

REF.: HTS-2003574

October 9, 2008

Mr. Thomas Kennedy
Kennedy Development
500 Broadway
Everett, Massachusetts 02149

SUBJECT: Revised Response to Zoning Board Comments
Proposed Woodbridge Crossing Residential Development
Route 27 (Central Street) and Island Street - Stoughton, Massachusetts

Dear Mr. Kennedy:

Greenman-Pedersen, Inc. (GPI) has prepared this revised Response to Comments letter to address the Stoughton Zoning Board of Appeals concerns described at the July 17 and September 18, 2008 public hearings with respect to traffic and off-site improvements for the proposed Woodbridge Crossing residential development. The proposed development project is to be located on Route 27 (Central Street) and Island Street in Stoughton, Massachusetts. Conceptual roadway improvement plans and a traffic study had been prepared and submitted to the Town describing the expected traffic impacts of the project and the proposed mitigation measures for the currently proposed project.¹ Two specific comments were raised at the meetings including 1) a comparison of current traffic volumes to those volumes used in the traffic study which were based on counts conducted in 2003, and 2) reconsideration of the proposed improvements at the Central Street intersection with Island Street to maintain a shoulder width in the northeast intersection corner allowing tractor trailer vehicles to temporarily park. Both comments are readdressed in this letter and described below:

Traffic Count Data

The traffic count data used in the submitted study were collected in the Fall of 2003. These counts were adjusted upwards using a growth factor of 1.0 percent per year to estimate a 2005 traffic volume condition. Additional traffic counts for the study area intersections were conducted in the Fall of 2005 to verify the accuracy of the traffic projections. Based on a comparison of the 2003 data adjusted to reflect 2005 traffic volume conditions and the actual 2005 traffic volume conditions, the adjusted 2003 traffic count traffic volumes were significantly higher than the actual traffic counts collected in 2005. To provide a conservative (worse case) analysis condition, the adjusted 2003 traffic data were used in subsequent traffic studies including the most recent study submitted to the Town.

¹ *Traffic Impact and Access Study; Proposed Woodbridge Crossing Residential Development; Stoughton, Massachusetts; May 2008.*

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At the July 17 and September 18, 2008 Zoning Board public hearings, it was questioned if the previous counts accurately represent current traffic conditions. After the July 17 hearing, the next scheduled hearing was on September 4. Therefore, additional traffic counts were performed along Central Street during the weekday AM and PM peak hours on Wednesday July 30, 2008, prior to the beginning of the school year. The traffic counts were performed at the two study intersections where improvements are proposed as part of the project. This includes the Central Street intersection with West Street and the Central Street intersection with Island Street. However, at the September 18 hearing, concern was raised regarding the direct impact of school traffic during those time periods when the data was collected as well as potential different commuting travel patterns when children are on summer vacation. Accordingly, additional traffic counts were collected on Thursday October 2, 2008 when school was in session at these locations. A comparison of the traffic volume data collected in 2003 (adjusted to 2005), and actual counts collected in 2005, July 2008, and October 2008 at these intersections are summarized in Table 1.

Table 1
TRAFFIC COUNT COMPARISON

Intersection/Year	2005 Estimated ^a	2005 Actual ^b	July 2008 Actual ^c	Oct. 2008 Actual ^d
Central Street at West Street:				
<i>Weekday AM</i>	2,223	1,947	1,580	1,628
<i>Weekday PM</i>	2,373	1,816	2,073	2,088
Central Street at Island Street:				
<i>Weekday AM</i>	2,282	1,971	1,765	1,764
<i>Weekday PM</i>	2,458	2,060	2,100	2,196

^a2003 traffic count data upwardly adjusted by 2 percent to reflect 2005 traffic volumes.

^bActual 2005 traffic count data.

^cActual July 2008 traffic count data.

^dActual October 2008 traffic count data.

As shown in Table 1, the actual July 2008 traffic volume counts are lower than the estimated 2005 traffic volumes using the 2003 count data, which were used in the analysis for the traffic studies prepared for the project. As indicated in the August 18, 2008 letter prepared by GPI, the traffic counts that were collected in July may have been underestimated by as much as 100 vehicles due to the proximity of the area schools. As presented in Table 1, the total traffic volumes through the intersections during the month of October were within 100 vehicles of those counts collected in July, as previously estimated. Accordingly, the traffic volumes collected in both July and October 2008 are significantly higher than used in the submitted traffic study. The October 2008 traffic count data is attached to this letter.

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Central Street at Island Street Design

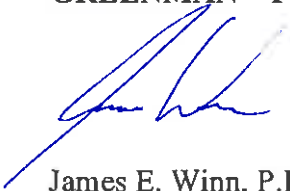
As discussed at the July 17, 2008 Zoning Board public hearing and described in the August 18, 2008 letter prepared by GPI, it was requested that the improvements at the Central Street intersection with Island Street be re-evaluated with respect to the current use along Island Street including travel patterns to access existing driveways. Of particular concern are the raised channelizing islands separating right-turning traffic flow. It was described that trucks currently park on the edge of the roadway in the northeast intersection corner and then proceed westerly into the commercial driveway located on the northwest intersection corner. Although this maneuver could be accomplished with the previous improvement proposal, it may be difficult for vehicles (particularly truck traffic) to pass-by a tractor trailer that is parked in the shoulder with the construction of a raised island.

To accommodate current travel patterns and the use of Island Street for truck parking, several geometric modifications have been made from the previous improvement proposal. A roadway shoulder has been included along Island Street to accommodate a parked tractor trailer near the Central Street intersection. Although the raised island has been removed from the plan for northbound traffic traveling onto Island Street from Central Street, the geometry of the intersection has been modified to provide a better defined intersection with less open pavement space which currently creates driver confusion. The radius on the northern end of the island separating right-turning southbound traffic from Island Road to Central Street has been increased to improve accessibility into the existing commercial driveway located in the northwest intersection corner. A revised concept plan illustrating the changes described above is attached to this letter.

Should you have any questions, or require additional information, please contact me at (603) 891-2213.

Sincerely,

GREENMAN – PEDERSEN, INC.



James E. Winn, P.E.
Project Manager

attachments

cc: Richard Bennett, Bernkopf Goodman LLP
Arthur Scarneo, GPI

ATTACHEMENTS

Traffic Count Data
Concept Plan

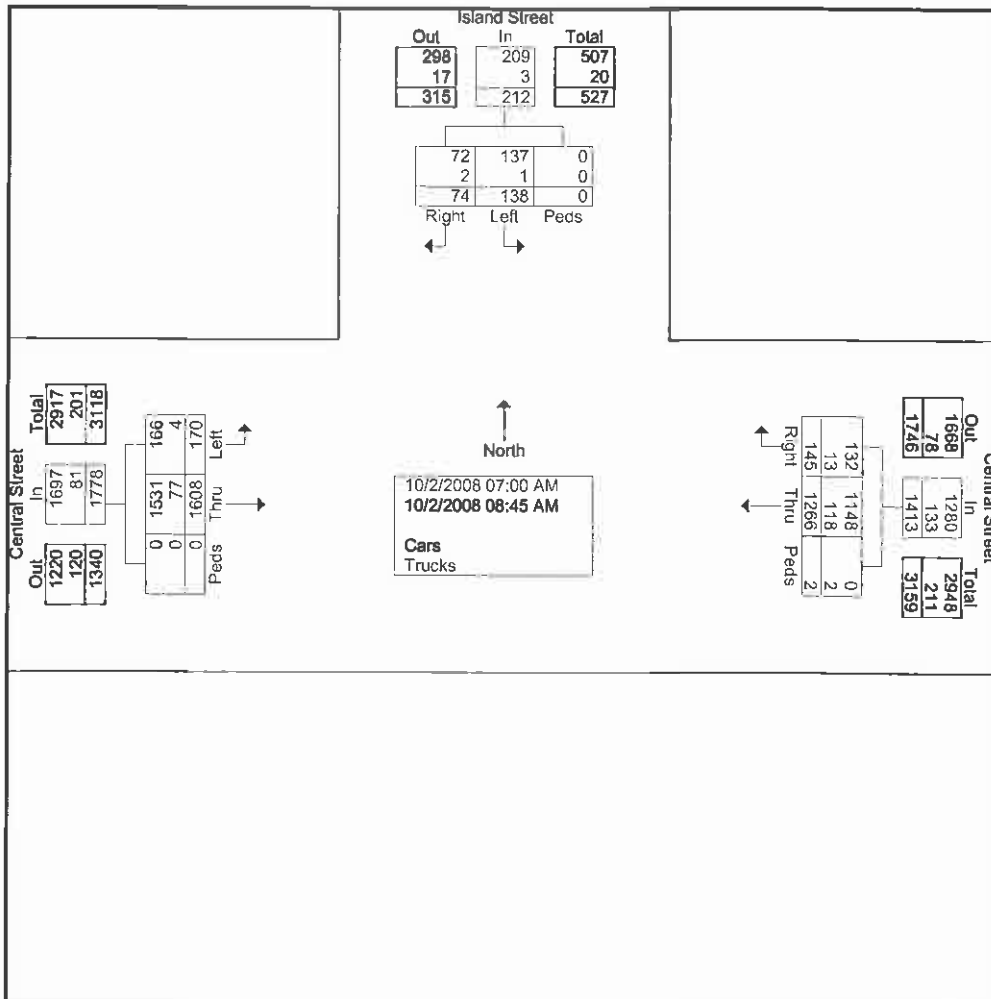
GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Island St @ Central Street - AM
Site Code : 03574
Start Date : 10/2/2008
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Groups Printed- Cars - Trucks

Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
07:00 AM	22	3	0	25	126	18	2	146	7	172	0	179	350
07:15 AM	19	5	0	24	151	21	0	172	20	297	0	317	513
07:30 AM	22	7	0	29	145	16	0	161	11	176	0	187	377
07:45 AM	9	14	0	23	160	16	0	176	35	165	0	200	399
Total	72	29	0	101	582	71	2	655	73	810	0	883	1639
08:00 AM	11	13	0	24	174	16	0	190	28	162	0	190	404
08:15 AM	22	20	0	42	175	18	0	193	27	193	0	220	455
08:30 AM	15	5	0	20	157	24	0	181	21	219	0	240	441
08:45 AM	18	7	0	25	178	16	0	194	21	224	0	245	464
Total	66	45	0	111	684	74	0	758	97	798	0	895	1764
Grand Total	138	74	0	212	1266	145	2	1413	170	1608	0	1778	3403
Approch %	65.1	34.9	0		89.6	10.3	0.1		9.6	90.4	0		
Total %	4.1	2.2	0	6.2	37.2	4.3	0.1	41.5	5	47.3	0	52.2	
Cars	137	72	0	209	1148	132	0	1280	166	1531	0	1697	3186
% Cars	99.3	97.3	0	98.6	90.7	91	0	90.6	97.6	95.2	0	95.4	93.6
Trucks	1	2	0	3	118	13	2	133	4	77	0	81	217
% Trucks	0.7	2.7	0	1.4	9.3	9	100	9.4	2.4	4.8	0	4.6	6.4

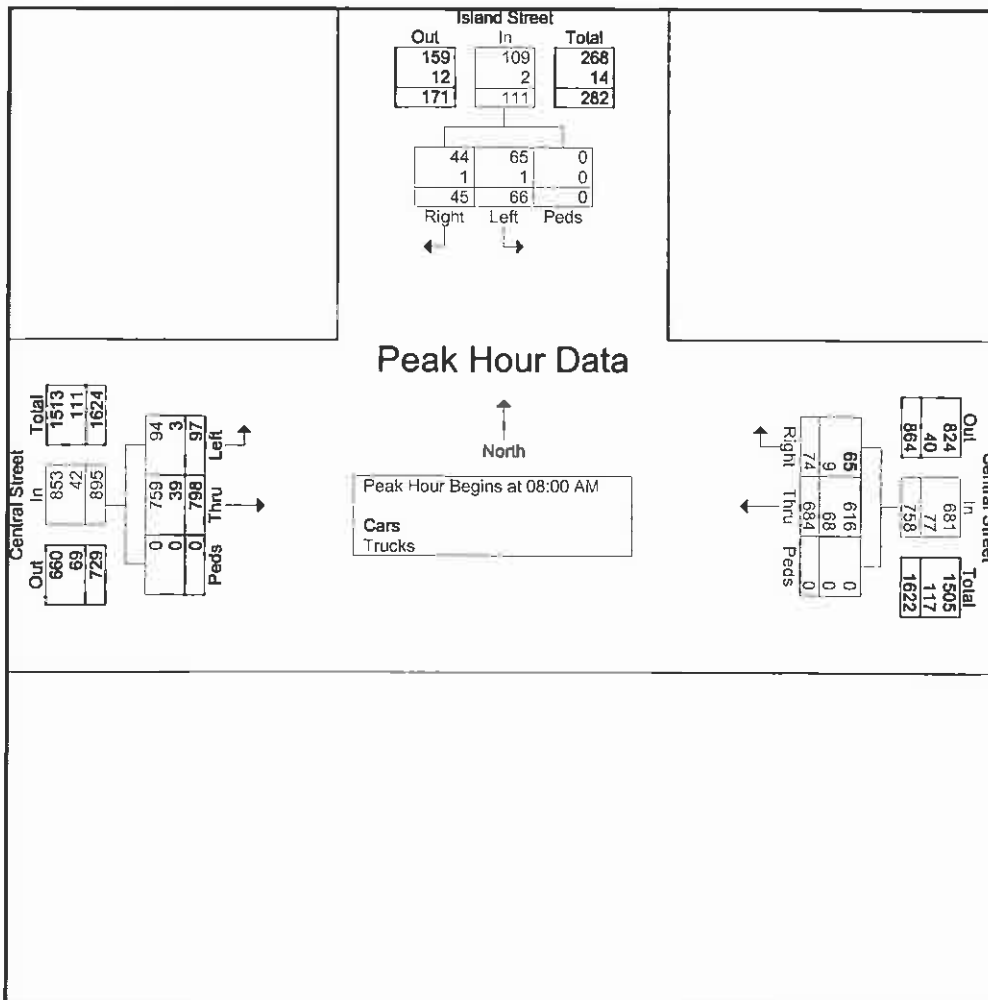


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61 Spit Brook Rd.
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File Name : Island St @ Central Street - AM
Site Code : 03574
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Start Time	Island Street Southbound			App. Total	Central Street Westbound			App. Total	Central Street Eastbound			Int. Total	
	Left	Right	Peds		Thru	Right	Peds		Left	Thru	Peds		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	11	13	0	24	174	16	0	190	28	162	0	190	404
08:15 AM	22	20	0	42	175	18	0	193	27	193	0	220	455
08:30 AM	15	5	0	20	157	24	0	181	21	219	0	240	441
08:45 AM	18	7	0	25	178	16	0	194	21	224	0	245	464
Total Volume	66	45	0	111	684	74	0	758	97	798	0	895	1764
% App. Total	59.5	40.5	0		90.2	9.8	0		10.8	89.2	0		
PHF	.750	.563	.000	.661	.961	.771	.000	.977	.866	.891	.000	.913	.950
Cars	65	44	0	109	616	65	0	681	94	759	0	853	1643
% Cars	98.5	97.8	0	98.2	90.1	87.8	0	89.8	96.9	95.1	0	95.3	93.1
Trucks	1	1	0	2	68	9	0	77	3	39	0	42	121
% Trucks	1.5	2.2	0	1.8	9.9	12.2	0	10.2	3.1	4.9	0	4.7	6.9



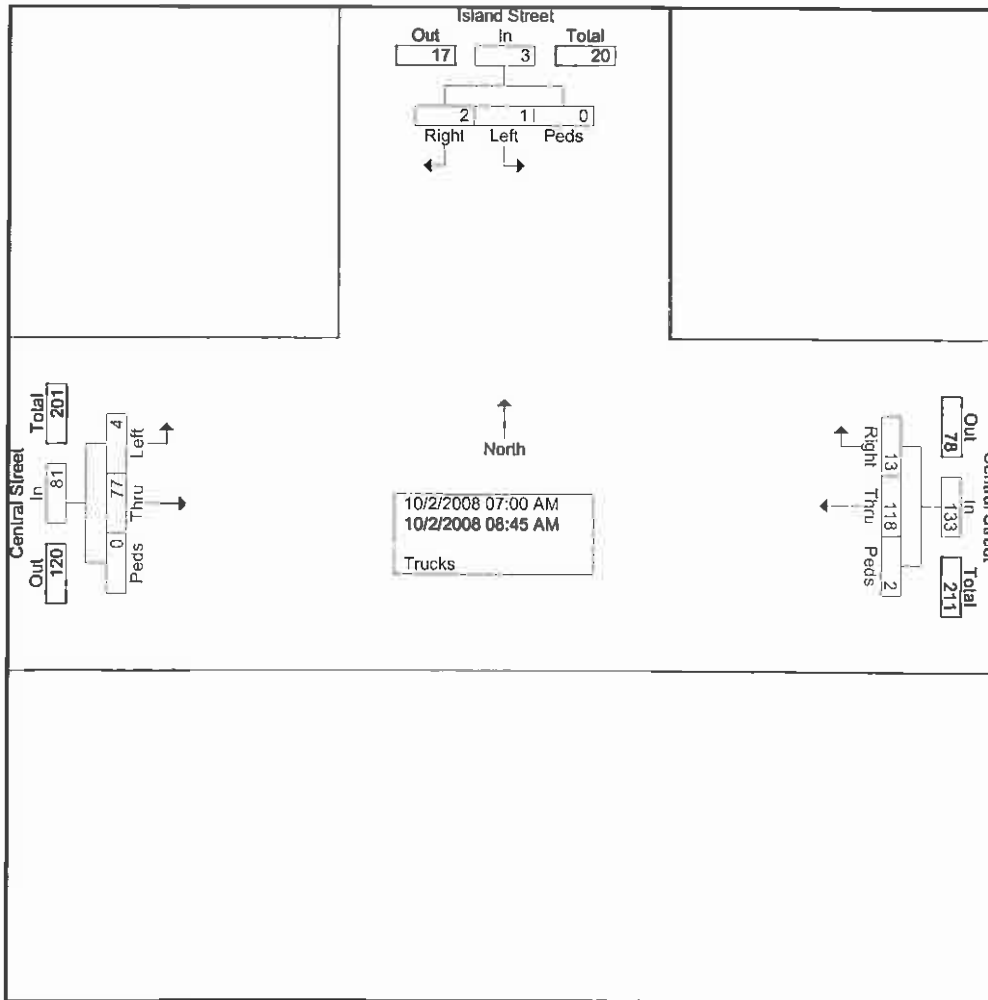
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61 Spit Brook Rd.
Nashua, NH. 03060

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Site Code : 03574
Start Date : 10/2/2008
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Groups Printed- Trucks

Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
07:00 AM	0	0	0	0	12	2	2	16	0	12	0	12	28
07:15 AM	0	1	0	1	15	0	0	15	0	10	0	10	26
07:30 AM	0	0	0	0	11	1	0	12	0	9	0	9	21
07:45 AM	0	0	0	0	12	1	0	13	1	7	0	8	21
Total	0	1	0	1	50	4	2	56	1	38	0	39	96
08:00 AM	0	0	0	0	17	3	0	20	0	6	0	6	26
08:15 AM	0	0	0	0	21	3	0	24	0	9	0	9	33
08:30 AM	1	1	0	2	8	2	0	10	1	15	0	16	28
08:45 AM	0	0	0	0	22	1	0	23	2	9	0	11	34
Total	1	1	0	2	68	9	0	77	3	39	0	42	121
Grand Total	1	2	0	3	118	13	2	133	4	77	0	81	217
Apprch %	33.3	66.7	0		88.7	9.8	1.5		4.9	95.1	0		
Total %	0.5	0.9	0	1.4	54.4	6	0.9	61.3	1.8	35.5	0	37.3	



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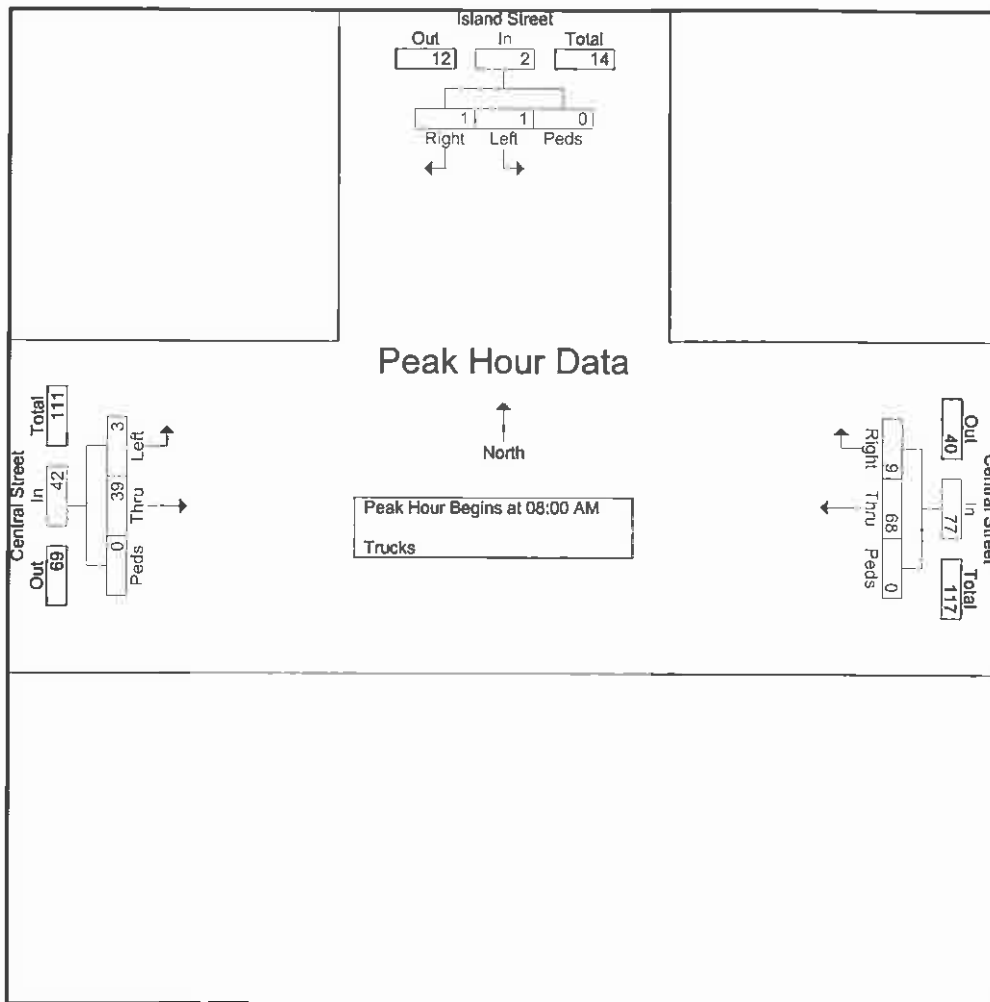
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Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	17	3	0	20	0	6	0	6	26
08:15 AM	0	0	0	0	21	3	0	24	0	9	0	9	33
08:30 AM	1	1	0	2	8	2	0	10	1	15	0	16	28
08:45 AM	0	0	0	0	22	1	0	23	2	9	0	11	34
Total Volume	1	1	0	2	68	9	0	77	3	39	0	42	121
% App. Total	50	50	0		88.3	11.7	0		7.1	92.9	0		
PHF	.250	.250	.000	.250	.773	.750	.000	.802	.375	.650	.000	.656	.890



GPI

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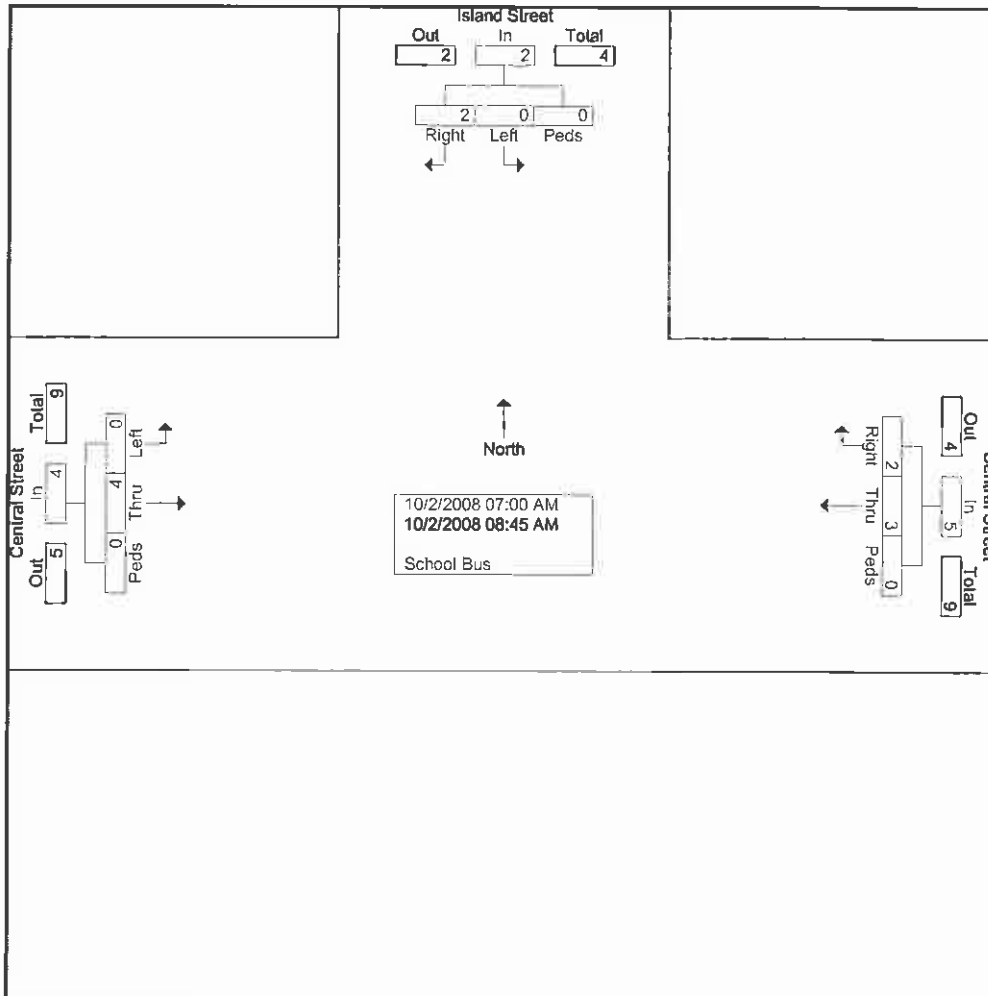
Site Code : 03574

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Groups Printed- School Bus

Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	1	0	0	1	0	3	0	3	4
07:30 AM	0	0	0	0	2	2	0	4	0	1	0	1	5
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	3	2	0	5	0	4	0	4	10
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total	0	1	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	2	0	2	3	2	0	5	0	4	0	4	11
Approch %	0	100	0		60	40	0		0	100	0		
Total %	0	18.2	0	18.2	27.3	18.2	0	45.5	0	36.4	0	36.4	



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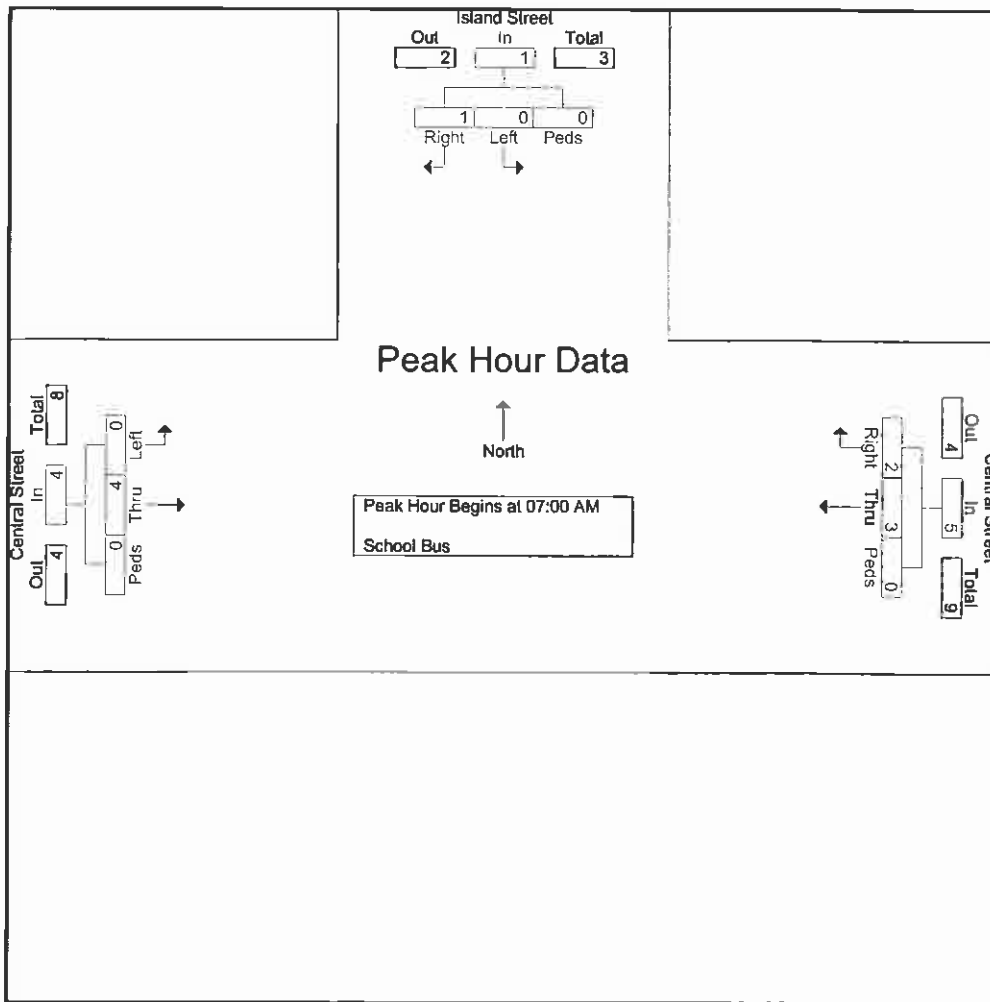
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Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	1	0	0	1	0	3	0	3	4
07:30 AM	0	0	0	0	2	2	0	4	0	1	0	1	5
07:45 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	3	2	0	5	0	4	0	4	10
% App. Total	0	100	0		60	40	0		0	100	0		
PHF	.000	.250	.000	.250	.375	.250	.000	.313	.000	.333	.000	.333	.500



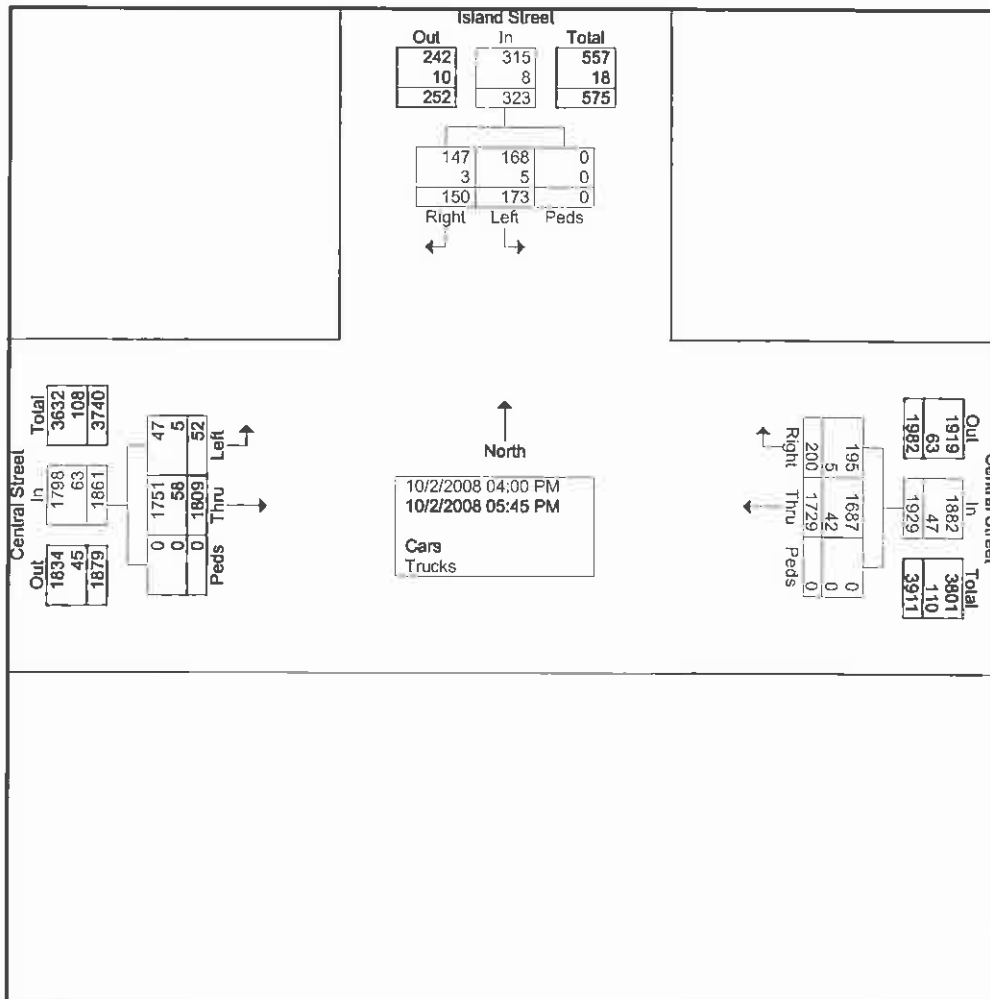
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61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Island St @ Central Street - PM
Site Code : 03574
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Groups Printed- Cars - Trucks

Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
04:00 PM	23	9	0	32	223	21	0	244	10	195	0	205	481
04:15 PM	28	10	0	38	166	24	0	190	5	214	0	219	447
04:30 PM	18	20	0	38	204	26	0	230	2	202	0	204	472
04:45 PM	20	16	0	36	221	18	0	239	1	241	0	242	517
Total	89	55	0	144	814	89	0	903	18	852	0	870	1917
05:00 PM	24	32	0	56	232	31	0	263	10	220	0	230	549
05:15 PM	17	20	0	37	248	21	0	269	12	249	0	261	567
05:30 PM	22	22	0	44	205	32	0	237	4	266	0	270	551
05:45 PM	21	21	0	42	230	27	0	257	8	222	0	230	529
Total	84	95	0	179	915	111	0	1026	34	957	0	991	2196
Grand Total	173	150	0	323	1729	200	0	1929	52	1809	0	1861	4113
Approch %	53.6	46.4	0		89.6	10.4	0		2.8	97.2	0		
Total %	4.2	3.6	0	7.9	42	4.9	0	46.9	1.3	44	0	45.2	
Cars	168	147	0	315	1687	195	0	1882	47	1751	0	1798	3995
% Cars	97.1	98	0	97.5	97.6	97.5	0	97.6	90.4	96.8	0	96.6	97.1
Trucks	5	3	0	8	42	5	0	47	5	58	0	63	118
% Trucks	2.9	2	0	2.5	2.4	2.5	0	2.4	9.6	3.2	0	3.4	2.9

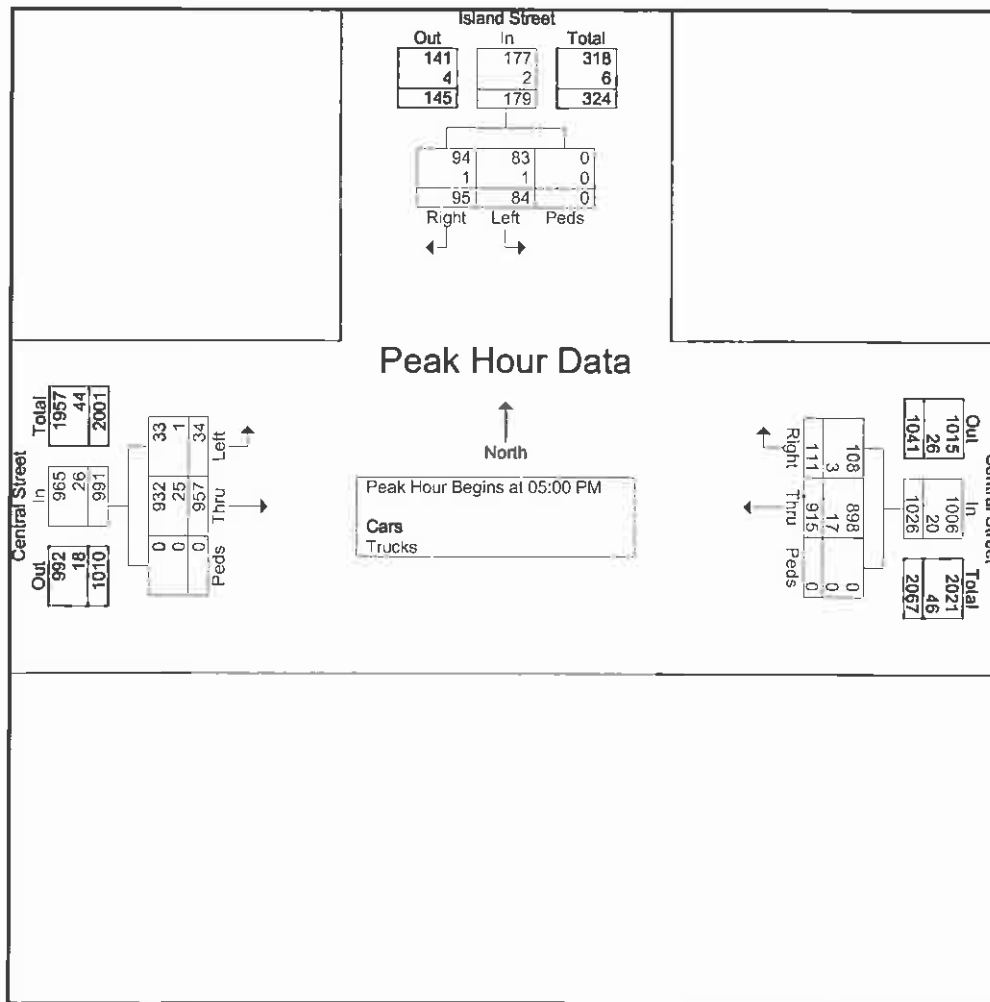


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Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	24	32	0	56	232	31	0	263	10	220	0	230	549
05:15 PM	17	20	0	37	248	21	0	269	12	249	0	261	567
05:30 PM	22	22	0	44	205	32	0	237	4	266	0	270	551
05:45 PM	21	21	0	42	230	27	0	257	8	222	0	230	529
Total Volume	84	95	0	179	915	111	0	1026	34	957	0	991	2196
% App. Total	46.9	53.1	0		89.2	10.8	0		3.4	96.6	0		
PHI	.875	.742	.000	.799	.922	.867	.000	.954	.708	.899	.000	.918	.968
Cars	83	94	0	177	898	108	0	1006	33	932	0	965	2148
% Cars	98.8	98.9	0	98.9	98.1	97.3	0	98.1	97.1	97.4	0	97.4	97.8
Trucks	1	1	0	2	17	3	0	20	1	25	0	26	48
% Trucks	1.2	1.1	0	1.1	1.9	2.7	0	1.9	2.9	2.6	0	2.6	2.2



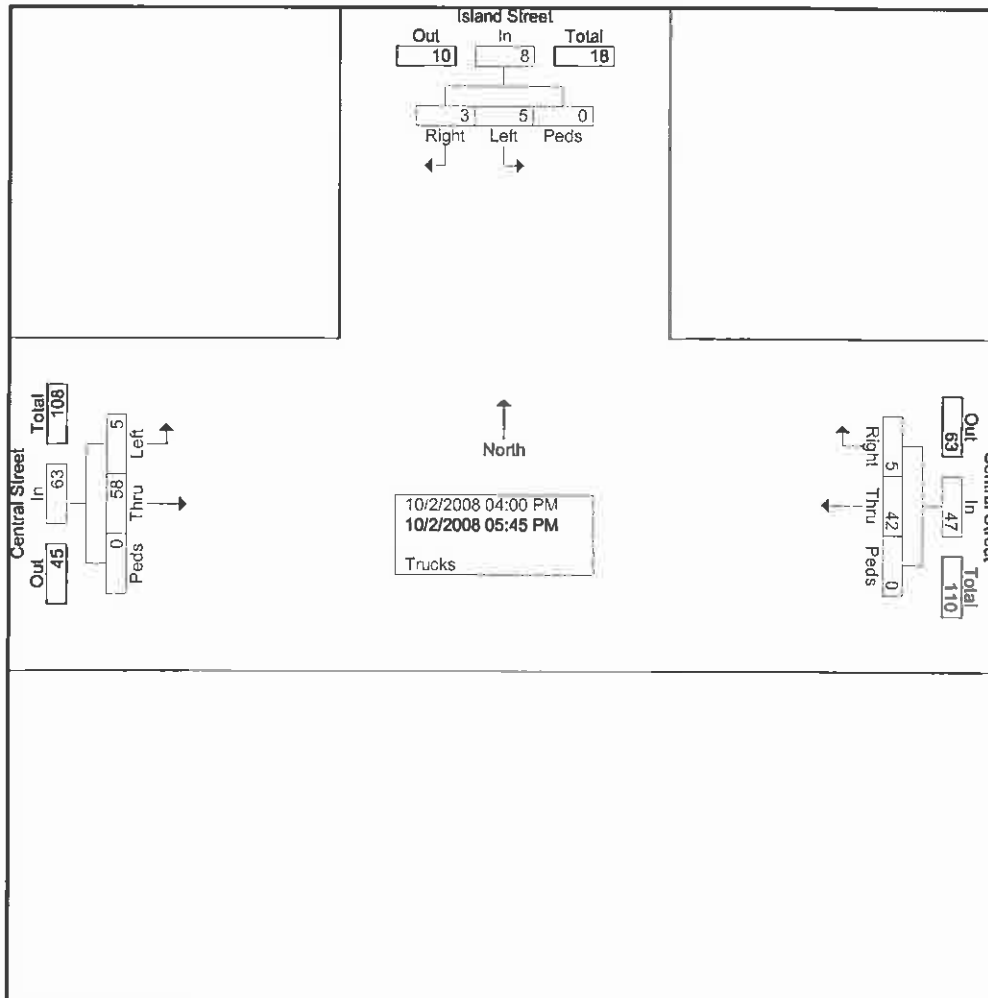
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Groups Printed- Trucks

Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
04:00 PM	1	0	0	1	8	0	0	8	1	11	0	12	21
04:15 PM	3	0	0	3	8	1	0	9	2	7	0	9	21
04:30 PM	0	1	0	1	6	0	0	6	1	6	0	7	14
04:45 PM	0	1	0	1	3	1	0	4	0	9	0	9	14
Total	4	2	0	6	25	2	0	27	4	33	0	37	70
05:00 PM	0	0	0	0	2	1	0	3	1	8	0	9	12
05:15 PM	1	1	0	2	3	0	0	3	0	4	0	4	9
05:30 PM	0	0	0	0	8	2	0	10	0	7	0	7	17
05:45 PM	0	0	0	0	4	0	0	4	0	6	0	6	10
Total	1	1	0	2	17	3	0	20	1	25	0	26	48
Grand Total	5	3	0	8	42	5	0	47	5	58	0	63	118
Apprch %	62.5	37.5	0		89.4	10.6	0		7.9	92.1	0		
Total %	4.2	2.5	0	6.8	35.6	4.2	0	39.8	4.2	49.2	0	53.4	



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61 Spit Brook Rd.
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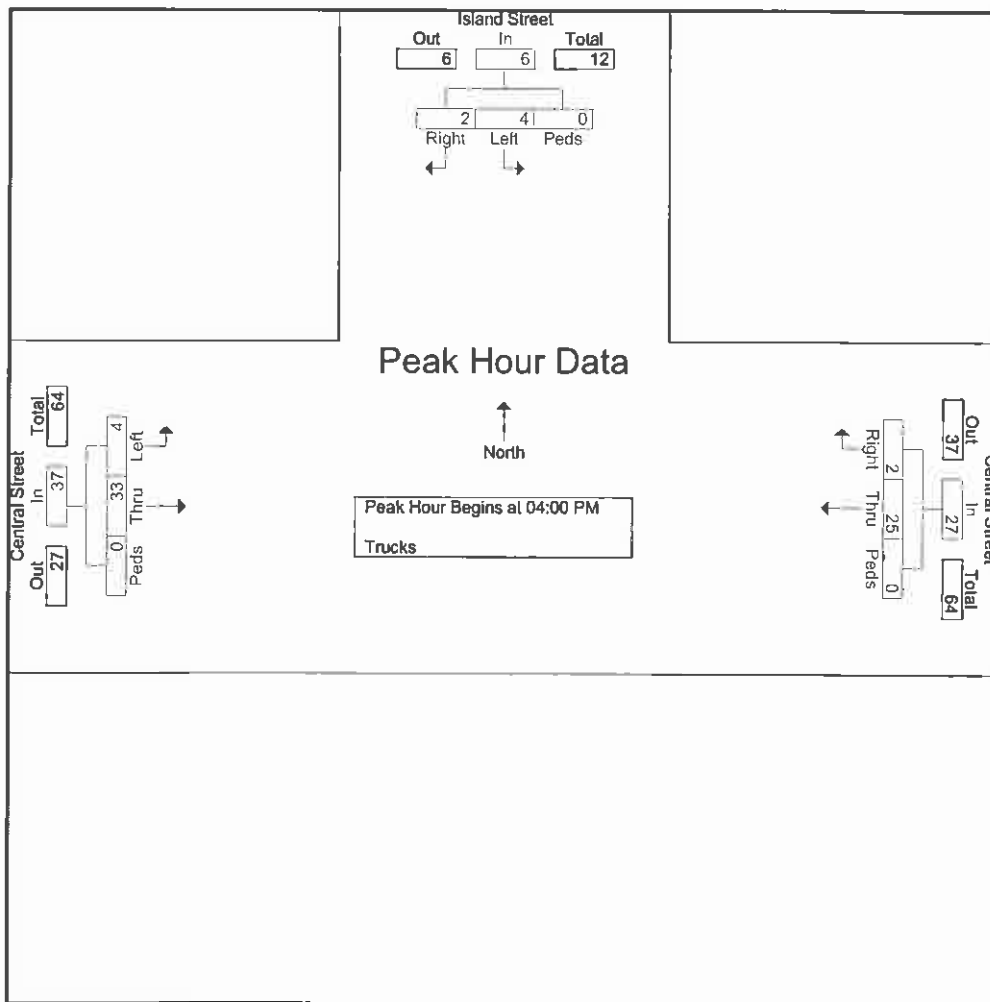
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Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	1	0	0	1	8	0	0	8	1	11	0	12	21
04:15 PM	3	0	0	3	8	1	0	9	2	7	0	9	21
04:30 PM	0	1	0	1	6	0	0	6	1	6	0	7	14
04:45 PM	0	1	0	1	3	1	0	4	0	9	0	9	14
Total Volume	4	2	0	6	25	2	0	27	4	33	0	37	70
% App. Total	66.7	33.3	0		92.6	7.4	0		10.8	89.2	0		
PHF	.333	.500	.000	.500	.781	.500	.000	.750	.500	.750	.000	.771	.833



GPI

61 Spit Brook Rd.
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File Name : Island St @ Central Street - PM

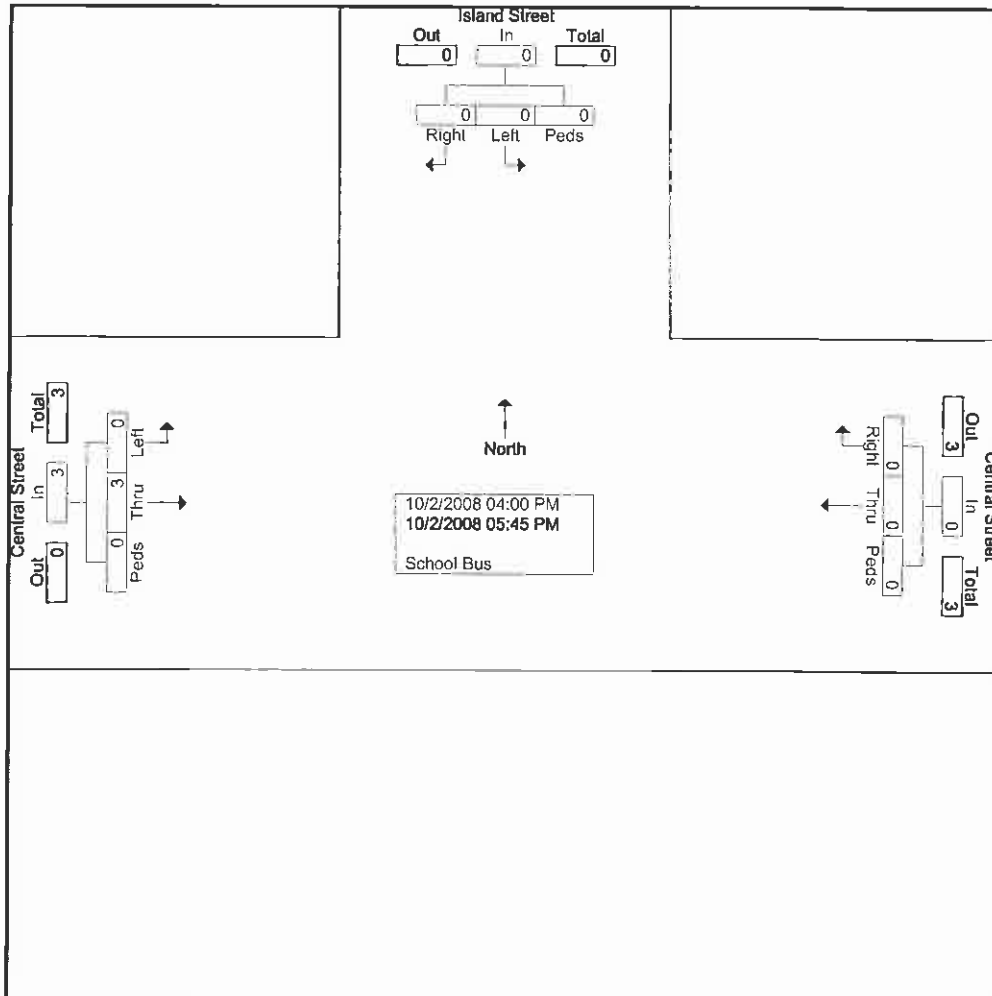
Site Code : 03574

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Groups Printed- School Bus

Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	
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	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	2	0	2	2
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	0	0	0	0	0	0	0
05:30 PM	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	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	3	0	3	3
Apprch %	0	0	0	0	0	0	0	0	0	100	0	100	
Total %	0	0	0	0	0	0	0	0	0	100	0	100	



GPI

61 Spit Brook Rd.
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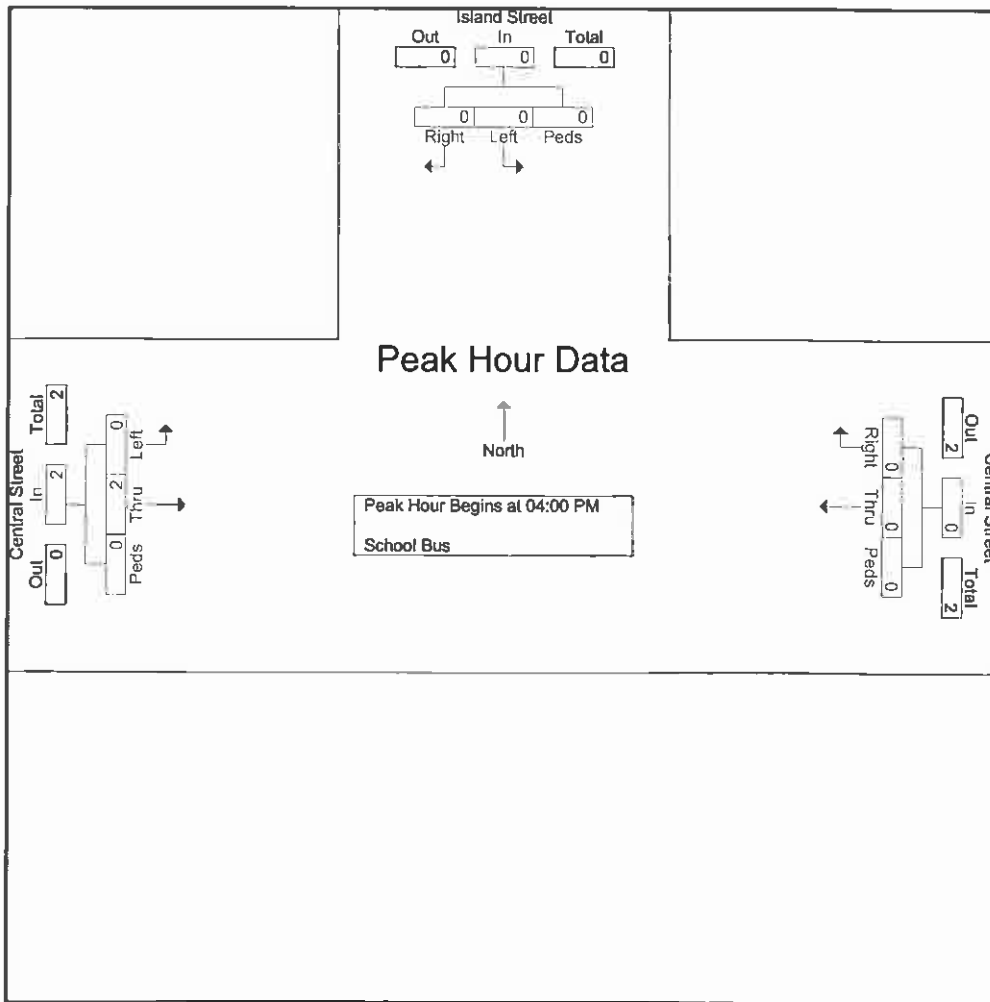
File Name : Island St @ Central Street - PM

Site Code : 03574

Start Date : 10/2/2008

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Start Time	Island Street Southbound				Central Street Westbound				Central Street Eastbound				Int. Total
	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	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	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	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	2	0	2	2
% App. Total	0	0	0	0	0	0	0	0	0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.500



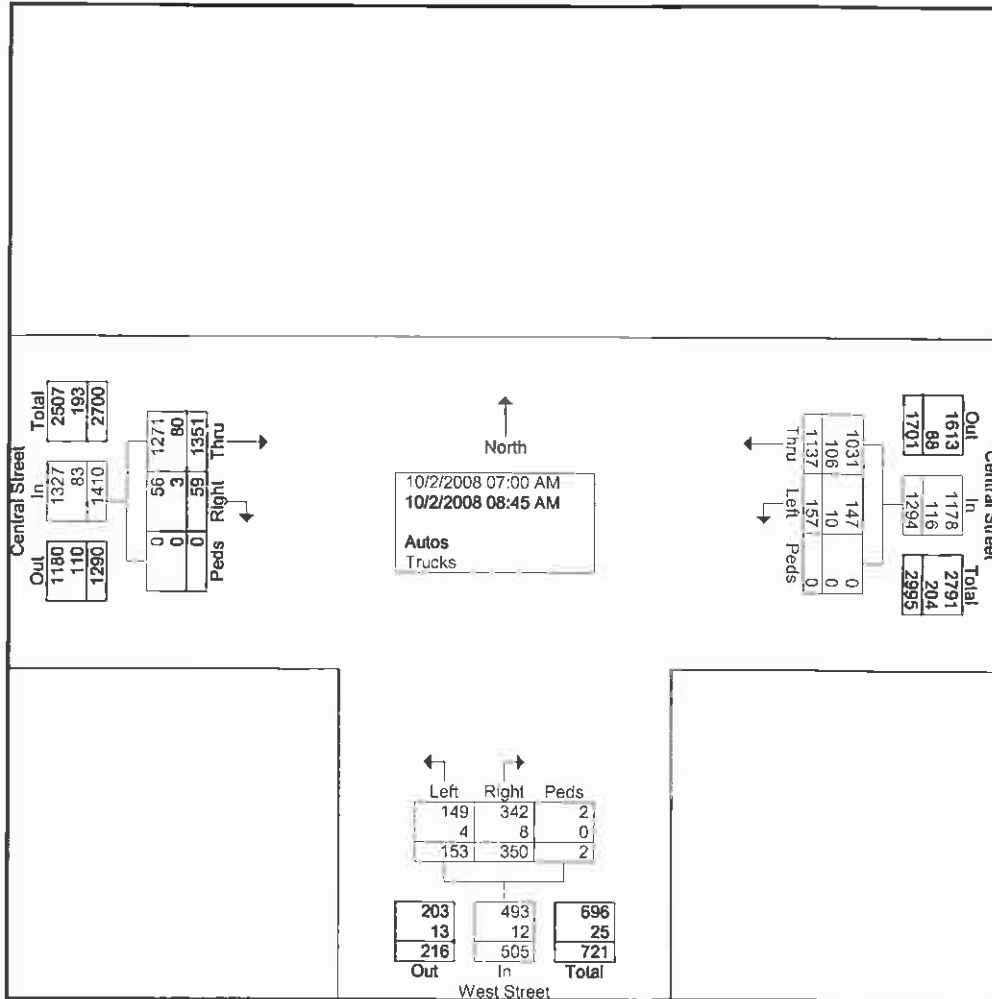
GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Island St @ West Street - AM
Site Code : 03574
Start Date : 10/2/2008
Page No : 1

Groups Printed- Autos - Trucks

Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
07:00 AM	18	134	0	152	15	55	0	70	188	4	0	192	414
07:15 AM	25	124	0	149	14	70	1	85	186	7	0	193	427
07:30 AM	24	134	0	158	14	37	0	51	154	8	0	162	371
07:45 AM	21	153	0	174	14	52	1	67	150	12	0	162	403
Total	88	545	0	633	57	214	2	273	678	31	0	709	1615
08:00 AM	18	167	0	185	34	47	0	81	149	6	0	155	421
08:15 AM	29	166	0	195	25	45	0	70	163	5	0	168	433
08:30 AM	10	127	0	137	15	19	0	34	165	4	0	169	340
08:45 AM	12	132	0	144	22	25	0	47	196	13	0	209	400
Total	69	592	0	661	96	136	0	232	673	28	0	701	1594
Grand Total	157	1137	0	1294	153	350	2	505	1351	59	0	1410	3209
Apprch %	12.1	87.9	0		30.3	69.3	0.4		95.8	4.2	0		
Total %	4.9	35.4	0	40.3	4.8	10.9	0.1	15.7	42.1	1.8	0	43.9	
Autos	147	1031	0	1178	149	342	2	493	1271	56	0	1327	2998
% Autos	93.6	90.7	0	91	97.4	97.7	100	97.6	94.1	94.9	0	94.1	93.4
Trucks	10	106	0	116	4	8	0	12	80	3	0	83	211
% Trucks	6.4	9.3	0	9	2.6	2.3	0	2.4	5.9	5.1	0	5.9	6.6

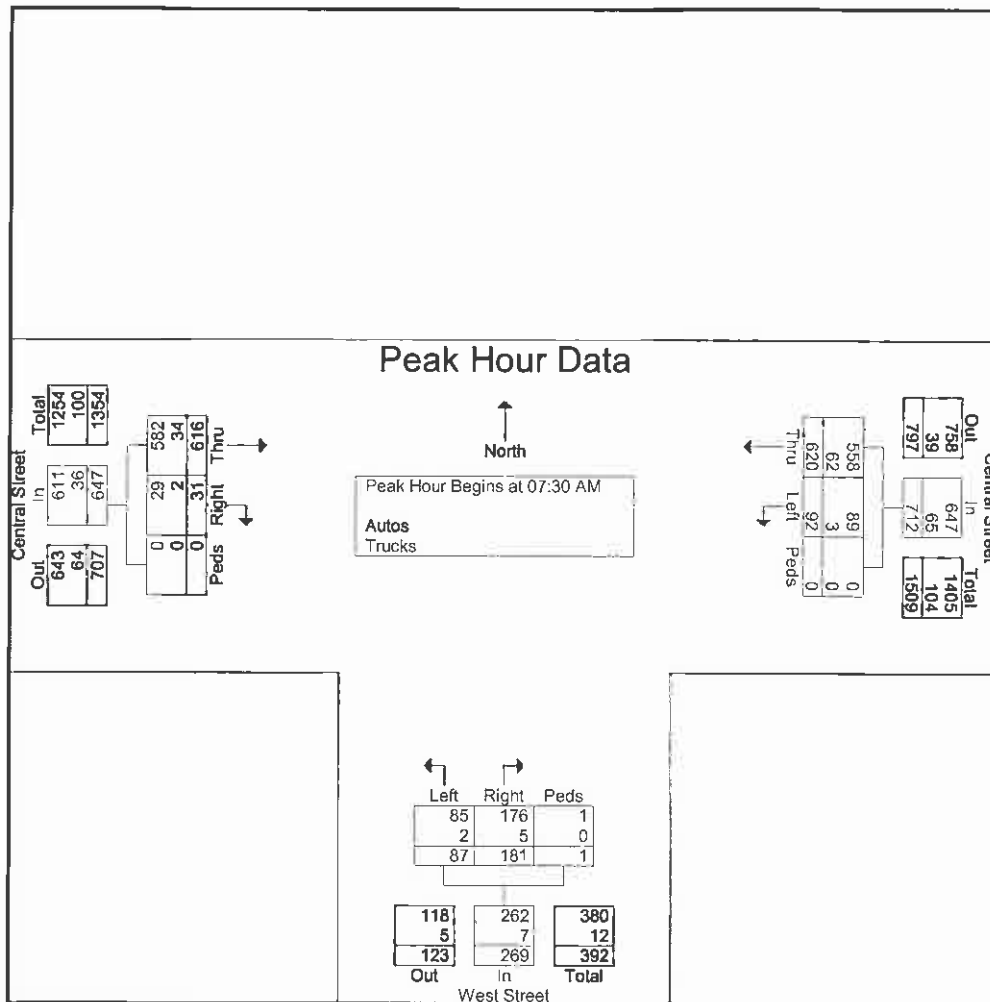


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61 Spit Brook Rd.
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File Name : Island St @ West Street - AM
Site Code : 03574
Start Date : 10/2/2008
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Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	24	134	0	158	14	37	0	51	154	8	0	162	371
07:45 AM	21	153	0	174	14	52	1	67	150	12	0	162	403
08:00 AM	18	167	0	185	34	47	0	81	149	6	0	155	421
08:15 AM	29	166	0	195	25	45	0	70	163	5	0	168	433
Total Volume	92	620	0	712	87	181	1	269	616	31	0	647	1628
% App. Total	12.9	87.1	0		32.3	67.3	0.4		95.2	4.8	0		
PHF	.793	.928	.000	.913	.640	.870	.250	.830	.945	.646	.000	.963	.940
Autos	89	558	0	647	85	176	1	262	582	29	0	611	1520
% Autos	96.7	90.0	0	90.9	97.7	97.2	100	97.4	94.5	93.5	0	94.4	93.4
Trucks	3	62	0	65	2	5	0	7	34	2	0	36	108
% Trucks	3.3	10.0	0	9.1	2.3	2.8	0	2.6	5.5	6.5	0	5.6	6.6



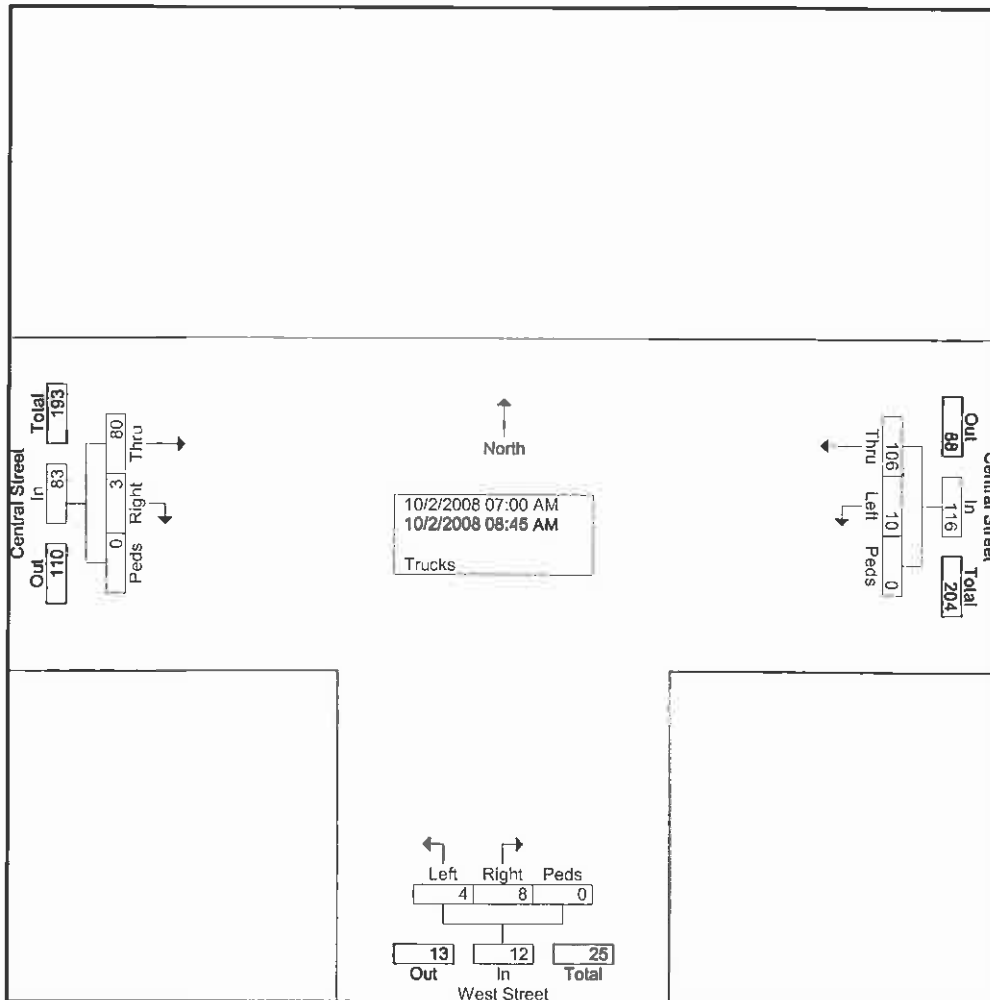
GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Island St @ West Street - AM
Site Code : 03574
Start Date : 10/2/2008
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Groups Printed- Trucks

Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
07:00 AM	1	9	0	10	0	0	0	0	10	0	0	10	20
07:15 AM	5	9	0	14	0	1	0	1	10	1	0	11	26
07:30 AM	1	13	0	14	1	0	0	1	10	0	0	10	25
07:45 AM	1	14	0	15	1	1	0	2	5	0	0	5	22
Total	8	45	0	53	2	2	0	4	35	1	0	36	93
08:00 AM	1	18	0	19	0	1	0	1	14	2	0	16	36
08:15 AM	0	17	0	17	0	3	0	3	5	0	0	5	25
08:30 AM	0	12	0	12	1	1	0	2	14	0	0	14	28
08:45 AM	1	14	0	15	1	1	0	2	12	0	0	12	29
Total	2	61	0	63	2	6	0	8	45	2	0	47	118
Grand Total	10	106	0	116	4	8	0	12	80	3	0	83	211
Apprch %	8.6	91.4	0		33.3	66.7	0		96.4	3.6	0		
Total %	4.7	50.2	0	55	1.9	3.8	0	5.7	37.9	1.4	0	39.3	

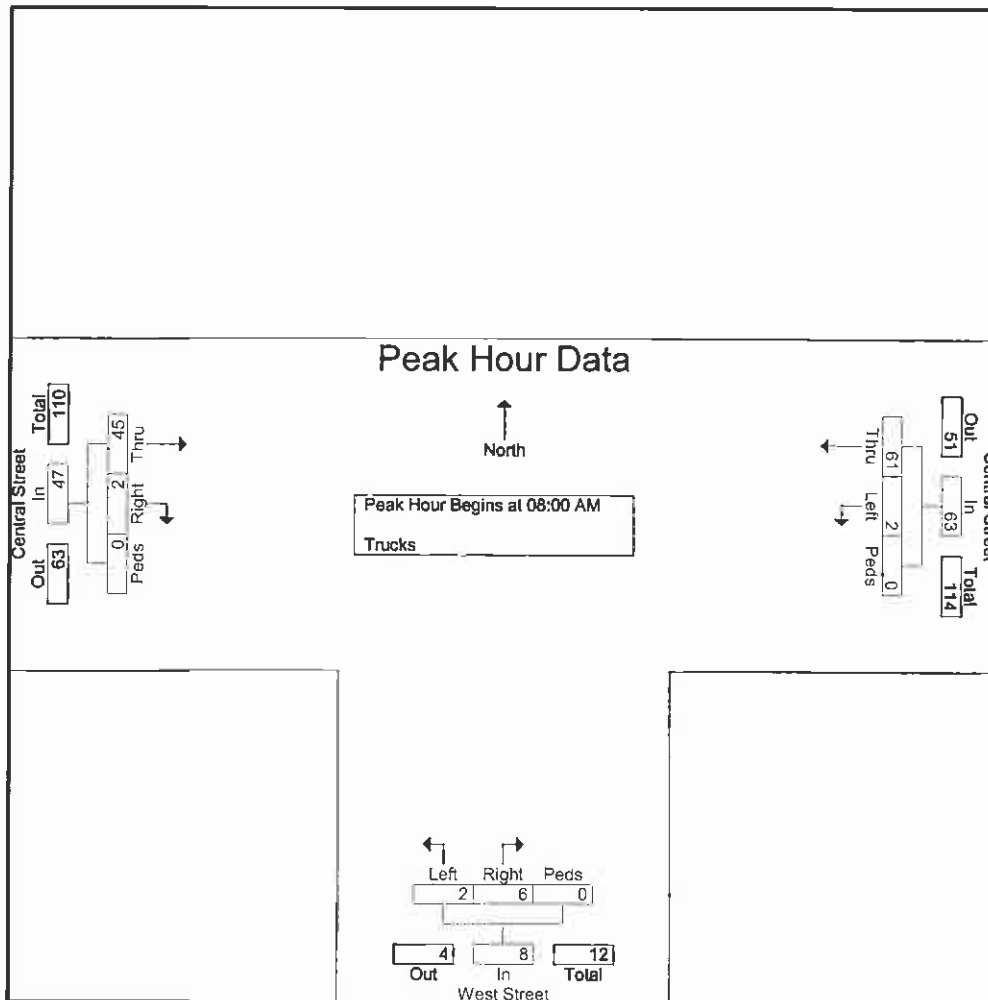


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61 Spit Brook Rd.
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File Name : Island St @ West Street - AM
Site Code : 03574
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Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Inl. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	1	18	0	19	0	1	0	1	14	2	0	16	36
08:15 AM	0	17	0	17	0	3	0	3	5	0	0	5	25
08:30 AM	0	12	0	12	1	1	0	2	14	0	0	14	28
08:45 AM	1	14	0	15	1	1	0	2	12	0	0	12	29
Total Volume	2	61	0	63	2	6	0	8	45	2	0	47	118
% App. Total	3.2	96.8	0		25	75	0		95.7	4.3	0		
PHF	.500	.847	.000	.829	.500	.500	.000	.667	.804	.250	.000	.734	.819



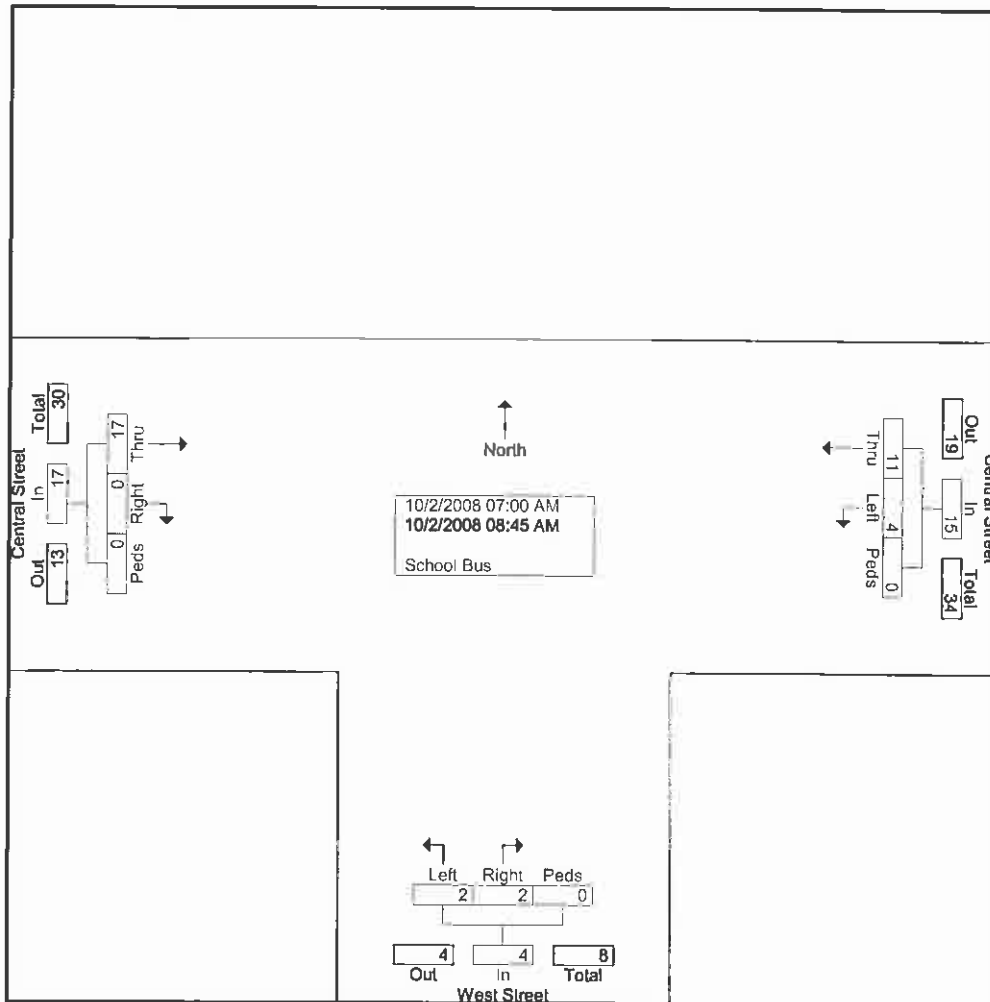
GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Island St @ West Street - AM
Site Code : 03574
Start Date : 10/2/2008
Page No : 1

Groups Printed- School Bus

Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
07:00 AM	0	3	0	3	0	0	0	0	2	0	0	2	5
07:15 AM	0	4	0	4	0	2	0	2	2	0	0	2	8
07:30 AM	0	0	0	0	0	0	0	0	3	0	0	3	3
07:45 AM	3	1	0	4	1	0	0	1	3	0	0	3	8
Total	3	8	0	11	1	2	0	3	10	0	0	10	24
08:00 AM	0	0	0	0	0	0	0	0	3	0	0	3	3
08:15 AM	0	2	0	2	1	0	0	1	2	0	0	2	5
08:30 AM	1	1	0	2	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	0	0	2	0	0	2	2
Total	1	3	0	4	1	0	0	1	7	0	0	7	12
Grand Total	4	11	0	15	2	2	0	4	17	0	0	17	36
Apprch %	26.7	73.3	0		50	50	0		100	0	0		
Total %	11.1	30.6	0	41.7	5.6	5.6	0	11.1	47.2	0	0	47.2	



GPI

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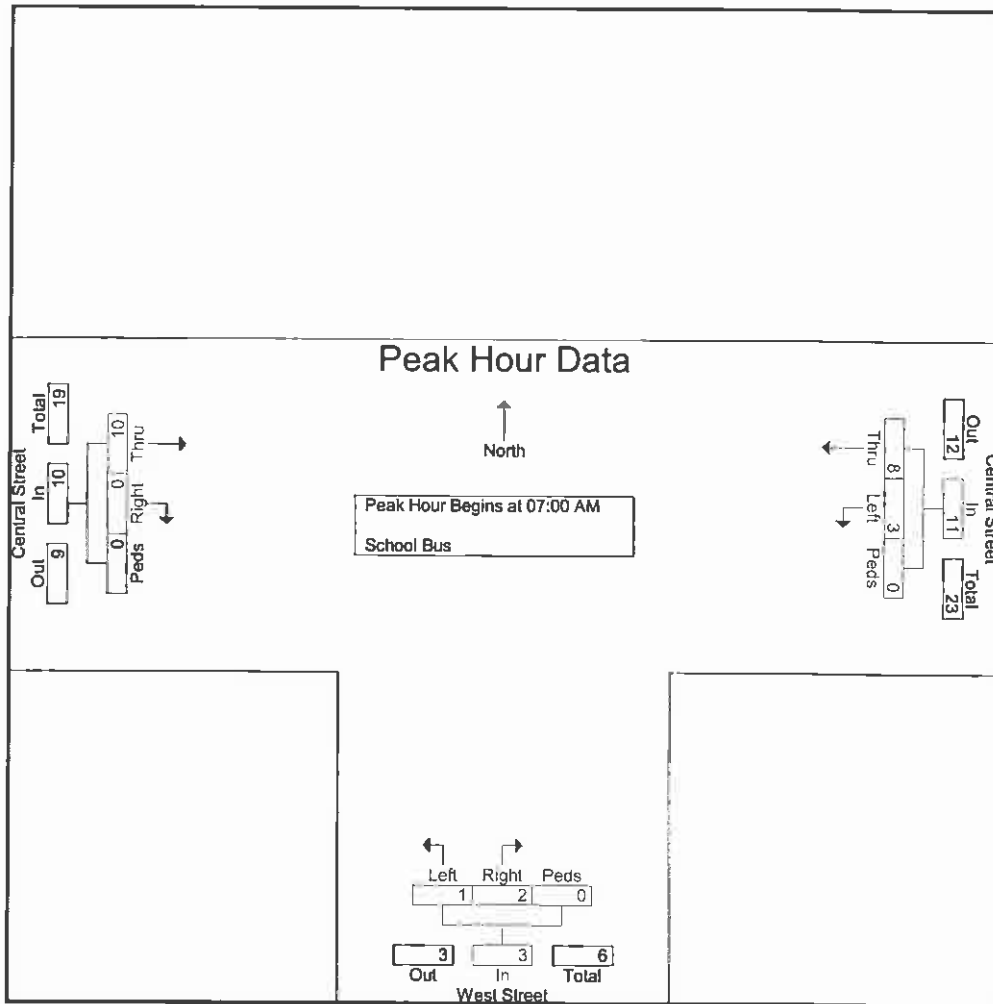
File Name : Island St @ West Street - AM

Site Code : 03574

Start Date : 10/2/2008

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Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	3	0	3	0	0	0	0	2	0	0	2	5
07:15 AM	0	4	0	4	0	2	0	2	2	0	0	2	8
07:30 AM	0	0	0	0	0	0	0	0	3	0	0	3	3
07:45 AM	3	1	0	4	1	0	0	1	3	0	0	3	8
Total Volume	3	8	0	11	1	2	0	3	10	0	0	10	24
% App. Total	27.3	72.7	0		33.3	66.7	0		100	0	0		
PHF	.250	.500	.000	.688	.250	.250	.000	.375	.833	.000	.000	.833	.750



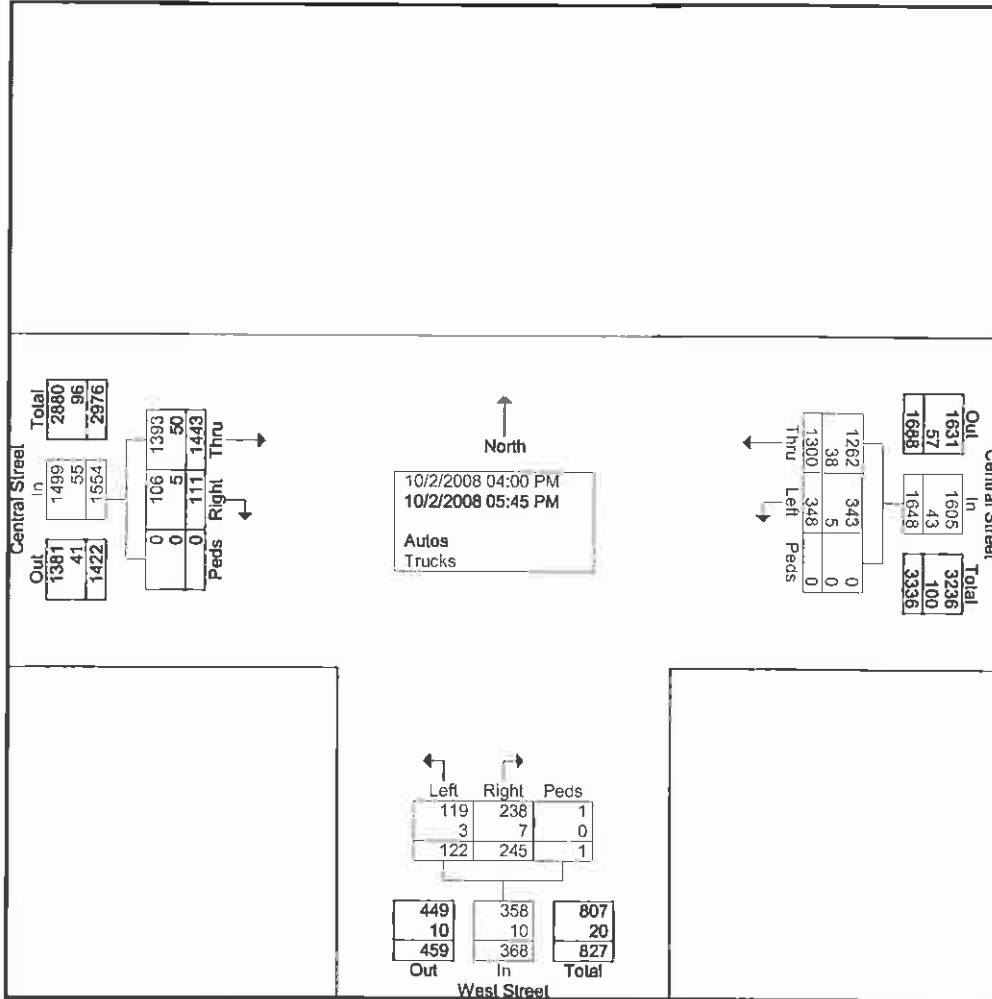
GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Island St @ West Street - PM
Site Code : 03574
Start Date : 10/2/2008
Page No : 1

Groups Printed- Autos - Trucks

Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
04:00 PM	26	149	0	175	12	19	0	31	152	13	0	165	371
04:15 PM	26	125	0	151	23	22	0	45	159	10	0	169	365
04:30 PM	47	167	0	214	10	22	0	32	164	20	0	184	430
04:45 PM	69	174	0	243	14	36	0	50	198	17	0	215	508
Total	168	615	0	783	59	99	0	158	673	60	0	733	1674
05:00 PM	57	194	0	251	15	39	1	55	215	16	0	231	537
05:15 PM	43	185	0	228	8	36	0	44	217	12	0	229	501
05:30 PM	58	195	0	253	21	42	0	63	216	10	0	226	542
05:45 PM	22	111	0	133	19	29	0	48	122	13	0	135	316
Total	180	685	0	865	63	146	1	210	770	51	0	821	1896
Grand Total	348	1300	0	1648	122	245	1	368	1443	111	0	1554	3570
Apprch %	21.1	78.9	0		33.2	66.6	0.3		92.9	7.1	0		
Total %	9.7	36.4	0	46.2	3.4	6.9	0	10.3	40.4	3.1	0	43.5	
Autos	343	1262	0	1605	119	238	1	358	1393	106	0	1499	3462
% Autos	98.6	97.1	0	97.4	97.5	97.1	100	97.3	96.5	95.5	0	96.5	97
Trucks	5	38	0	43	3	7	0	10	50	5	0	55	108
% Trucks	1.4	2.9	0	2.6	2.5	2.9	0	2.7	3.5	4.5	0	3.5	3

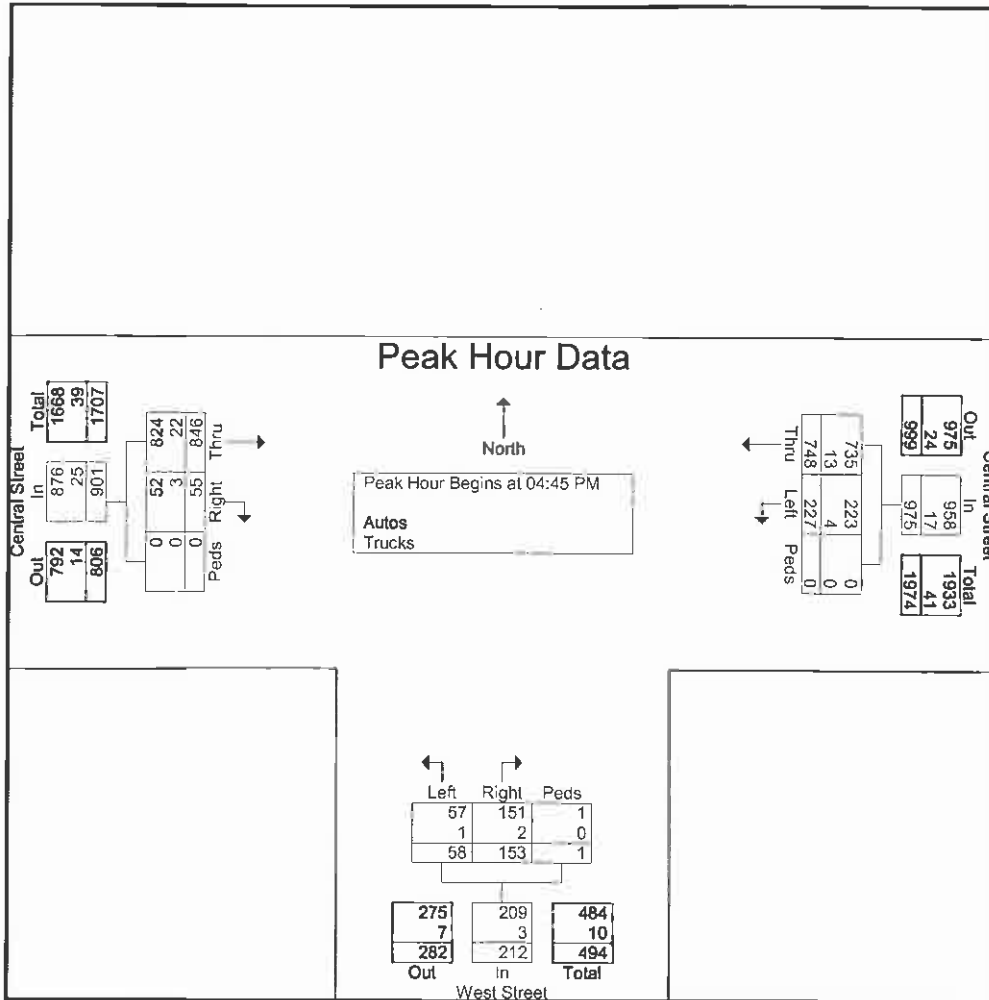


GPI

61 Spit Brook Rd.
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File Name : Island St @ West Street - PM
Site Code : 03574
Start Date : 10/2/2008
Page No : 2

Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	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	69	174	0	243	14	36	0	50	198	17	0	215	508
05:00 PM	57	194	0	251	15	39	1	55	215	16	0	231	537
05:15 PM	43	185	0	228	8	36	0	44	217	12	0	229	501
05:30 PM	58	195	0	253	21	42	0	63	216	10	0	226	542
Total Volume	227	748	0	975	58	153	1	212	846	55	0	901	2088
% App. Total	23.3	76.7	0		27.4	72.2	0.5		93.9	6.1	0		
PHF	.822	.959	.000	.963	.690	.911	.250	.841	.975	.809	.000	.975	.963
Autos	223	735	0	958	57	151	1	209	824	52	0	876	2043
% Autos	98.2	98.3	0	98.3	98.3	98.7	100	98.6	97.4	94.5	0	97.2	97.8
Trucks	4	13	0	17	1	2	0	3	22	3	0	25	45
% Trucks	1.8	1.7	0	1.7	1.7	1.3	0	1.4	2.6	5.5	0	2.8	2.2



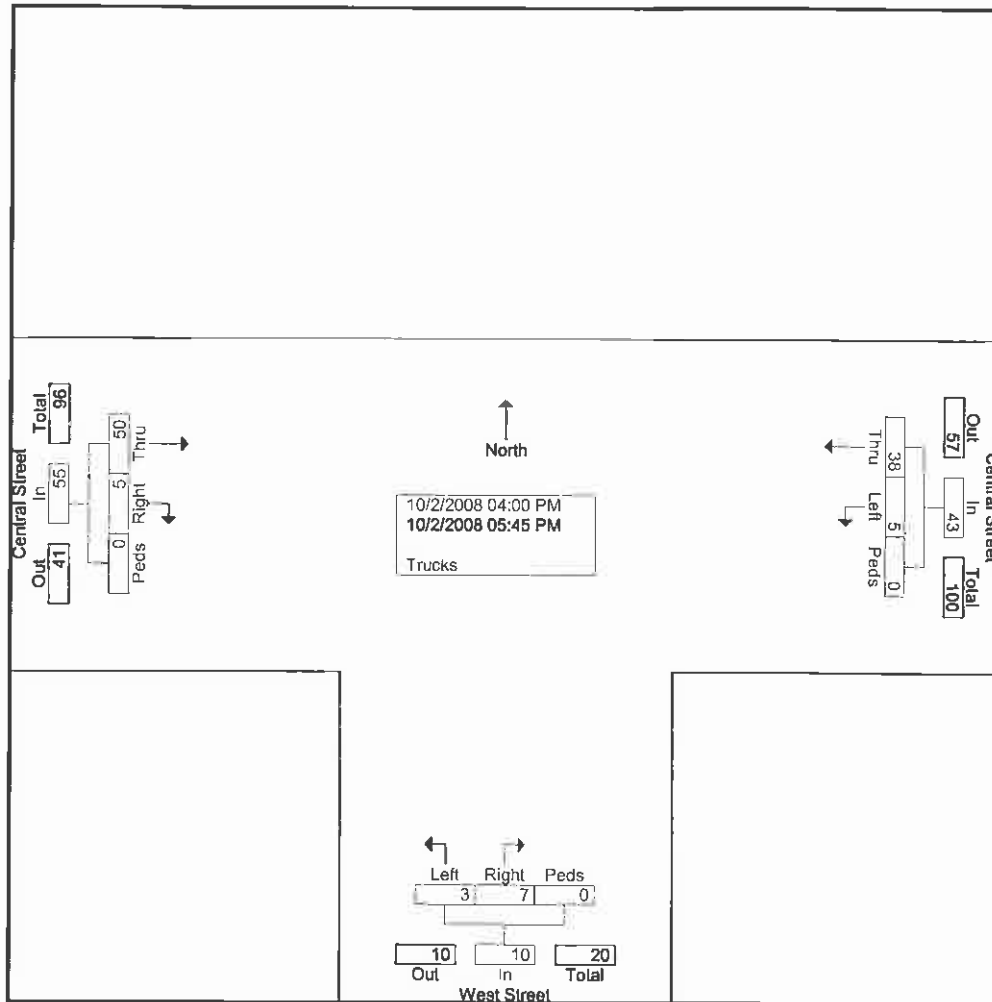
GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Island St @ West Street - PM
Site Code : 03574
Start Date : 10/2/2008
Page No : 1

Groups Printed- Trucks

Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
04:00 PM	0	5	0	5	1	2	0	3	3	0	0	3	11
04:15 PM	0	8	0	8	1	0	0	1	8	1	0	9	18
04:30 PM	1	5	0	6	0	2	0	2	8	0	0	8	16
04:45 PM	0	2	0	2	0	0	0	0	7	1	0	8	10
Total	1	20	0	21	2	4	0	6	26	2	0	28	55
05:00 PM	0	2	0	2	0	1	0	1	8	2	0	10	13
05:15 PM	3	6	0	9	1	1	0	2	2	0	0	2	13
05:30 PM	1	3	0	4	0	0	0	0	5	0	0	5	9
05:45 PM	0	7	0	7	0	1	0	1	9	1	0	10	18
Total	4	18	0	22	1	3	0	4	24	3	0	27	53
Grand Total	5	38	0	43	3	7	0	10	50	5	0	55	108
Apprch %	11.6	88.4	0		30	70	0		90.9	9.1	0		
Total %	4.6	35.2	0	39.8	2.8	6.5	0	9.3	46.3	4.6	0	50.9	

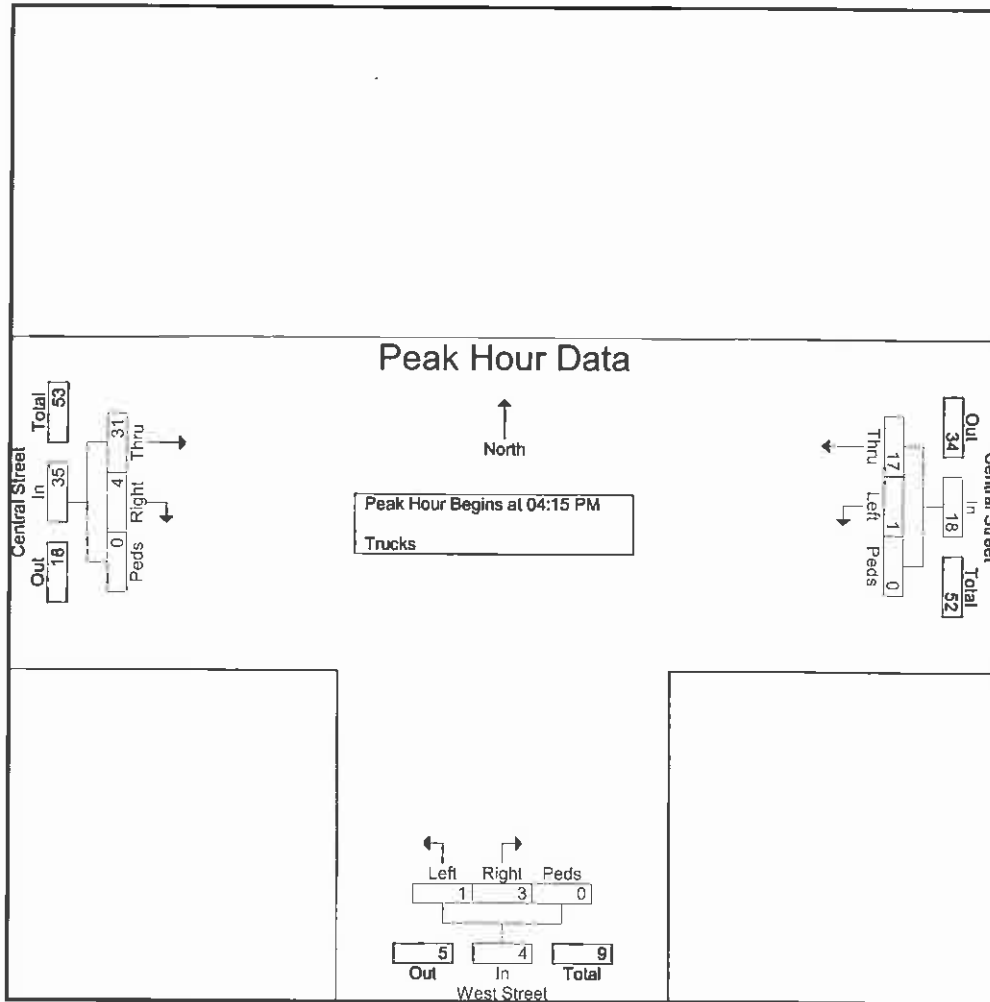


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61 Spit Brook Rd.
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File Name : Island St @ West Street - PM
Site Code : 03574
Start Date : 10/2/2008
Page No : 2

Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	0	8	0	8	1	0	0	1	8	1	0	9	18
04:30 PM	1	5	0	6	0	2	0	2	8	0	0	8	16
04:45 PM	0	2	0	2	0	0	0	0	7	1	0	8	10
05:00 PM	0	2	0	2	0	1	0	1	8	2	0	10	13
Total Volume	1	17	0	18	1	3	0	4	31	4	0	35	57
% App. Total	5.6	94.4	0		25	75	0		88.6	11.4	0		
PHF	.250	.531	.000	.563	.250	.375	.000	.500	.969	.500	.000	.875	.792



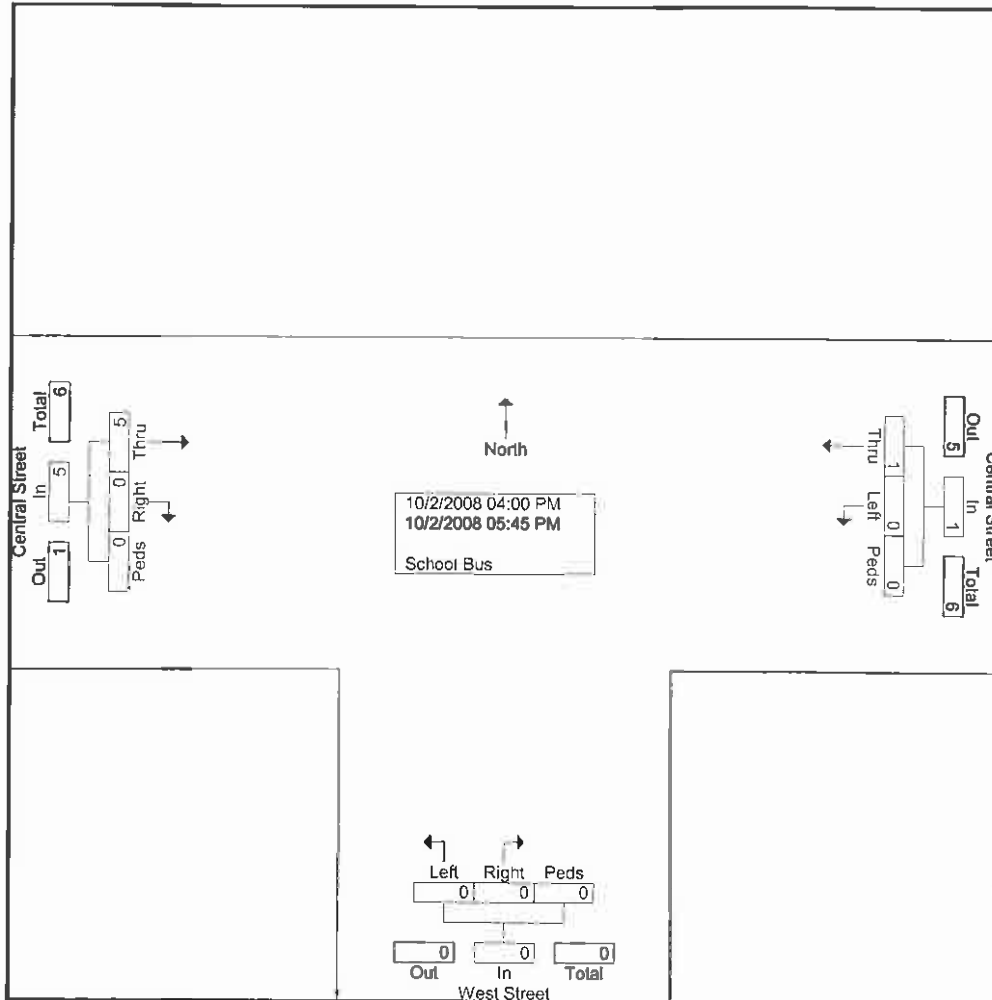
GPI

61 Spit Brook Rd.
Nashua, NH. 03060

File Name : Island St @ West Street - PM
Site Code : 03574
Start Date : 10/2/2008
Page No : 1

Groups Printed- School Bus

Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	
04:00 PM	0	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	5	0	0	5	5
05:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
05:15 PM	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
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	1	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	1	0	0	0	0	5	0	0	5	6
Apprch %	0	100	0		0	0	0		100	0	0		
Total %	0	16.7	0	16.7	0	0	0		83.3	0	0	83.3	

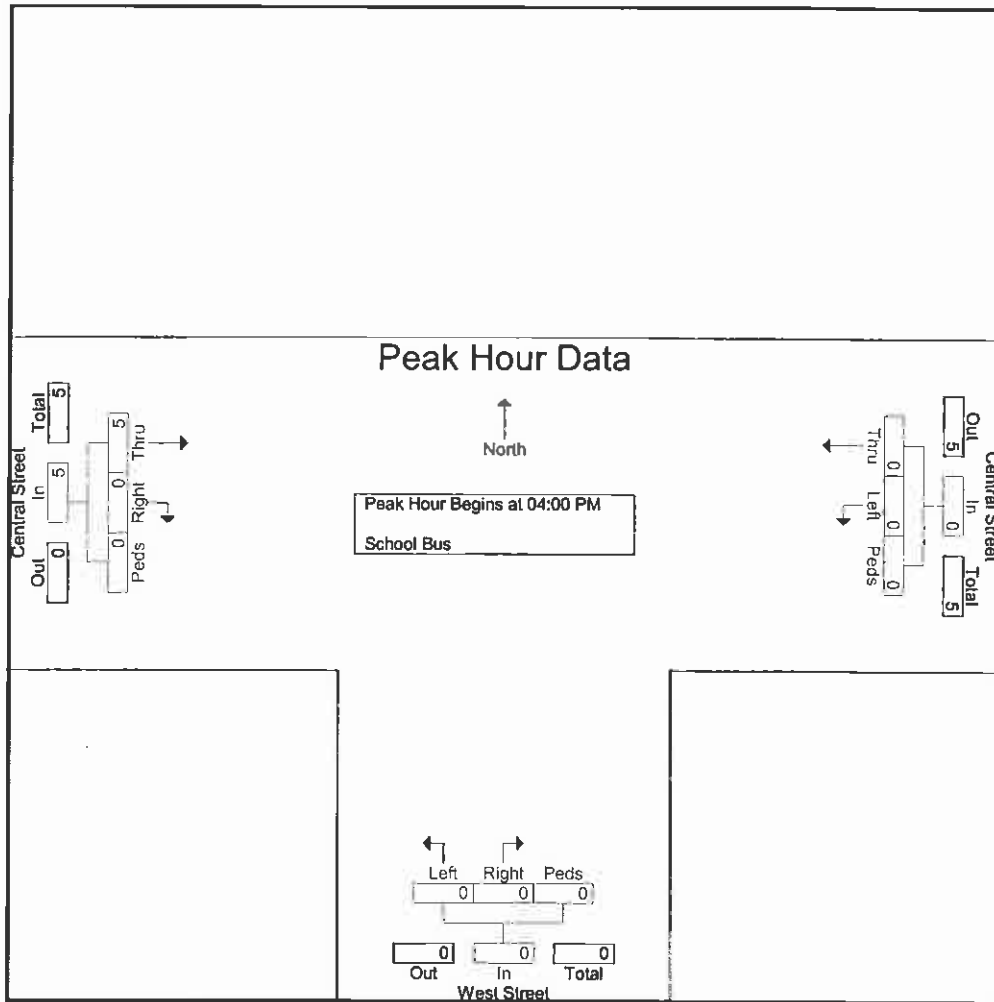


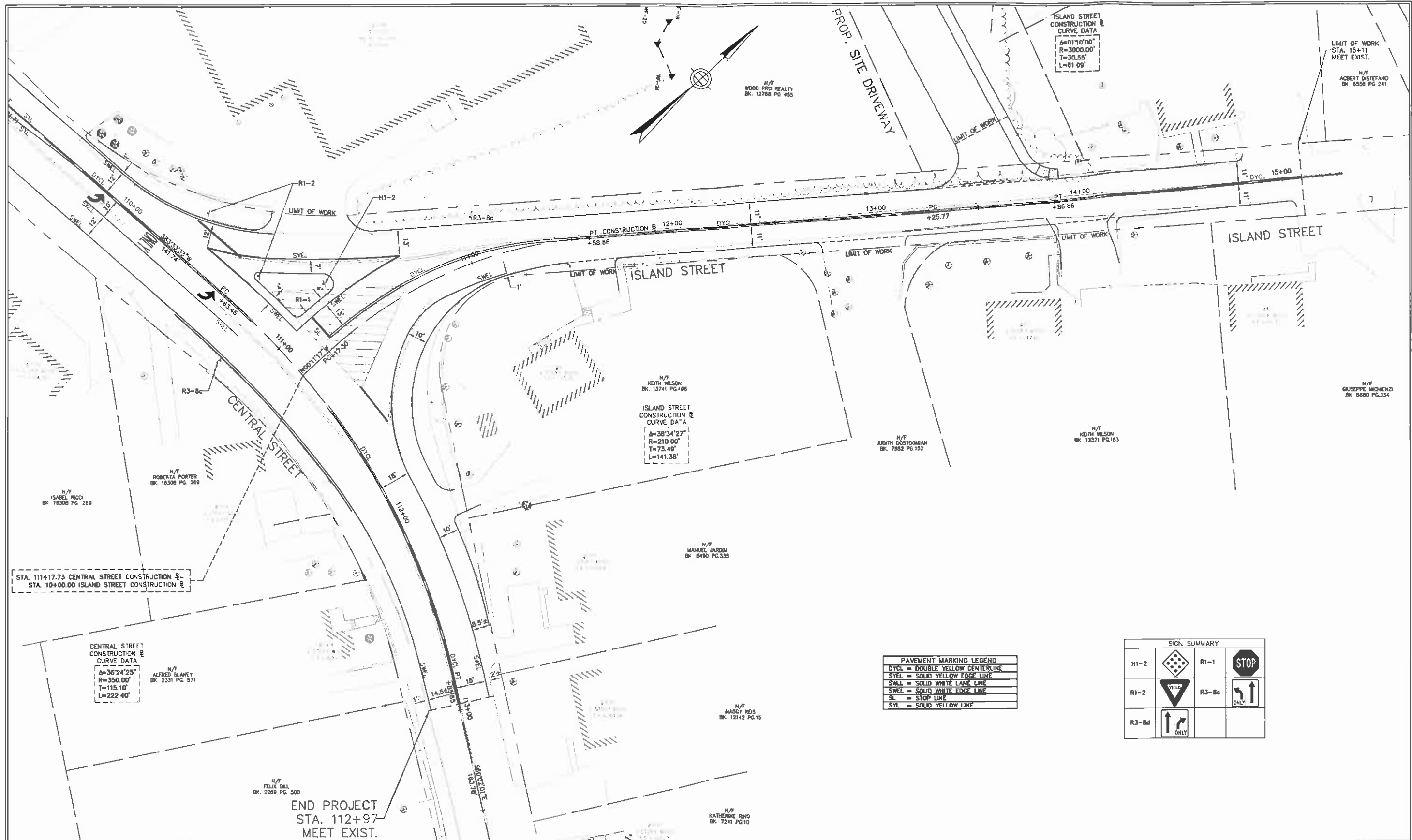
GPI

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File Name : Island St @ West Street - PM
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Start Date : 10/2/2008
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Start Time	Central Street Westbound				West Street Northbound				Central Street Eastbound				Int. Total
	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Thru	Right	Peds	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	0	0	0	0	0	1	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	5	0	0	5	5
% App. Total	0	0	0	0	0	0	0	0	100	0	0	100	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.625





ISLAND STREET
CONSTRUCTION &
CURVE DATA
A=01°10'00"
R=3000.00'
T=30.55'
L=81.09'

ISLAND STREET
CONSTRUCTION &
CURVE DATA
A=38°34'27"
R=210.00'
T=73.48'
L=141.38'

CENTRAL STREET
CONSTRUCTION &
CURVE DATA
A=36°24'25"
R=350.00'
T=115.10'
L=222.40'

PAVEMENT MARKING LEGEND

DYCL	=	DOUBLE YELLOW CENTERLINE
SYEL	=	SOLID YELLOW EDGE LINE
SWLL	=	SOLID WHITE LANE LINE
SWEEL	=	SOLID WHITE EDGE LINE
SL	=	STOP LINE
SYL	=	SOLID YELLOW LINE

SIGN SUMMARY

H1-2		R1-1	
R1-2		R3-Bc	
R3-Bd			



**CONCEPTUAL DESIGN PLAN
ISLAND STREET ALTERNATIVE 2
CENTRAL STREET AT ISLAND STREET
STOUGHTON, MASSACHUSETTS**

PROJECT: **PROPOSED WOODBRIDGE CROSSING RESIDENTIAL DEVELOPMENT
STOUGHTON, MASSACHUSETTS**

PREPARED FOR: **KENNEDY DEVELOPMENT GROUP
500 BROADWAY
EVERETT, MASSACHUSETTS 02149**

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NO.	REVISION	DATE	DESIGN/DRAWN BY	MAD
			CHKD BY: JFD	
			DATE: 08/18/08	
			SCALE: 1" = 20'	
			DWG NO. HTS-2003574	
			FILE NAME: ISLAND CONCEPT	
			DRAWING NO.	1 of 1