97.5	99.4	94.7	98.2	97.3	97.6
Trucks	22	151	1	28	108	3	313
% Trucks	5.9	2.5	0.6	5.3	1.8	2.7	2.4

# Accurate Counts

978-664-2565

File Name : 05250006

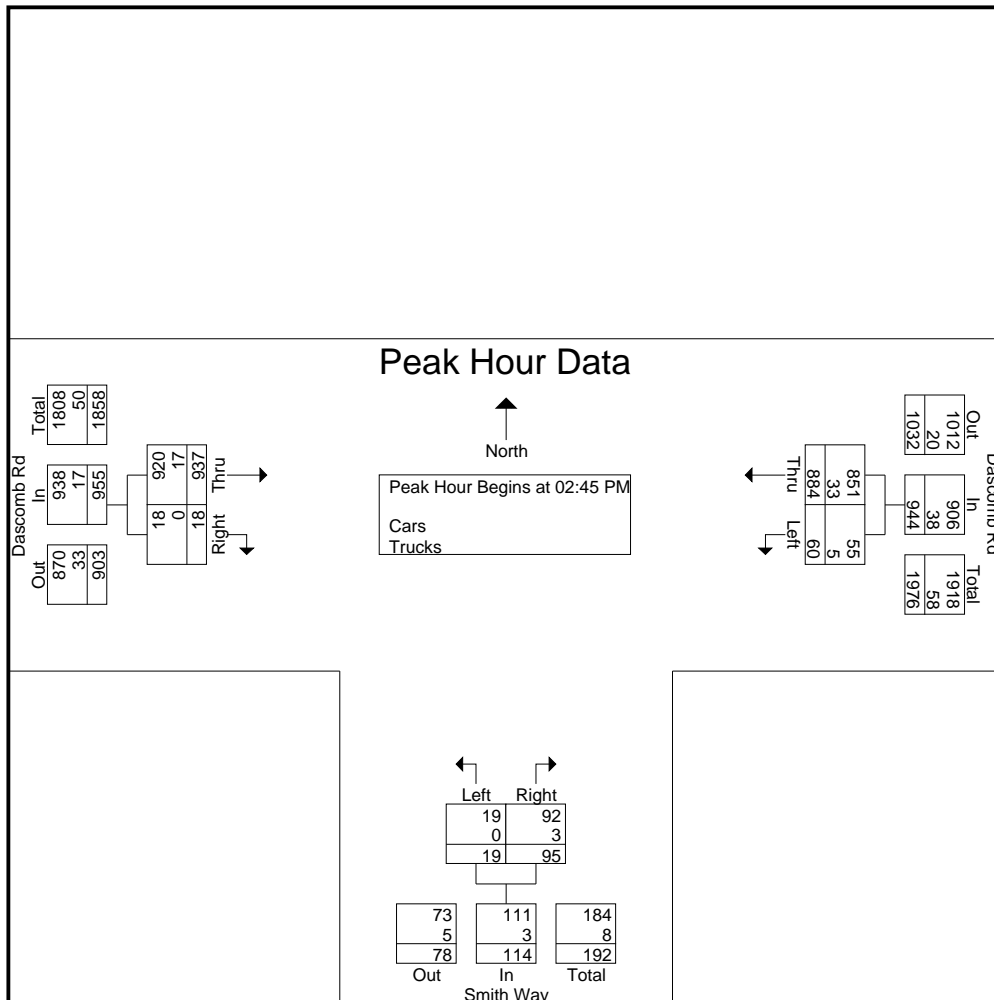
Site Code : 05250006

Start Date : 9/20/2018

Page No : 3

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:45 PM										
02:45 PM	18	217	235	6	22	28	192	<b>8</b>	200	463
03:00 PM	10	202	212	<b>7</b>	<b>28</b>	<b>35</b>	235	2	237	484
03:15 PM	<b>19</b>	<b>257</b>	<b>276</b>	5	23	28	239	5	244	<b>548</b>
03:30 PM	13	208	221	1	22	23	<b>271</b>	3	<b>274</b>	518
Total Volume	60	884	944	19	95	114	937	18	955	2013
% App. Total	6.4	93.6		16.7	83.3		98.1	1.9		
PHF	.789	.860	.855	.679	.848	.814	.864	.563	.871	.918
Cars	55	851	906	19	92	111	920	18	938	1955
% Cars	91.7	96.3	96.0	100	96.8	97.4	98.2	100	98.2	97.1
Trucks	5	33	38	0	3	3	17	0	17	58
% Trucks	8.3	3.7	4.0	0	3.2	2.6	1.8	0	1.8	2.9



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

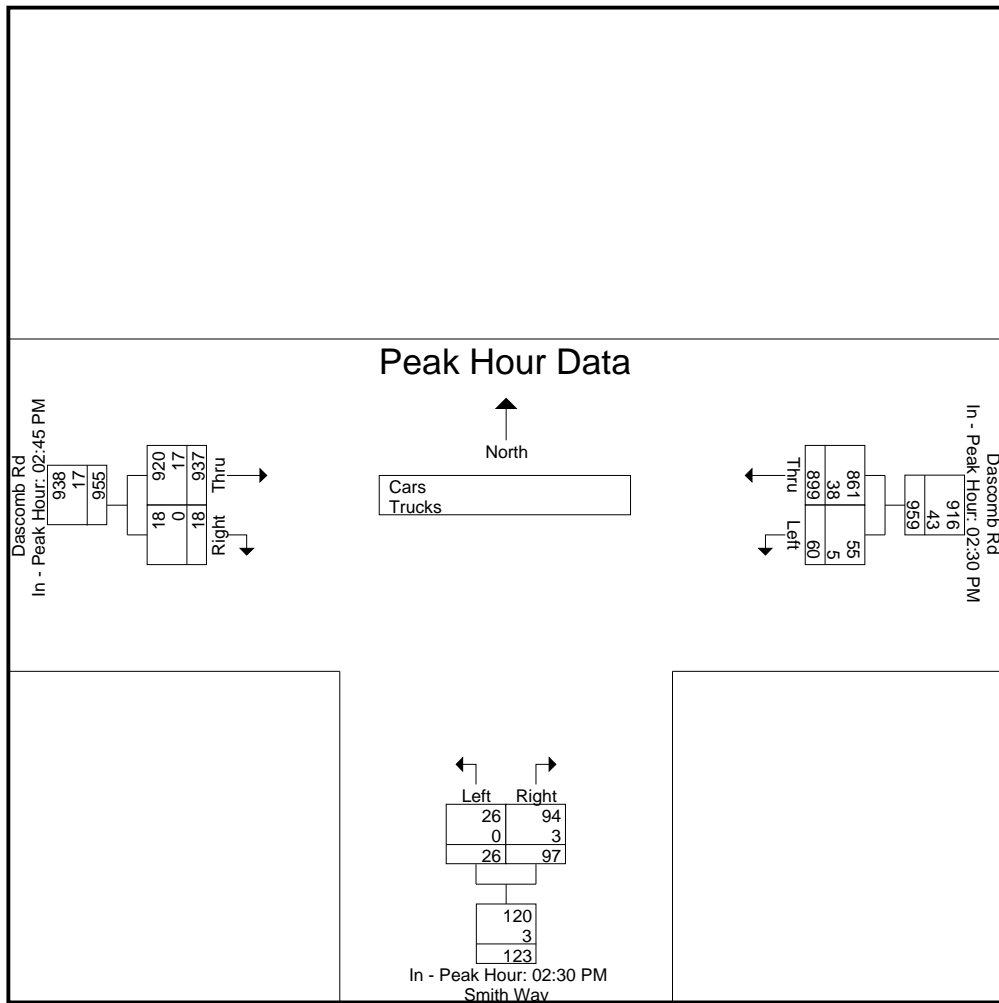
File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 4

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM			02:30 PM			02:45 PM		
+0 mins.	13	223	236	<b>8</b>	24	32	192	<b>8</b>	200
+15 mins.	18	217	235	6	22	28	235	2	237
+30 mins.	10	202	212	7	<b>28</b>	<b>35</b>	239	5	244
+45 mins.	<b>19</b>	<b>257</b>	<b>276</b>	5	23	28	<b>271</b>	3	<b>274</b>
Total Volume	60	899	959	26	97	123	937	18	955
% App. Total	6.3	93.7		21.1	78.9		98.1	1.9	
PHF	.789	.875	.869	.813	.866	.879	.864	.563	.871
Cars	55	861	916	26	94	120	920	18	938
% Cars	91.7	95.8	95.5	100	96.9	97.6	98.2	100	98.2
Trucks	5	38	43	0	3	3	17	0	17
% Trucks	8.3	4.2	4.5	0	3.1	2.4	1.8	0	1.8



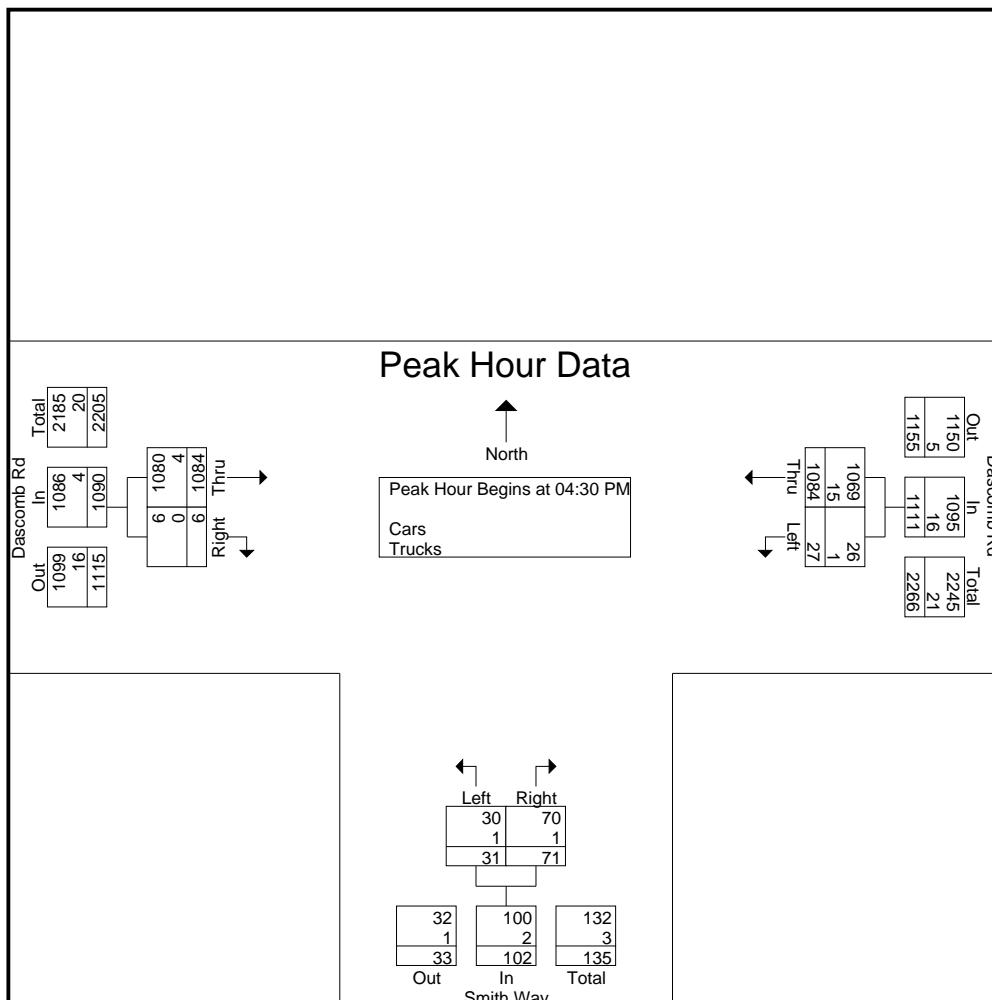
# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 5

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	4	237	241	9	<b>23</b>	<b>32</b>	293	1	294	567
04:45 PM	<b>8</b>	279	287	<b>11</b>	15	26	247	1	248	561
05:00 PM	7	<b>295</b>	<b>302</b>	8	20	28	235	<b>2</b>	237	567
05:15 PM	8	273	281	3	13	16	<b>309</b>	2	<b>311</b>	<b>608</b>
Total Volume	27	1084	1111	31	71	102	1084	6	1090	2303
% App. Total	2.4	97.6		30.4	69.6		99.4	0.6		
PHF	.844	.919	.920	.705	.772	.797	.877	.750	.876	.947
Cars	26	1069	1095	30	70	100	1080	6	1086	2281
% Cars	96.3	98.6	98.6	96.8	98.6	98.0	99.6	100	99.6	99.0
Trucks	1	15	16	1	1	2	4	0	4	22
% Trucks	3.7	1.4	1.4	3.2	1.4	2.0	0.4	0	0.4	1.0



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

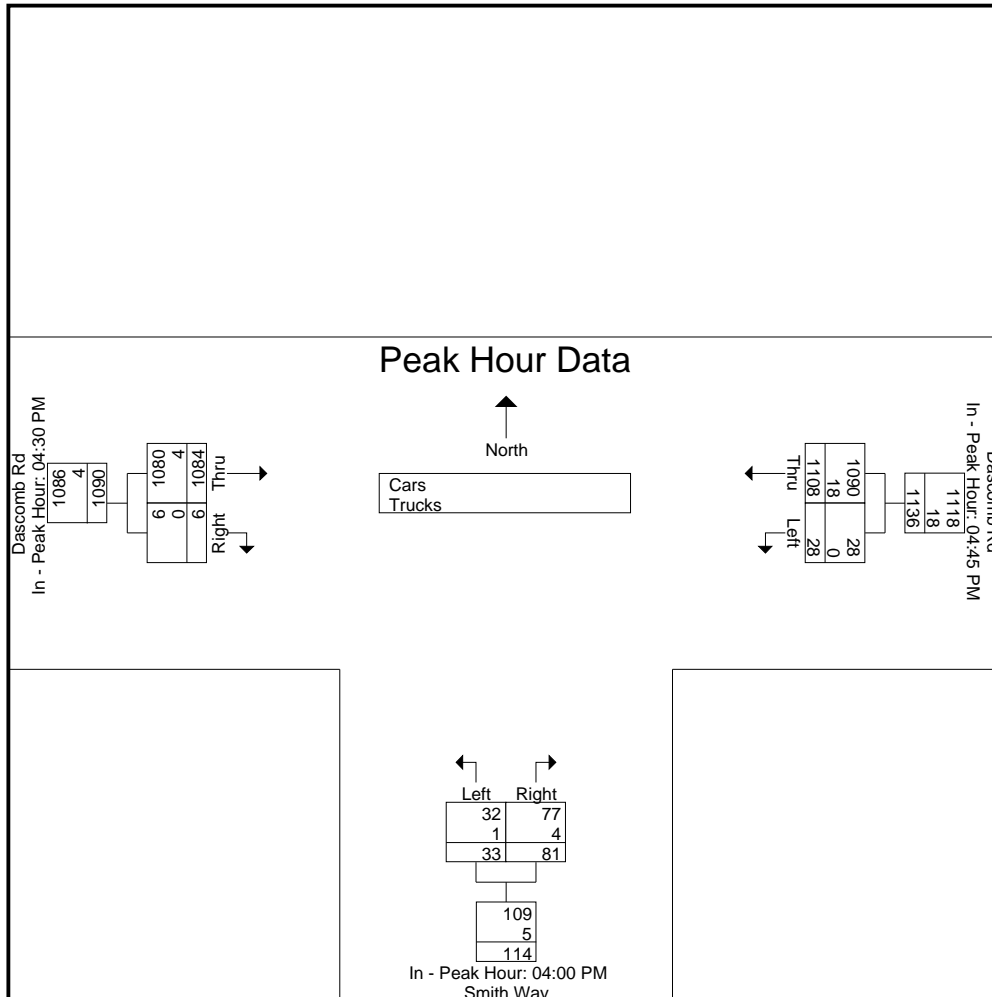
File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 6

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:00 PM			04:30 PM		
+0 mins.	<b>8</b>	279	287	9	20	29	293	1	294
+15 mins.	7	<b>295</b>	<b>302</b>	4	<b>23</b>	27	247	1	248
+30 mins.	8	273	281	9	23	<b>32</b>	235	<b>2</b>	237
+45 mins.	5	261	266	<b>11</b>	15	26	<b>309</b>	2	<b>311</b>
Total Volume	28	1108	1136	33	81	114	1084	6	1090
% App. Total	2.5	97.5		28.9	71.1		99.4	0.6	
PHF	.875	.939	.940	.750	.880	.891	.877	.750	.876
Cars	28	1090	1118	32	77	109	1080	6	1086
% Cars	100	98.4	98.4	97	95.1	95.6	99.6	100	99.6
Trucks	0	18	18	1	4	5	4	0	4
% Trucks	0	1.6	1.6	3	4.9	4.4	0.4	0	0.4



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 7

## Groups Printed- Cars

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	15	175	9	22	175	5	401
12:15 PM	20	191	6	15	140	6	378
12:30 PM	21	152	5	20	171	9	378
12:45 PM	21	150	5	16	155	5	352
Total	77	668	25	73	641	25	1509
01:00 PM	22	163	9	21	163	9	387
01:15 PM	18	163	2	20	157	7	367
01:30 PM	16	162	7	22	159	5	371
01:45 PM	19	163	1	22	173	7	385
Total	75	651	19	85	652	28	1510
02:00 PM	18	171	6	26	176	3	400
02:15 PM	13	212	3	7	189	4	428
02:30 PM	13	211	8	22	203	1	458
02:45 PM	17	207	6	22	189	8	449
Total	61	801	23	77	757	16	1735
03:00 PM	9	195	7	28	227	2	468
03:15 PM	16	248	5	22	237	5	533
03:30 PM	13	201	1	20	267	3	505
03:45 PM	13	250	5	18	228	4	518
Total	51	894	18	88	959	14	2024
04:00 PM	12	236	9	18	235	4	514
04:15 PM	15	234	4	21	269	4	547
04:30 PM	3	236	9	23	293	1	565
04:45 PM	8	270	10	15	247	1	551
Total	38	976	32	77	1044	10	2177

# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 8

## Groups Printed- Cars

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	7	291	8	20	234	2	562
05:15 PM	8	272	3	12	306	2	603
05:30 PM	5	257	2	19	199	0	482
05:45 PM	8	262	6	18	204	0	498
<b>Total</b>	<b>28</b>	<b>1082</b>	<b>19</b>	<b>69</b>	<b>943</b>	<b>4</b>	<b>2145</b>
06:00 PM	4	216	7	10	188	5	430
06:15 PM	6	249	5	10	250	5	525
06:30 PM	7	231	3	6	220	1	468
06:45 PM	2	183	3	6	163	2	359
<b>Total</b>	<b>19</b>	<b>879</b>	<b>18</b>	<b>32</b>	<b>821</b>	<b>13</b>	<b>1782</b>
<b>Grand Total</b>	<b>349</b>	<b>5951</b>	<b>154</b>	<b>501</b>	<b>5817</b>	<b>110</b>	<b>12882</b>
Apprch %	5.5	94.5	23.5	76.5	98.1	1.9	
Total %	2.7	46.2	1.2	3.9	45.2	0.9	

# Accurate Counts

978-664-2565

File Name : 05250006

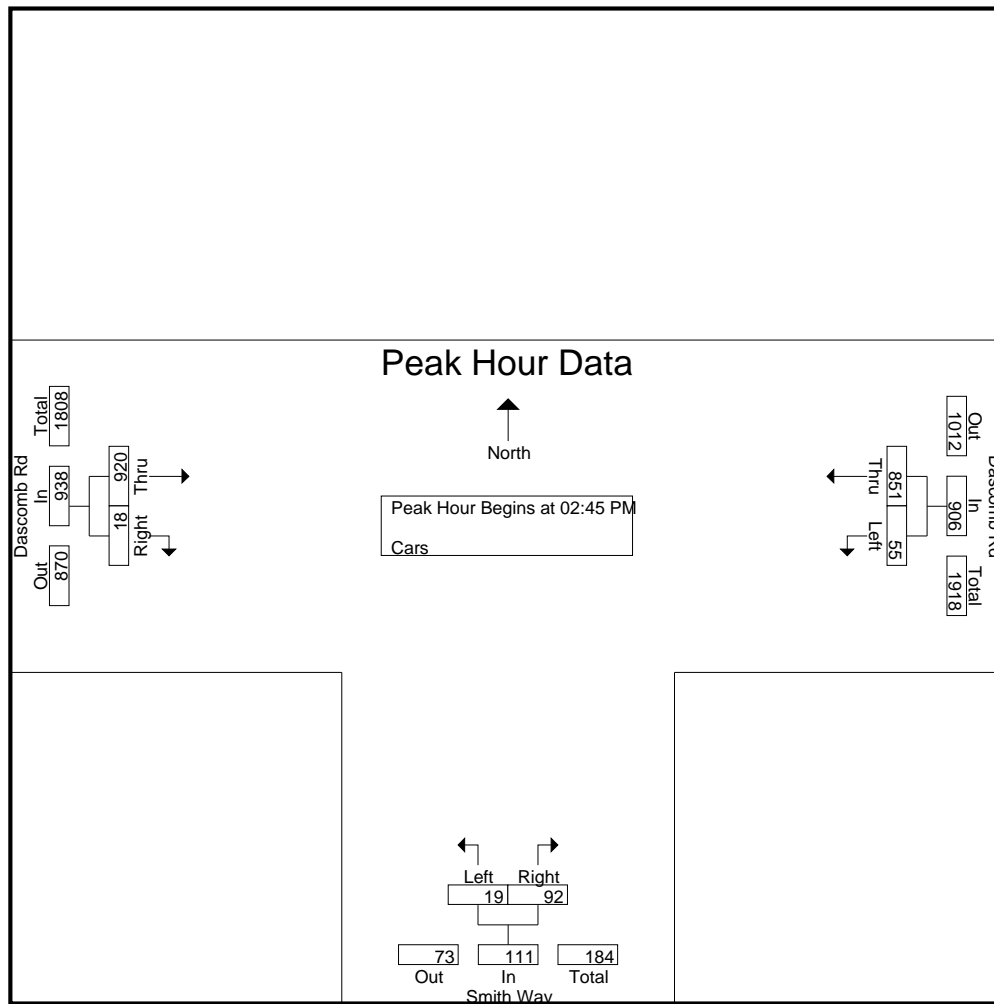
Site Code : 05250006

Start Date : 9/20/2018

Page No : 9

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:45 PM										
02:45 PM	17	207	224	6	22	28	189	8	197	449
03:00 PM	9	195	204	7	28	35	227	2	229	468
03:15 PM	16	248	264	5	22	27	237	5	242	533
03:30 PM	13	201	214	1	20	21	267	3	270	505
Total Volume	55	851	906	19	92	111	920	18	938	1955
% App. Total	6.1	93.9		17.1	82.9		98.1	1.9		
PHF	.809	.858	.858	.679	.821	.793	.861	.563	.869	.917



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

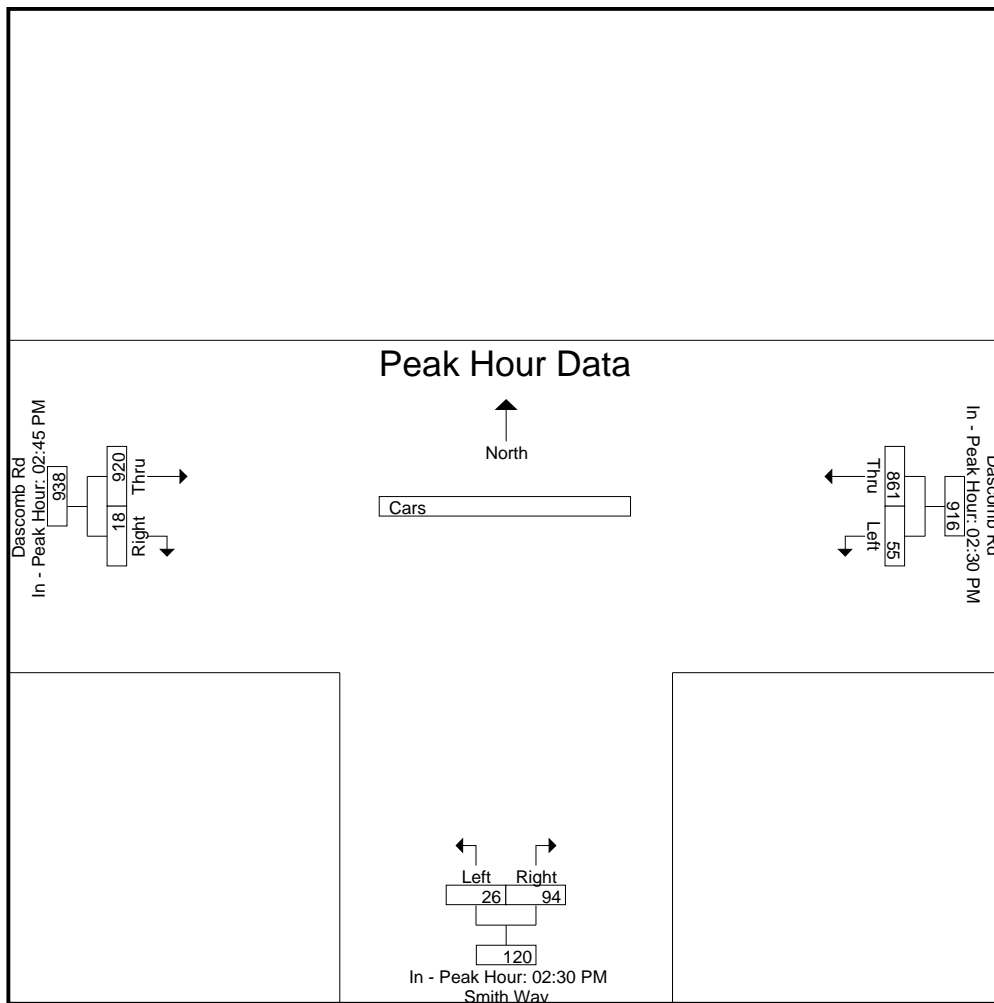
File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 10

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM			02:30 PM			02:45 PM		
+0 mins.	13	211	224	<b>8</b>	22	30	189	<b>8</b>	197
+15 mins.	<b>17</b>	207	224	6	22	28	227	2	229
+30 mins.	9	195	204	7	<b>28</b>	<b>35</b>	237	5	242
+45 mins.	16	<b>248</b>	<b>264</b>	5	22	27	<b>267</b>	3	<b>270</b>
Total Volume	55	861	916	26	94	120	920	18	938
% App. Total	6	94		21.7	78.3		98.1	1.9	
PHF	.809	.868	.867	.813	.839	.857	.861	.563	.869



# Accurate Counts

978-664-2565

File Name : 05250006

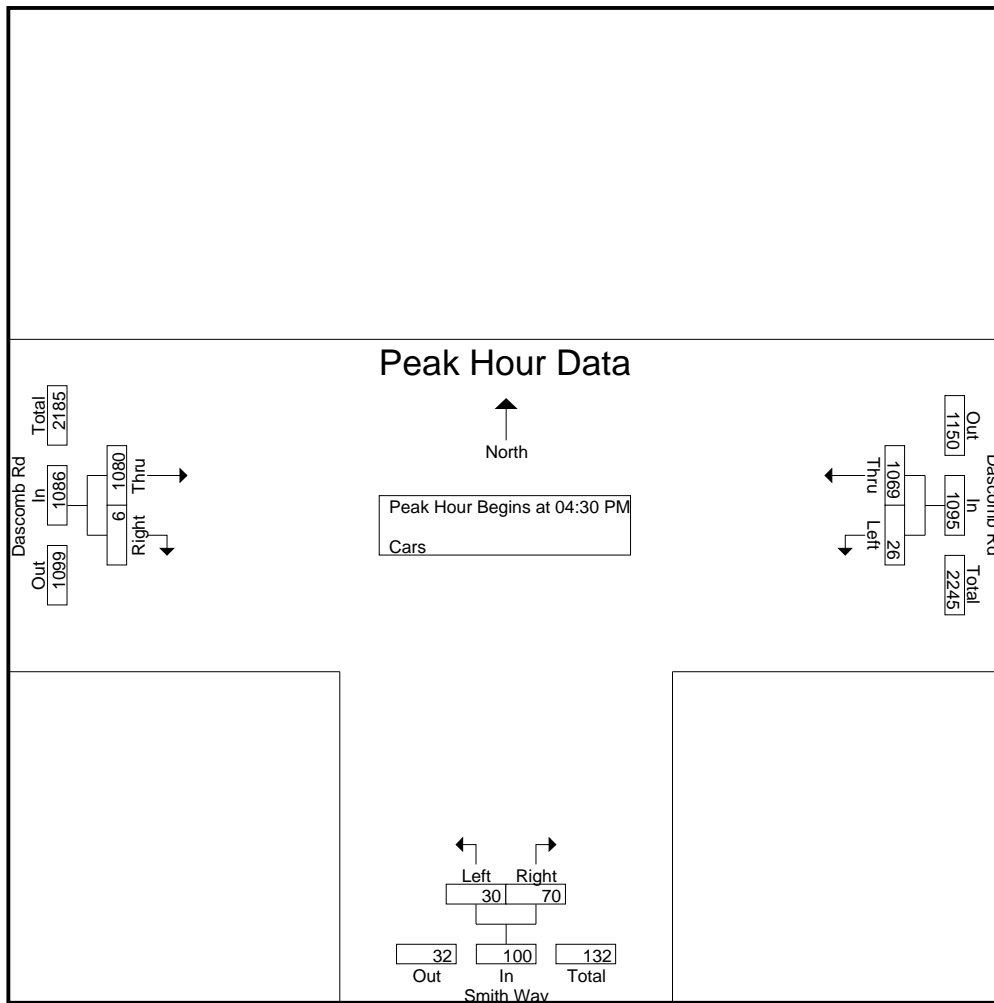
Site Code : 05250006

Start Date : 9/20/2018

Page No : 11

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	3	236	239	9	<b>23</b>	<b>32</b>	293	1	294	565
04:45 PM	<b>8</b>	270	278	<b>10</b>	15	25	247	1	248	551
05:00 PM	7	<b>291</b>	<b>298</b>	8	20	28	234	<b>2</b>	236	562
05:15 PM	8	272	280	3	12	15	<b>306</b>	2	<b>308</b>	<b>603</b>
Total Volume	26	1069	1095	30	70	100	1080	6	1086	2281
% App. Total	2.4	97.6		30	70		99.4	0.6		
PHF	.813	.918	.919	.750	.761	.781	.882	.750	.881	.946



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

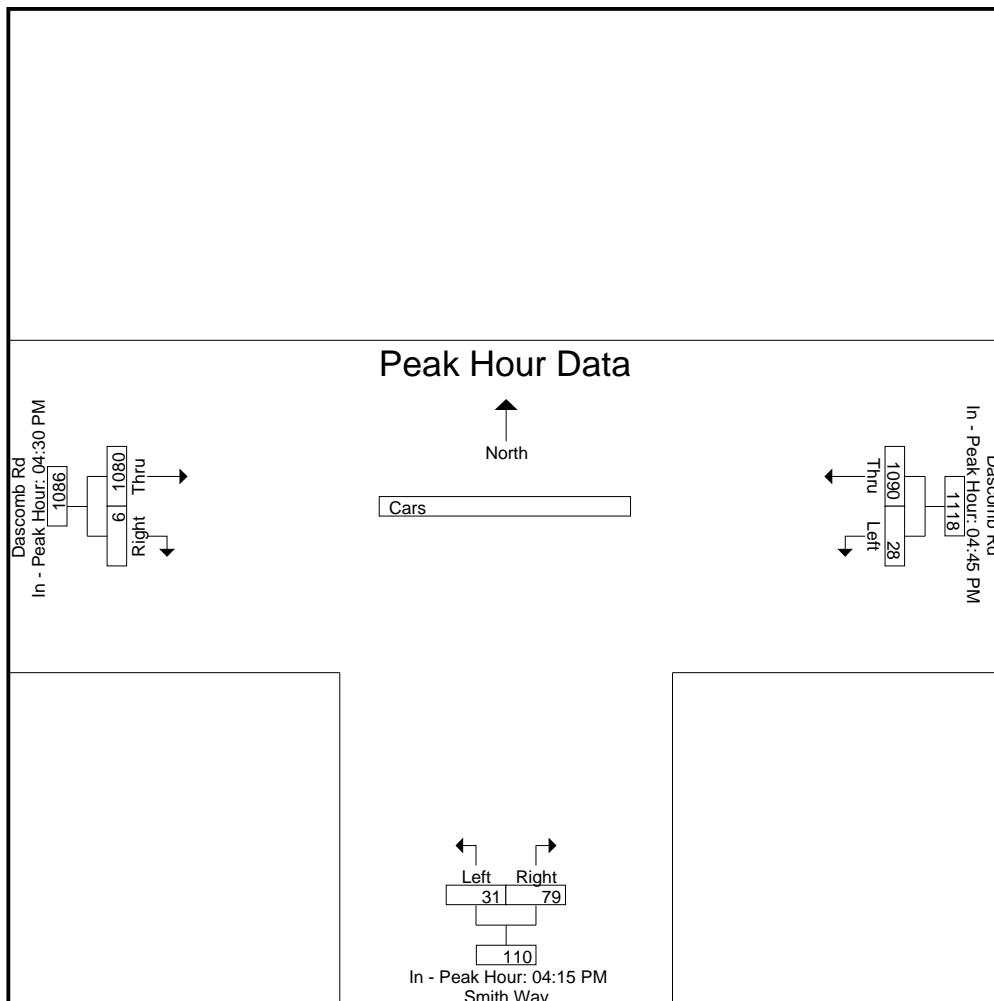
File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 12

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:15 PM			04:30 PM		
+0 mins.	<b>8</b>	270	278	4	21	25	293	1	294
+15 mins.	7	<b>291</b>	<b>298</b>	9	<b>23</b>	<b>32</b>	247	1	248
+30 mins.	8	272	280	<b>10</b>	15	25	234	<b>2</b>	236
+45 mins.	5	257	262	8	20	28	<b>306</b>	2	<b>308</b>
Total Volume	28	1090	1118	31	79	110	1080	6	1086
% App. Total	2.5	97.5		28.2	71.8		99.4	0.6	
PHF	.875	.936	.938	.775	.859	.859	.882	.750	.881



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 13

## Groups Printed- Trucks

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	3	7	0	2	5	0	17
12:15 PM	0	6	0	3	7	0	16
12:30 PM	0	4	0	2	5	1	12
12:45 PM	0	9	0	0	4	0	13
<b>Total</b>	<b>3</b>	<b>26</b>	<b>0</b>	<b>7</b>	<b>21</b>	<b>1</b>	<b>58</b>
01:00 PM	0	4	0	2	6	0	12
01:15 PM	1	6	0	1	9	1	18
01:30 PM	1	5	0	0	5	0	11
01:45 PM	3	6	0	0	6	0	15
<b>Total</b>	<b>5</b>	<b>21</b>	<b>0</b>	<b>3</b>	<b>26</b>	<b>1</b>	<b>56</b>
02:00 PM	1	9	0	2	6	0	18
02:15 PM	1	6	0	2	9	1	19
02:30 PM	0	12	0	2	6	0	20
02:45 PM	1	10	0	0	3	0	14
<b>Total</b>	<b>3</b>	<b>37</b>	<b>0</b>	<b>6</b>	<b>24</b>	<b>1</b>	<b>71</b>
03:00 PM	1	7	0	0	8	0	16
03:15 PM	3	9	0	1	2	0	15
03:30 PM	0	7	0	2	4	0	13
03:45 PM	2	5	0	1	2	0	10
<b>Total</b>	<b>6</b>	<b>28</b>	<b>0</b>	<b>4</b>	<b>16</b>	<b>0</b>	<b>54</b>
04:00 PM	0	5	0	2	4	0	11
04:15 PM	1	1	0	2	5	0	9
04:30 PM	1	1	0	0	0	0	2
04:45 PM	0	9	1	0	0	0	10
<b>Total</b>	<b>2</b>	<b>16</b>	<b>1</b>	<b>4</b>	<b>9</b>	<b>0</b>	<b>32</b>

# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 14

## Groups Printed- Trucks

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	0	4	0	0	1	0	5
05:15 PM	0	1	0	1	3	0	5
05:30 PM	0	4	0	1	1	0	6
05:45 PM	1	5	0	0	2	0	8
Total	1	14	0	2	7	0	24
06:00 PM	0	2	0	0	1	0	3
06:15 PM	1	2	0	0	1	0	4
06:30 PM	1	2	0	0	2	0	5
06:45 PM	0	3	0	2	1	0	6
Total	2	9	0	2	5	0	18
Grand Total	22	151	1	28	108	3	313
Apprch %	12.7	87.3	3.4	96.6	97.3	2.7	
Total %	7	48.2	0.3	8.9	34.5	1	

# Accurate Counts

978-664-2565

File Name : 05250006

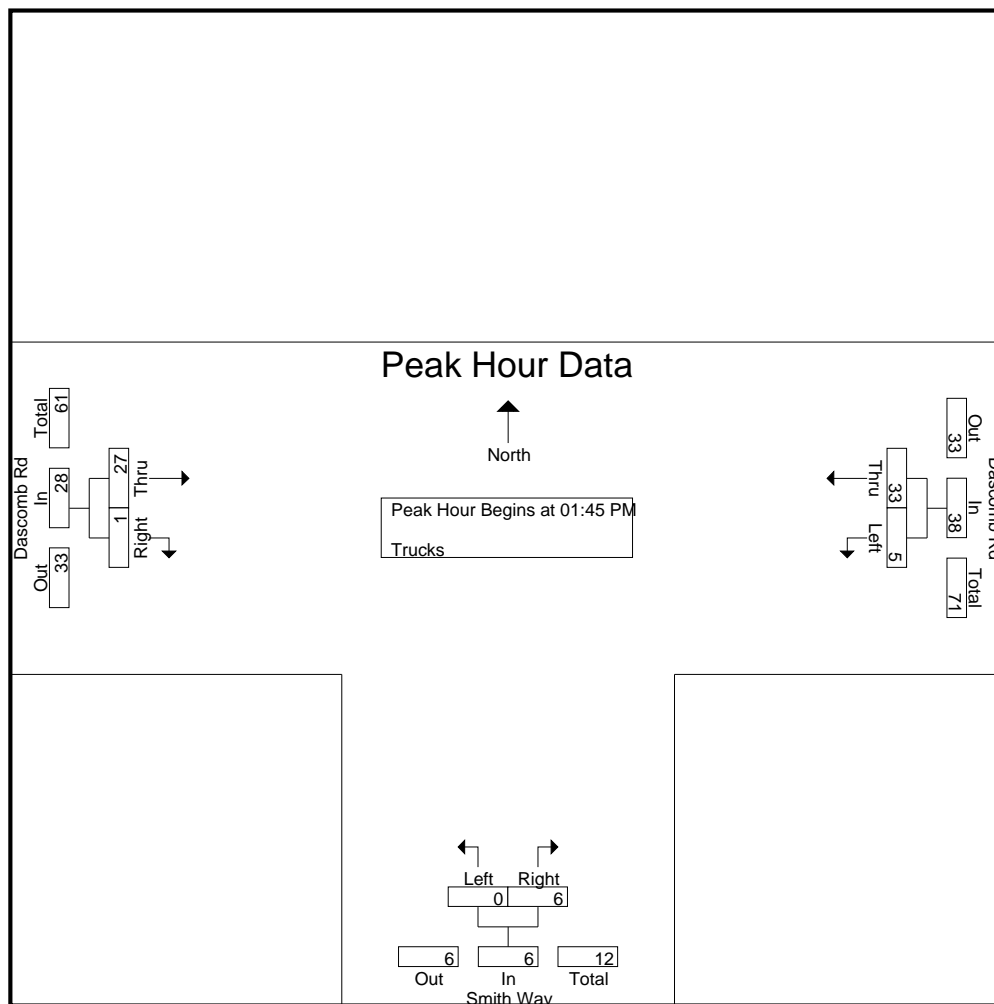
Site Code : 05250006

Start Date : 9/20/2018

Page No : 15

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 01:45 PM										
01:45 PM	3	6	9	0	0	0	6	0	6	15
02:00 PM	1	9	10	0	2	2	6	0	6	18
02:15 PM	1	6	7	0	2	2	9	1	10	19
02:30 PM	0	12	12	0	2	2	6	0	6	20
<b>Total Volume</b>	5	33	38	0	6	6	27	1	28	72
<b>% App. Total</b>	13.2	86.8		0	100		96.4	3.6		
<b>PHF</b>	.417	.688	.792	.000	.750	.750	.750	.250	.700	.900



# Accurate Counts

978-664-2565

File Name : 05250006

Site Code : 05250006

Start Date : 9/20/2018

Page No : 16

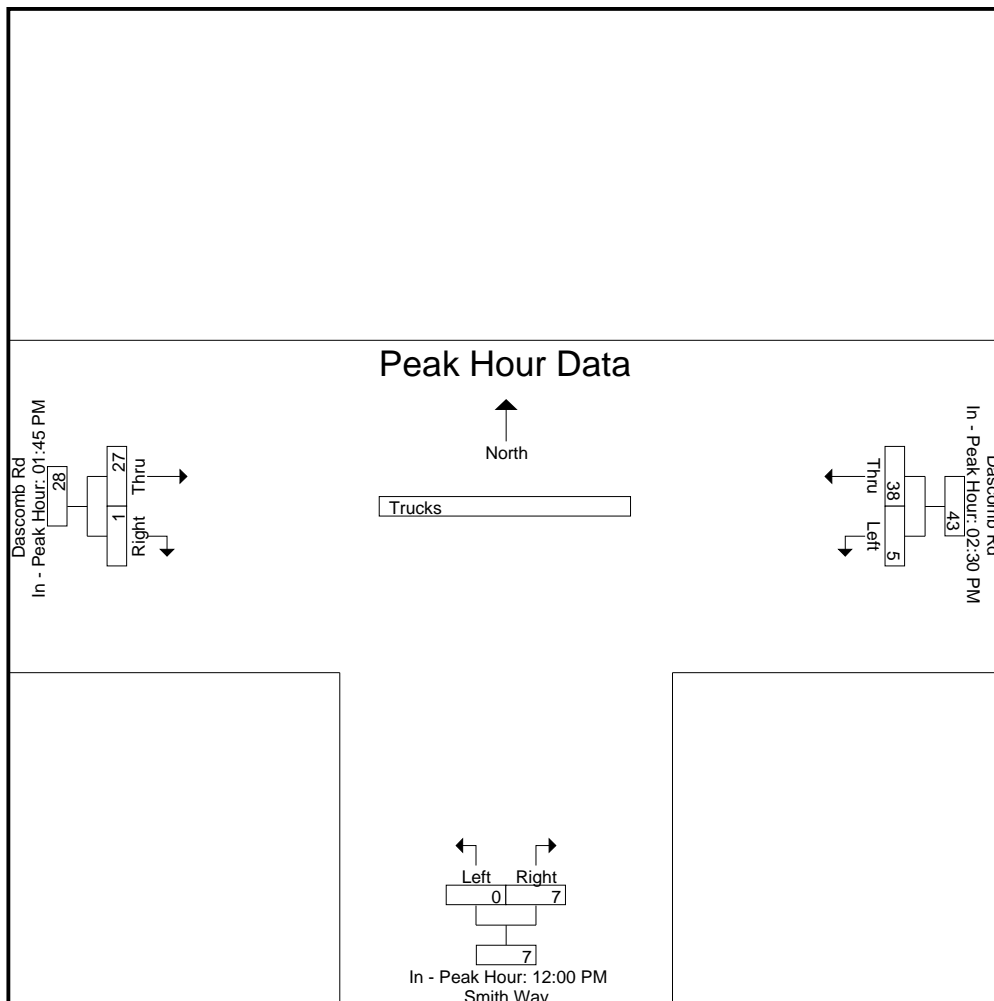
N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM			12:00 PM			01:45 PM		
+0 mins.	0	12	12	0	2	2	6	0	6
+15 mins.	1	10	11	0	3	3	6	0	6
+30 mins.	1	7	8	0	2	2	9	1	10
+45 mins.	3	9	12	0	0	0	6	0	6
Total Volume	5	38	43	0	7	7	27	1	28
% App. Total	11.6	88.4		0	100		96.4	3.6	
PHF	.417	.792	.896	.000	.583	.583	.750	.250	.700



# Accurate Counts

978-664-2565

File Name : 05250006

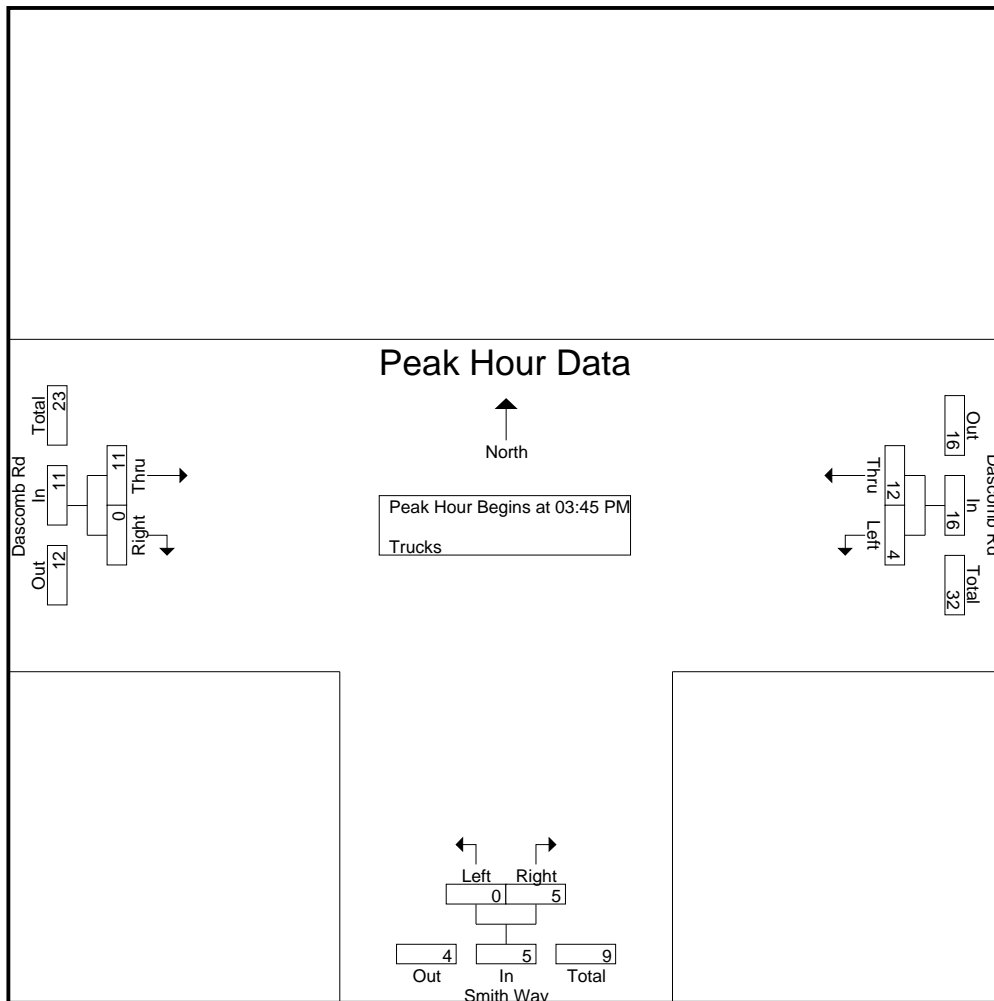
Site Code : 05250006

Start Date : 9/20/2018

Page No : 17

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:45 PM										
03:45 PM	2	5	7	0	1	1	2	0	2	10
04:00 PM	0	5	5	0	2	2	4	0	4	11
04:15 PM	1	1	2	0	2	2	5	0	5	9
04:30 PM	1	1	2	0	0	0	0	0	0	2
<b>Total Volume</b>	4	12	16	0	5	5	11	0	11	32
% App. Total	25	75		0	100		100	0		
PHF	.500	.600	.571	.000	.625	.625	.550	.000	.550	.727



# Accurate Counts

978-664-2565

File Name : 05250006

Site Code : 05250006

Start Date : 9/20/2018

Page No : 18

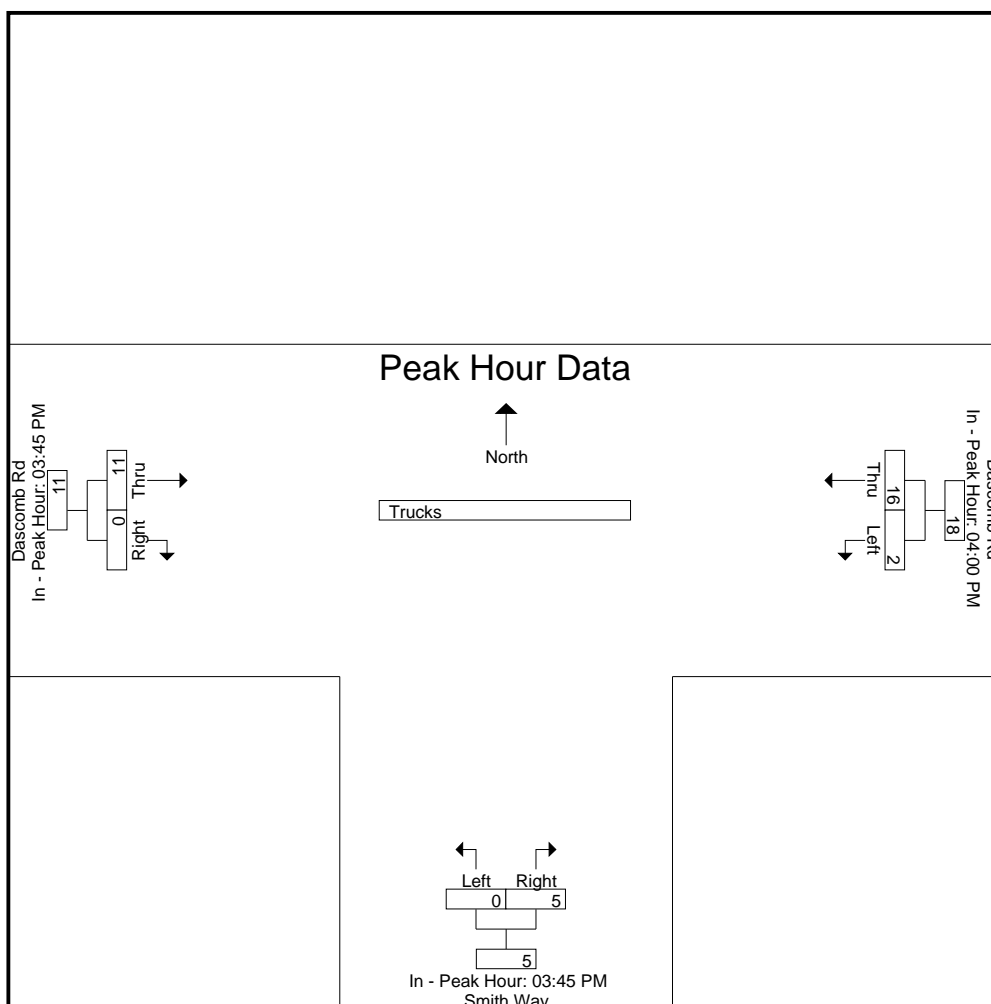
N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			03:45 PM			03:45 PM		
+0 mins.	0	5	5	0	1	1	2	0	2
+15 mins.	1	1	2	0	2	2	4	0	4
+30 mins.	1	1	2	0	2	2	5	0	5
+45 mins.	0	9	9	0	0	0	0	0	0
Total Volume	2	16	18	0	5	5	11	0	11
% App. Total	11.1	88.9		0	100		100	0	
PHF	.500	.444	.500	.000	.625	.625	.550	.000	.550





# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 20

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	1	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	1	0	0	0	0	0	0	0	0	1	1
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total</b>	0	6	2	0	0	0	0	0	0	2	6	8
Apprch %	0	100		0	0		0	0				
Total %	0	100		0	0		0	0		25	75	

# Accurate Counts

978-664-2565

File Name : 05250006

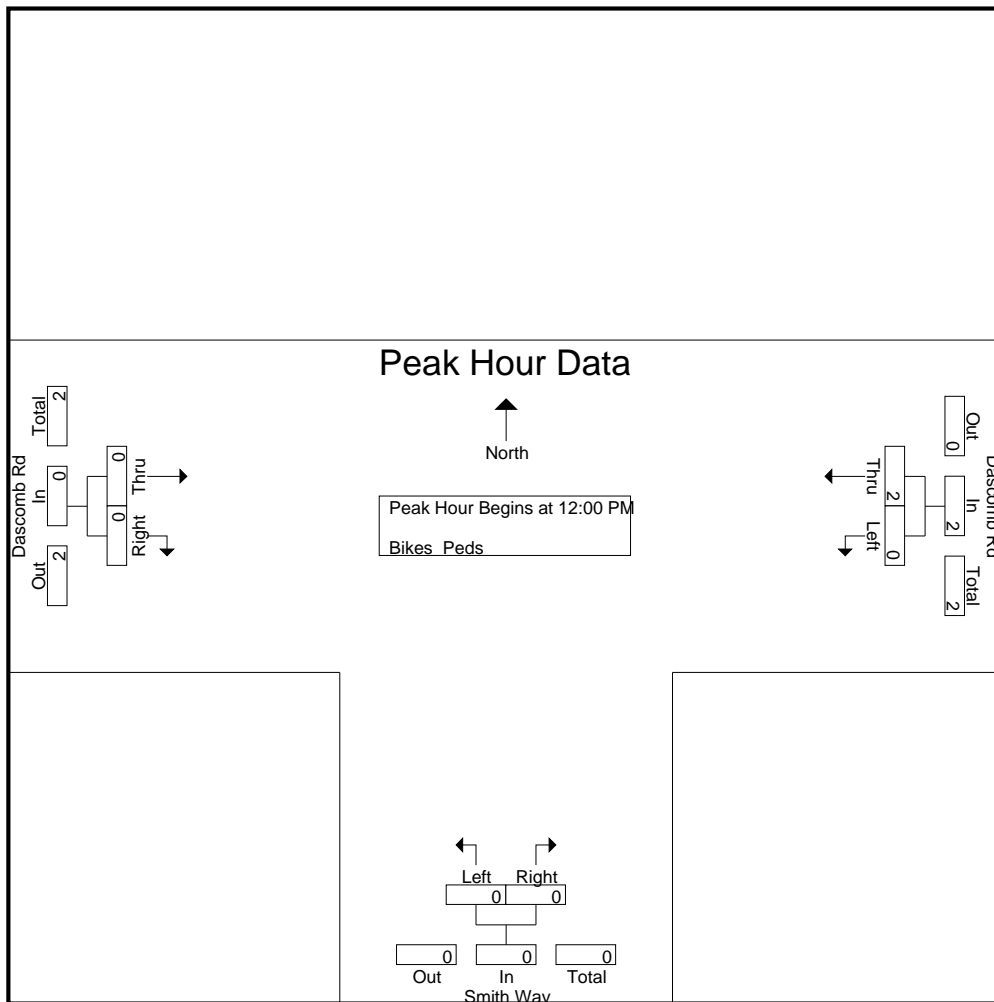
Site Code : 05250006

Start Date : 9/20/2018

Page No : 21

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	0	1	1	0	0	0	0	0	0	1
12:15 PM	0	1	1	0	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0
<b>Total Volume</b>	0	2	2	0	0	0	0	0	0	2
<b>% App. Total</b>	0	100		0	0		0	0		
<b>PHF</b>	.000	.500	.500	.000	.000	.000	.000	.000	.000	.500



# Accurate Counts

978-664-2565

File Name : 05250006

Site Code : 05250006

Start Date : 9/20/2018

Page No : 22

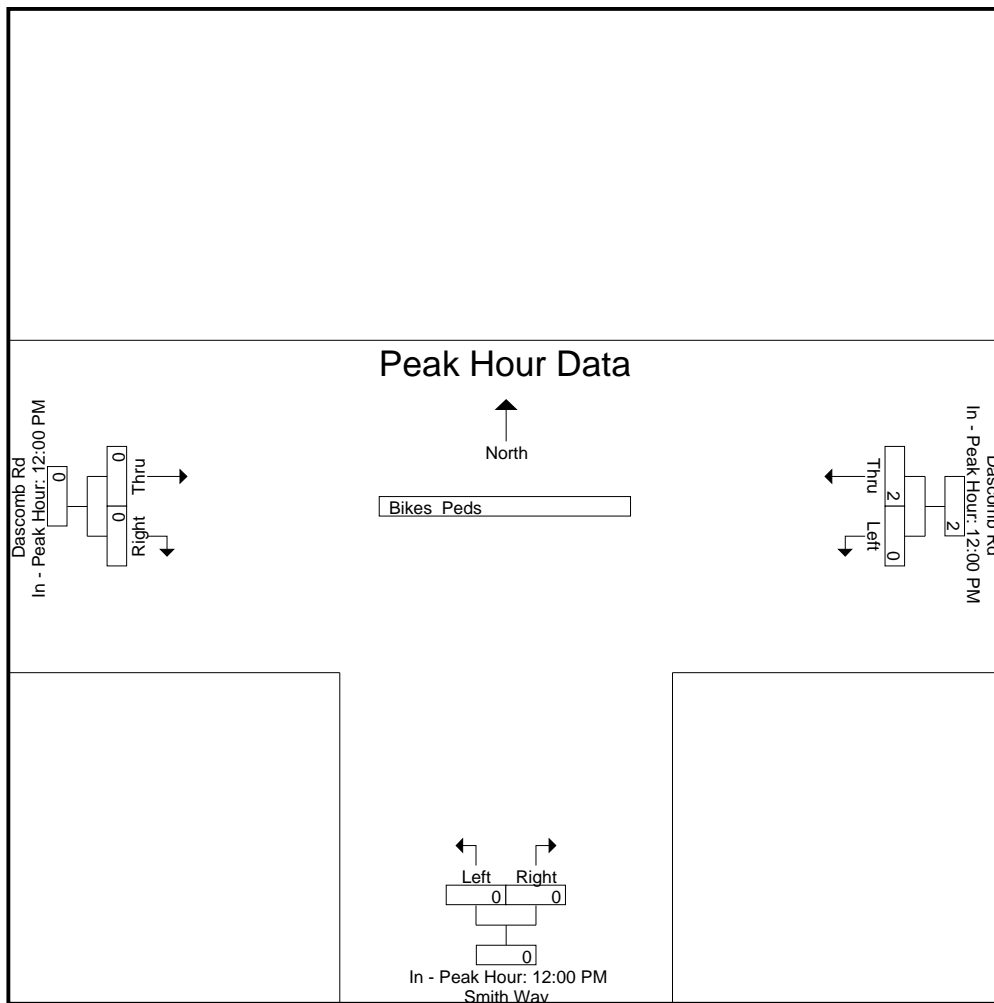
N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM			12:00 PM			12:00 PM		
+0 mins.	0	1	1	0	0	0	0	0	0
+15 mins.	0	1	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	2	2	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.500	.500	.000	.000	.000	.000	.000	.000



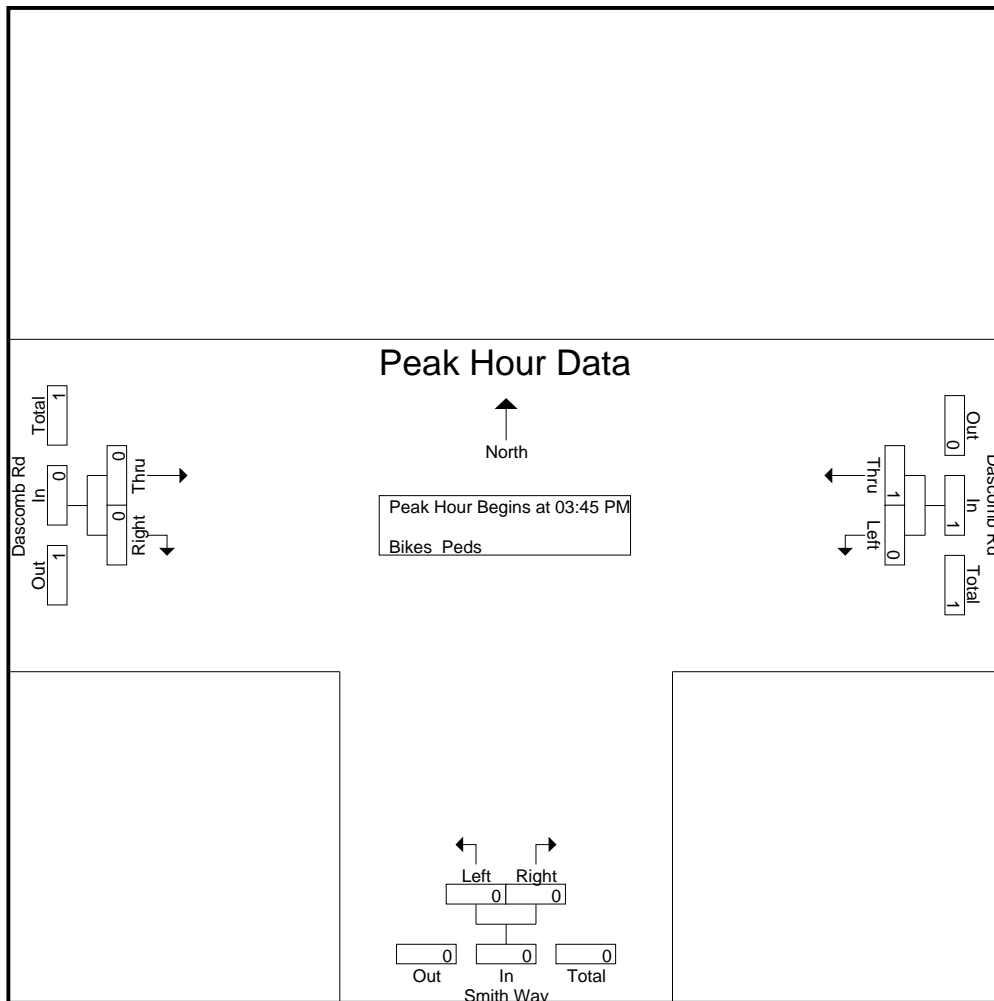
# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250006  
 Site Code : 05250006  
 Start Date : 9/20/2018  
 Page No : 23

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:45 PM										
03:45 PM	0	1	1	0	0	0	0	0	0	1
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250



# Accurate Counts

978-664-2565

File Name : 05250006

Site Code : 05250006

Start Date : 9/20/2018

Page No : 24

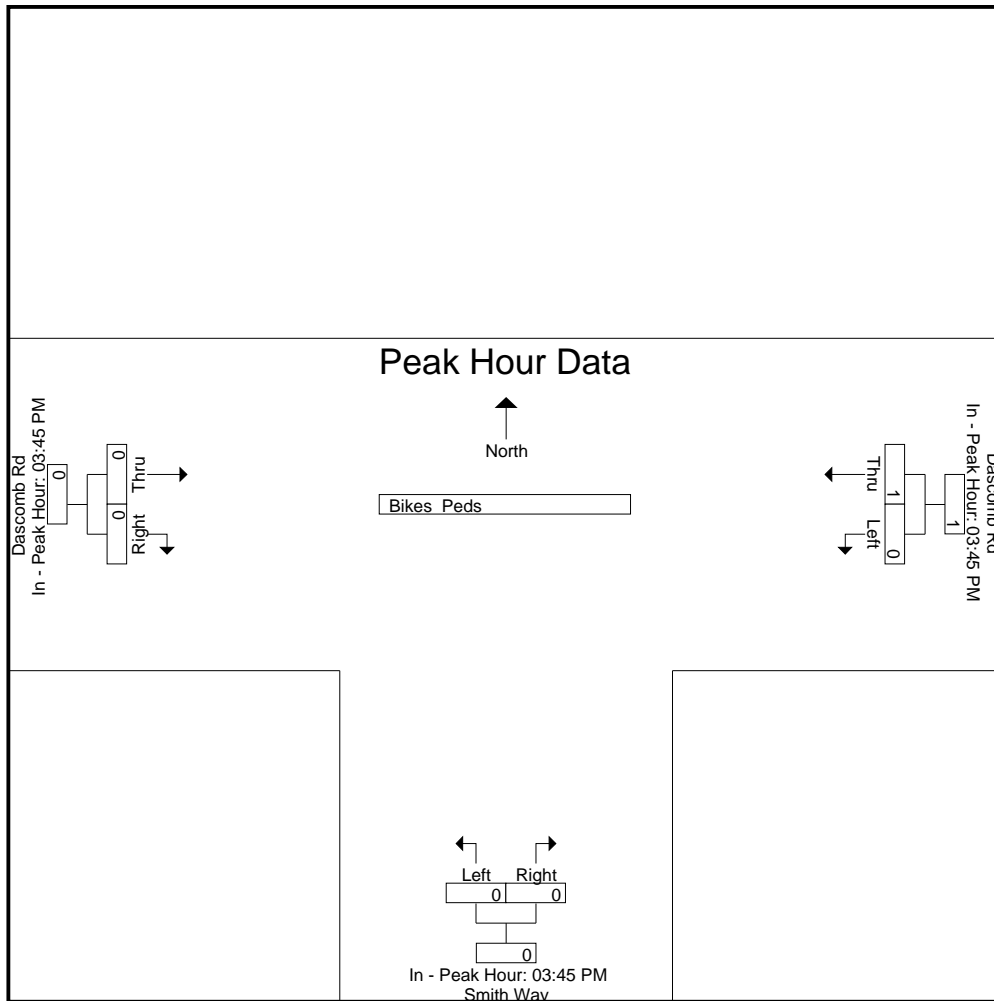
N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:45 PM			03:45 PM			03:45 PM		
+0 mins.	0	1	1	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	20	86	75	31	69	88	369
12:15 PM	15	117	79	35	50	55	351
12:30 PM	11	82	87	28	68	82	358
12:45 PM	20	83	74	37	56	69	339
<b>Total</b>	<b>66</b>	<b>368</b>	<b>315</b>	<b>131</b>	<b>243</b>	<b>294</b>	<b>1417</b>
01:00 PM	22	95	68	24	69	78	356
01:15 PM	19	93	84	36	57	72	361
01:30 PM	19	79	90	38	67	85	378
01:45 PM	23	72	94	47	74	99	409
<b>Total</b>	<b>83</b>	<b>339</b>	<b>336</b>	<b>145</b>	<b>267</b>	<b>334</b>	<b>1504</b>
02:00 PM	48	95	82	36	70	97	428
02:15 PM	27	85	94	34	78	98	416
02:30 PM	47	95	99	36	77	141	495
02:45 PM	40	78	103	35	88	114	458
<b>Total</b>	<b>162</b>	<b>353</b>	<b>378</b>	<b>141</b>	<b>313</b>	<b>450</b>	<b>1797</b>
03:00 PM	31	106	95	36	83	162	513
03:15 PM	37	112	102	51	90	166	558
03:30 PM	38	97	87	52	102	182	558
03:45 PM	46	112	98	36	114	112	518
<b>Total</b>	<b>152</b>	<b>427</b>	<b>382</b>	<b>175</b>	<b>389</b>	<b>622</b>	<b>2147</b>
04:00 PM	33	106	107	38	91	114	489
04:15 PM	26	120	111	62	120	134	573
04:30 PM	30	96	96	59	137	136	554
04:45 PM	22	104	111	59	100	124	520
<b>Total</b>	<b>111</b>	<b>426</b>	<b>425</b>	<b>218</b>	<b>448</b>	<b>508</b>	<b>2136</b>

# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 2

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	16	121	115	58	97	129	536
05:15 PM	14	128	97	49	120	135	543
05:30 PM	15	116	97	65	124	92	509
05:45 PM	12	117	98	80	102	103	512
Total	57	482	407	252	443	459	2100
06:00 PM	26	122	98	69	91	72	478
06:15 PM	11	140	88	103	138	102	582
06:30 PM	16	104	102	78	98	94	492
06:45 PM	13	58	102	41	74	69	357
Total	66	424	390	291	401	337	1909
Grand Total	697	2819	2633	1353	2504	3004	13010
Apprch %	19.8	80.2	66.1	33.9	45.5	54.5	
Total %	5.4	21.7	20.2	10.4	19.2	23.1	
Cars	686	2792	2536	1345	2486	2911	12756
% Cars	98.4	99	96.3	99.4	99.3	96.9	98
Trucks	11	27	97	8	18	93	254
% Trucks	1.6	1	3.7	0.6	0.7	3.1	2

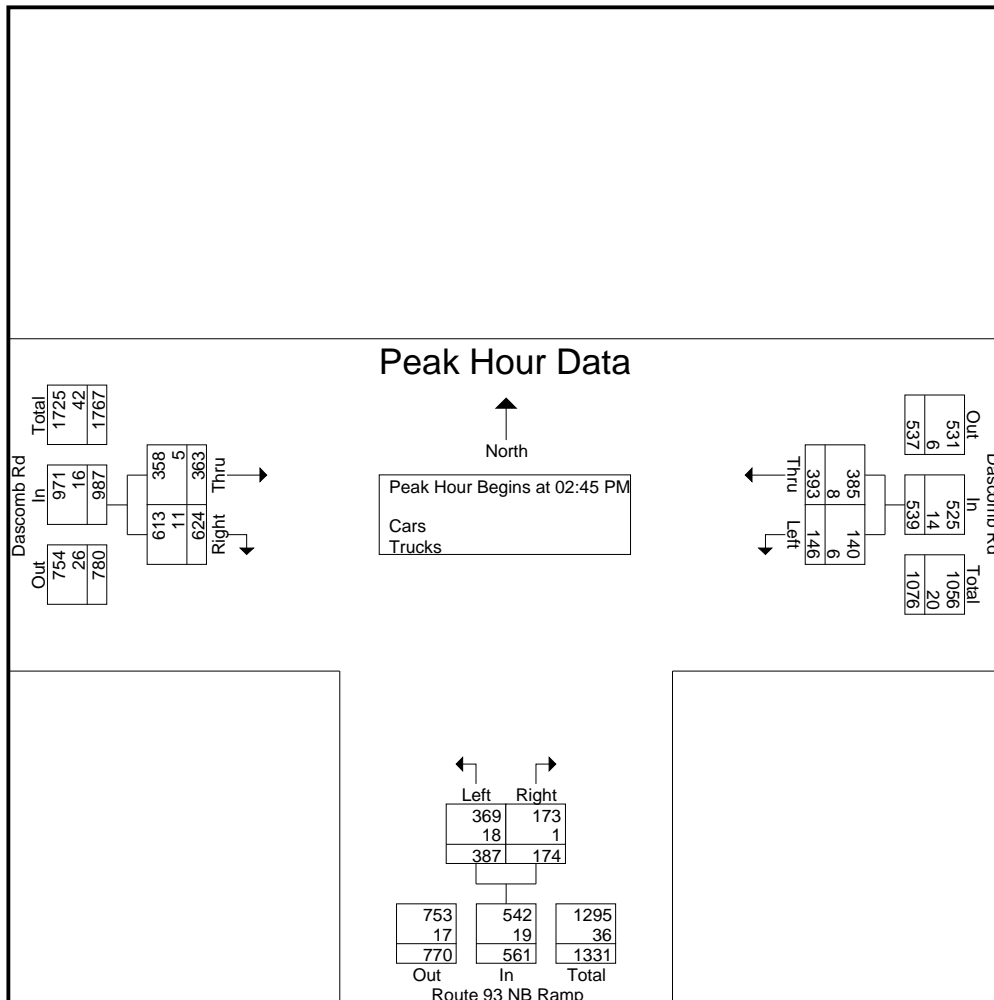
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 3

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:45 PM										
02:45 PM	40	78	118	103	35	138	88	114	202	458
03:00 PM	31	106	137	95	36	131	83	162	245	513
03:15 PM	37	112	149	102	51	153	90	166	256	558
03:30 PM	38	97	135	87	52	139	102	182	284	558
Total Volume	146	393	539	387	174	561	363	624	987	2087
% App. Total	27.1	72.9		69	31		36.8	63.2		
PHF	.913	.877	.904	.939	.837	.917	.890	.857	.869	.935
Cars	140	385	525	369	173	542	358	613	971	2038
% Cars	95.9	98.0	97.4	95.3	99.4	96.6	98.6	98.2	98.4	97.7
Trucks	6	8	14	18	1	19	5	11	16	49
% Trucks	4.1	2.0	2.6	4.7	0.6	3.4	1.4	1.8	1.6	2.3



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

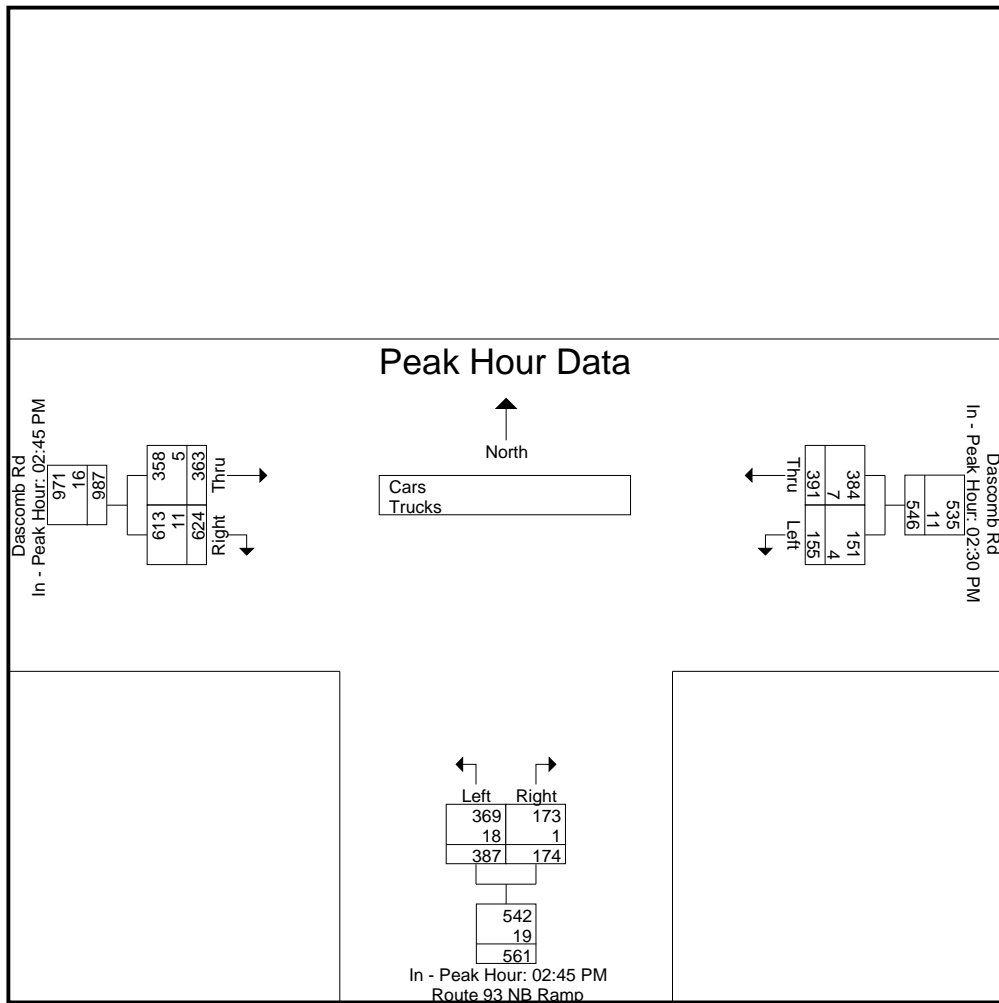
File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 4

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM			02:45 PM			02:45 PM		
+0 mins.	47	95	142	103	35	138	88	114	202
+15 mins.	40	78	118	95	36	131	83	162	245
+30 mins.	31	106	137	102	51	153	90	166	256
+45 mins.	37	112	149	87	52	139	102	182	284
Total Volume	155	391	546	387	174	561	363	624	987
% App. Total	28.4	71.6		69	31		36.8	63.2	
PHF	.824	.873	.916	.939	.837	.917	.890	.857	.869
Cars	151	384	535	369	173	542	358	613	971
% Cars	97.4	98.2	98	95.3	99.4	96.6	98.6	98.2	98.4
Trucks	4	7	11	18	1	19	5	11	16
% Trucks	2.6	1.8	2	4.7	0.6	3.4	1.4	1.8	1.6



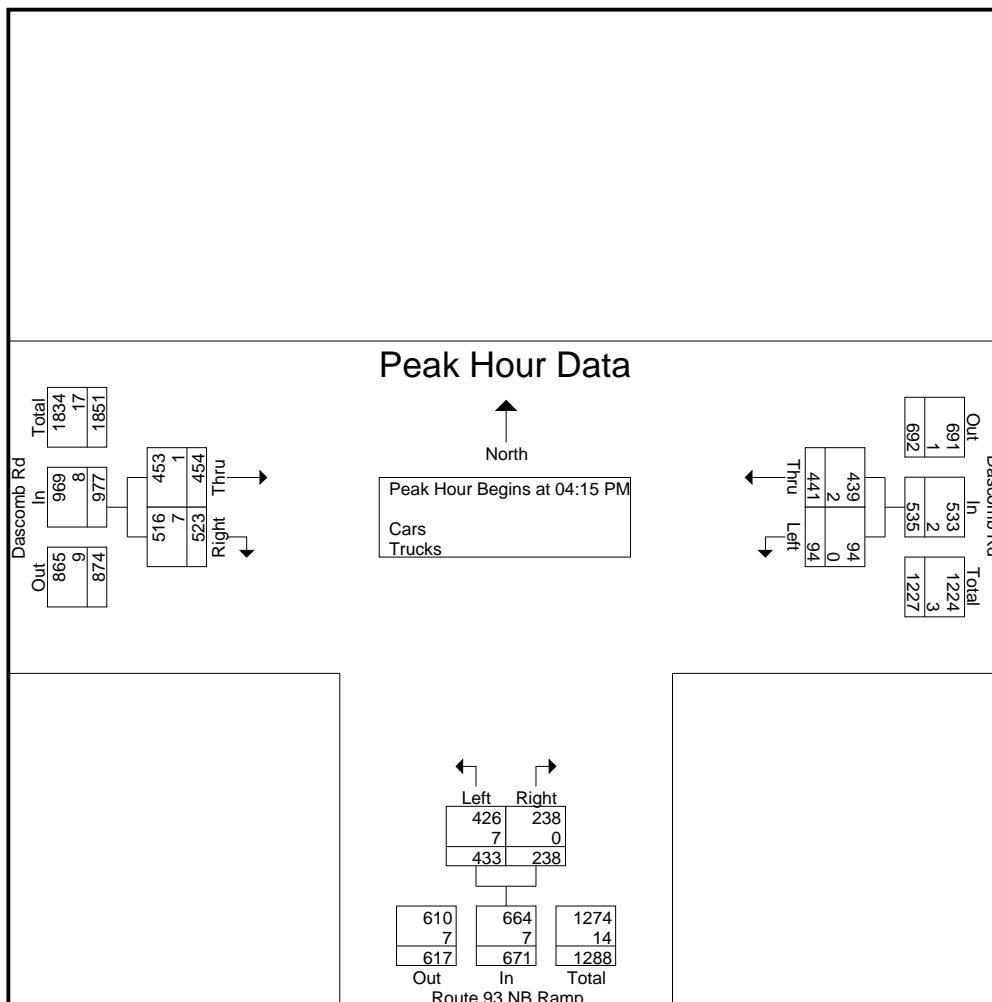
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 5

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	26	120	<b>146</b>	111	<b>62</b>	<b>173</b>	120	134	254	<b>573</b>
04:30 PM	<b>30</b>	96	126	96	59	155	<b>137</b>	<b>136</b>	<b>273</b>	554
04:45 PM	22	104	126	111	59	170	100	124	224	520
05:00 PM	16	<b>121</b>	137	<b>115</b>	58	173	97	129	226	536
Total Volume	94	441	535	433	238	671	454	523	977	2183
% App. Total	17.6	82.4		64.5	35.5		46.5	53.5		
PHF	.783	.911	.916	.941	.960	.970	.828	.961	.895	.952
Cars	94	439	533	426	238	664	453	516	969	2166
% Cars	100	99.5	99.6	98.4	100	99.0	99.8	98.7	99.2	99.2
Trucks	0	2	2	7	0	7	1	7	8	17
% Trucks	0	0.5	0.4	1.6	0	1.0	0.2	1.3	0.8	0.8



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

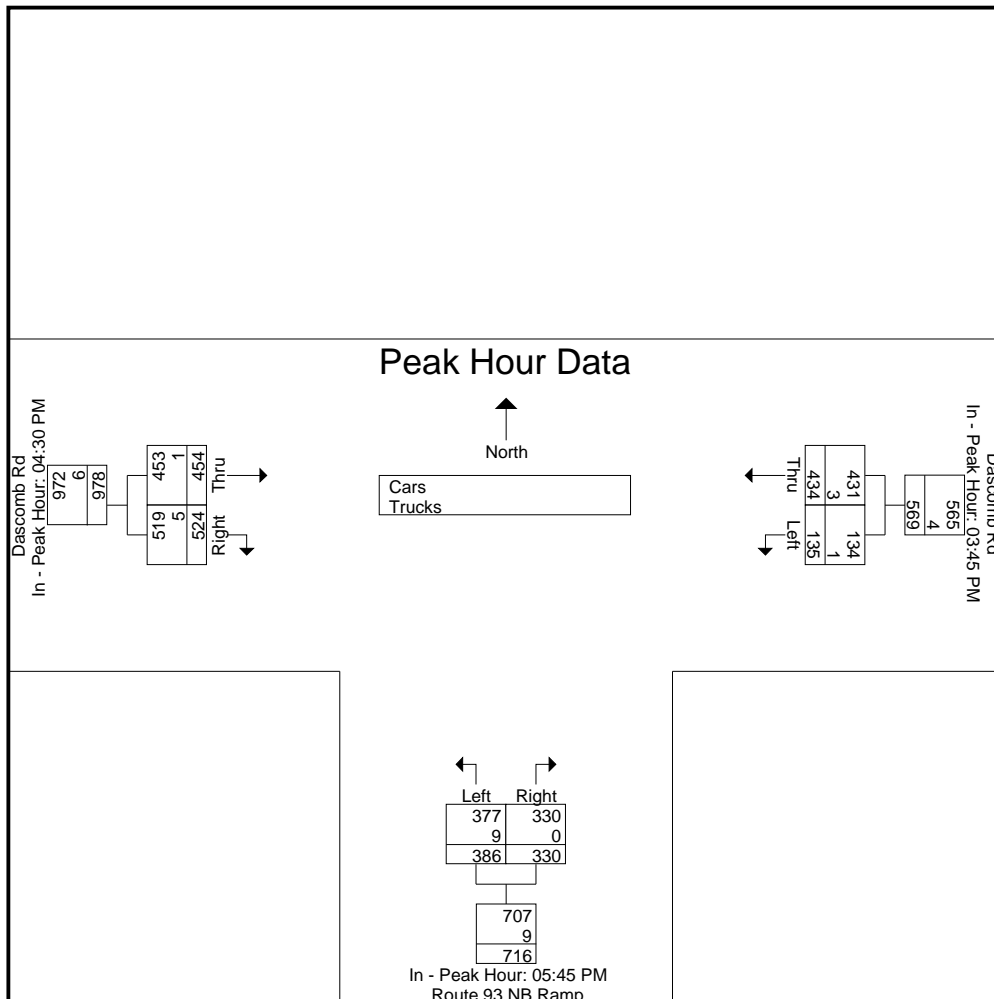
File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 6

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:45 PM			05:45 PM			04:30 PM		
+0 mins.	<b>46</b>	112	<b>158</b>	98	80	178	<b>137</b>	<b>136</b>	<b>273</b>
+15 mins.	33	106	139	98	69	167	100	124	224
+30 mins.	26	<b>120</b>	146	88	<b>103</b>	<b>191</b>	97	129	226
+45 mins.	30	96	126	<b>102</b>	78	180	120	135	255
Total Volume	135	434	569	386	330	716	454	524	978
% App. Total	23.7	76.3		53.9	46.1		46.4	53.6	
PHF	.734	.904	.900	.946	.801	.937	.828	.963	.896
Cars	134	431	565	377	330	707	453	519	972
% Cars	99.3	99.3	99.3	97.7	100	98.7	99.8	99	99.4
Trucks	1	3	4	9	0	9	1	5	6
% Trucks	0.7	0.7	0.7	2.3	0	1.3	0.2	1	0.6



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 7

## Groups Printed- Cars

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	19	85	67	30	68	84	353
12:15 PM	15	115	74	34	49	47	334
12:30 PM	11	80	84	28	67	77	347
12:45 PM	20	82	70	35	56	66	329
<b>Total</b>	<b>65</b>	<b>362</b>	<b>295</b>	<b>127</b>	<b>240</b>	<b>274</b>	<b>1363</b>
01:00 PM	22	95	63	24	67	68	339
01:15 PM	19	92	81	36	56	70	354
01:30 PM	19	78	87	38	67	80	369
01:45 PM	23	71	90	47	74	98	403
<b>Total</b>	<b>83</b>	<b>336</b>	<b>321</b>	<b>145</b>	<b>264</b>	<b>316</b>	<b>1465</b>
02:00 PM	46	95	75	35	67	92	410
02:15 PM	27	83	88	34	77	90	399
02:30 PM	47	94	93	36	75	135	480
02:45 PM	39	78	98	35	86	113	449
<b>Total</b>	<b>159</b>	<b>350</b>	<b>354</b>	<b>140</b>	<b>305</b>	<b>430</b>	<b>1738</b>
03:00 PM	31	103	91	35	82	158	500
03:15 PM	34	109	97	51	88	163	542
03:30 PM	36	95	83	52	102	179	547
03:45 PM	46	111	95	35	114	106	507
<b>Total</b>	<b>147</b>	<b>418</b>	<b>366</b>	<b>173</b>	<b>386</b>	<b>606</b>	<b>2096</b>
04:00 PM	32	105	105	38	91	110	481
04:15 PM	26	119	110	62	120	129	566
04:30 PM	30	96	95	59	136	136	552
04:45 PM	22	103	108	59	100	124	516
<b>Total</b>	<b>110</b>	<b>423</b>	<b>418</b>	<b>218</b>	<b>447</b>	<b>499</b>	<b>2115</b>

# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 8

## Groups Printed- Cars

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	16	121	113	58	97	127	532
05:15 PM	14	127	96	48	120	132	537
05:30 PM	15	115	96	65	124	92	507
05:45 PM	12	117	95	80	102	102	508
Total	57	480	400	251	443	453	2084
06:00 PM	26	121	98	69	91	71	476
06:15 PM	11	140	87	103	138	101	580
06:30 PM	16	104	97	78	98	93	486
06:45 PM	12	58	100	41	74	68	353
Total	65	423	382	291	401	333	1895
Grand Total	686	2792	2536	1345	2486	2911	12756
Apprch %	19.7	80.3	65.3	34.7	46.1	53.9	
Total %	5.4	21.9	19.9	10.5	19.5	22.8	

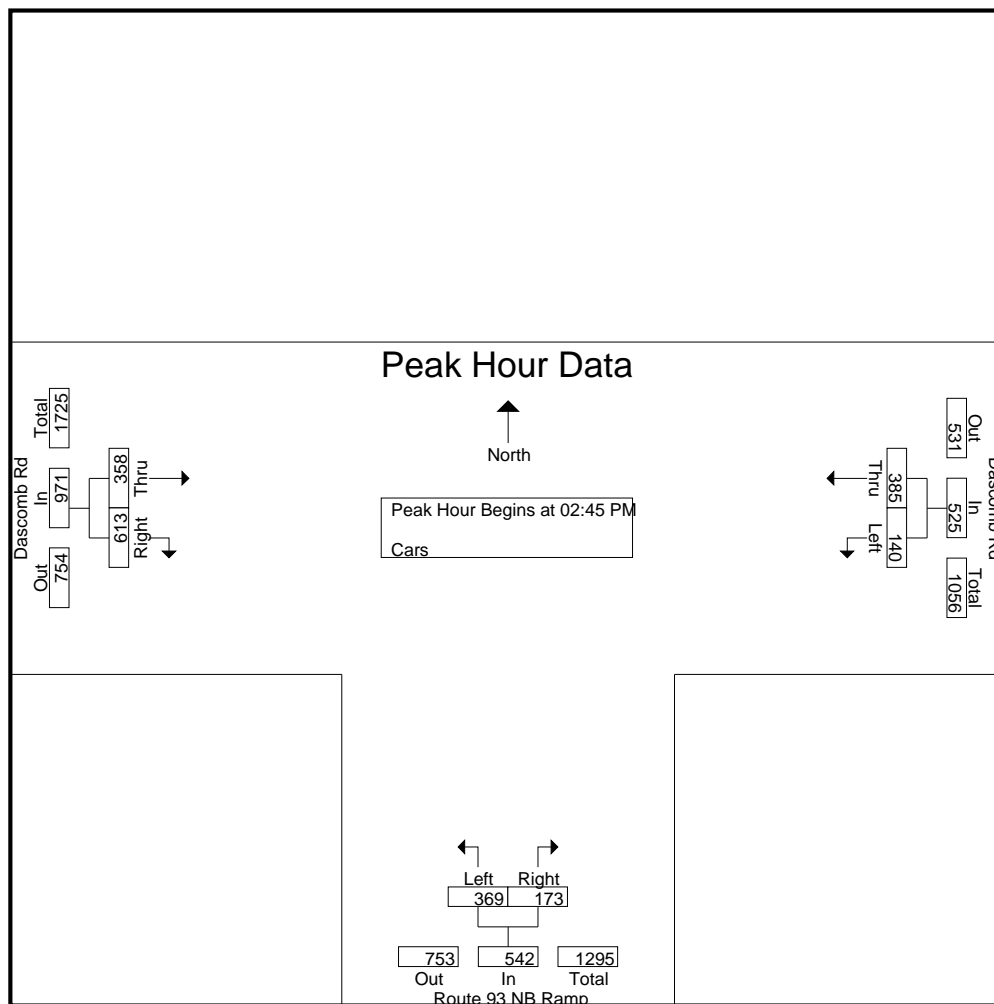
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 9

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:45 PM										
02:45 PM	39	78	117	98	35	133	86	113	199	449
03:00 PM	31	103	134	91	35	126	82	158	240	500
03:15 PM	34	109	143	97	51	148	88	163	251	542
03:30 PM	36	95	131	83	52	135	102	179	281	547
Total Volume	140	385	525	369	173	542	358	613	971	2038
% App. Total	26.7	73.3		68.1	31.9		36.9	63.1		
PHF	.897	.883	.918	.941	.832	.916	.877	.856	.864	.931



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

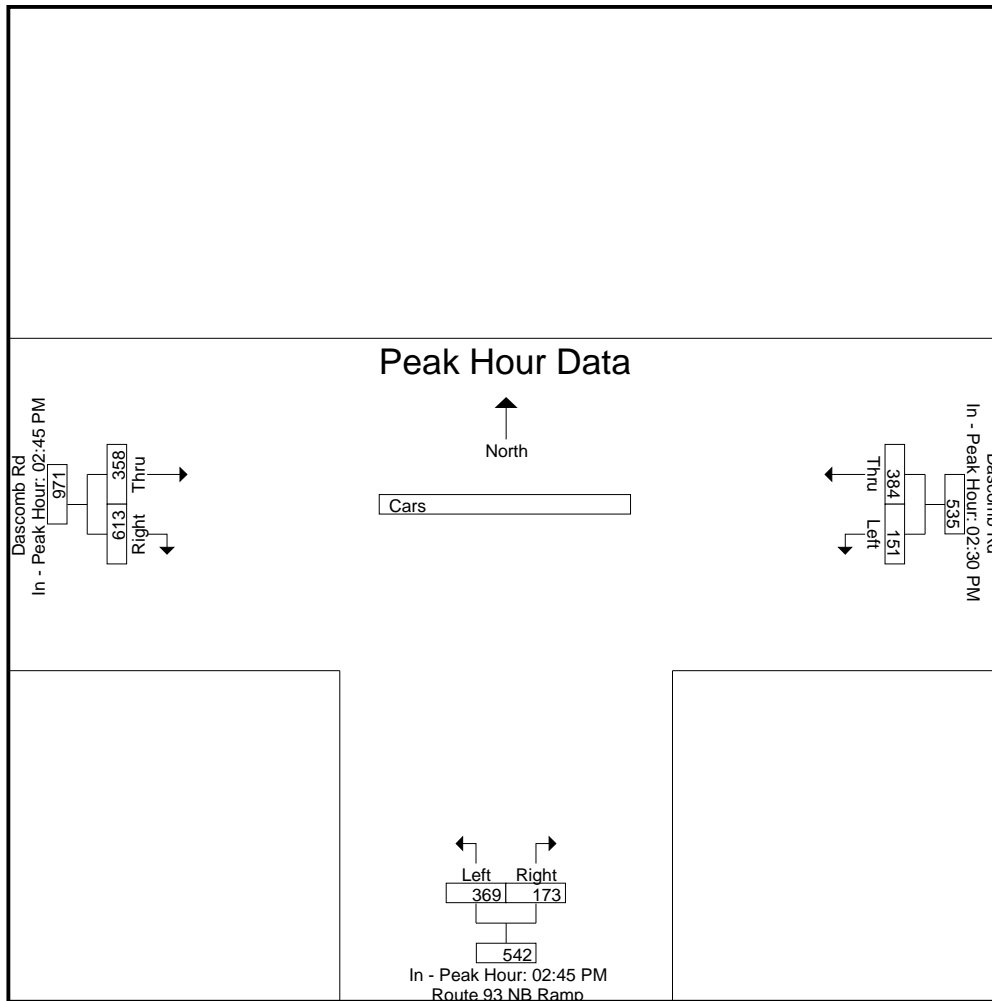
File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 10

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM			02:45 PM			02:45 PM		
+0 mins.	<b>47</b>	94	141	<b>98</b>	35	133	86	113	199
+15 mins.	39	78	117	91	35	126	82	158	240
+30 mins.	31	103	134	97	51	<b>148</b>	88	163	251
+45 mins.	34	<b>109</b>	<b>143</b>	83	<b>52</b>	135	<b>102</b>	<b>179</b>	<b>281</b>
Total Volume	151	384	535	369	173	542	358	613	971
% App. Total	28.2	71.8		68.1	31.9		36.9	63.1	
PHF	.803	.881	.935	.941	.832	.916	.877	.856	.864



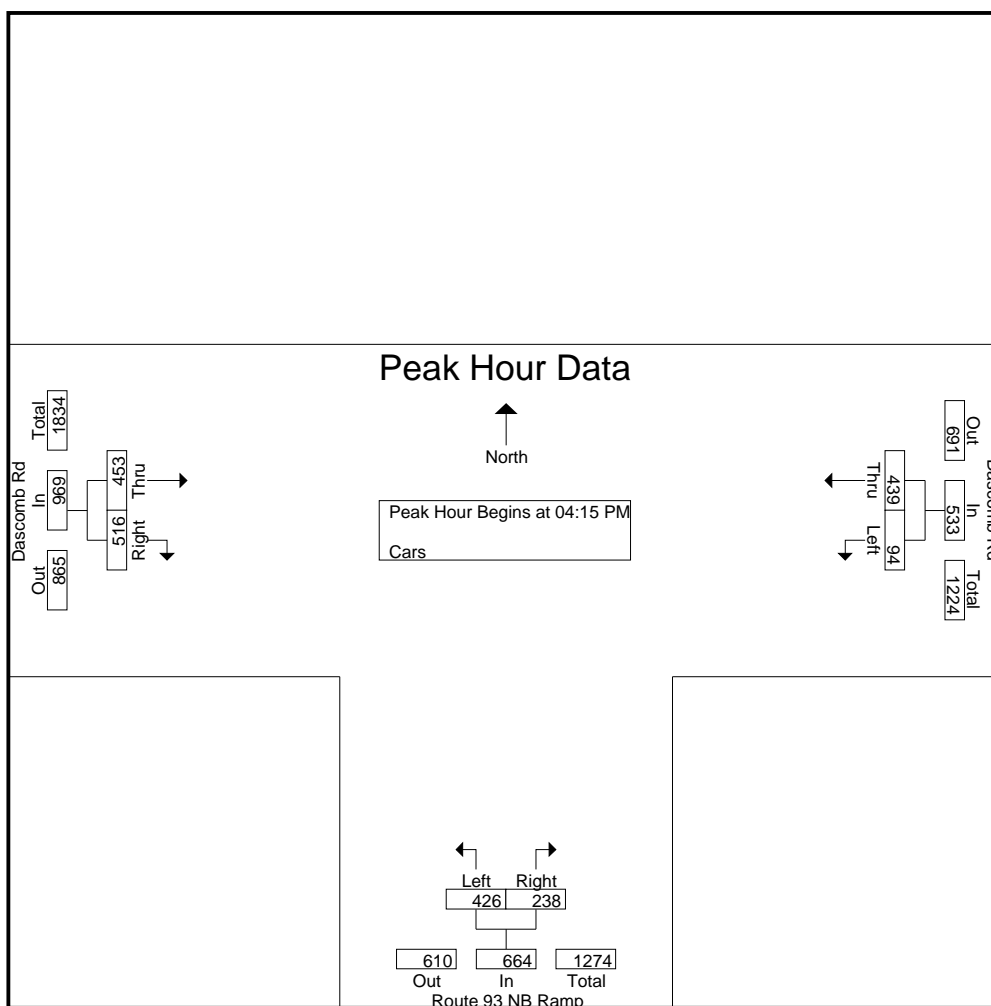
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 11

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	26	119	<b>145</b>	110	<b>62</b>	<b>172</b>	120	129	249	<b>566</b>
04:30 PM	<b>30</b>	96	126	95	59	154	<b>136</b>	<b>136</b>	<b>272</b>	552
04:45 PM	22	103	125	108	59	167	100	124	224	516
05:00 PM	16	<b>121</b>	137	<b>113</b>	58	171	97	127	224	532
Total Volume	94	439	533	426	238	664	453	516	969	2166
% App. Total	17.6	82.4		64.2	35.8		46.7	53.3		
PHF	.783	.907	.919	.942	.960	.965	.833	.949	.891	.957



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

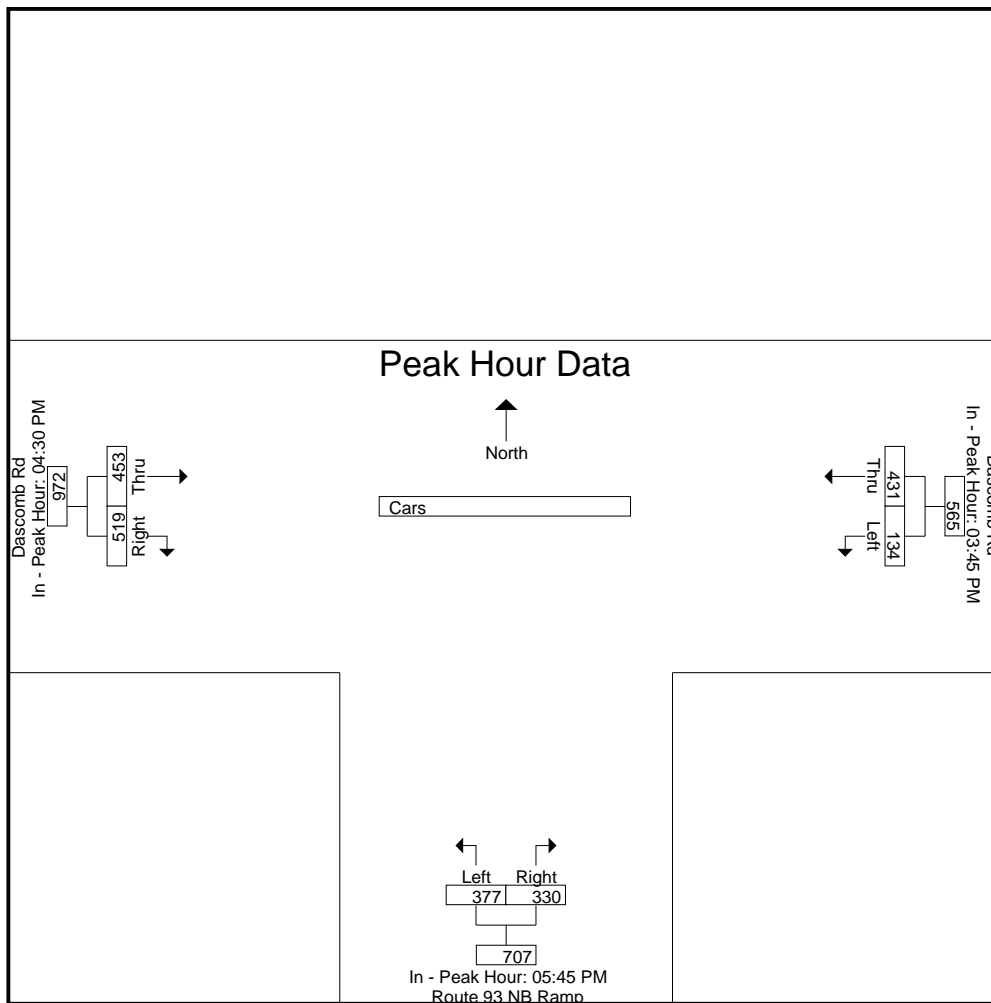
File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 12

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:45 PM			05:45 PM			04:30 PM		
+0 mins.	<b>46</b>	111	<b>157</b>	95	80	175	<b>136</b>	<b>136</b>	<b>272</b>
+15 mins.	32	105	137	<b>98</b>	69	167	100	124	224
+30 mins.	26	<b>119</b>	145	87	<b>103</b>	<b>190</b>	97	127	224
+45 mins.	30	96	126	97	78	175	120	132	252
Total Volume	134	431	565	377	330	707	453	519	972
% App. Total	23.7	76.3		53.3	46.7		46.6	53.4	
PHF	.728	.905	.900	.962	.801	.930	.833	.954	.893



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 13

## Groups Printed- Trucks

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	1	1	8	1	1	4	16
12:15 PM	0	2	5	1	1	8	17
12:30 PM	0	2	3	0	1	5	11
12:45 PM	0	1	4	2	0	3	10
<b>Total</b>	<b>1</b>	<b>6</b>	<b>20</b>	<b>4</b>	<b>3</b>	<b>20</b>	<b>54</b>
01:00 PM	0	0	5	0	2	10	17
01:15 PM	0	1	3	0	1	2	7
01:30 PM	0	1	3	0	0	5	9
01:45 PM	0	1	4	0	0	1	6
<b>Total</b>	<b>0</b>	<b>3</b>	<b>15</b>	<b>0</b>	<b>3</b>	<b>18</b>	<b>39</b>
02:00 PM	2	0	7	1	3	5	18
02:15 PM	0	2	6	0	1	8	17
02:30 PM	0	1	6	0	2	6	15
02:45 PM	1	0	5	0	2	1	9
<b>Total</b>	<b>3</b>	<b>3</b>	<b>24</b>	<b>1</b>	<b>8</b>	<b>20</b>	<b>59</b>
03:00 PM	0	3	4	1	1	4	13
03:15 PM	3	3	5	0	2	3	16
03:30 PM	2	2	4	0	0	3	11
03:45 PM	0	1	3	1	0	6	11
<b>Total</b>	<b>5</b>	<b>9</b>	<b>16</b>	<b>2</b>	<b>3</b>	<b>16</b>	<b>51</b>
04:00 PM	1	1	2	0	0	4	8
04:15 PM	0	1	1	0	0	5	7
04:30 PM	0	0	1	0	1	0	2
04:45 PM	0	1	3	0	0	0	4
<b>Total</b>	<b>1</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>21</b>

# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 14

## Groups Printed- Trucks

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	0	0	2	0	0	2	4
05:15 PM	0	1	1	1	0	3	6
05:30 PM	0	1	1	0	0	0	2
05:45 PM	0	0	3	0	0	1	4
Total	0	2	7	1	0	6	16
06:00 PM	0	1	0	0	0	1	2
06:15 PM	0	0	1	0	0	1	2
06:30 PM	0	0	5	0	0	1	6
06:45 PM	1	0	2	0	0	1	4
Total	1	1	8	0	0	4	14
Grand Total	11	27	97	8	18	93	254
Apprch %	28.9	71.1	92.4	7.6	16.2	83.8	
Total %	4.3	10.6	38.2	3.1	7.1	36.6	

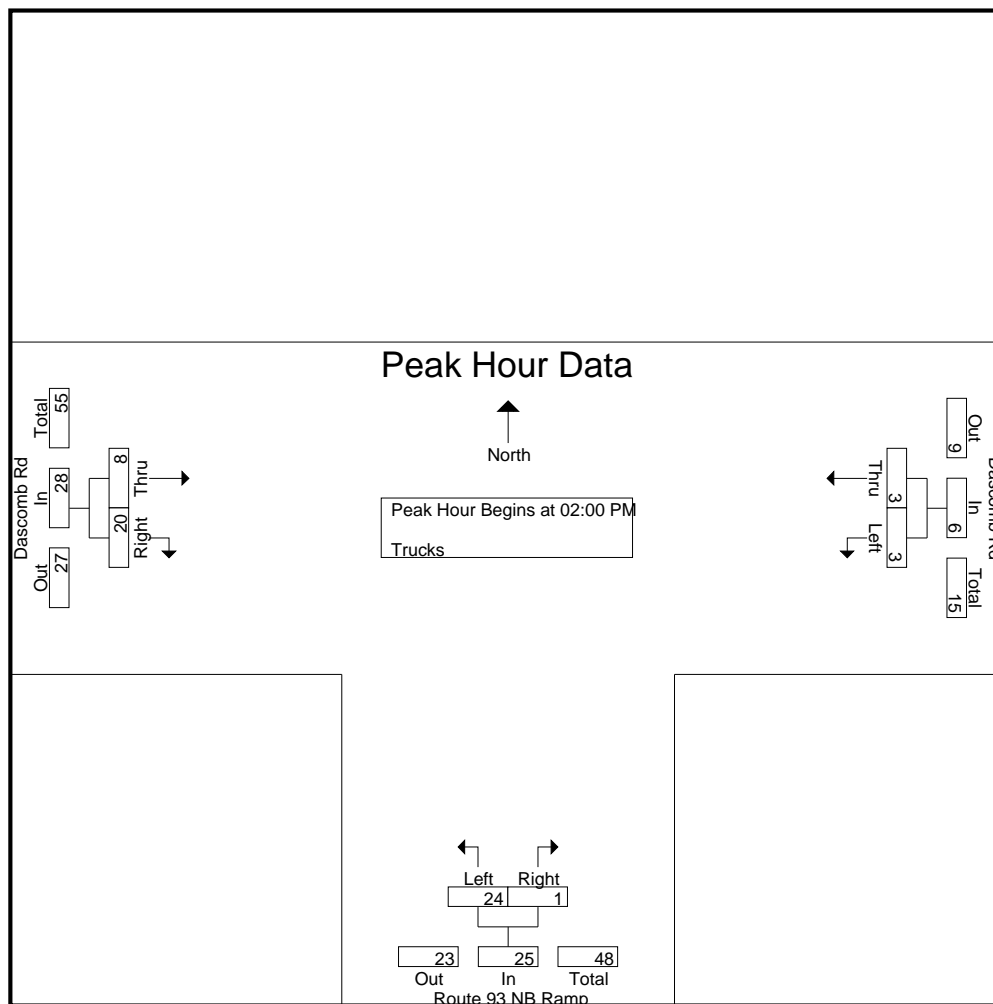
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 15

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	2	0	2	7	1	8	3	5	8	18
02:15 PM	0	2	2	6	0	6	1	8	9	17
02:30 PM	0	1	1	6	0	6	2	6	8	15
02:45 PM	1	0	1	5	0	5	2	1	3	9
<b>Total Volume</b>	<b>3</b>	<b>3</b>	<b>6</b>	<b>24</b>	<b>1</b>	<b>25</b>	<b>8</b>	<b>20</b>	<b>28</b>	<b>59</b>
<b>% App. Total</b>	<b>50</b>	<b>50</b>		<b>96</b>	<b>4</b>		<b>28.6</b>	<b>71.4</b>		
PHF	.375	.375	.750	.857	.250	.781	.667	.625	.778	.819



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

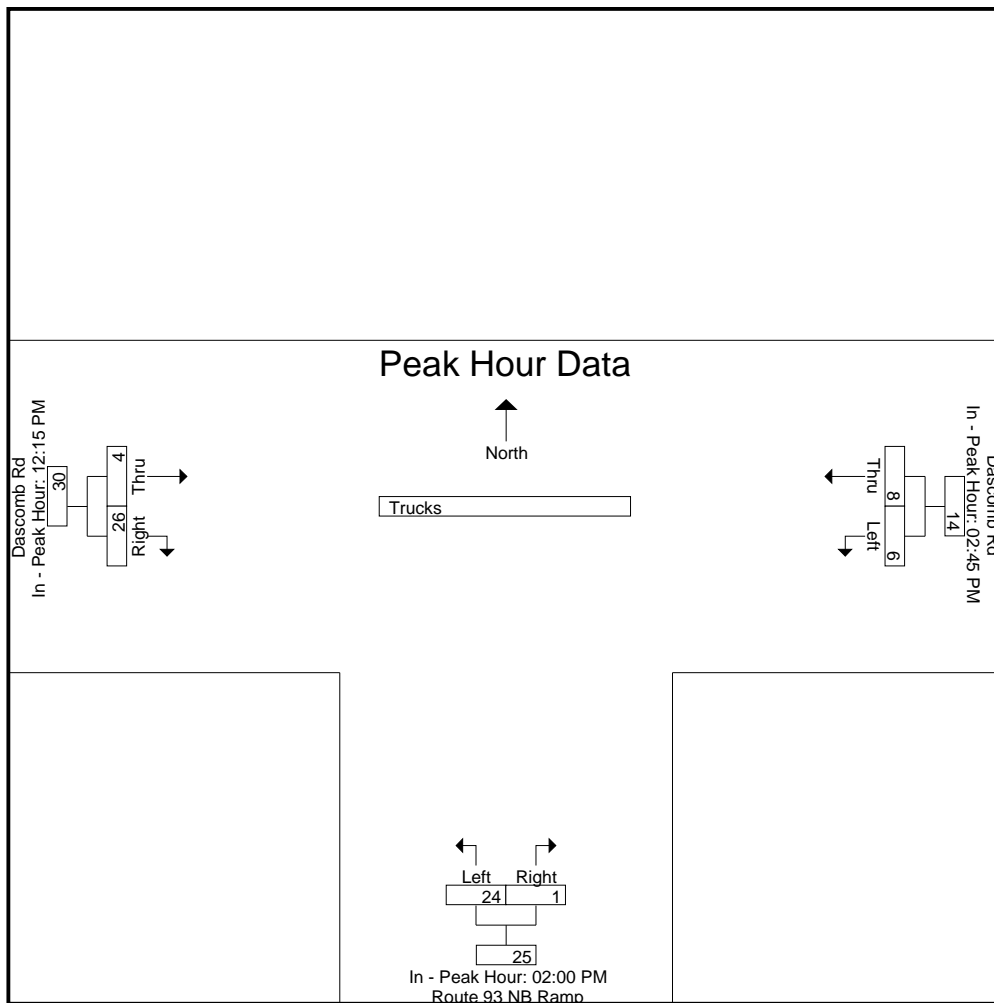
File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 16

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:45 PM			02:00 PM			12:15 PM		
+0 mins.	1	0	1	7	1	8	1	8	9
+15 mins.	0	3	3	6	0	6	1	5	6
+30 mins.	3	3	6	6	0	6	0	3	3
+45 mins.	2	2	4	5	0	5	2	10	12
Total Volume	6	8	14	24	1	25	4	26	30
% App. Total	42.9	57.1		96	4		13.3	86.7	
PHF	.500	.667	.583	.857	.250	.781	.500	.650	.625



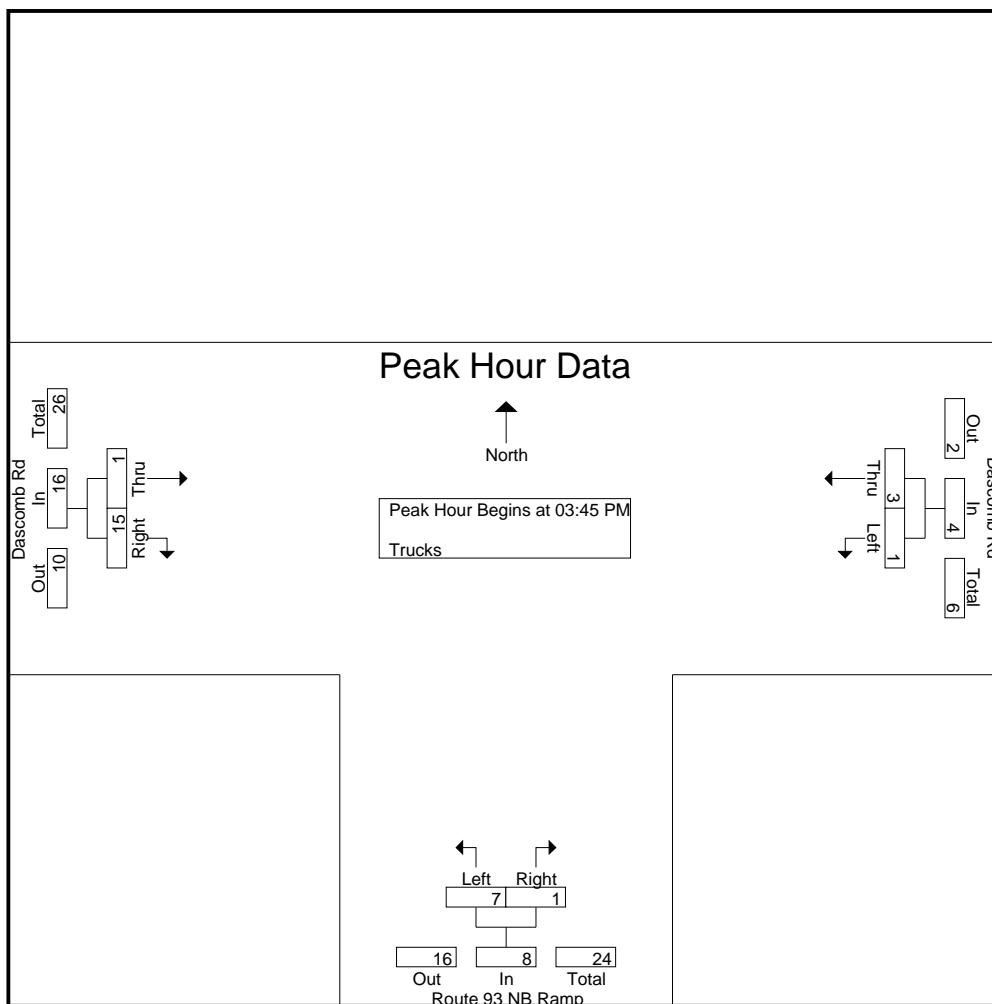
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 17

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:45 PM										
03:45 PM	0	1	1	3	1	4	0	6	6	11
04:00 PM	1	1	2	2	0	2	0	4	4	8
04:15 PM	0	1	1	1	0	1	0	5	5	7
04:30 PM	0	0	0	1	0	1	1	0	1	2
Total Volume	1	3	4	7	1	8	1	15	16	28
% App. Total	25	75		87.5	12.5		6.2	93.8		
PHF	.250	.750	.500	.583	.250	.500	.250	.625	.667	.636



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

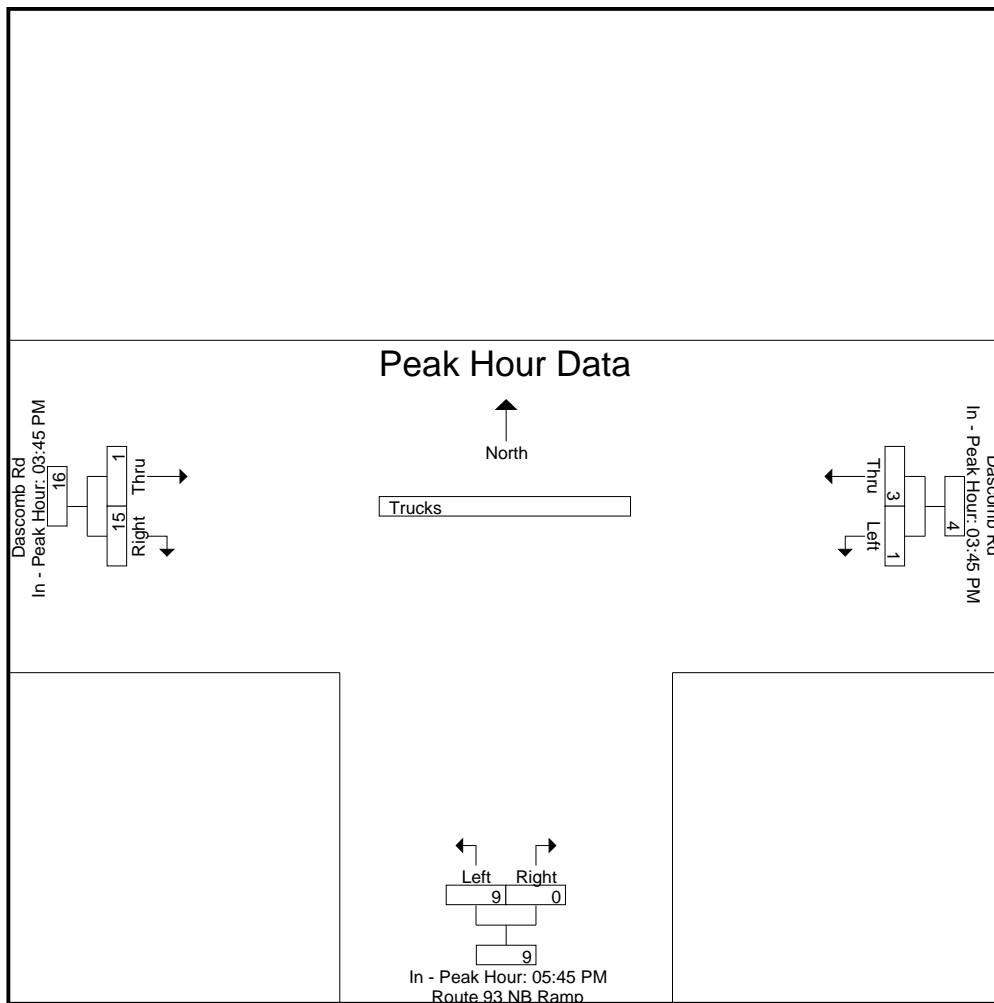
File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 18

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:45 PM			05:45 PM			03:45 PM		
+0 mins.	0	1	1	3	0	3	0	6	6
+15 mins.	1	1	2	0	0	0	0	4	4
+30 mins.	0	1	1	1	0	1	0	5	5
+45 mins.	0	0	0	5	0	5	1	0	1
Total Volume	1	3	4	9	0	9	1	15	16
% App. Total	25	75		100	0		6.2	93.8	
PHF	.250	.750	.500	.450	.000	.450	.250	.625	.667





# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 20

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
05:00 PM	0	0	0	0	0	0	1	0	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	1	0	0	0	1	1
06:00 PM	0	1	0	0	0	0	0	0	0	0	1	1
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	1	0	0	0	0	0	0	0	0	1	1
<b>Grand Total</b>	0	6	0	0	0	0	1	0	0	0	7	7
Apprch %	0	100		0	0		100	0				
Total %	0	85.7		0	0		14.3	0		0	100	

# Accurate Counts

978-664-2565

File Name : 05250007

Site Code : 05250007

Start Date : 9/20/2018

Page No : 21

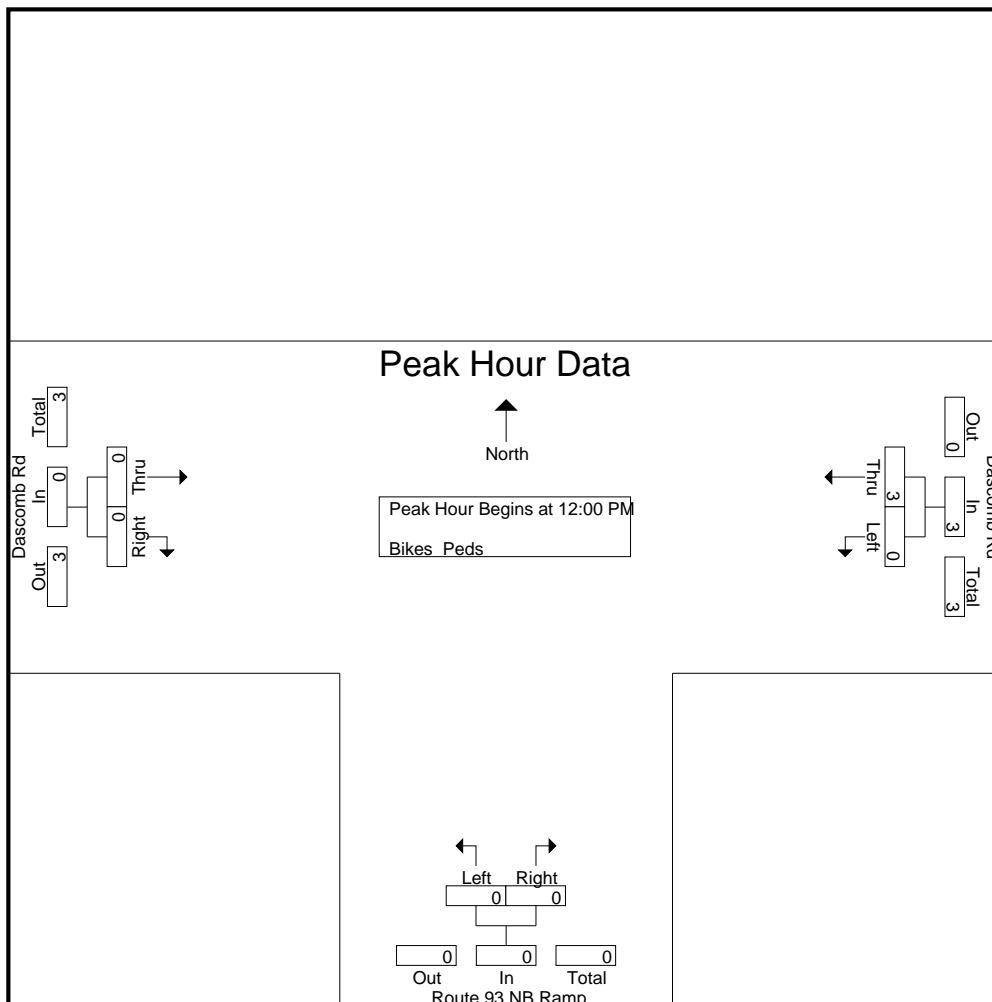
N/S Street : Route 93 NB Ramp

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	0	1	1	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	2	2	0	0	0	0	0	0	2
<b>Total Volume</b>	0	3	3	0	0	0	0	0	0	3
% App. Total	0	100		0	0		0	0		
PHF	.000	.375	.375	.000	.000	.000	.000	.000	.000	.375



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

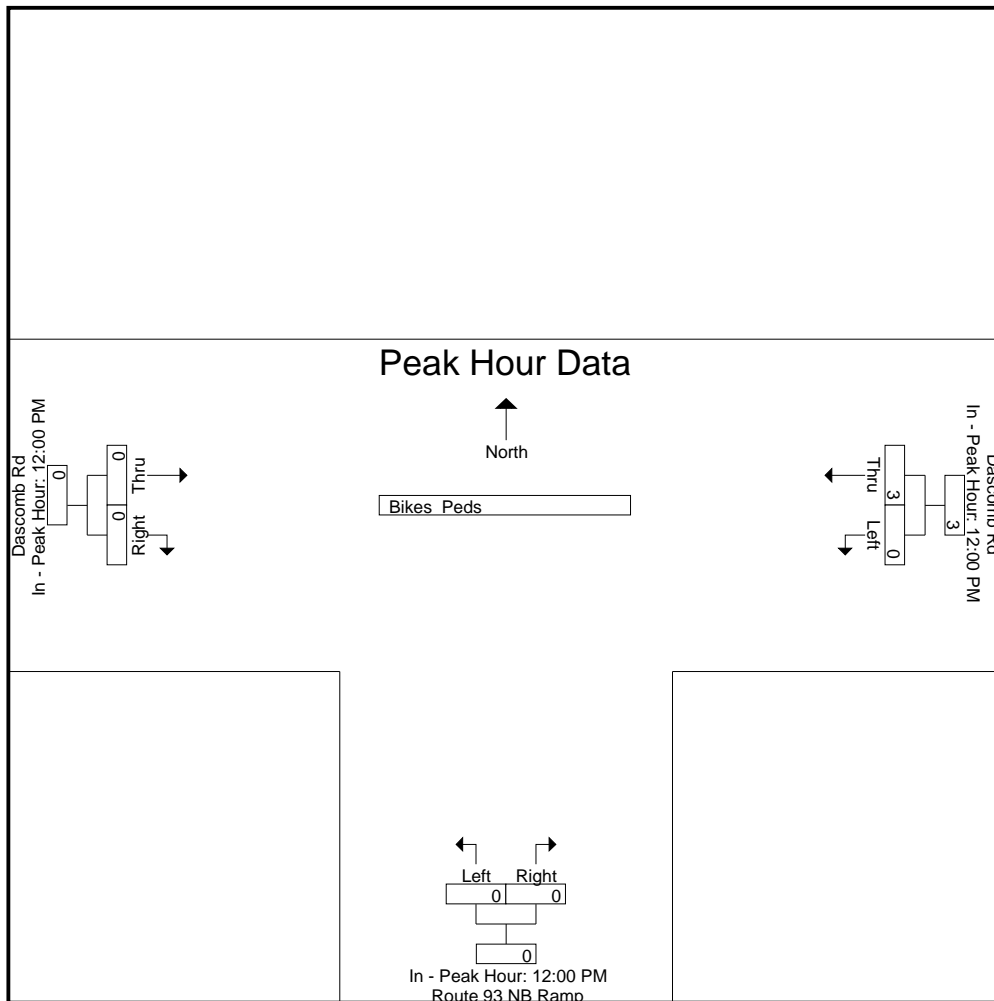
File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 22

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM			12:00 PM			12:00 PM		
+0 mins.	0	1	1	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	2	2	0	0	0	0	0	0
<b>Total Volume</b>	0	3	3	0	0	0	0	0	0
<b>% App. Total</b>	0	100		0	0		0	0	
<b>PHF</b>	.000	.375	.375	.000	.000	.000	.000	.000	.000



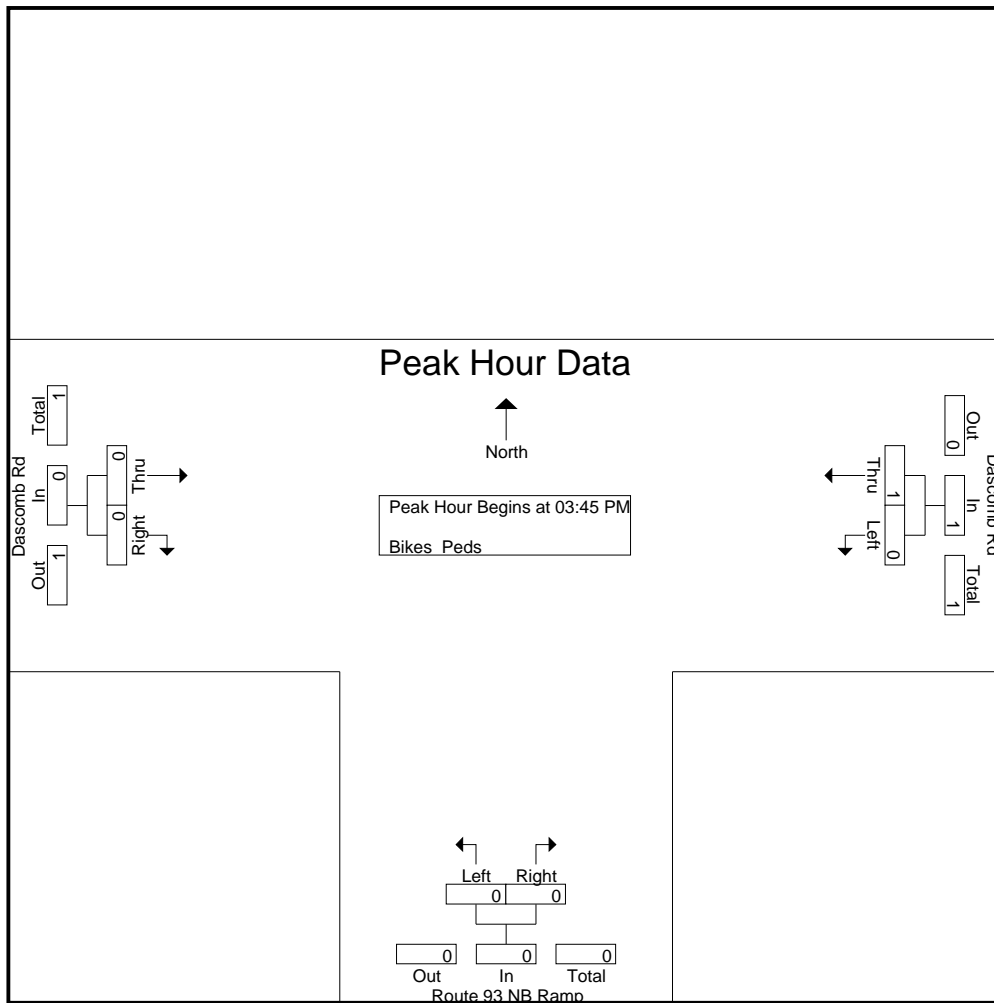
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 23

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:45 PM										
03:45 PM	0	1	1	0	0	0	0	0	0	1
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

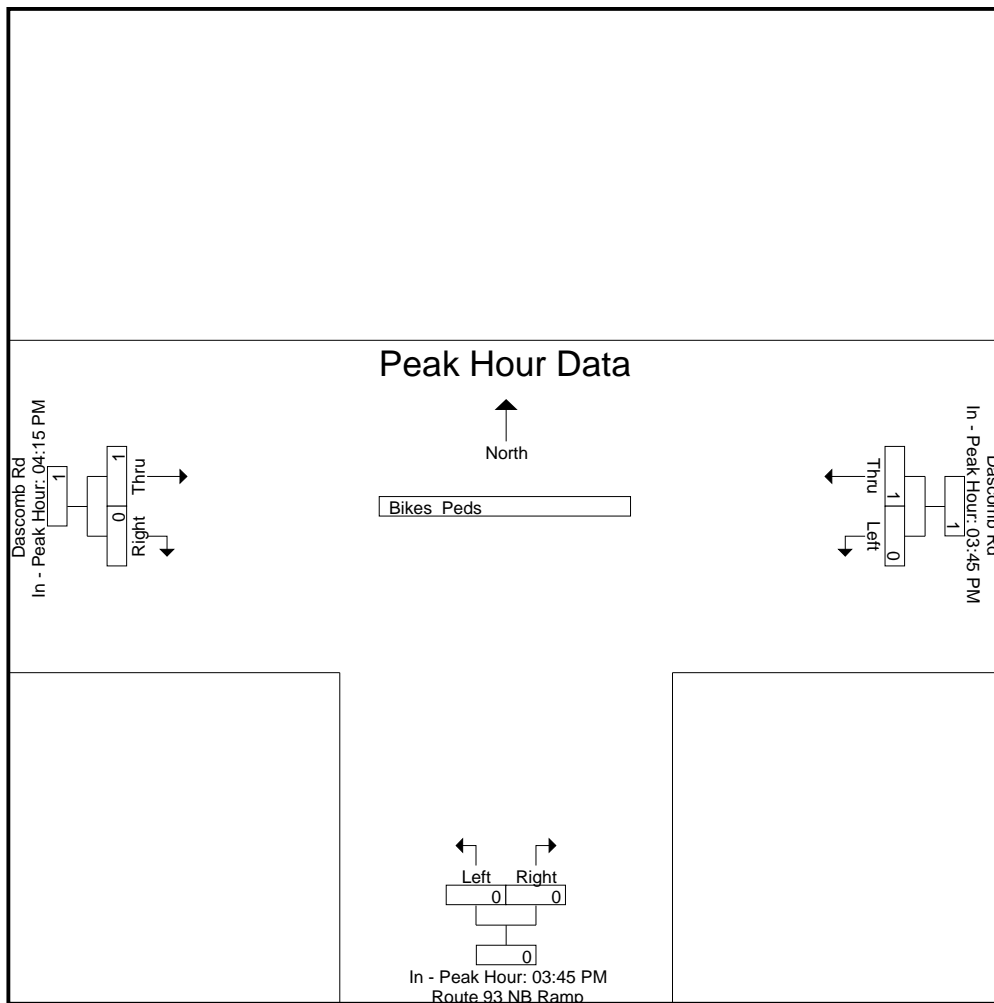
File Name : 05250007  
 Site Code : 05250007  
 Start Date : 9/20/2018  
 Page No : 24

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:45 PM			03:45 PM			04:15 PM		
+0 mins.	0	1	1	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	1	0	1
Total Volume	0	1	1	0	0	0	1	0	1
% App. Total	0	100		0	0		100	0	
PHF	.000	.250	.250	.000	.000	.000	.250	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right	
12:00 PM	1	0	57	0	0	0	35	1	0	57	0	53	204
12:15 PM	0	6	60	0	0	0	42	4	0	52	0	36	200
12:30 PM	1	1	62	0	0	0	34	1	0	58	1	35	193
12:45 PM	0	0	60	0	0	0	37	2	0	59	2	45	205
Total	2	7	239	0	0	0	148	8	0	226	3	169	802
01:00 PM	0	1	60	0	0	0	60	2	1	44	1	42	211
01:15 PM	0	0	60	0	0	0	36	2	0	58	1	33	190
01:30 PM	0	1	61	0	0	0	41	1	0	70	1	41	216
01:45 PM	0	1	53	0	0	0	45	1	0	65	2	49	216
Total	0	3	234	0	0	0	182	6	1	237	5	165	833
02:00 PM	0	3	71	0	0	0	86	2	0	63	3	37	265
02:15 PM	0	2	53	0	0	0	69	2	1	68	1	37	233
02:30 PM	0	4	82	0	0	0	74	1	0	69	3	36	269
02:45 PM	0	0	62	0	0	0	81	1	0	71	2	56	273
Total	0	9	268	0	0	0	310	6	1	271	9	166	1040
03:00 PM	0	5	77	0	0	0	81	2	1	73	0	39	278
03:15 PM	0	0	83	0	0	0	77	3	0	84	2	47	296
03:30 PM	0	5	61	0	0	0	82	4	0	118	6	33	309
03:45 PM	1	5	84	0	0	0	94	2	0	96	1	33	316
Total	1	15	305	0	0	0	334	11	1	371	9	152	1199
04:00 PM	0	0	79	0	0	0	93	2	0	89	0	40	303
04:15 PM	2	1	86	0	0	0	85	0	0	110	1	40	325
04:30 PM	0	2	99	0	0	0	82	1	0	104	3	41	332
04:45 PM	1	2	86	0	0	0	83	6	0	86	3	43	310
Total	3	5	350	0	0	0	343	9	0	389	7	164	1270

# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 2

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right	
05:00 PM	0	2	95	0	0	0	74	4	0	121	3	57	356
05:15 PM	0	1	100	0	0	0	62	5	0	90	1	64	323
05:30 PM	0	5	108	0	0	0	55	3	0	97	1	49	318
05:45 PM	1	3	90	0	0	0	71	7	0	100	1	53	326
<b>Total</b>	<b>1</b>	<b>11</b>	<b>393</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>262</b>	<b>19</b>	<b>0</b>	<b>408</b>	<b>6</b>	<b>223</b>	<b>1323</b>
06:00 PM	0	3	62	0	0	0	67	2	0	101	3	51	289
06:15 PM	0	2	87	0	0	0	53	1	1	136	5	73	358
06:30 PM	0	2	90	0	0	0	63	7	0	104	3	53	322
06:45 PM	0	2	48	0	0	0	39	2	0	73	2	36	202
<b>Total</b>	<b>0</b>	<b>9</b>	<b>287</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>222</b>	<b>12</b>	<b>1</b>	<b>414</b>	<b>13</b>	<b>213</b>	<b>1171</b>
<b>Grand Total</b>	<b>7</b>	<b>59</b>	<b>2076</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1801</b>	<b>71</b>	<b>4</b>	<b>2316</b>	<b>52</b>	<b>1252</b>	<b>7638</b>
Apprch %	0.3	2.8	96.9	0	0	0	96	3.8	0.2	64	1.4	34.6	
Total %	0.1	0.8	27.2	0	0	0	23.6	0.9	0.1	30.3	0.7	16.4	
<b>Cars</b>	<b>7</b>	<b>58</b>	<b>2052</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1795</b>	<b>71</b>	<b>4</b>	<b>2297</b>	<b>51</b>	<b>1245</b>	<b>7580</b>
<b>% Cars</b>	<b>100</b>	<b>98.3</b>	<b>98.8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>99.7</b>	<b>100</b>	<b>100</b>	<b>99.2</b>	<b>98.1</b>	<b>99.4</b>	<b>99.2</b>
<b>Trucks</b>	<b>0</b>	<b>1</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>1</b>	<b>7</b>	<b>58</b>
<b>% Trucks</b>	<b>0</b>	<b>1.7</b>	<b>1.2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.3</b>	<b>0</b>	<b>0</b>	<b>0.8</b>	<b>1.9</b>	<b>0.6</b>	<b>0.8</b>

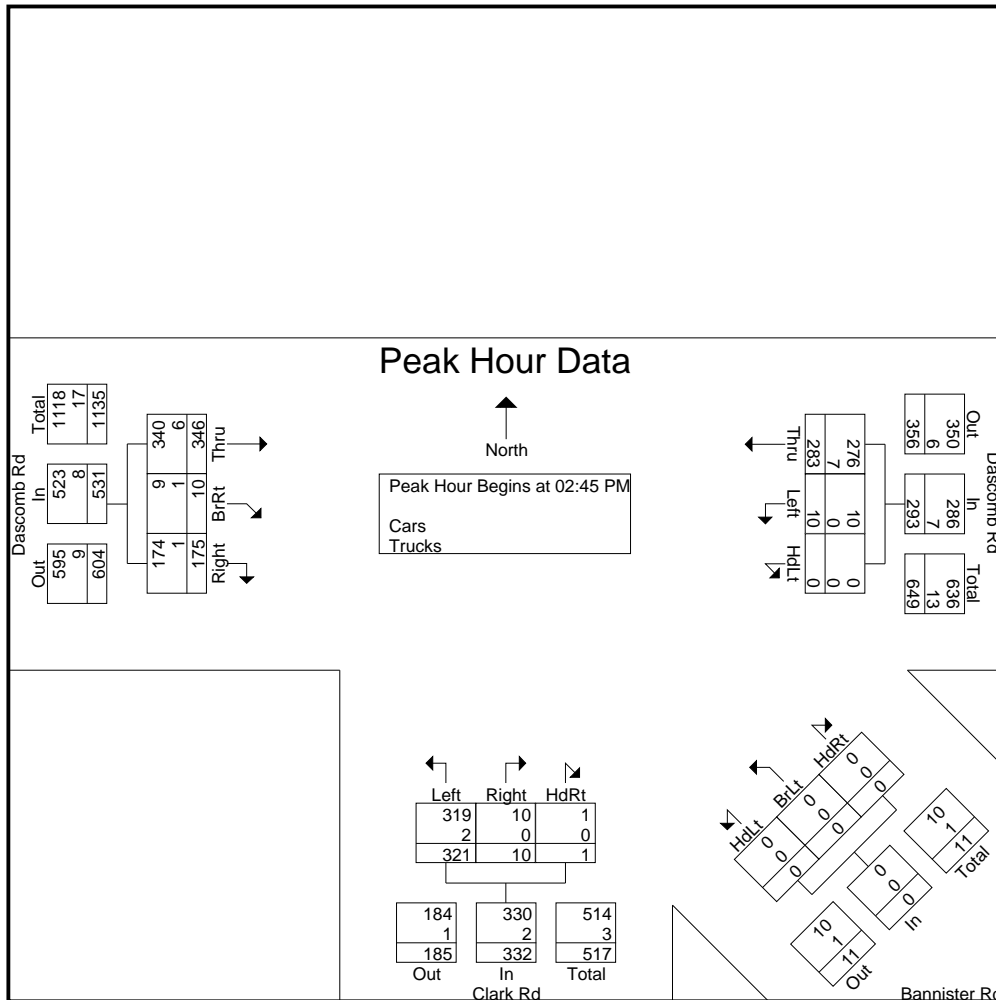
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 3

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	0	0	62	62	0	0	0	0	81	1	0	82	71	2	<b>56</b>	129	273
03:00 PM	0	<b>5</b>	77	82	0	0	0	0	81	2	<b>1</b>	84	73	0	39	112	278
03:15 PM	0	0	<b>83</b>	<b>83</b>	0	0	0	0	77	3	0	80	84	2	47	133	296
03:30 PM	0	5	61	66	0	0	0	0	<b>82</b>	<b>4</b>	0	<b>86</b>	<b>118</b>	<b>6</b>	33	<b>157</b>	<b>309</b>
Total Volume	0	10	283	293	0	0	0	0	321	10	1	332	346	10	175	531	1156
% App. Total	0	3.4	96.6		0	0	0		96.7	3	0.3		65.2	1.9	33		
PHF	.000	.500	.852	.883	.000	.000	.000	.000	.979	.625	.250	.965	.733	.417	.781	.846	.935
Cars	0	10	276	286	0	0	0	0	319	10	1	330	340	9	174	523	1139
% Cars	0	100	97.5	97.6	0	0	0	0	99.4	100	100	99.4	98.3	90.0	99.4	98.5	98.5
Trucks	0	0	7	7	0	0	0	0	2	0	0	2	6	1	1	8	17
% Trucks	0	0	2.5	2.4	0	0	0	0	0.6	0	0	0.6	1.7	10.0	0.6	1.5	1.5



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

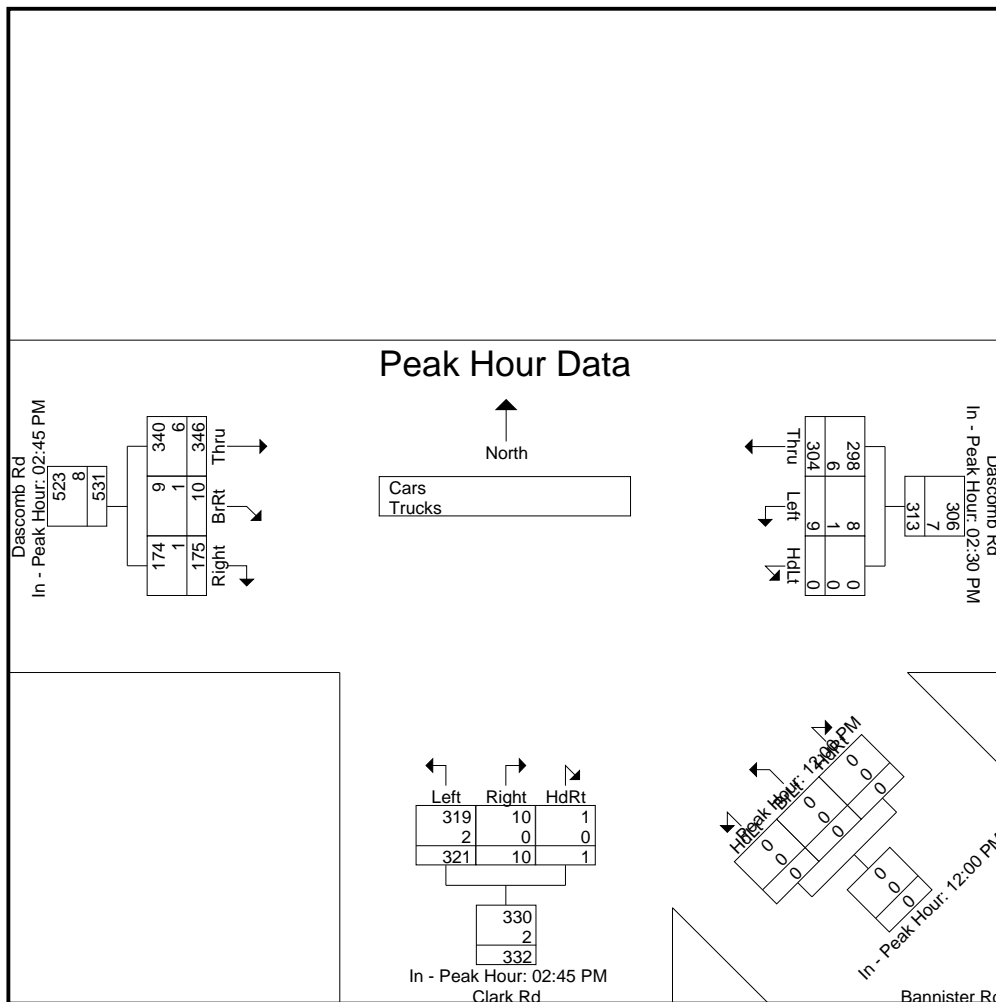
File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 4

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM				12:00 PM				02:45 PM				02:45 PM			
+0 mins.	0	4	82	<b>86</b>	0	0	0	0	81	1	0	82	71	2	<b>56</b>	129
+15 mins.	0	0	62	62	0	0	0	0	81	2	<b>1</b>	84	73	0	39	112
+30 mins.	0	<b>5</b>	77	82	0	0	0	0	77	3	0	80	84	2	47	133
+45 mins.	0	0	<b>83</b>	83	0	0	0	0	<b>82</b>	<b>4</b>	0	<b>86</b>	<b>118</b>	<b>6</b>	33	<b>157</b>
Total Volume	0	9	304	313	0	0	0	0	321	10	1	332	346	10	175	531
% App. Total	0	2.9	97.1		0	0	0		96.7	3	0.3		65.2	1.9	33	
PHF	.000	.450	.916	.910	.000	.000	.000	.000	.979	.625	.250	.965	.733	.417	.781	.846
Cars	0	8	298	306	0	0	0	0	319	10	1	330	340	9	174	523
% Cars	0	88.9	98	97.8	0	0	0	0	99.4	100	100	99.4	98.3	90	99.4	98.5
Trucks	0	1	6	7	0	0	0	0	2	0	0	2	6	1	1	8
% Trucks	0	11.1	2	2.2	0	0	0	0	0.6	0	0	0.6	1.7	10	0.6	1.5



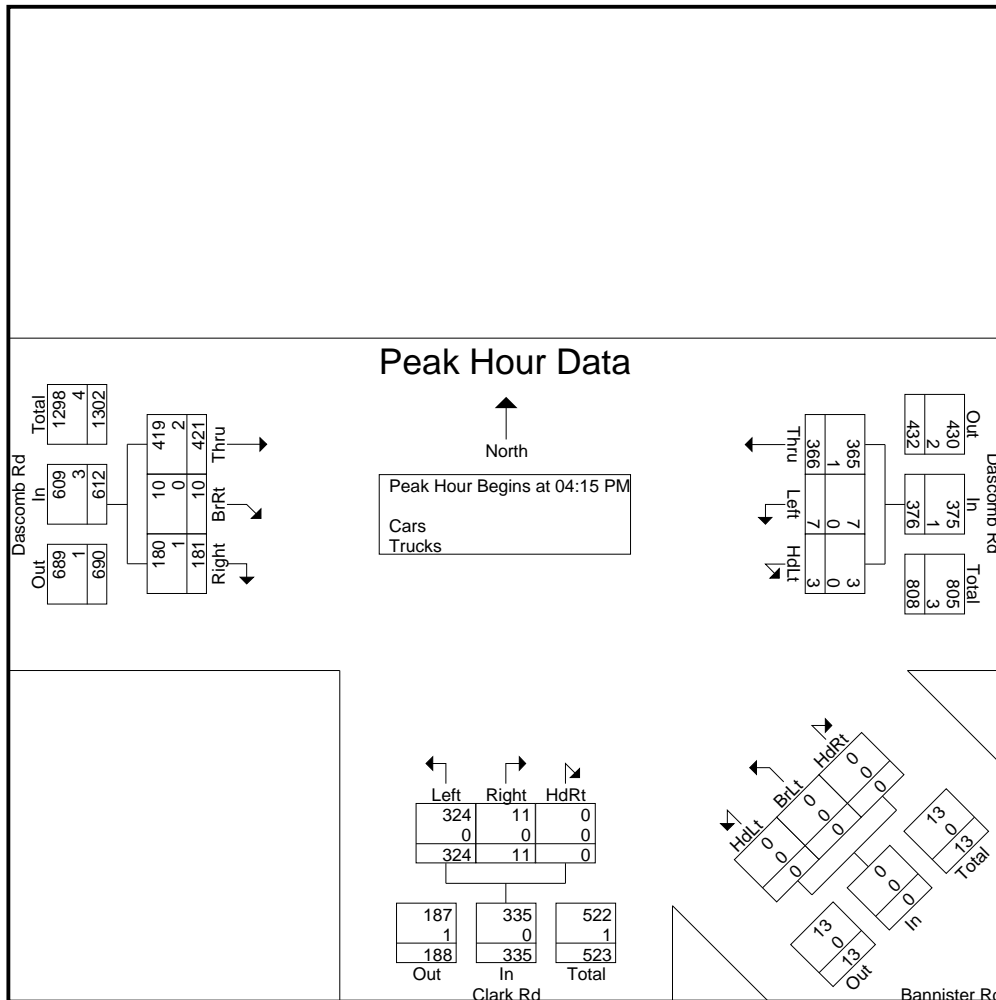
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 5

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	2	1	86	89	0	0	0	0	85	0	0	85	110	1	40	151	325
04:30 PM	0	2	99	101	0	0	0	0	82	1	0	83	104	3	41	148	332
04:45 PM	1	2	86	89	0	0	0	0	83	6	0	89	86	3	43	132	310
05:00 PM	0	2	95	97	0	0	0	0	74	4	0	78	121	3	57	181	356
Total Volume	3	7	366	376	0	0	0	0	324	11	0	335	421	10	181	612	1323
% App. Total	0.8	1.9	97.3		0	0	0		96.7	3.3	0		68.8	1.6	29.6		
PHF	.375	.875	.924	.931	.000	.000	.000	.000	.953	.458	.000	.941	.870	.833	.794	.845	.929
Cars	3	7	365	375	0	0	0	0	324	11	0	335	419	10	180	609	1319
% Cars	100	100	99.7	99.7	0	0	0	0	100	100	0	100	99.5	100	99.4	99.5	99.7
Trucks	0	0	1	1	0	0	0	0	0	0	0	0	2	0	1	3	4
% Trucks	0	0	0.3	0.3	0	0	0	0	0	0	0	0	0.5	0	0.6	0.5	0.3



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

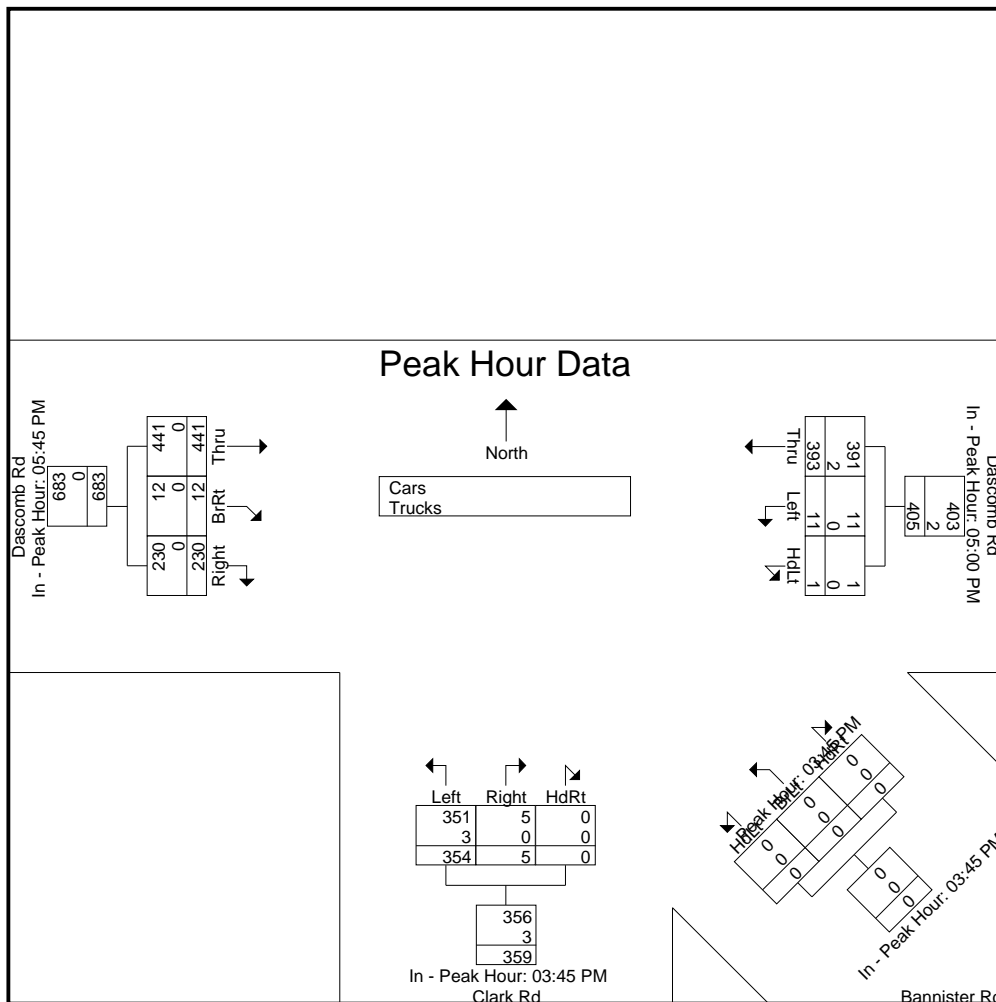
File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 6

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				03:45 PM				03:45 PM				05:45 PM			
+0 mins.	0	2	95	97	0	0	0	0	<b>94</b>	<b>2</b>	0	<b>96</b>	100	1	53	154
+15 mins.	0	1	100	101	0	0	0	0	93	2	0	95	101	3	51	155
+30 mins.	0	<b>5</b>	<b>108</b>	<b>113</b>	0	0	0	0	85	0	0	85	<b>136</b>	<b>5</b>	<b>73</b>	<b>214</b>
+45 mins.	<b>1</b>	3	90	94	0	0	0	0	82	1	0	83	104	3	53	160
Total Volume	1	11	393	405	0	0	0	0	354	5	0	359	441	12	230	683
% App. Total	0.2	2.7	97		0	0	0		98.6	1.4	0		64.6	1.8	33.7	
PHF	.250	.550	.910	.896	.000	.000	.000	.000	.941	.625	.000	.935	.811	.600	.788	.798
Cars	1	11	391	403	0	0	0	0	351	5	0	356	441	12	230	683
% Cars	100	100	99.5	99.5	0	0	0	0	99.2	100	0	99.2	100	100	100	100
Trucks	0	0	2	2	0	0	0	0	3	0	0	3	0	0	0	0
% Trucks	0	0	0.5	0.5	0	0	0	0	0.8	0	0	0.8	0	0	0	0



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 7

## Groups Printed- Cars

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right	
12:00 PM	1	0	55	0	0	0	35	1	0	56	0	53	201
12:15 PM	0	6	60	0	0	0	42	4	0	50	0	36	198
12:30 PM	1	1	62	0	0	0	34	1	0	58	1	34	192
12:45 PM	0	0	59	0	0	0	37	2	0	58	2	45	203
Total	2	7	236	0	0	0	148	8	0	222	3	168	794
01:00 PM	0	1	58	0	0	0	60	2	1	43	1	42	208
01:15 PM	0	0	59	0	0	0	36	2	0	57	1	33	188
01:30 PM	0	1	61	0	0	0	40	1	0	70	1	41	215
01:45 PM	0	1	51	0	0	0	45	1	0	65	2	49	214
Total	0	3	229	0	0	0	181	6	1	235	5	165	825
02:00 PM	0	3	68	0	0	0	86	2	0	61	3	35	258
02:15 PM	0	2	53	0	0	0	69	2	1	67	1	37	232
02:30 PM	0	3	80	0	0	0	74	1	0	69	3	34	264
02:45 PM	0	0	62	0	0	0	81	1	0	71	2	55	272
Total	0	8	263	0	0	0	310	6	1	268	9	161	1026
03:00 PM	0	5	77	0	0	0	81	2	1	71	0	39	276
03:15 PM	0	0	79	0	0	0	76	3	0	82	2	47	289
03:30 PM	0	5	58	0	0	0	81	4	0	116	5	33	302
03:45 PM	1	5	84	0	0	0	92	2	0	94	1	33	312
Total	1	15	298	0	0	0	330	11	1	363	8	152	1179
04:00 PM	0	0	79	0	0	0	92	2	0	89	0	40	302
04:15 PM	2	1	86	0	0	0	85	0	0	109	1	40	324
04:30 PM	0	2	98	0	0	0	82	1	0	103	3	41	330
04:45 PM	1	2	86	0	0	0	83	6	0	86	3	43	310
Total	3	5	349	0	0	0	342	9	0	387	7	164	1266

# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 8

## Groups Printed- Cars

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right	
05:00 PM	0	2	95	0	0	0	74	4	0	121	3	56	355
05:15 PM	0	1	99	0	0	0	62	5	0	90	1	64	322
05:30 PM	0	5	107	0	0	0	55	3	0	97	1	49	317
05:45 PM	1	3	90	0	0	0	71	7	0	100	1	53	326
Total	1	11	391	0	0	0	262	19	0	408	6	222	1320
06:00 PM	0	3	62	0	0	0	67	2	0	101	3	51	289
06:15 PM	0	2	87	0	0	0	53	1	1	136	5	73	358
06:30 PM	0	2	90	0	0	0	63	7	0	104	3	53	322
06:45 PM	0	2	47	0	0	0	39	2	0	73	2	36	201
Total	0	9	286	0	0	0	222	12	1	414	13	213	1170
Grand Total	7	58	2052	0	0	0	1795	71	4	2297	51	1245	7580
Aprrch %	0.3	2.7	96.9	0	0	0	96	3.8	0.2	63.9	1.4	34.7	
Total %	0.1	0.8	27.1	0	0	0	23.7	0.9	0.1	30.3	0.7	16.4	

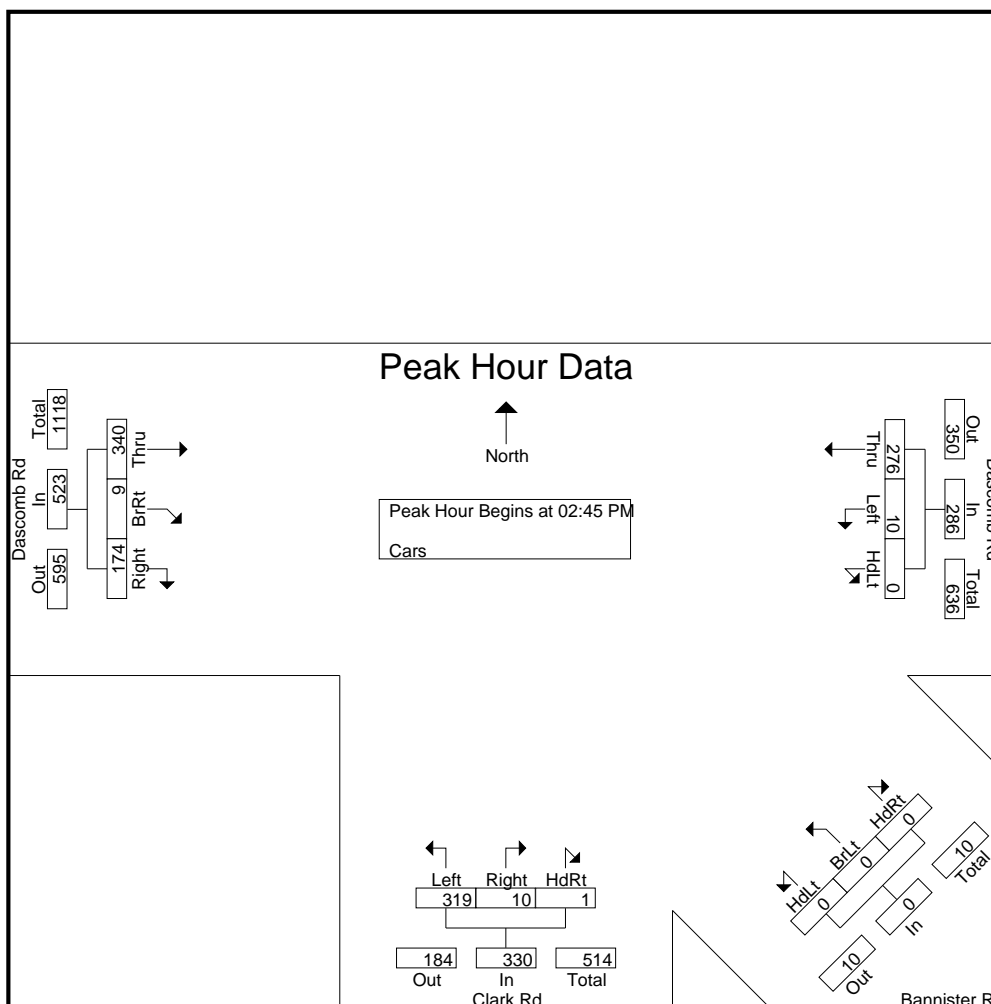
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 9

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	0	0	62	62	0	0	0	0	<b>81</b>	1	0	82	71	2	<b>55</b>	128	272
03:00 PM	0	<b>5</b>	77	<b>82</b>	0	0	0	0	81	2	<b>1</b>	84	71	0	39	110	276
03:15 PM	0	0	<b>79</b>	79	0	0	0	0	76	3	0	79	82	2	47	131	289
03:30 PM	0	5	58	63	0	0	0	0	81	<b>4</b>	0	<b>85</b>	<b>116</b>	<b>5</b>	33	<b>154</b>	<b>302</b>
Total Volume	0	10	276	286	0	0	0	0	319	10	1	330	340	9	174	523	1139
% App. Total	0	3.5	96.5		0	0	0		96.7	3	0.3		65	1.7	33.3		
PHF	.000	.500	.873	.872	.000	.000	.000	.000	.985	.625	.250	.971	.733	.450	.791	.849	.943



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

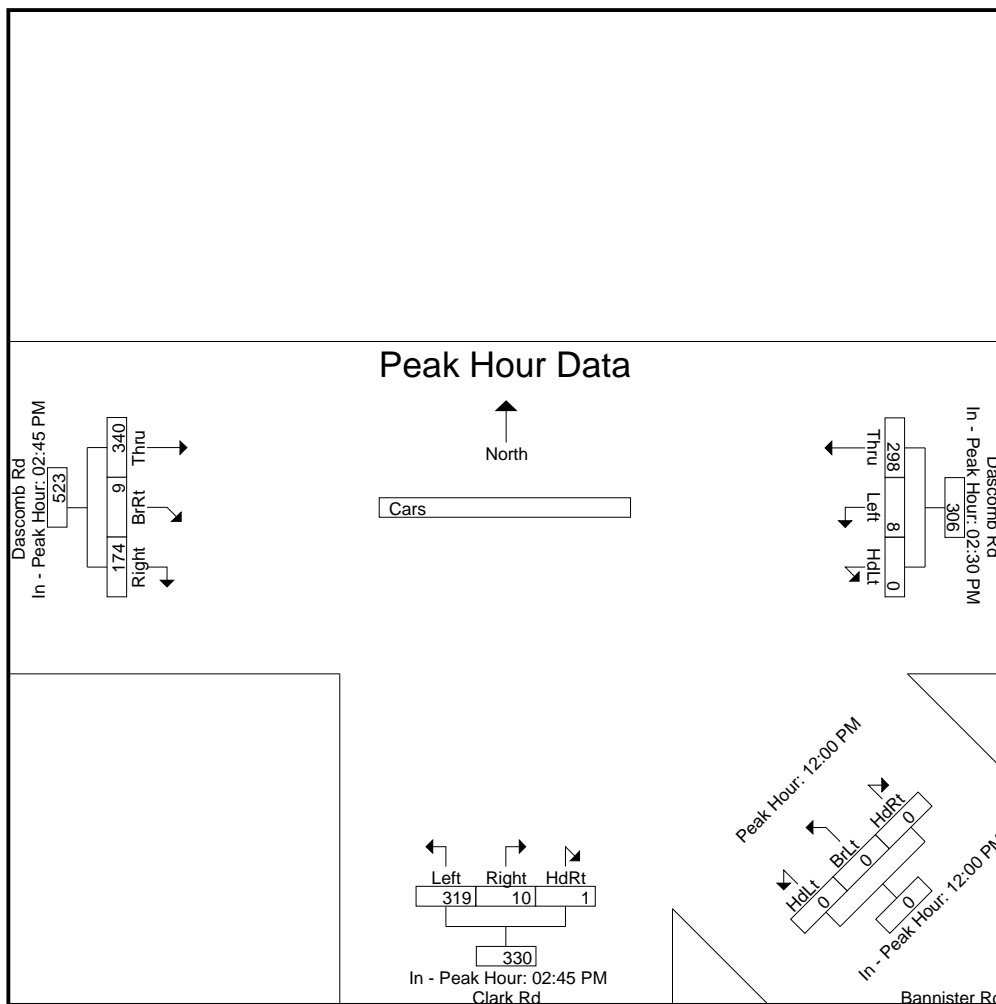
File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 10

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM				12:00 PM				02:45 PM				02:45 PM			
+0 mins.	0	3	<b>80</b>	<b>83</b>	0	0	0	0	<b>81</b>	1	0	82	71	2	<b>55</b>	128
+15 mins.	0	0	62	62	0	0	0	0	81	2	<b>1</b>	84	71	0	39	110
+30 mins.	0	<b>5</b>	77	82	0	0	0	0	76	3	0	79	82	2	47	131
+45 mins.	0	0	79	79	0	0	0	0	81	<b>4</b>	0	<b>85</b>	<b>116</b>	<b>5</b>	33	<b>154</b>
Total Volume	0	8	298	306	0	0	0	0	319	10	1	330	340	9	174	523
% App. Total	0	2.6	97.4		0	0	0		96.7	3	0.3		65	1.7	33.3	
PHF	.000	.400	.931	.922	.000	.000	.000	.000	.985	.625	.250	.971	.733	.450	.791	.849



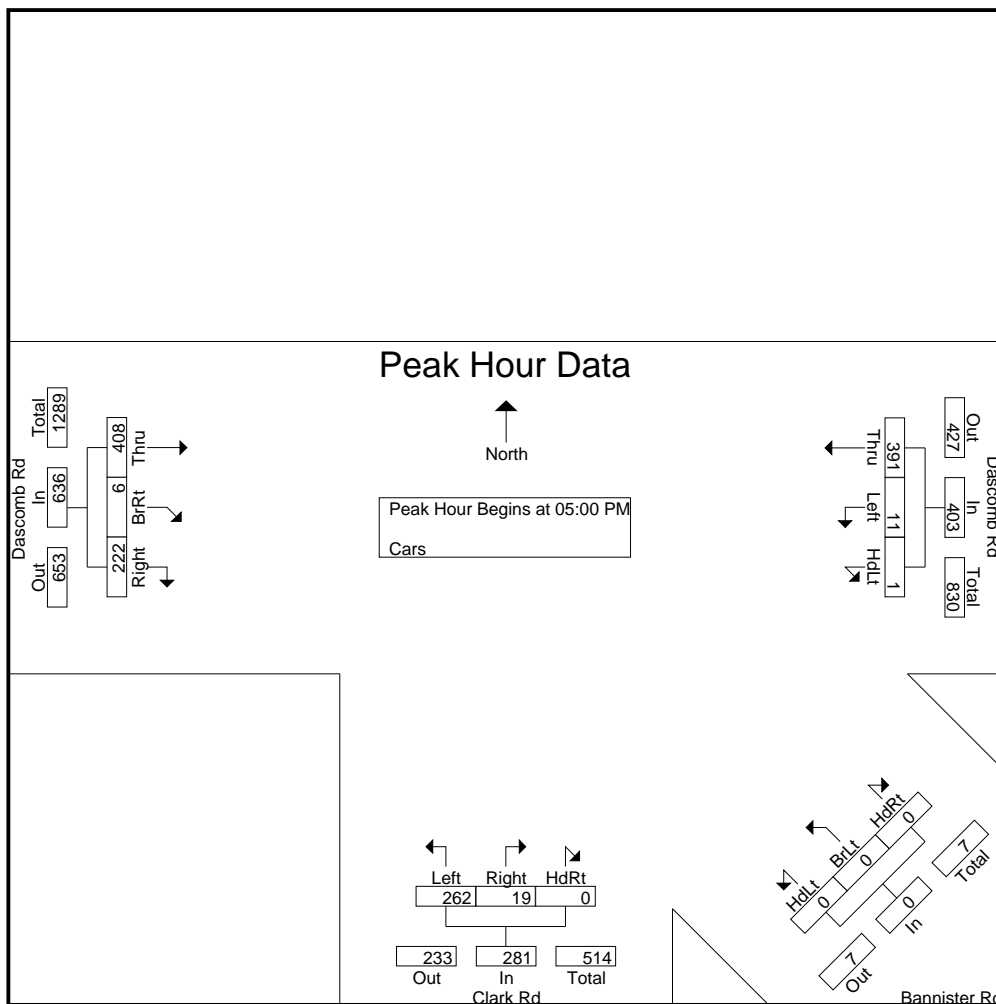
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 11

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	2	95	97	0	0	0	0	<b>74</b>	4	0	<b>78</b>	<b>121</b>	<b>3</b>	56	<b>180</b>	<b>355</b>
05:15 PM	0	1	99	100	0	0	0	0	62	5	0	67	90	1	<b>64</b>	155	322
05:30 PM	0	<b>5</b>	<b>107</b>	<b>112</b>	0	0	0	0	55	3	0	58	97	1	49	147	317
05:45 PM	<b>1</b>	3	90	94	0	0	0	0	71	<b>7</b>	0	78	100	1	53	154	326
Total Volume	1	11	391	403	0	0	0	0	262	19	0	281	408	6	222	636	1320
% App. Total	0.2	2.7	97		0	0	0		93.2	6.8	0		64.2	0.9	34.9		
PHF	.250	.550	.914	.900	.000	.000	.000	.000	.885	.679	.000	.901	.843	.500	.867	.883	.930



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

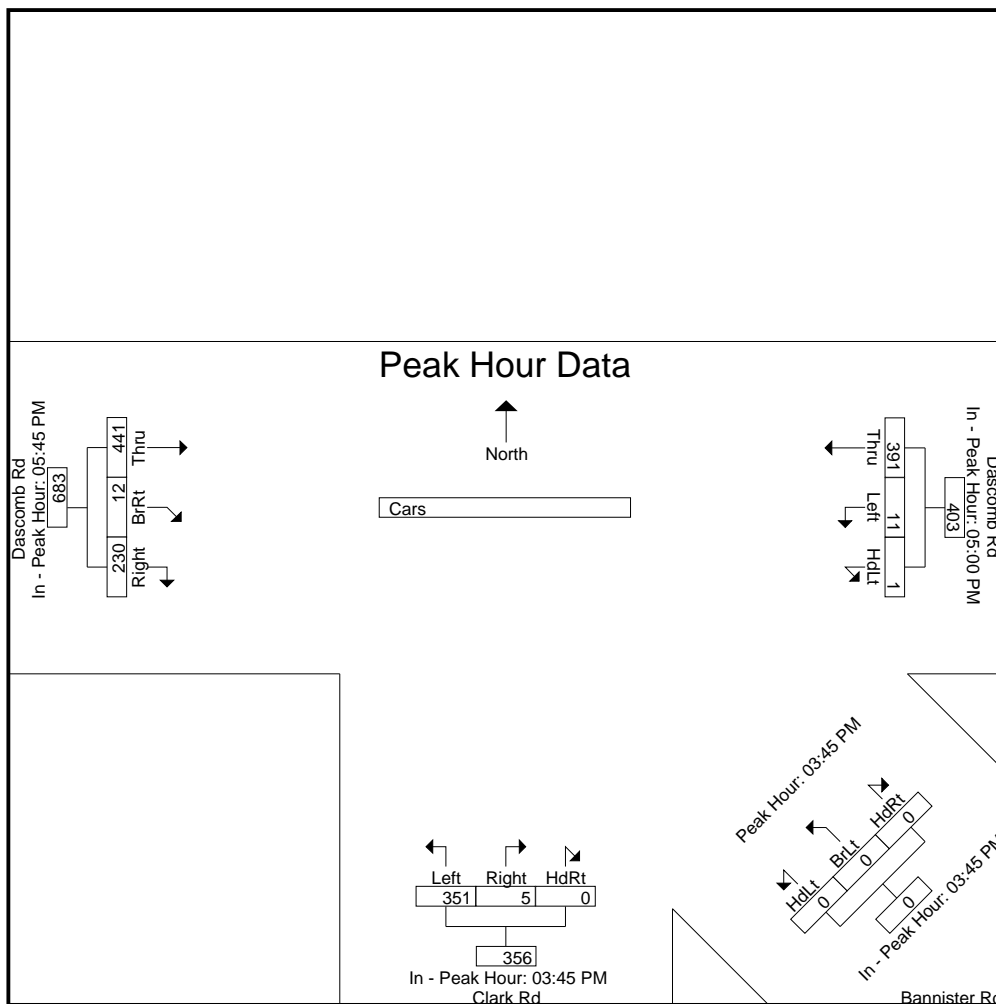
File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 12

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				03:45 PM				03:45 PM				05:45 PM			
+0 mins.	0	2	95	97	0	0	0	0	<b>92</b>	<b>2</b>	0	<b>94</b>	100	1	53	154
+15 mins.	0	1	99	100	0	0	0	0	92	2	0	94	101	3	51	155
+30 mins.	0	<b>5</b>	<b>107</b>	<b>112</b>	0	0	0	0	85	0	0	85	<b>136</b>	<b>5</b>	<b>73</b>	<b>214</b>
+45 mins.	<b>1</b>	3	90	94	0	0	0	0	82	1	0	83	104	3	53	160
Total Volume	1	11	391	403	0	0	0	0	351	5	0	356	441	12	230	683
% App. Total	0.2	2.7	97		0	0	0		98.6	1.4	0		64.6	1.8	33.7	
PHF	.250	.550	.914	.900	.000	.000	.000	.000	.954	.625	.000	.947	.811	.600	.788	.798



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 13

## Groups Printed- Trucks

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right	
12:00 PM	0	0	2	0	0	0	0	0	0	1	0	0	3
12:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
12:45 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
Total	0	0	3	0	0	0	0	0	0	4	0	1	8
01:00 PM	0	0	2	0	0	0	0	0	0	1	0	0	3
01:15 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
01:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
01:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	2
Total	0	0	5	0	0	0	1	0	0	2	0	0	8
02:00 PM	0	0	3	0	0	0	0	0	0	2	0	2	7
02:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
02:30 PM	0	1	2	0	0	0	0	0	0	0	0	2	5
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	1	5	0	0	0	0	0	0	3	0	5	14
03:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	2
03:15 PM	0	0	4	0	0	0	1	0	0	2	0	0	7
03:30 PM	0	0	3	0	0	0	1	0	0	2	1	0	7
03:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	4
Total	0	0	7	0	0	0	4	0	0	8	1	0	20
04:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
04:30 PM	0	0	1	0	0	0	0	0	0	1	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	0	0	1	0	0	2	0	0	4

# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 14

## Groups Printed- Trucks

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total	
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right		
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1
05:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	0	0	0	0	0	0	0	0	1	3
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	24	0	0	0	6	0	0	19	1	7		58
Apprch %	0	4	96	0	0	0	100	0	0	70.4	3.7	25.9		
Total %	0	1.7	41.4	0	0	0	10.3	0	0	32.8	1.7	12.1		

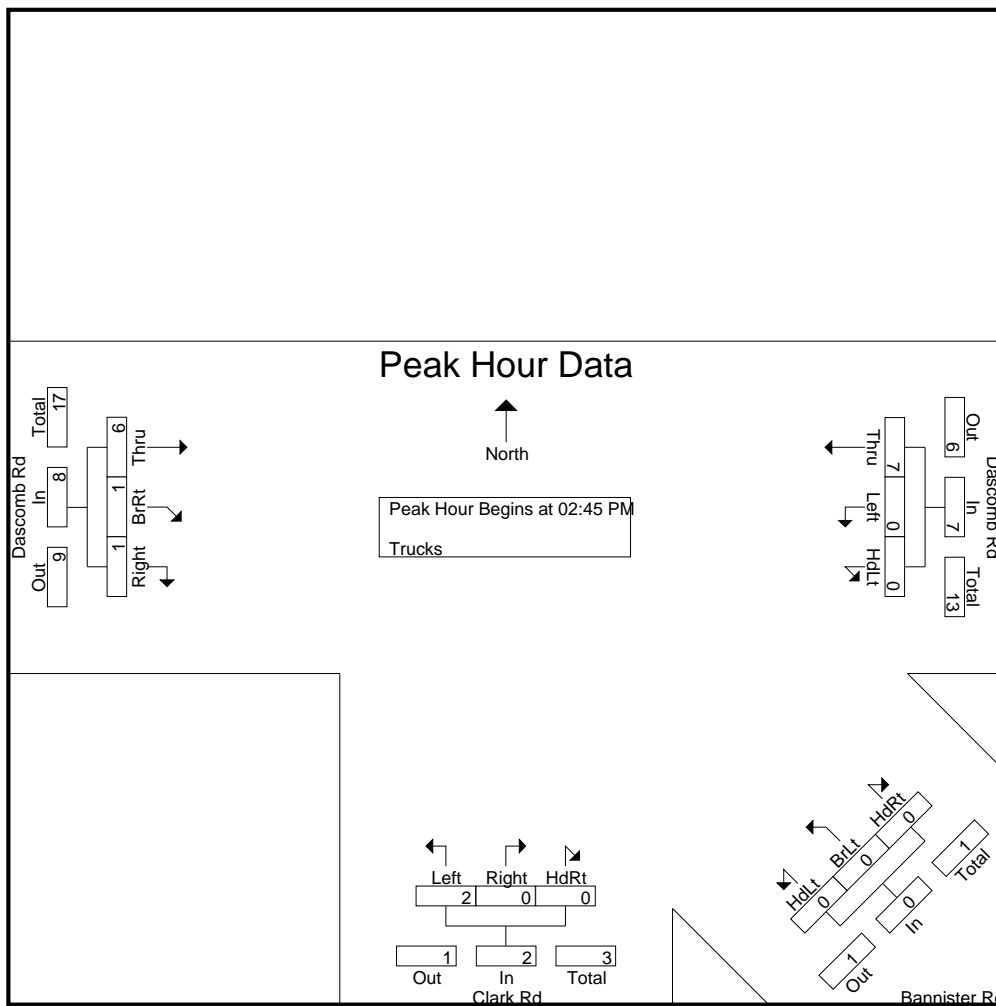
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 15

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
03:15 PM	0	0	4	4	0	0	0	0	1	0	0	1	2	0	0	2	7
03:30 PM	0	0	3	3	0	0	0	0	1	0	0	1	2	1	0	3	7
Total Volume	0	0	7	7	0	0	0	0	2	0	0	2	6	1	1	8	17
% App. Total	0	0	100		0	0	0		100	0	0		75	12.5	12.5		
PHF	.000	.000	.438	.438	.000	.000	.000	.000	.500	.000	.000	.500	.750	.250	.250	.667	.607



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

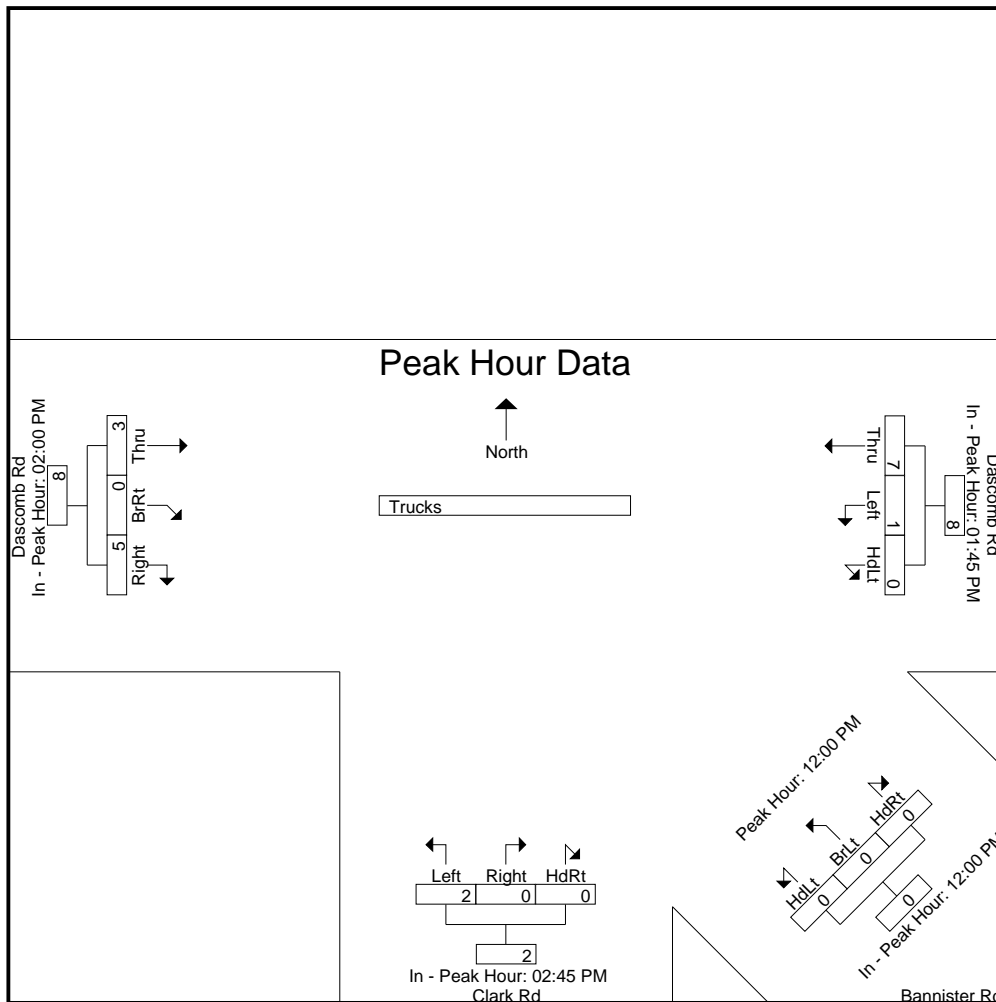
File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 16

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	01:45 PM				12:00 PM				02:45 PM				02:00 PM			
+0 mins.	0	0	2	2	0	0	0	0	0	0	0	0	2	0	2	4
+15 mins.	0	0	3	3	0	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	2
+45 mins.	0	1	2	3	0	0	0	0	1	0	0	1	0	0	1	1
Total Volume	0	1	7	8	0	0	0	0	2	0	0	2	3	0	5	8
% App. Total	0	12.5	87.5		0	0	0		100	0	0		37.5	0	62.5	
PHF	.000	.250	.583	.667	.000	.000	.000	.000	.500	.000	.000	.500	.375	.000	.625	.500



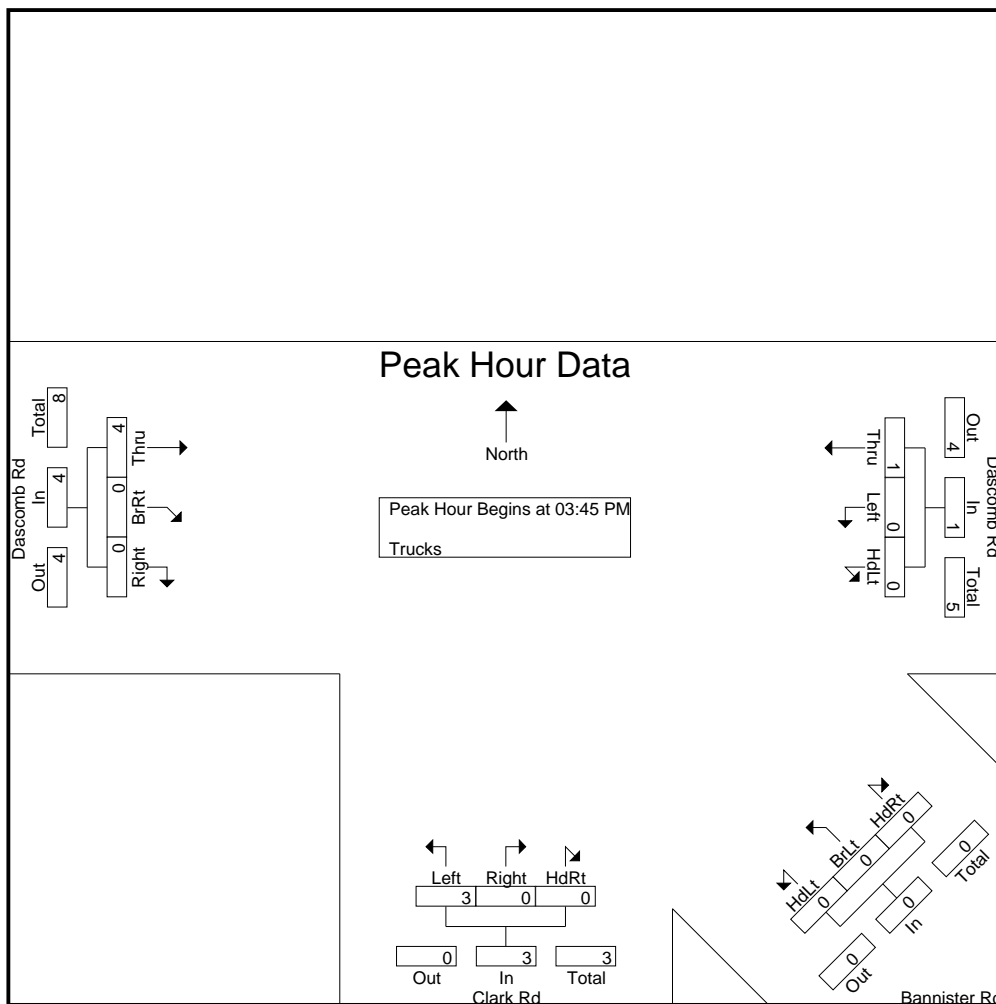
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 17

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	0	0	0	0	0	0	0	0	2	0	0	2	2	0	0	2	4
04:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	1	1	0	0	0	0	3	0	0	3	4	0	0	4	8
% App. Total	0	0	100		0	0	0		100	0	0		100	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.375	.000	.000	.375	.500	.000	.000	.500	.500



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

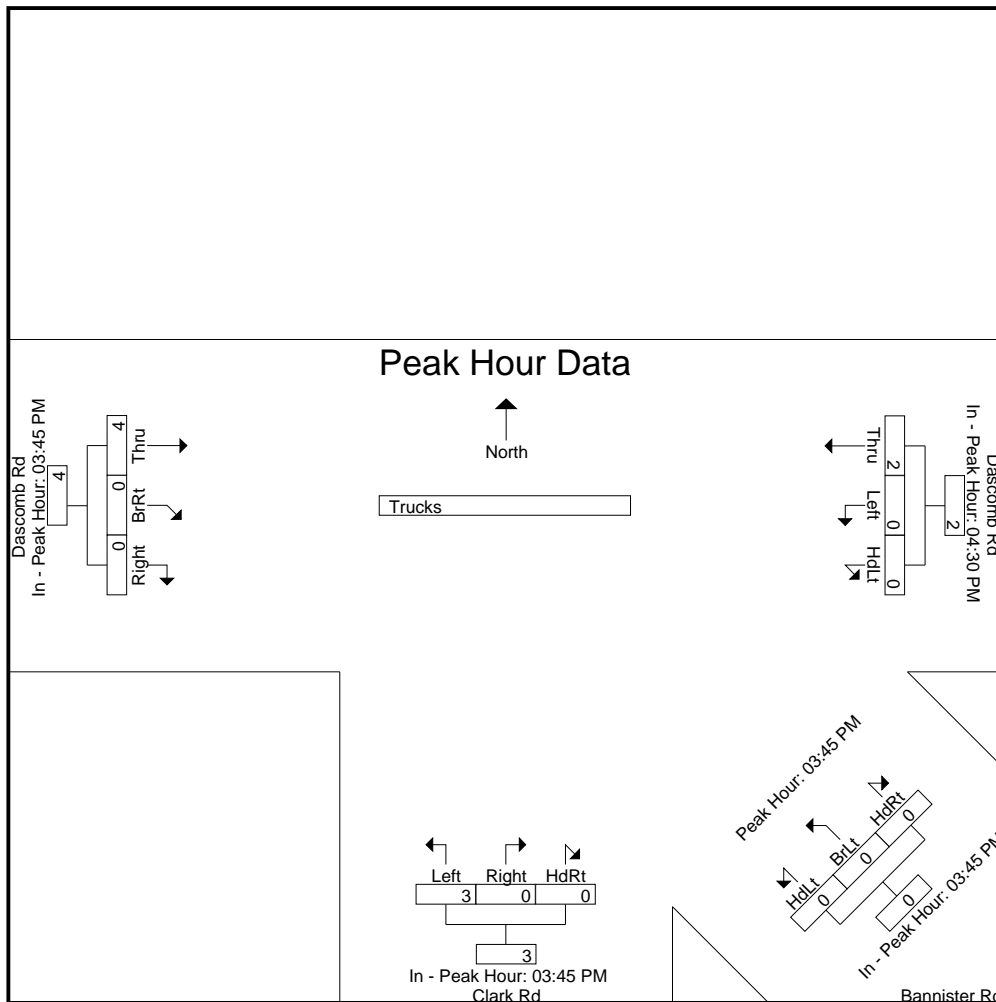
File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 18

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				03:45 PM				03:45 PM				03:45 PM			
+0 mins.	0	0	1	1	0	0	0	0	2	0	0	2	2	0	0	2
+15 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+45 mins.	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1
Total Volume	0	0	2	2	0	0	0	0	3	0	0	3	4	0	0	4
% App. Total	0	0	100		0	0	0		100	0	0		100	0	0	
PHF	.000	.000	.500	.500	.000	.000	.000	.000	.375	.000	.000	.375	.500	.000	.000	.500



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 19

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Exclu. Total	Inclu. Total	Int. Total
	HdLt	Left	Thru	Peds	HdLt	BrLt	HdRt	Peds	Left	Right	HdRt	Peds	Thru	BrRt	Right	Peds			
12:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	2	3
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
03:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1

# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 20

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Exclu. Total	Inclu. Total	Int. Total
	HdLt	Left	Thru	Peds	HdLt	BrLt	HdRt	Peds	Left	Right	HdRt	Peds	Thru	BrRt	Right	Peds			
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2
<b>Grand Total</b>	0	0	4	0	0	0	0	0	1	0	0	3	0	0	2	0	3	7	10
Apprch %	0	0	100		0	0	0		100	0	0		0	0	100				
Total %	0	0	57.1		0	0	0		14.3	0	0		0	0	28.6		30	70	

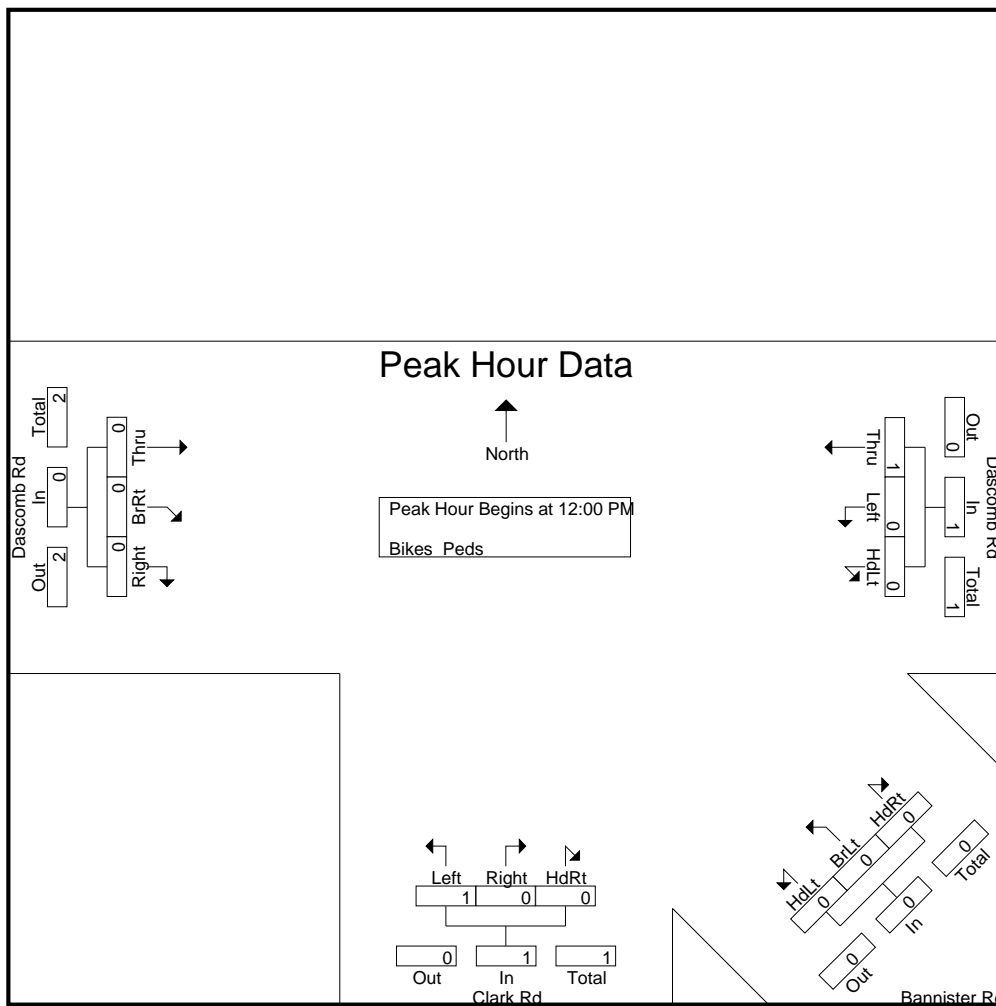
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 21

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total	
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total		
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 12:00 PM																		
12:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% App. Total	0	0	100		0	0	0		100	0	0		0	0	0			
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.500



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

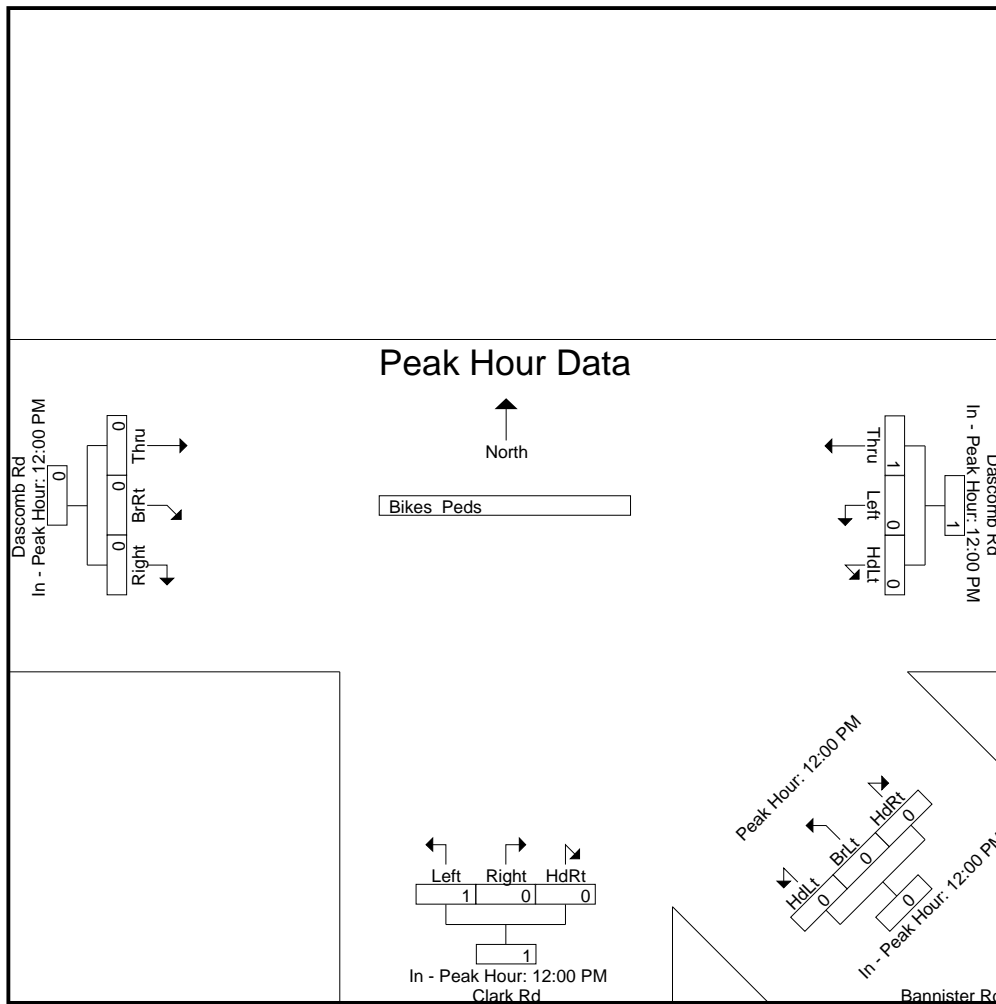
File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 22

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM				12:00 PM				12:00 PM				12:00 PM			
+0 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0
% App. Total	0	0	100		0	0	0		100	0	0		0	0	0	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000



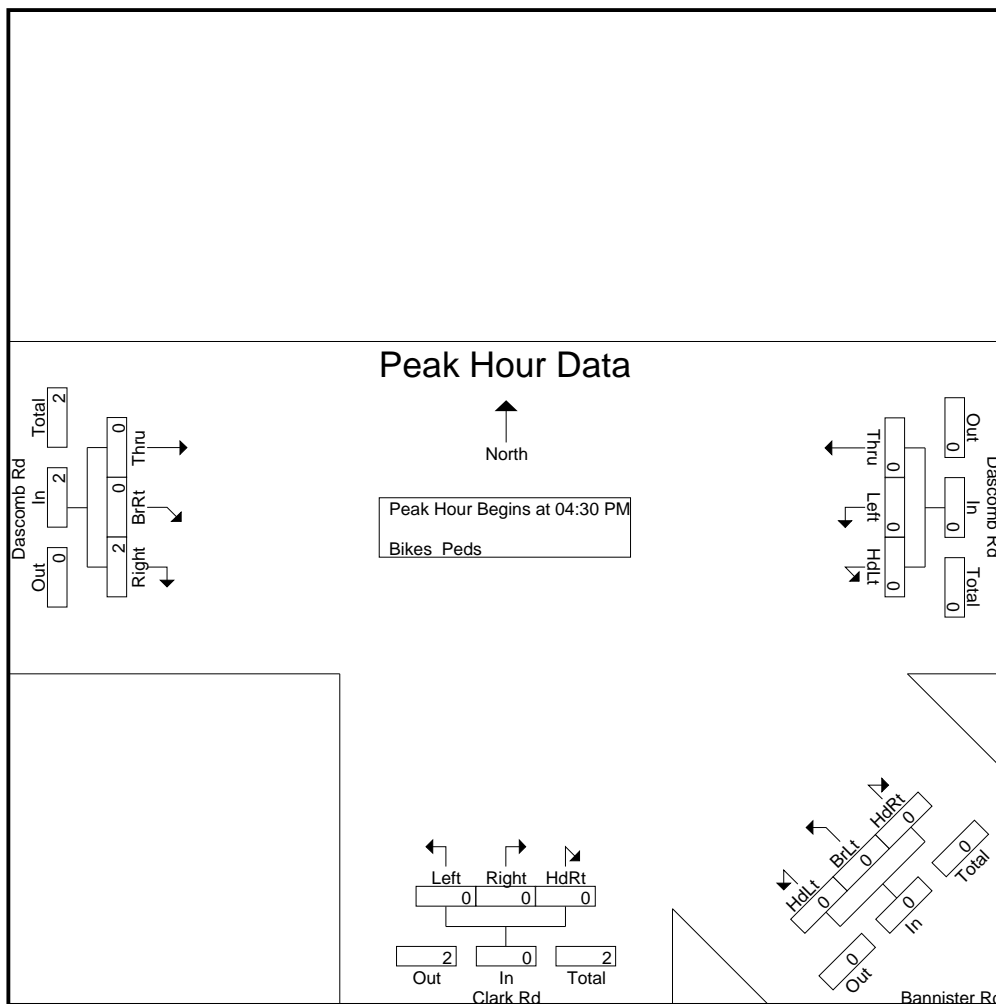
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 23

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.500	.500



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

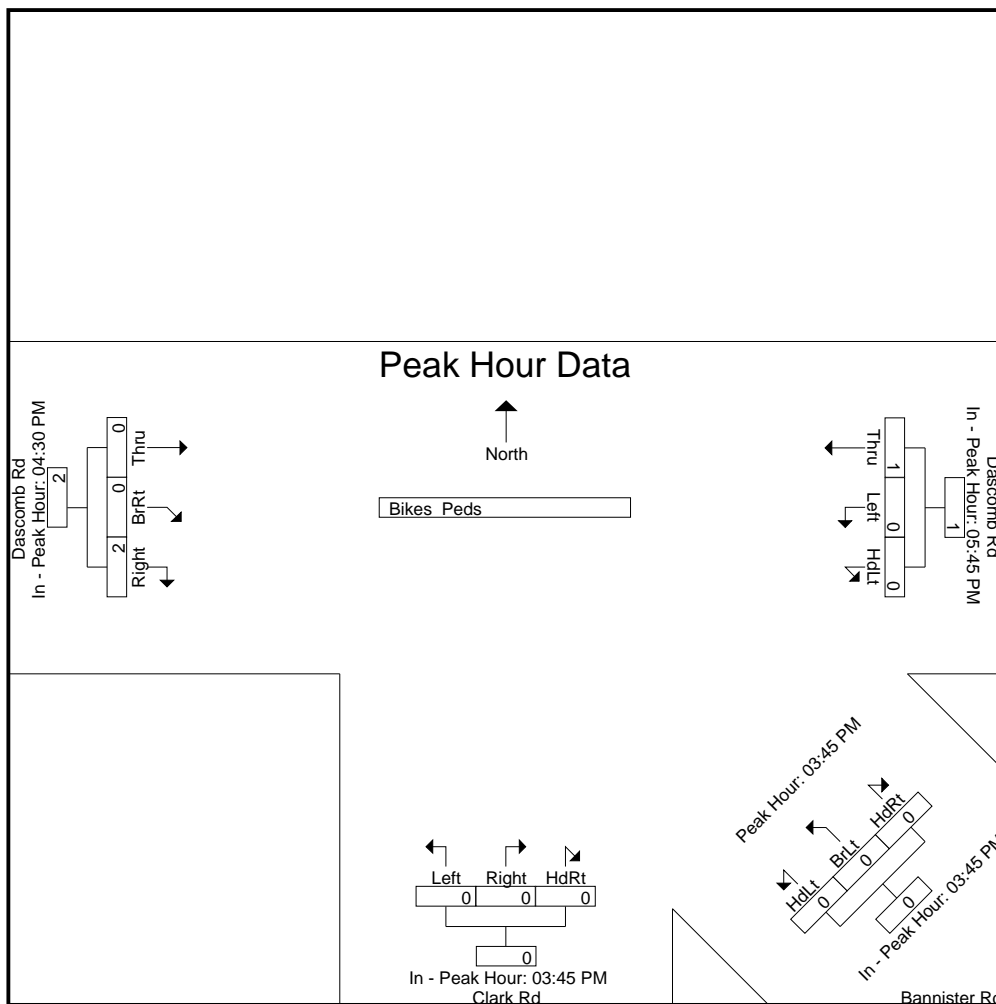
File Name : 05250008  
 Site Code : 05250008  
 Start Date : 9/20/2018  
 Page No : 24

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:45 PM				03:45 PM				03:45 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2
% App. Total	0	0	100		0	0	0		0	0	0		0	0	100	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.500



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	5	38	80	9	26	92	250
12:15 PM	9	20	70	10	37	101	247
12:30 PM	8	27	75	9	31	101	251
12:45 PM	9	19	75	10	27	100	240
Total	31	104	300	38	121	394	988
01:00 PM	8	24	81	11	29	93	246
01:15 PM	3	15	77	8	25	111	239
01:30 PM	14	24	92	10	19	92	251
01:45 PM	7	17	92	4	26	90	236
Total	32	80	342	33	99	386	972
02:00 PM	31	28	67	4	24	95	249
02:15 PM	11	26	87	7	27	80	238
02:30 PM	38	72	86	9	35	93	333
02:45 PM	16	31	122	10	43	95	317
Total	96	157	362	30	129	363	1137
03:00 PM	34	45	86	7	18	92	282
03:15 PM	24	39	107	5	24	88	287
03:30 PM	26	61	112	3	28	94	324
03:45 PM	21	38	111	4	27	89	290
Total	105	183	416	19	97	363	1183
04:00 PM	24	38	84	5	24	113	288
04:15 PM	24	42	97	5	30	122	320
04:30 PM	47	46	80	5	15	119	312
04:45 PM	47	69	90	8	33	90	337
Total	142	195	351	23	102	444	1257

# Accurate Counts

978-664-2565

File Name : 05250009

Site Code : 05250009

Start Date : 9/20/2018

Page No : 2

N/S Street : Frontage Road

E/W Street: Route 93 SB Ramp

City/State : Andover, MA

Weather : Clear

## Groups Printed- Cars - Trucks

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	43	61	98	1	24	92	319
05:15 PM	58	45	102	4	38	100	347
05:30 PM	50	39	110	2	22	94	317
05:45 PM	33	33	100	5	34	90	295
Total	184	178	410	12	118	376	1278
06:00 PM	32	27	89	3	33	77	261
06:15 PM	21	27	83	1	26	115	273
06:30 PM	12	18	108	1	30	85	254
06:45 PM	9	18	73	4	22	68	194
Total	74	90	353	9	111	345	982
Grand Total	664	987	2534	164	777	2671	7797
Apprch %	40.2	59.8	93.9	6.1	22.5	77.5	
Total %	8.5	12.7	32.5	2.1	10	34.3	
Cars	661	979	2408	160	771	2568	7547
% Cars	99.5	99.2	95	97.6	99.2	96.1	96.8
Trucks	3	8	126	4	6	103	250
% Trucks	0.5	0.8	5	2.4	0.8	3.9	3.2

# Accurate Counts

978-664-2565

File Name : 05250009

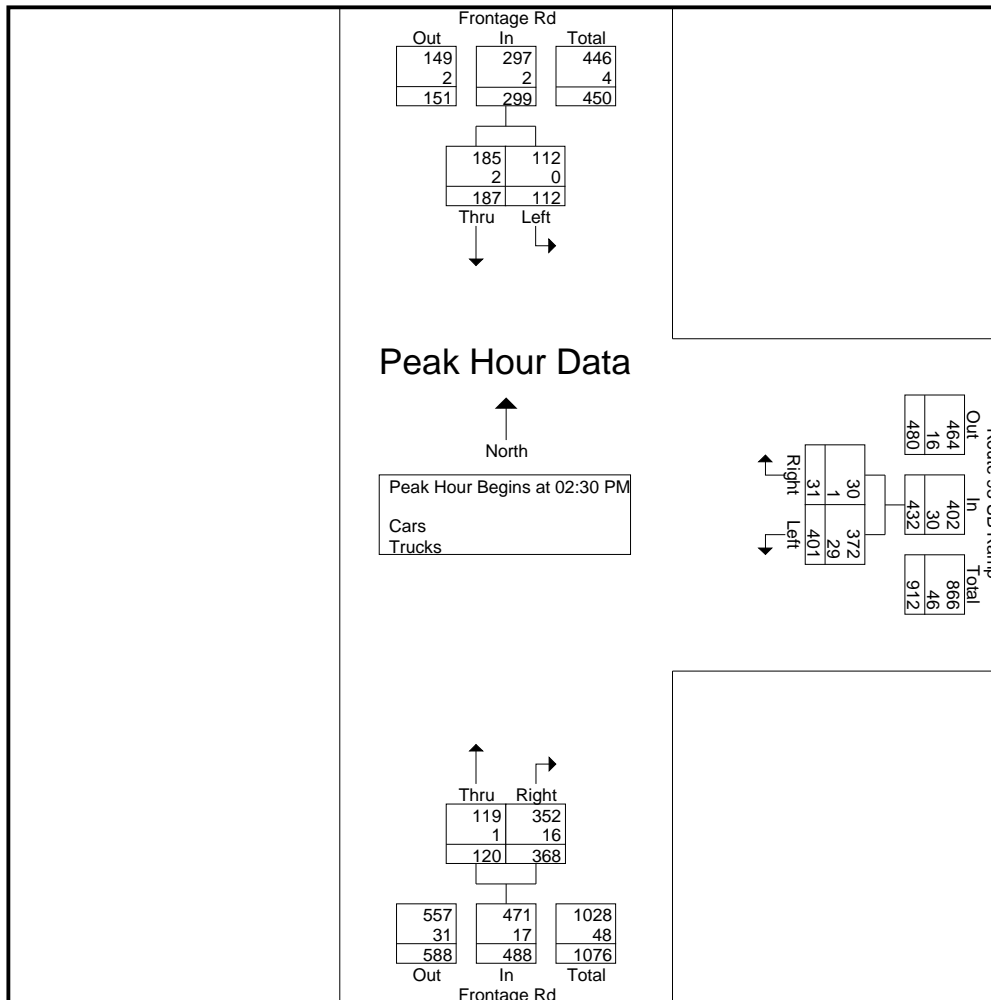
Site Code : 05250009

Start Date : 9/20/2018

Page No : 3

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:30 PM										
02:30 PM	38	72	110	86	9	95	35	93	128	333
02:45 PM	16	31	47	122	10	132	43	95	138	317
03:00 PM	34	45	79	86	7	93	18	92	110	282
03:15 PM	24	39	63	107	5	112	24	88	112	287
<b>Total Volume</b>	112	187	299	401	31	432	120	368	488	1219
<b>% App. Total</b>	37.5	62.5		92.8	7.2		24.6	75.4		
PHF	.737	.649	.680	.822	.775	.818	.698	.968	.884	.915
Cars	112	185	297	372	30	402	119	352	471	1170
<b>% Cars</b>	100	98.9	99.3	92.8	96.8	93.1	99.2	95.7	96.5	96.0
Trucks	0	2	2	29	1	30	1	16	17	49
<b>% Trucks</b>	0	1.1	0.7	7.2	3.2	6.9	0.8	4.3	3.5	4.0



# Accurate Counts

978-664-2565

File Name : 05250009

Site Code : 05250009

Start Date : 9/20/2018

Page No : 4

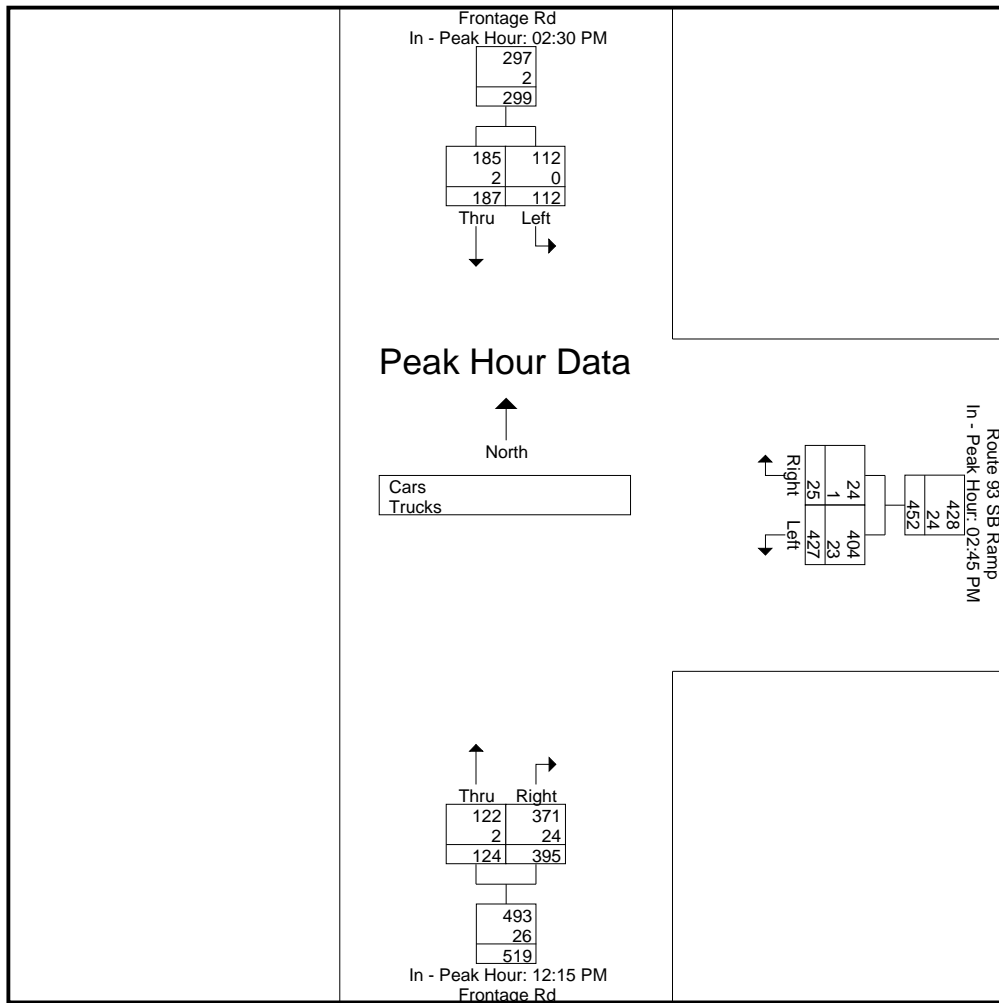
N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM			02:45 PM			12:15 PM		
+0 mins.	<b>38</b>	<b>72</b>	<b>110</b>	<b>122</b>	<b>10</b>	<b>132</b>	<b>37</b>	<b>101</b>	<b>138</b>
+15 mins.	16	31	47	86	7	93	31	101	132
+30 mins.	34	45	79	107	5	112	27	100	127
+45 mins.	24	39	63	112	3	115	29	93	122
<b>Total Volume</b>	<b>112</b>	<b>187</b>	<b>299</b>	<b>427</b>	<b>25</b>	<b>452</b>	<b>124</b>	<b>395</b>	<b>519</b>
<b>% App. Total</b>	<b>37.5</b>	<b>62.5</b>		<b>94.5</b>	<b>5.5</b>		<b>23.9</b>	<b>76.1</b>	
PHF	.737	.649	.680	.875	.625	.856	.838	.978	.940
Cars	112	185	297	404	24	428	122	371	493
% Cars	100	98.9	99.3	94.6	96	94.7	98.4	93.9	95
Trucks	0	2	2	23	1	24	2	24	26
% Trucks	0	1.1	0.7	5.4	4	5.3	1.6	6.1	5



# Accurate Counts

978-664-2565

File Name : 05250009

Site Code : 05250009

Start Date : 9/20/2018

Page No : 5

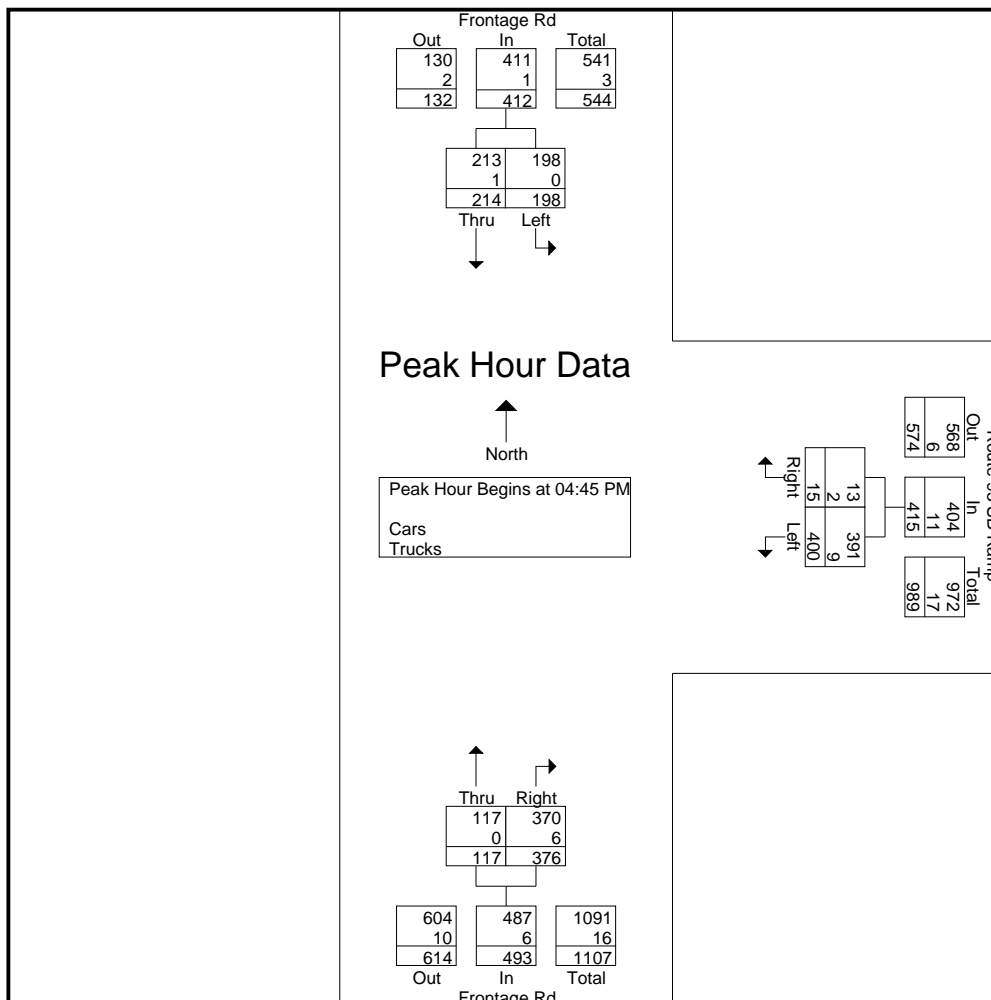
N/S Street : Frontage Road

E/W Street: Route 93 SB Ramp

City/State : Andover, MA

Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	47	<b>69</b>	<b>116</b>	90	<b>8</b>	98	33	90	123	337
05:00 PM	43	61	104	98	1	99	24	92	116	319
05:15 PM	<b>58</b>	45	103	102	4	106	<b>38</b>	<b>100</b>	<b>138</b>	<b>347</b>
05:30 PM	50	39	89	<b>110</b>	2	<b>112</b>	22	94	116	317
Total Volume	198	214	412	400	15	415	117	376	493	1320
% App. Total	48.1	51.9		96.4	3.6		23.7	76.3		
PHF	.853	.775	.888	.909	.469	.926	.770	.940	.893	.951
Cars	198	213	411	391	13	404	117	370	487	1302
% Cars	100	99.5	99.8	97.8	86.7	97.3	100	98.4	98.8	98.6
Trucks	0	1	1	9	2	11	0	6	6	18
% Trucks	0	0.5	0.2	2.3	13.3	2.7	0	1.6	1.2	1.4



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

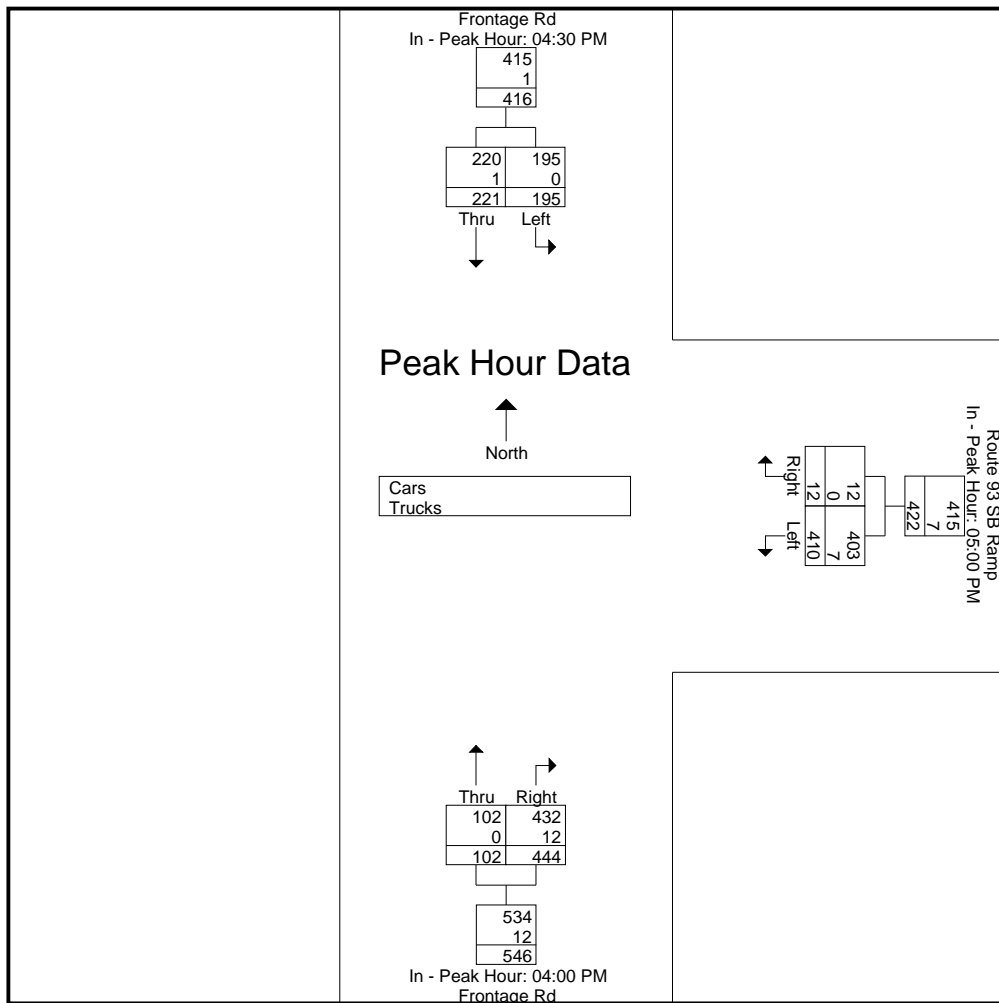
File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 6

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			05:00 PM			04:00 PM		
+0 mins.	47	46	93	98	1	99	24	113	137
+15 mins.	47	<b>69</b>	<b>116</b>	102	4	106	30	<b>122</b>	<b>152</b>
+30 mins.	43	61	104	<b>110</b>	2	<b>112</b>	15	119	134
+45 mins.	<b>58</b>	45	103	100	<b>5</b>	105	<b>33</b>	90	123
Total Volume	195	221	416	410	12	422	102	444	546
% App. Total	46.9	53.1		97.2	2.8		18.7	81.3	
PHF	.841	.801	.897	.932	.600	.942	.773	.910	.898
Cars	195	220	415	403	12	415	102	432	534
% Cars	100	99.5	99.8	98.3	100	98.3	100	97.3	97.8
Trucks	0	1	1	7	0	7	0	12	12
% Trucks	0	0.5	0.2	1.7	0	1.7	0	2.7	2.2



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 7

## Groups Printed- Cars

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	5	38	71	9	25	86	234
12:15 PM	9	20	62	10	37	93	231
12:30 PM	7	27	72	9	30	94	239
12:45 PM	9	17	69	10	26	98	229
Total	30	102	274	38	118	371	933
01:00 PM	8	23	78	11	29	86	235
01:15 PM	3	15	69	8	24	104	223
01:30 PM	14	23	86	10	19	85	237
01:45 PM	6	17	86	4	26	85	224
Total	31	78	319	33	98	360	919
02:00 PM	31	28	62	4	24	90	239
02:15 PM	11	26	84	7	27	77	232
02:30 PM	38	72	76	9	34	89	318
02:45 PM	16	31	111	10	43	92	303
Total	96	157	333	30	128	348	1092
03:00 PM	34	45	81	7	18	86	271
03:15 PM	24	37	104	4	24	85	278
03:30 PM	26	61	108	3	27	90	315
03:45 PM	21	38	106	4	27	85	281
Total	105	181	399	18	96	346	1145
04:00 PM	23	38	80	4	24	110	279
04:15 PM	24	41	94	5	30	117	311
04:30 PM	47	46	76	5	15	116	305
04:45 PM	47	68	85	6	33	89	328
Total	141	193	335	20	102	432	1223

# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 8

## Groups Printed- Cars

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	43	61	96	1	24	92	317
05:15 PM	58	45	101	4	38	97	343
05:30 PM	50	39	109	2	22	92	314
05:45 PM	33	33	97	5	34	89	291
Total	184	178	403	12	118	370	1265
06:00 PM	32	27	85	3	33	77	257
06:15 PM	21	27	82	1	26	114	271
06:30 PM	12	18	108	1	30	84	253
06:45 PM	9	18	70	4	22	66	189
Total	74	90	345	9	111	341	970
Grand Total	661	979	2408	160	771	2568	7547
Apprch %	40.3	59.7	93.8	6.2	23.1	76.9	
Total %	8.8	13	31.9	2.1	10.2	34	

# Accurate Counts

978-664-2565

File Name : 05250009

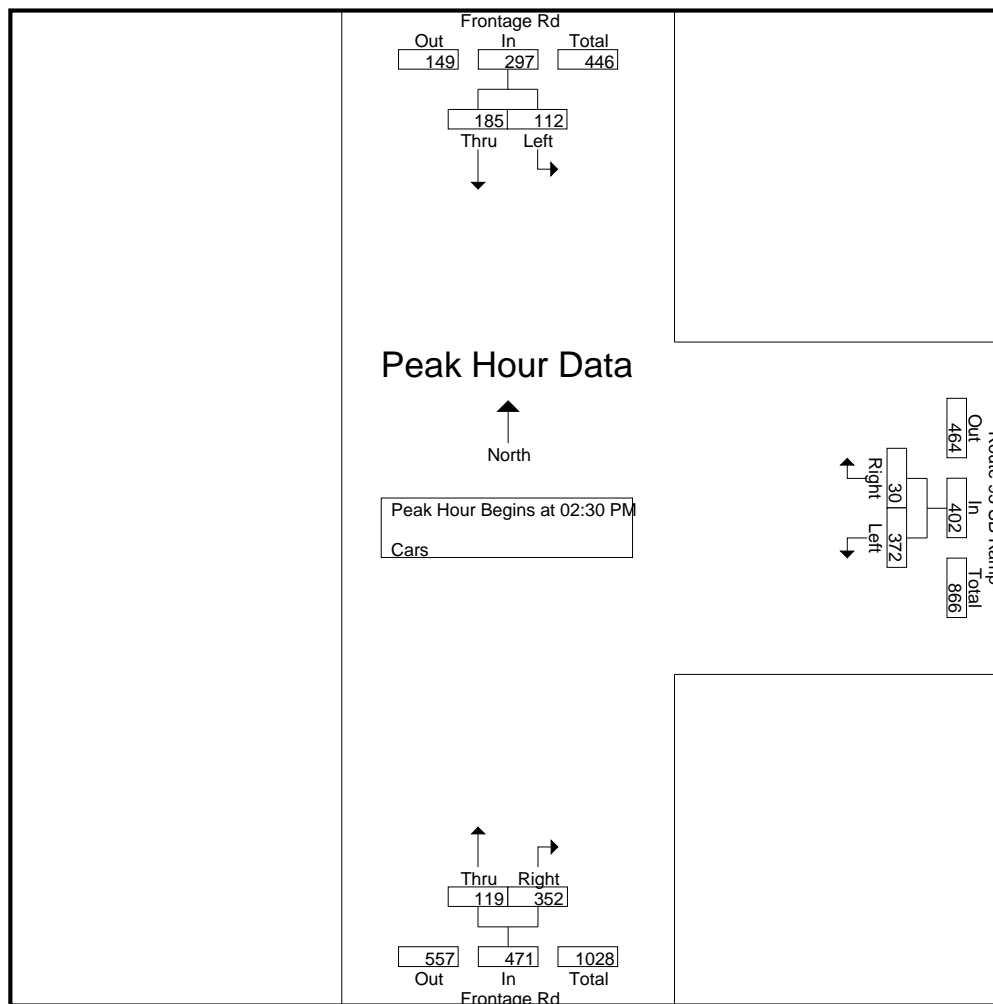
Site Code : 05250009

Start Date : 9/20/2018

Page No : 9

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:30 PM										
02:30 PM	38	72	110	76	9	85	34	89	123	318
02:45 PM	16	31	47	111	10	121	43	92	135	303
03:00 PM	34	45	79	81	7	88	18	86	104	271
03:15 PM	24	37	61	104	4	108	24	85	109	278
<b>Total Volume</b>	112	185	297	372	30	402	119	352	471	1170
<b>% App. Total</b>	37.7	62.3		92.5	7.5		25.3	74.7		
PHF	.737	.642	.675	.838	.750	.831	.692	.957	.872	.920



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

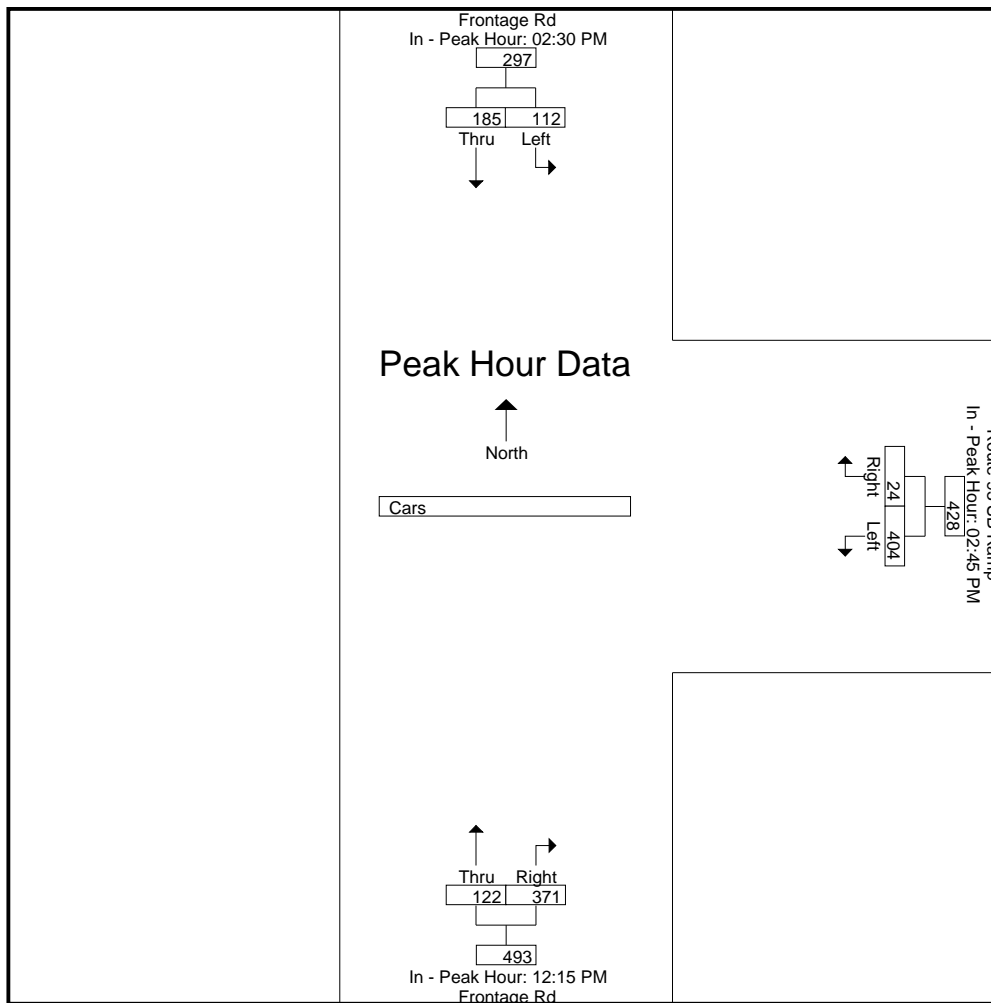
File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 10

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:30 PM			02:45 PM			12:15 PM		
+0 mins.	<b>38</b>	<b>72</b>	<b>110</b>	<b>111</b>	<b>10</b>	<b>121</b>	<b>37</b>	93	<b>130</b>
+15 mins.	16	31	47	81	7	88	30	94	124
+30 mins.	34	45	79	104	4	108	26	<b>98</b>	124
+45 mins.	24	37	61	108	3	111	29	86	115
Total Volume	112	185	297	404	24	428	122	371	493
% App. Total	37.7	62.3		94.4	5.6		24.7	75.3	
PHF	.737	.642	.675	.910	.600	.884	.824	.946	.948



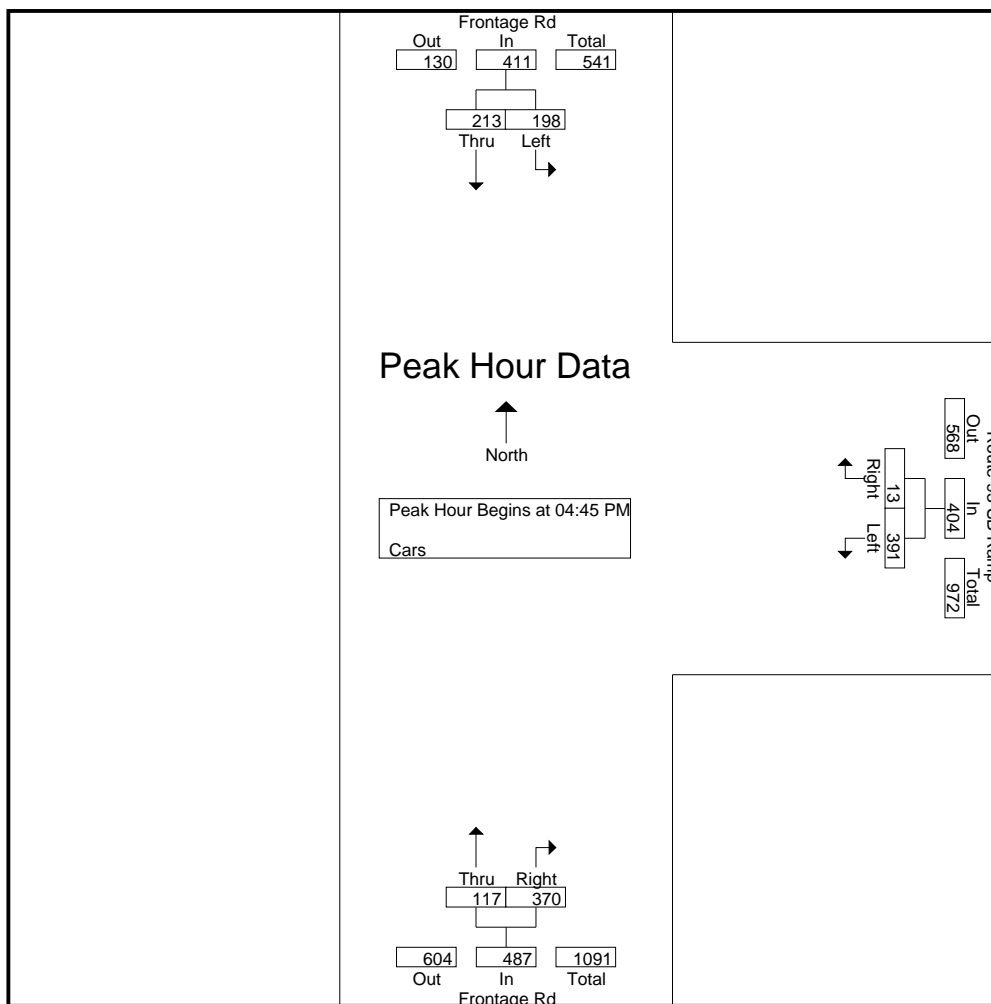
# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 11

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	47	<b>68</b>	<b>115</b>	85	<b>6</b>	91	33	89	122	328
05:00 PM	43	61	104	96	1	97	24	92	116	317
05:15 PM	<b>58</b>	45	103	101	4	105	<b>38</b>	<b>97</b>	<b>135</b>	<b>343</b>
05:30 PM	50	39	89	<b>109</b>	2	<b>111</b>	22	92	114	314
Total Volume	198	213	411	391	13	404	117	370	487	1302
% App. Total	48.2	51.8		96.8	3.2		24	76		
PHF	.853	.783	.893	.897	.542	.910	.770	.954	.902	.949



# Accurate Counts

978-664-2565

File Name : 05250009

Site Code : 05250009

Start Date : 9/20/2018

Page No : 12

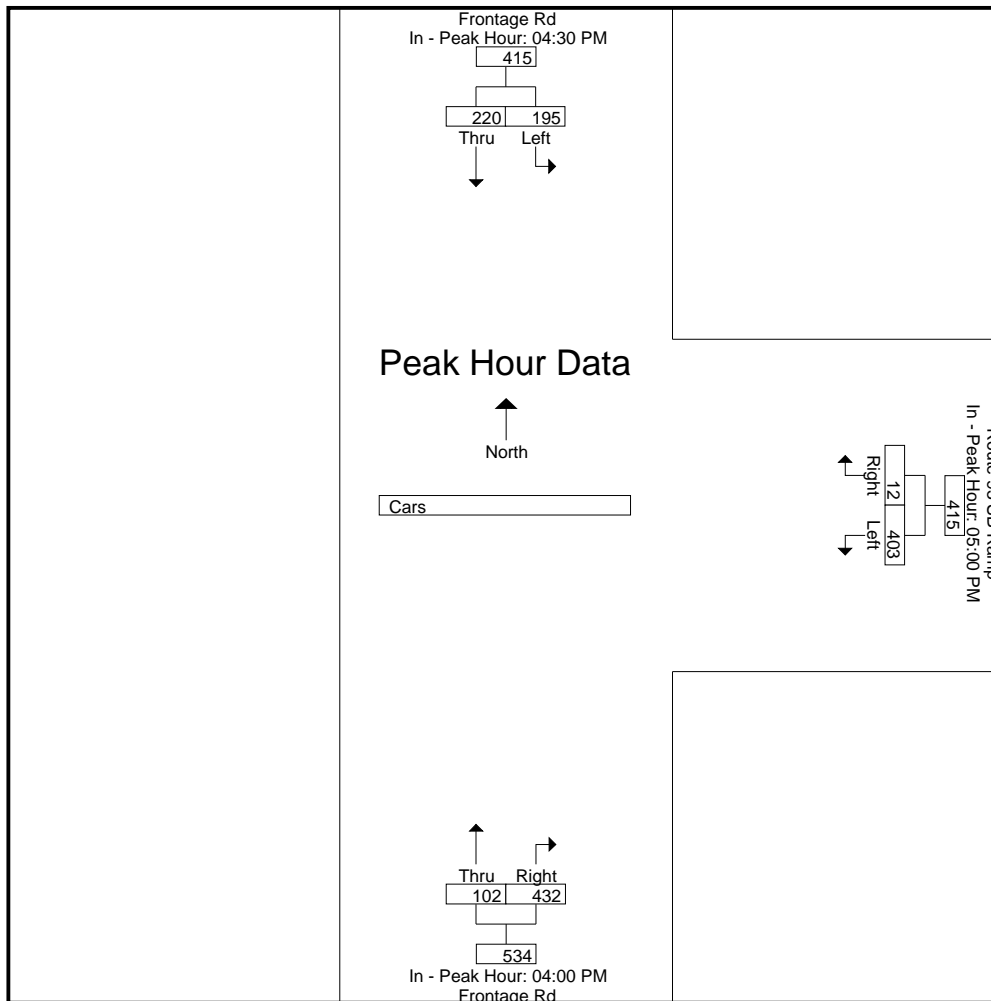
N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			05:00 PM			04:00 PM		
+0 mins.	47	46	93	96	1	97	24	110	134
+15 mins.	47	<b>68</b>	<b>115</b>	101	4	105	30	<b>117</b>	<b>147</b>
+30 mins.	43	61	104	<b>109</b>	2	<b>111</b>	15	116	131
+45 mins.	<b>58</b>	45	103	97	<b>5</b>	102	<b>33</b>	89	122
Total Volume	195	220	415	403	12	415	102	432	534
% App. Total	47	53		97.1	2.9		19.1	80.9	
PHF	.841	.809	.902	.924	.600	.935	.773	.923	.908



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 13

## Groups Printed- Trucks

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
12:00 PM	0	0	9	0	1	6	16
12:15 PM	0	0	8	0	0	8	16
12:30 PM	1	0	3	0	1	7	12
12:45 PM	0	2	6	0	1	2	11
<b>Total</b>	<b>1</b>	<b>2</b>	<b>26</b>	<b>0</b>	<b>3</b>	<b>23</b>	<b>55</b>
01:00 PM	0	1	3	0	0	7	11
01:15 PM	0	0	8	0	1	7	16
01:30 PM	0	1	6	0	0	7	14
01:45 PM	1	0	6	0	0	5	12
<b>Total</b>	<b>1</b>	<b>2</b>	<b>23</b>	<b>0</b>	<b>1</b>	<b>26</b>	<b>53</b>
02:00 PM	0	0	5	0	0	5	10
02:15 PM	0	0	3	0	0	3	6
02:30 PM	0	0	10	0	1	4	15
02:45 PM	0	0	11	0	0	3	14
<b>Total</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>0</b>	<b>1</b>	<b>15</b>	<b>45</b>
03:00 PM	0	0	5	0	0	6	11
03:15 PM	0	2	3	1	0	3	9
03:30 PM	0	0	4	0	1	4	9
03:45 PM	0	0	5	0	0	4	9
<b>Total</b>	<b>0</b>	<b>2</b>	<b>17</b>	<b>1</b>	<b>1</b>	<b>17</b>	<b>38</b>
04:00 PM	1	0	4	1	0	3	9
04:15 PM	0	1	3	0	0	5	9
04:30 PM	0	0	4	0	0	3	7
04:45 PM	0	1	5	2	0	1	9
<b>Total</b>	<b>1</b>	<b>2</b>	<b>16</b>	<b>3</b>	<b>0</b>	<b>12</b>	<b>34</b>

# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 14

## Groups Printed- Trucks

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
05:00 PM	0	0	2	0	0	0	2
05:15 PM	0	0	1	0	0	3	4
05:30 PM	0	0	1	0	0	2	3
05:45 PM	0	0	3	0	0	1	4
Total	0	0	7	0	0	6	13
06:00 PM	0	0	4	0	0	0	4
06:15 PM	0	0	1	0	0	1	2
06:30 PM	0	0	0	0	0	1	1
06:45 PM	0	0	3	0	0	2	5
Total	0	0	8	0	0	4	12
Grand Total	3	8	126	4	6	103	250
Apprch %	27.3	72.7	96.9	3.1	5.5	94.5	
Total %	1.2	3.2	50.4	1.6	2.4	41.2	

# Accurate Counts

978-664-2565

File Name : 05250009

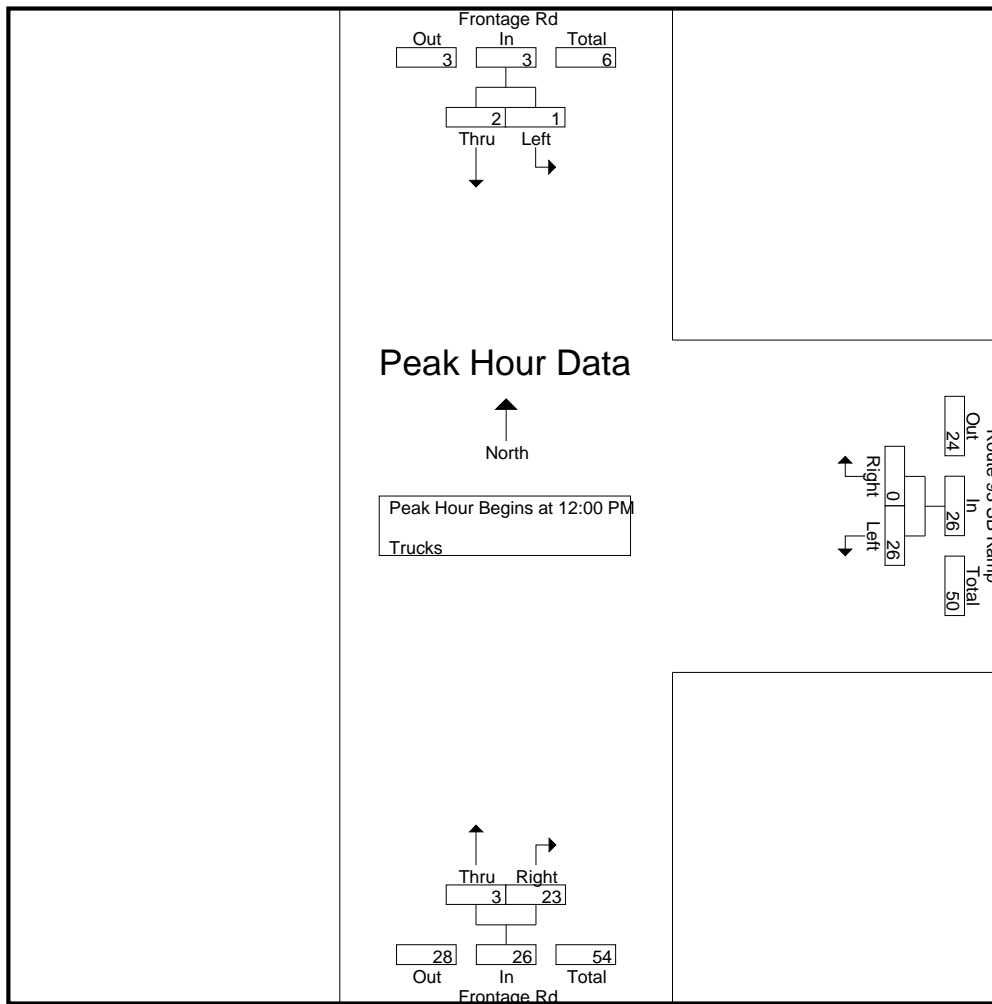
Site Code : 05250009

Start Date : 9/20/2018

Page No : 15

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	0	0	0	9	0	9	1	6	7	16
12:15 PM	0	0	0	8	0	8	0	8	8	16
12:30 PM	1	0	1	3	0	3	1	7	8	12
12:45 PM	0	2	2	6	0	6	1	2	3	11
<b>Total Volume</b>	1	2	3	26	0	26	3	23	26	55
<b>% App. Total</b>	33.3	66.7		100	0		11.5	88.5		
<b>PHF</b>	.250	.250	.375	.722	.000	.722	.750	.719	.813	.859



# Accurate Counts

978-664-2565

File Name : 05250009

Site Code : 05250009

Start Date : 9/20/2018

Page No : 16

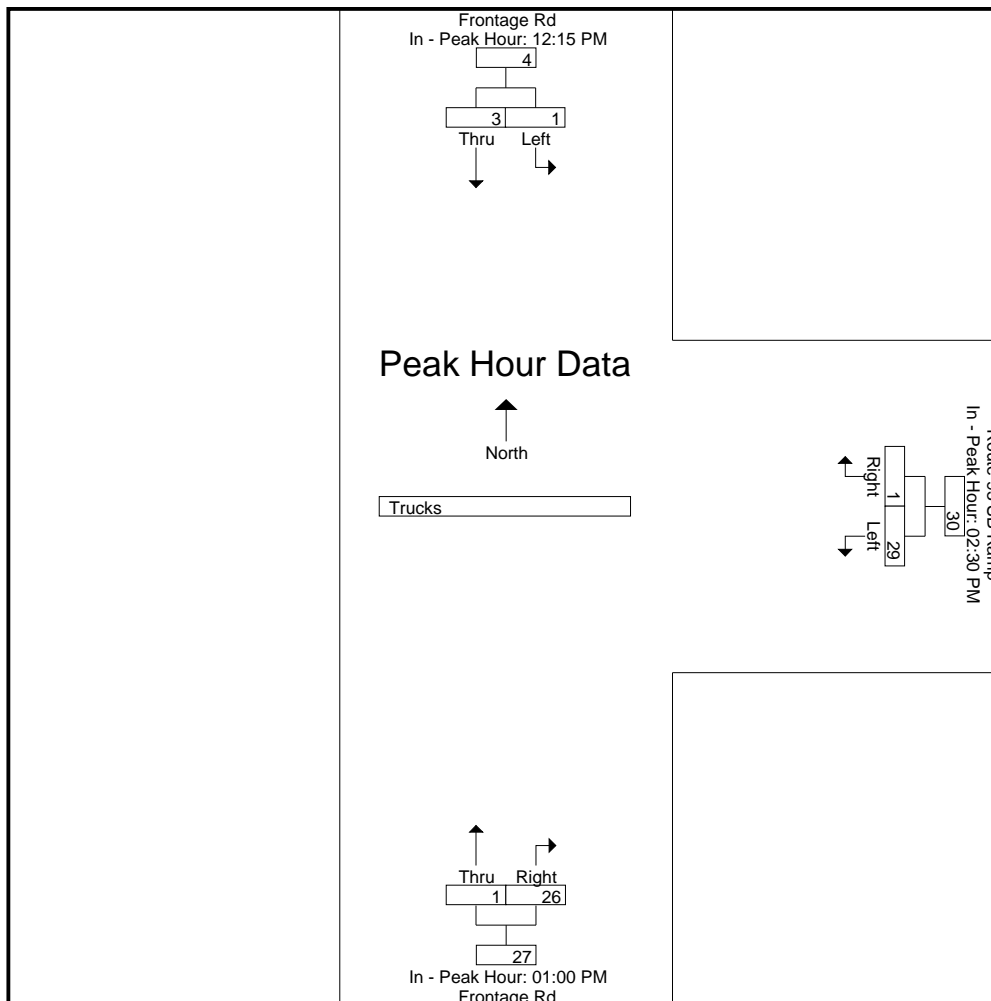
N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:15 PM			02:30 PM			01:00 PM		
+0 mins.	0	0	0	10	0	10	0	7	7
+15 mins.	1	0	1	11	0	11	1	7	8
+30 mins.	0	2	2	5	0	5	0	7	7
+45 mins.	0	1	1	3	1	4	0	5	5
<b>Total Volume</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>29</b>	<b>1</b>	<b>30</b>	<b>1</b>	<b>26</b>	<b>27</b>
<b>% App. Total</b>	<b>25</b>	<b>75</b>		<b>96.7</b>	<b>3.3</b>		<b>3.7</b>	<b>96.3</b>	
PHF	.250	.375	.500	.659	.250	.682	.250	.929	.844



# Accurate Counts

978-664-2565

File Name : 05250009

Site Code : 05250009

Start Date : 9/20/2018

Page No : 17

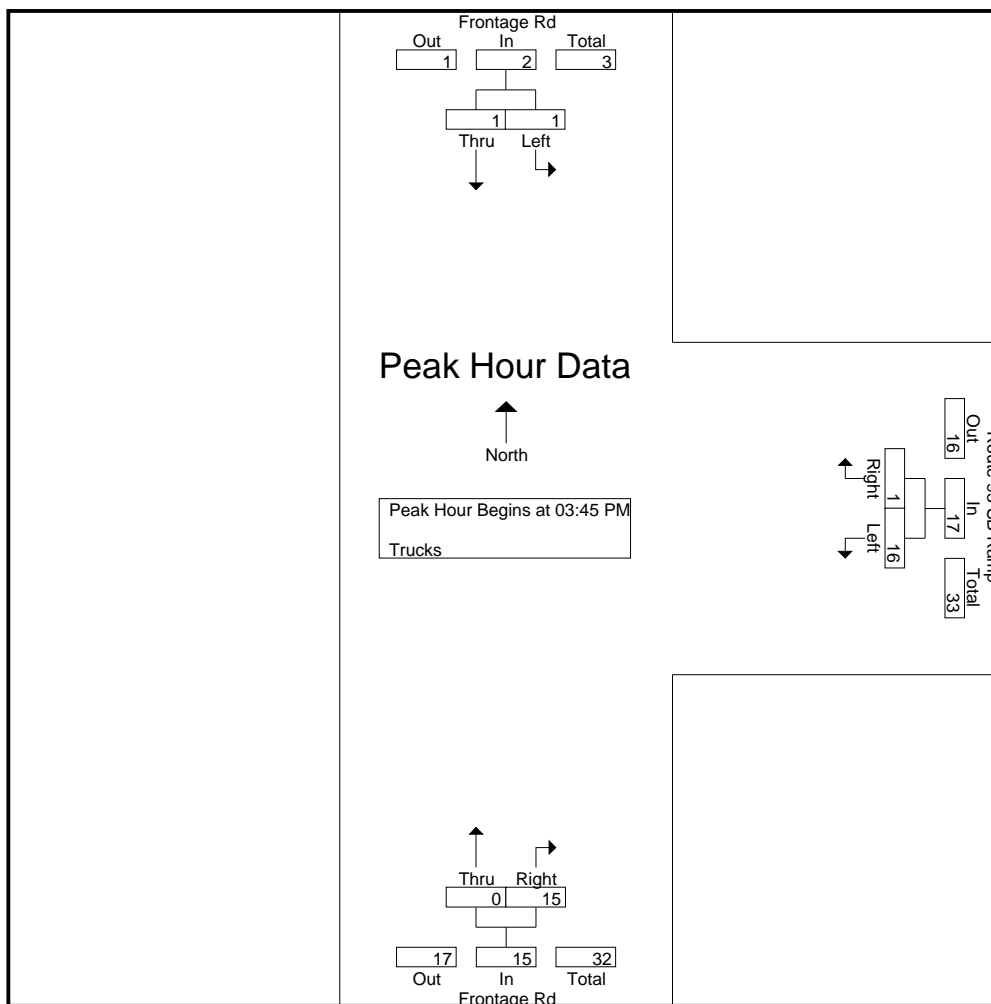
N/S Street : Frontage Road

E/W Street: Route 93 SB Ramp

City/State : Andover, MA

Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:45 PM										
03:45 PM	0	0	0	5	0	5	0	4	4	9
04:00 PM	1	0	1	4	1	5	0	3	3	9
04:15 PM	0	1	1	3	0	3	0	5	5	9
04:30 PM	0	0	0	4	0	4	0	3	3	7
<b>Total Volume</b>	1	1	2	16	1	17	0	15	15	34
<b>% App. Total</b>	50	50		94.1	5.9		0	100		
<b>PHF</b>	.250	.250	.500	.800	.250	.850	.000	.750	.750	.944



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

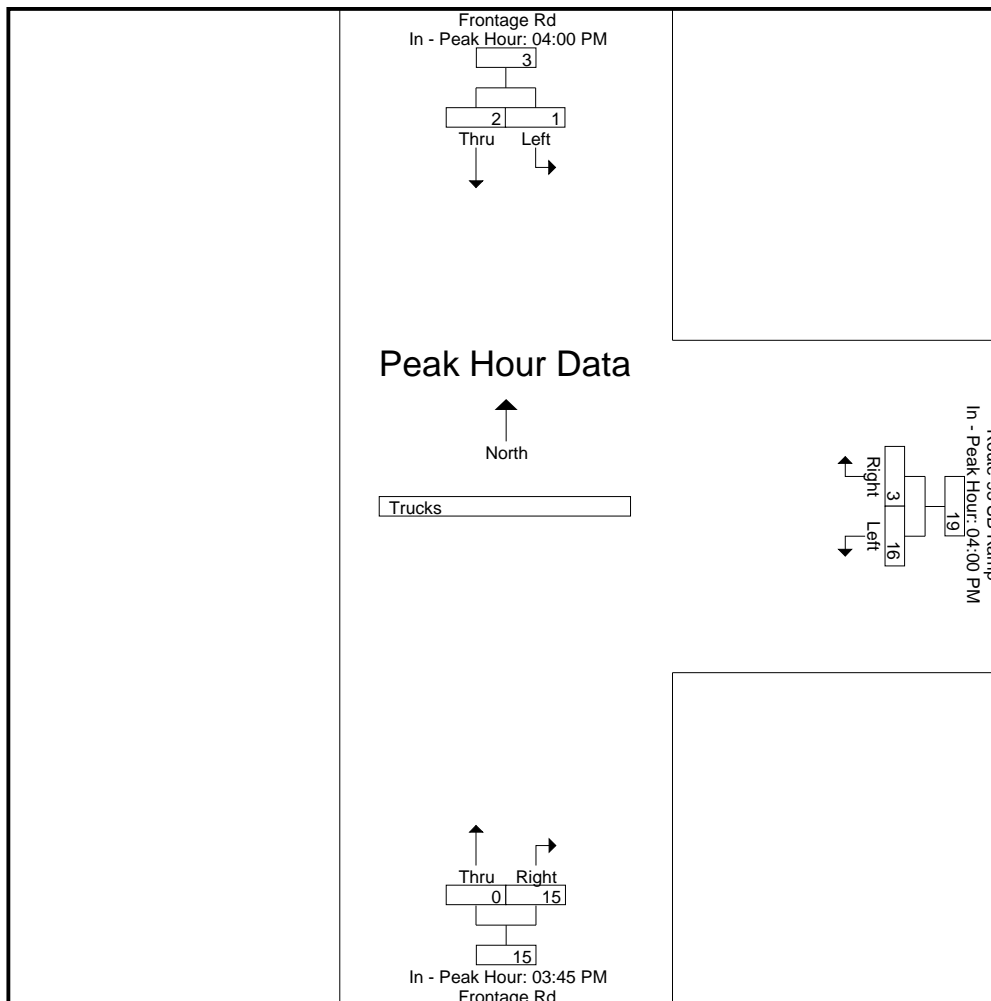
File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 18

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			03:45 PM		
+0 mins.	1	0	1	4	1	5	0	4	4
+15 mins.	0	1	1	3	0	3	0	3	3
+30 mins.	0	0	0	4	0	4	0	5	5
+45 mins.	0	1	1	5	2	7	0	3	3
<b>Total Volume</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>16</b>	<b>3</b>	<b>19</b>	<b>0</b>	<b>15</b>	<b>15</b>
<b>% App. Total</b>	<b>33.3</b>	<b>66.7</b>		<b>84.2</b>	<b>15.8</b>		<b>0</b>	<b>100</b>	
PHF	.250	.500	.750	.800	.375	.679	.000	.750	.750





# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 20

## Groups Printed- Bikes Peds

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
05:00 PM	0	1	0	0	0	0	0	0	0	0	1	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	1	0	0	0	0	0	0	0	0	1	1
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total</b>	0	1	0	0	0	0	2	0	2	2	3	5
<b>Apprch %</b>	0	100		0	0		100	0				
<b>Total %</b>	0	33.3		0	0		66.7	0		40	60	

# Accurate Counts

978-664-2565

File Name : 05250009

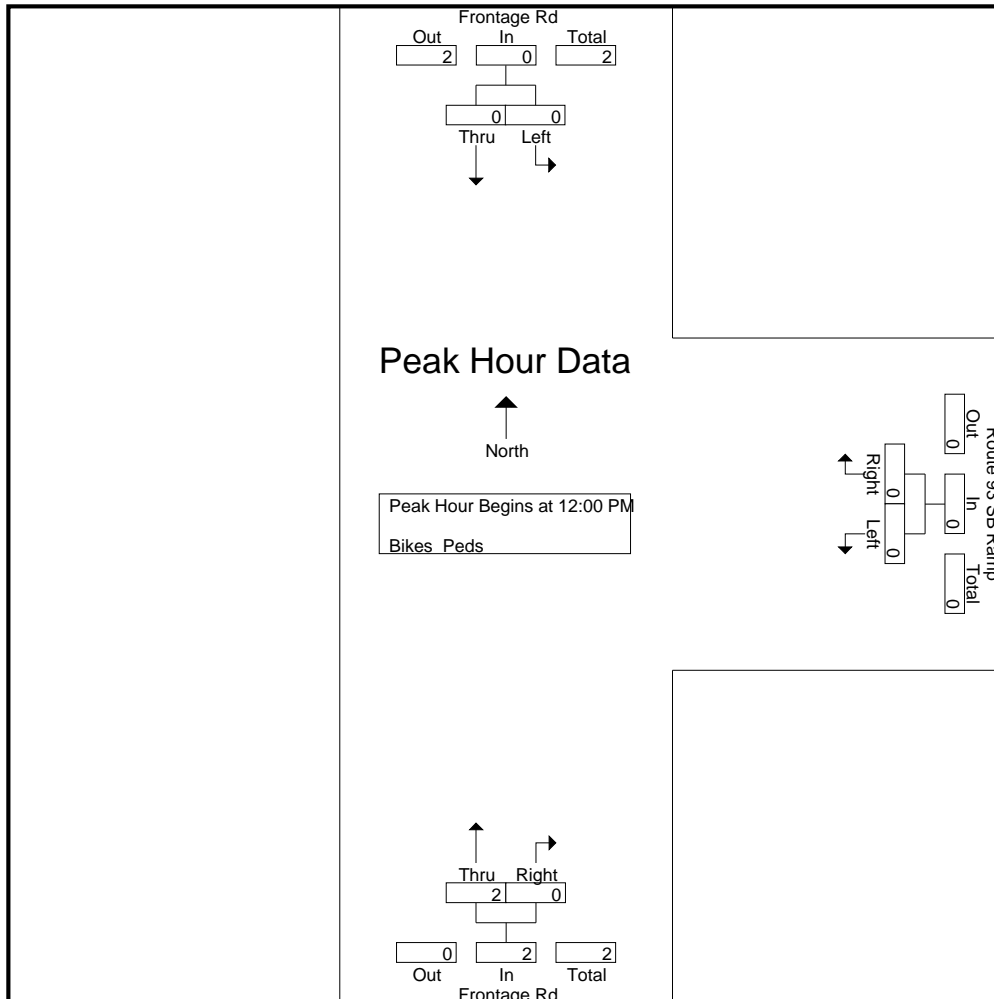
Site Code : 05250009

Start Date : 9/20/2018

Page No : 21

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	2	0	2	2
<b>Total Volume</b>	0	0	0	0	0	0	2	0	2	2
<b>% App. Total</b>	0	0		0	0		100	0		
<b>PHF</b>	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

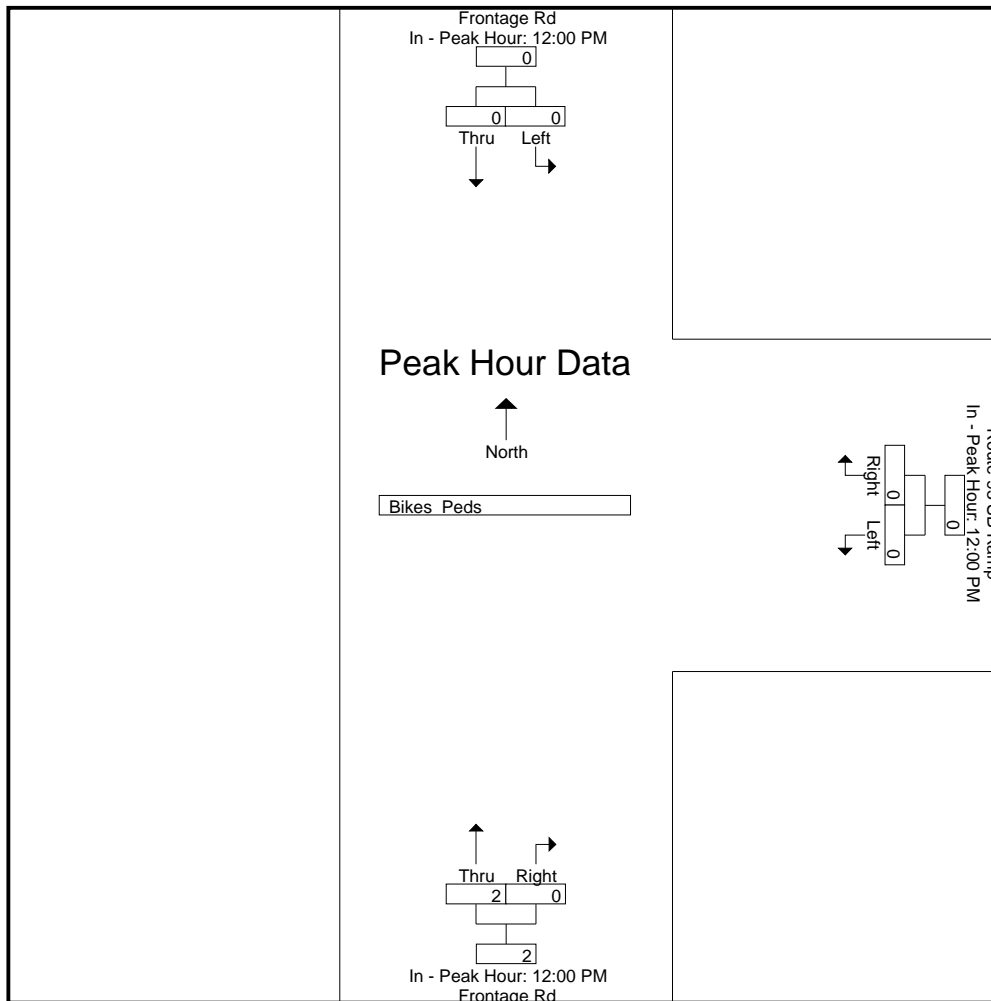
File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 22

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 12:00 PM to 03:30 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM			12:00 PM			12:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	2	0	2
<b>Total Volume</b>	0	0	0	0	0	0	2	0	2
<b>% App. Total</b>	0	0		0	0		100	0	
<b>PHF</b>	.000	.000	.000	.000	.000	.000	.250	.000	.250



# Accurate Counts

978-664-2565

File Name : 05250009

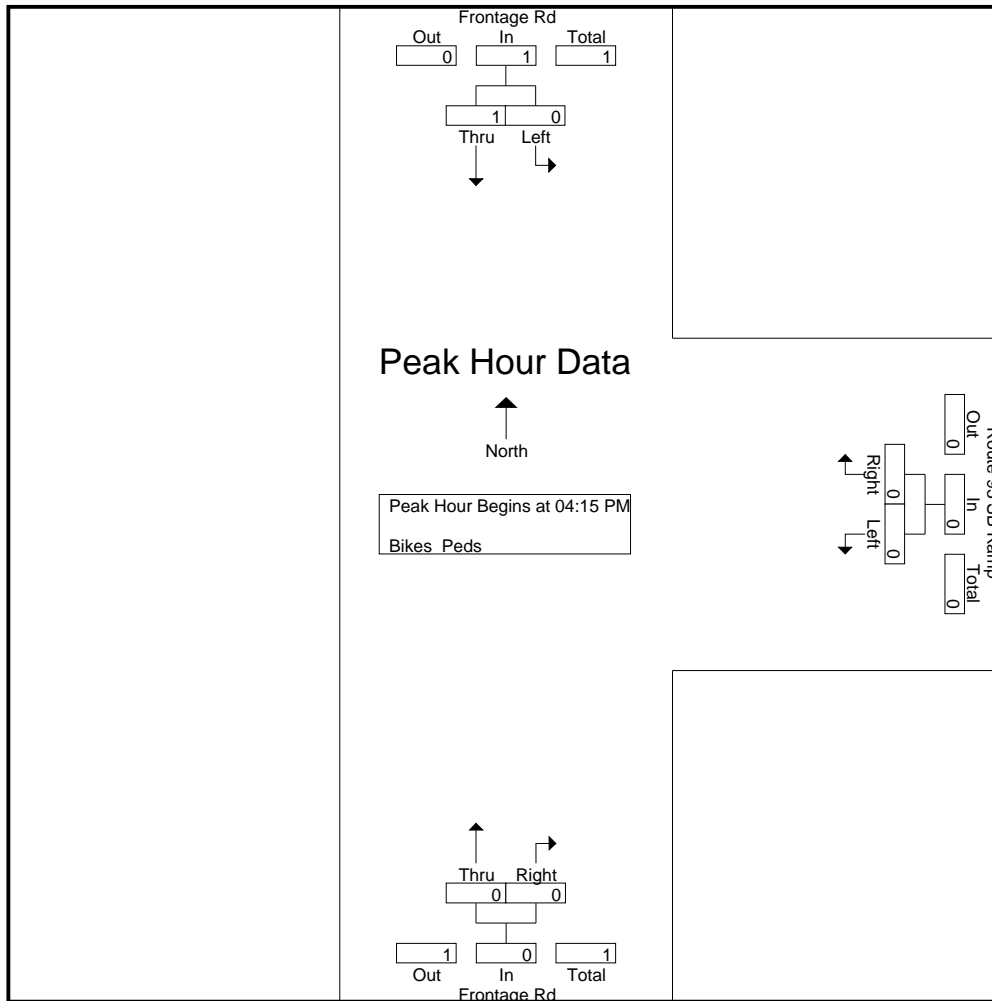
Site Code : 05250009

Start Date : 9/20/2018

Page No : 23

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	1	1	0	0	0	0	0	0	1
<b>Total Volume</b>	0	1	1	0	0	0	0	0	0	1
<b>% App. Total</b>	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

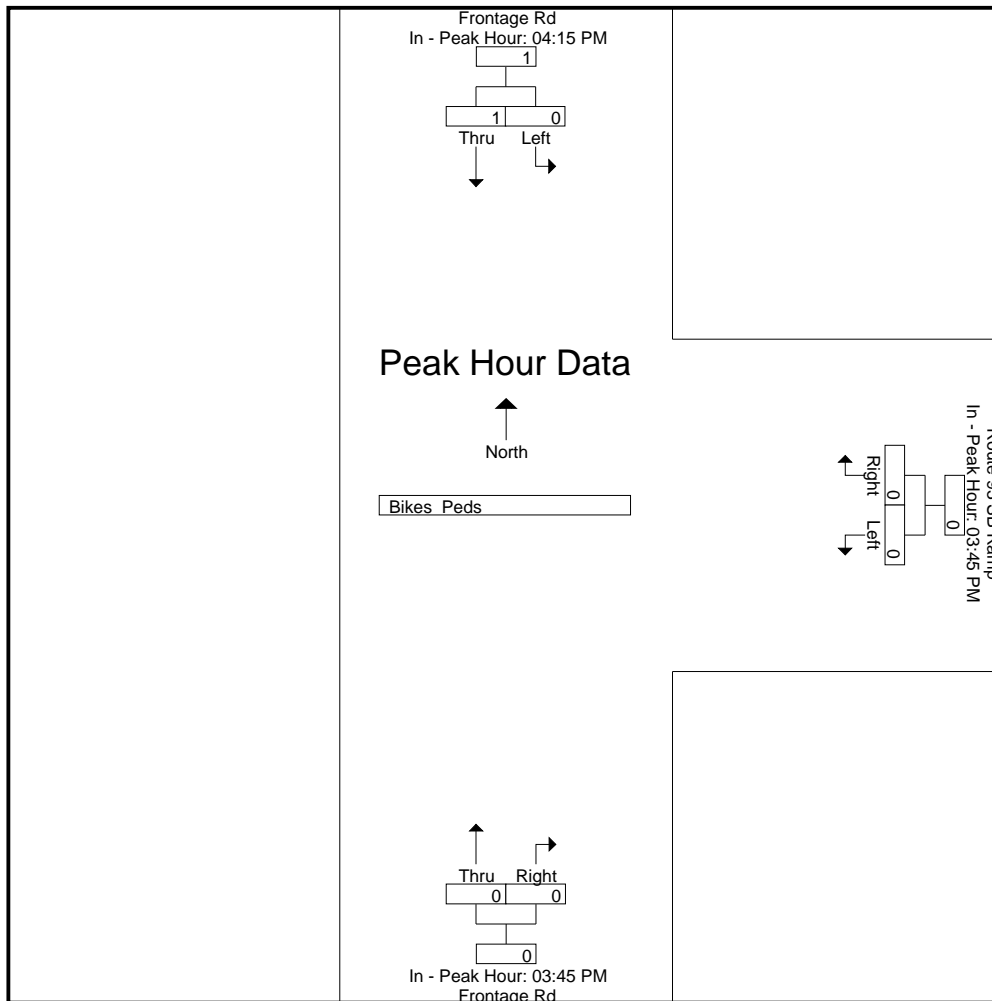
File Name : 05250009  
 Site Code : 05250009  
 Start Date : 9/20/2018  
 Page No : 24

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 03:45 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM			03:45 PM			03:45 PM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	1	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S1  
 Site Code : 05250001  
 Start Date : 9/22/2018  
 Page No : 1

### Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East		Shawsheen Rd From South		East St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	90	97	10	110	141	4	452
11:15 AM	96	105	8	112	98	17	436
11:30 AM	127	123	11	121	114	10	506
11:45 AM	101	87	10	109	121	6	434
Total	414	412	39	452	474	37	1828
12:00 PM	101	98	12	136	118	7	472
12:15 PM	101	91	11	114	139	9	465
12:30 PM	110	90	11	110	102	8	431
12:45 PM	106	101	6	105	100	10	428
Total	418	380	40	465	459	34	1796
Grand Total	832	792	79	917	933	71	3624
Apprch %	51.2	48.8	7.9	92.1	92.9	7.1	
Total %	23	21.9	2.2	25.3	25.7	2	
Cars	818	755	78	905	924	71	3551
% Cars	98.3	95.3	98.7	98.7	99	100	98
Trucks	14	37	1	12	9	0	73
% Trucks	1.7	4.7	1.3	1.3	1	0	2

# Accurate Counts

978-664-2565

File Name : 052500S1

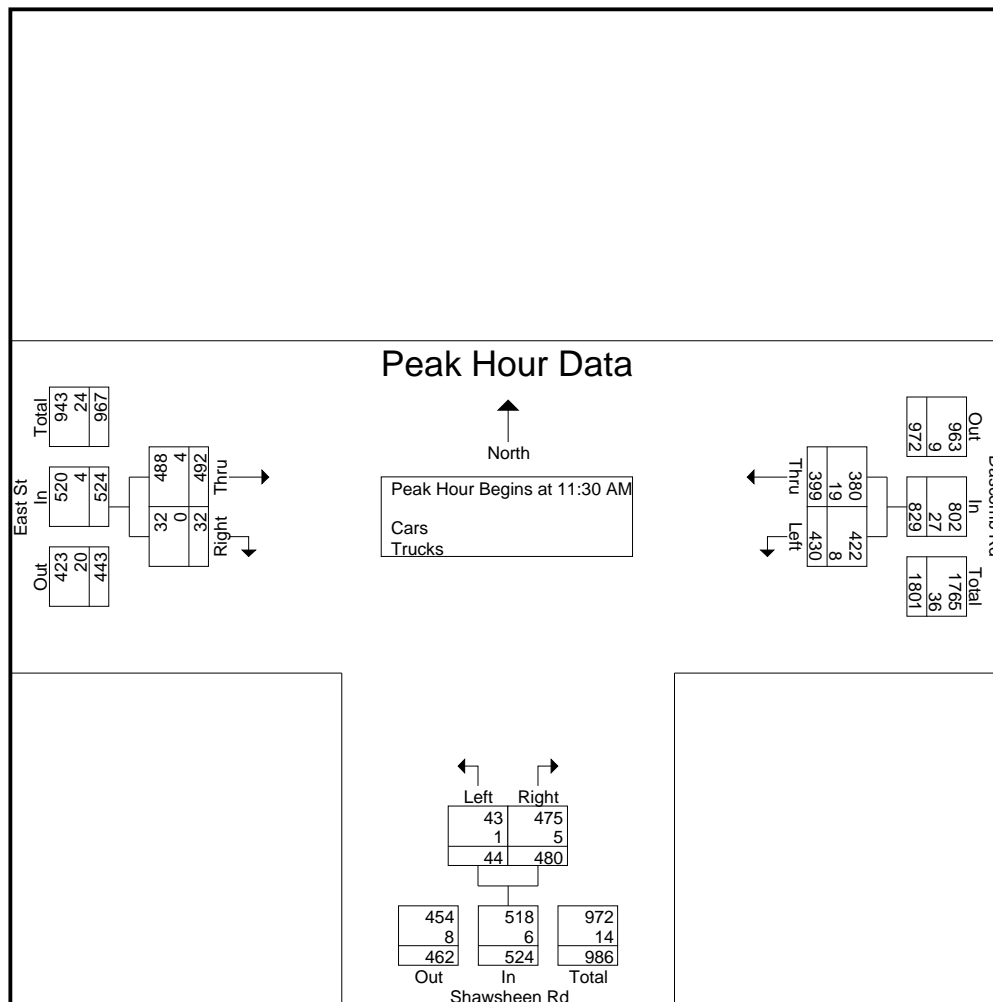
Site Code : 05250001

Start Date : 9/22/2018

Page No : 2

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	127	123	250	11	121	132	114	10	124	506
11:45 AM	101	87	188	10	109	119	121	6	127	434
12:00 PM	101	98	199	12	136	148	118	7	125	472
12:15 PM	101	91	192	11	114	125	139	9	148	465
<b>Total Volume</b>	430	399	829	44	480	524	492	32	524	1877
<b>% App. Total</b>	51.9	48.1		8.4	91.6		93.9	6.1		
PHF	.846	.811	.829	.917	.882	.885	.885	.800	.885	.927
Cars	422	380	802	43	475	518	488	32	520	1840
<b>% Cars</b>	98.1	95.2	96.7	97.7	99.0	98.9	99.2	100	99.2	98.0
Trucks	8	19	27	1	5	6	4	0	4	37
<b>% Trucks</b>	1.9	4.8	3.3	2.3	1.0	1.1	0.8	0	0.8	2.0



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

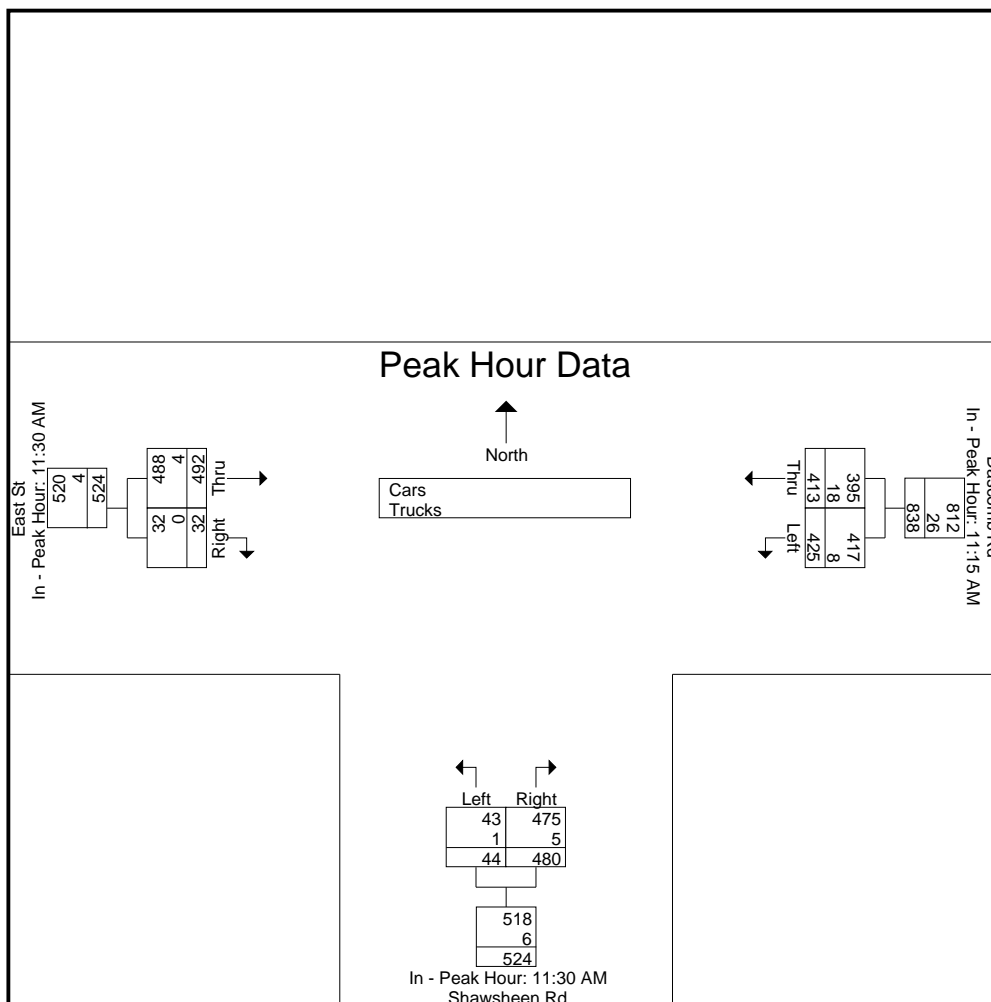
File Name : 052500S1  
 Site Code : 05250001  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM			11:30 AM			11:30 AM		
+0 mins.	96	105	201	11	121	132	114	<b>10</b>	124
+15 mins.	<b>127</b>	<b>123</b>	<b>250</b>	10	109	119	121	6	127
+30 mins.	101	87	188	<b>12</b>	<b>136</b>	<b>148</b>	118	7	125
+45 mins.	101	98	199	11	114	125	<b>139</b>	9	<b>148</b>
Total Volume	425	413	838	44	480	524	492	32	524
% App. Total	50.7	49.3		8.4	91.6		93.9	6.1	
PHF	.837	.839	.838	.917	.882	.885	.885	.800	.885
Cars	417	395	812	43	475	518	488	32	520
% Cars	98.1	95.6	96.9	97.7	99	98.9	99.2	100	99.2
Trucks	8	18	26	1	5	6	4	0	4
% Trucks	1.9	4.4	3.1	2.3	1	1.1	0.8	0	0.8



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S1  
 Site Code : 05250001  
 Start Date : 9/22/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Dascomb Rd From East		Shawsheen Rd From South		East St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	87	86	10	107	139	4	433
11:15 AM	95	103	8	110	96	17	429
11:30 AM	122	113	10	120	114	10	489
11:45 AM	100	83	10	109	119	6	427
Total	404	385	38	446	468	37	1778
12:00 PM	100	96	12	133	118	7	466
12:15 PM	100	88	11	113	137	9	458
12:30 PM	109	86	11	109	102	8	425
12:45 PM	105	100	6	104	99	10	424
Total	414	370	40	459	456	34	1773
Grand Total	818	755	78	905	924	71	3551
Apprch %	52	48	7.9	92.1	92.9	7.1	
Total %	23	21.3	2.2	25.5	26	2	

# Accurate Counts

978-664-2565

File Name : 052500S1

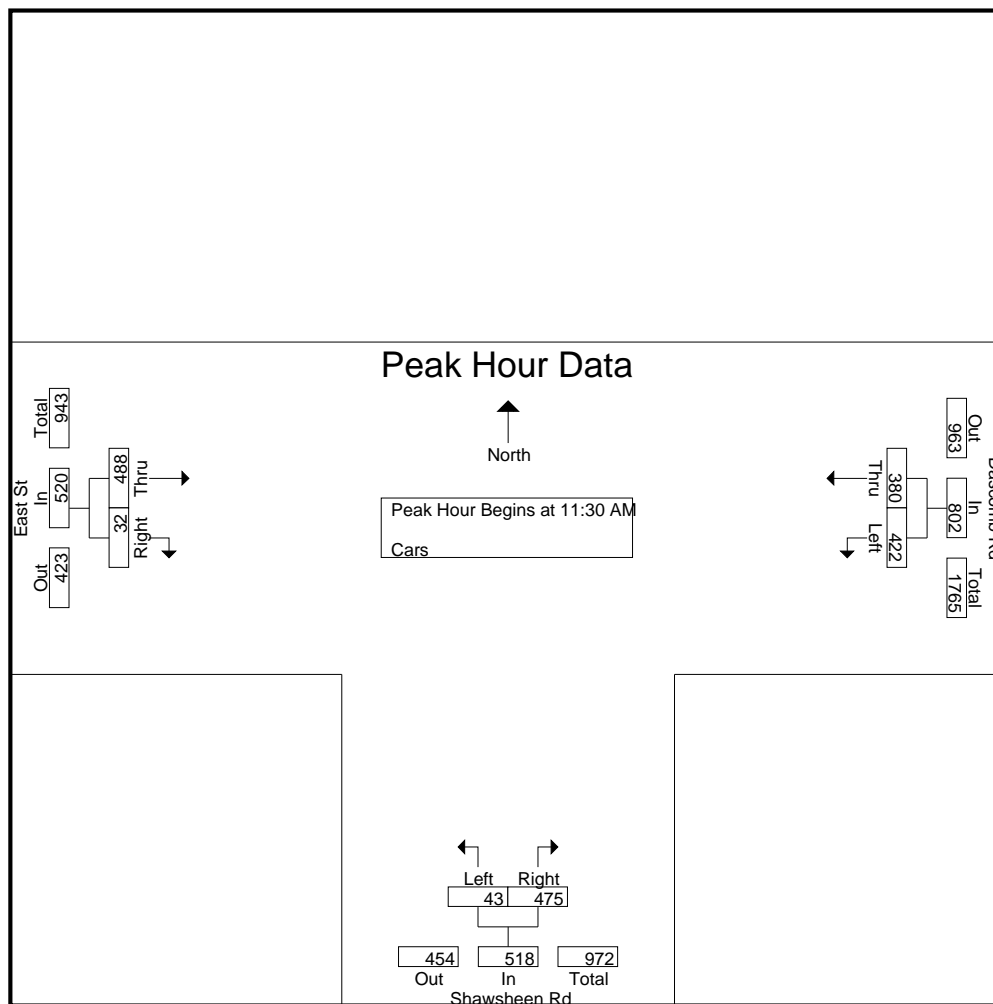
Site Code : 05250001

Start Date : 9/22/2018

Page No : 5

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	122	113	235	10	120	130	114	10	124	489
11:45 AM	100	83	183	10	109	119	119	6	125	427
12:00 PM	100	96	196	12	133	145	118	7	125	466
12:15 PM	100	88	188	11	113	124	137	9	146	458
Total Volume	422	380	802	43	475	518	488	32	520	1840
% App. Total	52.6	47.4		8.3	91.7		93.8	6.2		
PHF	.865	.841	.853	.896	.893	.893	.891	.800	.890	.941



# Accurate Counts

978-664-2565

File Name : 052500S1

Site Code : 05250001

Start Date : 9/22/2018

Page No : 6

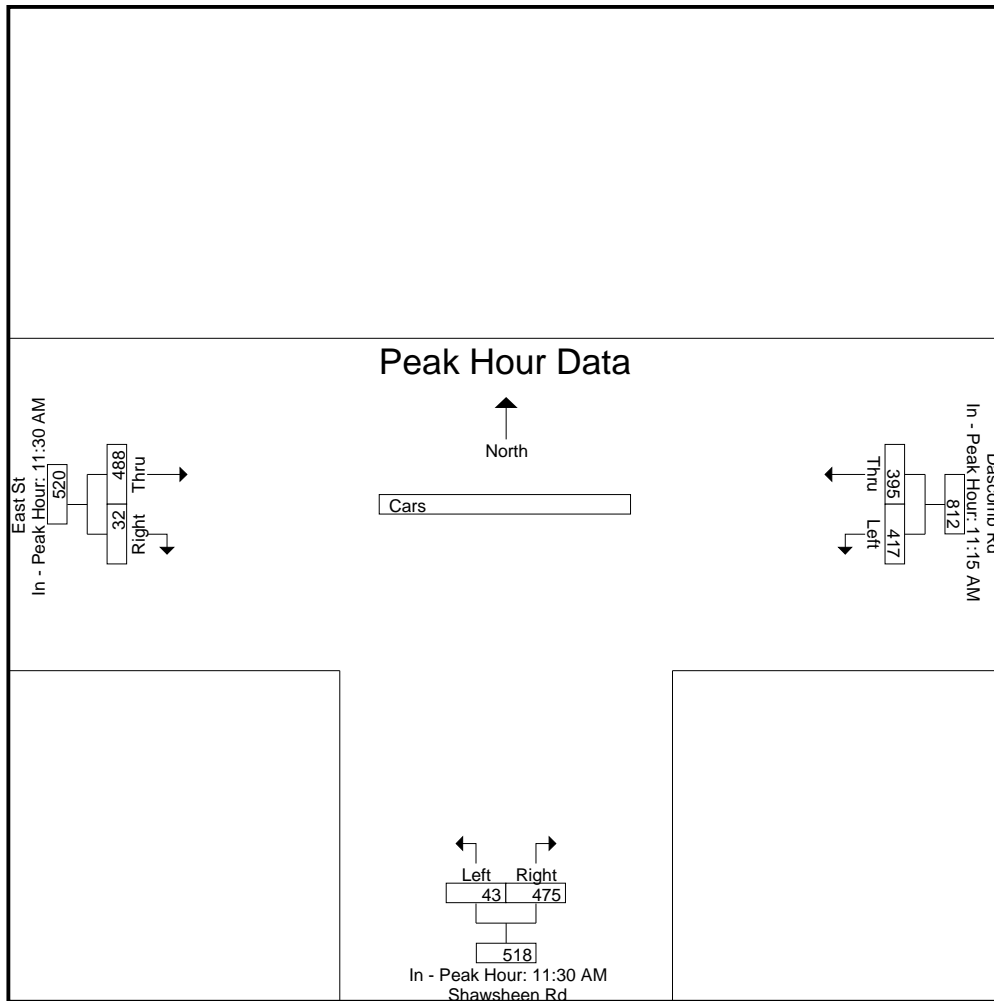
N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM			11:30 AM			11:30 AM		
+0 mins.	95	103	198	10	120	130	114	<b>10</b>	124
+15 mins.	<b>122</b>	<b>113</b>	<b>235</b>	10	109	119	119	6	125
+30 mins.	100	83	183	<b>12</b>	<b>133</b>	<b>145</b>	118	7	125
+45 mins.	100	96	196	11	113	124	<b>137</b>	9	<b>146</b>
Total Volume	417	395	812	43	475	518	488	32	520
% App. Total	51.4	48.6		8.3	91.7		93.8	6.2	
PHF	.855	.874	.864	.896	.893	.893	.891	.800	.890



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S1  
 Site Code : 05250001  
 Start Date : 9/22/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Dascomb Rd From East		Shawsheen Rd From South		East St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	3	11	0	3	2	0	19
11:15 AM	1	2	0	2	2	0	7
11:30 AM	5	10	1	1	0	0	17
11:45 AM	1	4	0	0	2	0	7
Total	10	27	1	6	6	0	50
12:00 PM	1	2	0	3	0	0	6
12:15 PM	1	3	0	1	2	0	7
12:30 PM	1	4	0	1	0	0	6
12:45 PM	1	1	0	1	1	0	4
Total	4	10	0	6	3	0	23
Grand Total	14	37	1	12	9	0	73
Apprch %	27.5	72.5	7.7	92.3	100	0	
Total %	19.2	50.7	1.4	16.4	12.3	0	

# Accurate Counts

978-664-2565

File Name : 052500S1

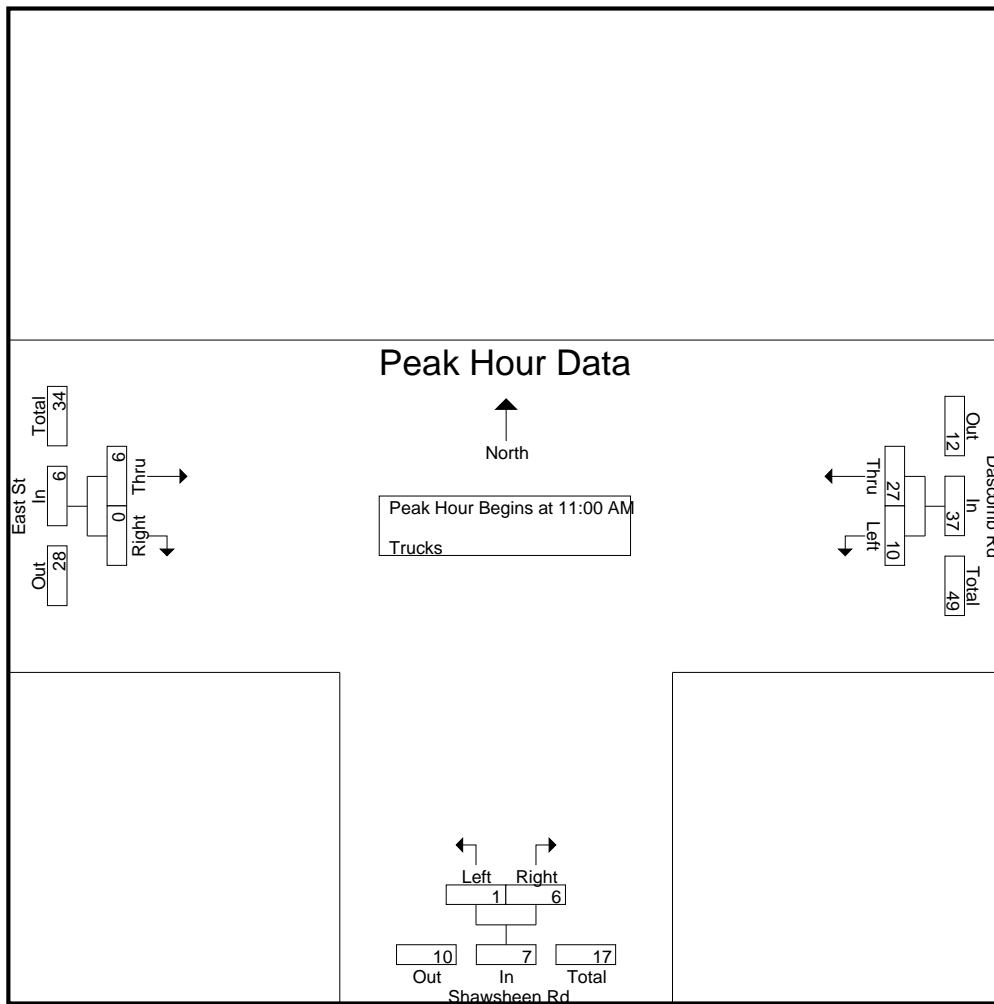
Site Code : 05250001

Start Date : 9/22/2018

Page No : 8

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	3	11	14	0	3	3	2	0	2	19
11:15 AM	1	2	3	0	2	2	2	0	2	7
11:30 AM	5	10	15	1	1	2	0	0	0	17
11:45 AM	1	4	5	0	0	0	2	0	2	7
Total Volume	10	27	37	1	6	7	6	0	6	50
% App. Total	27	73		14.3	85.7		100	0		
PHF	.500	.614	.617	.250	.500	.583	.750	.000	.750	.658



# Accurate Counts

978-664-2565

File Name : 052500S1

Site Code : 05250001

Start Date : 9/22/2018

Page No : 9

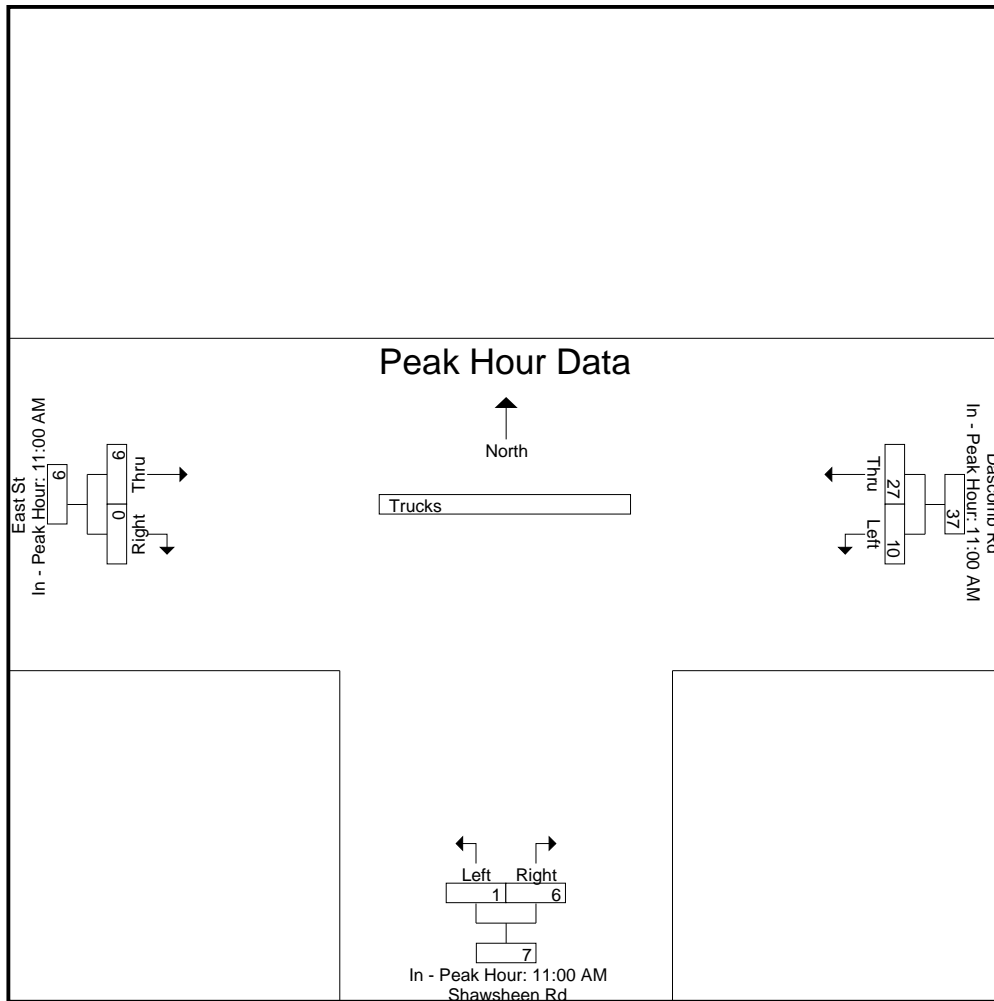
N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	3	11	14	0	3	3	2	0	2
+15 mins.	1	2	3	0	2	2	2	0	2
+30 mins.	5	10	15	1	1	2	0	0	0
+45 mins.	1	4	5	0	0	0	2	0	2
Total Volume	10	27	37	1	6	7	6	0	6
% App. Total	27	73		14.3	85.7		100	0	
PHF	.500	.614	.617	.250	.500	.583	.750	.000	.750



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S1  
 Site Code : 05250001  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Apprch %</b>	0	0		0	0		0	0				
<b>Total %</b>										0	0	

# Accurate Counts

978-664-2565

File Name : 052500S1

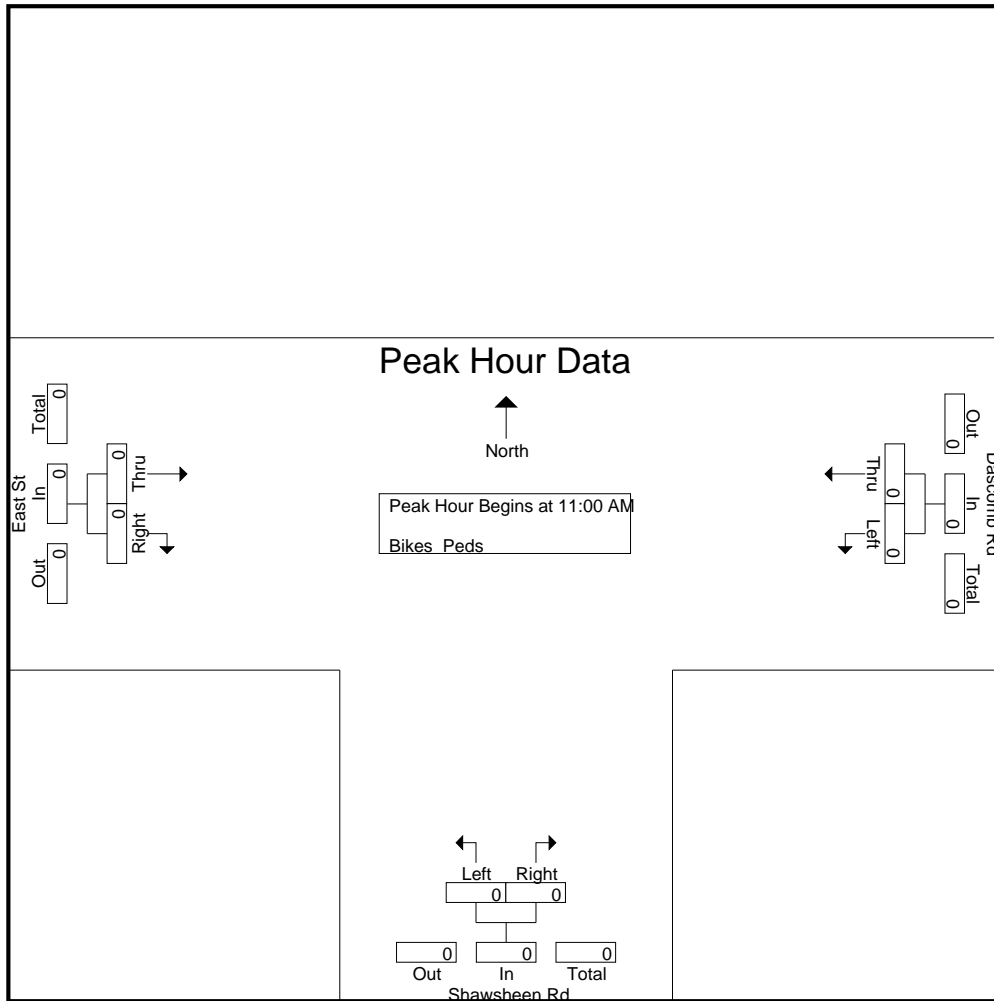
Site Code : 05250001

Start Date : 9/22/2018

Page No : 11

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
<b>Total Volume</b>	0	0	0	0	0	0	0	0	0	0
<b>% App. Total</b>	0	0		0	0		0	0		
<b>PHF</b>	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : Shawsheen Street  
 E/W Street: Dascomb Rd / East St  
 City/State : Andover, MA  
 Weather : Clear

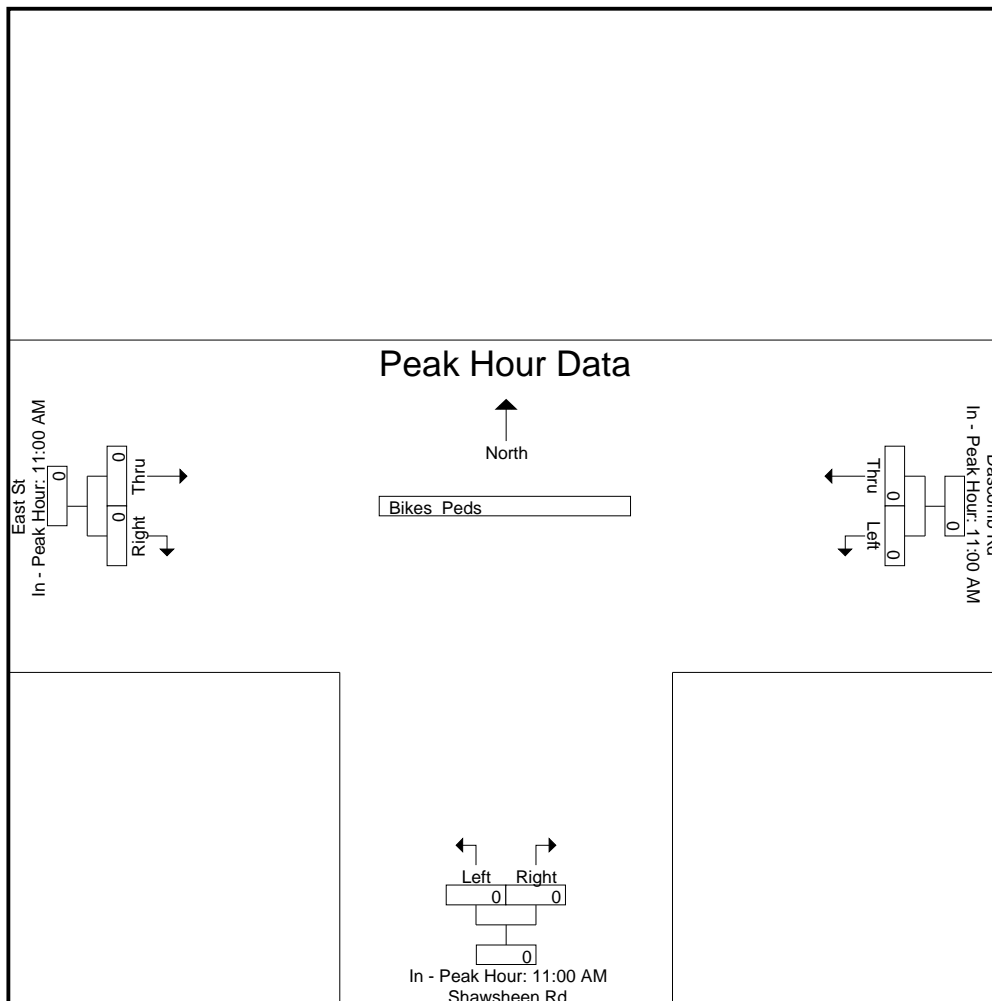
File Name : 052500S1  
 Site Code : 05250001  
 Start Date : 9/22/2018  
 Page No : 12

Start Time	Dascomb Rd From East			Shawsheen Rd From South			East St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S2  
 Site Code : 05250002  
 Start Date : 9/22/2018  
 Page No : 1

### Groups Printed- Cars - Trucks

Start Time	HP Drwy From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
11:00 AM	1	0	198	1	0	254	454
11:15 AM	1	0	201	0	1	211	414
11:30 AM	1	0	231	1	0	226	459
11:45 AM	0	0	197	0	0	226	423
<b>Total</b>	<b>3</b>	<b>0</b>	<b>827</b>	<b>2</b>	<b>1</b>	<b>917</b>	<b>1750</b>
12:00 PM	0	0	192	0	0	259	451
12:15 PM	0	0	198	0	1	245	444
12:30 PM	0	1	201	0	0	211	413
12:45 PM	0	0	212	0	0	206	418
<b>Total</b>	<b>0</b>	<b>1</b>	<b>803</b>	<b>0</b>	<b>1</b>	<b>921</b>	<b>1726</b>
<b>Grand Total</b>	<b>3</b>	<b>1</b>	<b>1630</b>	<b>2</b>	<b>2</b>	<b>1838</b>	<b>3476</b>
Apprch %	75	25	99.9	0.1	0.1	99.9	
Total %	0.1	0	46.9	0.1	0.1	52.9	
Cars	3	1	1586	2	2	1817	3411
% Cars	100	100	97.3	100	100	98.9	98.1
Trucks	0	0	44	0	0	21	65
% Trucks	0	0	2.7	0	0	1.1	1.9

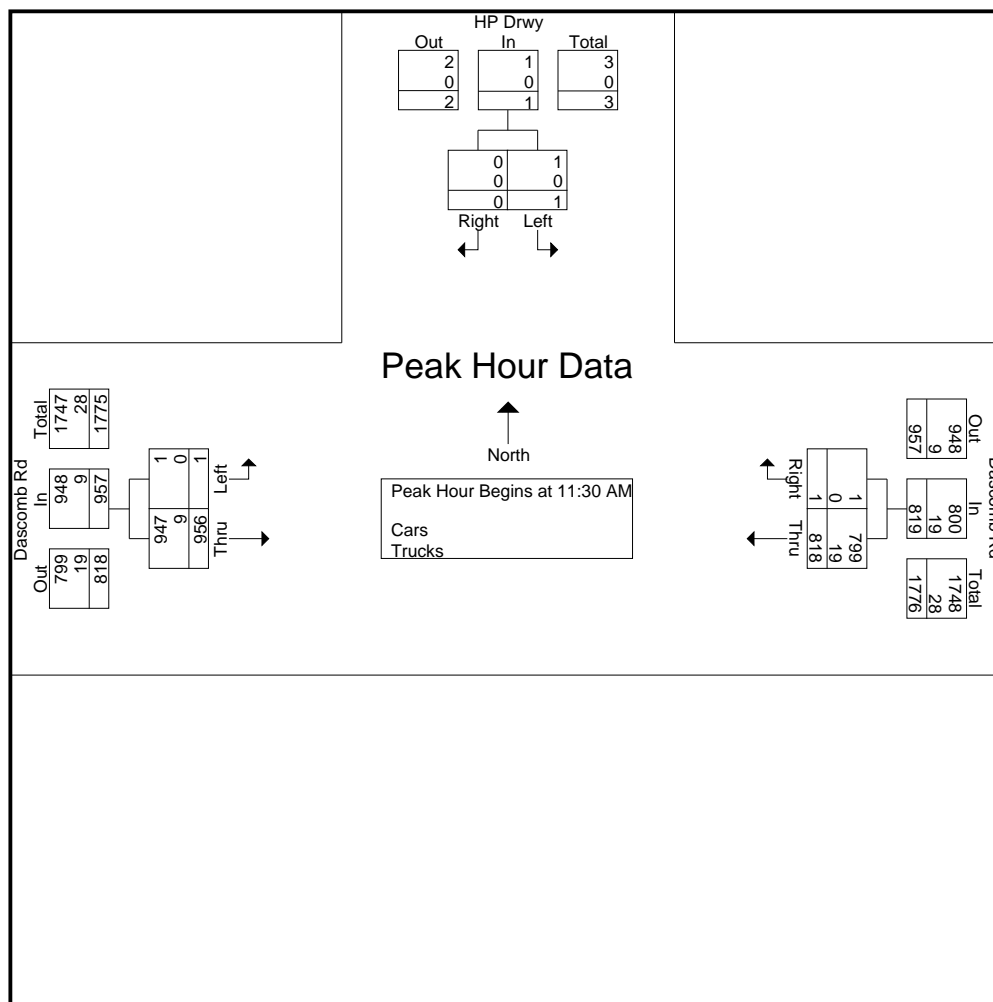
# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S2  
 Site Code : 05250002  
 Start Date : 9/22/2018  
 Page No : 2

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	1	0	1	231	1	232	0	226	226	459
11:45 AM	0	0	0	197	0	197	0	226	226	423
12:00 PM	0	0	0	192	0	192	0	259	259	451
12:15 PM	0	0	0	198	0	198	1	245	246	444
<b>Total Volume</b>	1	0	1	818	1	819	1	956	957	1777
<b>% App. Total</b>	100	0		99.9	0.1		0.1	99.9		
PHF	.250	.000	.250	.885	.250	.883	.250	.923	.924	.968
Cars	1	0	1	799	1	800	1	947	948	1749
% Cars	100	0	100	97.7	100	97.7	100	99.1	99.1	98.4
Trucks	0	0	0	19	0	19	0	9	9	28
% Trucks	0	0	0	2.3	0	2.3	0	0.9	0.9	1.6



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

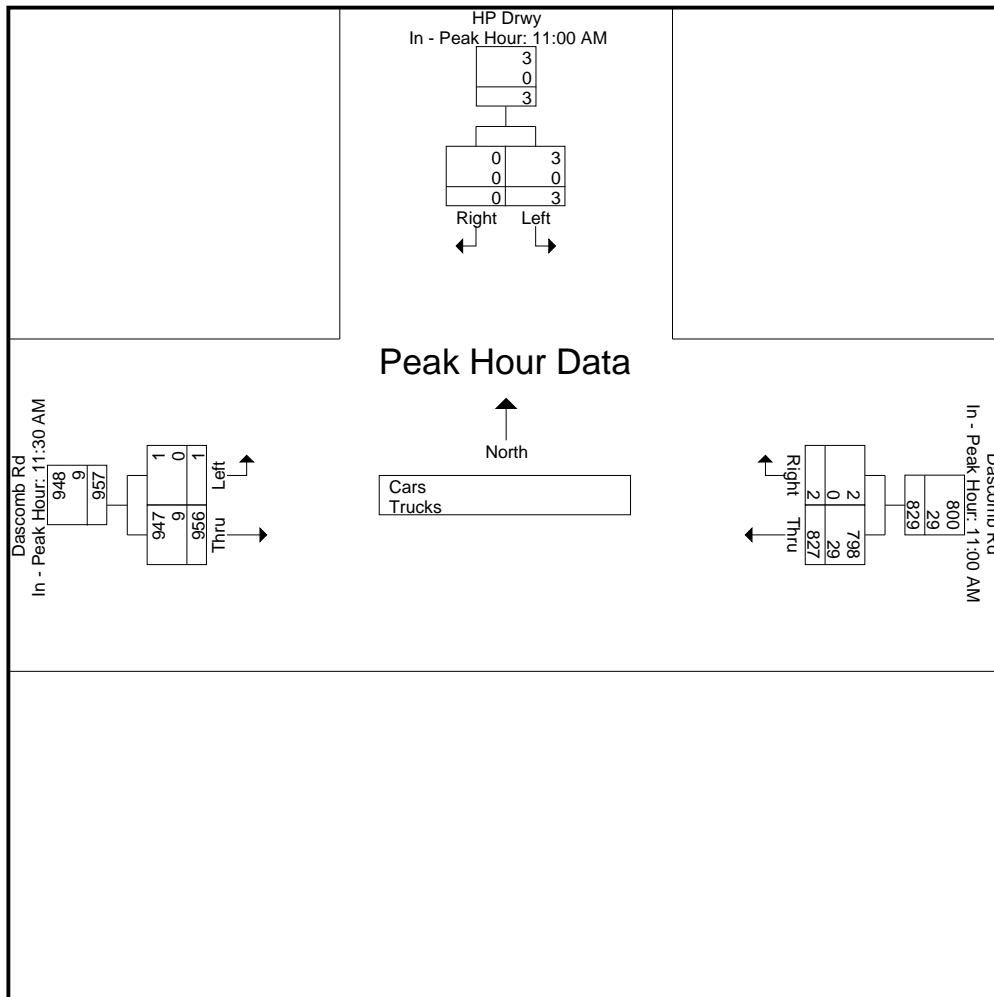
File Name : 052500S2  
 Site Code : 05250002  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:30 AM			11:30 AM		
+0 mins.	1	0	1	198	1	199	0	226	226
+15 mins.	1	0	1	201	0	201	0	226	226
+30 mins.	1	0	1	<b>231</b>	1	<b>232</b>	0	<b>259</b>	<b>259</b>
+45 mins.	0	0	0	197	0	197	1	245	246
<b>Total Volume</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>827</b>	<b>2</b>	<b>829</b>	<b>1</b>	<b>956</b>	<b>957</b>
<b>% App. Total</b>	<b>100</b>	<b>0</b>		<b>99.8</b>	<b>0.2</b>		<b>0.1</b>	<b>99.9</b>	
PHF	.750	.000	.750	.895	.500	.893	.250	.923	.924
Cars	3	0	3	798	2	800	1	947	948
% Cars	100	0	100	96.5	100	96.5	100	99.1	99.1
Trucks	0	0	0	29	0	29	0	9	9
% Trucks	0	0	0	3.5	0	3.5	0	0.9	0.9



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S2  
 Site Code : 05250002  
 Start Date : 9/22/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	HP Drwy From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
11:00 AM	1	0	187	1	0	249	438
11:15 AM	1	0	195	0	1	207	404
11:30 AM	1	0	223	1	0	225	450
11:45 AM	0	0	193	0	0	224	417
Total	3	0	798	2	1	905	1709
12:00 PM	0	0	189	0	0	256	445
12:15 PM	0	0	194	0	1	242	437
12:30 PM	0	1	195	0	0	210	406
12:45 PM	0	0	210	0	0	204	414
Total	0	1	788	0	1	912	1702
Grand Total	3	1	1586	2	2	1817	3411
Apprch %	75	25	99.9	0.1	0.1	99.9	
Total %	0.1	0	46.5	0.1	0.1	53.3	

# Accurate Counts

978-664-2565

File Name : 052500S2

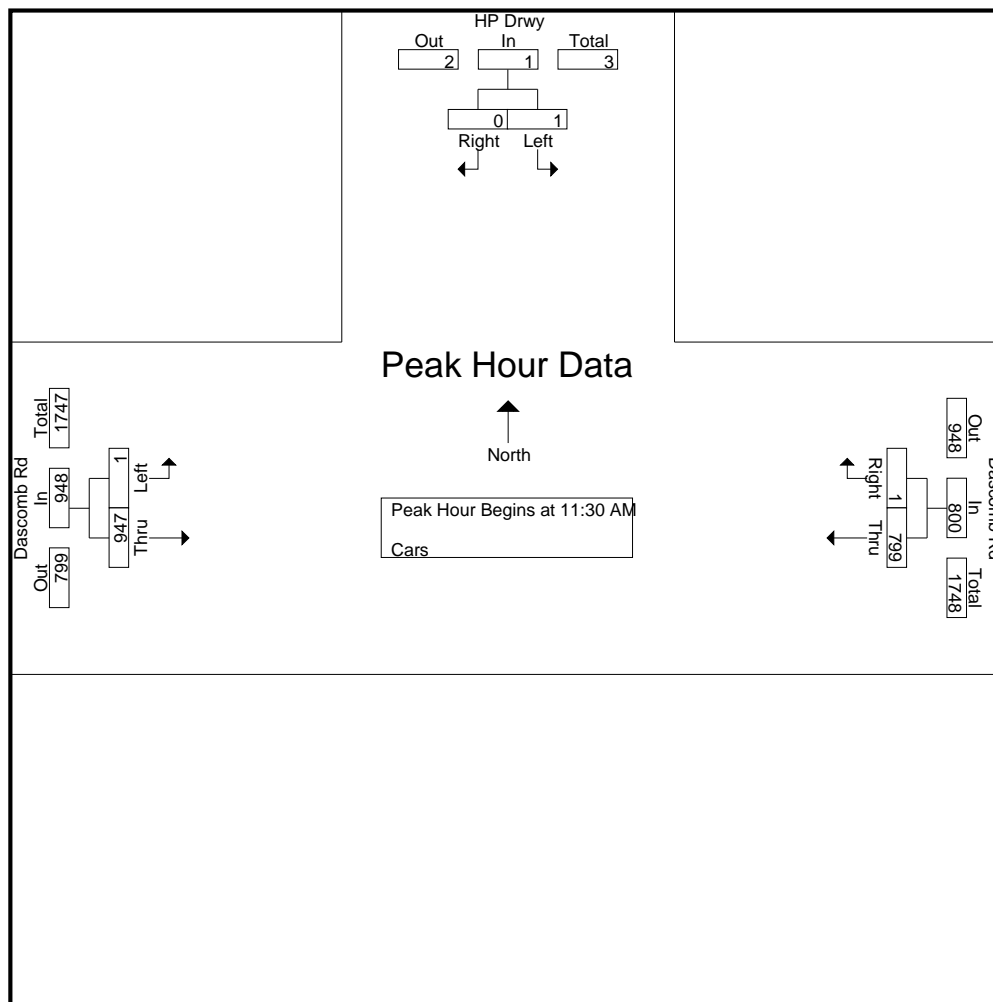
Site Code : 05250002

Start Date : 9/22/2018

Page No : 5

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	1	0	1	223	1	224	0	225	225	450
11:45 AM	0	0	0	193	0	193	0	224	224	417
12:00 PM	0	0	0	189	0	189	0	256	256	445
12:15 PM	0	0	0	194	0	194	1	242	243	437
<b>Total Volume</b>	1	0	1	799	1	800	1	947	948	1749
% App. Total	100	0		99.9	0.1		0.1	99.9		
PHF	.250	.000	.250	.896	.250	.893	.250	.925	.926	.972



# Accurate Counts

978-664-2565

File Name : 052500S2

Site Code : 05250002

Start Date : 9/22/2018

Page No : 6

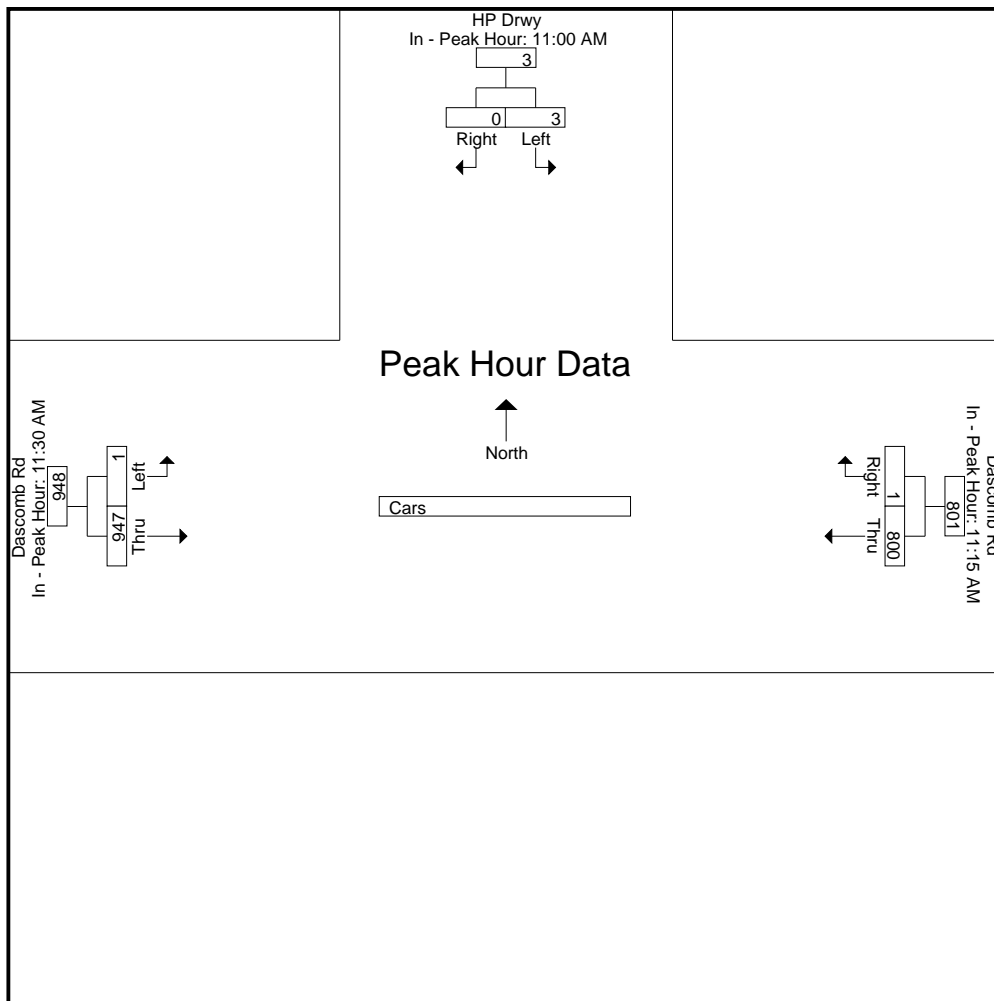
N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:15 AM			11:30 AM		
+0 mins.	1	0	1	195	0	195	0	225	225
+15 mins.	1	0	1	<b>223</b>	<b>1</b>	<b>224</b>	0	224	224
+30 mins.	1	0	1	193	0	193	0	<b>256</b>	<b>256</b>
+45 mins.	0	0	0	189	0	189	<b>1</b>	242	243
Total Volume	3	0	3	800	1	801	1	947	948
% App. Total	100	0		99.9	0.1		0.1	99.9	
PHF	.750	.000	.750	.897	.250	.894	.250	.925	.926



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S2  
 Site Code : 05250002  
 Start Date : 9/22/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	HP Drwy From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
11:00 AM	0	0	11	0	0	5	16
11:15 AM	0	0	6	0	0	4	10
11:30 AM	0	0	8	0	0	1	9
11:45 AM	0	0	4	0	0	2	6
<b>Total</b>	0	0	29	0	0	12	41
12:00 PM	0	0	3	0	0	3	6
12:15 PM	0	0	4	0	0	3	7
12:30 PM	0	0	6	0	0	1	7
12:45 PM	0	0	2	0	0	2	4
<b>Total</b>	0	0	15	0	0	9	24
<b>Grand Total</b>	0	0	44	0	0	21	65
Apprch %	0	0	100	0	0	100	
Total %	0	0	67.7	0	0	32.3	

# Accurate Counts

978-664-2565

File Name : 052500S2

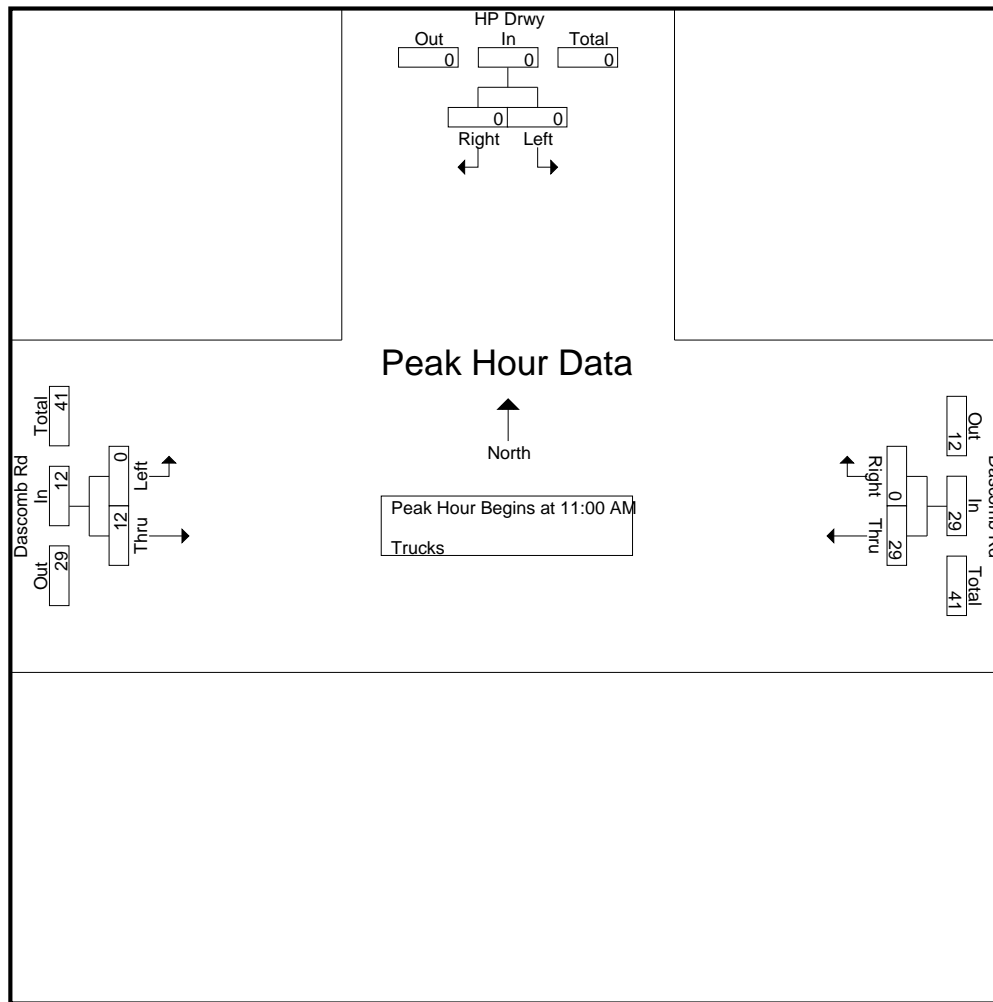
Site Code : 05250002

Start Date : 9/22/2018

Page No : 8

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	11	0	11	0	5	5	16
11:15 AM	0	0	0	6	0	6	0	4	4	10
11:30 AM	0	0	0	8	0	8	0	1	1	9
11:45 AM	0	0	0	4	0	4	0	2	2	6
<b>Total Volume</b>	0	0	0	29	0	29	0	12	12	41
<b>% App. Total</b>	0	0		100	0		0	100		
PHF	.000	.000	.000	.659	.000	.659	.000	.600	.600	.641



# Accurate Counts

978-664-2565

File Name : 052500S2

Site Code : 05250002

Start Date : 9/22/2018

Page No : 9

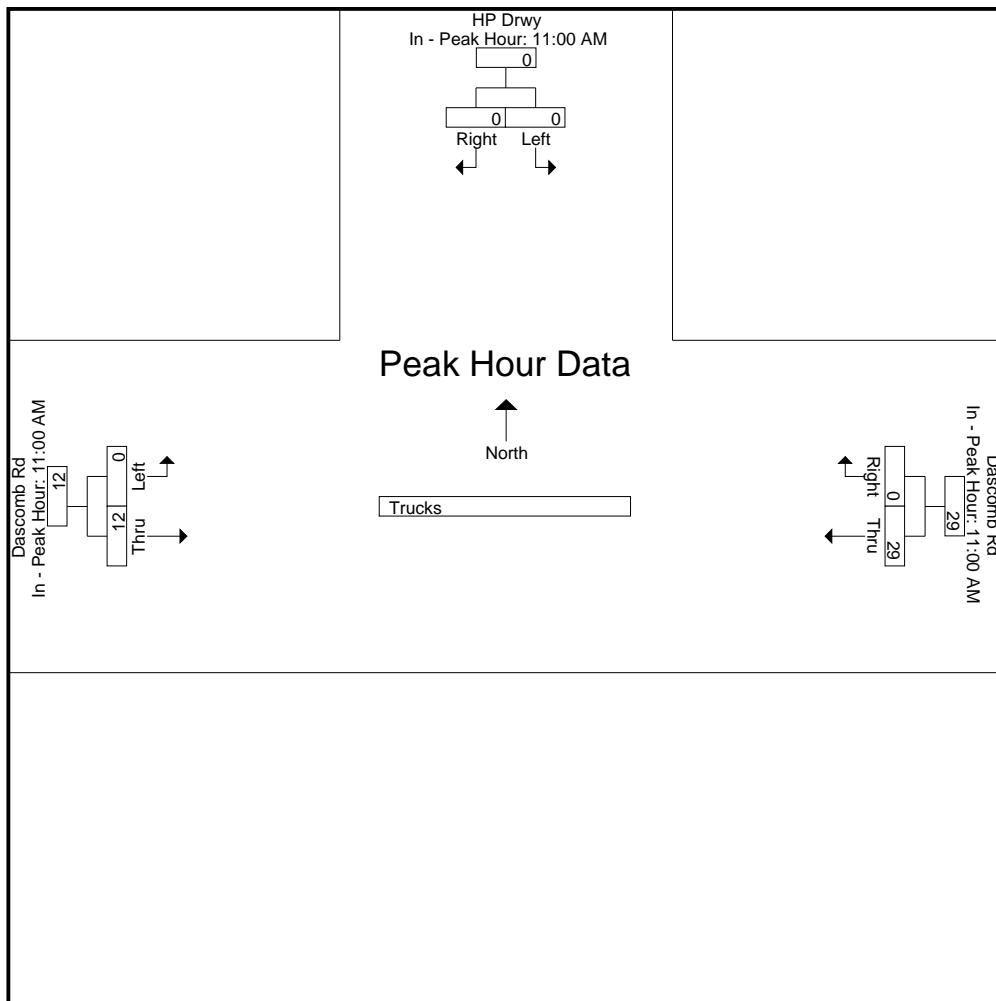
N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	11	0	11	0	5	5
+15 mins.	0	0	0	6	0	6	0	4	4
+30 mins.	0	0	0	8	0	8	0	1	1
+45 mins.	0	0	0	4	0	4	0	2	2
Total Volume	0	0	0	29	0	29	0	12	12
% App. Total	0	0		100	0		0	100	
PHF	.000	.000	.000	.659	.000	.659	.000	.600	.600



# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S2  
 Site Code : 05250002  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>Apprch %</b>	0	0		0	0		0	0				
<b>Total %</b>										0	0	

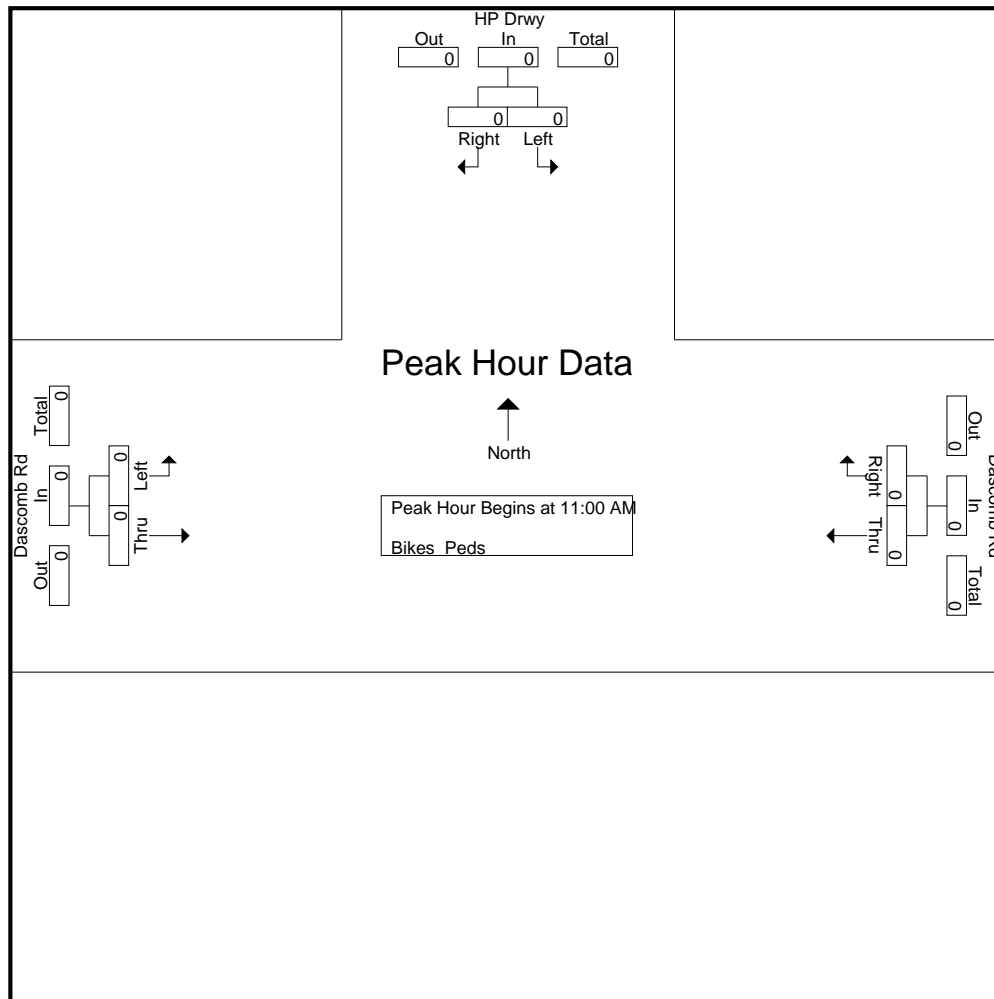
# Accurate Counts

978-664-2565

N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S2  
 Site Code : 05250002  
 Start Date : 9/22/2018  
 Page No : 11

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
<b>Total Volume</b>	0	0	0	0	0	0	0	0	0	0
<b>% App. Total</b>	0	0		0	0		0	0		
<b>PHF</b>	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

File Name : 052500S2

Site Code : 05250002

Start Date : 9/22/2018

Page No : 12

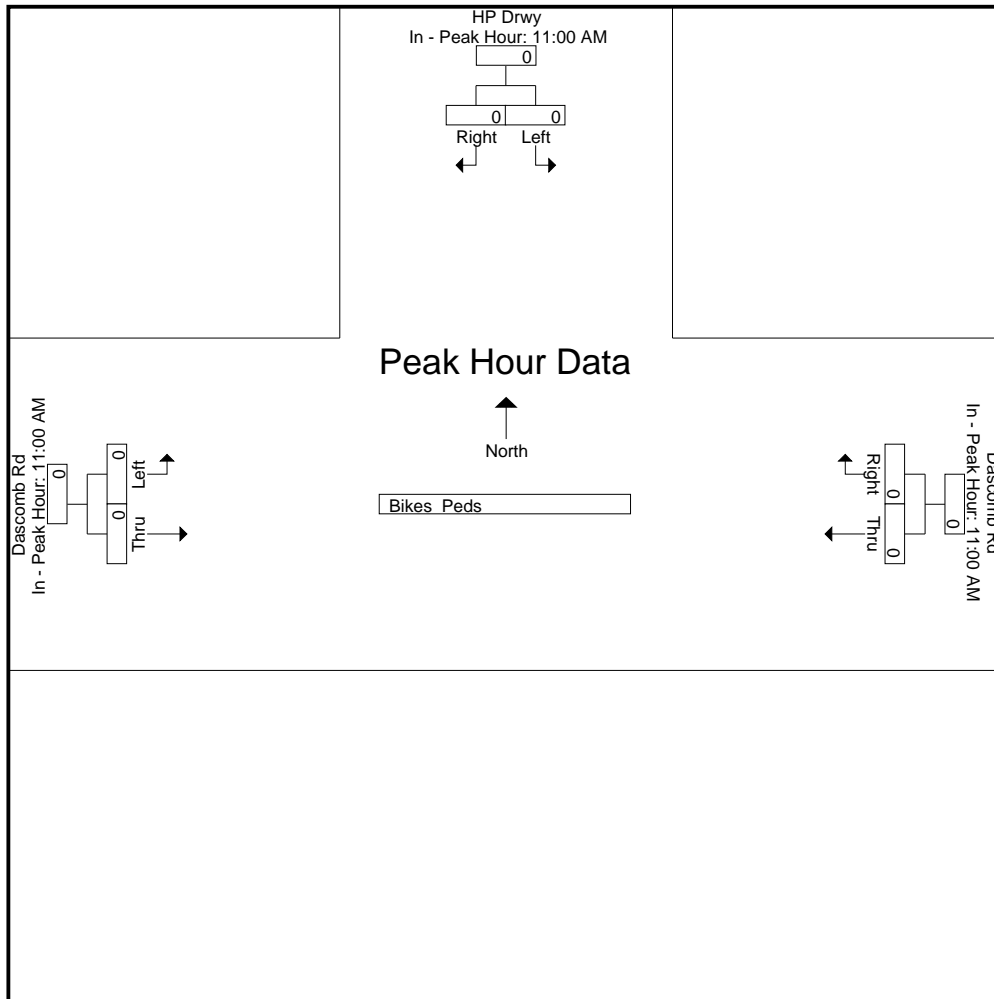
N/S Street : HP Driveway  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	HP Drwy From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Frontage Rd From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
11:00 AM	26	80	141	63	103	160	573
11:15 AM	21	78	127	67	88	146	527
11:30 AM	26	93	144	61	80	142	546
11:45 AM	28	88	133	52	124	127	552
Total	101	339	545	243	395	575	2198
12:00 PM	30	82	117	49	87	171	536
12:15 PM	28	89	122	51	103	156	549
12:30 PM	33	94	125	59	86	143	540
12:45 PM	28	92	134	57	74	146	531
Total	119	357	498	216	350	616	2156
Grand Total	220	696	1043	459	745	1191	4354
Apprch %	24	76	69.4	30.6	38.5	61.5	
Total %	5.1	16	24	10.5	17.1	27.4	
Cars	219	672	1028	458	734	1182	4293
% Cars	99.5	96.6	98.6	99.8	98.5	99.2	98.6
Trucks	1	24	15	1	11	9	61
% Trucks	0.5	3.4	1.4	0.2	1.5	0.8	1.4

# Accurate Counts

978-664-2565

File Name : 052500S3

Site Code : 05250003

Start Date : 9/22/2018

Page No : 2

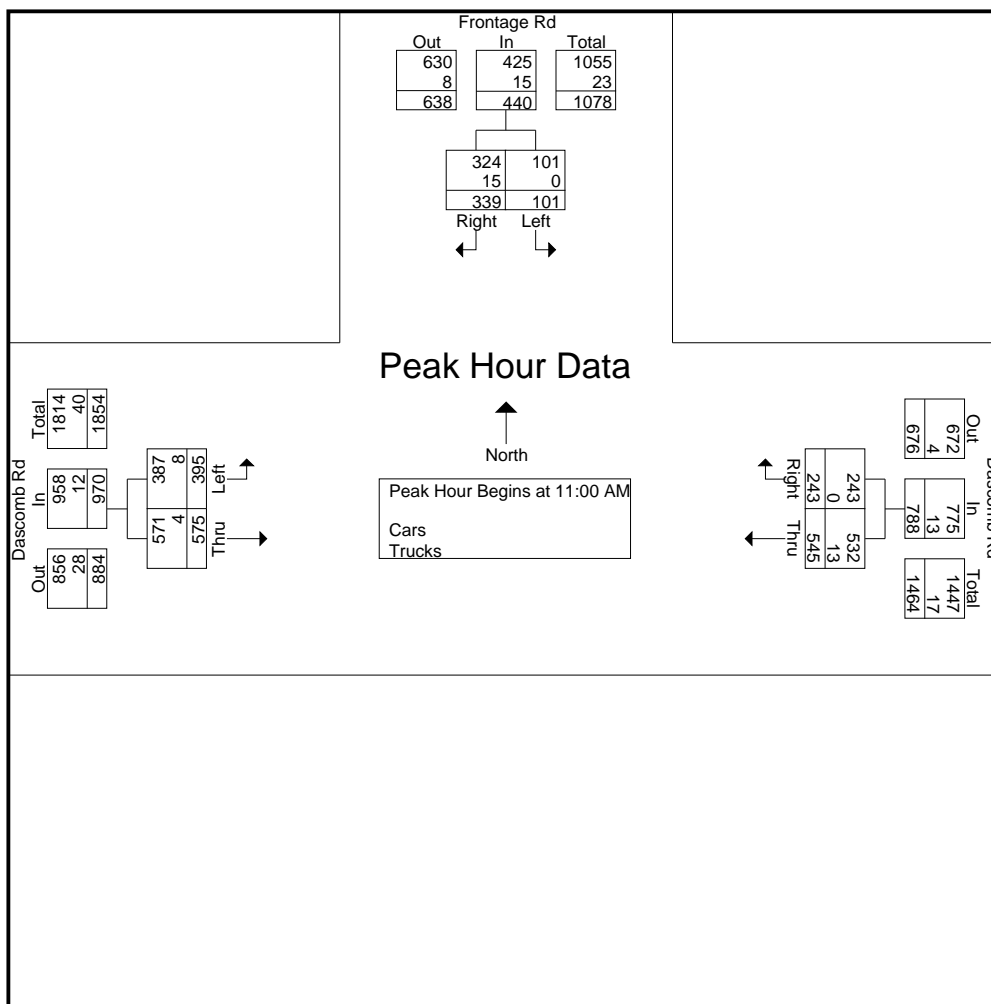
N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:00 AM

11:00 AM	26	80	106	141	63	204	103	<b>160</b>	<b>263</b>	<b>573</b>
11:15 AM	21	78	99	127	<b>67</b>	194	88	146	234	527
11:30 AM	26	<b>93</b>	<b>119</b>	<b>144</b>	61	<b>205</b>	80	142	222	546
11:45 AM	<b>28</b>	88	116	133	52	185	<b>124</b>	127	251	552
<b>Total Volume</b>	101	339	440	545	243	788	395	575	970	2198
<b>% App. Total</b>	23	77		69.2	30.8		40.7	59.3		
PHF	.902	.911	.924	.946	.907	.961	.796	.898	.922	.959
Cars	101	324	425	532	243	775	387	571	958	2158
% Cars	100	95.6	96.6	97.6	100	98.4	98.0	99.3	98.8	98.2
Trucks	0	15	15	13	0	13	8	4	12	40
% Trucks	0	4.4	3.4	2.4	0	1.6	2.0	0.7	1.2	1.8



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

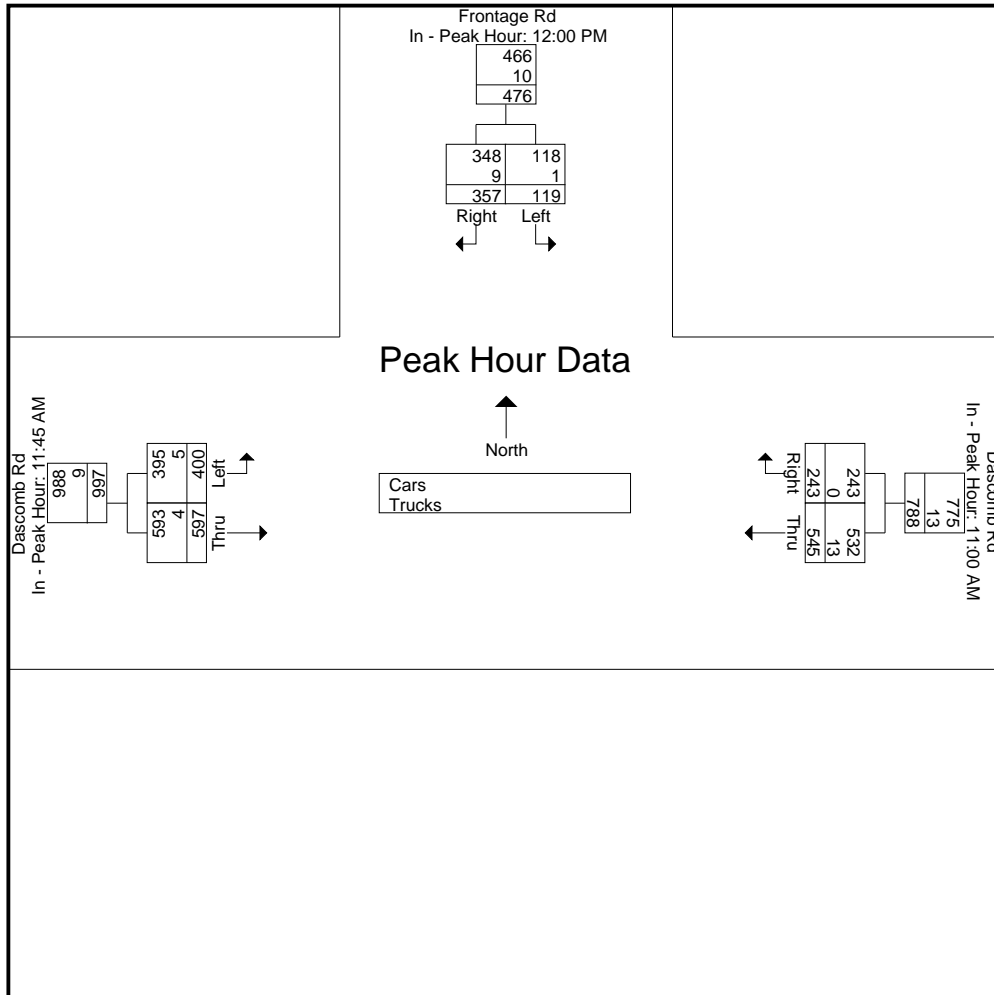
File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM			11:00 AM			11:45 AM		
+0 mins.	30	82	112	141	63	204	<b>124</b>	127	251
+15 mins.	28	89	117	127	<b>67</b>	194	87	<b>171</b>	258
+30 mins.	<b>33</b>	<b>94</b>	<b>127</b>	<b>144</b>	61	<b>205</b>	103	156	<b>259</b>
+45 mins.	28	92	120	133	52	185	86	143	229
Total Volume	119	357	476	545	243	788	400	597	997
% App. Total	25	75		69.2	30.8		40.1	59.9	
PHF	.902	.949	.937	.946	.907	.961	.806	.873	.962
Cars	118	348	466	532	243	775	395	593	988
% Cars	99.2	97.5	97.9	97.6	100	98.4	98.8	99.3	99.1
Trucks	1	9	10	13	0	13	5	4	9
% Trucks	0.8	2.5	2.1	2.4	0	1.6	1.2	0.7	0.9



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Frontage Rd From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
11:00 AM	26	73	137	63	100	158	557
11:15 AM	21	75	125	67	86	145	519
11:30 AM	26	91	139	61	79	141	537
11:45 AM	28	85	131	52	122	127	545
Total	101	324	532	243	387	571	2158
12:00 PM	29	80	117	49	86	170	531
12:15 PM	28	85	122	50	101	155	541
12:30 PM	33	92	124	59	86	141	535
12:45 PM	28	91	133	57	74	145	528
Total	118	348	496	215	347	611	2135
Grand Total	219	672	1028	458	734	1182	4293
Apprch %	24.6	75.4	69.2	30.8	38.3	61.7	
Total %	5.1	15.7	23.9	10.7	17.1	27.5	

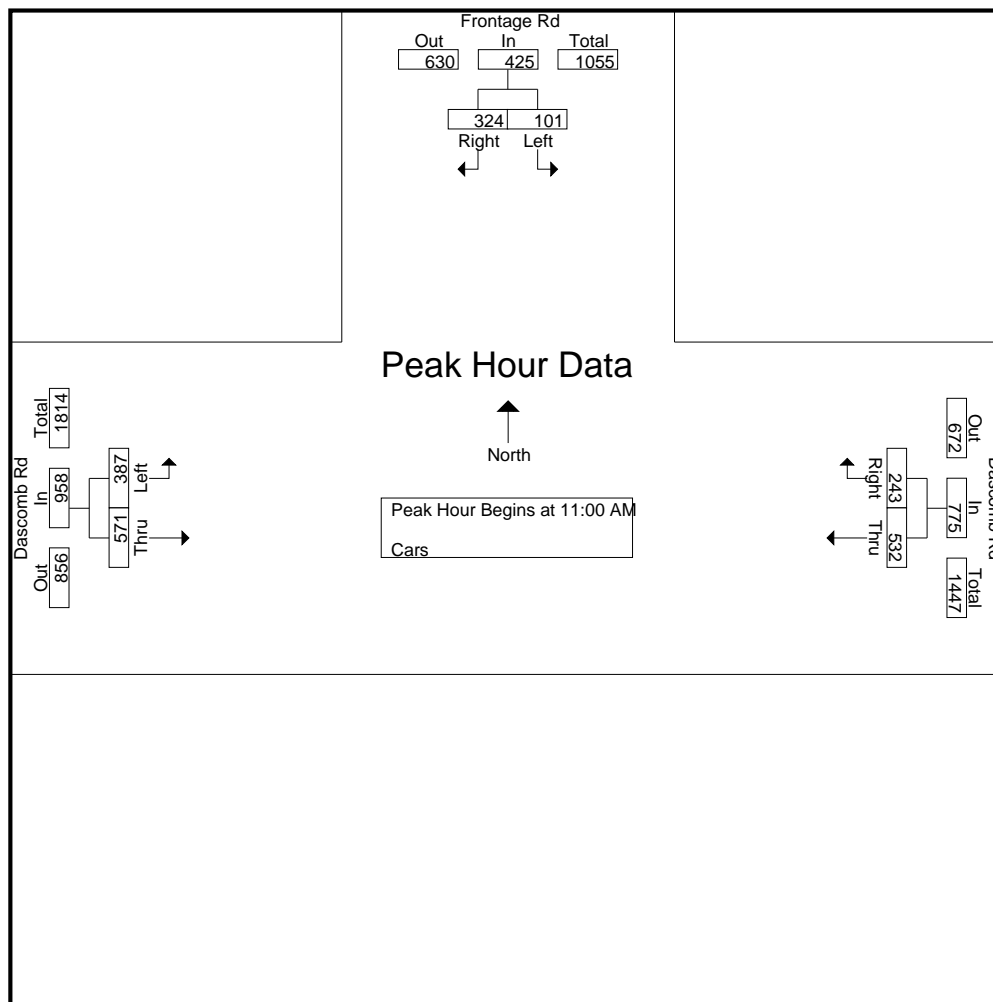
# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 5

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	26	73	99	137	63	<b>200</b>	100	<b>158</b>	<b>258</b>	<b>557</b>
11:15 AM	21	75	96	125	<b>67</b>	192	86	145	231	519
11:30 AM	26	<b>91</b>	<b>117</b>	<b>139</b>	61	200	79	141	220	537
11:45 AM	<b>28</b>	85	113	131	52	183	<b>122</b>	127	249	545
Total Volume	101	324	425	532	243	775	387	571	958	2158
% App. Total	23.8	76.2		68.6	31.4		40.4	59.6		
PHF	.902	.890	.908	.957	.907	.969	.793	.903	.928	.969



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

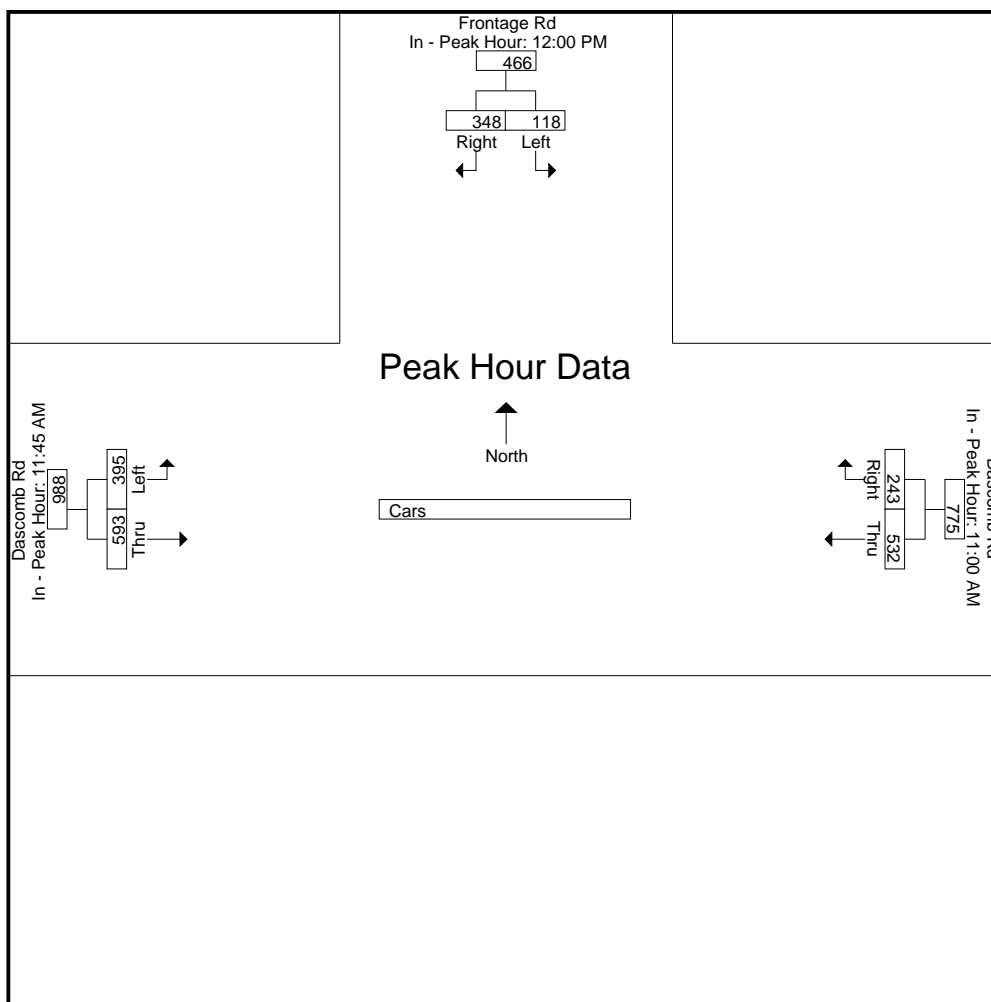
File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 6

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM			11:00 AM			11:45 AM		
+0 mins.	29	80	109	137	63	<b>200</b>	<b>122</b>	127	249
+15 mins.	28	85	113	125	<b>67</b>	192	86	<b>170</b>	<b>256</b>
+30 mins.	<b>33</b>	<b>92</b>	<b>125</b>	<b>139</b>	61	200	101	155	256
+45 mins.	28	91	119	131	52	183	86	141	227
Total Volume	118	348	466	532	243	775	395	593	988
% App. Total	25.3	74.7		68.6	31.4		40	60	
PHF	.894	.946	.932	.957	.907	.969	.809	.872	.965



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Frontage Rd From North		Dascomb Rd From East		Dascomb Rd From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
11:00 AM	0	7	4	0	3	2	16
11:15 AM	0	3	2	0	2	1	8
11:30 AM	0	2	5	0	1	1	9
11:45 AM	0	3	2	0	2	0	7
Total	0	15	13	0	8	4	40
12:00 PM	1	2	0	0	1	1	5
12:15 PM	0	4	0	1	2	1	8
12:30 PM	0	2	1	0	0	2	5
12:45 PM	0	1	1	0	0	1	3
Total	1	9	2	1	3	5	21
Grand Total	1	24	15	1	11	9	61
Apprch %	4	96	93.8	6.2	55	45	
Total %	1.6	39.3	24.6	1.6	18	14.8	

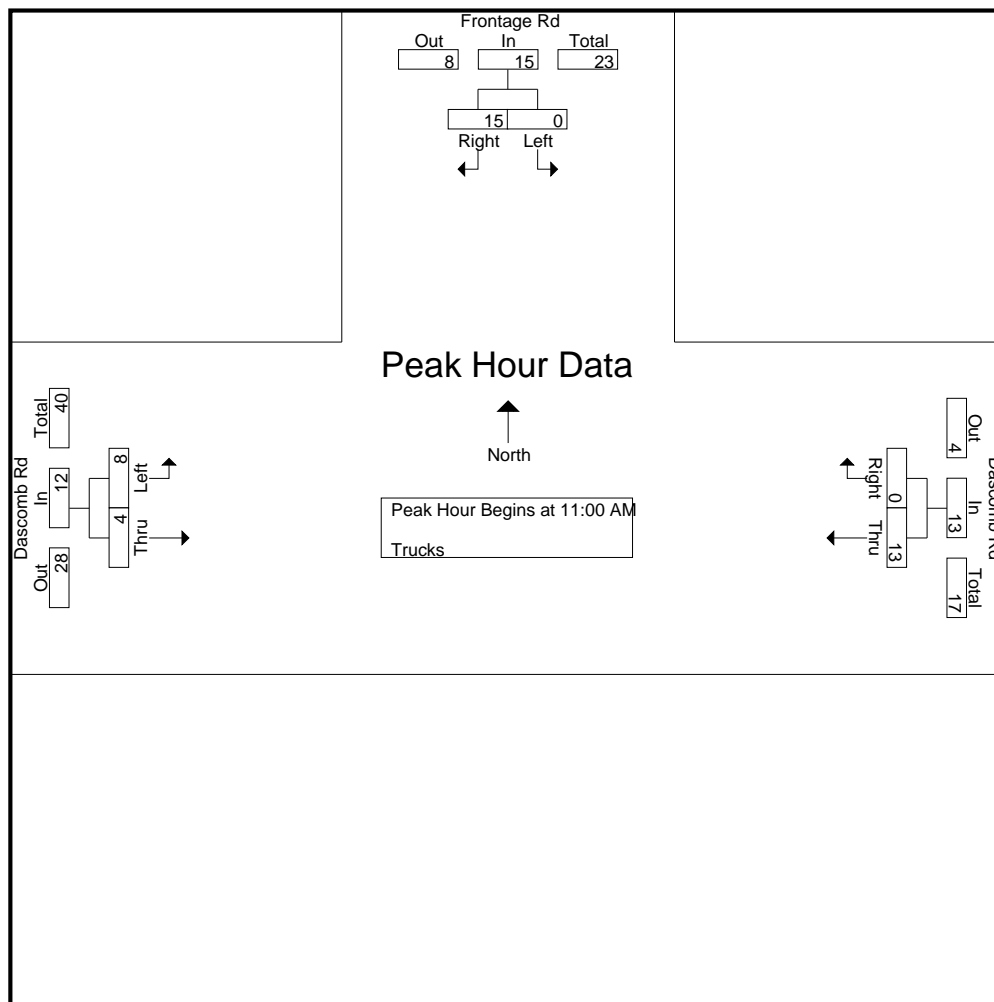
# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 8

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	7	7	4	0	4	3	2	5	16
11:15 AM	0	3	3	2	0	2	2	1	3	8
11:30 AM	0	2	2	5	0	5	1	1	2	9
11:45 AM	0	3	3	2	0	2	2	0	2	7
<b>Total Volume</b>	0	15	15	13	0	13	8	4	12	40
<b>% App. Total</b>	0	100		100	0		66.7	33.3		
PHF	.000	.536	.536	.650	.000	.650	.667	.500	.600	.625



# Accurate Counts

978-664-2565

File Name : 052500S3

Site Code : 05250003

Start Date : 9/22/2018

Page No : 9

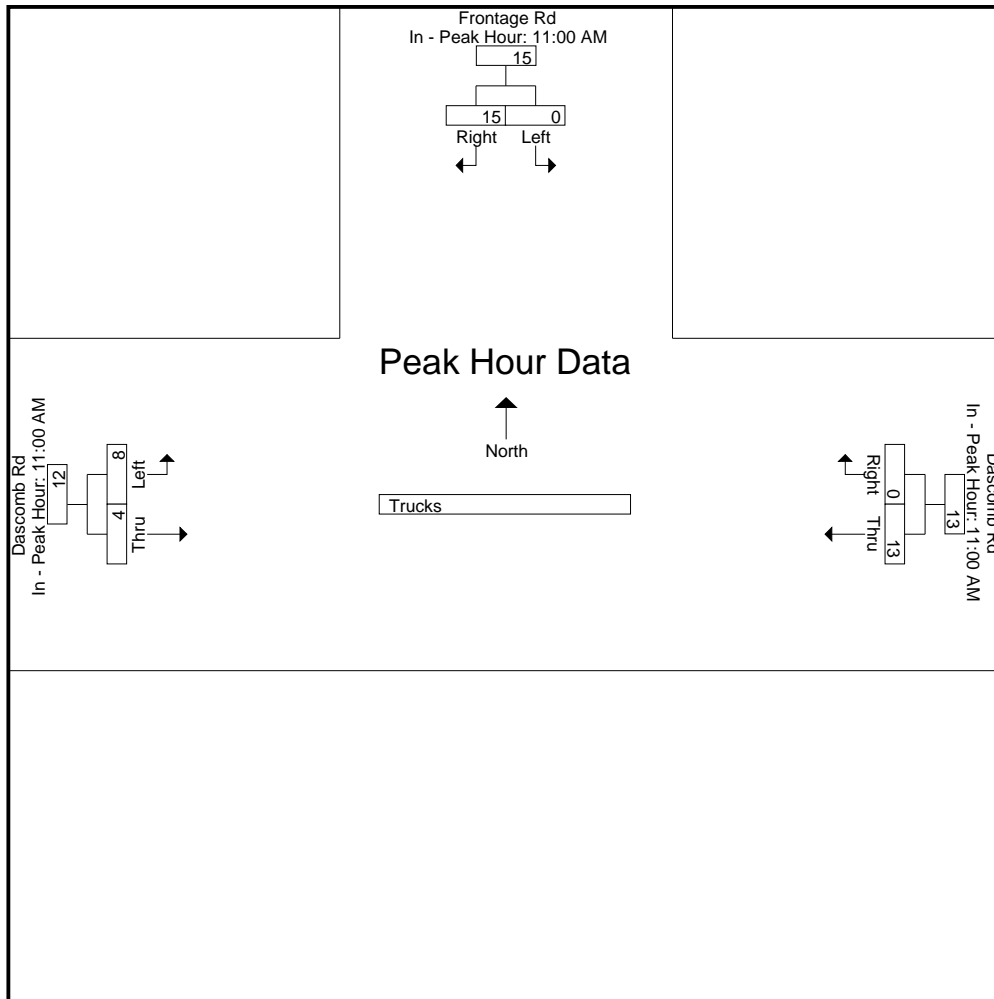
N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	7	7	4	0	4	3	2	5
+15 mins.	0	3	3	2	0	2	2	1	3
+30 mins.	0	2	2	5	0	5	1	1	2
+45 mins.	0	3	3	2	0	2	2	0	2
Total Volume	0	15	15	13	0	13	8	4	12
% App. Total	0	100		100	0		66.7	33.3	
PHF	.000	.536	.536	.650	.000	.650	.667	.500	.600



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
11:00 AM	1	0	0	0	0	0	0	0	0	0	1	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
12:00 PM	1	0	0	0	0	0	0	1	0	0	2	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>
<b>Grand Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>3</b>
Apprch %	100	0		0	0		0	100				
Total %	66.7	0		0	0		0	33.3		0	100	

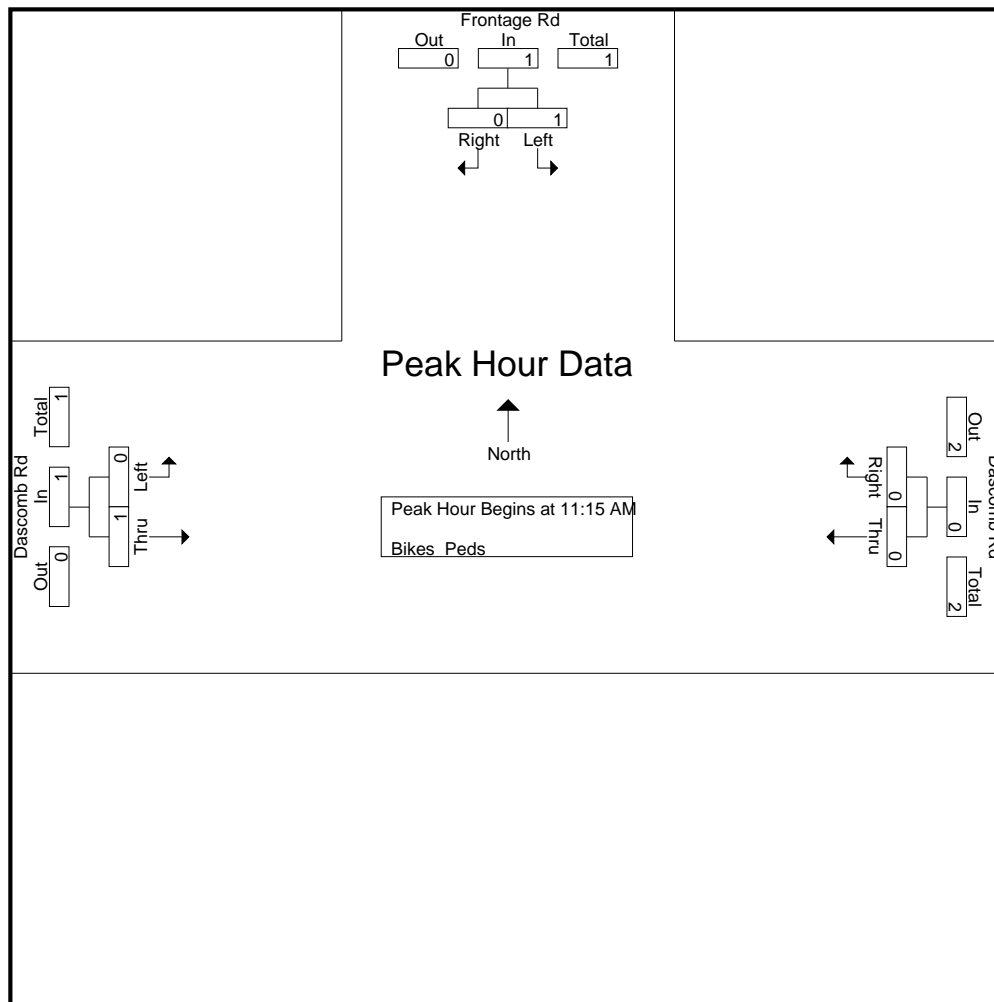
# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S3  
 Site Code : 05250003  
 Start Date : 9/22/2018  
 Page No : 11

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
12:00 PM	1	0	1	0	0	0	0	1	1	2
<b>Total Volume</b>	1	0	1	0	0	0	0	1	1	2
<b>% App. Total</b>	100	0		0	0		0	100		
<b>PHF</b>	.250	.000	.250	.000	.000	.000	.000	.250	.250	.250



# Accurate Counts

978-664-2565

File Name : 052500S3

Site Code : 05250003

Start Date : 9/22/2018

Page No : 12

N/S Street : Frontage Road

E/W Street: Dascomb Road

City/State : Andover, MA

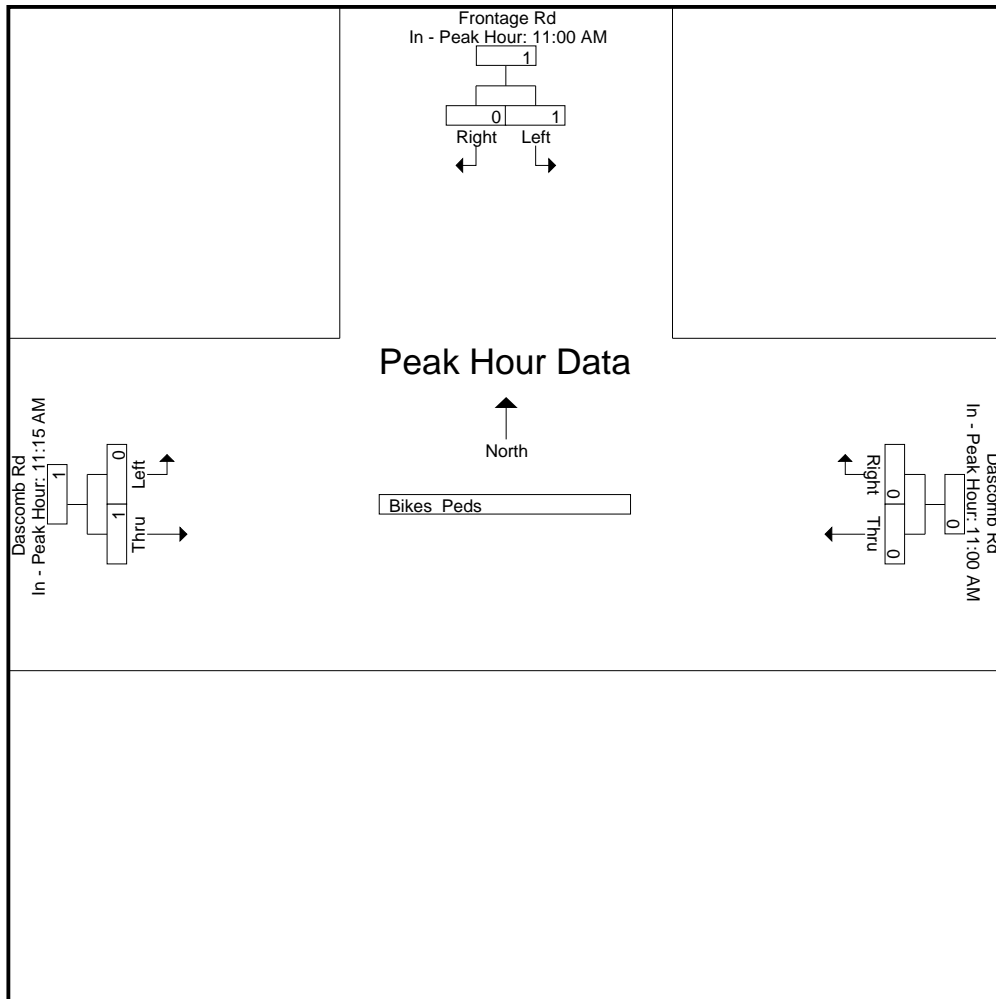
Weather : Clear

Start Time	Frontage Rd From North			Dascomb Rd From East			Dascomb Rd From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:15 AM		
+0 mins.	1	0	1	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	1	1
Total Volume	1	0	1	0	0	0	0	1	1
% App. Total	100	0		0	0		0	100	
PHF	.250	.000	.250	.000	.000	.000	.000	.250	.250



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

File Name : 052500S4

Site Code : 05250004

Start Date : 9/22/2018

Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Lovejoy Rd From North			Dascomb Rd From East			Acorn Dr From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	18	1	18	1	94	11	7	3	3	17	75	1	249
11:15 AM	11	0	15	2	102	16	4	2	1	8	78	1	240
11:30 AM	13	0	12	2	101	15	3	1	2	11	87	2	249
11:45 AM	28	1	16	6	105	18	2	0	4	9	82	4	275
Total	70	2	61	11	402	60	16	6	10	45	322	8	1013
12:00 PM	17	0	11	1	83	15	4	1	3	10	103	2	250
12:15 PM	11	1	16	1	97	11	0	0	1	11	90	1	240
12:30 PM	12	2	11	3	111	13	2	0	1	14	99	2	270
12:45 PM	14	2	9	1	101	16	1	0	3	11	110	4	272
Total	54	5	47	6	392	55	7	1	8	46	402	9	1032
Grand Total	124	7	108	17	794	115	23	7	18	91	724	17	2045
Aprch %	51.9	2.9	45.2	1.8	85.7	12.4	47.9	14.6	37.5	10.9	87	2	
Total %	6.1	0.3	5.3	0.8	38.8	5.6	1.1	0.3	0.9	4.4	35.4	0.8	
Cars	124	7	108	17	791	115	23	7	18	91	721	17	2039
% Cars	100	100	100	100	99.6	100	100	100	100	100	99.6	100	99.7
Trucks	0	0	0	0	3	0	0	0	0	0	3	0	6
% Trucks	0	0	0	0	0.4	0	0	0	0	0	0.4	0	0.3

# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

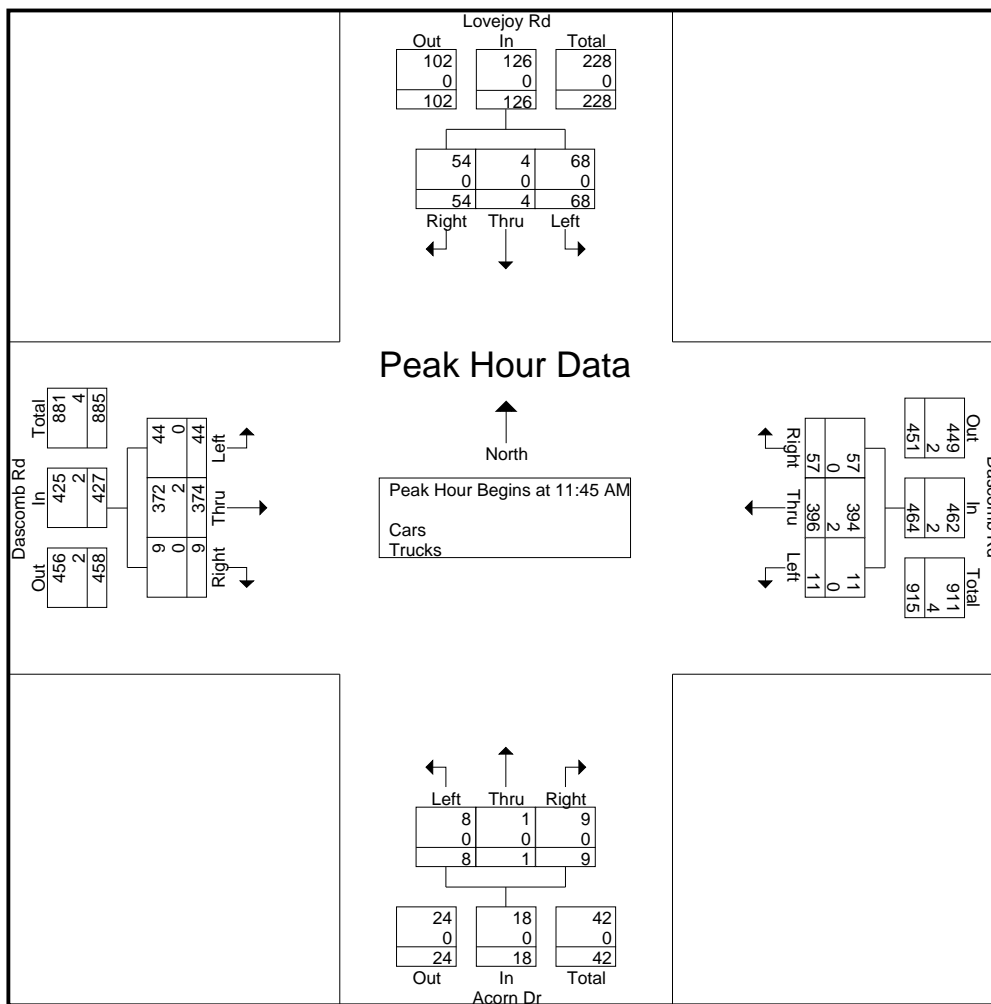
File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 2

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:45 AM

11:45 AM	28	1	16	45	6	105	18	129	2	0	4	6	9	82	4	95	275
12:00 PM	17	0	11	28	1	83	15	99	4	1	3	8	10	103	2	115	250
12:15 PM	11	1	16	28	1	97	11	109	0	0	1	1	11	90	1	102	240
12:30 PM	12	2	11	25	3	111	13	127	2	0	1	3	14	99	2	115	270
<b>Total Volume</b>	68	4	54	126	11	396	57	464	8	1	9	18	44	374	9	427	1035
<b>% App. Total</b>	54	3.2	42.9		2.4	85.3	12.3		44.4	5.6	50		10.3	87.6	2.1		
<b>PHF</b>	.607	.500	.844	.700	.458	.892	.792	.899	.500	.250	.563	.563	.786	.908	.563	.928	.941
Cars	68	4	54	126	11	394	57	462	8	1	9	18	44	372	9	425	1031
% Cars	100	100	100	100	100	99.5	100	99.6	100	100	100	100	100	99.5	100	99.5	99.6
Trucks	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
% Trucks	0	0	0	0	0	0.5	0	0.4	0	0	0	0	0	0.5	0	0.5	0.4



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

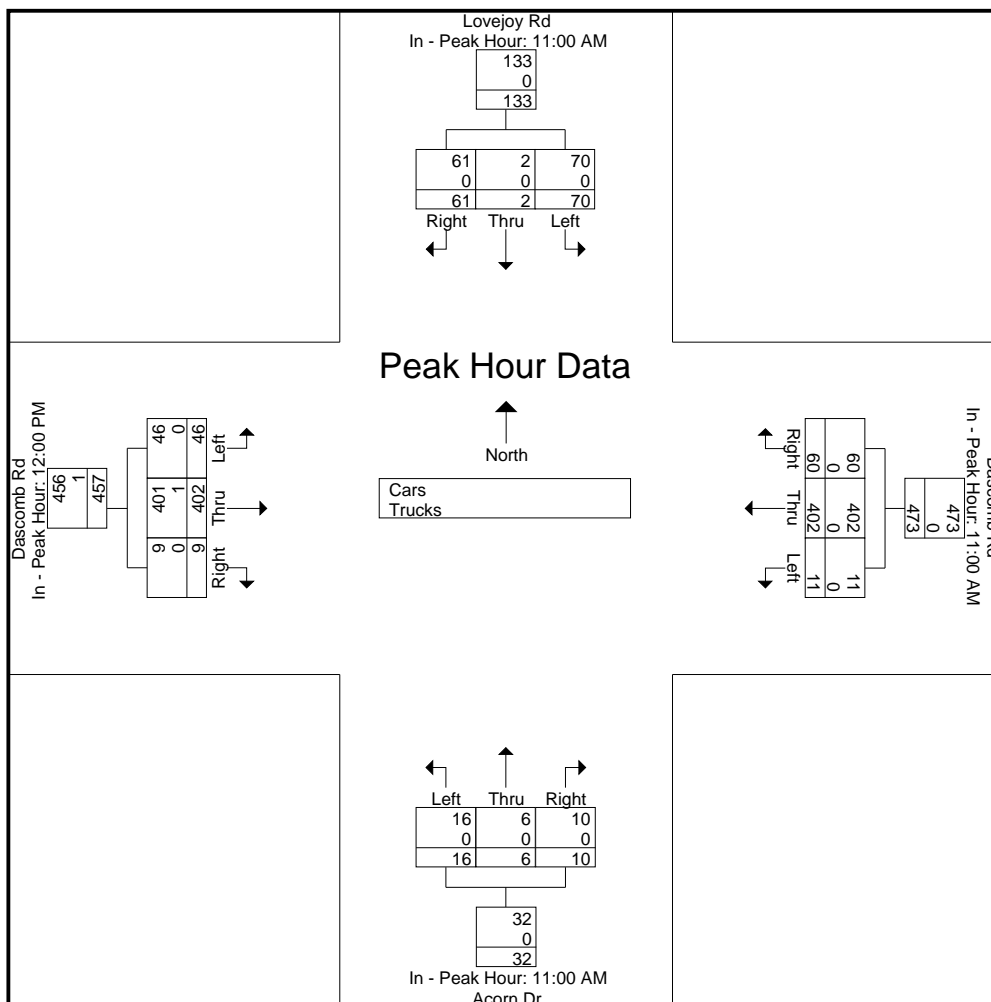
File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM				11:00 AM				11:00 AM				12:00 PM			
+0 mins.	18	1	18	37	1	94	11	106	7	3	3	13	10	103	2	115
+15 mins.	11	0	15	26	2	102	16	120	4	2	1	7	11	90	1	102
+30 mins.	13	0	12	25	2	101	15	118	3	1	2	6	14	99	2	115
+45 mins.	28	1	16	45	6	105	18	129	2	0	4	6	11	110	4	125
Total Volume	70	2	61	133	11	402	60	473	16	6	10	32	46	402	9	457
% App. Total	52.6	1.5	45.9		2.3	85	12.7		50	18.8	31.2		10.1	88	2	
PHF	.625	.500	.847	.739	.458	.957	.833	.917	.571	.500	.625	.615	.821	.914	.563	.914
Cars	70	2	61	133	11	402	60	473	16	6	10	32	46	401	9	456
% Cars	100	100	100	100	100	100	100	100	100	100	100	100	100	99.8	100	99.8
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0.2



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

File Name : 052500S4

Site Code : 05250004

Start Date : 9/22/2018

Page No : 4

## Groups Printed- Cars

Start Time	Lovejoy Rd From North			Dascomb Rd From East			Acorn Dr From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	18	1	18	1	94	11	7	3	3	17	74	1	248
11:15 AM	11	0	15	2	102	16	4	2	1	8	78	1	240
11:30 AM	13	0	12	2	101	15	3	1	2	11	87	2	249
11:45 AM	28	1	16	6	105	18	2	0	4	9	81	4	274
Total	70	2	61	11	402	60	16	6	10	45	320	8	1011
12:00 PM	17	0	11	1	83	15	4	1	3	10	102	2	249
12:15 PM	11	1	16	1	95	11	0	0	1	11	90	1	238
12:30 PM	12	2	11	3	111	13	2	0	1	14	99	2	270
12:45 PM	14	2	9	1	100	16	1	0	3	11	110	4	271
Total	54	5	47	6	389	55	7	1	8	46	401	9	1028
Grand Total	124	7	108	17	791	115	23	7	18	91	721	17	2039
Apprch %	51.9	2.9	45.2	1.8	85.7	12.5	47.9	14.6	37.5	11	87	2.1	
Total %	6.1	0.3	5.3	0.8	38.8	5.6	1.1	0.3	0.9	4.5	35.4	0.8	

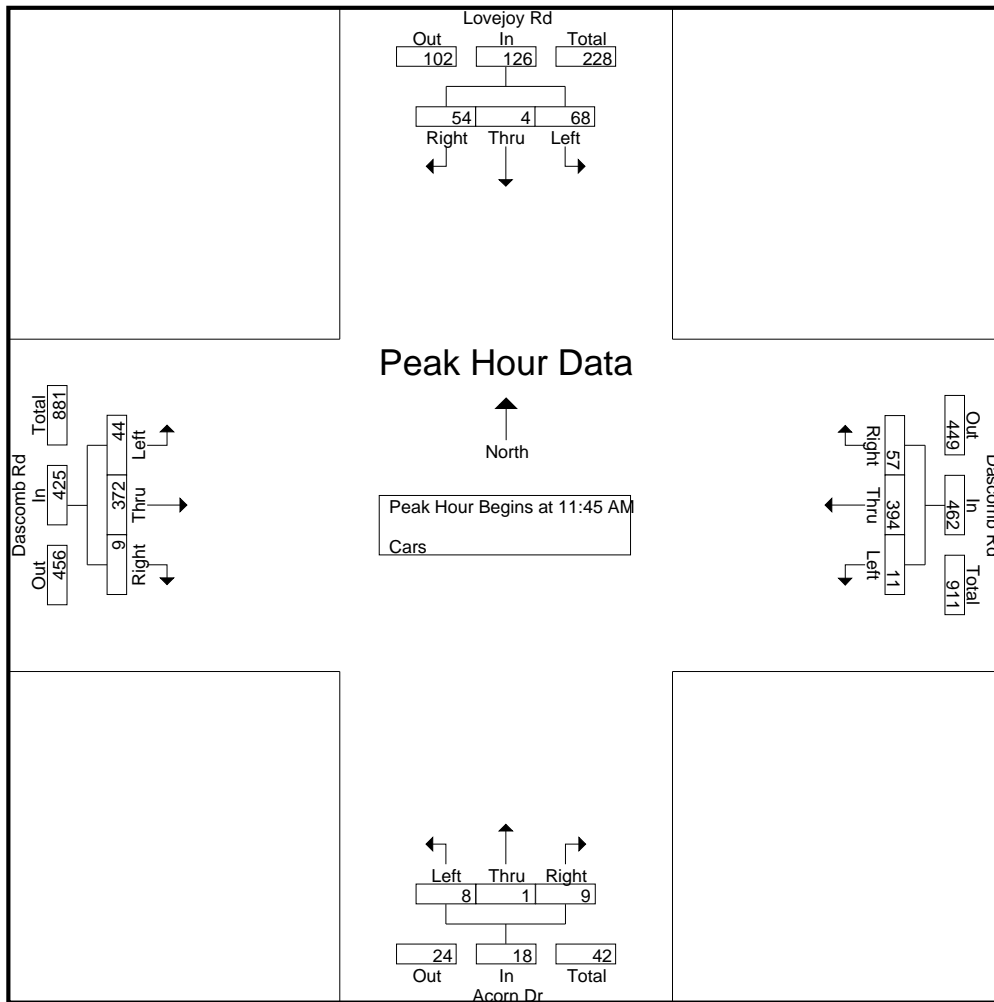
# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 5

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	28	1	16	45	6	105	18	129	2	0	4	6	9	81	4	94	274
12:00 PM	17	0	11	28	1	83	15	99	4	1	3	8	10	102	2	114	249
12:15 PM	11	1	16	28	1	95	11	107	0	0	1	1	11	90	1	102	238
12:30 PM	12	2	11	25	3	111	13	127	2	0	1	3	14	99	2	115	270
Total Volume	68	4	54	126	11	394	57	462	8	1	9	18	44	372	9	425	1031
% App. Total	54	3.2	42.9		2.4	85.3	12.3		44.4	5.6	50		10.4	87.5	2.1		
PHF	.607	.500	.844	.700	.458	.887	.792	.895	.500	.250	.563	.563	.786	.912	.563	.924	.941



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

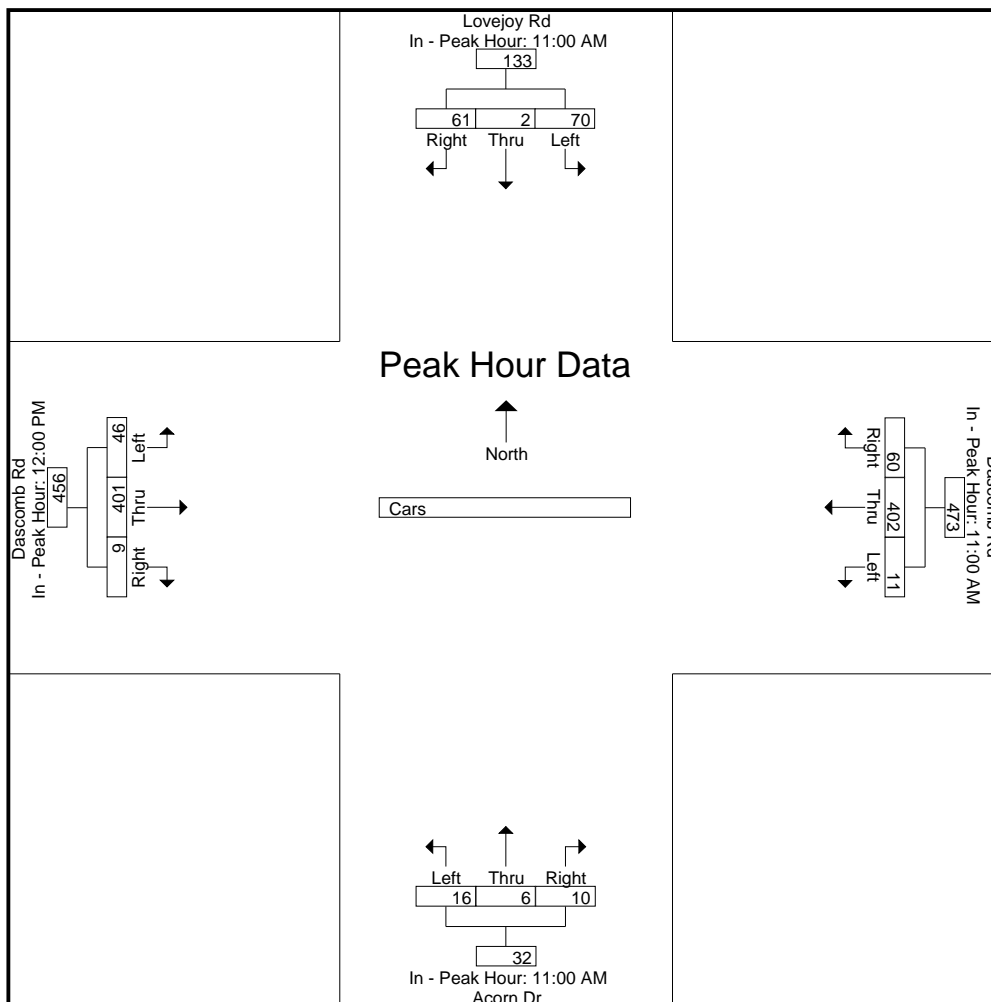
File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 6

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM				11:00 AM				11:00 AM				12:00 PM			
+0 mins.	18	1	18	37	1	94	11	106	7	3	3	13	10	102	2	114
+15 mins.	11	0	15	26	2	102	16	120	4	2	1	7	11	90	1	102
+30 mins.	13	0	12	25	2	101	15	118	3	1	2	6	14	99	2	115
+45 mins.	28	1	16	45	6	105	18	129	2	0	4	6	11	110	4	125
Total Volume	70	2	61	133	11	402	60	473	16	6	10	32	46	401	9	456
% App. Total	52.6	1.5	45.9		2.3	85	12.7		50	18.8	31.2		10.1	87.9	2	
PHF	.625	.500	.847	.739	.458	.957	.833	.917	.571	.500	.625	.615	.821	.911	.563	.912



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive

E/W Street: Dascomb Road

City/State : Andover, MA

Weather : Clear

File Name : 052500S4

Site Code : 05250004

Start Date : 9/22/2018

Page No : 7

## Groups Printed- Trucks

Start Time	Lovejoy Rd From North			Dascomb Rd From East			Acorn Dr From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	2	0	2
12:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
12:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
<b>Total</b>	0	0	0	0	3	0	0	0	0	0	1	0	4
<b>Grand Total</b>	0	0	0	0	3	0	0	0	0	0	3	0	6
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	50	0	0	0	0	0	50	0	

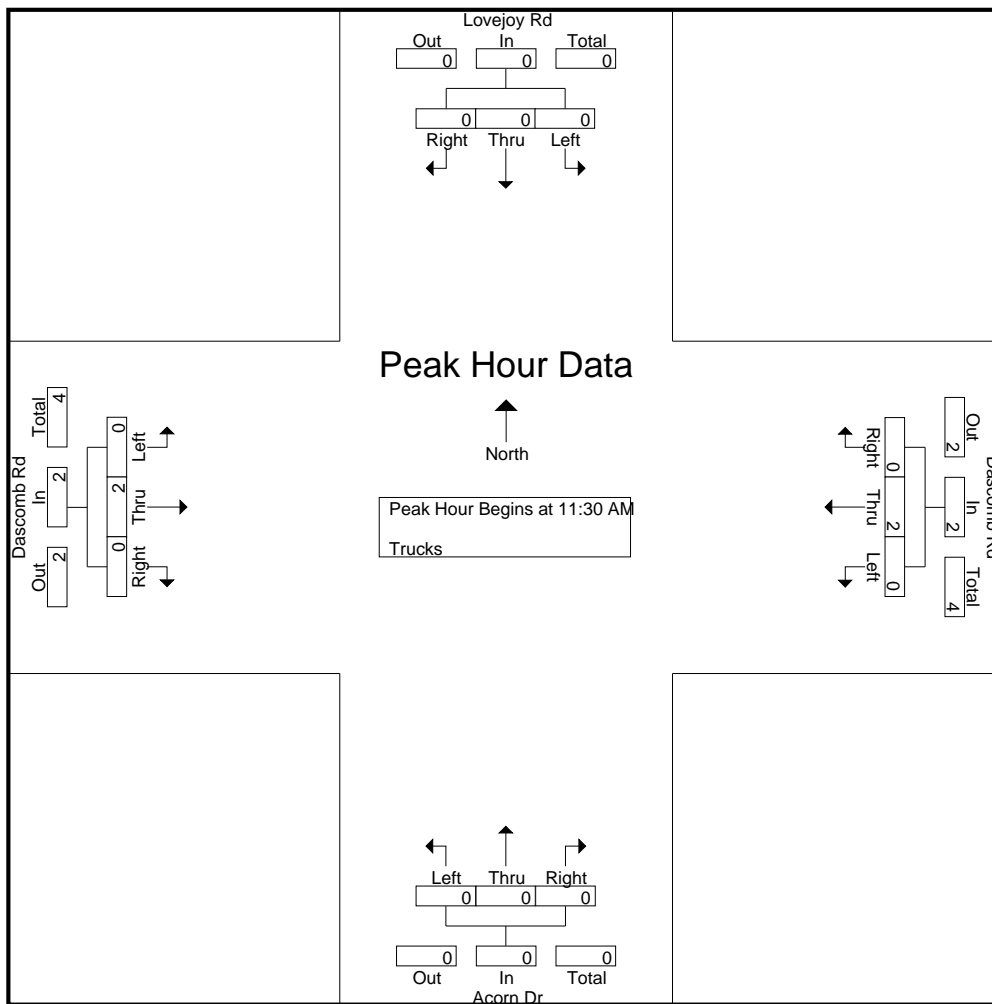
# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 8

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:30 AM																	
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>1</b>	0	<b>1</b>	<b>1</b>
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
12:15 PM	0	0	0	0	0	<b>2</b>	0	<b>2</b>	0	0	0	0	0	0	0	0	<b>2</b>
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.000	.500	.500



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

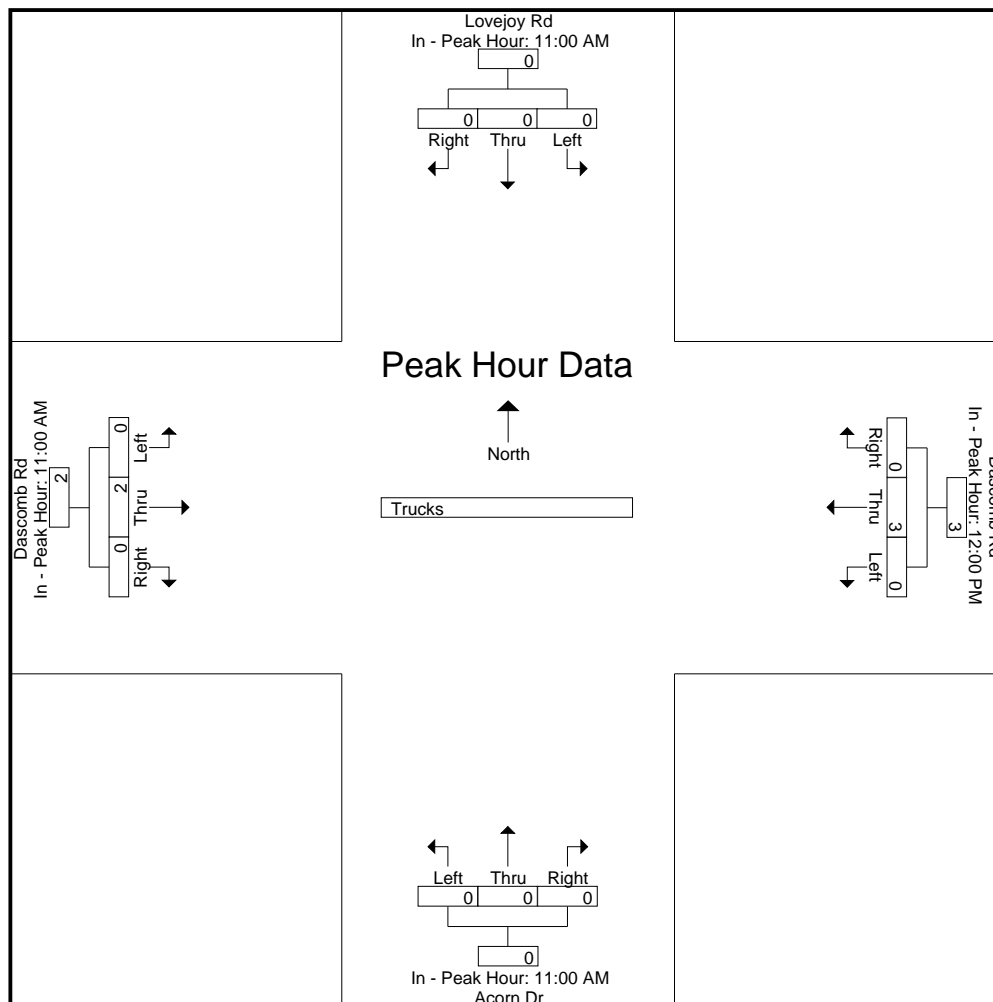
File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 9

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM				12:00 PM				11:00 AM				11:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.500	.000	.500



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
11:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	1	2	3
<b>Total</b>	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	4	4	3	7
12:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2
<b>Grand Total</b>	1	0	0	0	0	0	2	0	0	0	0	0	1	1	0	4	4	5	9
<b>Apprch %</b>	100	0	0		0	0	100		0	0	0		50	50	0				
<b>Total %</b>	20	0	0		0	0	40		0	0	0		20	20	0		44.4	55.6	

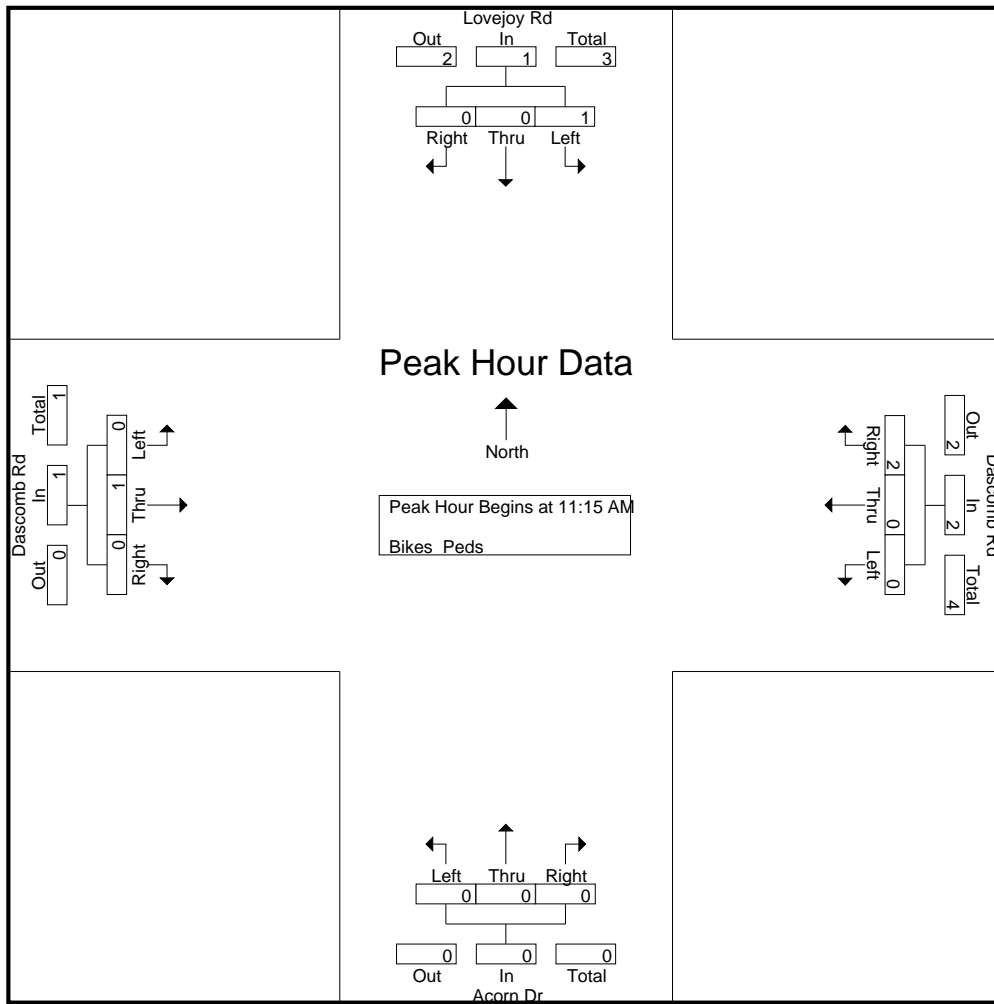
# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 11

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
<b>Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1</b>																	
<b>Peak Hour for Entire Intersection Begins at 11:15 AM</b>																	
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	2
12:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total Volume</b>	1	0	0	1	0	0	2	2	0	0	0	0	0	1	0	1	4
<b>% App. Total</b>	100	0	0		0	0	100		0	0	0		0	100	0		
<b>PHF</b>	.250	.000	.000	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250	.500



# Accurate Counts

978-664-2565

N/S Street : Lovejoy Road / Acorn Drive  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

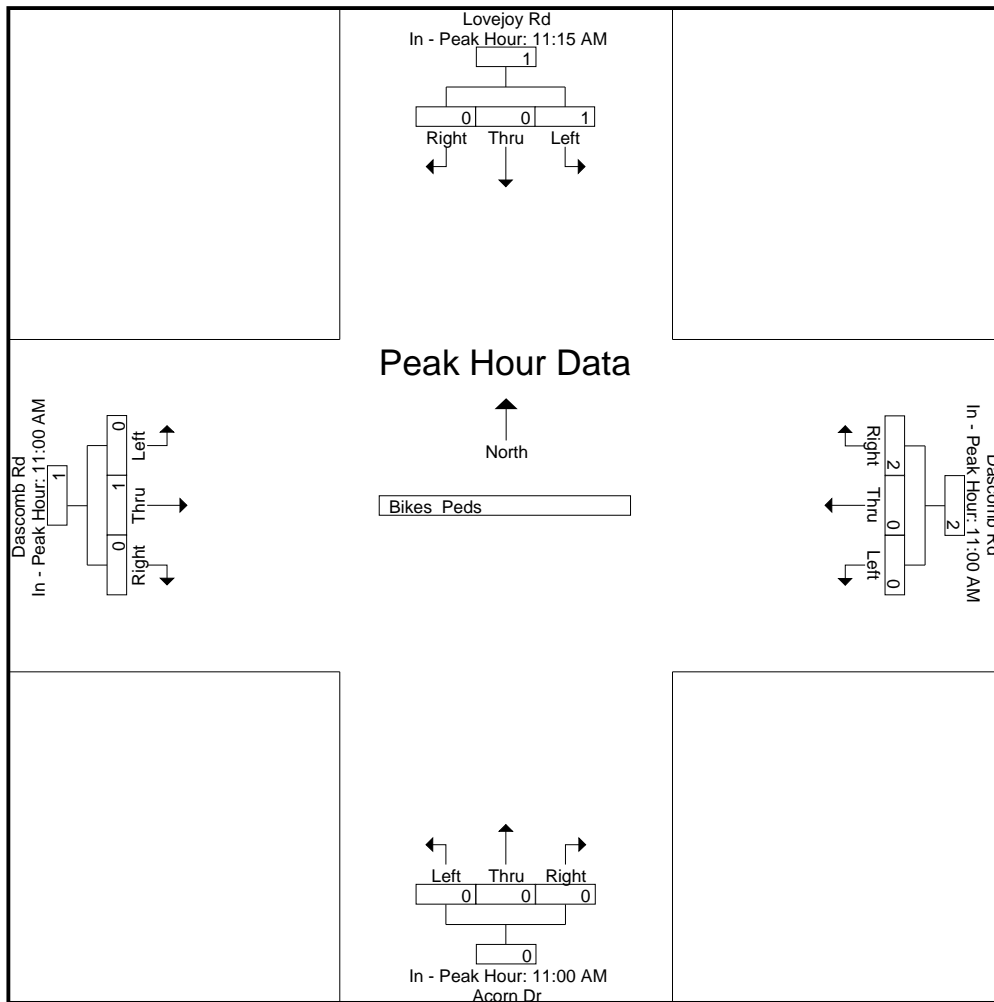
File Name : 052500S4  
 Site Code : 05250004  
 Start Date : 9/22/2018  
 Page No : 12

Start Time	Lovejoy Rd From North				Dascomb Rd From East				Acorn Dr From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	1	0	0	1	0	0	2	2	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	2	2	0	0	0	0	0	1	0	1
% App. Total	100	0	0		0	0	100		0	0	0		0	100	0	
PHF	.250	.000	.000	.250	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 1

### Groups Printed- Cars - Trucks

Start Time	Andover St From North			Dwy From East			Andover St From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	19	68	0	0	0	4	28	0	56	1	0	176
11:15 AM	0	20	80	0	0	1	4	25	0	51	0	4	185
11:30 AM	0	20	69	0	0	0	1	42	0	64	1	1	198
11:45 AM	0	30	62	0	0	0	1	27	0	79	0	4	203
<b>Total</b>	<b>0</b>	<b>89</b>	<b>279</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>10</b>	<b>122</b>	<b>0</b>	<b>250</b>	<b>2</b>	<b>9</b>	<b>762</b>
12:00 PM	0	19	69	0	0	0	3	19	0	71	1	4	186
12:15 PM	0	23	66	0	1	1	2	16	0	67	0	2	178
12:30 PM	0	12	84	0	0	2	2	31	0	70	1	5	207
12:45 PM	1	25	79	0	0	0	4	17	0	84	0	2	212
<b>Total</b>	<b>1</b>	<b>79</b>	<b>298</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>11</b>	<b>83</b>	<b>0</b>	<b>292</b>	<b>2</b>	<b>13</b>	<b>783</b>
<b>Grand Total</b>	<b>1</b>	<b>168</b>	<b>577</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>21</b>	<b>205</b>	<b>0</b>	<b>542</b>	<b>4</b>	<b>22</b>	<b>1545</b>
Apprch %	0.1	22.5	77.3	0	20	80	9.3	90.7	0	95.4	0.7	3.9	
Total %	0.1	10.9	37.3	0	0.1	0.3	1.4	13.3	0	35.1	0.3	1.4	
Cars	1	168	575	0	1	4	19	205	0	540	4	21	1538
% Cars	100	100	99.7	0	100	100	90.5	100	0	99.6	100	95.5	99.5
Trucks	0	0	2	0	0	0	2	0	0	2	0	1	7
% Trucks	0	0	0.3	0	0	0	9.5	0	0	0.4	0	4.5	0.5

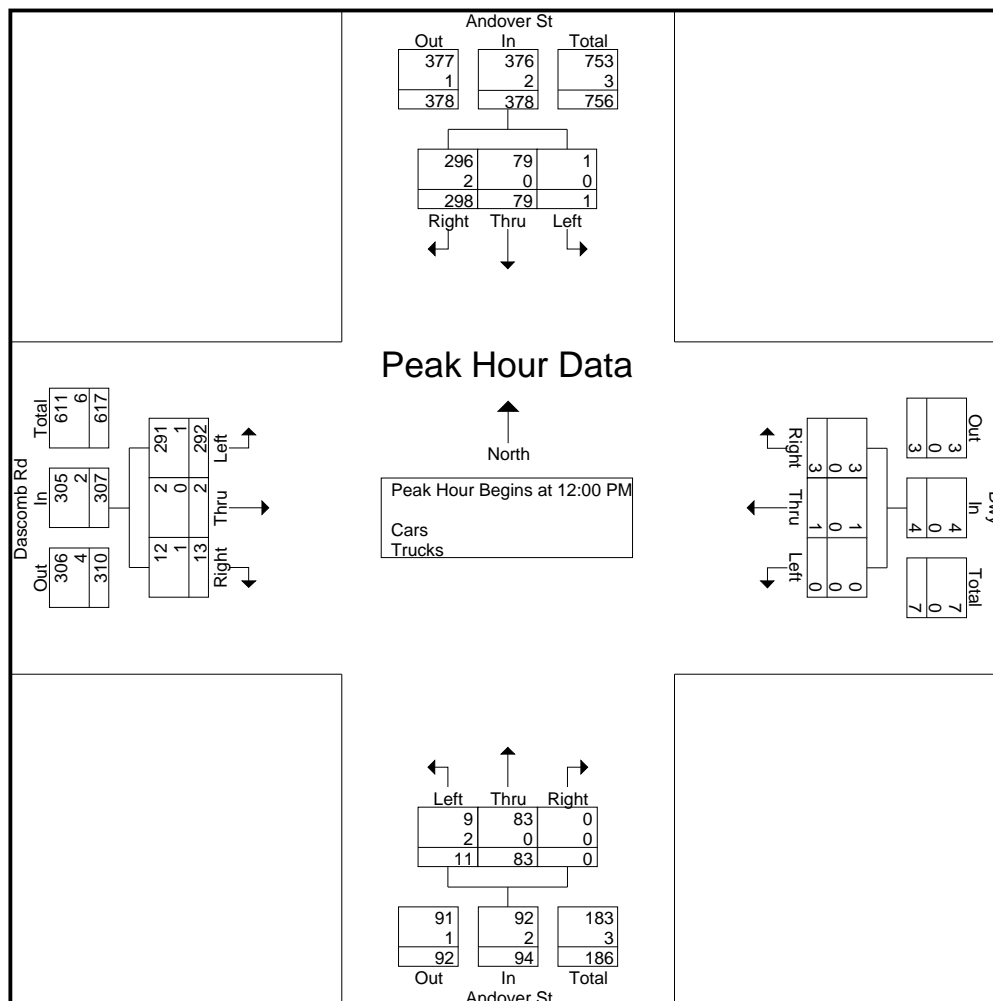
# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 2

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	19	69	88	0	0	0	0	3	19	0	22	71	1	4	76	186
12:15 PM	0	23	66	89	0	1	1	2	2	16	0	18	67	0	2	69	178
12:30 PM	0	12	<b>84</b>	96	0	0	2	2	2	<b>31</b>	0	<b>33</b>	70	1	<b>5</b>	76	207
12:45 PM	<b>1</b>	<b>25</b>	79	<b>105</b>	0	0	0	0	<b>4</b>	17	0	21	<b>84</b>	0	2	<b>86</b>	<b>212</b>
Total Volume	1	79	298	378	0	1	3	4	11	83	0	94	292	2	13	307	783
% App. Total	0.3	20.9	78.8		0	25	75		11.7	88.3	0		95.1	0.7	4.2		
PHF	.250	.790	.887	.900	.000	.250	.375	.500	.688	.669	.000	.712	.869	.500	.650	.892	.923
Cars	1	79	296	376	0	1	3	4	9	83	0	92	291	2	12	305	777
% Cars	100	100	99.3	99.5	0	100	100	100	81.8	100	0	97.9	99.7	100	92.3	99.3	99.2
Trucks	0	0	2	2	0	0	0	0	2	0	0	2	1	0	1	2	6
% Trucks	0	0	0.7	0.5	0	0	0	0	18.2	0	0	2.1	0.3	0	7.7	0.7	0.8



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

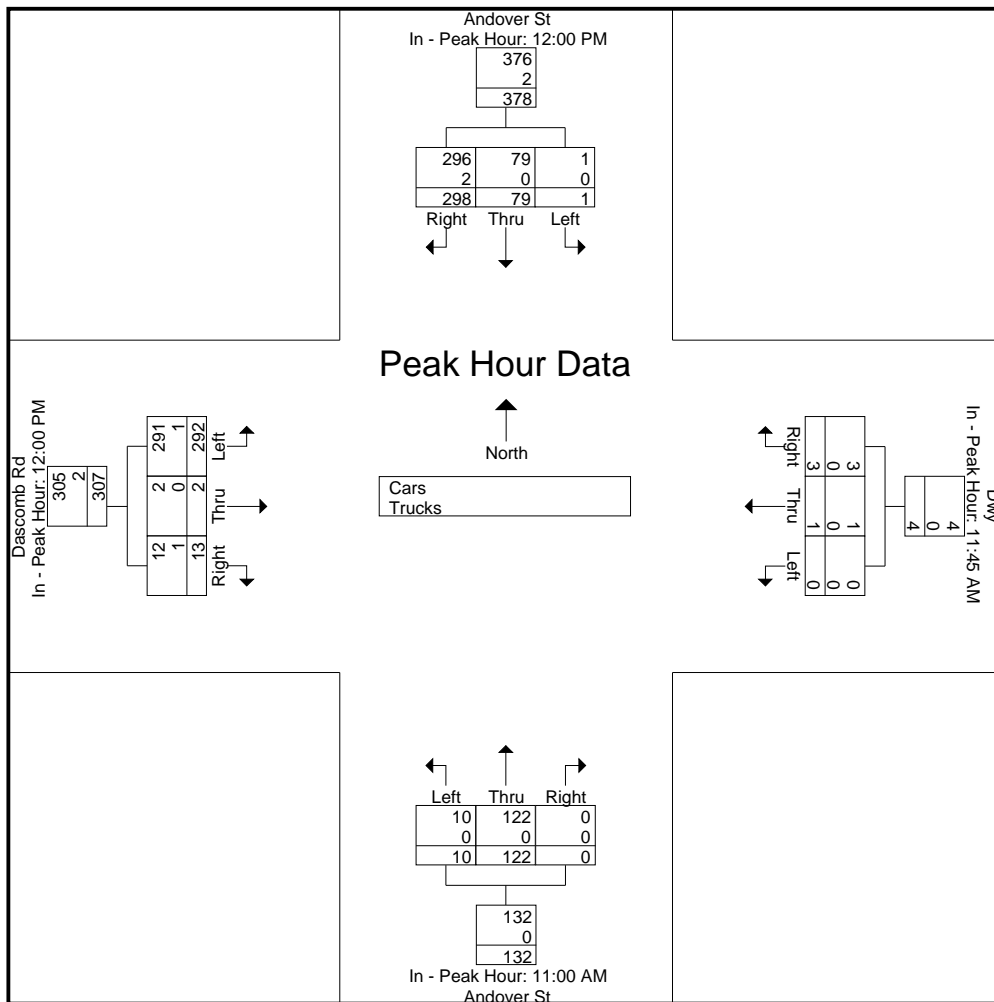
File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM				11:45 AM				11:00 AM				12:00 PM			
+0 mins.	0	19	69	88	0	0	0	0	4	28	0	32	71	1	4	76
+15 mins.	0	23	66	89	0	0	0	0	4	25	0	29	67	0	2	69
+30 mins.	0	12	84	96	0	1	1	2	1	42	0	43	70	1	5	76
+45 mins.	1	25	79	105	0	0	2	2	1	27	0	28	84	0	2	86
Total Volume	1	79	298	378	0	1	3	4	10	122	0	132	292	2	13	307
% App. Total	0.3	20.9	78.8		0	25	75		7.6	92.4	0		95.1	0.7	4.2	
PHF	.250	.790	.887	.900	.000	.250	.375	.500	.625	.726	.000	.767	.869	.500	.650	.892
Cars	1	79	296	376	0	1	3	4	10	122	0	132	291	2	12	305
% Cars	100	100	99.3	99.5	0	100	100	100	100	100	0	100	99.7	100	92.3	99.3
Trucks	0	0	2	2	0	0	0	0	0	0	0	0	1	0	1	2
% Trucks	0	0	0.7	0.5	0	0	0	0	0	0	0	0	0.3	0	7.7	0.7



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Andover St From North			Dwy From East			Andover St From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	19	68	0	0	0	4	28	0	56	1	0	176
11:15 AM	0	20	80	0	0	1	4	25	0	51	0	4	185
11:30 AM	0	20	69	0	0	0	1	42	0	64	1	1	198
11:45 AM	0	30	62	0	0	0	1	27	0	78	0	4	202
Total	0	89	279	0	0	1	10	122	0	249	2	9	761
12:00 PM	0	19	68	0	0	0	3	19	0	71	1	4	185
12:15 PM	0	23	66	0	1	1	1	16	0	66	0	2	176
12:30 PM	0	12	84	0	0	2	1	31	0	70	1	5	206
12:45 PM	1	25	78	0	0	0	4	17	0	84	0	1	210
Total	1	79	296	0	1	3	9	83	0	291	2	12	777
Grand Total	1	168	575	0	1	4	19	205	0	540	4	21	1538
Apprch %	0.1	22.6	77.3	0	20	80	8.5	91.5	0	95.6	0.7	3.7	
Total %	0.1	10.9	37.4	0	0.1	0.3	1.2	13.3	0	35.1	0.3	1.4	

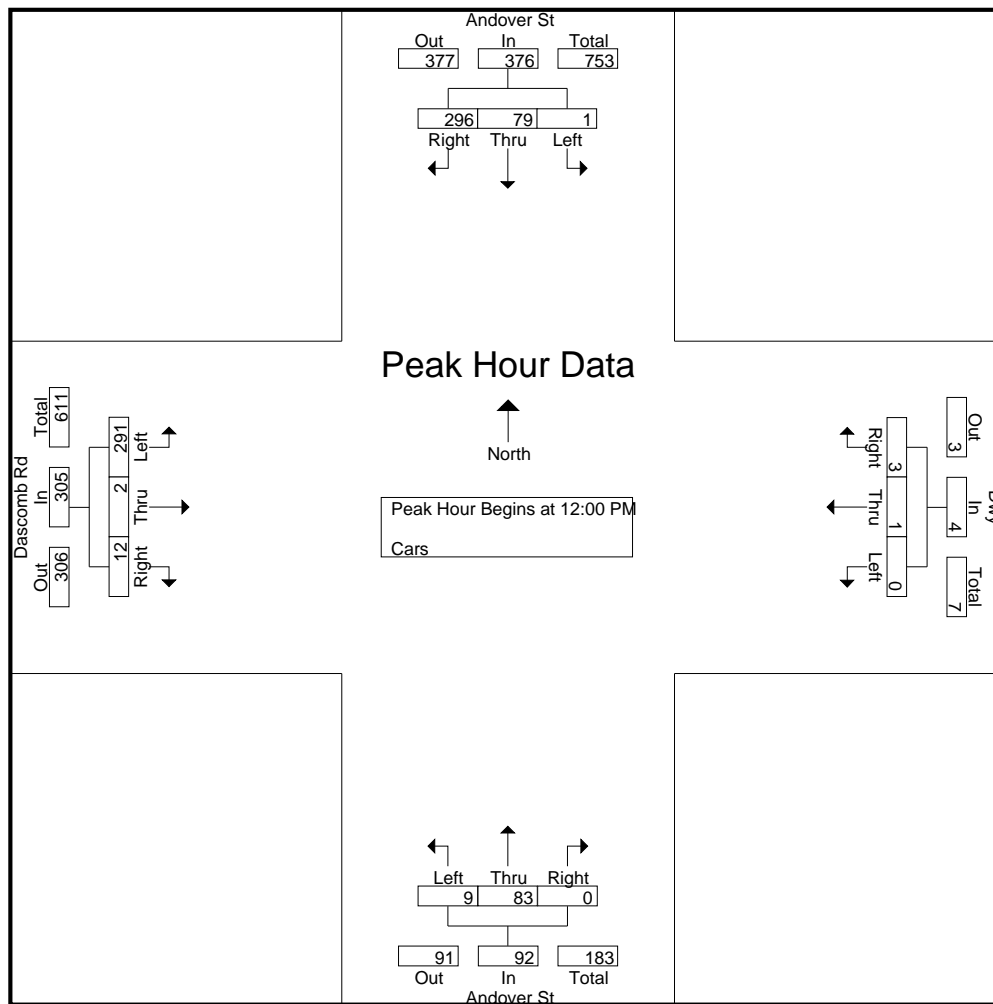
# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 5

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	19	68	87	0	0	0	0	3	19	0	22	71	1	4	76	185
12:15 PM	0	23	66	89	0	1	1	2	1	16	0	17	66	0	2	68	176
12:30 PM	0	12	84	96	0	0	2	2	1	31	0	32	70	1	5	76	206
12:45 PM	1	25	78	104	0	0	0	0	4	17	0	21	84	0	1	85	210
Total Volume	1	79	296	376	0	1	3	4	9	83	0	92	291	2	12	305	777
% App. Total	0.3	21	78.7		0	25	75		9.8	90.2	0		95.4	0.7	3.9		
PHF	.250	.790	.881	.904	.000	.250	.375	.500	.563	.669	.000	.719	.866	.500	.600	.897	.925



# Accurate Counts

978-664-2565

File Name : 052500S5

Site Code : 05250005

Start Date : 9/22/2018

Page No : 6

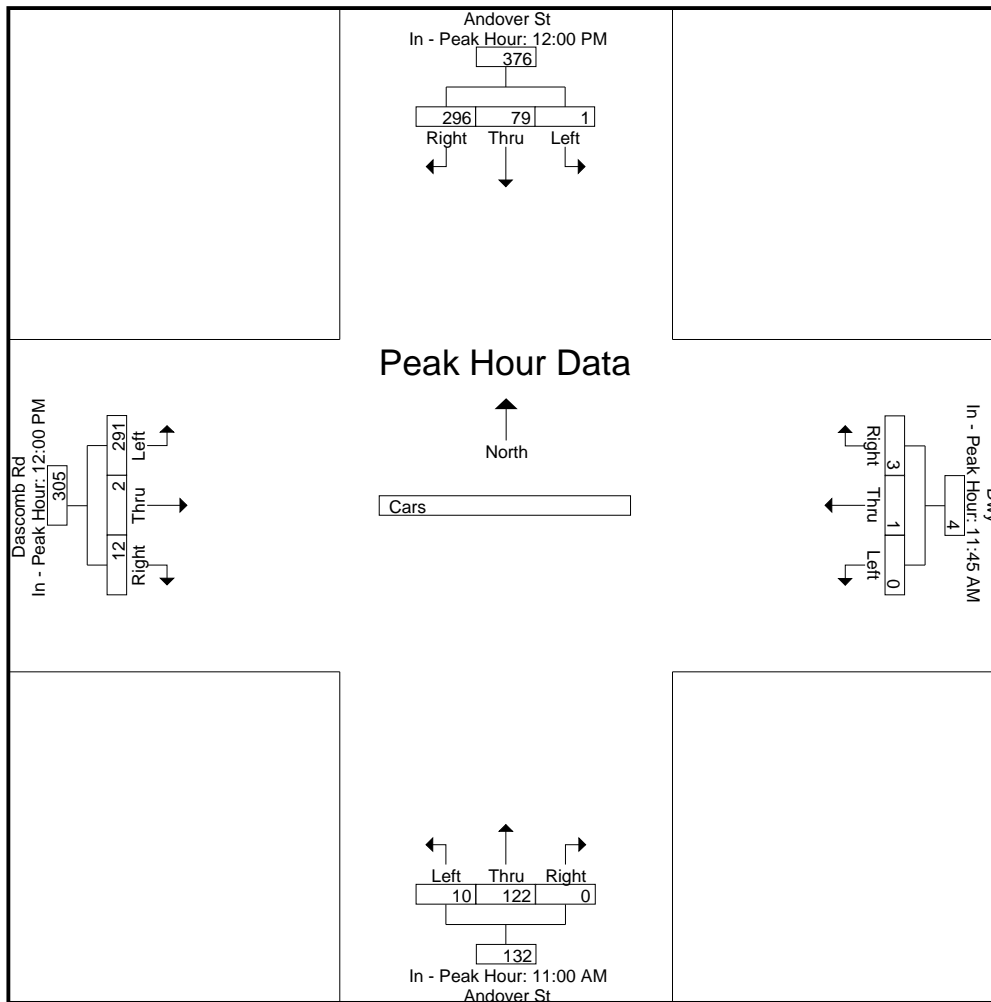
N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM				11:45 AM				11:00 AM				12:00 PM			
+0 mins.	0	19	68	87	0	0	0	0	4	28	0	32	71	1	4	76
+15 mins.	0	23	66	89	0	0	0	0	4	25	0	29	66	0	2	68
+30 mins.	0	12	84	96	0	1	1	2	1	42	0	43	70	1	5	76
+45 mins.	1	25	78	104	0	0	2	2	1	27	0	28	84	0	1	85
Total Volume	1	79	296	376	0	1	3	4	10	122	0	132	291	2	12	305
% App. Total	0.3	21	78.7		0	25	75		7.6	92.4	0		95.4	0.7	3.9	
PHF	.250	.790	.881	.904	.000	.250	.375	.500	.625	.726	.000	.767	.866	.500	.600	.897



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Andover St From North			Dwy From East			Andover St From South			Dascomb Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	0	0	0	0	0	0	0	1	0	0	1
12:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	2
12:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
12:45 PM	0	0	1	0	0	0	0	0	0	0	0	1	2
Total	0	0	2	0	0	0	2	0	0	1	0	1	6
Grand Total	0	0	2	0	0	0	2	0	0	2	0	1	7
Apprch %	0	0	100	0	0	0	100	0	0	66.7	0	33.3	
Total %	0	0	28.6	0	0	0	28.6	0	0	28.6	0	14.3	

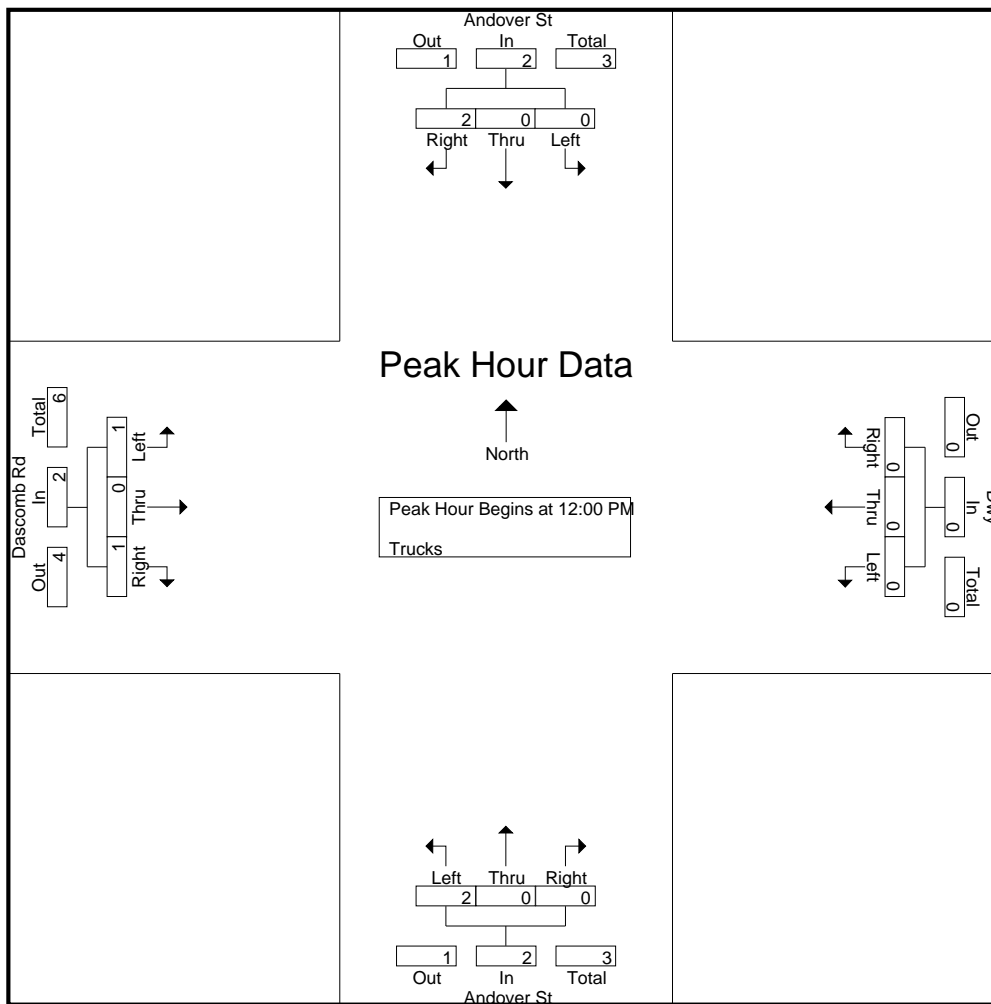
# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 8

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 12:00 PM																		
12:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1	2
12:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
12:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Total Volume	0	0	2	2	0	0	0	0	0	2	0	0	2	1	0	1	2	6
% App. Total	0	0	100		0	0	0			100	0	0		50	0	50		
PHF	.000	.000	.500	.500	.000	.000	.000	.000	.000	.500	.000	.000	.500	.250	.000	.250	.500	.750



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

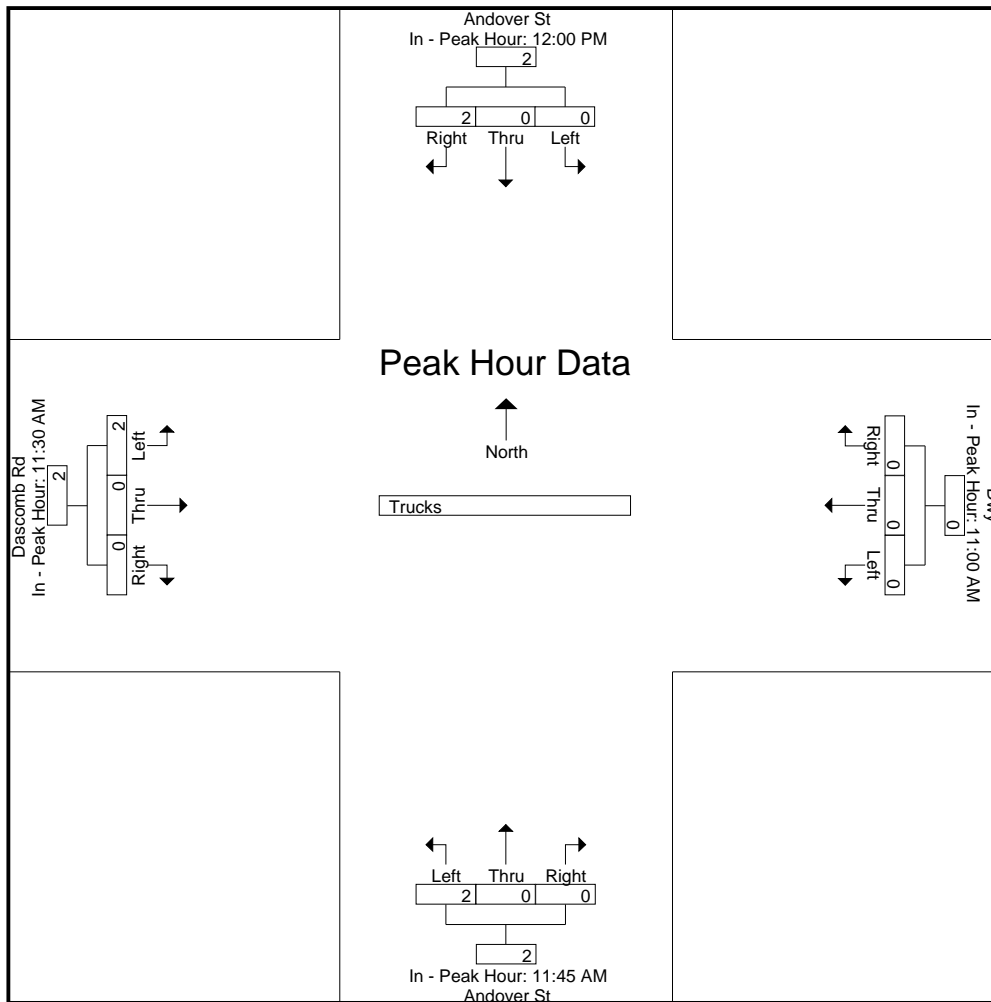
File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 9

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM				11:00 AM				11:45 AM				11:30 AM			
+0 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
+45 mins.	0	0	1	1	0	0	0	0	1	0	0	1	1	0	0	1
Total Volume	0	0	2	2	0	0	0	0	2	0	0	2	2	0	0	2
% App. Total	0	0	100		0	0	0		100	0	0		100	0	0	
PHF	.000	.000	.500	.500	.000	.000	.000	.000	.500	.000	.000	.500	.500	.000	.000	.500



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
<b>Total</b>	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total</b>	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	3
Apprch %	0	100	0		0	0	0		0	0	0		0	0	0				
Total %	0	100	0		0	0	0		0	0	0		0	0	0		33.3	66.7	

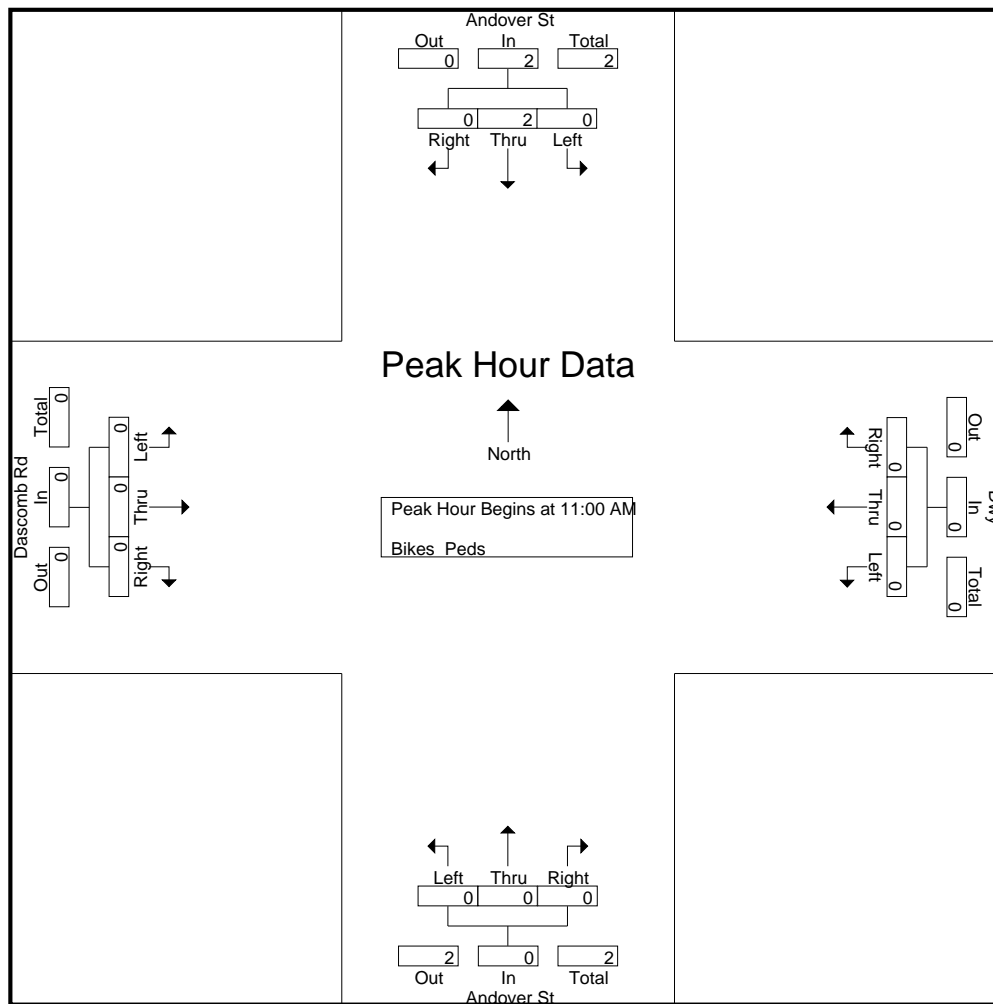
# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 11

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	<b>2</b>	0	<b>2</b>	0	0	0	0	0	0	0	0	0	0	0	0	<b>2</b>
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Andover Street  
 E/W Street: Dascomb Road / Driveway  
 City/State : Andover, MA  
 Weather : Clear

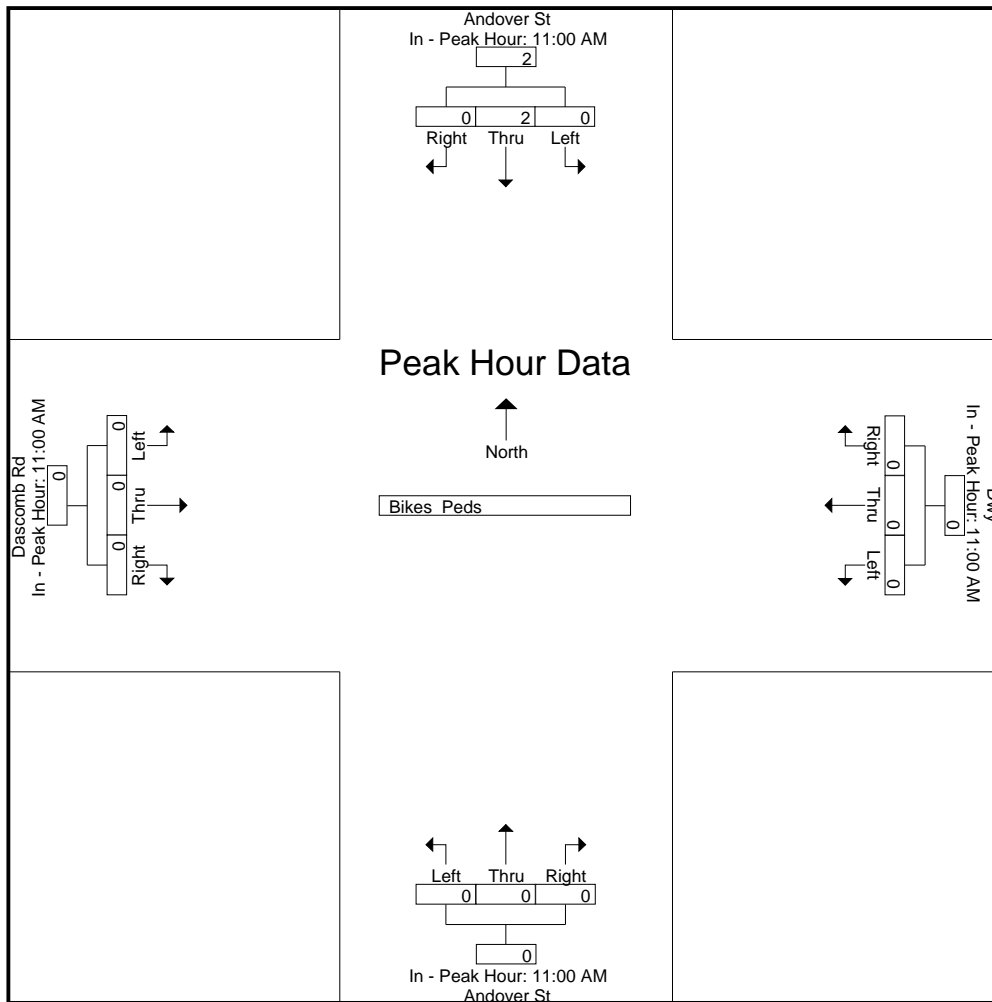
File Name : 052500S5  
 Site Code : 05250005  
 Start Date : 9/22/2018  
 Page No : 12

Start Time	Andover St From North				Dwy From East				Andover St From South				Dascomb Rd From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S6  
 Site Code : 05250006  
 Start Date : 9/22/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	20	193	5	20	253	6	497
11:15 AM	11	199	4	13	209	1	437
11:30 AM	19	217	7	17	216	6	482
11:45 AM	22	197	2	18	224	1	464
Total	72	806	18	68	902	14	1880
12:00 PM	19	197	5	15	253	5	494
12:15 PM	14	187	2	16	238	7	464
12:30 PM	28	197	6	17	209	4	461
12:45 PM	18	199	11	25	204	4	461
Total	79	780	24	73	904	20	1880
Grand Total	151	1586	42	141	1806	34	3760
Apprch %	8.7	91.3	23	77	98.2	1.8	
Total %	4	42.2	1.1	3.8	48	0.9	
Cars	150	1551	42	140	1790	34	3707
% Cars	99.3	97.8	100	99.3	99.1	100	98.6
Trucks	1	35	0	1	16	0	53
% Trucks	0.7	2.2	0	0.7	0.9	0	1.4

# Accurate Counts

978-664-2565

File Name : 052500S6

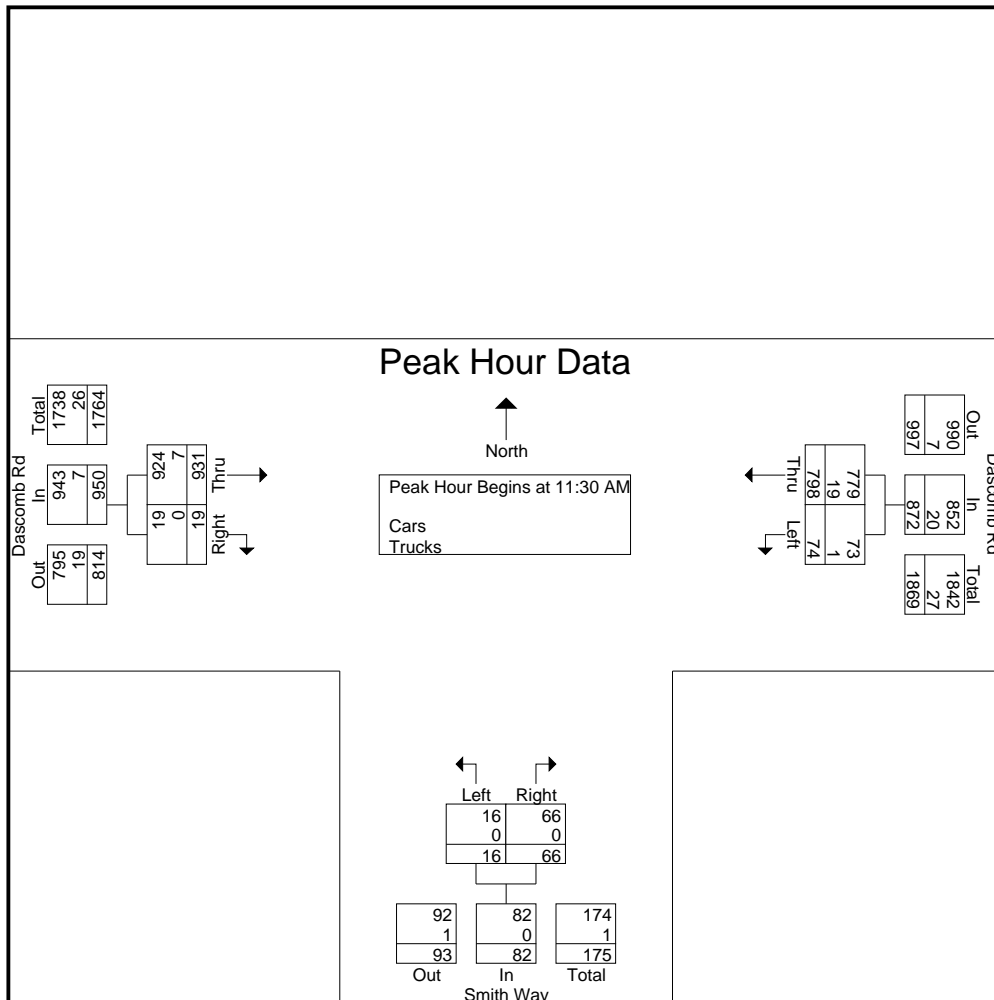
Site Code : 05250006

Start Date : 9/22/2018

Page No : 2

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	19	<b>217</b>	<b>236</b>	<b>7</b>	17	<b>24</b>	216	6	222	482
11:45 AM	<b>22</b>	197	219	2	<b>18</b>	20	224	1	225	464
12:00 PM	19	197	216	5	15	20	<b>253</b>	5	<b>258</b>	<b>494</b>
12:15 PM	14	187	201	2	16	18	238	<b>7</b>	245	464
<b>Total Volume</b>	74	798	872	16	66	82	931	19	950	1904
<b>% App. Total</b>	8.5	91.5		19.5	80.5		98	2		
PHF	.841	.919	.924	.571	.917	.854	.920	.679	.921	.964
Cars	73	779	852	16	66	82	924	19	943	1877
<b>% Cars</b>	98.6	97.6	97.7	100	100	100	99.2	100	99.3	98.6
Trucks	1	19	20	0	0	0	7	0	7	27
<b>% Trucks</b>	1.4	2.4	2.3	0	0	0	0.8	0	0.7	1.4



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

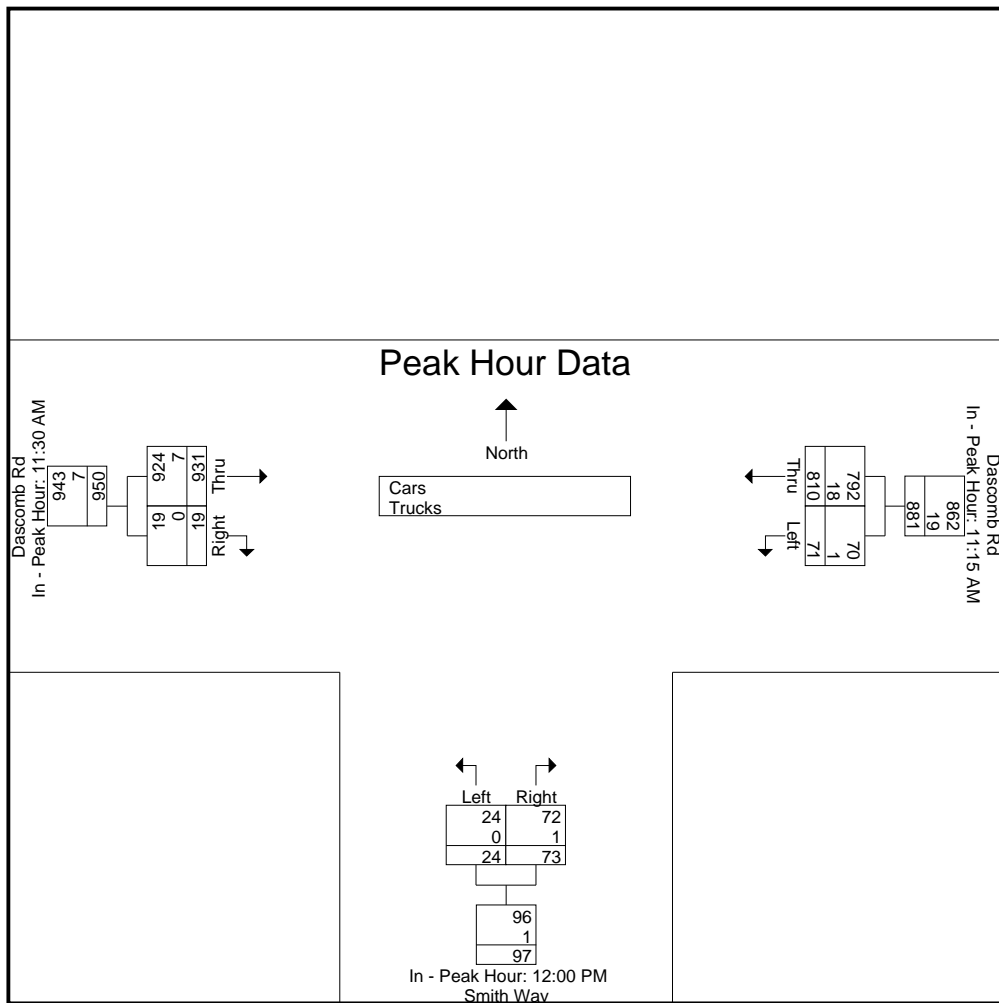
File Name : 052500S6  
 Site Code : 05250006  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM			12:00 PM			11:30 AM		
+0 mins.	11	199	210	5	15	20	216	6	222
+15 mins.	19	<b>217</b>	<b>236</b>	2	16	18	224	1	225
+30 mins.	<b>22</b>	197	219	6	17	23	<b>253</b>	5	<b>258</b>
+45 mins.	19	197	216	<b>11</b>	<b>25</b>	<b>36</b>	238	<b>7</b>	245
Total Volume	71	810	881	24	73	97	931	19	950
% App. Total	8.1	91.9		24.7	75.3		98	2	
PHF	.807	.933	.933	.545	.730	.674	.920	.679	.921
Cars	70	792	862	24	72	96	924	19	943
% Cars	98.6	97.8	97.8	100	98.6	99	99.2	100	99.3
Trucks	1	18	19	0	1	1	7	0	7
% Trucks	1.4	2.2	2.2	0	1.4	1	0.8	0	0.7



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S6  
 Site Code : 05250006  
 Start Date : 9/22/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	20	182	5	20	249	6	482
11:15 AM	11	196	4	13	206	1	431
11:30 AM	19	209	7	17	214	6	472
11:45 AM	22	192	2	18	222	1	457
Total	72	779	18	68	891	14	1842
12:00 PM	18	195	5	15	252	5	490
12:15 PM	14	183	2	16	236	7	458
12:30 PM	28	196	6	16	208	4	458
12:45 PM	18	198	11	25	203	4	459
Total	78	772	24	72	899	20	1865
Grand Total	150	1551	42	140	1790	34	3707
Apprch %	8.8	91.2	23.1	76.9	98.1	1.9	
Total %	4	41.8	1.1	3.8	48.3	0.9	

# Accurate Counts

978-664-2565

File Name : 052500S6

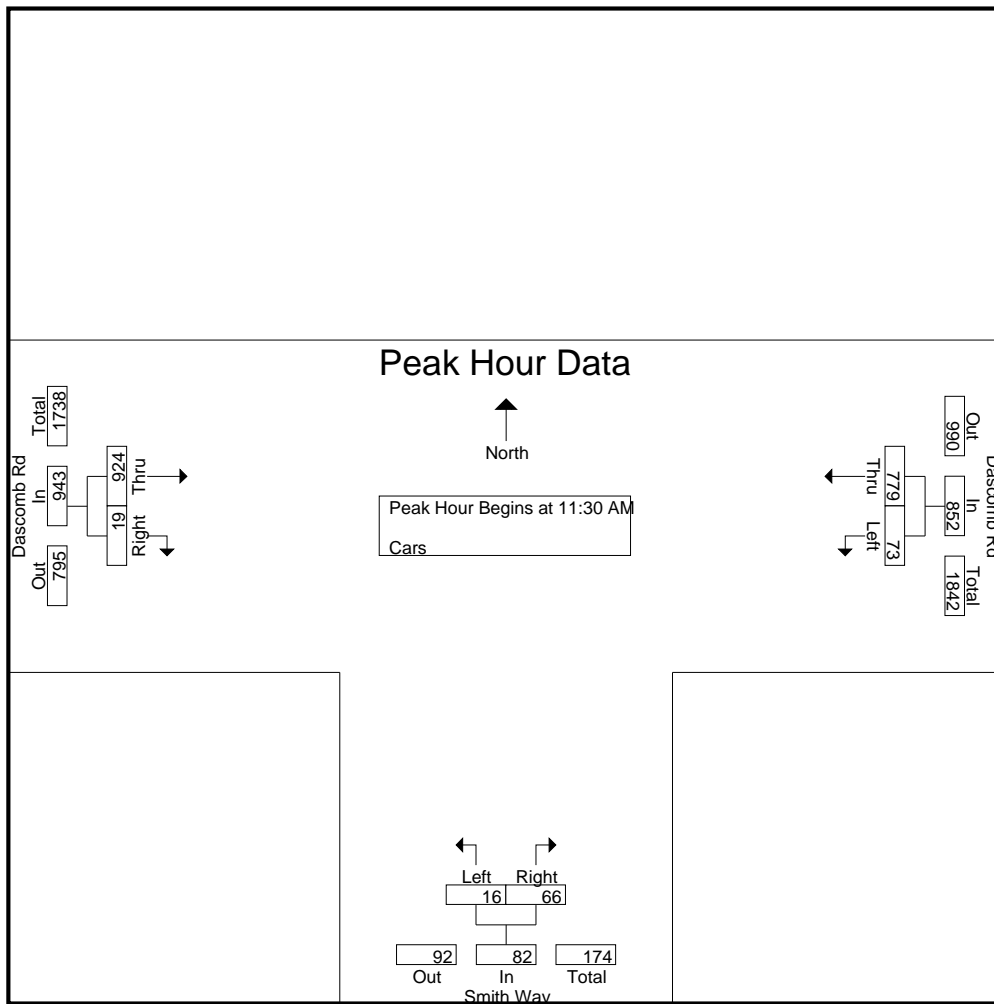
Site Code : 05250006

Start Date : 9/22/2018

Page No : 5

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	19	<b>209</b>	<b>228</b>	<b>7</b>	17	<b>24</b>	214	6	220	472
11:45 AM	<b>22</b>	192	214	2	<b>18</b>	20	222	1	223	457
12:00 PM	18	195	213	5	15	20	<b>252</b>	5	<b>257</b>	<b>490</b>
12:15 PM	14	183	197	2	16	18	236	<b>7</b>	243	458
Total Volume	73	779	852	16	66	82	924	19	943	1877
% App. Total	8.6	91.4		19.5	80.5		98	2		
PHF	.830	.932	.934	.571	.917	.854	.917	.679	.917	.958



# Accurate Counts

978-664-2565

File Name : 052500S6

Site Code : 05250006

Start Date : 9/22/2018

Page No : 6

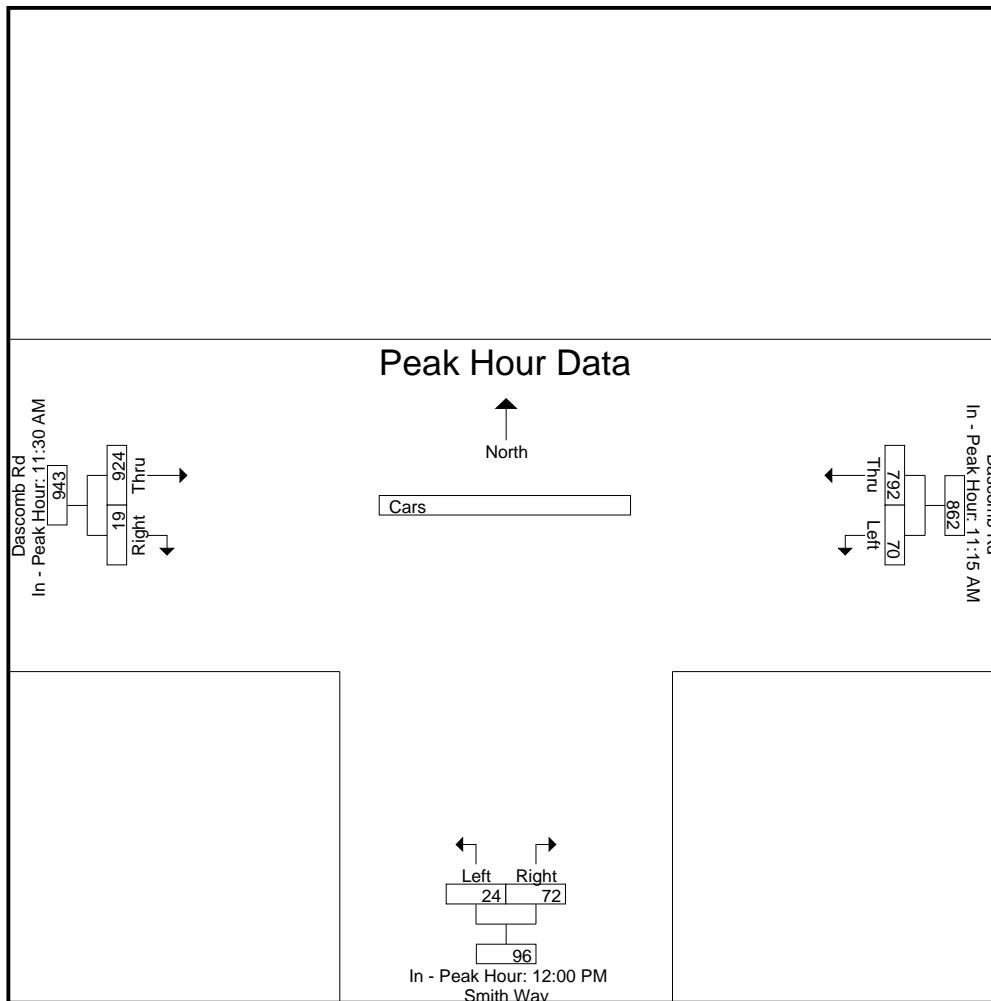
N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM			12:00 PM			11:30 AM		
+0 mins.	11	196	207	5	15	20	214	6	220
+15 mins.	19	<b>209</b>	<b>228</b>	2	16	18	222	1	223
+30 mins.	<b>22</b>	192	214	6	16	22	<b>252</b>	5	<b>257</b>
+45 mins.	18	195	213	<b>11</b>	<b>25</b>	<b>36</b>	236	<b>7</b>	243
Total Volume	70	792	862	24	72	96	924	19	943
% App. Total	8.1	91.9		25	75		98	2	
PHF	.795	.947	.945	.545	.720	.667	.917	.679	.917



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S6  
 Site Code : 05250006  
 Start Date : 9/22/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Dascomb Rd From East		Smith Way From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	0	11	0	0	4	0	15
11:15 AM	0	3	0	0	3	0	6
11:30 AM	0	8	0	0	2	0	10
11:45 AM	0	5	0	0	2	0	7
<b>Total</b>	<b>0</b>	<b>27</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>38</b>
12:00 PM	1	2	0	0	1	0	4
12:15 PM	0	4	0	0	2	0	6
12:30 PM	0	1	0	1	1	0	3
12:45 PM	0	1	0	0	1	0	2
<b>Total</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>15</b>
<b>Grand Total</b>	<b>1</b>	<b>35</b>	<b>0</b>	<b>1</b>	<b>16</b>	<b>0</b>	<b>53</b>
Apprch %	2.8	97.2	0	100	100	0	
Total %	1.9	66	0	1.9	30.2	0	

# Accurate Counts

978-664-2565

File Name : 052500S6

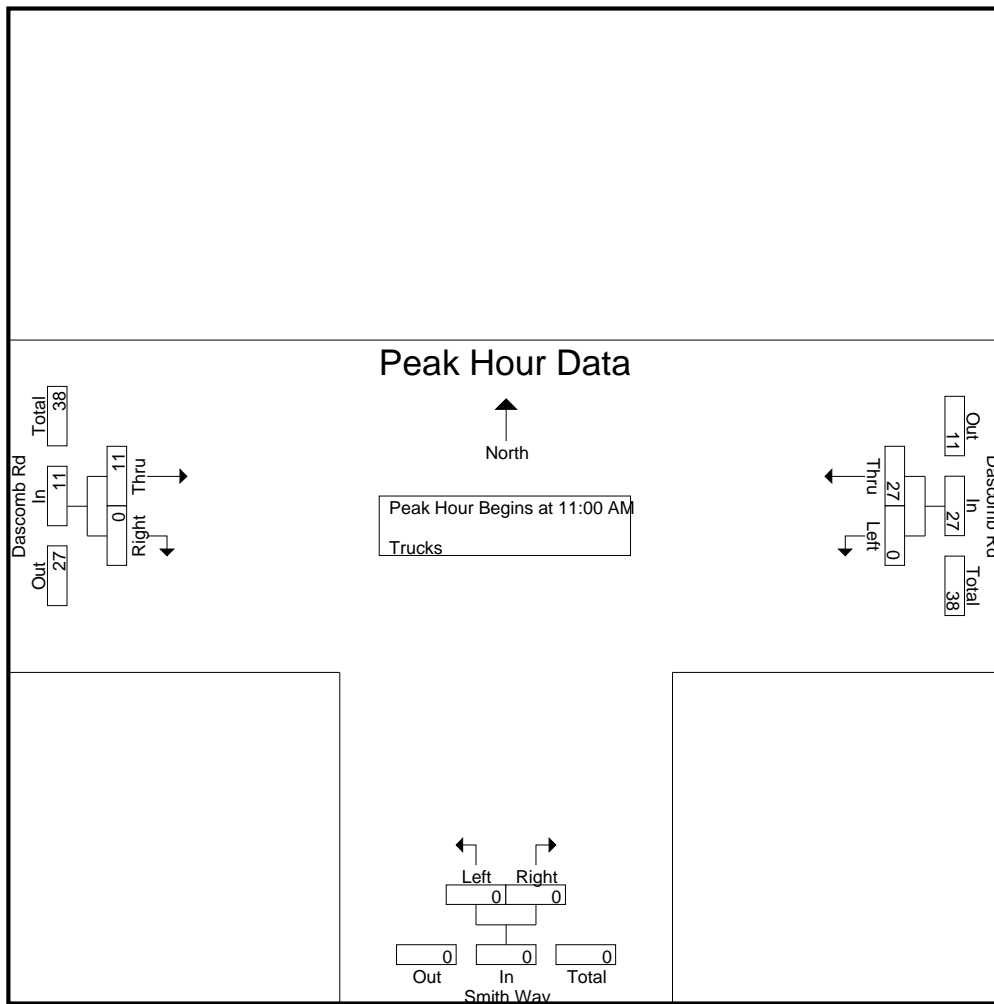
Site Code : 05250006

Start Date : 9/22/2018

Page No : 8

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	11	11	0	0	0	4	0	4	15
11:15 AM	0	3	3	0	0	0	3	0	3	6
11:30 AM	0	8	8	0	0	0	2	0	2	10
11:45 AM	0	5	5	0	0	0	2	0	2	7
<b>Total Volume</b>	0	27	27	0	0	0	11	0	11	38
<b>% App. Total</b>	0	100		0	0		100	0		
PHF	.000	.614	.614	.000	.000	.000	.688	.000	.688	.633



# Accurate Counts

978-664-2565

File Name : 052500S6

Site Code : 05250006

Start Date : 9/22/2018

Page No : 9

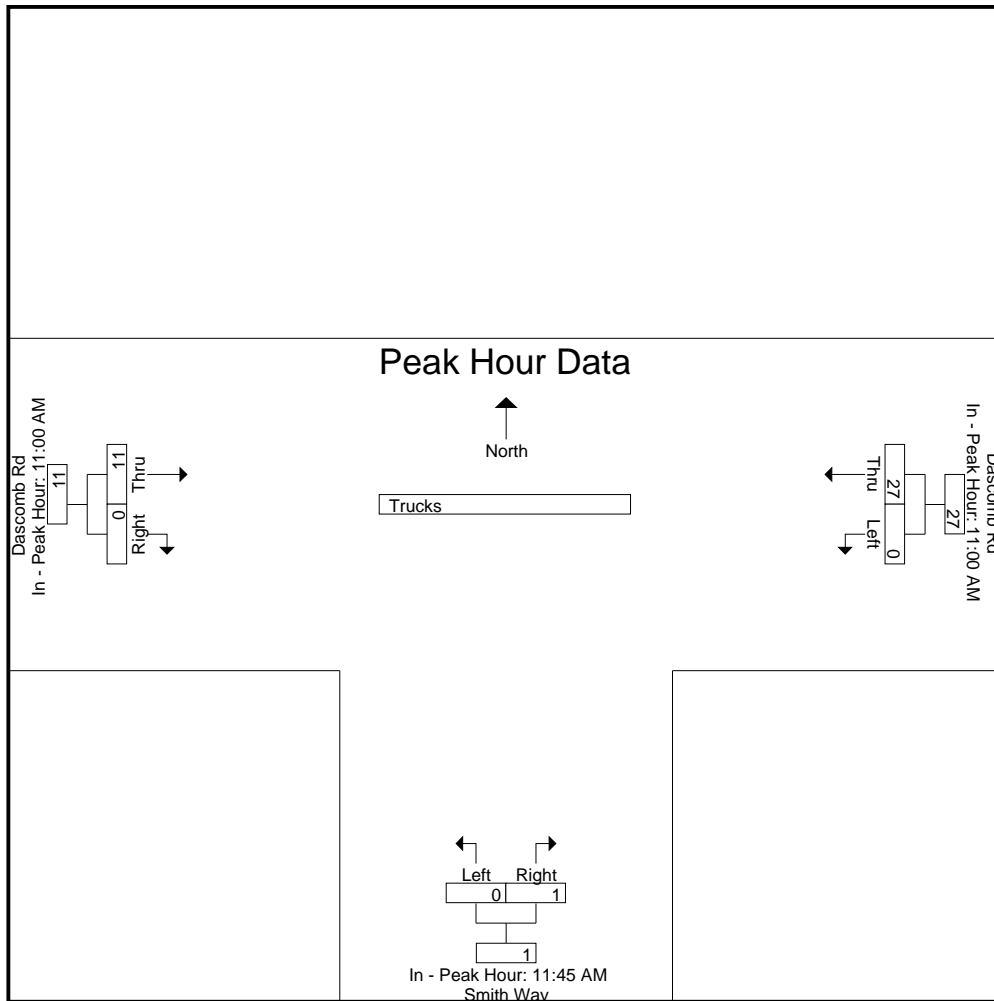
N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:45 AM			11:00 AM		
+0 mins.	0	11	11	0	0	0	4	0	4
+15 mins.	0	3	3	0	0	0	3	0	3
+30 mins.	0	8	8	0	0	0	2	0	2
+45 mins.	0	5	5	0	1	1	2	0	2
Total Volume	0	27	27	0	1	1	11	0	11
% App. Total	0	100		0	100		100	0	
PHF	.000	.614	.614	.000	.250	.250	.688	.000	.688



# Accurate Counts

978-664-2565

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S6  
 Site Code : 05250006  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0				
Total %										0	0	

# Accurate Counts

978-664-2565

File Name : 052500S6

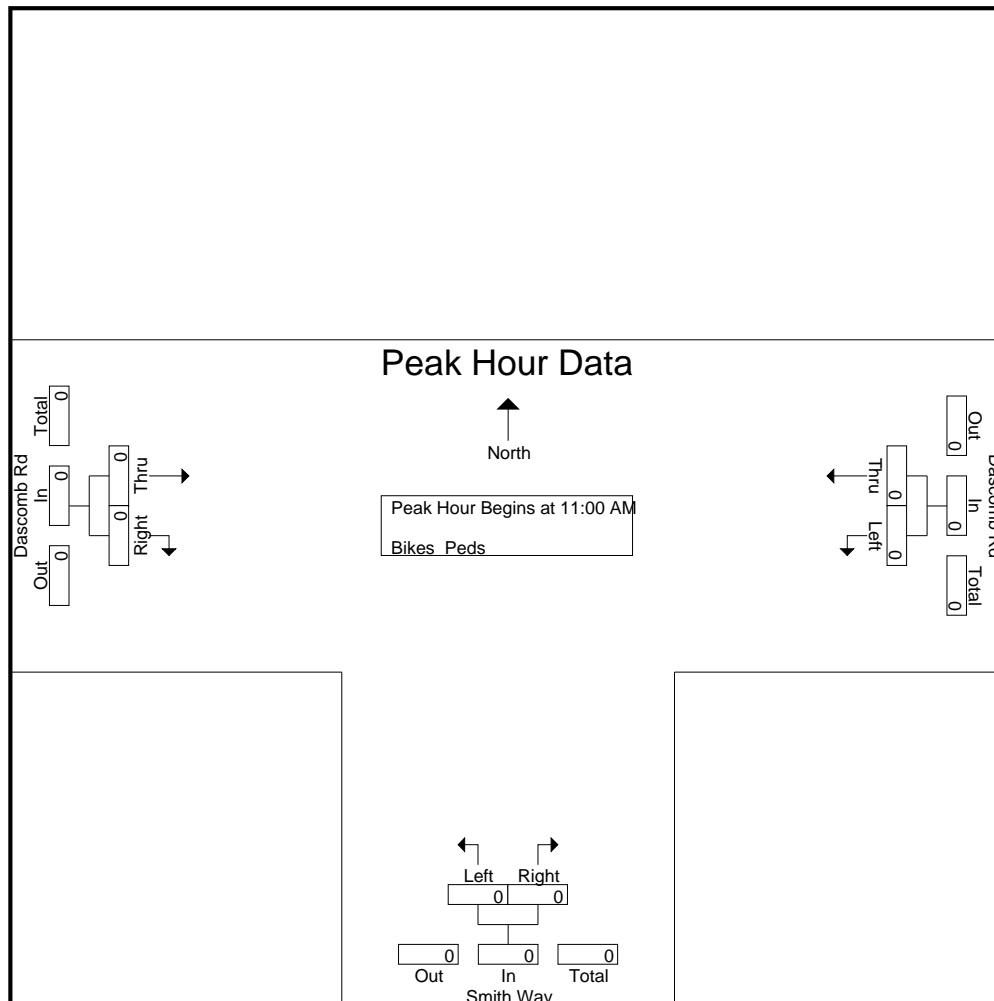
Site Code : 05250006

Start Date : 9/22/2018

Page No : 11

N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
<b>Total Volume</b>	0	0	0	0	0	0	0	0	0	0
<b>% App. Total</b>	0	0		0	0		0	0		
<b>PHF</b>	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

File Name : 052500S6

Site Code : 05250006

Start Date : 9/22/2018

Page No : 12

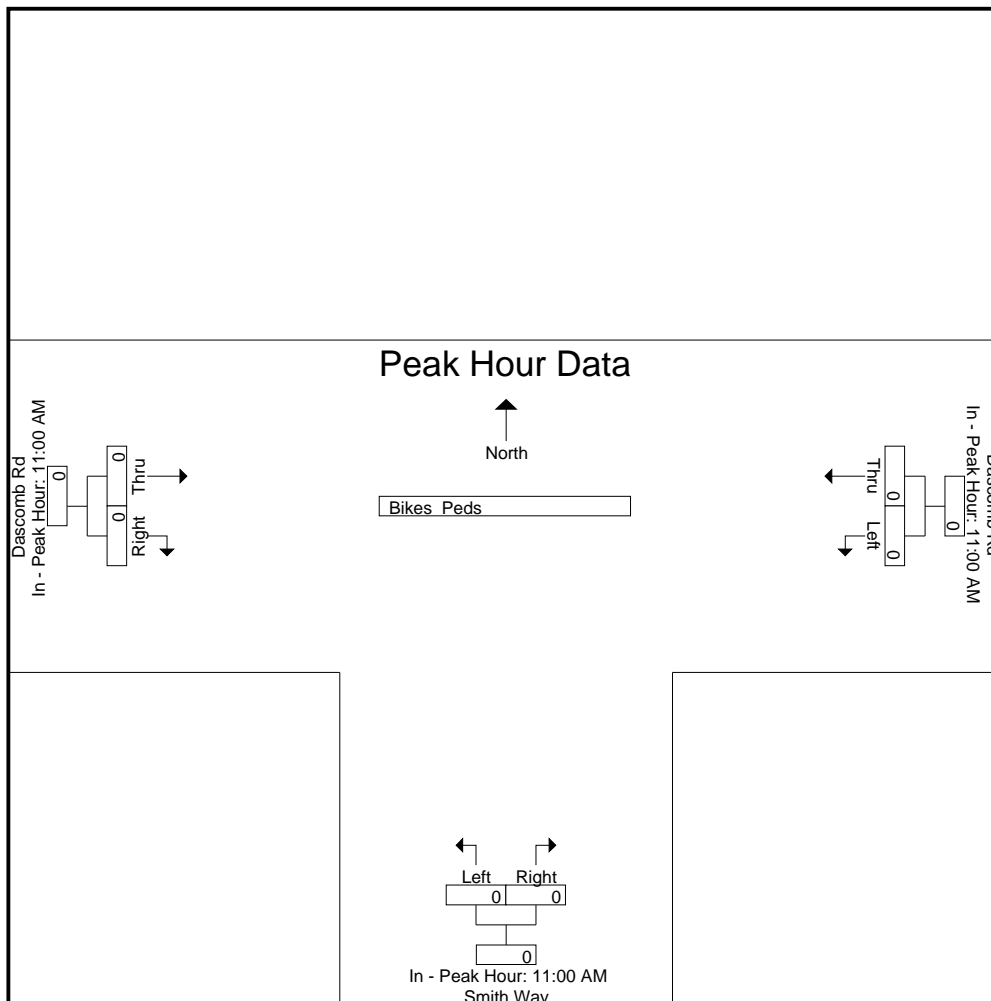
N/S Street : Smith Way  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Dascomb Rd From East			Smith Way From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	20	99	103	21	67	118	428
11:15 AM	16	109	87	38	67	96	413
11:30 AM	23	111	89	30	68	98	419
11:45 AM	29	101	80	33	63	89	395
Total	88	420	359	122	265	401	1655
12:00 PM	20	87	81	32	73	133	426
12:15 PM	21	91	83	38	65	122	420
12:30 PM	24	106	87	42	87	86	432
12:45 PM	21	97	100	52	69	106	445
Total	86	381	351	164	294	447	1723
Grand Total	174	801	710	286	559	848	3378
Apprch %	17.8	82.2	71.3	28.7	39.7	60.3	
Total %	5.2	23.7	21	8.5	16.5	25.1	
Cars	174	798	693	285	558	840	3348
% Cars	100	99.6	97.6	99.7	99.8	99.1	99.1
Trucks	0	3	17	1	1	8	30
% Trucks	0	0.4	2.4	0.3	0.2	0.9	0.9

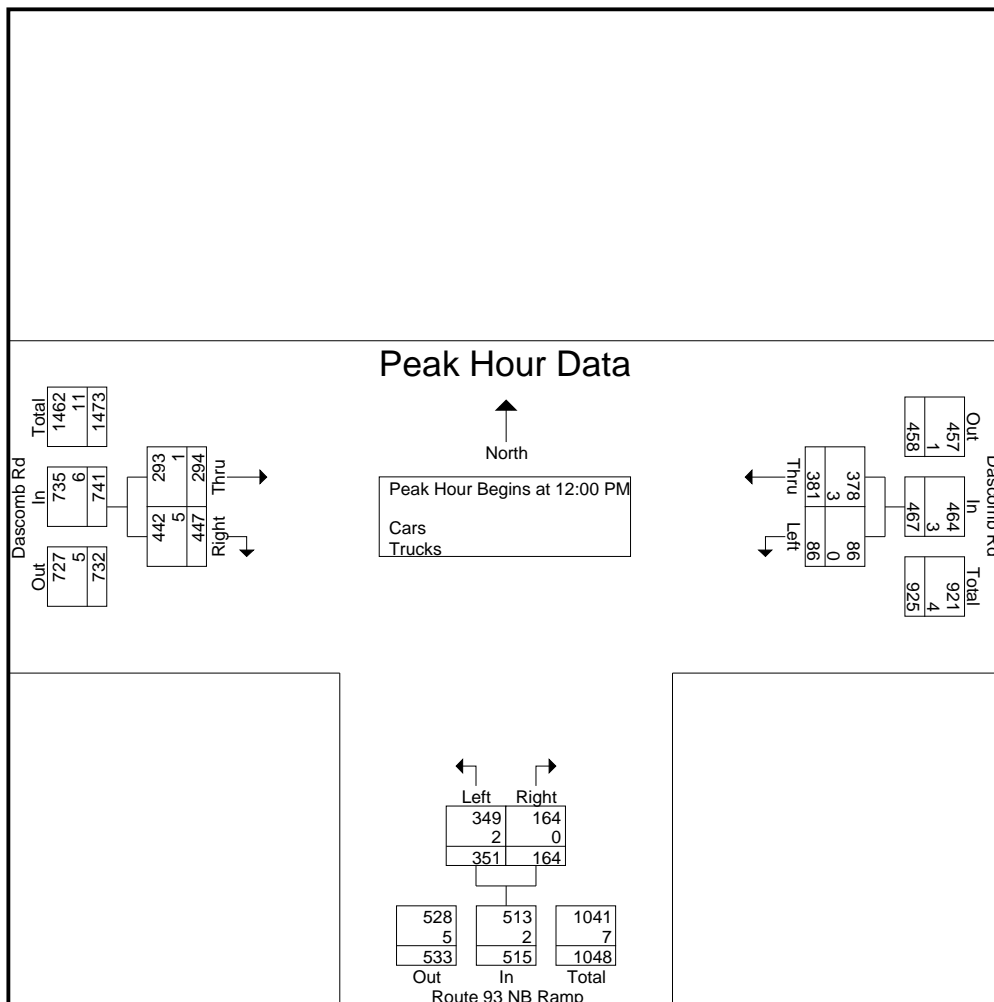
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 2

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	20	87	107	81	32	113	73	<b>133</b>	<b>206</b>	426
12:15 PM	21	91	112	83	38	121	65	122	187	420
12:30 PM	<b>24</b>	<b>106</b>	<b>130</b>	87	42	129	<b>87</b>	86	173	432
12:45 PM	21	97	118	<b>100</b>	<b>52</b>	<b>152</b>	69	106	175	<b>445</b>
Total Volume	86	381	467	351	164	515	294	447	741	1723
% App. Total	18.4	81.6		68.2	31.8		39.7	60.3		
PHF	.896	.899	.898	.878	.788	.847	.845	.840	.899	.968
Cars	86	378	464	349	164	513	293	442	735	1712
% Cars	100	99.2	99.4	99.4	100	99.6	99.7	98.9	99.2	99.4
Trucks	0	3	3	2	0	2	1	5	6	11
% Trucks	0	0.8	0.6	0.6	0	0.4	0.3	1.1	0.8	0.6



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

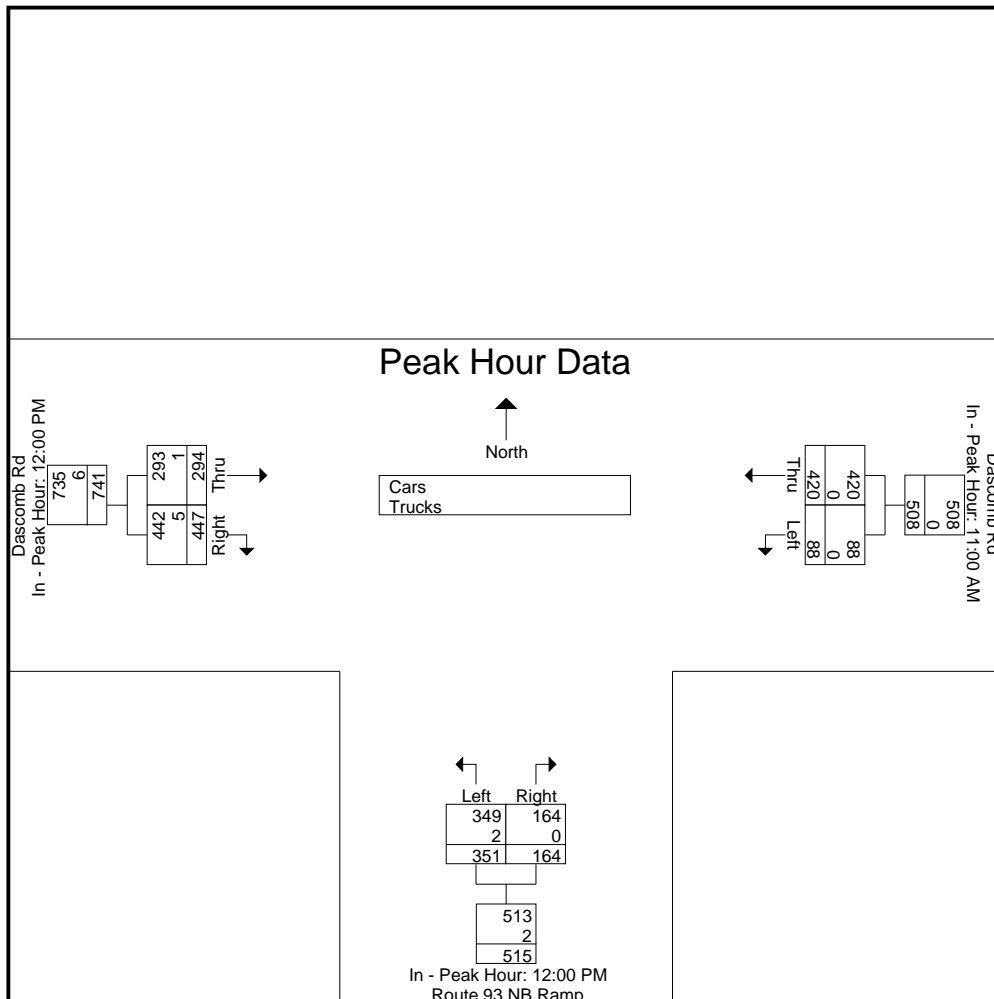
File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			12:00 PM			12:00 PM		
+0 mins.	20	99	119	81	32	113	73	<b>133</b>	<b>206</b>
+15 mins.	16	109	125	83	38	121	65	122	187
+30 mins.	23	<b>111</b>	<b>134</b>	87	42	129	<b>87</b>	86	173
+45 mins.	<b>29</b>	101	130	<b>100</b>	<b>52</b>	<b>152</b>	69	106	175
Total Volume	88	420	508	351	164	515	294	447	741
% App. Total	17.3	82.7		68.2	31.8		39.7	60.3	
PHF	.759	.946	.948	.878	.788	.847	.845	.840	.899
Cars	88	420	508	349	164	513	293	442	735
% Cars	100	100	100	99.4	100	99.6	99.7	98.9	99.2
Trucks	0	0	0	2	0	2	1	5	6
% Trucks	0	0	0	0.6	0	0.4	0.3	1.1	0.8



Cars  
Trucks

# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	20	99	98	21	67	117	422
11:15 AM	16	109	84	38	67	95	409
11:30 AM	23	111	84	30	68	97	413
11:45 AM	29	101	78	32	63	89	392
Total	88	420	344	121	265	398	1636
12:00 PM	20	87	80	32	73	132	424
12:15 PM	21	89	83	38	65	121	417
12:30 PM	24	106	86	42	87	84	429
12:45 PM	21	96	100	52	68	105	442
Total	86	378	349	164	293	442	1712
Grand Total	174	798	693	285	558	840	3348
Apprch %	17.9	82.1	70.9	29.1	39.9	60.1	
Total %	5.2	23.8	20.7	8.5	16.7	25.1	

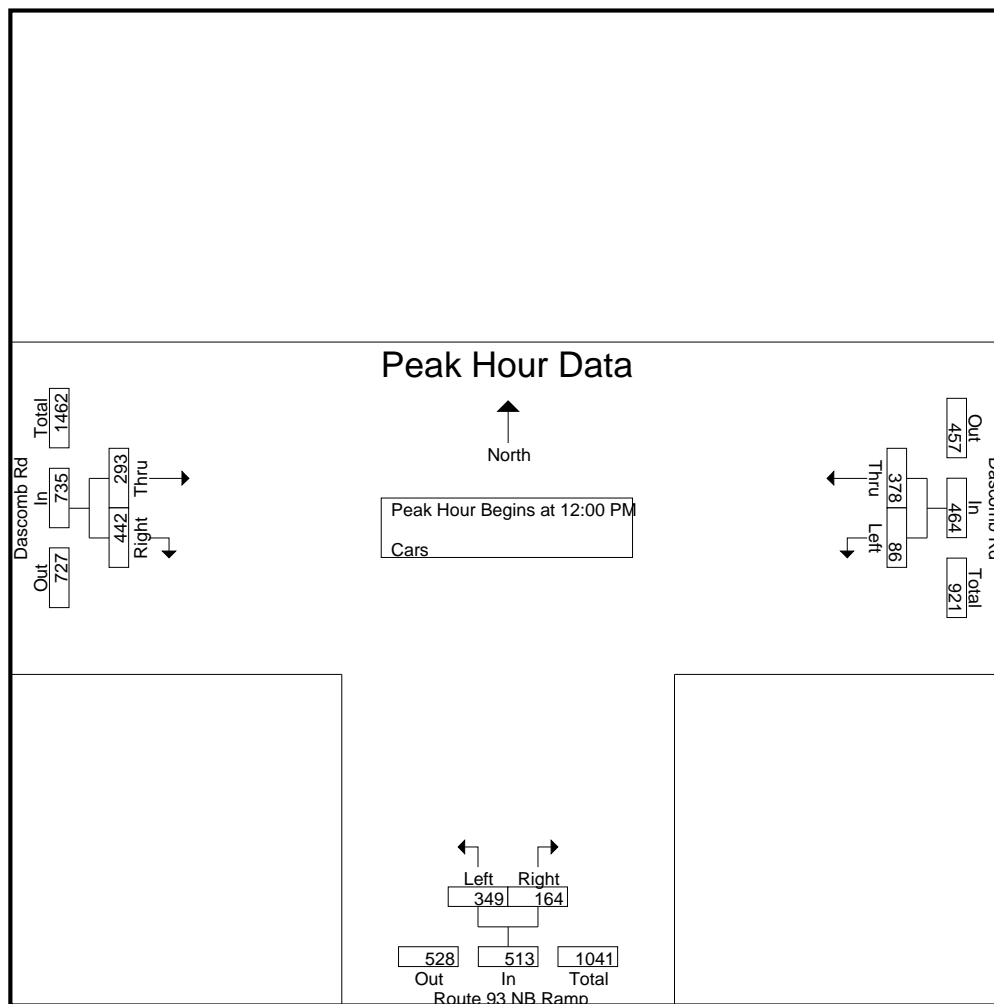
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 5

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	20	87	107	80	32	112	73	<b>132</b>	<b>205</b>	424
12:15 PM	21	89	110	83	38	121	65	121	186	417
12:30 PM	<b>24</b>	<b>106</b>	<b>130</b>	86	42	128	<b>87</b>	84	171	429
12:45 PM	21	96	117	<b>100</b>	<b>52</b>	<b>152</b>	68	105	173	<b>442</b>
Total Volume	86	378	464	349	164	513	293	442	735	1712
% App. Total	18.5	81.5		68	32		39.9	60.1		
PHF	.896	.892	.892	.873	.788	.844	.842	.837	.896	.968



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

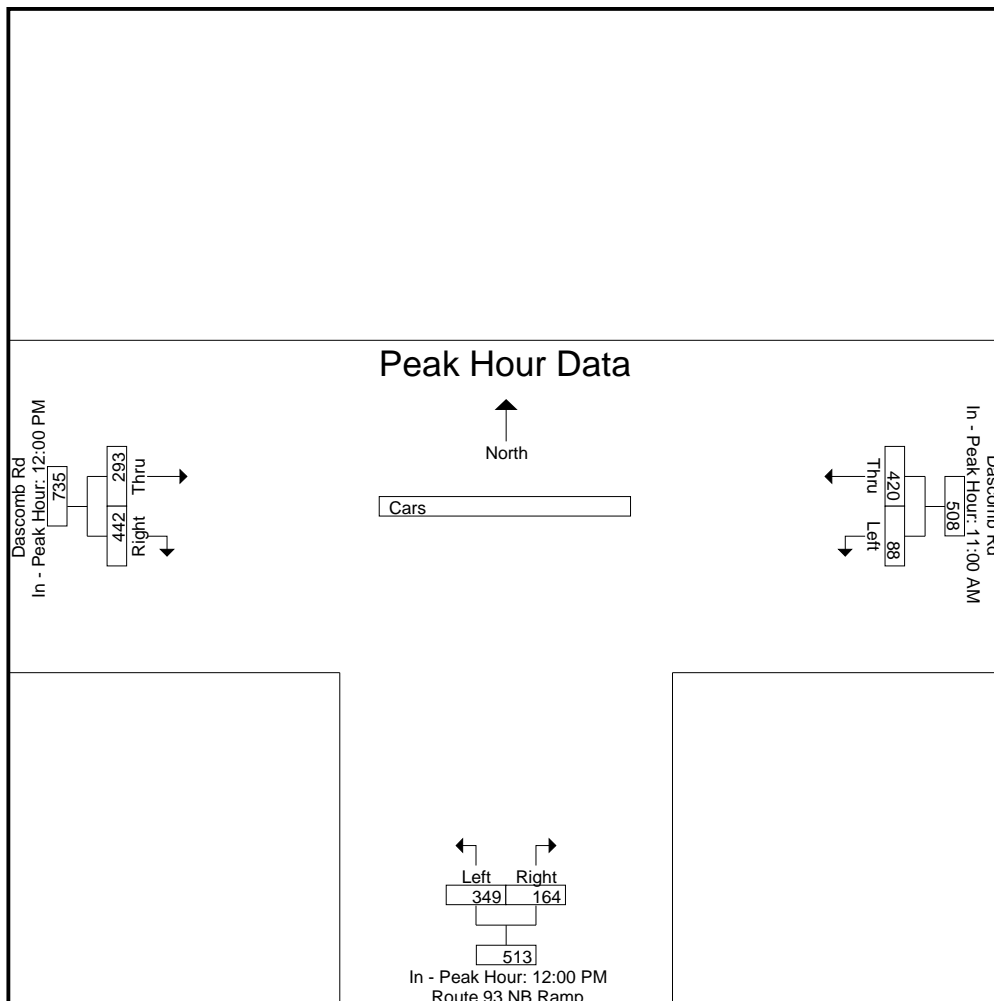
File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 6

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			12:00 PM			12:00 PM		
+0 mins.	20	99	119	80	32	112	73	<b>132</b>	<b>205</b>
+15 mins.	16	109	125	83	38	121	65	121	186
+30 mins.	23	<b>111</b>	<b>134</b>	86	42	128	<b>87</b>	84	171
+45 mins.	<b>29</b>	101	130	<b>100</b>	<b>52</b>	<b>152</b>	68	105	173
Total Volume	88	420	508	349	164	513	293	442	735
% App. Total	17.3	82.7		68	32		39.9	60.1	
PHF	.759	.946	.948	.873	.788	.844	.842	.837	.896



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Dascomb Rd From East		Route 93 NB Ramp From South		Dascomb Rd From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	0	0	5	0	0	1	6
11:15 AM	0	0	3	0	0	1	4
11:30 AM	0	0	5	0	0	1	6
11:45 AM	0	0	2	1	0	0	3
Total	0	0	15	1	0	3	19
12:00 PM	0	0	1	0	0	1	2
12:15 PM	0	2	0	0	0	1	3
12:30 PM	0	0	1	0	0	2	3
12:45 PM	0	1	0	0	1	1	3
Total	0	3	2	0	1	5	11
Grand Total	0	3	17	1	1	8	30
Apprch %	0	100	94.4	5.6	11.1	88.9	
Total %	0	10	56.7	3.3	3.3	26.7	

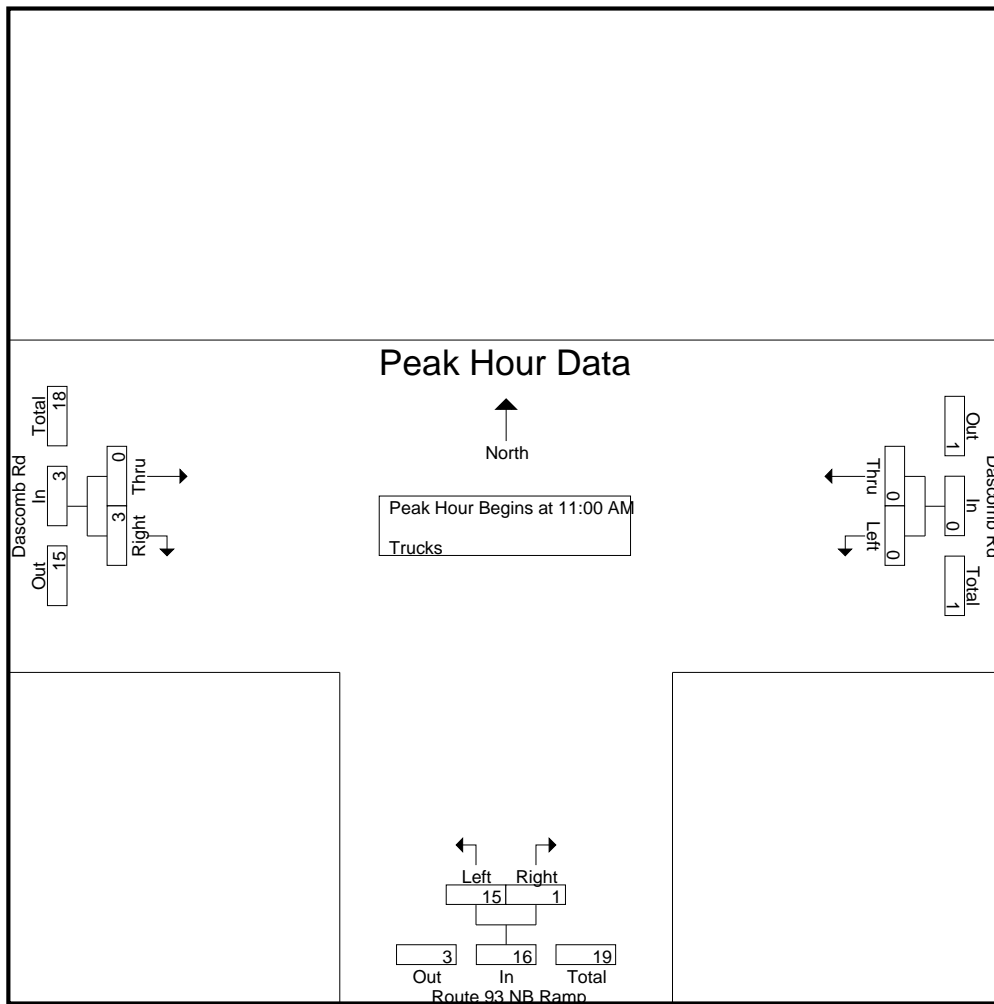
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 8

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	5	0	5	0	1	1	6
11:15 AM	0	0	0	3	0	3	0	1	1	4
11:30 AM	0	0	0	5	0	5	0	1	1	6
11:45 AM	0	0	0	2	1	3	0	0	0	3
<b>Total Volume</b>	0	0	0	15	1	16	0	3	3	19
<b>% App. Total</b>	0	0		93.8	6.2		0	100		
<b>PHF</b>	.000	.000	.000	.750	.250	.800	.000	.750	.750	.792



# Accurate Counts

978-664-2565

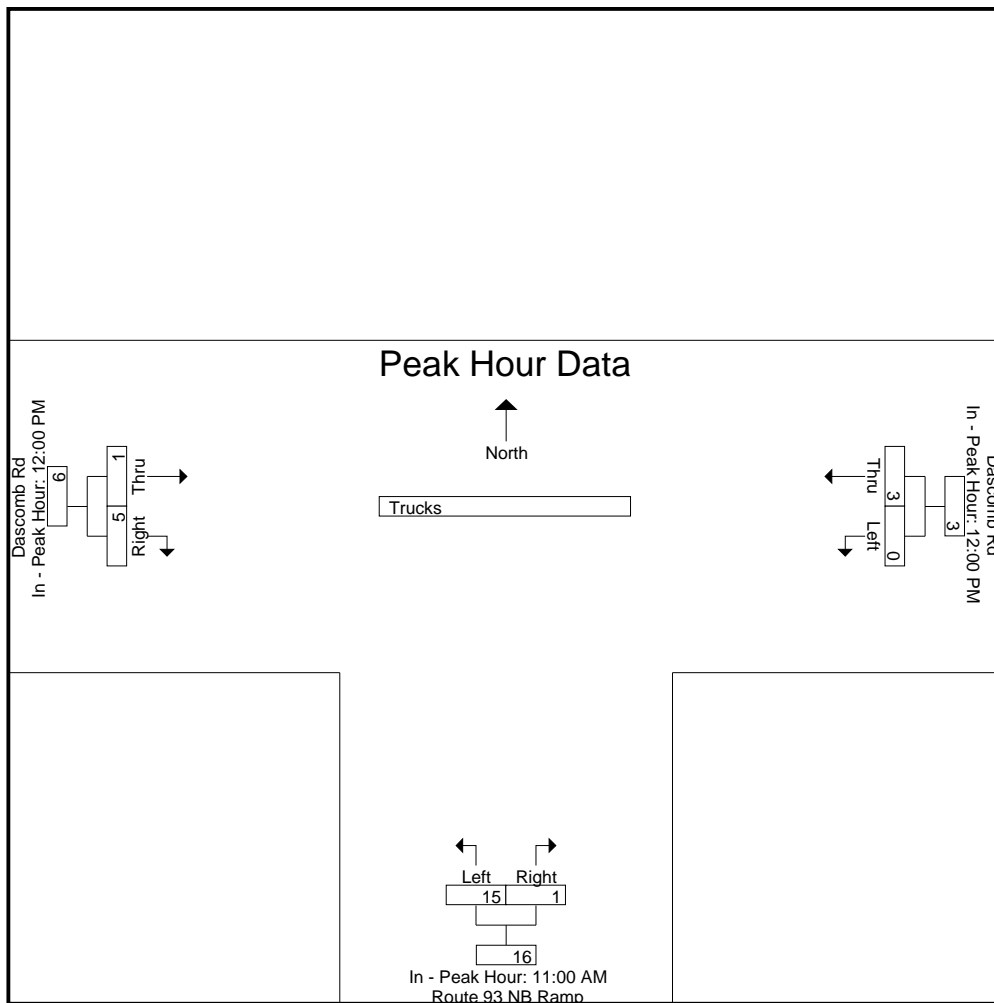
N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 9

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										

Peak Hour for Each Approach Begins at:

	12:00 PM			11:00 AM			12:00 PM		
+0 mins.	0	0	0	5	0	5	0	1	1
+15 mins.	0	2	2	3	0	3	0	1	1
+30 mins.	0	0	0	5	0	5	0	2	2
+45 mins.	0	1	1	2	1	3	1	1	2
Total Volume	0	3	3	15	1	16	1	5	6
% App. Total	0	100		93.8	6.2		16.7	83.3	
PHF	.000	.375	.375	.750	.250	.800	.250	.625	.750



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	0	1	0	0	0	1	1
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	1	0	0	0	0	0	0	0	0	1	1
<b>Total</b>	0	1	0	0	0	0	1	0	0	0	2	2
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	1	0	0	0	1	1
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	1	0	0	0	1	1
<b>Grand Total</b>	0	1	0	0	0	0	2	0	0	0	3	3
<b>Apprch %</b>	0	100		0	0		100	0				
<b>Total %</b>	0	33.3		0	0		66.7	0		0	100	

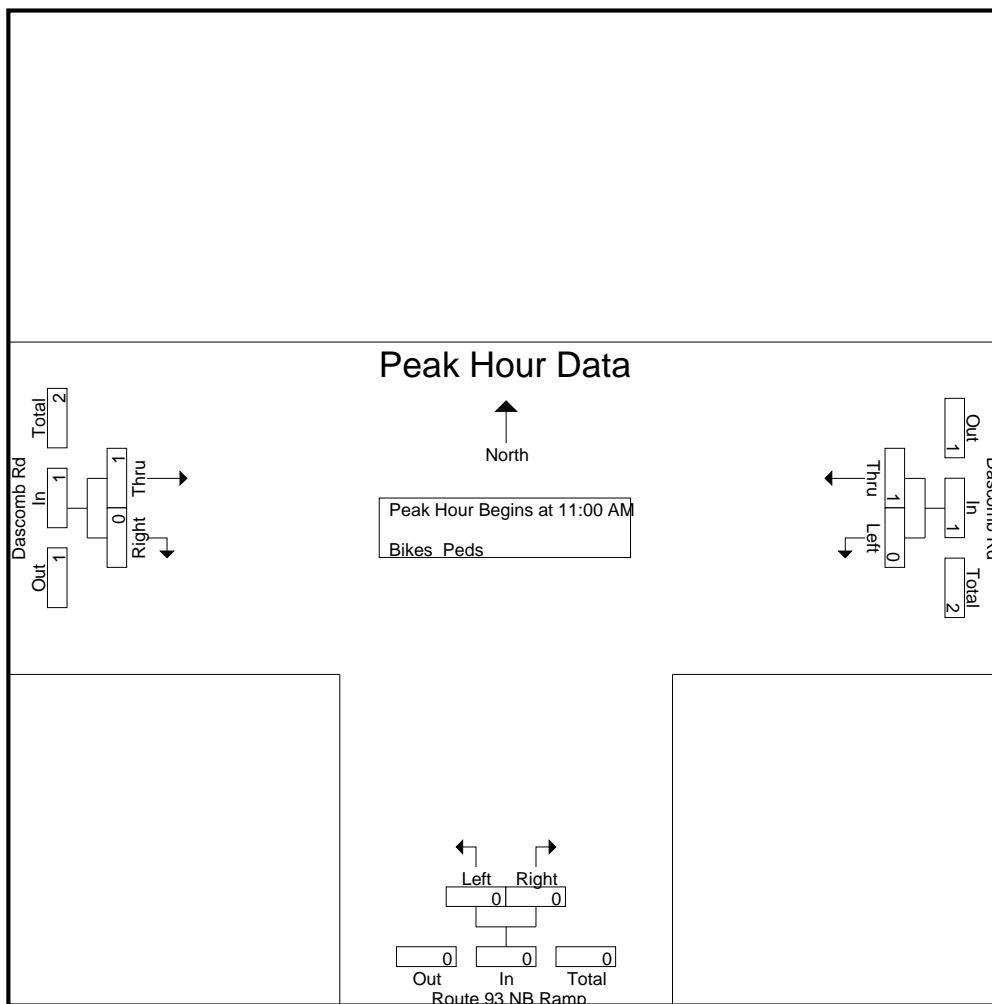
# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 11

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	1	0	1	1
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	1	1	0	0	0	0	0	0	1
<b>Total Volume</b>	0	1	1	0	0	0	1	0	1	2
<b>% App. Total</b>	0	100		0	0		100	0		
<b>PHF</b>	.000	.250	.250	.000	.000	.000	.250	.000	.250	.500



# Accurate Counts

978-664-2565

N/S Street : Route 93 NB Ramp  
 E/W Street: Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

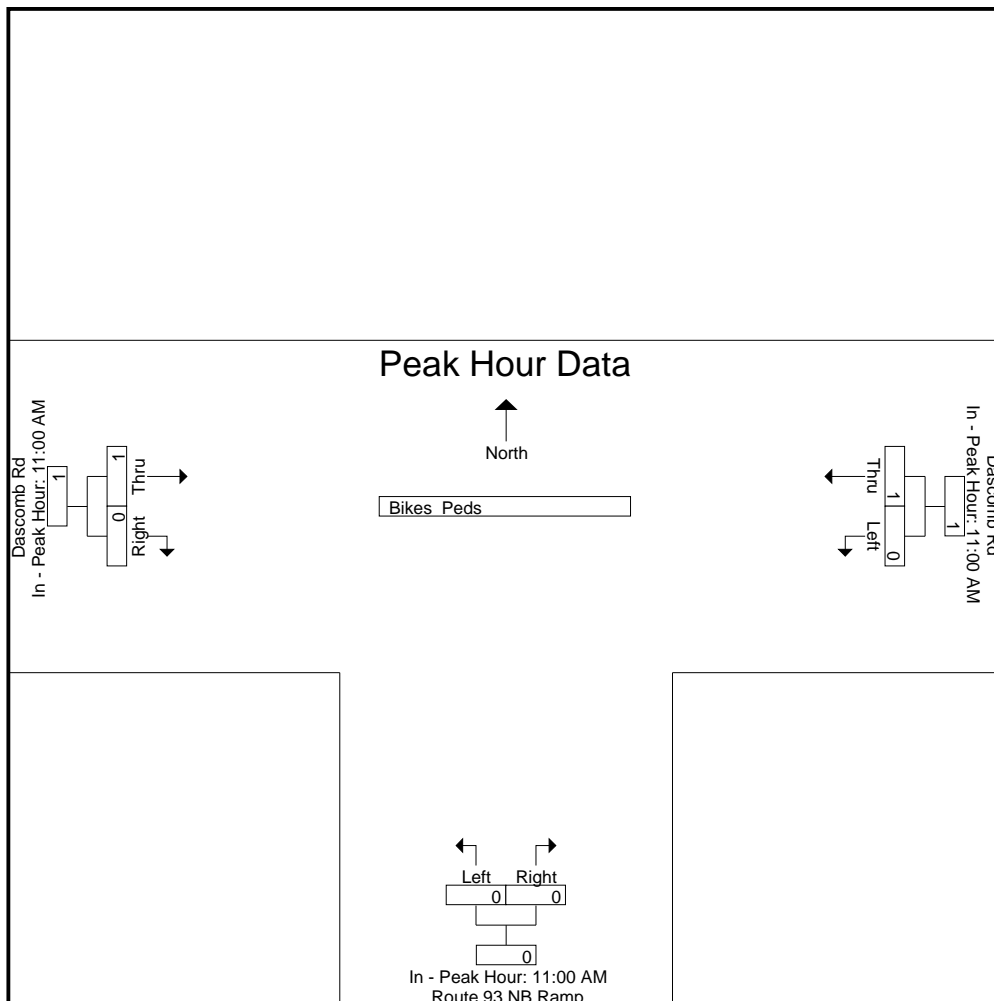
File Name : 052500S7  
 Site Code : 05250007  
 Start Date : 9/22/2018  
 Page No : 12

Start Time	Dascomb Rd From East			Route 93 NB Ramp From South			Dascomb Rd From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	1	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	1	0	1
% App. Total	0	100		0	0		100	0	
PHF	.000	.250	.250	.000	.000	.000	.250	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 1

## Groups Printed- Cars - Trucks

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right	
11:00 AM	0	2	85	0	0	0	26	1	1	60	0	30	205
11:15 AM	0	3	72	0	0	0	44	0	0	57	1	34	211
11:30 AM	0	2	73	0	0	0	42	2	0	75	1	38	233
11:45 AM	0	0	63	0	0	0	63	5	1	76	1	32	241
<b>Total</b>	<b>0</b>	<b>7</b>	<b>293</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>175</b>	<b>8</b>	<b>2</b>	<b>268</b>	<b>3</b>	<b>134</b>	<b>890</b>
12:00 PM	0	0	73	0	0	0	35	1	0	75	2	40	226
12:15 PM	0	4	71	0	0	0	42	5	0	75	3	28	228
12:30 PM	1	1	79	0	0	0	55	2	0	80	0	37	255
12:45 PM	0	1	78	0	0	0	44	2	0	81	5	32	243
<b>Total</b>	<b>1</b>	<b>6</b>	<b>301</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>176</b>	<b>10</b>	<b>0</b>	<b>311</b>	<b>10</b>	<b>137</b>	<b>952</b>
<b>Grand Total</b>	<b>1</b>	<b>13</b>	<b>594</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>351</b>	<b>18</b>	<b>2</b>	<b>579</b>	<b>13</b>	<b>271</b>	<b>1842</b>
Apprch %	0.2	2.1	97.7	0	0	0	94.6	4.9	0.5	67.1	1.5	31.4	
Total %	0.1	0.7	32.2	0	0	0	19.1	1	0.1	31.4	0.7	14.7	
Cars	1	13	593	0	0	0	351	18	2	578	13	271	1840
% Cars	100	100	99.8	0	0	0	100	100	100	99.8	100	100	99.9
Trucks	0	0	1	0	0	0	0	0	0	1	0	0	2
% Trucks	0	0	0.2	0	0	0	0	0	0	0.2	0	0	0.1

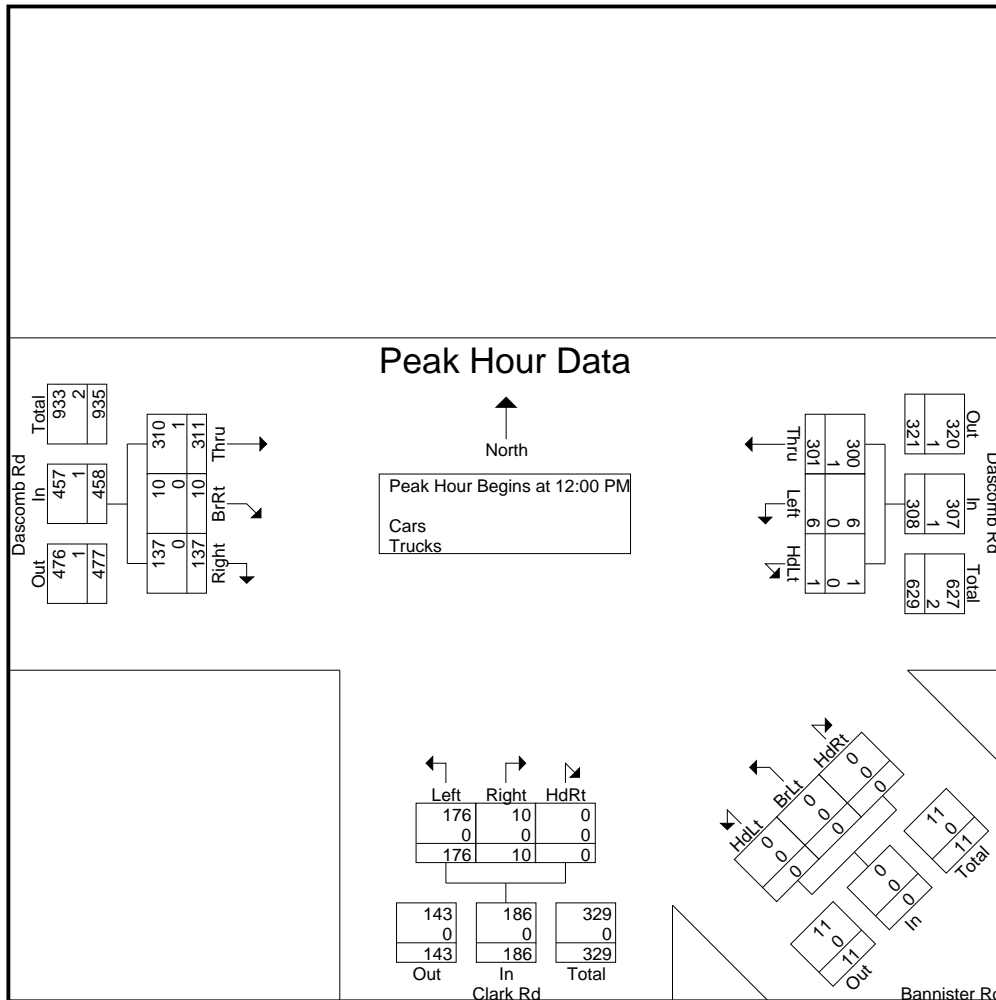
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 2

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	0	73	73	0	0	0	0	35	1	0	36	75	2	<b>40</b>	117	226
12:15 PM	0	<b>4</b>	71	75	0	0	0	0	42	<b>5</b>	0	47	75	3	28	106	228
12:30 PM	<b>1</b>	<b>1</b>	<b>79</b>	<b>81</b>	0	0	0	0	<b>55</b>	<b>2</b>	0	<b>57</b>	80	0	37	117	<b>255</b>
12:45 PM	0	1	78	79	0	0	0	0	44	2	0	46	<b>81</b>	<b>5</b>	32	<b>118</b>	243
Total Volume	1	6	301	308	0	0	0	0	176	10	0	186	311	10	137	458	952
% App. Total	0.3	1.9	97.7		0	0	0		94.6	5.4	0		67.9	2.2	29.9		
PHF	.250	.375	.953	.951	.000	.000	.000	.000	.800	.500	.000	.816	.960	.500	.856	.970	.933
Cars	1	6	300	307	0	0	0	0	176	10	0	186	310	10	137	457	950
% Cars	100	100	99.7	99.7	0	0	0	0	100	100	0	100	99.7	100	100	99.8	99.8
Trucks	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
% Trucks	0	0	0.3	0.3	0	0	0	0	0	0	0	0	0.3	0	0	0.2	0.2



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

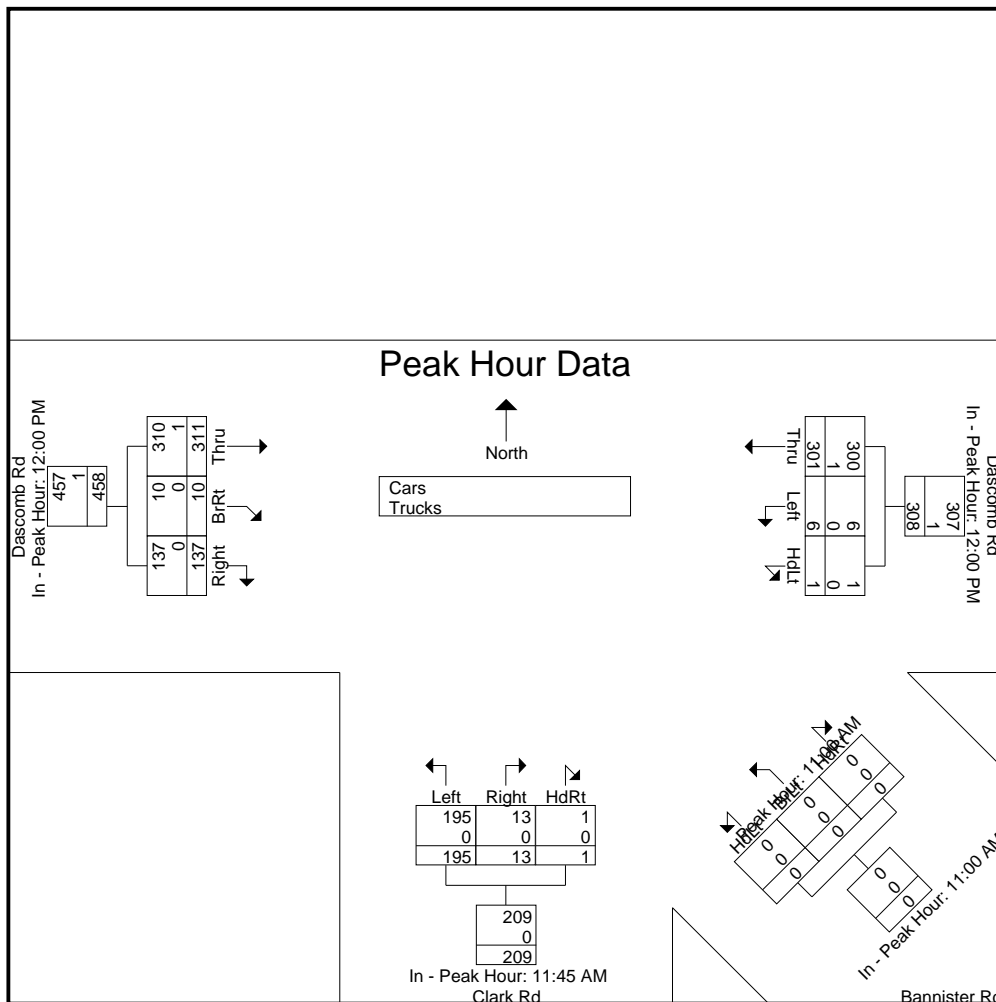
File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM				11:00 AM				11:45 AM				12:00 PM			
+0 mins.	0	0	73	73	0	0	0	0	<b>63</b>	<b>5</b>	<b>1</b>	<b>69</b>	75	2	<b>40</b>	117
+15 mins.	0	<b>4</b>	71	75	0	0	0	0	35	1	0	36	75	3	28	106
+30 mins.	<b>1</b>	<b>1</b>	<b>79</b>	<b>81</b>	0	0	0	0	42	5	0	47	80	0	37	117
+45 mins.	0	1	78	79	0	0	0	0	55	2	0	57	<b>81</b>	<b>5</b>	32	<b>118</b>
Total Volume	1	6	301	308	0	0	0	0	195	13	1	209	311	10	137	458
% App. Total	0.3	1.9	97.7		0	0	0		93.3	6.2	0.5		67.9	2.2	29.9	
PHF	.250	.375	.953	.951	.000	.000	.000	.000	.774	.650	.250	.757	.960	.500	.856	.970
Cars	1	6	300	307	0	0	0	0	195	13	1	209	310	10	137	457
% Cars	100	100	99.7	99.7	0	0	0	0	100	100	100	100	99.7	100	100	99.8
Trucks	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1
% Trucks	0	0	0.3	0.3	0	0	0	0	0	0	0	0	0.3	0	0	0.2



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right	
11:00 AM	0	2	85	0	0	0	26	1	1	60	0	30	205
11:15 AM	0	3	72	0	0	0	44	0	0	57	1	34	211
11:30 AM	0	2	73	0	0	0	42	2	0	75	1	38	233
11:45 AM	0	0	63	0	0	0	63	5	1	76	1	32	241
Total	0	7	293	0	0	0	175	8	2	268	3	134	890
12:00 PM	0	0	72	0	0	0	35	1	0	75	2	40	225
12:15 PM	0	4	71	0	0	0	42	5	0	75	3	28	228
12:30 PM	1	1	79	0	0	0	55	2	0	80	0	37	255
12:45 PM	0	1	78	0	0	0	44	2	0	80	5	32	242
Total	1	6	300	0	0	0	176	10	0	310	10	137	950
Grand Total	1	13	593	0	0	0	351	18	2	578	13	271	1840
Apprch %	0.2	2.1	97.7	0	0	0	94.6	4.9	0.5	67.1	1.5	31.4	
Total %	0.1	0.7	32.2	0	0	0	19.1	1	0.1	31.4	0.7	14.7	

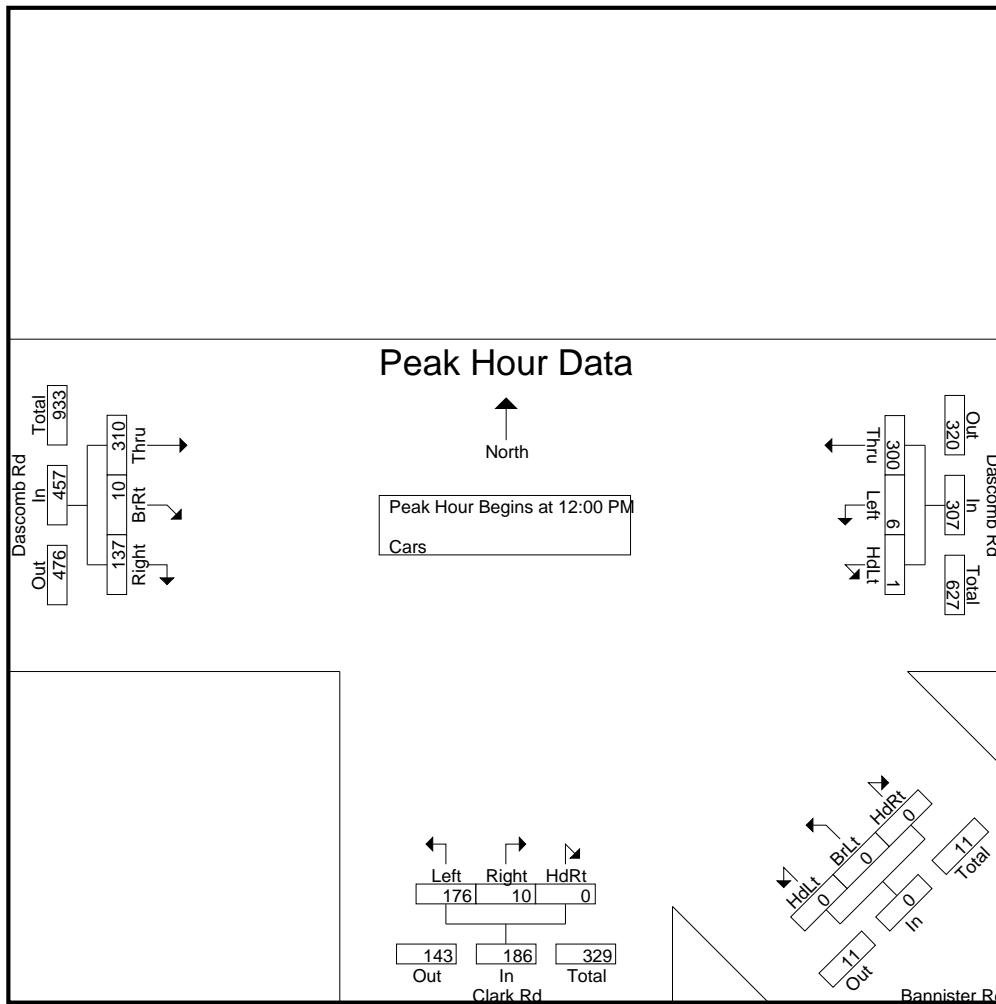
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 5

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	0	72	72	0	0	0	0	35	1	0	36	75	2	<b>40</b>	<b>117</b>	225
12:15 PM	0	<b>4</b>	71	75	0	0	0	0	42	<b>5</b>	0	47	75	3	28	106	228
12:30 PM	<b>1</b>	<b>1</b>	<b>79</b>	<b>81</b>	0	0	0	0	<b>55</b>	<b>2</b>	0	<b>57</b>	<b>80</b>	0	37	117	<b>255</b>
12:45 PM	0	1	78	79	0	0	0	0	44	2	0	46	80	<b>5</b>	32	117	242
Total Volume	1	6	300	307	0	0	0	0	176	10	0	186	310	10	137	457	950
% App. Total	0.3	2	97.7		0	0	0		94.6	5.4	0		67.8	2.2	30		
PHF	.250	.375	.949	.948	.000	.000	.000	.000	.800	.500	.000	.816	.969	.500	.856	.976	.931



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

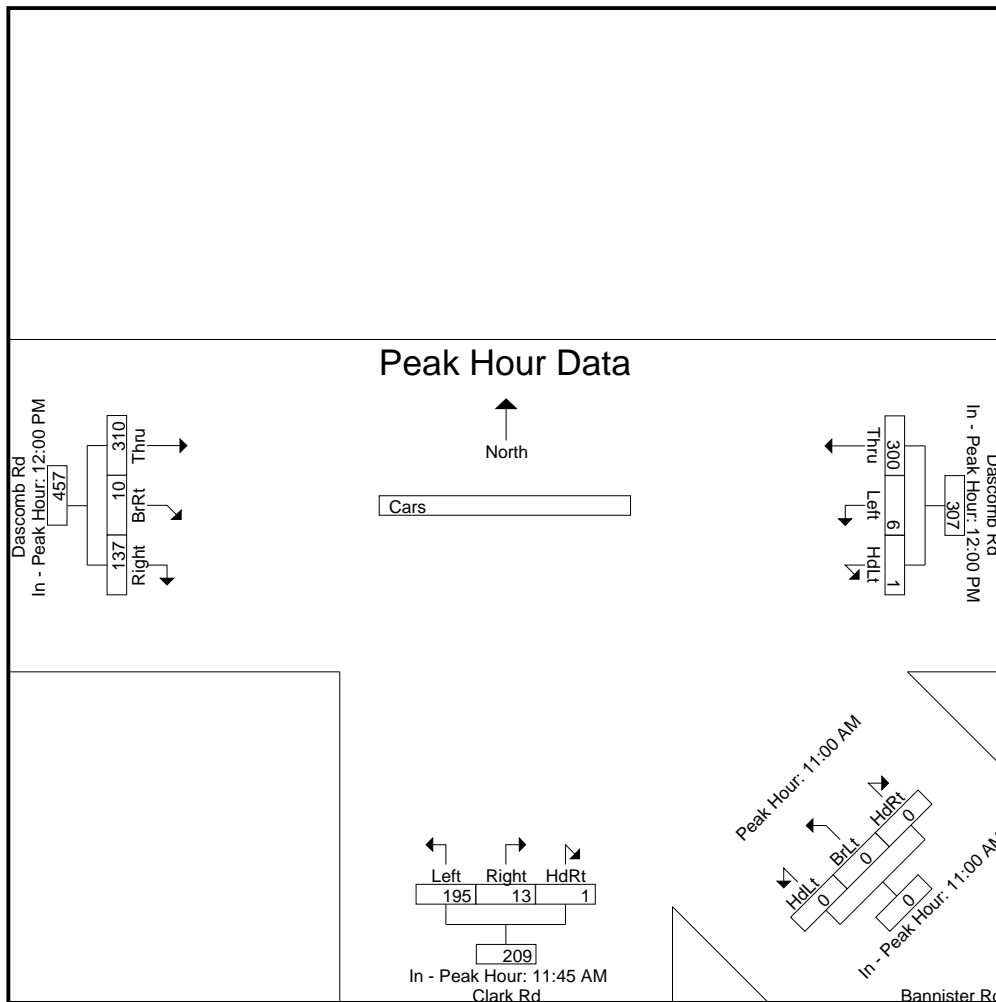
File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 6

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM				11:00 AM				11:45 AM				12:00 PM			
+0 mins.	0	0	72	72	0	0	0	0	<b>63</b>	<b>5</b>	<b>1</b>	<b>69</b>	75	2	<b>40</b>	<b>117</b>
+15 mins.	0	<b>4</b>	71	75	0	0	0	0	35	1	0	36	75	3	28	106
+30 mins.	<b>1</b>	<b>1</b>	<b>79</b>	<b>81</b>	0	0	0	0	42	5	0	47	<b>80</b>	0	37	117
+45 mins.	0	1	78	79	0	0	0	0	55	2	0	57	80	<b>5</b>	32	117
Total Volume	1	6	300	307	0	0	0	0	195	13	1	209	310	10	137	457
% App. Total	0.3	2	97.7		0	0	0		93.3	6.2	0.5		67.8	2.2	30	
PHF	.250	.375	.949	.948	.000	.000	.000	.000	.774	.650	.250	.757	.969	.500	.856	.976



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Dascomb Rd From East			Bannister Rd From Southeast			Clark Rd From South			Dascomb Rd From West			Int. Total
	HdLt	Left	Thru	HdLt	BrLt	HdRt	Left	Right	HdRt	Thru	BrRt	Right	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	1	0	0	0	0	0	0	1	0	0	2
Grand Total	0	0	1	0	0	0	0	0	0	1	0	0	2
Apprch %	0	0	100	0	0	0	0	0	0	100	0	0	
Total %	0	0	50	0	0	0	0	0	0	50	0	0	

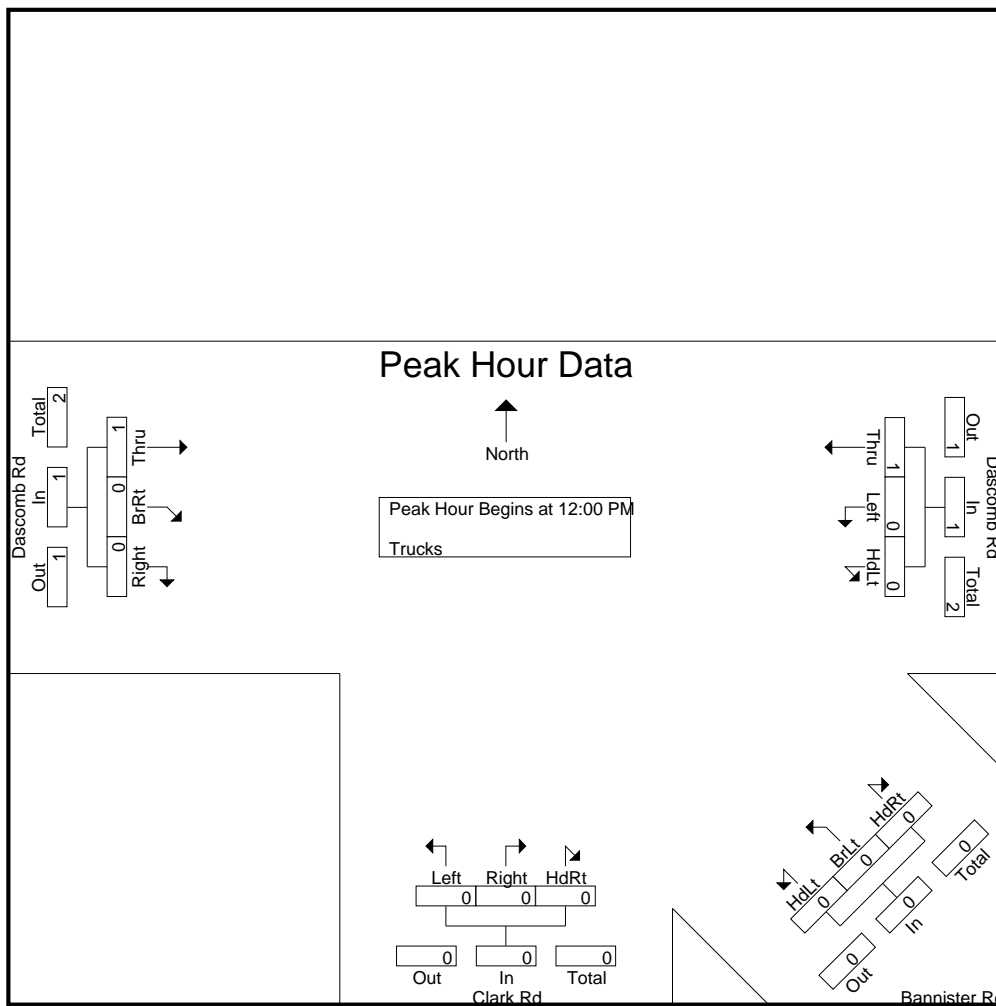
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 8

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
% App. Total	0	0	100		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.500



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

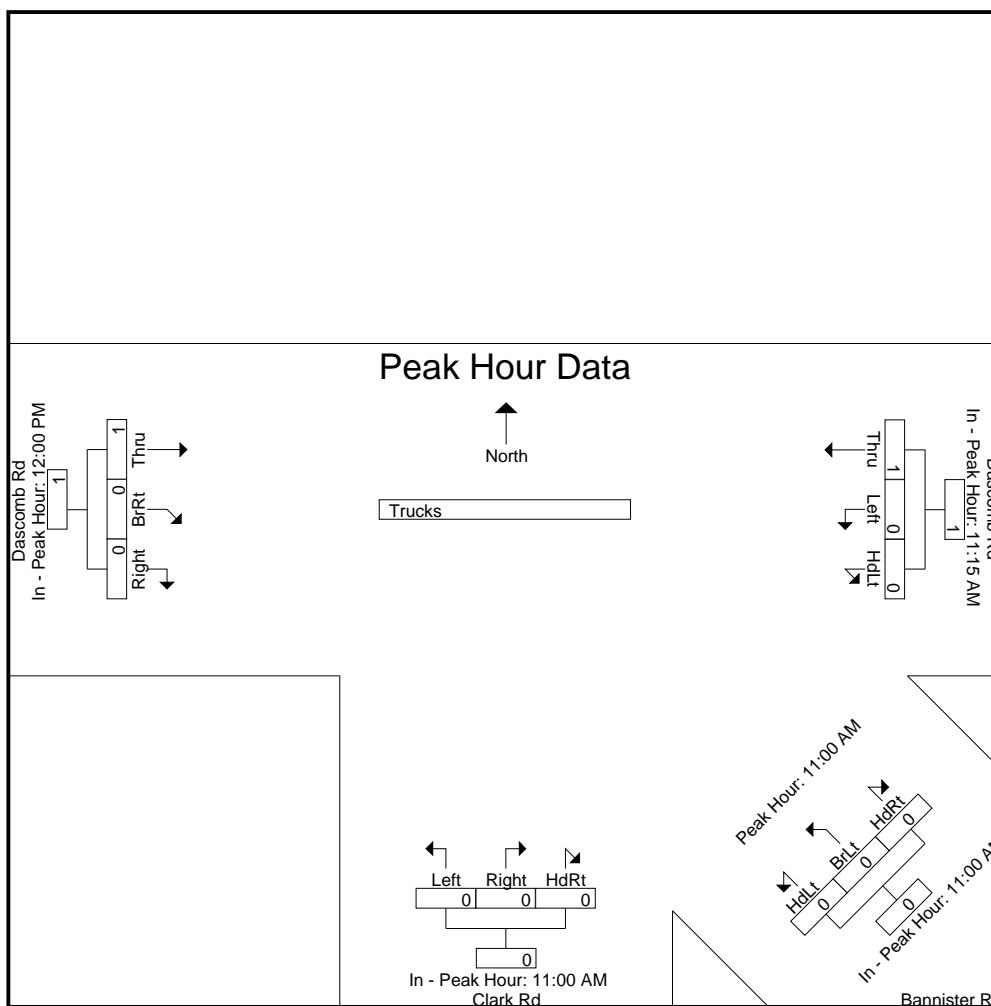
File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 9

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM				11:00 AM				11:00 AM				12:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1
Total Volume	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1
% App. Total	0	0	100		0	0	0		0	0	0		100	0	0	
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Exclu. Total	Inclu. Total	Int. Total
	HdLt	Left	Thru	Peds	HdLt	BrLt	HdRt	Peds	Left	Right	HdRt	Peds	Thru	BrRt	Right	Peds			
11:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	2
<b>Total</b>	0	0	2	0	0	0	0	0	0	0	0	1	1	0	0	0	1	3	4
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	2
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	1	2
<b>Grand Total</b>	0	0	2	0	0	0	0	0	0	0	0	2	1	0	1	0	2	4	6
<b>Apprch %</b>	0	0	100		0	0	0		0	0	0		50	0	50				
<b>Total %</b>	0	0	50		0	0	0		0	0	0		25	0	25		33.3	66.7	

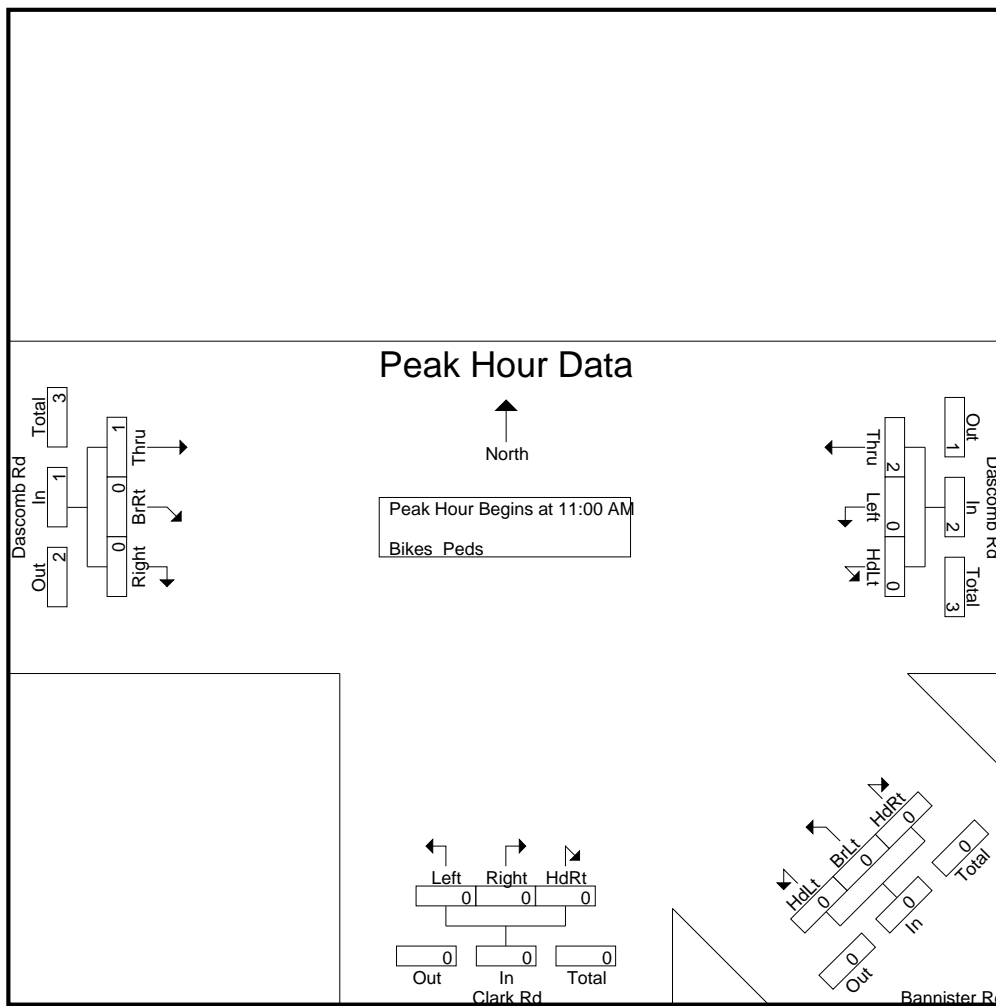
# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 11

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:00 AM																	
11:00 AM	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1	3
% App. Total	0	0	100		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.500	.500	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.375



# Accurate Counts

978-664-2565

N/S Street : Bannister Rd / Clark Rd  
 E/W Street : Dascomb Road  
 City/State : Andover, MA  
 Weather : Clear

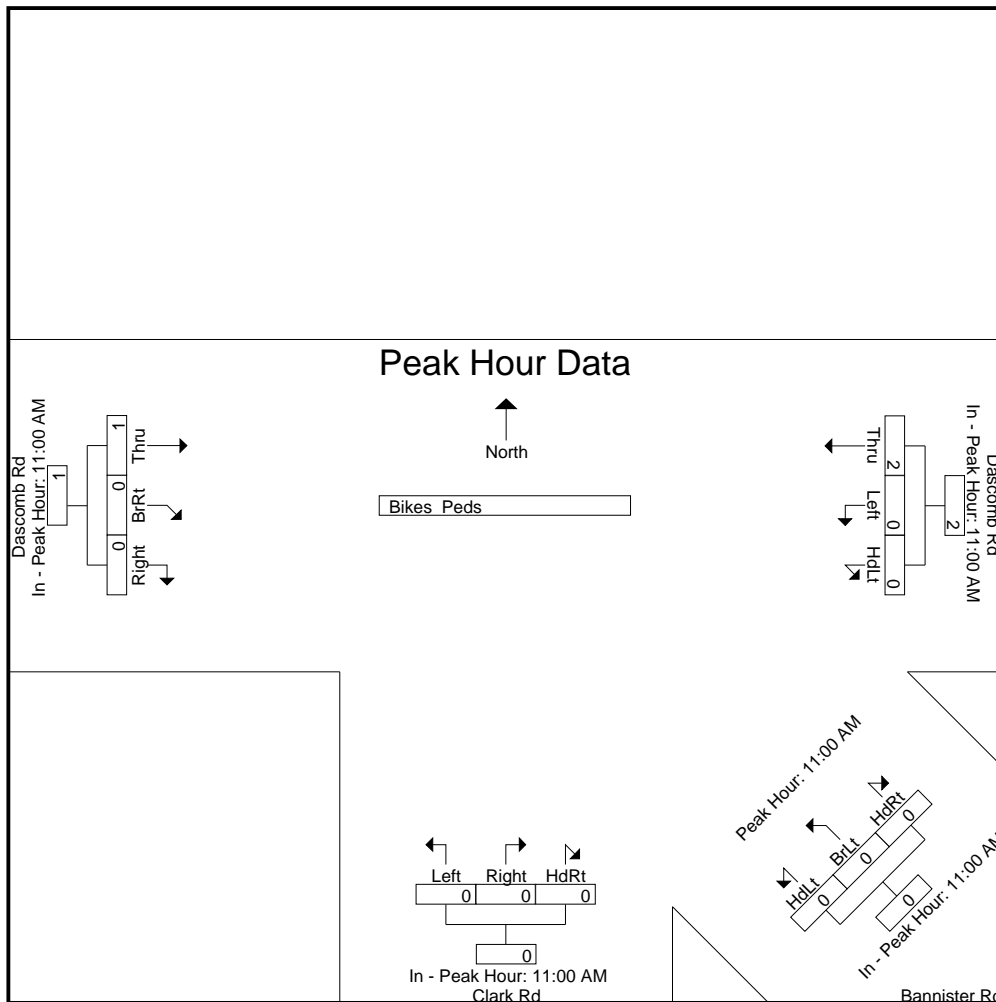
File Name : 052500S8  
 Site Code : 05250008  
 Start Date : 9/22/2018  
 Page No : 12

Start Time	Dascomb Rd From East				Bannister Rd From Southeast				Clark Rd From South				Dascomb Rd From West				Int. Total
	HdLt	Left	Thru	App. Total	HdLt	BrLt	HdRt	App. Total	Left	Right	HdRt	App. Total	Thru	BrRt	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM				11:00 AM				11:00 AM				11:00 AM			
+0 mins.	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	2	2	0	0	0	0	0	0	0	0	1	0	0	1
% App. Total	0	0	100		0	0	0		0	0	0		100	0	0	
PHF	.000	.000	.500	.500	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S9  
 Site Code : 05250009  
 Start Date : 9/22/2018  
 Page No : 1

### Groups Printed- Cars - Trucks

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	0	12	95	2	18	145	272
11:15 AM	4	13	85	2	23	135	262
11:30 AM	5	18	97	2	20	118	260
11:45 AM	11	18	101	4	16	150	300
Total	20	61	378	10	77	548	1094
12:00 PM	3	14	92	2	11	120	242
12:15 PM	3	4	108	0	10	143	268
12:30 PM	6	6	127	2	20	113	274
12:45 PM	3	13	96	1	22	106	241
Total	15	37	423	5	63	482	1025
Grand Total	35	98	801	15	140	1030	2119
Apprch %	26.3	73.7	98.2	1.8	12	88	
Total %	1.7	4.6	37.8	0.7	6.6	48.6	
Cars	35	98	776	15	140	1016	2080
% Cars	100	100	96.9	100	100	98.6	98.2
Trucks	0	0	25	0	0	14	39
% Trucks	0	0	3.1	0	0	1.4	1.8

# Accurate Counts

978-664-2565

File Name : 052500S9

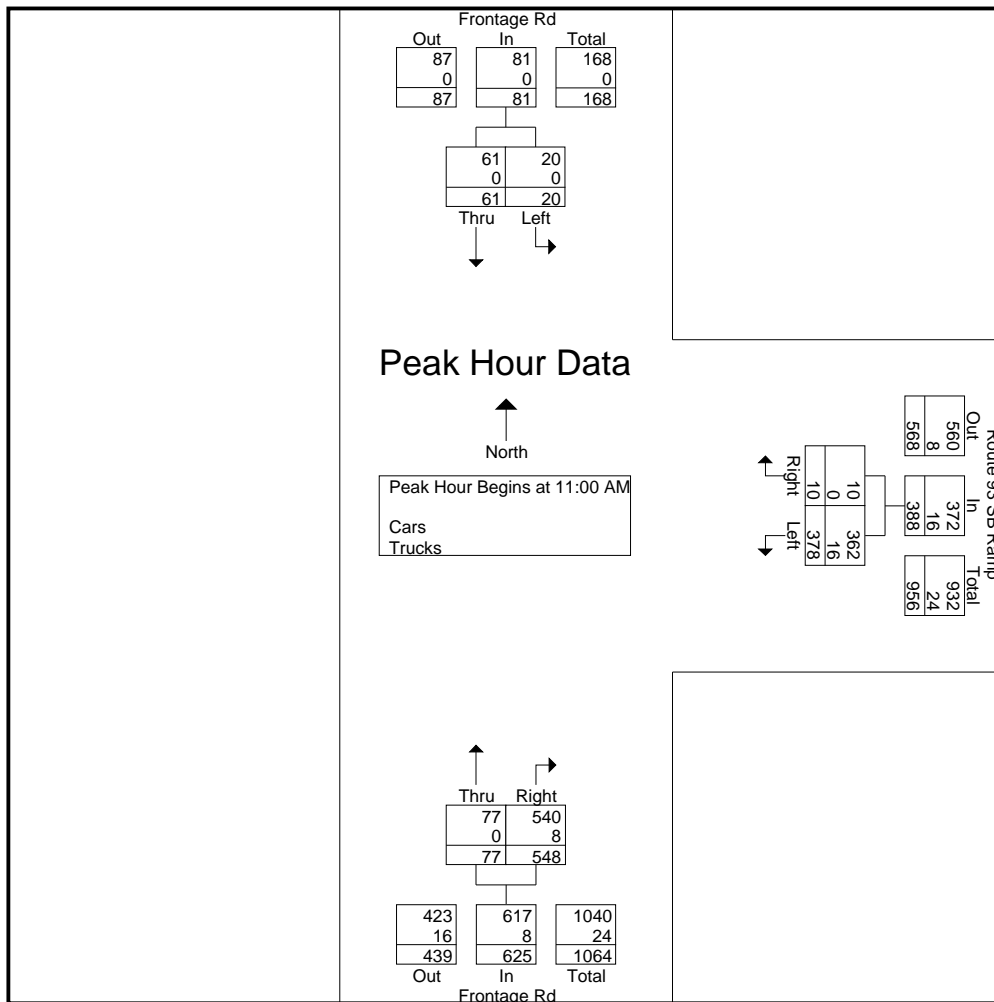
Site Code : 05250009

Start Date : 9/22/2018

Page No : 2

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	12	12	95	2	97	18	145	163	272
11:15 AM	4	13	17	85	2	87	<b>23</b>	135	158	262
11:30 AM	5	<b>18</b>	23	97	2	99	20	118	138	260
11:45 AM	<b>11</b>	18	<b>29</b>	<b>101</b>	<b>4</b>	<b>105</b>	16	<b>150</b>	<b>166</b>	<b>300</b>
Total Volume	20	61	81	378	10	388	77	548	625	1094
% App. Total	24.7	75.3		97.4	2.6		12.3	87.7		
PHF	.455	.847	.698	.936	.625	.924	.837	.913	.941	.912
Cars	20	61	81	362	10	372	77	540	617	1070
% Cars	100	100	100	95.8	100	95.9	100	98.5	98.7	97.8
Trucks	0	0	0	16	0	16	0	8	8	24
% Trucks	0	0	0	4.2	0	4.1	0	1.5	1.3	2.2



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

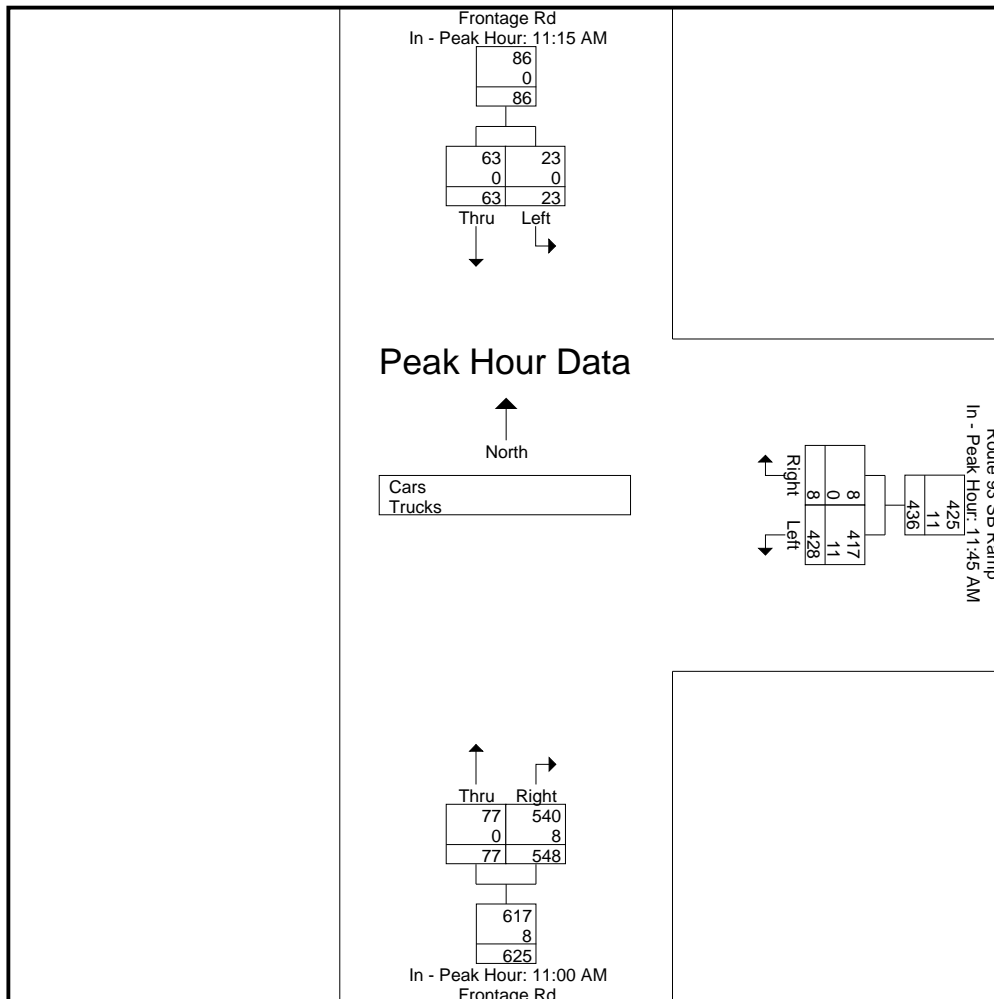
File Name : 052500S9  
 Site Code : 05250009  
 Start Date : 9/22/2018  
 Page No : 3

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM			11:45 AM			11:00 AM		
+0 mins.	4	13	17	101	<b>4</b>	105	18	145	163
+15 mins.	5	<b>18</b>	23	92	2	94	<b>23</b>	135	158
+30 mins.	<b>11</b>	18	<b>29</b>	108	0	108	20	118	138
+45 mins.	3	14	17	<b>127</b>	2	<b>129</b>	16	<b>150</b>	<b>166</b>
Total Volume	23	63	86	428	8	436	77	548	625
% App. Total	26.7	73.3		98.2	1.8		12.3	87.7	
PHF	.523	.875	.741	.843	.500	.845	.837	.913	.941
Cars	23	63	86	417	8	425	77	540	617
% Cars	100	100	100	97.4	100	97.5	100	98.5	98.7
Trucks	0	0	0	11	0	11	0	8	8
% Trucks	0	0	0	2.6	0	2.5	0	1.5	1.3



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S9  
 Site Code : 05250009  
 Start Date : 9/22/2018  
 Page No : 4

## Groups Printed- Cars

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	0	12	88	2	18	142	262
11:15 AM	4	13	82	2	23	133	257
11:30 AM	5	18	94	2	20	117	256
11:45 AM	11	18	98	4	16	148	295
Total	20	61	362	10	77	540	1070
12:00 PM	3	14	90	2	11	119	239
12:15 PM	3	4	105	0	10	138	260
12:30 PM	6	6	124	2	20	113	271
12:45 PM	3	13	95	1	22	106	240
Total	15	37	414	5	63	476	1010
Grand Total	35	98	776	15	140	1016	2080
Apprch %	26.3	73.7	98.1	1.9	12.1	87.9	
Total %	1.7	4.7	37.3	0.7	6.7	48.8	

# Accurate Counts

978-664-2565

File Name : 052500S9

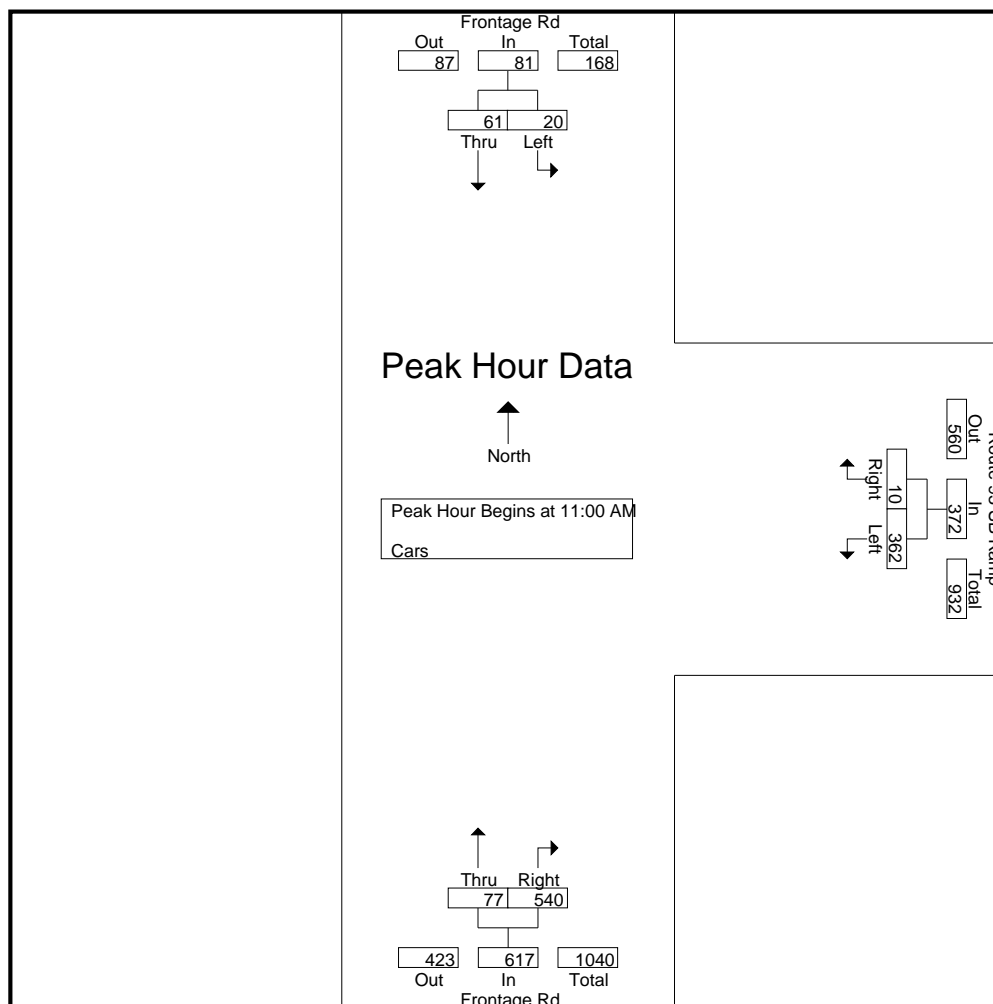
Site Code : 05250009

Start Date : 9/22/2018

Page No : 5

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	12	12	88	2	90	18	142	160	262
11:15 AM	4	13	17	82	2	84	<b>23</b>	133	156	257
11:30 AM	5	<b>18</b>	23	94	2	96	20	117	137	256
11:45 AM	<b>11</b>	18	<b>29</b>	<b>98</b>	<b>4</b>	<b>102</b>	16	<b>148</b>	<b>164</b>	<b>295</b>
Total Volume	20	61	81	362	10	372	77	540	617	1070
% App. Total	24.7	75.3		97.3	2.7		12.5	87.5		
PHF	.455	.847	.698	.923	.625	.912	.837	.912	.941	.907



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

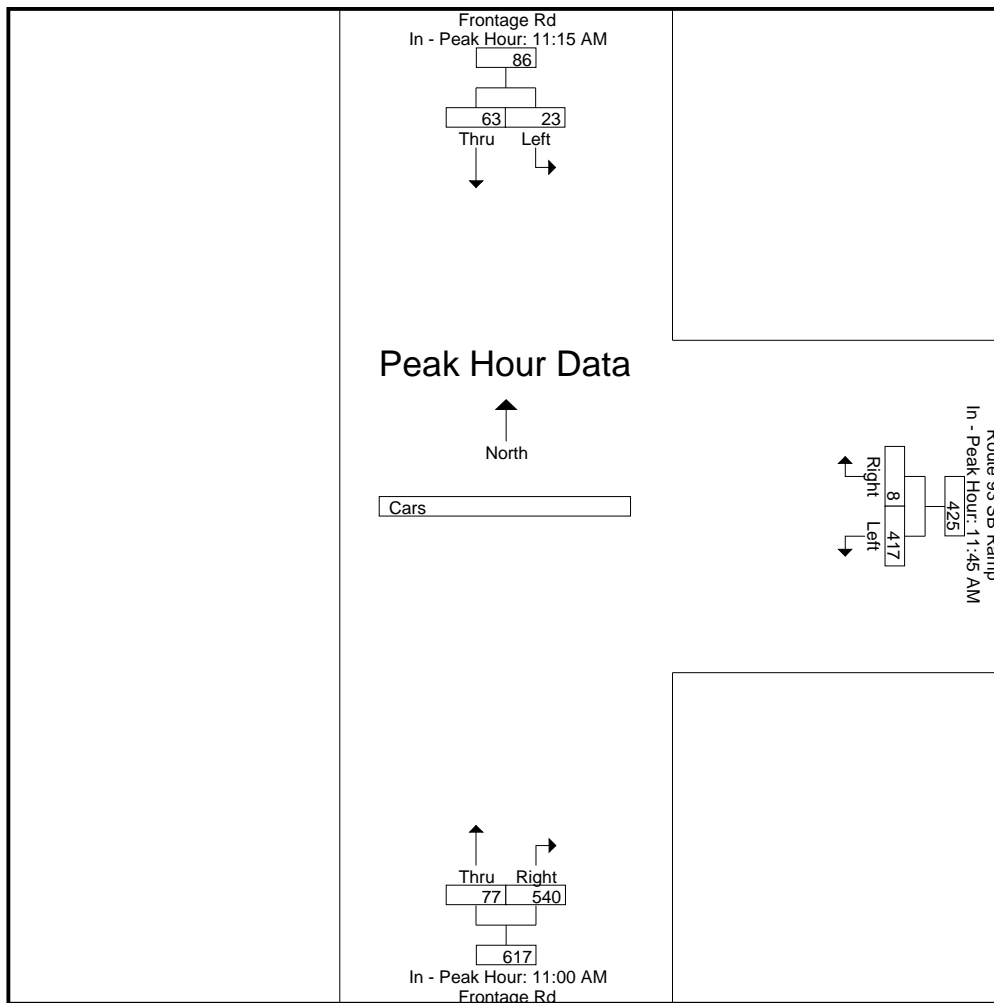
File Name : 052500S9  
 Site Code : 05250009  
 Start Date : 9/22/2018  
 Page No : 6

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM			11:45 AM			11:00 AM		
+0 mins.	4	13	17	98	<b>4</b>	102	18	142	160
+15 mins.	5	<b>18</b>	23	90	2	92	<b>23</b>	133	156
+30 mins.	<b>11</b>	18	<b>29</b>	105	0	105	20	117	137
+45 mins.	3	14	17	<b>124</b>	2	<b>126</b>	16	<b>148</b>	<b>164</b>
Total Volume	23	63	86	417	8	425	77	540	617
% App. Total	26.7	73.3		98.1	1.9		12.5	87.5	
PHF	.523	.875	.741	.841	.500	.843	.837	.912	.941



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S9  
 Site Code : 05250009  
 Start Date : 9/22/2018  
 Page No : 7

## Groups Printed- Trucks

Start Time	Frontage Rd From North		Route 93 SB Ramp From East		Frontage Rd From South		Int. Total
	Left	Thru	Left	Right	Thru	Right	
11:00 AM	0	0	7	0	0	3	10
11:15 AM	0	0	3	0	0	2	5
11:30 AM	0	0	3	0	0	1	4
11:45 AM	0	0	3	0	0	2	5
<b>Total</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>24</b>
12:00 PM	0	0	2	0	0	1	3
12:15 PM	0	0	3	0	0	5	8
12:30 PM	0	0	3	0	0	0	3
12:45 PM	0	0	1	0	0	0	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>15</b>
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>14</b>	<b>39</b>
Apprch %	0	0	100	0	0	100	
Total %	0	0	64.1	0	0	35.9	

# Accurate Counts

978-664-2565

File Name : 052500S9

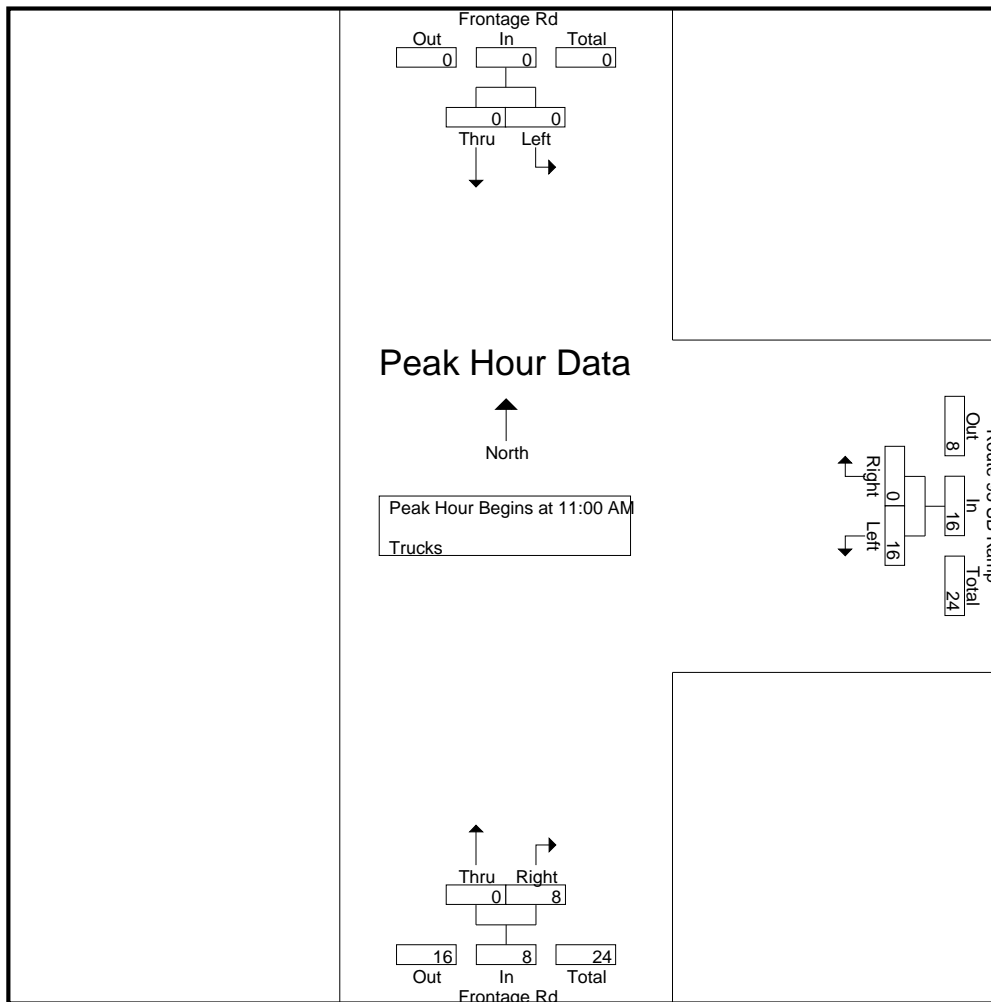
Site Code : 05250009

Start Date : 9/22/2018

Page No : 8

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	7	0	7	0	3	3	10
11:15 AM	0	0	0	3	0	3	0	2	2	5
11:30 AM	0	0	0	3	0	3	0	1	1	4
11:45 AM	0	0	0	3	0	3	0	2	2	5
<b>Total Volume</b>	0	0	0	16	0	16	0	8	8	24
<b>% App. Total</b>	0	0		100	0		0	100		
PHF	.000	.000	.000	.571	.000	.571	.000	.667	.667	.600



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

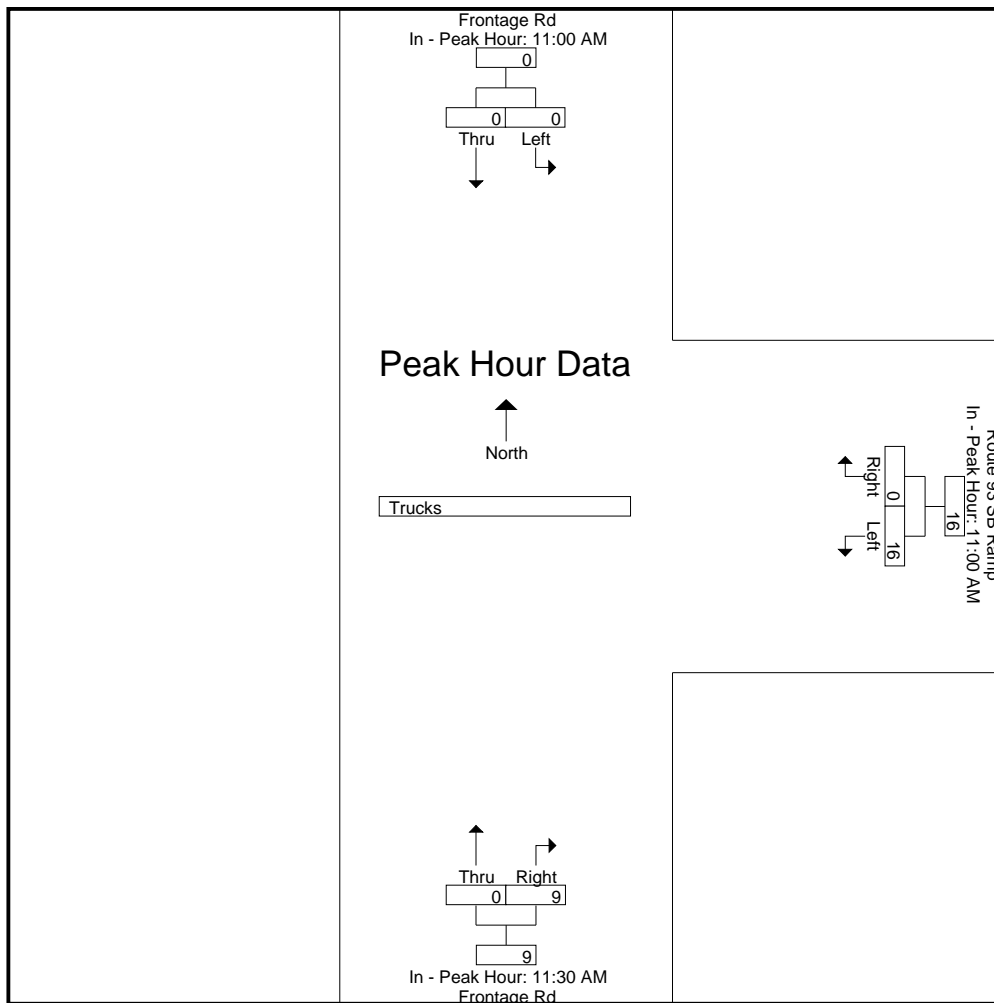
File Name : 052500S9  
 Site Code : 05250009  
 Start Date : 9/22/2018  
 Page No : 9

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:30 AM		
+0 mins.	0	0	0	7	0	7	0	1	1
+15 mins.	0	0	0	3	0	3	0	2	2
+30 mins.	0	0	0	3	0	3	0	1	1
+45 mins.	0	0	0	3	0	3	0	5	5
Total Volume	0	0	0	16	0	16	0	9	9
% App. Total	0	0		100	0		0	100	
PHF	.000	.000	.000	.571	.000	.571	.000	.450	.450



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

File Name : 052500S9  
 Site Code : 05250009  
 Start Date : 9/22/2018  
 Page No : 10

## Groups Printed- Bikes Peds

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	1	0	0	0	0	0	0	0	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	1	0	0	0	0	0	0	0	0	1	1
<b>Grand Total</b>	0	1	0	0	0	0	0	0	0	0	1	1
<b>Apprch %</b>	0	100		0	0		0	0				
<b>Total %</b>	0	100		0	0		0	0		0	100	

# Accurate Counts

978-664-2565

File Name : 052500S9

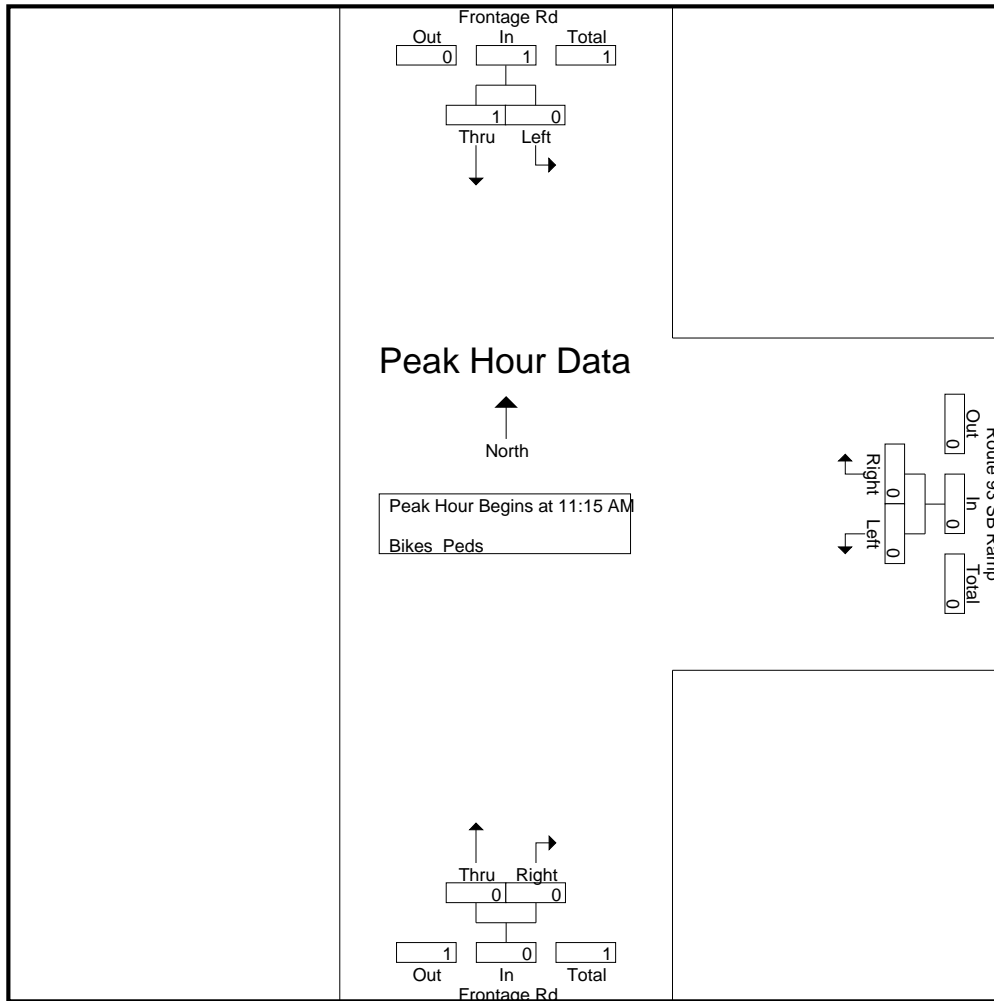
Site Code : 05250009

Start Date : 9/22/2018

Page No : 11

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
<b>Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1</b>										
<b>Peak Hour for Entire Intersection Begins at 11:15 AM</b>										
11:15 AM	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	1	1	0	0	0	0	0	0	1
<b>Total Volume</b>	0	1	1	0	0	0	0	0	0	1
<b>% App. Total</b>	0	100		0	0		0	0		
<b>PHF</b>	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250



# Accurate Counts

978-664-2565

N/S Street : Frontage Road  
 E/W Street: Route 93 SB Ramp  
 City/State : Andover, MA  
 Weather : Clear

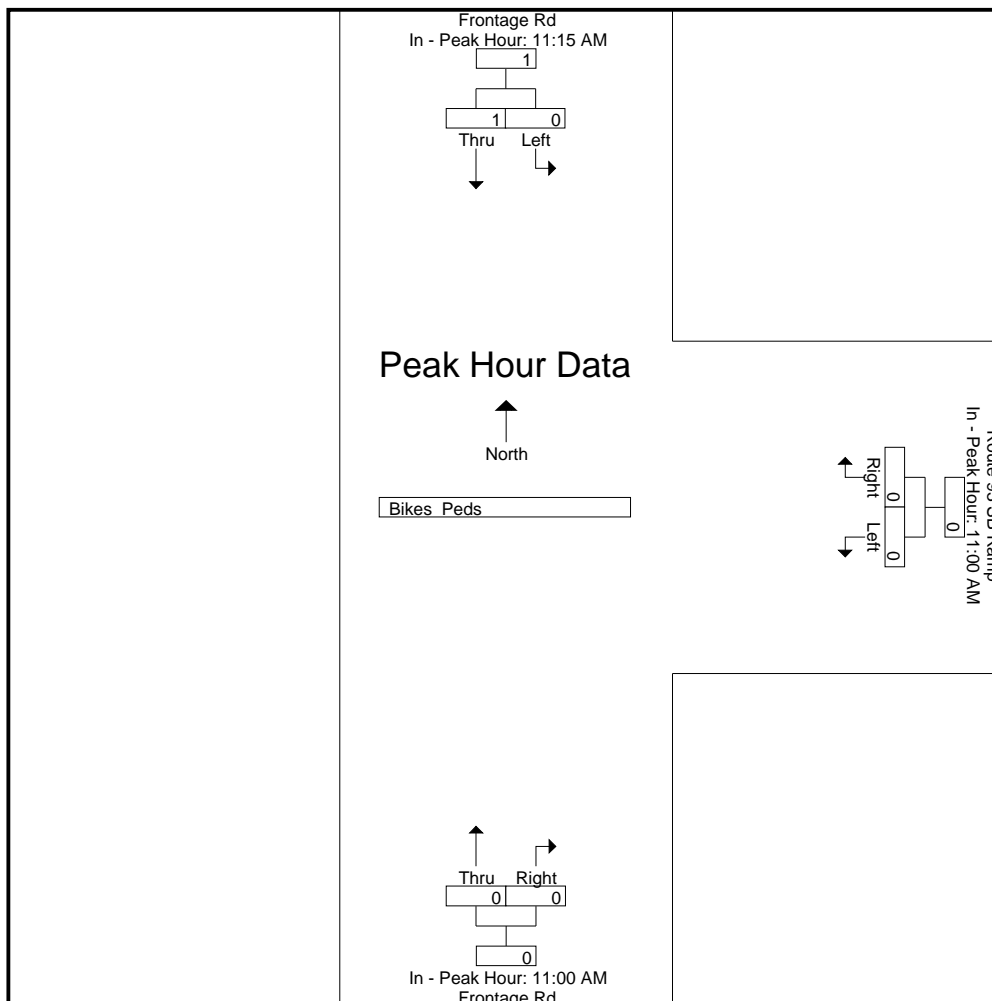
File Name : 052500S9  
 Site Code : 05250009  
 Start Date : 9/22/2018  
 Page No : 12

Start Time	Frontage Rd From North			Route 93 SB Ramp From East			Frontage Rd From South			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	

Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	1	0	0	0	0	0	0
Total Volume	0	1	1	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000



## **Appendix C**

2018 Automatic Traffic Recorder (ATR) Counts



#128-126 Dascomb Road between  
Partridge Hill Road and Surrey Lane  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

186440 A Volume  
Site Code: T0525

Start Time	EB		WB		Combined		09/12/18 Wed
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	*	109	*	71	*	180	
12:15	*	102	*	96	*	198	
12:30	*	91	*	110	*	201	
12:45	*	0 119	421	*	0 77	354	775
01:00	*	99	*	84	*	183	
01:15	*	91	*	66	*	157	
01:30	*	102	*	92	*	194	
01:45	*	0 100	392	*	0 84	326	718
02:00	*	92	*	98	*	190	
02:15	*	101	*	109	*	210	
02:30	*	107	*	116	*	223	
02:45	*	0 102	402	*	0 143	466	868
03:00	*	116	*	119	*	235	
03:15	*	133	*	167	*	300	
03:30	*	154	*	136	*	290	
03:45	*	0 135	538	*	0 130	552	1090
04:00	*	122	*	126	*	248	
04:15	*	146	*	161	*	307	
04:30	*	173	*	149	*	322	
04:45	*	0 164	605	*	0 151	587	1192
05:00	*	180	*	163	*	343	
05:15	*	258	*	162	*	420	
05:30	*	219	*	118	*	337	
05:45	*	0 236	893	*	0 134	577	1470
06:00	*	203	*	111	*	314	
06:15	*	182	*	98	*	280	
06:30	*	137	*	94	*	231	
06:45	*	0 100	622	*	0 88	391	1013
07:00	*	114	*	105	*	219	
07:15	*	116	*	70	*	186	
07:30	*	94	*	58	*	152	
07:45	*	0 74	398	*	0 63	296	694
08:00	*	64	*	71	*	135	
08:15	*	62	*	44	*	106	
08:30	*	66	*	61	*	127	
08:45	*	0 48	240	*	0 42	218	458
09:00	*	50	*	47	*	97	
09:15	*	42	*	42	*	84	
09:30	*	52	*	29	*	81	
09:45	*	0 37	181	*	0 21	139	320
10:00	*	37	*	30	*	67	
10:15	*	23	*	17	*	40	
10:30	*	37	*	23	*	60	
10:45	*	0 27	124	*	0 21	91	215
11:00	29	20	89	18	118	38	
11:15	25	18	74	13	99	31	
11:30	71	19	77	10	148	29	
11:45	95	220 21	78	77 317	10 51	172 537	31 129
Total	220	4894	317	4048	537	8942	
Percent	41.0%	54.7%	59.0%	45.3%			
Day Total		5114		4365		9479	
Peak	11:00	- 05:15	- 11:00	- 04:30	- 11:00	- 05:00	- - -
Vol.	220	- 916	- 317	- 625	- 537	- 1470	- - -
P.H.F.	0.579	0.888	0.890	0.959	0.781	0.875	

#128-126 Dascomb Road between  
Partridge Hill Road and Surrey Lane  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

186440 A Volume  
Site Code: T0525

Start Time	EB		WB		Combin ed		09/13/18 Thu							
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.								
12:00	16	93	7	80	23	173								
12:15	8	95	4	118	12	213								
12:30	8	113	4	92	12	205								
12:45	7	75	376	6	21	90	380	13	60	165	756			
01:00	6	96	4	104	10	200								
01:15	6	80	15	70	21	150								
01:30	6	95	5	88	11	183								
01:45	5	23	128	399	0	24	111	373	5	47	239	772		
02:00	4	108	2	128	6	236								
02:15	5	111	3	104	8	215								
02:30	6	135	2	140	8	275								
02:45	7	22	114	468	2	9	125	497	9	31	239	965		
03:00	5	129	1	158	6	287								
03:15	0	108	0	162	0	270								
03:30	4	143	6	139	10	282								
03:45	8	17	175	555	4	11	132	591	12	28	307	1146		
04:00	3	160	6	154	9	314								
04:15	13	168	4	137	17	305								
04:30	15	190	12	141	27	331								
04:45	10	41	194	712	23	45	153	585	33	86	347	1297		
05:00	21	219	34	183	55	402								
05:15	35	230	39	155	74	385								
05:30	59	231	57	170	116	401								
05:45	45	160	195	875	81	211	197	705	126	371	392	1580		
06:00	65	222	94	233	159	455								
06:15	53	177	126	255	179	432								
06:30	84	108	138	256	222	364								
06:45	114	316	151	658	157	515	280	1024	271	831	431	1682		
07:00	138	124	186	251	324	375								
07:15	172	114	166	214	338	328								
07:30	176	115	222	187	398	302								
07:45	195	681	66	419	257	831	169	821	452	1512	235	1240		
08:00	187	86	242	155	429	241								
08:15	183	65	205	133	388	198								
08:30	186	86	229	121	415	207								
08:45	161	717	77	314	192	868	74	483	353	1585	151	797		
09:00	117	76	143	59	260	135								
09:15	95	96	131	46	226	142								
09:30	96	57	100	51	196	108								
09:45	96	404	68	297	90	464	41	197	186	868	109	494		
10:00	85	55	83	38	168	93								
10:15	64	50	107	27	171	77								
10:30	74	45	84	23	158	68								
10:45	86	309	43	193	83	357	20	108	169	666	63	301		
11:00	76	24	82	24	158	48								
11:15	77	26	93	18	170	44								
11:30	93	24	103	13	196	37								
11:45	100	346	16	90	101	379	9	64	201	725	25	154		
Total	3075	5356	3735	5828	6810	11184								
Percent	45.2%	47.9%	54.8%	52.1%										
Day Total		8431		9563		17994								
Peak	07:45	-	05:15	-	07:45	-	06:15	-	07:45	-	06:00	-	-	-
Vol.	751	-	878	-	933	-	1042	-	1684	-	1682	-	-	-
P.H.F.	0.963		0.950		0.908		0.930		0.931		0.924			

#128-126 Dascomb Road between  
Partridge Hill Road and Surrey Lane  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

186440 A Volume  
Site Code: T0525

Start Time	EB		WB		Combined		09/14/18 Fri
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	9	150	7	111	16	261	
12:15	17	146	6	125	23	271	
12:30	9	*	5	*	14	*	
12:45	15	50	4	22	19	72	532
01:00	10	*	8	*	18	*	
01:15	10	*	5	*	15	*	
01:30	8	*	6	*	14	*	
01:45	13	41	4	23	17	64	0
02:00	6	*	3	*	9	*	
02:15	2	*	2	*	4	*	
02:30	1	*	1	*	2	*	
02:45	6	15	5	11	11	26	0
03:00	6	*	2	*	8	*	
03:15	4	*	2	*	6	*	
03:30	3	*	2	*	5	*	
03:45	7	20	3	9	10	29	0
04:00	4	*	2	*	6	*	
04:15	7	*	10	*	17	*	
04:30	16	*	13	*	29	*	
04:45	16	43	11	36	27	79	0
05:00	26	*	14	*	40	*	
05:15	33	*	23	*	56	*	
05:30	76	*	25	*	101	*	
05:45	80	215	29	91	109	306	0
06:00	63	*	40	*	103	*	
06:15	61	*	45	*	106	*	
06:30	94	*	54	*	148	*	
06:45	110	328	84	223	194	551	0
07:00	113	*	89	*	202	*	
07:15	146	*	79	*	225	*	
07:30	147	*	87	*	234	*	
07:45	143	549	94	349	237	898	0
08:00	160	*	105	*	265	*	
08:15	194	*	102	*	296	*	
08:30	208	*	101	*	309	*	
08:45	188	750	90	398	278	1148	0
09:00	176	*	95	*	271	*	
09:15	121	*	84	*	205	*	
09:30	126	*	94	*	220	*	
09:45	170	593	87	360	257	953	0
10:00	126	*	74	*	200	*	
10:15	127	*	94	*	221	*	
10:30	113	*	93	*	206	*	
10:45	131	497	91	352	222	849	0
11:00	141	*	85	*	226	*	
11:15	146	*	112	*	258	*	
11:30	168	*	103	*	271	*	
11:45	146	601	105	405	251	1006	0
Total	3702	296	2279	236	5981	532	
Percent	61.9%	55.6%	38.1%	44.4%			
Day Total		3998		2515		6513	
Peak	08:15	-	-	11:00	-	-	-
Vol.	766	-	-	405	-	-	-
P.H.F.	0.921	-	-	0.904	-	-	-

#128-126 Dascomb Road between  
 Partridge Hill Road and Surrey Lane  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 A Class  
 Site Code: T0525

EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	1	180	27	1	8	1	0	2	0	0	0	0	0	220
12 PM	2	344	56	6	10	3	0	0	0	0	0	0	0	421
13:00	2	317	59	0	10	3	0	1	0	0	0	0	0	392
14:00	4	318	61	1	16	0	0	2	0	0	0	0	0	402
15:00	3	465	58	2	8	1	0	1	0	0	0	0	0	538
16:00	0	531	71	0	1	2	0	0	0	0	0	0	0	605
17:00	4	763	109	0	9	5	1	2	0	0	0	0	0	893
18:00	0	549	63	2	5	0	0	2	1	0	0	0	0	622
19:00	0	335	54	0	7	1	0	1	0	0	0	0	0	398
20:00	0	216	17	0	6	0	0	0	0	1	0	0	0	240
21:00	0	168	11	0	2	0	0	0	0	0	0	0	0	181
22:00	0	110	14	0	0	0	0	0	0	0	0	0	0	124
23:00	0	67	7	0	2	0	0	0	2	0	0	0	0	78
Total	16	4363	607	12	84	16	1	11	3	1	0	0	0	5114
Percent	0.3%	85.3%	11.9%	0.2%	1.6%	0.3%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	11:00	11:00	11:00	11:00		11:00						11:00
Vol.	1	180	27	1	8	1		2						220
PM Peak	14:00	17:00	17:00	12:00	14:00	17:00	17:00	14:00	23:00	20:00				17:00
Vol.	4	763	109	6	16	5	1	2	2	1				893

#128-126 Dascomb Road between  
 Partridge Hill Road and Surrey Lane  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 A Class  
 Site Code: T0525

EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/13/1														
8	0	37	2	0	0	0	0	0	0	0	0	0	0	39
01:00	0	22	1	0	0	0	0	0	0	0	0	0	0	23
02:00	0	14	7	0	1	0	0	0	0	0	0	0	0	22
03:00	0	14	2	0	1	0	0	0	0	0	0	0	0	17
04:00	0	30	10	0	1	0	0	0	0	0	0	0	0	41
05:00	1	107	43	1	5	1	0	2	0	0	0	0	0	160
06:00	2	232	67	3	10	0	0	1	1	0	0	0	0	316
07:00	4	565	84	2	22	2	0	2	0	0	0	0	0	681
08:00	2	602	88	4	18	2	0	1	0	0	0	0	0	717
09:00	3	307	60	6	22	2	0	3	1	0	0	0	0	404
10:00	1	227	60	5	14	1	0	0	1	0	0	0	0	309
11:00	0	263	65	4	10	0	0	3	1	0	0	0	0	346
12 PM	0	298	60	2	13	2	0	1	0	0	0	0	0	376
13:00	3	310	62	2	16	2	0	3	1	0	0	0	0	399
14:00	3	380	66	4	11	2	1	0	1	0	0	0	0	468
15:00	0	455	75	2	20	2	0	1	0	0	0	0	0	555
16:00	0	591	99	1	17	3	0	0	1	0	0	0	0	712
17:00	23	735	71	1	17	19	4	4	1	0	0	0	0	875
18:00	9	546	80	0	14	8	0	1	0	0	0	0	0	658
19:00	4	348	53	1	11	1	0	1	0	0	0	0	0	419
20:00	1	272	39	1	1	0	0	0	0	0	0	0	0	314
21:00	0	255	39	0	3	0	0	0	0	0	0	0	0	297
22:00	0	168	21	0	4	0	0	0	0	0	0	0	0	193
23:00	0	80	9	0	0	0	0	1	0	0	0	0	0	90
Total	56	6858	1163	39	231	47	5	24	8	0	0	0	0	8431
Percent	0.7%	81.3%	13.8%	0.5%	2.7%	0.6%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	08:00	09:00	07:00	07:00		09:00	06:00					08:00
Vol.	4	602	88	6	22	2		3	1					717
PM Peak	17:00	17:00	16:00	14:00	15:00	17:00	17:00	17:00	13:00					17:00
Vol.	23	735	99	4	20	19	4	4	1					875

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EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/14/1														
8	0	38	11	0	1	0	0	0	0	0	0	0	0	50
01:00	1	36	3	0	0	1	0	0	0	0	0	0	0	41
02:00	0	10	5	0	0	0	0	0	0	0	0	0	0	15
03:00	0	12	6	0	2	0	0	0	0	0	0	0	0	20
04:00	1	31	8	0	2	0	0	0	1	0	0	0	0	43
05:00	4	145	58	0	7	1	0	0	0	0	0	0	0	215
06:00	3	237	61	5	21	0	0	0	1	0	0	0	0	328
07:00	1	423	105	1	18	1	0	0	0	0	0	0	0	549
08:00	4	609	106	2	27	0	0	2	0	0	0	0	0	750
09:00	2	472	89	3	24	0	0	2	1	0	0	0	0	593
10:00	0	403	75	2	12	0	0	3	2	0	0	0	0	497
11:00	2	469	106	5	16	2	0	1	0	0	0	0	0	601
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	18	2885	633	18	130	5	0	8	5	0	0	0	0	3702
Percent	0.5%	77.9%	17.1%	0.5%	3.5%	0.1%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	05:00	08:00	08:00	06:00	08:00	11:00		10:00	10:00					08:00
Vol.	4	609	106	5	27	2		3	2					750
PM Peak														
Vol.														

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186440 A Class  
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WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	0	238	63	2	9	1	0	4	0	0	0	0	0	317
12 PM	0	277	55	2	16	1	0	3	0	0	0	0	0	354
13:00	1	247	66	2	8	0	0	2	0	0	0	0	0	326
14:00	0	351	86	1	26	1	0	1	0	0	0	0	0	466
15:00	2	406	108	5	26	1	0	3	1	0	0	0	0	552
16:00	0	476	89	1	21	0	0	0	0	0	0	0	0	587
17:00	1	500	66	0	8	1	0	1	0	0	0	0	0	577
18:00	0	326	50	1	11	0	0	2	1	0	0	0	0	391
19:00	0	252	37	1	6	0	0	0	0	0	0	0	0	296
20:00	0	195	19	1	2	1	0	0	0	0	0	0	0	218
21:00	1	123	12	0	2	1	0	0	0	0	0	0	0	139
22:00	0	82	9	0	0	0	0	0	0	0	0	0	0	91
23:00	0	42	9	0	0	0	0	0	0	0	0	0	0	51
Total	5	3515	669	16	135	7	0	16	2	0	0	0	0	4365
Percent	0.1%	80.5%	15.3%	0.4%	3.1%	0.2%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		11:00	11:00	11:00	11:00	11:00		11:00						11:00
Vol.		238	63	2	9	1		4						317
PM Peak	15:00	17:00	15:00	15:00	14:00	12:00		12:00	15:00					16:00
Vol.	2	500	108	5	26	1		3	1					587

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WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/13/1														
8	0	19	2	0	0	0	0	0	0	0	0	0	0	21
01:00	0	21	2	0	1	0	0	0	0	0	0	0	0	24
02:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
04:00	1	36	6	0	1	1	0	0	0	0	0	0	0	45
05:00	0	170	33	0	7	1	0	0	0	0	0	0	0	211
06:00	1	428	72	0	13	1	0	0	0	0	0	0	0	515
07:00	1	703	108	2	13	2	0	1	1	0	0	0	0	831
08:00	1	739	110	3	11	1	0	3	0	0	0	0	0	868
09:00	1	369	76	3	12	1	0	2	0	0	0	0	0	464
10:00	0	264	70	3	15	0	0	4	1	0	0	0	0	357
11:00	1	284	71	3	16	1	0	3	0	0	0	0	0	379
12 PM	1	295	59	3	14	2	0	6	0	0	0	0	0	380
13:00	0	272	78	4	13	2	0	2	2	0	0	0	0	373
14:00	2	367	99	6	20	1	0	2	0	0	0	0	0	497
15:00	1	451	109	10	19	0	0	1	0	0	0	0	0	591
16:00	1	479	81	1	21	0	0	2	0	0	0	0	0	585
17:00	8	595	87	0	13	2	0	0	0	0	0	0	0	705
18:00	3	870	133	0	14	3	0	1	0	0	0	0	0	1024
19:00	0	698	96	2	23	1	0	1	0	0	0	0	0	821
20:00	0	412	62	0	7	1	0	0	1	0	0	0	0	483
21:00	2	161	30	0	4	0	0	0	0	0	0	0	0	197
22:00	0	84	22	0	2	0	0	0	0	0	0	0	0	108
23:00	0	52	10	0	2	0	0	0	0	0	0	0	0	64
Total	24	7788	1417	40	241	20	0	28	5	0	0	0	0	9563
Percent	0.3%	81.4%	14.8%	0.4%	2.5%	0.2%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	04:00	08:00	08:00	08:00	11:00	07:00		10:00	07:00					08:00
Vol.	1	739	110	3	16	2		4	1					868
PM Peak	17:00	18:00	18:00	15:00	19:00	18:00		12:00	13:00					18:00
Vol.	8	870	133	10	23	3		6	2					1024

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186440 A Class  
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WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/14/1														
8	0	15	3	0	4	0	0	0	0	0	0	0	0	22
01:00	0	22	1	0	0	0	0	0	0	0	0	0	0	23
02:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
03:00	0	6	2	0	1	0	0	0	0	0	0	0	0	9
04:00	2	26	5	0	2	1	0	0	0	0	0	0	0	36
05:00	0	66	20	0	4	1	0	0	0	0	0	0	0	91
06:00	2	167	46	1	5	1	0	0	1	0	0	0	0	223
07:00	1	280	54	0	11	1	0	2	0	0	0	0	0	349
08:00	2	318	61	0	16	0	0	1	0	0	0	0	0	398
09:00	0	282	63	1	10	0	0	4	0	0	0	0	0	360
10:00	0	276	64	3	8	1	0	0	0	0	0	0	0	352
11:00	1	309	84	2	9	0	0	0	0	0	0	0	0	405
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	8	1777	404	7	70	5	0	7	1	0	0	0	0	2279
Percent	0.4%	78.0%	17.7%	0.3%	3.1%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	04:00	08:00	11:00	10:00	08:00	04:00		09:00	06:00					11:00
Vol.	2	318	84	3	16	1		4	1					405
PM Peak														
Vol.														

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EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	<b>23</b>	<b>48</b>	<b>62</b>	<b>65</b>	<b>20</b>	<b>2</b>	0	0	0	0	0	0	0	<b>220</b>	28	22
12 PM	68	<b>106</b>	101	<b>111</b>	30	4	1	0	0	0	0	0	0	421	27	21
13:00	78	94	<b>114</b>	81	22	3	0	0	0	0	0	0	0	392	26	20
14:00	<b>111</b>	100	85	73	30	3	0	0	0	0	0	0	0	402	27	19
15:00	63	79	24	36	109	171	52	4	0	0	0	0	0	538	38	29
16:00	0	0	6	10	125	<b>330</b>	<b>117</b>	<b>15</b>	<b>2</b>	0	0	0	0	605	40	37
17:00	59	38	55	73	<b>252</b>	315	89	12	0	0	0	0	0	<b>893</b>	38	32
18:00	0	0	11	20	180	298	101	10	1	1	0	0	0	622	39	36
19:00	0	2	0	15	98	196	81	6	0	0	0	0	0	398	40	36
20:00	0	1	6	3	55	119	45	9	1	1	0	0	0	240	41	37
21:00	0	2	0	1	31	100	42	4	1	0	0	0	0	181	41	37
22:00	0	1	2	4	16	64	29	6	2	0	0	0	0	124	42	38
23:00	0	0	1	1	9	37	24	5	1	0	0	0	0	78	42	38
Total	402	471	467	493	977	1642	581	71	8	2	0	0	0	5114		
%	7.9%	9.2%	9.1%	9.6%	19.1%	32.1%	11.4%	1.4%	0.2%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	11:00	11:00	11:00	11:00	11:00								11:00		
Vol.	23	48	62	65	20	2								220		
PM Peak	14:00	12:00	13:00	12:00	17:00	16:00	16:00	16:00	16:00	18:00				17:00		
Vol.	111	106	114	111	252	330	117	15	2	1				893		

Stats

15th Percentile : 17 MPH  
 50th Percentile : 32 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 42 MPH

Mean Speed(Average) : 30 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 2619  
 Percent in Pace : 51.2%  
 Number of Vehicles > 35 MPH : 1976  
 Percent of Vehicles > 35 MPH : 38.6%

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186440 A Speed  
Site Code: T0525

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
09/13/																
18	0	0	0	1	7	19	9	3	0	0	0	0	0	39	42	38
01:00	0	0	0	2	3	7	5	3	2	0	1	0	0	23	48	40
02:00	0	0	0	1	3	10	5	3	0	0	0	0	0	22	43	38
03:00	0	0	0	0	1	4	9	2	1	0	0	0	0	17	45	41
04:00	0	0	0	1	2	14	19	4	1	0	0	0	0	41	43	40
05:00	0	0	4	5	25	60	59	7	0	0	0	0	0	160	42	38
06:00	1	2	13	5	46	154	88	7	0	0	0	0	0	316	41	37
07:00	0	1	19	35	208	322	93	2	0	1	0	0	0	681	38	35
08:00	4	12	24	57	209	322	85	2	2	0	0	0	0	717	38	34
09:00	0	3	3	13	88	198	90	7	1	0	0	0	1	404	41	37
10:00	0	0	2	15	75	156	55	5	0	1	0	0	0	309	40	36
11:00	0	0	3	3	64	183	83	9	1	0	0	0	0	346	41	37
12 PM	0	2	4	8	63	207	81	10	1	0	0	0	0	376	41	37
13:00	0	3	3	12	95	197	81	8	0	0	0	0	0	399	40	36
14:00	3	0	7	14	111	243	81	7	2	0	0	0	0	468	40	36
15:00	2	2	8	37	120	266	108	11	1	0	0	0	0	555	40	36
16:00	0	1	13	42	182	330	131	12	1	0	0	0	0	712	40	36
17:00	207	155	184	114	104	89	21	0	0	0	1	0	0	875	33	22
18:00	32	21	86	105	235	132	37	8	1	0	0	1	0	658	37	30
19:00	0	6	23	85	153	117	25	10	0	0	0	0	0	419	37	33
20:00	0	3	6	21	96	133	50	5	0	0	0	0	0	314	39	35
21:00	0	3	5	12	94	121	53	7	0	1	1	0	0	297	40	36
22:00	0	1	2	11	61	81	31	6	0	0	0	0	0	193	40	36
23:00	0	0	1	5	15	38	24	5	2	0	0	0	0	90	42	38
Total	249	215	410	604	2060	3403	1323	143	16	3	3	1	1	8431		
%	3.0%	2.6%	4.9%	7.2%	24.4%	40.4%	15.7%	1.7%	0.2%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	07:00	07:00	11:00	01:00	07:00	01:00		09:00	08:00		
Vol.	4	12	24	57	209	322	93	9	2	1	1		1	717		
PM Peak	17:00	17:00	17:00	17:00	18:00	16:00	16:00	16:00	14:00	21:00	17:00	18:00		17:00		
Vol.	207	155	184	114	235	330	131	12	2	1	1	1		875		

Stats

15th Percentile : 27 MPH  
 50th Percentile : 34 MPH  
 85th Percentile : 39 MPH  
 95th Percentile : 43 MPH

Mean Speed(Average) : 34 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 5463  
 Percent in Pace : 64.8%  
 Number of Vehicles > 35 MPH : 4212  
 Percent of Vehicles > 35 MPH : 50.0%

#128-126 Dascomb Road between  
 Partridge Hill Road and Surrey Lane  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 A Speed  
 Site Code: T0525

EB	Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed
09/14/																													
18	0	0	0	1	10	20	11	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	44	39	
01:00	0	0	2	1	6	13	14	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	43	38	
02:00	0	0	1	0	1	2	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	43	40	
03:00	0	0	0	0	1	3	8	7	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	47	43	
04:00	0	0	0	1	3	17	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	42	39	
05:00	0	0	1	5	23	101	71	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	215	42	39	
06:00	0	0	1	2	55	152	102	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	328	42	38	
07:00	0	2	0	13	75	289	152	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	549	41	38	
08:00	0	1	7	23	179	395	122	19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	750	40	36	
09:00	0	0	1	22	161	311	88	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	593	39	36	
10:00	0	1	8	12	124	223	116	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	497	41	37	
11:00	1	2	7	16	161	307	100	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	601	39	36	
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1	6	28	96	799	1833	814	112	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3702			
%	0.0%	0.2%	0.8%	2.6%	21.6%	49.5%	22.0%	3.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	11:00	07:00	10:00	08:00	08:00	08:00	07:00	08:00	08:00	03:00																10:00	08:00		
Vol.	1	2	8	23	179	395	152	19	4	1																1	750		
PM Peak																													
Vol.																													

Stats

15th Percentile : 31 MPH  
 50th Percentile : 36 MPH  
 85th Percentile : 41 MPH  
 95th Percentile : 43 MPH

Mean Speed(Average) : 37 MPH  
 10 MPH Pace Speed : 35-44 MPH  
 Number in Pace : 2647  
 Percent in Pace : 71.5%  
 Number of Vehicles > 35 MPH : 2405  
 Percent of Vehicles > 35 MPH : 65.0%

#128-126 Dascomb Road between  
Partridge Hill Road and Surrey Lane  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdilic.com

186440 A Speed  
Site Code: T0525

WB

Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	0	<b>4</b>	<b>3</b>	<b>41</b>	<b>178</b>	<b>80</b>	<b>10</b>	<b>1</b>	0	0	0	0	0	<b>317</b>	36	33
12 PM	0	<b>1</b>	6	77	214	53	3	0	0	0	0	0	0	354	34	32
13:00	0	1	18	58	170	75	4	0	0	0	0	0	0	326	36	32
14:00	0	1	26	<b>115</b>	<b>269</b>	53	2	0	0	0	0	0	0	466	33	31
15:00	1	0	26	100	185	171	64	5	0	0	0	0	0	552	38	33
16:00	0	0	5	9	78	<b>345</b>	<b>144</b>	6	0	0	0	0	0	<b>587</b>	41	37
17:00	<b>2</b>	1	<b>31</b>	25	116	292	102	<b>8</b>	0	0	0	0	0	577	40	36
18:00	0	0	0	6	96	225	60	4	0	0	0	0	0	391	39	36
19:00	0	1	4	9	89	155	36	2	0	0	0	0	0	296	38	36
20:00	0	0	4	16	56	111	29	2	0	0	0	0	0	218	38	35
21:00	0	0	2	4	36	72	20	5	0	0	0	0	0	139	40	36
22:00	0	0	1	5	17	44	20	4	0	0	0	0	0	91	41	37
23:00	0	0	3	1	13	26	5	2	<b>1</b>	0	0	0	0	51	39	36
Total	3	9	129	466	1517	1702	499	39	1	0	0	0	0	4365		
%	0.1%	0.2%	3.0%	10.7%	34.8%	39.0%	11.4%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		11:00	11:00	11:00	11:00	11:00	11:00	11:00						11:00		
Vol.		4	3	41	178	80	10	1						317		
PM Peak	17:00	12:00	17:00	14:00	14:00	16:00	16:00	17:00	23:00					16:00		
Vol.	2	1	31	115	269	345	144	8	1					587		

Stats

15th Percentile : 29 MPH  
50th Percentile : 34 MPH  
85th Percentile : 38 MPH  
95th Percentile : 42 MPH

Mean Speed(Average) : 34 MPH  
10 MPH Pace Speed : 30-39 MPH  
Number in Pace : 3219  
Percent in Pace : 73.7%  
Number of Vehicles > 35 MPH : 1901  
Percent of Vehicles > 35 MPH : 43.5%

#128-126 Dascomb Road between  
 Partridge Hill Road and Surrey Lane  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 A Speed  
 Site Code: T0525

WB

Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/13/18	0	0	0	2	2	9	5	3	0	0	0	0	0	21	43	38
01:00	0	0	0	1	8	6	6	3	0	0	0	0	0	24	43	37
02:00	0	0	0	0	2	4	3	0	0	0	0	0	0	9	41	38
03:00	0	0	0	0	1	7	2	1	0	0	0	0	0	11	42	38
04:00	0	0	3	0	8	13	15	6	0	0	0	0	0	45	43	38
05:00	0	1	0	1	27	127	44	8	3	0	0	0	0	211	41	38
06:00	1	6	8	28	94	255	114	8	1	0	0	0	0	515	41	36
07:00	1	0	4	17	203	454	141	10	1	0	0	0	0	831	39	36
08:00	0	0	17	49	259	441	94	7	1	0	0	0	0	868	38	35
09:00	0	1	2	5	101	238	103	12	2	0	0	0	0	464	41	37
10:00	0	0	0	8	90	167	86	4	2	0	0	0	0	357	41	37
11:00	0	2	4	15	87	199	63	9	0	0	0	0	0	379	40	36
12 PM	1	1	1	4	86	201	76	9	1	0	0	0	0	380	40	37
13:00	0	1	3	17	94	204	49	4	1	0	0	0	0	373	38	36
14:00	1	5	10	20	125	268	62	5	1	0	0	0	0	497	38	36
15:00	0	0	10	57	182	269	66	7	0	0	0	0	0	591	38	35
16:00	3	8	7	38	100	306	109	13	1	0	0	0	0	585	40	36
17:00	12	9	141	84	223	201	34	1	0	0	0	0	0	705	37	31
18:00	11	11	47	195	501	243	13	1	0	0	2	0	0	1024	36	32
19:00	0	7	62	205	382	149	15	1	0	0	0	0	0	821	35	31
20:00	0	1	5	75	198	174	29	1	0	0	0	0	0	483	37	34
21:00	0	4	7	16	59	94	14	3	0	0	0	0	0	197	38	34
22:00	0	1	2	10	33	46	14	2	0	0	0	0	0	108	38	35
23:00	0	1	1	1	11	27	19	3	1	0	0	0	0	64	42	38
Total	30	59	334	848	2876	4102	1176	121	15	0	2	0	0	9563		
%	0.3%	0.6%	3.5%	8.9%	30.1%	42.9%	12.3%	1.3%	0.2%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	06:00	08:00	08:00	08:00	07:00	07:00	09:00	05:00					08:00		
Vol.	1	6	17	49	259	454	141	12	3					868		
PM Peak	17:00	18:00	17:00	19:00	18:00	16:00	16:00	16:00	12:00		18:00			18:00		
Vol.	12	11	141	205	501	306	109	13	1		2			1024		

Stats

15th Percentile : 29 MPH  
 50th Percentile : 34 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 42 MPH

Mean Speed(Average) : 35 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 6978  
 Percent in Pace : 73.0%  
 Number of Vehicles > 35 MPH : 4596  
 Percent of Vehicles > 35 MPH : 48.1%

#128-126 Dascomb Road between  
 Partridge Hill Road and Surrey Lane  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 A Speed  
 Site Code: T0525

WB	Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
	09/14/18	0	0	1	1	4	8	5	2	1	0	0	0	0	22	43	38
	01:00	0	0	0	2	4	7	9	1	0	0	0	0	0	23	42	38
	02:00	0	1	0	0	0	6	4	0	0	0	0	0	0	11	41	37
	03:00	0	0	0	2	1	0	6	0	0	0	0	0	0	9	42	38
	04:00	0	0	1	1	5	11	12	5	1	0	0	0	0	36	44	39
	05:00	0	0	0	6	14	39	22	9	1	0	0	0	0	91	43	38
	06:00	0	0	2	9	35	112	61	4	0	0	0	0	0	223	41	37
	07:00	0	0	0	4	53	201	78	12	1	0	0	0	0	349	41	38
	08:00	1	0	1	5	99	201	81	10	0	0	0	0	0	398	40	37
	09:00	0	1	0	5	60	218	69	7	0	0	0	0	0	360	40	37
	10:00	0	0	0	5	75	196	67	9	0	0	0	0	0	352	40	37
	11:00	0	0	4	14	91	206	83	7	0	0	0	0	0	405	40	37
	12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Total	1	2	9	54	441	1205	497	66	4	0	0	0	0	2279		
	%	0.0%	0.1%	0.4%	2.4%	19.4%	52.9%	21.8%	2.9%	0.2%	0.0%	0.0%	0.0%	0.0%			
	AM Peak	08:00	02:00	11:00	11:00	08:00	09:00	11:00	07:00	00:00					11:00		
	Vol.	1	1	4	14	99	218	83	12	1					405		
	PM Peak																
	Vol.																

Stats

15th Percentile : 32 MPH  
 50th Percentile : 36 MPH  
 85th Percentile : 41 MPH  
 95th Percentile : 43 MPH

Mean Speed(Average) : 37 MPH  
 10 MPH Pace Speed : 35-44 MPH  
 Number in Pace : 1702  
 Percent in Pace : 74.7%  
 Number of Vehicles > 35 MPH : 1531  
 Percent of Vehicles > 35 MPH : 67.2%

Dascomb Road  
 at I-93 overpass  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



PRECISION  
 D A T A  
 INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 B Volume  
 Site Code: T0525

Start Time	EB		WB		Combined		09/12/18 Wed							
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.								
12:00	*	*	*	*	*	*								
12:15	*	*	*	*	*	*								
12:30	*	*	*	*	*	*								
12:45	*	0	0	*	0	*	0							
01:00	*	*	*	*	*	*								
01:15	*	*	*	*	*	*								
01:30	*	137	*	157	*	294								
01:45	*	0	156	293	*	0	157	314	*	0	313	607		
02:00	*		156	*		147	*		303					
02:15	*		180	*		150	*		330					
02:30	*		226	*		181	*		407					
02:45	*	0	186	748	*	0	181	659	*	0	367	1407		
03:00	*		253	*		189	*		442					
03:15	*		170	*		220	*		390					
03:30	*		259	*		194	*		453					
03:45	*	0	199	881	*	0	206	809	*	0	405	1690		
04:00	*		219	*		205	*		424					
04:15	*		228	*		217	*		445					
04:30	*		243	*		213	*		456					
04:45	*	0	217	907	*	0	222	857	*	0	439	1764		
05:00	*		214	*		239	*		453					
05:15	*		294	*		220	*		514					
05:30	*		249	*		209	*		458					
05:45	*	0	207	964	*	0	221	889	*	0	428	1853		
06:00	*		186	*		205	*		391					
06:15	*		178	*		190	*		368					
06:30	*		163	*		185	*		348					
06:45	*	0	130	657	*	0	143	723	*	0	273	1380		
07:00	*		138	*		184	*		322					
07:15	*		111	*		128	*		239					
07:30	*		93	*		120	*		213					
07:45	*	0	70	412	*	0	118	550	*	0	188	962		
08:00	*		75	*		121	*		196					
08:15	*		68	*		113	*		181					
08:30	*		73	*		104	*		177					
08:45	*	0	68	284	*	0	84	422	*	0	152	706		
09:00	*		76	*		92	*		168					
09:15	*		59	*		77	*		136					
09:30	*		53	*		68	*		121					
09:45	*	0	36	224	*	0	53	290	*	0	89	514		
10:00	*		48	*		53	*		101					
10:15	*		24	*		46	*		70					
10:30	*		32	*		38	*		70					
10:45	*	0	26	130	*	0	49	186	*	0	75	316		
11:00	*		42	*		41	*		83					
11:15	*		31	*		36	*		67					
11:30	*		28	*		30	*		58					
11:45	*	0	27	128	*	0	34	141	*	0	61	269		
Total	0		5628		0		5840		0		11468			
Percent	0.0%		49.1%		0.0%		50.9%							
Day Total			5628				5840				11468			
Peak Vol.	-	-	04:45	-	-	-	04:30	-	-	-	04:45	-	-	-
P.H.F.	-	-	974	-	-	-	894	-	-	-	1864	-	-	-
			0.828				0.935				0.907			

Dascomb Road  
 at I-93 overpass  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



PRECISION  
 D A T A  
 INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 B Volume  
 Site Code: T0525

Start Time	EB		WB		Combined		09/13/18 Thu							
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.								
12:00	27	149	20	141	47	290								
12:15	7	131	18	172	25	303								
12:30	5	140	12	143	17	283								
12:45	7	113	533	13	63	145	601	20	109	258	1134			
01:00	6	151	5	172	11	323								
01:15	12	130	11	147	23	277								
01:30	24	143	7	145	31	288								
01:45	16	58	153	577	2	25	192	656	18	83	345	1233		
02:00	13	161	5	194	18	355								
02:15	9	172	10	176	19	348								
02:30	8	221	7	191	15	412								
02:45	13	43	194	748	6	28	179	740	19	71	373	1488		
03:00	6	247	2	195	8	442								
03:15	5	169	4	223	9	392								
03:30	9	212	6	182	15	394								
03:45	11	31	248	876	8	20	168	768	19	51	416	1644		
04:00	12	261	13	211	25	472								
04:15	23	237	8	204	31	441								
04:30	21	251	21	222	42	473								
04:45	18	74	228	977	37	79	231	868	55	153	459	1845		
05:00	38	268	50	231	88	499								
05:15	66	266	72	221	138	487								
05:30	81	242	97	202	178	444								
05:45	65	250	241	1017	147	366	247	901	212	616	488	1918		
06:00	114	258	141	250	255	508								
06:15	86	165	190	284	276	449								
06:30	126	155	206	277	332	432								
06:45	177	503	132	710	222	759	307	1118	399	1262	439	1828		
07:00	190	115	231	298	421	413								
07:15	214	109	231	275	445	384								
07:30	230	109	264	242	494	351								
07:45	247	881	79	412	289	1015	251	1066	536	1896	330	1478		
08:00	209	76	290	224	499	300								
08:15	240	88	267	178	507	266								
08:30	212	90	268	161	480	251								
08:45	188	849	92	346	223	1048	121	684	411	1897	213	1030		
09:00	167	110	203	98	370	208								
09:15	137	102	188	77	325	179								
09:30	133	83	153	85	286	168								
09:45	144	581	65	360	141	685	86	346	285	1266	151	706		
10:00	127	59	127	66	254	125								
10:15	121	62	141	63	262	98								
10:30	124	51	104	47	228	98								
10:45	111	483	49	221	136	508	61	237	247	991	110	458		
11:00	142	44	131	51	273	95								
11:15	105	36	131	40	236	76								
11:30	149	39	120	27	269	66								
11:45	145	541	22	141	156	538	18	136	301	1079	40	277		
Total	4340	6918	5134	8121	9474	15039								
Percent	45.8%	46.0%	54.2%	54.0%										
Day Total		11258		13255		24513								
Peak	07:30	-	05:00	-	07:45	-	06:15	-	07:30	-	05:15	-	-	-
Vol.	926	-	1017	-	1114	-	1166	-	2036	-	1927	-	-	-
P.H.F.	0.937	-	0.949	-	0.960	-	0.950	-	0.950	-	0.948	-	-	-

Dascomb Road  
 at I-93 overpass  
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186440 B Volume  
 Site Code: T0525

Start Time	EB		WB		Combin ed		09/14/18 Fri
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	22	152	21	176	43	328	
12:15	16	167	16	152	32	319	
12:30	14	*	20	*	34	*	
12:45	13	65	9	66	22	131	647
01:00	10	*	16	*	26	*	
01:15	19	*	9	*	28	*	
01:30	26	*	11	*	37	*	
01:45	17	72	8	44	25	116	0
02:00	11	*	1	*	12	*	
02:15	4	*	7	*	11	*	
02:30	4	*	2	*	6	*	
02:45	10	29	12	22	22	51	0
03:00	6	*	6	*	12	*	
03:15	10	*	4	*	14	*	
03:30	9	*	4	*	13	*	
03:45	8	33	8	22	16	55	0
04:00	11	*	7	*	18	*	
04:15	37	*	14	*	51	*	
04:30	28	*	21	*	49	*	
04:45	22	98	26	68	48	166	0
05:00	45	*	30	*	75	*	
05:15	44	*	40	*	84	*	
05:30	96	*	62	*	158	*	
05:45	102	287	90	222	192	509	0
06:00	93	*	80	*	173	*	
06:15	105	*	100	*	205	*	
06:30	131	*	126	*	257	*	
06:45	151	480	145	451	296	931	0
07:00	154	*	146	*	300	*	
07:15	195	*	142	*	337	*	
07:30	201	*	152	*	353	*	
07:45	199	749	165	605	364	1354	0
08:00	198	*	150	*	348	*	
08:15	211	*	145	*	356	*	
08:30	207	*	161	*	368	*	
08:45	208	824	158	614	366	1438	0
09:00	192	*	154	*	346	*	
09:15	158	*	146	*	304	*	
09:30	175	*	147	*	322	*	
09:45	213	738	122	569	335	1307	0
10:00	149	*	131	*	280	*	
10:15	159	*	149	*	308	*	
10:30	159	*	144	*	303	*	
10:45	178	645	135	559	313	1204	0
11:00	178	*	141	*	319	*	
11:15	177	*	161	*	338	*	
11:30	201	*	127	*	328	*	
11:45	187	743	153	582	340	1325	0
Total	4763	319	3824	328	8587	647	
Percent	55.5%	49.3%	44.5%	50.7%			
Day Total		5082		4152		9234	
Peak	08:00	-	-	07:45	-	-	-
Vol.	824	-	-	621	-	-	-
P.H.F.	0.976	-	-	0.941	-	-	-

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186440 B Class  
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EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	7	544	147	9	25	11	0	4	1	0	0	0	0	748
15:00	6	692	140	5	25	7	0	4	2	0	0	0	0	881
16:00	4	746	131	4	17	2	0	2	1	0	0	0	0	907
17:00	6	806	121	3	23	3	0	2	0	0	0	0	0	964
18:00	2	565	75	5	6	2	0	2	0	0	0	0	0	657
19:00	2	343	55	0	10	2	0	0	0	0	0	0	0	412
20:00	4	242	27	0	6	4	0	1	0	0	0	0	0	284
21:00	1	201	17	0	2	0	0	0	3	0	0	0	0	224
22:00	3	112	10	0	1	3	0	0	1	0	0	0	0	130
23:00	2	108	9	0	4	2	0	0	3	0	0	0	0	128
Total	37	4359	732	26	119	36	0	15	11	0	0	0	0	5335
Percent	0.7%	81.7%	13.7%	0.5%	2.2%	0.7%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.														
PM Peak Vol.	14:00	17:00	14:00	14:00	14:00	14:00		14:00	21:00					17:00
	7	806	147	9	25	11		4	3					964

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EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/13/1														
8	0	38	5	0	2	0	0	0	1	0	0	0	0	46
01:00	1	52	3	0	0	0	0	0	2	0	0	0	0	58
02:00	1	19	11	3	1	2	0	0	6	0	0	0	0	43
03:00	0	22	3	1	1	1	0	0	3	0	0	0	0	31
04:00	2	43	18	1	5	1	0	1	3	0	0	0	0	74
05:00	6	149	53	2	9	9	0	1	21	0	0	0	0	250
06:00	4	371	100	1	17	6	0	1	3	0	0	0	0	503
07:00	13	705	105	2	32	13	0	5	6	0	0	0	0	881
08:00	5	675	110	8	30	10	1	5	4	1	0	0	0	849
09:00	5	415	102	10	29	7	0	4	9	0	0	0	0	581
10:00	7	326	93	9	22	11	0	3	11	0	0	0	1	483
11:00	9	372	102	5	29	14	0	3	6	1	0	0	0	541
12 PM	12	380	91	2	21	19	0	4	3	1	0	0	0	533
13:00	9	402	102	11	28	10	1	8	6	0	0	0	0	577
14:00	8	548	136	9	25	13	0	5	4	0	0	0	0	748
15:00	7	675	136	8	33	4	3	9	1	0	0	0	0	876
16:00	8	767	153	1	28	10	0	8	1	1	0	0	0	977
17:00	11	855	118	2	22	3	2	2	1	0	1	0	0	1017
18:00	7	586	91	4	12	7	0	3	0	0	0	0	0	710
19:00	3	339	54	2	11	2	0	1	0	0	0	0	0	412
20:00	2	298	42	0	4	0	0	0	0	0	0	0	0	346
21:00	1	307	44	0	5	2	0	1	0	0	0	0	0	360
22:00	1	188	24	0	3	2	0	0	3	0	0	0	0	221
23:00	2	117	13	0	5	2	0	0	2	0	0	0	0	141
Total	124	8649	1709	81	374	148	7	64	96	4	1	0	1	11258
Percent	1.1%	76.8%	15.2%	0.7%	3.3%	1.3%	0.1%	0.6%	0.9%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	08:00	09:00	07:00	11:00	08:00	07:00	05:00	08:00			10:00	07:00
Vol.	13	705	110	10	32	14	1	5	21	1			1	881
PM Peak	12:00	17:00	16:00	13:00	15:00	12:00	15:00	15:00	13:00	12:00	17:00			17:00
Vol.	12	855	153	11	33	19	3	9	6	1	1			1017

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EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/14/1														
8	1	48	11	0	3	1	0	0	1	0	0	0	0	65
01:00	1	63	5	0	0	1	0	0	2	0	0	0	0	72
02:00	0	17	7	1	0	0	0	0	4	0	0	0	0	29
03:00	1	12	7	1	4	1	0	0	7	0	0	0	0	33
04:00	5	48	15	1	2	4	0	2	21	0	0	0	0	98
05:00	9	178	69	1	16	5	0	1	8	0	0	0	0	287
06:00	5	338	93	3	27	5	0	1	8	0	0	0	0	480
07:00	6	574	135	1	19	4	0	6	4	0	0	0	0	749
08:00	9	638	127	3	30	7	0	6	4	0	0	0	0	824
09:00	8	539	124	7	30	13	1	3	12	1	0	0	0	738
10:00	6	482	113	7	16	6	2	4	9	0	0	0	0	645
11:00	11	552	120	11	24	18	0	4	2	0	1	0	0	743
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	62	3489	826	36	171	65	3	27	82	1	1	0	0	4763
Percent	1.3%	73.3%	17.3%	0.8%	3.6%	1.4%	0.1%	0.6%	1.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	08:00	07:00	11:00	08:00	11:00	10:00	07:00	04:00	09:00	11:00			08:00
Vol.	11	638	135	11	30	18	2	6	21	1	1			824
PM Peak														
Vol.														

Dascomb Road  
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PRECISION  
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186440 B Class  
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WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	2	478	118	4	42	7	0	6	2	0	0	0	0	659
15:00	4	612	144	7	29	1	1	5	6	0	0	0	0	809
16:00	3	687	123	2	32	4	0	2	4	0	0	0	0	857
17:00	3	763	107	1	12	0	0	3	0	0	0	0	0	889
18:00	2	621	72	3	17	1	0	4	2	0	0	1	0	723
19:00	0	471	66	1	11	0	0	1	0	0	0	0	0	550
20:00	2	358	47	2	11	1	0	0	1	0	0	0	0	422
21:00	1	248	30	2	9	0	0	0	0	0	0	0	0	290
22:00	0	164	14	0	5	1	0	0	2	0	0	0	0	186
23:00	0	110	23	1	0	5	0	0	2	0	0	0	0	141
Total	17	4512	744	23	168	20	1	21	19	0	0	1	0	5526
Percent	0.3%	81.7%	13.5%	0.4%	3.0%	0.4%	0.0%	0.4%	0.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.														
PM Peak Vol.	15:00	17:00	15:00	15:00	14:00	14:00	15:00	14:00	15:00			18:00		17:00
	4	763	144	7	42	7	1	6	6			1		889

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 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 B Class  
 Site Code: T0525

WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/13/1														
8	0	45	11	2	1	4	0	0	0	0	0	0	0	63
01:00	1	19	3	0	1	1	0	0	0	0	0	0	0	25
02:00	0	17	2	1	3	3	0	0	2	0	0	0	0	28
03:00	0	16	2	0	0	1	0	0	1	0	0	0	0	20
04:00	1	55	13	1	4	4	0	0	1	0	0	0	0	79
05:00	3	276	61	3	15	4	0	0	3	1	0	0	0	366
06:00	4	622	109	4	15	2	0	1	2	0	0	0	0	759
07:00	9	851	110	3	30	8	0	0	4	0	0	0	0	1015
08:00	10	878	122	4	23	4	0	4	3	0	0	0	0	1048
09:00	8	516	122	5	22	6	0	3	2	1	0	0	0	685
10:00	4	363	87	4	34	6	0	5	5	0	0	0	0	508
11:00	3	404	93	5	22	3	0	3	3	2	0	0	0	538
12 PM	3	464	81	10	26	5	0	7	4	0	0	1	0	601
13:00	2	476	123	9	36	2	0	5	3	0	0	0	0	656
14:00	4	525	140	4	43	9	0	10	5	0	0	0	0	740
15:00	3	589	130	4	31	4	0	3	4	0	0	0	0	768
16:00	2	704	117	0	33	5	1	4	2	0	0	0	0	868
17:00	9	765	105	2	8	4	0	6	2	0	0	0	0	901
18:00	3	972	117	2	15	2	0	6	1	0	0	0	0	1118
19:00	1	924	106	3	28	2	0	2	0	0	0	0	0	1066
20:00	3	591	77	3	8	1	0	0	1	0	0	0	0	684
21:00	1	298	38	2	6	0	0	0	1	0	0	0	0	346
22:00	1	196	33	0	4	1	0	0	1	1	0	0	0	237
23:00	0	101	23	1	6	5	0	0	0	0	0	0	0	136
Total	75	10667	1825	72	414	86	1	59	50	5	0	1	0	13255
Percent	0.6%	80.5%	13.8%	0.5%	3.1%	0.6%	0.0%	0.4%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	09:00	10:00	07:00		10:00	10:00	11:00				08:00
Vol.	10	878	122	5	34	8		5	5	2				1048
PM Peak	17:00	18:00	14:00	12:00	14:00	14:00	16:00	14:00	14:00	22:00		12:00		18:00
Vol.	9	972	140	10	43	9	1	10	5	1		1		1118

Dascomb Road  
 at I-93 overpass  
 City, State: Andover, MA  
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WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/14/1														
8	0	49	10	1	3	3	0	0	0	0	0	0	0	66
01:00	1	35	2	1	1	2	0	0	2	0	0	0	0	44
02:00	1	12	5	0	0	3	0	0	1	0	0	0	0	22
03:00	0	14	3	1	1	3	0	0	0	0	0	0	0	22
04:00	2	44	14	0	4	3	0	0	1	0	0	0	0	68
05:00	0	151	50	1	12	3	0	0	5	0	0	0	0	222
06:00	5	340	81	2	16	2	0	0	5	0	0	0	0	451
07:00	8	479	82	0	26	4	1	3	2	0	0	0	0	605
08:00	7	476	85	11	20	7	1	3	2	1	1	0	0	614
09:00	2	441	94	4	16	4	0	5	3	0	0	0	0	569
10:00	3	418	98	8	24	5	0	1	2	0	0	0	0	559
11:00	5	422	106	7	26	9	1	3	3	0	0	0	0	582
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	34	2881	630	36	149	48	3	15	26	1	1	0	0	3824
Percent	0.9%	75.3%	16.5%	0.9%	3.9%	1.3%	0.1%	0.4%	0.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	11:00	08:00	07:00	11:00	07:00	09:00	05:00	08:00	08:00			08:00
Vol.	8	479	106	11	26	9	1	5	5	1	1			614
PM Peak														
Vol.														

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EB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	0	0	<b>46</b>	83	325	259	34	1	0	0	0	0	0	748	37	33
15:00	0	<b>3</b>	13	<b>158</b>	391	280	32	4	0	0	0	0	0	881	37	33
16:00	0	0	0	53	<b>403</b>	374	69	<b>6</b>	<b>2</b>	0	0	0	0	907	38	35
17:00	0	0	2	86	377	<b>427</b>	<b>70</b>	2	0	0	0	0	0	<b>964</b>	38	35
18:00	0	0	3	45	226	325	54	4	0	0	0	0	0	657	38	35
19:00	0	2	7	23	153	193	31	3	0	0	0	0	0	412	38	35
20:00	0	0	3	27	112	114	22	5	0	<b>1</b>	0	0	0	284	38	35
21:00	0	0	0	7	76	113	23	5	0	0	0	0	0	224	38	36
22:00	0	0	0	11	32	68	18	0	0	1	0	0	0	130	38	36
23:00	0	0	0	8	36	63	20	1	0	0	0	0	0	128	39	36
Total	0	5	74	501	2131	2216	373	31	2	2	0	0	0	5335		
%	0.0%	0.1%	1.4%	9.4%	39.9%	41.5%	7.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%			

AM  
 Peak  
 Vol.

PM Peak Vol.	15:00	14:00	15:00	16:00	17:00	17:00	16:00	16:00	20:00	17:00
	3	46	158	403	427	70	6	2	1	964

Stats

15th Percentile : 29 MPH  
 50th Percentile : 33 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 40 MPH  
  
 Mean Speed(Average) : 34 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 4347  
 Percent in Pace : 81.5%  
 Number of Vehicles > 35 MPH : 2181  
 Percent of Vehicles > 35 MPH : 40.9%

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 Site Code: T0525

EB

Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/13/18	0	0	0	1	19	14	9	2	1	0	0	0	0	46	41	36
01:00	0	0	0	1	21	20	11	3	1	1	0	0	0	58	42	37
02:00	0	0	0	5	18	9	10	1	0	0	0	0	0	43	41	35
03:00	0	0	1	4	7	15	3	1	0	0	0	0	0	31	38	35
04:00	0	0	2	6	17	40	9	0	0	0	0	0	0	74	38	35
05:00	0	0	6	33	91	86	27	6	1	0	0	0	0	250	38	34
06:00	1	0	3	39	185	239	32	4	0	0	0	0	0	503	38	35
07:00	1	0	21	110	371	332	43	3	0	0	0	0	0	881	37	34
08:00	0	0	3	82	372	339	51	1	0	0	0	0	1	849	37	34
09:00	0	0	2	63	252	228	32	3	1	0	0	0	0	581	37	34
10:00	2	1	15	69	181	187	26	1	1	0	0	0	0	483	37	33
11:00	0	0	9	60	201	225	39	6	1	0	0	0	0	541	38	34
12 PM	1	0	9	55	163	250	52	3	0	0	0	0	0	533	38	35
13:00	1	7	9	109	237	181	31	2	0	0	0	0	0	577	37	33
14:00	1	0	15	125	351	234	16	6	0	0	0	0	0	748	37	33
15:00	1	0	14	81	401	321	49	6	2	0	0	0	1	876	37	34
16:00	1	0	19	90	412	398	53	4	0	0	0	0	0	977	37	34
17:00	81	63	142	170	325	198	34	4	0	0	0	0	0	1017	36	28
18:00	1	7	19	82	311	222	57	5	2	1	1	1	1	710	38	34
19:00	1	3	9	40	205	129	24	1	0	0	0	0	0	412	37	33
20:00	0	0	4	34	139	144	22	1	1	0	1	0	0	346	38	34
21:00	0	0	7	21	151	143	29	7	1	1	0	0	0	360	38	35
22:00	0	0	1	24	88	91	17	0	0	0	0	0	0	221	38	34
23:00	0	0	5	16	60	38	14	8	0	0	0	0	0	141	39	34
Total	92	81	315	1320	4578	4083	690	78	12	3	2	1	3	11258		
%	0.8%	0.7%	2.8%	11.7%	40.7%	36.3%	6.1%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	10:00	07:00	07:00	08:00	08:00	08:00	05:00	00:00	01:00				08:00	07:00	
Vol.	2	1	21	110	372	339	51	6	1	1				1	881	
PM Peak	17:00	17:00	17:00	17:00	16:00	16:00	18:00	23:00	15:00	18:00	18:00	18:00	15:00	17:00		
Vol.	81	63	142	170	412	398	57	8	2	1	1	1	1	1017		

Stats

15th Percentile : 28 MPH  
 50th Percentile : 33 MPH  
 85th Percentile : 37 MPH  
 95th Percentile : 40 MPH

Mean Speed(Average) : 33 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 8661  
 Percent in Pace : 76.9%  
 Number of Vehicles > 35 MPH : 4055  
 Percent of Vehicles > 35 MPH : 36.0%

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 at I-93 overpass  
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 Site Code: T0525

EB

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed
09/14/18	0	0	0	0	10	29	16	7	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	39	34	
01:00	0	0	0	0	5	28	24	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	40	36	
02:00	0	0	1	4	3	15	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	40	36	
03:00	0	0	0	4	5	12	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33	42	37	
04:00	0	0	9	21	24	33	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	38	33	
05:00	0	0	6	45	82	113	36	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	287	38	34	
06:00	0	0	5	27	149	230	61	<b>6</b>	<b>2</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	480	38	36	
07:00	0	0	6	40	240	376	<b>82</b>	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	749	38	35	
08:00	0	1	10	61	292	<b>378</b>	75	6	0	<b>1</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>824</b>	38	35	
09:00	1	6	<b>21</b>	<b>108</b>	316	238	44	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	738	37	33	
10:00	<b>2</b>	<b>10</b>	18	61	259	251	41	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	645	37	34	
11:00	0	1	13	104	<b>340</b>	257	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	743	37	33	
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	3	18	89	490	1767	1943	410	36	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4763			
%	0.1%	0.4%	1.9%	10.3%	37.1%	40.8%	8.6%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	10:00	10:00	09:00	09:00	11:00	08:00	07:00	06:00	06:00	08:00																08:00		
Vol.	2	10	21	108	340	378	82	6	2	1																824		
PM Peak																												
Vol.																												

Stats

15th Percentile : 29 MPH  
 50th Percentile : 34 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 41 MPH

Mean Speed(Average) : 34 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 3710  
 Percent in Pace : 77.9%  
 Number of Vehicles > 35 MPH : 2007  
 Percent of Vehicles > 35 MPH : 42.1%

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 at I-93 overpass  
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WB

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	0	2	7	36	177	313	111	11	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	659	40	36	
15:00	1	1	5	33	225	376	138	29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	809	40	36	
16:00	0	0	3	32	168	425	198	27	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	857	41	37	
17:00	0	0	1	11	176	418	239	36	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	889	42	38	
18:00	1	0	0	1	146	346	187	37	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	723	42	38	
19:00	0	0	0	5	93	276	147	25	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	550	42	38	
20:00	0	0	0	5	76	229	97	13	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	422	41	38	
21:00	0	0	0	7	42	146	77	17	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	290	42	38	
22:00	0	0	0	1	26	94	53	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	186	42	38	
23:00	0	0	0	0	21	74	37	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141	42	38	
Total	2	3	16	131	1150	2697	1284	215	21	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5526			
%	0.0%	0.1%	0.3%	2.4%	20.8%	48.8%	23.2%	3.9%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				

AM  
 Peak  
 Vol.

PM Peak Vol.	15:00	14:00	14:00	14:00	15:00	16:00	17:00	18:00	17:00	18:00	17:00
	1	2	7	36	225	425	239	37	7	3	889

Stats

15th Percentile : 31 MPH  
 50th Percentile : 36 MPH  
 85th Percentile : 41 MPH  
 95th Percentile : 43 MPH  
  
 Mean Speed(Average) : 37 MPH  
 10 MPH Pace Speed : 35-44 MPH  
 Number in Pace : 3981  
 Percent in Pace : 72.0%  
 Number of Vehicles > 35 MPH : 3685  
 Percent of Vehicles > 35 MPH : 66.7%

Dascomb Road  
 at I-93 overpass  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



PRECISION  
 D A T A  
 INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 B Speed  
 Site Code: T0525

WB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/13/																
18	0	0	0	1	15	25	18	3	1	0	0	0	0	63	42	38
01:00	0	0	0	0	4	11	7	2	1	0	0	0	0	25	43	39
02:00	0	0	1	1	8	11	6	1	0	0	0	0	0	28	41	36
03:00	0	0	0	1	4	7	7	1	0	0	0	0	0	20	42	38
04:00	0	2	0	4	9	30	24	9	1	0	0	0	0	79	43	38
05:00	1	1	9	8	59	178	98	9	3	0	0	0	0	366	41	37
06:00	0	1	0	10	157	397	163	28	2	1	0	0	0	759	41	37
07:00	2	0	14	61	241	466	199	27	4	1	0	0	0	1015	40	36
08:00	1	0	8	52	282	455	211	37	2	0	0	0	0	1048	41	36
09:00	2	0	1	17	121	316	194	30	4	0	0	0	0	685	42	38
10:00	0	1	3	16	72	219	159	34	1	3	0	0	0	508	42	38
11:00	0	0	6	17	77	220	190	23	2	3	0	0	0	538	42	38
12 PM	0	0	1	15	100	271	175	37	2	0	0	0	0	601	42	38
13:00	0	0	2	17	131	317	162	27	0	0	0	0	0	656	41	37
14:00	3	5	20	60	186	329	117	15	4	1	0	0	0	740	40	35
15:00	23	11	31	95	237	246	115	10	0	0	0	0	0	768	39	33
16:00	0	0	7	30	202	394	191	35	7	1	1	0	0	868	41	37
17:00	8	6	79	86	268	340	94	18	2	0	0	0	0	901	38	34
18:00	3	7	25	70	385	472	137	12	5	1	1	0	0	1118	38	35
19:00	0	0	8	116	435	414	76	14	2	1	0	0	0	1066	38	34
20:00	0	2	4	19	216	329	103	11	0	0	0	0	0	684	39	36
21:00	0	0	0	4	96	176	61	6	3	0	0	0	0	346	40	37
22:00	0	0	1	8	36	137	46	5	4	0	0	0	0	237	41	37
23:00	0	0	0	1	25	61	43	5	1	0	0	0	0	136	42	38
Total	43	36	220	709	3366	5821	2596	399	51	12	2	0	0	13255		
%	0.3%	0.3%	1.7%	5.3%	25.4%	43.9%	19.6%	3.0%	0.4%	0.1%	0.0%	0.0%	0.0%			
AM Peak	07:00	04:00	07:00	07:00	08:00	07:00	08:00	08:00	07:00	10:00				08:00		
Vol.	2	2	14	61	282	466	211	37	4	3				1048		
PM Peak	15:00	15:00	17:00	19:00	19:00	18:00	16:00	12:00	16:00	14:00	16:00			18:00		
Vol.	23	11	79	116	435	472	191	37	7	1	1			1118		

Stats  
 15th Percentile : 30 MPH  
 50th Percentile : 35 MPH  
 85th Percentile : 41 MPH  
 95th Percentile : 43 MPH

Mean Speed(Average) : 36 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 9187  
 Percent in Pace : 69.3%  
 Number of Vehicles > 35 MPH : 7717  
 Percent of Vehicles > 35 MPH : 58.2%

Dascomb Road  
 at I-93 overpass  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



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186440 B Speed  
 Site Code: T0525

WB

Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/14/18	0	0	0	1	15	28	14	6	0	2	0	0	0	66	43	38
01:00	0	0	0	0	5	20	14	1	2	0	2	0	0	44	43	40
02:00	0	0	2	0	3	9	7	1	0	0	0	0	0	22	42	37
03:00	0	0	0	0	5	9	7	1	0	0	0	0	0	22	42	38
04:00	0	1	1	3	14	22	18	8	1	0	0	0	0	68	43	38
05:00	0	1	2	4	40	100	59	14	2	0	0	0	0	222	42	38
06:00	0	0	4	11	62	220	125	24	4	1	0	0	0	451	42	38
07:00	0	0	11	15	94	301	159	24	1	0	0	0	0	605	41	37
08:00	0	1	5	21	166	285	117	17	2	0	0	0	0	614	40	36
09:00	0	0	7	18	117	296	116	13	2	0	0	0	0	569	40	37
10:00	0	1	2	28	98	259	141	28	2	0	0	0	0	559	42	37
11:00	0	0	3	18	140	264	129	25	2	1	0	0	0	582	41	37
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	0	4	37	119	759	1813	906	162	18	4	2	0	0	3824		
%	0.0%	0.1%	1.0%	3.1%	19.8%	47.4%	23.7%	4.2%	0.5%	0.1%	0.1%	0.0%	0.0%			
AM Peak		04:00	07:00	10:00	08:00	07:00	07:00	10:00	06:00	00:00	01:00			08:00		
Vol.		1	11	28	166	301	159	28	4	2	2			614		
PM Peak																
Vol.																

Stats

15th Percentile : 31 MPH  
 50th Percentile : 36 MPH  
 85th Percentile : 41 MPH  
 95th Percentile : 43 MPH

Mean Speed(Average) : 37 MPH  
 10 MPH Pace Speed : 35-44 MPH  
 Number in Pace : 2719  
 Percent in Pace : 71.1%  
 Number of Vehicles > 35 MPH : 2542  
 Percent of Vehicles > 35 MPH : 66.5%

Dascomb Road  
west of Smith Way  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdilic.com

186440 C Volume  
Site Code: T0525

Start Time	EB		WB		Combin ed		09/12/18 Wed					
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.						
12:00	*	*	*	*	*	*						
12:15	*	*	*	*	*	*						
12:30	*	*	*	*	*	*						
12:45	*	0	*	0	*	0	0					
01:00	*	*	*	*	*	*						
01:15	*	*	*	*	*	*						
01:30	*	*	*	*	*	*						
01:45	*	0	*	0	*	0	0					
02:00	*	150	*	172	*	322						
02:15	*	211	*	195	*	406						
02:30	*	220	*	225	*	445						
02:45	*	0	191	772	*	0	416	1589				
03:00	*	249	*	206	*	455						
03:15	*	201	*	247	*	448						
03:30	*	257	*	231	*	488						
03:45	*	0	195	902	*	0	463	1854				
04:00	*	232	*	227	*	459						
04:15	*	211	*	259	*	470						
04:30	*	244	*	264	*	508						
04:45	*	0	233	920	*	0	504	1941				
05:00	*	232	*	265	*	497						
05:15	*	275	*	194	*	469						
05:30	*	245	*	256	*	501						
05:45	*	0	230	982	*	0	514	1981				
06:00	*	205	*	227	*	432						
06:15	*	204	*	196	*	400						
06:30	*	177	*	229	*	406						
06:45	*	0	154	740	*	0	303	1541				
07:00	*	165	*	166	*	331						
07:15	*	140	*	139	*	279						
07:30	*	110	*	149	*	259						
07:45	*	0	85	500	*	0	214	1083				
08:00	*	85	*	123	*	208						
08:15	*	77	*	130	*	207						
08:30	*	87	*	102	*	189						
08:45	*	0	73	322	*	0	175	779				
09:00	*	107	*	91	*	198						
09:15	*	72	*	82	*	154						
09:30	*	61	*	68	*	129						
09:45	*	0	48	288	*	0	103	584				
10:00	*	53	*	53	*	106						
10:15	*	44	*	60	*	104						
10:30	*	35	*	42	*	77						
10:45	*	0	43	175	*	0	97	384				
11:00	*	48	*	50	*	98						
11:15	*	36	*	40	*	76						
11:30	*	37	*	34	*	71						
11:45	*	0	30	151	*	0	62	307				
Total	0	5752	0	6291	0	12043						
Percent	0.0%	47.8%	0.0%	52.2%								
Day Total		5752		6291		12043						
Peak Vol.	-	-	04:45	-	-	04:15	-	-	05:00	-	-	-
P.H.F.	-	-	0.895	-	-	0.977	-	-	0.964	-	-	-

Dascomb Road  
 west of Smith Way  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



PRECISION  
 D A T A  
 INDUSTRIES, LLC

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186440 C Volume  
 Site Code: T0525

Start Time	EB		WB		Combin ed		09/13/18 Thu			
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.				
12:00	27	169	23	172	50	341				
12:15	10	169	23	190	33	359				
12:30	6	192	17	155	23	347				
12:45	7	147	17	169	24	316	1363			
01:00	7	165	10	181	17	346				
01:15	16	150	14	161	30	311				
01:30	22	160	9	166	31	326				
01:45	18	138	6	179	24	317	1300			
02:00	12	161	12	166	24	327				
02:15	12	175	10	192	22	367				
02:30	9	179	7	239	16	418				
02:45	17	166	11	221	28	387	1499			
03:00	9	192	3	163	12	355				
03:15	12	179	3	221	15	400				
03:30	15	194	8	159	23	353				
03:45	19	228	11	199	30	427	1535			
04:00	25	243	23	175	48	418				
04:15	36	234	22	225	58	459				
04:30	47	275	48	248	95	523				
04:45	43	239	72	258	115	497	1897			
05:00	113	257	57	196	170	453				
05:15	162	205	58	181	220	386				
05:30	139	198	63	206	202	404				
05:45	110	206	85	181	195	387	1630			
06:00	170	228	103	170	273	398				
06:15	156	187	163	286	319	473				
06:30	161	189	228	257	389	446				
06:45	193	161	250	271	443	432	1749			
07:00	215	144	231	292	446	436				
07:15	262	136	174	242	436	378				
07:30	243	152	166	212	409	364				
07:45	251	140	239	179	490	319	1497			
08:00	234	127	248	188	482	315				
08:15	250	125	214	150	464	275				
08:30	225	113	218	150	443	263				
08:45	205	102	218	122	423	224	1077			
09:00	184	137	173	98	357	235				
09:15	165	119	165	79	330	198				
09:30	173	82	160	86	333	168				
09:45	156	71	129	627	88	159	760			
10:00	149	69	154	94	303	163				
10:15	164	69	128	70	292	139				
10:30	156	59	142	68	298	127				
10:45	133	34	144	568	44	78	507			
11:00	150	41	120	59	270	100				
11:15	139	40	133	57	272	97				
11:30	154	53	149	32	303	85				
11:45	170	23	154	556	19	42	324			
Total	5351	7222	4815	7916	10166	15138				
Percent	52.6%	47.7%	47.4%	52.3%						
Day Total		12573		12731		25304				
Peak	07:15	-	04:15	-	07:45	-	04:15	-	-	-
Vol.	990	-	1005	-	1106	-	1879	-	1932	-
P.H.F.	0.945	-	0.914	-	0.919	-	0.947	-	0.924	-

Dascomb Road  
west of Smith Way  
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Client: TEC/ S. Gregorio



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186440 C Volume  
Site Code: T0525

Start Time	EB		WB		Combin ed		09/14/18 Fri
	A.M.	P.M.	A.M.	P.M.	A.M.	P.M.	
12:00	21	*	30	*	51	*	
12:15	11	*	21	*	32	*	
12:30	9	*	23	*	32	*	
12:45	13	54	13	87	26	141	0
01:00	15	*	28	*	43	*	
01:15	19	*	10	*	29	*	
01:30	24	*	10	*	34	*	
01:45	20	78	13	61	33	139	0
02:00	13	*	6	*	19	*	
02:15	7	*	10	*	17	*	
02:30	7	*	6	*	13	*	
02:45	14	41	9	31	23	72	0
03:00	10	*	15	*	25	*	
03:15	20	*	12	*	32	*	
03:30	15	*	16	*	31	*	
03:45	14	59	14	57	28	116	0
04:00	25	*	18	*	43	*	
04:15	65	*	14	*	79	*	
04:30	49	*	43	*	92	*	
04:45	48	187	59	134	107	321	0
05:00	78	*	63	*	141	*	
05:15	106	*	68	*	174	*	
05:30	129	*	71	*	200	*	
05:45	140	453	109	311	249	764	0
06:00	141	*	96	*	237	*	
06:15	161	*	145	*	306	*	
06:30	162	*	204	*	366	*	
06:45	167	631	192	637	359	1268	0
07:00	198	*	202	*	400	*	
07:15	241	*	179	*	420	*	
07:30	237	*	153	*	390	*	
07:45	244	920	162	696	406	1616	0
08:00	204	*	185	*	389	*	
08:15	210	*	148	*	358	*	
08:30	216	*	179	*	395	*	
08:45	191	821	187	699	378	1520	0
09:00	188	*	183	*	371	*	
09:15	*	*	*	*	*	*	*
09:30	*	*	*	*	*	*	*
09:45	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*
10:15	*	*	*	*	*	*	*
10:30	*	*	*	*	*	*	*
10:45	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*
11:15	*	*	*	*	*	*	*
11:30	*	*	*	*	*	*	*
11:45	*	*	*	*	*	*	*
Total	3432	0	2896	0	6328	0	
Percent	54.2%	0.0%	45.8%	0.0%			
Day Total		3244		2713		5957	
Peak Vol.	07:15	-	06:30	-	07:00	-	-
P.H.F.	926	-	777	-	1616	-	-
	0.949		0.952		0.962		

Dascomb Road  
west of Smith Way  
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186440 C Class  
Site Code: T0525

EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	22	527	123	10	65	13	1	6	5	0	0	0	0	772
15:00	25	642	138	8	73	7	1	7	1	0	0	0	0	902
16:00	19	693	132	4	62	6	1	2	1	0	0	0	0	920
17:00	40	756	106	2	56	10	2	10	0	0	0	0	0	982
18:00	18	563	105	4	45	5	0	0	0	0	0	0	0	740
19:00	9	385	77	0	27	2	0	0	0	0	0	0	0	500
20:00	6	249	42	1	23	1	0	0	0	0	0	0	0	322
21:00	2	227	41	0	14	1	0	0	3	0	0	0	0	288
22:00	3	134	20	1	4	2	0	0	11	0	0	0	0	175
23:00	2	118	18	0	7	1	0	0	5	0	0	0	0	151
Total	146	4294	802	30	376	48	5	25	26	0	0	0	0	5752
Percent	2.5%	74.7%	13.9%	0.5%	6.5%	0.8%	0.1%	0.4%	0.5%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.														
PM Peak Vol.	17:00	17:00	15:00	14:00	15:00	14:00	17:00	17:00	22:00					17:00
	40	756	138	10	73	13	2	10	11					982

Dascomb Road  
west of Smith Way  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

186440 C Class  
Site Code: T0525

EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/13/1														
8	1	30	10	0	4	1	0	0	4	0	0	0	0	50
01:00	0	53	5	0	3	0	0	0	2	0	0	0	0	63
02:00	1	19	8	4	6	1	0	0	11	0	0	0	0	50
03:00	1	31	11	2	7	1	0	0	2	0	0	0	0	55
04:00	3	84	24	2	26	6	0	1	4	1	0	0	0	151
05:00	9	311	97	5	55	15	0	1	31	0	0	0	0	524
06:00	13	464	106	8	68	9	0	1	11	0	0	0	0	680
07:00	30	727	113	3	74	9	1	3	9	2	0	0	0	971
08:00	21	672	125	10	56	13	3	7	4	2	0	0	1	914
09:00	18	449	114	12	57	15	0	5	8	0	0	0	0	678
10:00	17	367	111	11	56	21	0	5	13	1	0	0	0	602
11:00	20	408	94	8	53	19	0	4	6	1	0	0	0	613
12 PM	19	449	93	7	73	21	2	7	6	0	0	0	0	677
13:00	14	402	101	13	50	22	0	8	3	0	0	0	0	613
14:00	39	463	93	12	43	16	2	10	3	0	0	0	0	681
15:00	34	579	100	6	35	9	3	23	4	0	0	0	0	793
16:00	29	712	141	3	67	17	2	18	2	0	0	0	0	991
17:00	52	640	94	0	46	8	3	18	2	1	0	1	1	866
18:00	24	576	102	3	37	5	2	14	1	0	1	0	0	765
19:00	12	442	81	0	28	4	0	4	1	0	0	0	0	572
20:00	7	382	59	0	19	0	0	0	0	0	0	0	0	467
21:00	4	317	71	0	13	2	0	1	1	0	0	0	0	409
22:00	2	182	26	0	8	4	0	0	7	2	0	0	0	231
23:00	6	122	14	1	6	4	0	0	4	0	0	0	0	157
Total	376	8881	1793	110	890	222	18	130	139	10	1	1	2	12573
Percent	3.0%	70.6%	14.3%	0.9%	7.1%	1.8%	0.1%	1.0%	1.1%	0.1%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	08:00	09:00	07:00	10:00	08:00	08:00	05:00	07:00			08:00	07:00
Vol.	30	727	125	12	74	21	3	7	31	2			1	971
PM Peak	17:00	16:00	16:00	13:00	12:00	13:00	15:00	15:00	22:00	22:00	18:00	17:00	17:00	16:00
Vol.	52	712	141	13	73	22	3	23	7	2	1	1	1	991

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EB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/14/1														
8	2	34	6	1	7	1	0	0	3	0	0	0	0	54
01:00	2	61	8	0	1	2	0	0	4	0	0	0	0	78
02:00	2	19	7	2	6	2	0	0	3	0	0	0	0	41
03:00	2	21	13	2	12	2	0	0	7	0	0	0	0	59
04:00	9	88	30	4	15	13	0	2	26	0	0	0	0	187
05:00	8	272	83	6	58	11	0	2	11	1	0	0	1	453
06:00	15	417	98	3	71	13	0	6	8	0	0	0	0	631
07:00	31	634	148	3	72	21	0	7	4	0	0	0	0	920
08:00	22	602	108	5	58	12	0	6	7	1	0	0	0	821
09:00	19	529	129	7	57	16	1	3	10	2	0	0	0	773
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	112	2677	630	33	357	93	1	26	83	4	0	0	1	4017
Percent	2.8%	66.6%	15.7%	0.8%	8.9%	2.3%	0.0%	0.6%	2.1%	0.1%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	07:00	09:00	07:00	07:00	09:00	07:00	04:00	09:00			05:00	07:00
Vol.	31	634	148	7	72	21	1	7	26	2			1	920
PM Peak														
Vol.														

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WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	24	548	160	10	46	13	1	7	8	0	0	0	0	817
15:00	26	690	160	7	40	10	2	7	9	1	0	0	0	952
16:00	19	789	158	7	34	3	1	4	5	0	1	0	0	1021
17:00	38	714	172	3	49	7	1	14	1	0	0	0	0	999
18:00	9	327	394	2	56	4	0	8	1	0	0	0	0	801
19:00	6	230	275	2	66	1	0	1	2	0	0	0	0	583
20:00	6	129	277	1	40	3	0	1	0	0	0	0	0	457
21:00	2	84	180	3	25	1	0	0	1	0	0	0	0	296
22:00	1	63	128	4	10	1	0	0	2	0	0	0	0	209
23:00	5	53	77	1	10	8	0	0	2	0	0	0	0	156
Total	136	3627	1981	40	376	51	5	42	31	1	1	0	0	6291
Percent	2.2%	57.7%	31.5%	0.6%	6.0%	0.8%	0.1%	0.7%	0.5%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.														
PM Peak Vol.	17:00	16:00	18:00	14:00	19:00	14:00	15:00	17:00	15:00	15:00	16:00			16:00
	38	789	394	10	66	13	2	14	9	1	1			1021

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WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/13/1														
8	2	22	40	2	7	6	0	0	1	0	0	0	0	80
01:00	3	5	24	1	3	1	0	0	2	0	0	0	0	39
02:00	1	5	14	3	9	4	0	0	4	0	0	0	0	40
03:00	0	4	15	0	4	1	0	0	1	0	0	0	0	25
04:00	7	32	83	2	29	10	0	0	2	0	0	0	0	165
05:00	1	70	118	3	56	5	0	0	9	1	0	0	0	263
06:00	7	344	262	5	96	10	0	11	9	0	0	0	0	744
07:00	25	480	185	2	85	14	1	14	4	0	0	0	0	810
08:00	22	335	386	15	96	18	2	13	11	0	0	0	0	898
09:00	13	169	302	16	91	11	2	12	10	1	0	0	0	627
10:00	14	113	290	11	108	12	2	3	15	0	0	0	0	568
11:00	9	168	266	10	73	9	0	10	9	2	0	0	0	556
12 PM	15	158	365	13	100	17	2	10	5	1	0	0	0	686
13:00	13	267	273	17	88	11	1	11	5	1	0	0	0	687
14:00	29	358	278	11	97	13	5	20	6	1	0	0	0	818
15:00	32	431	166	2	72	11	0	18	7	2	0	0	1	742
16:00	24	470	277	9	90	8	3	14	7	2	2	0	0	906
17:00	31	467	185	1	55	9	1	13	1	1	0	0	0	764
18:00	26	615	257	1	59	7	0	14	4	1	0	0	0	984
19:00	18	512	310	3	63	5	0	11	2	1	0	0	0	925
20:00	4	268	274	4	50	6	0	3	1	0	0	0	0	610
21:00	2	66	243	2	36	1	0	0	1	0	0	0	0	351
22:00	2	57	185	4	24	2	0	0	1	1	0	0	0	276
23:00	3	31	101	2	23	6	0	1	0	0	0	0	0	167
Total	303	5447	4899	139	1414	197	19	178	117	15	2	0	1	12731
Percent	2.4%	42.8%	38.5%	1.1%	11.1%	1.5%	0.1%	1.4%	0.9%	0.1%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	08:00	09:00	10:00	08:00	08:00	07:00	10:00	11:00				08:00
Vol.	25	480	386	16	108	18	2	14	15	2				898
PM Peak	15:00	18:00	12:00	13:00	12:00	12:00	14:00	14:00	15:00	15:00	16:00		15:00	18:00
Vol.	32	615	365	17	100	17	5	20	7	2	2		1	984

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WB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/14/1														
8	2	25	47	1	7	5	0	0	0	0	0	0	0	87
01:00	3	11	35	0	5	4	0	0	3	0	0	0	0	61
02:00	1	1	16	3	4	2	0	0	4	0	0	0	0	31
03:00	2	4	33	1	12	5	0	0	0	0	0	0	0	57
04:00	6	16	61	2	40	3	0	1	5	0	0	0	0	134
05:00	4	39	156	5	82	9	0	3	12	1	0	0	0	311
06:00	17	190	275	4	116	11	2	7	14	1	0	0	0	637
07:00	10	314	259	6	80	13	1	9	3	1	0	0	0	696
08:00	14	264	278	18	91	7	4	9	13	1	0	0	0	699
09:00	17	196	298	10	86	11	0	11	13	1	0	0	0	643
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	76	1060	1458	50	523	70	7	40	67	5	0	0	0	3356
Percent	2.3%	31.6%	43.4%	1.5%	15.6%	2.1%	0.2%	1.2%	2.0%	0.1%	0.0%	0.0%	0.0%	
AM Peak	06:00	07:00	09:00	08:00	06:00	07:00	08:00	09:00	06:00	05:00				08:00
Vol.	17	314	298	18	116	13	4	11	14	1				699
PM Peak														
Vol.														

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186440 C Speed  
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EB

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	5	16	104	201	321	115	10	0	0	0	0	0	0	772	34	30
15:00	12	37	117	<b>269</b>	339	115	11	2	0	0	0	0	0	902	33	29
16:00	5	27	57	210	<b>384</b>	217	18	2	0	0	0	0	0	920	36	31
17:00	<b>39</b>	<b>69</b>	<b>144</b>	190	323	195	22	0	0	0	0	0	0	<b>982</b>	35	29
18:00	1	9	12	90	327	<b>259</b>	38	4	0	0	0	0	0	740	37	33
19:00	1	1	1	27	195	224	<b>48</b>	2	<b>1</b>	0	0	0	0	500	38	35
20:00	0	0	4	24	95	146	47	5	1	0	0	0	0	322	39	36
21:00	0	0	1	12	80	148	42	5	0	0	0	0	0	288	39	36
22:00	0	0	5	5	46	76	37	6	0	0	0	0	0	175	41	36
23:00	0	0	0	6	48	57	32	<b>7</b>	1	0	0	0	0	151	41	37
Total	63	159	445	1034	2158	1552	305	33	3	0	0	0	0	5752		
%	1.1%	2.8%	7.7%	18.0%	37.5%	27.0%	5.3%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%			

AM Peak Vol.	PM Peak Vol.
17:00	17:00
39	69
144	269
384	384
259	259
48	48
7	7
1	1
982	982

Stats

15th Percentile : 24 MPH  
50th Percentile : 31 MPH  
85th Percentile : 37 MPH  
95th Percentile : 39 MPH

Mean Speed(Average) : 32 MPH  
10 MPH Pace Speed : 30-39 MPH  
Number in Pace : 3710  
Percent in Pace : 64.5%  
Number of Vehicles > 35 MPH : 1583  
Percent of Vehicles > 35 MPH : 27.5%

Dascomb Road  
west of Smith Way  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdilic.com

186440 C Speed  
Site Code: T0525

EB

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
	14	19	24	29	34	39	44	49	54	59	64	69	9999			
09/13/																
18	0	0	1	1	21	20	6	0	0	1	0	0	0	50	38	35
01:00	0	0	0	3	14	23	18	4	1	0	0	0	0	63	42	38
02:00	0	0	0	8	17	16	5	4	0	0	0	0	0	50	40	35
03:00	0	0	2	2	10	31	8	2	0	0	0	0	0	55	40	36
04:00	0	2	5	11	41	62	22	8	0	0	0	0	0	151	40	35
05:00	0	0	13	103	218	161	25	3	1	0	0	0	0	524	37	33
06:00	3	2	36	114	279	214	28	4	0	0	0	0	0	680	37	33
07:00	26	27	166	320	331	96	4	1	0	0	0	0	0	971	33	28
08:00	5	23	117	302	332	128	6	1	0	0	0	0	0	914	33	29
09:00	4	5	42	112	308	189	17	1	0	0	0	0	0	678	36	32
10:00	0	3	35	141	247	154	21	1	0	0	0	0	0	602	36	32
11:00	0	6	30	118	233	189	37	0	0	0	0	0	0	613	37	33
12 PM	2	17	51	132	281	170	23	1	0	0	0	0	0	677	36	31
13:00	0	8	65	165	221	129	22	2	1	0	0	0	0	613	36	31
14:00	64	54	156	151	186	59	11	0	0	0	0	0	0	681	33	26
15:00	151	195	309	114	23	1	0	0	0	0	0	0	0	793	24	19
16:00	61	96	204	247	252	117	13	1	0	0	0	0	0	991	33	26
17:00	101	185	327	139	92	19	2	1	0	0	0	0	0	866	28	22
18:00	23	58	154	156	236	116	18	1	2	0	1	0	0	765	35	28
19:00	1	4	25	117	248	157	15	5	0	0	0	0	0	572	36	32
20:00	1	0	7	79	225	126	27	0	1	1	0	0	0	467	37	33
21:00	0	0	9	59	186	128	24	2	1	0	0	0	0	409	37	33
22:00	0	0	3	24	95	80	28	1	0	0	0	0	0	231	38	34
23:00	0	4	3	11	47	52	31	8	1	0	0	0	0	157	41	36
Total	442	689	1760	2629	4143	2437	411	51	8	2	1	0	0	12573		
%	3.5%	5.5%	14.0%	20.9%	33.0%	19.4%	3.3%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	07:00	08:00	06:00	11:00	04:00	01:00	00:00				07:00		
Vol.	26	27	166	320	332	214	37	8	1	1				971		
PM Peak	15:00	15:00	17:00	16:00	12:00	12:00	23:00	23:00	18:00	20:00	18:00			16:00		
Vol.	151	195	327	247	281	170	31	8	2	1	1			991		

Stats

15th Percentile : 21 MPH  
50th Percentile : 29 MPH  
85th Percentile : 36 MPH  
95th Percentile : 38 MPH

Mean Speed(Average) : 29 MPH  
10 MPH Pace Speed : 25-34 MPH  
Number in Pace : 6772  
Percent in Pace : 53.9%  
Number of Vehicles > 35 MPH : 2423  
Percent of Vehicles > 35 MPH : 19.3%

Dascomb Road  
west of Smith Way  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
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Email: datarequests@pdillc.com

186440 C Speed  
Site Code: T0525

EB

Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/14/ 18	0	1	3	6	16	19	7	2	0	0	0	0	0	54	39	34
01:00	0	1	1	10	22	25	13	6	0	0	0	0	0	78	41	35
02:00	0	0	0	5	6	20	7	3	0	0	0	0	0	41	41	37
03:00	0	0	2	4	17	15	19	0	1	1	0	0	0	59	42	37
04:00	0	0	0	48	52	52	25	10	0	0	0	0	0	187	40	34
05:00	0	0	11	57	160	169	49	6	1	0	0	0	0	453	38	34
06:00	0	0	22	92	241	234	39	2	0	0	0	1	0	631	37	33
07:00	7	8	67	237	415	164	20	1	1	0	0	0	0	920	35	31
08:00	3	22	63	216	343	157	14	3	0	0	0	0	0	821	35	31
09:00	2	21	86	193	304	152	15	0	0	0	0	0	0	773	35	30
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	12	53	255	868	1576	1007	208	33	3	1	0	1	0	4017		
%	0.3%	1.3%	6.3%	21.6%	39.2%	25.1%	5.2%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	09:00	07:00	07:00	06:00	05:00	04:00	03:00	03:00		06:00		07:00		
Vol.	7	22	86	237	415	234	49	10	1	1		1		920		
PM Peak																
Vol.																

Stats

15th Percentile : 25 MPH  
50th Percentile : 31 MPH  
85th Percentile : 37 MPH  
95th Percentile : 40 MPH

Mean Speed(Average) : 32 MPH  
10 MPH Pace Speed : 30-39 MPH  
Number in Pace : 2583  
Percent in Pace : 64.3%  
Number of Vehicles > 35 MPH : 1052  
Percent of Vehicles > 35 MPH : 26.2%

Dascomb Road  
west of Smith Way  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



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186440 C Speed  
Site Code: T0525

WB

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	3	4	26	164	368	197	49	5	1	0	0	0	0	817	37	32
15:00	10	<b>22</b>	72	226	<b>386</b>	203	30	2	1	0	0	0	0	952	36	31
16:00	<b>13</b>	22	<b>94</b>	<b>257</b>	360	223	46	4	2	0	0	0	0	<b>1021</b>	36	31
17:00	11	11	87	177	336	278	90	9	0	0	0	0	0	999	38	32
18:00	3	0	4	39	163	<b>287</b>	<b>212</b>	79	12	1	<b>1</b>	0	0	801	43	38
19:00	0	0	0	8	81	230	184	64	15	1	0	0	0	583	43	39
20:00	0	0	0	0	32	116	194	<b>97</b>	16	2	0	0	0	457	46	42
21:00	0	0	1	1	13	61	126	74	16	<b>4</b>	0	0	0	296	47	42
22:00	0	0	0	1	11	46	87	51	10	3	0	0	0	209	47	42
23:00	0	0	3	5	9	23	56	40	<b>18</b>	2	0	0	0	156	48	42
Total	40	59	287	878	1759	1664	1074	425	91	13	1	0	0	6291		
%	0.6%	0.9%	4.6%	14.0%	28.0%	26.5%	17.1%	6.8%	1.4%	0.2%	0.0%	0.0%	0.0%			

AM Peak Vol.	16:00	15:00	16:00	16:00	15:00	18:00	18:00	20:00	23:00	21:00	18:00	16:00
PM Peak Vol.	13	22	94	257	386	287	212	97	18	4	1	1021

Stats

15th Percentile : 27 MPH  
50th Percentile : 34 MPH  
85th Percentile : 42 MPH  
95th Percentile : 46 MPH

Mean Speed(Average) : 35 MPH  
10 MPH Pace Speed : 30-39 MPH  
Number in Pace : 3423  
Percent in Pace : 54.4%  
Number of Vehicles > 35 MPH : 2935  
Percent of Vehicles > 35 MPH : 46.7%

Dascomb Road  
 west of Smith Way  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
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186440 C Speed  
 Site Code: T0525

WB

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
	14	19	24	29	34	39	44	49	54	59	64	69	9999			
09/13/																
18	0	0	0	0	6	19	34	17	3	0	1	0	0	80	46	42
01:00	0	0	0	0	4	0	21	8	5	0	1	0	0	39	49	44
02:00	0	0	1	2	2	15	11	5	3	1	0	0	0	40	46	40
03:00	0	0	0	2	3	3	10	5	1	1	0	0	0	25	47	41
04:00	0	1	3	19	16	38	56	26	6	0	0	0	0	165	45	39
05:00	0	0	1	11	30	94	84	32	9	1	1	0	0	263	44	39
06:00	4	10	13	72	183	236	166	48	11	0	1	0	0	744	42	36
07:00	<b>13</b>	<b>16</b>	<b>63</b>	<b>157</b>	222	221	92	22	2	2	0	0	0	810	38	33
08:00	8	3	27	110	<b>238</b>	<b>286</b>	157	55	11	2	1	0	0	<b>898</b>	41	35
09:00	0	4	14	34	97	213	180	65	<b>17</b>	3	0	0	0	627	43	38
10:00	0	3	7	24	69	168	<b>189</b>	<b>86</b>	17	<b>4</b>	1	0	0	568	45	39
11:00	4	2	9	12	73	216	168	57	12	3	0	0	0	556	43	39
12 PM	0	3	19	33	110	222	<b>192</b>	<b>94</b>	11	1	<b>1</b>	0	0	686	44	38
13:00	48	34	69	99	111	145	120	53	8	0	0	0	0	687	42	32
14:00	43	<b>63</b>	151	127	147	167	88	27	5	0	0	0	0	818	38	30
15:00	<b>62</b>	56	236	174	139	54	19	2	0	0	0	0	0	742	32	25
16:00	9	23	98	165	291	213	78	24	4	1	0	0	0	906	38	32
17:00	39	58	<b>268</b>	148	123	85	32	10	1	0	0	0	0	764	34	26
18:00	18	15	96	<b>213</b>	<b>337</b>	228	68	8	1	0	0	0	0	<b>984</b>	37	31
19:00	10	16	66	168	287	<b>251</b>	108	18	0	1	0	0	0	925	38	33
20:00	0	1	4	28	132	237	152	49	7	0	0	0	0	610	42	38
21:00	0	4	3	8	20	108	126	65	10	<b>7</b>	0	0	0	351	46	41
22:00	0	0	1	0	13	83	116	47	14	2	0	0	0	276	46	41
23:00	1	2	1	4	8	35	52	40	<b>16</b>	7	1	0	0	167	48	42
Total	259	314	1150	1610	2661	3337	2319	863	174	36	8	0	0	12731		
%	2.0%	2.5%	9.0%	12.6%	20.9%	26.2%	18.2%	6.8%	1.4%	0.3%	0.1%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	07:00	08:00	08:00	10:00	10:00	09:00	10:00	00:00			08:00		
Vol.	13	16	63	157	238	286	189	86	17	4	1			898		
PM Peak	15:00	14:00	17:00	18:00	18:00	19:00	12:00	12:00	23:00	21:00	12:00			18:00		
Vol.	62	63	268	213	337	251	192	94	16	7	1			984		

Stats

15th Percentile : 24 MPH  
 50th Percentile : 34 MPH  
 85th Percentile : 42 MPH  
 95th Percentile : 46 MPH

Mean Speed(Average) : 34 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 5998  
 Percent in Pace : 47.1%  
 Number of Vehicles > 35 MPH : 6070  
 Percent of Vehicles > 35 MPH : 47.7%

Dascomb Road  
west of Smith Way  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



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186440 C Speed  
Site Code: T0525

WB

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed	
09/14/18	0	2	0	1	6	21	30	16	9	1	1	0	0	87	48	42													
01:00	0	2	0	3	4	7	15	17	8	1	3	1	0	61	51	44													
02:00	0	0	2	0	1	3	5	12	6	2	0	0	0	31	51	45													
03:00	0	2	0	1	2	11	12	21	6	1	1	0	0	57	48	43													
04:00	0	6	2	4	5	21	28	45	17	5	1	0	0	134	49	43													
05:00	0	0	0	8	26	69	99	65	32	3	7	2	0	311	48	42													
06:00	0	0	6	18	103	224	190	70	25	0	1	0	0	637	44	39													
07:00	1	4	19	42	159	219	183	52	13	4	0	0	0	696	43	37													
08:00	0	8	30	96	200	186	126	45	7	1	0	0	0	699	41	35													
09:00	0	5	15	100	188	218	91	24	2	0	0	0	0	643	40	35													
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*													
Total	1	29	74	273	694	979	779	367	125	18	14	3	0	3356															
%	0.0%	0.9%	2.2%	8.1%	20.7%	29.2%	23.2%	10.9%	3.7%	0.5%	0.4%	0.1%	0.0%																
AM Peak	07:00	08:00	08:00	09:00	08:00	06:00	06:00	06:00	05:00	04:00	05:00	05:00		08:00															
Vol.	1	8	30	100	200	224	190	70	32	5	7	2		699															
PM Peak																													
Vol.																													

Stats

15th Percentile : 29 MPH  
50th Percentile : 37 MPH  
85th Percentile : 44 MPH  
95th Percentile : 48 MPH

Mean Speed(Average) : 38 MPH  
10 MPH Pace Speed : 35-44 MPH  
Number in Pace : 1758  
Percent in Pace : 52.4%  
Number of Vehicles > 35 MPH : 2089  
Percent of Vehicles > 35 MPH : 62.3%

Frontage Road NB  
 south of I-93 SB Ramps  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 E-NB Volume  
 Site Code: T0525

Start Time	A.M.	NB												Wed
			P.M.											09/12/18
12:00	*		*											
12:15	*		*											
12:30	*		*											
12:45	*	0	*	0										
01:00	*		122											
01:15	*		99											
01:30	*		116											
01:45	*	0	112	449										
02:00	*		110											
02:15	*		113											
02:30	*		129											
02:45	*	0	129	481										
03:00	*		143											
03:15	*		140											
03:30	*		135											
03:45	*	0	104	522										
04:00	*		120											
04:15	*		126											
04:30	*		114											
04:45	*	0	124	484										
05:00	*		148											
05:15	*		158											
05:30	*		122											
05:45	*	0	120	548										
06:00	*		116											
06:15	*		117											
06:30	*		112											
06:45	*	0	90	435										
07:00	*		103											
07:15	*		96											
07:30	*		75											
07:45	*	0	63	337										
08:00	*		62											
08:15	*		55											
08:30	*		54											
08:45	*	0	46	217										
09:00	*		71											
09:15	*		44											
09:30	*		48											
09:45	*	0	35	198										
10:00	*		40											
10:15	*		36											
10:30	*		29											
10:45	*	0	32	137										
11:00	*		16											
11:15	*		19											
11:30	*		19											
11:45	*	0	12	66										
Total	0		3874											
Percent			100.0 %	0.0%	0.0%									
Day Total		3874												
Peak Vol.	-	-	04:45	-	-	-	-	-	-	-	-	-	-	
P.H.F.	-	-	552	-	-	-	-	-	-	-	-	-	-	
			0.873											

Frontage Road NB  
 south of I-93 SB Ramps  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 E-NB Volume  
 Site Code: T0525

Start Time	A.M.	NB		P.M.																
						Thu 09/13/18														
12:00	9			120																
12:15	6			142																
12:30	4			146																
12:45	4	23		110	518															
01:00	5			103																
01:15	5			108																
01:30	3			106																
01:45	4	17		113	430															
02:00	1			102																
02:15	6			134																
02:30	8			95																
02:45	9	24		114	445															
03:00	6			120																
03:15	8			130																
03:30	10			131																
03:45	12	36		121	502															
04:00	16			132																
04:15	23			124																
04:30	38			139																
04:45	41	118		153	548															
05:00	101			139																
05:15	160			160																
05:30	144			160																
05:45	166	571		191	650															
06:00	168			207																
06:15	147			200																
06:30	158			173																
06:45	151	624		166	746															
07:00	169			147																
07:15	213			163																
07:30	213			154																
07:45	225	820		181	645															
08:00	210			130																
08:15	226			115																
08:30	221			101																
08:45	163	820		65	411															
09:00	188			77																
09:15	153			51																
09:30	118			49																
09:45	123	582		40	217															
10:00	103			37																
10:15	123			39																
10:30	121			38																
10:45	107	454		28	142															
11:00	102			25																
11:15	116			25																
11:30	118			24																
11:45	133	469		14	88															
Total	4558			5342																
Percent				100.0%		0.0%				0.0%										
Day Total			9900																	
Peak	07:45	-	05:45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vol.	882	-	771	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	0.976		0.931																	

Frontage Road NB  
 south of I-93 SB Ramps  
 City, State: Andover, MA  
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186440 E-NB Volume  
 Site Code: T0525

Start Time	A.M.	NB	P.M.											Fri 09/14/18	
12:00	11		*												
12:15	6		*												
12:30	8		*												
12:45	6	31	*	0											
01:00	9		*												
01:15	5		*												
01:30	6		*												
01:45	3	23	*	0											
02:00	3		*												
02:15	5		*												
02:30	4		*												
02:45	5	17	*	0											
03:00	6		*												
03:15	12		*												
03:30	9		*												
03:45	13	40	*	0											
04:00	18		*												
04:15	39		*												
04:30	41		*												
04:45	46	144	*	0											
05:00	75		*												
05:15	105		*												
05:30	122		*												
05:45	151	453	*	0											
06:00	120		*												
06:15	121		*												
06:30	111		*												
06:45	133	485	*	0											
07:00	135		*												
07:15	133		*												
07:30	142		*												
07:45	151	561	*	0											
08:00	137		*												
08:15	154		*												
08:30	155		*												
08:45	120	566	*	0											
09:00	143		*												
09:15	134		*												
09:30	119		*												
09:45	104	500	*	0											
10:00	109		*												
10:15	116		*												
10:30	101		*												
10:45	97	423	*	0											
11:00	119		*												
11:15	*	*	*	*											
11:30	*	*	*	*											
11:45	*	*	*	*											
Total	3362		0												
Percent			0.0%	0.0%	0.0%										
Day Total		3243													
Peak	07:45	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vol.	597	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	0.963														

Frontage Road NB  
 south of I-93 SB Ramps  
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186440 E-NB Class  
 Site Code: T0525

NB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	3	310	85	5	35	6	0	2	3	0	0	0	0	449
14:00	2	329	99	6	35	3	0	4	3	0	0	0	0	481
15:00	2	374	104	7	32	2	0	1	0	0	0	0	0	522
16:00	0	361	86	2	31	2	0	2	0	0	0	0	0	484
17:00	0	446	73	0	24	1	0	2	1	1	0	0	0	548
18:00	2	333	69	1	24	1	0	3	2	0	0	0	0	435
19:00	0	277	53	0	7	0	0	0	0	0	0	0	0	337
20:00	0	175	26	2	13	0	0	0	1	0	0	0	0	217
21:00	2	159	27	0	9	1	0	0	0	0	0	0	0	198
22:00	3	108	14	1	2	3	0	0	6	0	0	0	0	137
23:00	0	51	11	0	2	0	0	0	2	0	0	0	0	66
Total	14	2923	647	24	214	19	0	14	18	1	0	0	0	3874
Percent	0.4%	75.5%	16.7%	0.6%	5.5%	0.5%	0.0%	0.4%	0.5%	0.0%	0.0%	0.0%	0.0%	

AM  
 Peak  
 Vol.

PM Peak Vol.	13:00	17:00	15:00	15:00	13:00	13:00		14:00	22:00	17:00				17:00
	3	446	104	7	35	6		4	6	1				548

Frontage Road NB  
 south of I-93 SB Ramps  
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 Email: datarequests@pdillc.com

186440 E-NB Class  
 Site Code: T0525

NB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/13/1														
8	0	10	9	0	1	0	0	0	3	0	0	0	0	23
01:00	0	14	2	0	0	0	0	0	1	0	0	0	0	17
02:00	1	13	5	0	1	1	0	0	3	0	0	0	0	24
03:00	0	21	8	2	5	0	0	0	0	0	0	0	0	36
04:00	1	80	17	1	12	3	0	1	2	1	0	0	0	118
05:00	3	374	110	4	55	11	0	3	11	0	0	0	0	571
06:00	3	477	94	6	30	6	0	3	5	0	0	0	0	624
07:00	6	657	97	3	38	9	0	5	4	1	0	0	0	820
08:00	2	641	129	6	25	5	0	5	5	1	0	1	0	820
09:00	5	418	103	5	34	8	0	7	2	0	0	0	0	582
10:00	3	301	77	7	40	8	0	8	9	1	0	0	0	454
11:00	5	342	71	6	28	9	0	4	3	1	0	0	0	469
12 PM	4	370	81	9	38	9	1	2	4	0	0	0	0	518
13:00	2	305	80	4	29	5	0	2	3	0	0	0	0	430
14:00	2	307	91	8	30	4	0	1	2	0	0	0	0	445
15:00	2	368	94	6	29	0	0	1	2	0	0	0	0	502
16:00	3	403	93	3	40	2	0	3	1	0	0	0	0	548
17:00	4	522	88	1	29	3	0	3	0	0	0	0	0	650
18:00	7	596	116	3	22	0	0	1	1	0	0	0	0	746
19:00	1	509	104	0	29	1	0	0	1	0	0	0	0	645
20:00	1	344	53	0	12	0	0	0	1	0	0	0	0	411
21:00	1	177	31	0	7	0	0	0	1	0	0	0	0	217
22:00	2	102	21	0	8	3	0	0	6	0	0	0	0	142
23:00	2	68	10	1	2	2	0	0	3	0	0	0	0	88
Total	60	7419	1584	75	544	89	1	49	73	5	0	1	0	9900
Percent	0.6%	74.9%	16.0%	0.8%	5.5%	0.9%	0.0%	0.5%	0.7%	0.1%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	08:00	10:00	05:00	05:00		10:00	05:00	04:00		08:00		07:00
Vol.	6	657	129	7	55	11		8	11	1		1		820
PM Peak	18:00	18:00	18:00	12:00	16:00	12:00	12:00	16:00	22:00					18:00
Vol.	7	596	116	9	40	9	1	3	6					746

Frontage Road NB  
 south of I-93 SB Ramps  
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186440 E-NB Class  
 Site Code: T0525

NB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/14/1														
8	1	18	8	1	2	1	0	0	0	0	0	0	0	31
01:00	1	16	3	0	0	1	0	0	2	0	0	0	0	23
02:00	0	11	4	0	0	1	0	0	1	0	0	0	0	17
03:00	1	21	12	1	4	1	0	0	0	0	0	0	0	40
04:00	3	89	22	4	12	6	0	0	8	0	0	0	0	144
05:00	1	286	87	3	61	5	0	1	9	0	0	0	0	453
06:00	3	350	79	3	32	9	0	4	5	0	0	0	0	485
07:00	7	405	86	3	34	10	0	7	9	0	0	0	0	561
08:00	7	439	70	3	32	9	0	5	0	1	0	0	0	566
09:00	5	363	86	6	27	7	1	3	2	0	0	0	0	500
10:00	6	282	81	7	33	7	0	3	4	0	0	0	0	423
11:00	4	314	69	14	28	11	0	4	5	0	0	0	0	449
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	39	2594	607	45	265	68	1	27	45	1	0	0	0	3692
Percent	1.1%	70.3%	16.4%	1.2%	7.2%	1.8%	0.0%	0.7%	1.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	08:00	05:00	11:00	05:00	11:00	09:00	07:00	05:00	08:00				08:00
Vol.	7	439	87	14	61	11	1	7	9	1				566
PM Peak														
Vol.														

Frontage Road NB  
 south of I-93 SB Ramps  
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186440 E-NB Speed  
 Site Code: T0525

NB	Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
		14	19	24	29	34	39	44	49	54	59	64	69	9999			
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	0	0	17	62	220	123	26	1	0	0	0	0	0	0	449	37	33
14:00	0	3	<b>20</b>	<b>68</b>	<b>230</b>	<b>143</b>	<b>14</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>481</b>	<b>37</b>	<b>33</b>
15:00	0	<b>8</b>	<b>20</b>	<b>66</b>	<b>237</b>	<b>173</b>	<b>15</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>522</b>	<b>37</b>	<b>33</b>
16:00	0	1	12	31	212	186	<b>41</b>	1	0	0	0	0	0	0	484	38	34
17:00	0	0	14	60	234	<b>212</b>	26	2	0	0	0	0	0	0	<b>548</b>	37	34
18:00	0	5	19	45	189	151	22	3	0	0	<b>1</b>	0	0	0	435	37	33
19:00	0	1	5	39	155	121	15	1	0	0	0	0	0	0	337	37	34
20:00	0	0	2	30	106	67	11	1	0	0	0	0	0	0	217	37	33
21:00	0	1	5	24	94	62	12	0	0	0	0	0	0	0	198	37	33
22:00	0	0	5	33	56	37	6	0	0	0	0	0	0	0	137	37	32
23:00	0	0	2	13	27	20	2	1	1	0	0	0	0	0	66	37	33
Total	0	19	121	471	1760	1295	190	15	2	0	1	0	0	0	3874		
%	0.0%	0.5%	3.1%	12.2%	45.4%	33.4%	4.9%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			

AM  
 Peak  
 Vol.

PM	15:00	14:00	14:00	15:00	17:00	16:00	15:00	14:00	18:00	17:00
Peak Vol.	8	20	68	237	212	41	3	1	1	548

Stats

- 15th Percentile : 28 MPH
- 50th Percentile : 32 MPH
- 85th Percentile : 37 MPH
- 95th Percentile : 39 MPH
- Mean Speed(Average) : 33 MPH
- 10 MPH Pace Speed : 30-39 MPH
- Number in Pace : 3055
- Percent in Pace : 78.9%
- Number of Vehicles > 35 MPH : 1244
- Percent of Vehicles > 35 MPH : 32.1%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Frontage Road NB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: TEC/ S. Gregorio

186440 E-NB Speed  
Site Code: T0525

NB	Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
		14	19	24	29	34	39	44	49	54	59	64	69	9999			
09/13/																	
18	0	0	0	8	9	6	0	0	0	0	0	0	0	0	23	36	32
01:00	0	1	0	2	8	5	1	0	0	0	0	0	0	0	17	37	33
02:00	0	1	5	6	7	5	0	0	0	0	0	0	0	0	24	35	29
03:00	0	1	1	5	18	9	2	0	0	0	0	0	0	0	36	37	32
04:00	0	5	7	23	58	22	3	0	0	0	0	0	0	0	118	35	31
05:00	0	13	78	115	242	105	15	3	0	0	0	0	0	0	571	35	31
06:00	2	9	11	104	294	188	16	0	0	0	0	0	0	0	624	36	32
07:00	0	6	27	98	377	275	33	4	0	0	0	0	0	0	820	37	33
08:00	0	7	15	83	429	237	44	4	1	0	0	0	0	0	820	37	33
09:00	0	1	21	88	250	199	23	0	0	0	0	0	0	0	582	37	33
10:00	0	9	15	72	227	115	13	2	1	0	0	0	0	0	454	36	32
11:00	0	4	14	55	212	161	20	2	1	0	0	0	0	0	469	37	33
12 PM	2	4	25	65	211	181	29	1	0	0	0	0	0	0	518	37	33
13:00	1	3	16	36	196	155	16	7	0	0	0	0	0	0	430	37	33
14:00	3	5	20	56	195	144	19	3	0	0	0	0	0	0	445	37	33
15:00	0	0	17	49	255	158	21	2	0	0	0	0	0	0	502	37	33
16:00	4	1	15	39	279	180	28	2	0	0	0	0	0	0	548	37	33
17:00	0	1	25	77	270	237	34	6	0	0	0	0	0	0	650	37	33
18:00	0	3	19	120	363	207	23	10	1	0	0	0	0	0	746	37	33
19:00	0	5	23	129	316	151	21	0	0	0	0	0	0	0	645	36	32
20:00	0	2	12	83	206	98	8	2	0	0	0	0	0	0	411	36	32
21:00	0	3	7	30	108	57	12	0	0	0	0	0	0	0	217	37	33
22:00	0	2	5	30	64	33	7	1	0	0	0	0	0	0	142	36	32
23:00	0	0	8	13	38	24	5	0	0	0	0	0	0	0	88	37	32
Total	12	86	386	1386	4632	2952	393	49	4	0	0	0	0	0	9900		
%	0.1%	0.9%	3.9%	14.0%	46.8%	29.8%	4.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	05:00	05:00	05:00	08:00	07:00	08:00	07:00	08:00								07:00
Vol.	2	13	78	115	429	275	44	4	1								820
PM Peak	16:00	14:00	12:00	19:00	18:00	17:00	17:00	18:00	18:00								18:00
Vol.	4	5	25	129	363	237	34	10	1								746

Stats

15th Percentile : 27 MPH  
 50th Percentile : 32 MPH  
 85th Percentile : 37 MPH  
 95th Percentile : 38 MPH

Mean Speed(Average) : 33 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 7584  
 Percent in Pace : 76.6%  
 Number of Vehicles > 35 MPH : 2808  
 Percent of Vehicles > 35 MPH : 28.4%

Frontage Road NB  
 south of I-93 SB Ramps  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 E-NB Speed  
 Site Code: T0525

NB	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
Start Time	14	19	24	29	34	39	44	49	54	59	64	69	9999			
09/14/																
18	0	0	5	11	9	5	1	0	0	0	0	0	0	31	35	30
01:00	0	1	3	5	13	1	0	0	0	0	0	0	0	23	33	29
02:00	1	0	3	4	6	2	1	0	0	0	0	0	0	17	35	29
03:00	0	2	1	5	16	14	2	0	0	0	0	0	0	40	37	33
04:00	0	5	11	30	53	36	9	0	0	0	0	0	0	144	37	32
05:00	0	15	36	70	205	115	10	1	1	0	0	0	0	453	36	32
06:00	3	7	17	51	196	181	29	1	0	0	0	0	0	485	37	33
07:00	2	1	21	68	264	182	20	2	1	0	0	0	0	561	37	33
08:00	0	8	28	59	244	201	22	3	1	0	0	0	0	566	37	33
09:00	1	5	18	59	228	169	19	1	0	0	0	0	0	500	37	33
10:00	3	8	21	50	200	120	17	3	1	0	0	0	0	423	37	32
11:00	0	5	18	77	195	126	24	3	1	0	0	0	0	449	37	33
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	10	57	182	489	1629	1152	154	14	5	0	0	0	0	3692		
%	0.3%	1.5%	4.9%	13.2%	44.1%	31.2%	4.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	05:00	05:00	11:00	07:00	08:00	06:00	08:00	05:00					08:00		
Vol.	3	15	36	77	264	201	29	3	1					566		
PM Peak																
Vol.																

Stats

15th Percentile :	27 MPH
50th Percentile :	32 MPH
85th Percentile :	37 MPH
95th Percentile :	38 MPH
Mean Speed(Average) :	33 MPH
10 MPH Pace Speed :	30-39 MPH
Number in Pace :	2781
Percent in Pace :	75.3%
Number of Vehicles > 35 MPH :	1095
Percent of Vehicles > 35 MPH :	29.6%

Frontage Road SB  
 south of I-93 SB Ramps  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



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186440 E-SB Volume  
 Site Code: T0525

Start Time	A.M.	SB	P.M.											
12:00	*		*											
12:15	*		*											
12:30	*		*											
12:45	*	0	*	0										
01:00	*		105											
01:15	*		96											
01:30	*		106											
01:45	*	0	110	417										
02:00	*		137											
02:15	*		131											
02:30	*		166											
02:45	*	0	139	573										
03:00	*		138											
03:15	*		145											
03:30	*		147											
03:45	*	0	140	570										
04:00	*		143											
04:15	*		156											
04:30	*		159											
04:45	*	0	163	621										
05:00	*		162											
05:15	*		154											
05:30	*		167											
05:45	*	0	144	627										
06:00	*		121											
06:15	*		102											
06:30	*		117											
06:45	*	0	76	416										
07:00	*		77											
07:15	*		68											
07:30	*		66											
07:45	*	0	57	268										
08:00	*		58											
08:15	*		55											
08:30	*		32											
08:45	*	0	56	201										
09:00	*		32											
09:15	*		35											
09:30	*		39											
09:45	*	0	22	128										
10:00	*		23											
10:15	*		29											
10:30	*		19											
10:45	*	0	22	93										
11:00	*		18											
11:15	*		12											
11:30	*		14											
11:45	*	0	9	53										
Total	0		3967											
Percent			100.0%	0.0%	0.0%									
Day Total		3967												
Peak Vol.	-	-	04:45	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	-	-	646	-	-	-	-	-	-	-	-	-	-	-
			0.967											

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186440 E-SB Volume  
 Site Code: T0525

Start Time	A.M.	SB		P.M.											Thu 09/13/18					
12:00	8			103																
12:15	8			116																
12:30	10			114																
12:45	8	34		98	431															
01:00	5			98																
01:15	4			86																
01:30	5			105																
01:45	9	23		123	412															
02:00	9			102																
02:15	4			127																
02:30	7			170																
02:45	11	31		140	539															
03:00	4			154																
03:15	0			157																
03:30	5			174																
03:45	10	19		147	632															
04:00	11			144																
04:15	28			144																
04:30	47			164																
04:45	71	157		139	591															
05:00	80			133																
05:15	71			201																
05:30	79			156																
05:45	57	287		157	647															
06:00	104			132																
06:15	90			151																
06:30	146			109																
06:45	148	488		103	495															
07:00	163			119																
07:15	134			89																
07:30	163			78																
07:45	179	639		50	336															
08:00	170			53																
08:15	165			55																
08:30	166			60																
08:45	169	670		45	213															
09:00	141			44																
09:15	120			48																
09:30	104			52																
09:45	111	476		43	187															
10:00	99			39																
10:15	80			47																
10:30	103			40																
10:45	93	375		25	151															
11:00	85			35																
11:15	90			28																
11:30	118			17																
11:45	104	397		10	90															
Total	3596			4724																
Percent				100.0 %		0.0%				0.0%										
Day Total			8320																	
Peak	07:45	-	05:00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vol.	680	-	647	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	0.950		0.805																	

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186440 E-SB Volume  
 Site Code: T0525

Start Time	A.M.	SB	P.M.											Fri 09/14/18							
12:00	16		*																		
12:15	14		*																		
12:30	17		*																		
12:45	10	57	*	0																	
01:00	12		*																		
01:15	10		*																		
01:30	5		*																		
01:45	9	36	*	0																	
02:00	3		*																		
02:15	7		*																		
02:30	1		*																		
02:45	4	15	*	0																	
03:00	12		*																		
03:15	8		*																		
03:30	16		*																		
03:45	15	51	*	0																	
04:00	17		*																		
04:15	18		*																		
04:30	50		*																		
04:45	69	154	*	0																	
05:00	101		*																		
05:15	85		*																		
05:30	114		*																		
05:45	128	428	*	0																	
06:00	106		*																		
06:15	136		*																		
06:30	154		*																		
06:45	171	567	*	0																	
07:00	157		*																		
07:15	141		*																		
07:30	132		*																		
07:45	122	552	*	0																	
08:00	153		*																		
08:15	174		*																		
08:30	165		*																		
08:45	193	685	*	0																	
09:00	168		*																		
09:15	125		*																		
09:30	126		*																		
09:45	149	568	*	0																	
10:00	131		*																		
10:15	95		*																		
10:30	99		*																		
10:45	114	439	*	0																	
11:00	123		*																		
11:15	*	*	*	*																	
11:30	*	*	*	*																	
11:45	*	*	*	*																	
Total	3675		0																		
Percent			0.0%		0.0%																
Day Total		3552																			
Peak	08:15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vol.	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	0.907																				

Frontage Road SB  
 south of I-93 SB Ramps  
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186440 E-SB Class  
 Site Code: T0525

SB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	5	256	77	8	49	11	0	2	9	0	0	0	0	417
14:00	5	369	103	9	65	4	0	6	12	0	0	0	0	573
15:00	5	383	95	8	53	8	0	5	13	0	0	0	0	570
16:00	2	457	91	4	60	2	0	4	1	0	0	0	0	621
17:00	5	480	85	2	45	2	0	6	2	0	0	0	0	627
18:00	2	320	67	0	25	1	0	1	0	0	0	0	0	416
19:00	3	192	46	1	23	3	0	0	0	0	0	0	0	268
20:00	3	144	38	0	12	3	0	0	1	0	0	0	0	201
21:00	2	99	17	0	9	0	0	0	1	0	0	0	0	128
22:00	0	82	4	3	4	0	0	0	0	0	0	0	0	93
23:00	3	37	6	0	2	3	0	0	2	0	0	0	0	53
Total	35	2819	629	35	347	37	0	24	41	0	0	0	0	3967
Percent	0.9%	71.1%	15.9%	0.9%	8.7%	0.9%	0.0%	0.6%	1.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak Vol.														
PM Peak Vol.	13:00	17:00	14:00	14:00	14:00	13:00		14:00	15:00					17:00
	5	480	103	9	65	11		6	13					627

Frontage Road SB  
south of I-93 SB Ramps  
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186440 E-SB Class  
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SB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/13/1														
8	2	20	7	0	2	2	0	0	1	0	0	0	0	34
01:00	2	16	1	0	1	2	0	0	1	0	0	0	0	23
02:00	3	11	7	1	3	3	0	0	3	0	0	0	0	31
03:00	0	11	5	0	3	0	0	0	0	0	0	0	0	19
04:00	5	97	27	0	19	7	0	0	2	0	0	0	0	157
05:00	4	160	64	3	48	3	0	1	4	0	0	0	0	287
06:00	9	318	81	4	56	10	0	3	7	0	0	0	0	488
07:00	7	466	84	5	56	8	0	6	6	1	0	0	0	639
08:00	6	491	98	13	33	9	1	7	12	0	0	0	0	670
09:00	1	434	19	1	14	3	0	2	2	0	0	0	0	476
10:00	0	372	2	0	1	0	0	0	0	0	0	0	0	375
11:00	0	395	0	0	2	0	0	0	0	0	0	0	0	397
12 PM	0	429	1	0	1	0	0	0	0	0	0	0	0	431
13:00	0	411	1	0	0	0	0	0	0	0	0	0	0	412
14:00	3	457	44	3	20	0	1	3	7	1	0	0	0	539
15:00	9	447	102	2	51	9	0	5	7	0	0	0	0	632
16:00	3	452	71	4	50	4	0	5	2	0	0	0	0	591
17:00	11	491	103	2	33	1	0	3	2	0	0	1	0	647
18:00	8	369	84	3	27	2	0	1	1	0	0	0	0	495
19:00	4	236	64	1	26	4	0	1	0	0	0	0	0	336
20:00	1	144	50	1	14	1	0	1	1	0	0	0	0	213
21:00	2	136	31	0	15	2	0	0	1	0	0	0	0	187
22:00	4	104	28	3	10	2	0	0	0	0	0	0	0	151
23:00	2	71	8	0	6	2	0	0	1	0	0	0	0	90
Total	86	6538	982	46	491	74	2	38	60	2	0	1	0	8320
Percent	1.0%	78.6%	11.8%	0.6%	5.9%	0.9%	0.0%	0.5%	0.7%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	08:00	08:00	08:00	06:00	06:00	08:00	08:00	08:00	07:00				08:00
Vol.	9	491	98	13	56	10	1	7	12	1				670
PM Peak	17:00	17:00	17:00	16:00	15:00	15:00	14:00	15:00	14:00	14:00		17:00		17:00
Vol.	11	491	103	4	51	9	1	5	7	1		1		647

Frontage Road SB  
 south of I-93 SB Ramps  
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186440 E-SB Class  
 Site Code: T0525

SB

Start Time	Cycles	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
09/14/1														
8	1	40	8	0	5	1	0	1	1	0	0	0	0	57
01:00	2	24	3	0	2	2	0	0	3	0	0	0	0	36
02:00	1	5	3	2	1	1	0	0	2	0	0	0	0	15
03:00	1	25	6	1	15	3	0	0	0	0	0	0	0	51
04:00	7	86	30	0	22	6	0	0	3	0	0	0	0	154
05:00	8	251	72	2	75	8	0	1	11	0	0	0	0	428
06:00	16	349	105	5	66	13	0	3	10	0	0	0	0	567
07:00	4	380	95	5	49	3	0	10	6	0	0	0	0	552
08:00	12	470	89	10	69	12	0	4	18	0	0	0	1	685
09:00	11	363	99	6	61	11	0	5	12	0	0	0	0	568
10:00	2	276	91	9	38	3	0	3	17	0	0	0	0	439
11:00	0	378	103	10	49	4	1	5	11	0	0	0	0	561
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	65	2647	704	50	452	67	1	32	94	0	0	0	1	4113
Percent	1.6%	64.4%	17.1%	1.2%	11.0%	1.6%	0.0%	0.8%	2.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	08:00	06:00	08:00	05:00	06:00	11:00	07:00	08:00				08:00	08:00
Vol.	16	470	105	10	75	13	1	10	18				1	685
PM Peak														
Vol.														

Frontage Road SB  
 south of I-93 SB Ramps  
 City, State: Andover, MA  
 Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
 Office: 508-875-0100 Fax: 508-875-0118  
 Email: datarequests@pdillc.com

186440 E-SB Speed  
 Site Code: T0525

SB

Start Time	1 14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/12/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	0	0	9	41	165	170	29	2	1	0	0	0	0	417	38	34
14:00	3	3	12	70	223	195	58	8	1	0	0	0	0	573	38	34
15:00	3	3	23	85	231	171	45	8	1	0	0	0	0	570	38	33
16:00	5	0	9	56	237	242	59	12	1	0	0	0	0	621	38	34
17:00	1	1	11	59	237	246	63	7	1	0	1	0	0	627	38	35
18:00	1	0	3	26	141	190	51	4	0	0	0	0	0	416	38	35
19:00	0	0	2	22	97	118	25	4	0	0	0	0	0	268	38	35
20:00	0	0	0	13	88	82	11	4	2	1	0	0	0	201	38	35
21:00	2	0	2	9	46	49	18	1	1	0	0	0	0	128	39	35
22:00	1	0	0	7	44	34	4	3	0	0	0	0	0	93	37	34
23:00	0	1	6	7	15	20	4	0	0	0	0	0	0	53	38	33
Total	16	8	77	395	1524	1517	367	53	8	1	1	0	0	3967		
%	0.4%	0.2%	1.9%	10.0%	38.4%	38.2%	9.3%	1.3%	0.2%	0.0%	0.0%	0.0%	0.0%			

AM  
Peak  
Vol.

PM Peak Vol.	16:00	14:00	15:00	15:00	16:00	17:00	17:00	16:00	20:00	20:00	17:00		17:00
Vol.	5	3	23	85	237	246	63	12	2	1	1		627

Stats

15th Percentile : 29 MPH  
 50th Percentile : 33 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 42 MPH  
  
 Mean Speed(Average) : 34 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 3041  
 Percent in Pace : 76.7%  
 Number of Vehicles > 35 MPH : 1644  
 Percent of Vehicles > 35 MPH : 41.4%

Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: TEC/ S. Gregorio



46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

186440 E-SB Speed  
Site Code: T0525

SB

Start Time	14	15 19	20 24	25 29	30 34	35 39	40 44	45 49	50 54	55 59	60 64	65 69	70 9999	Total	85th % ile	Ave Speed
09/13/																
18	0	0	2	9	10	12	1	0	0	0	0	0	0	34	37	32
01:00	0	0	2	6	6	5	4	0	0	0	0	0	0	23	39	33
02:00	0	2	0	9	13	6	1	0	0	0	0	0	0	31	35	31
03:00	0	0	0	2	9	7	1	0	0	0	0	0	0	19	37	34
04:00	0	0	9	34	56	52	5	1	0	0	0	0	0	157	37	32
05:00	3	0	13	55	111	92	9	3	1	0	0	0	0	287	37	32
06:00	0	1	9	70	159	<b>203</b>	40	<b>6</b>	0	0	0	0	0	488	38	34
07:00	1	0	<b>25</b>	101	236	203	<b>66</b>	6	1	0	0	0	0	639	38	34
08:00	4	<b>6</b>	25	<b>114</b>	<b>270</b>	199	46	5	1	0	0	0	0	<b>670</b>	37	33
09:00	339	2	9	19	69	30	7	0	1	0	0	0	0	476	31	15
10:00	372	1	1	0	0	0	1	0	0	0	0	0	0	375	11	8
11:00	<b>394</b>	0	1	1	0	1	0	0	0	0	0	0	0	397	11	8
12 PM	<b>429</b>	0	0	1	1	0	0	0	0	0	0	0	0	431	11	8
13:00	411	0	0	1	0	0	0	0	0	0	0	0	0	412	11	8
14:00	340	<b>32</b>	25	36	60	31	13	2	0	0	0	0	0	539	31	15
15:00	99	21	31	78	193	166	33	10	1	0	0	0	0	632	37	29
16:00	2	3	17	62	209	<b>223</b>	59	<b>15</b>	1	0	0	0	0	591	38	34
17:00	34	16	<b>38</b>	<b>103</b>	<b>215</b>	194	41	5	1	0	0	0	0	<b>647</b>	37	31
18:00	3	1	13	66	193	148	<b>60</b>	7	<b>2</b>	0	0	<b>1</b>	<b>1</b>	495	38	34
19:00	0	3	16	56	140	102	16	3	0	0	0	0	0	336	37	33
20:00	0	0	2	18	97	79	15	1	1	0	0	0	0	213	38	34
21:00	0	0	4	13	75	69	21	5	0	0	0	0	0	187	38	35
22:00	0	2	3	12	67	56	8	3	0	0	0	0	0	151	37	34
23:00	1	0	3	11	26	37	11	1	0	0	0	0	0	90	38	34
Total	2432	90	248	877	2215	1915	458	73	10	0	0	1	1	8320		
%	29.2%	1.1%	3.0%	10.5%	26.6%	23.0%	5.5%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	08:00	07:00	08:00	08:00	06:00	07:00	06:00	05:00					08:00		
Vol.	394	6	25	114	270	203	66	6	1					670		
PM Peak	12:00	14:00	17:00	17:00	17:00	16:00	18:00	16:00	18:00			18:00	18:00	17:00		
Vol.	429	32	38	103	215	223	60	15	2			1	1	647		

Stats

15th Percentile : 7 MPH  
50th Percentile : 30 MPH  
85th Percentile : 37 MPH  
95th Percentile : 40 MPH

Mean Speed(Average) : 26 MPH  
10 MPH Pace Speed : 30-39 MPH  
Number in Pace : 4130  
Percent in Pace : 49.6%  
Number of Vehicles > 35 MPH : 2075  
Percent of Vehicles > 35 MPH : 24.9%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: TEC/ S. Gregorio

186440 E-SB Speed  
Site Code: T0525

SB

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed	
09/14/18	0	0	2	14	15	22	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57	37	33	
01:00	0	0	7	1	15	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	37	32	
02:00	0	0	3	4	2	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	37	31	
03:00	0	1	3	7	13	20	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	51	38	34	
04:00	0	2	13	23	46	59	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	154	37	33	
05:00	0	3	15	76	168	135	25	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	428	37	33	
06:00	2	3	23	77	220	193	40	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	567	38	33	
07:00	1	1	14	49	202	215	60	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	552	38	35	
08:00	23	31	61	126	238	161	39	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	685	37	31	
09:00	6	1	26	75	207	182	61	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	568	38	34	
10:00	0	0	8	49	175	169	36	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	439	38	34	
11:00	2	7	17	110	231	157	31	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	561	37	33	
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	34	49	192	611	1532	1328	317	45	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4113			
%	0.8%	1.2%	4.7%	14.9%	37.2%	32.3%	7.7%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	08:00	08:00	08:00	08:00	08:00	07:00	09:00	07:00	05:00											09:00							08:00		
Vol.	23	31	61	126	238	215	61	10	1											1							685		
PM Peak																													
Vol.																													

Stats

15th Percentile : 26 MPH  
 50th Percentile : 32 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 41 MPH

Mean Speed(Average) : 33 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 2860  
 Percent in Pace : 69.5%  
 Number of Vehicles > 35 MPH : 1429  
 Percent of Vehicles > 35 MPH : 34.8%



## **Appendix D**

Seasonal Adjustment Data



**Seasonal Adjustment**

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA  
 Date: 9/14/2018  
 Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T. / Danah Hamzeh  
 Source: MassDOT Temporary Count Station 5022

**STATION 5022 - ANDOVER - RTE. I-93 - NORTH OF RTE. 125**

<u>YR</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>YEAR</u>	<u>September Seasonal Adjustment</u>	<u>October Seasonal Adjustment</u>
15	125,444	126,309	140,654	143,059	144,180	150,259	146,755	150,695	<b>145,957</b>	<b>148,892</b>	141,259	138,759	<b>141,852</b>	-2.9%	-5.0%
16	136,909	139,810	147,511	146,392	148,367	152,149	140,385		<b>149,778</b>	<b>150,835</b>	143,182	136,507	<b>144,663</b>	-3.5%	-4.3%
17	137,166	131,962	141,765	153,753	153,699	159,302	152,395	155,344	<b>153,395</b>	<b>153,498</b>	143,695	133,970	<b>147,495</b>	-4.0%	-4.1%
Average Adj. =														<b>-3.5%</b>	<b>-4.4%</b>

Assume 0.0% Seasonal Adjustment.



## **Appendix E**

Dascomb Road 2016 Road Safety Audit (RSA)



# ROAD SAFETY AUDIT

Dascomb Road (Frontage Road to I-93 NB Ramps)

Town of Andover

March 29, 2017

Prepared For:  
Massachusetts Department of Transportation



Town of Andover, Massachusetts



Prepared By:  
TEC, Inc.  
65 Glenn Street  
Lawrence, MA 01843





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## Background

TEC, Inc. (TEC), in cooperation with the Town of Andover and the Massachusetts Department of Transportation (MassDOT), is evaluating the existing traffic safety characteristics at the Dascomb Road / Frontage Road and Dascomb Road / Interstate 93 (I-93) Northbound (NB) Ramps intersections in Andover, Massachusetts. TEC is conducting this safety evaluation as the first step towards off-site improvements for the proposed #146 Dascomb Road Redevelopment project. To date, the private mixed-use development project is in the early planning phase and is anticipated to begin state review with the Massachusetts Environmental Policy Act (MEPA) office in the spring of 2017.

### **Road Safety Audit Justification**

A Road Safety Audit (RSA), as defined by the Federal Highway Administration (FHWA), is the *formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team*. The purpose of the RSA is to observe, identify, and report all safety issues and identify future opportunities for safety enhancement improvements for all roadway users. This includes identifying both short-term and long-term safety enhancements that can be implemented through general maintenance, immediate installation/removal, or could be potentially incorporated into future improvement projects. Enhancements, or improvements, can take the form of one or more of the 4 E's; including: **E**ngineering, **E**ducation, **E**mergency Response, and **E**nforcement.

The U.S. Congress enacted the “Safe, Accountable, Flexible, Efficient, Transportation Act - A Legacy for Users” (SAFETEA-LU) in August 2005. This act provides guidance and funding for the implementation of a State Highway Safety Improvement Program (HSIP). As part of this Program, all states are required to develop a Strategic Highway Safety Plan (SHSP). The MassDOT guidelines require an RSA be conducted where HSIP-eligible crash clusters are present within the study area of a transportation improvement project prior to commencing or finalizing a 25% Design. In this case, the RSA is being conducted during the early MEPA review process. An intersection is defined as HSIP-eligible if the intersection is within the top 5% of crash clusters in its respective Regional Planning Commission (RPC) boundaries based on Equivalent Property Damage Only (EPDO). EPDO rates crashes based on the crash severity.

### ***HSIP Eligibility***

Based on the MassDOT online crash cluster database, the Dascomb Road / Smith Drive intersection is considered 2012-2014 HSIP-eligible. Upon further review of the compiled crash reports, many of the crashes that MassDOT geocoded to the intersection of Dascomb Road / Smith Drive were found to be incorrectly placed. Crash reports indicate that nearly all of these crashes occurred at or within the influence of the Dascomb Road / Frontage Road intersection, which is located approximately 600 feet to the east. TEC had identified this error with the MassDOT Traffic Safety Section in October 2016. As part of all subsequent traffic related documents, the intersection of Dascomb Road / Smith Drive will not be considered HSIP-eligible; however the intersection of Dascomb Road / Frontage Road is to be considered.

The Interstate 93 Interchange 42 is considered HSIP-eligible as a whole. Like many freeway interchanges throughout the Commonwealth, a large number of crashes that occurred along the freeway segment,

ramps, surface intersections, and at locations far upstream and downstream of the interchanges are geocoded to the interchange regardless of influence location. Therefore, it is difficult to decipher where the crash issues, if any, exist on or at the general interchange. After a review of all interchange crash reports, the reports indicated that the surface intersection of Dascomb Road / I-93 NB Ramps is HSIP-eligible separate from the interchange.

## Project Data

TEC of Lawrence, Massachusetts is the primary traffic safety investigation consultant in this RSA for the Dascomb Road / Frontage Road and Dascomb Road / I-93 NB Ramps intersections. The RSA meeting was conducted on Wednesday, December 14, 2016 at 1:00 PM, with the pre- and post-audit meetings held at the Andover Public Safety Center, located at #32 North Main Street in Andover, Massachusetts. A copy of the RSA agenda can be found in Appendix A. TEC and representatives of the Town have also conducted various other field visits to the audit location as part of their private development project scoping process.

As presented in Table 1 below, the audit team consisted of a cross-section of state, regional, and local engineering, enforcement, maintenance, and emergency response professionals and was assembled in conjunction with input from MassDOT's Traffic Safety Management Unit. Contact information for all participating audit team members is provided in Appendix B.

**Table 1: Participating Audit Team Members**

<b>Audit Team Member</b>	<b>Agency/Affiliation</b>
Brian Moore	Andover Engineering Department
Paul Materazzo	Andover Planning Department
Glen Ota	Andover Police Department
Chris Moore	Andover Police Department
John Mangiaratti	Andover Town Manager
Adam Prichard	MassDOT Traffic Safety
Michelle Deng	MassDOT Traffic Safety
Elsa Chan	MassDOT Traffic Safety
Tony Komornick	Merrimack Valley Planning Commission (MVPC)
Jim Terlizzi	Merrimack Valley Planning Commission (MVPC)
Tim Roberts	MassDOT District 4
Timothy Paris	MassDOT District 4
Mikel Myers	TEC, Inc.
Rick Friberg	TEC, Inc.
Samuel Gregorio	TEC, Inc.

Audit participants were provided with materials to review prior to the audit meeting. The materials included a summary of crash data, collision diagrams (See Appendix), a summary of the type and severity of crashes, and traffic volume data. Participants were encouraged to visit the site prior to the audit and urged to consider elements on MassDOT's Safety Review Prompt List.

On the day of the audit, a pre-audit meeting was held to discuss the project's background, the audit process, review the distributed materials, and discuss some of the issues that team members had

observed individually. The audit site walk consisted of field observations at the audit intersections. Handwritten notes and photographs documented the observations made by audit team members during the site walk. Following the audit site walk, a post-audit meeting was held where the team confirmed the observations made in the field and offered solutions to enhance the safety of areas noted in the site walk and pre-audit meeting.

## Project Location and Description

The RSA was conducted at the Dascomb Road / Frontage Road and Dascomb Road / I-93 NB Ramps intersections in the Town of Andover, Massachusetts. A study area location map is provided in Figure 1. A detailed description of the study area roadways and intersections is provided below:

### **Existing Geometry and Infrastructure Summary**

#### ***Dascomb Road***

Dascomb Road is a northeast-southwest urban minor arterial roadway maintained by the Town of Andover. MassDOT maintains a short segment of the roadway between Frontage Road and the I-93 NB Interchange 42 Ramps. For the purposes of this audit, the cardinal direction of the corridor is east-west. Within the Town of Tewksbury, the corridor is signed as East Street. The corridor provides a local connection between Tewksbury Center to the west and Andover Street to Andover Center to the east. Dascomb Road ranges from approximately 42 to 55-foot wide and features a posted speed limit of 35 miles per hour (mph) within the vicinity of the audit site. Land uses along Dascomb Road include residential and industrial uses. Dascomb Road / East Street to the west carries a significant level of heavy vehicle traffic as a result of the Market Basket Headquarters and Distribution Warehouse located approximately 1-mile west of the audit area.

#### ***Frontage Road***

Frontage Road is a north-south local roadway maintained by the Town of Andover. The roadway provides a local connection between Osgood Street and the Raytheon facility to the north and Dascomb Road to the south as well as regional access to the I-93 SB Interchange 42 Ramps. Frontage Road is approximately 53-foot wide and does not feature a posted speed limit within the vicinity of the audit area. Land uses along Frontage Road are predominantly industrial in nature. Immediately north of Dascomb Road, Frontage Road provides access/egress to a MassDOT Park 'n' Ride facility.

#### ***Intersection: Dascomb Road / Frontage Road***

Frontage Road intersects Dascomb Road to form a three-way, T-type, fully-actuated signalized intersection. The Dascomb Road eastbound approach consists of an exclusive left-turn lane and a through lane, while the Dascomb Road westbound approach consists of two through lanes and a channelized right-turn lane, which operates under YIELD-control. Directional flow along Dascomb Road is separated by a marked centerline. The Frontage Road southbound approach consists of an exclusive left-turn lane and a channelized right-turn lane, which operates under YIELD-control. Directional flow along Frontage Road is separated by a raised concrete median which transitions to a marked centerline. Sidewalks and crosswalks are not provided along any of the roadways or intersection approaches. Although the traffic

signal is programmed for coordination, the traffic signal currently operates under free operation. The master controller unit, which is not currently connected and is located at the adjacent East Street / Shawsheen Street / Dascomb Road intersection, will be transferred to this intersection upon further improvements to the corridor signalization per MassDOT.

Recently in the late summer of 2016, MassDOT installed a permitted flashing yellow arrow (FYA) left-turn indication along Dascomb Road eastbound. Anecdotal information from an RSA team member indicates that the installation of the FYA indication has made a minimal impact on the occurrence of crashes on the left-turn movement.

***Intersection: Dascomb Road / Interstate 93 Northbound Ramps [Interchange 42]***

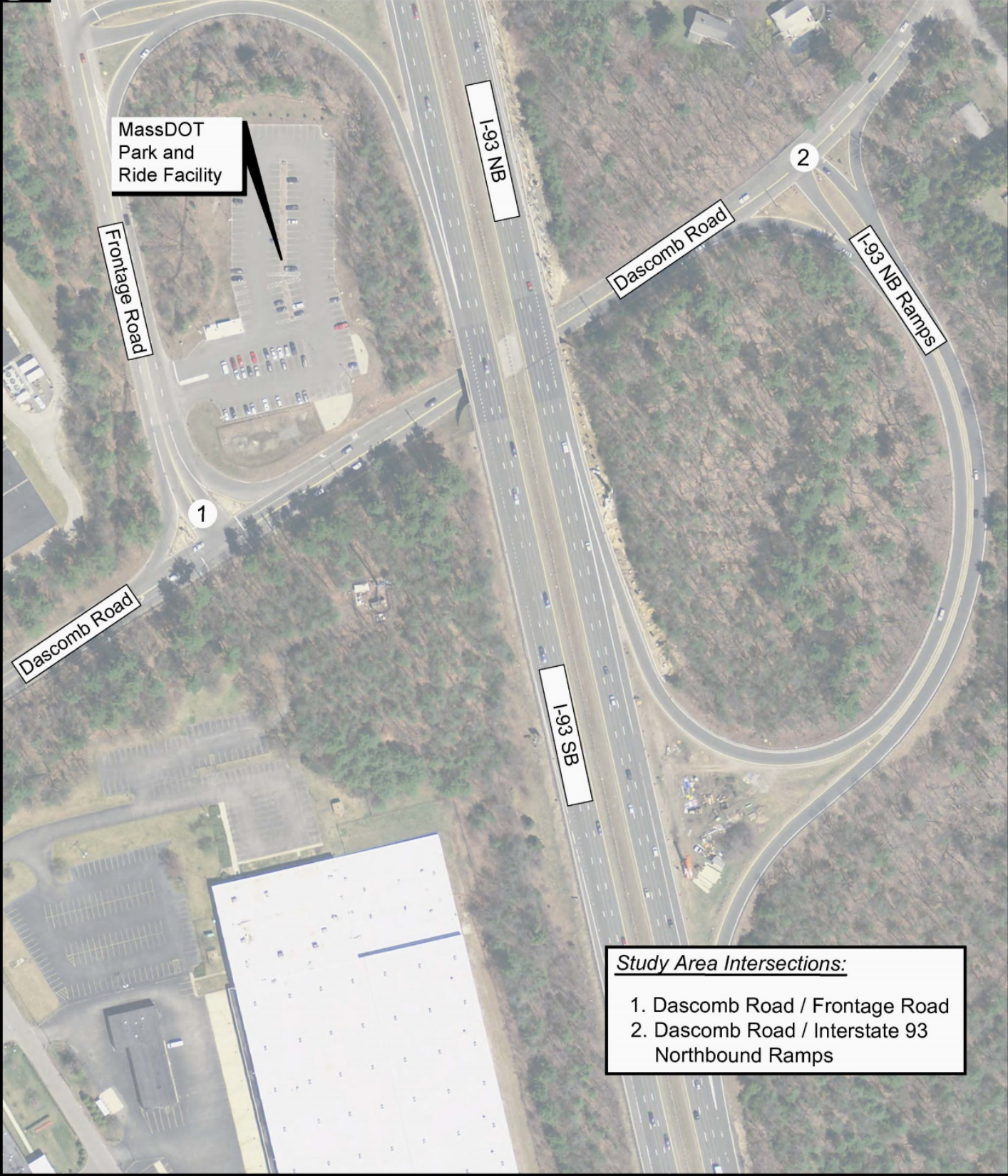
The Interstate 93 Northbound Interchange 42 Ramps (I-93 NB Ramps) intersect Dascomb Road to form a three-way, T-type, unsignalized intersection. The intersection is constructed as a standard half-cloverleaf. The Dascomb Road eastbound approach consists of a through lane and a channelized right-turn lane. The Dascomb Road westbound approach consists of an exclusive left-turn lane and a through lane. Directional flow along Dascomb Road is separated by a marked centerline. The I-93 NB Ramps northbound approach consists of an exclusive left-turn lane and a channelized right-turn lane, which operates under YIELD-control. The ramp is marked as one travel lane immediately south of the channelization. Directional flow along the I-93 NB Ramps is separated by a landscaped median which transitions to a raised concrete median. Sidewalks and crosswalks are not provided along any of the roadways or intersection approaches. Upon observation, the queue for the left-turn movement along the I-93 NB Ramps is extensive during the commuter peak periods. To bypass this extensive queue, left-turning vehicles often turn right instead and then make a U-turn on one of the nearby side streets. As a result, many side street roadways to the east along Dascomb Road are signed for prohibited reverse movements. Although much of the off-ramp is striped as one-lane, left-turning vehicles will queue against the far left shoulder allowing right-turning vehicles to by-pass.

**Sight Distance Measurements**

TEC visited the site on Monday, October 11, 2016 to measure the available sight distances along the study area roadways. The available sight distances were compared to minimum requirements established by the American Association of State Highway and Transportation Officials (AASHTO).

Sight distance represents the length of roadway that is visible to a driver traveling within the roadway. Two types of sight distance are typically evaluated for driveways and intersections: stopping sight distance (SSD) and intersection sight distance (ISD). SSD is the minimum distance required for a driver traveling along a roadway to perceive an object in the roadway and stop safely in advance of the object when traveling on a wet pavement surface. SSD is measured from an eye height of 3.5 feet to an object height of two (2) feet above the ground, which is equivalent to a driver viewing the taillight of a vehicle ahead. SSD is measured along the centerline of the travel lane approaching the driveway or intersection.

North  
1" = 200'



Study Area Intersections:

- 1. Dascomb Road / Frontage Road
- 2. Dascomb Road / Interstate 93 Northbound Ramps

Figure 1

Project Location Map & Study Area Intersections



ISD represents the length of the roadway visible to a driver waiting to exit a driveway or minor street. The minimum ISD desired are based on the distance required for a driver to exit a minor street onto a major street without requiring an approaching vehicle to reduce its speed from the design speed to less than 70 percent of the design speed. ISD is measured from an eye height of 3.5 feet to an object height of 3.5 feet, and is measured from a distance 14.5 feet off the edge of the travel-way of the major roadway to represent a driver waiting to exit a driveway or minor roadway.

SSD is typically considered the critical sight distance, as it represents the minimum distance required for safe stopping, while ISD represents an acceptable speed reduction for approaching vehicles. The ISD, however, must be at least equal to the minimum required SSD in order to prevent a driver from entering the roadway when an approaching vehicle is too close to safely stop. The guidance provided by AASHTO states:

*“If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, this may require a major-road vehicle to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.”*

Tables 2 and 3 provide a summary of the available SSD and ISD at the audit intersections, respectively. The posted speed of along Dascomb Road is 35 MPH. For calculation purposes, the 85<sup>th</sup> percentile speed measured from the Automatic Traffic Recorder (ATR) counts was utilized as the design speed to provide a conservative depiction of sight distance criteria.

**Table 2: Stopping Sight Distance Summary**

Approach / Direction	Design Speed <sup>(a)</sup>	Minimum Required	Measured Sight Distance
Dascomb Road EB	36	260 FT	>500 FT
Dascomb Road WB	40	305 FT	>500 FT

<sup>a</sup> 85<sup>th</sup> percentile speed utilized as measurement of “Design Speed” for Dascomb Road approaches

**Table 3: Intersection Sight Distance Summary**

Approach / Direction	Design Speed <sup>(a)</sup>	Minimum Required ISD	Desired ISD	Measured ISD
Frontage Road SB – Looking East	40	305 FT	445 FT	>500 FT
I-93 NB Ramps NB – Looking East	40	305 FT	445 FT	>500 FT
I-93 NB Ramps NB – Looking West	36	260 FT	400 FT	>500 FT

<sup>a</sup> 85<sup>th</sup> percentile speed utilized as measurement of “Design Speed” for Dascomb Road approaches

The sight distance measurements, as shown in Tables 2 and 3, indicate that the SSD approaching the intersections exceed the minimum recommendations for safe operations. The measurements also indicate that the ISD exceed both minimum recommended and desired sight lines.

### **General Crash History**

Crash incident reports for the Dascomb Road / Frontage Road and Dascomb Road / I-93 NB Ramps intersections were compiled and analyzed for the most recent consecutive 5+ year period (January 2011 – September 2016) on file with the Town of Andover Police Department and supplemented by crash reports provided by MassDOT.

In addition to examining the number of crashes at the intersections, a crash rate was calculated to compare the occurrence of crashes to the volume of traffic passing through the intersection. The crash rate per million entering vehicles (MEV) was calculated using the evening peak hour traffic volumes from the Turning Movement Counts (TMCs), and a K-factor of 0.085 was determined from ATR counts conducted along Dascomb Road. The crash rate at each of the intersections was compared to the statewide and district-wide averages published by MassDOT in February 2016 to determine the significance of the crash occurrence. The statewide average for the signalized intersections is 0.77, and the District 4 average for signalized intersections is 0.73. The statewide average for unsignalized intersections is 0.58, and the District 4 average for unsignalized intersections is 0.56.

The crash rate per MEV for the Dascomb Road / Frontage Road and Dascomb Road / I-93 NB Ramps intersections are provided in Table 4.

**Table 4: Crash Rates by Intersection**

<b>Intersection</b>	<b>Total Crashes</b>	<b>Crash Rate</b>
Dascomb Road / Frontage Road	69	1.05
Dascomb Road / I-93 NB Ramps	26	0.45

Below is a general crash history summary for the Dascomb Road / Frontage Road and Dascomb Road / I-93 NB Ramps intersections. Further information regarding crashes is provided in the General Observations section. A detailed breakdown of the reported collisions is provided in Table 5.

#### ***Intersection: Dascomb Road / Frontage Road***

The intersection of Dascomb Road / Frontage Road experienced an average of approximately 12 reported crashes per year during the 5+ year study period. The crash rate for this intersection is higher than the statewide and district-wide averages for signalized intersections. More than half (38 of 69) of the reported crashes located at this intersection were angle crashes in which an eastbound left-turning vehicle and westbound through vehicle made contact. An additional 15 crashes were designated as rear-end crashes that occurred within the channelized right-turn lane along Frontage Road southbound. These two crash occurrences resulted in over 75 percent of the total intersection crashes at the intersection.

Approximately 40 percent of the reported crashes resulted in non-fatal injuries. An RSA team member noted that the high injury occurrence is a direct result of the “T-bone” nature of the angled crashes. Approximately 45 percent of the crashes occurred between 3:00 PM to 9:00 PM during the late-afternoon and evening peak period which represents the peak traffic period for Dascomb Road eastbound traffic. Nearly 35 percent (24 of 69) of the crashes occurred during the nighttime (dark - lighted or dark – not lighted) period, indicating the intersection may not be properly illuminated.

Table 5: Crash Data Summary

		Dascomb Road @ Frontage Road	Dascomb Road @ I- 93 NB Ramps
<b>Crash Year:</b>	2011	8	5
	2012	13	3
	2013	12	2
	2014	13	3
	2015	10	7
	2016 <sup>1</sup>	13	6
<b>TOTAL</b>		<b>69</b>	<b>26</b>
<b>Annual Average Crash Rate (MEV)</b>		<b>12.00</b>	<b>4.52</b>
		<b>1.05</b>	<b>0.45</b>
<b>Type:</b>	Angle	38	18
	Rear-End	24	3
	Sideswipe	2	0
	Head-on	3	1
	Single Vehicle	2	3
	Ped / Bike	0	1
	Not Reported	0	0
<b>TOTAL</b>		<b>69</b>	<b>26</b>
<b>Surface Conditions:</b>	Dry	54	22
	Wet	12	2
	Snow / Ice / Slush	2	1
	Other / Unknown	1	1
<b>TOTAL</b>		<b>69</b>	<b>26</b>
<b>Severity:</b>	Property Damage	43	19
	Non-Fatal Injury	26	7
	Not Reported	0	0
<b>TOTAL</b>		<b>69</b>	<b>26</b>
<b>Day of Week:</b>	Monday-Friday	56	20
	Saturday-Sunday	13	6
<b>TOTAL</b>		<b>69</b>	<b>26</b>
<b>Time of Day:</b>	6:00AM-9:00AM	11	5
	9:00AM-12:00PM	9	1
	12:00PM-3:00PM	5	5
	3:00PM-6:00PM	12	7
	6:00PM-9:00PM	19	4
	9:00PM-6:00AM	13	4
<b>TOTAL</b>		<b>69</b>	<b>26</b>
<b>Ambient Light:</b>	Daylight	40	18
	Dawn/Dusk	5	2
	Dark – Lighted	24	6
<b>TOTAL</b>		<b>69</b>	<b>26</b>

<sup>1</sup> 2016 data include crashes occurring between 1/1/2016 and 9/31/2016.

### ***Intersection: Dascomb Road / I-93 NB Ramps***

The intersection of Dascomb Road / I-93 NB Ramps experienced an average of more than four (4.52) crashes per year during the 5+ year study period. The crash rate for this intersection is significantly lower than the statewide and district-wide averages for unsignalized intersections. Approximately 69 percent (18 of 26) of the crashes were designated as angle crashes, which are typical of unsignalized intersections on half-cloverleaf interchanges. The high rate of angled crashes may be a result of the high travel speeds along Dascomb Road where vehicles attempting to enter the roadway misjudge the gap in traffic. Nearly half (12 of 26) of the crashes attributed “Failure to Yield Right-of-Way” as the primary cause.

Approximately 30 percent of the crashes resulted in non-fatal injuries. In addition, approximately 30 percent of the crashes occurred during the evening commuter peak period (3:00 PM to 6:00 PM) which represents the peak traffic period for Dascomb Road eastbound traffic and a period for which the queue along the I-93 NB Ramp northbound approach is at its peak length. Roughly 23 percent (6 of 26) of the crashes occurred during the nighttime (dark - lighted or dark – not lighted) period, indicating the intersection may not be properly illuminated.

Note that the crash data provided as part of the Appendix indicates the main contributing factor of the crash that was included on the crash report and may not be indicative of what is described in the report narrative. Further details regarding the crash data is noted in the following RSA sections.

## **Audit Observations and Potential Safety Enhancements**

Pre- and post-RSA site walk meetings were held at the Andover Public Safety Center, located at #32 North Main Street in Andover. The pre-audit meeting included brief introductions, an overview of the future design project and RSA process, and an overview of the safety characteristics of the Dascomb Road / Frontage Road and Dascomb Road / I-93 NB Ramps intersections. Each participant was asked to provide his or her concerns and comments related to the safety issues at the intersections. This process was also utilized during comment periods after the audit meeting.

Based on a summary of the existing crash information and the RSA site visit, audit participants identified both corridor-wide safety issues and safety issues that were unique to each of the individual intersections. The findings are summarized below.

### **Summary of Safety Concerns**

The RSA Team identified the following safety issues prior to, during, and after the field visit:

- Solar Glare
- Red Light Running
- Permitted Left-Turn Traffic Signal Phasing
- YIELD Channelization at Traffic Signal
- Sub-Standard Pedestrian and Bicycle Accommodations
- Lack of / Misplacement of Pavement Markings and Regulatory Signage
- Drainage and Debris
- Vehicle Queue Length, Congestion, and Courtesy Gaps
- Speed
- Dascomb Road Westbound Lane Delineation at I-93 NB Ramps

The following section provides a detailed summary of the identified safety concerns and potential safety enhancements along the corridor and at the two intersections.

***Safety Issue #1: Solar Glare***

Solar glare along the corridor currently makes it difficult for drivers to see along Dascomb Road westbound, where the direction of travel and lack of overhead canopy invites direct sunlight onto the roadway. The issue is exacerbated in the Dascomb Road westbound direction as vehicles approach the I-93 overpass and leave the sun-field for an extended period due to the noise barriers along I-93 across the overpass. When the vehicle passes the far-side of the overpass, the sun is unblocked. Only one (1) crash report identified solar glare as a direct factor in the crash; however, solar glare may be a contributing factor in other crashes during the afternoon and evening commuter peak periods. Solar glare does not appear to be an issue for travel along Dascomb Road eastbound.



**Image 1: Solar glare along Dascomb Road westbound.**

To partially mitigate the impacts of solar glare, retro-reflective back plates were installed onto the existing traffic signal housings for the intersection of Dascomb Road / Frontage Road as part of the recent transportation improvement project for the adjacent Dascomb Road / Shawsheen Street / East Street intersection.

**Potential Safety Enhancements:**

1. Install under-deck lighting under the I-93 overpass to reduce the impact on drivers' eyes as they transition from glare-darkness-glare.
2. Install advanced warning signage along Dascomb Road westbound to provide notice of solar glare to motorists.

3. Should an alternative for the installation of additional traffic signals along the corridor be implemented, install retro-reflective back plates and tunnel visors on all traffic signal indications to increase signal visibility.

### ***Safety Issue #2: Red Light Running***

#### *Specific Observations:*

Four (4) of the crashes that occurred at the signalized intersection of Dascomb Road / Frontage Road include a vehicle running a red light. Three (3) of these four (4) crashes involved a Dascomb Road westbound vehicle running the red light. All three (3) of the crashes that resulted from the red-light running in the westbound direction occurred during the Dascomb Road eastbound protected left-turn traffic signal phase.

#### *Potential Safety Enhancements:*

1. Re-calculate traffic signal clearance intervals based on standard guidelines for travel speed, roadway grade, and intersection width.
2. Increase enforcement of red-light running at and in the vicinity of the Dascomb Road corridor.

### ***Safety Issue #3: Permitted Left-Turn Signal Phasing***

#### *Specific Observations:*

The Dascomb Road eastbound left-turn movement at the Frontage Road intersection is currently controlled with a protected left-turn traffic signal phase, followed by a permitted left-turn traffic signal phase. The permitted phase currently operates with a FYA, which was recently installed in the summer of 2016. More than half (38 of 69) of the reported crashes located at this intersection were angle crashes in which an eastbound left-turning vehicle and westbound through vehicle made contact. This indicates that most, if not all, of these crashes resulted during the permitted left-turn traffic signal phasing. Anecdotal information from an RSA team member indicates that the installation of the FYA has made a minimal impact on the occurrence of crashes on the left-turn movement; however there is insufficient data to confirm this information.

A representative of the Town of Andover noted that the two through lanes along Dascomb Road westbound through the Frontage Road intersection result in potential conflicts from courtesy gaps. A courtesy gap is created when a Dascomb Road westbound vehicle stops on the green traffic signal indication and “waves” a Dascomb Road eastbound vehicle to turn left. Because Dascomb Road westbound is two through lanes, westbound traffic may by-pass the stopped vehicle unknowing that a “wave” is allowing the left-turning vehicle to go.



**Image 2: Dascomb Road westbound approach at Frontage Road.**

Potential Safety Enhancements:

1. Further evaluate the crash impacts of the FYA installation on the Dascomb Road eastbound approach.
2. Consider the removal of the Dascomb Road eastbound permitted left-turn phase and retain only the protected left-turn phasing.
3. Consider narrowing the cross-section of Dascomb Road westbound to consist of only one through lane. Exploration of this alternative will require evaluation of potential queuing that may result during the commuter peak periods. This will help eliminate potential conflicts with the existing merge condition upstream at the channelized right-turn lane.

***Safety Issue #4: YIELD Channelization at Traffic Signal***

Specific Observations:

The Frontage Road southbound right-turn movement is currently separated from left-turning southbound traffic by a channelized right-turn lane. The channelized lane operates under YIELD-control, though the YIELD sign is currently obscured from view due to overgrown vegetation. The significant skew of the channelized lane forces motorists to view far over their shoulder to decipher gaps in the Dascomb Road westbound traffic. In some cases, a vehicle will begin to “creep” into the flow of traffic only to reevaluate the gap and then step on the brake. This has the potential to cause following vehicles to also stop quickly, or in some cases, rear-end the vehicle in front. Fifteen (15) crashes were designated as rear-end crashes that occurred within the right-turn channelized lane along Frontage Road southbound.

Potential Safety Enhancements:

1. Relocate or supplement (on opposing curb line) existing YIELD signage along the channelized lane to increase visibility.
2. Stripe YIELD markings “Shark Teeth” along the channelized lane to increase awareness of the YIELD-control condition.
3. Consider the removal of YIELD-control along the channelized lane and install traffic signal indications and phasing to control the approach. This may reduce the expectation of right-turning vehicles for the need of a gap in Dascomb Road traffic. As part of this improvement, it is anticipated that the turn-lane can remain channelized to accommodate heavy vehicle turning radii.
4. If pedestrian signals, sidewalk, and crosswalks are considered for the Dascomb Road / Frontage Road intersection, signalized-control should be considered in place of the YIELD-control along the channelized right-turn lane from Frontage Road southbound onto Dascomb Road westbound. An approved variance is required if a YIELD-control, STOP-control, or uncontrolled condition is proposed.

5. Consider narrowing the cross-section of Frontage Road southbound to consist of only one travel lane, thus removing the merge condition from the channelized right-turn lane. Exploration of this alternative will require evaluation of potential queuing that may result during the commuter peak periods and evaluation of heavy vehicle turns.

### ***Safety Issue #5: Sub-Standard Pedestrian and Bicycle Accommodations***

#### ***Specific Observations:***

*Pedestrian Accommodations* - It was noted during the RSA that the intersections lacked ADA-compliant pedestrian accommodations; including accessible ramps, detectable warning strips, crosswalks, or advanced pedestrian warning signage. RSA participants observed roadway debris accumulating in the turning islands and along the roadway edges, specifically in the short segment of paved sidewalk below the I-93 overpass. Pedestrian signal infrastructure is not provided at the intersection of Dascomb Road / Frontage Road. A representative of the Town of Andover indicated that pedestrian traffic is more prevalent further west along the Dascomb Road corridor in the vicinity of Shawsheen Street; however, increased pedestrian traffic is expected should any development become active near the I-93 Interchange. No crashes during the 5+ year period at the subject intersections involved a pedestrian.



**Image 3: Debris located on sidewalk below I-93 overpass.**

*Bicycle Accommodations* – Bicycle accommodations are not currently provided along Dascomb Road in the vicinity of the RSA intersections. On the intersection approaches, the shoulders are relatively narrow and do not provide sufficient space as a bike-able shoulder. One crash involving a bicyclist was reported during the 5+ year study period at the Dascomb Road / I-93 NB Ramps intersection.

#### ***Potential Safety Enhancements:***

1. Consider the construction of sidewalk along Dascomb Road and along Frontage Road through the audit area. Considerations should be made to provide connectivity between existing sidewalk to the east, which terminates at Osgood Street, and to the west, which terminates at Shawsheen Street.
2. Construct new Americans with Disabilities Act (ADA) / Architectural Access Board (AAB) compliant accessible curb ramps at each corner of the several intersections along Dascomb Road and Frontage Road, where applicable. Consider providing two accessible ramps per corner, where two crosswalks are present, to allow for improved access for disabled pedestrians. Stripe new crosswalks at the intersections between each ramp pair.
3. Install pedestrian traffic signal infrastructure at the signalized intersection of Dascomb Road / Frontage Road; including countdown signal heads, Accessible Pedestrian Signal (APS) push buttons, and dedicated pedestrian signal timings.

4. Should an alternative for the installation of additional traffic signals along the corridor be implemented, install pedestrian traffic signal infrastructure at newly constructed signalized intersections.
5. Consider the striping of shared-use “sharrows” pavement markings, with associated signage, along the Dascomb Road corridor to encourage cyclists to travel within the roadway and on the correct roadway approach.
6. Consider the construction of bicycle lanes along Dascomb Road to provide a dedicated space for cyclists to maneuver. The construction of bicycle lanes may require the widening of pavement and potentially require modifications to the I-93 overpass bridge abutments. If Dascomb Road is converted into one lane in each direction, bicycle lanes may be accommodated within the existing curb lines.

***Safety Issue #6: Lack of / Misplacement of Pavement Markings and Regulatory Signage***

***Specific Observations:***

***YIELD-Control Conditions*** – The Dascomb Road westbound and the Frontage Road southbound approaches each provide a channelized right-turn lane which operates under YIELD-control. Each of the YIELD signs posted at the end of each channelized right-turn lanes are partially blocked for upstream viewing by the surroundings; including steep slope grading, vegetation, and traffic signal infrastructure. No advanced YIELD signage is present nor are YIELD pavement markings painted along the channelized lanes. Eighteen (18) crashes at the intersection of Dascomb Road / Frontage Road occurred within both channelized right-turn lanes. An RSA team member noted that it is not uncommon for vehicles turning left onto Frontage Road from Dascomb Road eastbound to ignore the solid white cross hatch markings adjacent to the channelized right-turn lane in order to cut in front of right-turning vehicles prior to the I-93 SB Ramps.



**Image 4: YIELD sign visibility limited by sloped grade.**

The Dascomb Road / I-93 NB Ramps intersection operates as a typical half-cloverleaf unsignalized intersection. The I-93 NB Ramps northbound approach and the Dascomb Road eastbound approach each provide a channelized right-turn lane. The Dascomb Road eastbound channelized right-turn lane lacks both YIELD signage and pavement markings, although geometry normally dictates that right-turning vehicles accessing the on-ramp must yield to Dascomb Road westbound left-turning vehicles. Similar to the Frontage Road intersection, no advanced YIELD signage is present along the I-93 NB Ramps channelized lane. Five (5) crashes at the intersection of Dascomb Road / I-93 NB Ramps occurred within the channelized right-turn lanes. The one crash which occurred within



**Image 5: Lack of YIELD signage and markings on Dascomb Road channelized lane.**

the Dascomb Road eastbound channelized lane resulted in a rear-end crash in which the first vehicle yielded and was subsequently struck by two trailing vehicles. This may have been the result of no defined YIELD condition on the movement.

*YIELD Ambiguity* – The Dascomb Road westbound channelized right-turn lane opens into a dedicated receiving lane along Frontage Road. With a YIELD-sign present, but no pavement markings and the driver expectation that a dedicated lane is provided, some motorists may be confused on whether to yield, stop, or go. This ambiguity of not knowing where or if to yield, and which vehicle has the right-of-way, may be contributing factors with the two (2) rear-end crashes that occurred within the channelized right-turn lane. This issue is exacerbated by the location of the Park and Ride driveway, located immediately north of the intersection, and vehicles trying to position themselves to access the I-93 SB Ramps.

*Faded Pavement Markings* – Although generally in an above average condition, several pavement markings along the Dascomb Road corridor, and along the Frontage Road and I-93 NB Ramps approaches, were observed to be faded or missing. The lack of visible lane lines increases the potential for sideswipe crashes as clear and consistent lane delineation is not provided. There were two (2) sideswipe collisions within the audit area during the study period. It should be noted that an RSA team member indicated that recent restriping of the Dascomb Road westbound channelized lane has resulted in a noticeable improvement.

*Faded or Murky Signage* – Similar to the condition of pavement markings, some traffic signs within the audit area are faded, murky, or have lost their reflectivity over time. For example, the YIELD sign along the Frontage Road southbound channelized lane is currently covered in grime and lacks reflectivity. The lack of sign visibility and the close proximity of some signs to the roadway edge could be contributing factors for damage to the signs caused by heavy vehicles. This condition coupled with the sign placement, as previously noted, renders the sign unable to convey a clear and concise message from a distance or during darker time periods. One (1) rear-end crash within the channelized lane occurred during the nighttime hours when lack of reflectivity may have been a contributing factor.



**Image 6: Murky YIELD sign along Frontage Road.**

*Lack of Lane Configuration Signage* – Although some lane specific signage (R3-7 series) is present for turn lanes along Dascomb Road, approaching Frontage Road, there is a lack of lane configuration signage on the several intersection approaches in the audit area. The lack of signage may be contributing to lane choice confusion. For example, the Dascomb Road westbound exclusive left-turn lane at the I-93 NB Ramps immediately turns into a through lane on the opposing side of the intersection. This may lead to some vehicles utilizing the left-turn lane as a through lane.

Lane configuration signage or delineation is not currently provided along the I-93 NB Ramps. Although striped as a one-lane approach with a diverge point for right-turns, vehicles along the ramp will form two lanes of traffic along the ramp during congested periods. No crashes occurred as a result of the queuing along the ramp; however the potential exists for a safety concern where no clear lane designation signage or markings are present.

*Tewksbury Location Confusion* – An RSA team member noted that drivers exiting the I-93 SB Ramps along Frontage Road sometimes assume the roadway to be Dascomb Road and that a right-turn will head towards Tewksbury. Vehicles will turn right from the ramps and continue north along Frontage Road until they realize that they are on the incorrect roadway. This driver confusion sometime results in unnecessary and illegal turning maneuvers.

*Potential Safety Enhancements:*

1. Install advanced warning signage for YIELD-control upstream from channelized right-turn lanes and provide MUTCD-compliant pavement markings to supplement at both intersections.
2. Relocate or supplement (on opposing curb line) existing YIELD signs along channelized lanes to increase visibility of the signs.
3. Trim the overgrown vegetation currently blocking the YIELD signs to increase visibility of the signs.
4. Stripe YIELD markings “Shark Teeth” along channelized lanes to indicate the required yielding point.
5. Consider the removal of YIELD-control along the Dascomb Road westbound channelized right-turn lane to Frontage Road as a dedicated receiving lane exists.
6. Install advanced guide signage to the MassDOT Park and Ride lot to alert drivers of which lane to travel in to avoid confusion at the Dascomb Road / Frontage Road intersection due to the entrance’s close proximity to the intersection.
7. Restripe pavement markings, including: lane lines and stop bars along all approaches to the intersections within the audit area to provide improved clarity of lane delineation. Supplement lane markings with lane designation signage on the several intersection approaches.
8. Perform a signage inventory along the Dascomb Road corridor to remove/replace any MUTCD non-compliant signage or faded/damage signage. Existing signage post locations should be re-evaluated to a new position out of harm’s way where there is evidence of damage from heavy vehicles. This will reduce the maintenance costs for MassDOT.
9. Improve guide signage along Frontage Road at the I-93 SB Ramps to direct vehicles to Dascomb Road and Tewksbury and to reduce the risk of driver confusion.

### ***Safety Issue #7: Drainage and Debris***

#### **Specific Observations:**

It was noted and observed that a large amount of roadway debris currently lines the edge of pavement along the Dascomb Road corridor. This includes sand, bottles, tree branches, and other litter. Debris is extensive on the sidewalk below the I-93 overpass and within a number of catch basins within the audit area. This debris creates obstacles for bicyclists utilizing the shoulders along Dascomb Road. As cyclists approach debris, they may enter the vehicle paths to avoid it, which forces vehicles in the travel lanes to swerve or to unexpectedly stop or slow. Although no collisions were attributed to a bicyclist entering the travel lane, the potential for roadway debris remains a safety concern. In addition, the build-up of debris also creates a concern for an increase in ponding of stormwater along the roadway edge.



**Image 7: Debris within Dascomb Road catch basin.**

#### **Potential Safety Enhancements:**

1. Clear roadway debris and street sweep along the gutter lines of Dascomb Road, Frontage Road, and the I-93 NB Ramps to improve the travel experience and safety for bicyclists and motorists.

### ***Safety Issue #8: Congestion and Vehicle Queue Length***

#### **Specific Observations:**

*Congestion and Queues* - As a result of the numerous commercial and residential land uses along Dascomb Road, in addition to the proximity to I-93, traffic volumes at the intersections along Dascomb Road generally increase during the weekday peak periods. These additional traffic volumes, combined with the numerous driveway / side-street access locations, result in increased traffic congestion. With elevated traffic volumes along Dascomb Road, insufficient gaps are created for vehicles to exit the I-93 NB Ramps. This problem is exacerbated by the elevated truck traffic attempting to turn left from the off-ramp. Approximately 35 percent of the crashes reported in the audit area occurred during the commuter peak periods. Nearly 30 percent of the crashes reported were rear-end crashes. These collisions indicate that driver frustration caused by heavy traffic congestion may result in drivers running the red light or taking unsafe gaps to make left-turns. Approximately 59 percent of the reported crashes were angle crashes. As previously noted, some of these crashes may be left-turn courtesy crashes, where one vehicle “waves” on the opposing left-turn vehicle to turn when that vehicle does not have the right-of-way. Upon the vehicle making the turn, other vehicles from the second oncoming through lane are unaware of the “courtesy” given and strike the left-turning vehicle while travelling normally through the intersection.



**Image 8: Queue along I-93 NB Ramps.**

*Right-turning U-Turns* - All representatives of the Town of Andover noted the excessive queues along the I-93 NB Ramps during the commuter peak hours. Generally, the queue for left-turning vehicles will line-up along the inside of the ramp and extend back onto the mainline freeway. As the left-turning vehicles

line-up on the inside of the ramp, right-turning traffic by-passes the queue. It was also noted that drivers who want to take a left will historically act as a right-turning vehicle, exit the ramp, and enter Cardinal Lane or Surrey Lane located to the east of the Dascomb Road / I-93 NB Ramps intersection. Vehicles will then make a U-turn and proceed along Dascomb Road westbound. “Turns Prohibited to Reverse Direction” signs are currently present on multiple side streets to discourage this practice. Such an attempt was made during the RSA site walk.

Potential Safety Enhancements:

1. Consider the installation of a traffic signal at the intersection of Dascomb Road / I-93 NB Ramps.
2. Install advanced queue detection on the I-93 NB Ramps, pending the installation of a traffic signal at this location.
3. Continue enforcement and levying penalties to deter motorists from performing illegal U-turns.

**Safety Issue #9: Speed**

Specific Observations:

Excessive speed was noted as the contributing factor in two (2) crashes at the Dascomb Road / I-93 NB Ramps intersection. Based on the traffic counts conducted in October 2016, the 85<sup>th</sup> percentile speed along Dascomb Road was measured above the posted speed. Speed of vehicles along Dascomb Road westbound was also noted anecdotally as a cause for queuing along the I-93 NB Ramps as vehicles will generally have a difficult time perceiving gaps along Dascomb Road.

Potential Safety Enhancements:

1. Consider reducing the travel lane widths along Dascomb Road to encourage slower speeds along the corridor.
2. Increase enforcement of speeding at and in the vicinity of the intersections.
3. Evaluate the need to reconstruct turning islands at both intersections to help reduce turning speeds. Note that damage to curb reveal is evident under existing conditions which may indicate that heavy vehicles may not have sufficient space to complete turns at the intersections.

**Safety Issue #10: Dascomb Road Westbound Lane Delineation at I-93 NB Ramps**

Specific Observations:

It was observed at the audit meeting that left-turning vehicles exiting the I-93 NB Ramps will attempt to enter the far-right lane along Dascomb Road westbound, crossing over the far-left lane. Typically, the traffic volume in this far-left lane is minimal as the opposing lane on Dascomb Road entering the intersection is the exclusive left-turn lane onto the I-93 NB on-ramp. Several audit participants noted that

vehicles attempting to cross these lanes of traffic pose a risk to Dascomb Road westbound traffic that may assume that the ramp traffic is entering Dascomb Road in the far-left lane. It was also observed that almost all heavy vehicle traffic utilized both lanes of Dascomb Road westbound to enter the roadway from the I-93 off-ramp.

Potential Safety Enhancements:

1. Provide tracking pavement markings at the intersection to guide I-93 NB Ramp left-turning traffic into the far-left lane along Dascomb Road. This will maintain unopposed flow in the far-right lane for Dascomb Road westbound traffic.

## Summary of Road Safety Audit

Each improvement considered has been categorized as short-term, mid-term, or long-term. Additionally, a cost category has been assigned to each improvement based on the definitions shown in Table 6. Table 7 includes a summary of the several potential safety enhancements. Safety benefit estimates are subjective and are based on engineering experience and the relative percent of crashes that may be reduced by the enhancement based on known and documented crash reduction factors (such as FHWA documented crash reduction factors).

Note that some costs are noted with two cost thresholds. This is included as some enhancements may require additional measures to ensure regulatory compliance. For instance, the relocation of a YIELD sign is low-cost; however, along the Dascomb Road corridor, the signalization and timing coordination may require reconstruction of intersection approaches and impacts to utilities. In addition, some enhancements are defined to mitigate multiple safety issues. For those enhancements identified for multiple issues, such as the construction of a roundabout, the enhancement has only been listed once in Table 7.

**Table 6: Estimated Time Frame and Costs Breakdown**

Time Frame		Costs	
Short-Term	<1 Year	Low	<\$10,000
Mid-Term	1-3 Years	Medium	\$10,001-\$50,000
Long-Term	>3 Years	High	>\$50,000

**Table 7: Potential Safety Enhancement Summary**

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Responsible Party
Solar Glare	Install under-deck lighting under the I-93 overpass to reduce the impact on drivers' eyes as they transition from glare-darkness-glare.	Medium	Short-Term	Medium	MassDOT
	Install advanced warning signage along Dascomb Road westbound to provide notice of solar glare to motorists.	Low	Short-Term	Low	MassDOT / Town
	Should an alternative for the installation of additional traffic signals along the corridor be implemented, install retro-reflective back plates and tunnel visors on all traffic signal indications.	Medium	Short-Term	Low	MassDOT
Red Light Running	Re-calculate traffic signal clearance intervals based on standard guidelines for travel speed, roadway grade, and intersection width.	Medium	Short-Term	Low	MassDOT
	Increase enforcement of red-light running at and in the vicinity of the Dascomb Road corridor.	High	Short-Term	Medium	MSP / Andover PD
Permitted Left-Turn Phasing	Further evaluate the crash impacts of the FYA installation on the Dascomb Road eastbound approach.	Medium	Mid-Term	Low	MassDOT
	Consider the removal of the Dascomb Road eastbound permitted left-turn phase and retain only the protected left-turn phasing.	High	Mid-Term	Low	MassDOT
	Consider narrowing the cross-section of Dascomb Road westbound to consist of only one through lane.	High	Long-Term	High	MassDOT / Town
Yield Channelization at Traffic Signal	Relocate or supplement (on opposing curb line) existing YIELD signage along the channelized lane.	Medium	Short-Term	Low	Town
	Stripe YIELD markings "Shark Teeth" along the channelized lane.	Medium	Short-Term	Low	Town
	Consider the removal of YIELD-control along the channelized lane and install traffic signal indications and phasing to control the approach.	Medium	Long-Term	High	Town
	If pedestrian signals, sidewalk, and crosswalks are considered for the Dascomb Road / Frontage Road intersection, signalized-control should be considered in place of the YIELD-control along the channelized right-turn lane from Frontage Road southbound onto Dascomb Road westbound.	Medium	Long-Term	High	Town

**Table 7: Potential Safety Enhancement Summary**

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Responsible Party
Yield Channelization at Traffic Signal	Consider narrowing the cross-section of Frontage Road southbound to consist of only one travel lane, thus removing the merge condition from the channelized right-turn lane.	Low	Long-Term	Medium	Town
Sub-Standard Pedestrian and Bicycle Accommodations	Consider the construction of sidewalk along Dascomb Road and along Frontage Road through the audit area.	High	Long-Term	High	MassDOT / Town
	Construct new ADA / AAB compliant accessible curb ramps at each corner of the several intersections along Dascomb Road and Frontage Road, where applicable. Stripe new crosswalks at the intersections between each ramp pair.	Medium	Long-Term	High	MassDOT / Town
	Install pedestrian traffic signal infrastructure at the signalized intersection of Dascomb Road / Frontage Road; including countdown signal heads, Accessible Pedestrian Signal (APS) push buttons, and dedicated pedestrian signal timings.	High	Long-Term	Medium	MassDOT
	Should an alternative for the installation of additional traffic signals along the corridor be implemented, install pedestrian traffic signal infrastructure at newly constructed signalized intersections.	High	Long-Term	Medium	MassDOT
	Consider the striping of shared-use “sharrows” pavement markings, with associated signage, along the Dascomb Road corridor.	Medium	Short-Term	Low	MassDOT / Town
	Consider the construction of bicycle lanes along Dascomb Road.	High	Long-Term	High	MassDOT / Town
Lack of / Misplacement of Pavement Markings and Regulatory Signage	Install advanced warning signage for YIELD-control upstream from channelized right-turn lanes and provide MUTCD compliant pavement markings to supplement at both intersections.	Low	Short-Term	Low	MassDOT / Town
	Relocate or supplement (on opposing curb line) existing YIELD signs along channelized lanes.	Medium	Short-Term	Low	MassDOT / Town
	Trim the overgrown vegetation currently blocking the YIELD signs.	Medium	Short-Term	Low	Town
	Stripe YIELD markings “Shark Teeth” along channelized.	Medium	Short-Term	Low	MassDOT / Town

**Table 7 Continued: Potential Safety Enhancement Summary**

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Responsible Party
Lack of / Misplacement of Pavement Markings and Regulatory Signage	Consider the removal of YIELD-control along the Dascomb Road westbound channelized right-turn lane to Frontage Road.	Low	Short-Term	Low	Town
	Install advanced guide signage to the MassDOT Park and Ride lot.	Low	Short-Term	Low	MassDOT / Town
	Restripe pavement markings, including: lane lines, stop bars, and crosswalks along all approaches to the intersections within the audit area. Supplement lane markings with lane designation signage on the several intersection approaches.	Medium	Short-Term	Medium	MassDOT / Town
	Perform a signage inventory along the Dascomb Road corridor to remove/replace any MUTCD non-compliant signage or faded/damage signage.	Medium	Short-Term	Medium	MassDOT / Town
	Improve guide signage along Frontage Road at the I-93 SB Ramps to direct vehicles to Dascomb Road and Tewksbury.	Low	Short-Term	Low	MassDOT / Town
Drainage and Debris	Clear roadway debris and street sweep along the gutter lines of Dascomb Road, Frontage Road, and the I-93 NB Ramps.	Low	Short-Term	Low	MassDOT / Town
Congestion and Vehicle Queue Length	Consider the installation of a traffic signal at the intersection of Dascomb Road / I-93 NB Ramps.	High	Long-Term	High	MassDOT
	Install advanced queue detection on the I-93 NB Ramps (pending installation of traffic signal control).	Medium	Mid-Term	Medium	MassDOT
	Continue enforcement and levying penalties to deter motorists from performing illegal U-turns.	Medium	Short-Term	Medium	Andover PD
Speed	Consider reducing the travel lane widths along Dascomb Road to encourage slower speeds along the corridor.	Medium	Short-Term	Low	MassDOT / Town
	Increase enforcement of speeding at and in the vicinity of the intersections.	Medium	Short-Term	Medium	MSP / Andover PD
	Evaluate the need to reconstruct turning islands at both intersections to help reduce turning speeds.	Low	Mid-Term	Medium	MassDOT / Town
Dascomb Road WB Lane Delineation at I-93 NB Ramps	Provide tracking pavement markings at the intersection to guide I-93 NB Ramps left-turning traffic into the far-left lane along Dascomb Road.	Medium	Short-Term	Low	MassDOT

## Appendix A. RSA Meeting Agenda

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# Agenda

## Road Safety Audit

### LOCATION

#### Meeting Location:

Andover Public Safety Center  
32 N. Main Street  
Andover, Massachusetts  
Wednesday December 14, 2016  
1:00 PM – 4:00 PM

**Type of meeting:** High Crash Locations – Road Safety Audit  
**Attendees:** Invited Participants to Comprise a Multidisciplinary Team  
**Please bring:** Thoughts and Enthusiasm!

**1:00 PM** **Welcome and Introductions**  
• Introductions

**1:15 PM** **Review of Site Specific Material**  
• Crash Summaries – provided in advance  
• Dascomb Road @ Frontage Road  
• Dascomb Road @ I-93 NB Ramps  
• Existing Geometries and Conditions

**2:00 PM** **Visit the Site**  
• Conduct Field Visit  
• As a group, identify areas for improvement

**3:00 PM** **Post Visit Discussion / Completion of RSA**  
• Discuss observations and finalize findings  
• Discuss potential improvements and finalize recommendations

**4:00 PM** **Adjourn for the Day – but the RSA has not ended**

### Instructions for Participants:

- Before attending the RSA on December 14, participants are encouraged to drive through the Dascomb Road intersections with both Frontage Road and the I-93 NB Ramps and complete / consider elements on the RSA Prompt List, with a focus on safety.
- All participants will be actively involved throughout the RSA process. Participants are encouraged to come with thoughts and ideas; however, remember that the synergy that develops and respect for others' opinions are key elements to the success of the overall RSA process.
- After the RSA meeting, participants will be asked to comment and respond to the document materials to assure it is reflective of the RSA completed by the multidisciplinary team.

## Appendix B. RSA Audit Team Contact List

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## Participating Audit Team Members

Date: December 14, 2016    Location: Andover, Massachusetts

<b>Audit Team Members</b>	<b>Agency/Affiliation</b>	<b>Email Address</b>
<i>Name</i>	<i>Agency</i>	<i>Email</i>
Brian Moore	Andover Engineering	<a href="mailto:bmoore@andoverma.gov">bmoore@andoverma.gov</a>
Paul Materazzo	Andover Planning	<a href="mailto:pmaterazzo@andoverma.gov">pmaterazzo@andoverma.gov</a>
Glen Ota	Andover Police Department	<a href="mailto:gota@andoverps.net">gota@andoverps.net</a>
Chris Moore	Andover Police Department	<a href="mailto:cmoo@andoverps.net">cmoo@andoverps.net</a>
Adam Prichard	MassDOT Traffic Safety	<a href="mailto:adam.prichard@dot.state.ma.us">adam.prichard@dot.state.ma.us</a>
Michelle Deng	MassDOT Traffic Safety	<a href="mailto:michelle.deng@dot.state.ma.us">michelle.deng@dot.state.ma.us</a>
Elsa Chan	MassDOT Traffic Safety	<a href="mailto:elsa.chan@dot.state.ma.us">elsa.chan@dot.state.ma.us</a>
John Mangiaratti	Andover Town Manager	<a href="mailto:john.mangiaratti@andoverma.us">john.mangiaratti@andoverma.us</a>
Tony Komornick	Merrimack Valley Planning Commission (MVPC)	<a href="mailto:akomornick@mvpc.org">akomornick@mvpc.org</a>
Jim Terlizzi	Merrimack Valley Planning Commission (MVPC)	<a href="mailto:jterlizzi@mvpc.org">jterlizzi@mvpc.org</a>
Tim Roberts	MassDOT District 4	<a href="mailto:timothy.roberts@state.ma.us">timothy.roberts@state.ma.us</a>
Timothy Paris	MassDOT District 4	<a href="mailto:timothy.paris@state.ma.us">timothy.paris@state.ma.us</a>
Mikel Myers	TEC, Inc.	<a href="mailto:mmyers@theengineeringcorp.com">mmyers@theengineeringcorp.com</a>
Rick Friberg	TEC, Inc.	<a href="mailto:rfriberg@theengineeringcorp.com">rfriberg@theengineeringcorp.com</a>
Samuel Gregorio	TEC, Inc.	<a href="mailto:sgregorio@theengineeringcorp.com">sgregorio@theengineeringcorp.com</a>

## Appendix C. Detailed Crash Data

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## Appendix D. Additional Information

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## Appendix E. Road Safety Audit References

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## Road Safety Audit References

*Massachusetts Traffic Safety Toolbox*, Massachusetts Highway Department,  
[www.mhd.state.ma.us/safetytoolbox](http://www.mhd.state.ma.us/safetytoolbox).

*Road Safety Audits, A Synthesis of Highway Practice*. NCHRP Synthesis 336. Transportation Research Board, National Cooperative Highway Research Program, 2004.

*Road Safety Audits*. Institute of Transportation Engineers and U.S. Department of Transportation, Federal Highway Administration, [www.roadwaysafetyaudits.org](http://www.roadwaysafetyaudits.org).

*FHWA Road Safety Audit Guidelines*. U.S. Department of Transportation, Federal Highway Administration, 2006.

*Road Safety Audit*, 2<sup>nd</sup> edition. Austroads, 2000.

*Road Safety Audits*. ITE Technical Council Committee 4S-7. Institute of Transportation Engineers, February 1995.

*Safety Evaluation of Flashing Beacons at STOP-Controlled Intersections*. U.S. Department of Transportation, Federal Highway Administration. April 2008.  
<http://www.fhwa.dot.gov/publications/research/safety/08044/index.cfm>

## **Appendix F**

Crash Data



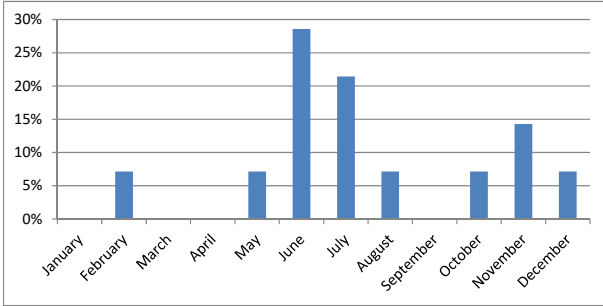
Crash Data Summary Tables  
 Dascomb Road @ East Street / Shawsheen Street - Andover, MA  
 01/01/2011 - 12/31/2017

No.	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							V1	V2	V3	V4					
1	2/26/2011	1:30 PM	Daylight	Clear	Dry	2	N	N			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveling NB on Shawsheen St. Both vehicles were waiting to turn right. MV2 rear-ended MV1 when MV2 started to go before realizing that MV1 had not turned yet causing damages to both vehicles which would cost over \$1000.
2	6/8/2011	10:32 AM	Daylight	Clear	Dry	2	W	W			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveling WB on Dascomb Rd. MV2 rear-ended MV1 when MV1 slowed and stopped in traffic. MV2 operator was adjusting the radio and did not pay attention causing damages over \$1000 to MV2.
3	6/30/2011	2:01 PM	Daylight	Clear	Dry	3	W	W	W		Property Damage Only	0	Rear-end	Inattention / Distracted	MV1, MV2 and MV3: traveling WB on Dascomb Rd. MV1 and MV2 stopped in traffic to turn left onto Shawsheen St. MV3 failed to stop in time and rear-ended MV2. The collision of MV2 and MV3 caused another rear-end collision between MV1 and MV2.
4	7/27/2011	5:35 PM	Daylight	Clear	Dry	2	N	E			Property Damage Only	0	Angled	Disregarded Traffic Controls	MV1: traveling NB on Shawsheen St and stopping at a Stop sign; MV2: traveling EB on East St. MV1 collided with MV2 when MV1 attempted to pull out and make a right turn onto East St EB lane. No injuries were reported but MV1 got towed.
5	11/13/2013	4:24 PM	Dusk	Clear	Dry	2	W	W			Property Damage Only	0	Sideswipe	Other	MV1 and MV2: traveling WB on Dascomb Rd. MV1 passed MV2 on the right side of the road when MV1 sideswiped MV2 as MV2 was taking a left turn onto Shawsheen St. Both vehicles received some minor damages.
6	5/19/2014	7:31 AM	Daylight	Clear	Dry	2	E	E			Property Damage Only	0	Rear-end	Not Reported	MV1 and M2: traveling EB in stop and go traffic on East St. MV2 rear-ended MV1 and both vehicles received minor damage.
7	6/16/2014	3:20 PM	Daylight	Clear	Dry	2	E	N			Property Damage Only	0	Sideswipe	Failure to Yield Right-of-Way	MV1: traveling EB on East St; MV2: traveling NB on Shawsheen St. MV2 collided with MV1 when MV2 attempted to pull out and make a left turn onto East St WB lane thinking that MV1 was giving way.
8	8/14/2014	12:55 PM	Daylight	Clear	Dry	2	N	N			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: traveling NB on Shawsheen St. Both vehicles were waiting to turn right. MV2 accidentally rear-ended MV1. No injuries or damage were reported.
9	12/30/2014	3:46 PM	Daylight	Clear	Dry	2	E	W			Property Damage Only	0	Angled	Glare	MV1: traveling EB on East St; MV2: traveling WB on Dascomb Rd. MV2 struck MV1 when MV2 attempted a left turn and due to an extreme sun glare, the operator of MV2 did not see MV1. Both vehicles suffered damages estimated to be over \$1000.
10	6/19/2015	2:15 PM	Daylight	Clear	Dry	2	N	N			Property Damage Only	0	Sideswipe	Inattention / Distracted	MV1: stopped on Shawsheen St NB lane to turn right onto Dascomb Rd EB lane; MV2: traveling NB on Shawsheen St. MV2 approach to the intersection on the right of MV1 not noticing the right-turn signal of MV1. MV2 sideswiped the tractor trailer of MV1 causing minor damages to MV2 and MV1's trailer.
11	10/2/2015	12:39 PM	Daylight	Clear	Dry	2	N	E			Property Damage Only	0	Angled	Not Reported	MV1: stopped at a Stop sign on Shawsheen St NB lane waiting to turn left onto East St; MV2: traveling EB on East St. MV1 collided with MV2 when MV1 attempted to pull out and make a left turn onto East St EB lane. No injuries were reported but both vehicles were towed.
12	7/23/2016	2:46 PM	Daylight	Clear	Dry	2	E	W			Property Damage Only	0	Head-on	Not Reported	MV1: traveling EB on East St; MV2: traveling WB on Dascomb Rd. MV2 struck MV1 when MV2 attempted a left turn onto Shawsheen St SB lane.
13	11/28/2017	3:43 PM	Dusk	Clear	Dry	3	E	E	E		Property Damage Only	0	Rear-end	Followed Too Closely	MV1, MV2 and MV3 were traveling east on Dascomb Rd. MV1 was forced to stop short for a white truck. MV3 collided with MV2, pushing MV2 into MV1.
14	7/31/2017	4:50 PM	Daylight	Clear	Dry	2	N	W			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1 attempted to make a left into the west bound traffic lane, MV2 had the right of way. MV1 struck MV2 in the rear drivers side.

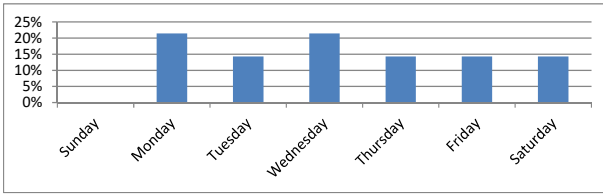
**Crash Data Summary Tables**  
**Dascomb Road @ East Street / Shawsheen Street - Andover, MA**  
**01/01/2011 - 12/31/2017**

**Dascomb Road @ East Street / Shawsheen Street** 14

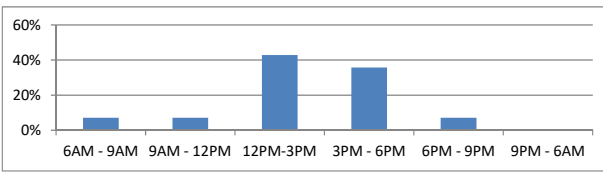
Month	#	%
January	0	0%
February	1	7%
March	0	0%
April	0	0%
May	1	7%
June	4	29%
July	3	21%
August	1	7%
September	0	0%
October	1	7%
November	2	14%
December	1	7%



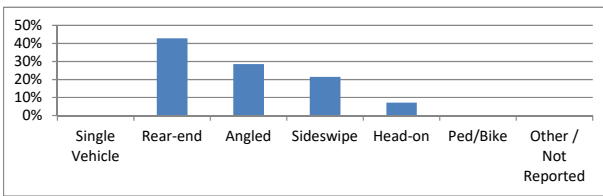
Day of Week	#	%
Sunday	0	0%
Monday	3	21%
Tuesday	2	14%
Wednesday	3	21%
Thursday	2	14%
Friday	2	14%
Saturday	2	14%



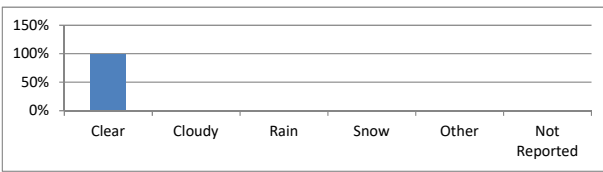
Time of Day	#	%
6AM - 9AM	1	7%
9AM - 12PM	1	7%
12PM-3PM	6	43%
3PM - 6PM	5	36%
6PM - 9PM	1	7%
9PM - 6AM	0	0%



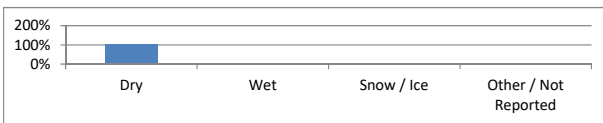
Manner of Collision	#	%
Single Vehicle	0	0%
Rear-end	6	43%
Angled	4	29%
Sideswipe	3	21%
Head-on	1	7%
Ped/Bike	0	0%
Other / Not Reported	0	0%



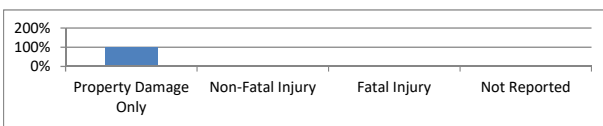
Weather Conditions	#	%
Clear	14	100%
Cloudy	0	0%
Rain	0	0%
Snow	0	0%
Other	0	0%
Not Reported	0	0%



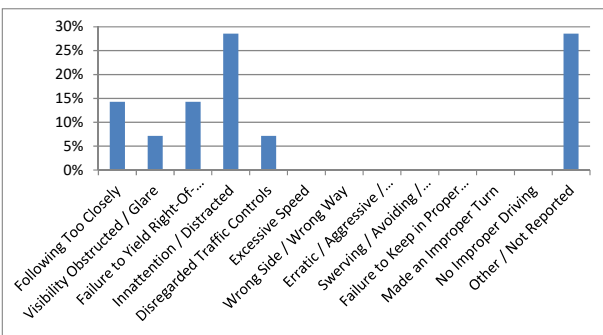
Road Surface	#	%
Dry	14	100%
Wet	0	0%
Snow / Ice	0	0%
Other / Not Reported	0	0%



Crash Severity	#	%
Property Damage Only	14	100%
Non-Fatal Injury	0	0%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	2	14%
Visibility Obstructed / Glare	1	7%
Failure to Yield Right-Of-Way	2	14%
Innattention / Distracted	4	29%
Disregarded Traffic Controls	1	7%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	0	0%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	0	0%
Other / Not Reported	4	29%



## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover COUNT DATE : Sep-18

DISTRICT : 4 UNSIGNALIZED :  NO  SIGNALIZED :  YES

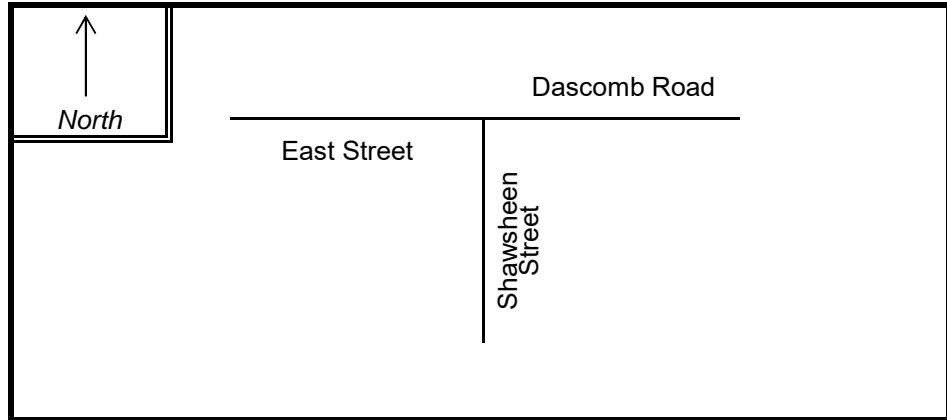
~ INTERSECTION DATA ~

MAJOR STREET : Dascomb Road

MINOR STREET(S) : East Street

Shawsheen Street

**INTERSECTION  
 DIAGRAM  
 (Label Approaches)**



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	572	1,130	618			2,320

"K" FACTOR :  INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES :  # OF YEARS :  AVERAGE # OF CRASHES PER YEAR ( A ) :

**CRASH RATE CALCULATION :**  RATE =  $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : K Factor based on ATR counts along Dascomb Road

Project Title & Date: The Dascomb Road Project (#146 Dascomb Road)



**Crash Data Summary Tables**  
**Dascomb Road @ Hewlett Packard Driveway - Andover, MA**  
**01/01/2011 - 12/31/2017**

Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							V1	V2	V3	V4					
1	4/9/2012	11:46 AM	Daylight	Cloudy	Dry	2	S	S			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveling SB on Hewlett Packard driveway. MV2 struck MV1 when MV1 stopped for Dascomb Rd traffic. There were some minor damages to MV1 but no damages to MV2.
2	10/24/2012	6:54 AM	Dawn	Clear	Dry	2	W	W			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveling WB on Dascomb Rd. MV2 rear-ended MV1 when MV1 was slowing due to traffic. The accident occurred because MV2 got distracted as she was looking down at her radio. Both vehicles suffered damages which would worth over \$1000.
3	1/4/2013	2:21 AM	Dark - Lighted	Clear	Dry	1	W				Property Damage Only	1	Single Vehicle	Failure to Keep in Proper Lane	MV1: traveling WB on Dascomb Rd. MV1 traveled left over the snow covered median. MV1 struck a tree near the Hewlett Packard driveway while veering right back into lane causing damages estimated to be over \$1000.
4	11/10/2013	7:27 PM	Dark - Lighted	Cloudy	Dry	1	W				Property Damage Only	0	Single Vehicle	No Improper Driving	MV1: traveling WB on Dascomb Rd. A deer entered the roadway which MV1 struck causing damages over \$1000.
5	6/17/2014	8:15 AM	Daylight	Clear	Dry	2	W	W			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: traveling WB on Dascomb Rd. MV2 rear-ended MV1 when MV1 was slowing due to traffic. The accident occurred because MV2 was following too close to MV1. Both vehicles suffered damages which would worth over \$1000.
6	12/30/2014	3:50 PM	Daylight	Clear	Dry	3	W	W	W		Non-fatal Injury	1	Rear-end	Glare	MV1, MV2 and MV3: traveling WB on Dascomb Rd. Due to solar glare, MV1 attempted to adjust her visor. While being distracted, MV1 rear-ended MV2 and then MV2 struck MV3. All vehicles sustained damages and estimated to be well over \$1000.
7	4/7/2015	2:33 PM	Daylight	Cloudy	Dry	2	W	W			Non-fatal Injury	1	Rear-end	Other	MV1 and MV2: traveling WB on Dascomb Rd. MV2 rear-ended MV1 when MV1 slowed to stop in traffic. MV2 operator was taken to the hospital and both vehicles sustained damages.
8	9/16/2015	8:51 AM	Daylight	Clear	Dry	2	W	E			Property Damage Only	0	Angled	Inattention / Distracted	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 collided with MV1 when MV2 made a left turn into Hewlett Packard driveway without paying attention to the opposite lane traffic. Both vehicles were towed and the damage caused was estimated to be over \$1000.
9	10/8/2015	4:37 PM	Daylight	Clear	Dry	2	W	S			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd. MV2: attempting to enter onto Dascomb Rd EB lane from Hewlett Packard driveway SB lane. MV2 collided with MV1 when MV2 made a left-turn without yielding for MV1.
10	12/10/2015	4:51 PM	Dark - Lighted	Clear	Dry	2	W	E			Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: attempting to turn left from Dascomb Rd EB lane to Hewlett Packard driveway. MV1 struck MV2 when MV2 turned left without yielding for the oncoming traffic causing damages to both vehicles estimated to be over \$1000.
11	3/15/2016	8:13 AM	Daylight	Rain	Wet	2	W	E			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 collided with MV1 when MV2 made a left turn into Hewlett Packard driveway without yielding for MV1.
12	3/15/2016	5:47 PM	Dusk	Clear	Wet	2	S	W			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: attempting to enter Dascomb Rd from Hewlett Packard driveway SB lane; MV2: traveling WB on Dascomb Rd. MV2 collided with MV1 when MV1 made a left-turn without yielding for the right-of-way vehicle, MV1. MV1 was towed from the scene.
13	5/23/2016	4:48 PM	Daylight	Clear	Dry	2	W	S			Property Damage Only	0	Angled	Inattention / Distracted	MV1: traveling WB on Dascomb Rd; MV2: exiting Hewlett Packard driveway. MV2 struck MV1 when MV2 pulled out of the driveway without paying attention for the oncoming traffic.
14	8/26/2016	7:00 AM	Daylight	Clear	Dry	2	W	E			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: attempting to turn left from Dascomb Rd EB lane to Hewlett Packard driveway. MV1 struck MV2 when MV2 turned left without yielding for the oncoming traffic causing damages to both vehicles estimated to be over \$1000.
15	9/9/2016	12:24 PM	Daylight	Clear	Dry	3	E	E	E		Non-fatal Injury	3	Rear-end	Other	MV1, MV2 and MV3: traveling EB on Dascomb Rd. MV3 was stopped to wait for the traffic to clear before taking a left-turn into Hewlett Packard driveway and MV2 was stopped right behind MV2. MV1 rear-ended MV2 and the collision pushed MV2 to hit MV3. All vehicles sustained damages and estimated to be well over \$1000.
16	8/26/2016	7:00 AM	Daylight	Clear	Dry	2	W	E			Property Damage Only	0	Angled	Made an Improper Turn	MV1 traveling WB on Dascomb Rd, traffic in the left lane stopped to let MV2 turn left in to the HP Driveway, as MV2 was turning left and crossing the divide line MV1 struck MV2
17	3/30/2017	5:03 PM	Daylight	Clear	Dry	2	W	S			Property Damage Only	0	Angled	Made an Improper Turn	MV1 traveling west on Dascomb Rd, MV2 attempted to turn left out of HP driveway and collided with MV1
18	3/9/2016	12:24 PM	Daylight	Clear	Dry	3	E	E	E		Non-fatal Injury	3	Rear-end	Erratic / Aggressive / Reckless Driving	MV1 traveling east on Dascomb Rd, MV2 stopped in front of MV1, MV3 stopped in front of MV2
19	7/24/2017	7:36 AM	Daylight	Rain	Wet	2	S	E			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1 traveling west on Dascomb Rd, MV2 traveling east on East St. MV1 attempted to turn left and MV2 was unable to stop and crashed into MV1
20	7/23/2016	2:45 PM	Not Reported	Not Reported	Not Reported						Property Damage Only	0	Not Reported	Not Reported	

Crash Data Summary Tables  
 Dascomb Road @ Hewlett Packard Driveway - Andover, MA  
 01/01/2011 - 12/31/2017

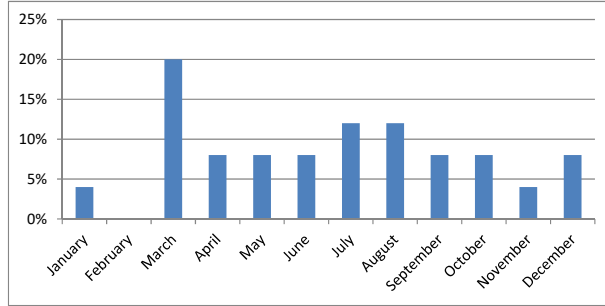
Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							V1	V2	V3	V4					
21	6/2/2017	2:18 PM	Daylight	Clear	Dry	2	E	W			Property Damage Only	0	Not Reported	Failure to Keep in Proper Lane	MV1 was stopped at the stop sign at 165 Dascomb Rd, waiting to turn Northeast onto Dascomb Rd. MV2 traveling southwest in the left lane of traffic. MV1 did not see MV2 and collided as MV1 attempted to turn onto Dascomb Rd.
22	5/1/2017	3:18 PM	Daylight	Cloudy	Wet	2	W	E			Property Damage Only	0	Sideswipe	Failure to Keep in Proper Lane	MV1 was stopped in traffic prior to the entrance/exit of 165 Dascomb Rd. MV1 allowed MV2 to turn left out of the exit of 165 Dascomb Rd. MV2 made the left turn the rear driver side metal bumper caught the front driver side bumper of MV1
23	3/18/2016	11:50 AM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
24	7/6/2016	8:00 AM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
25	8/5/2016	5:30 PM	Not Reported	Not Reported	Not Reported	2					Property Damage Only		Not Reported	Not Reported	

**Crash Data Summary Tables**  
**Dascomb Road @ Hewlett Packard Driveway - Andover, MA**  
**01/01/2011 - 12/31/2017**

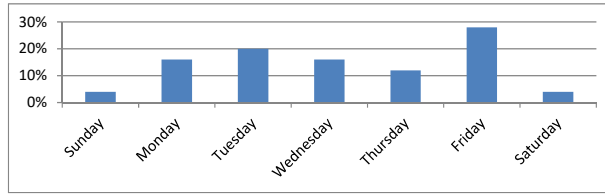
**Dascomb Road @ Hewlett Packard Driveway**

25

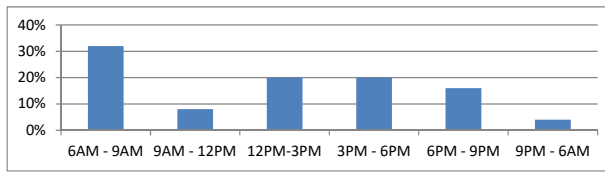
Month	#	%
January	1	4%
February	0	0%
March	5	20%
April	2	8%
May	2	8%
June	2	8%
July	3	12%
August	3	12%
September	2	8%
October	2	8%
November	1	4%
December	2	8%



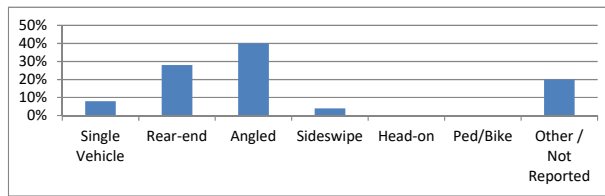
Day of Week	#	%
Sunday	1	4%
Monday	4	16%
Tuesday	5	20%
Wednesday	4	16%
Thursday	3	12%
Friday	7	28%
Saturday	1	4%



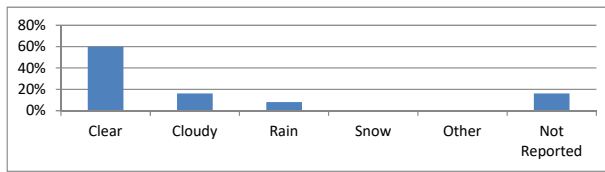
Time of Day	#	%
6AM - 9AM	8	32%
9AM - 12PM	2	8%
12PM-3PM	5	20%
3PM - 6PM	5	20%
6PM - 9PM	4	16%
9PM - 6AM	1	4%



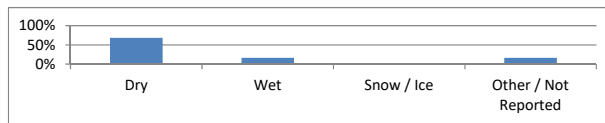
Manner of Collision	#	%
Single Vehicle	2	8%
Rear-end	7	28%
Angled	10	40%
Sideswipe	1	4%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	5	20%



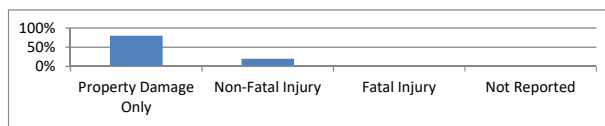
Weather Conditions	#	%
Clear	15	60%
Cloudy	4	16%
Rain	2	8%
Snow	0	0%
Other	0	0%
Not Reported	4	16%



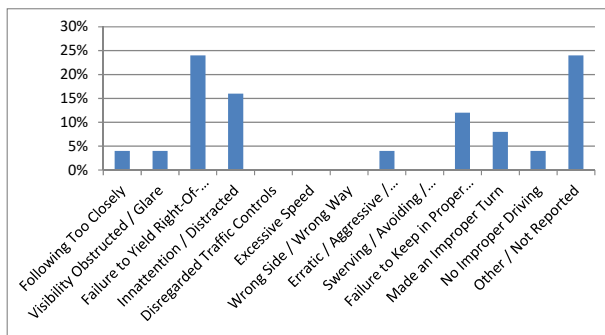
Road Surface	#	%
Dry	17	68%
Wet	4	16%
Snow / Ice	0	0%
Other / Not Reported	4	16%



Crash Severity	#	%
Property Damage Only	20	80%
Non-Fatal Injury	5	20%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	1	4%
Visibility Obstructed / Glare	1	4%
Failure to Yield Right-Of-Way	6	24%
Innattention / Distracted	4	16%
Disregarded Traffic Controls	0	0%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	1	4%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	3	12%
Made an Improper Turn	2	8%
No Improper Driving	1	4%
Other / Not Reported	6	24%



## INTERSECTION CRASH RATE WORKSHEET

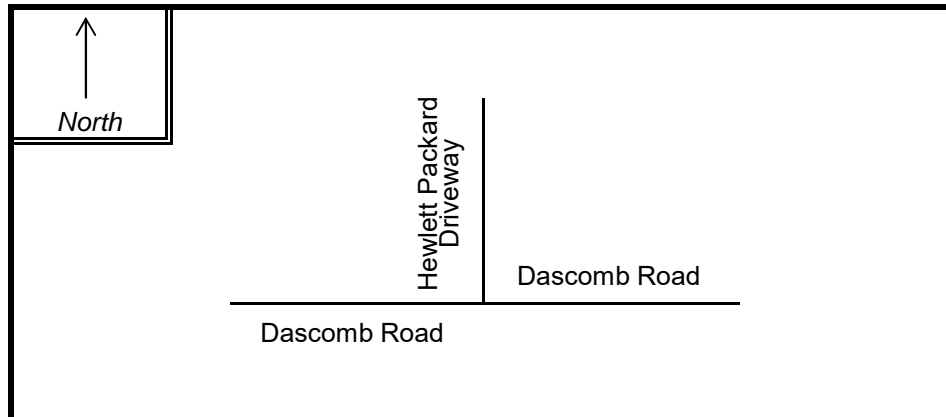
CITY/TOWN : Andover COUNTY DATE : Sep-18

DISTRICT : 4 UNSIGNALIZED : YES SIGNALIZED : NO

~ INTERSECTION DATA ~

MAJOR STREET : Dascomb Road  
 MINOR STREET(S) : Hewlett Packard Driveway

**INTERSECTION  
 DIAGRAM**  
 (Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	<b>Total Peak Hourly Approach Volume</b>
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	1,090	1,095		29		2,214

" K " FACTOR :	<b>0.084</b>	INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :	<b>26,357</b>
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TOTAL # OF CRASHES :	25	# OF YEARS :	7	AVERAGE # OF CRASHES PER YEAR ( A ) :	<b>3.57</b>
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**CRASH RATE CALCULATION :** **0.37**      RATE =  $\frac{( A * 1,000,000 )}{( V * 365 )}$

Comments : K Factor based on ATR counts along Dascomb Road

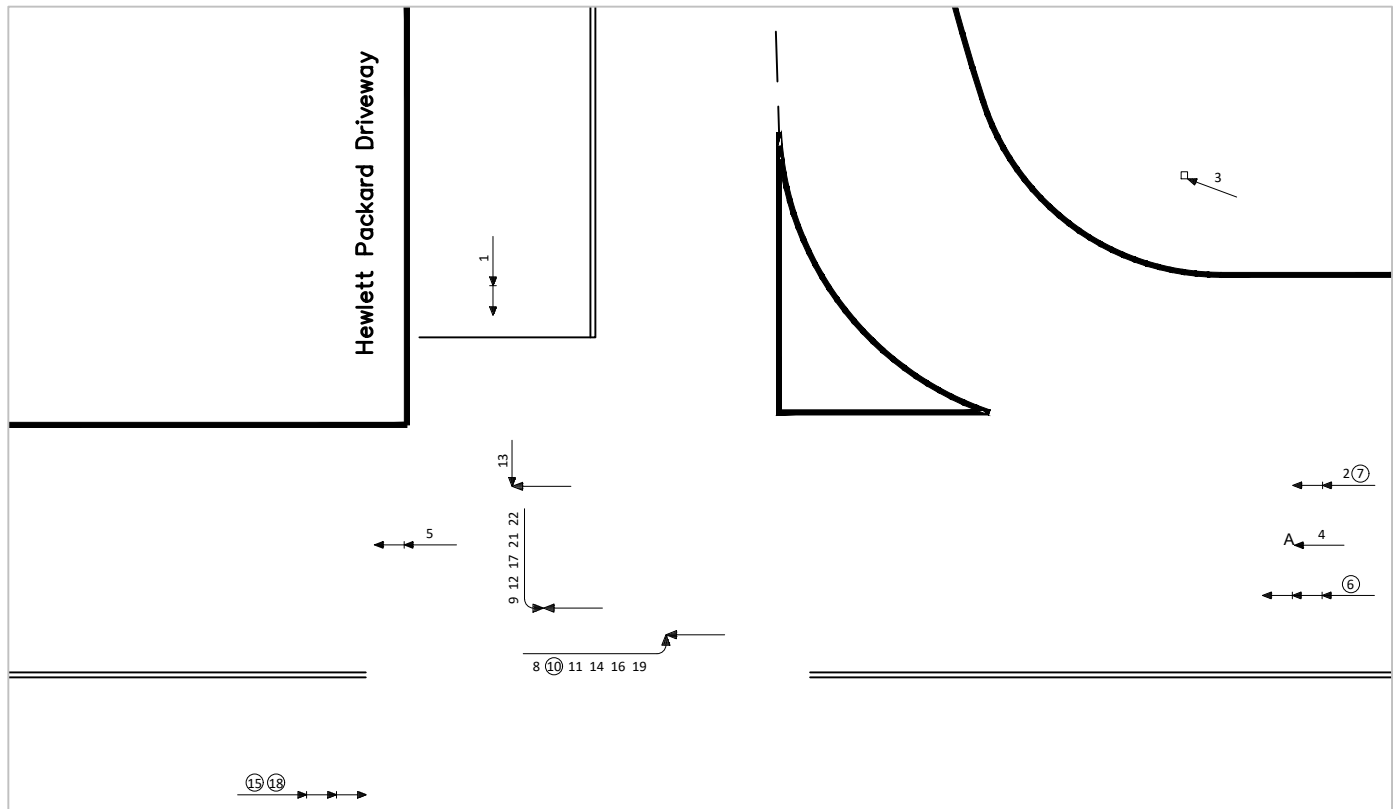
Project Title & Date: The Dascomb Road Project (#146 Dascomb Road)



Not to Scale

# The Dascomb Road Project (#146 Dascomb Road) - Andover, Massachusetts Traffic Impact, Access and Parking Study (TIAPS)

LOCATION: Dascomb Road @ Hewlett Packard Driveway  
 CITY/STATE: Andover, Massachusetts  
 TIME PERIOD: 01/01/2011- 12/31/2017  
 PREPARED BY: TEC, Inc. / Eindra (Elena) Aung, E.I.T.  
 SOURCE: Town of Andover Police Department



#20, #23 to #25 are property damage only crashes and are not locatable.

### Dascomb Road

LEGEND			SHOW FOR COLLISION
→	VEHICLE PATH	□	FIXED OBJECT
←←	BACKING VEHICLE	⊠	MOVEABLE OBJECT
↔	SIDESWIPE COLLISION	▨	PARKED VEHICLE
→P	PEDESTRIAN COLLISION	○	PERSONAL INJURY
→C	CYCLIST COLLISION	⊙	FATALITY
→→	REAR-END COLLISION	A	ANIMAL
↔↔	HEAD-ON COLLISION		
↘↗	ANGLED COLLISION		
→□	FIXED OBJECT COLLISION		
→○	OVERTURNED VEHICLE		
↘↗	OUT-OF-CONTROL VEHICLE		

1. Approximate location of collision,  
 2. Direction of collision,  
 3. Type of collision and vehicles involved,  
 4. Time, Day, Date  
 5. Any other pertinent factors mentioned on the report.

### SUMMARY OF CRASHES ON DIAGRAM [no fatal collisions]

	REAR-END	SIDESWIPE	HEAD-ON	ANGLED	SINGLE VEH	PED/BIKE	OTHER / UNK	TOTAL
PROPERTY DAMAGE ONLY	3	1	0	9	2	0	5	20
NON-FATAL INJURY	4	0	0	1	0	0	0	5
UNKNOWN / NOT REPORTED	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>7</b>	<b>1</b>	<b>0</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>25</b>

Figure G-1

Collision Diagrams  
2011-2017 Collision Data





Crash Data Summary Tables  
 Dascomb Road @ Smith Drive - Andover, MA  
 01/01/2011 - 12/31/2017

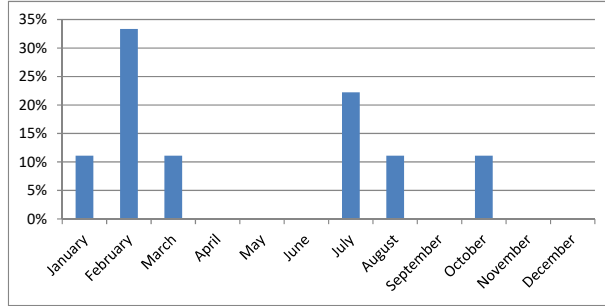
No.	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							V1	V2	V3	V4					
1	7/15/2011	5:11 PM	Daylight	Clear	Dry	2	E	E			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1: stopped on Dascomb Rd EB lane in front of Smith Dr; MV2: traveling EB on Dascomb Rd. MV2 rear-ended MV1 when MV2 continued driving without noticing that MV1 was parked causing damages over \$1000 to the vehicles.
2	3/3/2014	10:47 AM	Daylight	Clear	Dry	1	E				Property Damage Only	0	Single Vehicle	Inattention / Distracted	MV1: traveling EB on Dascomb Rd. MV1 operator was distracted as he was reaching for his coffee from the cup holder. The vehicle veered right toward the shoulder of the roadway and then struck a utility pole. Total damages to both the vehicle and the utility pole were estimated to be well over \$1000.
3	2/14/2015	7:24 AM	Daylight	Clear	Dry	2	W	W			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveled WB on Dascomb Rd and stopped to turn left onto Smith Dr. MV2 rear-ended MV1 when MV2 turned left while MV1 was still stopped. Both vehicles suffered some damages.
4	2/19/2015	4:40 PM	Daylight	Clear	Wet	2	E	N			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: attempting to make a left turn onto Dascomb Rd from Smith Dr. MV1 collided with MV2 when MV2 turned left without yielding for MV1 causing some damages and both vehicles were towed from the scene.
5	7/25/2015	10:30 AM	Daylight	Cloudy	Dry	2	N	N			Property Damage Only	0	Rear-end	Other	MV1 and MV2: stopped at a Stop sign on Smith Dr NB lane. MV1 and MV2 collided when MV1 rolled backwards down the slight incline. MV1 operates a standard shit.
6	8/31/2015	3:34 PM	Daylight	Clear	Dry	2	W	W			Property Damage Only	0	Sideswipe	Other	MV1 and MV2: traveling WB on Dascomb Rd. MV1 sideswiped (same direction) MV2 while attempting to pass before the two lanes merged into one. The damage was estimated to be over \$1000.
7	1/14/2016	5:14 PM	Dark - Lighted	Clear	Dry	2	E	N			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: attempting to make a left turn onto Dascomb Rd from Smith Dr. MV1 collided with MV2 when MV2 turned left without yielding for MV1 causing some damages and both vehicles were towed from the scene.
8	2/12/2016	10:49 AM	Daylight	Clear	Dry	2	N	N			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: stopped at a Stop sign on Smith Dr NB lane. MV1 and MV2 collided when MV1 put the vehicle into reverse and backed into MV2 while trying to avoid an accident with a tractor trailer unit making a left turn into the driveway.
9	10/24/2016	6:02 AM	Dark - Lighted	Clear	Dry	1	W				Non-fatal Injury	1	Single Vehicle	Visibility Obstructed	MV1 traveling west on Dascomb Rd and while turning left into the entrance, pedestrian running crossed the driveway when MV1 struck him. Intersection does not have a cross walk

**Crash Data Summary Tables**  
**Dascomb Road @ Smith Drive - Andover, MA**  
**01/01/2011 - 12/31/2017**

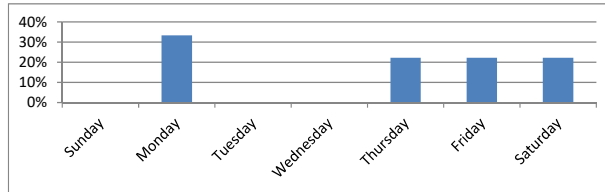
**Dascomb Road @ Smith Drive**

9

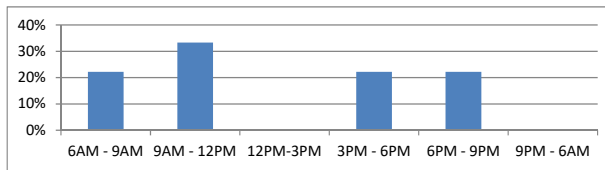
Month	#	%
January	1	11%
February	3	33%
March	1	11%
April	0	0%
May	0	0%
June	0	0%
July	2	22%
August	1	11%
September	0	0%
October	1	11%
November	0	0%
December	0	0%



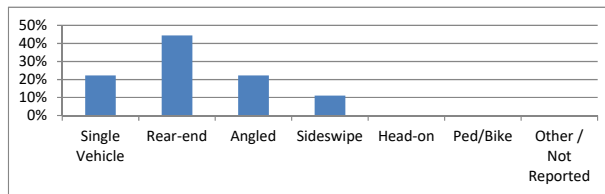
Day of Week	#	%
Sunday	0	0%
Monday	3	33%
Tuesday	0	0%
Wednesday	0	0%
Thursday	2	22%
Friday	2	22%
Saturday	2	22%



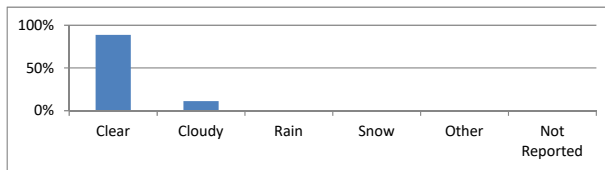
Time of Day	#	%
6AM - 9AM	2	22%
9AM - 12PM	3	33%
12PM-3PM	0	0%
3PM - 6PM	2	22%
6PM - 9PM	2	22%
9PM - 6AM	0	0%



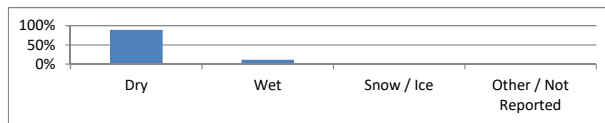
Manner of Collision	#	%
Single Vehicle	2	22%
Rear-end	4	44%
Angled	2	22%
Sideswipe	1	11%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	0	0%



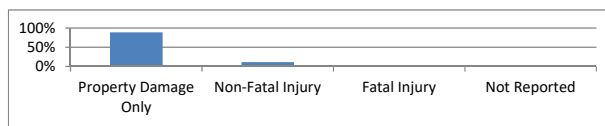
Weather Conditions	#	%
Clear	8	89%
Cloudy	1	11%
Rain	0	0%
Snow	0	0%
Other	0	0%
Not Reported	0	0%



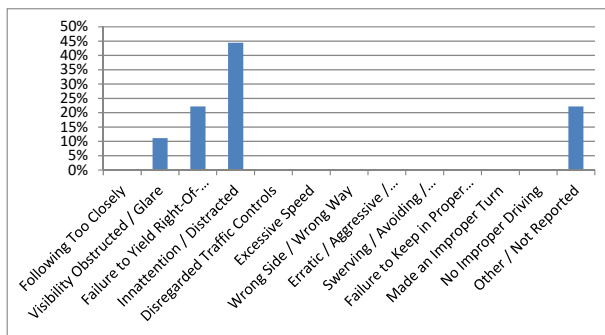
Road Surface	#	%
Dry	8	89%
Wet	1	11%
Snow / Ice	0	0%
Other / Not Reported	0	0%



Crash Severity	#	%
Property Damage Only	8	89%
Non-Fatal Injury	1	11%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	1	11%
Failure to Yield Right-Of-Way	2	22%
Innattention / Distracted	4	44%
Disregarded Traffic Controls	0	0%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	0	0%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	0	0%
Other / Not Reported	2	22%



## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover COUNT DATE : Sep-18

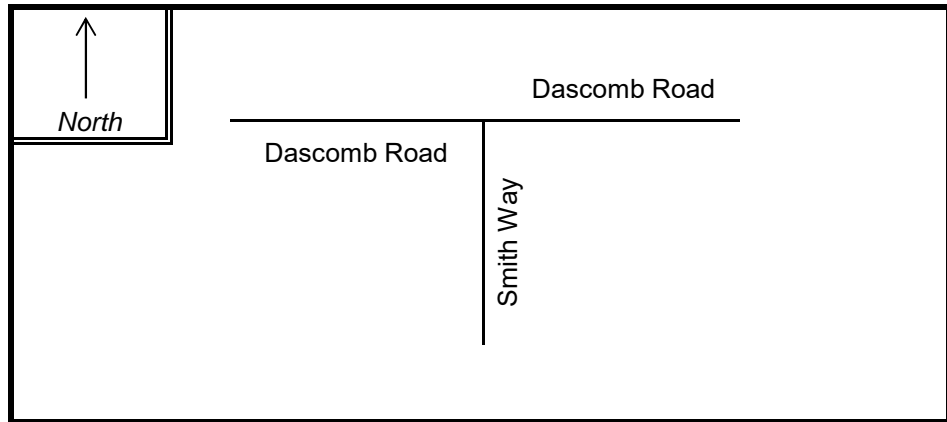
DISTRICT : 4 UNSIGNALIZED :  **YES** SIGNALIZED :  **NO**

~ INTERSECTION DATA ~

MAJOR STREET : Dascomb Road

MINOR STREET(S) : Smith Way

**INTERSECTION  
 DIAGRAM**  
 (Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	1,090	1,111	102			2,303

" K " FACTOR :  INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES :  # OF YEARS :  AVERAGE # OF CRASHES PER YEAR ( A ) :

**CRASH RATE CALCULATION :**  RATE =  $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : K Factor based on ATR counts along Dascomb Road

Project Title & Date: The Dascomb Road Project (#146 Dascomb Road)



Crash Data Summary Tables  
 Dascomb Road @ Frontage Road - Andover, MA  
 01/01/2011 - 09/31/2016

Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Operator's Age				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Portal)
							V1	V2	V3	V4	V1	V2	V3	V4					
1	2/18/2011	12:54 PM	Daylight	Clear	Dry	2	W	E			52	26			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 turned left onto Frontage Rd.
2	3/18/2011	8:14 AM	Daylight	Clear	Dry	2	N	N			28	40			Property Damage Only	0	Sideswipe	Not Reported	MV1 and MV2: traveled EB on Dascomb Rd, turned left onto Frontage Rd and traveling NB. MV1 sideswiped in the same direction with MV2 when MV1 attempted to pass MV2 on the right while MV2 was turning right into the Park and Ride causing minor damages to both vehicles.
3	5/19/2011	3:32 PM	Daylight	Cloudy	Dry	2	S	S			56	N/A			Property Damage Only	0	Rear-end	Not Reported	MV1 and MV2: traveling SB on Frontage Rd. Both vehicles were stopped at a yield sign to turn right onto Dascomb Rd. MV2 and rear-ended MV1 and fled the scene.
4	6/24/2011	10:31 AM	Daylight	Rain	Wet	2	S	S			30	24			Property Damage Only	0	Rear-end	No Improper Driving	MV1 and MV2: traveling SB on Frontage Rd and turning right onto Dascomb Rd WB traffic lane. MV1 slowed/stopped on Frontage Rd. MV2 slowed in time but was unable to stop and collided with MV1. The road surface was wet due to the rain.
5	10/19/2011	8:06 PM	Dark - Lighted	Rain	Wet	2	W	E			28	49			Non-fatal Injury	1	Angled	Erratic / Aggressive / Reckless Driving	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 had the green arrow and was turning left onto Frontage Rd NB lane. MV1 and MV2 collided when MV1 ran the red light.
6	10/26/2011	6:33 AM	Dark - Lighted	Clear	Dry	2	W	E			47	58			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 failed to yield for MV1 while turning left onto Frontage Rd NB lane.
7	11/28/2011	5:11 PM	Dark - Lighted	Clear	Dry	2	E	E			63	30			Non-fatal Injury	1	Rear-end	Inattention / Distracted	MV1 and MV2: traveling EB on Dascomb Rd. MV2 rear-ended MV1 when MV1 stopped at the traffic light to make a left turn onto Frontage Rd. MV2 was towed and the operator was taken to the hospital due to pregnancy.
8	12/24/2011	7:49 PM	Dark - Lighted	Clear	Dry	2	S	S			25	52			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveling SB on Frontage Rd and waiting to turn left onto Dascomb Rd EB lane. MV1 operator's foot slipped off from brake and rear-ended MV2.
9	1/30/2012	2:35 PM	Daylight	Cloudy	Dry	2	W	E			45	46			Property Damage Only	0	Angled	Inattention / Distracted	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 collided with MV1 when MV2 operator was distracted briefly and made a left turn onto Frontage Rd NB lane.
10	2/15/2012	8:12 PM	Dark - Lighted	Clear	Dry	2	W	E			58	26			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 failed to yield for MV1 while turning left onto Frontage Rd NB lane.
11	6/5/2012	5:40 PM	Daylight	Cloudy	Dry	2	S	S			68	53			Non-fatal Injury	1	Rear-end	Followed Too Closely	MV1 and MV2: traveling SB on Frontage Rd. MV1 stopped to yield for traffic on Dascomb Rd before turning right to merge. MV2 followed MV1 too closely and was unable to stop on time and rear-ended MV1.
12	7/5/2012	4:51 PM	Daylight	Clear	Dry	3	W	W	W		27	22	18		Non-fatal Injury	2	Rear-end	Followed Too Closely	MV1: traveling WB on Dascomb Rd; MV2 and MV3: from Frontage Rd SB lane merged onto Dascomb Rd WB approach. MV3 rear-ended MV2 and pushed MV2 into MV1.
13	8/18/2012	10:55 AM	Daylight	Cloudy	Wet	2	E	E			34	42			Non-fatal Injury	2	Rear-end	Inattention / Distracted	MV1 and MV2: traveling EB on Dascomb Rd. MV2 rear-ended MV1 when MV1 pulled over to the side of the road to use GPS.
14	9/5/2012	8:53 AM	Daylight	Cloudy	Wet	2	W	E			60	45			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd without yielding to the oncoming traffic.
15	9/26/2012	2:36 PM	Daylight	Cloudy	Dry	2	S	S			48	18			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveling SB on Frontage Rd. MV1 slowed at a yield sign before turning right to merge onto Dascomb Rd WB traffic. MV2 was unable to stop on time and rear-ended MV1.

**Crash Data Summary Tables**  
**Dascomb Road @ Frontage Road - Andover, MA**  
**01/01/2011 - 09/31/2016**

Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Operator's Age				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Portal)
							V1	V2	V3	V4	V1	V2	V3	V4					
16	10/17/2012	6:46 PM	Dark - Lighted	Clear	Dry	2	W	E			19	52			Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd without yielding to the oncoming traffic.
17	10/29/2012	10:35 PM	Dark - Not Lighted	Rain	Wet	2	W	S			28	72			Property Damage Only	0	Angled	Inattention / Distracted	MV1: traveling WB on Dascomb Rd; MV2: traveling SB on frontage Rd and turning right onto Dascomb Rd WB lane. MV2 struck MV1 when MV2 failed to yield for MV1 which has the right-of-way.
18	11/3/2012	6:53 PM	Dark - Lighted	Clear	Dry	2	W	E			20	27			Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd without yielding to the oncoming traffic.
19	11/6/2012	5:58 PM	Dark - Lighted	Clear	Dry	2	E	W			26	56			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV1 struck MV2 when MV1 turned left onto Frontage Road NB lane without yielding for MV2.
20	11/27/2012	5:48 PM	Dark - Lighted	Rain	Wet	2	W	S			66	26			Property Damage Only	0	Angled	Other	MV1: traveling WB on Dascomb Rd; MV2: traveling SB on Frontage Rd. MV2 had a red light and attempted to stop but the brake failed and MV2 stuck MV1.
21	12/13/2012	9:20 PM	Dark - Lighted	Clear	Dry	2	S	S			52	64			Non-fatal Injury	2	Rear-end	Inattention / Distracted	MV1 and MV2: traveling SB on Frontage Rd. MV2 rear-ended MV1 causing MV1 operator and passenger to be transported to the hospital with non-incapacitating injuries.
22	1/4/2013	5:31 PM	Dark - Lighted	Cloudy	Dry	2	E	W			31	41			Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV1 collided with MV2 when MV1 made a left turn onto Frontage Rd NB lane thinking that MV1 was turning right onto Frontage Rd.
23	2/19/2013	7:25 PM	Dark - Lighted	Rain	Wet	2	W	E			41	18			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV1 and MV2 collided when MV2 attempted to turn left onto Frontage Rd.
24	6/20/2013	11:32 PM	Dark - Lighted	Clear	Dry	2	W	E			23	26			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV1 and MV2 collided when MV2 attempted to turn left onto Frontage Rd causing MV1 operator to be taken to the hospital.
25	6/25/2013	6:10 PM	Dusk	Clear	Dry	2	W	E			18	32			Non-fatal Injury	3	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 was making a left turn onto Frontage Rd without yielding for MV1. All parties involved were transported to the hospital.
26	7/1/2013	6:25 PM	Daylight	Rain	Wet	2	W	E			29	77			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 collided with MV1 when MV2 made a left turn onto Frontage Rd NB lane without yielding for MV1.
27	7/9/2013	6:16 PM	Daylight	Clear	Dry	2	S	S			28	61			Non-fatal Injury	1	Rear-end	Inattention / Distracted	MV1 and MV2: traveling SB on Frontage Rd. MV1 was attempting to turn right onto Dascomb Rd when it was rear-ended by MV2 whom had thought that MV1 was moving and accelerated into it.
28	8/30/2013	3:04 PM	Daylight	Clear	Dry	2	S	S			41	19			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: traveling SB on Frontage Rd. MV1 stopped to yield for traffic on Dascomb Rd before turning right to merge. MV2 followed MV1 too closely and was unable to stop on time and rear-ended MV1.
29	9/29/2013	3:31 PM	Daylight	Clear	Dry	2	S	S			59	41			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveling SB on Frontage Rd. MV1 slowed at a yield sign before turning right to merge onto Dascomb Rd WB traffic. MV2 was unable to stop on time and rear-ended MV1.
30	9/30/2013	6:57 AM	Dawn	Other	Dry	2	E	W			49	48			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV1 struck MV2 when MV1 turned left onto Frontage Road NB lane without yielding for MV2. MV1 did not have green light to turn at that time as well.
31	10/17/2013	9:24 PM	Dark - Lighted	Clear	Dry	2	W	E			17	26			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd without yielding for the oncoming traffic.

**Crash Data Summary Tables**  
**Dascomb Road @ Frontage Road - Andover, MA**  
**01/01/2011 - 09/31/2016**

Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Operator's Age				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Portal)
							V1	V2	V3	V4	V1	V2	V3	V4					
32	10/31/2013	7:10 AM	Daylight	Cloudy	Dry	2	N	N			22	49			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: traveled WB on Dascomb Rd and turning right onto Frontage Road. MV2 stopped to yield for traffic on Frontage Rd before merging. MV1 followed MV2 too closely and was unable to stop on time and rear-ended MV1.
33	12/8/2013	6:50 PM	Dark - Lighted	Clear	Dry	3	W	E	S		43	26	46		Non-fatal Injury	1	Head-on	Disregarded Traffic Controls	MV1: traveling WB on Dascomb Rd; MV2: attempting to turn left onto Frontage Rd NB lane from Dascomb Rd EB lane; MV3: stopped for traffic on Frontage Rd SB lane. MV1 ran the red light and struck MV2 head on. Then MV1 spun out and struck MV3 and the Mass Highway sign.
34	3/10/2014	10:04 AM	Daylight	Cloudy	Dry	2	E	W			67	22			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV1 collided with MV2 when MV1 made a left turn onto Frontage Rd NB lane without yielding for MV1.
35	3/18/2014	4:14 PM	Daylight	Clear	Dry	2	S	S			23	25			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: traveling SB on Frontage Rd. MV1 slowed at a yield sign before turning right to merge onto Dascomb Rd WB traffic. MV2 followed MV1 too closely and was unable to stop on time and rear-ended MV1.
36	3/19/2014	9:23 AM	Daylight	Clear	Dry	2	S	S			34	45			Property Damage Only	0	Rear-end	Inattention / Distracted	MV1 and MV2: traveling SB on Frontage Rd. MV2 rear-ended MV1 when MV1 was turning right onto Dascomb Rd EB lane.
37	4/15/2014	3:22 PM	Daylight	Rain	Wet	2	W	E			33	63			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 was attempting to make a left turn onto Frontage Rd NB lane without yielding for MV1.
38	7/16/2014	9:18 PM	Dark - Lighted	Clear	Dry	2	W	E			39	22			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 was attempting to make a left turn onto Frontage Rd NB lane without yielding for MV1.
39	8/5/2014	5:33 AM	Dawn	Clear	Dry	2	W	E			27	38			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 was attempting to make a left turn onto Frontage Rd NB lane without yielding for MV1.
40	8/6/2014	10:05 PM	Dark - Lighted	Clear	Dry	2	W	E			22	27			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 was attempting to make a left turn onto Frontage Rd NB lane without yielding for MV1.
41	9/4/2014	9:12 AM	Daylight	Clear	Dry	2	W	E			41	52			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 was attempting to make a left turn onto Frontage Rd NB lane without yielding for MV1.
42	9/15/2014	9:43 AM	Daylight	Cloudy	Dry	2	E	W			55	18			Non-fatal Injury	4	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV1 struck MV2 when MV1 was attempting to make a left turn onto Frontage Rd NB lane without yielding for MV2.
43	10/8/2014	10:47 AM	Daylight	Clear	Dry	2	S	S			28	18			Non-fatal Injury	1	Rear-end	Followed Too Closely	MV1 and MV2: traveling SB on Frontage Rd. MV1 stopped to yield for traffic on Dascomb Rd before turning right to merge. MV2 followed MV1 too closely and was unable to stop on time and rear-ended MV1.
44	10/12/2014	8:52 PM	Dark - Lighted	Clear	Dry	2	W	E			45	19			Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd without yielding for the oncoming traffic.
45	11/20/2014	5:57 AM	Dawn	Clear	Dry	2	W	E			33	23			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 was attempting to make a left turn onto Frontage Rd NB lane without yielding for MV1.
46	12/6/2014	5:56 PM	Dark - Not Lighted	Rain	Wet	2	E	W			41	31			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV1 struck MV2 when MV1 turned left onto Frontage Rd NB lane without yielding for MV2. MV2 might not have the headlights on.

Crash Data Summary Tables  
 Dascomb Road @ Frontage Road - Andover, MA  
 01/01/2011 - 09/31/2016

Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Operator's Age				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Portal)
							V1	V2	V3	V4	V1	V2	V3	V4					
47	2/13/2015	6:28 AM	Dawn	Clear	Snow	2	W	W			31	30		Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: turning right onto Frontage Rd NB lane from Dascomb Rd WB lane. MV2 rear-ended MV1 when MV1 slowed to yield to the oncoming traffic.	
48	4/5/2015	5:45 PM	Daylight	Clear	Dry	2	S	S			46	40		Property Damage Only	0	Rear-end	No Improper Driving	MV1 and MV2: traveling SB on Frontage Rd. MV2 rear-ended MV1.	
49	5/28/2015	5:13 AM	Daylight	Clear	Dry	1	E				41			Property Damage Only	0	Single Vehicle	No Improper Driving	MV1: traveling EB on Dascomb Rd. MV1 attempted to turn left onto Frontage Rd when the operator felt ill. Vehicle continued over an embankment and through a fence landing in a ditch.	
50	8/2/2015	4:44 PM	Daylight	Clear	Dry	2	W	E			23	30		Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 was attempting to make a left turn onto Frontage Rd NB lane without yielding for MV1.	
51	8/13/2015	10:15 PM	Dark - Lighted	Clear	Dry	2	W	E			26	26		Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd without yielding for the oncoming traffic.	
52	10/21/2015	5:18 AM	Dark - Lighted	Clear	Dry	2	W	E			31	30		Property Damage Only	0	Head-on	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 collided head on with MV1 when MV2 turned left onto Frontage Rd NB lane.	
53	10/24/2015	4:47 PM	Daylight	Clear	Dry	2	S	S			56	17		Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: traveling SB on Frontage Rd. MV2 rear-ended MV1 when MV1 stopped at the yield sign.	
54	11/4/2015	9:08 PM	Dark - Lighted	Clear	Dry	2	W	E			72	25		Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 made a left turn onto Frontage Rd NB lane without yielding for MV1.	
55	12/14/2015	10:52 AM	Daylight	Cloudy	Dry	2	W	E			30	30		Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 made a left turn onto Frontage Rd NB lane without yielding for MV1.	
56	12/29/2015	9:03 AM	Daylight	Other	Other	2	E	E			39	23		Property Damage Only	0	Rear-end	Not Reported	MV1 and MV2: traveling EB on Dascomb Rd; MV1 rear-ended MV2 when MV2 was slowing due to traffic.	
57	1/7/2016	3:20 PM	Daylight	Cloudy	Dry	3	E	E	E		22	34	80	Property Damage Only	0	Rear-end	Other	MV1, MV2 and MV3: traveling EB on Dascomb Rd. MV1 and MV2 stopped at the red light but MV3 didn't stop in time and struck MV2 which caused MV2 to strike MV1.	
58	1/13/2016	10:10 PM	Dark - Lighted	Clear	Wet	2	W	E			18	53		Property Damage Only	0	Rear-end	Disregarded Traffic Controls	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 ran the red light and turned left onto Frontage Rd.	
59	1/14/2016	1:06 PM	Daylight	Clear	Dry	2	S	S			50	28		Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: traveling SB on Frontage Rd. MV1 stopped to yield for traffic on Dascomb Rd before turning right to merge. MV2 followed MV1 too closely and was unable to stop on time and rear-ended MV1.	
60	2/16/2016	7:46 AM	Daylight	Cloudy	Ice	1	E				36			Property Damage Only	0	Single Vehicle	Other	MV1: traveling EB on Dascomb Rd approaching the Frontage Rd intersection. Due to the icy road surface conditions, MV1 began to slide on the ice and in an effort to avoid rear ending a vehicle in front, the operator cut the wheel to the right which caused her to crash into a snow bank.	
61	2/24/2016	3:15 PM	Daylight	Rain	Wet	2	S	S			46	24		Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: traveling SB on Frontage Rd. Both vehicles were stopped at a yield sign to turn right onto Dascomb Rd. MV2 rolled forward and rear-ended MV1.	
62	5/14/2016	8:26 AM	Daylight	Clear	Dry	2	E	W			62	43		Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV1 and MV2 collided when MV1 made a left turn onto Frontage Rd without yielding for MV2.	
63	5/19/2016	5:13 PM	Daylight	Clear	Dry	2	W	E			38	37		Non-fatal Injury	2	Angled	Other	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd.	
64	6/19/2016	8:01 AM	Daylight	Clear	Dry	2	W	E			28	58		Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV1 and MV2 collided when MV1 turned left onto Frontage Rd without yielding for MV1.	
65	7/23/2016	3:25 PM	Daylight	Clear	Dry	2	W	E			32	52		Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd without yielding to the oncoming traffic.	
66	7/26/2016	7:17 AM	Daylight	Clear	Dry	2	E	W			48	29		Non-fatal Injury	1	Angled	Disregarded Traffic Controls	MV1: attempting to make a left turn from Dascomb Rd EB lane onto Frontage Rd NB lane; MV2: traveling WB on Dascomb Rd. MV2 struck MV1 when MV2 went through the red light.	
67	9/15/2016	1:42 PM	Daylight	Cloudy	Dry	2	S	S			64	49		Property Damage Only	0	Sideswipe	Other	MV1 and MV2: traveling SB on Frontage Rd towards Dascomb Rd intersection. MV1 was on the inside lane and MV2 was on the outside lane. The vehicles struck each other when MV1 moved over towards MV2.	
68	9/21/2016	6:01 AM	Daylight	Clear	Dry	2	E	W			27	35		Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV1 struck MV2 when MV1 turned left onto Frontage Rd NB lane without yielding for MV2.	
69	9/29/2016	4:33 PM	Daylight	Clear	Dry	2	W	E			31	37		Non-fatal Injury	2	Head-on	Not Reported	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV1 and MV2 collided when MV2 attempted to make a left-turn onto Frontage Rd.	
70	5/14/2016	8:26 AM	Daylight	Clear	Dry	2	W	E			62	43		Property Damage Only	0	Angled	No Improper Driving	MV1 was traveling EB on Dascomb Rd while turning left onto Frontage Rd, MV2 was travelling WB on Dascomb Rd and attempted to turn left when MV1 collided into MV2.	
71	11/1/2016	7:07 AM	Daylight	Clear	Dry	2	S	S			68	25		Property Damage Only	0	Rear-end	Followed Too Closely	MV1 was traveling SB on Frontage Road and stopped to turn right from Frontage Rd onto Dascomb Rd. MV2 was behind MV1. MV2 failed to stop and struck rear of MV1.	

**Crash Data Summary Tables**  
**Dascomb Road @ Frontage Road - Andover, MA**  
**01/01/2011 - 09/31/2016**

Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Operator's Age				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Portal)
							V1	V2	V3	V4	V1	V2	V3	V4					
72	1/2/2017	8:48 PM	Dark - Lighted	Clear	Dry	2	W	E			54	25			Property Damage Only	0	Angled	Made an Improper Turn	MV1 traveling west direction on Dascomb Rd, MV2 was traveling east on Dascomb Rd and proceeded to make a left turn onto Frontage Rd. MV1 collided with MV2.
73	1/10/2017	8:11 PM	Dark - Lighted	Cloudy	Wet	2	W	S			57	55			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1 traveling WB on Dascomb Rd, MV2 on Frontage Rd attempting to turn right onto Dascomb Rd. MV2 entered Dascomb Rd and collided with MV1.
74	2/6/2017	6:30 PM	Dark - Lighted	Clear	Dry	2	W	E			63	68			Property Damage Only	0	Angled	Made an Improper Turn	MV1 traveling west on Dascomb Rd, MV2 traveling in east on Dascomb and attempted to make a left turn onto Frontage Rd. MV1 collided with MV2.
75	2/7/2017	3:27 PM	Daylight	Snow	Ice	2	W	S			21	21			Property Damage Only	0	Sideswipe	Failure to Yield Right-of-Way	MV1 traveling WB on Dascomb Rd, MV2 on Frontage Rd attempting to turn right onto Dascomb Rd. MV2 entered Dascomb Rd and collided with MV1.
76	2/14/2017	8:59 AM	Daylight	Clear	Wet	2	S	S			37	74			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 traveling SB on Frontage Rd, MV2 traveling behind MV1. MV1 stopped at yield sign and MV2 rear-ended MV1.
77	6/23/2017	3:00 PM	Daylight	Cloudy	Wet	3	E	E	E		61	43	35		Property Damage Only	0	Rear-end	Swerving / Avoiding	MV1 was stopped at a red light heading east on Dascomb Rd. MV2 was traveling behind MV1 and failed to stop in time crashing into MV1. MV3 crashed into the rear of MV2 and pushed MV2 back into MV1.
78	6/23/2017	3:00 PM	Daylight	Cloudy	Wet	2	E	E			61	43			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 was stopped at a red light heading east on Dascomb Rd. MV2 was traveling behind MV1, failed to stop in time and rear-ended MV1.
79	9/13/2017	7:44 AM	Daylight	Clear	Dry	2	E	E			47	38			Property Damage Only	0	Rear-end	Erratic / Aggressive / Reckless Driving	MV1 was stopped facing east at the intersection of Dascomb Rd and Frontage Rd when MV2 rear ended MV1.
80	11/22/2017	4:30 PM	Dark - Lighted	Rain	Wet	2	W	E			65	62			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1 was traveling west on Dascomb Rd. MV2 was turning left from Dascomb onto Frontage. MV2 failed to yield for MV1.
81	12/19/2017	6:03 AM	Dark - Lighted	Clear	Wet	2	E	W			26	23			Property Damage Only	0	Angled	Excessive Speed	MV1 traveling East on Dascomb Rd attempting to turn left onto Frontage Rd when MV2 traveling west on Dascomb Rd and struck MV1.
82	12/27/2017	8:00 AM	Daylight	Clear	Wet	2	W	E			59	40			Property Damage Only	0	Angled	Made an Improper Turn	MV1 was traveling west on Dascomb Rd, MV2 traveling east on Dascomb Rd and attempting to turn left. MV1 crashed into MV2.
83	7/26/2016	7:17 AM	Daylight	Clear	Dry	2	E	W			48	29			Non-fatal Injury	1	Angled	Disregarded Traffic Controls	MV1 was attempting to make a left turn from Dascomb Rd on to Frontage Rd. MV2 was traveling WB on Dascomb Rd. MV2 went through red light and struck MV1. MV1 evaluated by AFD personnel.
84	9/21/2016	6:01 AM	Daylight	Clear	Dry	2	E	W			27	35			Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	MV1 was traveling east on Dascomb Rd attempting to turn left on to Frontage Rd. MV2 was travelling west on Dascomb Road. MV1 struck MV2.
85	9/29/2016	3:55 PM	Daylight	Clear	Dry	2	W	E			31	37			Non-fatal Injury	2	Head-on	Wrong Side / Wrong Way	MV1 was traveling west on Dascomb Rd approaching the Frontage Rd. MV2 was traveling east on Dascomb Rd and made a left turn in front of MV1. MV1 and MV2 collided.
86	12/23/2016	6:45 PM	Dark - Lighted	Clear	Dry	2	W	N			35	30			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1 was traveling west on Dascomb Road. MV2 was traveling east on Dascomb Rd and attempting to turn left onto Frontage Rd. MV2 turned left to go to Frontage Rd and collided with MV1.
87	1/3/2017	10:48 PM	Dark - Lighted	Rain	Wet	2	W	E			34	46			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1 was traveling WB on Dascomb Rd. MV2 was traveling EB on Dascomb and attempting to make a left turn onto Frontage Rd. MV1 collided with MV2.
88	2/10/2017	2:10 PM	Daylight	Clear	Wet	2	S	S			27	52			Non-fatal Injury	1	Rear-end	Followed Too Closely	MV1 was traveling south on Frontage Rd. MV2 was traveling behind MV1. MV2 collided with MV1 after stopping short.
89	5/28/2017	11:35 AM	Daylight	Clear	Dry	1	S				38				Non-fatal Injury	1	Single Vehicle	Made an Improper Turn	MV1 was traveling on Frontage Rd, attempting to turn left and exiting to its right causing the front side of vehicle to make contact with metal traffic light pole.
90	12/31/2017	12:39 PM	Daylight	Clear	Dry	2	W	E			55	28			Non-fatal Injury	3	Head-on	Made an Improper Turn	MV1: traveling west on Dascomb Rd; MV2: traveling east on Dascomb Rd. MV2 cut in front of MV1 to turn left causing the two vehicles to collide.
91	1/13/2016	10:10 PM	Dark - Lighted	Clear	Wet	2	W	E			18	53			Property Damage Only	0	Angled	Erratic / Aggressive / Reckless Driving	MV1: traveling west on Dascomb Rd, MV2: traveling east on Dascomb Rd and attempting to turn left on a red light and crashed into MV1.
92	9/15/2017	10:55 PM	Daylight	Cloudy	Wet	2	S	W			53	63			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 rear ended MV2 while turning right from Frontage Rd onto Dascomb Rd.
93	1/14/2016	1:06 PM	Daylight	Clear	Dry	2	S	W			50	28			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 was stopped at yield sign on Frontage Rd. MV2 stopped behind MV1 and rear-ended MV1.
94	2/24/2016	3:15 PM	Daylight	Rain	Wet	2	S	S			46	24			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 was on Frontage Rd waiting to turn right. MV2 was stopped behind MV1. MV2 rolled forward and struck MV1.
95	9/15/2016	1:25 PM	Daylight	Cloudy	Dry	2	S	S			64	49			Property Damage Only	2	Sideswipe	Failure to Keep in Proper Lane	MV1 was traveling north on the inside lane of Frontage Rd. MV2 was traveling in the same direction on the outside lane. MV1 moved over towards MV2 and both vehicle struck each other.
96	11/26/2016	8:36 AM	Daylight	Clear	Dry	2	S	S			57	48			Property Damage Only	2	Rear-end	Followed Too Closely	MV1 was traveling south on Frontage Rd. MV2 was traveling south directly behind MV1 and collided with MV2.
97	11/25/2016	6:21 PM	Dark - Lighted	Cloudy	Wet	2	W	E			20	51			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1 was traveling west on Dascomb Rd in the right travel lane. MV2 attempted to make a left turn from Dascomb Rd onto Frontage Rd. MV1 was unable to stop and collided into MV2. MV1 had the right of way.
98	2/12/2017	11:26 PM	Dark - Lighted	Snow	Other	1	S				39				Property Damage Only	0	Single Vehicle	No Improper Driving	MV1 was traveling south on to Frontage Rd when passenger tire fell into uncapped man hole in the roadway.

Crash Data Summary Tables  
 Dascomb Road @ Frontage Road - Andover, MA  
 01/01/2011 - 09/31/2016

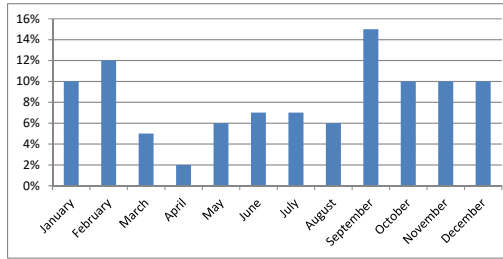
Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Operator's Age				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Portal)
							V1	V2	V3	V4	V1	V2	V3	V4					
99	3/23/2017	2:22 PM	Daylight	Clear	Dry	2	E	W			27	30			Property Damage Only	0	Angled	Made an Improper Turn	MV1 was turning left onto Frontage Rd from Dascomb Rd when it was struck by MV2 which was traveling west on Dascomb Rd.
100	9/14/2017	5:15 PM	Daylight	Clear	Dry	2	S	S			60	49			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 was stopped at yield sign on Frontage Rd and was rear ended by MV2.

**Crash Data Summary Tables**  
**Dascomb Road @ Frontage Road - Andover, MA**  
**01/01/2011 - 12/31/2017**

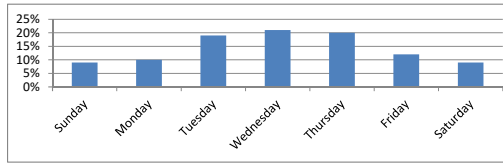
**Dascomb Road @ Frontage Road**

100

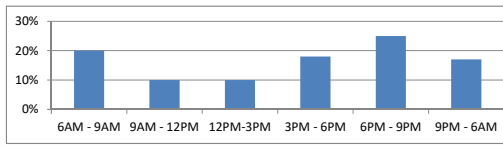
Month	#	%
January	10	10%
February	12	12%
March	5	5%
April	2	2%
May	6	6%
June	7	7%
July	7	7%
August	6	6%
September	15	15%
October	10	10%
November	10	10%
December	10	10%



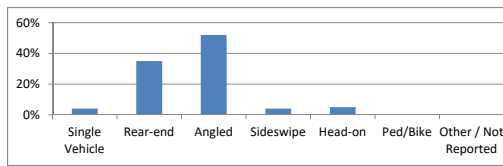
Day of Week	#	%
Sunday	9	9%
Monday	10	10%
Tuesday	19	19%
Wednesday	21	21%
Thursday	20	20%
Friday	12	12%
Saturday	9	9%



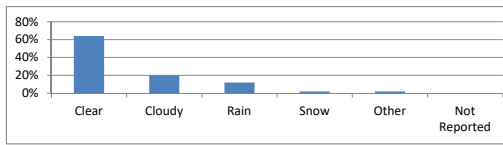
Time of Day	#	%
6AM - 9AM	20	20%
9AM - 12PM	10	10%
12PM-3PM	10	10%
3PM - 6PM	18	18%
6PM - 9PM	25	25%
9PM - 6AM	17	17%



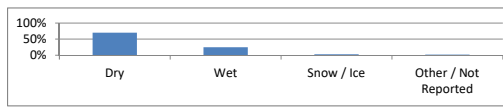
Manner of Collision	#	%
Single Vehicle	4	4%
Rear-end	35	35%
Angled	52	52%
Sideswipe	4	4%
Head-on	5	5%
Ped/Bike	0	0%
Other / Not Reported	0	0%



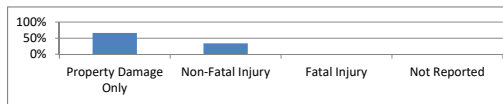
Weather Conditions	#	%
Clear	64	64%
Cloudy	20	20%
Rain	12	12%
Snow	2	2%
Other	2	2%
Not Reported	0	0%



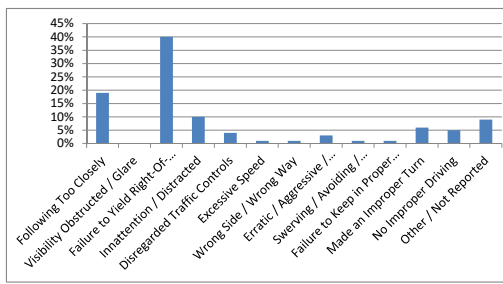
Road Surface	#	%
Dry	70	70%
Wet	25	25%
Snow / Ice	3	3%
Other / Not Reported	2	2%



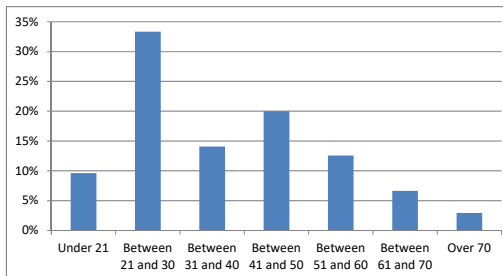
Crash Severity	#	%
Property Damage Only	66	66%
Non-Fatal Injury	34	34%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	19	19%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	40	40%
Inattention / Distracted	10	10%
Disregarded Traffic Controls	4	4%
Excessive Speed	1	1%
Wrong Side / Wrong Way	1	1%
Erratic / Aggressive / Reckless Driving	3	3%
Swerving / Avoiding / Over-Steering / Over-Correcting	1	1%
Failure to Keep in Proper Lane	1	1%
Made an Improper Turn	6	6%
No Improper Driving	5	5%
Other / Not Reported	9	9%



Age	#	%
Under 21	13	10%
Between 21 and 30	45	33%
Between 31 and 40	19	14%
Between 41 and 50	27	20%
Between 51 and 60	17	13%
Between 61 and 70	9	7%
Over 70	4	3%



## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover COUNT DATE : Sep-18

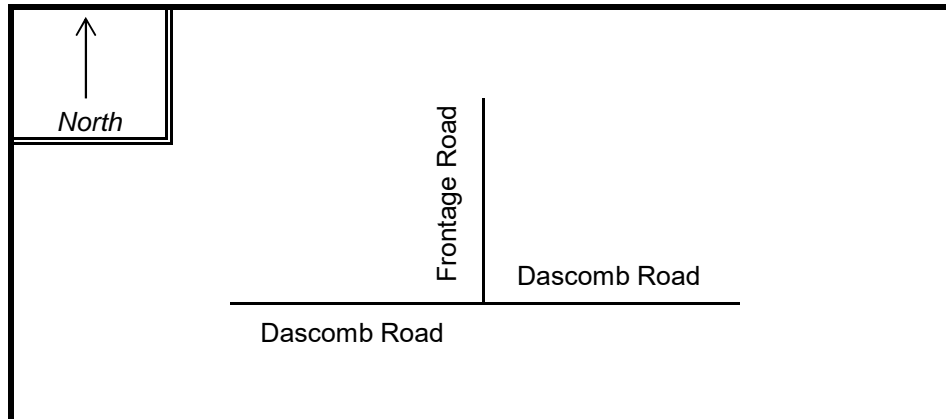
DISTRICT : 4 UNSIGNALIZED :  NO  SIGNALIZED :  YES

~ INTERSECTION DATA ~

MAJOR STREET : Dascomb Road

MINOR STREET(S) : Frontage Road

**INTERSECTION  
DIAGRAM**  
(Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	<b>Total Peak Hourly Approach Volume</b>
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	1,165	863		622		2,650

" K " FACTOR :	<b>0.082</b>	INTERSECTION ADT ( <b>V</b> ) = TOTAL DAILY APPROACH VOLUME :	<b>32,317</b>
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TOTAL # OF CRASHES :	100	# OF YEARS :	7	AVERAGE # OF CRASHES PER YEAR ( <b>A</b> ) :	<b>14.29</b>
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**CRASH RATE CALCULATION :** 1.21      RATE =  $\frac{( A * 1,000,000 )}{( V * 365 )}$

Comments : K Factor based on ATR counts along Dascomb Road

Project Title & Date: The Dascomb Road Project (#146 Dascomb Road)

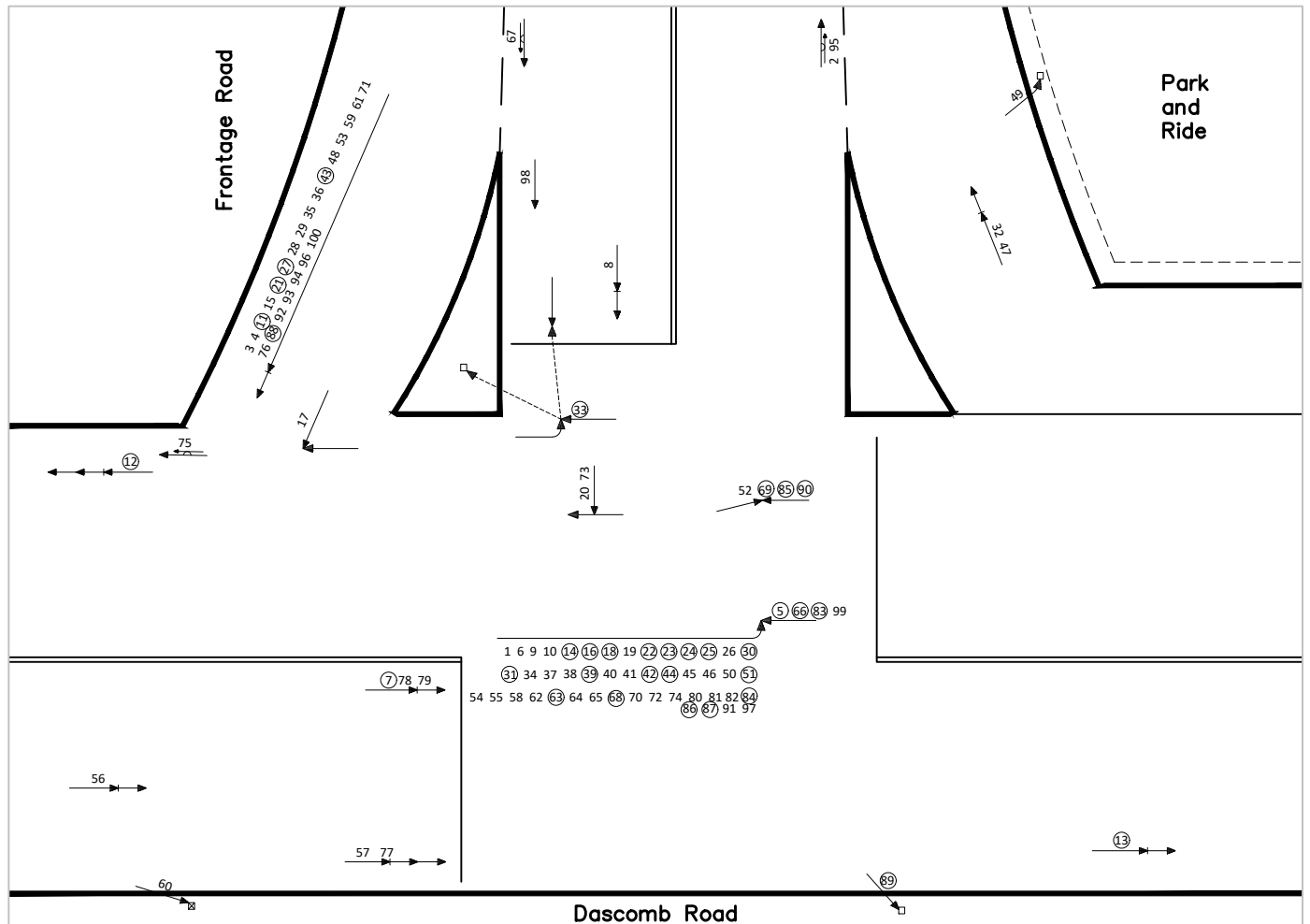


Not to Scale

# The Dascomb Road Project (#146 Dascomb Road) - Andover, Massachusetts

Traffic Impact, Access and Parking Study (TIAPS)

LOCATION: Dascomb Road @ Frontage Road  
CITY/STATE: Andover, Massachusetts  
TIME PERIOD: 01/01/2011- 12/31/2017  
PREPARED BY: TEC, Inc. / Eindra (Elena) Aung, E.I.T., Danah Hamzeh  
SOURCE: MassDOT / Town of Andover Police Department



LEGEND		SHOW FOR COLLISION	
→ VEHICLE PATH	↔ HEAD-ON COLLISION	□ FIXED OBJECT	1. Approximate location of collision, 2. Direction of collision, 3. Type of collision and vehicles involved, 4. Time, Day, Date 5. Any other pertinent factors mentioned on the report.
←←← BACKING VEHICLE	↘ ANGLED COLLISION	▣ MOVEABLE OBJECT	
↔↔↔ SIDESWIPE COLLISION	→□ FIXED OBJECT COLLISION	▨ PARKED VEHICLE	
→P PEDESTRIAN COLLISION	→○ OVERTURNED VEHICLE	○ PERSONAL INJURY	
→C CYCLIST COLLISION	↘ OUT-OF-CONTROL VEHICLE	○ FATALITY	
→ REAR-END COLLISION		A ANIMAL	

SUMMARY OF CRASHES ON DIAGRAM [no fatal collisions]								
	REAR-END	SIDESWIPE	HEAD-ON	ANGLED	SINGLE VEH	PED/BIKE	OTHER / UNK	TOTAL
PROPERTY DAMAGE ONLY	27	4	1	31	3	0	0	66
NON-FATAL INJURY	8	0	4	21	1	0	0	34
UNKNOWN / NOT REPORTED	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>37</b>	<b>4</b>	<b>5</b>	<b>51</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>100</b>

Figure G-2

Collision Diagrams  
2011-2017 Collision Data





Crash Data Summary Tables  
Dascomb Road @ I-93 Northbound Ramps - Andover, MA  
01/01/2011 - 12/31/2017

Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Operator's Age				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							V1	V2	V3	V4	V1	V2	V3	V4					
1	2/5/2011	12:10 AM	Dark - Lighted	Clear	Dry	2	E	N			54	44			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: exiting from I93 NB off-ramp. MV2 collided with MV1 when MV2 made a left turn onto Dascomb Rd WB lane without yielding for MV1. MV2 did not stop at the STOP-sign prior to making the turn as well. Both vehicles were towed.
2	2/18/2011	5:59 PM	Dark - Lighted	Cloudy	Wet	2	E	N			16	20			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling NB on I-93NB Ramp. MV2 collided with MV1 when MV2 merged onto Dascomb Rd EB lane without yielding for MV1.
3	7/21/2011	5:30 PM	Daylight	Clear	Dry	2	E	W			44	50			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MC1: traveling EB on Dascomb Rd; MV1: traveling WB on Dascomb Rd. MV1 took a left turn onto I93 NB on ramp, cutting off MC1. MV1 struck MC1 and the operator of MC1 was subsequently transported to the hospital.
4	9/21/2011	7:51 AM	Daylight	Clear	Dry	2	W	W			23	44			Property Damage Only	0	Angled	Made an Improper Turn	MV1 and MV2: traveling WB on Dascomb Rd. MV2 struck MV1 when MV1 made an improper U-turn to get on the I-93NB on-ramp since MV1 missed the entrance to the on-ramp.
5	10/21/2011	12:30 AM	Dark - Not Lighted	Clear	Dry	1	N				24				Property Damage Only	0	Single Vehicle	Excessive Speed	MV1: traveling NB on I-93NB off-ramp. MV1 was driving at an excess speed on the ramp. MV1 was unable to negotiate the corner on the ramp and enters the island where it rolls over.
6	1/21/2012	8:25 AM	Daylight	Clear	Other	2	N	W			24	50			Property Damage Only	0	Angled	Excessive Speed	MV1: exiting I-93NB off-ramp; MV2: traveling WB on Dascomb Rd. MV1 was driving too fast for the roadway conditions at that time. MV1 could not stop at the Stop sign, continued to slide into Dascomb Rd and collided with MV2.
7	4/1/2012	2:25 AM	Dark - Not Lighted	Clear	Dry	1	N				50				Non-fatal Injury	2	Single Vehicle	Other	MV1: traveling NB on I-93NB off-ramp. The operator of MV1 was fatigue/sleepy while operating the vehicle. When the police arrived at the scene, the vehicle was onto of the grassy knoll overturned and on fire with the gas tank exposed.
8	9/13/2012	6:44 PM	Dusk	Clear	Dry	2	N	W			49	N/A			Property Damage Only	1	Angled	Other	MV1: exiting I-93NB off-ramp; MV2: traveling WB on Dascomb Rd. MV1 struck MV2 while turning left onto Dascomb Rd without yielding. MV1 turned onto I-93 NB on-ramp and fled the scene.
9	8/2/2013	4:05 PM	Daylight	Clear	Dry	3	S	S	S		39	21	41		Property Damage Only	0	Rear-end	Followed Too Closely	MV1, MV2, and MV3: traveling SB on I-93NB on-ramp. MV3 was yielding for the traffic and was rear-ended by MV1 and MV2.
10	10/8/2013	7:38 AM	Daylight	Clear	Dry	2	W	N			27	40			Property Damage Only	0	Angled	Disregarded Traffic Controls	MV1: traveling WB on Dascomb Rd; MV2: exiting I-93NB off-ramps. MV1 was preparing to turn left onto I-93NB on-ramp. MV2 hit MV1 when MV2 failed to use care while turning left onto Dascomb Rd WB lane.
11	1/22/2014	9:24 AM	Daylight	Clear	Wet	2	W	N			62	25			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: exiting I-93NB off-ramps. MV1 was slowing to turn left onto I-93NB on-ramp. MV2 hit MV1 when MV2 failed to use care while turning left onto Dascomb Rd WB lane.
12	7/8/2014	2:53 PM	Daylight	Clear	Dry	2	E	N			77	61			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling NB on I-93NB Ramp. MV2 collided with MV1 when MV2 turned left onto Dascomb Rd WB lane without yielding for MV1.
13	10/6/2014	4:51 PM	Daylight	Clear	Dry	2	E	N			24	60			Non-fatal Injury	2	Angled	Disregarded Traffic Controls	MV1: traveling EB on Dascomb Rd; MV2: exiting I-93NB off-ramps piggy backing the car in front. MV2 hit MV1 when MV2 failed to yield while turning left onto Dascomb Rd WB lane.
14	1/16/2015	12:41 PM	Daylight	Clear	Dry	2	W	E			63	N/A			Property Damage Only	0	Head-on	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV1 made a left turn on to I-93NB on-ramp without yielding for MV2 causing a head-on accident.
15	1/16/2015	4:51 PM	Dusk	Clear	Dry	2	E	N			43	26			Property Damage Only	0	Angled	Inattention / Distracted	MV1: traveling EB on Dascomb Rd; MV2: exiting I-93 NB off-ramp. MV1 struck MV2 when MV2 made a left turn onto Dascomb Rd.
16	3/8/2015	7:39 AM	Daylight	Clear	Dry	2	W	N			41	41			Property Damage Only	0	Angled	Visibility Obstructed	MV1: traveling WB on Dascomb Rd; MV2: exiting I-93NB off-ramps. MV1 was turning left onto I-93NB on-ramp. MV2 hit MV1 when MV2 failed to use care while turning left onto Dascomb Rd WB lane.
17	4/11/2015	4:08 PM	Daylight	Clear	Dry	2	N	N			46	27			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 and MV2: exiting I-93NB off-ramp. MV2 rear-ended MV1 when MV1 stopped at the yield sign.
18	5/18/2015	3:31 PM	Daylight	Clear	Dry	2	E	W			57	44			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: traveling WB on Dascomb Rd. MV2 struck MV1 when MV2 made a left turn on to I-93NB on-ramp without yielding for MV1.
19	7/15/2015	4:45 PM	Daylight	Clear	Dry	2	N	N			30	18			Non-fatal Injury	1	Rear-end	Other	MV1 and MV2: exiting I-93NB off-ramp. MV2 rear-ended MV1 when MV1 stopped at the yield sign.
20	11/3/2015	3:59 PM	Daylight	Cloudy	Dry	2	E	N			19	75			Non-fatal Injury	1	Angled	No Improper Driving	MC1: traveling EB on Dascomb Rd; MV1: exiting I93NB off-ramp. MV1 struck MC1 when MV1 turned left onto Dascomb Rd.
21	1/15/2016	2:59 PM	Daylight	Cloudy	Dry	2	E	N			34	77			Non-fatal Injury	2	Angled	Failure to Yield Right-of-Way	MV1: traveling EB on Dascomb Rd; MV2: exiting from I93 NB off-ramp. MV2 collided with MV1 when MV2 made a left turn onto Dascomb Rd WB lane without yielding for MV1.
22	1/18/2016	8:12 AM	Daylight	Snow	Snow	2	W	E			26	47			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling WB on Dascomb Rd; MV2: traveling EB on Dascomb Rd. MV1 made a left turn on to I-93NB on-ramp without yielding for MV2 causing a head-on accident.

Crash Data Summary Tables  
 Dascomb Road @ I-93 Northbound Ramps - Andover, MA  
 01/01/2011 - 12/31/2017

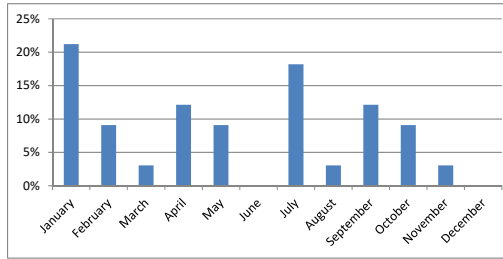
Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Operator's Age				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							V1	V2	V3	V4	V1	V2	V3	V4					
23	2/1/2016	11:24 PM	Dark - Lighted	Clear	Dry	2	N	W			61	56			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: exiting I-93NB off-ramp; MV2: traveling WB on Dascomb Rd. MV1 was attempting to make a left turn onto Dascomb Rd and MV2 was attempting to make a left turn onto I93 NB on - ramp. The accident occurred when MV1 failed to yield for MV2.
24	7/8/2016	12:21 PM	Daylight	Clear	Dry	2	S	W			58	42			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: attempting to enter Dascomb Rd from I-93NB off-ramp; MV2: traveling WB on Dascomb Rd. MV1 collided with MV2 when MV1 turned left without yielding for MV2.
25	7/17/2016	12:16 PM	Daylight	Clear	Dry	2	E	N			27	62			Non-fatal Injury	1	Cyclist	Failure to Yield Right-of-Way	Cyclist 1: traveling EB on Dascomb Rd; MV1: exiting I-93NB off-ramp. MV1 sideswiped Cyclist 1 when MV1 attempted to turn left onto Dascomb Rd.
26	9/29/2016	8:06 PM	Dark - Lighted	Clear	Dry	1	W				62				Non-fatal Injury	2	Angled	No Improper Driving	MV1: traveling WB on Dascomb Rd. MV1 collided with a deer when the deer ran across the roadway.
27	9/29/2016	8:06 PM	Dark - Lighted	Clear	Dry	1	W				62				Property Damage Only	0	Other	No Improper Driving	MV1 was traveling WB on Dascomb Rd and collided with a deer in the roadway. Operator was unable to avoid collision.
28	4/18/2017	7:08 PM	Daylight	Clear	Dry	2	W	N			38	25			Property Damage Only	0	Angled	Made an Improper Turn	MV1 was traveling WB on Dascomb Rd. MV2 was stopped at the end of the off ramp to take a left onto Dascomb Rd. MV1 attempted to make a left onto the on ramp and MV2 struck MV1.
29	5/30/2017	9:42 AM	Daylight	Clear	Dry	2	E	N			45	55			Property Damage Only	0	Angled	Made an Improper Turn	MV1 was traveling east on Dascomb Rd. MV2 was attempting to exit the off ramp. As MV2 pulled onto Dascomb Rd it crashed into the passenger side of MV1.
30	1/18/2016	8:12 AM	Daylight	Snow	Snow	2	E	W			26	47			Property Damage Only	0	Angled	Made an Improper Turn	MV1 was traveling east on Dascomb Rd. MV2 was traveling west on Dascomb Rd and attempted to turn left onto I-93 NB ramps . MV2 crashed into MV1 .
31	4/7/2017	4:18 PM	Daylight	Clear	Dry	1	W				88				Non-fatal Injury	2	Single Vehicle	Swerving / Avoiding	MV1 was stopped at the end of ramp attempting to make a left turn onto Dascomb Rd. It veered off the road and collided with a tree.
32	7/17/2016	12:16 PM	Daylight	Clear	Dry	1	W				27				Non-fatal Injury	1	Sideswipe	Made an Improper Turn	Cyclist was traveling EB on Dascomb Rd. MV1 attempted to turn left onto Dascomb Rd from the off ramps and struck the cyclist.
33	5/18/2016	8:34 PM	Not Reported	Not Reported	Not Reported									Property Damage Only		Not Reported	Not Reported	Not Reported	

**Crash Data Summary Tables**  
**Dascomb Road @ I-93 Northbound Ramps - Andover, MA**  
**01/01/2011 - 12/31/2017**

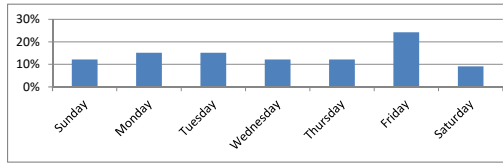
**Dascomb Road @ I-93 North Ramps**

33

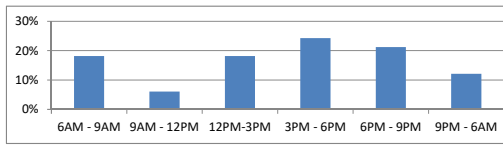
Month	#	%
January	7	21%
February	3	9%
March	1	3%
April	4	12%
May	3	9%
June	0	0%
July	6	18%
August	1	3%
September	4	12%
October	3	9%
November	1	3%
December	0	0%



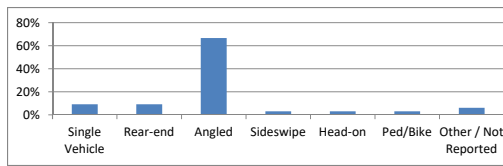
Day of Week	#	%
Sunday	4	12%
Monday	5	15%
Tuesday	5	15%
Wednesday	4	12%
Thursday	4	12%
Friday	8	24%
Saturday	3	9%



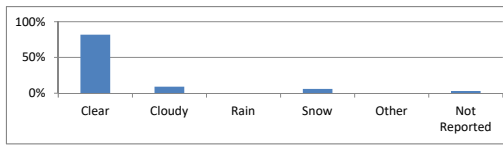
Time of Day	#	%
6AM - 9AM	6	18%
9AM - 12PM	2	6%
12PM-3PM	6	18%
3PM - 6PM	8	24%
6PM - 9PM	7	21%
9PM - 6AM	4	12%



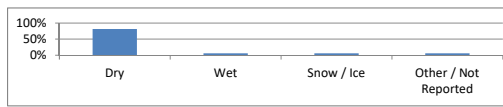
Manner of Collision	#	%
Single Vehicle	3	9%
Rear-end	3	9%
Angled	22	67%
Sideswipe	1	3%
Head-on	1	3%
Ped/Bike	1	3%
Other / Not Reported	2	6%



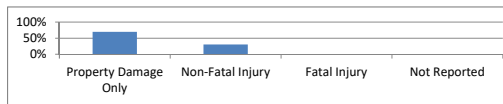
Weather Conditions	#	%
Clear	27	82%
Cloudy	3	9%
Rain	0	0%
Snow	2	6%
Other	0	0%
Not Reported	1	3%



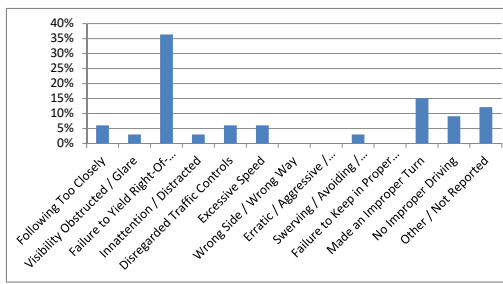
Road Surface	#	%
Dry	27	82%
Wet	2	6%
Snow / Ice	2	6%
Other / Not Reported	2	6%



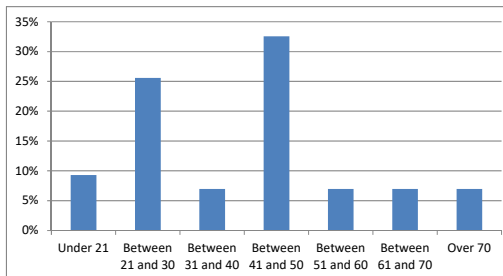
Crash Severity	#	%
Property Damage Only	23	70%
Non-Fatal Injury	10	30%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	2	6%
Visibility Obstructed / Glare	1	3%
Failure to Yield Right-Of-Way	12	36%
Inattention / Distracted	1	3%
Disregarded Traffic Controls	2	6%
Excessive Speed	2	6%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	0	0%
Swerving / Avoiding / Over-Steering / Over-Correcting	1	3%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	5	15%
No Improper Driving	3	9%
Other / Not Reported	4	12%



Age	#	%
Under 21	4	9%
Between 21 and 30	11	26%
Between 31 and 40	3	7%
Between 41 and 50	14	33%
Between 51 and 60	3	7%
Between 61 and 70	3	7%
Over 70	3	7%



# INTERSECTION CRASH RATE WORKSHEET

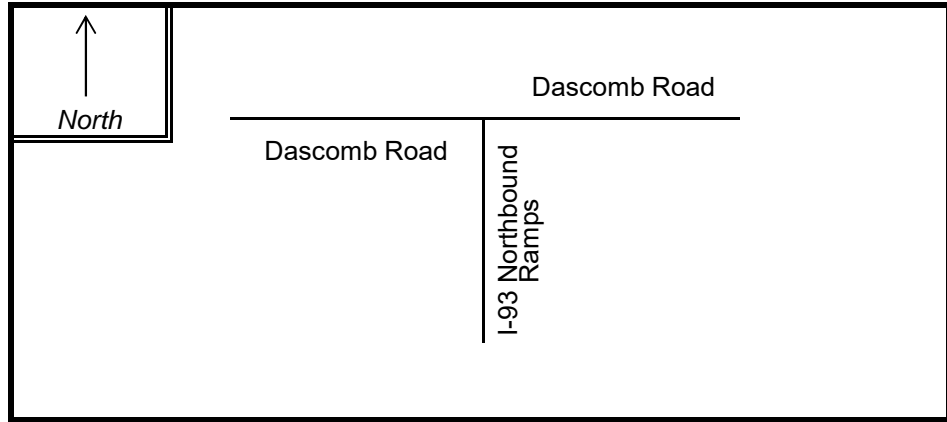
CITY/TOWN : Andover COUNT DATE : Sep-18

DISTRICT : 4 UNSIGNALIZED :  YES  SIGNALIZED :  NO

~ INTERSECTION DATA ~

MAJOR STREET : Dascomb Road  
MINOR STREET(S) : I-93 Northbound Ramps

**INTERSECTION  
DIAGRAM**  
(Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	978	531	644			2,153

" K " FACTOR :  0.082 INTERSECTION ADT ( **V** ) = TOTAL DAILY APPROACH VOLUME :  26,256

TOTAL # OF CRASHES :  33 # OF YEARS :  7 AVERAGE # OF CRASHES PER YEAR ( **A** ) :  4.71

CRASH RATE CALCULATION :  0.49 RATE = 
$$\frac{( A * 1,000,000 )}{( V * 365 )}$$

Comments : K Factor based on ATR counts along Dascomb Road

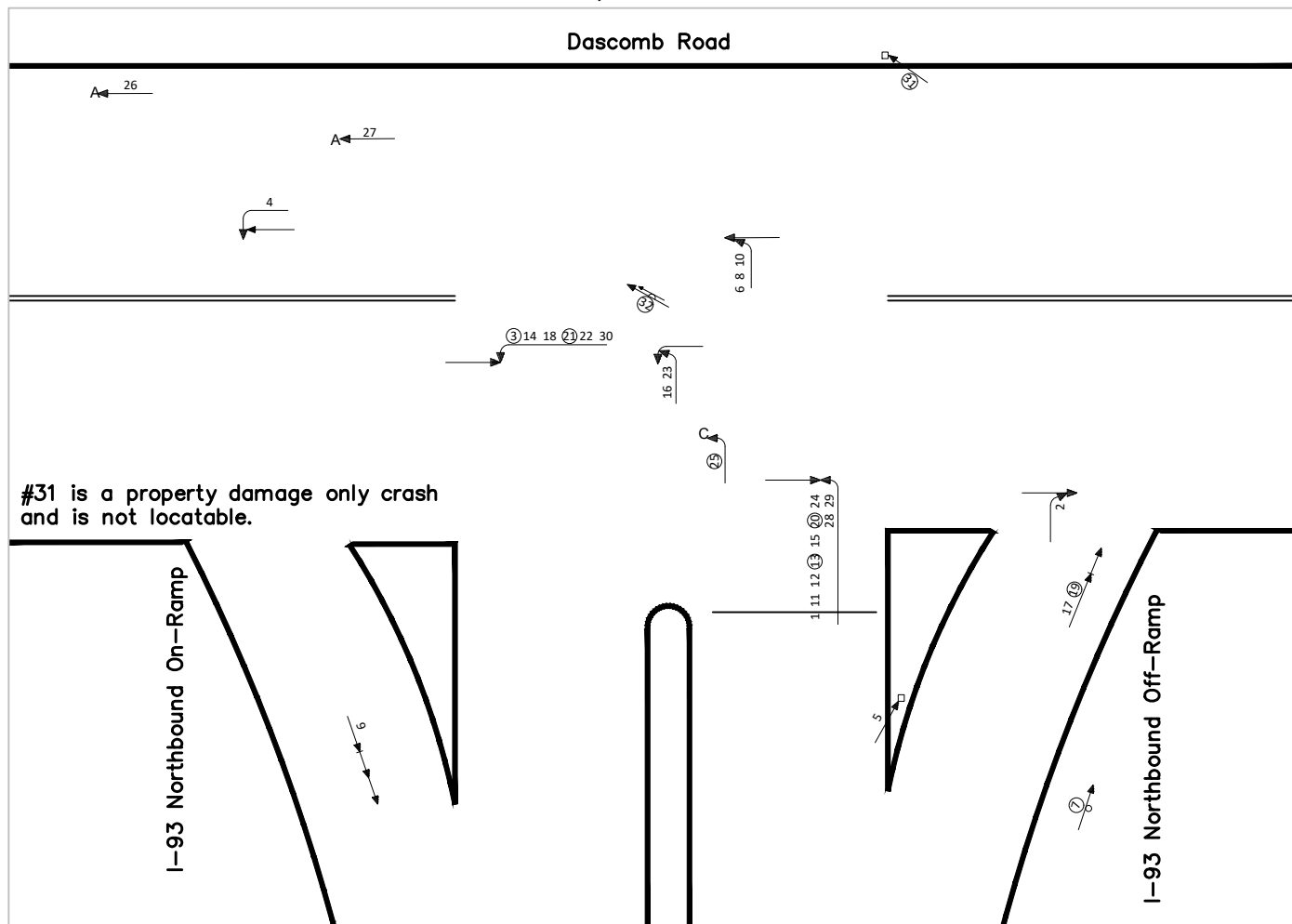
Project Title & Date: The Dascomb Road Project (#146 Dascomb Road)



Not to Scale

# The Dascomb Road Project (#146 Dascomb Road) - Andover, Massachusetts Traffic Impact, Access and Parking Study (TIAPS)

LOCATION: Dascomb Road @ I-93 Northbound Ramps  
 CITY/STATE: Andover, Massachusetts  
 TIME PERIOD: 01/01/2011- 12/31/2017  
 PREPARED BY: TEC, Inc. / Eindra (Elena) Aung, E.I.T., Danah Hamzeh  
 SOURCE: MassDOT / Town of Andover Police Department



LEGEND			SHOW FOR COLLISION	
→	VEHICLE PATH	↔	HEAD-ON COLLISION	1. Approximate location of collision, 2. Direction of collision, 3. Type of collision and vehicles involved, 4. Time, Day, Date 5. Any other pertinent factors mentioned on the report.
←←	BACKING VEHICLE	↘	ANGLED COLLISION	
↔↔	SIDESWIPE COLLISION	→	FIXED OBJECT COLLISION	
→P	PEDESTRIAN COLLISION	→○	OVERTURNED VEHICLE	
→C	CYCLIST COLLISION	→○	PERSONAL INJURY	
→→	REAR-END COLLISION	→○	FATALITY	
		→○	OUT-OF-CONTROL VEHICLE	
		□	FIXED OBJECT	
		⊠	MOVEABLE OBJECT	
		▨	PARKED VEHICLE	

### SUMMARY OF CRASHES ON DIAGRAM [no fatal collisions]

	REAR-END	SIDESWIPE	HEAD-ON	ANGLED	SINGLE VEH	PED/BIKE	OTHER / UNK	TOTAL
PROPERTY DAMAGE ONLY	2	0	1	17	1	0	2	23
NON-FATAL INJURY	1	1	0	5	2	1	0	10
UNKNOWN / NOT REPORTED	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>22</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>33</b>

Figure G-3

Collision Diagrams  
2011-2017 Collision Data





**Crash Data Summary Tables**  
**Frontage Road @ I-93 Southbound Ramps - Andover, MA**  
**01/01/2011 - 12/31/2017**

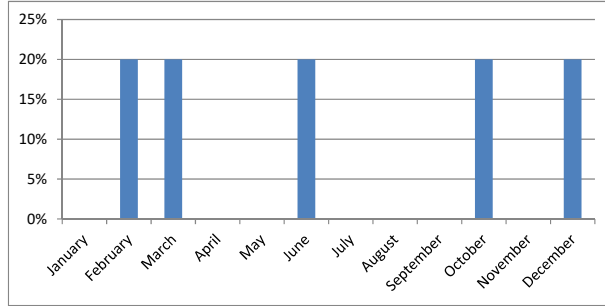
No.	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							v1	v2	v3	v4					
1	2/20/2015	3:00 PM	Daylight	Clear	Dry	2	W	S			Property Damage Only	0	Angled	Disregarded Traffic Controls	MV1: exiting I-93SB off-ramp; MV2: traveling SB on Frontage Rd. MV1 struck MV2 when MV1 attempted to turn left onto Frontage Rd from the ramp causing MV2 to get towed.
2	3/30/2015	9:01 PM	Dark - Lighted	Cloudy	Dry	2	W	W			Property Damage Only	0	Rear-end	Not Reported	MV1 and MV2: traveling WB on I-93SB off-ramp. MV2 rear-ended MV1 when MV1 was stopped at the stop sign to turn left onto Frontage Rd. Both vehicles sustained minor damages.
3	10/16/2015	8:20 AM	Daylight	Cloudy	Wet	2	S	W			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1: traveling SB on Frontage Rd; MV2: exiting I-93SB off-ramp. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd from the ramp.
4	6/29/2016	9:29 AM	Daylight	Clear	Dry	2	S	W			Property Damage Only	0	Angled	No Improper Driving	MV1: traveling SB on Frontage Rd; MV2: exiting I-93SB off-ramp. MV2 struck MV1 when MV2 attempted to turn left onto Frontage Rd from the ramp. Both vehicles received damages estimated to be over \$1000.
5	12/14/2017	8:29 AM	Daylight	Cloudy	Dry	2	S	W			Property Damage Only	0	Angled	Visibility Obstructed	MV1 was traveling south on Frontage Rd. MV2 was stopped on the off ramp attempting to turn left onto Frontage Rd. MV1 attempted to turn left onto the on ramp. As MV1 began to turn, MV2 crashed into MV1.

**Crash Data Summary Tables**  
**Frontage Road @ I-93 Southbound Ramps - Andover, MA**  
**01/01/2011 - 12/31/2017**

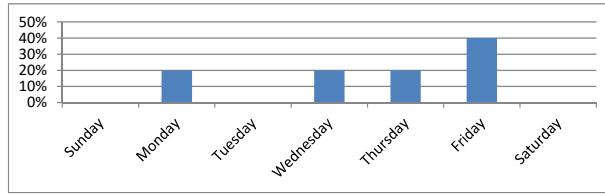
**Frontage Road @ I-93 South Ramps**

5

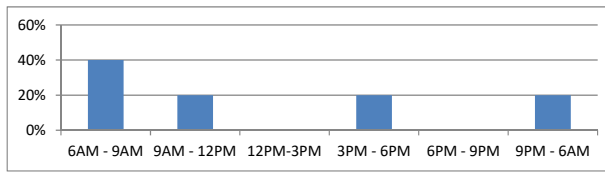
Month	#	%
January	0	0%
February	1	20%
March	1	20%
April	0	0%
May	0	0%
June	1	20%
July	0	0%
August	0	0%
September	0	0%
October	1	20%
November	0	0%
December	1	20%



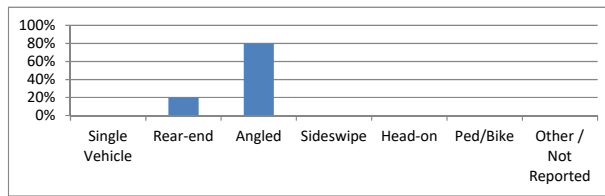
Day of Week	#	%
Sunday	0	0%
Monday	1	20%
Tuesday	0	0%
Wednesday	1	20%
Thursday	1	20%
Friday	2	40%
Saturday	0	0%



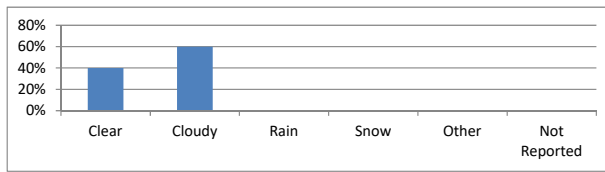
Time of Day	#	%
6AM - 9AM	2	40%
9AM - 12PM	1	20%
12PM-3PM	0	0%
3PM - 6PM	1	20%
6PM - 9PM	0	0%
9PM - 6AM	1	20%



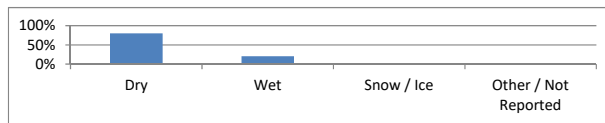
Manner of Collision	#	%
Single Vehicle	0	0%
Rear-end	1	20%
Angled	4	80%
Sideswipe	0	0%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	0	0%



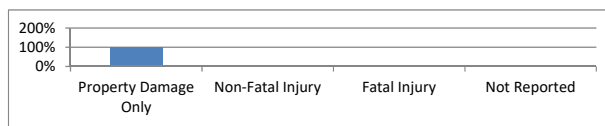
Weather Conditions	#	%
Clear	2	40%
Cloudy	3	60%
Rain	0	0%
Snow	0	0%
Other	0	0%
Not Reported	0	0%



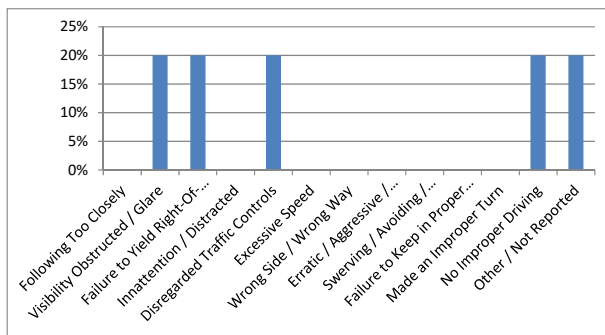
Road Surface	#	%
Dry	4	80%
Wet	1	20%
Snow / Ice	0	0%
Other / Not Reported	0	0%



Crash Severity	#	%
Property Damage Only	5	100%
Non-Fatal Injury	0	0%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	1	20%
Failure to Yield Right-Of-Way	1	20%
Innattention / Distracted	0	0%
Disregarded Traffic Controls	1	20%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	0	0%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	1	20%
Other / Not Reported	1	20%







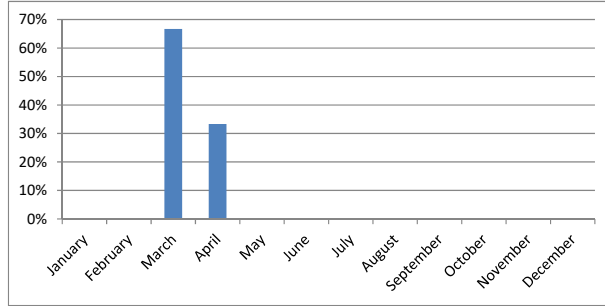
Crash Data Summary Tables  
 Dascomb Road @ Lovejoy Road / Acorn Drive - Andover, MA  
 01/01/2015 - 12/31/2017

No.	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							v1	v2	v3	v4					
1	3/15/2015	5:30 PM	Dusk	Snow	Snow	1	E				Property Damage Only		Single Vehicle	Other	Near 104 Dascomb Road: MV1 swerved off the roadway and struck National Grid utility pole during white out conditions. MV1 was inventoried and then towed. It didn't seem to be speeding.
2	3/21/2015	9:16 AM	Daylight	Snow	Snow	2	W	S			Property Damage Only	0	Sideswipe	Swerving / Avoiding	MV1 was traveling west on Dascomb Rd at intersection. MV2 was stopped at red light on Lovejoy Rd. Due to weather conditions, MV1 tried to slow down as making the right turn but lost control and collided with MV2.
3	4/22/2016	2:35 PM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	

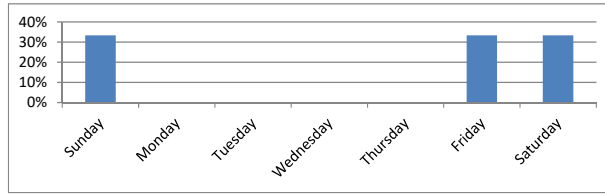
**Crash Data Summary Tables**  
**Dascomb Road @ Lovejoy Road / Acorn Drive - Andover, MA**  
**01/01/2015 - 12/31/2017**

**Dascomb Road @ Lovejoy Road / Acorn Drive** 3

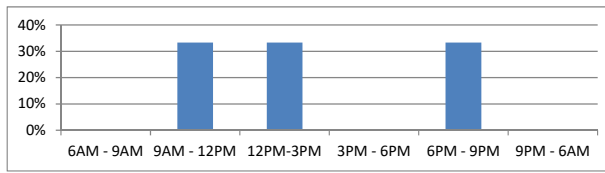
Month	#	%
January	0	0%
February	0	0%
March	2	67%
April	1	33%
May	0	0%
June	0	0%
July	0	0%
August	0	0%
September	0	0%
October	0	0%
November	0	0%
December	0	0%



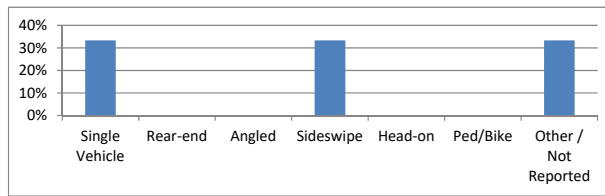
Day of Week	#	%
Sunday	1	33%
Monday	0	0%
Tuesday	0	0%
Wednesday	0	0%
Thursday	0	0%
Friday	1	33%
Saturday	1	33%



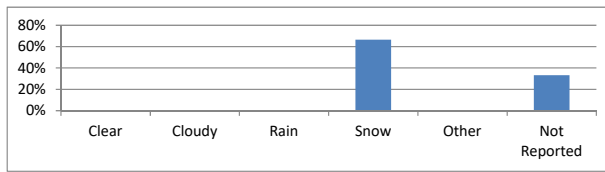
Time of Day	#	%
6AM - 9AM	0	0%
9AM - 12PM	1	33%
12PM-3PM	1	33%
3PM - 6PM	0	0%
6PM - 9PM	1	33%
9PM - 6AM	0	0%



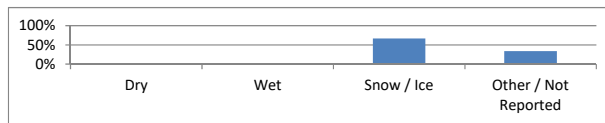
Manner of Collision	#	%
Single Vehicle	1	33%
Rear-end	0	0%
Angled	0	0%
Sideswipe	1	33%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	1	33%



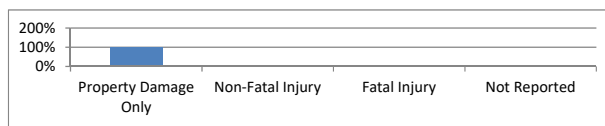
Weather Conditions	#	%
Clear	0	0%
Cloudy	0	0%
Rain	0	0%
Snow	2	67%
Other	0	0%
Not Reported	1	33%



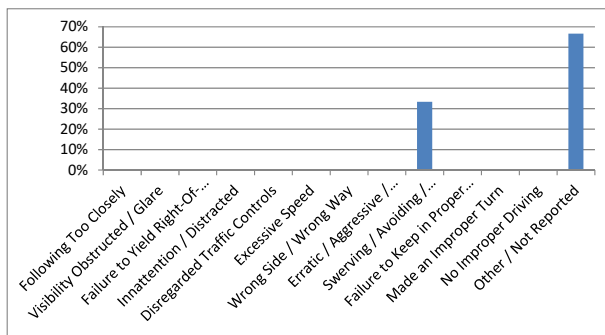
Road Surface	#	%
Dry	0	0%
Wet	0	0%
Snow / Ice	2	67%
Other / Not Reported	1	33%



Crash Severity	#	%
Property Damage Only	3	100%
Non-Fatal Injury	0	0%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	0	0%
Innattention / Distracted	0	0%
Disregarded Traffic Controls	0	0%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	0	0%
Swerving / Avoiding / Over-Steering / Over-Correcting	1	33%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	0	0%
Other / Not Reported	2	67%



## INTERSECTION CRASH RATE WORKSHEET

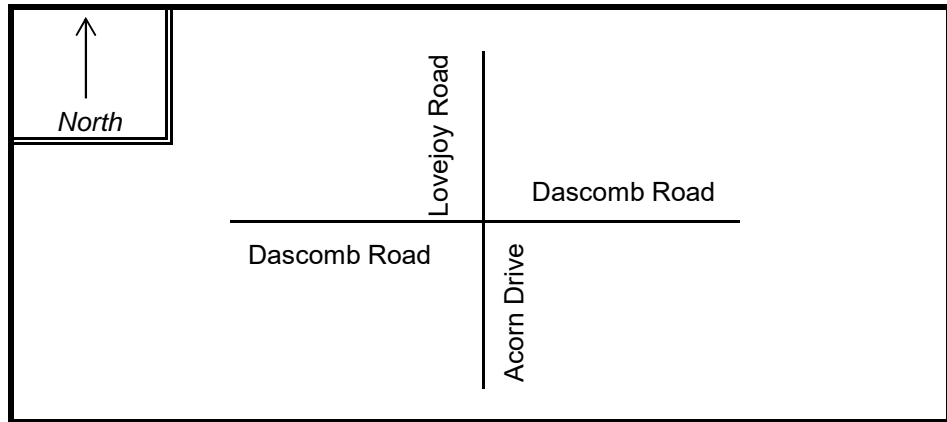
---

CITY/TOWN : Andover COUNTY : \_\_\_\_\_ COUNT DATE : Sep-18  
 DISTRICT : 4 UNSIGNALIZED :  NO  SIGNALIZED :  YES

~ INTERSECTION DATA ~

MAJOR STREET : Dascomb Road  
 MINOR STREET(S) : Lovejoy Road  
Acorn Drive

**INTERSECTION  
 DIAGRAM  
 (Label Approaches)**



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	628	663	15	179		1,485

" K " FACTOR :	<b>0.093</b>	INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :	<b>15,968</b>
----------------	--------------	--	---------------

TOTAL # OF CRASHES :	<b>3</b>	# OF YEARS :	<b>3</b>	AVERAGE # OF CRASHES PER YEAR ( A ) :	<b>1.00</b>
----------------------	----------	--------------	----------	---------------------------------------	-------------

**CRASH RATE CALCULATION :**     **0.17**     RATE =  $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : K Factor based on ATR counts along Dascomb Road

Project Title & Date: The Dascomb Road Project (#146 Dascomb Road)



Crash Data Summary Tables  
 Dascomb Road @ Clark Road / Bannister Road - Andover, MA  
 01/01/2015 - 12/31/2017

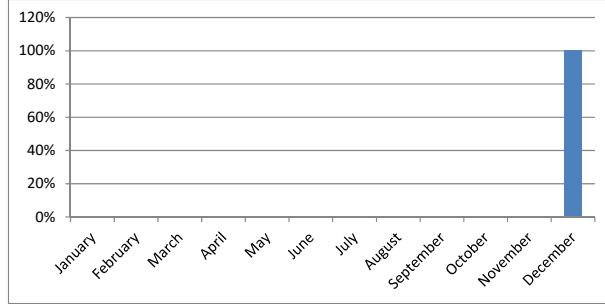
No.	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							V1	V2	V3	V4					
1	12/23/2017	11:00 PM	Not Reported	Not Reported	Not Reported	1					Property Damage Only	0	Not Reported		

**Crash Data Summary Tables**  
**Dascomb Road @ Clark Road / Bannister Road - Andover, MA**  
**01/01/2015 - 12/31/2017**

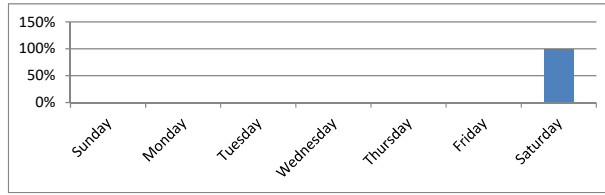
**Dascomb Road @ Clark Road / Bannister Road**

1

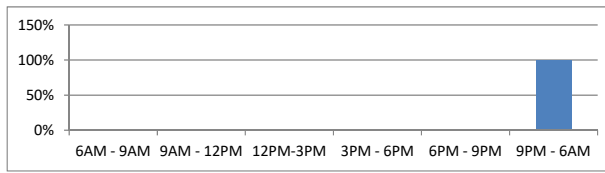
Month	#	%
January	0	0%
February	0	0%
March	0	0%
April	0	0%
May	0	0%
June	0	0%
July	0	0%
August	0	0%
September	0	0%
October	0	0%
November	0	0%
December	1	100%



Day of Week	#	%
Sunday	0	0%
Monday	0	0%
Tuesday	0	0%
Wednesday	0	0%
Thursday	0	0%
Friday	0	0%
Saturday	1	100%



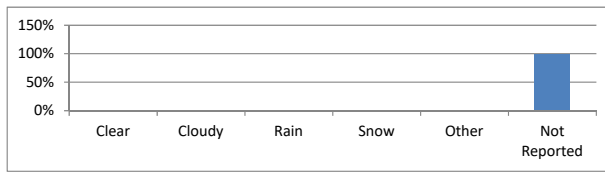
Time of Day	#	%
6AM - 9AM	0	0%
9AM - 12PM	0	0%
12PM-3PM	0	0%
3PM - 6PM	0	0%
6PM - 9PM	0	0%
9PM - 6AM	1	100%



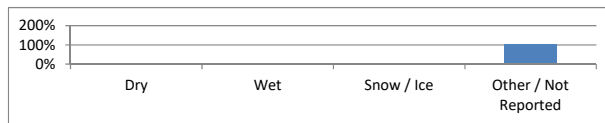
Manner of Collision	#	%
Single Vehicle	0	0%
Rear-end	0	0%
Angled	0	0%
Sideswipe	0	0%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	1	100%



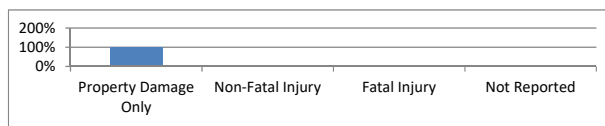
Weather Conditions	#	%
Clear	0	0%
Cloudy	0	0%
Rain	0	0%
Snow	0	0%
Other	0	0%
Not Reported	1	100%



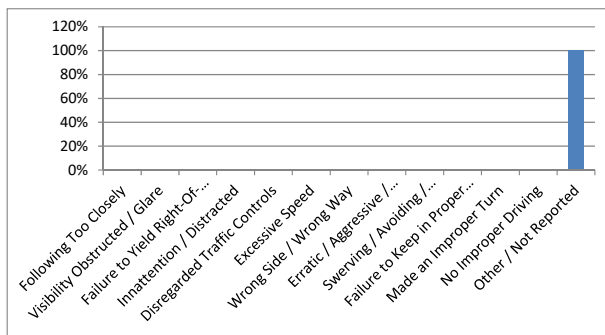
Road Surface	#	%
Dry	0	0%
Wet	0	0%
Snow / Ice	0	0%
Other / Not Reported	1	100%



Crash Severity	#	%
Property Damage Only	1	100%
Non-Fatal Injury	0	0%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	0	0%
Innattention / Distracted	0	0%
Disregarded Traffic Controls	0	0%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	0	0%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	0	0%
Other / Not Reported	1	100%



## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover COUNT DATE : Sep-18

DISTRICT : 4 UNSIGNALIZED :  **YES** SIGNALIZED :  **NO**

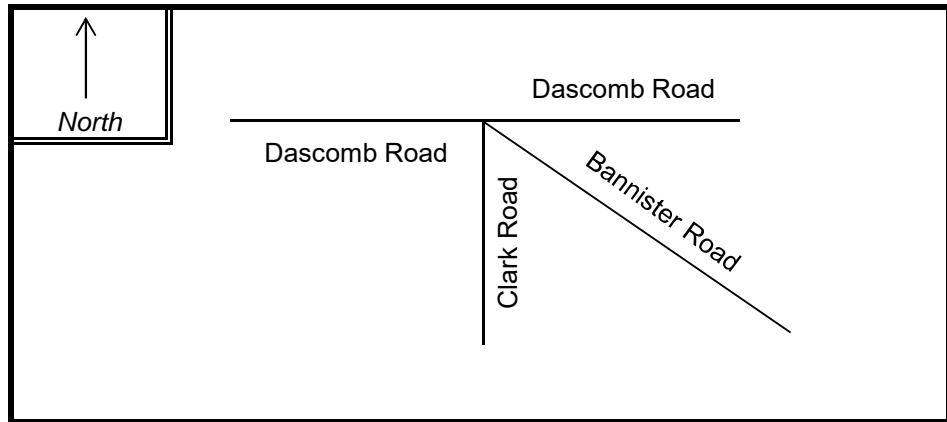
~ INTERSECTION DATA ~

MAJOR STREET : Dascomb Road

MINOR STREET(S) : Clark Road

Bannister Road

**INTERSECTION  
 DIAGRAM**  
 (Label Approaches)



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	NWB		
PEAK HOURLY VOLUMES (PM) :	637	405	281			1,323

" K " FACTOR :  INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES :  # OF YEARS :  AVERAGE # OF CRASHES PER YEAR ( A ) :

**CRASH RATE CALCULATION :**

**0.06**

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : K Factor based on ATR counts along Dascomb Road

Project Title & Date: The Dascomb Road Project (#146 Dascomb Road)



**Crash Data Summary Tables**  
**Dascomb Road @ Andover Street - Andover, MA**  
**01/01/2015 - 12/31/2017**

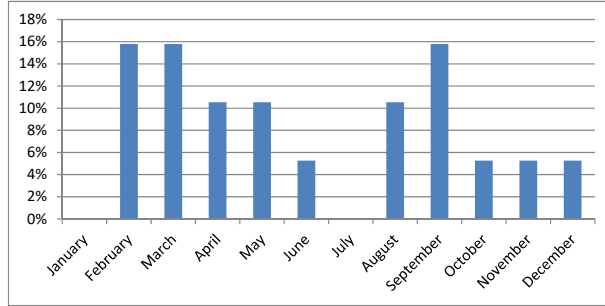
Collision Diagram	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Vehicle Travel Directions				Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
							v1	v2	v3	v4					
1	2/6/2015	2:54 PM	Daylight	Clear	Dry	2	N	W			Property Damage Only	0	Angled	Swerving / Avoiding	MV1 was traveling north on Andover St when it was struck by MV2 which was attempting to exit Wingate Nursing Home driveway. MV2 stated his vehicle was stuck in a snow bank and when it gained traction, it was late to stop.
2	2/23/2015	3:54 PM	Daylight	Clear	Dry	2	S	E			Property Damage Only	0	Angled	Visibility Obstructed	MV1 traveling south on Andover Street. MV2 stopped facing east at stop sign on Dascomb Road. MV2 could not see because of snow bank and collided with MV1 while turning left.
3	5/13/2015	7:07 PM	Daylight	Clear	Dry	1	N				Property Damage Only	0	Angled	No Improper Driving	Near #90 Andover Street: MV1 traveling NB on Andover St as a deer crossed the roadway and collided with the vehicle
4	5/19/2016	5:47 PM	Daylight	Clear	Dry	2	S	N			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1 was traveling SB straight ahead with the right of way on Andover St. MV2 was traveling NB turning left onto Dascomb Rd. MV2 failed to yield to oncoming traffic while turning left
5	6/1/2016	3:59 PM	Daylight	Clear	Dry	2	S	N			Property Damage Only	0	Angled	Failure to Yield Right-of-Way	MV1 was traveling south on Andover St. MV2 was turning left from Andover St onto Dascomb St. MV1 crashed into MV2
6	12/20/2016	3:31 PM	Daylight	Cloudy	Dry	2	S	E			Property Damage Only	0	Angled	Visibility Obstructed	MV1 was traveling south on Andover St. MV2 was stopped at stop sign on Dascomb Rd, MV2 entered onto Andover St and collided with MV1 because it could not see vehicle.
7	2/7/2017	12:41 PM	Daylight	Snow	Snow	2	S	W			Property Damage Only	0	Angled	Erratic / Aggressive / Reckless Driving	MV1 was traveling south on Andover St. MV2 exited parking lot and crashed into driver side of MV1.
8	3/12/2017	12:50 PM	Daylight	Clear	Dry	2	E	E			Property Damage Only	0	Rear-end	Followed Too Closely	MV1 was stopped facing east at the stop sign on Dascomb Rd. MV2 stopped directly behind MV1. MV1 began to take a left onto Andover St and MV2 collided into the bumper
9	9/23/2015	6:35 AM	Daylight	Clear	Dry	2	S	N			Non-fatal Injury	9	Head-on	Failure to Yield Right-of-Way	MV1 was traveling south on Andover St. MV2 was traveling north on Andover St. MV2 attempted to make a left turn onto Dascomb Rd and struck MV1.
10	10/20/2015	7:05 AM	Daylight	Cloudy	Wet	2	S	E			Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	MV1 was traveling south on Andover St. MV2 stopped at stop sign on Dascomb Rd and pulled out in front of MV1. MV1 was unable to stop in time and collided with MV2.
11	8/19/2017	11:59 AM	Daylight	Clear	Dry	3	N	S	N		Non-fatal Injury	3	Head-on	Made an Improper Turn	MV1 was traveling NB on Andover Street, slowed down and attempted to take a left onto Dascomb Rd. MV2 was traveling SB on Andover St when MV1 took the left cutting MV2 off, causing MV2 to turn into the NB lane and to collide head on with MV3.
12	8/4/2016	4:40 PM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
13	9/18/2017	6:10 AM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
14	11/25/2016	12:33 PM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
15	9/18/2017	6:10 AM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
16	3/18/2015	3:10 PM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
17	4/21/2016	4:45 PM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
18	3/18/2015	3:10 PM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	
19	4/21/2016	4:45 PM	Not Reported	Not Reported	Not Reported						Property Damage Only		Not Reported	Not Reported	

**Crash Data Summary Tables**  
**Dascomb Road @ Andover Street - Andover, MA**  
**01/01/2015 - 12/31/2017**

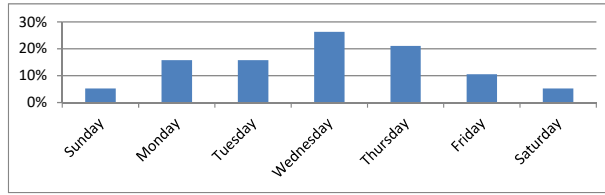
**Dascomb Road @ Andover Street**

19

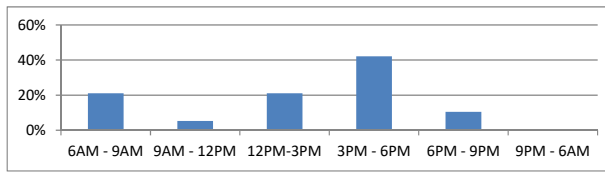
Month	#	%
January	0	0%
February	3	16%
March	3	16%
April	2	11%
May	2	11%
June	1	5%
July	0	0%
August	2	11%
September	3	16%
October	1	5%
November	1	5%
December	1	5%



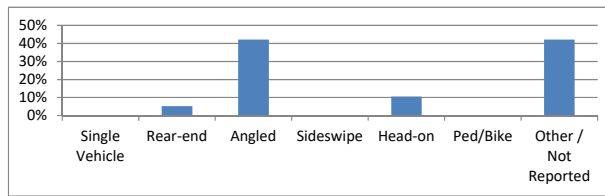
Day of Week	#	%
Sunday	1	5%
Monday	3	16%
Tuesday	3	16%
Wednesday	5	26%
Thursday	4	21%
Friday	2	11%
Saturday	1	5%



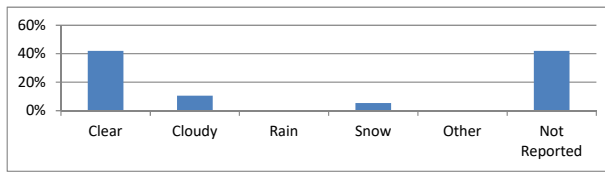
Time of Day	#	%
6AM - 9AM	4	21%
9AM - 12PM	1	5%
12PM-3PM	4	21%
3PM - 6PM	8	42%
6PM - 9PM	2	11%
9PM - 6AM	0	0%



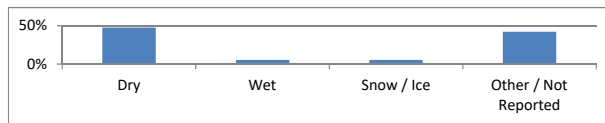
Manner of Collision	#	%
Single Vehicle	0	0%
Rear-end	1	5%
Angled	8	42%
Sideswipe	0	0%
Head-on	2	11%
Ped/Bike	0	0%
Other / Not Reported	8	42%



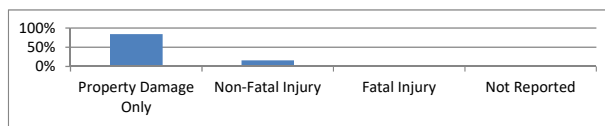
Weather Conditions	#	%
Clear	8	42%
Cloudy	2	11%
Rain	0	0%
Snow	1	5%
Other	0	0%
Not Reported	8	42%



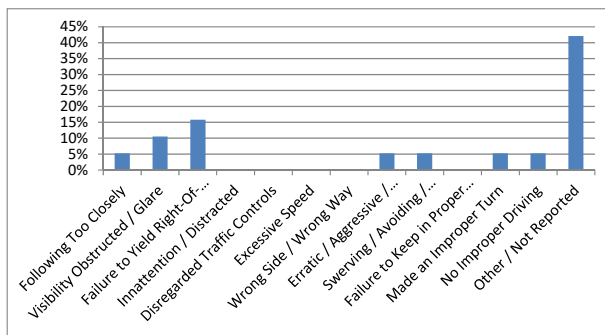
Road Surface	#	%
Dry	9	47%
Wet	1	5%
Snow / Ice	1	5%
Other / Not Reported	8	42%



Crash Severity	#	%
Property Damage Only	16	84%
Non-Fatal Injury	3	16%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	1	5%
Visibility Obstructed / Glare	2	11%
Failure to Yield Right-Of-Way	3	16%
Innattention / Distracted	0	0%
Disregarded Traffic Controls	0	0%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	1	5%
Swerving / Avoiding / Over-Steering / Over-Correcting	1	5%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	1	5%
No Improper Driving	1	5%
Other / Not Reported	8	42%



## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover COUNT DATE : Sep-18

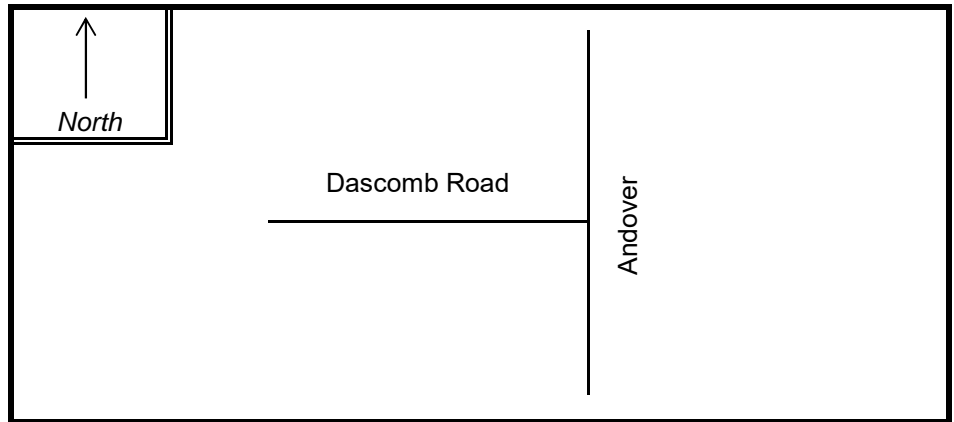
DISTRICT : 4 UNSIGNALIZED :  **YES**  SIGNALIZED :  **NO**

~ INTERSECTION DATA ~

MAJOR STREET : Dascomb Road

MINOR STREET(S) : Andover Street

**INTERSECTION  
 DIAGRAM  
 (Label Approaches)**



**PEAK HOUR VOLUMES**

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	401		437	408		1,246

" K " FACTOR :  INTERSECTION ADT ( V ) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES :  # OF YEARS :  AVERAGE # OF CRASHES PER YEAR ( A ) :

**CRASH RATE CALCULATION :**  RATE =  $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : K Factor based on ATR counts along Frontage Road

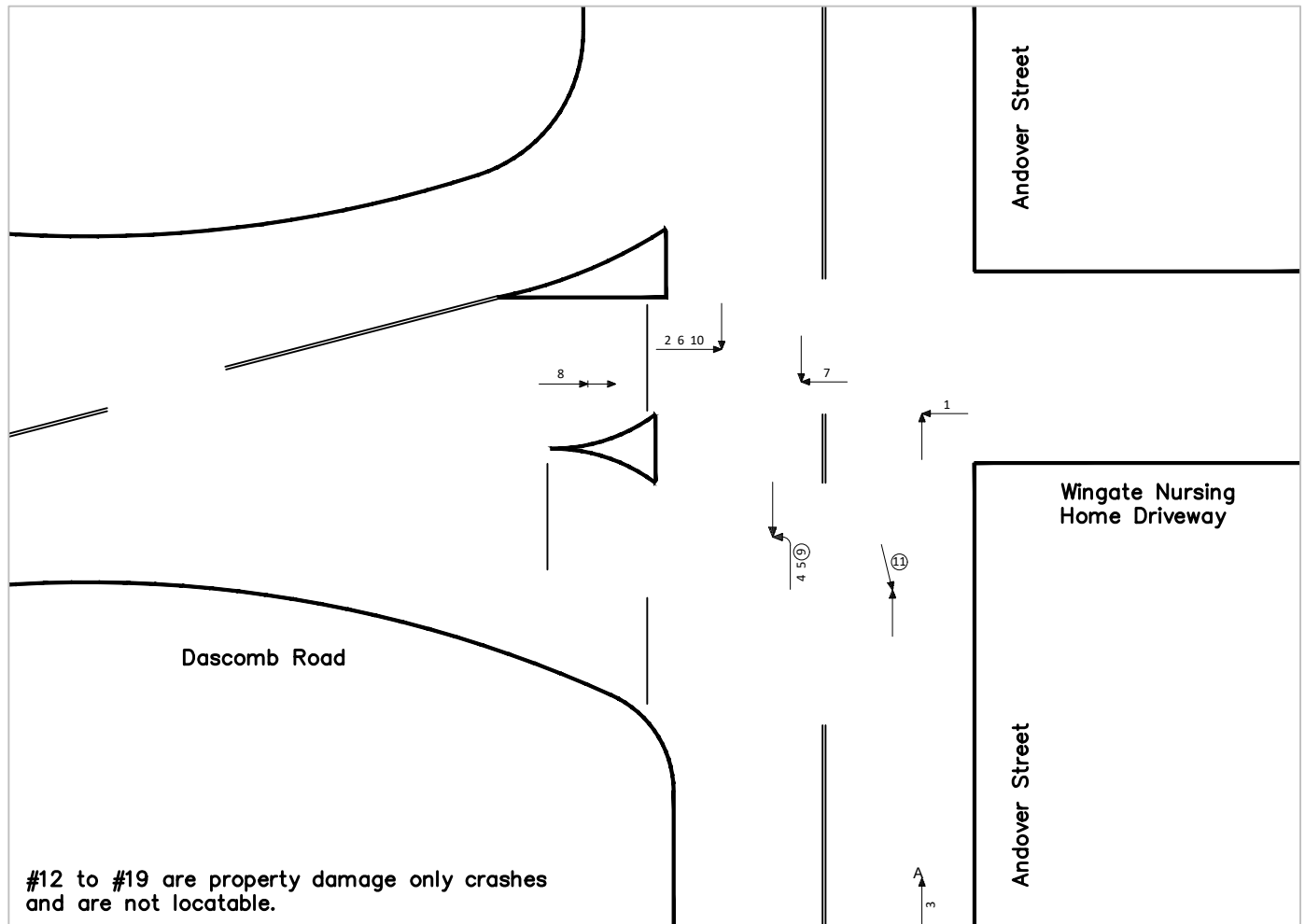
Project Title & Date: The Dascomb Road Project (#146 Dascomb Road)



Not to Scale

# The Dascomb Road Project (#146 Dascomb Road) - Andover, Massachusetts Traffic Impact, Access and Parking Study (TIAPS)

LOCATION: Dascomb Road @ Andover Street  
 CITY/STATE: Andover, Massachusetts  
 TIME PERIOD: 01/01/2011- 12/31/2017  
 PREPARED BY: TEC, Inc. / Eindra (Elena) Aung, E.I.T.  
 SOURCE: Town of Andover Police Department



LEGEND			SHOW FOR COLLISION
→	VEHICLE PATH	↔	1. Approximate location of collision, 2. Direction of collision, 3. Type of collision and vehicles involved, 4. Time, Day, Date 5. Any other pertinent factors mentioned on the report.
←←	BACKING VEHICLE	↘	
↔↔	SIDESWIPE COLLISION	→□	
→P	PEDESTRIAN COLLISION	→○	
→C	CYCLIST COLLISION	↘○	
→→	REAR-END COLLISION	↘	
↔↔	HEAD-ON COLLISION	□	
↘	ANGLED COLLISION	⊠	
→□	FIXED OBJECT COLLISION	▨	
→○	OVERTURNED VEHICLE	○	
↘	OUT-OF-CONTROL VEHICLE	○	
		A	ANIMAL

### SUMMARY OF CRASHES ON DIAGRAM [no fatal collisions]

	REAR-END	SIDESWIPE	HEAD-ON	ANGLED	SINGLE VEH	PED/BIKE	OTHER / UNK	TOTAL
PROPERTY DAMAGE ONLY	1	0	0	7	0	0	8	16
NON-FATAL INJURY	0	0	2	1	0	0	0	3
UNKNOWN / NOT REPORTED	0	0	0	0	0	0	0	0
<b>TOTAL</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>19</b>

Figure G-4

Collision Diagrams  
2011-2017 Collision Data



## **Appendix G**

Ambient Growth Rate Data



**Average Daily Traffic Summary Table**

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA  
 Date: 9/14/2018  
 Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T. / Danah Hamzeh  
 Source: MassDOT Permanent Count Stations

STA.	TOWN	ROUTE/STREET	LOCATION	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Amb. Growth
ATRs	ANDOVER	FRONTAGE ROAD	SOUTH OF 1-93 SB RAMPS									16633		16920	0.86%
5022	ANDOVER	I-93	NORTH OF RTE. 125	136203	134844	137116		135921	136213	136495	142104	145189	151255		1.19%
															1.02%

Assume 1.0% Seasonal Adjustment.



## **Appendix H**

2016 Automatic Traffic Recorder (ATR) Counts





PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road EB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
EB

165301 A EB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/06/1														
6	2	35	13	1	4	1	0	0	0	0	0	0	0	56
01:00	2	59	13	1	2	2	0	0	4	0	0	0	0	83
02:00	2	36	6	2	2	1	0	0	5	0	0	0	0	54
03:00	2	22	10	2	7	3	0	0	0	0	0	0	0	46
04:00	5	84	31	3	15	5	0	1	4	0	0	0	0	148
05:00	10	308	120	2	47	14	1	0	26	0	0	0	0	528
06:00	7	399	126	3	33	14	1	2	9	0	0	0	0	594
07:00	14	700	156	21	41	14	1	3	9	0	0	0	0	959
08:00	15	572	134	6	36	11	0	3	9	0	0	0	0	786
09:00	15	454	135	12	31	15	0	6	12	0	0	0	0	680
10:00	16	409	151	13	52	18	1	8	23	0	0	0	0	691
11:00	14	438	150	10	50	13	0	5	9	0	0	0	0	689
12 PM	14	425	124	7	38	16	0	2	15	0	0	0	0	641
13:00	10	469	150	9	48	16	0	3	9	0	0	0	0	714
14:00	11	563	171	12	43	16	1	4	10	0	0	0	0	831
15:00	13	693	201	8	63	11	0	4	5	0	0	0	0	998
16:00	6	773	211	5	45	1	0	4	3	0	0	0	0	1048
17:00	10	865	166	3	35	1	0	5	2	0	0	0	0	1087
18:00	10	763	157	3	41	3	0	2	2	0	0	0	0	981
19:00	7	471	94	2	23	0	0	2	1	0	0	0	0	600
20:00	7	304	77	0	5	7	0	0	1	0	0	0	0	401
21:00	5	241	51	1	8	1	0	0	0	0	0	0	0	307
22:00	4	127	22	0	6	3	0	0	6	0	0	0	0	168
23:00	4	116	17	0	4	1	0	0	0	0	0	0	0	142
Percent	1.5%	70.5%	18.8%	1.0%	5.1%	1.4%	0.0%	0.4%	1.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	07:00	07:00	07:00	10:00	10:00	05:00	10:00	05:00					07:00
Vol.	16	700	156	21	52	18	1	8	26					959
PM Peak	12:00	17:00	16:00	14:00	15:00	12:00	14:00	17:00	12:00					17:00
Vol.	14	865	211	12	63	16	1	5	15					1087



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road EB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
EB

165301 A EB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/07/1														
6	1	44	4	0	1	1	0	0	1	0	0	0	0	52
01:00	4	51	7	0	1	5	0	1	1	0	0	0	0	70
02:00	2	14	6	0	4	2	0	0	1	0	0	0	0	29
03:00	1	20	9	4	4	1	0	0	5	0	0	0	0	44
04:00	10	89	25	1	16	12	0	0	25	0	0	0	0	178
05:00	11	279	109	2	42	12	1	0	11	0	0	0	1	468
06:00	10	363	128	8	41	14	1	4	14	0	0	0	0	583
07:00	12	660	172	10	46	10	1	12	11	0	0	0	0	934
08:00	13	627	154	5	35	15	0	6	7	0	0	0	0	862
09:00	24	485	147	7	33	16	0	6	19	0	0	0	0	737
10:00	16	430	137	13	50	18	0	6	19	0	0	0	0	689
11:00	19	437	139	15	45	15	0	6	15	0	0	0	0	691
12 PM	16	519	140	10	37	15	1	13	17	0	0	0	0	768
13:00	16	542	165	16	40	13	1	8	11	0	0	0	0	812
14:00	15	602	200	15	51	12	0	2	3	0	0	0	0	900
15:00	7	794	212	7	42	6	0	2	2	0	0	0	0	1072
16:00	12	776	186	4	43	7	0	8	3	0	0	0	0	1039
17:00	12	906	175	6	43	4	0	8	0	0	0	0	0	1154
18:00	10	763	168	4	27	1	0	2	1	0	0	0	0	976
19:00	5	449	85	0	22	2	0	1	0	0	0	0	0	564
20:00	5	287	65	1	9	4	0	0	4	0	0	0	0	375
21:00	3	154	33	0	10	1	0	0	1	0	0	0	0	202
22:00	1	250	55	0	16	1	0	0	2	0	0	0	0	325
23:00	0	211	29	1	10	0	0	0	0	0	0	0	0	251
Percent	1.6%	70.8%	18.5%	0.9%	4.8%	1.4%	0.0%	0.6%	1.3%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	07:00	11:00	10:00	10:00	05:00	07:00	04:00				05:00	07:00
Vol.	24	660	172	15	50	18	1	12	25				1	934
PM Peak	12:00	17:00	15:00	13:00	14:00	12:00	12:00	12:00	12:00					17:00
Vol.	16	906	212	16	51	15	1	13	17					1154



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road EB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
EB

165301 A EB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/08/1														
6	0	128	19	0	6	0	0	0	2	0	0	0	0	155
01:00	2	61	8	0	2	2	0	0	0	0	0	0	0	75
02:00	0	17	7	0	0	0	0	0	0	0	0	0	0	24
03:00	0	26	8	1	5	0	0	0	0	0	0	0	0	40
04:00	1	48	19	0	7	1	0	1	1	0	0	0	0	78
05:00	5	97	37	1	6	11	0	0	19	0	0	0	0	176
06:00	3	156	61	5	18	6	1	0	5	0	0	0	0	255
07:00	3	309	102	5	37	3	0	1	0	0	0	0	0	460
08:00	1	427	130	5	33	7	0	1	2	0	0	0	0	606
09:00	6	508	149	1	29	7	0	5	2	0	0	0	0	707
10:00	4	579	142	3	33	8	0	3	5	0	0	0	0	777
11:00	9	667	189	2	41	7	0	5	2	0	0	0	0	922
12 PM	4	638	160	3	22	3	0	3	3	0	0	0	0	836
13:00	15	585	145	2	36	1	1	5	0	0	0	0	0	790
14:00	4	544	144	0	31	2	0	0	0	0	0	0	0	725
15:00	6	652	124	0	28	1	1	3	0	0	0	0	0	815
16:00	4	516	97	1	30	0	0	3	0	0	0	0	0	651
17:00	3	479	92	1	19	0	0	3	0	0	0	0	0	597
18:00	0	374	80	2	24	1	0	0	0	0	0	0	0	481
19:00	0	299	62	0	12	0	0	0	1	0	0	0	0	374
20:00	2	196	45	0	9	0	0	0	0	0	0	0	0	252
21:00	0	194	32	2	5	0	0	0	0	0	0	0	0	233
22:00	0	145	25	0	4	0	0	0	0	0	0	0	0	174
23:00	0	126	18	0	5	0	0	0	0	0	0	0	0	149
Percent	0.7%	75.1%	18.3%	0.3%	4.3%	0.6%	0.0%	0.3%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	11:00	11:00	06:00	11:00	05:00	06:00	09:00	05:00					11:00
Vol.	9	667	189	5	41	11	1	5	19					922
PM Peak	13:00	15:00	12:00	12:00	13:00	12:00	13:00	13:00	12:00					12:00
Vol.	15	652	160	3	36	3	1	5	3					836



PRECISION  
D A T A  
INDUSTRIES, LLC

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Dascomb Road EB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
EB

165301 A EB Speed  
Site Code:

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
10/06/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
16	0	0	0	1	18	30	4	2	0	1	0	0	0	56	38	36
01:00	0	0	2	7	22	40	10	1	1	0	0	0	0	83	38	35
02:00	0	0	1	9	15	23	5	1	0	0	0	0	0	54	38	34
03:00	0	0	1	8	15	13	9	0	0	0	0	0	0	46	40	34
04:00	2	5	6	27	47	52	7	2	0	0	0	0	0	148	37	32
05:00	0	0	20	120	250	126	12	0	0	0	0	0	0	528	36	32
06:00	0	9	28	136	261	144	16	0	0	0	0	0	0	594	36	32
07:00	9	49	101	335	369	82	13	1	0	0	0	0	0	959	33	29
08:00	5	23	72	243	328	109	6	0	0	0	0	0	0	786	33	30
09:00	11	46	70	159	271	111	12	0	0	0	0	0	0	680	34	29
10:00	4	23	133	232	217	60	21	1	0	0	0	0	0	691	33	29
11:00	11	26	88	212	275	69	7	1	0	0	0	0	0	689	33	29
12 PM	2	19	75	210	251	74	8	2	0	0	0	0	0	641	33	29
13:00	3	15	83	255	262	85	10	1	0	0	0	0	0	714	33	29
14:00	16	26	101	294	298	87	8	1	0	0	0	0	0	831	33	29
15:00	19	76	176	327	302	80	18	0	0	0	0	0	0	998	33	28
16:00	4	15	112	331	436	141	9	0	0	0	0	0	0	1048	33	30
17:00	35	66	144	426	340	66	9	1	0	0	0	0	0	1087	32	27
18:00	5	28	123	380	357	80	8	0	0	0	0	0	0	981	33	29
19:00	0	7	50	183	238	104	16	2	0	0	0	0	0	600	35	31
20:00	0	5	11	82	182	102	17	2	0	0	0	0	0	401	36	32
21:00	0	2	10	64	127	91	11	2	0	0	0	0	0	307	37	32
22:00	0	3	5	25	82	35	12	4	2	0	0	0	0	168	37	33
23:00	0	0	4	13	54	55	13	3	0	0	0	0	0	142	38	34
Total	126	443	1416	4079	5017	1859	261	27	3	1	0	0	0	13232		
%	1.0%	3.3%	10.7%	30.8%	37.9%	14.0%	2.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	09:00	07:00	10:00	07:00	07:00	06:00	10:00	00:00	01:00	00:00					07:00	
Vol.	11	49	133	335	369	144	21	2	1	1				959		
PM Peak	17:00	15:00	15:00	17:00	16:00	16:00	15:00	22:00	22:00						17:00	
Vol.	35	76	176	426	436	141	18	4	2					1087		

Stats

15th Percentile : 23 MPH  
50th Percentile : 29 MPH  
85th Percentile : 34 MPH  
95th Percentile : 38 MPH

Mean Speed(Average) : 30 MPH  
10 MPH Pace Speed : 25-34 MPH  
Number in Pace : 9096  
Percent in Pace : 68.7%  
Number of Vehicles > 30 MPH : 6165  
Percent of Vehicles > 30 MPH : 46.6%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road EB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
EB

165301 A EB Speed  
Site Code:

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
10/07/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
16	0	0	2	9	14	19	7	0	1	0	0	0	0	52	39	34
01:00	0	0	0	9	30	21	9	1	0	0	0	0	0	70	38	34
02:00	0	0	1	8	5	9	4	1	1	0	0	0	0	29	41	34
03:00	0	0	2	9	17	12	2	2	0	0	0	0	0	44	37	33
04:00	0	0	16	36	68	37	14	7	0	0	0	0	0	178	38	33
05:00	8	14	66	108	168	86	16	2	0	0	0	0	0	468	35	30
06:00	0	3	56	156	250	104	13	1	0	0	0	0	0	583	35	31
07:00	11	21	115	367	323	90	6	1	0	0	0	0	0	934	33	29
08:00	0	17	119	269	348	96	11	2	0	0	0	0	0	862	33	29
09:00	1	19	113	217	300	81	6	0	0	0	0	0	0	737	33	29
10:00	2	23	113	223	236	79	11	2	0	0	0	0	0	689	33	29
11:00	0	6	114	233	249	81	7	1	0	0	0	0	0	691	33	29
12 PM	2	28	129	299	244	60	5	1	0	0	0	0	0	768	32	28
13:00	0	20	145	301	268	74	4	0	0	0	0	0	0	812	33	28
14:00	26	49	157	342	267	48	11	0	0	0	0	0	0	900	32	27
15:00	46	71	235	400	234	79	7	0	0	0	0	0	0	1072	32	26
16:00	18	20	105	350	416	118	9	3	0	0	0	0	0	1039	33	29
17:00	51	69	218	392	354	65	5	0	0	0	0	0	0	1154	32	27
18:00	31	73	168	375	264	59	3	3	0	0	0	0	0	976	32	27
19:00	0	0	29	155	256	104	18	2	0	0	0	0	0	564	35	31
20:00	0	0	17	85	170	84	16	3	0	0	0	0	0	375	36	32
21:00	0	0	8	39	93	46	13	2	1	0	0	0	0	202	37	33
22:00	0	2	8	63	151	83	15	3	0	0	0	0	0	325	37	33
23:00	0	1	3	54	93	71	27	2	0	0	0	0	0	251	38	33
Total	196	436	1939	4499	4818	1606	239	39	3	0	0	0	0	13775		
%	1.4%	3.2%	14.1%	32.7%	35.0%	11.7%	1.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	10:00	08:00	07:00	08:00	06:00	05:00	04:00	00:00							07:00
Vol.	11	23	119	367	348	104	16	7	1							934
PM Peak	17:00	18:00	15:00	15:00	16:00	16:00	23:00	16:00	21:00							17:00
Vol.	51	73	235	400	416	118	27	3	1							1154

Stats

15th Percentile : 22 MPH  
 50th Percentile : 28 MPH  
 85th Percentile : 33 MPH  
 95th Percentile : 37 MPH

Mean Speed(Average) : 29 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 9317  
 Percent in Pace : 67.6%  
 Number of Vehicles > 30 MPH : 5741  
 Percent of Vehicles > 30 MPH : 41.7%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road EB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
EB

165301 A EB Speed  
Site Code:

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed	
10/08/																													
16	0	2	8	24	55	54	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	155	37	33	
01:00	1	0	2	15	31	18	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75	38	33	
02:00	0	0	0	0	8	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	41	37	
03:00	0	0	1	7	9	15	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	40	35	
04:00	0	0	6	2	27	31	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	78	39	35	
05:00	0	0	3	40	73	50	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176	37	33	
06:00	0	1	8	45	93	81	24	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	255	38	33	
07:00	0	0	7	47	187	183	31	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	460	38	34	
08:00	0	1	17	128	244	185	28	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	606	37	33	
09:00	0	5	32	194	323	133	18	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	707	35	31	
10:00	12	21	69	207	322	137	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	777	35	30	
11:00	4	10	69	293	400	124	20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	922	34	30	
12 PM	5	7	61	242	370	128	22	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	836	35	31	
13:00	1	9	54	213	333	166	11	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	790	35	31	
14:00	3	2	49	183	322	151	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	725	35	31	
15:00	2	6	52	245	354	140	14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	815	35	31	
16:00	0	0	17	153	311	141	25	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	651	36	32	
17:00	0	3	17	107	275	158	34	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	597	37	33	
18:00	0	2	19	100	240	108	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	481	36	32	
19:00	0	0	10	91	168	86	17	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	374	36	32	
20:00	0	0	5	43	115	71	15	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252	37	33	
21:00	0	0	2	45	113	63	7	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	233	37	33	
22:00	0	1	5	48	72	41	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	174	36	32	
23:00	0	0	3	62	60	21	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	149	34	31	
Total	28	70	516	2534	4505	2295	357	43	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10352			
%	0.3%	0.7%	5.0%	24.5%	43.5%	22.2%	3.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	10:00	10:00	10:00	11:00	11:00	08:00	07:00	07:00	04:00																		11:00		
Vol.	12	21	69	293	400	185	31	5	1																		922		
PM Peak	12:00	13:00	12:00	15:00	12:00	13:00	17:00	16:00	15:00	19:00																	12:00		
Vol.	5	9	61	245	370	166	34	4	1	1																	836		

Stats

- 15th Percentile : 25 MPH
- 50th Percentile : 31 MPH
- 85th Percentile : 36 MPH
- 95th Percentile : 38 MPH
  
- Mean Speed(Average) : 32 MPH
- 10 MPH Pace Speed : 25-34 MPH
- Number in Pace : 7039
- Percent in Pace : 68.0%
- Number of Vehicles > 30 MPH : 6303
- Percent of Vehicles > 30 MPH : 60.9%









PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road WB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
WB

165301 A WB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/06/1														
6	2	50	13	0	2	2	0	0	3	0	0	0	0	72
01:00	2	24	3	1	0	2	0	0	4	0	0	0	0	36
02:00	1	28	6	0	3	1	0	0	1	0	0	0	0	40
03:00	1	36	11	3	4	1	0	0	2	0	0	0	0	58
04:00	4	88	22	0	11	5	0	0	4	0	0	0	0	134
05:00	9	148	62	6	21	7	0	1	2	0	0	0	0	256
06:00	19	572	162	8	32	20	0	5	8	0	0	0	0	826
07:00	16	711	155	13	29	15	0	2	13	1	0	0	0	955
08:00	21	678	146	11	37	17	0	5	6	0	0	0	0	921
09:00	28	476	140	16	28	26	1	9	9	0	0	0	0	733
10:00	14	391	137	9	39	11	1	4	8	0	0	0	0	614
11:00	13	411	137	14	35	16	3	5	8	0	0	0	0	642
12 PM	20	437	138	6	34	15	0	7	15	0	0	0	0	672
13:00	16	452	146	10	35	17	3	2	5	0	0	0	0	686
14:00	16	507	173	5	32	21	3	5	11	0	1	0	0	774
15:00	14	688	206	13	30	15	0	10	11	0	0	0	0	987
16:00	10	811	191	5	45	5	0	5	4	0	0	0	0	1076
17:00	11	882	152	2	34	2	0	10	2	0	0	0	0	1095
18:00	7	728	131	3	21	2	1	3	1	0	0	0	0	897
19:00	7	500	102	2	14	3	0	1	0	0	1	0	0	630
20:00	4	393	63	3	15	5	0	1	0	0	0	0	0	484
21:00	2	300	56	1	5	0	0	0	2	0	0	0	0	366
22:00	3	200	27	1	5	3	0	0	0	0	0	0	0	239
23:00	2	137	16	0	1	0	0	0	0	0	0	0	0	156
Percent	1.8%	72.3%	17.9%	1.0%	3.8%	1.6%	0.1%	0.6%	0.9%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	06:00	09:00	10:00	09:00	11:00	09:00	07:00	07:00				07:00
Vol.	28	711	162	16	39	26	3	9	13	1				955
PM Peak	12:00	17:00	15:00	15:00	16:00	14:00	13:00	15:00	12:00		14:00			17:00
Vol.	20	882	206	13	45	21	3	10	15		1			1095



PRECISION  
D A T A  
INDUSTRIES, LLC

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Dascomb Road WB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
WB

165301 A WB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/07/1														
6	8	74	14	1	2	4	0	0	3	0	0	0	0	106
01:00	3	33	3	0	2	1	0	0	5	0	0	0	0	47
02:00	2	16	8	0	1	2	0	0	1	0	0	0	0	30
03:00	3	38	19	0	4	2	0	0	7	0	0	0	0	73
04:00	3	82	18	0	5	5	0	0	2	0	0	0	0	115
05:00	12	169	65	2	18	10	0	2	9	0	0	0	0	287
06:00	21	475	166	4	30	18	0	6	14	0	0	0	0	734
07:00	23	625	146	10	29	22	1	7	4	0	0	0	0	867
08:00	21	519	124	13	40	17	0	8	11	0	0	0	0	753
09:00	20	432	158	15	20	21	0	10	7	0	0	0	0	683
10:00	12	403	145	9	33	12	0	5	8	0	0	0	0	627
11:00	17	459	122	10	31	15	0	5	10	0	0	0	0	669
12 PM	19	505	168	14	32	9	0	8	8	0	0	0	0	763
13:00	19	439	133	15	40	18	2	5	6	0	0	0	0	677
14:00	7	562	163	7	37	7	0	7	12	0	1	0	1	804
15:00	16	708	185	11	33	12	0	3	8	0	0	0	1	977
16:00	14	927	190	6	39	6	0	8	7	0	0	0	1	1198
17:00	8	842	149	3	33	0	0	6	4	0	0	0	0	1045
18:00	6	552	116	3	15	1	0	2	2	0	0	0	0	697
19:00	3	407	92	1	11	1	0	4	0	0	0	0	0	519
20:00	3	358	59	3	10	1	0	0	0	0	0	0	0	434
21:00	0	281	47	2	12	0	0	0	3	0	0	0	0	345
22:00	2	240	43	2	11	1	0	0	1	0	0	0	0	300
23:00	2	186	35	2	4	0	0	0	0	0	0	0	0	229
Percent	1.9%	71.9%	18.2%	1.0%	3.8%	1.4%	0.0%	0.7%	1.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	06:00	09:00	08:00	07:00	07:00	09:00	06:00					07:00
Vol.	23	625	166	15	40	22	1	10	14					867
PM Peak	12:00	16:00	16:00	13:00	13:00	13:00	13:00	12:00	14:00		14:00		14:00	16:00
Vol.	19	927	190	15	40	18	2	8	12		1		1	1198



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road WB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
WB

165301 A WB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/08/1														
6	1	121	17	0	3	1	0	0	2	0	0	0	0	145
01:00	0	46	10	1	1	0	0	0	1	0	0	0	0	59
02:00	1	38	8	1	1	1	0	0	1	0	0	0	0	51
03:00	0	28	9	0	5	0	0	0	1	0	0	0	0	43
04:00	3	32	19	0	4	1	0	0	0	0	0	0	0	59
05:00	1	87	34	0	9	3	0	0	0	0	0	0	0	134
06:00	2	190	61	2	21	6	0	0	1	0	0	0	0	283
07:00	3	248	78	4	21	5	0	1	2	0	0	0	0	362
08:00	3	371	98	2	18	2	0	1	3	0	0	0	0	498
09:00	8	444	117	3	22	7	0	4	5	0	0	0	0	610
10:00	12	526	150	3	19	9	0	2	4	0	0	0	0	725
11:00	5	582	130	2	30	6	0	4	14	0	0	0	0	773
12 PM	9	573	132	1	18	4	1	6	3	0	0	0	0	747
13:00	4	577	146	5	19	2	0	3	1	0	0	0	0	757
14:00	12	583	145	5	20	1	0	2	1	0	0	0	0	769
15:00	7	591	125	0	21	1	0	1	0	0	0	0	0	746
16:00	6	530	105	4	12	0	0	4	0	0	0	0	0	661
17:00	6	504	95	4	19	1	0	2	0	0	0	0	0	631
18:00	3	428	71	2	13	1	0	0	1	0	0	0	0	519
19:00	0	332	57	0	13	0	0	0	0	0	0	0	0	402
20:00	5	304	60	1	9	0	1	0	0	0	0	0	0	380
21:00	0	264	33	4	5	0	0	0	0	0	0	0	0	306
22:00	1	233	33	0	2	1	0	0	0	0	0	0	0	270
23:00	0	200	34	0	7	0	0	0	0	0	0	0	0	241
Percent	0.9%	77.0%	17.4%	0.4%	3.1%	0.5%	0.0%	0.3%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	11:00	10:00	07:00	11:00	10:00		09:00	11:00					11:00
Vol.	12	582	150	4	30	9		4	14					773
PM Peak	14:00	15:00	13:00	13:00	15:00	12:00	12:00	12:00	12:00					14:00
Vol.	12	591	146	5	21	4	1	6	3					769



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road WB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
WB

165301 A WB Speed  
Site Code:

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
10/06/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
16	0	1	2	10	5	24	21	6	3	0	0	0	0	72	43	37
01:00	0	0	4	10	6	5	8	2	0	1	0	0	0	36	42	34
02:00	0	0	0	8	14	7	8	3	0	0	0	0	0	40	42	35
03:00	0	0	4	13	26	7	6	2	0	0	0	0	0	58	38	32
04:00	0	0	5	34	43	21	17	10	3	1	0	0	0	134	42	34
05:00	0	6	18	35	84	55	44	11	3	0	0	0	0	256	41	34
06:00	0	20	45	217	321	<b>166</b>	47	9	1	0	0	0	0	826	36	32
07:00	<b>1</b>	28	<b>71</b>	259	<b>376</b>	164	49	5	2	0	0	0	0	<b>955</b>	36	31
08:00	0	8	70	<b>260</b>	353	161	53	13	3	0	0	0	0	921	36	31
09:00	0	<b>31</b>	64	170	250	141	57	18	2	0	0	0	0	733	37	31
10:00	0	6	36	157	191	136	<b>65</b>	<b>22</b>	1	0	0	0	0	614	38	33
11:00	0	7	50	162	218	122	65	13	<b>5</b>	0	0	0	0	642	38	32
12 PM	4	16	40	141	251	134	66	16	3	<b>1</b>	0	0	0	672	38	32
13:00	0	2	30	146	264	151	81	10	2	0	0	0	0	686	38	33
14:00	0	3	56	209	327	124	45	9	1	0	0	0	0	774	36	31
15:00	0	2	60	309	388	163	60	5	0	0	0	0	0	987	36	31
16:00	2	<b>28</b>	<b>104</b>	315	433	153	31	8	2	0	0	0	0	1076	35	30
17:00	<b>9</b>	24	75	<b>332</b>	<b>453</b>	161	34	7	0	0	0	0	0	<b>1095</b>	35	30
18:00	0	5	41	216	344	<b>198</b>	72	20	1	0	0	0	0	897	37	33
19:00	0	5	21	115	218	158	88	23	2	0	0	0	0	630	40	34
20:00	0	3	6	61	147	147	<b>94</b>	<b>26</b>	0	0	0	0	0	484	41	35
21:00	0	0	3	61	106	92	79	19	4	1	0	0	<b>1</b>	366	42	36
22:00	0	0	5	39	62	50	53	22	<b>7</b>	1	0	0	0	239	43	36
23:00	0	2	3	11	45	40	44	10	1	0	0	0	0	156	42	36
Total	16	197	813	3290	4925	2580	1187	289	46	5	0	0	1	13349		
%	0.1%	1.5%	6.1%	24.6%	36.9%	19.3%	8.9%	2.2%	0.3%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	09:00	07:00	08:00	07:00	06:00	10:00	10:00	11:00	01:00						07:00
Vol.	1	31	71	260	376	166	65	22	5	1				955		
PM Peak	17:00	16:00	16:00	17:00	17:00	18:00	20:00	20:00	22:00	12:00			21:00	17:00		
Vol.	9	28	104	332	453	198	94	26	7	1			1	1095		

Stats

15th Percentile : 25 MPH  
 50th Percentile : 31 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 42 MPH

Mean Speed(Average) : 32 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 8215  
 Percent in Pace : 61.5%  
 Number of Vehicles > 30 MPH : 8048  
 Percent of Vehicles > 30 MPH : 60.3%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road WB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
WB

165301 A WB Speed  
Site Code:

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
10/07/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
16	0	8	5	5	24	17	30	13	4	0	0	0	0	106	44	36
01:00	2	0	2	5	14	5	9	8	2	0	0	0	0	47	45	36
02:00	0	2	4	7	10	3	3	0	1	0	0	0	0	30	38	31
03:00	0	0	1	27	24	10	8	3	0	0	0	0	0	73	39	32
04:00	0	0	5	32	33	22	17	4	2	0	0	0	0	115	40	33
05:00	0	13	10	63	102	52	27	17	1	1	1	0	0	287	39	33
06:00	1	<b>20</b>	48	186	283	135	40	19	2	0	0	0	0	734	37	32
07:00	<b>3</b>	14	50	<b>212</b>	<b>350</b>	<b>163</b>	64	10	1	0	0	0	0	<b>867</b>	37	32
08:00	0	14	53	195	295	135	51	9	1	0	0	0	0	753	37	32
09:00	0	19	<b>58</b>	168	215	149	56	16	2	0	0	0	0	683	38	32
10:00	0	1	28	134	207	131	<b>98</b>	<b>22</b>	6	0	0	0	0	627	40	34
11:00	0	5	21	160	233	147	73	21	<b>9</b>	0	0	0	0	669	39	33
12 PM	0	0	39	189	270	158	83	21	3	0	0	0	0	763	38	33
13:00	0	3	40	146	253	136	78	19	2	0	0	0	0	677	38	33
14:00	0	1	17	210	333	155	69	16	2	<b>1</b>	0	0	0	804	37	33
15:00	0	1	55	266	402	168	70	14	1	0	0	0	0	977	37	32
16:00	2	22	<b>110</b>	<b>366</b>	<b>476</b>	165	45	12	0	0	0	0	0	<b>1198</b>	35	30
17:00	<b>11</b>	<b>30</b>	88	260	417	<b>177</b>	51	8	2	0	<b>1</b>	0	0	1045	36	31
18:00	0	0	17	129	273	175	84	16	3	0	0	0	0	697	38	34
19:00	0	0	11	61	193	141	<b>97</b>	14	2	0	0	0	0	519	40	35
20:00	0	0	5	74	111	128	85	<b>25</b>	<b>6</b>	0	0	0	0	434	41	36
21:00	0	0	1	54	106	86	77	19	1	0	0	<b>1</b>	0	345	42	36
22:00	0	0	6	49	86	77	67	12	3	0	0	0	0	300	41	35
23:00	0	0	3	34	65	62	39	19	6	1	0	0	0	229	42	36
Total	19	153	677	3032	4775	2597	1321	337	62	3	2	1	0	12979		
%	0.1%	1.2%	5.2%	23.4%	36.8%	20.0%	10.2%	2.6%	0.5%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	06:00	09:00	07:00	07:00	07:00	10:00	10:00	11:00	05:00	05:00			07:00		
Vol.	3	20	58	212	350	163	98	22	9	1	1			867		
PM Peak	17:00	17:00	16:00	16:00	16:00	17:00	19:00	20:00	20:00	14:00	17:00	21:00		16:00		
Vol.	11	30	110	366	476	177	97	25	6	1	1	1		1198		

Stats

15th Percentile : 25 MPH  
 50th Percentile : 31 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 43 MPH

Mean Speed(Average) : 33 MPH  
 10 MPH Pace Speed : 25-34 MPH  
 Number in Pace : 7807  
 Percent in Pace : 60.2%  
 Number of Vehicles > 30 MPH : 8143  
 Percent of Vehicles > 30 MPH : 62.7%



PRECISION  
DATA  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road WB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
WB

165301 A WB Speed  
Site Code:

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th %ile	Ave Speed	
10/08/16	0	0	0	3	29	27	31	40	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	145	43	36	
01:00	0	0	0	1	5	14	10	22	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	43	38	
02:00	0	0	0	5	12	11	14	7	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	51	44	38	
03:00	0	0	0	5	9	5	14	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	46	39	
04:00	0	1	4	18	11	11	8	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	42	33	
05:00	0	2	2	31	45	25	23	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	134	40	34	
06:00	0	1	5	47	87	60	57	23	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	283	42	35	
07:00	0	0	5	53	127	63	71	35	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	362	43	36	
08:00	0	0	5	77	160	128	97	19	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	498	41	35	
09:00	0	5	13	106	211	130	106	33	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	610	41	35	
10:00	0	1	23	131	292	158	89	28	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	725	39	34	
11:00	0	5	21	167	300	169	86	21	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	773	38	33	
12 PM	0	2	12	160	278	166	101	25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	747	39	34	
13:00	2	2	11	141	290	180	98	31	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	757	39	34	
14:00	0	0	18	165	287	162	106	27	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	769	40	34	
15:00	0	0	14	149	281	173	108	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	746	39	34	
16:00	0	0	5	116	268	126	110	34	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	661	41	34	
17:00	0	0	6	107	234	162	93	25	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	631	40	35	
18:00	0	0	5	96	184	121	93	19	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	519	40	35	
19:00	0	0	1	63	152	90	76	18	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	402	41	35	
20:00	0	1	5	73	111	83	80	23	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	380	42	35	
21:00	0	0	2	64	73	80	63	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	306	42	35	
22:00	0	5	1	49	82	71	48	12	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	270	41	35	
23:00	0	0	2	76	71	58	30	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	241	38	33	
Total %	0.0%	0.2%	1.6%	19.0%	35.5%	22.3%	16.1%	4.6%	1.6%	0.6%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10171			
AM Peak		09:00	10:00	11:00	11:00	11:00	09:00	07:00	08:00	07:00	02:00																11:00		
Vol.		5	23	167	300	169	106	35	11	2	1																773		
PM Peak	13:00	22:00	14:00	14:00	13:00	13:00	16:00	16:00	12:00	20:00												17:00					14:00		
Vol.	2	5	18	165	290	180	110	34	3	2												1					769		

Stats

- 15th Percentile : 27 MPH
- 50th Percentile : 33 MPH
- 85th Percentile : 40 MPH
- 95th Percentile : 44 MPH
  
- Mean Speed(Average) : 34 MPH
- 10 MPH Pace Speed : 30-39 MPH
- Number in Pace : 5879
- Percent in Pace : 57.8%
- Number of Vehicles > 30 MPH : 7326
- Percent of Vehicles > 30 MPH : 72.0%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
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Dascomb Road WB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli

165301 A WB Volume  
Site Code:

Start Time	WB													
	A.M.	P.M.												
12:00	23	167												
12:15	19	166												
12:30	19	169												
12:45	11	170	672											
01:00	6	160												
01:15	10	189												
01:30	11	159												
01:45	9	178	686											
02:00	9	174												
02:15	13	179												
02:30	7	194												
02:45	11	227	774											
03:00	12	231												
03:15	8	262												
03:30	13	243												
03:45	25	251	987											
04:00	21	247												
04:15	29	257												
04:30	26	276												
04:45	58	296	1076											
05:00	37	245												
05:15	61	274												
05:30	57	312												
05:45	101	264	1095											
06:00	133	260												
06:15	175	232												
06:30	227	213												
06:45	291	192	897											
07:00	209	170												
07:15	226	172												
07:30	250	144												
07:45	270	144	630											
08:00	236	132												
08:15	240	115												
08:30	241	109												
08:45	204	128	484											
09:00	202	95												
09:15	187	103												
09:30	164	85												
09:45	180	83	366											
10:00	156	67												
10:15	163	68												
10:30	158	43												
10:45	137	61	239											
11:00	147	53												
11:15	144	44												
11:30	156	35												
11:45	195	24	156											
Total	5287	8062												
Percent		100.0 %	0.0%	0.0%										
Day Total		13349												
Peak	07:30	-	04:45	-	-	-	-	-	-	-	-	-	-	-
Vol.	996	-	1127	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	0.922		0.903											





PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Dascomb Road WB  
east of California Products Driveway  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli

165301 A WB Volume  
Site Code:

Start Time	WB												Sat		
	A.M.	P.M.											10/8/201		
12:00	44	187											6		
12:15	41	181													
12:30	25	170													
12:45	35	209	145	209	747										
01:00	21	197													
01:15	15	187													
01:30	17	176													
01:45	6	197	59	197	757										
02:00	18	173													
02:15	10	202													
02:30	11	194													
02:45	12	200	51	200	769										
03:00	10	172													
03:15	12	180													
03:30	8	203													
03:45	13	191	43	191	746										
04:00	14	165													
04:15	13	162													
04:30	14	155													
04:45	18	179	59	179	661										
05:00	17	161													
05:15	16	160													
05:30	34	148													
05:45	67	162	134	162	631										
06:00	42	148													
06:15	70	135													
06:30	75	125													
06:45	96	111	283	111	519										
07:00	57	112													
07:15	92	95													
07:30	102	82													
07:45	111	113	362	113	402										
08:00	104	95													
08:15	124	103													
08:30	129	98													
08:45	141	84	498	84	380										
09:00	142	96													
09:15	132	72													
09:30	138	76													
09:45	198	62	610	62	306										
10:00	180	62													
10:15	183	77													
10:30	179	66													
10:45	183	65	725	65	270										
11:00	192	58													
11:15	197	65													
11:30	192	59													
11:45	192	59	773	59	241										
Total	3742	6429													
Percent		100.0 %	0.0%	0.0%											
Day Total		10171													
Peak	11:00	-	00:45	-	-	-	-	-	-	-	-	-	-	-	
Vol.	773	-	769	-	-	-	-	-	-	-	-	-	-	-	
P.H.F.	0.981		0.920												



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46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
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Frontage Road NB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
NB

165301 B NB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/06/1														
6	0	23	6	1	1	0	0	0	0	0	0	0	0	31
01:00	0	23	9	0	0	0	0	0	0	0	0	0	0	32
02:00	1	26	1	1	0	0	0	0	1	0	0	0	0	30
03:00	0	26	7	0	3	2	0	0	0	0	0	0	0	38
04:00	3	81	24	2	3	4	0	1	3	0	0	0	0	121
05:00	7	405	142	2	20	10	1	2	8	0	0	0	0	597
06:00	5	484	84	4	10	8	0	1	6	0	0	0	0	602
07:00	4	629	82	10	17	8	0	2	5	0	0	0	0	757
08:00	2	601	86	8	11	1	0	1	1	0	0	0	0	711
09:00	8	400	79	4	18	10	0	2	3	0	0	0	0	524
10:00	14	355	79	5	25	15	1	2	6	0	0	0	0	502
11:00	5	311	88	4	15	8	0	1	2	0	0	0	0	434
12 PM	12	322	62	5	11	11	0	0	6	0	0	0	0	429
13:00	4	334	80	3	21	11	0	1	3	0	0	0	0	457
14:00	0	399	90	6	18	8	0	3	3	0	0	0	0	527
15:00	1	363	71	5	19	4	0	1	1	0	0	0	0	465
16:00	4	415	103	1	11	1	0	2	2	0	0	0	0	539
17:00	8	493	75	0	14	2	0	1	0	0	0	0	0	593
18:00	4	444	57	1	15	2	0	1	0	0	0	0	0	524
19:00	5	317	36	0	3	2	0	0	0	0	0	0	0	363
20:00	5	191	21	0	1	5	0	0	0	0	0	0	0	223
21:00	1	163	18	0	1	0	0	1	0	0	0	0	0	184
22:00	3	94	20	0	4	2	0	0	3	0	0	0	0	126
23:00	3	60	9	0	1	1	0	0	0	0	0	0	0	74
Percent	1.1%	78.3%	15.0%	0.7%	2.7%	1.3%	0.0%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	
AM Peak	10:00	07:00	05:00	07:00	10:00	10:00	05:00	05:00	05:00					07:00
Vol.	14	629	142	10	25	15	1	2	8					757
PM Peak	12:00	17:00	16:00	14:00	13:00	12:00		14:00	12:00					17:00
Vol.	12	493	103	6	21	11		3	6					593



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Frontage Road NB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
NB

165301 B NB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/07/1														
6	1	22	1	0	0	1	0	0	0	0	0	0	0	25
01:00	2	14	1	0	0	3	0	0	0	0	0	0	0	20
02:00	1	9	2	0	1	1	0	0	1	0	0	0	0	15
03:00	0	18	4	2	1	0	0	0	0	0	0	0	0	25
04:00	4	84	25	1	3	4	0	0	6	0	0	0	0	127
05:00	6	375	121	2	22	6	1	1	6	0	0	0	0	540
06:00	8	397	83	6	16	8	1	1	8	0	0	0	0	528
07:00	7	615	95	2	17	3	0	3	2	0	0	0	0	744
08:00	7	590	87	0	15	8	0	4	4	0	0	0	0	715
09:00	14	399	80	4	10	11	0	2	3	0	0	0	0	523
10:00	8	324	79	4	15	10	0	2	6	0	0	0	0	448
11:00	7	324	63	5	16	7	0	4	2	0	0	0	0	428
12 PM	10	352	68	3	18	12	0	4	4	0	0	0	0	471
13:00	9	330	92	10	10	12	0	5	5	0	0	0	0	473
14:00	2	393	89	9	19	3	0	2	1	0	0	0	1	519
15:00	6	410	76	3	12	6	0	1	0	0	0	0	0	514
16:00	8	430	71	5	24	2	0	1	0	0	0	0	0	541
17:00	5	469	76	5	14	2	0	3	0	0	0	0	0	574
18:00	2	414	61	2	6	1	0	1	0	0	0	0	0	487
19:00	2	251	31	0	7	1	0	0	0	0	0	0	0	292
20:00	2	178	32	0	3	1	0	0	0	0	0	0	0	216
21:00	2	113	19	0	2	1	0	0	0	0	0	0	0	137
22:00	4	177	32	0	8	0	0	1	0	0	0	0	0	222
23:00	0	129	16	1	3	0	0	0	0	0	0	0	0	149
Percent	1.3%	78.1%	14.9%	0.7%	2.8%	1.2%	0.0%	0.4%	0.5%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	07:00	05:00	06:00	05:00	09:00	05:00	08:00	06:00					07:00
Vol.	14	615	121	6	22	11	1	4	8					744
PM Peak	12:00	17:00	13:00	13:00	16:00	12:00		13:00	13:00				14:00	17:00
Vol.	10	469	92	10	24	12		5	5				1	574



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Frontage Road NB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
NB

165301 B NB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/08/1														
6	0	79	8	0	1	0	0	0	0	0	0	0	0	88
01:00	1	44	8	0	1	1	0	0	0	0	0	0	0	55
02:00	0	15	2	0	0	0	0	0	0	0	0	0	0	17
03:00	0	26	3	1	0	0	0	0	0	0	0	0	0	30
04:00	1	38	10	0	2	1	0	1	0	0	0	0	0	53
05:00	1	75	36	2	1	9	0	0	11	0	0	0	0	135
06:00	1	106	42	3	9	2	1	0	2	0	0	0	0	166
07:00	0	191	35	1	14	2	0	0	1	0	0	0	0	244
08:00	1	247	50	4	6	4	0	0	2	0	0	0	0	314
09:00	4	309	70	0	7	4	0	0	3	0	0	0	0	397
10:00	1	370	62	2	6	6	0	1	2	0	0	0	0	450
11:00	3	381	83	1	7	4	0	2	4	0	0	0	0	485
12 PM	2	365	55	2	5	3	0	0	1	0	0	0	0	433
13:00	4	378	68	2	13	2	0	1	0	0	0	0	0	468
14:00	4	325	76	0	6	0	0	0	0	0	0	0	0	411
15:00	1	373	58	0	6	1	0	0	0	0	0	0	0	439
16:00	2	331	56	0	7	0	0	0	0	0	0	0	0	396
17:00	1	332	50	0	9	0	0	1	0	0	0	0	0	393
18:00	0	303	38	2	8	0	0	0	0	0	0	0	0	351
19:00	1	224	30	0	3	0	0	0	1	0	0	0	0	259
20:00	2	156	21	0	4	0	0	0	0	0	0	0	0	183
21:00	0	147	22	0	2	0	0	0	0	0	0	0	0	171
22:00	0	133	12	0	1	0	0	0	0	0	0	0	0	146
23:00	0	93	13	0	3	0	0	0	0	0	0	0	0	109
Percent	0.5%	81.4%	14.7%	0.3%	2.0%	0.6%	0.0%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	11:00	08:00	07:00	05:00	06:00	11:00	05:00					11:00
Vol.	4	381	83	4	14	9	1	2	11					485
PM Peak	13:00	13:00	14:00	12:00	13:00	12:00		13:00	12:00					13:00
Vol.	4	378	76	2	13	3		1	1					468



PRECISION  
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Frontage Road NB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
NB

165301 B NB Speed  
Site Code:

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
10/06/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
16	0	0	2	6	9	13	1	0	0	0	0	0	0	31	37	33
01:00	0	0	1	8	14	6	2	1	0	0	0	0	0	32	37	32
02:00	0	1	1	3	14	9	2	0	0	0	0	0	0	30	37	33
03:00	0	0	1	9	15	11	2	0	0	0	0	0	0	38	37	33
04:00	1	0	16	25	53	24	2	0	0	0	0	0	0	121	35	31
05:00	1	8	73	116	257	124	16	2	0	0	0	0	0	597	36	31
06:00	0	4	16	83	287	179	29	3	1	0	0	0	0	602	37	33
07:00	0	0	19	104	356	252	24	2	0	0	0	0	0	757	37	33
08:00	0	0	11	70	349	237	40	3	1	0	0	0	0	711	37	34
09:00	0	1	18	57	259	170	19	0	0	0	0	0	0	524	37	33
10:00	1	7	41	84	228	129	11	1	0	0	0	0	0	502	36	32
11:00	1	4	9	49	223	128	17	3	0	0	0	0	0	434	37	33
12 PM	0	0	25	68	195	124	14	2	1	0	0	0	0	429	37	33
13:00	0	2	11	66	211	149	18	0	0	0	0	0	0	457	37	33
14:00	0	1	17	64	257	168	19	1	0	0	0	0	0	527	37	33
15:00	0	4	18	47	249	133	14	0	0	0	0	0	0	465	36	33
16:00	0	0	6	58	277	166	32	0	0	0	0	0	0	539	37	33
17:00	0	0	16	87	287	175	27	1	0	0	0	0	0	593	37	33
18:00	0	1	15	60	268	152	23	4	0	1	0	0	0	524	37	33
19:00	0	4	5	52	193	92	16	1	0	0	0	0	0	363	36	33
20:00	0	3	11	31	107	61	9	1	0	0	0	0	0	223	37	32
21:00	0	0	4	40	83	48	7	1	0	1	0	0	0	184	37	33
22:00	0	1	9	29	56	28	3	0	0	0	0	0	0	126	36	31
23:00	0	1	3	9	36	20	5	0	0	0	0	0	0	74	37	33
Total	4	42	348	1225	4283	2598	352	26	3	2	0	0	0	8883		
%	0.0%	0.5%	3.9%	13.8%	48.2%	29.2%	4.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	04:00	05:00	05:00	05:00	07:00	07:00	08:00	06:00	06:00							07:00
Vol.	1	8	73	116	356	252	40	3	1							757
PM Peak		15:00	12:00	17:00	17:00	17:00	16:00	18:00	12:00	18:00						17:00
Vol.		4	25	87	287	175	32	4	1	1						593

Stats

15th Percentile : 27 MPH  
 50th Percentile : 32 MPH  
 85th Percentile : 37 MPH  
 95th Percentile : 38 MPH

Mean Speed(Average) : 33 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 6881  
 Percent in Pace : 77.5%  
 Number of Vehicles > 30 MPH : 6407  
 Percent of Vehicles > 30 MPH : 72.1%



PRECISION  
DATA  
INDUSTRIES, LLC

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Frontage Road NB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
NB

165301 B NB Speed  
Site Code:

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th % ile	Ave Speed
10/07/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
16	0	0	3	4	9	6	2	1	0	0	0	0	0	25	38	33
01:00	0	0	0	10	8	1	1	0	0	0	0	0	0	20	33	30
02:00	0	0	2	3	8	2	0	0	0	0	0	0	0	15	33	30
03:00	0	1	0	4	10	8	2	0	0	0	0	0	0	25	37	33
04:00	0	0	24	15	57	29	2	0	0	0	0	0	0	127	36	31
05:00	2	19	69	115	215	108	11	1	0	0	0	0	0	540	35	30
06:00	5	9	24	62	284	128	15	0	0	1	0	0	0	528	36	32
07:00	0	2	24	123	382	184	25	4	0	0	0	0	0	744	36	32
08:00	0	5	27	93	361	199	28	1	1	0	0	0	0	715	37	33
09:00	0	9	36	76	241	148	10	2	1	0	0	0	0	523	36	32
10:00	0	7	19	71	207	135	8	1	0	0	0	0	0	448	36	32
11:00	0	2	22	73	201	115	13	2	0	0	0	0	0	428	36	32
12 PM	0	0	15	72	201	157	22	3	1	0	0	0	0	471	37	33
13:00	2	9	24	76	183	158	18	2	1	0	0	0	0	473	37	32
14:00	0	1	11	60	250	178	17	2	0	0	0	0	0	519	37	33
15:00	0	0	11	65	238	174	25	1	0	0	0	0	0	514	37	33
16:00	0	0	8	82	285	145	18	3	0	0	0	0	0	541	36	33
17:00	0	1	20	68	302	158	22	3	0	0	0	0	0	574	37	33
18:00	0	0	6	50	268	147	16	0	0	0	0	0	0	487	37	33
19:00	0	1	10	57	140	74	10	0	0	0	0	0	0	292	36	32
20:00	0	0	5	36	108	58	9	0	0	0	0	0	0	216	36	33
21:00	0	1	8	23	72	29	3	1	0	0	0	0	0	137	36	32
22:00	0	1	10	47	92	59	9	4	0	0	0	0	0	222	37	32
23:00	1	0	3	16	66	47	12	4	0	0	0	0	0	149	38	34
Total	10	68	381	1301	4188	2447	298	35	4	1	0	0	0	8733		
%	0.1%	0.8%	4.4%	14.9%	48.0%	28.0%	3.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	05:00	05:00	07:00	07:00	08:00	08:00	07:00	08:00	06:00				07:00		
Vol.	5	19	69	123	382	199	28	4	1	1				744		
PM Peak	13:00	13:00	13:00	16:00	17:00	14:00	15:00	22:00	12:00					17:00		
Vol.	2	9	24	82	302	178	25	4	1					574		

Stats

15th Percentile : 27 MPH  
50th Percentile : 32 MPH  
85th Percentile : 37 MPH  
95th Percentile : 38 MPH

Mean Speed(Average) : 32 MPH  
10 MPH Pace Speed : 30-39 MPH  
Number in Pace : 6635  
Percent in Pace : 76.0%  
Number of Vehicles > 30 MPH : 6135  
Percent of Vehicles > 30 MPH : 70.3%



PRECISION  
D A T A  
INDUSTRIES, LLC

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Frontage Road NB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
NB

165301 B NB Speed  
Site Code:

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed	
10/08/16	0	0	0	2	21	35	21	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	88	38	33		
01:00	0	2	0	0	8	20	23	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	37	33		
02:00	0	1	2	0	8	8	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	38	32		
03:00	0	1	3	4	10	9	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	38	32		
04:00	0	0	5	9	29	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	35	31		
05:00	0	1	5	28	60	36	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135	36	32		
06:00	0	1	7	23	92	37	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	166	36	32		
07:00	0	0	3	29	133	68	10	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	244	37	33		
08:00	0	0	2	36	167	96	10	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	314	37	33		
09:00	0	2	11	41	197	136	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	397	37	33		
10:00	2	0	12	49	232	138	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	450	37	33		
11:00	0	0	15	56	242	146	25	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	485	37	33		
12 PM	0	1	6	46	210	146	23	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	433	37	34	
13:00	0	1	5	61	233	156	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	468	37	33	
14:00	0	2	11	48	190	144	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	411	37	33	
15:00	1	0	7	45	242	125	17	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	439	37	33	
16:00	0	0	12	28	221	112	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	396	37	33	
17:00	0	0	9	48	207	112	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	393	37	33	
18:00	0	0	9	43	193	97	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	351	36	33	
19:00	1	4	5	32	149	64	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	259	36	32	
20:00	0	1	5	27	100	46	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	183	36	32	
21:00	0	1	7	27	94	38	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	171	36	32	
22:00	0	1	5	41	73	22	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	146	34	31	
23:00	0	0	6	38	49	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109	33	30	
Total	4	19	154	788	3186	1802	220	16	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6193			
%	0.1%	0.3%	2.5%	12.7%	51.4%	29.1%	3.6%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	10:00	01:00	11:00	11:00	11:00	11:00	11:00	11:00	10:00	09:00																	11:00		
Vol.	2	2	15	56	242	146	25	5	1																		485		
PM Peak	15:00	19:00	16:00	13:00	15:00	13:00	12:00	16:00	12:00																		13:00		
Vol.	1	4	12	61	242	156	23	2	1																		468		

Stats

15th Percentile : 28 MPH  
 50th Percentile : 32 MPH  
 85th Percentile : 37 MPH  
 95th Percentile : 38 MPH

Mean Speed(Average) : 33 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 4988  
 Percent in Pace : 80.5%  
 Number of Vehicles > 30 MPH : 4591  
 Percent of Vehicles > 30 MPH : 74.1%







PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Frontage Road NB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli

165301 B NB Volume  
Site Code:

Start Time	NB													
	A.M.	P.M.												
12:00	26	107												
12:15	26	107												
12:30	23	120												
12:45	13	88	99	433										
01:00	17	108												
01:15	13	128												
01:30	21	104												
01:45	4	55	128	468										
02:00	4	110												
02:15	4	112												
02:30	3	98												
02:45	6	17	91	411										
03:00	6	107												
03:15	4	109												
03:30	11	117												
03:45	9	30	106	439										
04:00	12	90												
04:15	10	99												
04:30	17	123												
04:45	14	53	84	396										
05:00	19	109												
05:15	47	89												
05:30	31	91												
05:45	38	135	104	393										
06:00	34	107												
06:15	39	83												
06:30	53	82												
06:45	40	166	79	351										
07:00	46	63												
07:15	59	72												
07:30	68	70												
07:45	71	244	54	259										
08:00	56	47												
08:15	75	49												
08:30	94	34												
08:45	89	314	53	183										
09:00	86	50												
09:15	96	45												
09:30	101	40												
09:45	114	397	36	171										
10:00	111	39												
10:15	127	39												
10:30	107	36												
10:45	105	450	32	146										
11:00	133	25												
11:15	115	23												
11:30	116	29												
11:45	121	485	32	109										
Total	2434		3759											
Percent			100.0 %	0.0%	0.0%									
Day Total		6193												
Peak Vol.	11:00	-	01:15	-	-	-	-	-	-	-	-	-	-	-
P.H.F.	485	-	470	-	-	-	-	-	-	-	-	-	-	-
	0.912		0.918											



PRECISION  
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Office: 508-875-0100 Fax: 508-875-0118  
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Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
SB

165301 B SB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/06/1														
6	1	13	4	0	2	1	0	0	2	0	0	0	0	23
01:00	1	12	2	1	0	1	0	0	3	0	0	0	0	20
02:00	1	19	8	1	1	1	0	0	0	0	0	0	0	31
03:00	1	32	14	1	2	0	0	0	0	0	0	0	0	50
04:00	5	83	29	0	10	3	0	0	1	0	0	0	0	131
05:00	8	132	59	3	20	6	0	0	1	0	0	0	0	229
06:00	12	364	114	7	34	14	0	1	6	0	0	0	0	552
07:00	12	435	94	10	29	13	0	1	5	0	0	0	0	599
08:00	17	390	101	9	28	13	1	3	1	0	0	0	0	563
09:00	13	261	101	11	22	12	1	5	10	0	0	0	0	436
10:00	6	225	64	3	19	3	0	3	8	0	0	0	1	332
11:00	8	273	87	11	24	8	1	1	5	0	0	0	0	418
12 PM	11	271	73	7	16	7	0	5	10	0	0	0	0	400
13:00	10	249	98	8	18	9	0	2	5	0	0	0	0	399
14:00	8	373	106	2	23	14	1	1	11	0	0	0	0	539
15:00	6	395	104	6	11	8	0	2	9	0	0	0	0	541
16:00	7	465	109	4	26	2	0	2	2	0	0	0	0	617
17:00	8	516	81	1	15	2	0	1	2	0	0	0	0	626
18:00	5	322	68	2	3	2	0	1	1	0	0	0	0	404
19:00	6	210	50	0	6	2	0	1	0	0	0	0	0	275
20:00	3	148	38	0	6	2	0	0	0	0	0	0	0	197
21:00	0	134	29	0	4	0	0	0	0	0	0	0	0	167
22:00	1	110	13	0	1	1	0	0	1	0	0	0	0	127
23:00	1	63	8	0	1	1	0	0	0	0	0	0	0	74
Percent	1.9%	70.9%	18.8%	1.1%	4.1%	1.6%	0.1%	0.4%	1.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	06:00	09:00	06:00	06:00	08:00	09:00	09:00				10:00	07:00
Vol.	17	435	114	11	34	14	1	5	10				1	599
PM Peak	12:00	17:00	16:00	13:00	16:00	14:00	14:00	12:00	14:00					17:00
Vol.	11	516	109	8	26	14	1	5	11					626



PRECISION  
D A T A  
INDUSTRIES, LLC

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Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
SB

165301 B SB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/07/1														
6	6	24	4	1	0	6	0	0	0	0	0	0	0	41
01:00	2	17	2	1	3	1	0	0	0	0	0	0	0	26
02:00	1	13	10	0	0	1	0	0	1	0	0	0	0	26
03:00	2	34	19	0	1	1	0	0	3	0	0	0	0	60
04:00	2	71	28	0	4	2	0	0	1	0	0	0	0	108
05:00	8	159	76	0	19	8	0	0	5	0	0	0	0	275
06:00	15	316	112	2	28	17	0	1	9	0	0	0	0	500
07:00	10	404	91	3	23	10	0	1	4	0	0	0	0	546
08:00	15	328	99	8	18	12	0	3	14	0	0	0	0	497
09:00	12	288	83	13	15	12	0	4	5	0	0	0	0	432
10:00	3	187	76	3	18	4	0	2	5	0	0	0	0	298
11:00	11	292	72	4	20	8	0	4	2	0	0	0	0	413
12 PM	11	321	101	7	22	6	0	3	3	0	0	0	0	474
13:00	13	256	92	10	21	10	1	4	6	0	0	0	0	413
14:00	3	385	103	6	21	2	0	0	7	0	0	0	0	527
15:00	3	423	124	5	14	5	0	3	4	0	0	0	0	581
16:00	5	498	94	2	21	6	0	3	2	0	0	0	0	631
17:00	4	427	86	2	19	0	0	3	2	0	0	0	0	543
18:00	7	259	63	0	8	1	0	1	0	0	0	0	0	339
19:00	3	198	40	1	5	1	0	2	0	0	0	0	0	250
20:00	3	154	29	0	2	1	0	0	0	0	0	0	0	189
21:00	0	136	30	1	5	0	0	0	0	0	0	0	0	172
22:00	0	128	16	0	7	0	0	0	1	0	0	0	0	152
23:00	1	86	20	2	4	0	0	0	0	0	0	0	0	113
Percent	1.8%	71.0%	19.3%	0.9%	3.9%	1.5%	0.0%	0.4%	1.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	07:00	06:00	09:00	06:00	06:00		09:00	08:00					07:00
Vol.	15	404	112	13	28	17		4	14					546
PM Peak	13:00	16:00	15:00	13:00	12:00	13:00	13:00	13:00	14:00					16:00
Vol.	13	498	124	10	22	10	1	4	7					631



PRECISION  
D A T A  
INDUSTRIES, LLC

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Office: 508-875-0100 Fax: 508-875-0118  
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Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
SB

165301 B SB Class  
Site Code:

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
10/08/1														
6	1	51	9	0	4	1	0	0	0	0	0	0	0	66
01:00	0	19	8	0	1	0	0	0	0	0	0	0	0	28
02:00	0	15	5	1	1	0	0	0	0	0	0	0	0	22
03:00	0	14	4	0	1	0	0	0	0	0	0	0	0	19
04:00	2	25	15	0	1	0	0	0	0	0	0	0	0	43
05:00	1	84	32	0	7	3	0	0	0	0	0	0	0	127
06:00	0	103	43	2	12	0	0	0	2	0	0	0	0	162
07:00	2	143	32	2	9	3	0	1	2	0	0	0	0	194
08:00	0	180	54	1	16	0	0	0	2	0	0	0	0	253
09:00	5	217	67	1	10	5	0	4	2	0	0	0	0	311
10:00	4	309	72	1	7	4	0	1	4	0	0	0	0	402
11:00	6	306	80	1	19	5	0	1	8	0	0	0	0	426
12 PM	5	289	75	0	8	1	0	0	1	0	0	0	0	379
13:00	1	294	81	1	13	0	0	1	0	0	0	0	0	391
14:00	3	327	76	0	7	2	0	3	1	0	0	0	0	419
15:00	6	324	83	0	6	1	0	1	0	0	0	0	0	421
16:00	4	286	64	2	8	0	0	0	0	0	0	0	0	364
17:00	4	247	64	2	8	1	0	0	0	0	0	0	0	326
18:00	2	226	39	2	8	1	0	1	0	0	0	0	0	279
19:00	2	193	32	1	8	0	0	0	0	0	0	0	0	236
20:00	1	156	32	0	5	0	0	0	0	0	0	0	0	194
21:00	1	146	21	0	4	0	0	0	0	0	0	0	0	172
22:00	1	114	24	0	1	1	0	0	0	0	0	0	0	141
23:00	0	106	19	0	1	0	0	0	0	0	0	0	0	126
Percent	0.9%	75.9%	18.7%	0.3%	3.0%	0.5%	0.0%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	
AM Peak	11:00	10:00	11:00	06:00	11:00	09:00		09:00	11:00					11:00
Vol.	6	309	80	2	19	5		4	8					426
PM Peak	15:00	14:00	15:00	16:00	13:00	14:00		14:00	12:00					15:00
Vol.	6	327	83	2	13	2		3	1					421



PRECISION  
DATA  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
SB

165301 B SB Speed  
Site Code:

Start Time	14	15	19	20	24	25	29	30	34	35	39	40	44	45	49	50	54	55	59	60	64	65	69	70	9999	Total	85th % ile	Ave Speed	
10/06/																													
16	0	0	0	2	5	6	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	37	32	
01:00	0	0	0	2	5	8	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	36	31	
02:00	0	0	0	2	1	14	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	37	34	
03:00	0	1	2	4	22	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	37	33		
04:00	0	0	2	25	56	41	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	131	37	33		
05:00	0	0	14	46	76	77	15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229	37	33		
06:00	4	2	18	76	209	190	48	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	552	38	33		
07:00	0	2	20	71	243	213	44	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	599	38	34		
08:00	0	1	21	64	204	212	58	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	563	38	34		
09:00	0	1	10	58	149	163	51	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	436	38	34		
10:00	0	0	2	21	123	145	39	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	332	38	35		
11:00	0	0	7	52	152	153	50	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	418	38	34		
12 PM	0	1	8	59	140	145	39	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	400	38	34		
13:00	0	0	8	51	148	145	40	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	399	38	34		
14:00	0	2	9	64	212	190	59	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	539	38	34		
15:00	0	1	5	66	215	205	43	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	541	38	34		
16:00	0	0	7	53	227	249	74	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	617	38	35		
17:00	0	0	5	74	253	237	49	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	626	38	34		
18:00	0	0	0	29	166	169	36	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	404	38	35		
19:00	0	0	3	17	128	113	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	275	37	34		
20:00	0	0	0	16	81	83	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	197	38	35		
21:00	0	0	0	19	79	57	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	167	37	34		
22:00	0	0	0	18	61	42	5	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	37	33		
23:00	0	0	3	3	36	23	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	38	34		
Total	4	11	150	897	3008	2894	712	67	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7750				
%	0.1%	0.1%	1.9%	11.6%	38.8%	37.3%	9.2%	0.9%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%					
AM Peak	06:00	06:00	08:00	06:00	07:00	07:00	08:00	07:00	04:00																	07:00			
Vol.	4	2	21	76	243	213	58	6	1																	599			
PM Peak		14:00	14:00	17:00	17:00	16:00	16:00	17:00	12:00																		17:00		
Vol.		2	9	74	253	249	74	8	2																		626		

Stats

15th Percentile : 29 MPH  
50th Percentile : 33 MPH  
85th Percentile : 38 MPH  
95th Percentile : 41 MPH

Mean Speed(Average) : 34 MPH  
10 MPH Pace Speed : 30-39 MPH  
Number in Pace : 5902  
Percent in Pace : 76.2%  
Number of Vehicles > 30 MPH : 6086  
Percent of Vehicles > 30 MPH : 78.5%



PRECISION  
D A T A  
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Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
SB

165301 B SB Speed  
Site Code:

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
10/07/	14	19	24	29	34	39	44	49	54	59	64	69	9999			
16	0	3	8	9	7	10	4	0	0	0	0	0	0	41	37	30
01:00	0	3	2	1	10	6	4	0	0	0	0	0	0	26	39	32
02:00	0	0	3	3	10	10	0	0	0	0	0	0	0	26	37	32
03:00	0	0	1	6	29	21	3	0	0	0	0	0	0	60	37	34
04:00	0	0	5	22	39	30	11	1	0	0	0	0	0	108	38	33
05:00	0	2	9	49	106	89	17	3	0	0	0	0	0	275	37	33
06:00	0	4	26	62	196	170	36	4	1	1	0	0	0	500	38	33
07:00	0	4	16	64	219	202	38	2	1	0	0	0	0	546	37	34
08:00	1	3	12	70	179	182	48	1	0	1	0	0	0	497	38	34
09:00	0	1	23	55	139	163	43	7	1	0	0	0	0	432	38	34
10:00	0	0	6	25	110	120	30	7	0	0	0	0	0	298	38	35
11:00	0	1	3	31	162	167	44	4	1	0	0	0	0	413	38	35
12 PM	0	0	9	36	186	196	43	4	0	0	0	0	0	474	38	35
13:00	0	0	3	52	155	163	36	4	0	0	0	0	0	413	38	34
14:00	0	0	6	49	195	217	51	9	0	0	0	0	0	527	38	35
15:00	0	1	1	63	218	237	52	9	0	0	0	0	0	581	38	35
16:00	0	0	5	62	256	247	56	5	0	0	0	0	0	631	38	34
17:00	0	2	4	48	205	221	55	7	1	0	0	0	0	543	38	35
18:00	0	0	4	39	137	129	26	4	0	0	0	0	0	339	38	34
19:00	0	0	5	19	114	94	17	1	0	0	0	0	0	250	37	34
20:00	0	0	6	16	83	74	9	1	0	0	0	0	0	189	37	34
21:00	0	0	2	18	78	65	7	2	0	0	0	0	0	172	37	34
22:00	0	0	1	12	74	55	10	0	0	0	0	0	0	152	37	34
23:00	0	0	1	3	56	43	9	1	0	0	0	0	0	113	38	35
Total	1	24	161	814	2963	2911	649	76	5	2	0	0	0	7606		
%	0.0%	0.3%	2.1%	10.7%	39.0%	38.3%	8.5%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	06:00	06:00	08:00	07:00	07:00	08:00	09:00	06:00	06:00					07:00	
Vol.	1	4	26	70	219	202	48	7	1	1					546	
PM Peak		17:00	12:00	15:00	16:00	16:00	16:00	14:00	17:00						16:00	
Vol.		2	9	63	256	247	56	9	1						631	

Stats

15th Percentile : 29 MPH  
 50th Percentile : 33 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 41 MPH

Mean Speed(Average) : 34 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 5874  
 Percent in Pace : 77.2%  
 Number of Vehicles > 30 MPH : 6013  
 Percent of Vehicles > 30 MPH : 79.1%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
Email: datarequests@pdillc.com

165301 B SB Speed  
Site Code:

Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli  
SB

Start Time	1	15	20	25	30	35	40	45	50	55	60	65	70	Total	85th %ile	Ave Speed
10/08/														9999		
16	0	0	4	4	27	23	6	1	1	0	0	0	0	66	38	34
01:00	0	0	0	2	14	9	3	0	0	0	0	0	0	28	38	34
02:00	0	0	1	0	10	8	3	0	0	0	0	0	0	22	38	35
03:00	0	0	1	3	7	5	3	0	0	0	0	0	0	19	39	34
04:00	0	0	1	5	20	14	3	0	0	0	0	0	0	43	37	34
05:00	0	0	0	16	45	48	16	2	0	0	0	0	0	127	38	35
06:00	0	0	2	13	51	79	16	1	0	0	0	0	0	162	38	35
07:00	0	0	1	20	72	82	18	1	0	0	0	0	0	194	38	35
08:00	0	1	2	10	86	113	38	3	0	0	0	0	0	253	39	36
09:00	0	0	1	25	98	150	34	3	0	0	0	0	0	311	38	35
10:00	0	0	3	31	156	177	30	4	1	0	0	0	0	402	38	35
11:00	0	0	5	39	171	172	31	5	3	0	0	0	0	426	38	34
12 PM	0	0	0	20	136	170	44	7	2	0	0	0	0	379	38	36
13:00	0	0	5	17	162	174	31	2	0	0	0	0	0	391	38	35
14:00	0	0	3	31	186	176	21	2	0	0	0	0	0	419	37	34
15:00	1	0	5	30	190	152	39	3	1	0	0	0	0	421	38	34
16:00	0	1	3	21	167	150	18	4	0	0	0	0	0	364	37	34
17:00	0	0	3	25	152	116	29	1	0	0	0	0	0	326	38	34
18:00	0	0	5	16	129	112	14	2	1	0	0	0	0	279	37	34
19:00	0	0	0	33	103	86	10	4	0	0	0	0	0	236	37	34
20:00	0	1	0	22	94	63	12	2	0	0	0	0	0	194	37	34
21:00	0	0	0	22	81	64	4	1	0	0	0	0	0	172	37	34
22:00	0	0	4	24	80	32	1	0	0	0	0	0	0	141	35	32
23:00	0	0	1	21	69	32	2	1	0	0	0	0	0	126	36	33
Total	1	3	50	450	2306	2207	426	49	9	0	0	0	0	5501		
%	0.0%	0.1%	0.9%	8.2%	41.9%	40.1%	7.7%	0.9%	0.2%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.		08:00	11:00	11:00	11:00	10:00	08:00	11:00	11:00					11:00		
PM Peak Vol.	15:00	16:00	13:00	19:00	15:00	14:00	12:00	12:00	12:00					15:00		

Stats

15th Percentile : 29 MPH  
 50th Percentile : 33 MPH  
 85th Percentile : 38 MPH  
 95th Percentile : 41 MPH

Mean Speed(Average) : 34 MPH  
 10 MPH Pace Speed : 30-39 MPH  
 Number in Pace : 4513  
 Percent in Pace : 82.0%  
 Number of Vehicles > 30 MPH : 4536  
 Percent of Vehicles > 30 MPH : 82.5%



PRECISION  
D A T A  
INDUSTRIES, LLC

46 Morton Street, Framingham, MA 01702  
Office: 508-875-0100 Fax: 508-875-0118  
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Frontage Road SB  
south of I-93 SB Ramps  
City, State: Andover, MA  
Client: Lupoli Companies / S. Lupoli

165301 B SB Volume  
Site Code:

Start Time	SB				Thu 10/6/201 6
	A.M.		P.M.		
12:00	7		108		
12:15	6		92		
12:30	5		98		
12:45	5	23	102	400	
01:00	2		95		
01:15	4		92		
01:30	11		104		
01:45	3	20	108	399	
02:00	4		117		
02:15	8		105		
02:30	11		171		
02:45	8	31	146	539	
03:00	8		133		
03:15	9		144		
03:30	9		136		
03:45	24	50	128	541	
04:00	15		137		
04:15	24		151		
04:30	30		164		
04:45	62	131	165	617	
05:00	64		163		
05:15	57		158		
05:30	37		155		
05:45	71	229	150	626	
06:00	100		110		
06:15	123		107		
06:30	154		89		
06:45	175	552	98	404	
07:00	131		75		
07:15	167		58		
07:30	156		71		
07:45	145	599	71	275	
08:00	138		56		
08:15	133		43		
08:30	149		48		
08:45	143	563	50	197	
09:00	127		46		
09:15	115		50		
09:30	99		37		
09:45	95	436	34	167	
10:00	82		34		
10:15	80		43		
10:30	79		22		
10:45	91	332	28	127	
11:00	92		25		
11:15	81		18		
11:30	123		16		
11:45	122	418	15	74	
Total	3384		4366		
Percent			100.0%	0.0%	0.0%
Day Total		7750			
Peak	06:45	-	04:30	-	-
Vol.	629	-	650	-	-
P.H.F.	0.899		0.985		





## **Appendix I**

### Site Trip Generation Calculations



# Trip Generation Assessment

Project: The Dascomb Road Project - Andover, Massachusetts  
 Date: September 18, 2018  
 Analyst: TEC, Inc. / Elena Aung, E.I.T.  
 Source: Institute of Transportation Engineers - Trip Generation - 10th Ed.

## Proposed Development

### 30,000 SF Health / Fitness Club (ITE LUC 492)

Units:	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Transit Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips			
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT	IN	OUT
Weekday Daily *	988	N/A	988	50%	50%	494	494	50	52	0	0	0	886	0	0	444	442		
Weekday AM PH	39	N/A	39	51%	49%	20	19	3	4	0	0	0	32	0	0	17	15		
Weekday PM PH	104	112	112	57%	43%	64	48	10	6	0	0	0	96	0	0	54	42		
Saturday Daily *	626	N/A	626	50%	50%	313	313	20	22	0	0	0	584	0	0	293	291		
Sat Midday PH	98	N/A	98	49%	51%	48	50	4	6	0	0	0	88	0	0	44	44		

\* No 10th Edition Data - Trip rates obtained from ITE Trip Generation - 9th Edition

### 100-Room Business Hotel (ITE LUC 312)

Units:	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Transit Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips			
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT	IN	OUT
Weekday Daily	402	442	442	50%	50%	221	221	33	92	11	11	0	295	0	0	177	118		
Weekday AM PH	39	39	39	42%	58%	16	23	1	13	1	1	0	23	0	0	14	9		
Weekday PM PH	32	N/A	32	55%	45%	18	14	7	8	1	1	0	15	0	0	10	5		
Saturday Daily	580	N/A	580	50%	50%	290	290	44	100	15	15	0	406	0	0	231	175		
Sat Midday PH	46	46	46	48%	52%	22	24	3	10	1	1	0	31	0	0	18	13		

### 293,000 SF General Office Building (ITE LUC 710)

Units:	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Transit Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips			
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT	IN	OUT
Weekday Daily	2854	3010	3010	50%	50%	1505	1505	276	201	75	75	0	2383	0	0	1154	1229		
Weekday AM PH	340	302	302	86%	14%	260	42	33	25	13	2	0	229	0	0	214	15		
Weekday PM PH	337	316	316	16%	84%	51	265	9	30	3	13	0	261	0	0	39	222		
Saturday Daily	648	N/A	648	50%	50%	324	324	101	124	16	16	0	391	0	0	207	184		
Sat Midday PH	156	N/A	156	54%	46%	84	72	25	20	4	4	0	103	0	0	55	48		

### 115,000 SF Shopping Center (ITE LUC 820)

Units:	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Transit Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips			
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT	IN	OUT
Weekday Daily	4342	8612	8612	50%	50%	3306	3306	331	347	0	0	1542	4392	771	771	2204	2189		
Weekday AM PH	108	209	209	62%	38%	130	79	19	19	0	0	44	127	22	22	89	38		
Weekday PM PH	438	603	603	48%	52%	289	314	46	37	0	0	176	344	88	88	155	169		
Saturday Daily	5304	9720	9720	50%	50%	4860	4860	307	339	0	0	2360	6714	1180	1180	3373	3341		
Sat Midday PH	518	691	691	52%	48%	359	332	34	43	0	0	160	454	80	80	245	209		

Assumed 34% pass-by rate for weekday PM and 26% pass-by rate for all others (Trip Generation Handbook, 3rd Edition).

### 10,000 SF Quality Restaurant (ITE LUC 931)

Units:	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Transit Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips			
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT	IN	OUT
Weekday Daily	838	N/A	838	50%	50%	419	419	157	156	0	0	232	293	116	116	146	147		
Weekday AM PH	7	N/A	7	50%	50%	4	3	2	1	0	0	2	2	1	1	1	1		
Weekday PM PH	78	N/A	78	67%	33%	52	26	19	13	0	0	20	26	10	10	23	3		
Saturday Daily	900	N/A	900	50%	50%	450	450	171	123	0	0	266	340	133	133	146	194		
Sat Midday PH	107	N/A	107	59%	41%	63	44	25	16	0	0	30	36	15	15	23	19		

Assumed 44% passby rate (Trip Generation Handbook, 3rd Edition).

### 10,000 SF High-Turnover (Sit-Down) Restaurant (ITE LUC 932)

Units:	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Transit Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips			
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT	IN	OUT
Weekday Daily	1122	N/A	1122	50%	50%	561	561	210	209	0	0	302	401	151	151	200	201		
Weekday AM PH	99	N/A	99	55%	45%	54	45	26	22	0	0	22	29	11	11	17	12		
Weekday PM PH	98	N/A	98	62%	38%	61	37	22	19	0	0	24	33	12	12	27	6		
Saturday Daily	1224	N/A	1224	50%	50%	612	612	232	167	0	0	354	471	177	177	203	268		
Sat Midday PH	112	N/A	112	51%	49%	57	55	23	19	0	0	30	40	15	15	19	21		

Assumed 43% passby rate (Trip Generation Handbook, 3rd Edition).

## Existing Development

### 27,300 SF General Office Building (ITE LUC 710)

Units:	Total Trips		Total New Trips	% Distribution		# New Trips		Multi-Use Trips		Transit Trips		Total New Pass-by Trips	Total New Primary Trips	# Passby Trips		# Primary Trips			
	Avg. Rates	Fitted Curve		IN	OUT	IN	OUT	IN	OUT	IN	OUT			IN	OUT	IN	OUT	IN	OUT
Weekday Daily	266	N/A	266	50%	50%	133	133						266	0	0	133	133		
Weekday AM PH	32	N/A	32	86%	14%	28	4						32	0	0	28	4		
Weekday PM PH	31	N/A	31	16%	84%	5	26						31	0	0	5	26		
Saturday Daily	60	N/A	60	50%	50%	30	30						60	0	0	30	30		
Sat Midday PH	14	N/A	14	54%	46%	8	6						14	0	0	8	6		

	Total Trips	Total New Trips	Total Multi-Use Trips		Total Transit Trips		Total New Pass-by Trips	Total New Primary Trips	Total Pass-by Trips		Total Primary Trips		
			In	Out	In	Out			In	Out	In	Out	
Weekday Daily	12746	6373	6373	1057	1057	86	86	2076	8384	1038	1038	4192	4192
Weekday AM Peak Hour	663	456	207	84	84	14	3	68	410	34	34	324	86
Weekday PM Peak Hour	1208	530	678	113	113	4	14	220	744	110	110	303	441
Saturday Daily	13638	6819	6819	875	875	31	31	2980	8846	1490	1490	4423	4423
Sat Midday Peak Hour	1196	625	571	114	114	5	5	220	738	110	110	396	342

# General Office Building (710)

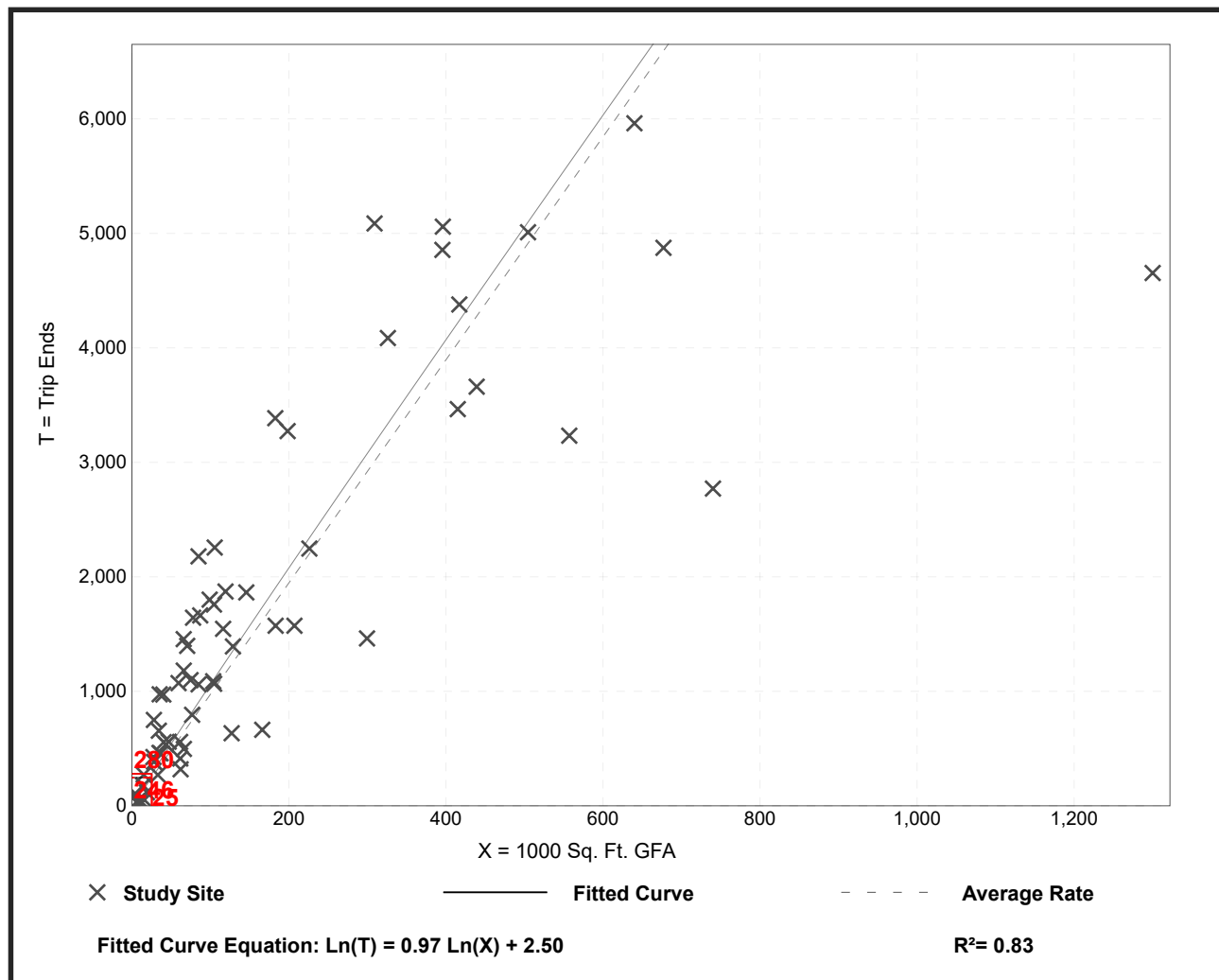
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 66  
Avg. 1000 Sq. Ft. GFA: 171  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.74	2.71 - 27.56	5.15

## Data Plot and Equation



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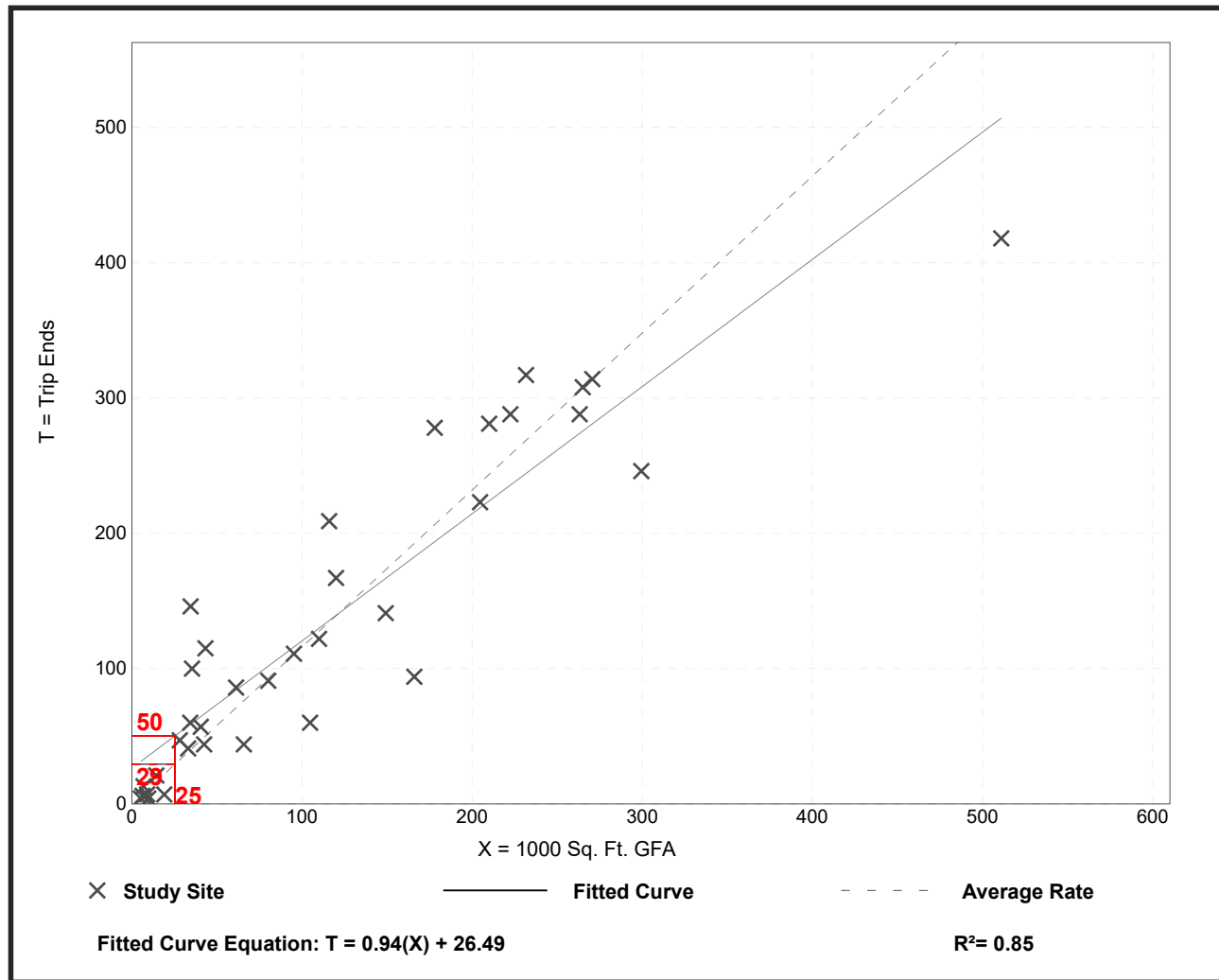
# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 35  
 Avg. 1000 Sq. Ft. GFA: 117  
 Directional Distribution: 86% entering, 14% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.16	0.37 - 4.23	0.47

## Data Plot and Equation



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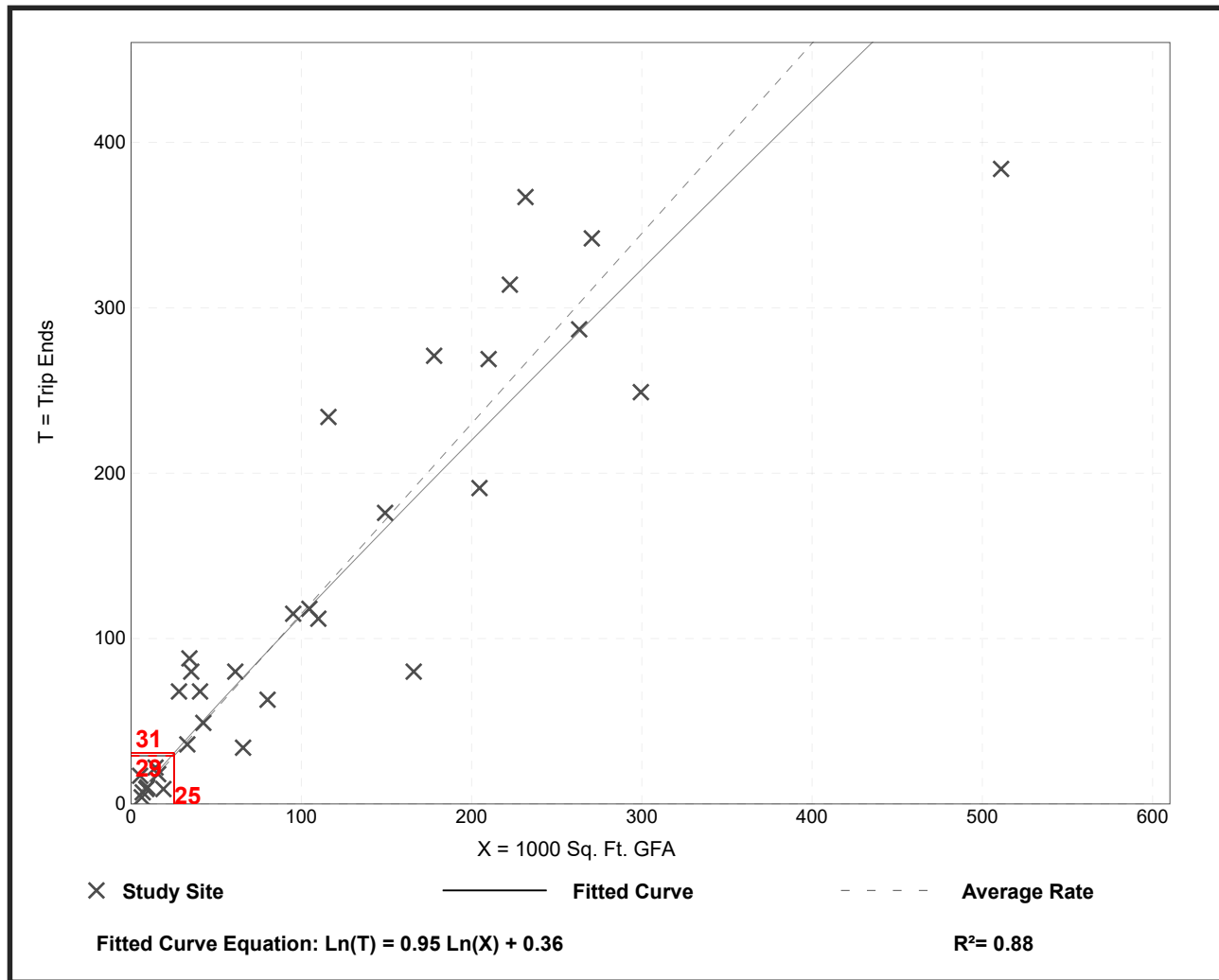
# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 32  
 Avg. 1000 Sq. Ft. GFA: 114  
 Directional Distribution: 16% entering, 84% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.15	0.47 - 3.23	0.42

## Data Plot and Equation



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# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday**

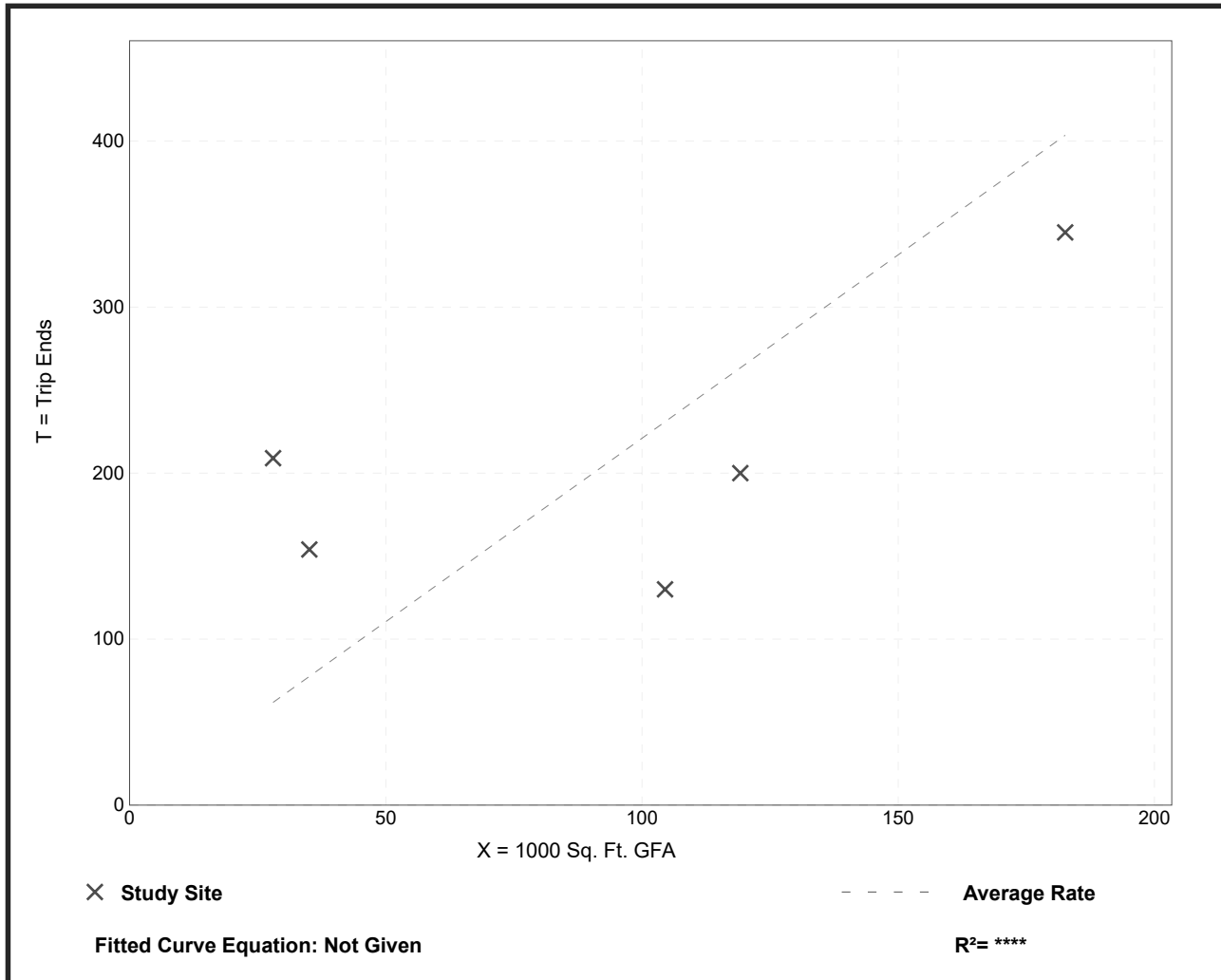
**Setting/Location: General Urban/Suburban**  
Number of Studies: 5  
Avg. 1000 Sq. Ft. GFA: 94  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.21	1.24 - 7.46	1.70

## Data Plot and Equation

*Caution – Small Sample Size*



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# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday, Peak Hour of Generator**

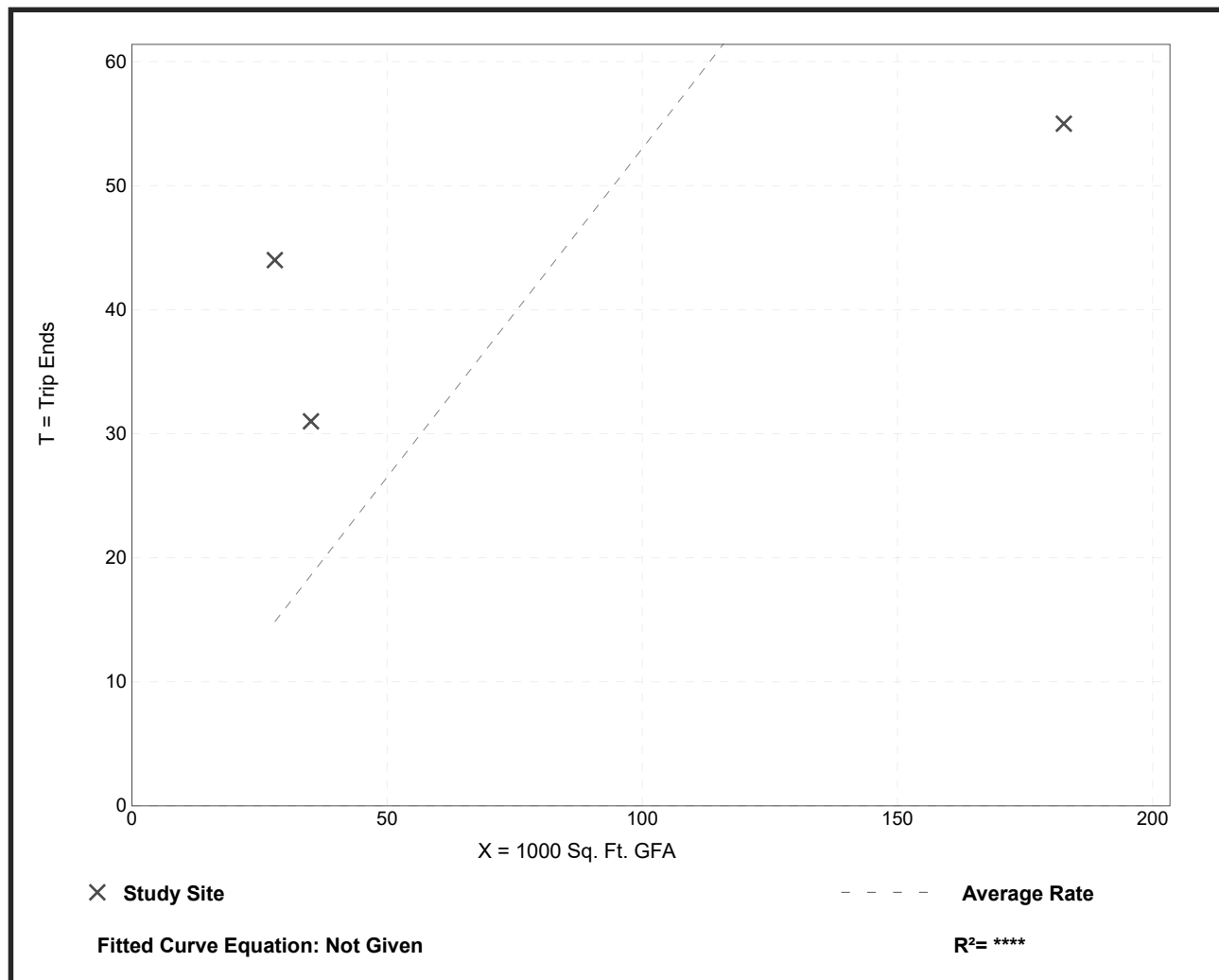
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 3  
 Avg. 1000 Sq. Ft. GFA: 82  
 Directional Distribution: 54% entering, 46% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.53	0.30 - 1.57	0.52

## Data Plot and Equation

*Caution – Small Sample Size*



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# Business Hotel (312)

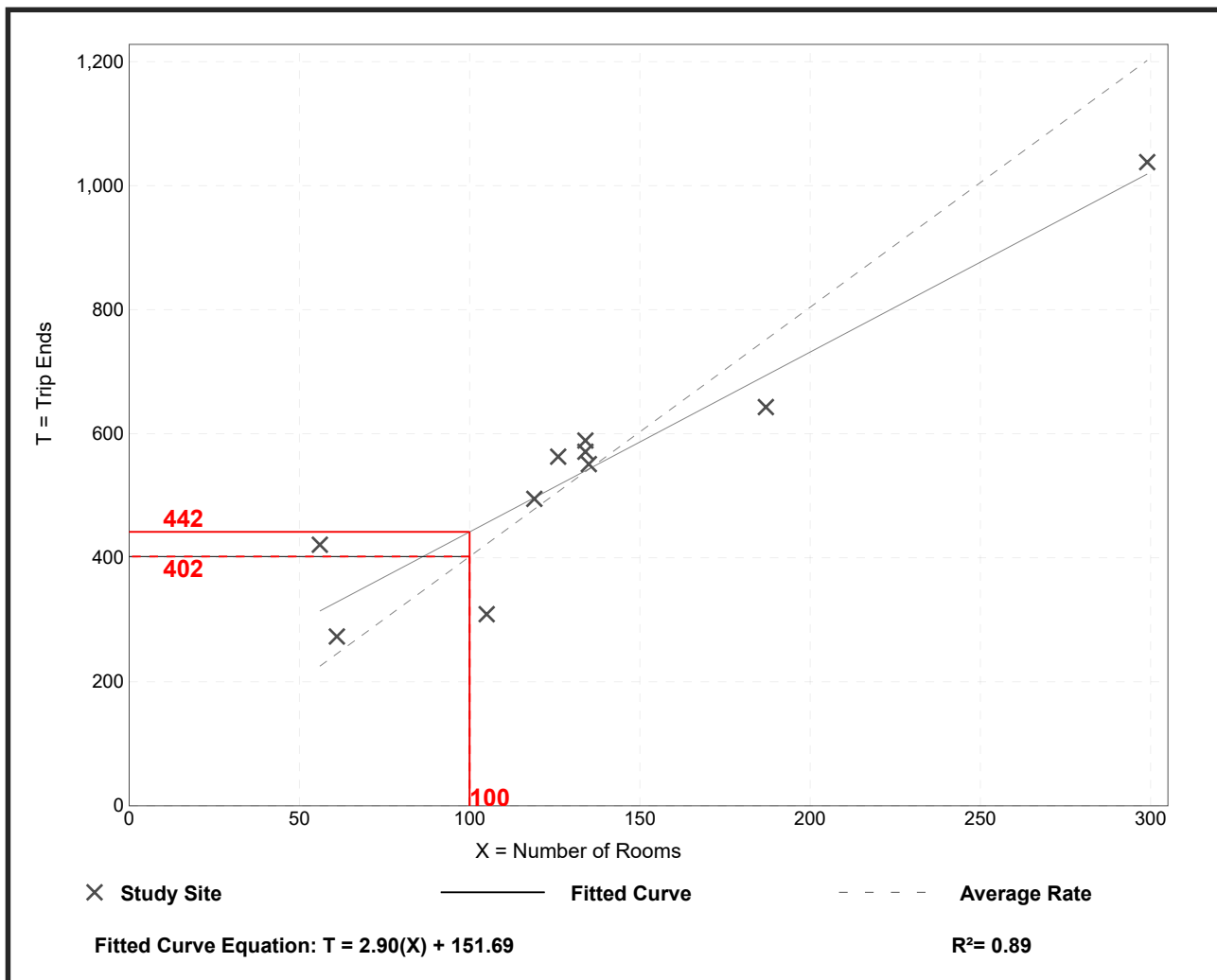
**Vehicle Trip Ends vs: Rooms**  
**On a: Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 10  
Avg. Num. of Rooms: 136  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
4.02	2.94 - 7.52	0.92

## Data Plot and Equation



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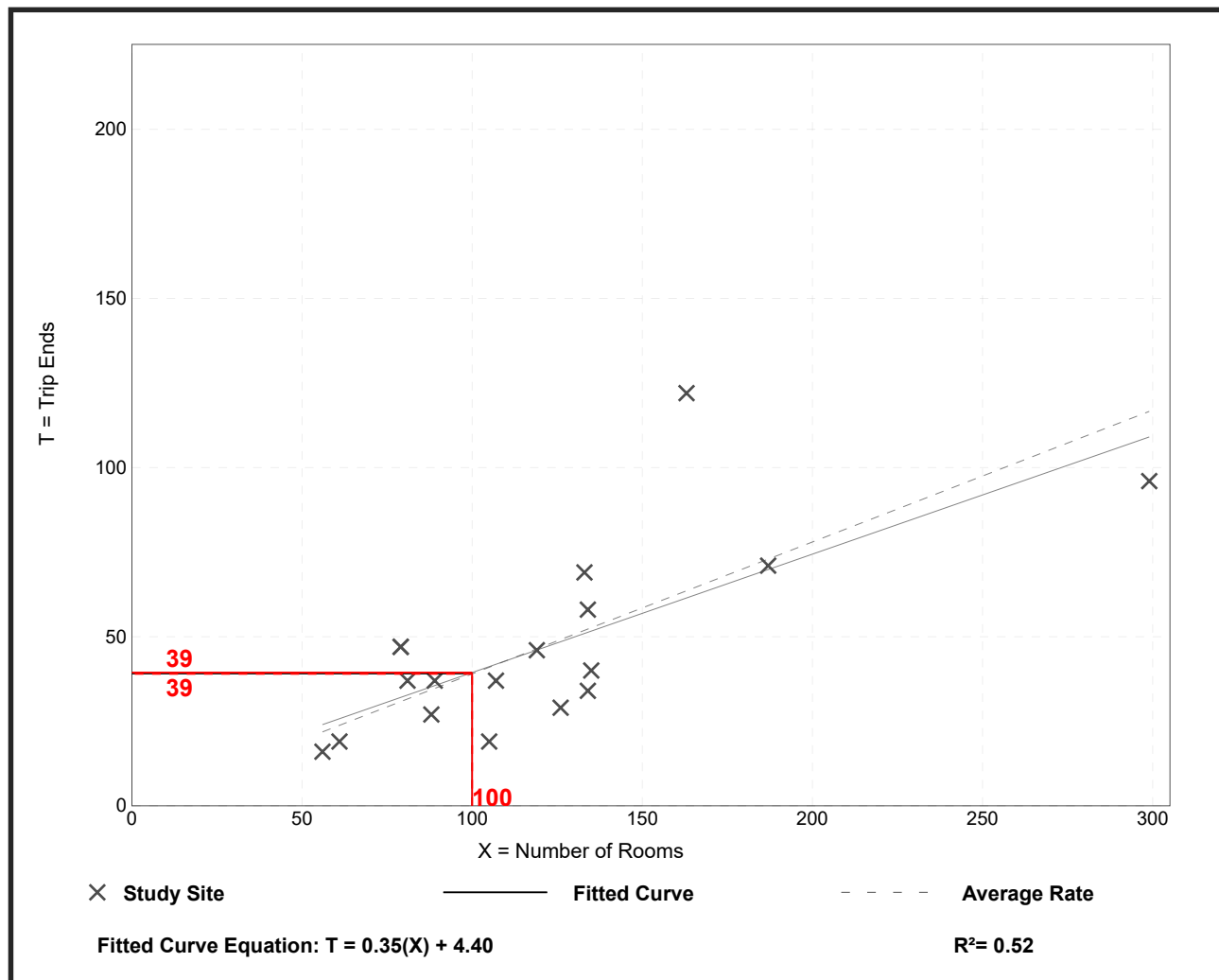
# Business Hotel (312)

**Vehicle Trip Ends vs: Rooms**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 18  
 Avg. Num. of Rooms: 121  
 Directional Distribution: 42% entering, 58% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.39	0.18 - 0.75	0.15

## Data Plot and Equation



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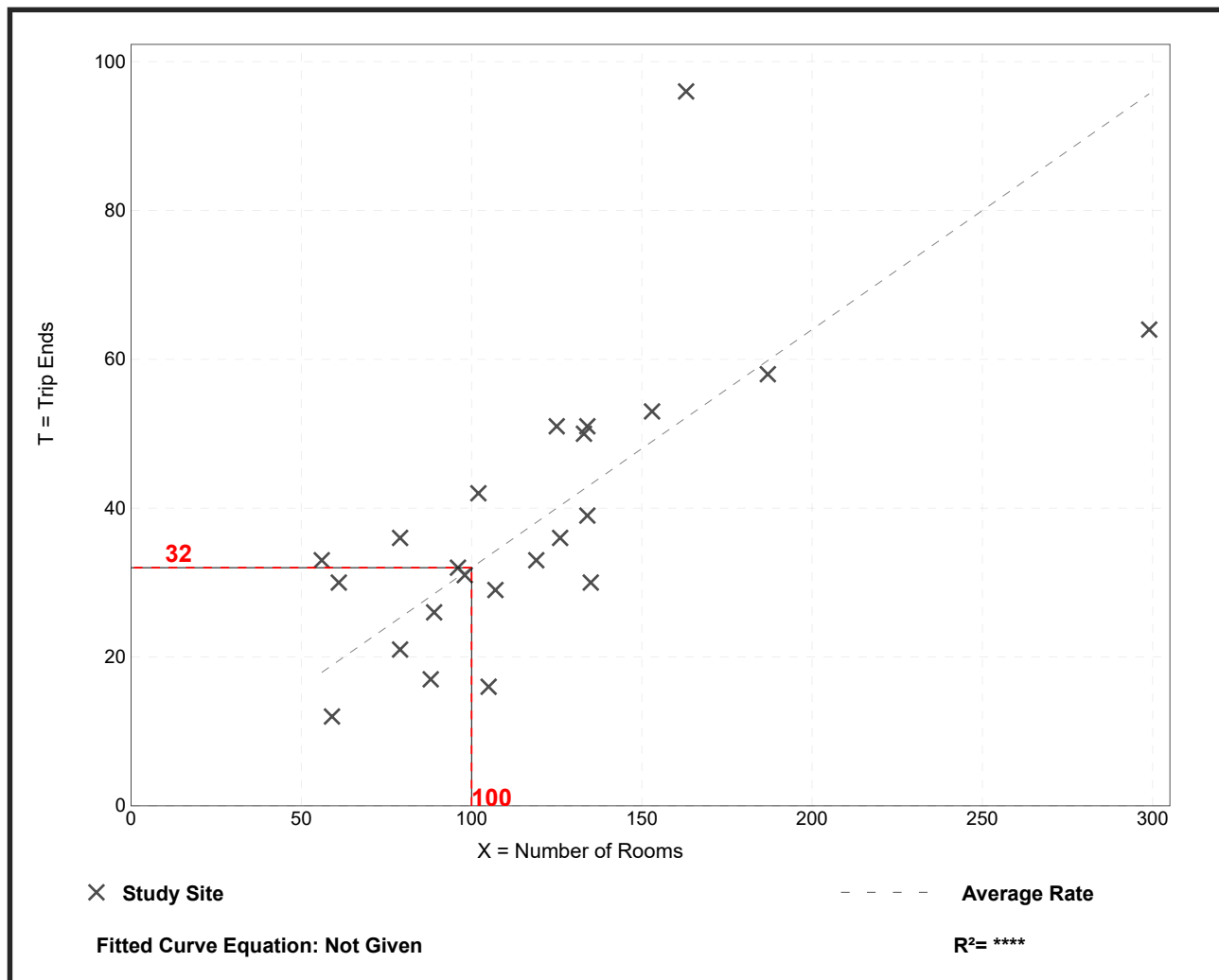
# Business Hotel (312)

**Vehicle Trip Ends vs: Rooms**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 23  
 Avg. Num. of Rooms: 119  
 Directional Distribution: 55% entering, 45% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.32	0.15 - 0.59	0.11

## Data Plot and Equation



# Business Hotel (312)

**Vehicle Trip Ends vs: Rooms**  
**On a: Saturday**

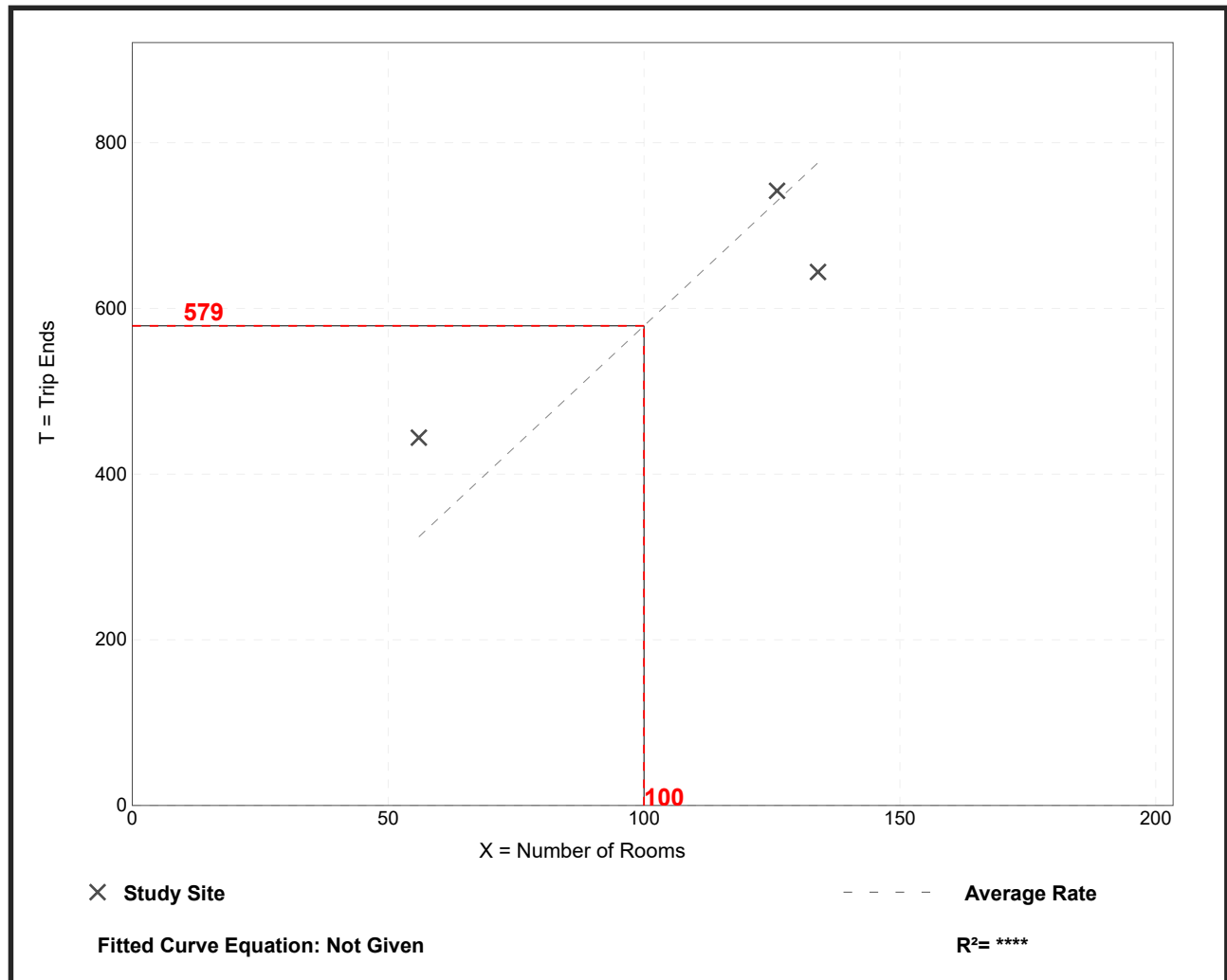
**Setting/Location: General Urban/Suburban**  
Number of Studies: 3  
Avg. Num. of Rooms: 105  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
5.79	4.81 - 7.93	1.36

## Data Plot and Equation

*Caution – Small Sample Size*



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# Business Hotel (312)

**Vehicle Trip Ends vs: Rooms**  
**On a: Saturday, Peak Hour of Generator**

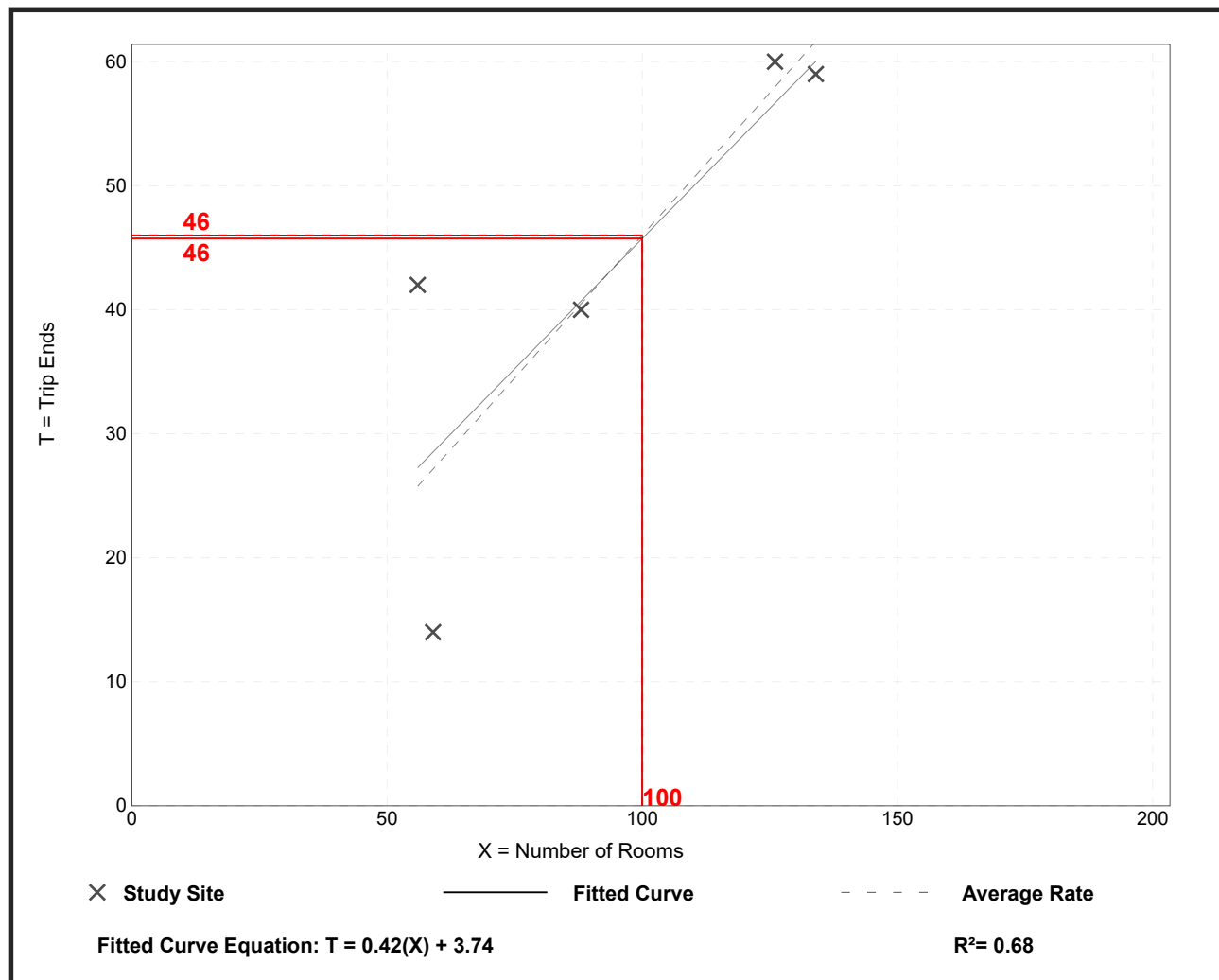
**Setting/Location: General Urban/Suburban**  
Number of Studies: 5  
Avg. Num. of Rooms: 93  
Directional Distribution: 48% entering, 52% exiting

## Vehicle Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
0.46	0.24 - 0.75	0.14

## Data Plot and Equation

*Caution – Small Sample Size*



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## Trip Generation Estimate

Project: The Dascomb Road Project - Andover, Massachusetts  
Date: September 18, 2018  
Analyst: TEC, Inc. / Samuel W. Gregorio, P.E., PTOE  
Source: Institute of Transportation Engineers - *Trip Generation, 9th Edition*

**ITE Land Use Code (LUC):** 492 Health/Fitness Club

Average Vehicle Trips Ends vs: 1000 SF Gross Floor Area  
Independent Variable (X): 30 KSF  
Curve Method: Average

### AVERAGE WEEKDAY DAILY

$T = 32.93 * (X)$   
 $T = 32.93 * 30.00$   
 $T = \boxed{988}$  vehicle trips  
with 50% entering ( 494 vpd) and with 50% exiting ( 494 vpd)

### AVERAGE SATURDAY DAILY

$T = 20.89 * (X)$   
 $T = 20.89 * 30.00$   
 $T = \boxed{626}$  vehicle trips  
with 50% entering ( 313 vpd) and with 50% exiting ( 313 vpd)

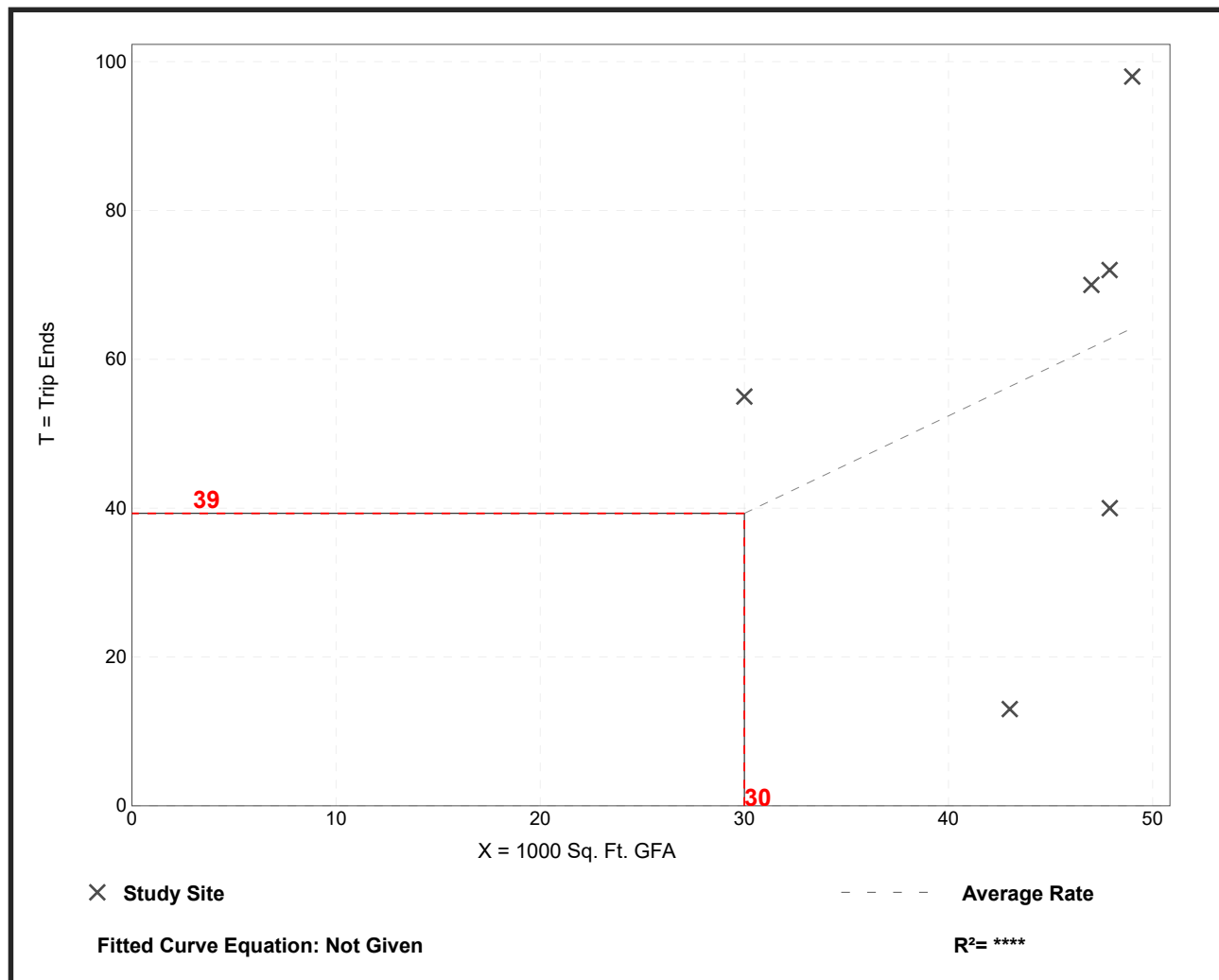
# Health/Fitness Club (492)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 6  
 Avg. 1000 Sq. Ft. GFA: 44  
 Directional Distribution: 51% entering, 49% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.31	0.30 - 2.00	0.64

## Data Plot and Equation



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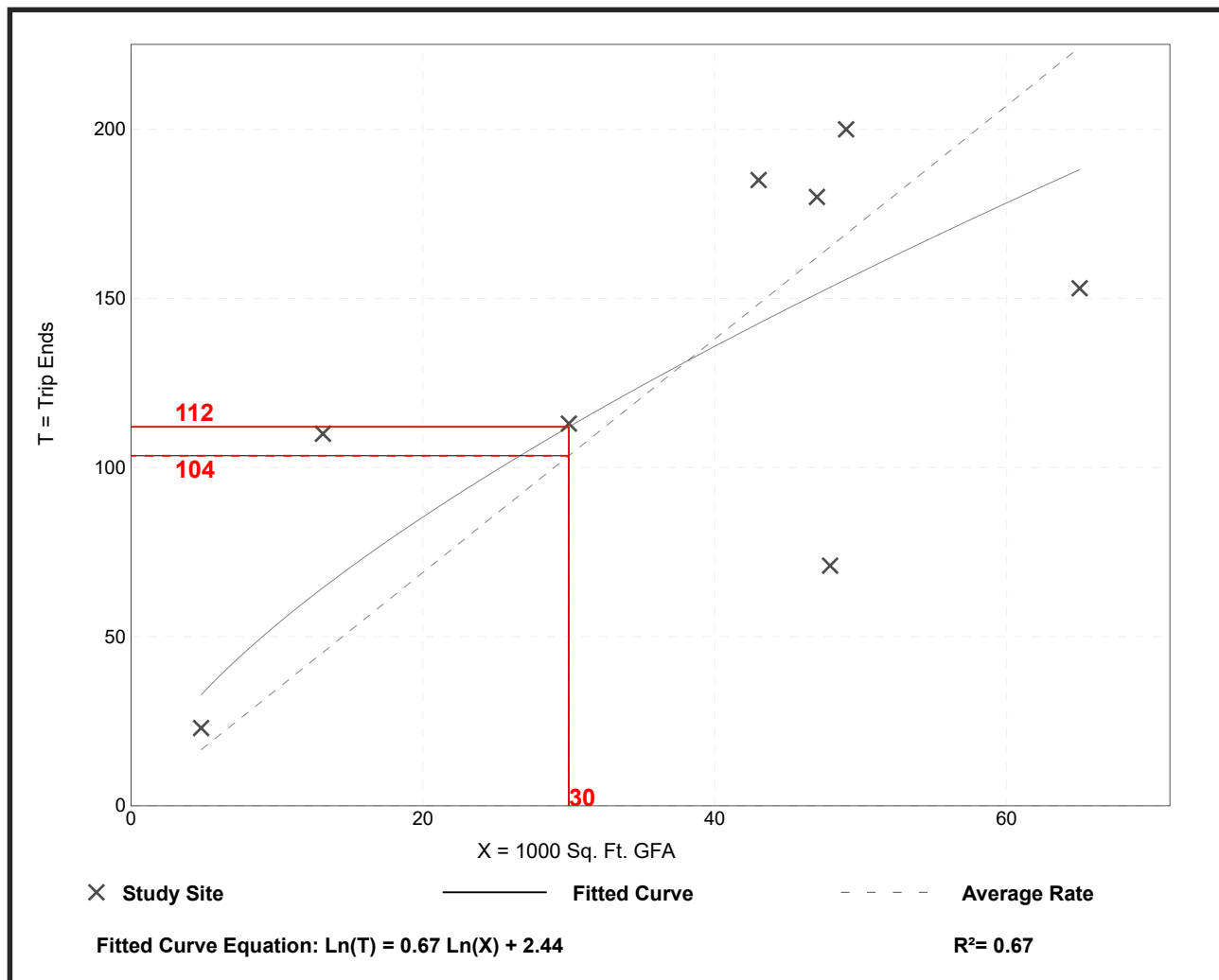
# Health/Fitness Club (492)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 8  
 Avg. 1000 Sq. Ft. GFA: 37  
 Directional Distribution: 57% entering, 43% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.45	1.48 - 8.37	1.57

## Data Plot and Equation



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# Health/Fitness Club (492)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday, Peak Hour of Generator**

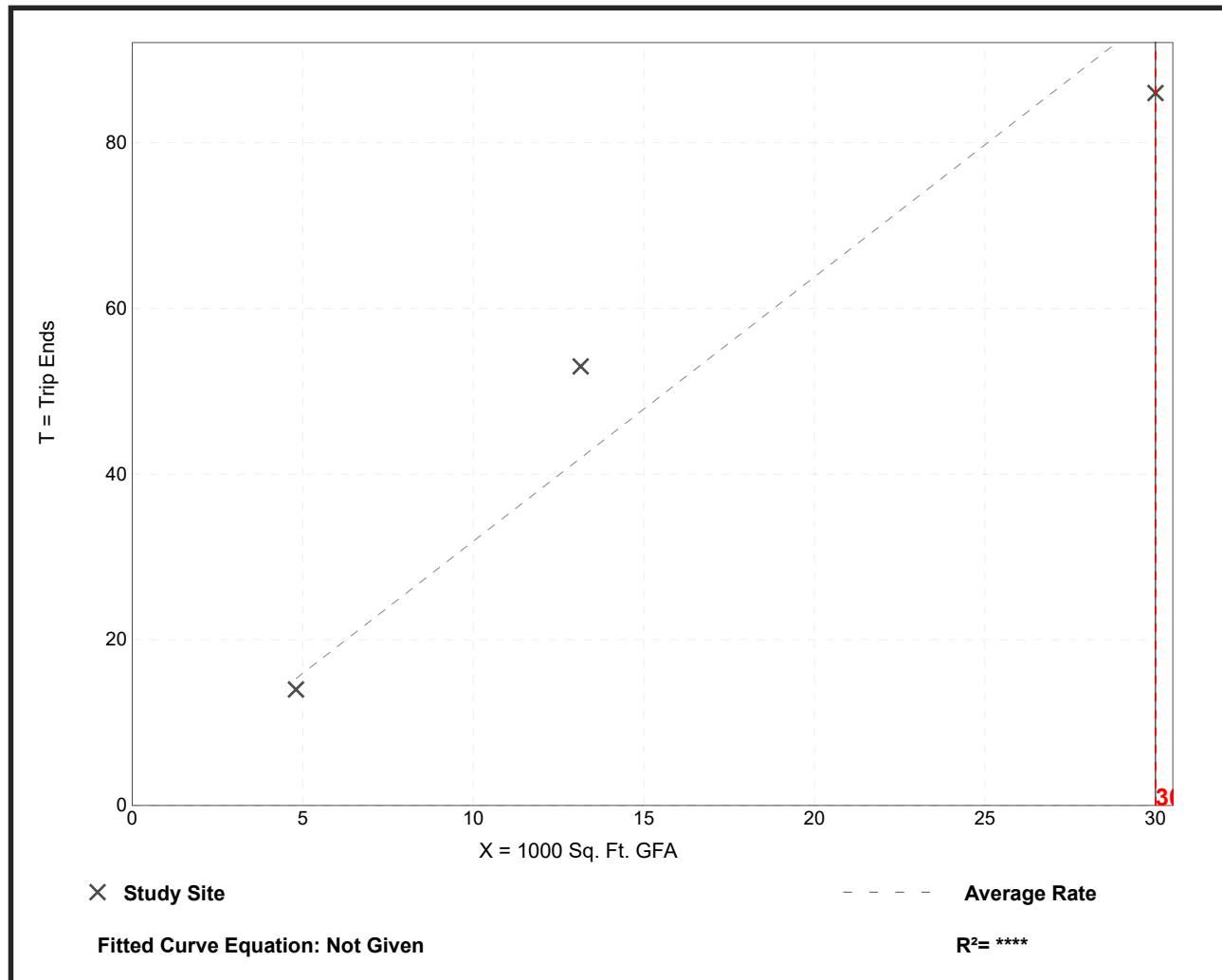
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 3  
 Avg. 1000 Sq. Ft. GFA: 16  
 Directional Distribution: 49% entering, 51% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.19	2.87 - 4.03	0.63

## Data Plot and Equation

*Caution – Small Sample Size*



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# General Office Building (710)

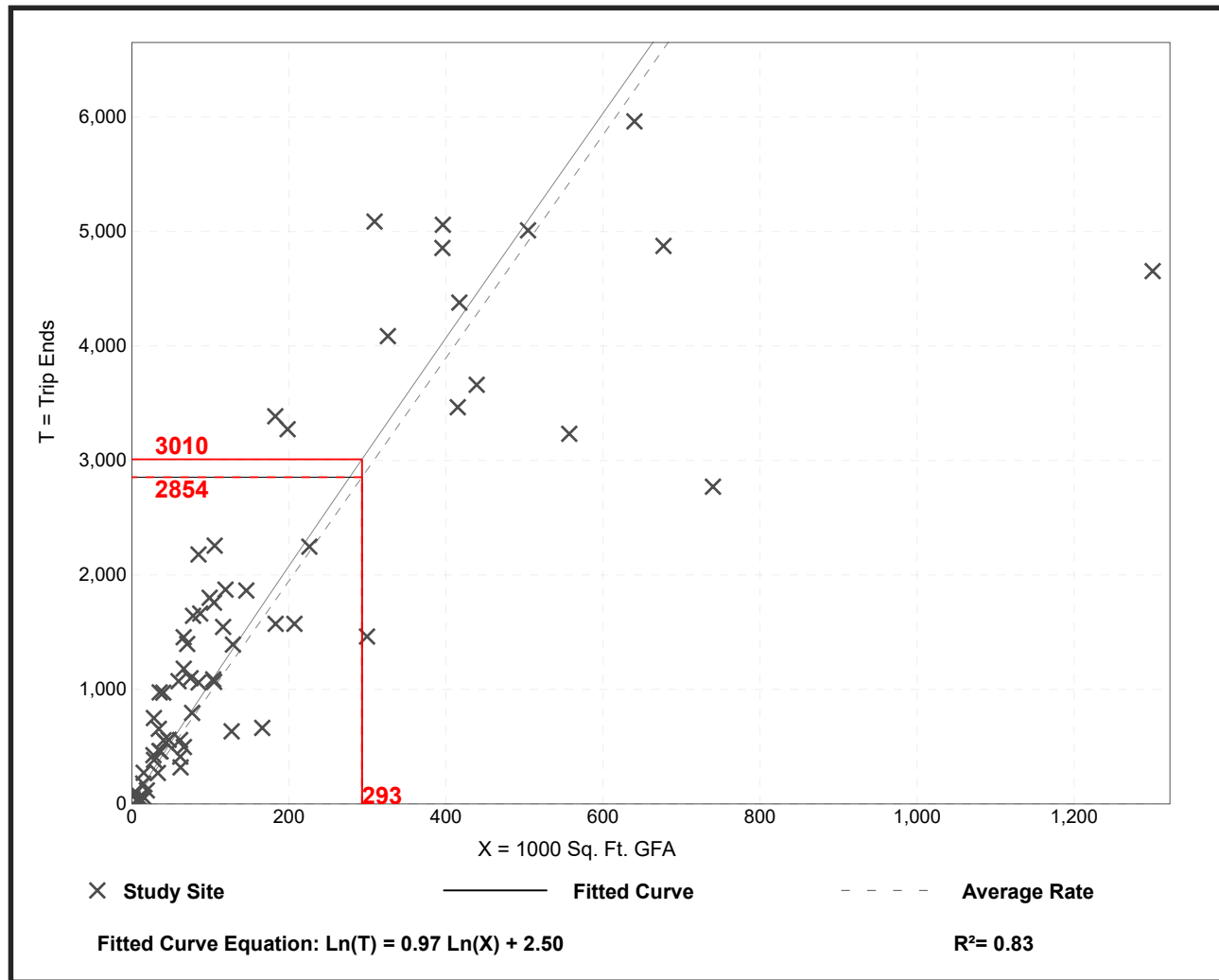
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 66  
Avg. 1000 Sq. Ft. GFA: 171  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.74	2.71 - 27.56	5.15

## Data Plot and Equation



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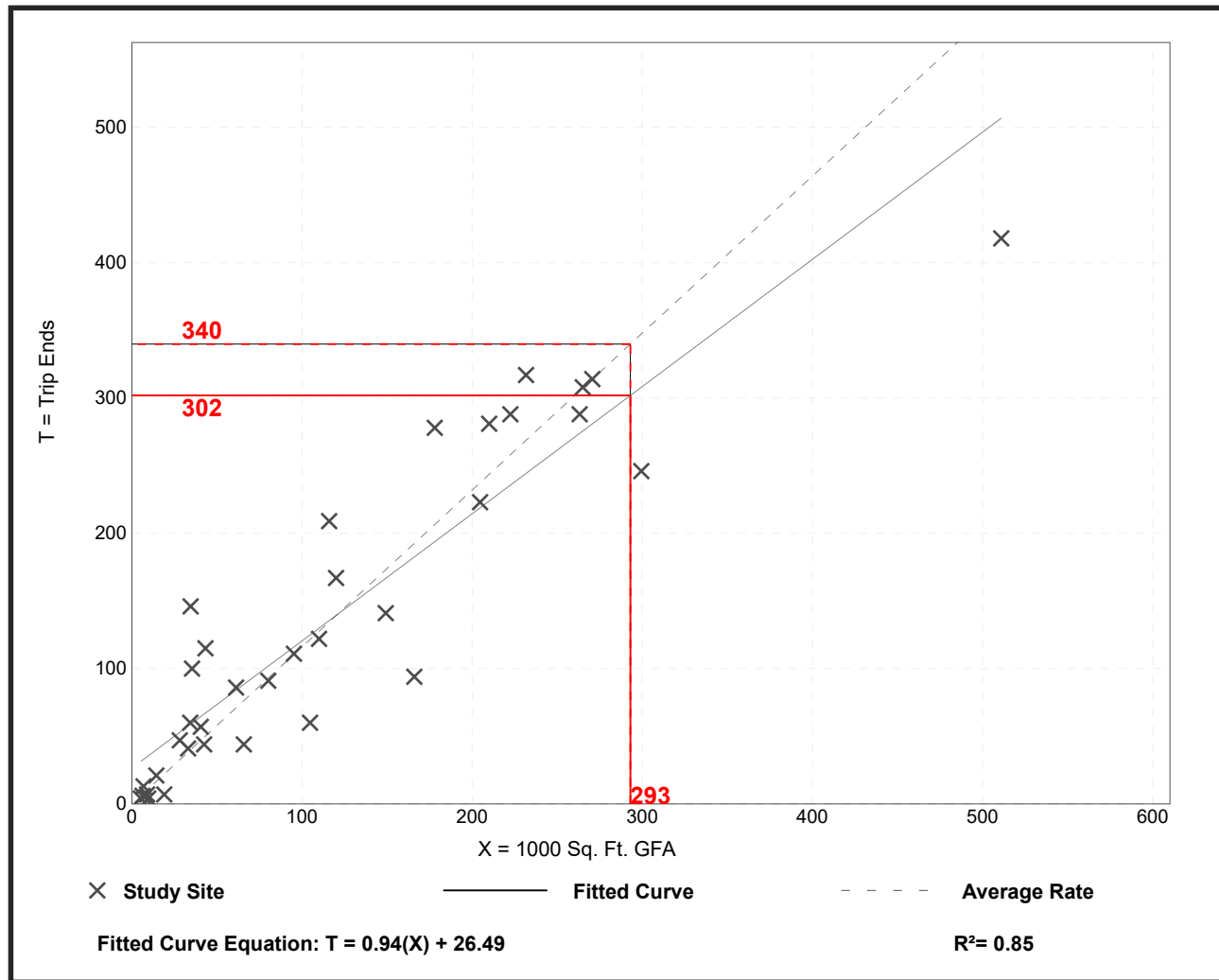
# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 35  
 Avg. 1000 Sq. Ft. GFA: 117  
 Directional Distribution: 86% entering, 14% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.16	0.37 - 4.23	0.47

## Data Plot and Equation



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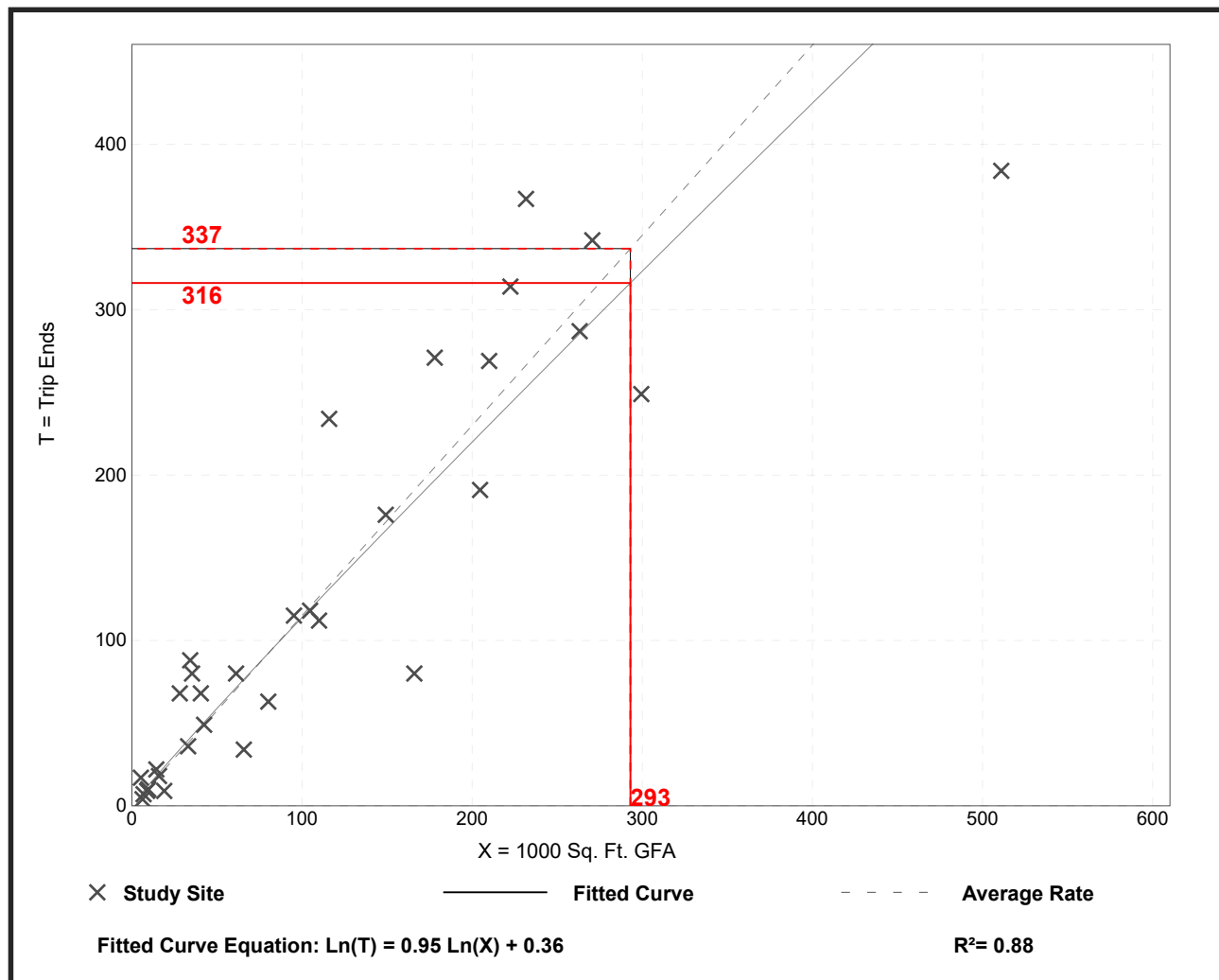
# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 32  
 Avg. 1000 Sq. Ft. GFA: 114  
 Directional Distribution: 16% entering, 84% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.15	0.47 - 3.23	0.42

## Data Plot and Equation



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# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday**

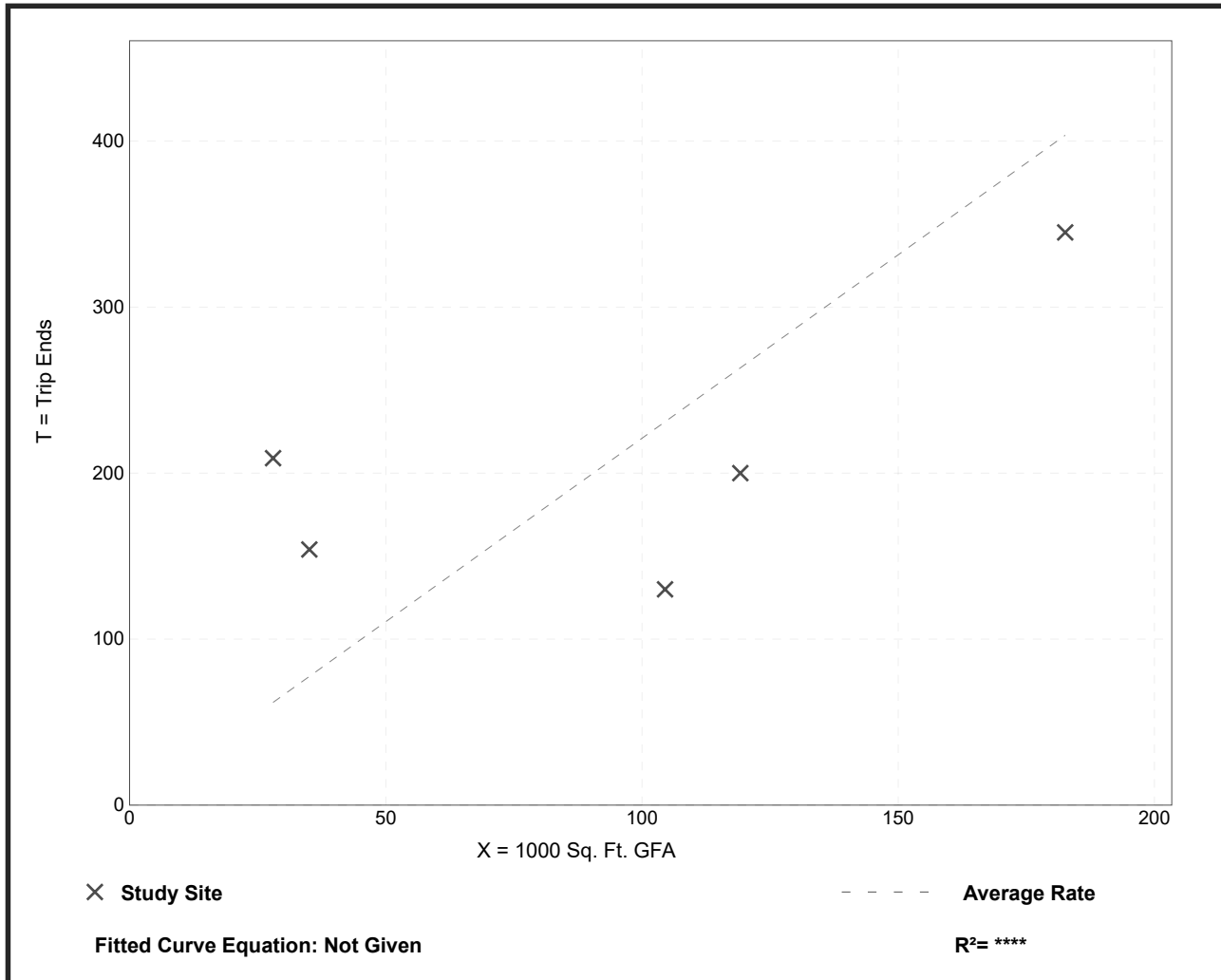
**Setting/Location: General Urban/Suburban**  
Number of Studies: 5  
Avg. 1000 Sq. Ft. GFA: 94  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.21	1.24 - 7.46	1.70

## Data Plot and Equation

*Caution – Small Sample Size*



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# General Office Building (710)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday, Peak Hour of Generator**

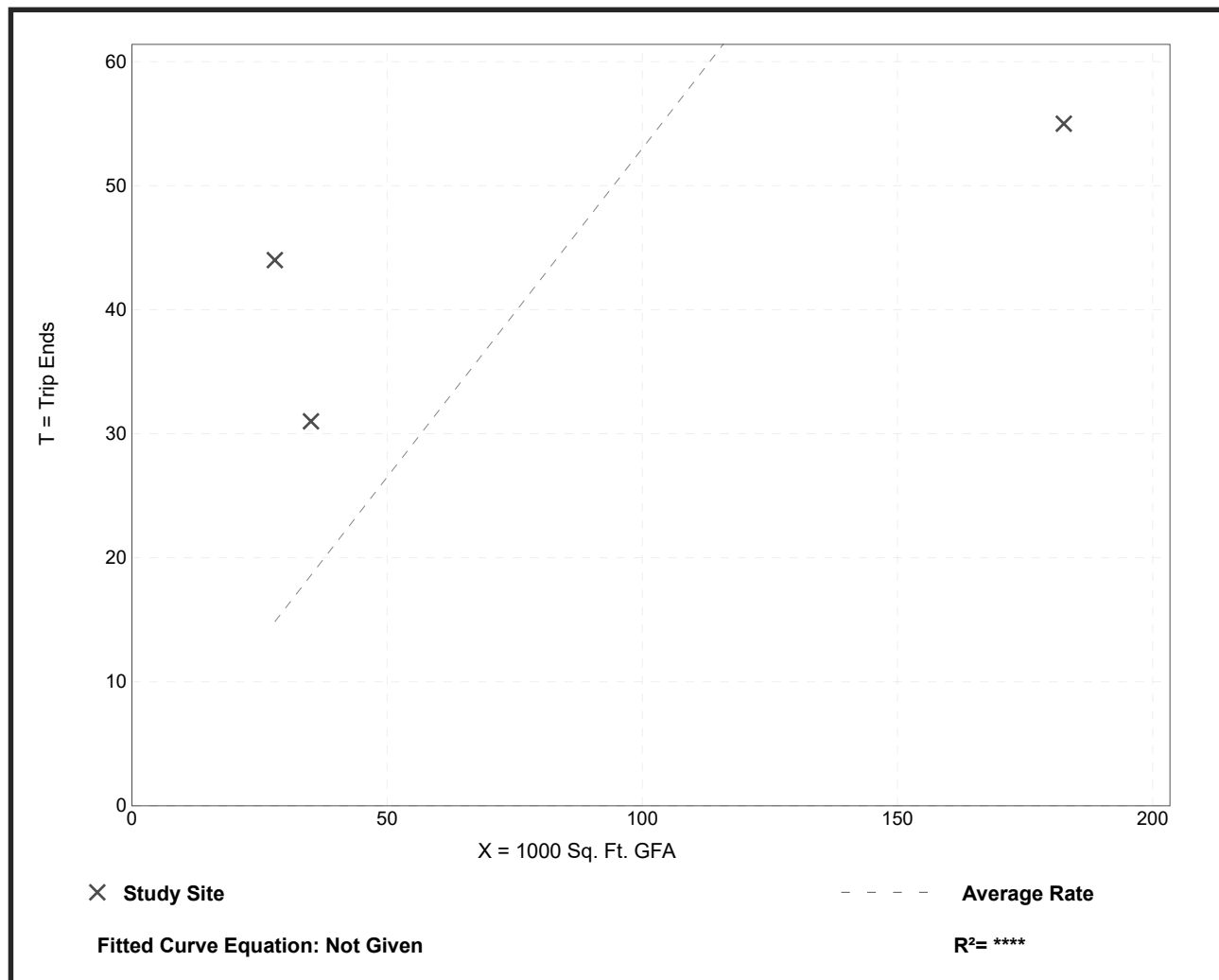
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 3  
 Avg. 1000 Sq. Ft. GFA: 82  
 Directional Distribution: 54% entering, 46% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.53	0.30 - 1.57	0.52

## Data Plot and Equation

*Caution – Small Sample Size*



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# Shopping Center (820)

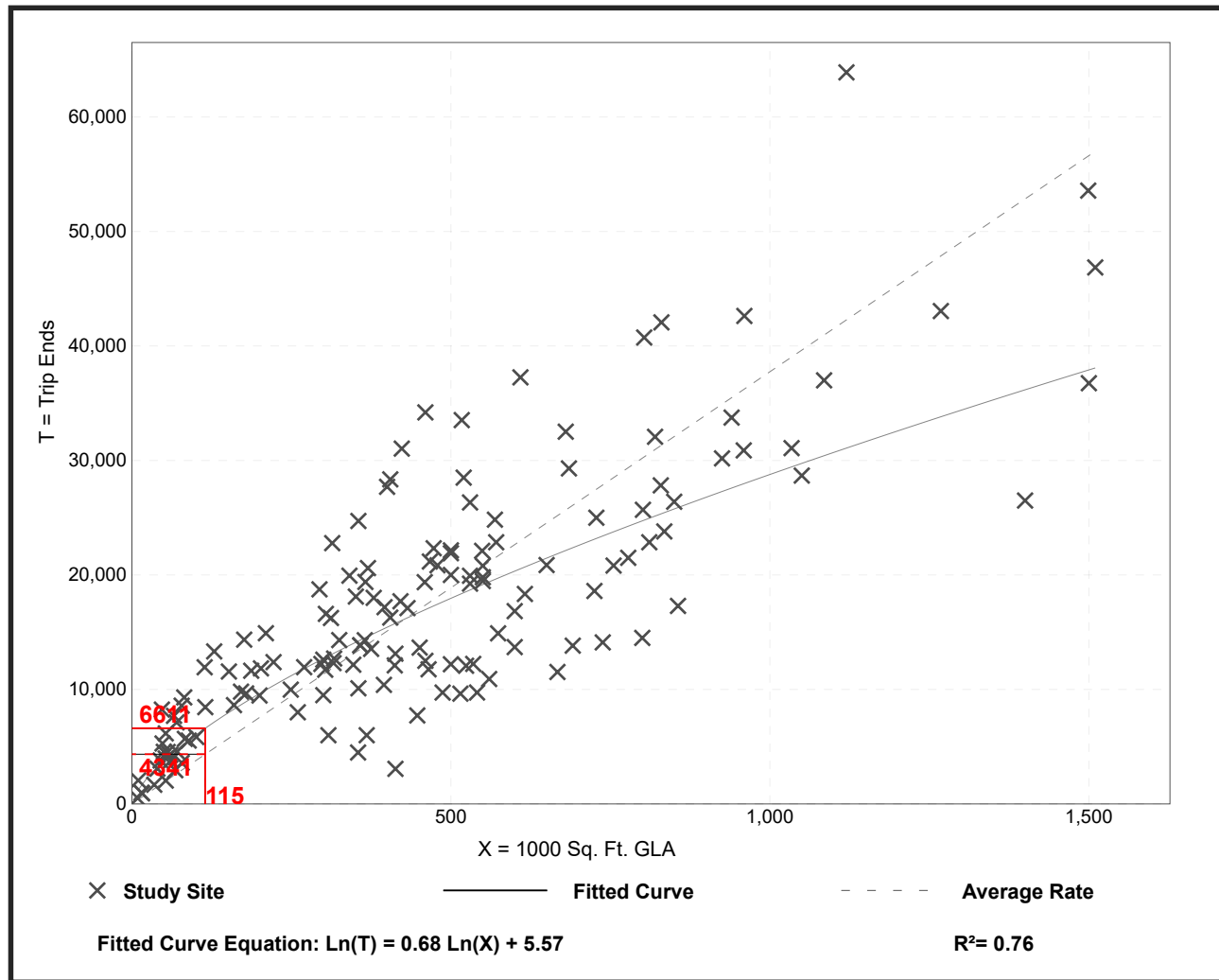
**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 147  
Avg. 1000 Sq. Ft. GLA: 453  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

## Data Plot and Equation



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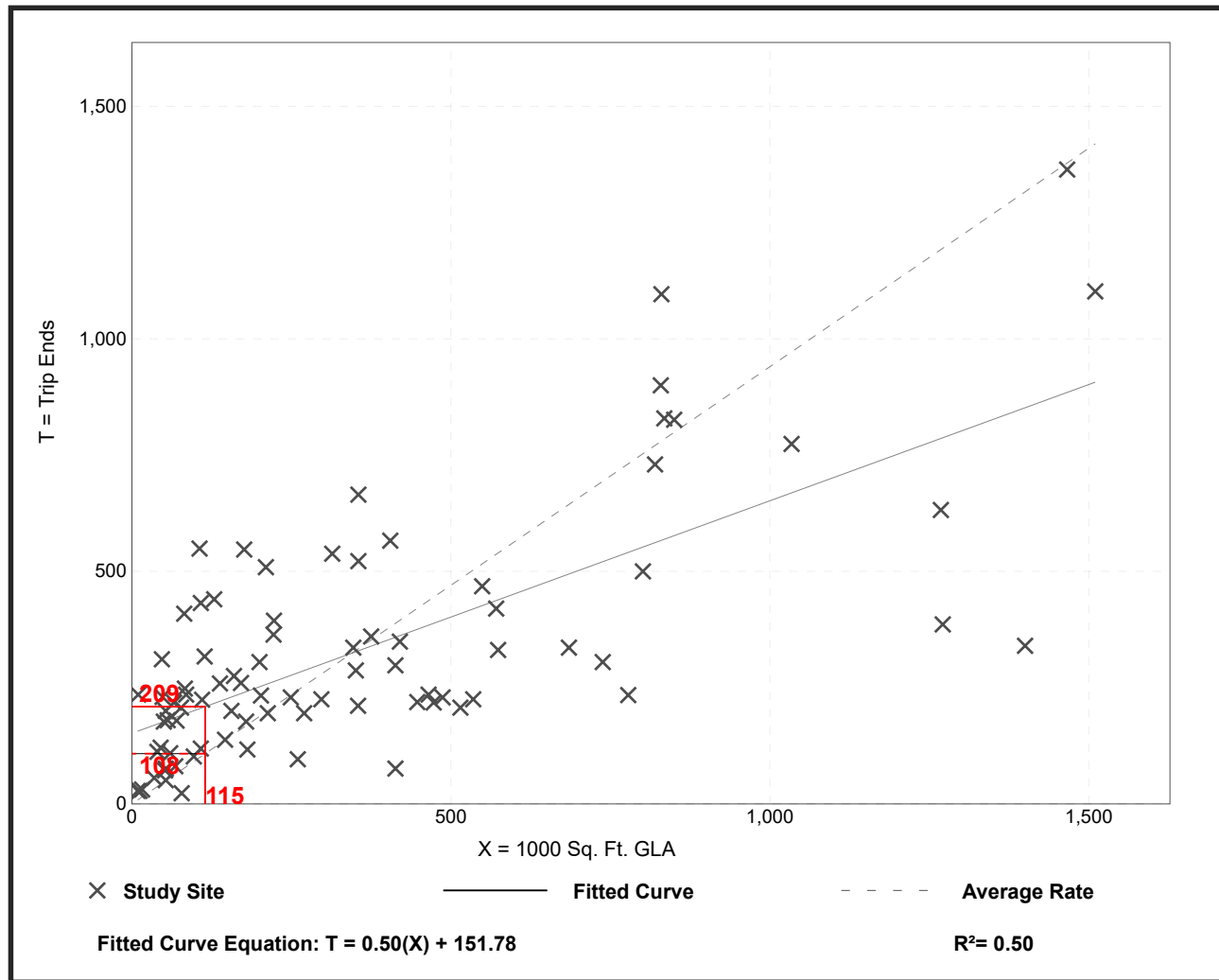
# Shopping Center (820)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 84  
 Avg. 1000 Sq. Ft. GLA: 351  
 Directional Distribution: 62% entering, 38% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

## Data Plot and Equation



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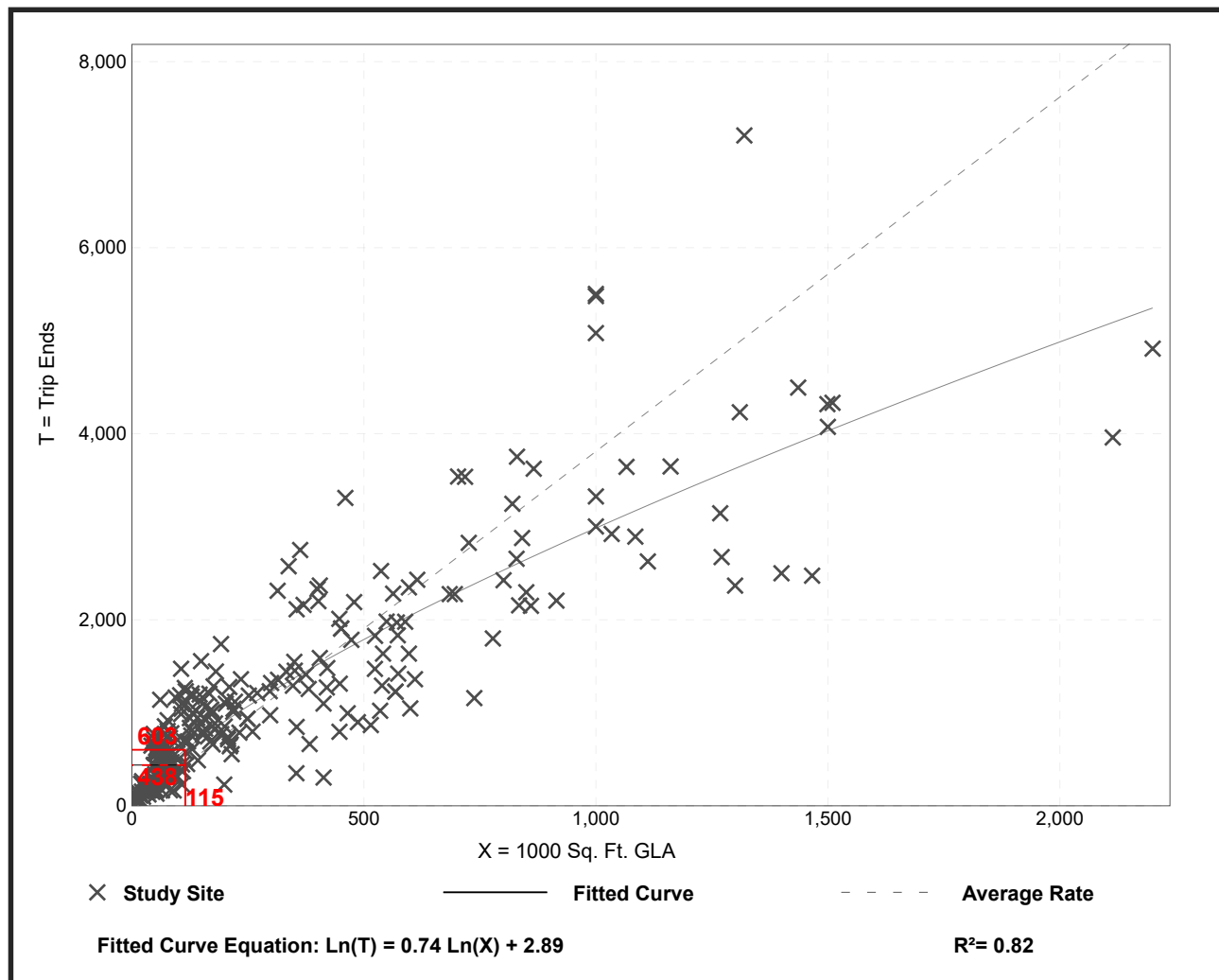
# Shopping Center (820)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 261  
 Avg. 1000 Sq. Ft. GLA: 327  
 Directional Distribution: 48% entering, 52% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

## Data Plot and Equation



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# Shopping Center (820)

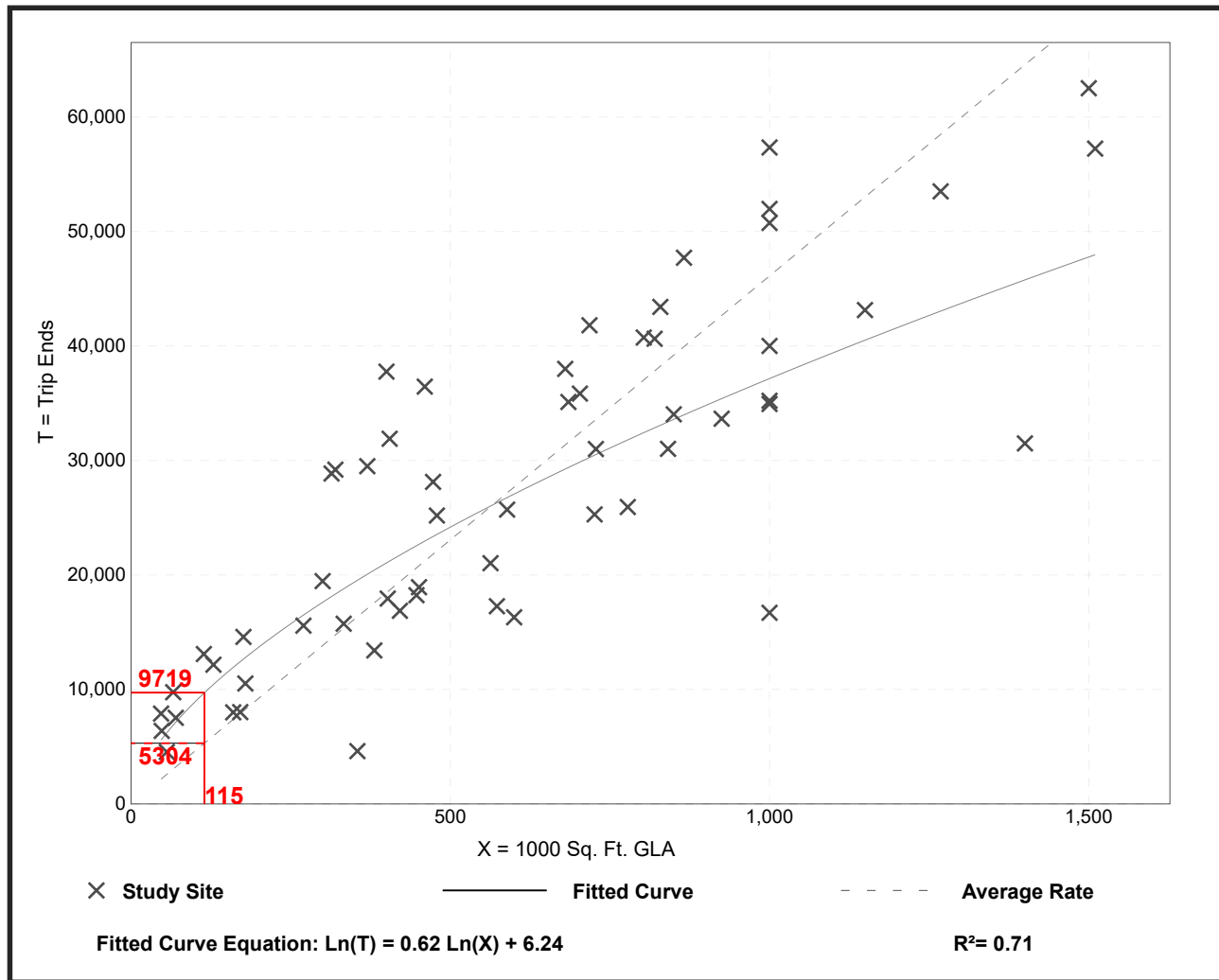
**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Saturday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 58  
Avg. 1000 Sq. Ft. GLA: 602  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
46.12	13.01 - 167.89	17.91

## Data Plot and Equation



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# Shopping Center (820)

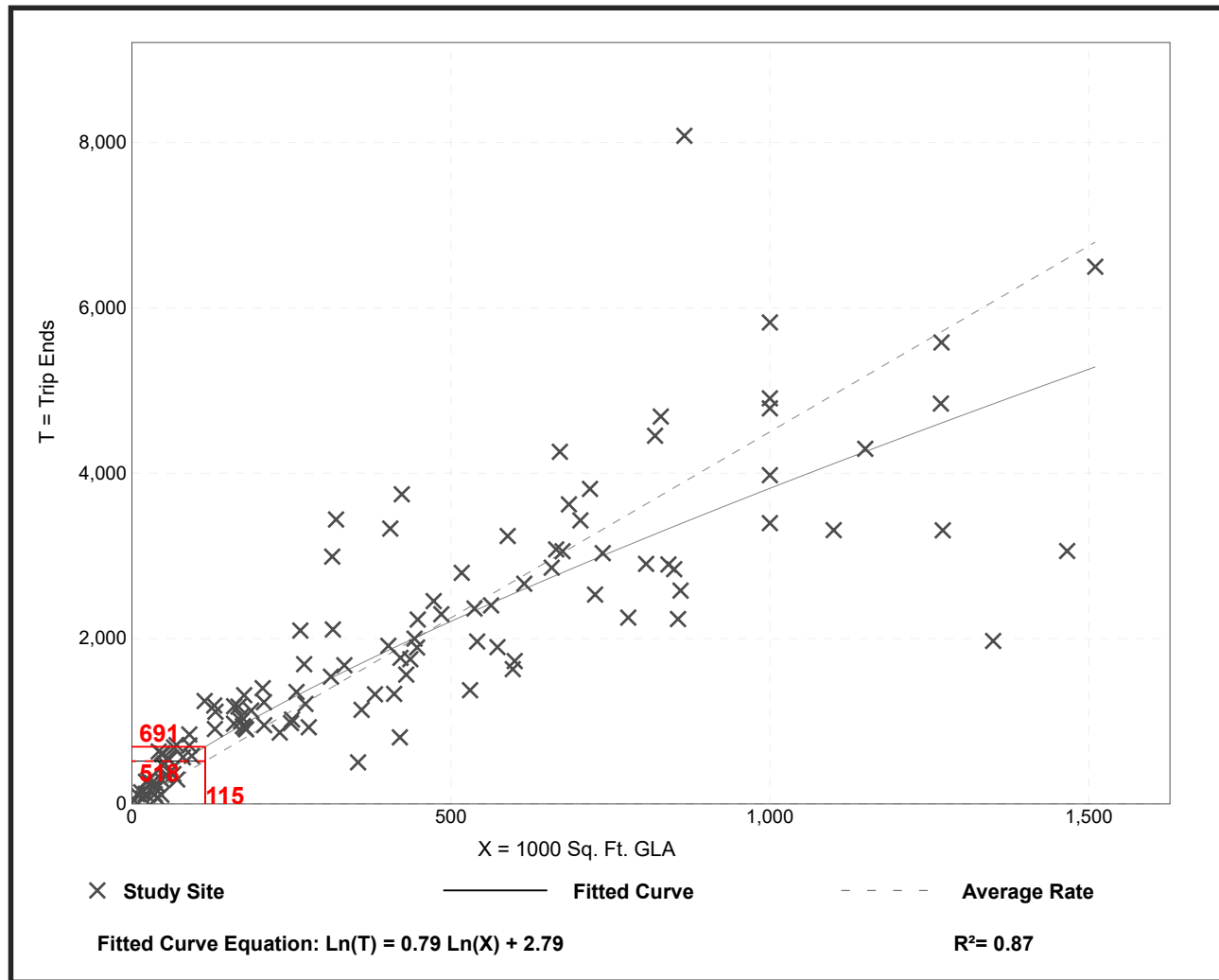
**Vehicle Trip Ends vs: 1000 Sq. Ft. GLA**  
**On a: Saturday, Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 119  
 Avg. 1000 Sq. Ft. GLA: 416  
 Directional Distribution: 52% entering, 48% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.50	1.42 - 15.10	1.88

## Data Plot and Equation



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# Quality Restaurant (931)

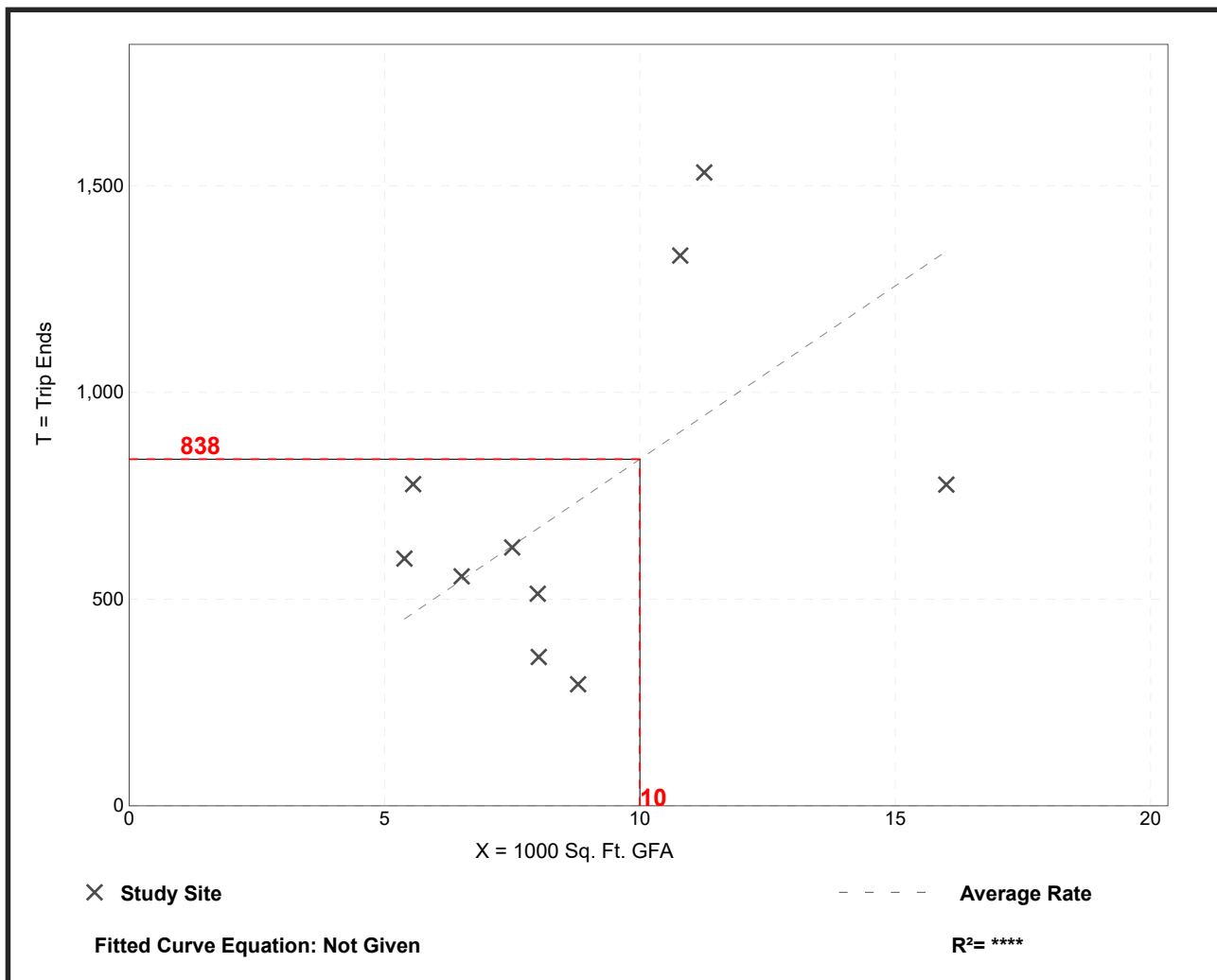
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 10  
Avg. 1000 Sq. Ft. GFA: 9  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
83.84	33.45 - 139.93	40.01

## Data Plot and Equation



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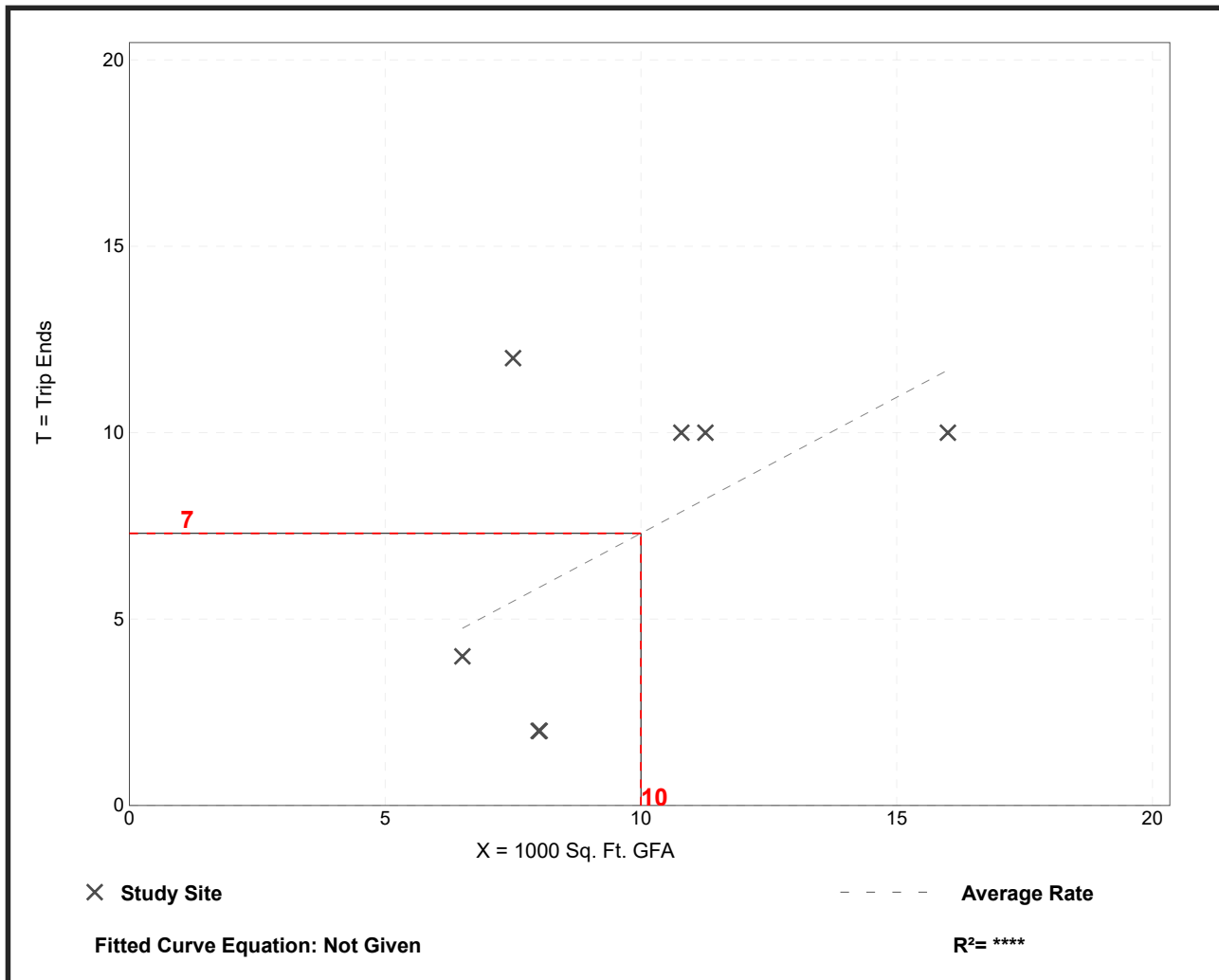
# Quality Restaurant (931)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 7  
 Avg. 1000 Sq. Ft. GFA: 10  
 Directional Distribution: Not Available

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.73	0.25 - 1.60	0.42

## Data Plot and Equation



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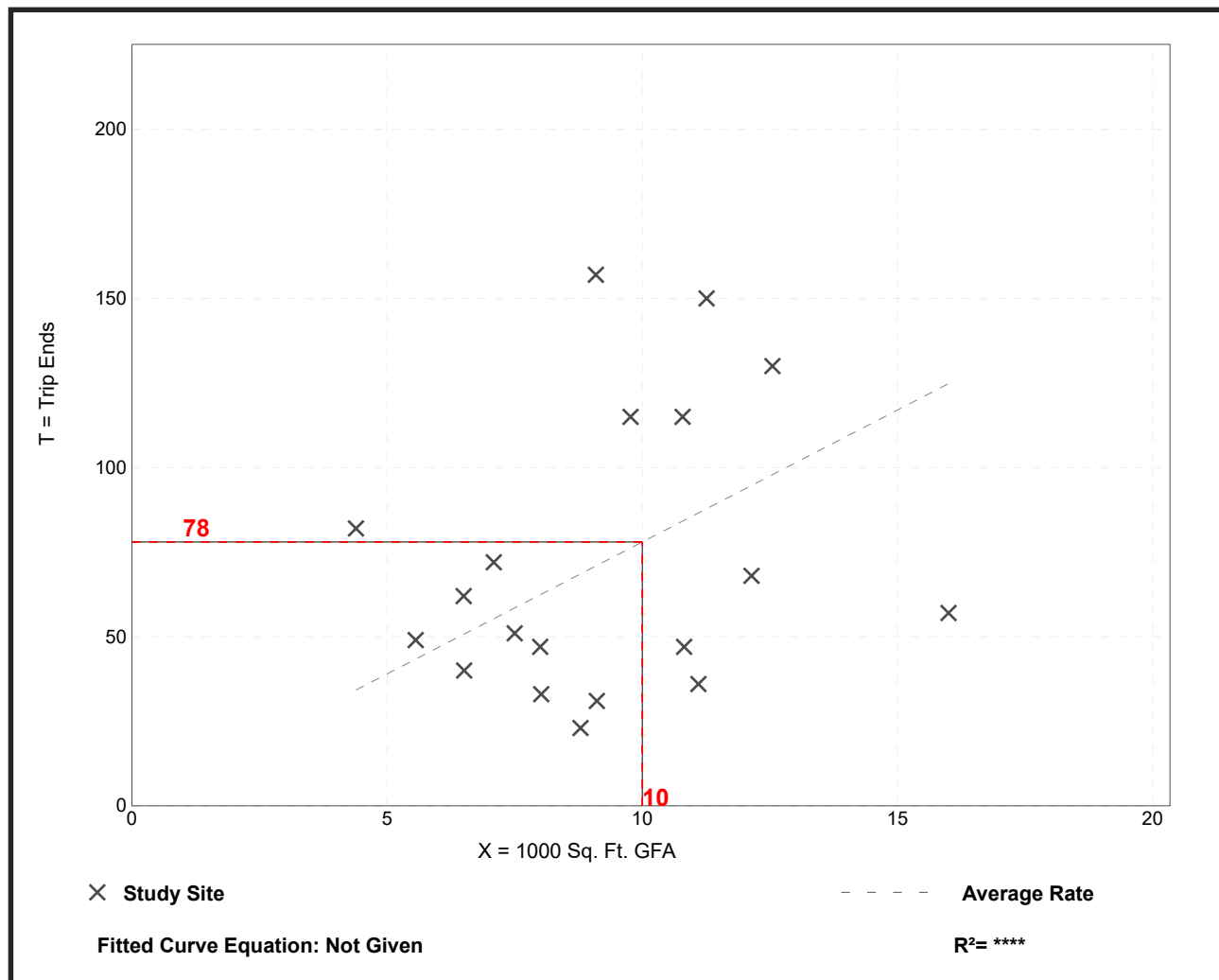
# Quality Restaurant (931)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 19  
 Avg. 1000 Sq. Ft. GFA: 9  
 Directional Distribution: 67% entering, 33% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
7.80	2.62 - 18.68	4.49

## Data Plot and Equation



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# Quality Restaurant (931)

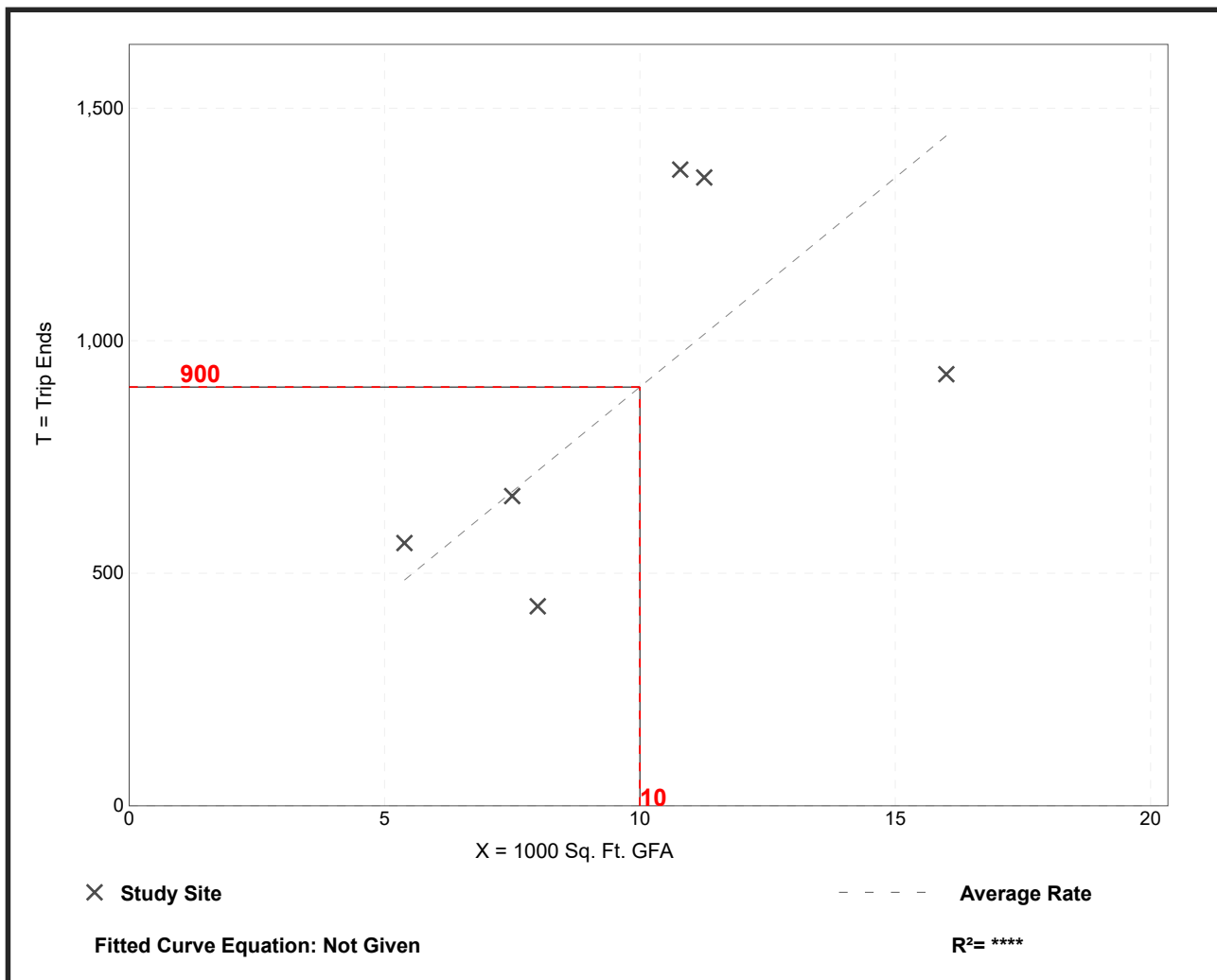
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 6  
Avg. 1000 Sq. Ft. GFA: 10  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
90.04	53.63 - 126.78	32.81

## Data Plot and Equation



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# Quality Restaurant (931)

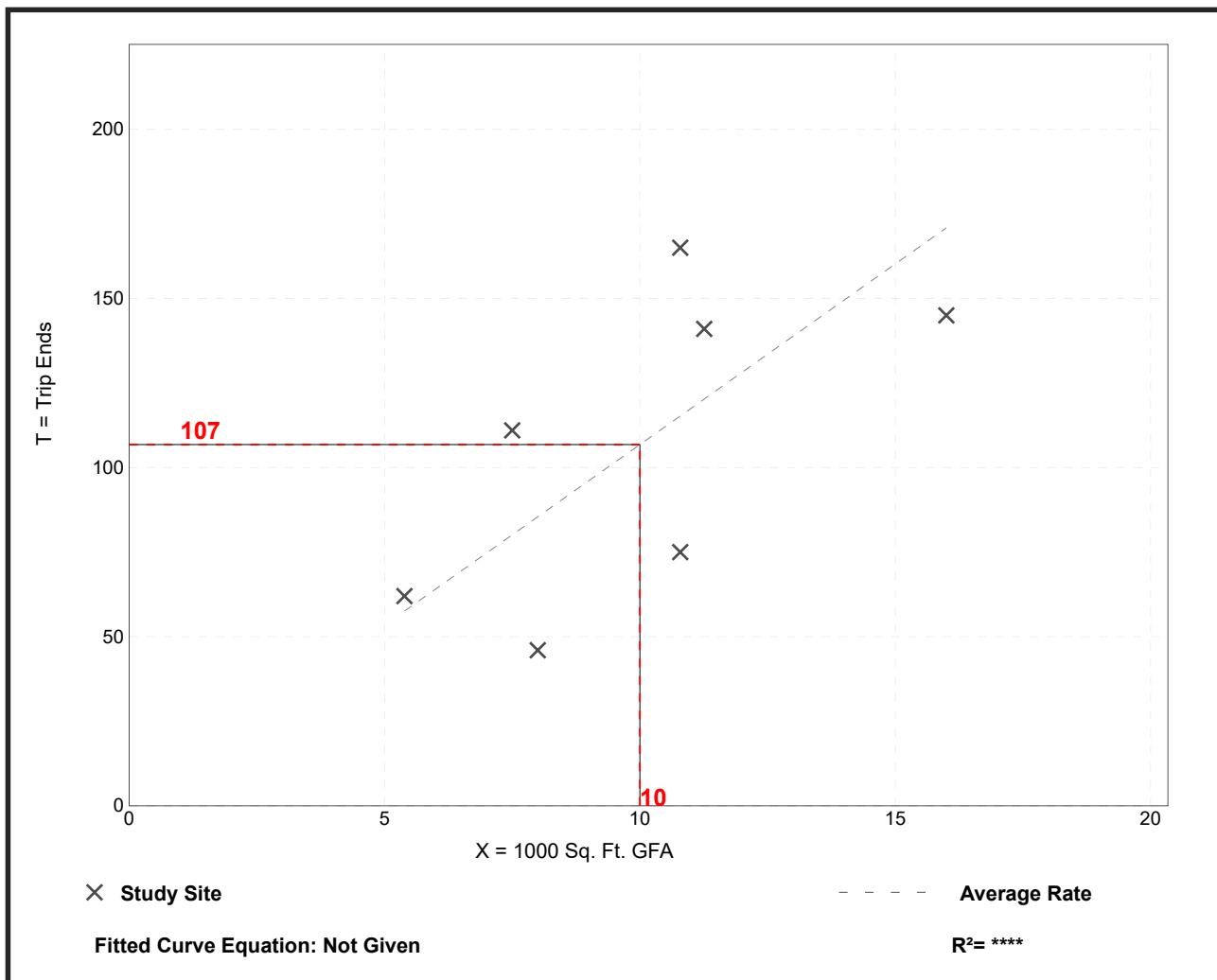
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday, Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 7  
 Avg. 1000 Sq. Ft. GFA: 10  
 Directional Distribution: 59% entering, 41% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
10.68	5.75 - 15.29	3.62

## Data Plot and Equation



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# High-Turnover (Sit-Down) Restaurant (932)

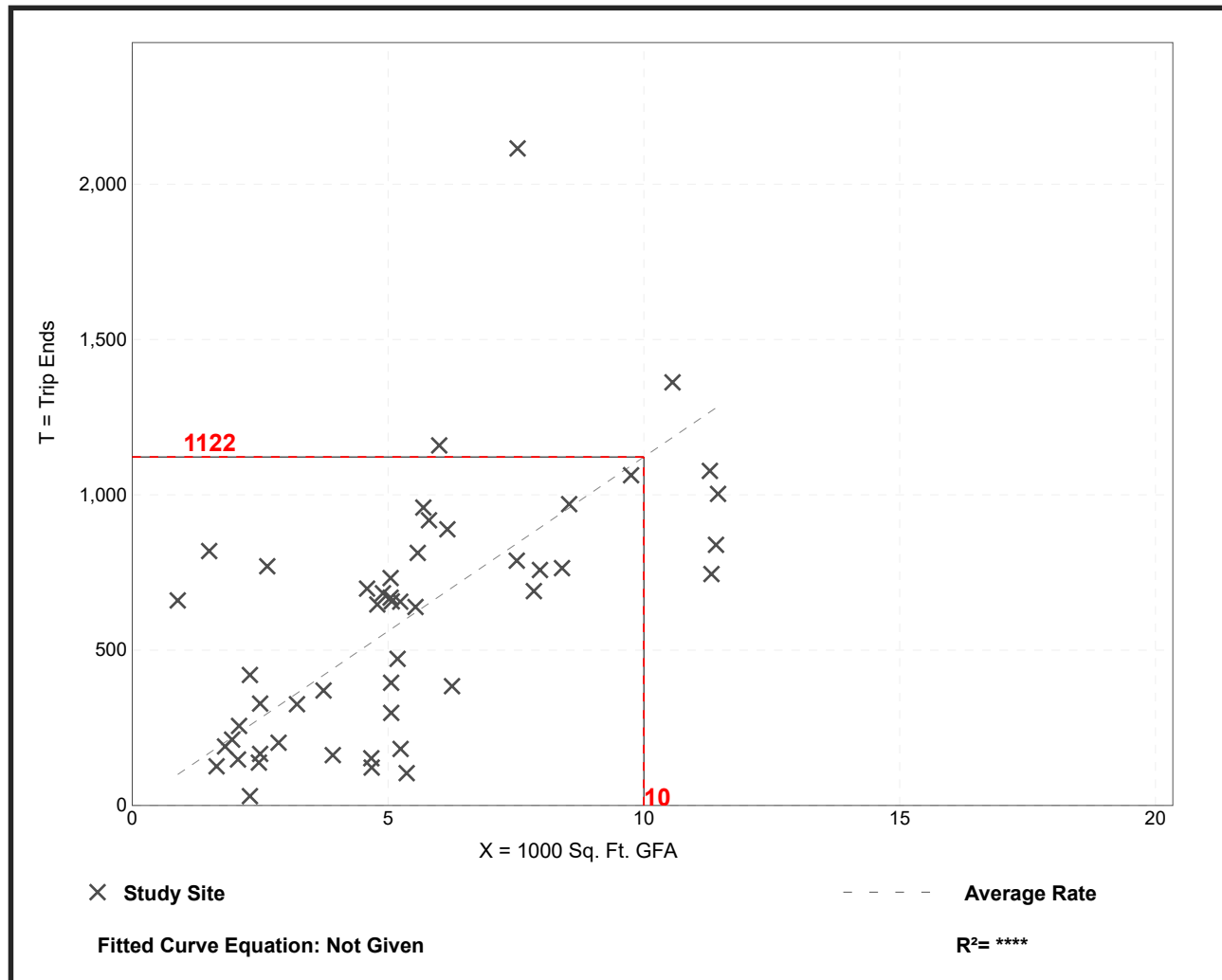
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 50  
Avg. 1000 Sq. Ft. GFA: 5  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
112.18	13.04 - 742.41	72.51

## Data Plot and Equation



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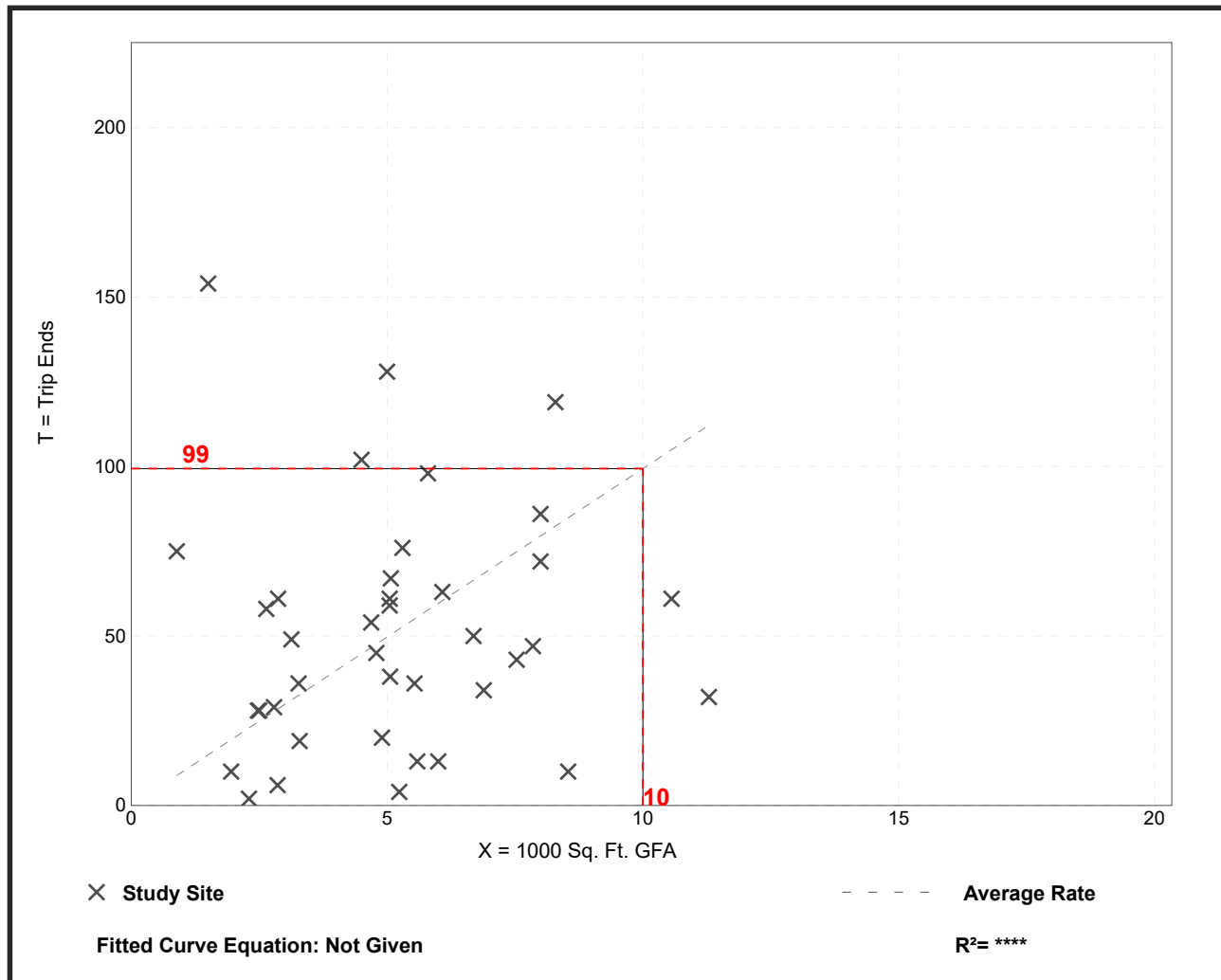
# High-Turnover (Sit-Down) Restaurant (932)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 39  
 Avg. 1000 Sq. Ft. GFA: 5  
 Directional Distribution: 55% entering, 45% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.94	0.76 - 102.39	11.33

## Data Plot and Equation



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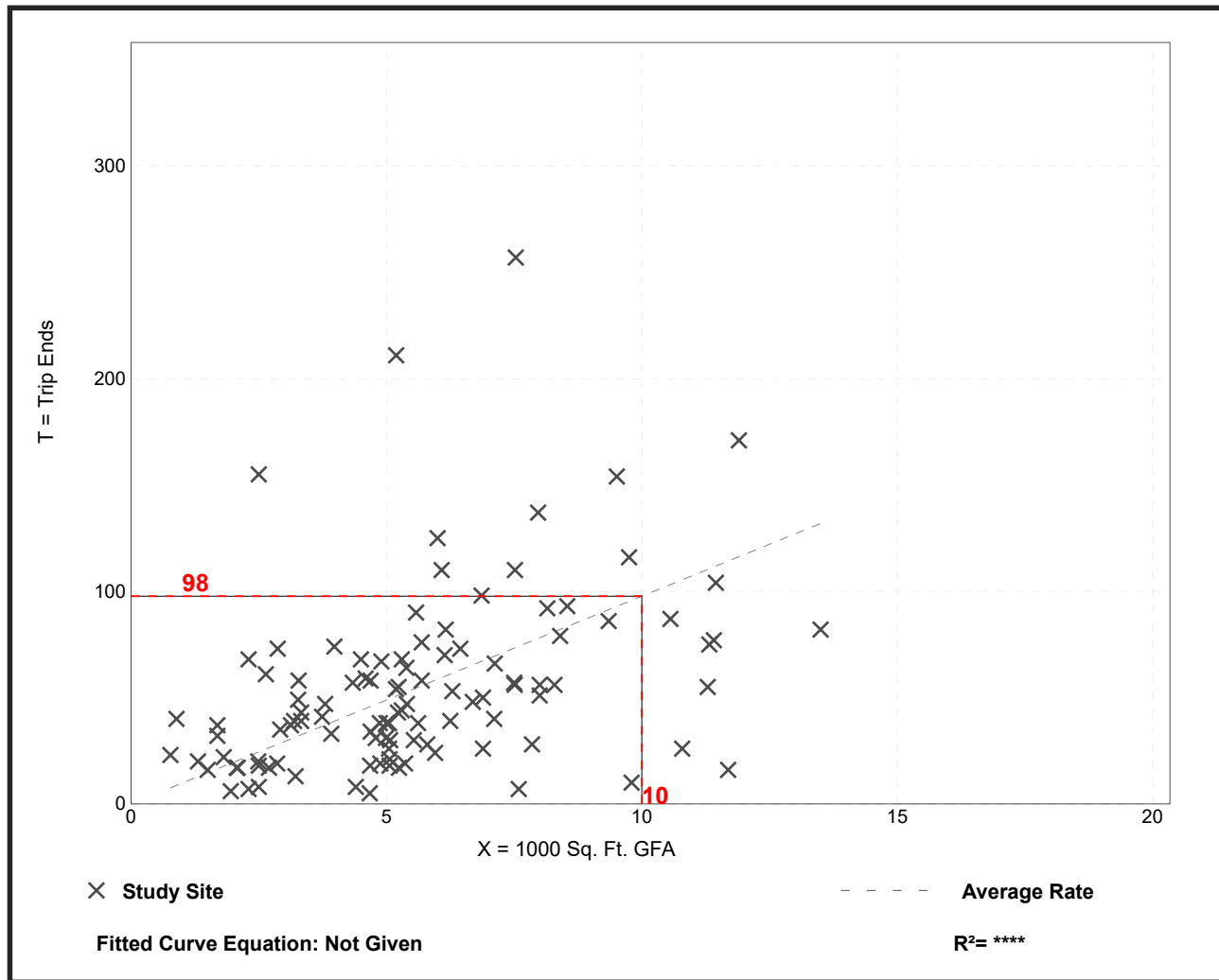
# High-Turnover (Sit-Down) Restaurant (932)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: General Urban/Suburban**  
 Number of Studies: 107  
 Avg. 1000 Sq. Ft. GFA: 6  
 Directional Distribution: 62% entering, 38% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.77	0.92 - 62.00	7.37

## Data Plot and Equation



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# High-Turnover (Sit-Down) Restaurant (932)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday**

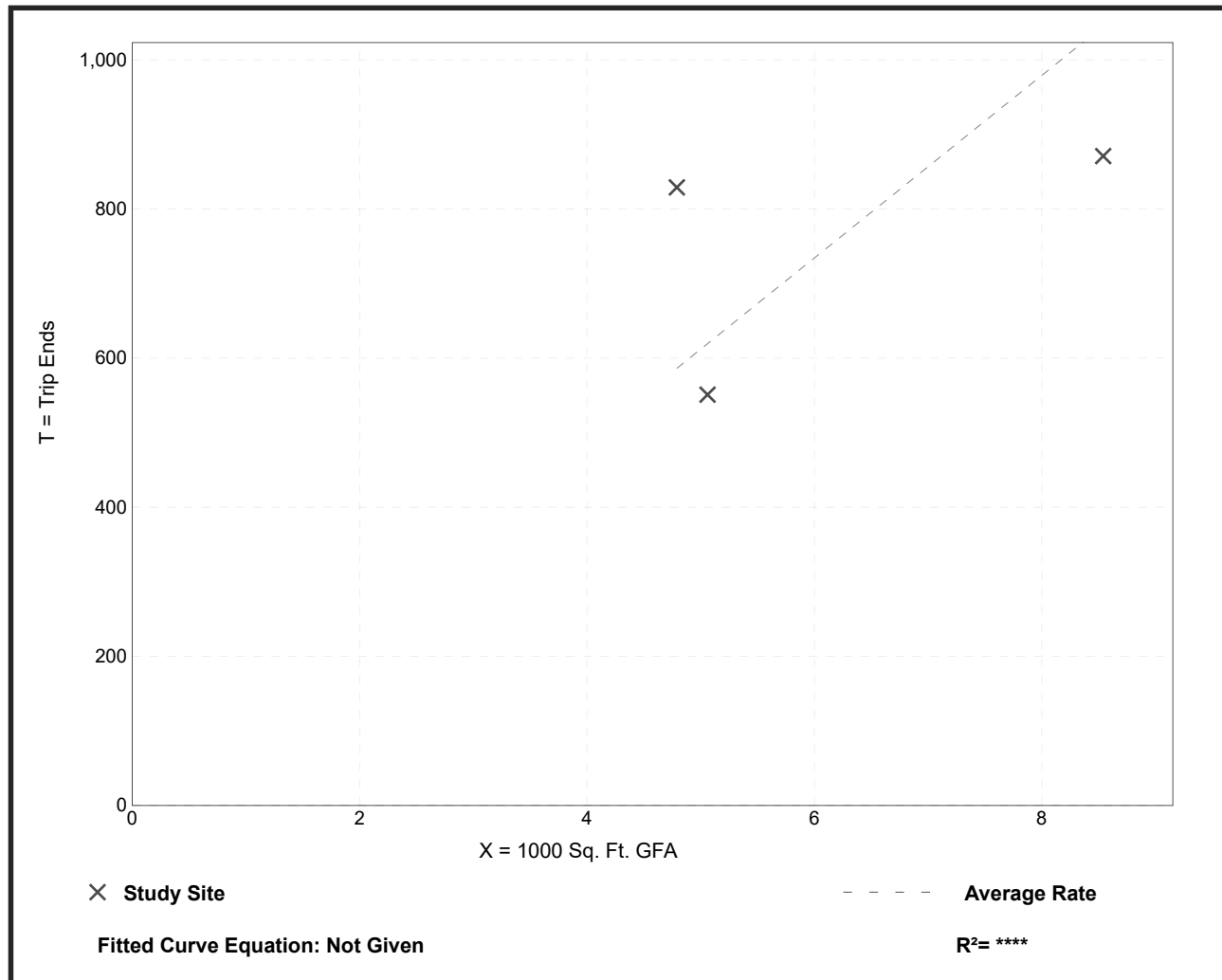
**Setting/Location: General Urban/Suburban**  
Number of Studies: 3  
Avg. 1000 Sq. Ft. GFA: 6  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
122.40	101.99 - 173.07	36.99

## Data Plot and Equation

*Caution – Small Sample Size*



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# High-Turnover (Sit-Down) Restaurant (932)

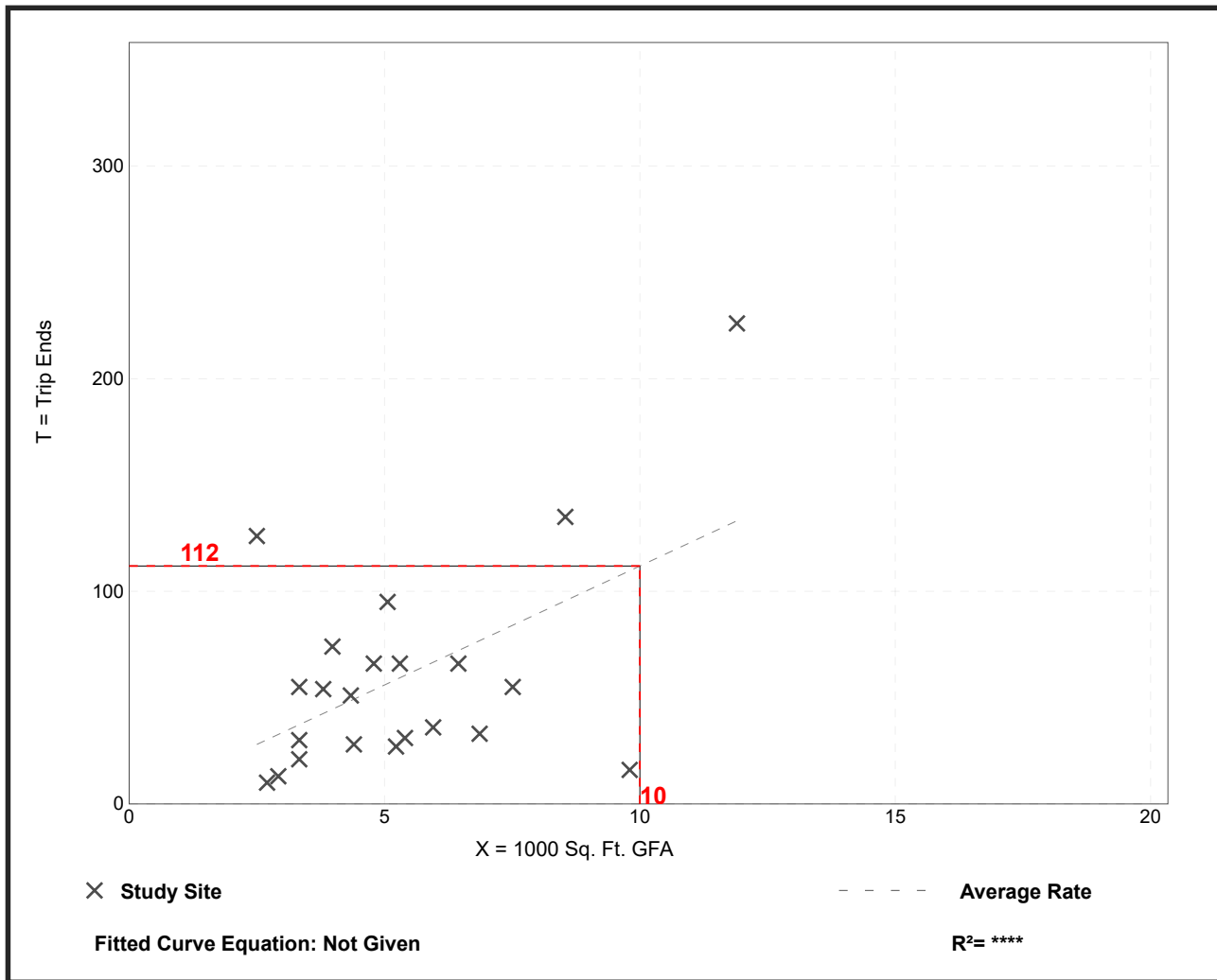
**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Saturday, Peak Hour of Generator**

**Setting/Location: General Urban/Suburban**  
 Number of Studies: 22  
 Avg. 1000 Sq. Ft. GFA: 5  
 Directional Distribution: 51% entering, 49% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.19	1.63 - 50.40	8.30

## Data Plot and Equation



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Land Use Description	Land Use	A	B	C	D
	Land Use Name	Retail & Fitness	Restaurant	Hotel	Office
	Land Use Type	Retail	Restaurant	Hotel	Office
	ITE LUC	492/820	931/932	312	710
	Size	115 KSF	20 KSF	100 Rooms	293 KSF
New Trips	<i>Weekday Daily</i>				
	Enter	3800	980	221	1505
	Exit	3800	980	221	1505
	<i>Weekday AM</i>				
	Enter	150	58	16	260
	Exit	98	48	23	42
	<i>Weekday PM</i>				
	Enter	353	113	18	51
	Exit	362	63	14	265
	<i>Saturday Daily</i>				
	Enter	5173	1062	290	324
	Exit	5173	1062	290	324
	<i>Saturday Midday</i>				
	Enter	407	120	22	84
	Exit	382	99	24	72

Project Name: The Dascomb Road Project  
Analyst: EA  
Date: 9/18/2018

KEY: Entry Cells

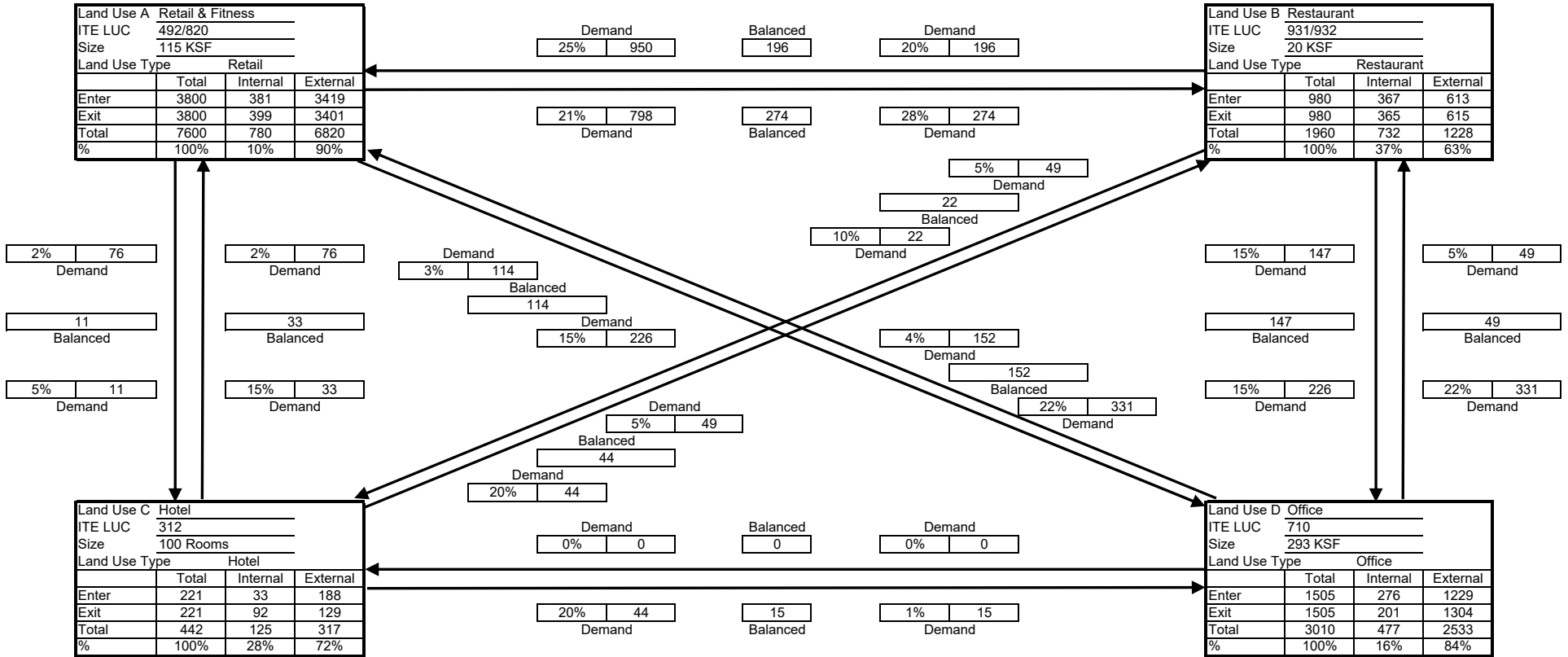
INSTRUCTIONS:

- 1.) Enter the Land Use Name for each land use in table above.
- 2.)  
Select from the drop down menu in the table above which Land Use Type to use.
- 3.) Enter the ITE LUC for each land use in the table above.
- 4.) Enter the Size of each land use in the table above.
- 5.) Fill in the NEW TRIPS for each land use in the table above (Note: This is the total of primary and pass-by trips).
- 6.) Enter the Project Name above.
- 7.) Enter you initials for the Analyst above.
- 8.) Enter the Date above.
- 9.)  
Print the Multi-Use Trip Generation Calculation Sheet for each time period.

## Multi-Use Trip Generation Calculation

Analyst: EA \_\_\_\_\_  
Date: 9/18/2018 \_\_\_\_\_

Project Name: The Dascomb Road Project \_\_\_\_\_  
Time Period: Weekday Daily \_\_\_\_\_



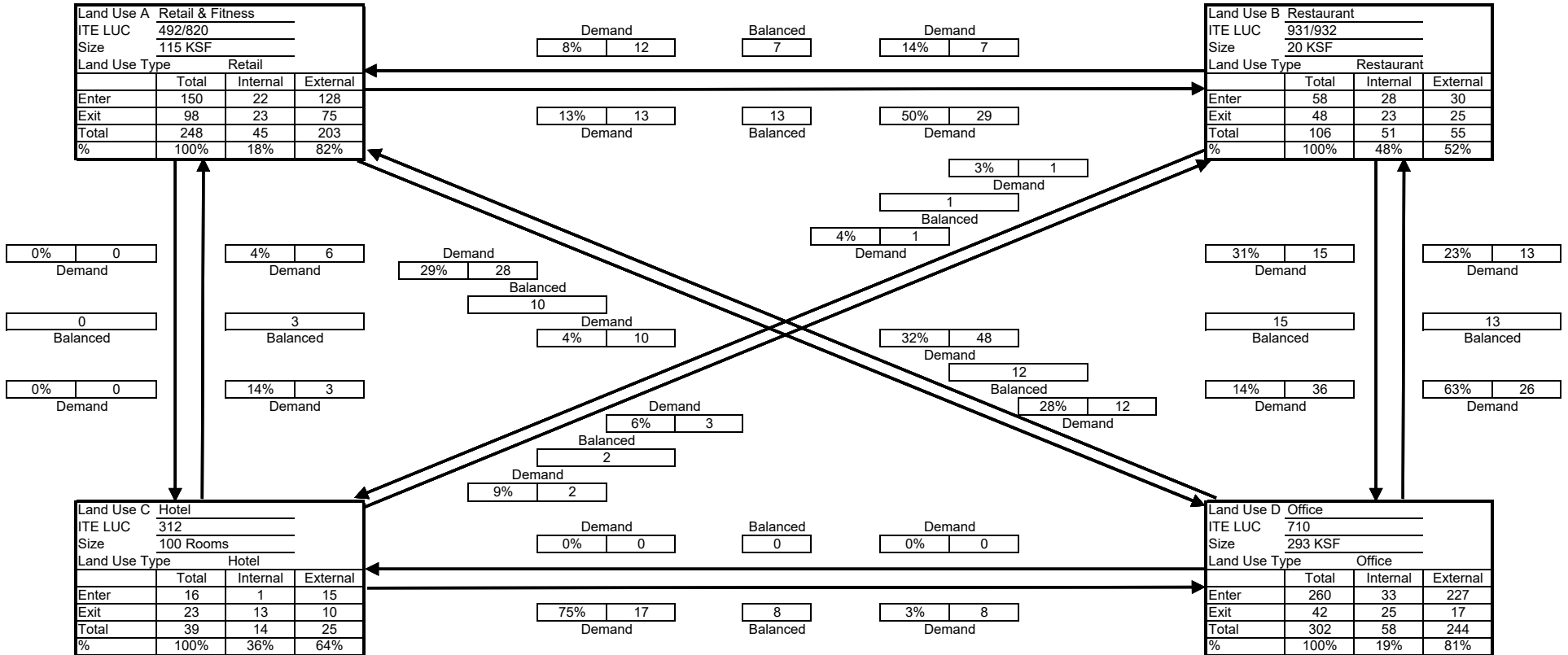
Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	3419	613	188	1229	5449
Exit	3401	615	129	1304	5449
<b>Total External Trips</b>	<b>6820</b>	<b>1228</b>	<b>317</b>	<b>2533</b>	<b>10898</b>
Single-Use Trip Gen. Est.	7600	1960	442	3010	13012
<b>Net Internal Trips</b>	<b>780</b>	<b>732</b>	<b>125</b>	<b>477</b>	<b>2114</b>

**Internal Capture 16%**

## Multi-Use Trip Generation Calculation

Analyst: EA \_\_\_\_\_  
Date: 9/18/2018 \_\_\_\_\_

Project Name: The Dascomb Road Project \_\_\_\_\_  
Time Period: Weekday AM Peak Hour \_\_\_\_\_

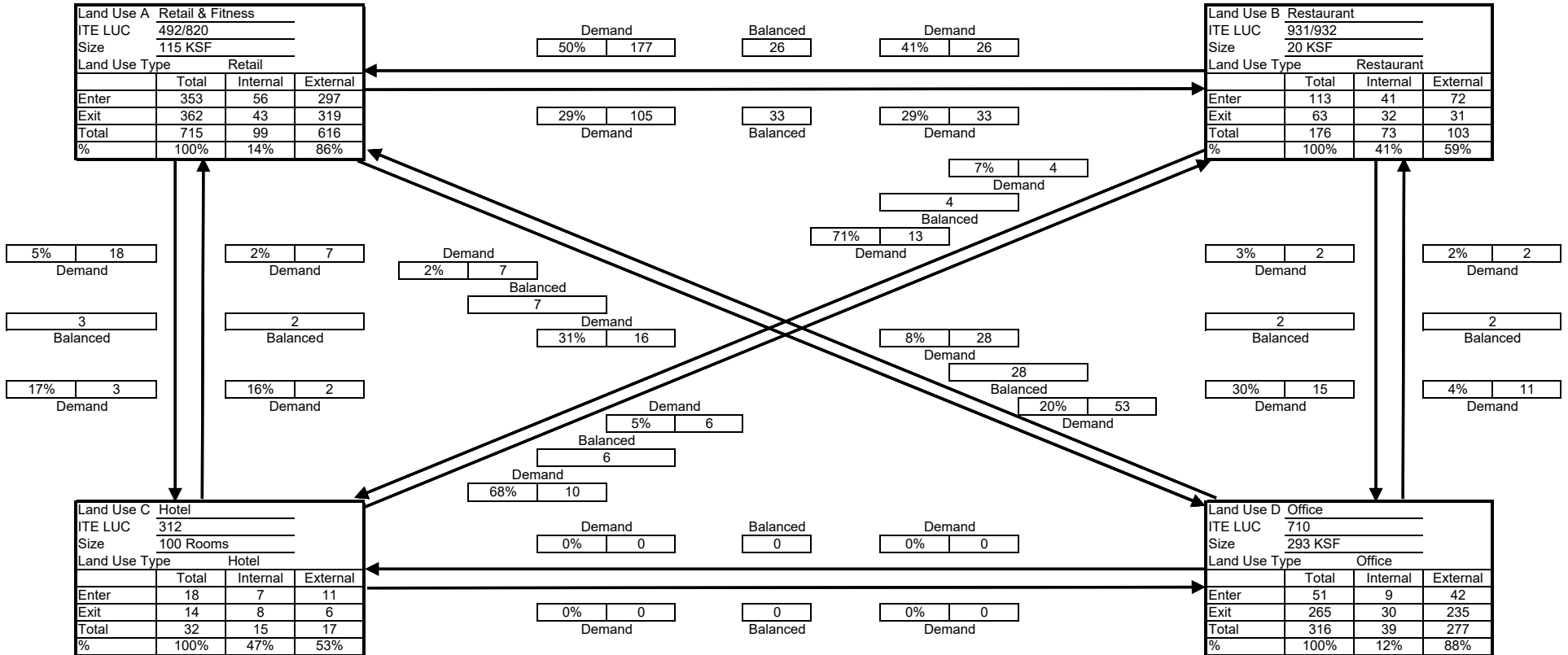


Net External Trips for Multi-Use Development						
Land Use	A	B	C	D	Total	
Enter	128	30	15	227	400	
Exit	75	25	10	17	127	
<b>Total External Trips</b>	<b>203</b>	<b>55</b>	<b>25</b>	<b>244</b>	<b>527</b>	<b>Internal Capture</b>
Single-Use Trip Gen. Est.	248	106	39	302	695	<b>24%</b>
<b>Net Internal Trips</b>	<b>45</b>	<b>51</b>	<b>14</b>	<b>58</b>	<b>168</b>	

## Multi-Use Trip Generation Calculation

Analyst: EA  
Date: 9/18/2018

Project Name: The Dascomb Road Project  
Time Period: Weekday PM Peak Hour

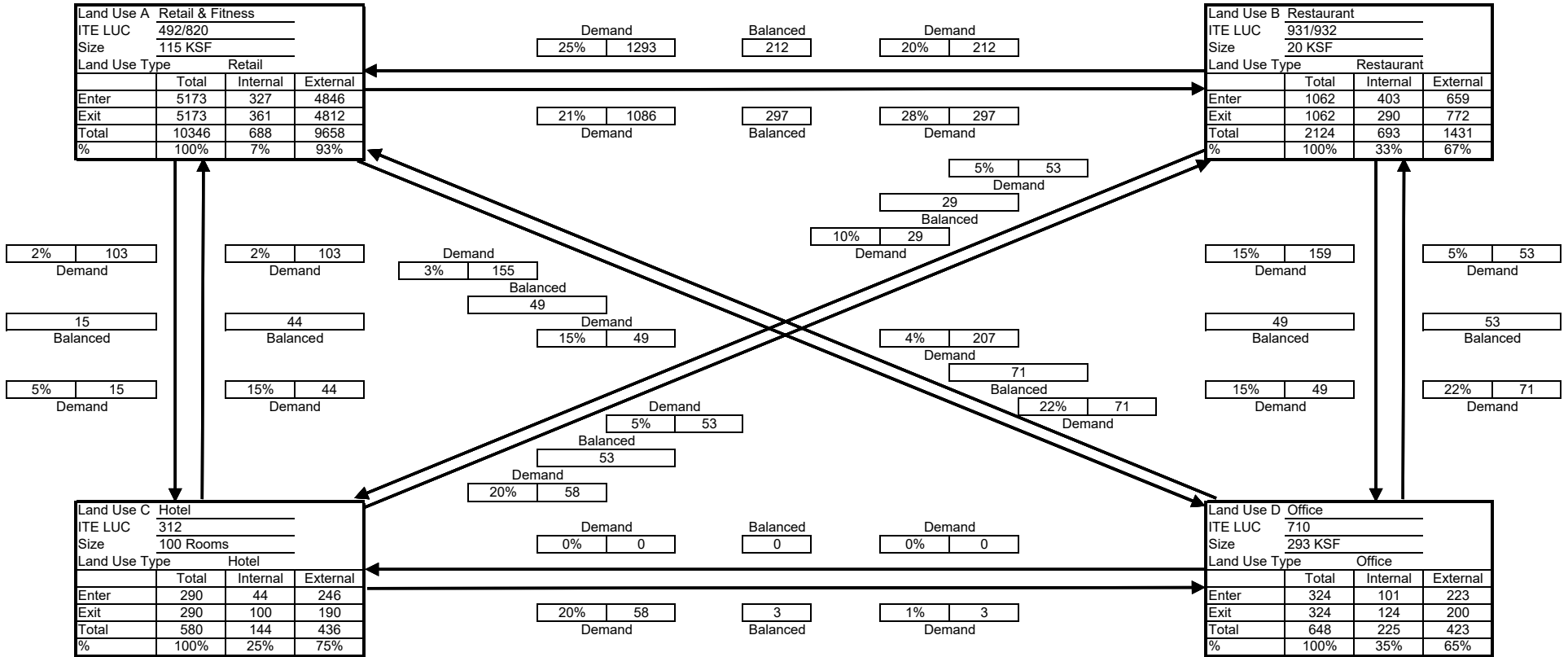


Net External Trips for Multi-Use Development						
Land Use	A	B	C	D	Total	
Enter	297	72	11	42	422	
Exit	319	31	6	235	591	
<b>Total External Trips</b>	<b>616</b>	<b>103</b>	<b>17</b>	<b>277</b>	<b>1013</b>	<b>Internal Capture</b>
Single-Use Trip Gen. Est.	715	176	32	316	1239	18%
<b>Net Internal Trips</b>	<b>99</b>	<b>73</b>	<b>15</b>	<b>39</b>	<b>226</b>	

## Multi-Use Trip Generation Calculation

Analyst: EA \_\_\_\_\_  
Date: 9/18/2018 \_\_\_\_\_

Project Name: The Dascomb Road Project \_\_\_\_\_  
Time Period: Saturday Daily \_\_\_\_\_



Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	4846	659	246	223	5974
Exit	4812	772	190	200	5974
<b>Total External Trips</b>	<b>9658</b>	<b>1431</b>	<b>436</b>	<b>423</b>	<b>11948</b>
Single-Use Trip Gen. Est.	10346	2124	580	648	13698
<b>Net Internal Trips</b>	<b>688</b>	<b>693</b>	<b>144</b>	<b>225</b>	<b>1750</b>

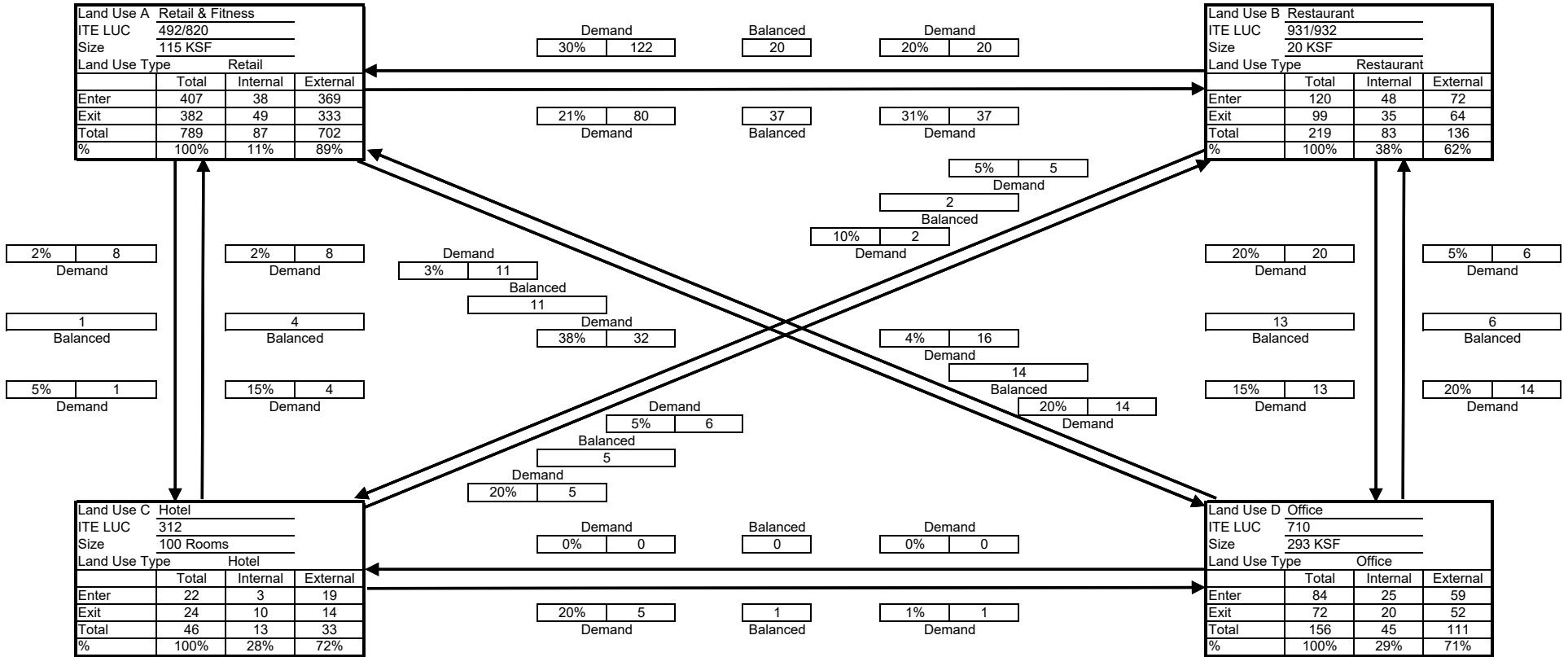
**Internal Capture**

**13%**

## Multi-Use Trip Generation Calculation

Analyst: EA \_\_\_\_\_  
Date: 9/18/2018 \_\_\_\_\_

Project Name: The Dascomb Road Project \_\_\_\_\_  
Time Period: Saturday Midday \_\_\_\_\_



Net External Trips for Multi-Use Development					
Land Use	A	B	C	D	Total
Enter	369	72	19	59	519
Exit	333	64	14	52	463
<b>Total External Trips</b>	<b>702</b>	<b>136</b>	<b>33</b>	<b>111</b>	<b>982</b>
Single-Use Trip Gen. Est.	789	219	46	156	1210
<b>Net Internal Trips</b>	<b>87</b>	<b>83</b>	<b>13</b>	<b>45</b>	<b>228</b>

**Internal Capture** 19%





Location	Direction	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count
6 Frontage Road @ I-93 SB Ramps	I-93 SB Ramps WBU	55%	8	32%	5	55%	102	32%	29	32%	1	32%	5	0	0	0	0	0	0
	I-93 SB Ramps WBL													150	0	1	151		
	I-93 SB Ramps WBR													0	0	-1	-1		
	Frontage Road NBT			3%	0	2%	1	3%	1	3%	0	3%	0	0	2	1	3		
	Frontage Road NBR	35%	3	13%	2	15%	2	13%	5	13%	0	13%	2	0	14	1	15		
	Frontage Road SBL													0	0	-1	-1		
Frontage Road SBT			3%	1	2%	4	3%	3	3%	0	3%	1	9	0	1	10			
7 Dascomb Road @ Smith Drive	Dascomb Road EBT	5%	0	8%	1	2%	4	8%	7	8%	0	8%	1	13	0	-6	7		
	Dascomb Road EBR			17%	3	3%	6	17%	15	17%	0	17%	3	27	0	7	34		
	Dascomb Road WBL			25%	4	32%	59	25%	22	25%	0	25%	4	89	0	7	96		
	Dascomb Road WBT	5%	0	8%	1	2%	0	8%	3	8%	0	8%	1	0	5	-8	-3		
	Smith Drive NBL			17%	3	3%	0	17%	6	17%	0	17%	2	0	11	9	20		
	Smith Drive NBR			24%	4	32%	4	24%	9	24%	0	24%	3	0	20	6	26		
8 Dascomb Road @ Hewlett Packard Driveway	Dascomb Road EBL	5%	0	25%	4	5%	10	25%	22	25%	0	25%	4	0	0	1	41		
	Dascomb Road EBT													40	0	1	41		
	Dascomb Road WBT	5%	0	25%	4	5%	0	25%	9	25%	0	25%	3	0	16	1	17		
	Dascomb Road WBR													0	0	0	0		
	HP Driveway SBL													0	0	0	0		
	HP Driveway SBR													0	0	0	0		
9 Dascomb Road @ East Street / Shawsheen Street	East Street EBT	3%	0	11%	2	3%	6	11%	10	11%	0	11%	2	20	0	0	20		
	East Street EBR													0	0	0	0		
	Dascomb Road WBL	2%	0	14%	2	2%	0	14%	5	14%	0	14%	2	0	9	0	9		
	Dascomb Road WBT	3%	0	11%	2	3%	0	11%	4	11%	0	11%	1	0	7	1	8		
	Shawsheen Street NBL													0	0	-1	-1		
	Shawsheen Street NBR	2%	0	14%	2	2%	4	14%	12	14%	0	14%	2	20	0	1	21		

100% 100% 14 9 100% 100% 17 15 100% 100% 186 11 100% 100% 89 38 100% 100% 1 1 100% 100% 17 12 324 86

Pass-by Trip Distribution				(2/3)			(1/3)		
	TOTAL	Dascomb E	Other	TOTAL	Dascomb E	Other	TOTAL	Dascomb E	Other
A	544	15.5%	5	3	1	2	2	1	1
B	40	1.1%	0	0	0		0	0	
C	44	1.3%	1	1	1		0	0	
D	549	15.6%	5	3	1	2	2	1	1
E	115	3.3%	1	1	1		0	0	
F	214	6.1%	2	1	0	1	1	0	1
G	455	13.0%	4	3	1	2	1	0	1
H	76	2.2%	1	1	1		0	0	
I	82	2.3%	1	1	1		0	0	
J	910	25.9%	9	6	4	2	3	2	1
K	296	8.4%	3	2	1	1	1	1	0
L	184	5.2%	2	1	1		1	1	
TOTAL	3509	100.0%	34	23	13	10	11	6	5
					W	X		Y	Z

LUC 312 - Business Hotel	
Entering	Exiting
10	5

LUC 492 - Health / Fitness Club	
Entering	Exiting
54	42

LUC 710 - General Office Building	
Entering	Exiting
34	196

LUC 820 - Shopping Center	
Entering	Exiting
155	189

LUC 931 - Quality Restaurant	
Entering	Exiting
23	3

LUC 932 - High-Turnover (Sit-Down) Restaurant	
Entering	Exiting
27	6

Pass-By Enter	Pass-By Exit
110	110

WEEKDAY EVENING PEAK HOUR TRAFFIC VOLUMES: 4:30 PM to 5:30 PM

Intersection/Movement	Site Trip Generation																								Entering	Exiting	Pass-by	Site Generated	
	Entering %	Exiting %	Entering	Exiting	Entering %	Exiting %	Entering	Exiting	Entering %	Exiting %	Entering	Exiting	Entering %	Exiting %	Entering	Exiting	Entering %	Exiting %	Entering	Exiting	Entering %	Exiting %	Entering	Exiting					
<b>1 Dascomb Road @ Andover Street</b>																													
Dascomb Road EBL		3%		0		15%		6		13%		25		15%		28		15%		1		15%		1	0	61		61	
Dascomb Road EBT																									0	0		0	
Dascomb Road EBR																									0	0		0	
Driveway WBL																									0	0		0	
Driveway WBT																									0	0		0	
Driveway WBR																									0	0		0	
Andover Street NBL																									0	0		0	
Andover Street NBT																									0	0		0	
Andover Street NBR																									0	0		0	
Andover Street SBL																									0	0		0	
Andover Street SBT																									0	0		0	
Andover Street SBR	3%			0	15%			8	13%			4	15%			23	15%			3	15%			4	42	0		42	
<b>2 Dascomb Road @ Clark Road / Bannister Road</b>																													
Dascomb Road EBT		3%		0		15%		6		13%		25		15%		28		15%		1		15%		1	0	61		61	
Dascomb Road EBBR (to Bannister)																									0	0		0	
Dascomb Road EBR (to Clark)		1%		0		7%		3		6%		12		7%		13		7%		0		7%		0	0	28		28	
Dascomb Road WBHL (to Bannister)																									0	0		0	
Dascomb Road WBL (to Clark)																									0	0		0	
Dascomb Road WBT	3%			0	15%			8	13%			4	15%			23	15%			3	15%			4	42	0		42	
Clark Road NBL	1%			0	7%			4	6%			2	7%			11	7%			2	7%			2	21	0		21	
Clark Road NBR																									0	0		0	
Clark Road NBHR (to Bannister)																									0	0		0	
Bannister Road [One-Way]																									0	0		0	
<b>3 Dascomb Road @ Lovejoy Road / Acorn Drive</b>																													
Dascomb Road EBL		1%		0		5%		2		4%		8		5%		9		5%		0		5%		0	0	19		19	
Dascomb Road EBT		4%		0		22%		9		19%		37		22%		41		22%		1		22%		1	0	89		89	
Dascomb Road EBR																									0	0		0	
Dascomb Road WBL																									0	0		0	
Dascomb Road WBT	4%			0	22%			12	19%			6	22%			34	22%			5	22%			6	63	0		63	
Dascomb Road WBR																									0	0		0	
Acorn Drive NBL																									0	0		0	
Acorn Drive NBT																									0	0		0	
Acorn Drive NBR																									0	0		0	
Lovejoy Road SBL																									0	0		0	
Lovejoy Road SBT																									0	0		0	
Lovejoy Road SBR	1%			0	5%			3	4%			1	5%			8	5%			1	5%			1	14	0		14	
<b>4 Dascomb Road @ I-93 NB Ramps</b>																													
Dascomb Road EBT		5%		0		27%		11		23%		45		27%		50		27%		1		27%		1	0	108	8	116	
Dascomb Road EBR		55%		3		32%		14		55%		108		32%		60		32%		1		32%		2	0	188	3	191	
Dascomb Road WBL																									0	0		-3	
Dascomb Road WBT	5%			0	27%			15	23%			7	27%			42	27%			6	27%			7	77	0	3	80	
I-93 NB Ramps NBL	35%			4	13%			7	15%			5	13%			20	13%			3	13%			4	43	0	8	51	
I-93 NB Ramps NBR																									0	0		-8	
<b>5 Dascomb Road @ Frontage Road / New Driveway</b>																													
Dascomb Road EBL						5%		2		6%		12		5%		10		5%		0		5%		0	0	24	-14	10	
Dascomb Road EBT						19%		8		26%		51		19%		35		19%		1		19%		1	0	96	-2	94	
Dascomb Road EBR	5%			0	8%			4	2%			1	8%			12	8%			2	8%			2	21	0	12	33	
Dascomb Road WBL	40%			4	27%			15	25%			8	27%			42	27%			6	27%			7	82	0	28	110	
Dascomb Road WBT					13%			7	13%			4	13%			20	13%			3	13%			4	38	0	-11	27	
Dascomb Road WBR																									0	0		-6	
Driveway NBL		5%		0		8%		4		2%		4		8%		15		8%		0		8%		1	0	24	13	37	
Driveway NBT		35%		2		11%		4		11%		21		11%		22		11%		1		11%		1	0	51	28	79	
Driveway NBR		60%		3		40%		17		52%		102		40%		75		40%		1		40%		2	0	200	20	220	
Frontage Road SBU																									0	0		-7	
Frontage Road SBL																									0	0		-7	
Frontage Road SBT	55%			6	23%			12	38%			13	23%			35	23%			5	23%			6	77	0	20	97	
Frontage Road SBR					12%			6	19%			7	12%			19	12%			3	12%			3	38	0	-5	33	

Location	Scenario	100%	100%	10	5	100%	100%	54	42	100%	100%	34	196	100%	100%	155	189	100%	100%	23	3	100%	100%	27	6	303	441	
6 Frontage Road @ I-93 SB Ramps	I-93 SB Ramps WBU	55%	6	32%	16	55%	19	32%	50	32%	7	32%	8	106	0	1	107											
	I-93 SB Ramps WBL			3%	1	2%	4	3%	7	3%	0	3%	0	0	0	-1	-1											
	I-93 SB Ramps WBR													0	12	1	13											
	Frontage Road NBR	35%	2	13%	5	15%	29	13%	25	13%	1	13%	1	0	63	7	70											
	Frontage Road SBL													0	0	-7	-7											
	Frontage Road SBT	3%	2	2%	1	3%	4	3%	1	3%	1	3%	1	9	0	7	16											
7 Dascomb Road @ Smith Drive	Dascomb Road EBT	5%	0	8%	4	2%	1	8%	12	8%	2	8%	2	21	0	-26	-5											
	Dascomb Road EBR			17%	10	3%	1	17%	27	17%	4	17%	5	47	0	27	74											
	Dascomb Road WBL			25%	13	32%	11	25%	39	25%	6	25%	7	76	0	23	99											
	Dascomb Road WBT	5%	0	8%	4	2%	4	8%	15	8%	0	8%	1	0	24	-26	-2											
	Smith Drive NBL			17%	7	3%	6	17%	32	17%	0	17%	1	0	46	27	73											
	Smith Drive NBR			24%	10	32%	63	24%	45	24%	1	24%	1	0	120	22	142											
8 Dascomb Road @ Hewlett Packard Driveway	Dascomb Road EBL	5%	0	25%	14	5%	2	25%	39	25%	6	25%	7	0	0	0	0											
	Dascomb Road EBT													68	0	1	69											
	Dascomb Road WBT	5%	0	25%	11	5%	10	25%	47	25%	0	25%	2	0	70	1	71											
	Dascomb Road WBR													0	0	0	0											
	HP Driveway SBL													0	0	0	0											
	HP Driveway SBR													0	0	0	0											
9 Dascomb Road @ East Street / Shawsheen Street	East Street EBT	3%	0	11%	6	3%	1	11%	17	11%	3	11%	3	30	0	1	31											
	East Street EBR													0	0	-1	-1											
	Dascomb Road WBL	2%	0	14%	6	2%	4	14%	26	14%	0	14%	1	0	37	1	38											
	Dascomb Road WBT	3%	0	11%	5	3%	6	11%	21	11%	0	11%	1	0	33	0	33											
	Shawsheen Street NBL													0	0	0	0											
	Shawsheen Street NBR	2%	0	14%	8	2%	1	14%	22	14%	3	14%	4	38	0	0	38											

Pass-by Trip Distribution			(2/3)			(1/3)			
	TOTAL	Dascomb E	Other	TOTAL	Dascomb E	Other			
A	545	17.2%	19	13	4	9	6	2	4
B	27	0.9%	1	1	1		0	0	
C	62	2.0%	0	0	0		0	0	
D	556	17.5%	19	13	4	9	6	2	4
E	195	6.2%	7	5	5		2	2	
F	221	7.0%	8	5	2	3	3	1	2
G	370	11.7%	13	9	3	6	4	1	3
H	18	0.6%	1	1	1		0	0	
I	82	2.6%	3	2	2		1	1	
J	449	14.2%	16	11	9	2	5	4	1
K	419	13.2%	15	10	8	2	5	4	1
L	225	7.1%	8	5	5		3	3	
TOTAL	3169	100.0%	110	75	44	31	35	20	15
					W	X		Y	Z



Location	Direction	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	TOTAL	Dascomb E	Other	TOTAL	Dascomb E	Other
6 Frontage Road @ I-93 SB Ramps	I-93 SB Ramps WBU	55%	10	32%	14	55%	26	32%	78	32%	7	32%	6			141	0	0	141	0	0
	I-93 SB Ramps WBL															0	0	0	0	0	0
	I-93 SB Ramps WBR			3%	1	2%	1	3%	6	3%	0	3%	1			0	9	0	9	0	9
	Frontage Road NBT			13%	6	15%	6	13%	27	13%	2	13%	3			0	49	1	50	0	50
	Frontage Road NBR	35%	5													0	0	-1	-1	0	-1
	Frontage Road SBL			3%	1	2%	1	3%	7	3%	1	3%	1			11	0	1	12	0	1
7 Dascomb Road @ Smith Drive	Dascomb Road EBT	5%	1	8%	4	2%	1	8%	20	8%	2	8%	2			30	0	-28	2	0	-28
	Dascomb Road EBR			17%	7	3%	1	17%	42	17%	4	17%	3			57	0	32	89	0	32
	Dascomb Road WBL			25%	11	32%	15	25%	61	25%	6	25%	4			97	0	21	118	0	21
	Dascomb Road WBT	5%	0	8%	4	2%	1	8%	17	8%	1	8%	2			0	25	-24	1	0	-24
	Smith Drive NBL			17%	7	3%	1	17%	36	17%	2	17%	3			0	49	28	77	0	28
	Smith Drive NBR			24%	10	32%	13	24%	50	24%	4	24%	5			0	82	21	103	0	21
8 Dascomb Road @ Hewlett Packard Driveway	Dascomb Road EBL															0	0	0	0	0	0
	Dascomb Road EBT	5%	1	25%	11	5%	2	25%	62	25%	6	25%	5			87	0	4	91	0	4
	Dascomb Road WBT					5%	2	5%	53							0	74	4	78	0	4
	Dascomb Road WBR	5%	0	25%	11											0	0	0	0	0	0
	HP Driveway SBL															0	0	0	0	0	0
	HP Driveway SBR															0	0	0	0	0	0
9 Dascomb Road @ East Street / Shawsheen Street	East Street EBT	3%	1	11%	5	3%	1	11%	27	11%	3	11%	2			39	0	1	40	0	1
	East Street EBR															0	0	-1	-1	0	-1
	Dascomb Road WBL	2%	0	14%	6	2%	1	14%	30	14%	2	14%	3			0	42	1	43	0	1
	Dascomb Road WBT	3%	0	11%	5	3%	1	11%	23	11%	1	11%	2			0	32	3	35	0	3
	Shawsheen Street NBL															0	0	-3	-3	0	-3
	Shawsheen Street NBR	2%	0	14%	6	2%	1	14%	35	14%	3	14%	3			48	0	3	51	0	3

Pass-by Trip Distribution				(2/3)			(1/3)		
	TOTAL	Percentage	Count	TOTAL	Dascomb E	Other	TOTAL	Dascomb E	Other
A	492	20.0%	22	15	6	9	7	3	4
B	32	1.3%	1	1	1		0	0	
C	44	1.8%	3	2	2		1	1	
D	480	19.5%	21	14	6	8	7	3	4
E	20	0.8%	1	1	1		0	0	
F	61	2.5%	3	2	0	2	1	0	1
G	378	15.3%	17	11	3	8	6	1	5
H	10	0.4%	0	0	0		0	0	
I	93	3.8%	4	3	3		1	1	
J	390	15.8%	17	11	8	3	6	4	2
K	333	13.5%	15	10	7	3	5	4	1
L	133	5.4%	6	4	4		2	2	
TOTAL	2466	100.0%	110	74	41	33	36	19	17
					W	X		Y	Z

## **Appendix J**

### Site Trip Distribution Calculations



**Trip Distribution Gravity Model - Retail/Restaurant**

Project: The Dascomb Road Project - Andover, Massachusetts  
 Date: September 18, 2018  
 Analyst: TEC, Inc. / Samuel W. Gregorio, P.E., PTOE  
 Source: U.S. Census Data - 2017, Estimated Population by Residence State-County

Surrounding Community State-County-MCD Name	Population	Distance (Travel Time)	Competing Opportunity	Adjusted Population	Osgood		East Street to/from West	Shawsheen Street to/from South	Lovejoy Road to/from North	Clark Road to/from South	Andover Street to/from East	TOTAL
					I-93 to/from North	Road to/from North						
Lawrence city Essex Co. MA	80,162	0.5	0.5	20,041	90%				10%			100%
Andover town Essex Co. MA	35,937	1	1	35,937	10%	5%	5%		15%	25%	40%	100%
Tewksbury town Middlesex Co. MA	31,247	1	1	31,247	10%	5%	40%	45%				100%
Dracut town Middlesex Co. MA	31,619	0.5	0.1	1,581	95%	5%						100%
Lowell city Middlesex Co. MA	111,346	0.75	0.1	8,351	70%	5%	25%					100%
Chelmsford town Middlesex Co. MA	35,099	0.5	0.1	1,755	67%		33%					100%
Billerica town Middlesex Co. MA	43,962	0.75	0.1	3,297	10%		40%	40%				100%
Wilmington town Middlesex Co. MA	23,803	1	0.5	11,902			60%	40%				100%
Reading town Middlesex Co. MA	26,106	0.75	0.1	1,958			100%					100%
North Reading town Middlesex Co. MA	15,735	0.75	0.5	5,901			100%					100%
North Andover town Essex Co. MA	31,013	1	0.5	15,507	50%					5%	45%	100%
Methuen city Essex Co. MA	50,259	1	0.1	5,026	100%							100%
Middleton town Essex Co. MA	9,861	0.5	0.5	2,465			30%			40%	30%	100%
Burlington town Middlesex Co. MA	27,176	0.5	0.1	1,359			60%	40%				100%
<b>Total</b>												
<b>Percentage</b>												
<b>Use</b>												

- Notes:  
 1.) 7.5-mile gravity model  
 2.) Distance Factors: 0-15 min. = 1.0; 15-30 min = 0.5; +30min = 0.25  
 3.) Competing Opportunities Factors: Little-No Competition = 1.0; Same distance to competition = 0.5; Closer to competition = 0.1

Equal / Similar Competing Opportunities within: Lowell, Burlington, Woburn, and Salem, NH

Surrounding Community State-County-MCD Name	Population	Osgood		East Street to/from West	Shawsheen Street to/from South	Lovejoy Road to/from North	Clark Road to/from South	Andover Street to/from East	Total
		I-93 to/from North	Road to/from North						
Lawrence city Essex Co. MA	80,162	18036	0	0	0	2004	0	0	20041
Andover town Essex Co. MA	35,937	3594	1797	1797	0	5391	8984	14375	35937
Tewksbury town Middlesex Co. MA	31,247	3125	1562	0	12499	14061	0	0	31247
Dracut town Middlesex Co. MA	31,619	1502	79	0	0	0	0	0	1581
Lowell city Middlesex Co. MA	111,346	5846	418	0	2088	0	0	0	8351
Chelmsford town Middlesex Co. MA	35,099	1176	0	0	579	0	0	0	1755
Billerica town Middlesex Co. MA	43,962	330	0	330	1319	1319	0	0	3297
Wilmington town Middlesex Co. MA	23,803	0	0	7141	0	4761	0	0	11902
Reading town Middlesex Co. MA	26,106	0	0	1958	0	0	0	0	1958
North Reading town Middlesex Co. MA	15,735	0	0	5901	0	0	0	0	5901
North Andover town Essex Co. MA	31,013	7753	0	0	0	0	775	6978	15507
Methuen city Essex Co. MA	50,259	5026	0	0	0	0	0	0	5026
Middleton town Essex Co. MA	9,861	0	0	740	0	0	986	740	2465
Burlington town Middlesex Co. MA	27,176	0	0	815	0	544	0	0	1359
<b>Total</b>		<b>46387</b>	<b>3856</b>	<b>18681</b>	<b>16485</b>	<b>20684</b>	<b>7395</b>	<b>10746</b>	<b>146325</b>
<b>Percentage</b>		<b>31.7%</b>	<b>2.6%</b>	<b>12.8%</b>	<b>11.3%</b>	<b>14.1%</b>	<b>5.1%</b>	<b>7.3%</b>	<b>100%</b>
<b>Use</b>		<b>32%</b>	<b>3%</b>	<b>13%</b>	<b>11%</b>	<b>14%</b>	<b>5%</b>	<b>7%</b>	<b>100%</b>

**Trip Distribution Gravity Model - Workplace to Residence**  
**Workplace Distribution**

Project: #146 Dascomb Road Site Redevelopment Project - Andover, Massachusetts  
 Date: September 20, 2018  
 Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T., Danah Hamzeh  
 Source: United States Census Bureau, 2009 - 2013

Workplace State-County-MCD Name	Residence State-County-MCD Name	Count	% of Total Andover Workers	% of Distributed Workforce	Major Route								Major Route									
					I-93 to/from North	Osgood Street to/from North	I-93 to/from South	East Street to/from West	Shawsheen Street to/from South	Lovejoy Road to/from North	Clark Road to/from South	Andover Street to/from East	Check	I-93 to/from North	Osgood Street to/from North	I-93 to/from South	East Street to/from West	Shawsheen Street to/from South	Lovejoy Road to/from North	Clark Road to/from South	Andover Street to/from East	
Andover town Essex Co. MA	Andover town Essex Co. MA	4929	15.14%	21.69%	10%	5%	5%				15%	25%	40%	100.0%	2.2%	1.1%	1.1%	0.0%	0.0%	3.3%	5.4%	8.7%
Andover town Essex Co. MA	Lawrence city Essex Co. MA	2428	7.46%	10.68%	90%						10%			100.0%	9.6%	0.0%	0.0%	0.0%	0.0%	1.1%	0.0%	0.0%
Andover town Essex Co. MA	Methuen city Essex Co. MA	2141	6.58%	9.42%	100%									100.0%	9.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Haverhill city Essex Co. MA	1766	5.42%	7.77%	75%								25%	100.0%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%
Andover town Essex Co. MA	Lowell city Middlesex Co. MA	1262	3.88%	5.55%	70%	5%		25%						100.0%	3.9%	0.3%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	North Andover town Essex Co. MA	1103	3.39%	4.85%	50%						5%	45%		100.0%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	2.2%
Andover town Essex Co. MA	Salem town Rockingham Co. NH	1068	3.28%	4.70%	100%									100.0%	4.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Boston city Suffolk Co. MA	865	2.66%	3.81%				100%						100.0%	0.0%	0.0%	3.8%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Dracut town Middlesex Co. MA	705	2.17%	3.10%	95%	5%								100.0%	2.9%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Derry town Rockingham Co. NH	610	1.87%	2.68%	100%									100.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Tewksbury town Middlesex Co. MA	605	1.86%	2.66%	10%	5%		40%	45%					100.0%	0.3%	0.1%	0.0%	1.1%	1.2%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Nashua City Hillsborough Co. NH	520	1.60%	2.29%	100%									100.0%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Peabody city Essex Co. MA	484	1.49%	2.13%			75%				25%			100.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.5%	0.0%
Andover town Essex Co. MA	Chelmsford town Middlesex Co. MA	412	1.27%	1.81%	67%			33%						100.0%	1.2%	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Londonderry town Rockingham Co. NH	347	1.07%	1.53%	100%									100.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Manchester City Hillsborough Co. NH	330	1.01%	1.45%	100%									100.0%	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Windham town Rockingham Co. NH	329	1.01%	1.45%	100%									100.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Lynn city Essex Co. MA	313	0.96%	1.38%			100%							100.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Woburn City Middlesex Co. MA	299	0.92%	1.32%			100%							100.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	North Reading town Middlesex Co. MA	292	0.90%	1.28%			100%							100.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Billerica town Middlesex Co. MA	291	0.89%	1.28%	10%		10%	40%	40%					100.0%	0.1%	0.0%	0.1%	0.5%	0.5%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Medford city Middlesex Co. MA	289	0.89%	1.27%			100%							100.0%	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Westford town Middlesex Co. MA	288	0.88%	1.27%	100%									100.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Reading town Middlesex Co. MA	280	0.86%	1.23%			100%							100.0%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Wilmington town Middlesex Co. MA	265	0.81%	1.17%			60%		40%					100.0%	0.0%	0.0%	0.7%	0.0%	0.5%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Plaistown town Rockingham Co. NH	263	0.81%	1.16%	100%									100.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Andover town Essex Co. MA	Somerville city Middlesex Co. MA	242	0.74%	1.06%			100%							100.0%	0.0%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>TOTAL</b>		<b>32559</b>	<b>69.80%</b>	<b>98.94%</b>											<b>54.4%</b>	<b>1.7%</b>	<b>14.9%</b>	<b>3.6%</b>	<b>2.2%</b>	<b>4.3%</b>	<b>6.2%</b>	<b>12.8%</b>
															<b>55%</b>	<b>2%</b>	<b>15%</b>	<b>3%</b>	<b>2%</b>	<b>4%</b>	<b>6%</b>	<b>13%</b>

## **Appendix K**

MUTCD Traffic Signal Warrant Analysis





RAW DATA INPUT				
Time	VOLUMES			
	SB	NB	WB	EB
6-7 AM				
7-8 AM	30	1056	1002	
8-9 AM	54	943	1043	
9-10 AM	92	685	740	
10-11 AM	118	602	647	
11-12 PM	112	611	626	
12-1 PM	105	774	688	
1-2 PM	107	752	707	
2-3 PM	106	902	798	
3-4 PM	110	979	989	
4-5 PM	114	1032	1063	
5-6 PM	90	1125	954	
6-7 PM	52	909	839	

SEASONALLY ADJUSTED DATA				
Time	VOLUMES			
	SB	NB	WB	EB
6-7 AM	0	0	0	
7-8 AM	30	1019	967	
8-9 AM	54	910	1006	
9-10 AM	92	661	714	
10-11 AM	118	581	624	
11-12 PM	112	590	604	
12-1 PM	105	747	664	
1-2 PM	107	726	682	
2-3 PM	106	870	770	
3-4 PM	110	945	954	
4-5 PM	114	996	1026	
5-6 PM	90	1086	921	
6-7 PM	52	877	810	

SITE-GENERATED DATA				
Time	VOLUMES			
	SB	NB	WB	EB
6-7 AM				
7-8 AM	4	22	8	
8-9 AM	14	78	25	
9-10 AM	17	88	34	
10-11 AM	22	52	45	
11-12 PM	48	69	57	
12-1 PM	69	84	68	
1-2 PM	109	97	76	
2-3 PM	98	100	66	
3-4 PM	101	83	62	
4-5 PM	100	83	63	
5-6 PM	167	99	67	
6-7 PM	171	103	70	

BUILD DATA				
Time	VOLUMES			
	SB	NB	WB	EB
6-7 AM	0	0	0	
7-8 AM	0	34	1041	975
8-9 AM	0	68	988	1031
9-10 AM	0	109	749	748
10-11 AM	0	140	633	669
11-12 PM	0	160	659	661
12-1 PM	0	174	831	732
1-2 PM	0	216	823	758
2-3 PM	0	204	970	836
3-4 PM	0	211	1028	1016
4-5 PM	0	214	1079	1089
5-6 PM	0	257	1185	988
6-7 PM	0	223	980	880

Seasonal Adjustment: -3.5%

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 492 / 820 / 931 / 932)

Time	Entering Traffic	Exiting Traffic	NB		WB		EB	
			Minor Exiting	Major Entering	Major Exiting	Major Entering		
6-7 AM	0.8%	0.3%	1.4%	2.5%	0.3%	2.5%		
7-8 AM	2.0%	0.9%	4.1%	6.3%	0.8%	6.3%		
8-9 AM	3.1%	1.2%	5.5%	9.7%	1.1%	9.7%		
9-10 AM	5.5%	2.0%	9.2%	17.2%	1.8%	17.2%		
10-11 AM	7.0%	4.3%	19.8%	21.9%	3.9%	21.9%		
11-12 PM	8.4%	6.2%	28.6%	26.3%	5.6%	26.3%		
12-1 PM	9.4%	8.3%	38.2%	29.4%	7.5%	29.4%		
1-2 PM	8.2%	8.6%	39.6%	25.6%	7.7%	25.6%		
2-3 PM	7.7%	8.9%	41.0%	24.1%	8.0%	24.1%		
3-4 PM	7.8%	8.8%	40.5%	24.4%	7.9%	24.4%		
4-5 PM	8.0%	8.9%	41.0%	25.0%	8.0%	25.0%		
5-6 PM	8.4%	9.2%	42.4%	26.3%	8.3%	26.3%		
6-7 PM	8.0%	7.5%	34.6%	25.0%	6.7%	25.0%		

Source: ITE Trip Generation, 9th Edition, LUC 820: Shopping Center [Table 1]

PM Trip Generation Retail/Restaurant/Fitness

Total Trips (in) =	259
Total Trips (out) =	240
	499

Dascomb Road at Smith Way Trip Distribution:

25% Entering Eastbound	
25% Entering Westbound	
8% Exiting Westbound	
41% Exiting Northbound	

FITNESS/RETAIL/RESTAURANT TRIPS

Time	VOLUMES			
	SB	NB	WB	EB
6-7 AM	3	7	6	
7-8 AM	10	18	16	
8-9 AM	13	28	25	
9-10 AM	22	49	45	
10-11 AM	48	66	57	
11-12 PM	69	81	68	
12-1 PM	92	94	76	
1-2 PM	95	85	66	
2-3 PM	98	82	62	
3-4 PM	97	82	63	
4-5 PM	98	84	65	
5-6 PM	102	88	68	
6-7 PM	83	81	65	

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 710)

Time	Entering Traffic	Exiting Traffic	NB		WB		EB	
			Minor Exiting	Major Entering	Major Exiting	Major Entering		
6-7 AM	25.0%	25.0%	8.8%	8.0%	0.5%	1.3%		
7-8 AM	100.0%	100.0%	35.0%	32.0%	2.0%	5.0%		
8-9 AM	100.0%	100.0%	35.0%	32.0%	2.0%	5.0%		
9-10 AM	5.0%	5.0%	1.8%	1.6%	0.1%	0.3%		
10-11 AM	5.0%	5.0%	1.8%	1.6%	0.1%	0.3%		
11-12 PM	5.0%	5.0%	1.8%	1.6%	0.1%	0.3%		
12-1 PM	5.0%	25.0%	8.8%	1.6%	0.5%	0.3%		
1-2 PM	25.0%	5.0%	1.8%	8.0%	0.1%	1.3%		
2-3 PM	5.0%	5.0%	1.8%	1.6%	0.1%	0.3%		
3-4 PM	5.0%	5.0%	1.8%	1.6%	0.1%	0.3%		
4-5 PM	100.0%	100.0%	35.0%	32.0%	2.0%	5.0%		
5-6 PM	100.0%	100.0%	35.0%	32.0%	2.0%	5.0%		
6-7 PM	5.0%	5.0%	1.8%	1.6%	0.1%	0.3%		

AM Trip Generation Office

Total Trips (in) =	186
Total Trips (out) =	11
	197

PM Trip Generation Office

Total Trips (in) =	34
Total Trips (out) =	196
	230

Dascomb Road at Smith Way Trip Distribution:

5% Entering Eastbound	
32% Entering Westbound	
2% Exiting Westbound	
35% Exiting Northbound	

OFFICE TRIPS

Time	VOLUMES			
	SB	NB	WB	EB
6-7 AM	1	15	2	
7-8 AM	4	60	9	
8-9 AM	4	60	9	
9-10 AM	0	3	0	
10-11 AM	0	3	0	
11-12 PM	0	3	0	
12-1 PM	17	3	0	
1-2 PM	3	15	0	
2-3 PM	3	1	0	
3-4 PM	3	1	0	
4-5 PM	69	15	2	
5-6 PM	69	15	2	
6-7 PM	3	4	0	



85th Percentile > 40 mph? **OR** Population <10,000 people? **N**

**Warrant 1 - One of the Following Conditions Must Be Met for any 8 hours of an average day (Table 4C-1)**

**Individual Option:**

**Condition A: Minimum Vehicular Volume  
100%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	600	0	2016	2019	1497	1302	1320	1563	1581	1806	2044	2168	2173	1860
Minor	2	200	0	34	68	109	140	160	174	216	204	211	214	257	223
Met?			NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES

**OR**

**Condition B: Interruption of Continuous Traffic  
100%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	900	0	2016	2019	1497	1302	600	1563	1581	1806	2044	2168	2173	1860
Minor	2	100	0	34	68	109	140	160	174	216	204	211	214	257	223
Met?			NO	NO	NO	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES

Result: **YES**

**Combination Option:**

**Condition A: Minimum Vehicular Volume  
80%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	480	0	2016	2019	1497	1302	1320	1563	1581	1806	2044	2168	2173	1860
Minor	2	160	0	34	68	109	140	160	174	216	204	211	214	257	223
Met?			NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES

**AND**

**Condition B: Interruption of Continuous Traffic  
80%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	720	0	2016	2019	1497	1302	1320	1563	1581	1806	2044	2168	2173	1860
Minor	2	80	0	34	68	109	140	160	174	216	204	211	214	257	223
Met?			NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Result: **YES**



**Warrant 2 - Four-Hour Vehicular Volume (must be met for any 4 hours of an average day)**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	Figure 4C-1	0	2016	2019	1497	1302	1320	1563	1581	1806	2044	2168	2173	1860
Minor	2	Figure 4C-1	0	34	68	109	140	160	174	216	204	211	214	257	223
Met?			NO	NO	NO	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES

Result: YES

**Warrant 3 - Peak Hour Volume (must be met for 1 hour of an average day)**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	Figure 4C-3	0	2016	2019	1497	1302	1320	1563	1581	1806	2044	2168	2173	1860
Minor	2	Figure 4C-3	0	34	68	109	140	160	174	216	204	211	214	257	223
Met?			NO	NO	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES

Result: YES

**Warrants 4 to 8: Not Evaluated**





RAW DATA INPUT				
VOLUMES				
Time	N/A	I-93 NB	Dascomb	Dascomb
	SB	NBL	WB	EBT
6-7 AM				
7-8 AM		315	872	578
8-9 AM		293	930	597
9-10 AM		287	475	302
10-11 AM		232	363	207
11-12 PM		246	380	240
12-1 PM		315	434	243
1-2 PM		336	422	267
2-3 PM		378	515	313
3-4 PM		382	579	389
4-5 PM		425	537	448
5-6 PM		407	539	443
6-7 PM		390	490	401

SEASONALLY ADJUSTED DATA				
VOLUMES				
Time	N/A	I-93 NB	Dascomb	Dascomb
	SB	NBL	WB	EBT
6-7 AM	0	0	0	0
7-8 AM	0	304	841	558
8-9 AM	0	283	897	576
9-10 AM	0	277	458	291
10-11 AM	0	224	350	200
11-12 PM	0	237	367	232
12-1 PM	0	304	419	234
1-2 PM	0	324	407	258
2-3 PM	0	365	497	302
3-4 PM	0	369	559	375
4-5 PM	0	410	518	432
5-6 PM	0	393	520	427
6-7 PM	0	376	473	387

SITE-GENERATED DATA				
VOLUMES				
Time	N/A	I-93 NB	Dascomb	Dascomb
	SB	NBL	WB	EBT
6-7 AM				
7-8 AM		10	18	7
8-9 AM		36	60	23
9-10 AM		41	70	28
10-11 AM		24	50	32
11-12 PM		30	63	68
12-1 PM		36	75	99
1-2 PM		40	84	170
2-3 PM		36	83	145
3-4 PM		32	67	150
4-5 PM		33	68	148
5-6 PM		39	78	295
6-7 PM		40	81	299

BUILD DATA				
VOLUMES				
Time	N/A	I-93 NB	Dascomb	Dascomb
	SB	NBL	WB	EBT
6-7 AM	0	0	0	0
7-8 AM	0	314	859	565
8-9 AM	0	319	957	599
9-10 AM	0	318	528	319
10-11 AM	0	248	400	232
11-12 PM	0	267	430	300
12-1 PM	0	340	494	333
1-2 PM	0	364	491	428
2-3 PM	0	401	580	447
3-4 PM	0	401	626	525
4-5 PM	0	443	586	580
5-6 PM	0	432	598	722
6-7 PM	0	416	554	686

Seasonal Adjustment: -3.5%

Assumptions:

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 492 / 820 / 931 / 932)

Time	Entering Traffic	Exiting Traffic	NBL		WB		EBT	
			Minor Entering	Major Entering	Major Exiting	Major Exiting		
6-7 AM	0.8%	0.3%	1.3%	2.7%	0.0%	2.0%		
7-8 AM	2.0%	0.9%	3.3%	6.8%	0.0%	6.0%		
8-9 AM	3.1%	1.2%	5.0%	10.5%	0.0%	8.0%		
9-10 AM	5.5%	2.0%	8.9%	18.6%	0.0%	13.3%		
10-11 AM	7.0%	4.3%	11.4%	23.6%	0.0%	28.5%		
11-12 PM	8.4%	6.2%	13.7%	28.4%	0.0%	41.1%		
12-1 PM	9.4%	8.3%	15.3%	31.7%	0.0%	55.0%		
1-2 PM	8.2%	8.6%	13.3%	27.7%	0.0%	57.0%		
2-3 PM	7.7%	8.9%	12.5%	26.0%	0.0%	59.0%		
3-4 PM	7.8%	8.8%	12.7%	26.3%	0.0%	58.3%		
4-5 PM	8.0%	8.9%	13.0%	27.0%	0.0%	59.0%		
5-6 PM	8.4%	9.2%	13.7%	28.4%	0.0%	61.0%		
6-7 PM	8.0%	7.5%	13.0%	27.0%	0.0%	49.7%		

PM Trip Generation Retail/Restaurant/Fitness

Total Trips (in) =	259
Total Trips (out) =	240
	499

Dascomb Road at I-93 NB Trip Distribution:	
59%	Exiting Eastbound
27%	Entering Westbound
13%	Entering Northbound

Source: ITE Trip Generation, 9th Edition, LUC 820: Shopping Center [Table 1]

FITNESS/RETAIL/RESTAURANT TRIPS

VOLUMES				
Time	I-93 NB	Dascomb	Dascomb	
	NBL	WB	EBT	
6-7 AM	3	7	5	
7-8 AM	8	17	14	
8-9 AM	13	27	19	
9-10 AM	23	48	32	
10-11 AM	29	61	68	
11-12 PM	35	73	99	
12-1 PM	40	82	132	
1-2 PM	35	72	137	
2-3 PM	32	67	142	
3-4 PM	33	68	140	
4-5 PM	34	70	142	
5-6 PM	35	73	146	
6-7 PM	34	70	119	

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 710)

Time	Entering Traffic	Exiting Traffic	NBL		WB		EBT	
			Minor Entering	Major Entering	Major Exiting	Major Exiting		
6-7 AM	25.0%	25.0%	3.8%	5.8%	0.0%	19.5%		
7-8 AM	100.0%	100.0%	15.0%	23.0%	0.0%	78.0%		
8-9 AM	100.0%	100.0%	15.0%	23.0%	0.0%	78.0%		
9-10 AM	5.0%	5.0%	0.8%	1.2%	0.0%	3.9%		
10-11 AM	5.0%	5.0%	0.8%	1.2%	0.0%	3.9%		
11-12 PM	5.0%	5.0%	0.8%	1.2%	0.0%	3.9%		
12-1 PM	5.0%	25.0%	0.8%	1.2%	0.0%	19.5%		
1-2 PM	25.0%	5.0%	3.8%	5.8%	0.0%	3.9%		
2-3 PM	5.0%	5.0%	0.8%	1.2%	0.0%	3.9%		
3-4 PM	5.0%	5.0%	0.8%	1.2%	0.0%	3.9%		
4-5 PM	100.0%	100.0%	15.0%	23.0%	0.0%	78.0%		
5-6 PM	100.0%	100.0%	15.0%	23.0%	0.0%	78.0%		
6-7 PM	5.0%	5.0%	0.8%	1.2%	0.0%	3.9%		

AM Trip Generation Office

Total Trips (in) =	186
Total Trips (out) =	11
	197

PM Trip Generation Office

Total Trips (in) =	34
Total Trips (out) =	196
	230

Dascomb Road at I-93 NB Trip Distribution:	
78%	Exiting Eastbound
23%	Entering Westbound
15%	Entering Northbound

OFFICE TRIPS

VOLUMES				
Time	I-93 NB	Dascomb	Dascomb	
	NBL	WB	EBT	
6-7 AM	7	11	2	
7-8 AM	28	43	9	
8-9 AM	28	43	9	
9-10 AM	1	2	0	
10-11 AM	1	2	0	
11-12 PM	1	2	0	
12-1 PM	0	2	38	
1-2 PM	1	11	8	
2-3 PM	0	0	8	
3-4 PM	0	0	8	
4-5 PM	5	8	153	
5-6 PM	5	8	153	
6-7 PM	0	3	8	



85th Percentile > 40 mph? **OR** Population <10,000 people? N

**Warrant 1** - One of the Following Conditions Must Be Met for any 8 hours of an average day (Table 4C-1)

**Individual Option:**

**Condition A: Minimum Vehicular Volume**  
**100%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	600	0	1424	1556	847	632	730	827	919	1027	1151	1166	1320	1240
Minor	2	200	0	314	319	318	248	267	340	364	401	401	443	432	416
Met?			NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**OR**

**Condition B: Interruption of Continuous Traffic**  
**100%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	900	0	1424	1556	847	632	600	827	919	1027	1151	1166	1320	1240
Minor	2	100	0	314	319	318	248	267	340	364	401	401	443	432	416
Met?			NO	YES	YES	NO	NO	NO	NO	YES	YES	YES	YES	YES	YES

Result: YES

**Combination Option:**

**Condition A: Minimum Vehicular Volume**  
**80%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	480	0	1424	1556	847	632	730	827	919	1027	1151	1166	1320	1240
Minor	2	160	0	314	319	318	248	267	340	364	401	401	443	432	416
Met?			NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**AND**

**Condition B: Interruption of Continuous Traffic**  
**80%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	720	0	1424	1556	847	632	730	827	919	1027	1151	1166	1320	1240
Minor	2	80	0	314	319	318	248	267	340	364	401	401	443	432	416
Met?			NO	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES

Result: YES

Project: The Dascomb Road Project (#146 Dascomb Road)  
 Town: Andover, MA  
 TEC # T0680  
 Analyst: TEC / Eindra (Elena) Aung, E.I.T.



**Warrant 2 - Four-Hour Vehicular Volume (must be met for any 4 hours of an average day)**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	Figure 4C-1	0	1424	1556	847	632	730	827	919	1027	1151	1166	1320	1240
Minor	2	Figure 4C-1	0	314	319	318	248	267	340	364	401	401	443	432	416
Met?			NO	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	YES	YES

Result: YES

**Warrant 3 - Peak Hour Volume (must be met for 1 hour of an average day)**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	2	Figure 4C-3	0	1424	1556	847	632	730	827	919	1027	1151	1166	1320	1240
Minor	2	Figure 4C-3	0	314	319	318	248	267	340	364	401	401	443	432	416
Met?			NO	YES	YES	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES

Result: YES

**Warrants 4 to 8: Not Evaluated**





RAW DATA INPUT				
VOLUMES				
Time	N/A	Clark	Dascomb	Dascomb
	SB	NB	WB	EB
6-7 AM				
7-8 AM		212	453	984
8-9 AM		274	481	946
9-10 AM		149	274	455
10-11 AM		146	206	325
11-12 PM		155	233	352
12-1 PM		156	248	398
1-2 PM		189	237	407
2-3 PM		317	277	446
3-4 PM		346	321	532
4-5 PM		352	358	560
5-6 PM		405	281	637
6-7 PM		296	235	640

SEASONALLY ADJUSTED DATA				
VOLUMES				
Time	N/A	Clark	Dascomb	Dascomb
	SB	NB	WB	EB
6-7 AM	0	0	0	0
7-8 AM	0	205	437	950
8-9 AM	0	264	464	913
9-10 AM	0	144	264	439
10-11 AM	0	141	199	314
11-12 PM	0	150	225	340
12-1 PM	0	151	239	384
1-2 PM	0	182	229	393
2-3 PM	0	306	267	430
3-4 PM	0	334	310	513
4-5 PM	0	340	345	540
5-6 PM	0	391	271	615
6-7 PM	0	286	227	618

SITE-GENERATED DATA				
VOLUMES				
Time	N/A	Clark	Dascomb	Dascomb
	SB	NB	WB	EB
6-7 AM				
7-8 AM		5	10	3
8-9 AM		16	34	7
9-10 AM		18	39	9
10-11 AM		13	28	12
11-12 PM		17	35	26
12-1 PM		20	42	37
1-2 PM		21	47	58
2-3 PM		20	46	53
3-4 PM		17	37	55
4-5 PM		18	38	54
5-6 PM		20	43	90
6-7 PM		21	45	92

BUILD DATA				
VOLUMES				
Time	N/A	Clark	Dascomb	Dascomb
	SB	NB	WB	EB
6-7 AM	0	0	0	0
7-8 AM	0	210	447	953
8-9 AM	0	280	498	920
9-10 AM	0	162	303	448
10-11 AM	0	154	227	326
11-12 PM	0	167	260	366
12-1 PM	0	171	281	421
1-2 PM	0	203	276	451
2-3 PM	0	326	313	483
3-4 PM	0	351	347	568
4-5 PM	0	358	383	594
5-6 PM	0	411	314	705
6-7 PM	0	307	272	710

Seasonal Adjustment: -3.5%

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 492 / 820 / 931 / 932)						
Time	Entering Traffic	Exiting Traffic	NB		WB	
			Minor Entering	Major Entering	Major Exiting	Major Exiting
6-7 AM	0.8%	0.3%	0.7%	1.5%	0.0%	0.7%
7-8 AM	2.0%	0.9%	1.8%	3.8%	0.0%	2.2%
8-9 AM	3.1%	1.2%	2.7%	5.8%	0.0%	3.0%
9-10 AM	5.5%	2.0%	4.8%	10.3%	0.0%	4.9%
10-11 AM	7.0%	4.3%	6.1%	13.1%	0.0%	10.6%
11-12 PM	8.4%	6.2%	7.4%	15.8%	0.0%	15.3%
12-1 PM	9.4%	8.3%	8.2%	17.6%	0.0%	20.5%
1-2 PM	8.2%	8.6%	7.2%	15.4%	0.0%	21.3%
2-3 PM	7.7%	8.9%	6.7%	14.4%	0.0%	22.0%
3-4 PM	7.8%	8.8%	6.8%	14.6%	0.0%	21.8%
4-5 PM	8.0%	8.9%	7.0%	15.0%	0.0%	22.0%
5-6 PM	8.4%	9.2%	7.4%	15.8%	0.0%	22.7%
6-7 PM	8.0%	7.5%	7.0%	15.0%	0.0%	18.5%

PM Trip Generation Retail/Restaurant/Fitness	
Total Trips (in) =	259
Total Trips (out) =	240
	499

Dascomb Road at Clark Road Trip Distribution:	
22% Exiting Eastbound	
15% Entering Westbound	
7% Entering Northbound	

Source: ITE Trip Generation, 9th Edition, LUC 820: Shopping Center [Table 1]

FITNESS/RETAIL/RESTAURANT TRIPS				
VOLUMES				
Time	Clark	Dascomb	Dascomb	
	SB	NB	WB	EB
6-7 AM	2	4	2	
7-8 AM	5	10	5	
8-9 AM	7	15	7	
9-10 AM	12	27	12	
10-11 AM	16	34	26	
11-12 PM	19	41	37	
12-1 PM	21	46	49	
1-2 PM	19	40	51	
2-3 PM	17	37	53	
3-4 PM	18	38	52	
4-5 PM	18	39	53	
5-6 PM	19	41	55	
6-7 PM	18	39	44	

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 710)						
Time	Entering Traffic	Exiting Traffic	NB		WB	
			Minor Entering	Major Entering	Major Exiting	Major Exiting
6-7 AM	25.0%	25.0%	1.5%	3.3%	0.0%	4.8%
7-8 AM	100.0%	100.0%	6.0%	13.0%	0.0%	19.0%
8-9 AM	100.0%	100.0%	6.0%	13.0%	0.0%	19.0%
9-10 AM	5.0%	5.0%	0.3%	0.7%	0.0%	1.0%
10-11 AM	5.0%	5.0%	0.3%	0.7%	0.0%	1.0%
11-12 PM	5.0%	5.0%	0.3%	0.7%	0.0%	1.0%
12-1 PM	5.0%	25.0%	0.3%	0.7%	0.0%	4.8%
1-2 PM	25.0%	5.0%	1.5%	3.3%	0.0%	1.0%
2-3 PM	5.0%	5.0%	0.3%	0.7%	0.0%	1.0%
3-4 PM	5.0%	5.0%	0.3%	0.7%	0.0%	1.0%
4-5 PM	100.0%	100.0%	6.0%	13.0%	0.0%	19.0%
5-6 PM	100.0%	100.0%	6.0%	13.0%	0.0%	19.0%
6-7 PM	5.0%	5.0%	0.3%	0.7%	0.0%	1.0%

AM Trip Generation Office	
Total Trips (in) =	186
Total Trips (out) =	11
	197

PM Trip Generation Office	
Total Trips (in) =	34
Total Trips (out) =	196
	230

Dascomb Road at Clark Road Trip Distribution:	
19% Exiting Eastbound	
13% Entering Westbound	
6% Entering Northbound	

OFFICE TRIPS				
VOLUMES				
Time	Clark	Dascomb	Dascomb	
	SB	NB	WB	EB
6-7 AM	3	6	1	
7-8 AM	11	24	2	
8-9 AM	11	24	2	
9-10 AM	1	1	0	
10-11 AM	1	1	0	
11-12 PM	1	1	0	
12-1 PM	0	1	9	
1-2 PM	1	6	2	
2-3 PM	0	0	2	
3-4 PM	0	0	2	
4-5 PM	2	4	37	
5-6 PM	2	4	37	
6-7 PM	0	2	2	



85th Percentile > 40 mph? **OR** Population <10,000 people? N

**Warrant 1** - One of the Following Conditions Must Be Met for any 8 hours of an average day (Table 4C-1)

**Individual Option:**

**Condition A: Minimum Vehicular Volume**  
**100%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	500	0	1400	1418	751	553	626	702	727	796	915	977	1019	982
Minor	1	150	0	210	280	162	154	167	171	203	326	351	358	411	307
Met?			NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**OR**

**Condition B: Interruption of Continuous Traffic**  
**100%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	750	0	1400	1418	751	553	600	702	727	796	915	977	1019	982
Minor	1	75	0	210	280	162	154	167	171	203	326	351	358	411	307
Met?			NO	YES	YES	YES	NO	NO	NO	NO	YES	YES	YES	YES	YES

Result: YES

**Combination Option:**

**Condition A: Minimum Vehicular Volume**  
**80%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	400	0	1400	1418	751	553	626	702	727	796	915	977	1019	982
Minor	1	120	0	210	280	162	154	167	171	203	326	351	358	411	307
Met?			NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

**AND**

**Condition B: Interruption of Continuous Traffic**  
**80%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	600	0	1400	1418	751	553	626	702	727	796	915	977	1019	982
Minor	1	60	0	210	280	162	154	167	171	203	326	351	358	411	307
Met?			NO	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES	YES

Result: YES



**Warrant 2 - Four-Hour Vehicular Volume (must be met for any 4 hours of an average day)**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	Figure 4C-1	0	1400	1418	751	553	626	702	727	796	915	977	1019	982
Minor	1	Figure 4C-1	0	210	280	162	154	167	171	203	326	351	358	411	307
Met?			NO	YES	YES	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES

Result: YES

**Warrant 3 - Peak Hour Volume (must be met for 1 hour of an average day)**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	Figure 4C-3	0	1400	1418	751	553	626	702	727	796	915	977	1019	982
Minor	1	Figure 4C-3	0	210	280	162	154	167	171	203	326	351	358	411	307
Met?			NO	YES	YES	NO	NO	NO	NO	NO	YES	YES	YES	YES	YES

Result: YES

**Warrants 4 to 8: Not Evaluated**





RAW DATA INPUT				
VOLUMES				
Time	N/A	I-93 SB	Frontage	Frontage
	EB	WBL	NBT	SB
6-7 AM				
7-8 AM		445	272	330
8-9 AM		471	290	267
9-10 AM		398	97	121
10-11 AM		319	48	77
11-12 PM		278	69	149
12-1 PM		300	121	135
1-2 PM		342	99	112
2-3 PM		362	129	253
3-4 PM		416	97	288
4-5 PM		351	102	337
5-6 PM		410	118	362
6-7 PM		353	111	164

SEASONALLY ADJUSTED DATA				
VOLUMES				
Time	N/A	I-93 SB	Frontage	Frontage
	EB	WBL	NBT	SB
6-7 AM	0	0	0	0
7-8 AM	0	429	262	318
8-9 AM	0	455	280	258
9-10 AM	0	384	94	117
10-11 AM	0	308	46	74
11-12 PM	0	268	67	144
12-1 PM	0	290	117	130
1-2 PM	0	330	96	108
2-3 PM	0	349	124	244
3-4 PM	0	401	94	278
4-5 PM	0	339	98	325
5-6 PM	0	396	114	349
6-7 PM	0	341	107	158

SITE-GENERATED DATA				
VOLUMES				
Time	N/A	I-93 SB	Frontage	Frontage
	EB	WBL	NBT	SB
6-7 AM				
7-8 AM		34	1	2
8-9 AM		123	6	6
9-10 AM		134	7	7
10-11 AM		62	9	5
11-12 PM		78	19	7
12-1 PM		92	27	8
1-2 PM		98	36	9
2-3 PM		90	37	8
3-4 PM		81	40	7
4-5 PM		82	40	8
5-6 PM		102	71	9
6-7 PM		106	73	9

BUILD DATA				
VOLUMES				
Time	N/A	I-93 SB	Frontage	Frontage
	EB	WBL	NBT	SB
6-7 AM	0	0	0	0
7-8 AM	0	463	263	320
8-9 AM	0	578	286	264
9-10 AM	0	518	101	124
10-11 AM	0	370	55	79
11-12 PM	0	346	86	151
12-1 PM	0	382	144	138
1-2 PM	0	428	132	117
2-3 PM	0	439	161	252
3-4 PM	0	482	134	285
4-5 PM	0	421	138	333
5-6 PM	0	498	185	358
6-7 PM	0	447	180	167

Seasonal Adjustment: -3.5%

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 492 / 820 / 931 / 932)

Time	Entering Traffic	Exiting Traffic	WBL		NBT		SB	
			Minor Entering	Major Entering	Major Exiting	Major Entering		
6-7 AM	0.8%	0.3%	3.2%	0.0%	0.5%	0.3%		
7-8 AM	2.0%	0.9%	8.0%	0.0%	1.6%	0.8%		
8-9 AM	3.1%	1.2%	12.4%	0.0%	2.2%	1.2%		
9-10 AM	5.5%	2.0%	22.0%	0.0%	3.6%	2.1%		
10-11 AM	7.0%	4.3%	28.0%	0.0%	7.7%	2.6%		
11-12 PM	8.4%	6.2%	33.6%	0.0%	11.1%	3.2%		
12-1 PM	9.4%	8.3%	37.6%	0.0%	14.9%	3.5%		
1-2 PM	8.2%	8.6%	32.8%	0.0%	15.5%	3.1%		
2-3 PM	7.7%	8.9%	30.8%	0.0%	16.0%	2.9%		
3-4 PM	7.8%	8.8%	31.2%	0.0%	15.8%	2.9%		
4-5 PM	8.0%	8.9%	32.0%	0.0%	16.0%	3.0%		
5-6 PM	8.4%	9.2%	33.6%	0.0%	16.5%	3.2%		
6-7 PM	8.0%	7.5%	32.0%	0.0%	13.5%	3.0%		

**PM Trip Generation Retail/Restaurant/Fitness**

Total Trips (in) = 259

Total Trips (out) = 240

**499**

Frontage Road at I-93 SB Trip Distribution:

32% Entering Westbound

16% Exiting Northbound

3% Entering Southbound

Source: ITE Trip Generation, 9th Edition, LUC 820: Shopping Center [Table 1]

FITNESS/RETAIL/RESTAURANT TRIPS

VOLUMES				
Time	EB	I-93 SB	Frontage	Frontage
		WBL	NBT	SB
6-7 AM		8	1	1
7-8 AM		21	4	2
8-9 AM		32	5	3
9-10 AM		57	9	5
10-11 AM		73	19	7
11-12 PM		87	27	8
12-1 PM		97	36	9
1-2 PM		85	37	8
2-3 PM		80	38	7
3-4 PM		81	38	8
4-5 PM		83	38	8
5-6 PM		87	40	8
6-7 PM		83	32	8

PERCENTAGE OF PEAK HOUR FOR SITE TRIPS (LUC 710)

Time	Entering Traffic	Exiting Traffic	WBL		NBT		SB	
			Minor Entering	Major Entering	Major Exiting	Major Entering		
6-7 AM	25.0%	25.0%	13.8%	0.0%	4.3%	0.5%		
7-8 AM	100.0%	100.0%	55.0%	0.0%	17.0%	2.0%		
8-9 AM	100.0%	100.0%	55.0%	0.0%	17.0%	2.0%		
9-10 AM	5.0%	5.0%	2.8%	0.0%	0.9%	0.1%		
10-11 AM	5.0%	5.0%	2.8%	0.0%	0.9%	0.1%		
11-12 PM	5.0%	5.0%	2.8%	0.0%	0.9%	0.1%		
12-1 PM	5.0%	25.0%	2.8%	0.0%	4.3%	0.1%		
1-2 PM	25.0%	5.0%	13.8%	0.0%	0.9%	0.5%		
2-3 PM	5.0%	5.0%	2.8%	0.0%	0.9%	0.1%		
3-4 PM	5.0%	5.0%	2.8%	0.0%	0.9%	0.1%		
4-5 PM	100.0%	100.0%	55.0%	0.0%	17.0%	2.0%		
5-6 PM	100.0%	100.0%	55.0%	0.0%	17.0%	2.0%		
6-7 PM	5.0%	5.0%	2.8%	0.0%	0.9%	0.1%		

**AM Trip Generation Office**

Total Trips (in) = 186

Total Trips (out) = 11

**197**

Frontage Road at I-93 SB Trip Distribution:

55% Entering Westbound

17% Exiting Northbound

2% Entering Southbound

OFFICE TRIPS

VOLUMES				
Time	EB	I-93 SB	Frontage	Frontage
		WBL	NBT	SB
6-7 AM		26	0	1
7-8 AM		102	2	4
8-9 AM		102	2	4
9-10 AM		5	0	0
10-11 AM		5	0	0
11-12 PM		5	0	0
12-1 PM		1	0	0
1-2 PM		5	0	0
2-3 PM		1	2	0
3-4 PM		1	2	0
4-5 PM		19	33	1
5-6 PM		19	33	1
6-7 PM		1	2	0



85th Percentile > 40 mph? **OR** Population <10,000 people? N

**Warrant 1** - One of the Following Conditions Must Be Met for any 8 hours of an average day (Table 4C-1)

**Individual Option:**

**Condition A: Minimum Vehicular Volume**  
**100%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	500	0	583	550	225	134	237	282	249	413	419	471	543	347
Minor	2	200	0	463	578	518	370	346	382	428	439	482	421	498	447
Met?			NO	YES	YES	NO	NO	NO	NO	NO	NO	NO	NO	YES	NO

**OR**

**Condition B: Interruption of Continuous Traffic**  
**100%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	750	0	583	550	225	134	600	282	249	413	419	471	543	347
Minor	2	100	0	463	578	518	370	346	382	428	439	482	421	498	447
Met?			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Result: NO

**Combination Option:**

**Condition A: Minimum Vehicular Volume**  
**80%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	400	0	583	550	225	134	237	282	249	413	419	471	543	347
Minor	2	160	0	463	578	518	370	346	382	428	439	482	421	498	447
Met?			NO	YES	YES	NO	NO	NO	NO	NO	YES	YES	YES	YES	NO

**AND**

**Condition B: Interruption of Continuous Traffic**  
**80%**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	600	0	583	550	225	134	237	282	249	413	419	471	543	347
Minor	2	80	0	463	578	518	370	346	382	428	439	482	421	438	447
Met?			NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Result: NO



**Warrant 2 - Four-Hour Vehicular Volume (must be met for any 4 hours of an average day)**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	Figure 4C-1	0	583	550	225	134	237	282	249	413	419	471	543	347
Minor	2	Figure 4C-1	0	463	578	518	370	346	382	428	439	482	421	498	447
Met?			NO	YES	YES	NO	NO	NO	NO	NO	YES	YES	YES	YES	NO

Result: YES

**Warrant 3 - Peak Hour Volume (must be met for 1 hour of an average day)**

Street	Lanes	Minimum Volume	ATR Data												
			6-7 AM	7-8 AM	8-9 AM	9-10 AM	10-11 AM	11-12 PM	12-1 PM	1-2 PM	2-3 PM	3-4 PM	4-5 PM	5-6 PM	6-7 PM
Major	1	Figure 4C-3	0	583	550	225	134	237	282	249	413	419	471	543	347
Minor	2	Figure 4C-3	0	463	578	518	370	346	382	428	439	482	421	498	447
Met?			NO	NO	YES	NO	NO	NO	NO	NO	NO	YES	NO	YES	NO

Result: YES

**Warrants 4 to 8: Not Evaluated**



## **Appendix L**

Intersection Capacity and Queue Analysis Worksheets



2018 Existing Conditions



Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

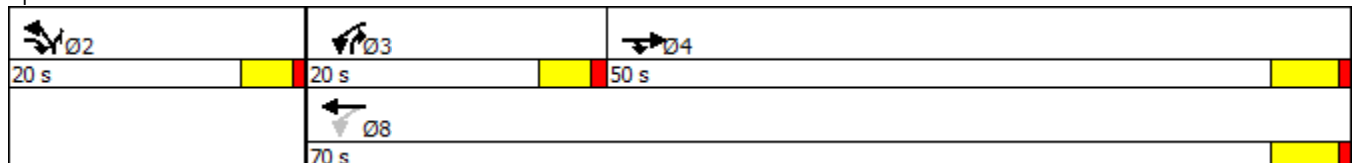
2018 Existing Conditions  
 Weekday Morning

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	547	40	504	490	44	552
Future Volume (vph)	547	40	504	490	44	552
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1733	1487	1631	1717	1572	1487
Flt Permitted			0.198		0.950	
Satd. Flow (perm)	1733	1487	340	1717	1572	1487
Satd. Flow (RTOR)		43				235
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	5%	7%	7%	11%	5%
Shared Lane Traffic (%)						
Turn Type	NA	pt+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	4	2 4	3	8	2	2 3
Permitted Phases			8			
Detector Phase	4	2 4	3	8	2	2 3
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	
Minimum Split (s)	15.5		10.5	15.5	10.5	
Total Split (s)	50.0		20.0	70.0	20.0	
Total Split (%)	55.6%		22.2%	77.8%	22.2%	
Maximum Green (s)	44.5		15.5	64.5	15.5	
Yellow Time (s)	4.5		3.5	4.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		4.5	5.5	4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		2.0	4.0	2.0	
Recall Mode	Min		None	Min	None	

Intersection Summary







Cycle Length: 90  
 Actuated Cycle Length: 77  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
 1: Shawsheen Street & East Street/Dascomb Road

2018 Existing Conditions  
 Weekday Morning













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	582	43	536	521	47	587
v/c Ratio	0.81	0.04	1.07	0.45	0.16	0.73
Control Delay	29.3	1.2	78.9	7.0	30.8	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	1.2	78.9	7.0	30.8	18.4
Queue Length 50th (ft)	241	0	~212	102	19	132
Queue Length 95th (ft)	363	8	#443	154	54	#379
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	1022	1068	501	1440	323	801
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.04	1.07	0.36	0.15	0.73

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2018 Existing Conditions  
 Weekday Morning

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	547	40	504	490	44	552		
Future Volume (veh/h)	547	40	504	490	44	552		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1792	1810	1776	1776	1712	1810		
Adj Flow Rate, veh/h	582	43	536	521	47	587		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	6	5	7	7	11	5		
Cap, veh/h	768	958	536	1207	318	599		
Arrive On Green	0.43	0.43	0.19	0.68	0.19	0.19		
Sat Flow, veh/h	1792	1538	1691	1776	1630	1538		
Grp Volume(v), veh/h	582	43	536	521	47	587		
Grp Sat Flow(s),veh/h/ln	1792	1538	1691	1776	1630	1538		
Q Serve(g_s), s	21.9	0.9	15.5	10.6	1.9	15.5		
Cycle Q Clear(g_c), s	21.9	0.9	15.5	10.6	1.9	15.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	768	958	536	1207	318	599		
V/C Ratio(X)	0.76	0.04	1.00	0.43	0.15	0.98		
Avail Cap(c_a), veh/h	1002	1160	536	1439	318	599		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	19.3	5.8	16.9	5.8	26.6	24.0		
Incr Delay (d2), s/veh	3.0	0.0	38.7	0.3	0.1	31.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	11.3	0.6	17.4	5.2	0.9	17.9		
LnGrp Delay(d),s/veh	22.3	5.8	55.6	6.1	26.6	55.4		
LnGrp LOS	C	A	E	A	C	E		
Approach Vol, veh/h	625			1057	634			
Approach Delay, s/veh	21.1			31.2	53.3			
Approach LOS	C			C	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	20.0	39.6				59.6
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		15.5	15.5	44.5				64.5
Max Q Clear Time (g_c+I1), s		17.5	17.5	23.9				12.6
Green Ext Time (p_c), s		0.0	0.0	10.2				14.7
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			34.5					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2018 Existing Conditions  
 Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	1087	990	14	1	4
Future Volume (vph)	12	1087	990	14	1	4
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.892	
Flt Protected		0.999			0.990	
Satd. Flow (prot)	0	1732	2008	0	1049	0
Flt Permitted		0.999			0.990	
Satd. Flow (perm)	0	1732	2008	0	1049	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	7%	7%	100%	50%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	4		4	
Traffic Vol, veh/h	12	1087	990	14	1	4
Future Vol, veh/h	12	1087	990	14	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	6	7	7	100	50
Mvmt Flow	13	1169	1065	15	1	4












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1065	0	0 2260 1065
Stage 1	-	-	- 1065 -
Stage 2	-	-	- 1195 -
Critical Hdwy	4.1	-	- 7.4 6.7
Critical Hdwy Stg 1	-	-	- 6.4 -
Critical Hdwy Stg 2	-	-	- 6.4 -
Follow-up Hdwy	2.2	-	- 4.4 3.75
Pot Cap-1 Maneuver	662	-	- 23 219
Stage 1	-	-	- 220 -
Stage 2	-	-	- 186 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	662	-	- 22 219
Mov Cap-2 Maneuver	-	-	- 22 -
Stage 1	-	-	- 220 -
Stage 2	-	-	- 176 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	54.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	662	-	-	-	78
HCM Lane V/C Ratio	0.019	-	-	-	0.069
HCM Control Delay (s)	10.5	0	-	-	54.5
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Lanes, Volumes, Timings  
 3: Smith Drive & Dascomb Road

2018 Existing Conditions  
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1068	20	97	994	10	29
Future Volume (vph)	1068	20	97	994	10	29
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1905	0	1604	1835	1532	1322
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1905	0	1604	1835	1532	1322
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	15%	5%	7%	10%	14%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1068	20	97	994	10	29
Future Vol, veh/h	1068	20	97	994	10	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	135
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	15	5	7	10	14
Mvmt Flow	1174	22	107	1092	11	32














Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1196
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.15
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.245
Pot Cap-1 Maneuver	-	-	573
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	573
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	81.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	24	217	-	-	573	-
HCM Lane V/C Ratio	0.458	0.147	-	-	0.186	-
HCM Control Delay (s)	247	24.4	-	-	12.7	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	1.4	0.5	-	-	0.7	-

Lanes, Volumes, Timings  
4: Dascomb Road & Frontage Road

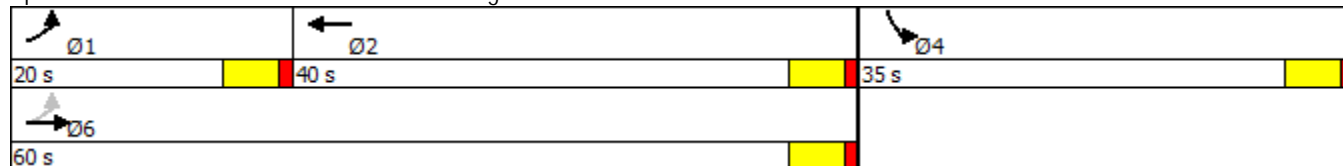
2018 Existing Conditions  
Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			 			
Traffic Volume (vph)	381	716	709	497	289	382
Future Volume (vph)	381	716	709	497	289	382
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1687	1792	3471	1812	2006	1794
Flt Permitted	0.178				0.950	
Satd. Flow (perm)	316	1792	3471	1812	2006	1794
Satd. Flow (RTOR)				313		406
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	6%	4%	1%	2%	2%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	Free	Prot	Free
Protected Phases	1	6	2		4	
Permitted Phases	6			Free		Free
Detector Phase	1	6	2		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0		6.0	
Minimum Split (s)	15.0	15.0	11.0		11.0	
Total Split (s)	20.0	60.0	40.0		35.0	
Total Split (%)	21.1%	63.2%	42.1%		36.8%	
Maximum Green (s)	15.0	55.0	35.0		30.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	
Recall Mode	Min	Min	None		None	

Intersection Summary

Cycle Length: 95  
 Actuated Cycle Length: 65  
 Natural Cycle: 55  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Dascomb Road & Frontage Road









## Queues

2018 Existing Conditions

## 4: Dascomb Road &amp; Frontage Road

Weekday Morning













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	405	762	754	529	307	406
v/c Ratio	0.79	0.69	0.72	0.29	0.67	0.23
Control Delay	26.6	13.5	24.9	0.4	31.5	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.6	13.5	24.9	0.4	31.5	0.3
Queue Length 50th (ft)	88	170	135	0	108	0
Queue Length 95th (ft)	#307	393	226	0	215	0
Internal Link Dist (ft)		120	920		695	
Turn Bay Length (ft)	150			130		
Base Capacity (vph)	519	1525	1923	1812	953	1794
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.50	0.39	0.29	0.32	0.23

## Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
4: Dascomb Road & Frontage Road

2018 Existing Conditions  
Weekday Morning

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	381	716	709	497	289	382		
Future Volume (veh/h)	381	716	709	497	289	382		
Number	1	6	2	12	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1776	1792	1827	1956	1937	1937		
Adj Flow Rate, veh/h	405	762	754	0	307	0		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	7	6	4	1	2	2		
Cap, veh/h	547	1112	1221	585	371	331		
Arrive On Green	0.18	0.62	0.35	0.00	0.20	0.00		
Sat Flow, veh/h	1691	1792	3563	1663	1845	1647		
Grp Volume(v), veh/h	405	762	754	0	307	0		
Grp Sat Flow(s),veh/h/ln	1691	1792	1736	1663	1845	1647		
Q Serve(g_s), s	7.6	15.7	10.1	0.0	8.9	0.0		
Cycle Q Clear(g_c), s	7.6	15.7	10.1	0.0	8.9	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	547	1112	1221	585	371	331		
V/C Ratio(X)	0.74	0.69	0.62	0.00	0.83	0.00		
Avail Cap(c_a), veh/h	698	1763	2173	1041	990	883		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	9.7	7.0	15.0	0.0	21.4	0.0		
Incr Delay (d2), s/veh	2.1	0.3	0.2	0.0	1.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.8	7.7	4.8	0.0	4.7	0.0		
LnGrp Delay(d),s/veh	11.8	7.3	15.2	0.0	23.2	0.0		
LnGrp LOS	B	A	B		C			
Approach Vol, veh/h		1167	754		307			
Approach Delay, s/veh		8.9	15.2		23.2			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	24.7		16.2		39.7		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	15.0	35.0		30.0		55.0		
Max Q Clear Time (g_c+I1), s	9.6	12.1		10.9		17.7		
Green Ext Time (p_c), s	0.4	7.6		0.4		8.5		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			13.0					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
 5: I-93 NB Ramps & Dascomb Road

2018 Existing Conditions  
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	644	361	82	910	296	184
Future Volume (vph)	644	361	82	910	296	184
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1956	0	1736	1881	1930	1777
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1956	0	1736	1881	1930	1777
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	8%	4%	1%	6%	3%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 190.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	644	361	82	910	296	184
Future Vol, veh/h	644	361	82	910	296	184
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	8	4	1	6	3
Mvmt Flow	685	384	87	968	315	196

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	685
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.236
Pot Cap-1 Maneuver	-	-	899
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	899
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	\$ 981.4
HCM LOS			F













Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	74	446	-	-	899	-
HCM Lane V/C Ratio	4.255	0.439	-	-	0.097	-
HCM Control Delay (s)	\$ 1579.6	19.2	-	-	9.4	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	33.6	2.2	-	-	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 6: Frontage Road & I-93 SB Ramps

2018 Existing Conditions  
 Weekday Morning

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	455	76	286	595	115	214
Future Volume (vph)	455	76	286	595	115	214
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.983
Satd. Flow (prot)	1877	1812	2007	1760	0	3425
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1877	1812	2007	1760	0	3425
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	9%	1%	1%	4%	1%	5%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
6: Frontage Road & I-93 SB Ramps

2018 Existing Conditions  
Weekday Morning

Intersection

Int Delay, s/veh	44.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↗↘
Traffic Vol, veh/h	455	76	286	595	115	214
Future Vol, veh/h	455	76	286	595	115	214
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	9	1	1	4	1	5
Mvmt Flow	464	78	292	607	117	218

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	636	292	0	0	292
Stage 1	292	-	-	-	-
Stage 2	344	-	-	-	-
Critical Hdwy	6.735	6.215	-	-	4.115
Critical Hdwy Stg 1	5.535	-	-	-	-
Critical Hdwy Stg 2	5.935	-	-	-	-
Follow-up Hdwy	3.5855	3.3095	-	-	2.2095
Pot Cap-1 Maneuver	~ 412	749	-	-	1275
Stage 1	739	-	-	-	-
Stage 2	673	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	~ 369	749	-	-	1275
Mov Cap-2 Maneuver	~ 369	-	-	-	-
Stage 1	739	-	-	-	-
Stage 2	603	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	144.8	0	3
HCM LOS	F		










Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	369	749	1275	-
HCM Lane V/C Ratio	-	-	1.258	0.104	0.092	-
HCM Control Delay (s)	-	-	167.2	10.4	8.1	0.2
HCM Lane LOS	-	-	F	B	A	A
HCM 95th %tile Q(veh)	-	-	20.4	0.3	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2018 Existing Conditions  
Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	347	668	7	527	255	8
Future Volume (vph)	347	668	7	527	255	8
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.911				0.996	
Flt Protected				0.999	0.954	
Satd. Flow (prot)	1810	0	0	1923	1653	0
Flt Permitted				0.999	0.954	
Satd. Flow (perm)	1810	0	0	1923	1653	0
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	0%	2%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 54.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	347	668	7	527	255	8
Future Vol, veh/h	347	668	7	527	255	8
Conflicting Peds, #/hr	0	1	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, %	4	1	0	2	2	0
Mvmt Flow	377	726	8	573	277	9

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1104
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	640
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	640
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	\$ 373.9
HCM LOS			F











Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	171	-	-	640	-
HCM Lane V/C Ratio	1.672	-	-	0.012	-
HCM Control Delay (s)	\$ 373.9	-	-	10.7	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	19.8	-	-	0	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2018 Existing Conditions  
 Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	339	81	32	103	279	466
Future Volume (vph)	339	81	32	103	279	466
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.916	
Flt Protected	0.950			0.988		
Satd. Flow (prot)	1851	1706	0	1874	1813	0
Flt Permitted	0.950			0.988		
Satd. Flow (perm)	1851	1706	0	1874	1813	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	16%	4%	3%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 10.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	339	81	32	103	279	466
Future Vol, veh/h	339	81	32	103	279	466
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	4	1	16	4	3	2
Mvmt Flow	349	84	33	106	288	480

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	460	288	288	0	-	0
Stage 1	288	-	-	-	-	-
Stage 2	172	-	-	-	-	-
Critical Hdwy	6.44	6.21	4.26	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.309	2.344	-	-	-
Pot Cap-1 Maneuver	556	753	1198	-	-	0
Stage 1	756	-	-	-	-	0
Stage 2	853	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	540	753	1198	-	-	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	828	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	20.7	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
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Capacity (veh/h)	1198	-	540	753	-
HCM Lane V/C Ratio	0.028	-	0.647	0.111	-
HCM Control Delay (s)	8.1	0	23.1	10.4	-
HCM Lane LOS	A	A	C	B	-
HCM 95th %tile Q(veh)	0.1	-	4.6	0.4	-

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

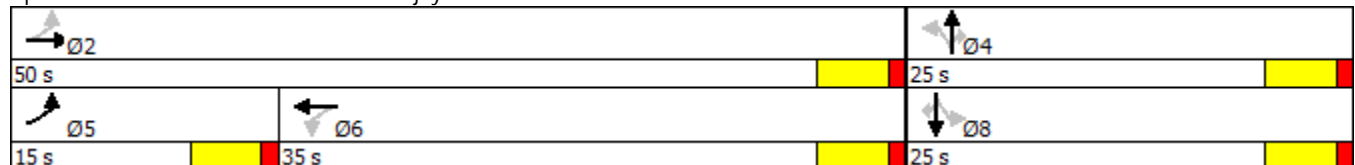
2018 Existing Conditions  
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	718	9	8	721	65	11	8	16	274	11	208
Future Volume (vph)	52	718	9	8	721	65	11	8	16	274	11	208
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				0.97
Frt		0.998			0.989				0.850			0.850
Flt Protected		0.997						0.972			0.954	
Satd. Flow (prot)	0	1832	0	0	2083	0	0	1724	1561	0	1658	1706
Flt Permitted		0.914			0.993			0.795			0.717	
Satd. Flow (perm)	0	1680	0	0	2069	0	0	1408	1561	0	1246	1662
Satd. Flow (RTOR)		1			7				102			102
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.97	0.97	0.97	0.96	0.96	0.96	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	6%	3%	0%	0%	2%	5%	0%	0%	0%	1%	27%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	50.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	20.0%	66.7%		46.7%	46.7%		33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	10.0	45.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 68.1  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road



## Queues

2018 Existing Conditions

## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road

Weekday Morning

	→	←	↑	↗	↓	↙
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	803	827	24	20	357	260
v/c Ratio	0.86	0.72	0.06	0.04	0.97	0.46
Control Delay	23.8	15.0	20.6	0.1	69.0	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.8	15.0	20.6	0.1	69.0	16.1
Queue Length 50th (ft)	257	227	8	0	-155	54
Queue Length 95th (ft)	#432	346	23	0	#288	104
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1121	1160	417	534	369	564
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.71	0.06	0.04	0.97	0.46



















## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis













## 7: Acorn Drive/Lovejoy Road & Dascomb Road

2018 Existing Conditions  
Weekday Morning

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	52	718	9	8	721	65	11	8	16	274	11	208	
Future Volume (vph)	52	718	9	8	721	65	11	8	16	274	11	208	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00	0.98	
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00	
Frt		1.00			0.99			1.00	0.85		1.00	0.85	
Flt Protected		1.00			1.00			0.97	1.00		0.95	1.00	
Satd. Flow (prot)		1833			2082			1721	1561		1659	1663	
Flt Permitted		0.91			0.99			0.80	1.00		0.72	1.00	
Satd. Flow (perm)		1681			2068			1408	1561		1246	1663	
Peak-hour factor, PHF	0.97	0.97	0.97	0.96	0.96	0.96	0.80	0.80	0.80	0.80	0.80	0.80	
Adj. Flow (vph)	54	740	9	8	751	68	14	10	20	342	14	260	
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	14	0	0	72	
Lane Group Flow (vph)	0	803	0	0	824	0	0	24	6	0	357	188	
Confl. Peds. (#/hr)							3					3	
Heavy Vehicles (%)	6%	3%	0%	0%	2%	5%	0%	0%	0%	1%	27%	1%	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2			6			4			8		
Permitted Phases	2			6			4		4	8		8	
Actuated Green, G (s)		37.8			37.8			20.2	20.2		20.2	20.2	
Effective Green, g (s)		37.8			37.8			20.2	20.2		20.2	20.2	
Actuated g/C Ratio		0.56			0.56			0.30	0.30		0.30	0.30	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		934			1149			418	463		370	494	
v/s Ratio Prot													
v/s Ratio Perm		c0.48			0.40			0.02	0.00		c0.29	0.11	
v/c Ratio		0.86			0.72			0.06	0.01		0.96	0.38	
Uniform Delay, d1		12.8			11.2			17.1	16.9		23.6	18.9	
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.7			1.8			0.0	0.0		37.1	0.2	
Delay (s)		20.5			13.0			17.1	16.9		60.6	19.1	
Level of Service		C			B			B	B		E	B	
Approach Delay (s)		20.5			13.0			17.0			43.1		
Approach LOS		C			B			B			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			23.8									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.98										
Actuated Cycle Length (s)			68.0									Sum of lost time (s)	15.0
Intersection Capacity Utilization			102.5%									ICU Level of Service	G
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

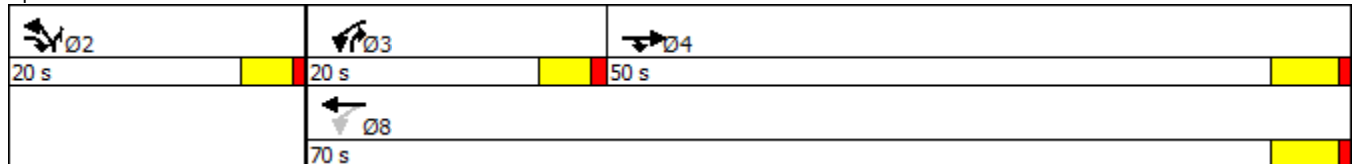
2018 Existing Conditions  
 Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	545	27	486	648	62	556
Future Volume (vph)	545	27	486	648	62	556
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1818	1561	1728	1801	1745	1561
Flt Permitted			0.211		0.950	
Satd. Flow (perm)	1818	1561	384	1801	1745	1561
Satd. Flow (RTOR)		28				248
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Shared Lane Traffic (%)						
Turn Type	NA	pt+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	4	2 4	3	8	2	2 3
Permitted Phases			8			
Detector Phase	4	2 4	3	8	2	2 3
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	
Minimum Split (s)	15.5		10.5	15.5	10.5	
Total Split (s)	50.0		20.0	70.0	20.0	
Total Split (%)	55.6%		22.2%	77.8%	22.2%	
Maximum Green (s)	44.5		15.5	64.5	15.5	
Yellow Time (s)	4.5		3.5	4.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		4.5	5.5	4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		2.0	4.0	2.0	
Recall Mode	Min		None	Min	None	

Intersection Summary







Cycle Length: 90  
 Actuated Cycle Length: 72.1  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
1: Shawsheen Street & East Street/Dascomb Road

2018 Existing Conditions  
Weekday Evening













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	562	28	501	668	64	573
v/c Ratio	0.76	0.03	0.94	0.55	0.20	0.68
Control Delay	26.0	1.5	41.8	8.2	30.1	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	1.5	41.8	8.2	30.1	15.0
Queue Length 50th (ft)	223	0	131	144	25	105
Queue Length 95th (ft)	333	6	#355	215	68	296
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	1170	1166	564	1569	391	862
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.02	0.89	0.43	0.16	0.66

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2018 Existing Conditions  
 Weekday Evening

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	545	27	486	648	62	556		
Future Volume (veh/h)	545	27	486	648	62	556		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1900	1881	1863	1900	1900		
Adj Flow Rate, veh/h	562	28	501	668	64	573		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Percent Heavy Veh, %	1	0	1	2	0	0		
Cap, veh/h	814	1028	563	1238	369	608		
Arrive On Green	0.43	0.43	0.17	0.66	0.20	0.20		
Sat Flow, veh/h	1881	1615	1792	1863	1810	1615		
Grp Volume(v), veh/h	562	28	501	668	64	573		
Grp Sat Flow(s),veh/h/ln	1881	1615	1792	1863	1810	1615		
Q Serve(g_s), s	18.4	0.5	10.9	14.3	2.2	15.5		
Cycle Q Clear(g_c), s	18.4	0.5	10.9	14.3	2.2	15.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	814	1028	563	1238	369	608		
V/C Ratio(X)	0.69	0.03	0.89	0.54	0.17	0.94		
Avail Cap(c_a), veh/h	1101	1274	619	1580	369	608		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.5	5.1	12.9	6.7	25.0	22.9		
Incr Delay (d2), s/veh	1.6	0.0	13.2	0.5	0.1	22.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	9.9	0.3	7.2	7.4	1.1	15.4		
LnGrp Delay(d),s/veh	19.0	5.1	26.1	7.2	25.1	45.8		
LnGrp LOS	B	A	C	A	C	D		
Approach Vol, veh/h	590			1169	637			
Approach Delay, s/veh	18.4			15.3	43.7			
Approach LOS	B			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	17.7	38.4				56.1
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		15.5	15.5	44.5				64.5
Max Q Clear Time (g_c+I1), s		17.5	12.9	20.4				16.3
Green Ext Time (p_c), s		0.0	0.3	12.5				17.0
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			23.6					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2018 Existing Conditions  
 Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	1098	1112	3	7	22
Future Volume (vph)	3	1098	1112	3	7	22
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.896	
Flt Protected					0.988	
Satd. Flow (prot)	0	1819	2108	0	1521	0
Flt Permitted					0.988	
Satd. Flow (perm)	0	1819	2108	0	1521	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	2%	67%	29%	5%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	3	1098	1112	3	7	22
Future Vol, veh/h	3	1098	1112	3	7	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	2	67	29	5
Mvmt Flow	3	1132	1146	3	7	23












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1146	0	0 2284 1146
Stage 1	-	-	- 1146 -
Stage 2	-	-	- 1138 -
Critical Hdwy	4.1	-	- 6.69 6.25
Critical Hdwy Stg 1	-	-	- 5.69 -
Critical Hdwy Stg 2	-	-	- 5.69 -
Follow-up Hdwy	2.2	-	- 3.761 3.345
Pot Cap-1 Maneuver	617	-	- 36 239
Stage 1	-	-	- 268 -
Stage 2	-	-	- 271 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	617	-	- 36 239
Mov Cap-2 Maneuver	-	-	- 36 -
Stage 1	-	-	- 268 -
Stage 2	-	-	- 267 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	55
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	617	-	-	-	101
HCM Lane V/C Ratio	0.005	-	-	-	0.296
HCM Control Delay (s)	10.9	0	-	-	55
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	1.1

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

2018 Existing Conditions  
Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1099	6	27	1084	31	71
Future Volume (vph)	1099	6	27	1084	31	71
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	2025	0	1620	1944	1636	1492
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	2025	0	1620	1944	1636	1492
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	4%	1%	3%	1%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	4.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1099	6	27	1084	31	71
Future Vol, veh/h	1099	6	27	1084	31	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	135
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	1	3	1
Mvmt Flow	1157	6	28	1141	33	75













Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1163	0	2358 1160
Stage 1	-	-	-	-	1160 -
Stage 2	-	-	-	-	1198 -
Critical Hdwy	-	-	4.14	-	6.43 6.21
Critical Hdwy Stg 1	-	-	-	-	5.43 -
Critical Hdwy Stg 2	-	-	-	-	5.43 -
Follow-up Hdwy	-	-	2.236	-	3.527 3.309
Pot Cap-1 Maneuver	-	-	594	-	39 239
Stage 1	-	-	-	-	297 -
Stage 2	-	-	-	-	285 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	594	-	37 239
Mov Cap-2 Maneuver	-	-	-	-	37 -
Stage 1	-	-	-	-	297 -
Stage 2	-	-	-	-	272 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	101.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	37	239	-	-	594	-
HCM Lane V/C Ratio	0.882	0.313	-	-	0.048	-
HCM Control Delay (s)	274	26.8	-	-	11.4	-
HCM Lane LOS	F	D	-	-	B	-
HCM 95th %tile Q(veh)	3.2	1.3	-	-	0.1	-

Lanes, Volumes, Timings  
4: Dascomb Road & Frontage Road

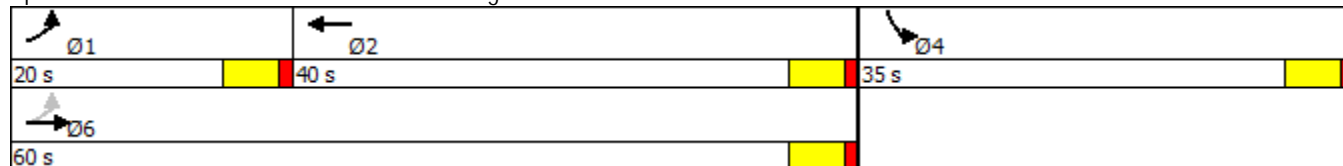
2018 Existing Conditions  
Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	374	796	690	178	204	421
Future Volume (vph)	374	796	690	178	204	421
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1881	3574	1812	2025	1777
Flt Permitted	0.199				0.950	
Satd. Flow (perm)	374	1881	3574	1812	2025	1777
Satd. Flow (RTOR)				115		439
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	3%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	Free	Prot	Free
Protected Phases	1	6	2		4	
Permitted Phases	6			Free		Free
Detector Phase	1	6	2		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0		6.0	
Minimum Split (s)	15.0	15.0	11.0		11.0	
Total Split (s)	20.0	60.0	40.0		35.0	
Total Split (%)	21.1%	63.2%	42.1%		36.8%	
Maximum Green (s)	15.0	55.0	35.0		30.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	
Recall Mode	Min	Min	None		None	

Intersection Summary

Cycle Length: 95  
 Actuated Cycle Length: 56.1  
 Natural Cycle: 55  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Dascomb Road & Frontage Road









## Queues

2018 Existing Conditions

## 4: Dascomb Road &amp; Frontage Road

Weekday Evening














						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	390	829	719	185	213	439
v/c Ratio	0.71	0.72	0.68	0.10	0.53	0.25
Control Delay	17.4	12.2	21.4	0.1	26.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	12.2	21.4	0.1	26.6	0.3
Queue Length 50th (ft)	55	152	106	0	63	0
Queue Length 95th (ft)	#203	354	190	0	141	0
Internal Link Dist (ft)		120	920		695	
Turn Bay Length (ft)	150			130		
Base Capacity (vph)	621	1745	2308	1812	1121	1777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.48	0.31	0.10	0.19	0.25

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
4: Dascomb Road & Frontage Road

2018 Existing Conditions  
Weekday Evening

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations			 					
Traffic Volume (veh/h)	374	796	690	178	204	421		
Future Volume (veh/h)	374	796	690	178	204	421		
Number	1	6	2	12	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1956	1956	1918		
Adj Flow Rate, veh/h	390	829	719	0	212	0		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	1	1	1	1	1	3		
Cap, veh/h	642	1234	1287	599	273	239		
Arrive On Green	0.20	0.66	0.36	0.00	0.15	0.00		
Sat Flow, veh/h	1792	1881	3668	1663	1863	1631		
Grp Volume(v), veh/h	390	829	719	0	212	0		
Grp Sat Flow(s),veh/h/ln	1792	1881	1787	1663	1863	1631		
Q Serve(g_s), s	5.7	13.7	8.2	0.0	5.6	0.0		
Cycle Q Clear(g_c), s	5.7	13.7	8.2	0.0	5.6	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	642	1234	1287	599	273	239		
V/C Ratio(X)	0.61	0.67	0.56	0.00	0.78	0.00		
Avail Cap(c_a), veh/h	819	2041	2468	1148	1103	965		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	7.4	5.4	13.0	0.0	20.8	0.0		
Incr Delay (d2), s/veh	0.3	0.2	0.1	0.0	1.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.8	7.0	4.0	0.0	3.0	0.0		
LnGrp Delay(d),s/veh	7.8	5.6	13.1	0.0	22.6	0.0		
LnGrp LOS	A	A	B		C			
Approach Vol, veh/h		1219	719		212			
Approach Delay, s/veh		6.3	13.1		22.6			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	23.3		12.4		38.3		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	15.0	35.0		30.0		55.0		
Max Q Clear Time (g_c+I1), s	7.7	10.2		7.6		15.7		
Green Ext Time (p_c), s	0.4	8.1		0.3		9.0		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			10.2					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
 5: I-93 NB Ramps & Dascomb Road

2018 Existing Conditions  
 Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	464	536	82	449	419	225
Future Volume (vph)	464	536	82	449	419	225
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1988	0	1805	1900	2006	1830
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1988	0	1805	1900	2006	1830
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 111.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	464	536	82	449	419	225
Future Vol, veh/h	464	536	82	449	419	225
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	2	0
Mvmt Flow	488	564	86	473	441	237

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	488
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1086
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1086
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	\$ 374.2
HCM LOS			F













Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	206	584	-	-	1086	-
HCM Lane V/C Ratio	2.141	0.406	-	-	0.079	-
HCM Control Delay (s)	\$ 566.9	15.3	-	-	8.6	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	34.2	2	-	-	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 6: Frontage Road & I-93 SB Ramps

2018 Existing Conditions  
 Weekday Evening

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	370	18	110	401	195	221
Future Volume (vph)	370	18	110	401	195	221
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.977
Satd. Flow (prot)	1986	1649	2027	1794	0	3527
Flt Permitted	0.950					0.977
Satd. Flow (perm)	1986	1649	2027	1794	0	3527
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	11%	0%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
6: Frontage Road & I-93 SB Ramps

2018 Existing Conditions  
Weekday Evening

Intersection

Int Delay, s/veh	33.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	370	18	110	401	195	221
Future Vol, veh/h	370	18	110	401	195	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	11	0	2	0	0
Mvmt Flow	389	19	116	422	205	233

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	643	116	0	0	116
Stage 1	116	-	-	-	-
Stage 2	527	-	-	-	-
Critical Hdwy	6.645	6.365	-	-	4.1
Critical Hdwy Stg 1	5.445	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-
Follow-up Hdwy	3.5285	3.4045	-	-	2.2
Pot Cap-1 Maneuver	420	909	-	-	1485
Stage 1	906	-	-	-	-
Stage 2	555	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	~ 353	909	-	-	1485
Mov Cap-2 Maneuver	~ 353	-	-	-	-
Stage 1	906	-	-	-	-
Stage 2	467	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	108.5	0	3.8
HCM LOS	F		










Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	353	909	1485	-
HCM Lane V/C Ratio	-	-	1.103	0.021	0.138	-
HCM Control Delay (s)	-	-	113.3	9	7.8	0.2
HCM Lane LOS	-	-	F	A	A	A
HCM 95th %tile Q(veh)	-	-	14.6	0.1	0.5	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2018 Existing Conditions  
Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	408	229	12	393	262	19
Future Volume (vph)	408	229	12	393	262	19
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952				0.991	
Flt Protected				0.999	0.955	
Satd. Flow (prot)	1929	0	0	1943	1678	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1929	0	0	1943	1678	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 27.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	408	229	12	393	262	19
Future Vol, veh/h	408	229	12	393	262	19
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	439	246	13	423	282	20

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	685
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	918
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	918
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	128.3
HCM LOS			F











Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	272	-	-	918	-
HCM Lane V/C Ratio	1.111	-	-	0.014	-
HCM Control Delay (s)	128.3	-	-	9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	12.7	-	-	0	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2018 Existing Conditions  
 Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	378	22	125	312	112	296
Future Volume (vph)	378	22	125	312	112	296
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.902	
Flt Protected	0.950			0.986		
Satd. Flow (prot)	1925	1580	0	1967	1823	0
Flt Permitted	0.950			0.986		
Satd. Flow (perm)	1925	1580	0	1967	1823	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	9%	3%	1%	1%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	58.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	378	22	125	312	112	296
Future Vol, veh/h	378	22	125	312	112	296
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	9	3	1	1	0
Mvmt Flow	411	24	136	339	122	322

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	733	122	122	0	0
Stage 1	122	-	-	-	-
Stage 2	611	-	-	-	-
Critical Hdwy	6.4	6.29	4.13	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.381	2.227	-	-
Pot Cap-1 Maneuver	~ 391	911	1459	-	0
Stage 1	908	-	-	-	0
Stage 2	546	-	-	-	0
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 346	911	1459	-	-
Mov Cap-2 Maneuver	~ 346	-	-	-	-
Stage 1	908	-	-	-	-
Stage 2	483	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	135.9	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1459	-	346	911	-
HCM Lane V/C Ratio	0.093	-	1.187	0.026	-
HCM Control Delay (s)	7.7	0	143.3	9.1	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	0.3	-	17.1	0.1	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

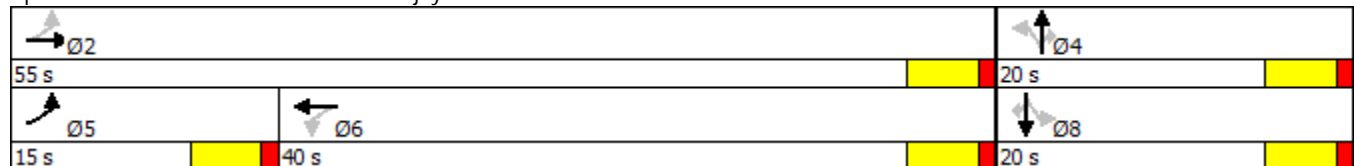
2018 Existing Conditions  
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	499	9	10	481	172	4	2	9	111	3	65
Future Volume (vph)	120	499	9	10	481	172	4	2	9	111	3	65
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.965				0.850			0.850
Flt Protected		0.991			0.999			0.968			0.954	
Satd. Flow (prot)	0	1879	0	0	2076	0	0	1717	1561	0	1692	1723
Flt Permitted		0.771			0.991			0.785			0.726	
Satd. Flow (perm)	0	1462	0	0	2059	0	0	1392	1561	0	1287	1723
Satd. Flow (RTOR)		2			32				102			102
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.63	0.63	0.63	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	55.0		40.0	40.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	20.0%	73.3%		53.3%	53.3%		26.7%	26.7%	26.7%	26.7%	26.7%	26.7%
Maximum Green (s)	10.0	50.0		35.0	35.0		15.0	15.0	15.0	15.0	15.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 54.7  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road









## Queues

2018 Existing Conditions



















## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road

Weekday Evening

						
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	660	736	9	14	148	84
v/c Ratio	0.65	0.51	0.03	0.04	0.59	0.20
Control Delay	10.8	7.1	23.2	0.2	34.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	7.1	23.2	0.2	34.2	5.8
Queue Length 50th (ft)	123	110	2	0	43	0
Queue Length 95th (ft)	274	219	10	0	100	17
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1261	1587	418	540	386	588
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.46	0.02	0.03	0.38	0.14
Intersection Summary						













HCM Signalized Intersection Capacity Analysis  
7: Acorn Drive/Lovejoy Road & Dascomb Road

2018 Existing Conditions  
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	499	9	10	481	172	4	2	9	111	3	65
Future Volume (vph)	120	499	9	10	481	172	4	2	9	111	3	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frt		1.00			0.96			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.97	1.00		0.95	1.00
Satd. Flow (prot)		1879			2076			1716	1561		1691	1723
Flt Permitted		0.77			0.99			0.79	1.00		0.73	1.00
Satd. Flow (perm)		1462			2058			1393	1561		1287	1723
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90	0.63	0.63	0.63	0.77	0.77	0.77
Adj. Flow (vph)	126	525	9	11	534	191	6	3	14	144	4	84
RTOR Reduction (vph)	0	1	0	0	11	0	0	0	12	0	0	71
Lane Group Flow (vph)	0	659	0	0	725	0	0	9	2	0	148	13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)		36.6			36.6			8.8	8.8		8.8	8.8
Effective Green, g (s)		36.6			36.6			8.8	8.8		8.8	8.8
Actuated g/C Ratio		0.66			0.66			0.16	0.16		0.16	0.16
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		965			1359			221	247		204	273
v/s Ratio Prot												
v/s Ratio Perm		c0.45			0.35			0.01	0.00		c0.11	0.01
v/c Ratio		0.68			0.53			0.04	0.01		0.73	0.05
Uniform Delay, d1		5.8			4.9			19.7	19.6		22.2	19.8
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		1.6			0.2			0.0	0.0		10.3	0.0
Delay (s)		7.4			5.1			19.8	19.6		32.5	19.8
Level of Service		A			A			B	B		C	B
Approach Delay (s)		7.4			5.1			19.7			27.9	
Approach LOS		A			A			B			C	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			9.4									A
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			55.4							15.0		
Intersection Capacity Utilization			95.3%									F
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

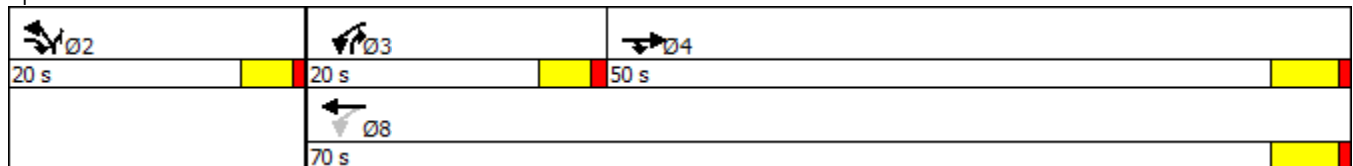
2018 Existing Conditions  
 Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	492	32	430	399	44	480
Future Volume (vph)	492	32	430	399	44	480
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1818	1561	1711	1749	1711	1546
Flt Permitted			0.239		0.950	
Satd. Flow (perm)	1818	1561	430	1749	1711	1546
Satd. Flow (RTOR)		34				271
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	0%	2%	5%	2%	1%
Shared Lane Traffic (%)						
Turn Type	NA	pt+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	4	2 4	3	8	2	2 3
Permitted Phases			8			
Detector Phase	4	2 4	3	8	2	2 3
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	
Minimum Split (s)	15.5		10.5	15.5	10.5	
Total Split (s)	50.0		20.0	70.0	20.0	
Total Split (%)	55.6%		22.2%	77.8%	22.2%	
Maximum Green (s)	44.5		15.5	64.5	15.5	
Yellow Time (s)	4.5		3.5	4.5	3.5	
All-Red Time (s)	1.0		1.0	1.0	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.5		4.5	5.5	4.5	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		2.0	4.0	2.0	
Recall Mode	Min		None	Min	None	

Intersection Summary







Cycle Length: 90  
 Actuated Cycle Length: 66.2  
 Natural Cycle: 55  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
1: Shawsheen Street & East Street/Dascomb Road

2018 Existing Conditions  
Saturday MIDDAY













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	529	34	462	429	47	516
v/c Ratio	0.73	0.03	0.86	0.37	0.16	0.62
Control Delay	24.1	1.5	27.0	6.1	28.0	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	1.5	27.0	6.1	28.0	11.2
Queue Length 50th (ft)	183	0	81	68	16	62
Queue Length 95th (ft)	310	7	#267	119	52	208
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	1286	1227	610	1583	426	898
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.03	0.76	0.27	0.11	0.57

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2018 Existing Conditions  
 Saturday MIDDAY

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	492	32	430	399	44	480		
Future Volume (veh/h)	492	32	430	399	44	480		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1900	1863	1810	1863	1881		
Adj Flow Rate, veh/h	529	34	462	429	47	516		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	1	0	2	5	2	1		
Cap, veh/h	752	1002	549	1153	391	630		
Arrive On Green	0.40	0.40	0.17	0.64	0.22	0.22		
Sat Flow, veh/h	1881	1615	1774	1810	1774	1599		
Grp Volume(v), veh/h	529	34	462	429	47	516		
Grp Sat Flow(s),veh/h/ln	1881	1615	1774	1810	1774	1599		
Q Serve(g_s), s	16.5	0.6	9.9	7.9	1.5	15.5		
Cycle Q Clear(g_c), s	16.5	0.6	9.9	7.9	1.5	15.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	752	1002	549	1153	391	630		
V/C Ratio(X)	0.70	0.03	0.84	0.37	0.12	0.82		
Avail Cap(c_a), veh/h	1191	1378	633	1660	391	630		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.6	5.2	12.2	6.1	21.9	19.1		
Incr Delay (d2), s/veh	1.7	0.0	7.9	0.3	0.1	7.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.9	0.4	5.8	4.0	0.7	10.2		
LnGrp Delay(d),s/veh	19.3	5.2	20.1	6.3	22.0	27.0		
LnGrp LOS	B	A	C	A	C	C		
Approach Vol, veh/h	563			891	563			
Approach Delay, s/veh	18.5			13.5	26.6			
Approach LOS	B			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	16.7	33.6				50.3
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		15.5	15.5	44.5				64.5
Max Q Clear Time (g_c+I1), s		17.5	11.9	18.5				9.9
Green Ext Time (p_c), s		0.0	0.3	9.6				11.8
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			18.5					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2018 Existing Conditions  
 Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	971	829	1	1	0
Future Volume (vph)	1	971	829	1	1	0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	1818	2111	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1818	2111	0	1805	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	1	971	829	1	1	0
Future Vol, veh/h	1	971	829	1	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	1	1001	855	1	1	0












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	855	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	793	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	793	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	49.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	793	-	-	-	82
HCM Lane V/C Ratio	0.001	-	-	-	0.013
HCM Control Delay (s)	9.5	0	-	-	49.5
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	0

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

2018 Existing Conditions  
Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	953	19	74	814	16	66
Future Volume (vph)	953	19	74	814	16	66
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	2001	0	1668	1925	1685	1507
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	2001	0	1668	1925	1685	1507
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	953	19	74	814	16	66
Future Vol, veh/h	953	19	74	814	16	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	135
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	1	2	0	0
Mvmt Flow	993	20	77	848	17	69













Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1013	0	2005
Stage 1	-	-	-	-	1003
Stage 2	-	-	-	-	1002
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	688	-	66
Stage 1	-	-	-	-	358
Stage 2	-	-	-	-	358
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	688	-	59
Mov Cap-2 Maneuver	-	-	-	-	59
Stage 1	-	-	-	-	358
Stage 2	-	-	-	-	318

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	33.9
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	59	297	-	-	688	-
HCM Lane V/C Ratio	0.282	0.231	-	-	0.112	-
HCM Control Delay (s)	88.5	20.7	-	-	10.9	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	1	0.9	-	-	0.4	-

Lanes, Volumes, Timings  
4: Dascomb Road & Frontage Road

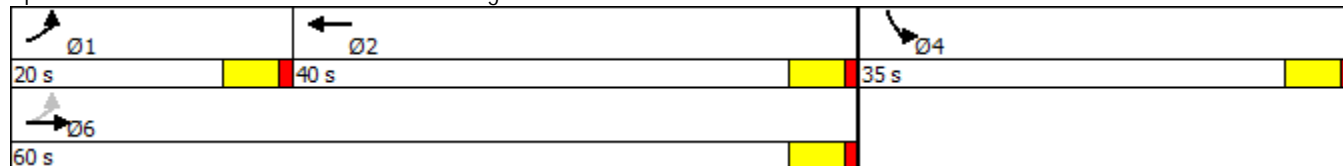
2018 Existing Conditions  
Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	406	613	528	213	112	360
Future Volume (vph)	406	613	528	213	112	360
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1881	3574	1561	2025	1777
Flt Permitted	0.283				0.950	
Satd. Flow (perm)	527	1881	3574	1561	2025	1777
Satd. Flow (RTOR)				180		375
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	0%	1%	3%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	Free	Prot	Free
Protected Phases	1	6	2		4	
Permitted Phases	6			Free		Free
Detector Phase	1	6	2		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0		6.0	
Minimum Split (s)	15.0	15.0	11.0		11.0	
Total Split (s)	20.0	60.0	40.0		35.0	
Total Split (%)	21.1%	63.2%	42.1%		36.8%	
Maximum Green (s)	15.0	55.0	35.0		30.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	
Recall Mode	Min	Min	None		None	

Intersection Summary

Cycle Length: 95  
 Actuated Cycle Length: 44.4  
 Natural Cycle: 45  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Dascomb Road & Frontage Road









## Queues

2018 Existing Conditions














## 4: Dascomb Road &amp; Frontage Road

Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	423	639	550	222	117	375
v/c Ratio	0.61	0.49	0.57	0.14	0.33	0.21
Control Delay	9.3	6.4	17.7	0.2	21.6	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.3	6.4	17.7	0.2	21.6	0.3
Queue Length 50th (ft)	44	77	65	0	28	0
Queue Length 95th (ft)	118	163	123	0	74	0
Internal Link Dist (ft)		120	920		695	
Turn Bay Length (ft)	150			130		
Base Capacity (vph)	796	1866	2796	1561	1416	1777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.34	0.20	0.14	0.08	0.21
Intersection Summary						












HCM 2010 Signalized Intersection Summary  
4: Dascomb Road & Frontage Road

2018 Existing Conditions  
Saturday MIDDAY

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations			 					
Traffic Volume (veh/h)	406	613	528	213	112	360		
Future Volume (veh/h)	406	613	528	213	112	360		
Number	1	6	2	12	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1881	1881	1900	1956	1918		
Adj Flow Rate, veh/h	423	639	550	0	117	0		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	2	1	1	0	1	3		
Cap, veh/h	740	1240	1095	495	197	172		
Arrive On Green	0.24	0.66	0.31	0.00	0.11	0.00		
Sat Flow, veh/h	1774	1881	3668	1615	1863	1631		
Grp Volume(v), veh/h	423	639	550	0	117	0		
Grp Sat Flow(s),veh/h/ln	1774	1881	1787	1615	1863	1631		
Q Serve(g_s), s	5.5	7.5	5.4	0.0	2.5	0.0		
Cycle Q Clear(g_c), s	5.5	7.5	5.4	0.0	2.5	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	740	1240	1095	495	197	172		
V/C Ratio(X)	0.57	0.52	0.50	0.00	0.59	0.00		
Avail Cap(c_a), veh/h	949	2434	2943	1330	1315	1151		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	6.0	3.7	12.1	0.0	18.1	0.0		
Incr Delay (d2), s/veh	0.3	0.1	0.1	0.0	1.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	3.8	2.6	0.0	1.4	0.0		
LnGrp Delay(d),s/veh	6.2	3.9	12.2	0.0	19.2	0.0		
LnGrp LOS	A	A	B		B			
Approach Vol, veh/h		1062	550		117			
Approach Delay, s/veh		4.8	12.2		19.2			
Approach LOS		A	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	18.0		9.5		33.0		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	15.0	35.0		30.0		55.0		
Max Q Clear Time (g_c+I1), s	7.5	7.4		4.5		9.5		
Green Ext Time (p_c), s	0.4	5.7		0.1		5.9		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			8.1					
HCM 2010 LOS			A					

Lanes, Volumes, Timings  
5: I-93 NB Ramps & Dascomb Road

2018 Existing Conditions  
Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	274	451	93	400	341	133
Future Volume (vph)	274	451	93	400	341	133
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.916					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1960	0	1805	1881	2006	1812
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1960	0	1805	1881	2006	1812
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	2%	1%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh	32.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	274	451	93	400	341	133
Future Vol, veh/h	274	451	93	400	341	133
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	0	1	2	1
Mvmt Flow	282	465	96	412	352	137

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	282	0	886 282
Stage 1	-	-	-	-	282 -
Stage 2	-	-	-	-	604 -
Critical Hdwy	-	-	4.1	-	6.42 6.21
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.2	-	3.518 3.309
Pot Cap-1 Maneuver	-	-	1292	-	~ 315 759
Stage 1	-	-	-	-	766 -
Stage 2	-	-	-	-	546 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1292	-	~ 292 759
Mov Cap-2 Maneuver	-	-	-	-	~ 292 -
Stage 1	-	-	-	-	766 -
Stage 2	-	-	-	-	505 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	115.9
HCM LOS			F













Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	292	759	-	-	1292	-
HCM Lane V/C Ratio	1.204	0.181	-	-	0.074	-
HCM Control Delay (s)	156.9	10.8	-	-	8	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	15.8	0.7	-	-	0.2	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 6: Frontage Road & I-93 SB Ramps

2018 Existing Conditions  
 Saturday MIDDAY

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	378	10	77	548	20	61
Future Volume (vph)	378	10	77	548	20	61
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.988
Satd. Flow (prot)	1967	1830	2027	1599	0	3567
Flt Permitted	0.950					0.988
Satd. Flow (perm)	1967	1830	2027	1599	0	3567
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
6: Frontage Road & I-93 SB Ramps

2018 Existing Conditions  
Saturday MIDDAY

Intersection

Int Delay, s/veh	5.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	378	10	77	548	20	61
Future Vol, veh/h	378	10	77	548	20	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	1	0	0
Mvmt Flow	415	11	85	602	22	67










Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	162	85	0	0	85
Stage 1	85	-	-	-	-
Stage 2	77	-	-	-	-
Critical Hdwy	6.66	6.2	-	-	4.1
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-
Follow-up Hdwy	3.538	3.3	-	-	2.2
Pot Cap-1 Maneuver	816	980	-	-	1524
Stage 1	932	-	-	-	-
Stage 2	932	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	804	980	-	-	1524
Mov Cap-2 Maneuver	804	-	-	-	-
Stage 1	932	-	-	-	-
Stage 2	918	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	804	980	1524	-
HCM Lane V/C Ratio	-	-	0.517	0.011	0.014	-
HCM Control Delay (s)	-	-	14.2	8.7	7.4	0
HCM Lane LOS	-	-	B	A	A	A
HCM 95th %tile Q(veh)	-	-	3	0	0	-

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2018 Existing Conditions  
Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	311	147	7	301	176	10
Future Volume (vph)	311	147	7	301	176	10
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.957				0.993	
Flt Protected				0.999	0.955	
Satd. Flow (prot)	1940	0	0	1961	1682	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1940	0	0	1961	1682	0
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	311	147	7	301	176	10
Future Vol, veh/h	311	147	7	301	176	10
Conflicting Peds, #/hr	0	1	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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	334	158	8	324	189	11

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	493	0	753	414
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	339	-
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	-	-	1081	-	380	643
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	726	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1081	-	376	642
Mov Cap-2 Maneuver	-	-	-	-	376	-
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	0.2	24
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	385	-	-	1081	-
HCM Lane V/C Ratio	0.519	-	-	0.007	-
HCM Control Delay (s)	24	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.9	-	-	0	-

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2018 Existing Conditions  
 Saturday MIDDAY

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	292	13	11	83	79	298
Future Volume (vph)	292	13	11	83	79	298
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.893	
Flt Protected	0.950			0.994		
Satd. Flow (prot)	1925	1595	0	1973	1796	0
Flt Permitted	0.950			0.994		
Satd. Flow (perm)	1925	1595	0	1973	1796	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	18%	0%	0%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 8.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	292	13	11	83	79	298
Future Vol, veh/h	292	13	11	83	79	298
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	18	0	0	1
Mvmt Flow	317	14	12	90	86	324

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	200	86	86	0	-	0
Stage 1	86	-	-	-	-	-
Stage 2	114	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.28	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.362	-	-	-
Pot Cap-1 Maneuver	793	956	1415	-	-	0
Stage 1	942	-	-	-	-	0
Stage 2	916	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	786	956	1415	-	-	-
Mov Cap-2 Maneuver	786	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	908	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	12.4	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
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Capacity (veh/h)	1415	-	786	956	-
HCM Lane V/C Ratio	0.008	-	0.404	0.015	-
HCM Control Delay (s)	7.6	0	12.6	8.8	-
HCM Lane LOS	A	A	B	A	-
HCM 95th %tile Q(veh)	0	-	2	0	-

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

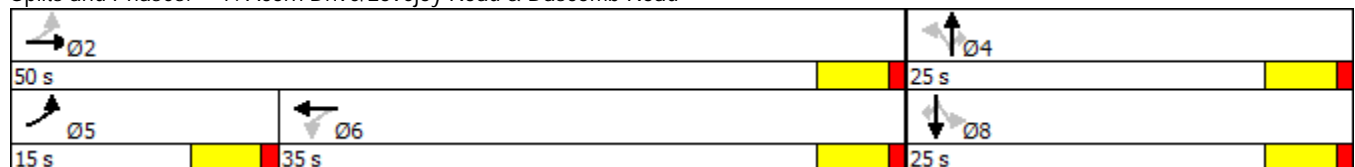
2018 Existing Conditions  
Saturday Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	374	9	11	396	57	8	1	9	68	4	54
Future Volume (vph)	44	374	9	11	396	57	8	1	9	68	4	54
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				0.98
Frt		0.997			0.983				0.850			0.850
Flt Protected		0.995			0.999			0.958			0.955	
Satd. Flow (prot)	0	1868	0	0	2097	0	0	1699	1561	0	1694	1723
Flt Permitted		0.918			0.987			0.690			0.727	
Satd. Flow (perm)	0	1724	0	0	2072	0	0	1222	1561	0	1289	1685
Satd. Flow (RTOR)		3			11				102			102
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.93	0.93	0.93	0.90	0.90	0.90	0.56	0.56	0.56	0.70	0.70	0.70
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	50.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	20.0%	66.7%		46.7%	46.7%		33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	10.0	45.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 33.6  
 Natural Cycle: 45  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road









## Queues

2018 Existing Conditions



















## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road

Saturday MIDDAY

						
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	459	515	16	16	103	77
v/c Ratio	0.47	0.44	0.06	0.04	0.34	0.16
Control Delay	8.6	7.7	11.0	0.1	14.5	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.6	7.7	11.0	0.1	14.5	3.4
Queue Length 50th (ft)	49	52	2	0	13	0
Queue Length 95th (ft)	131	133	8	0	37	8
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1724	1879	741	987	782	1062
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.27	0.02	0.02	0.13	0.07
Intersection Summary						

HCM Signalized Intersection Capacity Analysis  
7: Acorn Drive/Lovejoy Road & Dascomb Road

2018 Existing Conditions  
Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	374	9	11	396	57	8	1	9	68	4	54
Future Volume (vph)	44	374	9	11	396	57	8	1	9	68	4	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		1.00			0.98			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.96	1.00		0.96	1.00
Satd. Flow (prot)		1868			2097			1696	1561		1694	1684
Flt Permitted		0.92			0.99			0.69	1.00		0.73	1.00
Satd. Flow (perm)		1723			2072			1221	1561		1289	1684
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.56	0.56	0.56	0.70	0.70	0.70
Adj. Flow (vph)	47	402	10	12	440	63	14	2	16	97	6	77
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	13	0	0	62
Lane Group Flow (vph)	0	458	0	0	510	0	0	16	3	0	103	15
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)		17.9			17.9			6.6	6.6		6.6	6.6
Effective Green, g (s)		17.9			17.9			6.6	6.6		6.6	6.6
Actuated g/C Ratio		0.52			0.52			0.19	0.19		0.19	0.19
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		893			1075			233	298		246	322
v/s Ratio Prot												
v/s Ratio Perm		c0.27			0.25			0.01	0.00		c0.08	0.01
v/c Ratio		0.51			0.47			0.07	0.01		0.42	0.05
Uniform Delay, d1		5.4			5.3			11.4	11.3		12.3	11.4
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.2			0.1			0.0	0.0		0.4	0.0
Delay (s)		5.6			5.4			11.5	11.3		12.7	11.4
Level of Service		A			A			B	B		B	B
Approach Delay (s)		5.6			5.4			11.4			12.1	
Approach LOS		A			A			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			6.7									A
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			34.5							15.0		
Intersection Capacity Utilization			61.7%									B
Analysis Period (min)			15									
c Critical Lane Group												















## 2026 No-Build Conditions



Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road





2026 No-Build Conditions  
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	591	43	546	531	48	596
Future Volume (vph)	591	43	546	531	48	596
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1733	1487	1631	1717	1572	1487
Flt Permitted			0.143		0.950	
Satd. Flow (perm)	1733	1487	245	1717	1572	1487
Satd. Flow (RTOR)		35				97
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	5%	7%	7%	11%	5%
Shared Lane Traffic (%)						
Turn Type	NA	pt+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	4	2 4	3	8	2	3
Permitted Phases			8			2
Detector Phase	4	2 4	3	8	2	3
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	6.0
Minimum Split (s)	15.5		10.5	15.5	10.5	10.5
Total Split (s)	40.0		40.0	80.0	20.0	40.0
Total Split (%)	40.0%		40.0%	80.0%	20.0%	40.0%
Maximum Green (s)	34.5		35.5	74.5	15.5	35.5
Yellow Time (s)	4.5		3.5	4.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5		4.5	5.5	4.5	4.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		2.0	4.0	2.0	2.0
Recall Mode	Min		None	Min	None	None

Intersection Summary







Cycle Length: 100  
 Actuated Cycle Length: 85.4  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road

 Ø2	 Ø3	 Ø4
20 s	40 s	40 s
	 Ø8	
	80 s	

Queues  
1: Shawsheen Street & East Street/Dascomb Road

2026 No-Build Conditions  
Weekday Morning













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	629	46	581	565	51	634
v/c Ratio	0.88	0.05	0.83	0.39	0.36	0.85
Control Delay	42.4	5.1	28.1	3.4	46.7	27.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.4	5.1	28.1	3.4	46.7	27.9
Queue Length 50th (ft)	348	3	210	67	29	244
Queue Length 95th (ft)	#610	19	#424	129	65	399
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	714	998	792	1474	291	841
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.05	0.73	0.38	0.18	0.75

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 No-Build Conditions  
 Weekday Morning

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	591	43	546	531	48	596		
Future Volume (veh/h)	591	43	546	531	48	596		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1792	1810	1776	1776	1712	1810		
Adj Flow Rate, veh/h	629	46	581	565	51	634		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	6	5	7	7	11	5		
Cap, veh/h	666	830	614	1285	274	725		
Arrive On Green	0.37	0.37	0.30	0.72	0.17	0.17		
Sat Flow, veh/h	1792	1538	1691	1776	1630	1538		
Grp Volume(v), veh/h	629	46	581	565	51	634		
Grp Sat Flow(s),veh/h/ln	1792	1538	1691	1776	1630	1538		
Q Serve(g_s), s	31.3	1.3	25.2	11.9	2.5	15.5		
Cycle Q Clear(g_c), s	31.3	1.3	25.2	11.9	2.5	15.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	666	830	614	1285	274	725		
V/C Ratio(X)	0.94	0.06	0.95	0.44	0.19	0.87		
Avail Cap(c_a), veh/h	671	834	752	1435	274	725		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.0	10.1	24.1	5.2	32.9	21.9		
Incr Delay (d2), s/veh	22.2	0.0	17.5	0.3	0.1	11.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	19.5	0.8	17.3	5.8	1.1	16.6		
LnGrp Delay(d),s/veh	50.3	10.1	41.6	5.5	33.1	33.1		
LnGrp LOS	D	B	D	A	C	C		
Approach Vol, veh/h	675			1146	685			
Approach Delay, s/veh	47.5			23.8	33.1			
Approach LOS	D			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	32.4	39.8				72.2
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		15.5	35.5	34.5				74.5
Max Q Clear Time (g_c+I1), s		17.5	27.2	33.3				13.9
Green Ext Time (p_c), s		0.0	0.7	0.9				17.4
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			32.7					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 No-Build Conditions  
 Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	1175	1073	14	1	4
Future Volume (vph)	12	1175	1073	14	1	4
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.892	
Flt Protected		0.999			0.990	
Satd. Flow (prot)	0	1732	2008	0	1049	0
Flt Permitted		0.999			0.990	
Satd. Flow (perm)	0	1732	2008	0	1049	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	7%	7%	100%	50%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	12	1175	1073	14	1	4
Future Vol, veh/h	12	1175	1073	14	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	6	7	7	100	50
Mvmt Flow	13	1263	1154	15	1	4












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1154	0	0 2443 1154
Stage 1	-	-	- 1154 -
Stage 2	-	-	- 1289 -
Critical Hdwy	4.1	-	- 7.4 6.7
Critical Hdwy Stg 1	-	-	- 6.4 -
Critical Hdwy Stg 2	-	-	- 6.4 -
Follow-up Hdwy	2.2	-	- 4.4 3.75
Pot Cap-1 Maneuver	613	-	- 17 193
Stage 1	-	-	- 196 -
Stage 2	-	-	- 164 -
Platoon blocked, %	-	-	- -
Mov Cap-1 Maneuver	613	-	- 16 193
Mov Cap-2 Maneuver	-	-	- 16 -
Stage 1	-	-	- 196 -
Stage 2	-	-	- 152 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	70.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	613	-	-	-	60
HCM Lane V/C Ratio	0.021	-	-	-	0.09
HCM Control Delay (s)	11	0	-	-	70.8
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Lanes, Volumes, Timings  
 3: Smith Drive & Dascomb Road

2026 No-Build Conditions  
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1156	20	97	1077	10	29
Future Volume (vph)	1156	20	97	1077	10	29
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1905	0	1604	1835	1532	1322
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1905	0	1604	1835	1532	1322
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	15%	5%	7%	10%	14%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1156	20	97	1077	10	29
Future Vol, veh/h	1156	20	97	1077	10	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	135
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	15	5	7	10	14
Mvmt Flow	1270	22	107	1184	11	32













Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1292	0	2678 1281
Stage 1	-	-	-	-	1281 -
Stage 2	-	-	-	-	1397 -
Critical Hdwy	-	-	4.15	-	6.5 6.34
Critical Hdwy Stg 1	-	-	-	-	5.5 -
Critical Hdwy Stg 2	-	-	-	-	5.5 -
Follow-up Hdwy	-	-	2.245	-	3.59 3.426
Pot Cap-1 Maneuver	-	-	527	-	23 191
Stage 1	-	-	-	-	251 -
Stage 2	-	-	-	-	220 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	527	-	18 191
Mov Cap-2 Maneuver	-	-	-	-	18 -
Stage 1	-	-	-	-	251 -
Stage 2	-	-	-	-	175 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	114.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	18	191	-	-	527	-
HCM Lane V/C Ratio	0.611	0.167	-	-	0.202	-
HCM Control Delay (s)	\$ 367.6	27.6	-	-	13.6	-
HCM Lane LOS	F	D	-	-	B	-
HCM 95th %tile Q(veh)	1.6	0.6	-	-	0.8	-

Lanes, Volumes, Timings  
4: Dascomb Road & Frontage Road

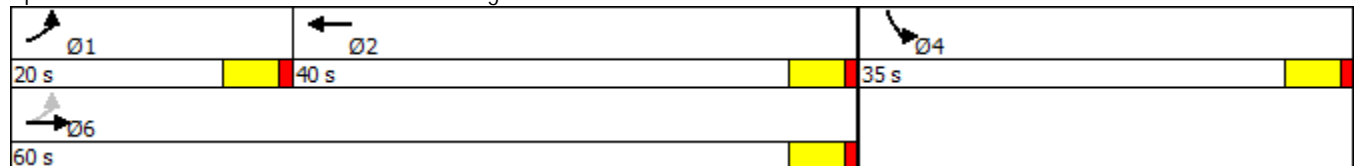
2026 No-Build Conditions  
Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	412	773	763	538	313	411
Future Volume (vph)	412	773	763	538	313	411
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1687	1792	3471	1812	2006	1794
Flt Permitted	0.160				0.950	
Satd. Flow (perm)	284	1792	3471	1812	2006	1794
Satd. Flow (RTOR)				315		437
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	6%	4%	1%	2%	2%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	Free	Prot	Free
Protected Phases	1	6	2		4	
Permitted Phases	6			Free		Free
Detector Phase	1	6	2		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0		6.0	
Minimum Split (s)	15.0	15.0	11.0		11.0	
Total Split (s)	20.0	60.0	40.0		35.0	
Total Split (%)	21.1%	63.2%	42.1%		36.8%	
Maximum Green (s)	15.0	55.0	35.0		30.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	
Recall Mode	Min	Min	None		None	

Intersection Summary

Cycle Length: 95  
 Actuated Cycle Length: 69.2  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Dascomb Road & Frontage Road









## Queues

2026 No-Build Conditions

## 4: Dascomb Road &amp; Frontage Road

Weekday Morning
















						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	438	822	812	572	333	437
v/c Ratio	0.90	0.75	0.74	0.32	0.71	0.24
Control Delay	40.8	15.7	25.8	0.5	33.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.8	15.7	25.8	0.5	33.9	0.3
Queue Length 50th (ft)	119	209	154	0	124	0
Queue Length 95th (ft)	#392	472	253	0	252	0
Internal Link Dist (ft)		120	920		695	
Turn Bay Length (ft)	150			130		
Base Capacity (vph)	489	1458	1814	1812	898	1794
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.56	0.45	0.32	0.37	0.24

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
4: Dascomb Road & Frontage Road

2026 No-Build Conditions  
Weekday Morning

							
Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations			 				
Traffic Volume (veh/h)	412	773	763	538	313	411	
Future Volume (veh/h)	412	773	763	538	313	411	
Number	1	6	2	12	7	14	
Initial Q (Qb), veh	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	
Adj Sat Flow, veh/h/ln	1776	1792	1827	1956	1937	1937	
Adj Flow Rate, veh/h	438	822	812	0	333	0	
Adj No. of Lanes	1	1	2	1	1	1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	
Percent Heavy Veh, %	7	6	4	1	2	2	
Cap, veh/h	534	1122	1250	599	392	350	
Arrive On Green	0.19	0.63	0.36	0.00	0.21	0.00	
Sat Flow, veh/h	1691	1792	3563	1663	1845	1647	
Grp Volume(v), veh/h	438	822	812	0	333	0	
Grp Sat Flow(s),veh/h/ln	1691	1792	1736	1663	1845	1647	
Q Serve(g_s), s	9.1	19.6	12.1	0.0	10.7	0.0	
Cycle Q Clear(g_c), s	9.1	19.6	12.1	0.0	10.7	0.0	
Prop In Lane	1.00			1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	534	1122	1250	599	392	350	
V/C Ratio(X)	0.82	0.73	0.65	0.00	0.85	0.00	
Avail Cap(c_a), veh/h	631	1593	1964	941	895	798	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00	
Uniform Delay (d), s/veh	11.0	8.0	16.5	0.0	23.4	0.0	
Incr Delay (d2), s/veh	6.2	0.5	0.2	0.0	2.0	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(50%),veh/ln	5.1	9.7	5.8	0.0	5.7	0.0	
LnGrp Delay(d),s/veh	17.2	8.5	16.8	0.0	25.4	0.0	
LnGrp LOS	B	A	B		C		
Approach Vol, veh/h		1260	812		333		
Approach Delay, s/veh		11.5	16.8		25.4		
Approach LOS		B	B		C		
Timer	1	2	3	4	5	6	7 8
Assigned Phs	1	2		4		6	
Phs Duration (G+Y+Rc), s	16.5	27.3		18.1		43.7	
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0	
Max Green Setting (Gmax), s	15.0	35.0		30.0		55.0	
Max Q Clear Time (g_c+I1), s	11.1	14.1		12.7		21.6	
Green Ext Time (p_c), s	0.3	8.2		0.5		9.5	
<b>Intersection Summary</b>							
HCM 2010 Ctrl Delay			15.2				
HCM 2010 LOS			B				

Lanes, Volumes, Timings  
 5: I-93 NB Ramps & Dascomb Road

2026 No-Build Conditions  
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	696	390	89	982	319	199
Future Volume (vph)	696	390	89	982	319	199
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.951					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1954	0	1736	1881	1930	1777
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1954	0	1736	1881	1930	1777
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	8%	4%	1%	6%	3%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	268					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	696	390	89	982	319	199
Future Vol, veh/h	696	390	89	982	319	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	8	4	1	6	3
Mvmt Flow	740	415	95	1045	339	212

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	740	0	1974
Stage 1	-	-	-	-	740
Stage 2	-	-	-	-	1234
Critical Hdwy	-	-	4.14	-	6.46
Critical Hdwy Stg 1	-	-	-	-	5.46
Critical Hdwy Stg 2	-	-	-	-	5.46
Follow-up Hdwy	-	-	2.236	-	3.554
Pot Cap-1 Maneuver	-	-	858	-	~ 67
Stage 1	-	-	-	-	465
Stage 2	-	-	-	-	~ 270
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	858	-	~ 60
Mov Cap-2 Maneuver	-	-	-	-	~ 60
Stage 1	-	-	-	-	465
Stage 2	-	-	-	-	~ 240

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	\$ 1382.3
HCM LOS			F













Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	60	415	-	-	858	-
HCM Lane V/C Ratio	5.656	0.51	-	-	0.11	-
HCM Control Delay (s)	\$ 2230.7	22.4	-	-	9.7	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	38.2	2.8	-	-	0.4	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
6: Frontage Road & I-93 SB Ramps

2026 No-Build Conditions  
Weekday Morning

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	493	82	310	644	125	232
Future Volume (vph)	493	82	310	644	125	232
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.983
Satd. Flow (prot)	1877	1812	2007	1760	0	3425
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1877	1812	2007	1760	0	3425
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	9%	1%	1%	4%	1%	5%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
6: Frontage Road & I-93 SB Ramps

2026 No-Build Conditions  
Weekday Morning

Intersection

Int Delay, s/veh	70.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↕
Traffic Vol, veh/h	493	82	310	644	125	232
Future Vol, veh/h	493	82	310	644	125	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	9	1	1	4	1	5
Mvmt Flow	503	84	316	657	128	237

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	689	316	0	0	316
Stage 1	316	-	-	-	-
Stage 2	373	-	-	-	-
Critical Hdwy	6.735	6.215	-	-	4.115
Critical Hdwy Stg 1	5.535	-	-	-	-
Critical Hdwy Stg 2	5.935	-	-	-	-
Follow-up Hdwy	3.5855	3.3095	-	-	2.2095
Pot Cap-1 Maneuver	~ 382	726	-	-	1249
Stage 1	720	-	-	-	-
Stage 2	650	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	~ 337	726	-	-	1249
Mov Cap-2 Maneuver	~ 337	-	-	-	-
Stage 1	720	-	-	-	-
Stage 2	573	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	229.7	0	3
HCM LOS	F		










Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	337	726	1249	-
HCM Lane V/C Ratio	-	-	1.493	0.115	0.102	-
HCM Control Delay (s)	-	-	266.1	10.6	8.2	0.2
HCM Lane LOS	-	-	F	B	A	A
HCM 95th %tile Q(veh)	-	-	27.6	0.4	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 No-Build Conditions  
Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	376	723	8	571	276	9
Future Volume (vph)	376	723	8	571	276	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.911				0.996	
Flt Protected				0.999	0.954	
Satd. Flow (prot)	1810	0	0	1923	1653	0
Flt Permitted				0.999	0.954	
Satd. Flow (perm)	1810	0	0	1923	1653	0
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	0%	2%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 83.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	376	723	8	571	276	9
Future Vol, veh/h	376	723	8	571	276	9
Conflicting Peds, #/hr	0	1	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, %	4	1	0	2	2	0
Mvmt Flow	409	786	9	621	300	10

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	1196	0	1441	803
Stage 1	-	-	-	-	803	-
Stage 2	-	-	-	-	638	-
Critical Hdwy	-	-	4.1	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.2	-	3.518	3.3
Pot Cap-1 Maneuver	-	-	591	-	~ 146	387
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	526	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	591	-	~ 143	387
Mov Cap-2 Maneuver	-	-	-	-	~ 143	-
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	514	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	0.2	\$ 577.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----











Capacity (veh/h)	146	-	-	591	-
HCM Lane V/C Ratio	2.122	-	-	0.015	-
HCM Control Delay (s)	\$ 577.4	-	-	11.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	25.1	-	-	0	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 No-Build Conditions  
 Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	367	88	35	112	302	505
Future Volume (vph)	367	88	35	112	302	505
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.915	
Flt Protected	0.950			0.988		
Satd. Flow (prot)	1851	1706	0	1874	1811	0
Flt Permitted	0.950			0.988		
Satd. Flow (perm)	1851	1706	0	1874	1811	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	16%	4%	3%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 13.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	367	88	35	112	302	505
Future Vol, veh/h	367	88	35	112	302	505
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	4	1	16	4	3	2
Mvmt Flow	378	91	36	115	311	521

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	499	311	311	0	-	0
Stage 1	311	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.44	6.21	4.26	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.309	2.344	-	-	-
Pot Cap-1 Maneuver	527	731	1174	-	-	0
Stage 1	738	-	-	-	-	0
Stage 2	839	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	510	731	1174	-	-	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	26	1.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
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Capacity (veh/h)	1174	-	510	731	-
HCM Lane V/C Ratio	0.031	-	0.742	0.124	-
HCM Control Delay (s)	8.2	0	29.7	10.6	-
HCM Lane LOS	A	A	D	B	-
HCM 95th %tile Q(veh)	0.1	-	6.2	0.4	-

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

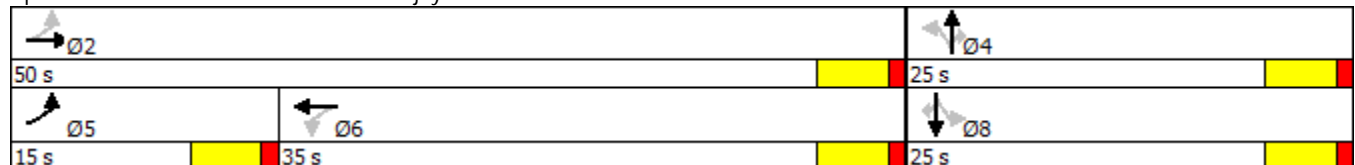
2026 No-Build Conditions  
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	777	10	9	781	70	12	9	17	297	12	225
Future Volume (vph)	56	777	10	9	781	70	12	9	17	297	12	225
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				0.97
Frt		0.998			0.989				0.850			0.850
Flt Protected		0.997			0.999			0.972			0.954	
Satd. Flow (prot)	0	1832	0	0	2081	0	0	1724	1561	0	1658	1706
Flt Permitted		0.906			0.992			0.764			0.715	
Satd. Flow (perm)	0	1665	0	0	2067	0	0	1353	1561	0	1243	1662
Satd. Flow (RTOR)		1			7				102			102
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.97	0.97	0.97	0.96	0.96	0.96	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	6%	3%	0%	0%	2%	5%	0%	0%	0%	1%	27%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	50.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	20.0%	66.7%		46.7%	46.7%		33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	10.0	45.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 71.5  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road









## Queues

2026 No-Build Conditions

## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road

Weekday Morning

						
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	869	896	26	21	386	281
v/c Ratio	0.90	0.75	0.07	0.04	1.10	0.52
Control Delay	28.0	15.7	21.2	0.2	109.0	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	15.7	21.2	0.2	109.0	18.5
Queue Length 50th (ft)	303	261	9	0	-217	68
Queue Length 95th (ft)	#580	399	24	0	#318	116
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1055	1197	380	513	350	541
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.75	0.07	0.04	1.10	0.52



















## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 No-Build Conditions

Weekday Morning

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	56	777	10	9	781	70	12	9	17	297	12	225	
Future Volume (vph)	56	777	10	9	781	70	12	9	17	297	12	225	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00	0.97	
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00	
Frt		1.00			0.99			1.00	0.85		1.00	0.85	
Flt Protected		1.00			1.00			0.97	1.00		0.95	1.00	
Satd. Flow (prot)		1833			2082			1721	1561		1659	1663	
Flt Permitted		0.91			0.99			0.76	1.00		0.72	1.00	
Satd. Flow (perm)		1665			2066			1353	1561		1244	1663	
Peak-hour factor, PHF	0.97	0.97	0.97	0.96	0.96	0.96	0.80	0.80	0.80	0.80	0.80	0.80	
Adj. Flow (vph)	58	801	10	9	814	73	15	11	21	371	15	281	
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	15	0	0	73	
Lane Group Flow (vph)	0	869	0	0	893	0	0	26	6	0	386	208	
Confl. Peds. (#/hr)							3					3	
Heavy Vehicles (%)	6%	3%	0%	0%	2%	5%	0%	0%	0%	1%	27%	1%	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2			6			4			8		
Permitted Phases	2			6			4		4	8		8	
Actuated Green, G (s)		41.3			41.3			20.1	20.1		20.1	20.1	
Effective Green, g (s)		41.3			41.3			20.1	20.1		20.1	20.1	
Actuated g/C Ratio		0.58			0.58			0.28	0.28		0.28	0.28	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		963			1195			380	439		350	468	
v/s Ratio Prot													
v/s Ratio Perm		c0.52			0.43			0.02	0.00		c0.31	0.12	
v/c Ratio		0.90			0.75			0.07	0.01		1.10	0.44	
Uniform Delay, d1		13.3			11.2			18.8	18.5		25.7	21.1	
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		11.2			2.3			0.0	0.0		78.7	0.2	
Delay (s)		24.5			13.4			18.8	18.5		104.4	21.3	
Level of Service		C			B			B	B		F	C	
Approach Delay (s)		24.5			13.4			18.7			69.4		
Approach LOS		C			B			B			E		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			32.5									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			1.05										
Actuated Cycle Length (s)			71.4									Sum of lost time (s)	15.0
Intersection Capacity Utilization			109.2%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

2026 No-Build Conditions  
 Weekday Evening

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	590	29	524	700	67	602
Future Volume (vph)	590	29	524	700	67	602
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1818	1561	1728	1801	1745	1561
Flt Permitted			0.178		0.950	
Satd. Flow (perm)	1818	1561	324	1801	1745	1561
Satd. Flow (RTOR)		27				144
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	4	2	3	8	2	3
Permitted Phases		4	8			2
Detector Phase	4	2	3	8	2	3
Switch Phase						
Minimum Initial (s)	10.0	6.0	6.0	10.0	6.0	6.0
Minimum Split (s)	15.5	10.5	10.5	15.5	10.5	10.5
Total Split (s)	45.0	20.0	35.0	80.0	20.0	35.0
Total Split (%)	45.0%	20.0%	35.0%	80.0%	20.0%	35.0%
Maximum Green (s)	39.5	15.5	30.5	74.5	15.5	30.5
Yellow Time (s)	4.5	3.5	3.5	4.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.5	4.5	5.5	4.5	4.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	2.0	2.0	4.0	2.0	2.0
Recall Mode	Min	None	None	Min	None	None

Intersection Summary







Cycle Length: 100  
 Actuated Cycle Length: 77.4  
 Natural Cycle: 65  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road

Ø2 20 s	Ø3 35 s	Ø4 45 s
	Ø8 80 s	

Queues  
1: Shawsheen Street & East Street/Dascomb Road

2026 No-Build Conditions  
Weekday Evening













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	608	30	540	722	69	621
v/c Ratio	0.80	0.03	0.77	0.49	0.36	0.81
Control Delay	31.0	3.7	21.3	4.5	43.5	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	3.7	21.3	4.5	43.5	24.1
Queue Length 50th (ft)	271	1	152	100	36	214
Queue Length 95th (ft)	#507	12	314	193	82	378
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	1015	1126	869	1599	382	931
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.03	0.62	0.45	0.18	0.67

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 No-Build Conditions  
 Weekday Evening

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	590	29	524	700	67	602		
Future Volume (veh/h)	590	29	524	700	67	602		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1900	1881	1863	1900	1900		
Adj Flow Rate, veh/h	608	30	540	722	69	621		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Percent Heavy Veh, %	1	0	1	2	0	0		
Cap, veh/h	793	987	582	1282	343	647		
Arrive On Green	0.42	0.42	0.21	0.69	0.19	0.19		
Sat Flow, veh/h	1881	1615	1792	1863	1810	1615		
Grp Volume(v), veh/h	608	30	540	722	69	621		
Grp Sat Flow(s),veh/h/ln	1881	1615	1792	1863	1810	1615		
Q Serve(g_s), s	22.6	0.6	14.5	16.1	2.6	15.5		
Cycle Q Clear(g_c), s	22.6	0.6	14.5	16.1	2.6	15.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	793	987	582	1282	343	647		
V/C Ratio(X)	0.77	0.03	0.93	0.56	0.20	0.96		
Avail Cap(c_a), veh/h	909	1087	872	1698	343	647		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	20.2	6.3	16.6	6.5	27.9	23.8		
Incr Delay (d2), s/veh	3.9	0.0	9.2	0.6	0.1	25.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	12.5	0.4	13.2	8.4	1.3	18.0		
LnGrp Delay(d),s/veh	24.1	6.3	25.8	7.1	28.0	49.2		
LnGrp LOS	C	A	C	A	C	D		
Approach Vol, veh/h	638			1262	690			
Approach Delay, s/veh	23.2			15.1	47.1			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	21.8	40.0				61.7
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		15.5	30.5	39.5				74.5
Max Q Clear Time (g_c+I1), s		17.5	16.5	24.6				18.1
Green Ext Time (p_c), s		0.0	0.8	9.9				20.4
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			25.6					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 No-Build Conditions  
 Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	1189	1202	3	7	22
Future Volume (vph)	3	1189	1202	3	7	22
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.896	
Flt Protected					0.988	
Satd. Flow (prot)	0	1819	2108	0	1521	0
Flt Permitted					0.988	
Satd. Flow (perm)	0	1819	2108	0	1521	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	2%	67%	29%	5%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	4		4	
Traffic Vol, veh/h	3	1189	1202	3	7	22
Future Vol, veh/h	3	1189	1202	3	7	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	2	67	29	5
Mvmt Flow	3	1226	1239	3	7	23












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1239	0	0 2471 1239
Stage 1	-	-	- 1239 -
Stage 2	-	-	- 1232 -
Critical Hdwy	4.1	-	- 6.69 6.25
Critical Hdwy Stg 1	-	-	- 5.69 -
Critical Hdwy Stg 2	-	-	- 5.69 -
Follow-up Hdwy	2.2	-	- 3.761 3.345
Pot Cap-1 Maneuver	569	-	- 27 211
Stage 1	-	-	- 241 -
Stage 2	-	-	- 243 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	569	-	- 27 211
Mov Cap-2 Maneuver	-	-	- 27 -
Stage 1	-	-	- 241 -
Stage 2	-	-	- 239 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	74.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	569	-	-	-	80
HCM Lane V/C Ratio	0.005	-	-	-	0.374
HCM Control Delay (s)	11.4	0	-	-	74.7
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	1.5

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

2026 No-Build Conditions  
Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1190	6	27	1174	31	71
Future Volume (vph)	1190	6	27	1174	31	71
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	2025	0	1620	1944	1636	1492
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	2025	0	1620	1944	1636	1492
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	4%	1%	3%	1%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	6.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1190	6	27	1174	31	71
Future Vol, veh/h	1190	6	27	1174	31	71
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	135
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	1	3	1
Mvmt Flow	1253	6	28	1236	33	75

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1259
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.236
Pot Cap-1 Maneuver	-	-	546
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	546
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	153.4
HCM LOS			F













Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	28	210	-	-	546	-
HCM Lane V/C Ratio	1.165	0.356	-	-	0.052	-
HCM Control Delay (s)	\$ 433.1	31.3	-	-	12	-
HCM Lane LOS	F	D	-	-	B	-
HCM 95th %tile Q(veh)	3.8	1.5	-	-	0.2	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
4: Dascomb Road & Frontage Road

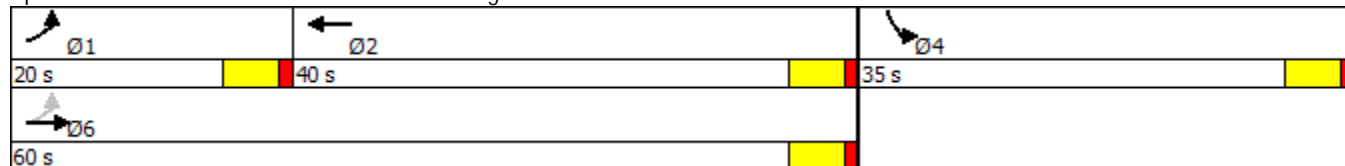
2026 No-Build Conditions  
Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	403	858	746	193	221	455
Future Volume (vph)	403	858	746	193	221	455
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1787	1881	3574	1812	2025	1777
Flt Permitted	0.178				0.950	
Satd. Flow (perm)	335	1881	3574	1812	2025	1777
Satd. Flow (RTOR)				115		474
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	3%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	Free	Prot	Free
Protected Phases	1	6	2		4	
Permitted Phases	6			Free		Free
Detector Phase	1	6	2		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0		6.0	
Minimum Split (s)	15.0	15.0	11.0		11.0	
Total Split (s)	20.0	60.0	40.0		35.0	
Total Split (%)	21.1%	63.2%	42.1%		36.8%	
Maximum Green (s)	15.0	55.0	35.0		30.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	
Recall Mode	Min	Min	None		None	

Intersection Summary

Cycle Length: 95  
 Actuated Cycle Length: 62.2  
 Natural Cycle: 50  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Dascomb Road & Frontage Road









## Queues

2026 No-Build Conditions

## 4: Dascomb Road &amp; Frontage Road

Weekday Evening













						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	420	894	777	201	230	474
v/c Ratio	0.75	0.75	0.69	0.11	0.58	0.27
Control Delay	21.7	13.1	22.3	0.1	30.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.7	13.1	22.3	0.1	30.4	0.4
Queue Length 50th (ft)	79	188	130	0	76	0
Queue Length 95th (ft)	#280	413	207	0	174	0
Internal Link Dist (ft)		120	920		695	
Turn Bay Length (ft)	150			130		
Base Capacity (vph)	576	1689	2082	1812	1011	1777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.53	0.37	0.11	0.23	0.27

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
4: Dascomb Road & Frontage Road

2026 No-Build Conditions  
Weekday Evening

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	403	858	746	193	221	455		
Future Volume (veh/h)	403	858	746	193	221	455		
Number	1	6	2	12	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1881	1956	1956	1918		
Adj Flow Rate, veh/h	420	894	777	0	230	0		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	1	1	1	1	1	3		
Cap, veh/h	611	1236	1348	627	292	255		
Arrive On Green	0.19	0.66	0.38	0.00	0.16	0.00		
Sat Flow, veh/h	1792	1881	3668	1663	1863	1631		
Grp Volume(v), veh/h	420	894	777	0	230	0		
Grp Sat Flow(s),veh/h/ln	1792	1881	1787	1663	1863	1631		
Q Serve(g_s), s	6.6	16.7	9.3	0.0	6.4	0.0		
Cycle Q Clear(g_c), s	6.6	16.7	9.3	0.0	6.4	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	611	1236	1348	627	292	255		
V/C Ratio(X)	0.69	0.72	0.58	0.00	0.79	0.00		
Avail Cap(c_a), veh/h	778	1930	2334	1086	1043	913		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	8.3	6.0	13.3	0.0	21.8	0.0		
Incr Delay (d2), s/veh	1.0	0.3	0.1	0.0	1.8	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.2	8.5	4.6	0.0	3.4	0.0		
LnGrp Delay(d),s/veh	9.3	6.3	13.4	0.0	23.6	0.0		
LnGrp LOS	A	A	B		C			
Approach Vol, veh/h		1314	777		230			
Approach Delay, s/veh		7.3	13.4		23.6			
Approach LOS		A	B		C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	25.2		13.4		40.2		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	15.0	35.0		30.0		55.0		
Max Q Clear Time (g_c+I1), s	8.6	11.3		8.4		18.7		
Green Ext Time (p_c), s	0.4	8.9		0.3		10.1		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			11.0					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
 5: I-93 NB Ramps & Dascomb Road

2026 No-Build Conditions  
 Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	501	578	89	486	453	244
Future Volume (vph)	501	578	89	486	453	244
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.928					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1988	0	1805	1900	2006	1830
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1988	0	1805	1900	2006	1830
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 157.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	501	578	89	486	453	244
Future Vol, veh/h	501	578	89	486	453	244
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	2	0
Mvmt Flow	527	608	94	512	477	257

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	527
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1050
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1050
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	\$ 529
HCM LOS			F













Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	179	555	-	-	1050	-
HCM Lane V/C Ratio	2.664	0.463	-	-	0.089	-
HCM Control Delay (s)	\$ 804.8	17	-	-	8.8	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	41.5	2.4	-	-	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 6: Frontage Road & I-93 SB Ramps

2026 No-Build Conditions  
 Weekday Evening

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	401	19	119	434	211	239
Future Volume (vph)	401	19	119	434	211	239
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.977
Satd. Flow (prot)	1986	1649	2027	1794	0	3527
Flt Permitted	0.950					0.977
Satd. Flow (perm)	1986	1649	2027	1794	0	3527
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	11%	0%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
6: Frontage Road & I-93 SB Ramps

2026 No-Build Conditions  
Weekday Evening

Intersection

Int Delay, s/veh	55.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	401	19	119	434	211	239
Future Vol, veh/h	401	19	119	434	211	239
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	11	0	2	0	0
Mvmt Flow	422	20	125	457	222	252

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	695	125	0	0	125
Stage 1	125	-	-	-	-
Stage 2	570	-	-	-	-
Critical Hdwy	6.645	6.365	-	-	4.1
Critical Hdwy Stg 1	5.445	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-
Follow-up Hdwy	3.5285	3.4045	-	-	2.2
Pot Cap-1 Maneuver	~ 390	899	-	-	1474
Stage 1	897	-	-	-	-
Stage 2	528	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	~ 322	899	-	-	1474
Mov Cap-2 Maneuver	~ 322	-	-	-	-
Stage 1	897	-	-	-	-
Stage 2	436	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	185	0	3.8
HCM LOS	F		










Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	322	899	1474	-
HCM Lane V/C Ratio	-	-	1.311	0.022	0.151	-
HCM Control Delay (s)	-	-	193.3	9.1	7.9	0.2
HCM Lane LOS	-	-	F	A	A	A
HCM 95th %tile Q(veh)	-	-	20.3	0.1	0.5	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 No-Build Conditions  
Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	442	247	13	426	284	21
Future Volume (vph)	442	247	13	426	284	21
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952				0.991	
Flt Protected				0.999	0.956	
Satd. Flow (prot)	1929	0	0	1943	1680	0
Flt Permitted				0.999	0.956	
Satd. Flow (perm)	1929	0	0	1943	1680	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 47.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	442	247	13	426	284	21
Future Vol, veh/h	442	247	13	426	284	21
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	475	266	14	458	305	23

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	741
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	875
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	875
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	221.7
HCM LOS			F











Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	243	-	-	875	-
HCM Lane V/C Ratio	1.35	-	-	0.016	-
HCM Control Delay (s)	221.7	-	-	9.2	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	17.6	-	-	0	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 No-Build Conditions  
 Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	409	24	135	338	121	321
Future Volume (vph)	409	24	135	338	121	321
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.902	
Flt Protected	0.950			0.986		
Satd. Flow (prot)	1925	1580	0	1967	1823	0
Flt Permitted	0.950			0.986		
Satd. Flow (perm)	1925	1580	0	1967	1823	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	9%	3%	1%	1%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	95.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	409	24	135	338	121	321
Future Vol, veh/h	409	24	135	338	121	321
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	9	3	1	1	0
Mvmt Flow	445	26	147	367	132	349

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	793	132	132	0	0
Stage 1	132	-	-	-	-
Stage 2	661	-	-	-	-
Critical Hdwy	6.4	6.29	4.13	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.381	2.227	-	-
Pot Cap-1 Maneuver	~ 360	899	1447	-	0
Stage 1	899	-	-	-	0
Stage 2	517	-	-	-	0
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	~ 314	899	1447	-	-
Mov Cap-2 Maneuver	~ 314	-	-	-	-
Stage 1	899	-	-	-	-
Stage 2	451	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	224.1	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1447	-	314	899	-
HCM Lane V/C Ratio	0.101	-	1.416	0.029	-
HCM Control Delay (s)	7.8	0	236.7	9.1	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	0.3	-	23.4	0.1	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

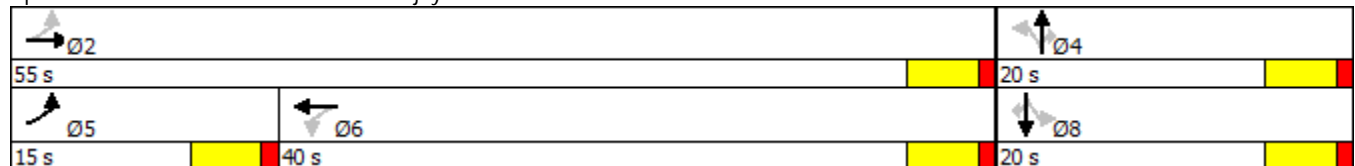
2026 No-Build Conditions  
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	540	10	11	521	186	4	2	10	120	3	70
Future Volume (vph)	130	540	10	11	521	186	4	2	10	120	3	70
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.965				0.850			0.850
Flt Protected		0.991			0.999			0.968			0.954	
Satd. Flow (prot)	0	1879	0	0	2076	0	0	1717	1561	0	1692	1723
Flt Permitted		0.759			0.989			0.818			0.725	
Satd. Flow (perm)	0	1439	0	0	2055	0	0	1451	1561	0	1286	1723
Satd. Flow (RTOR)		2			32				102			102
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.63	0.63	0.63	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	55.0		40.0	40.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	20.0%	73.3%		53.3%	53.3%		26.7%	26.7%	26.7%	26.7%	26.7%	26.7%
Maximum Green (s)	10.0	50.0		35.0	35.0		15.0	15.0	15.0	15.0	15.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 65.3  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road









## Queues

2026 No-Build Conditions

## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road



















Weekday Evening

						
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	716	798	9	16	160	91
v/c Ratio	0.75	0.58	0.03	0.04	0.69	0.23
Control Delay	14.1	8.1	24.7	0.2	43.6	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	8.1	24.7	0.2	43.6	6.9
Queue Length 50th (ft)	174	151	3	0	67	0
Queue Length 95th (ft)	334	251	10	0	107	20
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1134	1385	343	446	304	485
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.58	0.03	0.04	0.53	0.19
Intersection Summary						

# HCM Signalized Intersection Capacity Analysis

## 7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 No-Build Conditions  
Weekday Evening

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	130	540	10	11	521	186	4	2	10	120	3	70	
Future Volume (vph)	130	540	10	11	521	186	4	2	10	120	3	70	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Frt		1.00			0.96			1.00	0.85		1.00	0.85	
Flt Protected		0.99			1.00			0.97	1.00		0.95	1.00	
Satd. Flow (prot)		1878			2076			1716	1561		1691	1723	
Flt Permitted		0.76			0.99			0.82	1.00		0.73	1.00	
Satd. Flow (perm)		1439			2056			1451	1561		1286	1723	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90	0.63	0.63	0.63	0.77	0.77	0.77	
Adj. Flow (vph)	137	568	11	12	579	207	6	3	16	156	4	91	
RTOR Reduction (vph)	0	1	0	0	11	0	0	0	13	0	0	75	
Lane Group Flow (vph)	0	715	0	0	787	0	0	9	3	0	160	16	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2			6			4			8		
Permitted Phases	2			6			4		4	8		8	
Actuated Green, G (s)		43.3			43.3			11.8	11.8		11.8	11.8	
Effective Green, g (s)		43.3			43.3			11.8	11.8		11.8	11.8	
Actuated g/C Ratio		0.67			0.67			0.18	0.18		0.18	0.18	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		957			1367			263	282		233	312	
v/s Ratio Prot													
v/s Ratio Perm		c0.50			0.38			0.01	0.00		c0.12	0.01	
v/c Ratio		0.75			0.58			0.03	0.01		0.69	0.05	
Uniform Delay, d1		7.3			5.9			22.0	21.9		24.9	22.0	
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.8			0.4			0.0	0.0		6.5	0.0	
Delay (s)		10.1			6.3			22.0	21.9		31.5	22.1	
Level of Service		B			A			C	C		C	C	
Approach Delay (s)		10.1			6.3			21.9			28.0		
Approach LOS		B			A			C			C		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			11.1									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.81										
Actuated Cycle Length (s)			65.1									Sum of lost time (s)	15.0
Intersection Capacity Utilization			101.5%									ICU Level of Service	G
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

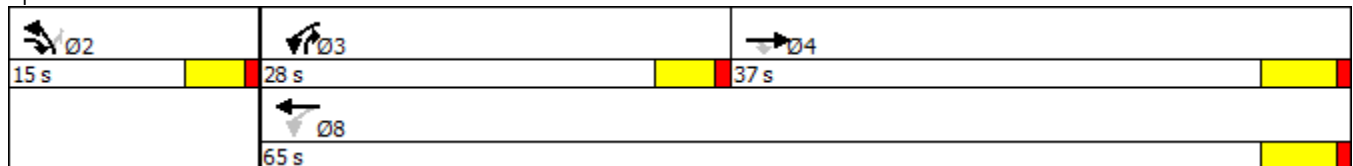
2026 No-Build Conditions  
 Saturday Midday

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	533	35	465	431	48	520
Future Volume (vph)	533	35	465	431	48	520
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1818	1561	1711	1749	1711	1546
Flt Permitted			0.208		0.950	
Satd. Flow (perm)	1818	1561	375	1749	1711	1546
Satd. Flow (RTOR)		38				161
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	0%	2%	5%	2%	1%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	4	2	3	8	2	3
Permitted Phases		4	8			2
Detector Phase	4	2	3	8	2	3
Switch Phase						
Minimum Initial (s)	10.0	6.0	6.0	10.0	6.0	6.0
Minimum Split (s)	15.5	10.5	10.5	15.5	10.5	10.5
Total Split (s)	37.0	15.0	28.0	65.0	15.0	28.0
Total Split (%)	46.3%	18.8%	35.0%	81.3%	18.8%	35.0%
Maximum Green (s)	31.5	10.5	23.5	59.5	10.5	23.5
Yellow Time (s)	4.5	3.5	3.5	4.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.5	4.5	5.5	4.5	4.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	2.0	2.0	4.0	2.0	2.0
Recall Mode	Min	None	None	Min	None	None

Intersection Summary







Cycle Length: 80  
 Actuated Cycle Length: 62  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
1: Shawsheen Street & East Street/Dascomb Road

2026 No-Build Conditions  
Saturday MIDDAY













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	573	38	500	463	52	559
v/c Ratio	0.76	0.04	0.70	0.31	0.25	0.77
Control Delay	25.7	2.7	14.5	3.0	33.8	19.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	2.7	14.5	3.0	33.8	19.3
Queue Length 50th (ft)	195	0	90	46	21	133
Queue Length 95th (ft)	#410	11	224	94	56	261
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	1022	1104	867	1535	320	880
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.03	0.58	0.30	0.16	0.64

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 No-Build Conditions  
 Saturday MIDDAY

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	533	35	465	431	48	520		
Future Volume (veh/h)	533	35	465	431	48	520		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1900	1863	1810	1863	1881		
Adj Flow Rate, veh/h	573	38	500	463	52	559		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	1	0	2	5	2	1		
Cap, veh/h	768	933	571	1212	300	572		
Arrive On Green	0.41	0.41	0.19	0.67	0.17	0.17		
Sat Flow, veh/h	1881	1615	1774	1810	1774	1599		
Grp Volume(v), veh/h	573	38	500	463	52	559		
Grp Sat Flow(s),veh/h/ln	1881	1615	1774	1810	1774	1599		
Q Serve(g_s), s	16.1	0.6	9.0	7.0	1.6	10.5		
Cycle Q Clear(g_c), s	16.1	0.6	9.0	7.0	1.6	10.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	768	933	571	1212	300	572		
V/C Ratio(X)	0.75	0.04	0.88	0.38	0.17	0.98		
Avail Cap(c_a), veh/h	955	1093	909	1736	300	572		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.6	5.7	10.8	4.6	22.1	19.7		
Incr Delay (d2), s/veh	3.0	0.0	3.6	0.3	0.1	31.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.9	0.4	4.7	3.6	0.8	14.3		
LnGrp Delay(d),s/veh	18.6	5.7	14.4	4.8	22.2	51.3		
LnGrp LOS	B	A	B	A	C	D		
Approach Vol, veh/h	611			963	611			
Approach Delay, s/veh	17.8			9.8	48.8			
Approach LOS	B			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		15.0	16.2	30.8				47.0
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		10.5	23.5	31.5				59.5
Max Q Clear Time (g_c+I1), s		12.5	11.0	18.1				9.0
Green Ext Time (p_c), s		0.0	0.7	7.3				13.2
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			23.0					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 No-Build Conditions  
 Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	1052	896	1	1	0
Future Volume (vph)	1	1052	896	1	1	0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	1818	2111	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1818	2111	0	1805	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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Lane Configurations		4	4		4	
Traffic Vol, veh/h	1	1052	896	1	1	0
Future Vol, veh/h	1	1052	896	1	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	1	1085	924	1	1	0

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All	924	0	0	2011	924
Stage 1	-	-	-	924	-
Stage 2	-	-	-	1087	-
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	748	-	-	66	329
Stage 1	-	-	-	390	-
Stage 2	-	-	-	326	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	748	-	-	66	329
Mov Cap-2 Maneuver	-	-	-	66	-
Stage 1	-	-	-	390	-
Stage 2	-	-	-	325	-

Approach	EB	WB	SB
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HCM Control Delay, s	0	0	60.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h)	748	-	-	-	66
HCM Lane V/C Ratio	0.001	-	-	-	0.016
HCM Control Delay (s)	9.8	0	-	-	60.4
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	0

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

2026 No-Build Conditions  
Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1034	19	74	881	16	66
Future Volume (vph)	1034	19	74	881	16	66
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	2003	0	1668	1925	1685	1507
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	2003	0	1668	1925	1685	1507
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1034	19	74	881	16	66
Future Vol, veh/h	1034	19	74	881	16	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	135
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	1	2	0	0
Mvmt Flow	1077	20	77	918	17	69













Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1097
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.11
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.209
Pot Cap-1 Maneuver	-	-	640
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	640
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	42
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	47	265	-	-	640	-
HCM Lane V/C Ratio	0.355	0.259	-	-	0.12	-
HCM Control Delay (s)	118.9	23.3	-	-	11.4	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	1.2	1	-	-	0.4	-

Lanes, Volumes, Timings  
4: Dascomb Road & Frontage Road

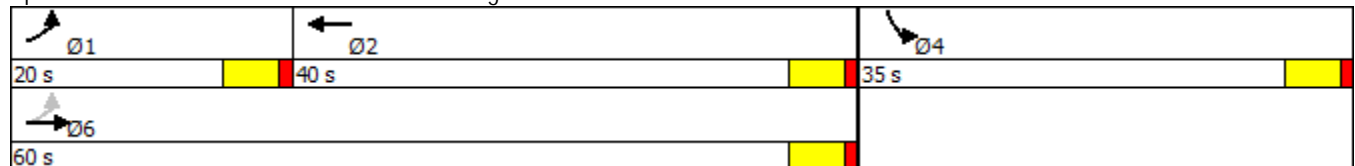
2026 No-Build Conditions  
Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	438	662	568	231	121	387
Future Volume (vph)	438	662	568	231	121	387
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1881	3574	1830	2025	1777
Flt Permitted	0.257				0.950	
Satd. Flow (perm)	479	1881	3574	1830	2025	1777
Satd. Flow (RTOR)				181		403
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	0%	1%	3%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA	Free	Prot	Free
Protected Phases	1	6	2		4	
Permitted Phases	6			Free		Free
Detector Phase	1	6	2		4	
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0		6.0	
Minimum Split (s)	15.0	15.0	11.0		11.0	
Total Split (s)	20.0	60.0	40.0		35.0	
Total Split (%)	21.1%	63.2%	42.1%		36.8%	
Maximum Green (s)	15.0	55.0	35.0		30.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	
Recall Mode	Min	Min	None		None	

Intersection Summary

Cycle Length: 95  
 Actuated Cycle Length: 47.3  
 Natural Cycle: 45  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Dascomb Road & Frontage Road









## Queues

2026 No-Build Conditions

## 4: Dascomb Road &amp; Frontage Road

Saturday MIDDAY














						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	456	690	592	241	126	403
v/c Ratio	0.65	0.51	0.60	0.13	0.36	0.23
Control Delay	11.8	6.7	18.9	0.1	23.2	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.8	6.7	18.9	0.1	23.2	0.3
Queue Length 50th (ft)	50	89	80	0	33	0
Queue Length 95th (ft)	#185	193	136	0	81	0
Internal Link Dist (ft)		120	920		695	
Turn Bay Length (ft)	150			130		
Base Capacity (vph)	763	1853	2654	1830	1347	1777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.37	0.22	0.13	0.09	0.23

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
4: Dascomb Road & Frontage Road

2026 No-Build Conditions  
Saturday MIDDAY

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations			 					
Traffic Volume (veh/h)	438	662	568	231	121	387		
Future Volume (veh/h)	438	662	568	231	121	387		
Number	1	6	2	12	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1881	1881	1976	1956	1918		
Adj Flow Rate, veh/h	456	690	592	0	126	0		
Adj No. of Lanes	1	1	2	1	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	2	1	1	0	1	3		
Cap, veh/h	723	1251	1154	542	200	175		
Arrive On Green	0.23	0.66	0.32	0.00	0.11	0.00		
Sat Flow, veh/h	1774	1881	3668	1680	1863	1631		
Grp Volume(v), veh/h	456	690	592	0	126	0		
Grp Sat Flow(s),veh/h/ln	1774	1881	1787	1680	1863	1631		
Q Serve(g_s), s	6.1	8.5	5.9	0.0	2.8	0.0		
Cycle Q Clear(g_c), s	6.1	8.5	5.9	0.0	2.8	0.0		
Prop In Lane	1.00			1.00	1.00	1.00		
Lane Grp Cap(c), veh/h	723	1251	1154	542	200	175		
V/C Ratio(X)	0.63	0.55	0.51	0.00	0.63	0.00		
Avail Cap(c_a), veh/h	925	2358	2851	1340	1274	1115		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	6.4	3.9	12.1	0.0	18.7	0.0		
Incr Delay (d2), s/veh	0.3	0.1	0.1	0.0	1.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.9	4.3	2.9	0.0	1.5	0.0		
LnGrp Delay(d),s/veh	6.7	4.0	12.2	0.0	20.0	0.0		
LnGrp LOS	A	A	B		B			
Approach Vol, veh/h		1146	592		126			
Approach Delay, s/veh		5.1	12.2		20.0			
Approach LOS		A	B		B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	15.0	19.2		9.7		34.2		
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0		
Max Green Setting (Gmax), s	15.0	35.0		30.0		55.0		
Max Q Clear Time (g_c+I1), s	8.1	7.9		4.8		10.5		
Green Ext Time (p_c), s	0.5	6.3		0.2		6.7		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			8.4					
HCM 2010 LOS			A					

Lanes, Volumes, Timings  
 5: I-93 NB Ramps & Dascomb Road

2026 No-Build Conditions  
 Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	296	487	101	431	368	144
Future Volume (vph)	296	487	101	431	368	144
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.916					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1960	0	1805	1881	2006	1812
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1960	0	1805	1881	2006	1812
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	2%	1%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 53.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	296	487	101	431	368	144
Future Vol, veh/h	296	487	101	431	368	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	0	1	2	1
Mvmt Flow	305	502	104	444	379	148

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	305
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1267
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1267
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	188.4
HCM LOS			F














Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	262	737	-	-	1267	-
HCM Lane V/C Ratio	1.448	0.201	-	-	0.082	-
HCM Control Delay (s)	257.8	11.1	-	-	8.1	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	21.3	0.7	-	-	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 6: Frontage Road & I-93 SB Ramps

2026 No-Build Conditions  
 Saturday MIDDAY

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						  
Traffic Volume (vph)	409	11	83	593	22	66
Future Volume (vph)	409	11	83	593	22	66
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.988
Satd. Flow (prot)	1967	1830	2027	1812	0	3567
Flt Permitted	0.950					0.988
Satd. Flow (perm)	1967	1830	2027	1812	0	3567
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	409	11	83	593	22	66
Future Vol, veh/h	409	11	83	593	22	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	1	0	0
Mvmt Flow	449	12	91	652	24	73










Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	176	91	0	0	91
Stage 1	91	-	-	-	-
Stage 2	85	-	-	-	-
Critical Hdwy	6.66	6.2	-	-	4.1
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-
Follow-up Hdwy	3.538	3.3	-	-	2.2
Pot Cap-1 Maneuver	800	972	-	-	1517
Stage 1	927	-	-	-	-
Stage 2	924	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	787	972	-	-	1517
Mov Cap-2 Maneuver	787	-	-	-	-
Stage 1	927	-	-	-	-
Stage 2	909	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.3	0	1.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	787	972	1517	-
HCM Lane V/C Ratio	-	-	0.571	0.012	0.016	-
HCM Control Delay (s)	-	-	15.5	8.8	7.4	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	3.7	0	0	-

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 No-Build Conditions  
Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	337	159	7	326	191	11
Future Volume (vph)	337	159	7	326	191	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.957				0.993	
Flt Protected				0.999	0.955	
Satd. Flow (prot)	1940	0	0	1961	1682	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1940	0	0	1961	1682	0
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	5.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	337	159	7	326	191	11
Future Vol, veh/h	337	159	7	326	191	11
Conflicting Peds, #/hr	0	1	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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	362	171	8	351	205	12











Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	534	0	815
Stage 1	-	-	-	-	449
Stage 2	-	-	-	-	366
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	-	-	1044	-	350
Stage 1	-	-	-	-	647
Stage 2	-	-	-	-	706
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1044	-	346
Mov Cap-2 Maneuver	-	-	-	-	346
Stage 1	-	-	-	-	646
Stage 2	-	-	-	-	699

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	30
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	354	-	-	1044	-
HCM Lane V/C Ratio	0.614	-	-	0.007	-
HCM Control Delay (s)	30	-	-	8.5	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.9	-	-	0	-

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 No-Build Conditions  
 Saturday MIDDAY

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	316	14	12	90	86	323
Future Volume (vph)	316	14	12	90	86	323
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.893	
Flt Protected	0.950			0.994		
Satd. Flow (prot)	1925	1595	0	1973	1796	0
Flt Permitted	0.950			0.994		
Satd. Flow (perm)	1925	1595	0	1973	1796	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	18%	0%	0%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	8.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	316	14	12	90	86	323
Future Vol, veh/h	316	14	12	90	86	323
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	18	0	0	1
Mvmt Flow	343	15	13	98	93	351

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	217	93	93	0	0
Stage 1	93	-	-	-	-
Stage 2	124	-	-	-	-
Critical Hdwy	6.4	6.28	4.28	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.362	-	-
Pot Cap-1 Maneuver	776	948	1407	-	0
Stage 1	936	-	-	-	0
Stage 2	907	-	-	-	0
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	768	948	1407	-	-
Mov Cap-2 Maneuver	768	-	-	-	-
Stage 1	936	-	-	-	-
Stage 2	898	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.2	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1407	-	768	948	-
HCM Lane V/C Ratio	0.009	-	0.447	0.016	-
HCM Control Delay (s)	7.6	0	13.4	8.9	-
HCM Lane LOS	A	A	B	A	-
HCM 95th %tile Q(veh)	0	-	2.3	0	-

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

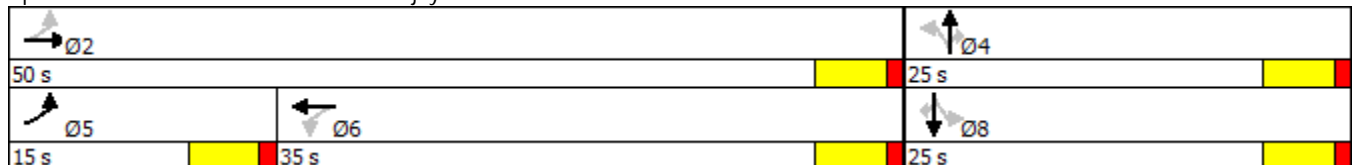
2026 No-Build Conditions  
Saturday Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	405	10	12	429	62	9	1	10	74	4	58
Future Volume (vph)	48	405	10	12	429	62	9	1	10	74	4	58
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				0.98
Frt		0.997			0.983				0.850			0.850
Flt Protected		0.995			0.999			0.957			0.955	
Satd. Flow (prot)	0	1869	0	0	2097	0	0	1697	1561	0	1694	1723
Flt Permitted		0.909			0.986			0.684			0.724	
Satd. Flow (perm)	0	1707	0	0	2069	0	0	1211	1561	0	1284	1685
Satd. Flow (RTOR)		3			11				102			102
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.93	0.93	0.93	0.90	0.90	0.90	0.56	0.56	0.56	0.70	0.70	0.70
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	50.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	20.0%	66.7%		46.7%	46.7%		33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	10.0	45.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 35.1  
 Natural Cycle: 50  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road









## Queues

2026 No-Build Conditions

## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road

Saturday MIDDAY

						
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	498	559	18	18	112	83
v/c Ratio	0.51	0.47	0.06	0.04	0.37	0.17
Control Delay	9.1	8.0	12.2	0.2	16.0	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	8.0	12.2	0.2	16.0	3.9
Queue Length 50th (ft)	57	61	2	0	15	0
Queue Length 95th (ft)	149	151	9	0	43	10
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1693	1822	710	958	753	1031
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.31	0.03	0.02	0.15	0.08



















## Intersection Summary

# HCM Signalized Intersection Capacity Analysis

## 7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 No-Build Conditions

Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	405	10	12	429	62	9	1	10	74	4	58
Future Volume (vph)	48	405	10	12	429	62	9	1	10	74	4	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		1.00			0.98			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.96	1.00		0.95	1.00
Satd. Flow (prot)		1868			2097			1695	1561		1693	1684
Flt Permitted		0.91			0.99			0.68	1.00		0.72	1.00
Satd. Flow (perm)		1707			2070			1211	1561		1285	1684
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.56	0.56	0.56	0.70	0.70	0.70
Adj. Flow (vph)	52	435	11	13	477	69	16	2	18	106	6	83
RTOR Reduction (vph)	0	1	0	0	5	0	0	0	15	0	0	67
Lane Group Flow (vph)	0	497	0	0	554	0	0	18	3	0	112	16
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)		19.0			19.0			6.9	6.9		6.9	6.9
Effective Green, g (s)		19.0			19.0			6.9	6.9		6.9	6.9
Actuated g/C Ratio		0.53			0.53			0.19	0.19		0.19	0.19
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		903			1095			232	300		246	323
v/s Ratio Prot												
v/s Ratio Perm		c0.29			0.27			0.01	0.00		c0.09	0.01
v/c Ratio		0.55			0.51			0.08	0.01		0.46	0.05
Uniform Delay, d1		5.6			5.4			11.9	11.7		12.8	11.8
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.4			0.1			0.1	0.0		0.5	0.0
Delay (s)		6.0			5.6			11.9	11.7		13.3	11.8
Level of Service		A			A			B	B		B	B
Approach Delay (s)		6.0			5.6			11.8			12.7	
Approach LOS		A			A			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			7.0									A
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			35.9							15.0		
Intersection Capacity Utilization			65.7%									C
Analysis Period (min)			15									
c Critical Lane Group												















## 2026 Build Conditions



Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

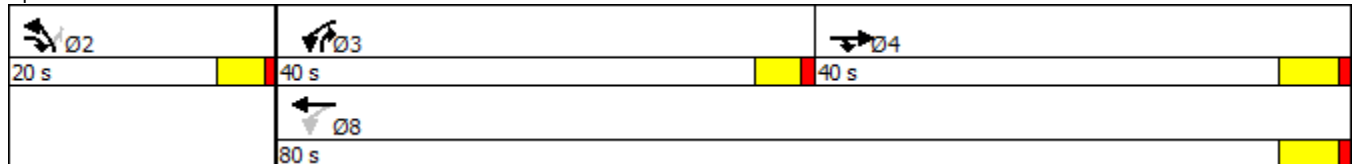
2026 Build Conditions  
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	611	43	555	539	47	617
Future Volume (vph)	611	43	555	539	47	617
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1733	1487	1631	1717	1572	1487
Flt Permitted			0.121		0.950	
Satd. Flow (perm)	1733	1487	208	1717	1572	1487
Satd. Flow (RTOR)		34				89
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	5%	7%	7%	11%	5%
Shared Lane Traffic (%)						
Turn Type	NA	pt+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	4	2 4	3	8	2	3
Permitted Phases			8			2
Detector Phase	4	2 4	3	8	2	3
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	6.0
Minimum Split (s)	15.5		10.5	15.5	10.5	10.5
Total Split (s)	40.0		40.0	80.0	20.0	40.0
Total Split (%)	40.0%		40.0%	80.0%	20.0%	40.0%
Maximum Green (s)	34.5		35.5	74.5	15.5	35.5
Yellow Time (s)	4.5		3.5	4.5	3.5	3.5
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5		4.5	5.5	4.5	4.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		2.0	4.0	2.0	2.0
Recall Mode	Min		None	Min	None	None

Intersection Summary







Cycle Length: 100  
 Actuated Cycle Length: 86.1  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
 1: Shawsheen Street & East Street/Dascomb Road

2026 Build Conditions  
 Weekday Morning













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	650	46	590	573	50	656
v/c Ratio	0.92	0.05	0.86	0.40	0.36	0.87
Control Delay	47.6	5.2	31.8	3.5	46.9	30.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.6	5.2	31.8	3.5	46.9	30.8
Queue Length 50th (ft)	370	3	233	67	28	265
Queue Length 95th (ft)	#636	20	#455	130	65	433
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	707	988	771	1468	288	830
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.05	0.77	0.39	0.17	0.79

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 Build Conditions  
 Weekday Morning

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	611	43	555	539	47	617		
Future Volume (veh/h)	611	43	555	539	47	617		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1792	1810	1776	1776	1712	1810		
Adj Flow Rate, veh/h	650	46	590	573	50	656		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	6	5	7	7	11	5		
Cap, veh/h	650	809	620	1300	266	746		
Arrive On Green	0.36	0.36	0.32	0.73	0.16	0.16		
Sat Flow, veh/h	1792	1538	1691	1776	1630	1538		
Grp Volume(v), veh/h	650	46	590	573	50	656		
Grp Sat Flow(s),veh/h/ln	1792	1538	1691	1776	1630	1538		
Q Serve(g_s), s	34.5	1.4	28.0	12.1	2.5	15.5		
Cycle Q Clear(g_c), s	34.5	1.4	28.0	12.1	2.5	15.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	650	809	620	1300	266	746		
V/C Ratio(X)	1.00	0.06	0.95	0.44	0.19	0.88		
Avail Cap(c_a), veh/h	650	809	707	1391	266	746		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	30.3	11.0	26.0	5.0	34.4	22.0		
Incr Delay (d2), s/veh	35.2	0.0	20.4	0.3	0.1	11.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	23.3	0.8	18.4	6.0	1.1	17.7		
LnGrp Delay(d),s/veh	65.5	11.1	46.4	5.4	34.5	33.4		
LnGrp LOS	E	B	D	A	C	C		
Approach Vol, veh/h	696			1163	706			
Approach Delay, s/veh	61.9			26.2	33.5			
Approach LOS	E			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	35.1	40.0				75.1
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		15.5	35.5	34.5				74.5
Max Q Clear Time (g_c+I1), s		17.5	30.0	36.5				14.1
Green Ext Time (p_c), s		0.0	0.6	0.0				18.1
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			37.9					
HCM 2010 LOS			D					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 Build Conditions  
 Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	1216	1090	14	1	4
Future Volume (vph)	12	1216	1090	14	1	4
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.998		0.892	
Flt Protected					0.990	
Satd. Flow (prot)	0	1734	2008	0	1049	0
Flt Permitted					0.990	
Satd. Flow (perm)	0	1734	2008	0	1049	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	7%	7%	100%	50%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	1		4	
Traffic Vol, veh/h	12	1216	1090	14	1	4
Future Vol, veh/h	12	1216	1090	14	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	6	7	7	100	50
Mvmt Flow	13	1308	1172	15	1	4












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1172	0	0 2505 1172
Stage 1	-	-	- 1172 -
Stage 2	-	-	- 1333 -
Critical Hdwy	4.1	-	- 7.4 6.7
Critical Hdwy Stg 1	-	-	- 6.4 -
Critical Hdwy Stg 2	-	-	- 6.4 -
Follow-up Hdwy	2.2	-	- 4.4 3.75
Pot Cap-1 Maneuver	603	-	- 15 188
Stage 1	-	-	- 192 -
Stage 2	-	-	- 155 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	603	-	- 14 188
Mov Cap-2 Maneuver	-	-	- 14 -
Stage 1	-	-	- 192 -
Stage 2	-	-	- 143 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	78.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	603	-	-	-	54
HCM Lane V/C Ratio	0.021	-	-	-	0.1
HCM Control Delay (s)	11.1	0	-	-	78.9
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

2026 Build Conditions  
Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1163	54	193	1074	30	55
Future Volume (vph)	1163	54	193	1074	30	55
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1893	0	1604	1835	1532	1322
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1893	0	1604	1835	1532	1322
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	15%	5%	7%	10%	14%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	25.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1163	54	193	1074	30	55
Future Vol, veh/h	1163	54	193	1074	30	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	6	15	5	7	10	14
Mvmt Flow	1278	59	212	1180	33	60

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1337	0	2912 1308
Stage 1	-	-	-	-	1308 -
Stage 2	-	-	-	-	1604 -
Critical Hdwy	-	-	4.15	-	6.5 6.34
Critical Hdwy Stg 1	-	-	-	-	5.5 -
Critical Hdwy Stg 2	-	-	-	-	5.5 -
Follow-up Hdwy	-	-	2.245	-	3.59 3.426
Pot Cap-1 Maneuver	-	-	506	-	~ 16 184
Stage 1	-	-	-	-	243 -
Stage 2	-	-	-	-	173 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	506	-	~ 9 184
Mov Cap-2 Maneuver	-	-	-	-	~ 9 -
Stage 1	-	-	-	-	243 -
Stage 2	-	-	-	-	101 -

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	\$ 732.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	9	184	-	-	506	-
HCM Lane V/C Ratio	3.663	0.328	-	-	0.419	-
HCM Control Delay (s)	\$ 2013.3	33.9	-	-	17.2	-
HCM Lane LOS	F	D	-	-	C	-
HCM 95th %tile Q(veh)	5.3	1.4	-	-	2	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
4: Site Driveway/Frontage Road & Dascomb Road

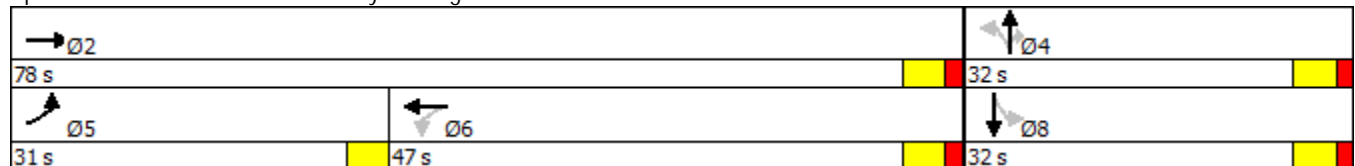
2026 Build Conditions  
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	414	787	17	96	799	534	10	20	44	312	115	458
Future Volume (vph)	414	787	17	96	799	534	10	20	44	312	115	458
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950				0.995		0.950				0.965	
Satd. Flow (prot)	1687	1788	0	0	3461	1812	1711	1801	1531	0	2037	1794
Flt Permitted	0.950				0.735		0.148				0.771	
Satd. Flow (perm)	1687	1788	0	0	2557	1812	266	1801	1531	0	1628	1794
Satd. Flow (RTOR)		2				230			55			386
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	6%	2%	2%	4%	1%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Free	Perm	NA	Perm	Perm	NA	Free
Protected Phases	5	2			6			4			8	
Permitted Phases				6		Free	4		4	8		Free
Detector Phase	5	2		6	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	9.5	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	
Total Split (s)	31.0	78.0		47.0	47.0		32.0	32.0	32.0	32.0	32.0	
Total Split (%)	28.2%	70.9%		42.7%	42.7%		29.1%	29.1%	29.1%	29.1%	29.1%	
Maximum Green (s)	27.5	73.0		42.0	42.0		27.0	27.0	27.0	27.0	27.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.0	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.5	5.0			5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	

Intersection Summary










Cycle Length: 110  
 Actuated Cycle Length: 109.8  
 Natural Cycle: 110  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Site Driveway/Frontage Road & Dascomb Road



Queues  
4: Site Driveway/Frontage Road & Dascomb Road

2026 Build Conditions  
Weekday Morning






















									
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	440	855	952	568	11	21	47	454	487
v/c Ratio	1.04	0.72	0.98	0.31	0.17	0.05	0.11	1.14	0.27
Control Delay	96.6	16.3	58.2	0.5	40.3	32.2	8.0	126.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.6	16.3	58.2	0.5	40.3	32.2	8.0	126.4	0.4
Queue Length 50th (ft)	~337	352	344	0	6	11	0	~374	0
Queue Length 95th (ft)	#533	508	#488	0	24	32	25	#575	0
Internal Link Dist (ft)		120	920			745		695	
Turn Bay Length (ft)	150			130	150		150		
Base Capacity (vph)	422	1189	977	1812	65	443	417	400	1794
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.72	0.97	0.31	0.17	0.05	0.11	1.14	0.27

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
 4: Site Driveway/Frontage Road & Dascomb Road

2026 Build Conditions  
 Weekday Morning

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	414	787	17	96	799	534	10	20	44	312	115	458
Future Volume (veh/h)	414	787	17	96	799	534	10	20	44	312	115	458
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1794	1900	1900	1831	1956	1863	1863	1863	1976	1937	1937
Adj Flow Rate, veh/h	440	837	18	102	850	0	11	21	47	332	122	0
Adj No. of Lanes	1	1	0	0	2	1	1	1	1	0	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	6	6	4	4	1	2	2	2	2	2	2
Cap, veh/h	432	1149	25	141	972	614	408	467	397	323	97	413
Arrive On Green	0.26	0.66	0.66	0.37	0.37	0.00	0.25	0.25	0.25	0.25	0.25	0.00
Sat Flow, veh/h	1691	1750	38	269	2633	1663	1264	1863	1583	1057	388	1647
Grp Volume(v), veh/h	440	0	855	438	514	0	11	21	47	454	0	0
Grp Sat Flow(s),veh/h/ln	1691	0	1787	1320	1583	1663	1264	1863	1583	1445	0	1647
Q Serve(g_s), s	27.5	0.0	33.9	29.8	32.7	0.0	0.0	0.9	2.5	26.1	0.0	0.0
Cycle Q Clear(g_c), s	27.5	0.0	33.9	33.4	32.7	0.0	0.7	0.9	2.5	27.0	0.0	0.0
Prop In Lane	1.00		0.02	0.23		1.00	1.00		1.00	0.73		1.00
Lane Grp Cap(c), veh/h	432	0	1174	528	584	614	408	467	397	420	0	413
V/C Ratio(X)	1.02	0.00	0.73	0.83	0.88	0.00	0.03	0.05	0.12	1.08	0.00	0.00
Avail Cap(c_a), veh/h	432	0	1211	554	617	648	408	467	397	420	0	413
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	40.1	0.0	12.2	31.3	31.8	0.0	30.5	30.6	31.2	42.6	0.0	0.0
Incr Delay (d2), s/veh	48.4	0.0	1.9	9.0	12.8	0.0	0.0	0.0	0.0	67.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	0.0	17.2	13.5	16.4	0.0	0.2	0.5	1.1	20.2	0.0	0.0
LnGrp Delay(d),s/veh	88.5	0.0	14.0	40.3	44.6	0.0	30.5	30.6	31.2	110.1	0.0	0.0
LnGrp LOS	F		B	D	D		C	C	C	F		
Approach Vol, veh/h		1295			952			79			454	
Approach Delay, s/veh		39.4			42.6			31.0			110.1	
Approach LOS		D			D			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.8		32.0	31.0	44.8		32.0				
Change Period (Y+Rc), s		5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s		73.0		27.0	27.5	42.0		27.0				
Max Q Clear Time (g_c+I1), s		35.9		4.5	29.5	35.4		29.0				
Green Ext Time (p_c), s		11.4		2.1	0.0	4.4		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			51.8									
HCM 2010 LOS			D									

Lanes, Volumes, Timings  
 5: I-93 NB Ramps & Dascomb Road

2026 Build Conditions  
 Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	719	424	88	1059	370	197
Future Volume (vph)	719	424	88	1059	370	197
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.950					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1951	0	1736	1881	1930	1777
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1951	0	1736	1881	1930	1777
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	8%	4%	1%	6%	3%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
 5: I-93 NB Ramps & Dascomb Road

2026 Build Conditions  
 Weekday Morning

Intersection

Int Delay, s/veh 413.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	719	424	88	1059	370	197
Future Vol, veh/h	719	424	88	1059	370	197
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	8	4	1	6	3
Mvmt Flow	765	451	94	1127	394	210

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	765
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	4.14	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	2.236	-
Pot Cap-1 Maneuver	-	839	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	839	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	\$ 2081.7
HCM LOS			F














Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	51	402	-	-	839	-
HCM Lane V/C Ratio	7.718	0.521	-	-	0.112	-
HCM Control Delay (s)	\$ 3177.7	23.3	-	-	9.8	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	46	2.9	-	-	0.4	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 6: Frontage Road & I-93 SB Ramps

2026 Build Conditions  
 Weekday Morning

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						  
Traffic Volume (vph)	644	81	313	659	124	242
Future Volume (vph)	644	81	313	659	124	242
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.983
Satd. Flow (prot)	1877	1812	2007	1760	0	3424
Flt Permitted	0.950					0.983
Satd. Flow (perm)	1877	1812	2007	1760	0	3424
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	9%	1%	1%	4%	1%	5%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
6: Frontage Road & I-93 SB Ramps

2026 Build Conditions  
Weekday Morning

Intersection

Int Delay, s/veh 148.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘	↗	↑	↗		↗↘
Traffic Vol, veh/h	644	81	313	659	124	242
Future Vol, veh/h	644	81	313	659	124	242
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	9	1	1	4	1	5
Mvmt Flow	657	83	319	672	127	247

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	696	319	0
Stage 1	319	-	-
Stage 2	377	-	-
Critical Hdwy	6.735	6.215	-
Critical Hdwy Stg 1	5.535	-	-
Critical Hdwy Stg 2	5.935	-	-
Follow-up Hdwy	3.5855	3.3095	-
Pot Cap-1 Maneuver	~ 379	724	-
Stage 1	718	-	-
Stage 2	~ 647	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	~ 334	724	-
Mov Cap-2 Maneuver	~ 334	-	-
Stage 1	718	-	-
Stage 2	~ 571	-	-

Approach	WB	NB	SB
HCM Control Delay, s\$	420.5	0	2.9
HCM LOS	F		











Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	334	724	1246	-
HCM Lane V/C Ratio	-	-	1.967	0.114	0.102	-
HCM Control Delay (s)	-	-	\$ 472.1	10.6	8.2	0.2
HCM Lane LOS	-	-	F	B	A	A
HCM 95th %tile Q(veh)	-	-	45.8	0.4	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 Build Conditions  
Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	387	729	8	615	295	9
Future Volume (vph)	387	729	8	615	295	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.912				0.996	
Flt Protected				0.999	0.954	
Satd. Flow (prot)	1811	0	0	1923	1653	0
Flt Permitted				0.999	0.954	
Satd. Flow (perm)	1811	0	0	1923	1653	0
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	0%	2%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 109.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	387	729	8	615	295	9
Future Vol, veh/h	387	729	8	615	295	9
Conflicting Peds, #/hr	0	1	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, %	4	1	0	2	2	0
Mvmt Flow	421	792	9	668	321	10

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1214
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	582
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	582
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	\$ 734
HCM LOS			F











Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	134	-	-	582	-
HCM Lane V/C Ratio	2.466	-	-	0.015	-
HCM Control Delay (s)	\$ 734	-	-	11.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	28.9	-	-	0	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 Build Conditions  
 Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	378	88	35	112	302	549
Future Volume (vph)	378	88	35	112	302	549
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.913	
Flt Protected	0.950			0.988		
Satd. Flow (prot)	1851	1706	0	1874	1808	0
Flt Permitted	0.950			0.988		
Satd. Flow (perm)	1851	1706	0	1874	1808	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	16%	4%	3%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 14.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	378	88	35	112	302	549
Future Vol, veh/h	378	88	35	112	302	549
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	4	1	16	4	3	2
Mvmt Flow	390	91	36	115	311	566

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	499	311	311	0	-	0
Stage 1	311	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.44	6.21	4.26	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.309	2.344	-	-	-
Pot Cap-1 Maneuver	527	731	1174	-	-	0
Stage 1	738	-	-	-	-	0
Stage 2	839	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	510	731	1174	-	-	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	27.5	1.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
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Capacity (veh/h)	1174	-	510	731	-
HCM Lane V/C Ratio	0.031	-	0.764	0.124	-
HCM Control Delay (s)	8.2	0	31.4	10.6	-
HCM Lane LOS	A	A	D	B	-
HCM 95th %tile Q(veh)	0.1	-	6.7	0.4	-

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

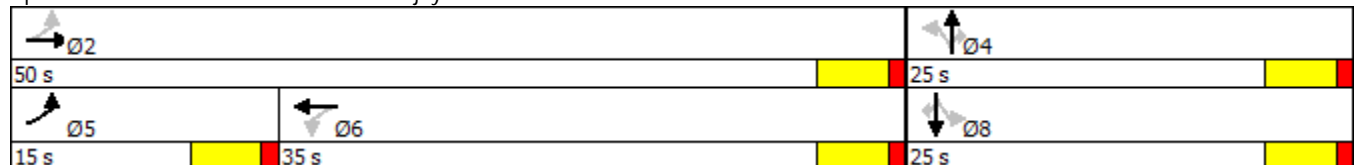
2026 Build Conditions  
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	794	10	9	844	70	12	9	17	297	12	238
Future Volume (vph)	60	794	10	9	844	70	12	9	17	297	12	238
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				0.97
Frt		0.998			0.990				0.850			0.850
Flt Protected		0.997						0.972			0.954	
Satd. Flow (prot)	0	1832	0	0	2086	0	0	1724	1561	0	1658	1706
Flt Permitted		0.893			0.992			0.736			0.715	
Satd. Flow (perm)	0	1641	0	0	2069	0	0	1303	1561	0	1243	1662
Satd. Flow (RTOR)		1			7				102			102
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.97	0.97	0.97	0.96	0.96	0.96	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	6%	3%	0%	0%	2%	5%	0%	0%	0%	1%	27%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	50.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	20.0%	66.7%		46.7%	46.7%		33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	10.0	45.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 73.8  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road



Queues

2026 Build Conditions

7: Acorn Drive/Lovejoy Road & Dascomb Road

Weekday Morning

	→	←	↑	↗	↓	↙
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	891	961	26	21	386	298
v/c Ratio	0.92	0.78	0.07	0.04	1.15	0.57
Control Delay	29.8	16.9	21.4	0.2	123.9	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.8	16.9	21.4	0.2	123.9	20.2
Queue Length 50th (ft)	325	297	9	0	-217	76
Queue Length 95th (ft)	#611	458	24	0	#318	126
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1003	1229	353	498	337	525
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.78	0.07	0.04	1.15	0.57

Intersection Summary



















- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 Build Conditions

Weekday Morning

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	60	794	10	9	844	70	12	9	17	297	12	238	
Future Volume (vph)	60	794	10	9	844	70	12	9	17	297	12	238	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00	0.97	
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00	
Frt		1.00			0.99			1.00	0.85		1.00	0.85	
Flt Protected		1.00			1.00			0.97	1.00		0.95	1.00	
Satd. Flow (prot)		1832			2084			1721	1561		1659	1662	
Flt Permitted		0.89			0.99			0.74	1.00		0.72	1.00	
Satd. Flow (perm)		1643			2068			1303	1561		1244	1662	
Peak-hour factor, PHF	0.97	0.97	0.97	0.96	0.96	0.96	0.80	0.80	0.80	0.80	0.80	0.80	
Adj. Flow (vph)	62	819	10	9	879	73	15	11	21	371	15	298	
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	15	0	0	74	
Lane Group Flow (vph)	0	891	0	0	958	0	0	26	6	0	386	224	
Confl. Peds. (#/hr)							3					3	
Heavy Vehicles (%)	6%	3%	0%	0%	2%	5%	0%	0%	0%	1%	27%	1%	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2			6			4			8		
Permitted Phases	2			6			4		4	8		8	
Actuated Green, G (s)		43.7			43.7			20.0	20.0		20.0	20.0	
Effective Green, g (s)		43.7			43.7			20.0	20.0		20.0	20.0	
Actuated g/C Ratio		0.59			0.59			0.27	0.27		0.27	0.27	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		974			1226			353	423		337	451	
v/s Ratio Prot													
v/s Ratio Perm		c0.54			0.46			0.02	0.00		c0.31	0.13	
v/c Ratio		0.91			0.78			0.07	0.01		1.15	0.50	
Uniform Delay, d1		13.3			11.4			20.0	19.6		26.9	22.6	
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		12.5			3.1			0.0	0.0		94.5	0.3	
Delay (s)		25.8			14.4			20.0	19.6		121.4	22.9	
Level of Service		C			B			B	B		F	C	
Approach Delay (s)		25.8			14.4			19.8			78.5		
Approach LOS		C			B			B			E		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			35.4									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			1.07										
Actuated Cycle Length (s)			73.7									Sum of lost time (s)	15.0
Intersection Capacity Utilization			113.4%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

2026 Build Conditions  
 Weekday Evening

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	621	28	562	733	67	640
Future Volume (vph)	621	28	562	733	67	640
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1818	1561	1728	1801	1745	1561
Flt Permitted			0.149		0.950	
Satd. Flow (perm)	1818	1561	271	1801	1745	1561
Satd. Flow (RTOR)		25				128
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	4	2	3	8	2	3
Permitted Phases		4	8			2
Detector Phase	4	2	3	8	2	3
Switch Phase						
Minimum Initial (s)	10.0	6.0	6.0	10.0	6.0	6.0
Minimum Split (s)	15.5	10.5	10.5	15.5	10.5	10.5
Total Split (s)	45.0	20.0	35.0	80.0	20.0	35.0
Total Split (%)	45.0%	20.0%	35.0%	80.0%	20.0%	35.0%
Maximum Green (s)	39.5	15.5	30.5	74.5	15.5	30.5
Yellow Time (s)	4.5	3.5	3.5	4.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.5	4.5	5.5	4.5	4.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	2.0	2.0	4.0	2.0	2.0
Recall Mode	Min	None	None	Min	None	None

Intersection Summary







Cycle Length: 100  
 Actuated Cycle Length: 83.7  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road

Ø2 20 s	Ø3 35 s	Ø4 45 s
	Ø8 80 s	

Queues  
1: Shawsheen Street & East Street/Dascomb Road

2026 Build Conditions  
Weekday Evening













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	640	29	579	756	69	660
v/c Ratio	0.83	0.03	0.82	0.50	0.39	0.85
Control Delay	34.5	3.9	27.6	4.5	46.3	28.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	3.9	27.6	4.5	46.3	28.9
Queue Length 50th (ft)	322	1	211	109	39	269
Queue Length 95th (ft)	#553	12	#431	209	82	#444
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	908	1084	786	1530	342	848
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.03	0.74	0.49	0.20	0.78

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.







HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 Build Conditions  
 Weekday Evening

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	621	28	562	733	67	640		
Future Volume (veh/h)	621	28	562	733	67	640		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1900	1881	1863	1900	1900		
Adj Flow Rate, veh/h	640	29	579	756	69	660		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Percent Heavy Veh, %	1	0	1	2	0	0		
Cap, veh/h	776	946	616	1331	314	687		
Arrive On Green	0.41	0.41	0.25	0.71	0.17	0.17		
Sat Flow, veh/h	1881	1615	1792	1863	1810	1615		
Grp Volume(v), veh/h	640	29	579	756	69	660		
Grp Sat Flow(s),veh/h/ln	1881	1615	1792	1863	1810	1615		
Q Serve(g_s), s	27.1	0.7	19.7	17.4	2.9	15.5		
Cycle Q Clear(g_c), s	27.1	0.7	19.7	17.4	2.9	15.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	776	946	616	1331	314	687		
V/C Ratio(X)	0.83	0.03	0.94	0.57	0.22	0.96		
Avail Cap(c_a), veh/h	832	995	777	1554	314	687		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	23.4	7.8	20.9	6.1	31.7	24.9		
Incr Delay (d2), s/veh	6.9	0.0	15.5	0.5	0.1	24.8		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	15.5	0.4	16.5	9.0	1.5	20.4		
LnGrp Delay(d),s/veh	30.2	7.8	36.3	6.7	31.8	49.7		
LnGrp LOS	C	A	D	A	C	D		
Approach Vol, veh/h	669			1335	729			
Approach Delay, s/veh	29.2			19.5	48.0			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		20.0	27.0	42.3				69.3
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		15.5	30.5	39.5				74.5
Max Q Clear Time (g_c+I1), s		17.5	21.7	29.1				19.4
Green Ext Time (p_c), s		0.0	0.7	7.8				22.1
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			29.5					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 Build Conditions  
 Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	1258	1273	3	7	22
Future Volume (vph)	3	1258	1273	3	7	22
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.896	
Flt Protected					0.988	
Satd. Flow (prot)	0	1819	2108	0	1521	0
Flt Permitted					0.988	
Satd. Flow (perm)	0	1819	2108	0	1521	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	2%	67%	29%	5%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	4		4	
Traffic Vol, veh/h	3	1258	1273	3	7	22
Future Vol, veh/h	3	1258	1273	3	7	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	2	67	29	5
Mvmt Flow	3	1297	1312	3	7	23












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1312	0	0 2615 1312
Stage 1	-	-	- 1312 -
Stage 2	-	-	- 1303 -
Critical Hdwy	4.1	-	- 6.69 6.25
Critical Hdwy Stg 1	-	-	- 5.69 -
Critical Hdwy Stg 2	-	-	- 5.69 -
Follow-up Hdwy	2.2	-	- 3.761 3.345
Pot Cap-1 Maneuver	534	-	- 22 191
Stage 1	-	-	- 221 -
Stage 2	-	-	- 223 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	534	-	- 22 191
Mov Cap-2 Maneuver	-	-	- 22 -
Stage 1	-	-	- 221 -
Stage 2	-	-	- 219 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	96.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	534	-	-	-	67
HCM Lane V/C Ratio	0.006	-	-	-	0.446
HCM Control Delay (s)	11.8	0	-	-	96.3
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	1.8

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

2026 Build Conditions  
Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1185	80	126	1172	104	213
Future Volume (vph)	1185	80	126	1172	104	213
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.991					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	2008	0	1620	1944	1636	1492
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	2008	0	1620	1944	1636	1492
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	4%	1%	3%	1%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
3: Smith Drive & Dascomb Road

2026 Build Conditions  
Weekday Evening

Intersection

Int Delay, s/veh 123.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1185	80	126	1172	104	213
Future Vol, veh/h	1185	80	126	1172	104	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	0	4	1	3	1
Mvmt Flow	1247	84	133	1234	109	224

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1332
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.14
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.236
Pot Cap-1 Maneuver	-	-	512
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	512
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	\$ 1116
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	16	201	-	-	512	-
HCM Lane V/C Ratio	6.842	1.115	-	-	0.259	-
HCM Control Delay (s)	\$ 3100.3	147.2	-	-	14.5	-
HCM Lane LOS	F	F	-	-	B	-
HCM 95th %tile Q(veh)	14.5	10.7	-	-	1	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 4: Site Driveway/Frontage Road & Dascomb Road

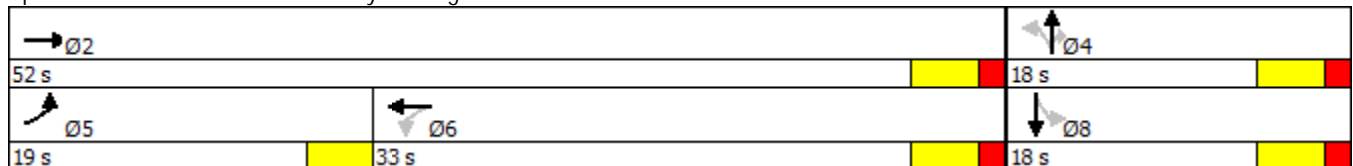
2026 Build Conditions  
 Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	413	952	33	110	773	187	37	79	220	214	97	488
Future Volume (vph)	413	952	33	110	773	187	37	79	220	214	97	488
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850			0.850			0.850
Flt Protected	0.950				0.994		0.950				0.967	
Satd. Flow (prot)	1787	1871	0	0	3548	1812	1711	1801	1531	0	2055	1777
Flt Permitted	0.950				0.638		0.308				0.744	
Satd. Flow (perm)	1787	1871	0	0	2278	1812	555	1801	1531	0	1581	1777
Satd. Flow (RTOR)		5				164			156			508
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	2%	2%	1%	1%	2%	2%	2%	1%	2%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Free	Perm	NA	Perm	Perm	NA	Free
Protected Phases	5	2			6			4			8	
Permitted Phases				6		Free	4		4	8		Free
Detector Phase	5	2		6	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		6.0	6.0	6.0	10.0	10.0	
Minimum Split (s)	13.5	15.0		15.0	15.0		11.0	11.0	11.0	15.0	15.0	
Total Split (s)	19.0	52.0		33.0	33.0		18.0	18.0	18.0	18.0	18.0	
Total Split (%)	27.1%	74.3%		47.1%	47.1%		25.7%	25.7%	25.7%	25.7%	25.7%	
Maximum Green (s)	15.5	47.0		28.0	28.0		13.0	13.0	13.0	13.0	13.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.0	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.5	5.0			5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	

Intersection Summary










Cycle Length: 70  
 Actuated Cycle Length: 70  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Site Driveway/Frontage Road & Dascomb Road



Queues  
4: Site Driveway/Frontage Road & Dascomb Road

2026 Build Conditions  
Weekday Evening






















									
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	430	1026	920	195	39	82	229	324	508
v/c Ratio	1.09	0.82	1.01	0.11	0.38	0.25	0.56	1.11	0.29
Control Delay	101.1	15.4	55.8	0.1	36.9	26.6	15.2	115.1	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.1	15.4	55.8	0.1	36.9	26.6	15.2	115.1	0.4
Queue Length 50th (ft)	~213	267	~206	0	15	30	27	~163	0
Queue Length 95th (ft)	#376	#468	#335	0	44	67	90	#308	0
Internal Link Dist (ft)		120	920			725		695	
Turn Bay Length (ft)	150			130	150		150		
Base Capacity (vph)	395	1257	911	1812	103	334	411	293	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.82	1.01	0.11	0.38	0.25	0.56	1.11	0.29

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
 4: Site Driveway/Frontage Road & Dascomb Road

2026 Build Conditions  
 Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	952	33	110	773	187	37	79	220	214	97	488
Future Volume (veh/h)	413	952	33	110	773	187	37	79	220	214	97	488
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1900	1879	1956	1863	1863	1863	1976	1950	1918
Adj Flow Rate, veh/h	430	992	34	115	805	0	39	82	229	223	101	0
Adj No. of Lanes	1	1	0	0	2	1	1	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	3
Cap, veh/h	398	1212	42	160	943	662	346	347	295	219	60	304
Arrive On Green	0.22	0.67	0.67	0.40	0.40	0.00	0.19	0.19	0.19	0.19	0.19	0.00
Sat Flow, veh/h	1792	1808	62	231	2367	1663	1288	1863	1583	707	320	1631
Grp Volume(v), veh/h	430	0	1026	357	563	0	39	82	229	324	0	0
Grp Sat Flow(s),veh/h/ln	1792	0	1870	974	1624	1663	1288	1863	1583	1027	0	1631
Q Serve(g_s), s	15.5	0.0	28.0	15.8	22.3	0.0	0.0	2.6	9.6	10.4	0.0	0.0
Cycle Q Clear(g_c), s	15.5	0.0	28.0	24.7	22.3	0.0	1.8	2.6	9.6	13.0	0.0	0.0
Prop In Lane	1.00		0.03	0.32		1.00	1.00		1.00	0.69		1.00
Lane Grp Cap(c), veh/h	398	0	1253	456	647	662	346	347	295	278	0	304
V/C Ratio(X)	1.08	0.00	0.82	0.78	0.87	0.00	0.11	0.24	0.78	1.16	0.00	0.00
Avail Cap(c_a), veh/h	398	0	1259	459	652	667	346	347	295	278	0	304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	27.1	0.0	8.4	20.1	19.3	0.0	23.8	24.2	27.0	31.3	0.0	0.0
Incr Delay (d2), s/veh	68.4	0.0	4.1	7.8	11.7	0.0	0.1	0.1	11.2	105.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.1	0.0	15.4	7.5	11.9	0.0	0.6	1.4	5.1	13.4	0.0	0.0
LnGrp Delay(d),s/veh	95.6	0.0	12.5	27.9	31.0	0.0	23.9	24.3	38.2	137.0	0.0	0.0
LnGrp LOS	F		B	C	C		C	C	D	F		
Approach Vol, veh/h		1456			920			350			324	
Approach Delay, s/veh		37.0			29.8			33.4			137.0	
Approach LOS		D			C			C			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		51.8		18.0	19.0	32.8		18.0				
Change Period (Y+Rc), s		5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s		47.0		13.0	15.5	28.0		13.0				
Max Q Clear Time (g_c+I1), s		30.0		11.6	17.5	26.7		15.0				
Green Ext Time (p_c), s		9.7		0.4	0.0	1.1		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			45.0									
HCM 2010 LOS			D									

Lanes, Volumes, Timings  
 5: I-93 NB Ramps & Dascomb Road

2026 Build Conditions  
 Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	617	769	86	566	504	236
Future Volume (vph)	617	769	86	566	504	236
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.925					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1981	0	1805	1900	2006	1830
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1981	0	1805	1900	2006	1830
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
5: I-93 NB Ramps & Dascomb Road

2026 Build Conditions  
Weekday Evening

Intersection

Int Delay, s/veh 253.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	617	769	86	566	504	236
Future Vol, veh/h	617	769	86	566	504	236
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	0	0	2	0
Mvmt Flow	649	809	91	596	531	248

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	649
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	947
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	947
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	\$ 949.8
HCM LOS			F













Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	135	473	-	-	947	-
HCM Lane V/C Ratio	3.93	0.525	-	-	0.096	-
HCM Control Delay (s)	\$ 1384.9	20.7	-	-	9.2	-
HCM Lane LOS	F	C	-	-	A	-
HCM 95th %tile Q(veh)	53.2	3	-	-	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 6: Frontage Road & I-93 SB Ramps

2026 Build Conditions  
 Weekday Evening

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	508	18	132	504	204	255
Future Volume (vph)	508	18	132	504	204	255
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950					0.978
Satd. Flow (prot)	1986	1649	2027	1794	0	3531
Flt Permitted	0.950					0.978
Satd. Flow (perm)	1986	1649	2027	1794	0	3531
Confl. Bikes (#/hr)		1				
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	11%	0%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

HCM 2010 TWSC  
6: Frontage Road & I-93 SB Ramps

2026 Build Conditions  
Weekday Evening

Intersection

Int Delay, s/veh	109.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	508	18	132	504	204	255
Future Vol, veh/h	508	18	132	504	204	255
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	11	0	2	0	0
Mvmt Flow	535	19	139	531	215	268

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	703	139	0	0	139
Stage 1	139	-	-	-	-
Stage 2	564	-	-	-	-
Critical Hdwy	6.645	6.365	-	-	4.1
Critical Hdwy Stg 1	5.445	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-
Follow-up Hdwy	3.5285	3.4045	-	-	2.2
Pot Cap-1 Maneuver	~ 386	883	-	-	1457
Stage 1	884	-	-	-	-
Stage 2	~ 532	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	~ 319	883	-	-	1457
Mov Cap-2 Maneuver	~ 319	-	-	-	-
Stage 1	884	-	-	-	-
Stage 2	~ 440	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	334.9	0	3.7
HCM LOS	F		











Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	319	883	1457	-
HCM Lane V/C Ratio	-	-	1.676	0.021	0.147	-
HCM Control Delay (s)	-	-	\$ 346.4	9.2	7.9	0.3
HCM Lane LOS	-	-	F	A	A	A
HCM 95th %tile Q(veh)	-	-	33	0.1	0.5	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 Build Conditions  
Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	503	275	13	468	305	21
Future Volume (vph)	503	275	13	468	305	21
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952				0.991	
Flt Protected				0.999	0.955	
Satd. Flow (prot)	1929	0	0	1942	1678	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1929	0	0	1942	1678	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh 79.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
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Lane Configurations						
Traffic Vol, veh/h	503	275	13	468	305	21
Future Vol, veh/h	503	275	13	468	305	21
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	541	296	14	503	328	23

Major/Minor	Major1	Major2	Minor1
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Conflicting Flow All	0	0	837	0	1220	689
Stage 1	-	-	-	-	689	-
Stage 2	-	-	-	-	531	-
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	-	-	806	-	~ 201	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	594	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	806	-	~ 196	449
Mov Cap-2 Maneuver	-	-	-	-	~ 196	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	580	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	0.3	\$ 387.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
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Capacity (veh/h)	203	-	-	806	-
HCM Lane V/C Ratio	1.727	-	-	0.017	-
HCM Control Delay (s)	\$ 387.6	-	-	9.5	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	23.9	-	-	0.1	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 Build Conditions  
 Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	470	24	135	338	121	363
Future Volume (vph)	470	24	135	338	121	363
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.899	
Flt Protected	0.950			0.986		
Satd. Flow (prot)	1925	1580	0	1967	1817	0
Flt Permitted	0.950			0.986		
Satd. Flow (perm)	1925	1580	0	1967	1817	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	9%	3%	1%	1%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 141.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	470	24	135	338	121	363
Future Vol, veh/h	470	24	135	338	121	363
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	9	3	1	1	0
Mvmt Flow	511	26	147	367	132	395

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	793	132	132	0	-	0
Stage 1	132	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Critical Hdwy	6.4	6.29	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	2.227	-	-	-
Pot Cap-1 Maneuver	~ 360	899	1447	-	-	0
Stage 1	899	-	-	-	-	0
Stage 2	517	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 314	899	1447	-	-	-
Mov Cap-2 Maneuver	~ 314	-	-	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	~ 451	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s\$	310.3	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1447	-	314	899	-
HCM Lane V/C Ratio	0.101	-	1.627	0.029	-
HCM Control Delay (s)	7.8	0\$	325.7	9.1	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	0.3	-	30.8	0.1	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

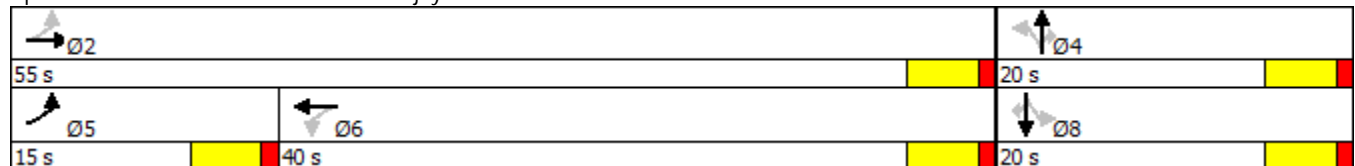
2026 Build Conditions  
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	629	10	11	584	186	4	2	10	120	3	84
Future Volume (vph)	149	629	10	11	584	186	4	2	10	120	3	84
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.968				0.850			0.850
Flt Protected		0.991			0.999			0.968			0.954	
Satd. Flow (prot)	0	1879	0	0	2082	0	0	1717	1561	0	1692	1723
Flt Permitted		0.729			0.988			0.820			0.725	
Satd. Flow (perm)	0	1382	0	0	2059	0	0	1454	1561	0	1286	1723
Satd. Flow (RTOR)		2			28				102			102
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.63	0.63	0.63	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	55.0		40.0	40.0		20.0	20.0	20.0	20.0	20.0	20.0
Total Split (%)	20.0%	73.3%		53.3%	53.3%		26.7%	26.7%	26.7%	26.7%	26.7%	26.7%
Maximum Green (s)	10.0	50.0		35.0	35.0		15.0	15.0	15.0	15.0	15.0	15.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 75.4  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road









## Queues

2026 Build Conditions

## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road

Weekday Evening

						
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	830	868	9	16	160	109
v/c Ratio	0.86	0.60	0.04	0.05	0.75	0.29
Control Delay	21.2	8.2	24.8	0.3	51.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	8.2	24.8	0.3	51.2	9.0
Queue Length 50th (ft)	253	176	3	0	69	3
Queue Length 95th (ft)	#576	292	10	0	107	29
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	969	1451	289	392	256	425
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.60	0.03	0.04	0.63	0.26

## Intersection Summary



















# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 Build Conditions

Weekday Evening

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	149	629	10	11	584	186	4	2	10	120	3	84	
Future Volume (vph)	149	629	10	11	584	186	4	2	10	120	3	84	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Frt		1.00			0.97			1.00	0.85		1.00	0.85	
Flt Protected		0.99			1.00			0.97	1.00		0.95	1.00	
Satd. Flow (prot)		1879			2083			1716	1561		1691	1723	
Flt Permitted		0.73			0.99			0.82	1.00		0.73	1.00	
Satd. Flow (perm)		1384			2060			1455	1561		1286	1723	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90	0.63	0.63	0.63	0.77	0.77	0.77	
Adj. Flow (vph)	157	662	11	12	649	207	6	3	16	156	4	109	
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	13	0	0	85	
Lane Group Flow (vph)	0	829	0	0	860	0	0	9	3	0	160	24	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2			6			4			8		
Permitted Phases	2			6			4		4	8		8	
Actuated Green, G (s)		52.9			52.9			12.5	12.5		12.5	12.5	
Effective Green, g (s)		52.9			52.9			12.5	12.5		12.5	12.5	
Actuated g/C Ratio		0.70			0.70			0.17	0.17		0.17	0.17	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		971			1445			241	258		213	285	
v/s Ratio Prot													
v/s Ratio Perm		c0.60			0.42			0.01	0.00		c0.12	0.01	
v/c Ratio		0.85			0.59			0.04	0.01		0.75	0.08	
Uniform Delay, d1		8.4			5.8			26.4	26.3		30.0	26.6	
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.1			0.4			0.0	0.0		12.4	0.0	
Delay (s)		15.5			6.2			26.4	26.3		42.4	26.7	
Level of Service		B			A			C	C		D	C	
Approach Delay (s)		15.5			6.2			26.3			36.0		
Approach LOS		B			A			C			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			14.4									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.90										
Actuated Cycle Length (s)			75.4									Sum of lost time (s)	15.0
Intersection Capacity Utilization			110.6%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

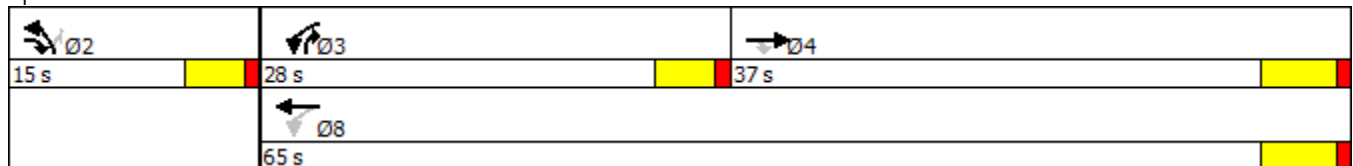
2026 Build Conditions  
 Saturday Midday

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	573	34	508	466	45	571
Future Volume (vph)	573	34	508	466	45	571
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1818	1561	1711	1749	1711	1546
Flt Permitted			0.167		0.950	
Satd. Flow (perm)	1818	1561	301	1749	1711	1546
Satd. Flow (RTOR)		37				139
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	0%	2%	5%	2%	1%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	4	2	3	8	2	3
Permitted Phases		4	8			2
Detector Phase	4	2	3	8	2	3
Switch Phase						
Minimum Initial (s)	10.0	6.0	6.0	10.0	6.0	6.0
Minimum Split (s)	15.5	10.5	10.5	15.5	10.5	10.5
Total Split (s)	37.0	15.0	28.0	65.0	15.0	28.0
Total Split (%)	46.3%	18.8%	35.0%	81.3%	18.8%	35.0%
Maximum Green (s)	31.5	10.5	23.5	59.5	10.5	23.5
Yellow Time (s)	4.5	3.5	3.5	4.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.5	4.5	5.5	4.5	4.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	2.0	2.0	4.0	2.0	2.0
Recall Mode	Min	None	None	Min	None	None

Intersection Summary

Cycle Length: 80  
 Actuated Cycle Length: 67.8  
 Natural Cycle: 70  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
1: Shawsheen Street & East Street/Dascomb Road

2026 Build Conditions  
Saturday MIDDAY













	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	616	37	546	501	48	614
v/c Ratio	0.82	0.04	0.82	0.35	0.26	0.83
Control Delay	30.8	2.7	24.7	3.5	35.7	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	2.7	24.7	3.5	35.7	23.9
Queue Length 50th (ft)	249	0	145	51	22	185
Queue Length 95th (ft)	#457	11	#340	102	53	327
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125	200			175
Base Capacity (vph)	902	1048	763	1467	283	838
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.04	0.72	0.34	0.17	0.73

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 Build Conditions  
 Saturday MIDDAY

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	573	34	508	466	45	571		
Future Volume (veh/h)	573	34	508	466	45	571		
Number	4	14	3	8	5	12		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1900	1863	1810	1863	1881		
Adj Flow Rate, veh/h	616	37	546	501	48	614		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	1	0	2	5	2	1		
Cap, veh/h	770	911	594	1263	275	602		
Arrive On Green	0.41	0.41	0.22	0.70	0.15	0.15		
Sat Flow, veh/h	1881	1615	1774	1810	1774	1599		
Grp Volume(v), veh/h	616	37	546	501	48	614		
Grp Sat Flow(s),veh/h/ln	1881	1615	1774	1810	1774	1599		
Q Serve(g_s), s	19.5	0.7	12.4	7.8	1.6	10.5		
Cycle Q Clear(g_c), s	19.5	0.7	12.4	7.8	1.6	10.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	770	911	594	1263	275	602		
V/C Ratio(X)	0.80	0.04	0.92	0.40	0.17	1.02		
Avail Cap(c_a), veh/h	874	1000	816	1587	275	602		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.6	6.6	13.9	4.3	24.9	21.1		
Incr Delay (d2), s/veh	5.2	0.0	10.4	0.3	0.1	41.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	11.2	0.4	11.4	4.0	0.8	18.1		
LnGrp Delay(d),s/veh	22.8	6.6	24.3	4.6	25.0	62.8		
LnGrp LOS	C	A	C	A	C	F		
Approach Vol, veh/h	653			1047	662			
Approach Delay, s/veh	21.9			14.9	60.1			
Approach LOS	C			B	E			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4				8
Phs Duration (G+Y+Rc), s		15.0	19.5	33.3				52.8
Change Period (Y+Rc), s		4.5	4.5	5.5				5.5
Max Green Setting (Gmax), s		10.5	23.5	31.5				59.5
Max Q Clear Time (g_c+I1), s		12.5	14.4	21.5				9.8
Green Ext Time (p_c), s		0.0	0.7	6.3				14.8
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			29.5					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 Build Conditions  
 Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	1143	974	1	1	0
Future Volume (vph)	1	1143	974	1	1	0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	1818	2111	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1818	2111	0	1805	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	1	1143	974	1	1	0
Future Vol, veh/h	1	1143	974	1	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	1	1178	1004	1	1	0












Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1004	0	0 2184 1004
Stage 1	-	-	- 1004 -
Stage 2	-	-	- 1180 -
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	698	-	- 51 296
Stage 1	-	-	- 357 -
Stage 2	-	-	- 295 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	698	-	- 51 296
Mov Cap-2 Maneuver	-	-	- 51 -
Stage 1	-	-	- 357 -
Stage 2	-	-	- 294 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	77
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	698	-	-	-	51
HCM Lane V/C Ratio	0.001	-	-	-	0.02
HCM Control Delay (s)	10.2	0	-	-	77
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

2026 Build Conditions  
Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1036	108	192	882	93	169
Future Volume (vph)	1036	108	192	882	93	169
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1982	0	1668	1925	1685	1507
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1982	0	1668	1925	1685	1507
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	75.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	1036	108	192	882	93	169
Future Vol, veh/h	1036	108	192	882	93	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	80	-	0	200
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	1	0	1	2	0	0
Mvmt Flow	1079	113	200	919	97	176

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1192
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.11
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.209
Pot Cap-1 Maneuver	-	-	589
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	589
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.5	\$ 701.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	22	249	-	-	589	-
HCM Lane V/C Ratio	4.403	0.707	-	-	0.34	-
HCM Control Delay (s)	\$ 1888.7	48.1	-	-	14.2	-
HCM Lane LOS	F	E	-	-	B	-
HCM 95th %tile Q(veh)	12.3	4.8	-	-	1.5	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
4: Site Driveway/Frontage Road & Dascomb Road

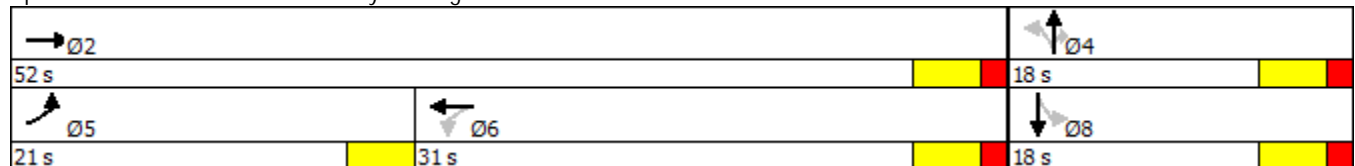
2026 Build Conditions  
Saturday Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	720	45	136	608	222	40	66	166	117	118	426
Future Volume (vph)	440	720	45	136	608	222	40	66	166	117	118	426
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991				0.850			0.850			0.850
Flt Protected	0.950				0.991		0.950				0.976	
Satd. Flow (prot)	1770	1863	0	0	3536	1830	1711	1801	1531	0	2071	1777
Flt Permitted	0.950				0.689		0.421				0.807	
Satd. Flow (perm)	1770	1863	0	0	2458	1830	758	1801	1531	0	1712	1777
Satd. Flow (RTOR)		10				181			173			444
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	0%	2%	2%	2%	1%	2%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Free	Perm	NA	Perm	Perm	NA	Free
Protected Phases	5	2			6			4			8	
Permitted Phases				6		Free	4		4	8		Free
Detector Phase	5	2		6	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	15.0	15.0	
Total Split (s)	21.0	52.0		31.0	31.0		18.0	18.0	18.0	18.0	18.0	
Total Split (%)	30.0%	74.3%		44.3%	44.3%		25.7%	25.7%	25.7%	25.7%	25.7%	
Maximum Green (s)	17.5	47.0		26.0	26.0		13.0	13.0	13.0	13.0	13.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.0	1.5		1.5	1.5		1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	3.5	5.0			5.0		5.0	5.0	5.0		5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Recall Mode	None	Min		Min	Min		None	None	None	None	None	

Intersection Summary










Cycle Length: 70  
 Actuated Cycle Length: 66.8  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 4: Site Driveway/Frontage Road & Dascomb Road



Queues  
4: Site Driveway/Frontage Road & Dascomb Road

2026 Build Conditions  
Saturday MIDDAY





















									
Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	458	797	775	231	42	69	173	245	444
v/c Ratio	0.98	0.64	0.89	0.13	0.31	0.21	0.42	0.81	0.25
Control Delay	66.8	9.2	34.9	0.1	31.6	26.1	8.1	48.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.8	9.2	34.9	0.1	31.6	26.1	8.1	48.9	0.3
Queue Length 50th (ft)	~217	162	157	0	16	25	0	101	0
Queue Length 95th (ft)	#383	261	#258	0	44	58	47	#209	0
Internal Link Dist (ft)		120	920			755		695	
Turn Bay Length (ft)	150			130	150		150		
Base Capacity (vph)	467	1323	963	1830	148	353	439	335	1777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.98	0.60	0.80	0.13	0.28	0.20	0.39	0.73	0.25

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
 4: Site Driveway/Frontage Road & Dascomb Road

2026 Build Conditions  
 Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	440	720	45	136	608	222	40	66	166	117	118	426
Future Volume (veh/h)	440	720	45	136	608	222	40	66	166	117	118	426
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1880	1900	1900	1878	1976	1863	1863	1863	1976	1947	1918
Adj Flow Rate, veh/h	458	750	47	142	633	0	42	69	173	122	123	0
Adj No. of Lanes	1	1	0	0	2	1	1	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	1	1	1	0	2	2	2	2	2	3
Cap, veh/h	459	1156	72	221	824	587	305	358	304	198	137	313
Arrive On Green	0.26	0.66	0.66	0.35	0.35	0.00	0.19	0.19	0.19	0.19	0.19	0.00
Sat Flow, veh/h	1774	1751	110	417	2357	1680	1263	1863	1583	615	715	1631
Grp Volume(v), veh/h	458	0	797	339	436	0	42	69	173	245	0	0
Grp Sat Flow(s),veh/h/ln	1774	0	1861	1151	1623	1680	1263	1863	1583	1330	0	1631
Q Serve(g_s), s	17.4	0.0	17.2	15.9	16.2	0.0	0.0	2.1	6.7	10.3	0.0	0.0
Cycle Q Clear(g_c), s	17.4	0.0	17.2	17.9	16.2	0.0	2.3	2.1	6.7	12.4	0.0	0.0
Prop In Lane	1.00		0.06	0.42		1.00	1.00		1.00	0.50		1.00
Lane Grp Cap(c), veh/h	459	0	1228	478	567	587	305	358	304	335	0	313
V/C Ratio(X)	1.00	0.00	0.65	0.71	0.77	0.00	0.14	0.19	0.57	0.73	0.00	0.00
Avail Cap(c_a), veh/h	459	0	1293	516	624	646	305	358	304	335	0	313
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.0	0.0	6.8	19.6	19.6	0.0	23.0	22.9	24.8	27.6	0.0	0.0
Incr Delay (d2), s/veh	41.4	0.0	0.8	3.3	4.5	0.0	0.1	0.1	1.6	6.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.7	0.0	8.9	6.2	7.9	0.0	0.7	1.1	3.1	5.1	0.0	0.0
LnGrp Delay(d),s/veh	66.4	0.0	7.6	22.9	24.1	0.0	23.1	23.0	26.4	34.5	0.0	0.0
LnGrp LOS	E		A	C	C		C	C	C	C		
Approach Vol, veh/h		1255			775			284			245	
Approach Delay, s/veh		29.1			23.6			25.1			34.5	
Approach LOS		C			C			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		49.6		18.0	21.0	28.6		18.0				
Change Period (Y+Rc), s		5.0		5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s		47.0		13.0	17.5	26.0		13.0				
Max Q Clear Time (g_c+I1), s		19.2		8.7	19.4	19.9		14.4				
Green Ext Time (p_c), s		8.9		0.8	0.0	3.8		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			27.5									
HCM 2010 LOS			C									

Lanes, Volumes, Timings  
 5: I-93 NB Ramps & Dascomb Road

2026 Build Conditions  
 Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	390	613	97	536	430	138
Future Volume (vph)	390	613	97	536	430	138
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.917					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1963	0	1805	1881	2006	1812
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1963	0	1805	1881	2006	1812
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	2%	1%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 119.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	390	613	97	536	430	138
Future Vol, veh/h	390	613	97	536	430	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Yield	-	None	-	Yield
Storage Length	-	-	200	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	0	1	2	1
Mvmt Flow	402	632	100	553	443	142

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	402
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1168
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1168
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	\$ 462.2
HCM LOS			F













Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	199	650	-	-	1168	-
HCM Lane V/C Ratio	2.228	0.219	-	-	0.086	-
HCM Control Delay (s)	\$ 606.6	12.1	-	-	8.4	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	35.3	0.8	-	-	0.3	-

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 6: Frontage Road & I-93 SB Ramps

2026 Build Conditions  
 Saturday MIDDAY

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						 
Traffic Volume (vph)	550	11	92	643	21	78
Future Volume (vph)	550	11	92	643	21	78
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.990
Satd. Flow (prot)	1967	1830	2027	1812	0	3574
Flt Permitted	0.950					0.990
Satd. Flow (perm)	1967	1830	2027	1812	0	3574
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	9.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	550	11	92	643	21	78
Future Vol, veh/h	550	11	92	643	21	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	Yield	-	None
Storage Length	0	0	-	0	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	0	0	1	0	0
Mvmt Flow	604	12	101	707	23	86










Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	190	101	0	0	101
Stage 1	101	-	-	-	-
Stage 2	89	-	-	-	-
Critical Hdwy	6.66	6.2	-	-	4.1
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-
Follow-up Hdwy	3.538	3.3	-	-	2.2
Pot Cap-1 Maneuver	785	960	-	-	1504
Stage 1	917	-	-	-	-
Stage 2	919	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	772	960	-	-	1504
Mov Cap-2 Maneuver	772	-	-	-	-
Stage 1	917	-	-	-	-
Stage 2	904	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24	0	1.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	772	960	1504	-
HCM Lane V/C Ratio	-	-	0.783	0.013	0.015	-
HCM Control Delay (s)	-	-	24.3	8.8	7.4	0
HCM Lane LOS	-	-	C	A	A	A
HCM 95th %tile Q(veh)	-	-	7.9	0	0	-

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 Build Conditions  
Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	386	182	7	383	217	11
Future Volume (vph)	386	182	7	383	217	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.957				0.993	
Flt Protected				0.999	0.955	
Satd. Flow (prot)	1940	0	0	1961	1682	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1940	0	0	1961	1682	0
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	10.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	386	182	7	383	217	11
Future Vol, veh/h	386	182	7	383	217	11
Conflicting Peds, #/hr	0	1	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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	415	196	8	412	233	12











Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	612	0	941
Stage 1	-	-	-	-	514
Stage 2	-	-	-	-	427
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	-	-	977	-	295
Stage 1	-	-	-	-	605
Stage 2	-	-	-	-	662
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	977	-	292
Mov Cap-2 Maneuver	-	-	-	-	292
Stage 1	-	-	-	-	605
Stage 2	-	-	-	-	655

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	54.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	299	-	-	977	-
HCM Lane V/C Ratio	0.82	-	-	0.008	-
HCM Control Delay (s)	54.5	-	-	8.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	6.8	-	-	0	-

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 Build Conditions  
 Saturday MIDDAY

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	365	14	12	90	86	380
Future Volume (vph)	365	14	12	90	86	380
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.890	
Flt Protected	0.950			0.994		
Satd. Flow (prot)	1925	1595	0	1973	1789	0
Flt Permitted	0.950			0.994		
Satd. Flow (perm)	1925	1595	0	1973	1789	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	18%	0%	0%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 9.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	365	14	12	90	86	380
Future Vol, veh/h	365	14	12	90	86	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	18	0	0	1
Mvmt Flow	397	15	13	98	93	413

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	217	93	93	0	-	0
Stage 1	93	-	-	-	-	-
Stage 2	124	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.28	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.362	-	-	-
Pot Cap-1 Maneuver	776	948	1407	-	-	0
Stage 1	936	-	-	-	-	0
Stage 2	907	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	768	948	1407	-	-	-
Mov Cap-2 Maneuver	768	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	14.4	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
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Capacity (veh/h)	1407	-	768	948	-
HCM Lane V/C Ratio	0.009	-	0.517	0.016	-
HCM Control Delay (s)	7.6	0	14.6	8.9	-
HCM Lane LOS	A	A	B	A	-
HCM 95th %tile Q(veh)	0	-	3	0	-

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

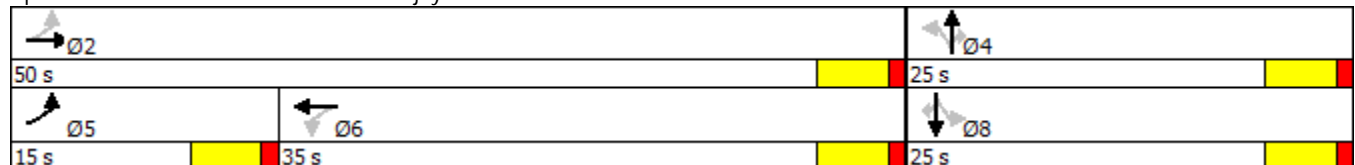
2026 Build Conditions  
Saturday Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	477	10	12	512	62	9	1	10	74	4	76
Future Volume (vph)	64	477	10	12	512	62	9	1	10	74	4	76
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				0.98
Frt		0.997			0.986				0.850			0.850
Flt Protected		0.994			0.999			0.957			0.955	
Satd. Flow (prot)	0	1867	0	0	2103	0	0	1697	1561	0	1694	1723
Flt Permitted		0.881			0.987			0.694			0.724	
Satd. Flow (perm)	0	1655	0	0	2077	0	0	1229	1561	0	1284	1685
Satd. Flow (RTOR)		2			9				102			109
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.93	0.93	0.93	0.90	0.90	0.90	0.56	0.56	0.56	0.70	0.70	0.70
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	15.0	50.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	20.0%	66.7%		46.7%	46.7%		33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	10.0	45.0		30.0	30.0		20.0	20.0	20.0	20.0	20.0	20.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 75  
 Actuated Cycle Length: 40.6  
 Natural Cycle: 50  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road









## Queues

2026 Build Conditions

## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road



















Saturday MIDDAY

						
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	593	651	18	18	112	109
v/c Ratio	0.58	0.50	0.07	0.04	0.39	0.24
Control Delay	9.6	7.9	16.2	0.2	20.4	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	7.9	16.2	0.2	20.4	6.1
Queue Length 50th (ft)	79	80	3	0	20	0
Queue Length 95th (ft)	206	195	12	0	55	17
Internal Link Dist (ft)	2295	1020	1377		1262	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1569	1684	647	870	676	939
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.39	0.03	0.02	0.17	0.12
Intersection Summary						

HCM Signalized Intersection Capacity Analysis  
7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 Build Conditions

Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	477	10	12	512	62	9	1	10	74	4	76
Future Volume (vph)	64	477	10	12	512	62	9	1	10	74	4	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		1.00			0.99			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.96	1.00		0.95	1.00
Satd. Flow (prot)		1868			2102			1694	1561		1693	1684
Flt Permitted		0.88			0.99			0.69	1.00		0.72	1.00
Satd. Flow (perm)		1655			2077			1229	1561		1285	1684
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.56	0.56	0.56	0.70	0.70	0.70
Adj. Flow (vph)	69	513	11	13	569	69	16	2	18	106	6	109
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	15	0	0	89
Lane Group Flow (vph)	0	592	0	0	647	0	0	18	3	0	112	20
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)		23.9			23.9			7.4	7.4		7.4	7.4
Effective Green, g (s)		23.9			23.9			7.4	7.4		7.4	7.4
Actuated g/C Ratio		0.58			0.58			0.18	0.18		0.18	0.18
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		957			1201			220	279		230	301
v/s Ratio Prot												
v/s Ratio Perm		c0.36			0.31			0.01	0.00		c0.09	0.01
v/c Ratio		0.62			0.54			0.08	0.01		0.49	0.06
Uniform Delay, d1		5.7			5.3			14.1	13.9		15.2	14.1
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8			0.2			0.1	0.0		0.6	0.0
Delay (s)		6.6			5.6			14.2	13.9		15.8	14.1
Level of Service		A			A			B	B		B	B
Approach Delay (s)		6.6			5.6			14.1			15.0	
Approach LOS		A			A			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			7.5									A
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			41.3							15.0		
Intersection Capacity Utilization			79.8%									D
Analysis Period (min)			15									
c Critical Lane Group												



2026 Build with Mitigation Conditions



Lanes, Volumes, Timings  
1: Shawsheen Street & East Street/Dascomb Road

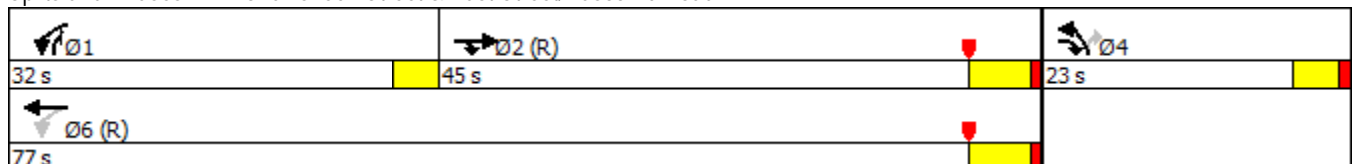
2026 Build with Mitigation Conditions  
Weekday Morning

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	611	43	555	539	47	617
Future Volume (vph)	611	43	555	539	47	617
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1733	1487	1631	1717	1572	1487
Flt Permitted			0.110		0.950	
Satd. Flow (perm)	1733	1487	189	1717	1572	1487
Satd. Flow (RTOR)		41				124
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	6%	5%	7%	7%	11%	5%
Shared Lane Traffic (%)						
Turn Type	NA	pt+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	2	2 4	1	6	4	1
Permitted Phases			6			4
Detector Phase	2	2 4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	6.0
Minimum Split (s)	15.5		9.5	15.5	10.5	9.5
Total Split (s)	45.0		32.0	77.0	23.0	32.0
Total Split (%)	45.0%		32.0%	77.0%	23.0%	32.0%
Maximum Green (s)	39.5		28.5	71.5	18.5	28.5
Yellow Time (s)	4.5		3.5	4.5	3.5	3.5
All-Red Time (s)	1.0		0.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5		3.5	5.5	4.5	3.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0		2.0	4.0	2.0	2.0
Recall Mode	C-Min		None	C-Min	None	None

Intersection Summary







Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 73 (73%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
1: Shawsheen Street & East Street/Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Morning













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	650	46	590	573	50	656
v/c Ratio	0.92	0.06	0.80	0.39	0.40	0.81
Control Delay	48.9	4.2	28.3	3.3	52.6	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	4.2	28.3	3.3	52.6	26.1
Queue Length 50th (ft)	394	2	256	6	31	272
Queue Length 95th (ft)	#627	17	#501	54	67	444
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125				175
Base Capacity (vph)	707	963	736	1463	290	807
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.05	0.80	0.39	0.17	0.81

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 Build with Mitigation Conditions  
 Weekday Morning

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	611	43	555	539	47	617		
Future Volume (veh/h)	611	43	555	539	47	617		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1792	1810	1776	1776	1712	1810		
Adj Flow Rate, veh/h	650	46	590	573	50	656		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	6	5	7	7	11	5		
Cap, veh/h	708	892	590	1270	302	723		
Arrive On Green	0.40	0.40	0.48	1.00	0.19	0.19		
Sat Flow, veh/h	1792	1538	1691	1776	1630	1538		
Grp Volume(v), veh/h	650	46	590	573	50	656		
Grp Sat Flow(s),veh/h/ln	1792	1538	1691	1776	1630	1538		
Q Serve(g_s), s	34.4	1.3	28.5	0.0	2.6	18.5		
Cycle Q Clear(g_c), s	34.4	1.3	28.5	0.0	2.6	18.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	708	892	590	1270	302	723		
V/C Ratio(X)	0.92	0.05	1.00	0.45	0.17	0.91		
Avail Cap(c_a), veh/h	708	892	590	1270	302	723		
HCM Platoon Ratio	1.00	1.00	1.67	1.67	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	28.7	9.1	17.9	0.0	34.3	24.5		
Incr Delay (d2), s/veh	18.8	0.1	37.0	1.2	0.1	14.9		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	20.7	0.8	21.9	0.4	1.2	30.7		
LnGrp Delay(d),s/veh	47.6	9.2	54.9	1.2	34.4	39.4		
LnGrp LOS	D	A	D	A	C	D		
Approach Vol, veh/h	696			1163	706			
Approach Delay, s/veh	45.0			28.4	39.0			
Approach LOS	D			C	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	32.0	45.0		23.0		77.0		
Change Period (Y+Rc), s	3.5	5.5		4.5		5.5		
Max Green Setting (Gmax), s	28.5	39.5		18.5		71.5		
Max Q Clear Time (g_c+I1), s	30.5	36.4		20.5		2.0		
Green Ext Time (p_c), s	0.0	2.4		0.0		18.6		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			35.9					
HCM 2010 LOS			D					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 Build with Mitigation Conditions  
 Weekday Morning

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			 		 	
Traffic Volume (vph)	12	1216	1090	14	1	4
Future Volume (vph)	12	1216	1090	14	1	4
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt			0.998		0.892	
Flt Protected					0.990	
Satd. Flow (prot)	0	1734	3255	0	1049	0
Flt Permitted					0.990	
Satd. Flow (perm)	0	1734	3255	0	1049	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	7%	7%	100%	50%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

HCM 2010 TWSC  
 2: Dascomb Road & HP Driveway

2026 Build with Mitigation Conditions  
 Weekday Morning

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↕↔		↕	
Traffic Vol, veh/h	12	1216	1090	14	1	4
Future Vol, veh/h	12	1216	1090	14	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	6	7	7	100	50
Mvmt Flow	13	1308	1172	15	1	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1172	0	0 2505 586
Stage 1	-	-	- 1172 -
Stage 2	-	-	- 1333 -
Critical Hdwy	4.1	-	- 8.1 7.65
Critical Hdwy Stg 1	-	-	- 7.3 -
Critical Hdwy Stg 2	-	-	- 6.9 -
Follow-up Hdwy	2.2	-	- 4.45 3.775
Pot Cap-1 Maneuver	603	-	- 9 367
Stage 1	-	-	- 142 -
Stage 2	-	-	- 128 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	603	-	- 8 367
Mov Cap-2 Maneuver	-	-	- 8 -
Stage 1	-	-	- 142 -
Stage 2	-	-	- 118 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	118.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	603	-	-	-	37
HCM Lane V/C Ratio	0.021	-	-	-	0.145
HCM Control Delay (s)	11.1	0	-	-	118.2
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

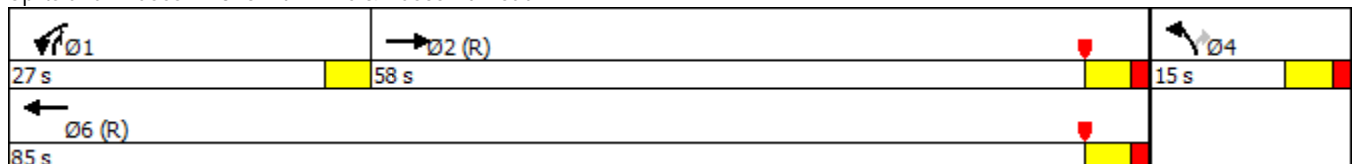
2026 Build with Mitigation Conditions  
Weekday Morning

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1163	54	193	1074	30	55
Future Volume (vph)	1163	54	193	1074	30	55
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.993					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3257	0	1662	3261	1586	1369
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3257	0	1662	3261	1586	1369
Satd. Flow (RTOR)	7					43
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	15%	5%	7%	10%	14%
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases						4
Detector Phase	2		1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	6.0
Minimum Split (s)	15.0		9.5	15.0	11.0	9.5
Total Split (s)	58.0		27.0	85.0	15.0	27.0
Total Split (%)	58.0%		27.0%	85.0%	15.0%	27.0%
Maximum Green (s)	53.0		23.5	80.0	10.0	23.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.5		0.0	1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		3.5	5.0	5.0	3.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Recall Mode	C-Min		None	C-Min	None	None

Intersection Summary






Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 6 (6%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

Splits and Phases: 3: Smith Drive & Dascomb Road



Queues  
3: Smith Drive & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Morning












					
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1337	212	1180	33	60
v/c Ratio	0.61	0.75	0.41	0.29	0.16
Control Delay	11.2	50.3	1.4	50.5	10.9
Queue Delay	0.1	0.0	0.1	0.0	0.0
Total Delay	11.3	50.3	1.5	50.5	10.9
Queue Length 50th (ft)	205	135	63	21	8
Queue Length 95th (ft)	m455	196	31	50	33
Internal Link Dist (ft)	385		545	920	
Turn Bay Length (ft)		200			200
Base Capacity (vph)	2177	390	2913	158	456
Starvation Cap Reductn	0	0	370	0	0
Spillback Cap Reductn	122	0	0	0	1
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.65	0.54	0.46	0.21	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary  
 3: Smith Drive & Dascomb Road

2026 Build with Mitigation Conditions  
 Weekday Morning

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	1163	54	193	1074	30	55		
Future Volume (veh/h)	1163	54	193	1074	30	55		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1786	1900	1810	1776	1727	1667		
Adj Flow Rate, veh/h	1278	59	212	1180	33	60		
Adj No. of Lanes	2	0	1	2	1	1		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91		
Percent Heavy Veh, %	6	6	5	7	10	14		
Cap, veh/h	2214	102	240	2849	91	276		
Arrive On Green	0.45	0.45	0.28	1.00	0.06	0.06		
Sat Flow, veh/h	3392	152	1723	3463	1645	1417		
Grp Volume(v), veh/h	656	681	212	1180	33	60		
Grp Sat Flow(s),veh/h/ln	1696	1759	1723	1687	1645	1417		
Q Serve(g_s), s	28.7	28.8	11.8	0.0	1.9	3.6		
Cycle Q Clear(g_c), s	28.7	28.8	11.8	0.0	1.9	3.6		
Prop In Lane		0.09	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1137	1179	240	2849	91	276		
V/C Ratio(X)	0.58	0.58	0.88	0.41	0.36	0.22		
Avail Cap(c_a), veh/h	1137	1179	405	2849	165	339		
HCM Platoon Ratio	0.67	0.67	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.81	0.81	1.00	1.00		
Uniform Delay (d), s/veh	17.0	17.0	35.3	0.0	45.5	33.8		
Incr Delay (d2), s/veh	2.1	2.1	5.1	0.4	0.9	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	14.1	14.7	5.9	0.1	0.9	3.0		
LnGrp Delay(d),s/veh	19.1	19.1	40.4	0.4	46.4	34.0		
LnGrp LOS	B	B	D	A	D	C		
Approach Vol, veh/h	1337			1392	93			
Approach Delay, s/veh	19.1			6.5	38.4			
Approach LOS	B			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	17.4	72.0		10.5		89.5		
Change Period (Y+Rc), s	3.5	5.0		5.0		5.0		
Max Green Setting (Gmax), s	23.5	53.0		10.0		80.0		
Max Q Clear Time (g_c+I1), s	13.8	30.8		5.6		2.0		
Green Ext Time (p_c), s	0.2	13.4		0.0		21.7		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			13.5					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
4: Site Driveway/Frontage Road & Dascomb Road

2026 Build with Mitigation Conditions

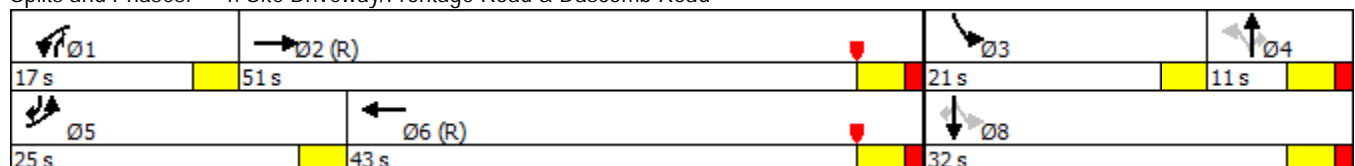
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	414	787	17	96	799	534	10	20	44	312	115	458
Future Volume (vph)	414	787	17	96	799	534	10	20	44	312	115	458
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3164	1729	0	1711	3355	1759	1711	1801	1531	1711	1801	1759
Flt Permitted	0.950			0.950						0.563		
Satd. Flow (perm)	3164	1729	0	1711	3355	1759	1801	1801	1531	1014	1801	1759
Satd. Flow (RTOR)		1				284			98			54
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	7%	6%	2%	2%	4%	1%	2%	2%	2%	2%	2%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6			4	1	3	8	5
Permitted Phases						Free	4		4	8		8
Detector Phase	5	2		1	6		4	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	15.0		9.5	15.0		11.0	11.0	9.5	9.5	11.0	9.5
Total Split (s)	25.0	51.0		17.0	43.0		11.0	11.0	17.0	21.0	32.0	25.0
Total Split (%)	25.0%	51.0%		17.0%	43.0%		11.0%	11.0%	17.0%	21.0%	32.0%	25.0%
Maximum Green (s)	21.5	46.0		13.5	38.0		6.0	6.0	13.5	17.5	27.0	21.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5		1.5	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	None

Intersection Summary












Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated

Splits and Phases: 4: Site Driveway/Frontage Road & Dascomb Road



Queues  
4: Site Driveway/Frontage Road & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Morning

											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	440	855	102	850	568	11	21	47	332	122	487
v/c Ratio	0.77	0.89	0.59	0.55	0.32	0.10	0.19	0.14	0.91	0.30	0.59
Control Delay	54.5	27.1	51.3	22.1	0.3	46.7	49.1	1.1	48.9	21.2	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.5	27.1	51.3	22.1	0.3	46.7	49.1	1.1	48.9	21.2	6.6
Queue Length 50th (ft)	101	~503	65	240	0	7	13	0	67	25	27
Queue Length 95th (ft)	207	#823	m77	m288	m0	25	37	3	#245	70	64
Internal Link Dist (ft)		545		920			920			695	
Turn Bay Length (ft)	250		160		130	150		150			150
Base Capacity (vph)	680	966	230	1543	1759	108	108	386	366	486	889
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.89	0.44	0.55	0.32	0.10	0.19	0.12	0.91	0.25	0.55

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary  
 4: Site Driveway/Frontage Road & Dascomb Road

2026 Build with Mitigation Conditions  
 Weekday Morning

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	414	787	17	96	799	534	10	20	44	312	115	458
Future Volume (veh/h)	414	787	17	96	799	534	10	20	44	312	115	458
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1776	1794	1900	1863	1827	1956	1863	1863	1863	1863	1863	1956
Adj Flow Rate, veh/h	440	837	18	102	850	0	11	21	47	332	122	487
Adj No. of Lanes	2	1	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	7	6	6	2	4	1	2	2	2	2	2	1
Cap, veh/h	501	915	20	128	1535	735	121	112	209	448	503	703
Arrive On Green	0.31	1.00	1.00	0.10	0.59	0.00	0.06	0.06	0.06	0.06	0.09	0.09
Sat Flow, veh/h	3281	1750	38	1774	3471	1663	809	1863	1583	1774	1863	1663
Grp Volume(v), veh/h	440	0	855	102	850	0	11	21	47	332	122	487
Grp Sat Flow(s),veh/h/ln	1640	0	1787	1774	1736	1663	809	1863	1583	1774	1863	1663
Q Serve(g_s), s	12.7	0.0	0.0	5.6	15.0	0.0	1.3	1.1	2.7	17.0	6.1	23.3
Cycle Q Clear(g_c), s	12.7	0.0	0.0	5.6	15.0	0.0	1.3	1.1	2.7	17.0	6.1	23.3
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	501	0	934	128	1535	735	121	112	209	448	503	703
V/C Ratio(X)	0.88	0.00	0.92	0.80	0.55	0.00	0.09	0.19	0.22	0.74	0.24	0.69
Avail Cap(c_a), veh/h	705	0	934	239	1535	735	121	112	209	448	503	703
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.77	0.00	0.77	0.46	0.46	0.00	1.00	1.00	1.00	0.78	0.78	0.78
Uniform Delay (d), s/veh	33.8	0.0	0.0	44.5	14.6	0.0	44.8	44.7	38.8	39.0	36.0	29.2
Incr Delay (d2), s/veh	5.6	0.0	12.2	2.0	0.7	0.0	0.1	0.3	0.2	4.5	0.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.1	0.0	3.2	2.8	7.2	0.0	0.3	0.6	1.2	8.8	3.2	11.1
LnGrp Delay(d),s/veh	39.4	0.0	12.2	46.4	15.2	0.0	44.9	45.0	39.0	43.5	36.1	31.1
LnGrp LOS	D		B	D	B		D	D	D	D	D	C
Approach Vol, veh/h		1295			952			79			941	
Approach Delay, s/veh		21.4			18.6			41.4			36.1	
Approach LOS		C			B			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	10.7	57.3	21.0	11.0	18.8	49.2		32.0				
Change Period (Y+Rc), s	3.5	5.0	3.5	5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	46.0	17.5	6.0	21.5	38.0		27.0				
Max Q Clear Time (g_c+I1), s	7.6	2.0	19.0	4.7	14.7	17.0		25.3				
Green Ext Time (p_c), s	0.1	10.8	0.0	0.3	0.6	8.7		0.4				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			25.3									
HCM 2010 LOS			C									

Lanes, Volumes, Timings  
5: I-93 NB Ramps & Dascomb Road

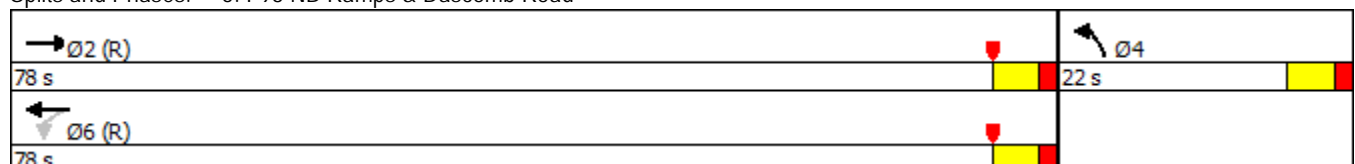
2026 Build with Mitigation Conditions  
Weekday Morning

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	719	424	88	1059	370	197
Future Volume (vph)	719	424	88	1059	370	197
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1783	1446	1678	1818	3193	1516
Flt Permitted			0.306		0.950	
Satd. Flow (perm)	1783	1446	540	1818	3193	1516
Satd. Flow (RTOR)		191				210
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	3%	8%	4%	1%	6%	3%
Shared Lane Traffic (%)						
Turn Type	NA	Free	Perm	NA	Prot	Free
Protected Phases	2			6	4	
Permitted Phases		Free	6			Free
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	6.0	
Minimum Split (s)	15.0		15.0	15.0	11.0	
Total Split (s)	78.0		78.0	78.0	22.0	
Total Split (%)	78.0%		78.0%	78.0%	22.0%	
Maximum Green (s)	73.0		73.0	73.0	17.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Min		C-Min	C-Min	None	

Intersection Summary







Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 52 (52%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

Splits and Phases: 5: I-93 NB Ramps & Dascomb Road



Queues  
5: I-93 NB Ramps & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Morning













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	765	451	94	1127	394	210
v/c Ratio	0.58	0.31	0.23	0.83	0.80	0.14
Control Delay	3.6	0.3	5.9	16.2	53.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	0.3	5.9	16.2	53.6	0.2
Queue Length 50th (ft)	66	0	16	425	124	0
Queue Length 95th (ft)	m20	m0	37	689	175	0
Internal Link Dist (ft)	920			2295	920	
Turn Bay Length (ft)		200	200		200	200
Base Capacity (vph)	1329	1446	402	1355	542	1516
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.31	0.23	0.83	0.73	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary  
5: I-93 NB Ramps & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Morning

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	719	424	88	1059	370	197		
Future Volume (veh/h)	719	424	88	1059	370	197		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1759	1827	1881	1792	1845		
Adj Flow Rate, veh/h	765	0	94	1127	394	0		
Adj No. of Lanes	1	1	1	1	2	1		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Percent Heavy Veh, %	3	8	4	1	6	3		
Cap, veh/h	1403	1138	594	1431	461	218		
Arrive On Green	1.00	0.00	0.76	0.76	0.14	0.00		
Sat Flow, veh/h	1845	1495	686	1881	3312	1568		
Grp Volume(v), veh/h	765	0	94	1127	394	0		
Grp Sat Flow(s),veh/h/ln	1845	1495	686	1881	1656	1568		
Q Serve(g_s), s	0.0	0.0	3.8	35.8	11.6	0.0		
Cycle Q Clear(g_c), s	0.0	0.0	3.8	35.8	11.6	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1403	1138	594	1431	461	218		
V/C Ratio(X)	0.55	0.00	0.16	0.79	0.85	0.00		
Avail Cap(c_a), veh/h	1403	1138	594	1431	563	267		
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.39	0.00	0.57	0.57	1.00	0.00		
Uniform Delay (d), s/veh	0.0	0.0	3.3	7.1	42.0	0.0		
Incr Delay (d2), s/veh	0.6	0.0	0.3	2.6	9.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.8	19.2	5.9	0.0		
LnGrp Delay(d),s/veh	0.6	0.0	3.6	9.7	51.0	0.0		
LnGrp LOS	A		A	A	D			
Approach Vol, veh/h	765			1221	394			
Approach Delay, s/veh	0.6			9.3	51.0			
Approach LOS	A			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		81.1		18.9		81.1		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		73.0		17.0		73.0		
Max Q Clear Time (g_c+I1), s		2.0		13.6		37.8		
Green Ext Time (p_c), s		16.8		0.3		14.4		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			13.4					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
6: Frontage Road & I-93 SB Ramps

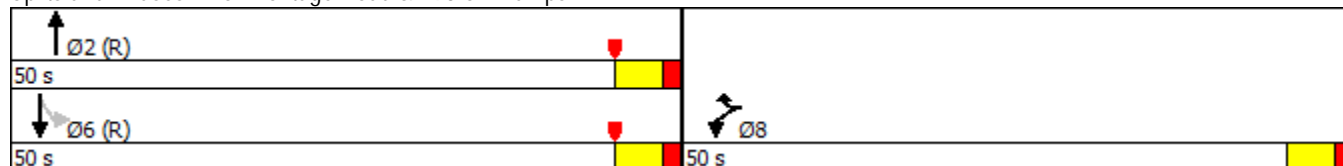
2026 Build with Mitigation Conditions  
Weekday Morning

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	644	81	313	659	124	242
Future Volume (vph)	644	81	313	659	124	242
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.983
Satd. Flow (prot)	3105	1759	1818	1708	0	3310
Flt Permitted	0.950					0.732
Satd. Flow (perm)	3105	1759	1818	1708	0	2465
Satd. Flow (RTOR)		83		672		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	9%	1%	1%	4%	1%	5%
Shared Lane Traffic (%)						
Turn Type	Prot	Prot	NA	Free	Perm	NA
Protected Phases	8	8	2			6
Permitted Phases				Free	6	
Detector Phase	8	8	2		6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	10.0		10.0	10.0
Minimum Split (s)	11.0	11.0	15.0		15.0	15.0
Total Split (s)	50.0	50.0	50.0		50.0	50.0
Total Split (%)	50.0%	50.0%	50.0%		50.0%	50.0%
Maximum Green (s)	45.0	45.0	45.0		45.0	45.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	1.5	1.5	1.5		1.5	1.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	5.0	5.0	5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.0		2.0	2.0
Minimum Gap (s)	2.0	2.0	2.0		2.0	2.0
Time Before Reduce (s)	2.0	2.0	2.0		2.0	2.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	0.0
Recall Mode	None	None	C-Min		C-Min	C-Min

Intersection Summary

Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 17 (17%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated

Splits and Phases: 6: Frontage Road & I-93 SB Ramps








## Queues

2026 Build with Mitigation Conditions

## 6: Frontage Road &amp; I-93 SB Ramps












Weekday Morning

					
Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	657	83	319	672	374
v/c Ratio	0.79	0.16	0.28	0.39	0.24
Control Delay	41.2	6.2	5.3	2.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	6.2	5.3	2.3	9.2
Queue Length 50th (ft)	201	0	44	41	49
Queue Length 95th (ft)	239	32	75	91	89
Internal Link Dist (ft)	920		695		645
Turn Bay Length (ft)	200	200			
Base Capacity (vph)	1397	837	1150	1708	1559
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.10	0.28	0.39	0.24

## Intersection Summary










HCM 2010 Signalized Intersection Summary  
6: Frontage Road & I-93 SB Ramps

2026 Build with Mitigation Conditions  
Weekday Morning

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	644	81	313	659	124	242		
Future Volume (veh/h)	644	81	313	659	124	242		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1743	1956	1881	1900	1900	1833		
Adj Flow Rate, veh/h	657	0	319	0	127	247		
Adj No. of Lanes	2	1	1	1	0	2		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98		
Percent Heavy Veh, %	9	1	1	4	5	5		
Cap, veh/h	743	383	1259	1081	578	1269		
Arrive On Green	0.23	0.00	0.67	0.00	0.67	0.67		
Sat Flow, veh/h	3221	1663	1881	1615	771	1979		
Grp Volume(v), veh/h	657	0	319	0	175	199		
Grp Sat Flow(s),veh/h/ln	1610	1663	1881	1615	1081	1585		
Q Serve(g_s), s	19.7	0.0	6.8	0.0	5.6	4.8		
Cycle Q Clear(g_c), s	19.7	0.0	6.8	0.0	12.3	4.8		
Prop In Lane	1.00	1.00		1.00	0.73			
Lane Grp Cap(c), veh/h	743	383	1259	1081	786	1061		
V/C Ratio(X)	0.88	0.00	0.25	0.00	0.22	0.19		
Avail Cap(c_a), veh/h	1449	748	1259	1081	786	1061		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.85	0.00	1.00	1.00		
Uniform Delay (d), s/veh	37.2	0.0	6.6	0.0	8.3	6.2		
Incr Delay (d2), s/veh	1.5	0.0	0.4	0.0	0.7	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.9	0.0	3.6	0.0	2.3	2.2		
LnGrp Delay(d),s/veh	38.6	0.0	7.0	0.0	9.0	6.6		
LnGrp LOS	D		A		A	A		
Approach Vol, veh/h	657		319			374		
Approach Delay, s/veh	38.6		7.0			7.7		
Approach LOS	D		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		71.9				71.9		28.1
Change Period (Y+Rc), s		5.0				5.0		5.0
Max Green Setting (Gmax), s		45.0				45.0		45.0
Max Q Clear Time (g_c+I1), s		8.8				14.3		21.7
Green Ext Time (p_c), s		3.1				3.1		1.3
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			22.6					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Morning

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	387	729	8	615	295	9
Future Volume (vph)	387	729	8	615	295	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912				0.996	
Flt Protected				0.999	0.954	
Satd. Flow (prot)	1755	0	0	1961	1653	0
Flt Permitted				0.999	0.954	
Satd. Flow (perm)	1755	0	0	1961	1653	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	6%	0%	0%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 109.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	387	729	8	615	295	9
Future Vol, veh/h	387	729	8	615	295	9
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, %	4	6	0	0	2	0
Mvmt Flow	421	792	9	668	321	10

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1213
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	582
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	582
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	\$ 734
HCM LOS			F











Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	134	-	-	582	-
HCM Lane V/C Ratio	2.466	-	-	0.015	-
HCM Control Delay (s)	\$ 734	-	-	11.3	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	28.9	-	-	0	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 Build with Mitigation Conditions  
 Weekday Morning

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	378	88	35	112	302	549
Future Volume (vph)	378	88	35	112	302	549
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.913	
Flt Protected	0.950			0.988		
Satd. Flow (prot)	1851	1706	0	1929	1808	0
Flt Permitted	0.950			0.988		
Satd. Flow (perm)	1851	1706	0	1929	1808	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	4%	1%	16%	0%	3%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 14.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	378	88	35	112	302	549
Future Vol, veh/h	378	88	35	112	302	549
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	4	1	16	0	3	2
Mvmt Flow	390	91	36	115	311	566

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	499	311	311	0	-	0
Stage 1	311	-	-	-	-	-
Stage 2	188	-	-	-	-	-
Critical Hdwy	6.44	6.21	4.26	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.309	2.344	-	-	-
Pot Cap-1 Maneuver	527	731	1174	-	-	0
Stage 1	738	-	-	-	-	0
Stage 2	839	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	510	731	1174	-	-	-
Mov Cap-2 Maneuver	510	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	27.5	1.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
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Capacity (veh/h)	1174	-	510	731	-
HCM Lane V/C Ratio	0.031	-	0.764	0.124	-
HCM Control Delay (s)	8.2	0	31.4	10.6	-
HCM Lane LOS	A	A	D	B	-
HCM 95th %tile Q(veh)	0.1	-	6.7	0.4	-

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

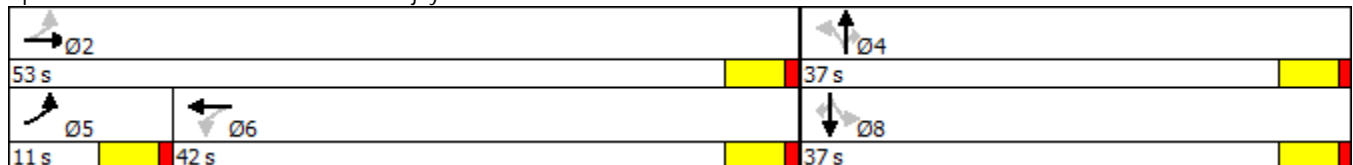
2026 Build with Mitigation Conditions  
Weekday Morning

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	794	10	9	844	70	12	9	17	297	12	238
Future Volume (vph)	60	794	10	9	844	70	12	9	17	297	12	238
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				0.98
Frt		0.998			0.990				0.850			0.850
Flt Protected		0.997						0.972			0.954	
Satd. Flow (prot)	0	1832	0	0	2086	0	0	1724	1561	0	1658	1706
Flt Permitted		0.881			0.992			0.797			0.715	
Satd. Flow (perm)	0	1619	0	0	2069	0	0	1412	1561	0	1243	1664
Satd. Flow (RTOR)		1			6				85			96
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.97	0.97	0.97	0.96	0.96	0.96	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	6%	3%	0%	0%	2%	5%	0%	0%	0%	1%	27%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	53.0		42.0	42.0		37.0	37.0	37.0	37.0	37.0	37.0
Total Split (%)	12.2%	58.9%		46.7%	46.7%		41.1%	41.1%	41.1%	41.1%	41.1%	41.1%
Maximum Green (s)	6.0	48.0		37.0	37.0		32.0	32.0	32.0	32.0	32.0	32.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 87.3  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road









## Queues

2026 Build with Mitigation Conditions

## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road

Weekday Morning

						
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	891	961	26	21	386	298
v/c Ratio	1.00	0.84	0.06	0.04	0.93	0.48
Control Delay	52.3	25.8	19.6	0.1	59.5	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	25.8	19.6	0.1	59.5	17.9
Queue Length 50th (ft)	~549	446	10	0	202	84
Queue Length 95th (ft)	#783	#720	24	0	#300	129
Internal Link Dist (ft)	2295	1020	1283		1505	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	892	1143	519	627	456	672
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.84	0.05	0.03	0.85	0.44



















## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 Build with Mitigation Conditions

Weekday Morning

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (vph)	60	794	10	9	844	70	12	9	17	297	12	238		
Future Volume (vph)	60	794	10	9	844	70	12	9	17	297	12	238		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14		
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0		
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00		
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00	0.98		
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00		
Frt		1.00			0.99			1.00	0.85		1.00	0.85		
Flt Protected		1.00			1.00			0.97	1.00		0.95	1.00		
Satd. Flow (prot)		1832			2084			1721	1561		1659	1664		
Flt Permitted		0.88			0.99			0.80	1.00		0.72	1.00		
Satd. Flow (perm)		1620			2068			1412	1561		1244	1664		
Peak-hour factor, PHF	0.97	0.97	0.97	0.96	0.96	0.96	0.80	0.80	0.80	0.80	0.80	0.80		
Adj. Flow (vph)	62	819	10	9	879	73	15	11	21	371	15	298		
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	14	0	0	64		
Lane Group Flow (vph)	0	891	0	0	958	0	0	26	7	0	386	234		
Confl. Peds. (#/hr)							3					3		
Heavy Vehicles (%)	6%	3%	0%	0%	2%	5%	0%	0%	0%	1%	27%	1%		
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm		
Protected Phases	5	2			6			4			8			
Permitted Phases	2			6			4		4	8		8		
Actuated Green, G (s)		48.1			48.1			29.2	29.2		29.2	29.2		
Effective Green, g (s)		48.1			48.1			29.2	29.2		29.2	29.2		
Actuated g/C Ratio		0.55			0.55			0.33	0.33		0.33	0.33		
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0		
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0		
Lane Grp Cap (vph)		892			1139			472	522		416	556		
v/s Ratio Prot														
v/s Ratio Perm		c0.55			0.46			0.02	0.00		c0.31	0.14		
v/c Ratio		1.00			0.84			0.06	0.01		0.93	0.42		
Uniform Delay, d1		19.6			16.4			19.7	19.4		28.0	22.5		
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00		
Incremental Delay, d2		29.5			5.5			0.0	0.0		26.3	0.2		
Delay (s)		49.0			21.9			19.7	19.4		54.3	22.7		
Level of Service		D			C			B	B		D	C		
Approach Delay (s)		49.0			21.9			19.6			40.6			
Approach LOS		D			C			B			D			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			36.2									HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio			1.04											
Actuated Cycle Length (s)			87.3							15.0				
Intersection Capacity Utilization			113.4%										ICU Level of Service	H
Analysis Period (min)			15											
c Critical Lane Group														

Lanes, Volumes, Timings  
 1: Shawsheen Street & East Street/Dascomb Road

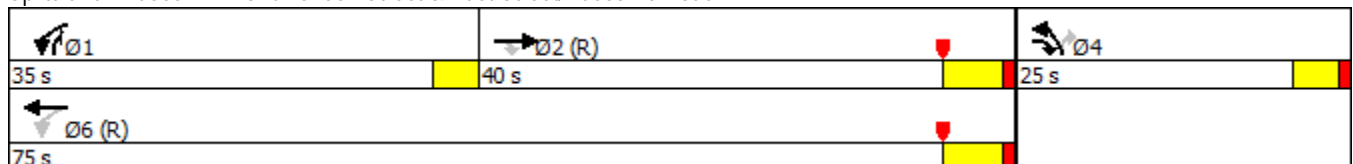
2026 Build with Mitigation Conditions  
 Weekday Evening

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	621	28	562	733	67	640
Future Volume (vph)	621	28	562	733	67	640
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1818	1561	1728	1801	1745	1561
Flt Permitted			0.168		0.950	
Satd. Flow (perm)	1818	1561	306	1801	1745	1561
Satd. Flow (RTOR)		25				93
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2	6			4
Detector Phase	2	4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	6.0	6.0	10.0	6.0	6.0
Minimum Split (s)	15.5	10.5	9.5	15.5	10.5	9.5
Total Split (s)	40.0	25.0	35.0	75.0	25.0	35.0
Total Split (%)	40.0%	25.0%	35.0%	75.0%	25.0%	35.0%
Maximum Green (s)	34.5	20.5	31.5	69.5	20.5	31.5
Yellow Time (s)	4.5	3.5	3.5	4.5	3.5	3.5
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.5	3.5	5.5	4.5	3.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	2.0	2.0	4.0	2.0	2.0
Recall Mode	C-Min	None	None	C-Min	None	None

Intersection Summary







Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 91 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
1: Shawsheen Street & East Street/Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Evening













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	640	29	579	756	69	660
v/c Ratio	0.78	0.03	0.76	0.50	0.46	0.86
Control Delay	34.4	5.1	20.4	6.0	52.8	31.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	5.1	20.4	6.0	52.8	31.9
Queue Length 50th (ft)	351	1	176	128	43	306
Queue Length 95th (ft)	#650	15	331	300	84	394
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125				175
Base Capacity (vph)	821	1118	763	1523	357	772
Starvation Cap Reductn	0	0	0	11	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.03	0.76	0.50	0.19	0.85

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.












HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 Build with Mitigation Conditions  
 Weekday Evening

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	621	28	562	733	67	640		
Future Volume (veh/h)	621	28	562	733	67	640		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1900	1881	1863	1900	1900		
Adj Flow Rate, veh/h	640	29	579	756	69	660		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Percent Heavy Veh, %	1	0	1	2	0	0		
Cap, veh/h	788	1008	596	1295	371	720		
Arrive On Green	0.42	0.42	0.48	1.00	0.20	0.20		
Sat Flow, veh/h	1881	1615	1792	1863	1810	1615		
Grp Volume(v), veh/h	640	29	579	756	69	660		
Grp Sat Flow(s),veh/h/ln	1881	1615	1792	1863	1810	1615		
Q Serve(g_s), s	30.0	0.7	21.4	0.0	3.2	20.5		
Cycle Q Clear(g_c), s	30.0	0.7	21.4	0.0	3.2	20.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	788	1008	596	1295	371	720		
V/C Ratio(X)	0.81	0.03	0.97	0.58	0.19	0.92		
Avail Cap(c_a), veh/h	788	1008	728	1295	371	720		
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	25.6	7.2	12.1	0.0	32.9	25.9		
Incr Delay (d2), s/veh	8.9	0.1	22.9	1.9	0.1	16.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	17.4	0.5	18.3	0.7	1.6	31.5		
LnGrp Delay(d),s/veh	34.5	7.3	35.1	1.9	32.9	42.1		
LnGrp LOS	C	A	D	A	C	D		
Approach Vol, veh/h	669			1335	729			
Approach Delay, s/veh	33.3			16.3	41.2			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	27.6	47.4		25.0		75.0		
Change Period (Y+Rc), s	3.5	5.5		4.5		5.5		
Max Green Setting (Gmax), s	31.5	34.5		20.5		69.5		
Max Q Clear Time (g_c+I1), s	23.4	32.0		22.5		2.0		
Green Ext Time (p_c), s	0.7	2.1		0.0		23.5		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			27.1					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 Build with Mitigation Conditions  
 Weekday Evening

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			 		 	
Traffic Volume (vph)	3	1258	1273	3	7	22
Future Volume (vph)	3	1258	1273	3	7	22
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt					0.896	
Flt Protected					0.988	
Satd. Flow (prot)	0	1819	3416	0	1521	0
Flt Permitted					0.988	
Satd. Flow (perm)	0	1819	3416	0	1521	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	2%	67%	29%	5%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

HCM 2010 TWSC  
 2: Dascomb Road & HP Driveway

2026 Build with Mitigation Conditions  
 Weekday Evening

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↕		↕	
Traffic Vol, veh/h	3	1258	1273	3	7	22
Future Vol, veh/h	3	1258	1273	3	7	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	2	67	29	5
Mvmt Flow	3	1297	1312	3	7	23

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1312	0	0 2615 656
Stage 1	-	-	- 1312 -
Stage 2	-	-	- 1303 -
Critical Hdwy	4.1	-	- 7.035 6.975
Critical Hdwy Stg 1	-	-	- 6.235 -
Critical Hdwy Stg 2	-	-	- 5.835 -
Follow-up Hdwy	2.2	-	- 3.7755 3.3475
Pot Cap-1 Maneuver	534	-	- 17 403
Stage 1	-	-	- 181 -
Stage 2	-	-	- 212 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	534	-	- 17 403
Mov Cap-2 Maneuver	-	-	- 17 -
Stage 1	-	-	- 181 -
Stage 2	-	-	- 208 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	108.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	534	-	-	-	62
HCM Lane V/C Ratio	0.006	-	-	-	0.482
HCM Control Delay (s)	11.8	0	-	-	108.3
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	1.9

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

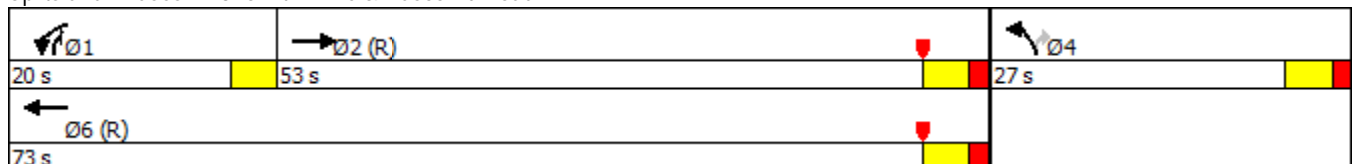
2026 Build with Mitigation Conditions  
Weekday Evening

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1185	80	126	1172	104	213
Future Volume (vph)	1185	80	126	1172	104	213
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.991					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3458	0	1678	3455	1694	1546
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3458	0	1678	3455	1694	1546
Satd. Flow (RTOR)	9					33
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	4%	1%	3%	1%
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases						4
Detector Phase	2		1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	6.0
Minimum Split (s)	15.0		9.5	15.0	11.0	9.5
Total Split (s)	53.0		20.0	73.0	27.0	20.0
Total Split (%)	53.0%		20.0%	73.0%	27.0%	20.0%
Maximum Green (s)	48.0		16.5	68.0	22.0	16.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.5		0.0	1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		3.5	5.0	5.0	3.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Recall Mode	C-Min		None	C-Min	None	None

Intersection Summary






Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 4 (4%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated

Splits and Phases: 3: Smith Drive & Dascomb Road



Queues  
3: Smith Drive & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Evening












					
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1331	133	1234	109	224
v/c Ratio	0.61	0.65	0.45	0.60	0.49
Control Delay	10.1	53.8	2.3	55.3	27.7
Queue Delay	0.1	0.0	0.1	0.0	0.0
Total Delay	10.2	53.8	2.3	55.3	27.7
Queue Length 50th (ft)	221	86	58	67	101
Queue Length 95th (ft)	283	m134	88	117	149
Internal Link Dist (ft)	385		545	920	
Turn Bay Length (ft)		200			200
Base Capacity (vph)	2198	279	2736	372	524
Starvation Cap Reductn	0	0	272	0	0
Spillback Cap Reductn	184	0	0	0	1
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.66	0.48	0.50	0.29	0.43

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary  
 3: Smith Drive & Dascomb Road

2026 Build with Mitigation Conditions  
 Weekday Evening

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	1185	80	126	1172	104	213		
Future Volume (veh/h)	1185	80	126	1172	104	213		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1900	1900	1827	1881	1845	1881		
Adj Flow Rate, veh/h	1247	84	133	1234	109	224		
Adj No. of Lanes	2	0	1	2	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	0	4	1	3	1		
Cap, veh/h	2147	144	160	2689	259	383		
Arrive On Green	0.83	0.83	0.18	1.00	0.15	0.15		
Sat Flow, veh/h	3528	231	1740	3668	1757	1599		
Grp Volume(v), veh/h	655	676	133	1234	109	224		
Grp Sat Flow(s),veh/h/ln	1805	1859	1740	1787	1757	1599		
Q Serve(g_s), s	11.8	11.9	7.4	0.0	5.6	12.4		
Cycle Q Clear(g_c), s	11.8	11.9	7.4	0.0	5.6	12.4		
Prop In Lane		0.12	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1129	1163	160	2689	259	383		
V/C Ratio(X)	0.58	0.58	0.83	0.46	0.42	0.58		
Avail Cap(c_a), veh/h	1129	1163	287	2689	387	499		
HCM Platoon Ratio	1.33	1.33	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.83	0.83	1.00	1.00		
Uniform Delay (d), s/veh	4.1	4.2	40.0	0.0	38.7	33.6		
Incr Delay (d2), s/veh	2.2	2.1	3.5	0.5	0.4	0.5		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.3	6.5	3.6	0.2	2.8	10.9		
LnGrp Delay(d),s/veh	6.3	6.3	43.5	0.5	39.1	34.1		
LnGrp LOS	A	A	D	A	D	C		
Approach Vol, veh/h	1331			1367	333			
Approach Delay, s/veh	6.3			4.7	35.8			
Approach LOS	A			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	12.7	67.5		19.8		80.2		
Change Period (Y+Rc), s	3.5	5.0		5.0		5.0		
Max Green Setting (Gmax), s	16.5	48.0		22.0		68.0		
Max Q Clear Time (g_c+I1), s	9.4	13.9		14.4		2.0		
Green Ext Time (p_c), s	0.1	17.3		0.4		21.7		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			8.8					
HCM 2010 LOS			A					

Lanes, Volumes, Timings  
4: Site Driveway/Frontage Road & Dascomb Road

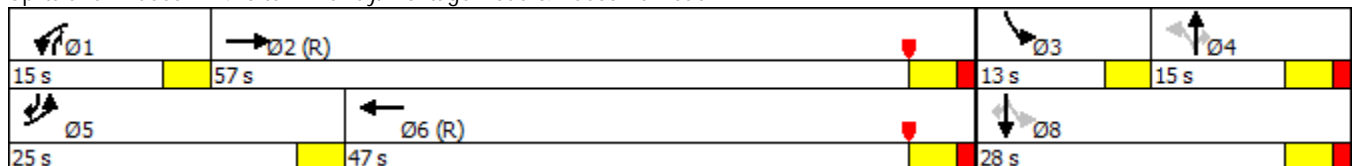
2026 Build with Mitigation Conditions  
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	413	952	33	110	773	187	37	79	220	214	97	488
Future Volume (vph)	413	952	33	110	773	187	37	79	220	214	97	488
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3351	1809	0	1711	3455	1759	1711	1801	1531	1728	1801	1725
Flt Permitted	0.950			0.950			0.692			0.474		
Satd. Flow (perm)	3351	1809	0	1711	3455	1759	1246	1801	1531	862	1801	1725
Satd. Flow (RTOR)		3				191			104			85
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	2%	2%	1%	1%	2%	2%	2%	1%	2%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6			4	1	3	8	5
Permitted Phases						Free	4		4	8		8
Detector Phase	5	2		1	6		4	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	15.0		9.5	15.0		11.0	11.0	9.5	9.5	11.0	9.5
Total Split (s)	25.0	57.0		15.0	47.0		15.0	15.0	15.0	13.0	28.0	25.0
Total Split (%)	25.0%	57.0%		15.0%	47.0%		15.0%	15.0%	15.0%	13.0%	28.0%	25.0%
Maximum Green (s)	21.5	52.0		11.5	42.0		10.0	10.0	11.5	9.5	23.0	21.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5		1.5	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	None

Intersection Summary












Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated

Splits and Phases: 4: Site Driveway/Frontage Road & Dascomb Road



Queues  
4: Site Driveway/Frontage Road & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Evening
























											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	430	1026	115	805	195	39	82	229	223	101	508
v/c Ratio	0.75	0.99	0.68	0.47	0.11	0.38	0.54	0.56	0.85	0.29	0.66
Control Delay	52.0	42.6	66.1	12.6	0.1	53.0	56.9	23.0	48.9	21.5	10.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.0	42.6	66.1	12.6	0.1	53.0	56.9	23.0	48.9	21.5	10.1
Queue Length 50th (ft)	111	~717	75	82	0	24	51	66	55	25	248
Queue Length 95th (ft)	201	#982	#135	186	0	57	98	137	#118	54	50
Internal Link Dist (ft)		545		920			920			695	
Turn Bay Length (ft)	250		160		130	150		150			150
Base Capacity (vph)	720	1038	196	1729	1759	124	180	428	261	414	834
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.99	0.59	0.47	0.11	0.31	0.46	0.54	0.85	0.24	0.61

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary  
 4: Site Driveway/Frontage Road & Dascomb Road

2026 Build with Mitigation Conditions  
 Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	413	952	33	110	773	187	37	79	220	214	97	488
Future Volume (veh/h)	413	952	33	110	773	187	37	79	220	214	97	488
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1863	1881	1956	1863	1863	1863	1881	1863	1918
Adj Flow Rate, veh/h	430	992	34	115	805	0	39	82	229	223	101	508
Adj No. of Lanes	2	1	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	2	1	1	2	2	2	1	2	3
Cap, veh/h	497	1001	34	144	1758	818	153	186	287	305	428	608
Arrive On Green	0.29	1.00	1.00	0.03	0.16	0.00	0.10	0.10	0.10	0.03	0.08	0.08
Sat Flow, veh/h	3476	1808	62	1774	3574	1663	809	1863	1583	1792	1863	1631
Grp Volume(v), veh/h	430	0	1026	115	805	0	39	82	229	223	101	508
Grp Sat Flow(s),veh/h/ln	1738	0	1870	1774	1787	1663	809	1863	1583	1792	1863	1631
Q Serve(g_s), s	11.7	0.0	0.0	6.4	20.4	0.0	4.6	4.1	10.0	9.5	5.1	23.0
Cycle Q Clear(g_c), s	11.7	0.0	0.0	6.4	20.4	0.0	4.6	4.1	10.0	9.5	5.1	23.0
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	497	0	1035	144	1758	818	153	186	287	305	428	608
V/C Ratio(X)	0.86	0.00	0.99	0.80	0.46	0.00	0.26	0.44	0.80	0.73	0.24	0.84
Avail Cap(c_a), veh/h	747	0	1035	204	1758	818	153	186	287	305	428	608
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	0.78	0.00	0.78	0.75	0.75	0.00	1.00	1.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	34.8	0.0	0.0	47.8	29.8	0.0	42.6	42.4	39.2	38.8	37.9	33.5
Incr Delay (d2), s/veh	3.7	0.0	22.7	6.8	0.6	0.0	0.3	0.6	13.5	6.4	0.1	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	0.0	6.5	3.4	10.3	0.0	1.0	2.2	7.1	1.9	2.6	13.5
LnGrp Delay(d),s/veh	38.5	0.0	22.7	54.6	30.5	0.0	42.9	43.0	52.7	45.2	38.0	41.3
LnGrp LOS	D		C	D	C		D	D	D	D	D	D
Approach Vol, veh/h		1456			920			350			832	
Approach Delay, s/veh		27.4			33.5			49.3			42.0	
Approach LOS		C			C			D			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	11.6	60.4	13.0	15.0	17.8	54.2		28.0				
Change Period (Y+Rc), s	3.5	5.0	3.5	5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	11.5	52.0	9.5	10.0	21.5	42.0		23.0				
Max Q Clear Time (g_c+I1), s	8.4	2.0	11.5	12.0	13.7	22.4		25.0				
Green Ext Time (p_c), s	0.0	13.1	0.0	0.0	0.6	9.6		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			34.5									
HCM 2010 LOS			C									

Lanes, Volumes, Timings  
5: I-93 NB Ramps & Dascomb Road

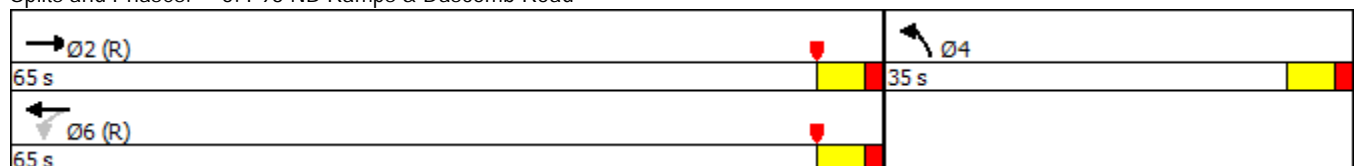
2026 Build with Mitigation Conditions  
Weekday Evening

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↖	↗
Traffic Volume (vph)	617	769	86	566	504	236
Future Volume (vph)	617	769	86	566	504	236
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1837	1546	1745	1837	3319	1561
Flt Permitted			0.345		0.950	
Satd. Flow (perm)	1837	1546	634	1837	3319	1561
Satd. Flow (RTOR)		404				248
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	0%	0%	2%	0%
Shared Lane Traffic (%)						
Turn Type	NA	Free	Perm	NA	Prot	Free
Protected Phases	2			6	4	
Permitted Phases		Free	6			Free
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	6.0	
Minimum Split (s)	15.0		15.0	15.0	11.0	
Total Split (s)	65.0		65.0	65.0	35.0	
Total Split (%)	65.0%		65.0%	65.0%	35.0%	
Maximum Green (s)	60.0		60.0	60.0	30.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Min		C-Min	C-Min	None	

Intersection Summary







Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 72 (72%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated

Splits and Phases: 5: I-93 NB Ramps & Dascomb Road



Queues  
5: I-93 NB Ramps & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Evening













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	649	809	91	596	531	248
v/c Ratio	0.51	0.52	0.21	0.47	0.78	0.16
Control Delay	6.2	0.6	7.7	9.0	46.0	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.2	0.6	7.7	9.0	46.0	0.2
Queue Length 50th (ft)	67	0	18	150	166	0
Queue Length 95th (ft)	m200	m0	47	263	210	0
Internal Link Dist (ft)	920			2295	920	
Turn Bay Length (ft)		200	200		200	200
Base Capacity (vph)	1277	1546	440	1277	995	1561
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.52	0.21	0.47	0.53	0.16

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary  
5: I-93 NB Ramps & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Evening

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	617	769	86	566	504	236		
Future Volume (veh/h)	617	769	86	566	504	236		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1863	1900		
Adj Flow Rate, veh/h	649	0	91	596	531	0		
Adj No. of Lanes	1	1	1	1	2	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	1	0	0	2	0		
Cap, veh/h	1370	1153	530	1370	616	289		
Arrive On Green	0.72	0.00	0.72	0.72	0.18	0.00		
Sat Flow, veh/h	1900	1599	795	1900	3442	1615		
Grp Volume(v), veh/h	649	0	91	596	531	0		
Grp Sat Flow(s),veh/h/ln	1900	1599	795	1900	1721	1615		
Q Serve(g_s), s	14.5	0.0	5.5	12.8	15.0	0.0		
Cycle Q Clear(g_c), s	14.5	0.0	20.0	12.8	15.0	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1370	1153	530	1370	616	289		
V/C Ratio(X)	0.47	0.00	0.17	0.44	0.86	0.00		
Avail Cap(c_a), veh/h	1370	1153	530	1370	1032	484		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.31	0.00	0.81	0.81	1.00	0.00		
Uniform Delay (d), s/veh	5.9	0.0	10.1	5.7	39.8	0.0		
Incr Delay (d2), s/veh	0.4	0.0	0.6	0.8	1.9	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.7	0.0	1.3	6.9	7.2	0.0		
LnGrp Delay(d),s/veh	6.3	0.0	10.7	6.5	41.7	0.0		
LnGrp LOS	A		B	A	D			
Approach Vol, veh/h	649			687	531			
Approach Delay, s/veh	6.3			7.1	41.7			
Approach LOS	A			A	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		77.1		22.9		77.1		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		60.0		30.0		60.0		
Max Q Clear Time (g_c+I1), s		16.5		17.0		22.0		
Green Ext Time (p_c), s		6.7		0.9		6.7		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			16.6					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
6: Frontage Road & I-93 SB Ramps

2026 Build with Mitigation Conditions

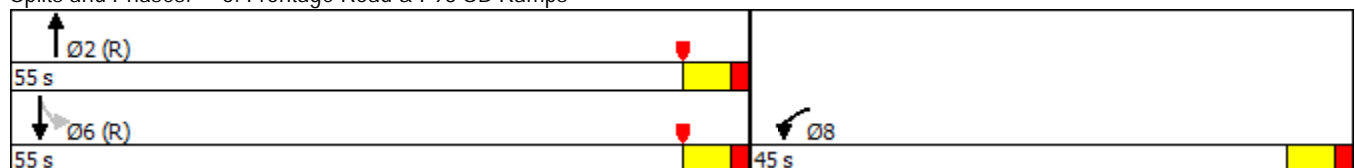
Weekday Evening

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	508	18	132	504	204	255
Future Volume (vph)	508	18	132	504	204	255
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.978
Satd. Flow (prot)	3286	1600	1837	1742	0	3413
Flt Permitted	0.950					0.758
Satd. Flow (perm)	3286	1600	1837	1742	0	2645
Satd. Flow (RTOR)		19		531		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	11%	0%	2%	0%	0%
Shared Lane Traffic (%)						
Turn Type	Prot	Free	NA	Free	Perm	NA
Protected Phases	8		2			6
Permitted Phases		Free		Free	6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	6.0		10.0		10.0	10.0
Minimum Split (s)	11.0		15.0		15.0	15.0
Total Split (s)	45.0		55.0		55.0	55.0
Total Split (%)	45.0%		55.0%		55.0%	55.0%
Maximum Green (s)	40.0		50.0		50.0	50.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.0		5.0		5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		2.0	2.0
Minimum Gap (s)	2.0		2.0		2.0	2.0
Time Before Reduce (s)	2.0		2.0		2.0	2.0
Time To Reduce (s)	0.0		0.0		0.0	0.0
Recall Mode	None		C-Min		C-Min	C-Min

Intersection Summary

Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 20 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated

Splits and Phases: 6: Frontage Road & I-93 SB Ramps








## Queues

2026 Build with Mitigation Conditions












## 6: Frontage Road &amp; I-93 SB Ramps

Weekday Evening

					
Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	535	19	139	531	483
v/c Ratio	0.77	0.01	0.11	0.30	0.27
Control Delay	44.7	0.0	2.8	2.6	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.7	0.0	2.8	2.6	6.9
Queue Length 50th (ft)	166	0	11	61	54
Queue Length 95th (ft)	208	0	21	88	93
Internal Link Dist (ft)	920		695		645
Turn Bay Length (ft)	200	200			
Base Capacity (vph)	1314	1600	1264	1742	1820
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.41	0.01	0.11	0.30	0.27
Intersection Summary					











HCM 2010 Signalized Intersection Summary  
6: Frontage Road & I-93 SB Ramps

2026 Build with Mitigation Conditions  
Weekday Evening

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Traffic Volume (veh/h)	508	18	132	504	204	255		
Future Volume (veh/h)	508	18	132	504	204	255		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1845	1780	1900	1937	1900	1900		
Adj Flow Rate, veh/h	535	0	139	0	215	268		
Adj No. of Lanes	2	1	1	1	0	2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	3	11	0	2	0	0		
Cap, veh/h	622	276	1363	1181	913	1240		
Arrive On Green	0.18	0.00	0.72	0.00	0.72	0.72		
Sat Flow, veh/h	3408	1513	1900	1647	1176	1814		
Grp Volume(v), veh/h	535	0	139	0	230	253		
Grp Sat Flow(s),veh/h/ln	1704	1513	1900	1647	1261	1643		
Q Serve(g_s), s	15.2	0.0	2.2	0.0	6.3	5.1		
Cycle Q Clear(g_c), s	15.2	0.0	2.2	0.0	8.5	5.1		
Prop In Lane	1.00	1.00		1.00	0.94			
Lane Grp Cap(c), veh/h	622	276	1363	1181	974	1178		
V/C Ratio(X)	0.86	0.00	0.10	0.00	0.24	0.21		
Avail Cap(c_a), veh/h	1363	605	1363	1181	974	1178		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.82	0.00	1.00	1.00		
Uniform Delay (d), s/veh	39.6	0.0	4.3	0.0	5.6	4.7		
Incr Delay (d2), s/veh	1.4	0.0	0.1	0.0	0.6	0.4		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	7.3	0.0	1.2	0.0	2.5	2.5		
LnGrp Delay(d),s/veh	41.0	0.0	4.4	0.0	6.1	5.1		
LnGrp LOS	D		A		A	A		
Approach Vol, veh/h	535		139			483		
Approach Delay, s/veh	41.0		4.4			5.6		
Approach LOS	D		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		76.7				76.7		23.3
Change Period (Y+Rc), s		5.0				5.0		5.0
Max Green Setting (Gmax), s		50.0				50.0		40.0
Max Q Clear Time (g_c+I1), s		4.2				10.5		17.2
Green Ext Time (p_c), s		2.7				2.7		1.0
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			21.8					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 Build with Mitigation Conditions  
Weekday Evening

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	503	275	13	468	305	21
Future Volume (vph)	503	275	13	468	305	21
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.952				0.991	
Flt Protected				0.999	0.955	
Satd. Flow (prot)	1929	0	0	1942	1678	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1929	0	0	1942	1678	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh	79.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	503	275	13	468	305	21
Future Vol, veh/h	503	275	13	468	305	21
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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	541	296	14	503	328	23

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	837	0	1220 689
Stage 1	-	-	-	-	689 -
Stage 2	-	-	-	-	531 -
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	-	-	806	-	~ 201 449
Stage 1	-	-	-	-	502 -
Stage 2	-	-	-	-	594 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	806	-	~ 196 449
Mov Cap-2 Maneuver	-	-	-	-	~ 196 -
Stage 1	-	-	-	-	502 -
Stage 2	-	-	-	-	580 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	\$ 387.6
HCM LOS			F











Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	203	-	-	806	-
HCM Lane V/C Ratio	1.727	-	-	0.017	-
HCM Control Delay (s)	\$ 387.6	-	-	9.5	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	23.9	-	-	0.1	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 Build with Mitigation Conditions  
 Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	470	24	135	338	121	363
Future Volume (vph)	470	24	135	338	121	363
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.899	
Flt Protected	0.950			0.986		
Satd. Flow (prot)	1925	1580	0	1967	1817	0
Flt Permitted	0.950			0.986		
Satd. Flow (perm)	1925	1580	0	1967	1817	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	9%	3%	1%	1%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 141.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	470	24	135	338	121	363
Future Vol, veh/h	470	24	135	338	121	363
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	9	3	1	1	0
Mvmt Flow	511	26	147	367	132	395

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	793	132	132	0	-	0
Stage 1	132	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Critical Hdwy	6.4	6.29	4.13	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.381	2.227	-	-	-
Pot Cap-1 Maneuver	~ 360	899	1447	-	-	0
Stage 1	899	-	-	-	-	0
Stage 2	517	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 314	899	1447	-	-	-
Mov Cap-2 Maneuver	~ 314	-	-	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	~ 451	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s\$	310.3	2.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1447	-	314	899	-
HCM Lane V/C Ratio	0.101	-	1.627	0.029	-
HCM Control Delay (s)	7.8	0\$	325.7	9.1	-
HCM Lane LOS	A	A	F	A	-
HCM 95th %tile Q(veh)	0.3	-	30.8	0.1	-

Notes

-: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

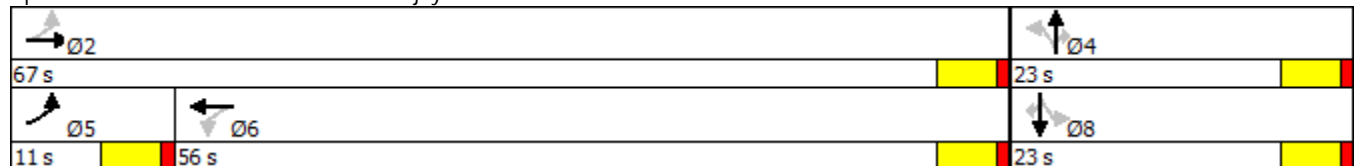
2026 Build with Mitigation Conditions  
Weekday Evening

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	629	10	11	584	186	4	2	10	120	3	84
Future Volume (vph)	149	629	10	11	584	186	4	2	10	120	3	84
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.968				0.850			0.850
Flt Protected		0.991			0.999			0.968			0.954	
Satd. Flow (prot)	0	1879	0	0	2082	0	0	1717	1561	0	1659	1723
Flt Permitted		0.724			0.988			0.831			0.725	
Satd. Flow (perm)	0	1373	0	0	2059	0	0	1474	1561	0	1261	1723
Satd. Flow (RTOR)		2			29				85			85
Peak Hour Factor	0.95	0.95	0.95	0.90	0.90	0.90	0.63	0.63	0.63	0.77	0.77	0.77
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	67.0		56.0	56.0		23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	12.2%	74.4%		62.2%	62.2%		25.6%	25.6%	25.6%	25.6%	25.6%	25.6%
Maximum Green (s)	6.0	62.0		51.0	51.0		18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 85.9  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road



## Queues

2026 Build with Mitigation Conditions

## 7: Acorn Drive/Lovejoy Road &amp; Dascomb Road

Weekday Evening

	→	←	↑	↗	↓	↙
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	830	868	9	16	160	109
v/c Ratio	0.84	0.59	0.04	0.05	0.76	0.30
Control Delay	20.2	8.2	29.7	0.3	57.6	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	8.2	29.7	0.3	57.6	13.1
Queue Length 50th (ft)	284	195	4	0	84	11
Queue Length 95th (ft)	#651	321	12	0	126	40
Internal Link Dist (ft)	2295	1020	1283		1505	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	994	1483	309	395	265	429
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.59	0.03	0.04	0.60	0.25

## Intersection Summary



















# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM Signalized Intersection Capacity Analysis

## 7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 Build with Mitigation Conditions

Weekday Evening

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	149	629	10	11	584	186	4	2	10	120	3	84	
Future Volume (vph)	149	629	10	11	584	186	4	2	10	120	3	84	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14	
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Frt		1.00			0.97			1.00	0.85		1.00	0.85	
Flt Protected		0.99			1.00			0.97	1.00		0.95	1.00	
Satd. Flow (prot)		1879			2083			1716	1561		1659	1723	
Flt Permitted		0.72			0.99			0.83	1.00		0.73	1.00	
Satd. Flow (perm)		1372			2059			1473	1561		1262	1723	
Peak-hour factor, PHF	0.95	0.95	0.95	0.90	0.90	0.90	0.63	0.63	0.63	0.77	0.77	0.77	
Adj. Flow (vph)	157	662	11	12	649	207	6	3	16	156	4	109	
RTOR Reduction (vph)	0	1	0	0	8	0	0	0	13	0	0	71	
Lane Group Flow (vph)	0	829	0	0	860	0	0	9	3	0	160	38	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm	
Protected Phases	5	2			6			4			8		
Permitted Phases	2			6			4		4	8		8	
Actuated Green, G (s)		61.6			61.6			14.3	14.3		14.3	14.3	
Effective Green, g (s)		61.6			61.6			14.3	14.3		14.3	14.3	
Actuated g/C Ratio		0.72			0.72			0.17	0.17		0.17	0.17	
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)		983			1476			245	259		210	286	
v/s Ratio Prot													
v/s Ratio Perm		c0.60			0.42			0.01	0.00		c0.13	0.02	
v/c Ratio		0.84			0.58			0.04	0.01		0.76	0.13	
Uniform Delay, d1		8.7			5.9			30.0	29.9		34.2	30.5	
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.5			0.4			0.0	0.0		13.6	0.1	
Delay (s)		15.2			6.3			30.0	29.9		47.8	30.6	
Level of Service		B			A			C	C		D	C	
Approach Delay (s)		15.2			6.3			30.0			40.8		
Approach LOS		B			A			C			D		
<b>Intersection Summary</b>													
HCM 2000 Control Delay			14.9									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.89										
Actuated Cycle Length (s)			85.9									Sum of lost time (s)	15.0
Intersection Capacity Utilization			110.6%									ICU Level of Service	H
Analysis Period (min)			15										
c Critical Lane Group													

Lanes, Volumes, Timings  
1: Shawsheen Street & East Street/Dascomb Road

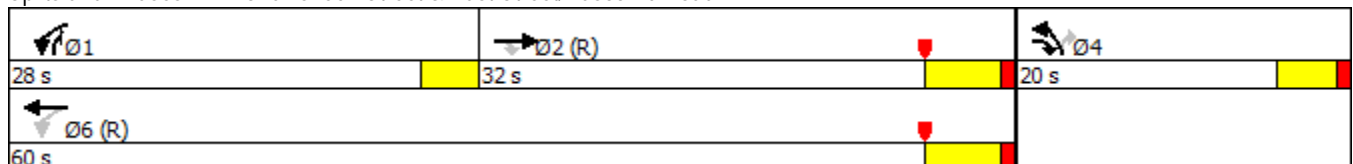
2026 Build with Mitigation Conditions  
Saturday Midday

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	573	34	508	465	46	570
Future Volume (vph)	573	34	508	465	46	570
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1818	1561	1711	1749	1711	1546
Flt Permitted			0.189		0.950	
Satd. Flow (perm)	1818	1561	340	1749	1711	1546
Satd. Flow (RTOR)		37				92
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	0%	2%	5%	2%	1%
Shared Lane Traffic (%)						
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2	6			4
Detector Phase	2	4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	6.0	6.0	10.0	6.0	6.0
Minimum Split (s)	15.5	10.5	9.5	15.5	10.5	9.5
Total Split (s)	32.0	20.0	28.0	60.0	20.0	28.0
Total Split (%)	40.0%	25.0%	35.0%	75.0%	25.0%	35.0%
Maximum Green (s)	26.5	15.5	24.5	54.5	15.5	24.5
Yellow Time (s)	4.5	3.5	3.5	4.5	3.5	3.5
All-Red Time (s)	1.0	1.0	0.0	1.0	1.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	4.5	3.5	5.5	4.5	3.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	4.0	2.0	2.0	4.0	2.0	2.0
Recall Mode	C-Min	None	None	C-Min	None	None

Intersection Summary







Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 54 (68%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Shawsheen Street & East Street/Dascomb Road



Queues  
1: Shawsheen Street & East Street/Dascomb Road

2026 Build with Mitigation Conditions  
Saturday MIDDAY













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	616	37	546	500	49	613
v/c Ratio	0.76	0.04	0.75	0.35	0.32	0.84
Control Delay	30.0	3.5	22.4	3.0	39.2	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.0	3.5	22.4	3.0	39.2	26.5
Queue Length 50th (ft)	262	0	92	49	24	213
Queue Length 95th (ft)	#528	13	287	82	54	291
Internal Link Dist (ft)	1155			220	920	
Turn Bay Length (ft)		125				175
Base Capacity (vph)	810	1116	747	1442	331	757
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.03	0.73	0.35	0.15	0.81

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.










HCM 2010 Signalized Intersection Summary  
 1: Shawsheen Street & East Street/Dascomb Road

2026 Build with Mitigation Conditions  
 Saturday MIDDAY

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	573	34	508	465	46	570		
Future Volume (veh/h)	573	34	508	465	46	570		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1900	1863	1810	1863	1881		
Adj Flow Rate, veh/h	616	37	546	500	49	613		
Adj No. of Lanes	1	1	1	1	1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93		
Percent Heavy Veh, %	1	0	2	5	2	1		
Cap, veh/h	779	982	586	1233	344	667		
Arrive On Green	0.41	0.41	0.22	0.68	0.19	0.19		
Sat Flow, veh/h	1881	1615	1774	1810	1774	1599		
Grp Volume(v), veh/h	616	37	546	500	49	613		
Grp Sat Flow(s),veh/h/ln	1881	1615	1774	1810	1774	1599		
Q Serve(g_s), s	22.8	0.7	15.2	9.7	1.8	15.5		
Cycle Q Clear(g_c), s	22.8	0.7	15.2	9.7	1.8	15.5		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	779	982	586	1233	344	667		
V/C Ratio(X)	0.79	0.04	0.93	0.41	0.14	0.92		
Avail Cap(c_a), veh/h	779	982	734	1233	344	667		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	20.4	6.3	17.0	5.6	26.7	22.1		
Incr Delay (d2), s/veh	8.0	0.1	14.9	1.0	0.1	17.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	13.5	0.5	14.1	5.1	0.9	24.7		
LnGrp Delay(d),s/veh	28.4	6.4	32.0	6.6	26.8	39.7		
LnGrp LOS	C	A	C	A	C	D		
Approach Vol, veh/h	653			1046	662			
Approach Delay, s/veh	27.2			19.8	38.8			
Approach LOS	C			B	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	21.4	38.6		20.0		60.0		
Change Period (Y+Rc), s	3.5	5.5		4.5		5.5		
Max Green Setting (Gmax), s	24.5	26.5		15.5		54.5		
Max Q Clear Time (g_c+I1), s	17.2	24.8		17.5		11.7		
Green Ext Time (p_c), s	0.6	1.3		0.0		14.2		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			27.2					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
 2: Dascomb Road & HP Driveway

2026 Build with Mitigation Conditions  
 Saturday MIDDAY

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	1142	973	1	1	0
Future Volume (vph)	1	1142	973	1	1	0
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	1818	3421	0	1805	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	1818	3421	0	1805	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
<b>Intersection Summary</b>						
Control Type: Unsignalized						

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↕		↕	
Traffic Vol, veh/h	1	1142	973	1	1	0
Future Vol, veh/h	1	1142	973	1	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	1	1177	1003	1	1	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1003	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.1	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.2	-	-
Pot Cap-1 Maneuver	698	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	698	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	86.9
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	698	-	-	-	45
HCM Lane V/C Ratio	0.001	-	-	-	0.023
HCM Control Delay (s)	10.2	0	-	-	86.9
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lanes, Volumes, Timings  
3: Smith Drive & Dascomb Road

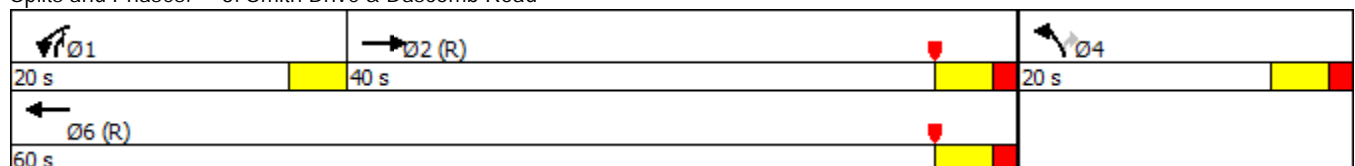
2026 Build with Mitigation Conditions  
Saturday Midday

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1035	108	191	890	84	173
Future Volume (vph)	1035	108	191	890	84	173
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.986					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3410	0	1728	3421	1745	1561
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3410	0	1728	3421	1745	1561
Satd. Flow (RTOR)	18					39
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Shared Lane Traffic (%)						
Turn Type	NA		Prot	NA	Prot	pm+ov
Protected Phases	2		1	6	4	1
Permitted Phases						4
Detector Phase	2		1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0		6.0	10.0	6.0	6.0
Minimum Split (s)	15.0		9.5	15.0	11.0	9.5
Total Split (s)	40.0		20.0	60.0	20.0	20.0
Total Split (%)	50.0%		25.0%	75.0%	25.0%	25.0%
Maximum Green (s)	35.0		16.5	55.0	15.0	16.5
Yellow Time (s)	3.5		3.5	3.5	3.5	3.5
All-Red Time (s)	1.5		0.0	1.5	1.5	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0		3.5	5.0	5.0	3.5
Lead/Lag	Lag		Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	2.0
Recall Mode	C-Min		None	C-Min	None	None

Intersection Summary






Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 64 (80%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated

Splits and Phases: 3: Smith Drive & Dascomb Road



Queues  
3: Smith Drive & Dascomb Road












2026 Build with Mitigation Conditions  
Saturday MIDDAY

					
Lane Group	EBT	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	1191	199	927	88	180
v/c Ratio	0.60	0.69	0.34	0.47	0.35
Control Delay	11.1	39.0	6.6	41.1	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	39.0	6.6	41.1	15.9
Queue Length 50th (ft)	178	84	93	42	51
Queue Length 95th (ft)	235	173	188	83	82
Internal Link Dist (ft)	385		545	920	
Turn Bay Length (ft)		200			200
Base Capacity (vph)	1994	366	2761	327	579
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.60	0.54	0.34	0.27	0.31

Intersection Summary

HCM 2010 Signalized Intersection Summary  
3: Smith Drive & Dascomb Road

2026 Build with Mitigation Conditions  
Saturday MIDDAY

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	1035	108	191	890	84	173		
Future Volume (veh/h)	1035	108	191	890	84	173		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1883	1900	1881	1863	1900	1900		
Adj Flow Rate, veh/h	1078	112	199	927	88	180		
Adj No. of Lanes	2	0	1	2	1	1		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Percent Heavy Veh, %	1	1	1	2	0	0		
Cap, veh/h	1895	197	234	2667	220	407		
Arrive On Green	0.19	0.19	0.26	1.00	0.12	0.12		
Sat Flow, veh/h	3366	340	1792	3632	1810	1615		
Grp Volume(v), veh/h	589	601	199	927	88	180		
Grp Sat Flow(s),veh/h/ln	1789	1823	1792	1770	1810	1615		
Q Serve(g_s), s	23.9	23.9	8.4	0.0	3.6	7.5		
Cycle Q Clear(g_c), s	23.9	23.9	8.4	0.0	3.6	7.5		
Prop In Lane		0.19	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1036	1056	234	2667	220	407		
V/C Ratio(X)	0.57	0.57	0.85	0.35	0.40	0.44		
Avail Cap(c_a), veh/h	1036	1056	370	2667	339	514		
HCM Platoon Ratio	0.33	0.33	2.00	2.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.88	0.88	1.00	1.00		
Uniform Delay (d), s/veh	23.3	23.3	28.8	0.0	32.5	25.2		
Incr Delay (d2), s/veh	2.3	2.2	5.4	0.3	0.4	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	12.5	12.8	4.4	0.1	1.8	7.0		
LnGrp Delay(d),s/veh	25.5	25.5	34.2	0.3	32.9	25.5		
LnGrp LOS	C	C	C	A	C	C		
Approach Vol, veh/h	1190			1126	268			
Approach Delay, s/veh	25.5			6.3	27.9			
Approach LOS	C			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	14.0	51.3		14.7		65.3		
Change Period (Y+Rc), s	3.5	5.0		5.0		5.0		
Max Green Setting (Gmax), s	16.5	35.0		15.0		55.0		
Max Q Clear Time (g_c+I1), s	10.4	25.9		9.5		2.0		
Green Ext Time (p_c), s	0.1	6.1		0.2		14.2		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			17.4					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
4: Site Driveway/Frontage Road & Dascomb Road

2026 Build with Mitigation Conditions

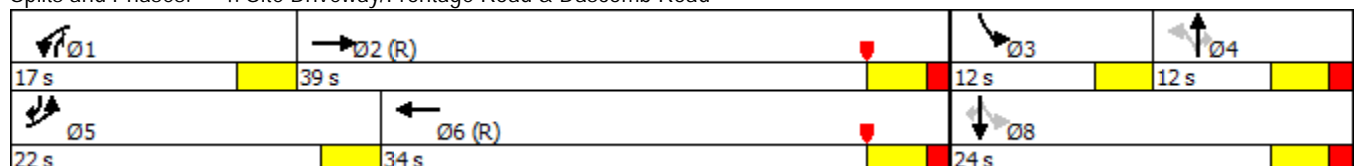
Saturday Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	444	719	45	137	608	221	35	79	163	121	118	438
Future Volume (vph)	444	719	45	137	608	221	35	79	163	121	118	438
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3319	1801	0	1711	3455	1777	1711	1801	1531	1728	1801	1725
Flt Permitted	0.950			0.950			0.727			0.444		
Satd. Flow (perm)	3319	1801	0	1711	3455	1777	1309	1801	1531	807	1801	1725
Satd. Flow (RTOR)		5				239			170			108
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	0%	2%	2%	2%	1%	2%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Free	Perm	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6			4	1	3	8	5
Permitted Phases						Free	4		4	8		8
Detector Phase	5	2		1	6		4	4	1	3	8	5
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	9.5	15.0		9.5	15.0		11.0	11.0	9.5	9.5	11.0	9.5
Total Split (s)	22.0	39.0		17.0	34.0		12.0	12.0	17.0	12.0	24.0	22.0
Total Split (%)	27.5%	48.8%		21.3%	42.5%		15.0%	15.0%	21.3%	15.0%	30.0%	27.5%
Maximum Green (s)	18.5	34.0		13.5	29.0		7.0	7.0	13.5	8.5	19.0	18.5
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.0	1.5		0.0	1.5		1.5	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.5	5.0		3.5	5.0		5.0	5.0	3.5	3.5	5.0	3.5
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection  
 Natural Cycle: 75  
 Control Type: Actuated-Coordinated












Splits and Phases: 4: Site Driveway/Frontage Road & Dascomb Road



Queues  
4: Site Driveway/Frontage Road & Dascomb Road

2026 Build with Mitigation Conditions

Saturday MIDDAY
























											
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	463	796	143	633	230	36	82	170	126	123	456
v/c Ratio	0.72	0.84	0.64	0.40	0.13	0.33	0.54	0.33	0.48	0.34	0.57
Control Delay	38.3	25.8	42.4	17.8	0.1	42.8	49.1	5.5	39.8	41.2	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.3	25.8	42.4	17.8	0.1	42.8	49.1	5.5	39.8	41.2	10.5
Queue Length 50th (ft)	94	402	73	88	0	17	40	0	41	46	28
Queue Length 95th (ft)	148	#677	116	196	0	46	#90	41	86	93	47
Internal Link Dist (ft)		545		920			920			695	
Turn Bay Length (ft)	250		160		130	150		150			150
Base Capacity (vph)	767	947	288	1595	1777	114	157	561	277	427	865
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.84	0.50	0.40	0.13	0.32	0.52	0.30	0.45	0.29	0.53

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM 2010 Signalized Intersection Summary  
 4: Site Driveway/Frontage Road & Dascomb Road

2026 Build with Mitigation Conditions  
 Saturday Midday

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	444	719	45	137	608	221	35	79	163	121	118	438
Future Volume (veh/h)	444	719	45	137	608	221	35	79	163	121	118	438
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1880	1900	1863	1881	1976	1863	1863	1863	1881	1863	1918
Adj Flow Rate, veh/h	462	749	47	143	633	0	36	82	170	126	123	456
Adj No. of Lanes	2	1	0	1	2	1	1	1	1	1	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	1	2	1	0	2	2	2	1	2	3
Cap, veh/h	557	867	54	175	1544	725	185	213	337	316	442	651
Arrive On Green	0.16	0.49	0.49	0.20	0.86	0.00	0.11	0.11	0.11	0.05	0.16	0.16
Sat Flow, veh/h	3442	1751	110	1774	3574	1680	831	1863	1583	1792	1863	1631
Grp Volume(v), veh/h	462	0	796	143	633	0	36	82	170	126	123	456
Grp Sat Flow(s),veh/h/ln	1721	0	1861	1774	1787	1680	831	1863	1583	1792	1863	1631
Q Serve(g_s), s	10.4	0.0	30.2	6.2	3.0	0.0	3.2	3.3	7.6	4.7	4.6	18.2
Cycle Q Clear(g_c), s	10.4	0.0	30.2	6.2	3.0	0.0	3.2	3.3	7.6	4.7	4.6	18.2
Prop In Lane	1.00		0.06	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	557	0	921	175	1544	725	185	213	337	316	442	651
V/C Ratio(X)	0.83	0.00	0.86	0.82	0.41	0.00	0.19	0.39	0.50	0.40	0.28	0.70
Avail Cap(c_a), veh/h	796	0	921	299	1544	725	185	213	337	364	442	651
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	0.80	0.00	0.80	0.81	0.81	0.00	1.00	1.00	1.00	0.73	0.73	0.73
Uniform Delay (d), s/veh	32.5	0.0	17.8	31.4	3.3	0.0	32.8	32.8	27.7	27.2	27.6	22.0
Incr Delay (d2), s/veh	2.8	0.0	8.7	2.8	0.7	0.0	0.2	0.4	0.5	0.2	0.1	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.0	17.7	3.2	1.4	0.0	0.7	1.7	3.3	2.3	2.4	8.6
LnGrp Delay(d),s/veh	35.2	0.0	26.6	34.2	3.9	0.0	33.0	33.3	28.2	27.4	27.7	24.0
LnGrp LOS	D		C	C	A		C	C	C	C	C	C
Approach Vol, veh/h		1258			776			288			705	
Approach Delay, s/veh		29.8			9.5			30.2			25.3	
Approach LOS		C			A			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2	3	4	5	6		8				
Phs Duration (G+Y+Rc), s	11.4	44.6	9.9	14.1	16.4	39.6		24.0				
Change Period (Y+Rc), s	3.5	5.0	3.5	5.0	3.5	5.0		5.0				
Max Green Setting (Gmax), s	13.5	34.0	8.5	7.0	18.5	29.0		19.0				
Max Q Clear Time (g_c+I1), s	8.2	32.2	6.7	9.6	12.4	5.0		20.2				
Green Ext Time (p_c), s	0.1	1.2	0.0	0.0	0.5	7.2		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.6									
HCM 2010 LOS			C									

Lanes, Volumes, Timings  
5: I-93 NB Ramps & Dascomb Road

2026 Build with Mitigation Conditions

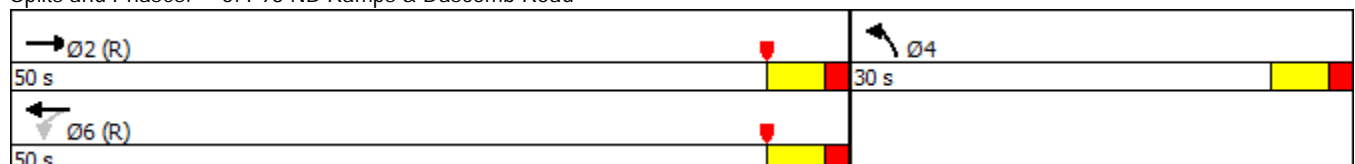
Saturday Midday

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↙	↑	↖	↗
Traffic Volume (vph)	390	613	97	536	430	138
Future Volume (vph)	390	613	97	536	430	138
Lane Util. Factor	1.00	1.00	1.00	1.00	0.97	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1837	1546	1745	1818	3319	1546
Flt Permitted			0.504		0.950	
Satd. Flow (perm)	1837	1546	926	1818	3319	1546
Satd. Flow (RTOR)		632				142
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	2%	1%
Shared Lane Traffic (%)						
Turn Type	NA	Free	Perm	NA	Prot	Free
Protected Phases	2			6	4	
Permitted Phases		Free	6			Free
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	6.0	
Minimum Split (s)	15.0		15.0	15.0	11.0	
Total Split (s)	50.0		50.0	50.0	30.0	
Total Split (%)	62.5%		62.5%	62.5%	37.5%	
Maximum Green (s)	45.0		45.0	45.0	25.0	
Yellow Time (s)	3.5		3.5	3.5	3.5	
All-Red Time (s)	1.5		1.5	1.5	1.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0	2.0	2.0	
Recall Mode	C-Min		C-Min	C-Min	None	

Intersection Summary







Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 69 (86%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated

Splits and Phases: 5: I-93 NB Ramps & Dascomb Road



Queues  
5: I-93 NB Ramps & Dascomb Road

2026 Build with Mitigation Conditions  
Saturday MIDDAY













						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group Flow (vph)	402	632	100	553	443	142
v/c Ratio	0.32	0.41	0.16	0.44	0.71	0.09
Control Delay	4.3	0.6	5.9	7.6	36.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.3	0.6	5.9	7.6	36.6	0.1
Queue Length 50th (ft)	16	0	15	105	107	0
Queue Length 95th (ft)	m134	m0	39	199	145	0
Internal Link Dist (ft)	920			2295	920	
Turn Bay Length (ft)		200	200		200	200
Base Capacity (vph)	1260	1546	635	1247	1037	1546
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.41	0.16	0.44	0.43	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM 2010 Signalized Intersection Summary  
5: I-93 NB Ramps & Dascomb Road

2026 Build with Mitigation Conditions  
Saturday MIDDAY

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	390	613	97	536	430	138		
Future Volume (veh/h)	390	613	97	536	430	138		
Number	2	12	1	6	7	14		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1900	1881	1900	1881	1863	1881		
Adj Flow Rate, veh/h	402	0	100	553	443	0		
Adj No. of Lanes	1	1	1	1	2	1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		
Percent Heavy Veh, %	0	1	0	1	2	1		
Cap, veh/h	1361	1145	805	1348	546	254		
Arrive On Green	1.00	0.00	0.72	0.72	0.16	0.00		
Sat Flow, veh/h	1900	1599	998	1881	3442	1599		
Grp Volume(v), veh/h	402	0	100	553	443	0		
Grp Sat Flow(s),veh/h/ln	1900	1599	998	1881	1721	1599		
Q Serve(g_s), s	0.0	0.0	2.5	9.4	9.9	0.0		
Cycle Q Clear(g_c), s	0.0	0.0	2.5	9.4	9.9	0.0		
Prop In Lane		1.00	1.00		1.00	1.00		
Lane Grp Cap(c), veh/h	1361	1145	805	1348	546	254		
V/C Ratio(X)	0.30	0.00	0.12	0.41	0.81	0.00		
Avail Cap(c_a), veh/h	1361	1145	805	1348	1076	500		
HCM Platoon Ratio	1.67	1.67	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.62	0.00	0.88	0.88	1.00	0.00		
Uniform Delay (d), s/veh	0.0	0.0	3.6	4.6	32.5	0.0		
Incr Delay (d2), s/veh	0.3	0.0	0.3	0.8	1.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.8	5.1	4.8	0.0		
LnGrp Delay(d),s/veh	0.3	0.0	3.9	5.4	33.6	0.0		
LnGrp LOS	A		A	A	C			
Approach Vol, veh/h	402			653	443			
Approach Delay, s/veh	0.3			5.1	33.6			
Approach LOS	A			A	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		
Phs Duration (G+Y+Rc), s		62.3		17.7		62.3		
Change Period (Y+Rc), s		5.0		5.0		5.0		
Max Green Setting (Gmax), s		45.0		25.0		45.0		
Max Q Clear Time (g_c+I1), s		2.0		11.9		11.4		
Green Ext Time (p_c), s		4.5		0.8		4.5		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			12.3					
HCM 2010 LOS			B					

Lanes, Volumes, Timings  
6: Frontage Road & I-93 SB Ramps

2026 Build with Mitigation Conditions

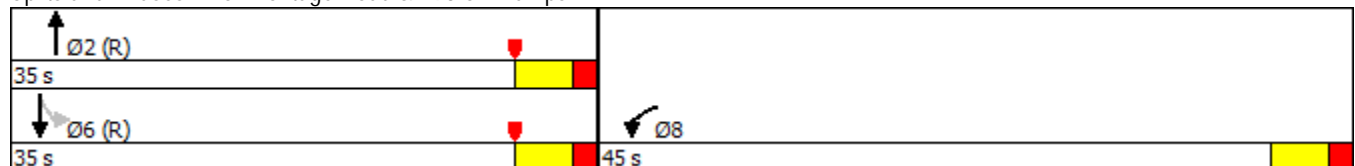
Saturday MIDDAY

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	550	11	92	643	21	78
Future Volume (vph)	550	11	92	643	21	78
Lane Util. Factor	0.97	1.00	1.00	1.00	0.95	0.95
Frt		0.850		0.850		
Flt Protected	0.950					0.990
Satd. Flow (prot)	3255	1777	1837	1759	0	3455
Flt Permitted	0.950					0.905
Satd. Flow (perm)	3255	1777	1837	1759	0	3158
Satd. Flow (RTOR)		12		707		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	4%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Turn Type	Prot	Free	NA	Free	Perm	NA
Protected Phases	8		2			6
Permitted Phases		Free		Free	6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	6.0		10.0		10.0	10.0
Minimum Split (s)	11.0		15.0		15.0	15.0
Total Split (s)	45.0		35.0		35.0	35.0
Total Split (%)	56.3%		43.8%		43.8%	43.8%
Maximum Green (s)	40.0		30.0		30.0	30.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.5		1.5		1.5	1.5
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	5.0		5.0			5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		2.0		2.0	2.0
Minimum Gap (s)	2.0		2.0		2.0	2.0
Time Before Reduce (s)	2.0		2.0		2.0	2.0
Time To Reduce (s)	0.0		0.0		0.0	0.0
Recall Mode	None		C-Min		C-Min	C-Min

Intersection Summary






Cycle Length: 80  
 Actuated Cycle Length: 80  
 Offset: 16 (20%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow  
 Natural Cycle: 40  
 Control Type: Actuated-Coordinated

Splits and Phases: 6: Frontage Road & I-93 SB Ramps



Queues  
6: Frontage Road & I-93 SB Ramps

2026 Build with Mitigation Conditions  
Saturday MIDDAY














					
Lane Group	WBL	WBR	NBT	NBR	SBT
Lane Group Flow (vph)	604	12	101	707	109
v/c Ratio	0.74	0.01	0.09	0.40	0.06
Control Delay	33.1	0.0	2.8	3.6	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	0.0	2.8	3.6	6.9
Queue Length 50th (ft)	143	0	8	104	10
Queue Length 95th (ft)	179	0	m15	176	23
Internal Link Dist (ft)	920		695		645
Turn Bay Length (ft)	200	200			
Base Capacity (vph)	1627	1777	1146	1759	1971
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	0.01	0.09	0.40	0.06

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.










HCM 2010 Signalized Intersection Summary  
6: Frontage Road & I-93 SB Ramps

2026 Build with Mitigation Conditions  
Saturday MIDDAY

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	 					 		
Traffic Volume (veh/h)	550	11	92	643	21	78		
Future Volume (veh/h)	550	11	92	643	21	78		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1827	1976	1900	1956	1900	1900		
Adj Flow Rate, veh/h	604	0	101	0	23	86		
Adj No. of Lanes	2	1	1	1	0	2		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91		
Percent Heavy Veh, %	4	0	0	1	0	0		
Cap, veh/h	715	356	1260	1103	463	1771		
Arrive On Green	0.21	0.00	0.66	0.00	0.66	0.66		
Sat Flow, veh/h	3375	1680	1900	1663	603	2757		
Grp Volume(v), veh/h	604	0	101	0	58	51		
Grp Sat Flow(s),veh/h/ln	1688	1680	1900	1663	1631	1643		
Q Serve(g_s), s	13.7	0.0	1.5	0.0	0.0	0.9		
Cycle Q Clear(g_c), s	13.7	0.0	1.5	0.0	0.8	0.9		
Prop In Lane	1.00	1.00		1.00	0.40			
Lane Grp Cap(c), veh/h	715	356	1260	1103	1145	1089		
V/C Ratio(X)	0.84	0.00	0.08	0.00	0.05	0.05		
Avail Cap(c_a), veh/h	1688	840	1260	1103	1145	1089		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.84	0.00	1.00	1.00		
Uniform Delay (d), s/veh	30.3	0.0	4.8	0.0	4.7	4.7		
Incr Delay (d2), s/veh	1.1	0.0	0.1	0.0	0.1	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.5	0.0	0.8	0.0	0.5	0.4		
LnGrp Delay(d),s/veh	31.4	0.0	4.9	0.0	4.8	4.8		
LnGrp LOS	C		A		A	A		
Approach Vol, veh/h	604		101			109		
Approach Delay, s/veh	31.4		4.9			4.8		
Approach LOS	C		A			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		58.1				58.1		21.9
Change Period (Y+Rc), s		5.0				5.0		5.0
Max Green Setting (Gmax), s		30.0				30.0		40.0
Max Q Clear Time (g_c+I1), s		3.5				2.9		15.7
Green Ext Time (p_c), s		0.7				0.7		1.2
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			24.5					
HCM 2010 LOS			C					

Lanes, Volumes, Timings  
8: Clark Road & Dascomb Road

2026 Build with Mitigation Conditions  
Saturday MIDDAY

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	386	182	7	383	217	11
Future Volume (vph)	386	182	7	383	217	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.957				0.993	
Flt Protected				0.999	0.955	
Satd. Flow (prot)	1940	0	0	1961	1682	0
Flt Permitted				0.999	0.955	
Satd. Flow (perm)	1940	0	0	1961	1682	0
Confl. Peds. (#/hr)		1	1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 10.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations						
Traffic Vol, veh/h	386	182	7	383	217	11
Future Vol, veh/h	386	182	7	383	217	11
Conflicting Peds, #/hr	0	1	1	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	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	415	196	8	412	233	12

Major/Minor	Major1	Major2	Minor1
-------------	--------	--------	--------

Conflicting Flow All	0	0	612	0	941	514
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	427	-
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	-	-	977	-	295	564
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	662	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	977	-	292	564
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	605	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	NB
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HCM Control Delay, s	0	0.2	54.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
-----------------------	-------	-----	-----	-----	-----

Capacity (veh/h)	299	-	-	977	-
HCM Lane V/C Ratio	0.82	-	-	0.008	-
HCM Control Delay (s)	54.5	-	-	8.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	6.8	-	-	0	-

Lanes, Volumes, Timings  
 9: Andover Street & Dascomb Road

2026 Build with Mitigation Conditions  
 Saturday MIDDAY

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	365	14	12	90	86	380
Future Volume (vph)	365	14	12	90	86	380
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.890	
Flt Protected	0.950			0.994		
Satd. Flow (prot)	1925	1595	0	1973	1789	0
Flt Permitted	0.950			0.994		
Satd. Flow (perm)	1925	1595	0	1973	1789	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	8%	18%	0%	0%	1%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Control Type: Unsignalized

Intersection

Int Delay, s/veh 9.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
Traffic Vol, veh/h	365	14	12	90	86	380
Future Vol, veh/h	365	14	12	90	86	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	50	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	18	0	0	1
Mvmt Flow	397	15	13	98	93	413

Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	217	93	93	0	-	0
Stage 1	93	-	-	-	-	-
Stage 2	124	-	-	-	-	-
Critical Hdwy	6.4	6.28	4.28	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	2.362	-	-	-
Pot Cap-1 Maneuver	776	948	1407	-	-	0
Stage 1	936	-	-	-	-	0
Stage 2	907	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	768	948	1407	-	-	-
Mov Cap-2 Maneuver	768	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	898	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s	14.4	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
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Capacity (veh/h)	1407	-	768	948	-
HCM Lane V/C Ratio	0.009	-	0.517	0.016	-
HCM Control Delay (s)	7.6	0	14.6	8.9	-
HCM Lane LOS	A	A	B	A	-
HCM 95th %tile Q(veh)	0	-	3	0	-

Lanes, Volumes, Timings  
7: Acorn Drive/Lovejoy Road & Dascomb Road

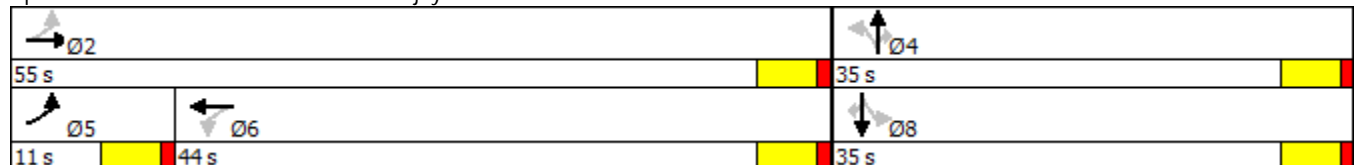
2026 Build with Mitigation Conditions  
Saturday Midday

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	477	10	12	512	62	9	1	10	74	4	76
Future Volume (vph)	64	477	10	12	512	62	9	1	10	74	4	76
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				0.98
Frt		0.997			0.986				0.850			0.850
Flt Protected		0.994			0.999			0.957			0.955	
Satd. Flow (prot)	0	1867	0	0	2103	0	0	1697	1561	0	1694	1723
Flt Permitted		0.881			0.987			0.704			0.724	
Satd. Flow (perm)	0	1655	0	0	2077	0	0	1247	1561	0	1284	1686
Satd. Flow (RTOR)		2			8				85			109
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.93	0.93	0.93	0.90	0.90	0.90	0.56	0.56	0.56	0.70	0.70	0.70
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Detector Phase	5	2		6	6		4	4	4	8	8	8
Switch Phase												
Minimum Initial (s)	6.0	10.0		10.0	10.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	11.0	15.0		15.0	15.0		11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	55.0		44.0	44.0		35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	12.2%	61.1%		48.9%	48.9%		38.9%	38.9%	38.9%	38.9%	38.9%	38.9%
Maximum Green (s)	6.0	50.0		39.0	39.0		30.0	30.0	30.0	30.0	30.0	30.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0		0.0	0.0
Total Lost Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min		Min	Min		None	None	None	None	None	None

Intersection Summary

Cycle Length: 90  
 Actuated Cycle Length: 41.8  
 Natural Cycle: 50  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Acorn Drive/Lovejoy Road & Dascomb Road



Queues

2026 Build with Mitigation Conditions

7: Acorn Drive/Lovejoy Road & Dascomb Road

Saturday MIDDAY

	→	←	↑	↗	↓	↙
Lane Group	EBT	WBT	NBT	NBR	SBT	SBR
Lane Group Flow (vph)	593	651	18	18	112	109
v/c Ratio	0.58	0.50	0.06	0.04	0.39	0.23
Control Delay	9.8	8.1	16.2	0.2	20.2	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.8	8.1	16.2	0.2	20.2	6.0
Queue Length 50th (ft)	82	82	3	0	20	0
Queue Length 95th (ft)	214	203	12	0	56	17
Internal Link Dist (ft)	2295	1020	1283		1505	
Turn Bay Length (ft)				40		25
Base Capacity (vph)	1591	1860	955	1215	983	1316
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.35	0.02	0.01	0.11	0.08
Intersection Summary						

HCM Signalized Intersection Capacity Analysis  
7: Acorn Drive/Lovejoy Road & Dascomb Road

2026 Build with Mitigation Conditions

Saturday Midday

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	477	10	12	512	62	9	1	10	74	4	76
Future Volume (vph)	64	477	10	12	512	62	9	1	10	74	4	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	16	16	10	10	11	10	10	14
Total Lost time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Lane Util. Factor		1.00			1.00			1.00	1.00		1.00	1.00
Frbp, ped/bikes		1.00			1.00			1.00	1.00		1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00	1.00		1.00	1.00
Frt		1.00			0.99			1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00			0.96	1.00		0.95	1.00
Satd. Flow (prot)		1868			2102			1694	1561		1693	1684
Flt Permitted		0.88			0.99			0.70	1.00		0.72	1.00
Satd. Flow (perm)		1655			2077			1246	1561		1285	1684
Peak-hour factor, PHF	0.93	0.93	0.93	0.90	0.90	0.90	0.56	0.56	0.56	0.70	0.70	0.70
Adj. Flow (vph)	69	513	11	13	569	69	16	2	18	106	6	109
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	15	0	0	89
Lane Group Flow (vph)	0	592	0	0	648	0	0	18	3	0	112	20
Confl. Peds. (#/hr)							1					1
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4		4	8		8
Actuated Green, G (s)		24.7			24.7			7.8	7.8		7.8	7.8
Effective Green, g (s)		24.7			24.7			7.8	7.8		7.8	7.8
Actuated g/C Ratio		0.58			0.58			0.18	0.18		0.18	0.18
Clearance Time (s)		5.0			5.0			5.0	5.0		5.0	5.0
Vehicle Extension (s)		2.0			2.0			2.0	2.0		2.0	2.0
Lane Grp Cap (vph)		961			1207			228	286		235	309
v/s Ratio Prot												
v/s Ratio Perm		c0.36			0.31			0.01	0.00		c0.09	0.01
v/c Ratio		0.62			0.54			0.08	0.01		0.48	0.06
Uniform Delay, d1		5.8			5.4			14.4	14.2		15.5	14.3
Progression Factor		1.00			1.00			1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8			0.2			0.1	0.0		0.6	0.0
Delay (s)		6.6			5.6			14.4	14.2		16.1	14.4
Level of Service		A			A			B	B		B	B
Approach Delay (s)		6.6			5.6			14.3			15.2	
Approach LOS		A			A			B			B	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			7.7									A
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			42.5						15.0			
Intersection Capacity Utilization			79.8%									D
Analysis Period (min)			15									
c Critical Lane Group												

## **Appendix M**

### Parking Calculations



## Parking Demand Assessment

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Land Use: Hotel

LUC:	310
Size	100 rooms

85th Percentile Peak Period Parking Demand:

Weekday\*: 1.08 vehicles per room x 100 rooms = **108 vehicles**

Saturday\*: 1.54 vehicles per room x 100 rooms = **154 vehicles**

\*Demand based on occupied rooms. Assumed 100% room occupancy to remain conservative.

### Parking Demand - Time of Day Distribution

Time	Weekday		Saturday	
	Percent of Peak	Demand	Percent of Peak	Demand
12:00-4:00 AM	100%	108	100%	154
5:00 AM	100%	108	100%	154
6:00 AM	100%	108	100%	154
7:00 AM	96%	104	96%	148
8:00 AM	90%	97	90%	139
9:00 AM	87%	94	87%	134
10:00 AM	82%	89	82%	126
11:00 AM	77%	83	77%	119
12:00 PM	77%	83	77%	119
1:00 PM	75%	81	75%	116
2:00 PM	73%	79	73%	112
3:00 PM	70%	76	70%	108
4:00 PM	71%	77	71%	109
5:00 PM	70%	76	70%	108
6:00 PM	74%	80	74%	114
7:00 PM	75%	81	75%	116
8:00 PM	79%	85	79%	122
9:00 PM	85%	92	85%	131
10:00 PM	87%	94	87%	134
11:00 PM	97%	105	97%	149
No Saturday distribution data available for LUC 310; percentages & demand assumed to equal that of a weekday for conservatism.				
Assumed based on 11:00 PM & 6:00 AM percentages				

## Parking Demand Assessment

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Land Use: Health/Fitness Club

LUC: 492

Size: 30,000 SF

Average Peak Period Parking Demand:

Weekday: 5.27 vehicles per 1,000 SF X 30,000 SF = **158 vehicles**  
 Saturday: 2.89 vehicles per 1,000 SF X 30,000 SF = **87 vehicles**

### Parking Demand - Time of Day Distribution

Time	Weekday		Saturday	
	Percent of Peak	Demand	Percent of Peak	Demand
12:00-4:00 AM	0%	0	0%	0
5:00 AM	10%	16	10%	9
6:00 AM	20%	32	20%	17
7:00 AM	20%	32	50%	44
8:00 AM	20%	32	76%	66
9:00 AM	26%	41	94%	82
10:00 AM	51%	81	95%	83
11:00 AM	48%	76	100%	87
12:00 PM	42%	66	87%	76
1:00 PM	47%	74	82%	71
2:00 PM	38%	60	78%	68
3:00 PM	41%	65	73%	64
4:00 PM	61%	96	77%	67
5:00 PM	84%	133	72%	63
6:00 PM	91%	144	68%	59
7:00 PM	100%	158	94%	82
8:00 PM	50%	79	50%	44
9:00 PM	35%	55	35%	30
10:00 PM	20%	32	20%	17
11:00 PM	20%	32	20%	17
Note:				
No data available, Percentages based on interpolation of opening/closing hour.				

# Parking Demand Assessment

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Land Use: Office Building  
 LUC: 710  
 Size: 293,000 SF

## 85th Percentile Peak Period Parking Demand:

Weekday: 3.45 vehicles per 1,000 SF X 293,000 SF = **1011 vehicles**  
 Saturday\*: 0.35 vehicles per 1,000 SF X 293,000 SF = **101 vehicles**

\*Saturday peak parking demand assumed as 10% of weekday peak parking demand.

## Parking Demand - Time of Day Distribution

Time	Weekday		Saturday	
	Percent of Peak	Demand	Percent of Peak	Demand
12:00-4:00 AM	1%	10	1%	1
5:00 AM	1%	10	1%	1
6:00 AM	1%	10	1%	1
7:00 AM	59%	596	59%	60
8:00 AM	79%	799	79%	80
9:00 AM	95%	960	95%	96
10:00 AM	100%	1011	100%	101
11:00 AM	98%	991	98%	99
12:00 PM	90%	910	90%	91
1:00 PM	77%	778	77%	78
2:00 PM	84%	849	84%	85
3:00 PM	81%	819	81%	82
4:00 PM	72%	728	72%	73
5:00 PM	46%	465	46%	46
6:00 PM	25%	253	25%	25
7:00 PM	1%	10	1%	1
8:00 PM	1%	10	1%	1
9:00 PM	1%	10	1%	1
10:00 PM	1%	10	1%	1
11:00 PM	1%	10	1%	1
No Saturday distribution data available for LUC 710; percentages & demand assumed to equal that of a weekday for conservatism.				
Assumed based on mior staff committments overnight				

## Parking Demand Assessment

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Land Use: Shopping Center

LUC: 820

Size 115,000 SF

85th Percentile Peak Period Parking Demand:

Weekday\*: 3.16 vehicles per 1,000 SF X 115,000 SF = **363 vehicles**

Saturday\*: 3.40 vehicles per 1,000 SF X 115,000 SF = **391 vehicles**

\*Weekday based on non-Friday, non-December; Saturday based on non-December

### Parking Demand - Time of Day Distribution

Time	Weekday		Saturday	
	Percent of Peak	Demand	Percent of Peak	Demand
12:00-4:00 AM	1%	4	1%	4
5:00 AM	1%	4	1%	4
6:00 AM	1%	4	1%	4
7:00 AM	5%	18	13%	51
8:00 AM	18%	65	27%	106
9:00 AM	38%	138	60%	235
10:00 AM	68%	247	75%	293
11:00 AM	91%	330	90%	352
12:00 PM	100%	363	100%	391
1:00 PM	97%	352	100%	391
2:00 PM	95%	345	98%	383
3:00 PM	88%	319	91%	356
4:00 PM	78%	283	76%	297
5:00 PM	62%	225	67%	262
6:00 PM	64%	232	72%	282
7:00 PM	77%	280	51%	199
8:00 PM	70%	254	52%	203
9:00 PM	42%	152	44%	172
10:00 PM	1%	4	29%	113
11:00 PM	1%	4	1%	4

Assumed based on minor staff commitments overnight

## Parking Demand Assessment

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Land Use: Shopping Center

LUC: 820

Size 115,000 SF

85th Percentile Peak Period Parking Demand:

Weekday\*: 5.05 vehicles per 1,000 SF X 115,000 SF = **581 vehicles**

Saturday\*: 5.91 vehicles per 1,000 SF X 115,000 SF = **680 vehicles**

\*Weekday based on non-Friday, December; Saturday based on December

### Parking Demand - Time of Day Distribution

Time	Weekday		Saturday	
	Percent of Peak	Demand	Percent of Peak	Demand
12:00-4:00 AM	1%	6	1%	7
5:00 AM	1%	6	1%	7
6:00 AM	1%	6	1%	7
7:00 AM	9%	52	13%	88
8:00 AM	16%	93	39%	265
9:00 AM	55%	320	68%	462
10:00 AM	57%	331	77%	524
11:00 AM	84%	488	93%	632
12:00 PM	84%	488	100%	680
1:00 PM	83%	482	94%	639
2:00 PM	94%	546	97%	660
3:00 PM	90%	523	96%	653
4:00 PM	81%	471	89%	605
5:00 PM	93%	540	83%	564
6:00 PM	100%	581	72%	490
7:00 PM	93%	540	51%	347
8:00 PM	96%	558	52%	354
9:00 PM	87%	505	44%	299
10:00 PM	1%	6	29%	197
11:00 PM	1%	6	1%	7
Assumed based on minor staff commitments overnight				

## Parking Demand Assessment

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Land Use: Quality Restaurant  
 LUC: 931  
 Size: 10,000 SF

85th Percentile Maximum Parking Demand:

Weekday (non-FRI):	14.2 vehicles per 1,000 SF	X	10,000 SF =	<b>142 vehicles</b>
Friday:	19.0 vehicles per 1,000 SF	X	10,000 SF =	<b>190 vehicles</b>
Saturday:	22.7 vehicles per 1,000 SF	X	10,000 SF =	<b>227 vehicles</b>

### Parking Demand - Time of Day Distribution

Time	Weekday (Non-FRI)		Friday		Saturday	
	Percent of Peak	Demand	Percent of Peak	Demand	Percent of Peak	Demand
12:00-4:00 AM	0%	0	0%	0	0%	0
5:00 AM	0%	0	0%	0	0%	0
6:00 AM	0%	0	0%	0	0%	0
7:00 AM	0%	0	0%	0	0%	0
8:00 AM	0%	0	0%	0	0%	0
9:00 AM	5%	7	5%	10	5%	11
10:00 AM	7%	10	7%	13	7%	16
11:00 AM	20%	28	20%	38	20%	45
12:00 PM	51%	72	61%	116	41%	93
1:00 PM	56%	80	75%	143	53%	120
2:00 PM	40%	57	52%	99	46%	104
3:00 PM	27%	38	38%	72	38%	86
4:00 PM	27%	38	37%	70	63%	143
5:00 PM	39%	55	30%	57	80%	182
6:00 PM	71%	101	60%	114	100%	227
7:00 PM	100%	142	93%	177	93%	211
8:00 PM	97%	138	100%	190	70%	159
9:00 PM	84%	119	84%	160	33%	75
10:00 PM	48%	68	48%	91	9%	20
11:00 PM	44%	62	44%	84	0%	0

Note:  
 Percentages obtained from LUC 932 [High-Turnover (Sit-Down) Restaurant]

## Parking Demand Assessment

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Land Use: High-Turnover (Sit-Down)

LUC: 932  
Size 10,000 SF

Average Parking Demand:

Weekday (non-FRI):	13.3 vehicles per 1,000 SF	X	10,000 SF =	<b>133 vehicles</b>
Friday:	13.3 vehicles per 1,000 SF	X	10,000 SF =	<b>133 vehicles</b>
Saturday:	16.3 vehicles per 1,000 SF	X	10,000 SF =	<b>163 vehicles</b>

### Parking Demand - Time of Day Distribution

Time	Weekday (Non-FRI)		Friday		Saturday	
	Percent of Peak	Demand	Percent of Peak	Demand	Percent of Peak	Demand
12:00-4:00 AM	0%	0	0%	0	0%	0
5:00 AM	0%	0	0%	0	0%	0
6:00 AM	0%	0	0%	0	0%	0
7:00 AM	0%	0	0%	0	0%	0
8:00 AM	0%	0	0%	0	0%	0
9:00 AM	5%	7	5%	7	5%	8
10:00 AM	7%	9	7%	9	7%	11
11:00 AM	16%	21	16%	21	20%	33
12:00 PM	49%	65	49%	65	41%	67
1:00 PM	39%	52	39%	52	53%	86
2:00 PM	27%	36	27%	36	46%	75
3:00 PM	19%	25	19%	25	38%	62
4:00 PM	22%	29	22%	29	63%	103
5:00 PM	60%	80	60%	80	80%	130
6:00 PM	94%	125	94%	125	100%	163
7:00 PM	100%	133	100%	133	93%	152
8:00 PM	81%	108	81%	108	70%	114
9:00 PM	84%	112	84%	112	33%	54
10:00 PM	48%	64	48%	64	9%	15
11:00 PM	44%	59	44%	59	0%	0
Note:						
Percentages obtained from Weekday (Non-FRI)						



## Parking Demand Assessment - Non-December

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Time	Weekday Parking Demand							Saturday Parking Demand						
	LUC 310	LUC 492	LUC 710	LUC 820	LUC 931	LUC 932	Total	LUC 310	LUC 492	LUC 710	LUC 820	LUC 931	LUC 932	Total
12:00-4:00 AM	108	0	10	4	0	0	122	154	0	1	4	0	0	159
5:00 AM	108	16	10	4	0	0	138	154	9	1	4	0	0	168
6:00 AM	108	32	10	4	0	0	154	154	17	1	4	0	0	176
7:00 AM	104	32	596	18	0	0	750	148	44	60	51	0	0	303
8:00 AM	97	32	799	65	0	0	993	139	66	80	106	0	0	391
9:00 AM	94	41	960	138	10	7	1250	134	82	96	235	11	8	566
10:00 AM	89	81	1011	247	13	9	1450	126	83	101	293	16	11	630
11:00 AM	83	76	991	330	38	21	1539	119	87	99	352	45	33	735
12:00 PM	83	66	910	363	116	65	1603	119	76	91	391	93	67	837
1:00 PM	81	74	778	352	143	52	1480	116	71	78	391	120	86	862
2:00 PM	79	60	849	345	99	36	1468	112	68	85	383	104	75	827
3:00 PM	76	65	819	319	72	25	1376	108	64	82	356	86	62	758
4:00 PM	77	96	728	283	70	29	1283	109	67	73	297	143	103	792
5:00 PM	76	133	465	225	57	80	1036	108	63	46	262	182	130	791
6:00 PM	80	144	253	232	114	125	948	114	59	25	282	227	163	870
7:00 PM	81	158	10	280	177	133	839	116	82	1	199	211	152	761
8:00 PM	85	79	10	254	190	108	726	122	44	1	203	159	114	643
9:00 PM	92	55	10	152	160	112	581	131	30	1	172	75	54	463
10:00 PM	94	32	10	4	91	64	295	134	17	1	113	20	15	300
11:00 PM	105	32	10	4	84	59	294	149	17	1	4	0	0	171

Peak Weekday Parking Demand:	<b>1603</b>	Peak Saturday Parking Demand:	<b>870</b>
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## Parking Demand Assessment - December

Project: 146 Dascomb Road Site Redevelopment Project - Andover, MA

Date: September 24, 2018

Analyst: TEC, Inc. / Eindra (Elena) Aung, E.I.T.

Source: Institute of Transportation Engineers - *Parking Generation - 4th Edition*

Time	Weekday Parking Demand							Saturday Parking Demand						
	LUC 310	LUC 492	LUC 710	LUC 820	LUC 931	LUC 932	Total	LUC 310	LUC 492	LUC 710	LUC 820	LUC 931	LUC 932	Total
12:00-4:00 AM	108	0	10	6	0	0	<b>124</b>	154	0	1	7	0	0	<b>162</b>
5:00 AM	108	16	10	6	0	0	<b>140</b>	154	9	1	7	0	0	<b>171</b>
6:00 AM	108	32	10	6	0	0	<b>156</b>	154	17	1	7	0	0	<b>179</b>
7:00 AM	104	32	596	52	0	0	<b>784</b>	148	44	60	88	0	0	<b>340</b>
8:00 AM	97	32	799	93	0	0	<b>1021</b>	139	66	80	265	0	0	<b>550</b>
9:00 AM	94	41	960	320	10	7	<b>1432</b>	134	82	96	462	11	8	<b>793</b>
10:00 AM	89	81	1011	331	13	9	<b>1534</b>	126	83	101	524	16	11	<b>861</b>
11:00 AM	83	76	991	488	38	21	<b>1697</b>	119	87	99	632	45	33	<b>1015</b>
12:00 PM	83	66	910	488	116	65	<b>1728</b>	119	76	91	680	93	67	<b>1126</b>
1:00 PM	81	74	778	482	143	52	<b>1610</b>	116	71	78	639	120	86	<b>1110</b>
2:00 PM	79	60	849	546	99	36	<b>1669</b>	112	68	85	660	104	75	<b>1104</b>
3:00 PM	76	65	819	523	72	25	<b>1580</b>	108	64	82	653	86	62	<b>1055</b>
4:00 PM	77	96	728	471	70	29	<b>1471</b>	109	67	73	605	143	103	<b>1100</b>
5:00 PM	76	133	465	540	57	80	<b>1351</b>	108	63	46	564	182	130	<b>1093</b>
6:00 PM	80	144	253	581	114	125	<b>1297</b>	114	59	25	490	227	163	<b>1078</b>
7:00 PM	81	158	10	540	177	133	<b>1099</b>	116	82	1	347	211	152	<b>909</b>
8:00 PM	85	79	10	558	190	108	<b>1030</b>	122	44	1	354	159	114	<b>794</b>
9:00 PM	92	55	10	505	160	112	<b>934</b>	131	30	1	299	75	54	<b>590</b>
10:00 PM	94	32	10	6	91	64	<b>297</b>	134	17	1	197	20	15	<b>384</b>
11:00 PM	105	32	10	6	84	59	<b>296</b>	149	17	1	7	0	0	<b>174</b>

Peak Weekday Parking Demand:	<b>1728</b>	Peak Saturday Parking Demand:	<b>1126</b>
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