Granite Ridge Development Study
Farmington Road
Rochester, New Hampshire

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EXECUTIVE SUMMARY

The intent of this study is to examine the feasibility and conceptual design of roadway and water/sewer improvements that would be required to support the eventual development of a series of undeveloped parcels along Farmington Road (NH Route 11) in Rochester, NH, known as the Granite Ridge Development District (GRDD). The City envisions this area, primarily along the south side of Farmington Road from Exit 15 of the Spaulding Turnpike to the Farmington Town Line, to be a major commercial and office district for the City in the future. This study was conducted to:

- Estimate the amount of possible development in the GRDD;
- Perform analyses to estimate the roadway infrastructure to accommodate the existing traffic plus the traffic generated by the proposed development;
- Estimate the water and sewer infrastructure required to support that development; and
- Estimate the infrastructure costs associated with the development of the GRDD.

A design horizon of 20 years, to the year 2028, was assumed as a reasonable period for the full build-out of the GRDD.

<u>Estimate the Amount of Possible Development in the GRDD</u>

In order to estimate the amount of land in the GRDD that is available to be developed based on current Land Use Regulations, the amount of land that cannot be developed must be subtracted from the total available acreage. For purposes of this study, the primary limitations to development in this area are two types: wetlands and steep slopes. The GRDD was surveyed by a wetland scientist, who determined where the wetlands are based on current definitions of wetlands. A 50-foot buffer was added around the wetlands per local and state regulations. The areas of the district where the slopes are too steep (greater than 15%) for building were determined from topographic data.

The wetlands (including the 50-foot buffer) and the steep slopes were plotted on the corridor base map of the area. Then, each lot in the study area was evaluated

for development potential based on allowed land uses and maximum lot coverage given the above physical limitations. For the most part, it was assumed that each existing lot would be developed separately unless the lot size was too small to be realistically developed. In these cases, some of the lots were consolidated with others to serve the needs of a particular development proposal. Based on this analysis, a total of approximately 1.6 million square feet of combined retail and other commercial or office uses can potentially be accommodated within the GRDD area.

Estimate the Roadway Infrastructure Required to Accommodate the Existing Traffic Plus the Traffic Generated by the Proposed Development

In order to evaluate the impacts of the expansion of development on Farmington Road, CLD conducted a multi-step process that determined the current traffic patterns, estimated the potential traffic generated by the district and how it would be distributed, assigned that traffic to the roadway system, and then evaluated necessary improvements to Farmington Road to accommodate the traffic. The expansion of the Spaulding Turnpike and the proposed realignment of the ramps were included in the analysis.

A frontage road paralleling Farmington Road is proposed to serve the GRDD area so that all development traffic does not need to travel on Farmington Road. The frontage road within the GRDD will be a City street serving developments along the road. The roadway would be built to City street standards. Stubs to sites along the frontage road could be provided, with turn lanes on the frontage road as appropriate. Originally, a loop road concept was envisioned, but the extent of wetland constraints in the GRDD area made that infeasible.

Based on this evaluation, lane uses and lengths were established for each intersection. Sketches of the proposed roadway improvements are shown in Figures 7 to 15. In general, the roadway of Farmington Road will need to be a median-divided five-lane roadway (2 through lanes in each direction and a center-turning lane), plus added turning lanes at intersections. New traffic signals are anticipated on Farmington Road at Nashoba Drive, Crane Drive, and a new intersection at the former Two Rod Road. In addition, the intersection of Two Rod Road and the frontage road will likely require a signal. Also, the intersections at the Spaulding Turnpike ramps would need to be expanded beyond what is proposed for the Turnpike expansion. The City should coordinate with the NHDOT on augmenting their current design for the Exit 15 improvement to accommodate the potential widening at some future point.

Sensitivity analyses were conducted to estimate when improvements would be needed to handle both the background growth along the corridor and the added traffic from GRDD. Tables were developed that show when certain

improvements should be made based on both the amount of trips generated and the year of development in the GRDD.

Estimate the Water and Sewer Infrastructure Required to Support the Development

Concept plans were developed to supply water and sewer service to the GRDD based on the projected levels and types of development. Existing services were determined and the location of possible service extensions and related facilities were established, as shown in the attached water and sewer concept plans. Both types of service would be placed in roadway rights-of-way.

Estimate the Costs Associated with the Development of the GRDD

Conceptual level costs were estimated to construct the roadway, water, and sewer facilities recommended in the study. The table below summarizes those costs.

Estimated Infrastructure Costs

Type	Location	Amount (in 2008 $)
Roadway	Frontage Road and Interior Intersections	$4,330,000
	Access A and Portion of Farmington Road	1,010,000
	Access B/Nashoba Drive and Portion of Farmington Road	1,530,000
	Access C/Crane Drive and Portion of Farmington Road	1,900,000
	Access D/Little Falls Bridge Road and Portion of Farmington Road	1,770,000
	Two Rod Road and Portion of Farmington Road	2,015,000
	Access E and Portion of Farmington Road	695,000
	Access F and Portion of Farmington Road	1,115,000
	Roadway Total:	$14,365,000
Water	Entire Project	2,900,000
Sewer	Entire Project	5,400,000
	Grand Total:	$22,665,000

I. PURPOSE AND SCOPE

The intent of this study is to examine the feasibility and conceptual design of roadway and water/sewer improvements that would be required to support the eventual development of a series of undeveloped parcels along Farmington Road (NH Route 11) in Rochester, NH, known as the Granite Ridge Development District (GRDD). Figure 1 shows the extent of the area included in the GRDD study area.

The City of Rochester retained CLD Consulting Engineers, Inc. (CLD) to evaluate the expected impacts due to the eventual development of the GRDD. The City envisions this area, primarily along the south side of Farmington Road from Exit 15 of the Spaulding Turnpike to the Farmington Town Line, to be a major commercial and office district for the City in the future. This study was conducted to:

- Estimate the amount of possible development in the GRDD;
- Perform analyses to estimate the roadway infrastructure to accommodate the existing traffic plus the traffic generated by the proposed development;
- Estimate the water and sewer infrastructure required to support that development; and
- Estimate the infrastructure costs associated with the development.

A design horizon of 20 years, to the year 2028, was assumed as a reasonable period for the full build-out of the GRDD.

II. ESTIMATE THE AMOUNT OF DEVELOPABLE LAND IN THE DISTRICT

In order to estimate the amount of land in the GRDD that is available to be developed based on current Land Use Regulations, the amount of land that cannot be developed must be subtracted from the total available acreage. For purposes of this study, the primary limitations to development in this area are two types: wetlands and steep slopes.

- The GRDD was surveyed by a wetland scientist, who determined where the wetlands are based on current definitions of wetlands. The area included in the GRDD initially included Lot 217/48. That lot was included in the survey, but was later dropped from consideration as part of the GRDD. In addition, Lots 216/1-5 and Lot 221/163 at the east end of the GRDD were not included in the GRDD initially, and were not surveyed by the wetland scientist. A 50-foot buffer was added around the wetlands per local and state regulations.
- The areas of the district where the slopes are too steep (greater than 15%) for building were determined from topographic data.

The wetlands (including the 50-foot buffer) and the steep slopes were plotted on the corridor base map of the area. Then, each lot in the study area was evaluated for development potential based on allowed land uses and maximum lot coverage given the above physical limitations. For the most part, it was assumed that each existing lot would

be developed separately unless the lot size was too small to be realistically developed. In these cases, some of the lots were consolidated with others to serve the needs of a particular development proposal. Appendix A contains the report, a map of wetlands and steep slopes, and a summary of the available developable land. A summary of estimates of the type and size of development that would be supported is presented in Table 1. Based on these estimates, a total of approximately 1.6 million square feet of combined retail and other commercial or office uses can potentially be accommodated within the GRDD area.

III. TRAFFIC ANALYSIS

This portion of the report presents the results of a conceptual level of analysis of traffic in the Farmington Road and North Main Street corridor from the Farmington Town Line to Ten Rod Road in Rochester. This study was conducted to evaluate potential traffic changes in the corridor that are expected to occur as the GRDD area is developed.

For this traffic study, seven existing intersections were evaluated:

- North Main Street at Ten Rod Road
- North Main Street at Spaulding Turnpike Exit 15 Northbound Ramps
- North Main Street at Spaulding Turnpike Exit 15 Southbound Ramps
- Farmington Road at Nashoba Drive
- Farmington Road at Crane Drive
- Farmington Road at Little Falls Bridge Road
- Farmington Road at Wal-Mart Entrance.

In order to evaluate the impacts of the expansion of development on Farmington Road, CLD conducted a multi-step process that determined the current traffic patterns, estimated the potential traffic generated by the district and how it would be distributed, assigned that traffic to the roadway system, and then evaluated necessary improvements to Farmington Road to accommodate the traffic. The process is explained in detail below.

The Farmington Road corridor (including part of North Main Street) in Rochester runs in a southeasterly-northwesterly direction between Ten Rod Road and the Farmington Town Line. However, for this report Farmington Road is considered to be an east-west road and the Spaulding Turnpike a north-south road in order to simplify naming conventions.

A. Effect of the Spaulding Turnpike Expansion on Traffic Distribution

The Spaulding Turnpike expansion project, when completed (completion is expected in 2012), will reconfigure the interchanges at Farmington Road and Ten Rod Road. At Farmington Road, there will be a full "diamond" interchange and all traffic-turning movements to and from the Turnpike will be allowed. Currently, the northbound Turnpike to eastbound North Main Street, westbound

North Main Street to southbound Turnpike, and southbound Turnpike to eastbound North Main Street movements are not allowed at Farmington Road and must be made at the Ten Rod Road interchange. Also, the Ten Rod Road interchange will no longer have the southbound off-ramp.

Table 1

Summary of Developable Land

Lot ID	Retail	Office	Comment
	in 1000 square feet (KSF)		
208-1	75	550	
208-2	165	45	
208-4	10		
208-5	7		
208-6	2		
208-6-1	Built Out	Built Out	
208-7	Built Out	Built Out	
208-8	100	130	Either
216-1	20		
216-2	15		
216-3	25		
216-4	65		
216-5	Built Out	Built Out	
216-6	20		
216-7	45		
216-8	30		
216-9	110		
216-10	N/A	N/A	PSNH Easement
216-11	220	140	
221-163	7		
Totals			
If Lot 208-8 is Retail	916	735	
If Lot 208-8 is Office	816	865	

As a result of these changes:

- All the traffic currently on the southbound off-ramp at Ten Rod Road will use the southbound off-ramp at Farmington Road, turning left onto North Main Street and proceeding to Ten Rod Road, where it will split to continue on as before.
- Only minimal traffic is expected to use the northbound off-ramp at North Main Street to make the right turn eastbound, as it would have had a previous opportunity to make the same movement at the Ten Rod Road interchange. It is likely that most of this traffic would be destined for the commercial area along North Main Street just east of the Turnpike.
- Only minimal traffic is expected to use the southbound on-ramp from the east, as it would have had a previous opportunity to make the same movement from Ten Rod Road. It is likely that most of this traffic would originate in the commercial area along North Main Street just east of the Turnpike.

This ramp system as proposed by NHDOT is shown in Figure 2. The redistribution of the traffic due to these changes is incorporated into both the No-Build and Build future traffic networks.

B. Determine the No-Build Traffic Data

In order to establish the base traffic conditions from which one can evaluate the possible effects of the full-development potential of the GRDD, existing traffic data is required. Turning-movement counts were collected during weekday morning peak hours (7 to 9 AM), weekday evening peak hours (4 to 6 PM), and Saturday peak hours (11:30 to 1:30) at the seven study intersections. Automatic traffic recorder (ATR) counts were collected at four locations along Farmington Road, and ATR data collected by NHDOT on Farmington Road and the Turnpike ramps was assembled. The traffic data was seasonally adjusted and balanced between intersections, where applicable, to estimate the 2007 peak month weekday AM, weekday PM, and Saturday peak hour traffic at each of the intersections. The peak month was chosen to be consistent with the normal NHDOT traffic impact analysis requirements. The traffic data are provided in Appendix B. The calculated existing peak hour traffic numbers are shown in the spreadsheets in Appendix C (along with many other calculations that will be referred to later) and Figure 3.

Even without the GRDD, traffic is expected to grow due to general growth in the area and throughout the region. Based on the Seacoast area traffic forecasting model, vehicle miles of travel (VMT) for both Farmington and Rochester are expected to increase by about 1.1% per year between 2007 and 2026. Those increases include some projected growth in the GRDD that cannot be separated from the other background growth in traffic. Therefore, the background growth rate for the study, assuming that no development occurs in the GRDD, was set at

1% per year. Applying that rate to the existing traffic volumes yields a No-Build estimate of traffic volumes if nothing new is built in the district for 2028, which is the assumed year that the GRDD will be completely built out. The 2028 No-Build volumes thus calculated are shown on Figure 4, with the calculations shown in the spreadsheet in Appendix C.

Note that the 2028 No-Build volumes at the Turnpike ramps are adjusted for the reconstruction of the Spaulding Turnpike and the reconfiguration of Exits 14 and 15 as described above. The movements not currently allowed at North Main Street/Farmington Road were estimated based on the current traffic at the Ten Rod Road interchange provided by the NHDOT.

C. Analysis of No-Build Traffic Data

The capacity of each intersection was analyzed using the software analysis package *Synchro* for both the 2008 existing conditions and for 2028 No-Build conditions, which assumes that no development occurs in the GRDD and only background growth occurs. The results of the analysis are presented in Table 2 for the signalized intersections, and the output sheets are in Appendix D. For the 2028 analyses, the signals on Farmington Road at Little Falls Bridge Road and at Wal-Mart are coordinated (as is currently the case), and the signals at the Turnpike ramps are also assumed to be coordinated. The North Main Street/Ten Rod Road signals are not coordinated with other signals in this corridor. In all cases, the optimum timing as determined by *Synchro* is used.

As seen in Table 2, the current signalized intersection configurations (including the proposed signals at Exit 15 ramps) are expected to handle the traffic at overall LOS C or better, with no approach worse than LOS D, through 2028.

Table 3 shows the capacity results for the unsignalized intersections along the corridor. For the two intersections that remain unsignalized in 2028 under this No-Build scenario (at Crane Drive and Nashoba Drive), the vehicles entering and leaving the side roads will experience longer delays due to the increase in traffic on Farmington Road.

D. GRDD Trip Generation and Distribution Estimates

Originally, a loop road concept was envisioned to serve as a local road connection between the GRDD developments and Farmington Road; however the extent of the wet lands in the area made this concept unrealistic.

Instead, a frontage road layout parallel to Farmington Road was proposed to serve the area so that all development traffic would not need to travel on Farmington Road. Private driveways would tie into this frontage road which would be a city street as development occurred. A series of controlled access points connecting this frontage road to Farmington Road is proposed.

Table 2 - No-Build Capacity Analysis Results – Signalized Intersections

	2007 AM Peak Hour				2028 AM Peak Hour				2007 PM Peak Hour				2028 PM Peak Hour				2007 Sat Peak Hour				2028 Sat Peak Hour			
Approach/Movement	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q
N Main St/Ten Rod Rd																								
EB Left/Thru/Right	0.51	7	A	115	0.45	9	A	114	0.84	18	B	217	0.59	11	B	155	0.75	14	B	284	0.66	12	B	186
WB Left	0.30	3	A	26	0.61	21	C	97	0.55	10	B	66	0.70	26	C	150	0.43	7	A	33	0.67	24	C	143
WB Thru/Right	0.16	2	A	23	0.17	2	A	27	0.38	3	A	83	0.52	4	A	108	0.31	3	A	63	0.39	3	A	67
NB Left/Thru	0.35	17	B	35	0.47	23	C	44	0.85	53	D	139	0.74	35	C	104	0.52	23	C	30	0.64	29	C	79
NB Right	0.12	12	B	28	0.13	13	B	28	0.42	17	B	113	0.28	13	B	65	0.36	16	B	100	0.27	13	B	62
SB Left/Thru/Right	--	--	--	--	--	--	--	--	0.08	21	C	17	0.03	19	B	8	--	--	--	--	--	--	--	--
Intersection	**0.46**	**7**	**A**	**--**	**0.49**	**10**	**A**	**--**	**0.79**	**14**	**B**	**--**	**0.64**	**10**	**B**	**--**	**0.60**	**10**	**B**	**--**	**0.66**	**10**	**B**	**--**
Farmington Rd/NB Ramps																								
EB Left					0.31	23	C	28					0.78	45	D	191					0.70	45	D	150
EB Thru					0.33	3	A	50					0.30	4	A	24					0.46	5	A	101
WB Thru/Right		Unsignalized			0.28	10	B	87		Unsignalized			0.89	25	C	501		Unsignalized			0.75	25	C	363
NB Left					0.46	21	C	83					0.88	41	D	264					0.81	36	D	262
NB Right					0.02	19	B	17					0.02	24	C	21					0.02	24	C	22
Intersection					**0.36**	**10**	**A**	**--**					**0.87**	**25**	**C**	**--**					**0.76**	**22**	**C**	**--**
Farmington Rd/SB Ramps																								
EB Thru/Right					0.62	4	A	8					0.53	6	A	58					0.74	10	B	271
WB Left					0.28	30	C	28					0.28	31	C	17					0.31	42	D	23
WB Thru		Unsignalized			0.28	2	A	10		Unsignalized			0.69	4	A	244		Unsignalized			0.62	9	A	288
SB Left					0.65	26	C	148					0.58	32	C	150					0.61	34	C	191
SB Right					0.07	19	B	34					0.49	30	C	121					0.75	41	D	220
Intersection					**0.61**	**6**	**A**	**--**					**0.66**	**8**	**A**	**--**					**0.74**	**14**	**B**	**--**
Farmington Rd/Little Falls Bridge Rd																								
EB Left	0.55	23	C	53	0.45	11	B	70	0.71	32	C	154	0.80	34	C	238	0.69	23	C	148	0.82	42	D	251
EB Thru	0.41	1	A	4	0.46	1	A	15	0.35	1	A	13	0.37	1	A	22	0.39	2	A	31	0.45	1	A	27
WB Thru/Right	0.40	13	B	89	0.41	12	B	155	0.79	17	B	280	0.90	16	B	561	0.77	18	B	318	0.89	12	B	316
SB Left	0.60	20	B	65	0.53	24	C	101	0.35	23	C	70	0.55	36	D	110	0.53	30	C	100	0.70	48	D	171
SB Right	0.06	15	B	25	0.06	20	C	30	0.14	22	C	32	0.14	32	C	62	0.15	27	C	58	0.19	36	D	76
Intersection	**0.47**	**9**	**A**	**--**	**0.48**	**8**	**A**	**--**	**0.69**	**14**	**B**	**--**	**0.83**	**14**	**B**	**--**	**0.71**	**14**	**B**	**--**	**0.85**	**14**	**B**	**--**
Farmington Rd/Wal-Mart																								
EB Left	--	--	--	--	--	--	--	--	0.10	28	C	9	0.07	38	D	13	0.34	35	C	21	0.27	45	D	29
EB Thru	0.63	12	B	156	0.62	11	B	227	0.59	17	B	175	0.80	28	C	294	0.92	41	D	245	0.94	44	D	394
EB Right	0.03	7	A	9	0.02	6	A	12	0.07	12	B	16	0.06	17	B	28	0.09	20	B	21	0.11	21	C	45
WB Left	0.33	29	C	49	0.35	10	B	33	0.69	22	C	92	0.48	11	B	116	0.71	12	B	190	0.68	13	B	221
WB Thru/Right	0.20	1	A	3	0.22	1	A	3	0.61	3	A	39	0.67	2	A	39	0.50	2	A	32	0.59	3	A	52
NB Left/Thru	0.13	18	B	7	0.12	23	C	27	0.61	26	C	56	0.57	34	C	120	0.76	41	D	48	0.73	47	D	183
NB Right	0.10	10	B	28	0.11	14	B	35	0.31	10	A	70	0.26	10	B	105	0.37	7	A	138	0.40	11	B	197
SB Left	--	--	--	--	--	--	--	--	0.08	20	C	13	0.07	28	C	18	0.29	27	C	36	0.27	34	C	45
SB Thru/Right	--	--	--	--	--	--	--	--	0.08	20	C	12	0.05	28	C	24	0.06	25	C	10	0.03	32	C	23
Intersection	**0.47**	**10**	**A**	**--**	**0.46**	**8**	**A**	**--**	**0.59**	**11**	**B**	**--**	**0.69**	**13**	**B**	**--**	**0.79**	**18**	**B**	**--**	**0.79**	**21**	**C**	**--**

v/c – Volume to capacity ratio
Del – Average delay per vehicle in seconds
LOS – Level of Service
Q – 95th percentile queue (feet)

Table 3 - No-Build Capacity Analysis Results – Unsignalized Intersections

	2007 AM Peak Hour				2028 AM Peak Hour				2007 PM Peak Hour				2028 PM Peak Hour				2007 Sat Peak Hour				2028 Sat Peak Hour			
Approach/Movement	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q
Farmington Rd/NB Ramps																								
EB Left	0.06	2	A	5		Signalized			0.31	9	A	32		Signalized			0.22	6	A	21		Signalized		
SB Right	0.47	15	B	63					2.19	578	F	1084					1.53	276	F	815				
Farmington Rd/SB Ramps																								
SB Right	0.17	13	B	15		Signalized			1.14	177	F	236		Signalized			1.44	263	F	458		Signalized		
Farmington Rd/Nashoba Dr																								
EB Left	--	--	--	--	--	--	--	--	0.02	13	B	2	0.02	16	C	1	0.02	12	B	1	0.02	15	C	1
WB Left	0.02	11	B	1	0.01	12	B	1	0.03	10	B	2	0.03	11	B	2	0.01	11	B	1	0.01	13	B	1
NB Left/Thru/Right	0.09	21	C	8	0.08	25	D	7	0.05	17	C	4	0.05	21	C	4	0.07	21	C	5	0.07	30	D	6
SB Left/Thru/Right	0.30	54	F	28	0.40	90	F	38	1.38	523	F	111	1.48	921	F	71	1.29	471	F	108	3.23	999	F	999
Farmington Rd/Crane Dr																								
EB Left	0.02	9	A	2	0.01	9	A	1	0.05	13	B	4	0.03	15	C	2	0.09	13	B	8	0.06	15	C	5
SB Left/Right	--	--	--	--	--	--	--	--	0.83	206	F	86	1.32	527	F	101	1.38	386	F	164	2.02	819	F	153

v/c – Volume to capacity ratio
Del – Average delay per vehicle in seconds
LOS – Level of Service
Q – 95th percentile queue (feet)

With the amount and type of development established, potential access points to Farmington Road were determined, and various types of development were assigned to each lot in light of lot sizes and expected traffic requirements. The parcels were allocated to access points for the purposes of determining the amount of GRDD traffic that would be assigned to the network. Figure 5 shows the various lots and proposed access points. The following allocations were made:

- Parcels that will have direct access (Access A) onto Farmington Road east of Nashoba Road. This is assumed to be a right-in-right-out-only access, with the left turns entering and leaving at Access B.
  - Lots 216-1, 216-2, 216-3 and 221-163 were combined and assumed to hold 40,000 square feet of shopping center space and 50 residential units. This is a change from the use shown in the developable land study, based on input from the City after the completion of the developable land study.
- Parcels expected to use a new signalized access (Access B, in the current location of the Apartment Building drive) across from Nashoba Drive as the primary access:
  - Lot 216-4 was assigned a shopping center for the 65,000 square feet of retail space.
- Parcels expected to use a new signalized access (Access C) across from Crane Drive as the primary access:
  - Lot 216-6 was assumed to have a 100-room hotel in place of the 20,000 square feet of retail space shown in the developable land study, based on a desire by the City to show a new hotel along the corridor.
  - Lot 216-7 was assigned a shopping center for the 45,000 square feet of retail space.
  - Lots 216-8 and 216-9 were assumed to have a combined use of 50,000 square feet of shopping center, 5,000 square feet of fast food restaurant, and 4,000 square feet of convenience store in place of the 140,000 square feet of retail space shown in the developable land study. This was deemed to be a more reasonable use of these lots.
- Parcels expected to use a new access (Access D) across from the currently signalized Little Falls Bridge Road as the primary access:
  - The estimate of developable land on Lot 216-11 called for 140,000 square feet of office space, which would be placed in the rear of the lot. In conversations with the City, it was determined that land would likely be held for conservation purposes, partly to mitigate for wetlands that may be disturbed in other parts of the district. The 220,000 square feet of retail space was assumed to be a shopping center.
- Parcels expected to use a new signalized access point west of the Wal-Mart drive, in approximately the location of the former Two Rod Road:

- Lot 208-1 was assigned a shopping center for the 75,000 square feet of retail space and general office space for the 550,000 square feet of office space.
- Lot 208-2 was assigned a discount club for the 165,000 square feet of retail space and a medical-dental office for the 45,000 square feet of office space.
- Lot 208-4 was assigned a pharmacy for the 10,000 square feet of retail space.

♦ Parcels that will have direct access (Access E) onto Farmington Road west of the proposed Two Rod Road access. This is assumed to be a right-in-right-out-only access, with the left turns entering and leaving at Two Rod Road.
  - Lot 208-5 was assigned a high-turnover restaurant for the 7,000 square feet of retail space.
  - Lot 208-6 was assigned a fast food restaurant for the 2,000 square feet of retail space.

♦ Lot 208-8 was assumed to have the 130,000 square feet of general office space, rather than the optional retail space shown on the developable land table (Table 1), and will have direct access (Access F) onto Farmington Road west of Access E. Office space was chosen for this parcel instead of the retail to balance the various uses along the corridor.

♦ Two additional developable areas along the corridor were also included in the analysis:
  - Lot 208-18 across from the Wal-Mart is estimated to contain 40,000 square feet of general office space, with access via the existing driveway.
  - The remaining lots on Crane Drive are estimated to generate the same number of trips as were there when the traffic counts were collected; thereby, doubling the number of trips using Crane Drive.

The above allocations result in the following total assignments of space to the GRDD:

♦ 688,000 square feet of retail space
♦ 765,000 square feet of office space
♦ 50 residential units
♦ 100 hotel rooms.

Not all of these projected trips will be "new" trips added to the corridor, although that will be one component. Some trips, such as delivery vehicles and some shopping trips, will be multi-destination in nature, visiting more than one site in the area without needing to travel on Farmington Road between sites. Other trips, especially retail uses, will already be passing by the site and will visit the retail use and then continue in their original direction. The spreadsheet for calculating the number of trips is shown in Appendix E and Table 4 summarizes the data. The rationale for the estimation and distribution of these trips on the street network is discussed below.

Table 4 - Trip Generation Data

Lot ID	Access	Land Use (ITE Land Use Code)	Total Trips AM In	Total Trips AM Out	Total Trips PM In	Total Trips PM Out	Total Trips Sat In	Total Trips Sat Out
216-1&2&3 & 221-163	Access A	50 Units Residential (210)	9	28	32	19	25	22
216-1&2&3 & 221-163	Access A	40 KSF Shopping Center (820)	25	16	72	78	103	95
216-4	Access B/Nashoba Dr	65 KSF Shopping Center (820)	41	26	117	127	168	155
216-6	Access C/Crane Dr	100-Room Hotel (310)	34	22	31	28	40	32
216-7	Access C/Crane Dr	45 KSF Shopping Center (820)	28	18	81	88	116	107
216-8&9	Access C/Crane Dr	50 KSF Shopping Center (820)	31	20	90	98	129	119
216-8&9	Access C/Crane Dr	5 KSF Fast Food (934)	135	130	90	83	151	145
216-8&9	Access C/Crane Dr	4 KSF Convenience Store (853)	34	34	38	38	40	40
216-11	Access D/LFBR	220 KSF Shopping Center (820)	138	88	396	429	569	525
208-5	Access E	7 KSF High Turnover Restaurant (932)	42	39	47	30	88	52
208-6	Access E	2 KSF Fast Food (934)	54	52	36	33	60	58
208-8	Access F	130 KSF General Office (710)	177	24	33	161	29	25
208-1	Two Rod Rd	75 KSF Shopping Center (820)	47	30	135	146	194	179
208-2	Two Rod Rd	165 KSF Discount Club (861)	66	27	350	350	565	565
208-4	Two Rod Rd	10 KSF Pharmacy (880)	15	11	42	44	39	39
208-1	Two Rod Rd	550 KSF General Office (710)	750	102	139	680	122	104
208-2	Two Rod Rd	45 KSF Medical-Dental Office (720)	19	5	16	31	23	17
	Summit Realty/Wal-Mart	40 KSF General Office (710)	55	7	10	49	9	8
	Crane Dr Expansion	Double Existing Trips	20	0	20	30	60	45
		Total Trip Generation	1722	681	1776	2542	2531	2331

1. Estimate the Number of Internal Capture Trips

In a multi-use development such as the one proposed for the GRDD, some trips will be made between the individual developments that will not need to travel on Farmington Road. For example, trips between the proposed discount club and Wal-Mart or between the proposed offices in Lot 208-1 and Wal-Mart will use the frontage road to make those trips, with no need to travel on Farmington Road. These trips are called internal capture trips.

For this analysis, the following developments were evaluated for the internal capture procedure:

- Office space in Lots 208-1 and 208-2;
- Retail space in Lots 208-1, 208-2, and 208-4 as a unit;
- Shopping center in Lot 216-11; and
- The existing Wal-Mart.

The ITE "Trip Generation Handbook, Second Edition" provides a procedure to estimate the number of these internal trips that would not leave the district. The calculations are shown in Appendix F. The rates suggested in the "Handbook" were reduced to compensate for the long distance between the individual developments. In effect, those internal trips can be removed from the number of trips using Farmington Road because they will not travel on Farmington Road. However, they will travel on the frontage roads system, and are assigned to the frontage road for analysis purposes (see the assignment section below), so the total number of site-generated trips still remains the same. The result of this exercise is a 17% reduction in trips for these developments assigned to Farmington Road during the PM peak hour, and a 21% reduction during the Saturday peak hour. No reductions are made for the AM peak hour because internal capture trips are not likely during that time.

In like manner, it was assumed that the various land uses at Access C (hotel, retail space, shopping center, restaurant and convenience store) would have a 10% capture rate in both the PM and Saturday peak hours, which are somewhat less than the rates determined for the above area, but appropriate for these land uses.

2. Estimate the Number of Pass-By Trips

Retail land uses are likely to attract some trips from the traffic stream that are passing by on Farmington Road. These "pass-by" trips do not add new traffic to Farmington Road, but they must be accounted for in the traffic analysis because they turn into and out of the access roads and business

driveways. The ITE "Trip Generation Handbook, Second Edition" also provides estimates of the percentage of pass-by trips for various land uses. The percentage of these trips varies, depending on the land use. The spreadsheet in Appendix E shows the calculations to arrive at the number of pass-by trips.

3. Estimate the Distribution of the New Trips

The estimates of where the GRDD trips are expected to come from and go to are based on estimates of the population of, and distance to, towns that are included in a 10-mile radius from the District as an estimate of the general labor and retail market areas. The procedure used to determine the distribution is outlined in Appendix G. Based on a review of the results, the following distribution of the new trips was used:

- 5% will use Little Falls Bridge Road;
- 25% will use North Main Street to and through Downtown Rochester;
- 15% will use Farmington Road (NH Route 11) to the west;
- 20% will use the Spaulding Turnpike to the north; and
- 35% will use the Spaulding Turnpike to the south.

The new trip distribution calculations are shown in the spreadsheets in Appendix C.

4. Estimate the Distribution of Pass-By Trips

The pass-by trips are distributed in proportion to the direction of through traffic on Farmington Road. As traffic on Farmington Road increases due to both the background growth and the development of parcels along Farmington Road, the traffic going past a site varies, depending on the amount and location of development. The number of pass-by trips are calculated as a percentage of the total number of trips generated by a development, and are applied at the intersection where those trips enter or leave Farmington Road. The number of trips turning each way into and out of that intersection is assumed to be proportional to the directional split of the traffic through the intersection. For this study, it is assumed that the GRDD is fully built out for the pass-by trip determination (2028 Build scenario). Appendix C shows the calculations.

E. Assign All Traffic to the Street Network

Using the number of trips generated in the GRDD and the trip distributions as described above, the resulting traffic estimates due to the GRDD were added to the 2028 No-Build traffic to determine the total traffic volumes that may be

expected at the intersections along Farmington Road in 2028 if the GRDD is fully built out at that time. The methodology of the assignments is shown in the spreadsheets in Appendix C. At the same time, the number of trips that would use the frontage roads was estimated from the internal trip capture results using a manual process. The resulting traffic volumes are used to establish the needed highway infrastructure along Farmington Road and at the frontage roads in the GRDD. Figure 6 shows the projected 2028 AM, PM, and Saturday peak hour traffic volumes with the GRDD fully built out by that time. For the Build condition, it is assumed that Farmington Road will have two travel lanes in each direction and a two-way left-turn lane, with left turns prohibited at Access A and Access E, and with median barriers as appropriate at the signalized intersections.

F. Analyze the 2028 Build Traffic

It should be noted that the above process of assigning traffic is based on many global assumptions that affect the traffic volumes. However, it is expected that the resulting traffic volumes, while not necessarily adequate for detailed design of highway improvements in the area, are adequate to determine conceptually the level of improvements that will be needed, especially the number of traffic lanes for through and turning traffic and estimates of the length of those lanes for the storage of queued vehicles. As development occurs, the corridor should be monitored to verify that the actual trip generation and traffic assignment are consistent with these assumptions.

The conceptual improvements were determined by examining the calculated traffic capacities of the intersections and making changes in the *Synchro* models for various intersection modifications that would alleviate existing and/or projected capacity problems. This is somewhat of a "trial and error" procedure to get the best combination of geometrics to handle the expected traffic volumes through the intersections. A desirable design goal is to achieve LOS D or better at each of the intersections for each of the time periods studied (AM, PM and Saturday peak hours), while providing as little additional "pavement" as possible. Tables 5 and 6 show the capacity results of the analysis for signalized and unsignalized intersections, respectively, and the analysis sheets are in Appendix H.

Table 5 – Full-Build Capacity Analysis Results – Signalized Intersections

	2028 AM Peak Hour				2028 PM Peak Hour				2028 Sat Peak Hour			
Approach/Movement	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q
N Main St/Ten Rod Rd/Commercial Dr												
EB Left	--	--	--	--	--	--	--	--	--	--	--	--
EB Thru/Right	0.51	9	A	138	0.81	16	B	330	0.76	13	B	282
WB Left	0.68	25	C	114	0.71	29	C	167	0.72	30	C	173
WB Thru/Right	0.34	2	A	58	0.59	4	A	157	0.51	3	A	105
NB Left/Thru	0.48	23	C	44	0.80	46	D	122	0.76	47	D	100
NB Right	0.18	14	B	36	0.35	16	B	95	0.32	17	B	86
SB Left/Thru/Right	--	--	--	--	0.03	23	C	10	--	--	--	--
Intersection	**0.55**	**9**	**A**	**--**	**0.79**	**13**	**B**	**--**	**0.75**	**11**	**B**	**--**
Farmington Rd/NB Ramps												
EB Left	0.44	24	C	47	1.12	104	F	287	1.04	78	E	237
EB Thru	0.49	8	A	112	0.53	12	B	288	0.67	24	C	540
WB Thru	0.79	23	C	225	1.16	104	F	792	1.10	85	F	736
NB Left	0.81	22	C	220	1.16	116	F	497	1.10	92	F	619
NB Right	0.02	13	B	15	0.02	24	C	22	0.02	22	C	22
Intersection	**0.76**	**18**	**B**	**--**	**1.15**	**83**	**F**	**--**	**1.09**	**68**	**E**	**--**
Farmington Rd/SB Ramps												
EB Thru	0.88	12	B	181	0.93	15	B	447	0.88	19	B	528
WB Left	0.28	28	C	13	0.33	29	C	14	0.37	51	D	18
WB Thru	0.74	4	A	70	0.90	4	A	3	0.99	8	A	135
SB Left	0.60	23	C	140	0.68	41	D	197	0.61	38	D	220
SB Right	0.66	24	C	123	0.81	46	D	197	0.97	68	E	344
Intersection	**0.72**	**11**	**B**	**--**	**0.88**	**13**	**B**	**--**	**0.98**	**20**	**C**	**--**
Farmington Rd/Nashoba Dr/Access B												
EB Left	--	--	--	--	0.13	63	E	5	0.11	41	D	3
EB Thru	0.66	3	A	43	1.02	19	B	116	0.95	8	A	79
EB Right	0.01	1	A	0	0.03	1	A	0	0.04	1	A	0
WB Left	0.34	58	E	108	0.70	64	E	313	0.94	92	F	344
WB Thru	0.63	3	A	257	0.84	9	A	756	0.94	16	B	1264
WB Right	0.00	1	A	2	0.01	2	A	4	0.02	2	A	7
NB Left/Thru	0.15	62	E	38	0.89	129	F	164	0.95	130	F	180
NB Right	0.02	61	E	37	0.29	65	E	84	0.08	54	D	61
SB Left/Thru/Right	0.18	63	E	46	0.18	64	E	35	0.30	57	E	50
Intersection	**0.62**	**5**	**A**	**--**	**0.95**	**19**	**B**	**--**	**0.96**	**18**	**B**	**--**
Farmington Rd/Crane Dr/Access C												
EB Left	0.24	67	E	39	0.31	52	D	14	0.45	74	E	30
EB Thru	0.69	17	B	670	0.95	10	A	207	1.00	22	C	391
EB Right	0.07	9	A	47	0.08	2	A	3	0.13	5	A	10
WB Left	0.72	60	E	250	0.88	73	E	283	0.90	55	D	321
WB Thru	0.63	8	A	540	0.79	9	A	702	0.90	11	B	417
WB Right	0.02	4	A	6	0.02	4	A	3	0.07	3	A	3
NB Left/Thru	0.54	63	E	125	0.88	112	F	209	0.93	104	F	244
NB Right	0.10	57	E	66	0.33	62	E	115	0.28	49	D	105
SB Left/Thru	--	--	--	--	0.64	79	E	109	0.67	69	E	117
SB Right	--	--	--	--	0.01	59	E	24	0.02	47	D	34
Intersection	**0.67**	**18**	**B**	**--**	**0.93**	**17**	**B**	**--**	**0.95**	**23**	**C**	**--**
Farmington Rd/Little Falls Bridge Rd/Access D												
EB Left	0.80	41	D	227	0.96	71	E	372	1.09	102	F	377
EB Thru	0.76	7	A	43	0.99	24	C	707	1.00	33	C	842
EB Right	0.01	1	A	0	0.06	5	A	5	0.08	2	A	6
WB Left	0.86	83	F	191	0.90	81	F	346	0.97	71	E	350
WB Thru	0.98	45	D	572	1.05	59	E	1114	1.14	86	F	1072
WB Right	0.02	7	A	10	0.12	12	B	25	0.11	4	A	8
NB Left	0.04	32	C	31	0.42	57	E	175	0.52	50	D	231
NB Thru	0.04	43	D	15	0.08	60	E	31	0.10	51	D	36
NB Right	0.09	37	D	35	0.69	56	E	280	0.56	38	D	287
SB Left	0.60	41	D	237	0.92	114	F	263	1.09	151	F	303
SB Thru	0.06	46	D	14	0.19	68	E	31	0.21	57	E	35
SB Right	0.30	37	D	66	0.65	53	D	225	0.96	83	F	297
Intersection	**0.78**	**29**	**C**	**--**	**0.96**	**47**	**D**	**--**	**1.00**	**64**	**E**	**--**

Table 5 – Full-Build Capacity Analysis Results – Signalized Intersections (Cont.)

	2028 AM Peak Hour				2028 PM Peak Hour				2028 Sat Peak Hour			
Approach/Movement	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q
Farmington Rd/Wal-Mart												
EB Left	0.18	72	E	11	0.13	62	E	5	0.27	52	D	17
EB Thru	0.66	3	A	42	0.98	24	C	651	0.97	25	C	480
EB Right	0.03	1	A	0	0.07	5	A	12	0.09	9	A	18
WB Left	0.26	27	C	54	0.69	46	D	208	0.80	37	D	259
WB Thru/Right	0.64	1	A	24	0.76	3	A	103	0.84	3	A	132
NB Left/Thru	0.19	43	D	42	0.83	90	F	233	0.82	76	E	224
NB Right	0.12	27	C	56	0.32	38	D	192	0.42	27	C	244
SB Left	0.04	41	D	14	0.66	78	E	117	0.39	51	D	65
SB Thru/Right	--	--	--	--	0.07	57	E	40	0.03	47	D	28
Intersection	**0.60**	**4**	**A**	**--**	**0.90**	**19**	**B**	**--**	**0.89**	**18**	**B**	**--**
Farmington Road/Two Rod Road												
EB Thru	0.79	25	C	473	0.75	31	C	650	0.81	31	C	573
EB Right	0.11	14	B	40	0.11	19	B	65	0.15	18	B	64
WB Left	0.81	20	C	267	0.78	43	D	300	0.80	31	C	344
WB Thru	0.26	2	A	56	0.65	5	A	256	0.55	2	A	75
NB Left	0.22	32	C	23	0.73	41	D	113	0.61	28	C	107
NB Right	0..24	14	B	90	0.76	25	C	289	0.65	9	A	120
Intersection	**0.76**	**18**	**B**	**--**	**0.75**	**24**	**C**	**--**	**0.77**	**19**	**B**	**--**
Frontage Road/Two Rod Road												
EB Left	0.48	43	D	104	0.84	53	D	517	0.90	43	D	548
EB Thru/Right	--	--	--	--	0.13	28	C	81	0.14	13	B	59
WB Left	--	--	--	--	0.29	66	E	55	0.31	56	E	57
WB Thru/Right	--	--	--	--	0.48	62	E	130	0.43	48	D	138
NB Left/Thru/Right	0.04	2	A	14	0.48	26	C	370	0.12	31	C	71
SB Left/Thru	0.56	6	A	242	0.14	7	A	80	0.18	40	D	106
SB Right	0.13	1	A	0	0.34	1	A	228	0.53	1	A	345
Intersection	**0.55**	**8**	**A**	**--**	**0.62**	**27**	**C**	**--**	**0.71**	**24**	**C**	**--**

v/c – Volume to capacity ratio
Del – Average delay per vehicle in seconds
LOS – Level of Service
Q – 95th percentile queue (feet)

Table 6 – Full-Build Capacity Analysis Results – Unsignalized Intersections

	2028 AM Peak Hour				2028 PM Peak Hour				2028 Sat Peak Hour			
Approach/Movement	v/c	Del	LOS	Q	v/c	Del	LOS	Q	v/c	Del	LOS	Q
Farmington Road at Access A												
NB Right	0.09	15	B	8	0.23	19	C	22	0.25	19	C	24
Farmington Road at Access E												
NB Right	0.21	17	C	19	0.11	16	C	10	0.21	18	C	20
Farmington Road at Access F												
WB Left	0.37	18	C	41	0.06	12	B	5	0.06	14	B	5
NB Left	0.21	48	E	19	0.91	66	F	176	0.23	52	F	21
Frontage Road at Access A												
EB Left/Right	0.03	8	A	2	0.08	9	A	6	0.10	9	A	8
NB Left/Thru	0.01	2	A	1	0.02	2	A	2	0.02	2	A	2
Frontage Road at Access B												
EB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
WB Left/Thru/Right	0.01	9	A	1	0.04	9	A	3	0.04	9	A	3
NB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
SB Left/Thru/Right	0.02	3	A	1	0.06	3	A	4	0.07	3	A	6
Frontage Road at Access C												
EB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
WB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
NB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
SB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
Frontage Road at Access D												
EB Left/Thru/Right	0.00	0	A	0	0.13	11	B	11	0.22	13	B	21
WB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
NB Left/Thru/Right	0.00	0	A	0	0.08	2	A	6	0.12	3	A	10
SB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
Frontage Road at Wal-Mart												
EB Left/Thru/Right	0.00	0	A	0	0.23	16	C	22	0.47	27	D	60
WB Left/Thru/Right	0.00	0	A	0	0.34	24	C	36	0.88	97	F	144
NB Left/Thru/Right	0.00	0	A	0	0.04	2	A	3	0.06	2	A	5
SB Left/Thru/Right	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0
Frontage Road at Access E												
WB Left/Right	0.07	10	A	6	0.07	9	A	6	0.13	10	A	12
SB Left/Thru	0.00	0	A	0	0.00	0	A	0	0.00	0	A	0

v/c – Volume to capacity ratio
Del – Average delay per vehicle in seconds
LOS – Level of Service
Q – 95th percentile queue (feet)

Based on this iterative evaluation, the following lane uses and lengths were established in the final analysis for 2028 Full-Build conditions. Sketches of the proposals are shown in Figures 7 to 15.

- Two through lanes on North Main Street in each direction between Ten Rod Road and the Turnpike.
- Two through lanes on Farmington Road in each direction from the Turnpike to the Farmington Town Line and a center two-way left-turn lane and center median, as appropriate, with left turns prohibited at Access A and Access E.
- At North Main Street/Ten Rod Road, as proposed by NHDOT for the Turnpike widening project (existing signal)
  - Eastbound – left (150'), thru, thru/right
  - Westbound – left (200'), thru, thru/right
  - Northbound – left/thru, right (260')
  - Southbound – left/thru/right (commercial drive)
- At Farmington Road/Northbound Ramps (signalized) – see Figure 15
  - Eastbound – 2 lefts (400'), 2 thru (Turnpike proposal is 1 left (250') and 2 thru)
  - Westbound – thru, thru/right (same as Turnpike proposal)
  - Northbound – 2 lefts (600'), right (Turnpike proposal is 2 lefts (200'), right)
- At Farmington Road/Southbound Ramps (signalized) – see Figure 15
  - Eastbound – 2 thrus, thru/right (Turnpike proposal is thru, thru/right)
  - Westbound – left (200'), 2 thrus (same as Turnpike proposal)
  - Southbound – left, 2 rights (300') (Turnpike proposal is left, right (100'))
- At Farmington Road/Access A (new intersection, unsignalized, no lefts allowed) – see Figure 13
  - Eastbound – 2 thrus, right (200')
  - Westbound – 2 thrus
  - Northbound – right only
- At Farmington Road/Access B/Nashoba Drive (signalized) – see Figure 12
  - Eastbound – left (200'), 2 thrus, right (200')
  - Westbound – left (250'), 2 thrus, right (100')
  - Northbound – left/thru, right (200')

- Southbound – left/thru/right

- At Farmington Road/Access C/Crane Drive (signalized) – see Figure 12
  - East bound – left (200'), 2 thrus, right (100')
  - Westbound – left (350'), 2 thrus, right (200')
  - Northbound – left/thru, right (250')
  - Southbound – left/thru, right (150')
- At Farmington Road/Access D/Little Falls Bridge Road (existing signal) – see Figure 10
  - Eastbound – left (500'), 2 thrus, right (200')
  - Westbound – left (350'), 2 thrus, right (200')
  - Northbound – left (300'), thru, right (300')
  - Southbound – left (400'), thru, right (400')
- At Farmington Road/Wal-Mart/Summit Realty (existing signal) – see Figure 10
  - Eastbound – left (150'), 2 thrus, right (150')
  - Westbound – left (300'), thru, thru/right
  - Northbound – left/thru, right (300')
  - Southbound – left, thru/right
- At Farmington Road/Two Rod Road (new intersection, signalized) – see Figure 9
  - Eastbound – 2 thru, right (200')
  - Westbound – 2 lefts (400'), 2 thru
  - Northbound – left and right lanes extending to the frontage road, right (300')
- At Farmington Road/Access E (new intersection, unsignalized, no lefts allowed) – see Figure 8
  - Eastbound – 2 thrus, right (200')
  - Westbound – 2 thrus
  - Northbound – right only
- At Farmington Road/Access F (new intersection, unsignalized) – see Figure 7
  - Eastbound – thru, thru/right
  - Westbound – left (200'), 2 thrus
  - Northbound – left, right

Note in Table 5 that, even with the added lanes at the Turnpike Exit 15 ramps, the northbound ramps intersection is expected to be at LOS E or F and over capacity in both the PM and Saturday peak hours. However, it was determined that it is not practical to make the intersection any larger than shown above. Even with this configuration, the bridge over the Turnpike would need to be one lane wider than in the current Turnpike proposal. See also the discussion later under "Estimating When the Improvements Should Be Made."

Note also in Table 5 that the intersection at Access D/Little Falls Bridge Road is expected to operate at LOS E during the 2028 Saturday peak hour. A second westbound left-turn lane into the proposed Access D was investigated to improve the operation of the intersection. However, the recently completed improvements at the intersection provide for only one westbound left-turn lane and, therefore, the final analysis was performed using that configuration. See also the discussion later under "Estimating When the Improvements Should Be Made."

The frontage road will be a City street serving developments along the road. The roadway would be one lane in each direction with a center turn lane. Each intersection is assumed to have one lane approaching from each direction. Stubs to sites along the frontage road would be provided, with turn lanes on the frontage road as appropriate.

At Two Rod Road, due to the heavy traffic generated by the possible retail and office uses in the area, the frontage road intersection would fail as an unsignalized intersection. It is assumed that intersection would be signalized with the following lane geometrics used in the analysis to provide an acceptable LOS:

- At Frontage Road/Two Rod Road
  - Eastbound – left (400'), thru/right
  - Westbound – left (200'), thru/right
  - Northbound – left/thru, thru/right (400')
  - Southbound – left/thru, right (free)

The intersection was also analyzed as a roundabout using NHDOT-supplied analysis spreadsheets. Because of the proposed westbound double left turns on Farmington Road at Two Rod Road, the southbound approach to the roundabout must also be two lanes. The right lane would become an exclusive free right-turn lane at the roundabout. The analysis for this configuration results in overall LOS C or better, although the proposed two-lane northbound approach on Two Rod Road during the PM peak hour is at LOS F. The northbound traffic is from the office development, and it should be possible to stagger work hours to avoid having a large majority leaving work during the peak hour. Based on the inherent

uncertainty and long design horizon, it appears impractical to suggest further additions to the number of lanes.

Note also that the frontage road would pass through the Wal-Mart parcel, connecting with the existing entrance to Wal-Mart. Coordination with the existing development to secure appropriate easements to allow for cross traffic will be required.

G. Estimate When the Improvements Should Be Made

Three sets of sensitivity analyses were conducted to estimate when improvements would be needed to handle both the background growth along the corridor and the added traffic from GRDD.

1. Adding Lanes to Farmington Road

As mentioned above, by the time that the GRDD is fully developed, Farmington Road would need to have two travel lanes in each direction and three more signals (at Nashoba Drive, Crane Drive, and Two Rod Road) with turning lanes. The signalized intersections will need two through lanes in each direction to handle the through traffic, and the two travel lanes in each direction on Farmington Road between the intersections will essentially connect those through lanes at the intersections. To the west of Two Rod Road, the roadway will need to revert to one lane in each direction at some point to match the existing road at the Farmington Town Line.

This west section of road was analyzed to determine when widening may be needed by evaluating various levels of GRDD development as a percentage of the total number of trips and year of development. The results are summarized in Table 7. The associated worksheet is in Appendix I. The PM peak hour traffic was used for the analyses because it has the heaviest directional traffic (westbound) of the three peak hours analyzed. The capacity of one lane of roadway is considered to be 1700 equivalent passenger cars per hour, adjusted for peak hour factor and percentage of trucks. When the volume reaches that level, a second lane is required to handle the traffic in that direction. A second lane would likely be added in the opposite direction at the same time, resulting in a 4-lane road.

Using this method, a second lane would be needed for this section of road by 2028 under full development. However, the same volume of traffic would be using the road to the west in Farmington, where it may remain only one lane in each direction. As the traffic increases, it will be necessary to review the amount of traffic and the operation of the road to determine the best course of action.

Table 7
Equivalent Passenger Cars per Hour on Farmington Road
Two Rod Road to Farmington Town Line

	Year			
GRDD Trips	2013	2018	2023	2028
0%				1670
10%				1700
20%			1645	1730
30%			1670	1760
40%			1700	1785
50%		1650	1730	1820
60%		1675	1760	1845
70%		1705	1785	1875
80%	1655	1735	1820	1905
90%	1685	1765	1845	1935
100%	1710	1790	1875	1960

Lines show maximum hourly traffic volume that one lane can handle (1700)

Based on the 1700 vph threshold, almost 100% of GRDD traffic could be accommodated in 2013 before Farmington Road would need to be widened to two lanes in each direction, excluding turn lanes at intersections. However, this also shows that existing traffic levels, plus 20 years of background growth, will use up most of Farmington Road's capacity by the 2028 design horizon, and only 10% of the projected GRDD trips could be accommodated before Farmington Road would need to be widened.

2. Upgrading the Spaulding Turnpike Ramps at Farmington Road

The proposed improvements to the Spaulding Turnpike by NHDOT include reconstructing the ramps and their intersections with Farmington Road. The proposed intersection lanes are proposed as follows, and the two intersections will be signalized and coordinated.

- At Farmington Road/Northbound Ramps:
  - Eastbound – left, 2 thru
  - Westbound – thru, thru/right
  - Northbound – 2 lefts, right slip lane
- At Farmington Road/Southbound Ramps:
  - Eastbound – 2 thrus, right slip lane
  - Westbound – left, 2 thrus
  - Southbound – left, right slip lane

Using this configuration, the LOS at the northbound ramps (which has the lower LOS of the two intersections) was determined for various years and levels of development of the GRDD in order to estimate when the intersections would need to be upgraded over and above the proposed NHDOT improvements. The results of the analyses are summarized in Table 8. The PM peak hour traffic was used because it has the worst LOS of the three peak hours analyzed. The desirable LOS D criterion was also applied here. The associated worksheet showing the traffic volumes is in Appendix I. The analysis sheets for the several iterations to create the table have not been included.

Table 8
Level of Service at Northbound Ramps
Based on NHDOT Design

	Year			
GRDD Trips	2013	2018	2023	2028
0%				C
10%			C	C
20%		C	C	D
30%	C	C	D	D
40%	C	D	D	D
50%	D	D	D	E
60%	D	D	E	E
70%	D	E	E	F
80%	E	E	F	F
90%	E	F	F	
100%	F	F		

Using the table for various development/year combinations will yield, for planning purposes, the approximate time that the upgrade to the intersection (and indeed, both ramp intersections) should be made. For example, if the pace of development of GRDD were to be uniform with no development in 2008 and full development in 2028, then in 2018 (halfway between 2008 and 2028) the level of development would be 50%, and the northbound ramp intersection would be at LOS D but approaching LOS E. Assuming that LOS D to E is the threshold where upgrading is required, then the intersection should be upgraded some time between 2018 and 2023 with continued GRDD development.

Note also that if GRDD is not developed, the northbound ramp intersection is expected to perform at LOS C in 2028.

As mentioned before, the Ramp intersections will need extensive improvements by 2028 for full development of the GRDD. The likely changes include:

- A second left-turn lane for eastbound to northbound traffic, which would require a third eastbound approach lane at the southbound ramp intersection, widening the bridge over the Turnpike to accommodate that lane, and adding a second lane to the northbound on-ramp to receive the vehicles making the double left.
- A second right-turn lane from the southbound off-ramp.
- Lengthening the two left-turn lanes on the northbound off-ramp.

The City should coordinate with the NHDOT on augmenting their current design for the Exit 15 improvements so that this future widening could be easily accommodated at some point in the future when required. Even with these changes, which appear to be the limit of the number of lanes that the interchange area can hold, the LOS in 2028 for the full GRDD build-out scenario is expected to be F at the northbound ramps intersection.

3. Improving the Intersection of Farmington Road and Little Falls Bridge Road

The most critical intersection, from a capacity constraint point of view, between the Turnpike and the Farmington Town Line is at Little Falls Bridge Road. This intersection was recently improved by the City with turning lanes and traffic signals. In order to estimate the length of time that the current configuration will handle traffic, a sensitivity analysis was conducted for the intersection. For this analysis, it was assumed that the development at Access D is not constructed, as that would likely be a large development that would require the reconstruction of the intersection anyway. Also, to be conservative, the internally captured trips (see explanation above) were not considered.

As was done for the ramp intersections, the capacity was estimated for various levels of GRDD development and year, with the results summarized in Table 9. The associated worksheet is in Appendix I. The Saturday peak hour traffic was used because it has the worst current LOS of the three peak hours analyzed. Note again that the development percentages are without the Access D development, so they do not compare with the percentages in Tables 7 and 8 above. The analysis sheets for the several iterations to create the table have not been included.

Table 9
Level of Service at Little Falls Bridge Road
For Existing Geometry

	Year			
GRDD Trips	2013	2018	2023	2028
0%				
10%				
20%				
30%				
40%				C
50%			C	C
60%		C	C	D
70%	C	C	D	D
80%	C	D	D	D
90%	D	D	D	E
100%	D	D	E	E

GRDD trips excludes development at Access D, which would require rebuilding the intersection
Internally captured trips not considered

It can be seen from the table that, using the above assumptions, the intersection will continue to operate satisfactorily (LOS D or better) until the latter years of the study time and higher percentages of development. Again, if the development at Access D occurs, the intersection would need to be expanded regardless of the growth in the rest of the GRDD. However, it is important to recognize that the City has already made a significant investment in roadway improvements in the Little Falls Road/Wal-Mart area that should be maintained as long as possible. The magnitude of additional improvements in this area, particularly a second westbound left-turn lane at the Little Falls Bridge Road intersection, would require major reconstruction of the recently widened section. The cost of such an improvement could very well be cost-prohibitive to a single development and, as such, detrimental to the City's goal of economic development of this parcel. As such, the existing cross section of Farmington Road in this area should be preserved as long as possible, and could accommodate about 80% of the remaining GRDD traffic estimates plus background growth through the 2028 design horizon.

IV. WATER AND SEWER INFRASTRUCTURE

A. Water Distribution Concept

The conceptual water distribution is shown in Figure 16. The layout and features concept were based on the following assumed points.

- The City is planning to extend a new major water main along the abandoned railway alignment paralleling Route 11 under another, separate, development project. With the additional flow supplied from the new (railway) main, a new 12-inch-diameter water main is shown to provide for supply and fire protection in the new Granite Ridge complex. In addition, the water distribution concept shows the 16-inch main extended westerly beyond Wal-Mart to the GRDD project limit.
- The water distribution concept plan (Figure 16) shows four separate connections back to the existing 16- and 12-inch-diameter water mains along Route 11 to provide recirculation (looping) capability (Accesses B, C, D, and E). In order to properly evaluate the water supply needs of the GRDD, a thorough model evaluation of water supply parameters should be conducted to confirm adequate supply before plans are further developed.
- Although the City is considering nearby well installation and water booster station construction, those costs are not reflected in the GRDD water estimate. These features are being developed by another engineering consultant for the City. Also, a water main is shown to extend across the Wal-Mart parcel to follow the new frontage road alignment.

B. Sewer Layout Concept

The conceptual sewer layout is shown in Figure 17. The following points were considered in determining this layout:

- Sewer generation was calculated from projected land utilization tables using rates published by NHDES. Areas and uses of projected development were used to estimate sewer flows. This development is discussed earlier and summarized in Table 1. Appendix K shows the calculations.
- The GRDD is roughly bisected by the Wal-Mart store, which is also located near the crest in the Route 11 roadway profile. As such, the concept wastewater plan shows a new pump station located west of Wal-Mart.
- The new "West Pump Station" is envisioned to collect flows from those developments situated west of Wal-Mart. Topography generally slopes from the Farmington line and Wal-Mart towards the proposed pump station location.
- Pump station flows will be conveyed through a relatively large force main routed along the south side of Route 11 to a new "Receiving Manhole," located east of the Little Falls Bridge Road intersection. The force-main alignment would parallel an existing, smaller force main route in front of Wal-Mart.
- From the "Receiving Manhole," flows will be gravity-fed through an approximately 18-inch-diameter sewer. (This size was empirically selected for discussion purposes and will need to be sized in a Design Basis Report in

the future). Some deeper excavation cuts will be required through this length. This alignment and profile will deserve future review in the design phase to balance initial capital costs with operating costs.

- The new 18-inch gravity sewer would extend along the south side of Route 11 and act both to convey the West Pump Station flows and collect flows from businesses that abut Route 11.
- The new 18-inch gravity sewer will cross beneath Route 11 to discharge into the existing Route 11 Pump Station located near the Cocheco River Estates. We expect that NHDOT will require the crossing construction to use directional drilling or jacking technologies due to the high traffic volume.
- Upon initial review, the 1,000 GPM rated capacity of the Gorman-Rupp T-6 pump skid appears to be insufficient to handle total flows entering the facility. The existing 8-foot-square wetwell may also limit efficient operation of an enlarged facility.
- Depending on condition and results from a capacity analysis, the existing 10-inch-diameter force main that conveys flows from the existing Route 11 Pump Station to a location near Poulin Chevrolet may be suitable for re-use. However, some portion will likely be impacted during the upcoming upgrades to the Spaulding Turnpike. Excess sewer capacity downstream from the GRDD was not evaluated as part of this study.

V. ESTIMATED COSTS

The table below summarizes the estimated costs to construct the proposed roadways and water and sewer infrastructure improvements. The assumptions and calculations for the roadway costs are contained in Appendix J, and the assumptions and calculations for water and sewer costs are in Appendix K.

Estimated Infrastructure Costs

Type	Location	Amt (in 2008 $)
Roadway	Frontage Road and Interior Intersections	$4,330,000
	Access A and Portion of Farmington Road	1,010,000
	Access B/Nashoba Drive and Portion of Farmington Road	1,530,000
	Access C/Crane Drive and Portion of Farmington Road	1,900,000
	Access D/Little Falls Bridge Road and Portion of Farmington Road	1,770,000
	Two Rod Road and Portion of Farmington Road	2,015,000
	Access E and Portion of Farmington Road	695,000
	Access F and Portion of Farmington Road	1,115,000
	Roadway Total:	$14,365,000
Water	Entire Project	2,900,000
Sewer	Entire Project	5,400,000
	Grand Total:	$22,665,000

VI. ESTIMATED WETLANDS IMPACTS

The development of the entire GRDD will result in some wetlands impacts. Although the actual impacts will be dictated by the size, type, and location of each development on the individual sites, it is estimated that the following disturbances will occur:

- Frontage Road – 0.75 acres
- Farmington Road Widening – 0.25 acres
- Site Development – 5.75 acres.

Comparisons with past site development facilities have been used to estimate these impact areas. Actual impacts would be dependent upon specific proposed work. The total estimated impact on wetlands is 6.75 acres. NHDES guidance policies and regulations on wetland impacts would likely influence detailed site development plans by individual property owners. Regulations will be one control on the location of the impacts.

VII. CONSTRUCTION PERFORMANCE STANDARDS

The City should establish design guidelines and construction performance standards that would apply to all development in the GRDD to ensure that City standards are met. Items for consideration include:

- Landscaping
- Signage – placement, size, type, sight distance, etc.
- Lighting – placement, type, etc.
- Curbing – granite, bituminous, none
- Stormwater treatment
- Building heights/density bonuses
- Cross easements for shared parking and driveways
- Snow storage.

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Granite Ridge Development Study
Farmington Road
Rochester, New Hampshire

APPENDICES

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APPENDIX A

Developable Land Backup

Route 11 Corridor Study – Developable Land Assumptions:

- It is assumed that approximately 15 percent of developable area is devoted to stormwater management and access. This set-aside comes about not only from required stormwater collection and storage, but also due to inefficiencies in layout forced by the lot irregularities of shape, grading requirements or other similar considerations/constraints.

- Due to cost of construction considerations, office buildings are assumed to be two stories in height. Retail Establishments are considered to be one story construction.

- Regarding wetlands, the assumption is made that construction within buffers is not allowed. Also, where small isolated pockets of wetlands are present, it is assumed that permits can/will be obtained to fill in the pockets, rendering the land useful for development purposes. It is additionally assumed that it will be difficult to secure permits for long crossings of wetlands (in excess of several hundred feet, making it infeasible to develop the back portion of Lot 208/8 as an example).

- It is our understanding that in their review for stormwater management/ runoff treatment/ wetland impacts, the NHDES wishes to consider the entire proposed zone as a single developable tract and not as individual properties upon which piecemeal development will take place. Site specific/wetlands application/review/permits thus would be viewed in the context of a stormwater management plan for the total watershed area encompassed by the proposed zone. Where small isolated pockets of wetlands are present, it is assumed that the NHDES will grant permits to fill in said pockets, and the filled land will therefore be utilized for development purposes (re; Lots 216/11, 208/1 and 208/2). It is also assumed that the upland areas of the site which are steeply sloped, although requiring additional cost to develop when compared to moderately sloped areas, may be fully included in the developable area calculations.

- Also a consideration, both the City of Rochester and the NHDES appear to be interested in limiting disturbance to and preserving significant, inter-related and inter-connected areas of the tract. Stormwater management strategies and layout considerations should be mindful of this overall goal. To this end, those lots that have remote or difficult to access functional 'pockets' in the rear yards (e.g. 216/9, 216/11, 208/1 and 208/8) can also be viewed as lots having the potential to preserve significant conservation areas that can be combined with similar areas on adjoining properties.

Route 11 Corridor Study – Other Observations/ Recommendations:

- Regarding layout and use of the properties within the proposed HC-2 zone, none of the undeveloped properties have the potential for the level of "big box" development that has occurred on the Wal-Mart site. However, Lots 216/11 and 208/2 appear to have enough buildable/ potentially buildable area in the front of the properties to put up fairly large retail footprints. If the isolated wetlands pockets on Lot 208/2 are filled and the front, western area of Lot 208/1 is combined with the buildable area of Lot 208/2, there appears to be the potential for building a "big box" retail facility. Similarly, although when viewed as separate entities, the areas of lots 216/1 through 216/9 and Lot 221/163 have limited developmental potential, collectively and viewed as a single tract these properties have good developmental possibilities for retail use.

- At least in the western portions of the proposed zone, the Collector Road might be placed in an easement and not be confined within a public Right of Way (private road ownership). Large, undeveloped lots 208/1 and 208/2 at the western end of the area in question are heavily constrained by wetlands and associated buffers, so further constraining those properties with front yard setbacks and reduced lot areas that come about through loss of land resulting from dedication of public right of ways will further and significantly reduce useable lot areas on these lots in particular. Should the choice be made to go with private roadways, public water and sewer would be placed in utility easements as required for ownership and maintenance by the utility purveyors.

- The rear yard of Lot 208/8 is virtually inaccessible from the front of the same lot due to the presence of a very large, seamless wetlands area that occupies the center of the property. It is certain that obtaining a permit from the NHDES to cross these wetlands with a roadway for developmental purposes would be difficult if not impossible. Consideration should therefore be made to place a conservation easement across the entire rear of this property inclusive of not only the wetlands but also the uplands area of the lot, combining same with the adjacent wetlands area on lot 208/2. The front of Lot 208/8 consists of interconnected "pockets" separated by narrow bands of wetlands existing crossings by existing roadways/paths. The history of the existing crossings is unknown, but in any case it seems plausible that development of this area would be possible.

- Office "campuses" (even allowing for medical office uses) might be a consideration for allowed use in the rear yards of the heavily wetland-constrained westerly lots 208/1 and 216/11. Within these western properties, this would enable the upland pockets in the rear yards to be utilized for building and parking areas, while the narrow links between the pockets could be used for serpentine roadway construction as required to interconnect the buildable areas.

- Consider a roadway connection into lot 208/1 from Route 11 (Farmington Road) through the Wal-Mart site. It appears from our base map that this would eliminate the need for a significant wetland crossing that may be difficult to obtain from the state when a Wal-Mart access connection appears to be a feasible alternate access. Alternatively, a Route 11 access into lot 208/1 from Lot 208/2 by two short wetlands crossings through the wetlands ringed frontage area of lot 208/1 and then southward along the westerly property line of the Wal-Mart site is also a possibility.

  The easterly, Route 11 frontage area of lot 208/1 (ringed by wetlands) could be accessed from a Lot 208/2 by a narrow wetlands crossing, a separate curb cut on Route 11 or, possibly, from access into the adjacent Wal-Mart property by agreement with that party. The westerly frontage area of lot 208/1 would be accessed from lot 208/2.

- Also consider entering into discussions with Wal-Mart about utilizing their traffic light as the terminus of a collector-service road that would have a starting point on Route 11 at lot 216/4. This would eliminate the need to provide a separate collector-service road access immediately adjacent to and to the east of the Wal-Mart site on Route 11. It goes without saying that if Wal-Mart is used as the collector road terminus, it will be necessary to reconfigure the frontage along the Wal-Mart site as required to provide appropriate roadway configuration while not imposing setback or other constraints on the Wal-Mart site that would reduce the functionality of their property.

Rochester - Route 11 Corridor Study
Potential Development Based on Max Land Utilization

Lot ID	Retail in 1000 sf (KSF)	Office in 1000 sf (KSF)	Comment
208-1	75	550	
208-2	165	45	
208-4	10		
208-5	7		
208-6	2		
208-6-1	Built Out	Built Out	
208-7	Built Out	Built Out	
208-8	100	130	Either/Or
216-1	20		
216-2	15		
216-3	25		
216-4	65		
216-5	Built Out	Built Out	
216-6	20		
216-7	45		
216-8	30		
216-9	110		
216-10	N/a	N/a	PSNH easement
216-11	220	140	
221-163	7		
Prel Sub-Totals	916	865	
Max Totals			
If 208-8 is Retail	**916**	**735**	
If 208-8 is Office	**816**	**865**	

CONCEPT PLAN, HC-2 ZONE

Lot ID	Total Lot Area (Acres, from Tax records)	Allowable Impervious - 75% Lot Area (Acres)	Developable Area (Acres, scaled - excluding future collector road, setbacks,buffers)	The lesser of the Allowable Impervious or Developable area (Acres)	Potential Future Development (SF FloorArea) [R = Retail O= Office]
0208-0001	82.5	62	45±	45±	75,000 SF (R) 550,000 SF (O)
0208-0002	32.0	24	15±	15±	165,000 (R) 45,00 SF (O)
0208-0004	1.2	0.9	1±	0.9	10,000 (R)
0208-0005	0.8	0.6	0.7±	0.6	7,000 (R)
0208-0006	1.1	0.8	1.0±	0.8	2,000 (R)
0208-0006.1	0.9	0.7	0.8±	0.7	Built Out
0208-0007	1.3	1.0	1.2±	1.0	Built Out
0208-0008	71.0	53	10±	10±	100,000 (R) or 130,000 (O)
0216-0001	3.2	2.4	3.0±	2.4±	20,000 (R)
0216-0002	2.6	2.0	2.0±	2.0±	15,000 (R)
0216-0003	2.9	2.2	2.5±	2.2	25,000 (R)
0216-0004	17.1	13	13±	13	65,000 (R)
0216-0005	0.75	0.6	0.75	0.6	Built Out
0216-0006	5.6	4.2	4.8±	4.2	20,000 (R)
0216-0007	7.6	5.7	6.6±	5.7	45,000 (R)
0216-0008	6.3	4.7	4.5±	4.5±	30,000 (R)
0216-0009	20.0	15	10±	10±	110,000 (R)
0216-0010	10.5	NA	0	0	NA
0216-0011	85.0	64	30±	30±	220,00 SF (R) 140,00 SF (O)
0221-0163	15.0	11	13±	11	7,000 (R)
TOTALS	367.4 Acres	293.9 Acres	156.9 Acres	152 Acres	

CONCEPT PLAN, HC-2 ZONE

Lot ID	Current Use	Total Lot Area (Acres, from Tax records)	Developable Area (Acres, scaled - excluding future collector road, setbacks,buffers)	Area Presently Developed consistent with HC-2 allowed uses (Acres,scaled)	Potential Future Area for Development (Acres)
0208-0001	Land	82.5	45±	0	45±
0208-0002	Land	32.0	15±	0	15±
0208-0004	Single Family Residence	1.2	1±	0	1±
0208-0005	Single Family Residence	0.8	0.7±	0	0.7±
0208-0006	Single Family Residence	1.1	1.0±	0.8±	0.2
0208-0006.1	Auto Sales/Service	0.9	0.8±	0.8±	0
0208-0007	Auto Sales/Service	1.3	1.2±	1.2±	0
0208-0008	General Office	71.0	10±	1±	9± (incl 2± ac on 208/2)
0216-0001	Retail/Service	3.2	3.0±	1.2±	1.8±
0216-0002	Retail/Service	2.6	2.0±	0.6±	1.4±
0216-0003	Land	2.9	2.5±	0	2.5±
0216-0004	Apartments	17.1	13±	7±	6±
0216-0005	Auto Sales/Service	0.75	0.75±	0.75±	0
0216-0006	Auto Sales/Service	5.6	4.8±	2.8±	2±
0216-0007	Auto Sales/Service	7.6	6.6±	2.6±	4±
0216-0008	General Office	6.3	4.5±	1.5±	3±
0216-0009	Land	20.0	10±	0	10±
0216-0010	Utility	10.5	0	0	0
0216-0011	Land	85.0	30±	0	30±
0221-0163	Single Family Residence	15.0	13±	1±	12±
TOTALS		367.4 Acres	156.9 Acres	21.3 Acres	135.6 Acres

LITTLE FALLS BRIDGE ROAD
FARMINGTON ROAD
RECENT RT. ROUTE IMPROVEMENTS
SUPER WAL-MART
FARMINGTON
ROCHESTER
TEN ROD ROAD
A
B
C
D
E
F
LEGEND
CONCEPTUAL LAYOUT OF DEVELOPMENT AREAS
STUDY AREA
DELINEATED WETLAND
WETLAND W/ BUFFER
STEEP SLOPES
FUTURE LAYOUT
WALMART EXPANSION
JANUARY 2009
SCALE IN FEET
CONCEPTUAL FRONTAGE RD. LAYOUT

APPENDIX B

Traffic Data

Rick Duval dba, All Directions Traffic

12-8 Manor Circle
Sanford, Maine 04073
PH: 207-266-0162 FAX: 207-490-0683

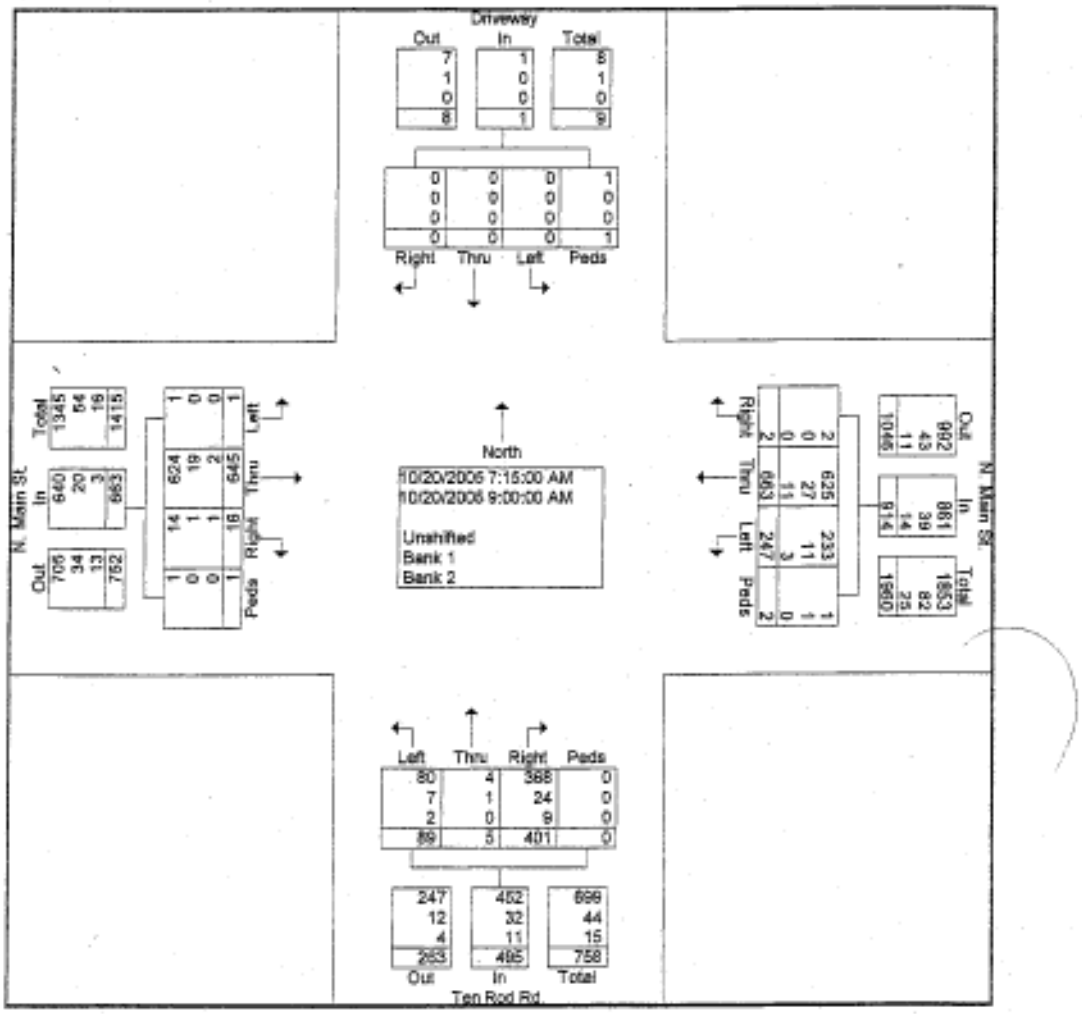
Combination of Volume and Bank 1 & 2
Classification: Bank 1 (Class 4 thru 7)
Classification: Bank 2 (Class 8 thru 13)

File Name : N Main St at Ten Rod Rd Thur 7-9
Site Code : 00000002
Start Date : 10/20/2005
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	Driveway From North					N. Main St. From East					Ten Rod Rd. From South					N. Main St. From West					
End Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:15 AM	0	0	0	0	0	0	73	24	1	98	47	0	8	0	55	2	68	1	1	72	225
07:30 AM	0	0	0	0	0	0	91	32	1	124	57	0	8	0	65	3	66	0	0	69	258
07:45 AM	0	0	0	0	0	1	85	39	0	125	59	0	11	0	70	4	87	0	0	91	286
08:00 AM	0	0	0	0	0	1	77	46	0	124	68	1	14	0	83	1	105	0	0	106	313
Total	0	0	0	0	0	2	326	141	2	471	231	1	41	0	273	10	326	1	1	338	1082
08:15 AM	0	0	0	0	0	0	72	33	0	105	46	2	15	0	63	1	88	0	0	89	257
08:30 AM	0	0	0	0	0	0	89	29	0	118	41	2	10	0	53	3	83	0	0	86	257
08:45 AM	0	0	0	0	0	0	87	26	0	113	44	0	8	0	52	2	60	0	0	62	227
09:00 AM	0	0	0	1	1	0	89	18	0	107	39	0	15	0	54	0	88	0	0	88	250
Total	0	0	0	1	1	0	337	106	0	443	170	4	48	0	222	6	319	0	0	325	991
Grand Total	0	0	0	1	1	2	663	247	2	914	401	5	89	0	495	16	645	1	1	663	2073
Apprch %	0.0	0.0	0.0	100.0		0.2	72.5	27.0	0.2		81.0	1.0	18.0	0.0		2.4	97.3	0.2	0.2		
Total %	0.0	0.0	0.0	0.0	0.0	0.1	32.0	11.9	0.1	44.1	19.3	0.2	4.3	0.0	23.9	0.8	31.1	0.0	0.0	32.0	
							38	14			32	1	9			1	21				T
							5%	6%			8%		10%			6%	2%				

Location: North Main Street at Ten Rod Road
Date: 10/20/2005
Day: Thursday
Period: 7:00 to 9:00 a.m.
Study: Turning Movment w/Classification



Rick Duval dba, All Directions Traffic

12-8 Manor Circle
Sanford, Maine 04073
PH: 207-266-0162 FAX: 207-490-0683

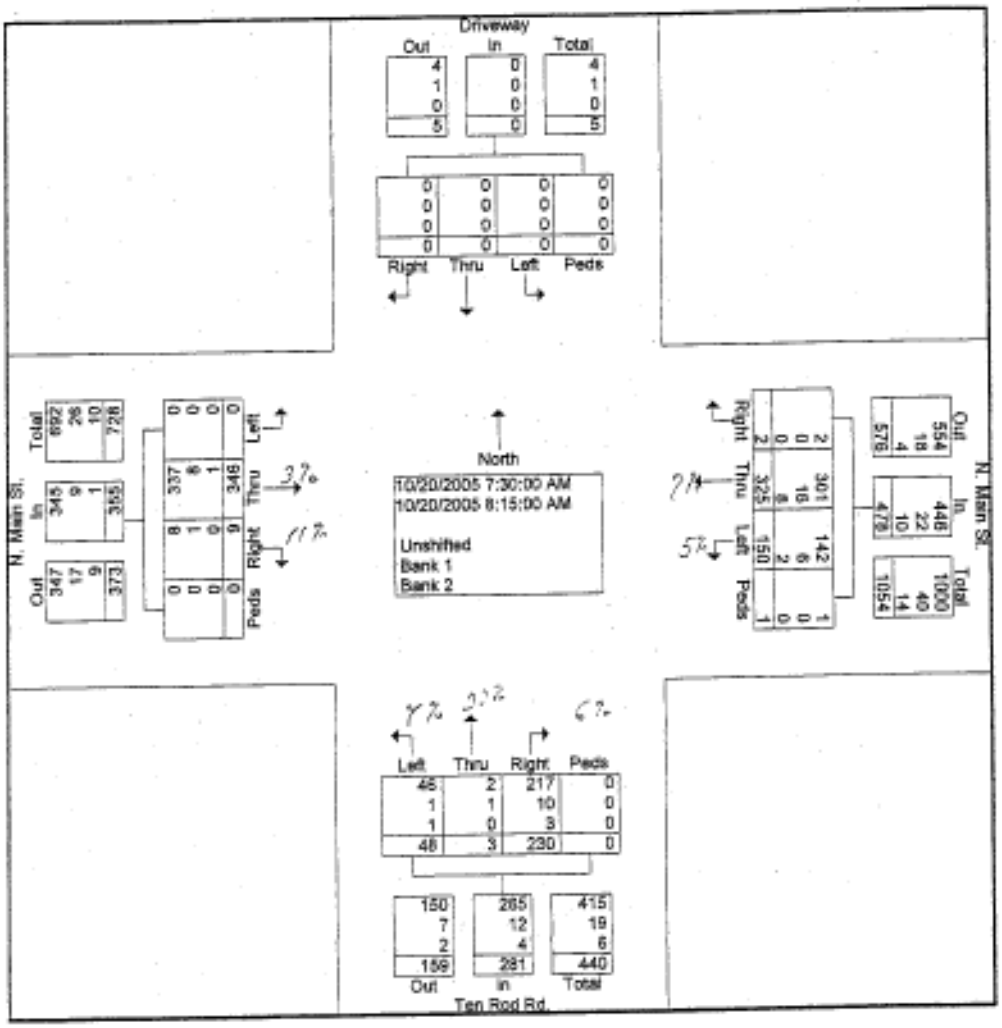
Peak Hour Only
Combination of Volume and Bank 1 & 2
Classification: Bank 1 (Class 4 thru 7)
Classification: Bank 2 (Class 8 thru 13)

File Name : N Main St at Ten Rod Rd Thur 7-9 PKH
Site Code : 00000002
Start Date : 10/20/2005
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	Driveway From North					N. Main St. From East					Ten Rod Rd. From South					N. Main St. From West					
End Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:30 AM	0	0	0	0	0	0	91	32	1	124	57	0	8	0	65	3	66	0	0	69	258
07:45 AM	0	0	0	0	0	1	85	39	0	125	59	0	11	0	70	4	87	0	0	91	286
08:00 AM	0	0	0	0	0	1	77	46	0	124	68	1	14	0	83	1	105	0	0	106	313
Total	0	0	0	0	0	2	253	117	1	373	184	1	33	0	218	8	258	0	0	266	857
08:15 AM	0	0	0	0	0	0	72	33	0	105	46	2	15	0	63	1	88	0	0	89	257
Grand Total	0	0	0	0	0	2	325	150	1	478	230	3	48	0	281	9	346	0	0	355	1114
Apprch %	0.0	0.0	0.0	0.0		0.4	68.0	31.4	0.2		81.9	1.1	17.1	0.0		2.5	97.5	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.2	29.2	13.5	0.1	42.9	20.6	0.3	4.3	0.0	25.2	0.8	31.1	0.0	0.0	31.9	

Location: North Main Street at Ten Rod Road
Date: 10/20/2005
Day: Thursday
Peak Period: 7:15 to 8:15 a.m.
Study: Turning Movment w\Classification



USPS
2005

CLD Consulting Engineers, Inc.

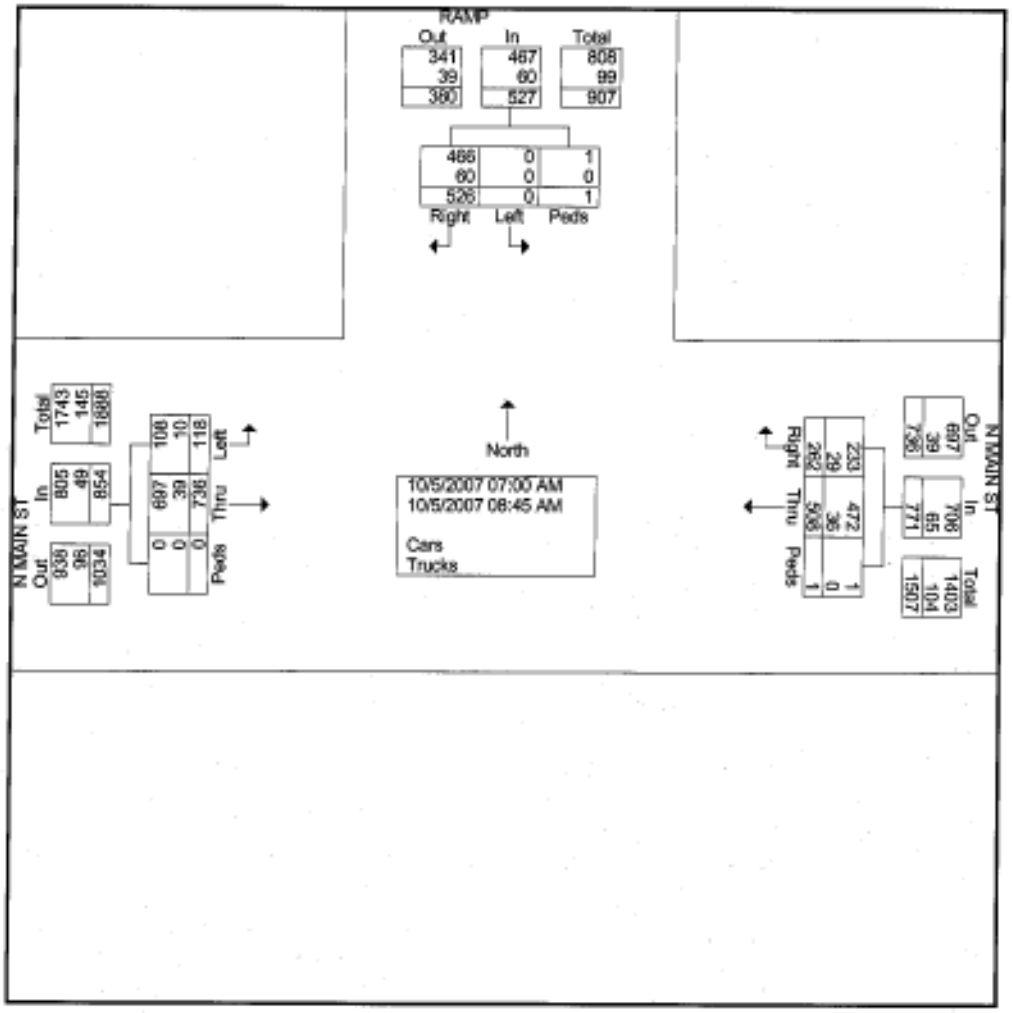
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at NB Ramps
Counter#/By: 2536/Dustin
Weather: Fair

File Name : NB Ramps AM
Site Code : 070241
Start Date : 10/5/2007
Page No : 1

Groups Printed- Cars - Trucks

	RAMP Southbound				N MAIN ST Westbound				N MAIN ST Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
07:00 AM	0	49	0	49	43	28	0	71	13	65	0	78	198
07:15 AM	0	73	0	73	62	33	1	96	14	72	0	86	255
07:30 AM	0	62	1	63	52	21	0	73	13	126	0	139	275
07:45 AM	0	59	0	59	61	30	0	91	18	112	0	130	280
Total	0	243	1	244	218	112	1	331	58	375	0	433	1008
08:00 AM	0	255 61	0	61	237 59	120 36	0	95	52 7	345 75	0	82	238
08:15 AM	0	89	0	89	82	32	0	114	20	96	0	116	319
08:30 AM	0	70	0	70	77	45	0	122	16	93	0	109	301
08:45 AM	0	63	0	63	72	37	0	109	17	97	0	114	286
Total	0	283	0	283	290	150	0	440	60	361	0	421	1144
Grand Total	0	526	1	527	508	262	1	771	118	736	0	854	2152
Apprch %	0	99.8	0.2		65.9	34	0.1		13.8	86.2	0		
Total %	0	24.4	0	24.5	23.6	12.2	0	35.8	5.5	34.2	0	39.7	
Cars	0	466	1	467	472	233	1	706	108	697	0	805	1978
% Cars	0	88.6	100	88.6	92.9	88.9	100	91.6	91.5	94.7	0	94.3	91.9
Trucks	0	60	0	60	36	29	0	65	10	39	0	49	174
% Trucks	0	11.4	0	11.4	7.1	11.1	0	8.4	8.5	5.3	0	5.7	8.1



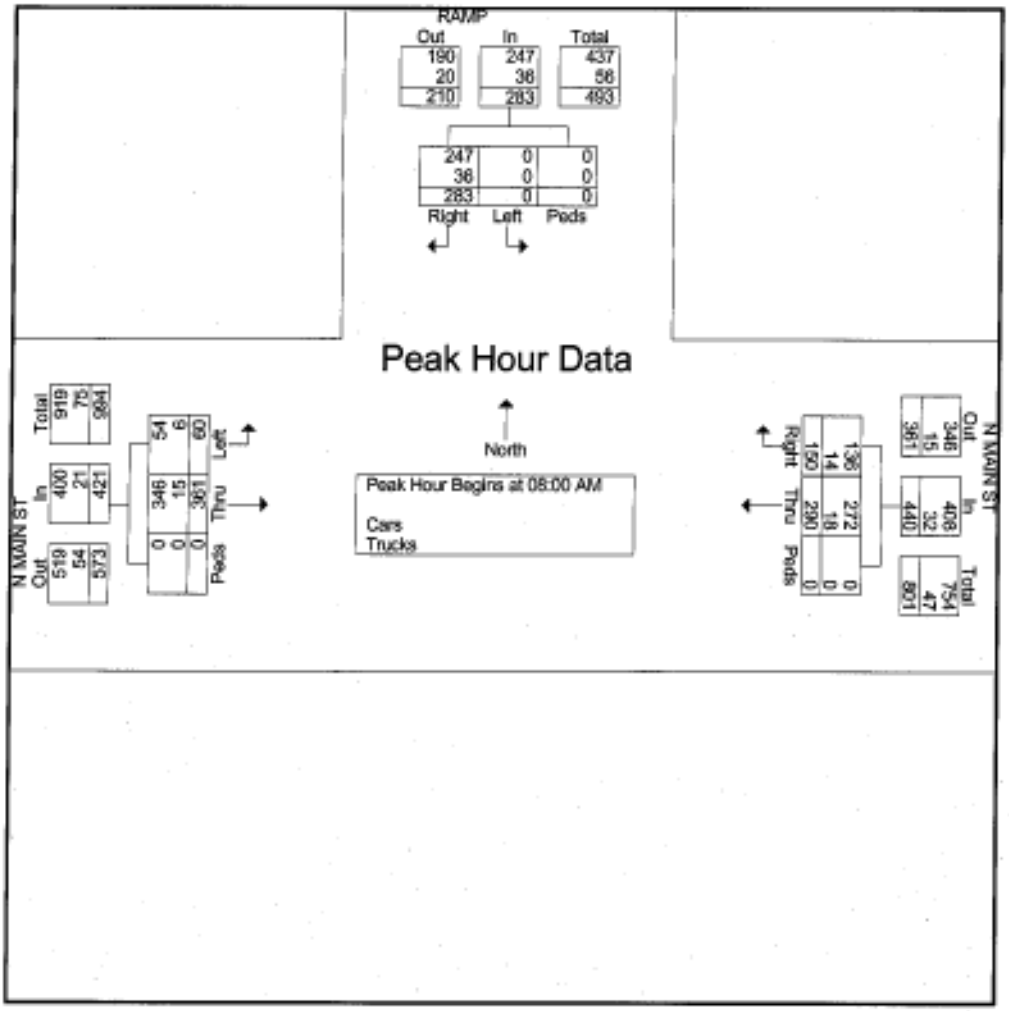
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at NB Ramps
Counter#/By: 2536/Dustin
Weather: Fair

File Name : NB Ramps AM
Site Code : 070241
Start Date : 10/5/2007
Page No : 2

	RAMP Southbound				N MAIN ST Westbound				N MAIN ST Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. 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	61	0	61	59	36	0	95	7	75	0	82	238
08:15 AM	0	**89**	0	**89**	**82**	32	0	114	**20**	96	0	**116**	**319**
08:30 AM	0	70	0	70	77	**45**	0	**122**	16	93	0	109	301
08:45 AM	0	63	0	63	72	37	0	109	17	**97**	0	114	286
Total Volume	0	283	0	283	290	150	0	440	60	361	0	421	1144
% App. Total	0	100	0		65.9	34.1	0		14.3	85.7	0		
PHF	.000	.795	.000	.795	.884	.833	.000	.902	.750	.930	.000	.907	.897
Cars	0	247	0	247	272	136	0	408	54	346	0	400	1055
% Cars	0	87.3	0	87.3	93.8	90.7	0	92.7	90.0	95.8	0	95.0	92.2
Trucks	0	36	0	36	18	14	0	32	6	15	0	21	89
% Trucks	0	12.7	0	12.7	6.2	9.3	0	7.3	10.0	4.2	0	5.0	7.8



CLD Consulting Engineers, Inc.

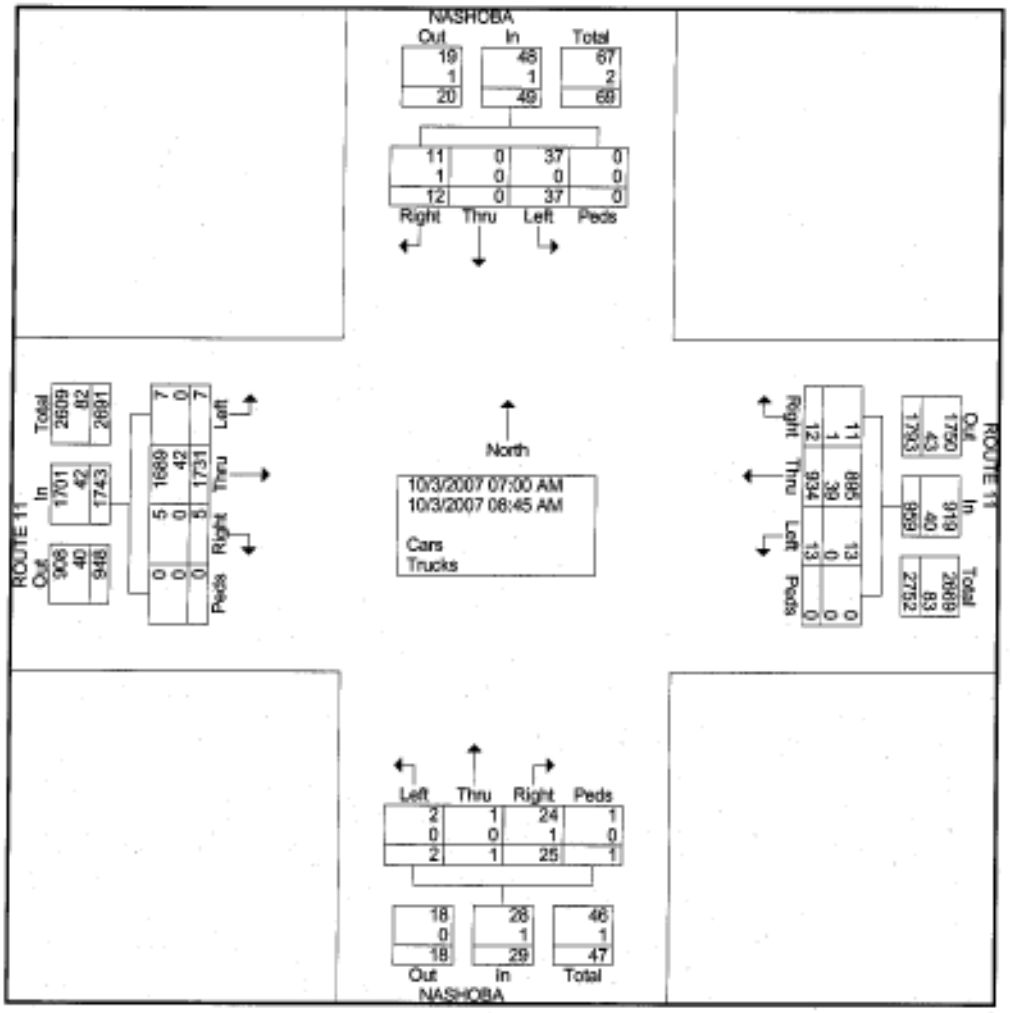
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Nashoba Dr
Counter#/By: 2537/Dan
Weather: Fair

File Name : Nashoba AM
Site Code : 070241
Start Date : 10/3/2007
Page No : 1

Groups Printed- Cars - Trucks

	NASHOBA Southbound					ROUTE 11 Westbound					NASHOBA Northbound					ROUTE 11 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	5	0	1	0	6	2	92	1	0	95	0	0	2	0	2	1	216	0	0	217	320
07:15 AM	3	0	1	0	4	1	138	2	0	141	0	0	5	0	5	0	239	2	0	241	391
07:30 AM	4	0	4	0	8	1	126	1	0	128	1	0	6	0	7	1	270	0	0	271	414
07:45 AM	6	0	1	0	7	1	110	2	0	113	0	0	1	0	1	0	245	1	0	246	367
Total	18	0	7	0	25	5	466	6	0	477	1	0	14	0	15	2	970	3	0	975	1492
08:00 AM	4	0	3	0	7	3	98	0	0	101	0	0	3	0	3	1	212	0	0	213	324
08:15 AM	3	0	1	0	4	2	122	0	0	124	1	0	3	0	4	1	196	1	0	198	330
08:30 AM	7	0	1	0	8	1	127	2	0	130	0	1	3	0	4	1	183	0	0	184	326
08:45 AM	5	0	0	0	5	2	121	4	0	127	0	0	2	1	3	2	170	1	0	173	308
Total	19	0	5	0	24	8	468	6	0	482	1	1	11	1	14	5	761	2	0	768	1288
Grand Total	37	0	12	0	49	13	934	12	0	959	2	1	25	1	29	7	1731	5	0	1743	2780
Apprch %	75.5	0	24.5	0		1.4	97.4	1.3	0		6.9	3.4	86.2	3.4		0.4	99.3	0.3	0		
Total %	1.3	0	0.4	0	1.8	0.5	33.6	0.4	0	34.5	0.1	0	0.9	0	1	0.3	62.3	0.2	0	62.7	
Cars	37	0	11	0	48	13	895	11	0	919	2	1	24	1	28	7	1689				
% Cars	100	0	91.7	0	96	100	95.8	91.7	0	95.8	100	100	96	100	96.6	100	97.6	100	0	97.6	97
Trucks	0	0	1	0	1	0	39	1	0	40	0	0	1	0	1	0	42	0	0	42	84
% Trucks	0	0	8.3	0	2	0	4.2	8.3	0	4.2	0	0	4	0	3.4	0	2.4	0	0	2.4	3



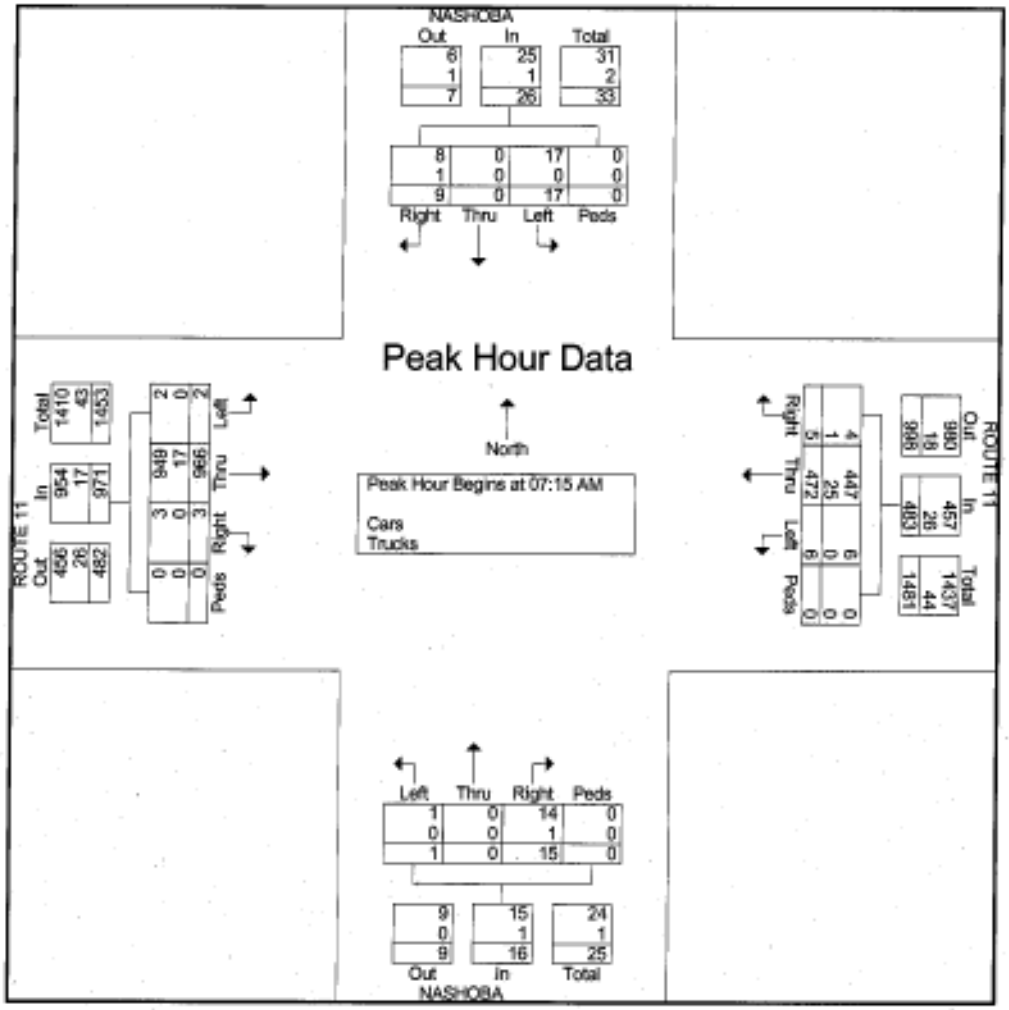
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Nashoba Dr
Counter#/By: 2537/Dan
Weather: Fair

File Name : Nashoba AM
Site Code : 070241
Start Date : 10/3/2007
Page No : 2

	NASHOBA Southbound					ROUTE 11 Westbound					NASHOBA Northbound					ROUTE 11 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	3	0	1	0	4	1	**138**	**2**	0	**141**	0	0	5	0	5	0	239	**2**	0	241	391
07:30 AM	4	0	**4**	0	**8**	1	126	1	0	128	**1**	0	**6**	0	**7**	**1**	**270**	0	0	**271**	**414**
07:45 AM	**6**	0	1	0	7	1	110	2	0	113	0	0	1	0	1	0	245	1	0	246	367
08:00 AM	4	0	3	0	7	**3**	98	0	0	101	0	0	3	0	3	1	212	0	0	213	324
Total Volume	17	0	9	0	26	6	472	5	0	483	1	0	15	0	16	2	966	3	0	971	1496
% App. Total	65.4	0	34.6	0		1.2	97.7	1	0		6.2	0	93.8	0		0.2	99.5	0.3	0		
PHF	.708	.000	.563	.000	.813	.500	.855	.625	.000	.856	.250	.000	.625	.000	.571	.500	.894	.375	.000	.896	.903
Cars	17	0	8	0	25	6	447	4	0	457	1	0	14	0	15	2	949	3	0	954	1451
% Cars	100	0	88.9	0	96.2	100	94.7	80.0	0	94.6	100	0	93.3	0	93.8	100	98.2	100	0	98.2	97.0
Trucks	0	0	1	0	1	0	25	1	0	26	0	0	1	0	1	0	17	0	0	17	45
% Trucks	0	0	11.1	0	3.8	0	5.3	20.0	0	5.4	0	0	6.7	0	6.3	0	1.8	0	0	1.8	3.0



CLD Consulting Engineers, Inc.

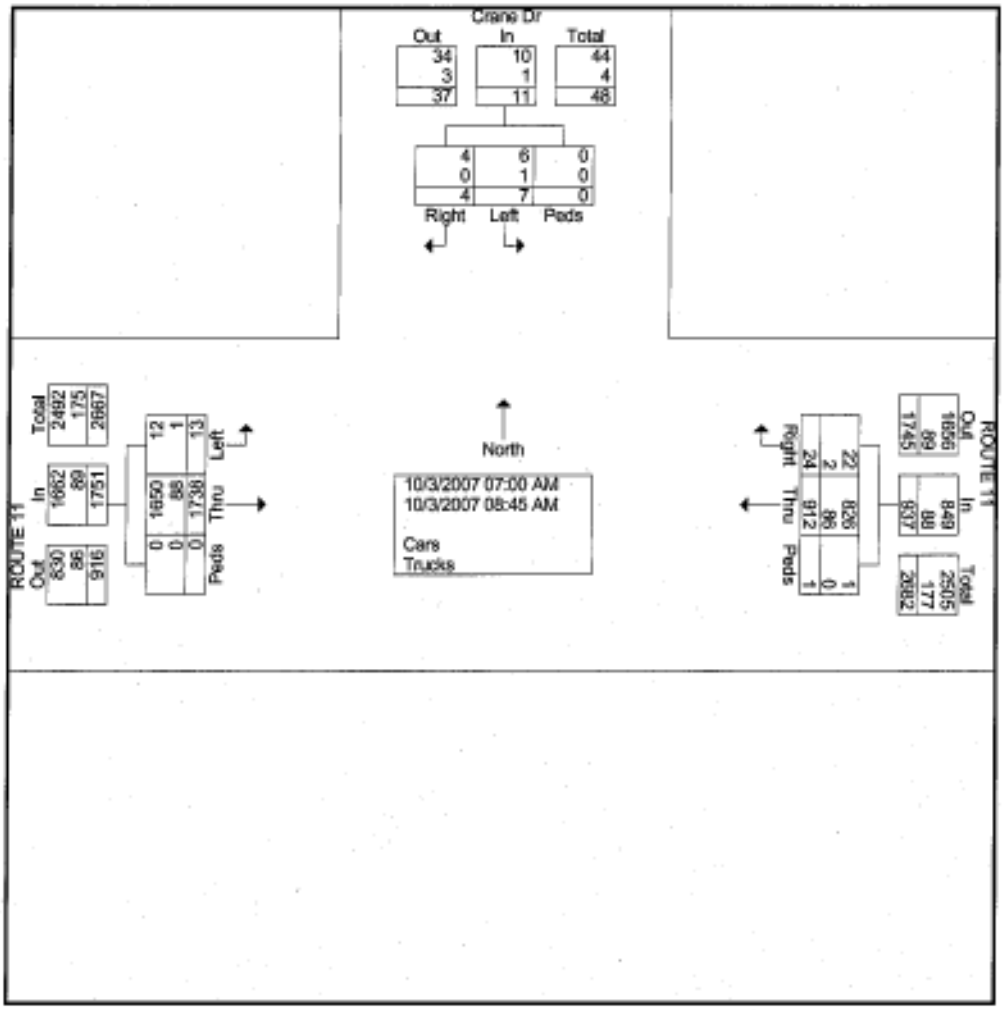
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Crane Dr
Counter#/By: 2536/Dustin
Weather: Fair

File Name : Crane AM
Site Code : 070241
Start Date : 10/3/2007 Wed
Page No : 1

Groups Printed- Cars - Trucks

	Crane Dr Southbound				ROUTE 11 Westbound				ROUTE 11 Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
07:00 AM	1	0	0	1	104	0	1	105	0	213	0	213	319
07:15 AM	0	0	0	0	130	8	0	138	3	241	0	244	382
07:30 AM	1	0	0	1	120	1	0	121	4	268	0	272	394
07:45 AM	1	1	0	2	108	0	0	108	1	243	0	244	354
Total	3	1	0	4	462	9	1	472	8	965	0	973	1449
08:00 AM	0	0	0	0	100	2	0	102	0	228	0	228	330
08:15 AM	1	0	0	1	117	2	0	119	0	199	0	199	319
08:30 AM	0	0	0	0	120	7	0	127	2	176	0	178	305
08:45 AM	3	3	0	6	113	4	0	117	3	170	0	173	296
Total	4	3	0	7	450	15	0	465	5	773	0	778	1250
Grand Total	7	4	0	11	912	24	1	937	13	1738	0	1751	2699
Apprch %	63.6	36.4	0		97.3	2.6	0.1		0.7	99.3	0		
Total %	0.3	0.1	0	0.4	33.8	0.9	0	34.7	0.5	64.4	0	64.9	
Cars	6	4	0	10	826	22	1	849	12	1650	0	1662	2521
% Cars	85.7	100	0	90.9	90.6	91.7	100	90.6	92.3	94.9	0	94.9	93.4
Trucks	1	0	0	1	86	2	0	88	1	88	0	89	178
% Trucks	14.3	0	0	9.1	9.4	8.3	0	9.4	7.7	5.1	0	5.1	6.6



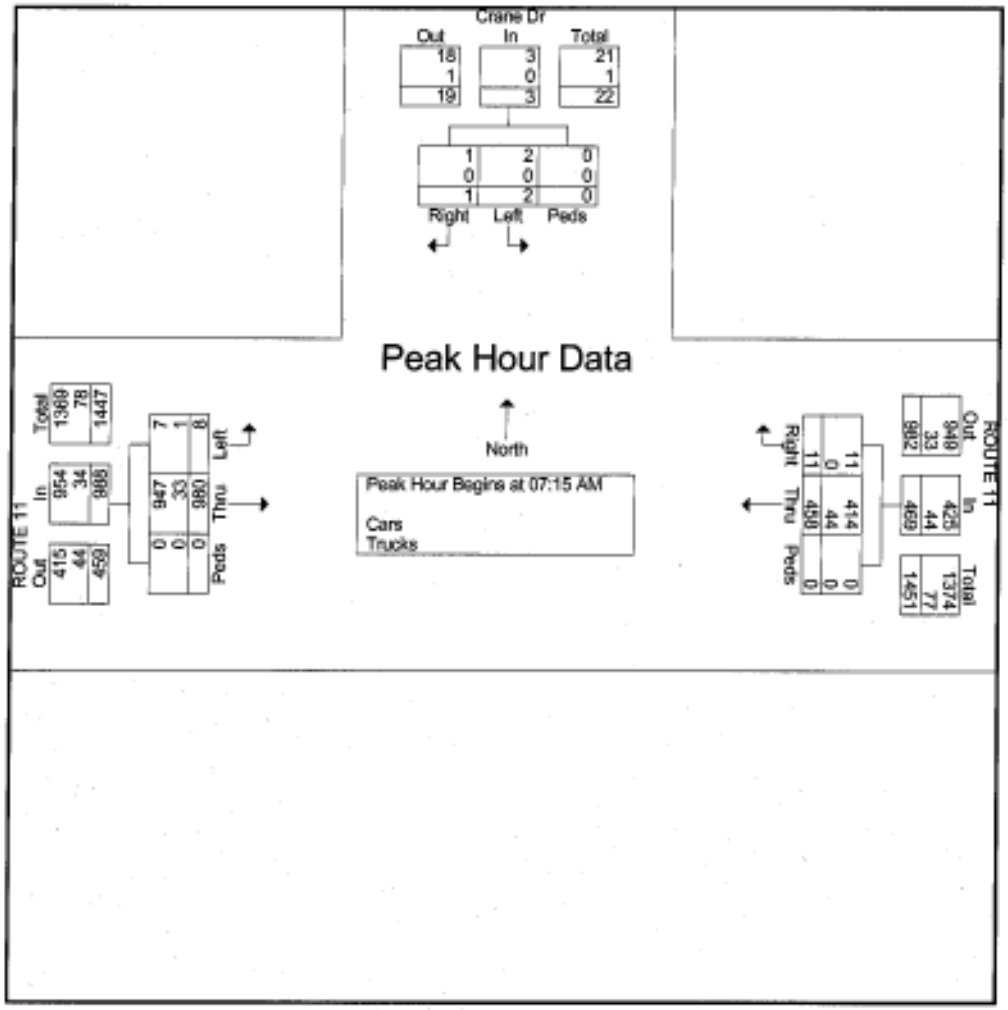
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Crane Dr
Counter#/By: 2536/Dustin
Weather: Fair

File Name : Crane AM
Site Code : 070241
Start Date : 10/3/2007
Page No : 2

	Crane Dr Southbound				ROUTE 11 Westbound				ROUTE 11 Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	0	0	0	**130**	**8**	0	**138**	3	241	0	244	382
07:30 AM	**1**	0	0	1	120	1	0	121	**4**	**268**	0	**272**	**394**
07:45 AM	1	**1**	0	**2**	108	0	0	108	1	243	0	244	354
08:00 AM	0	0	0	0	100	2	0	102	0	228	0	228	330
Total Volume	2	1	0	3	458	11	0	469	8	980	0	988	1460
% App. Total	66.7	33.3	0		97.7	2.3	0		0.8	99.2	0		
PHF	.500	.250	.000	.375	.881	.344	.000	.850	.500	.914	.000	.908	.926
Cars	2	1	0	3	414	11	0	425	7	947	0	954	1382
% Cars	100	100	0	100	90.4	100	0	90.6	87.5	96.6	0	96.6	94.7
Trucks	0	0	0	0	44	0	0	44	1	33	0	34	78
% Trucks	0	0	0	0	9.6	0	0	9.4	12.5	3.4	0	3.4	5.3



CLD Consulting Engineers, Inc.

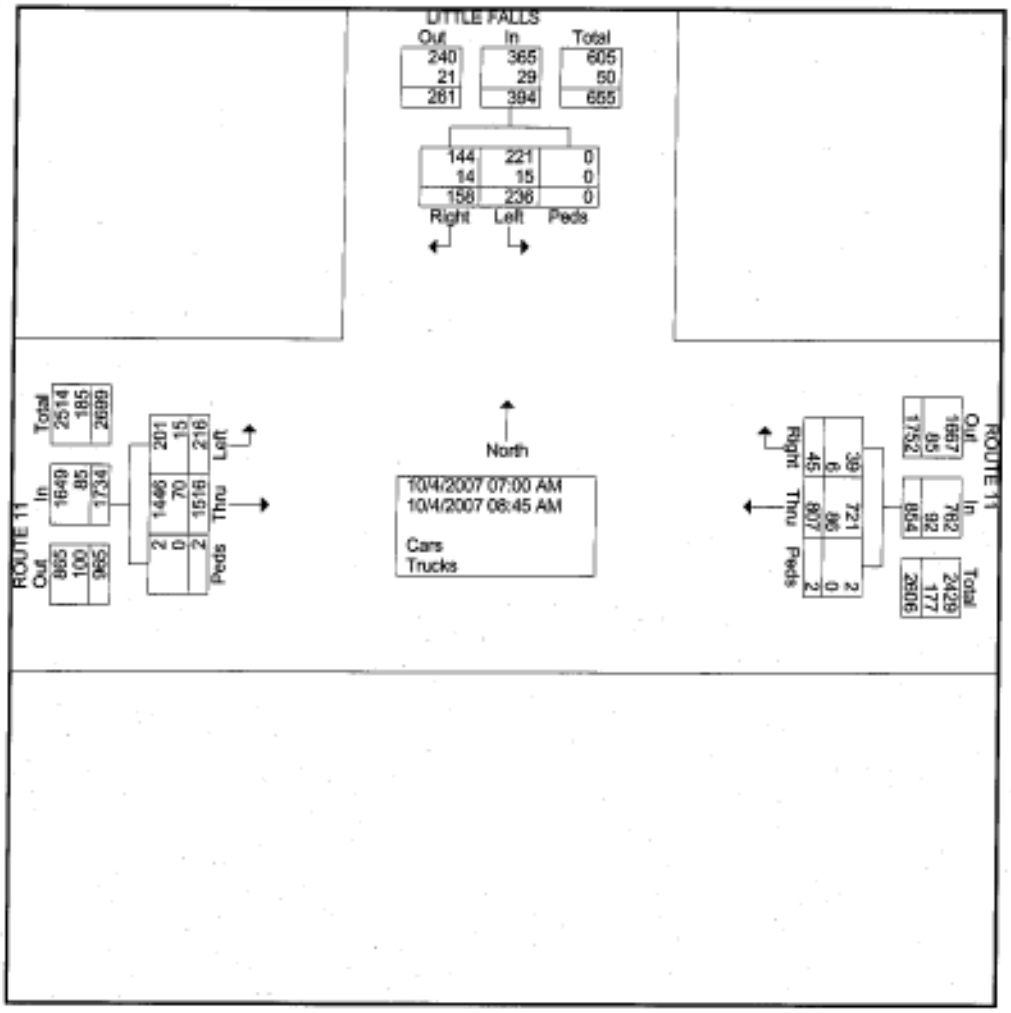
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at LFBR
Counter#/By: 2536/Dustin
Weather: Fair

File Name : Little Falls Br Rd AM
Site Code : 070241
Start Date : 10/4/2007
Page No : 1

Groups Printed- Cars - Trucks

	LITTLE FALLS Southbound				ROUTE 11 Westbound				ROUTE 11 Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
07:00 AM	26	19	0	45	64	5	1	70	21	222	0	243	358
07:15 AM	18	19	0	37	89	3	0	92	31	216	1	248	377
07:30 AM	60	17	0	77	114	5	0	119	33	197	1	231	427
07:45 AM	24	19	0	43	111	5	0	116	36	214	0	250	409
Total	128	74	0	202	378	18	1	397	121	849	2	972	1571
08:00 AM	29	20	0	49	95	9	1	105	28	200	0	228	382
08:15 AM	23	22	0	45	106	5	0	111	26	166	0	192	348
08:30 AM	31	24	0	55	100	6	0	106	18	144	0	162	323
08:45 AM	25	18	0	43	128	7	0	135	23	157	0	180	358
Total	108	84	0	192	429	27	1	457	95	667	0	762	1411
Grand Total	236	158	0	394	807	45	2	854	216	1516	2	1734	2982
Apprch %	59.9	40.1	0		94.5	5.3	0.2		12.5	87.4	0.1		
Total %	7.9	5.3	0	13.2	27.1	1.5	0.1	28.6	7.2	50.8	0.1	58.1	
Cars	221	144	0	365	721	39	2	762	201	1446	2	1649	2776
% Cars	93.6	91.1	0	92.6	89.3	86.7	100	89.2	93.1	95.4	100	95.1	93.1
Trucks	15	14	0	29	86	6	0	92	15	70	0	85	206
% Trucks	6.4	8.9	0	7.4	10.7	13.3	0	10.8	6.9	4.6	0	4.9	6.9



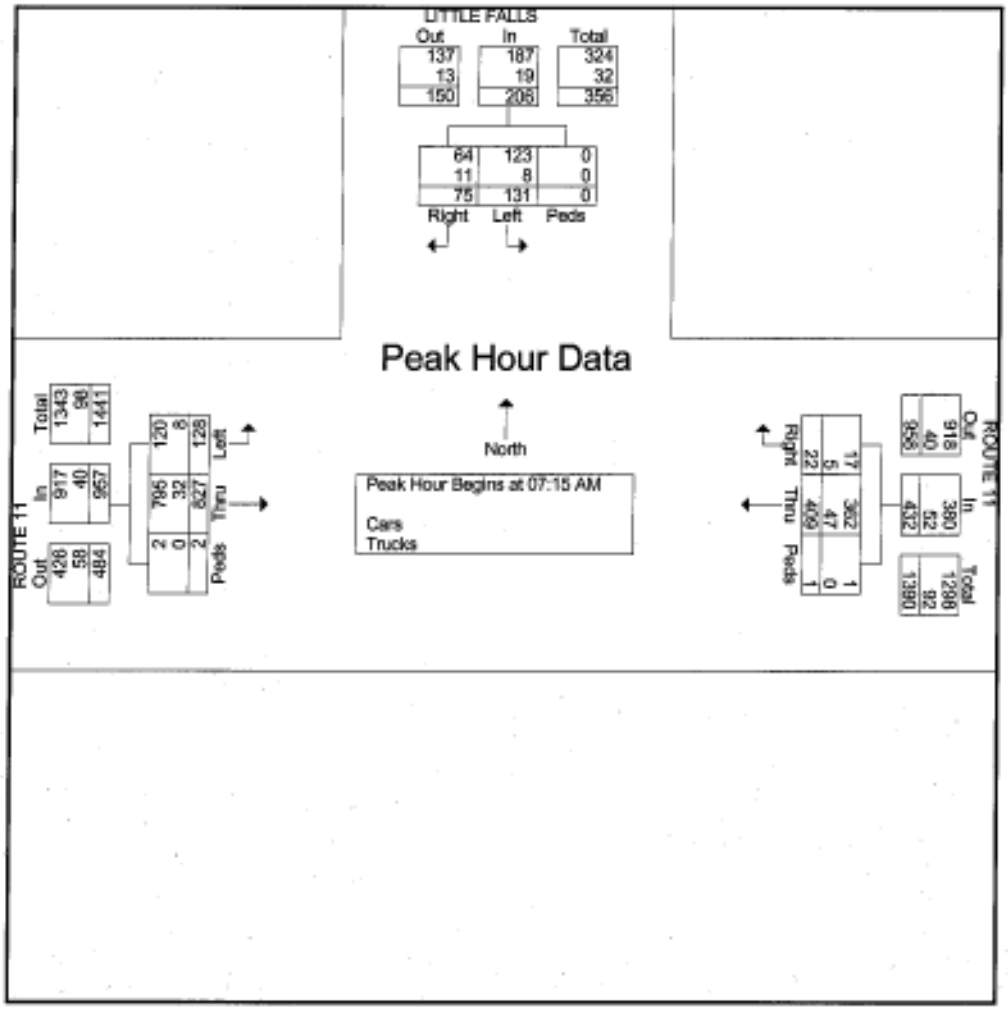
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at LFBR
Counter#/By: 2536/Dustin
Weather: Fair

File Name : Little Falls Br Rd AM
Site Code : 070241
Start Date : 10/4/2007
Page No : 2

	LITTLE FALLS Southbound				ROUTE 11 Westbound				ROUTE 11 Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	18	19	0	37	89	3	0	92	31	**216**	**1**	248	377
07:30 AM	**60**	17	0	**77**	**114**	5	0	**119**	33	197	1	231	**427**
07:45 AM	24	19	0	43	111	5	0	116	**36**	214	0	**250**	409
08:00 AM	29	**20**	0	49	95	**9**	**1**	105	28	200	0	228	382
Total Volume	131	75	0	206	409	22	1	432	128	827	2	957	1595
% App. Total	63.6	36.4	0		94.7	5.1	0.2		13.4	86.4	0.2		
PHF	.546	.938	.000	.669	.897	.611	.250	.908	.889	.957	.500	.957	.934
Cars	123	64	0	187	362	17	1	380	120	795	2	917	1484
% Cars	93.9	85.3	0	90.8	88.5	77.3	100	88.0	93.8	96.1	100	95.8	93.0
Trucks	8	11	0	19	47	5	0	52	8	32	0	40	111
% Trucks	6.1	14.7	0	9.2	11.5	22.7	0	12.0	6.3	3.9	0	4.2	7.0



CLD Consulting Engineers, Inc.

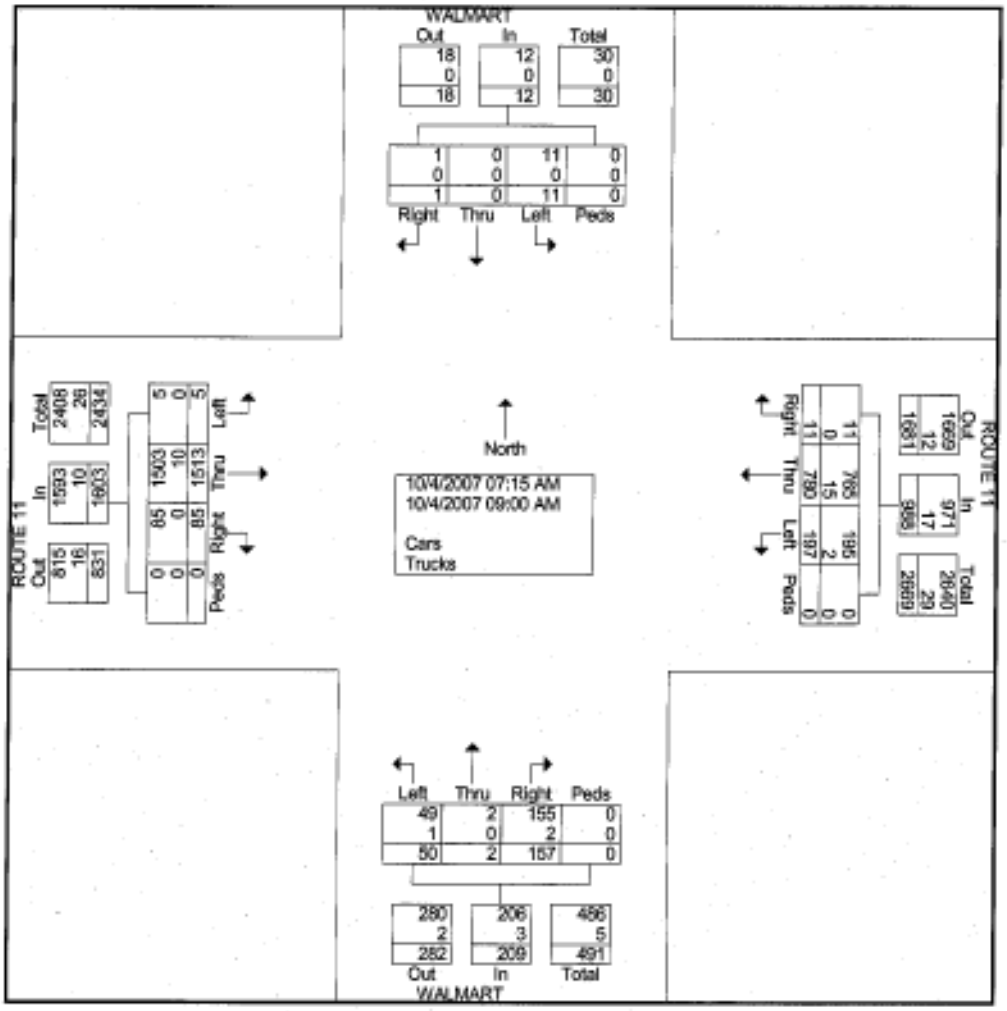
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Walmart
Counter#/By: 2537/Dan
Weather: Fair

File Name : WalMart AM
Site Code : 070241
Start Date : 10/4/2007
Page No : 1

Groups Printed- Cars - Trucks

	WALMART Southbound					ROUTE 11 Westbound					WALMART Northbound					ROUTE 11 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:15 AM	0	0	0	0	0	12	93	1	0	106	7	0	21	0	28	0	209	8	0	217	351
07:30 AM	1	0	0	0	1	18	102	0	0	120	4	0	22	0	26	0	225	5	0	230	377
07:45 AM	0	0	0	0	0	16	87	0	0	103	9	1	16	0	26	0	261	11	0	272	401
Total	1	0	0	0	1	46	282	1	0	329	20	1	59	0	80	0	695	24	0	719	1129
08:00 AM	1	0	0	0	1	18	109	0	0	127	6	0	19	0	25	1	185	13	0	199	352
08:15 AM	2	0	0	0	2	19	94	0	0	113	5	1	12	0	18	2	196	12	0	210	343
08:30 AM	1	0	1	0	2	29	116	3	0	148	6	0	19	0	25	1	160	6	0	167	342
08:45 AM	1	0	0	0	1	34	99	5	0	138	5	0	23	0	28	0	150	12	0	162	329
Total	5	0	1	0	6	100	418	8	0	526	22	1	73	0	96	4	691	43	0	738	1366
09:00 AM	5	0	0	0	5	51	80	2	0	133	8	0	25	0	33	1	127	18	0	146	317
Grand Total	11	0	1	0	12	197	780	11	0	988	50	2	157	0	209	5	1513	85	0	1603	2812
Apprch %	91.7	0	8.3	0		19.9	78.9	1.1	0		23.9	1	75.1	0		0.3	94.4	5.3	0		
Total %	0.4	0	0	0	0.4	7	27.7	0.4	0	35.1	1.8	0.1	5.6	0	7.4	0.2	53.8	3	0	57	
Cars	11	0	1	0	12	195	765	11	0	971	49	2	155	0	206	5	1503				
% Cars	100	0	100	0	100	99	98.1	100	0	98.3	98	100	98.7	0	98.6	100	99.3	100	0	99.4	98.9
Trucks	0	0	0	0	0	2	15	0	0	17	1	0	2	0	3	0	10	0	0	10	30
% Trucks	0	0	0	0	0	1	1.9	0	0	1.7	2	0	1.3	0	1.4	0	0.7	0	0	0.6	1.1



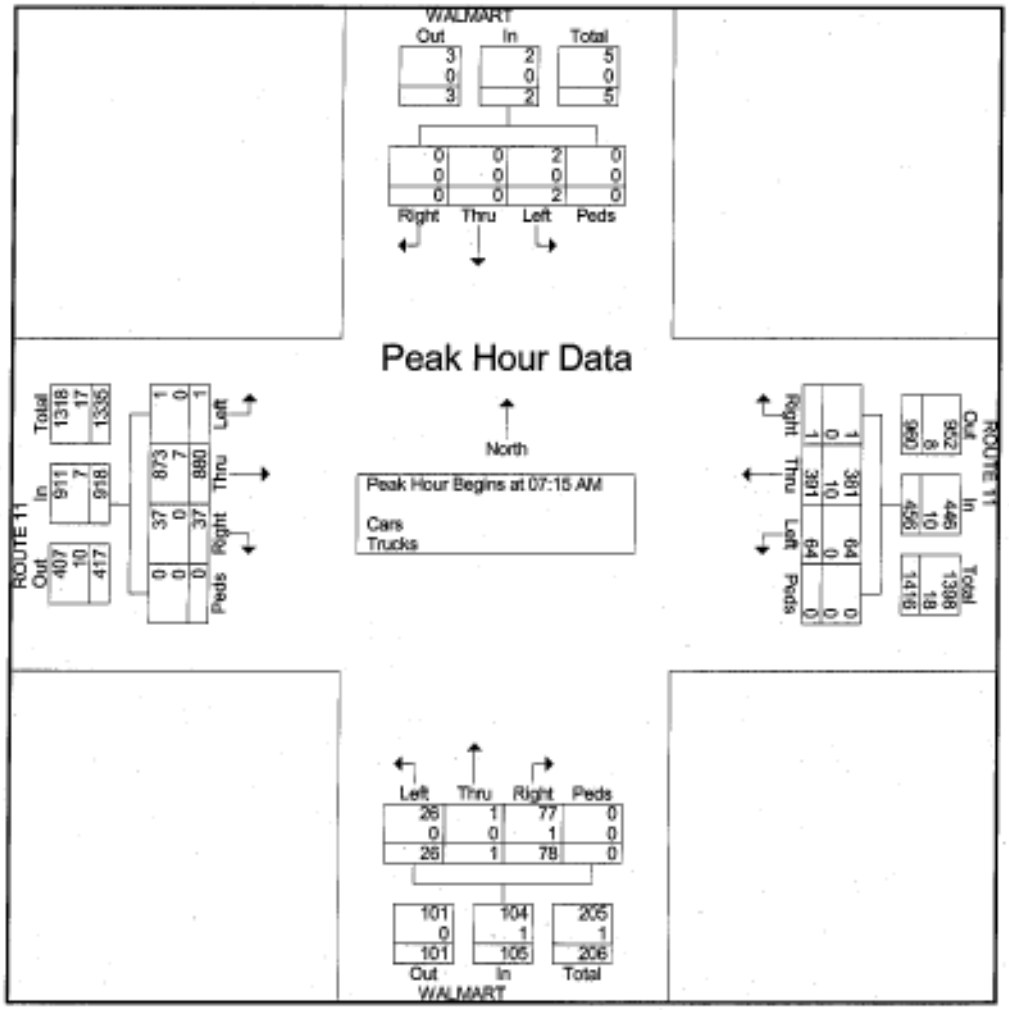
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Walmart
Counter#/By: 2537/Dan
Weather: Fair

File Name : WalMart AM
Site Code : 070241
Start Date : 10/4/2007
Page No : 2

	WALMART Southbound					ROUTE 11 Westbound					WALMART Northbound					ROUTE 11 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 09:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	12	93	**1**	0	106	7	0	21	0	**28**	0	209	8	0	217	351
07:30 AM	**1**	0	0	0	**1**	**18**	102	0	0	120	4	0	**22**	0	26	0	225	5	0	230	377
07:45 AM	0	0	0	0	0	16	87	0	0	103	**9**	**1**	16	0	26	0	**261**	11	0	**272**	**401**
08:00 AM	1	0	0	0	1	18	**109**	0	0	**127**	6	0	19	0	25	**1**	185	**13**	0	199	352
Total Volume	2	0	0	0	2	64	391	1	0	456	26	1	78	0	105	1	880	37	0	918	1481
% App. Total	100	0	0	0		14	85.7	0.2	0		24.8	1	74.3	0		0.1	95.9	4	0		
PHF	.500	.000	.000	.000	.500	.889	.897	.250	.000	.898	.722	.250	.886	.000	.938	.250	.843	.712	.000	.844	.923
Cars	2	0	0	0	2	64	381	1	0	446	26	1	77	0	104	1	873	37	0	911	1463
% Cars	100	0	0	0	100	100	97.4	100	0	97.8	100	100	98.7	0	99.0	100	99.2	100	0	99.2	98.8
Trucks	0	0	0	0	0	0	10	0	0	10	0	0	1	0	1	0	7	0	0	7	18
% Trucks	0	0	0	0	0	0	2.6	0	0	2.2	0	0	1.3	0	1.0	0	0.8	0	0	0.8	1.2



CLD Consulting Engineers, Inc.

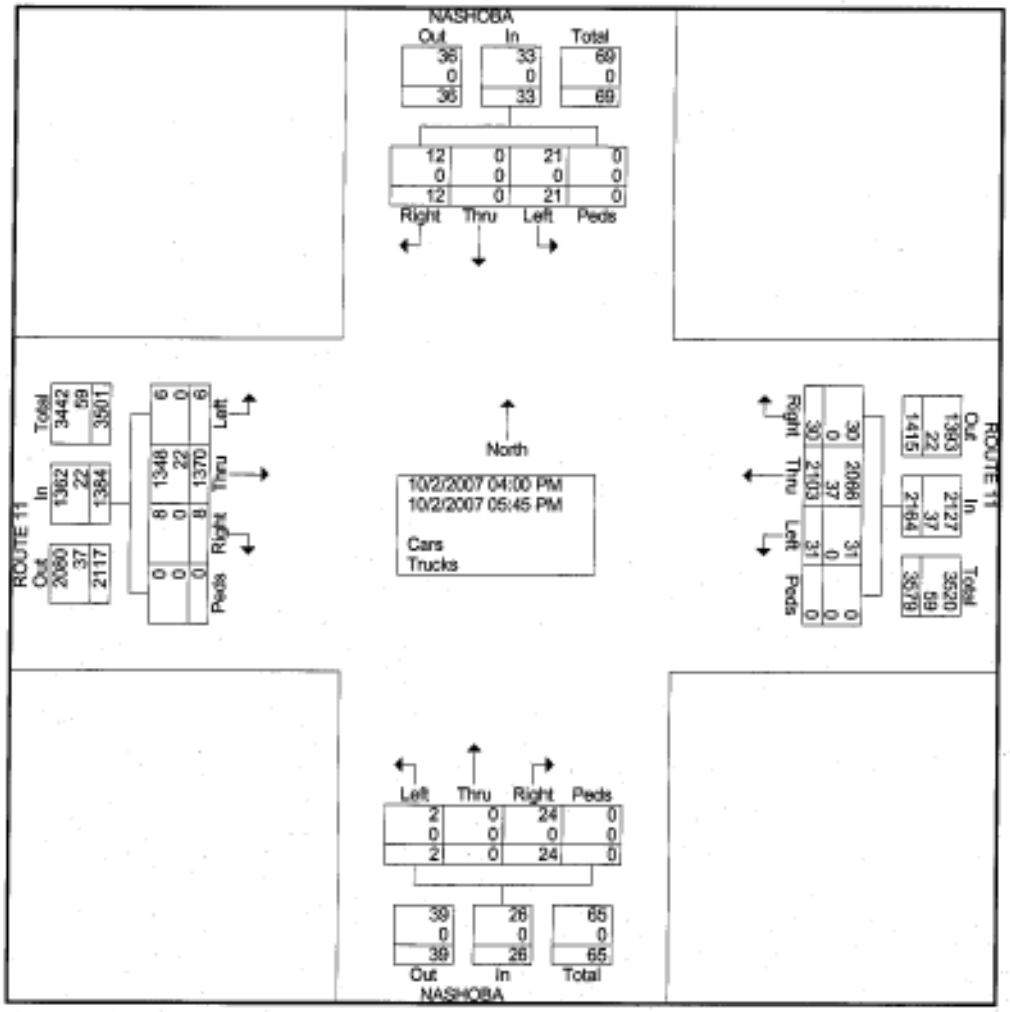
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Nashoba Dr
Counter#/By: 2537/Dan
Weather: Fair

File Name : Nashoba PM
Site Code : 070241
Start Date : 10/2/2007
Page No : 1

Groups Printed- Cars - Trucks

	NASHOBA Southbound					ROUTE 11 Westbound					NASHOBA Northbound					ROUTE 11 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
04:00 PM	2	0	4	0	6	3	253	5	0	261	0	0	3	0	3	0	165	2	0	167	437
04:15 PM	3	0	2	0	5	1	241	5	0	247	0	0	1	0	1	2	192	3	0	197	450
04:30 PM	6	0	3	0	9	5	304	3	0	312	0	0	5	0	5	1	164	0	0	165	491
04:45 PM	0	0	1	0	1	3	261	2	0	266	1	0	2	0	3	2	155	0	0	157	427
Total	11	0	10	0	21	12	1069	15	0	1086	1	0	11	0	12	5	676	5	0	686	1805
05:00 PM	2	0	0	0	2	4	295	3	0	302	0	0	4	0	4	1	183	0	0	184	492
05:15 PM	2	0	0	0	2	4	263	4	0	271	0	0	0	0	0	0	181	0	0	181	454
05:30 PM	2	0	2	0	4	4	254	6	0	264	1	0	7	0	8	0	181	1	0	182	458
05:45 PM	4	0	0	0	4	7	232	2	0	241	0	0	2	0	2	0	149	2	0	151	398
Total	10	0	2	0	12	19	1044	15	0	1078	1	0	13	0	14	1	694	3	0	698	1802
Grand Total	21	0	12	0	33	31	2103	30	0	2164	2	0	24	0	26	6	1370	8	0	1384	3607
Apprch %	63.6	0	36.4	0		1.4	97.2	1.4	0		7.7	0	92.3	0		0.4	99	0.6	0		
Total %	0.6	0	0.3	0	0.9	0.9	58.3	0.8	0	60	0.1	0	0.7	0	0.7	0.2	38	0.2	0	38.4	
Cars	21	0	12	0	33	31	2066										1348				
% Cars	100	0	100	0	100	100	98.2	100	0	98.3	100	0	100	0	100	100	98.4	100	0	98.4	98.4
Trucks	0	0	0	0	0	0	37	0	0	37	0	0	0	0	0	0	22	0	0	22	59
% Trucks	0	0	0	0	0	0	1.8	0	0	1.7	0	0	0	0	0	0	1.6	0	0	1.6	1.6



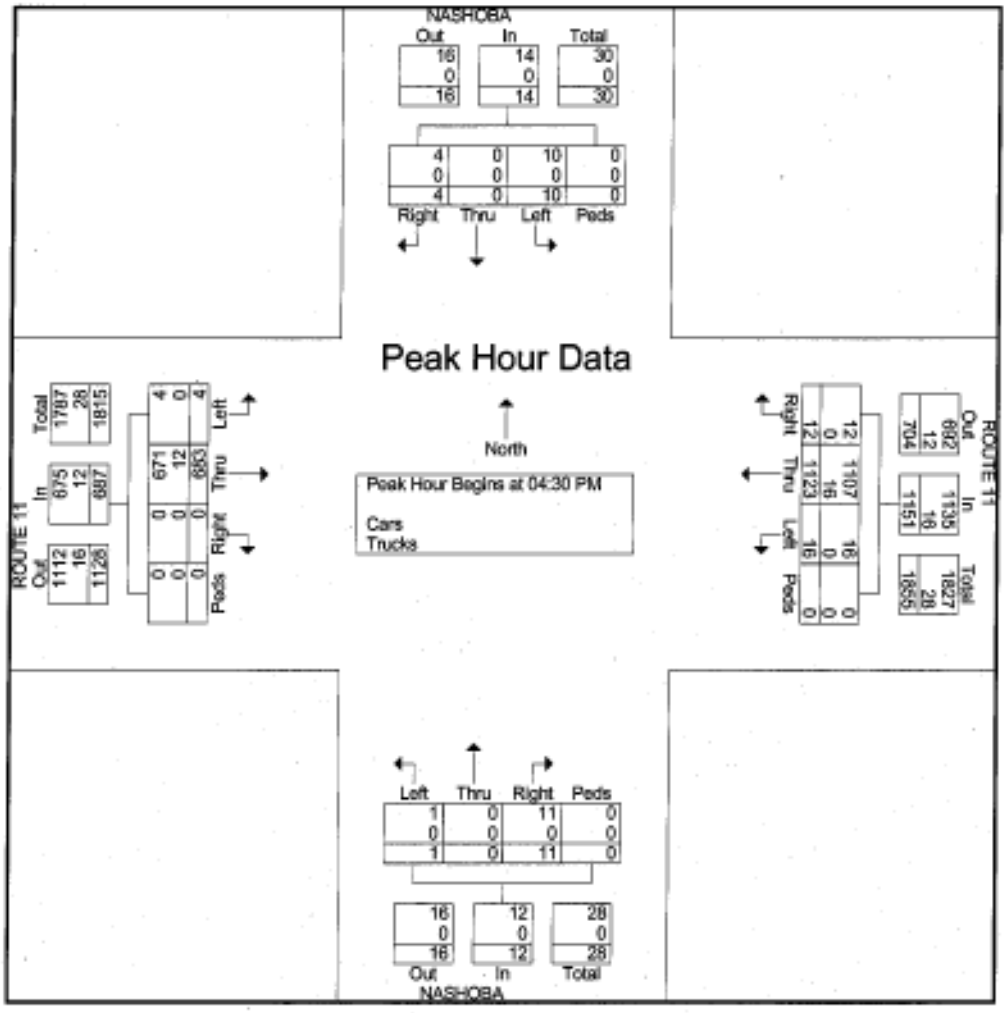
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Nashoba Dr
Counter#/By: 2537/Dan
Weather: Fair

File Name : Nashoba PM
Site Code : 070241
Start Date : 10/2/2007
Page No : 2

	NASHOBA Southbound					ROUTE 11 Westbound					NASHOBA Northbound					ROUTE 11 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. 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	**6**	0	**3**	0	**9**	**5**	**304**	3	0	**312**	0	0	**5**	0	**5**	1	164	0	0	165	491
04:45 PM	0	0	1	0	1	3	261	2	0	266	**1**	0	2	0	3	**2**	155	0	0	157	427
05:00 PM	2	0	0	0	2	4	295	3	0	302	0	0	4	0	4	**1**	**183**	0	0	**184**	**492**
05:15 PM	2	0	0	0	2	4	263	**4**	0	271	0	0	0	0	0	0	181	0	0	181	454
Total Volume	10	0	4	0	14	16	1123	12	0	1151	1	0	11	0	12	4	683	0	0	687	1864
% App. Total	71.4	0	28.6	0		1.4	97.6	1	0		8.3	0	91.7	0		0.6	99.4	0	0		
PHF	.417	.000	.333	.000	.389	.800	.924	.750	.000	.922	.250	.000	.550	.000	.600	.500	.933	.000	.000	.933	.947
Cars	10	0	4	0	14	16	1107														
% Cars	100	0	100	0	100	100	98.6	100	0	98.6	100	0	100	0	100	100	98.2	0	0	98.3	98.5
Trucks	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	0	12	0	0	12	28
% Trucks	0	0	0	0	0	0	1.4	0	0	1.4	0	0	0	0	0	0	1.8	0	0	1.7	1.5



CLD Consulting Engineers, Inc.

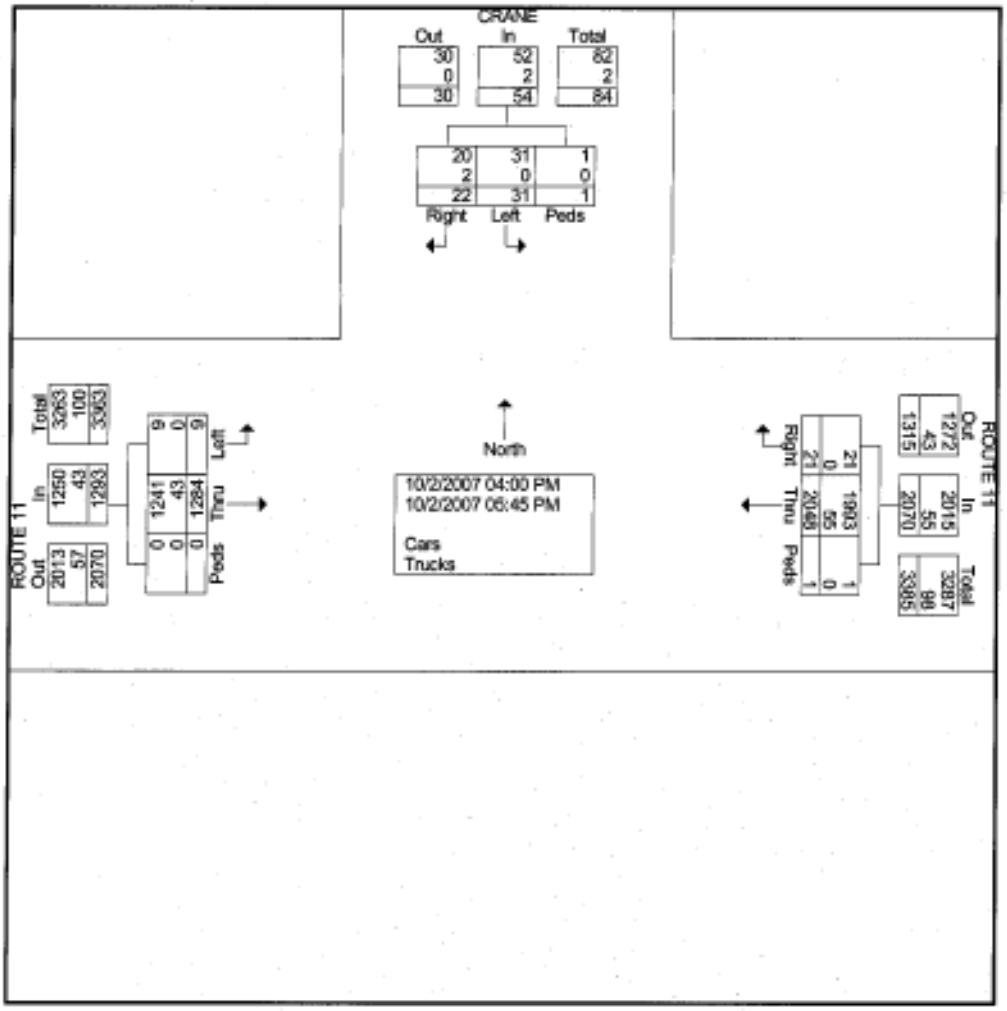
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Crane Dr
Counter#/By: 2536/Dustin
Weather: Fair

File Name : Crane PM
Site Code : 070241
Start Date : 10/2/2007
Page No : 1 Tour

Groups Printed- Cars - Trucks

	CRANE Southbound				ROUTE 11 Westbound				ROUTE 11 Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
04:00 PM	2	2	0	4	244	4	0	248	0	171	0	171	423
04:15 PM	3	2	0	5	243	2	0	245	1	177	0	178	428
04:30 PM	3	2	0	5	293	5	0	298	0	153	0	153	456
04:45 PM	8	2	0	10	262	1	0	263	2	141	0	143	416
Total	16	8	0	24	1042	12	0	1054	3	642	0	645	1723
05:00 PM	5	2	0	7	257	4	0	261	5	161	0	166	434
05:15 PM	2	5	0	7	264	1	0	265	1	170	0	171	443
05:30 PM	7	0	0	7	254	2	1	257	0	167	0	167	431
05:45 PM	1	7	1	9	231	2	0	233	0	144	0	144	386
Total	15	14	1	30	1006	9	1	1016	6	642	0	648	1694
Grand Total	31	22	1	54	2048	21	1	2070	9	1284	0	1293	3417
Apprch %	57.4	40.7	1.9		98.9	1	0		0.7	99.3	0		
Total %	0.9	0.6	0	1.6	59.9	0.6	0	60.6	0.3	37.6	0	37.8	
Cars	31	20	1	52	1993	21	1	2015	9	1241	0	1250	3317
% Cars	100	90.9	100	96.3	97.3	100	100	97.3	100	96.7	0	96.7	97.1
Trucks	0	2	0	2	55	0	0	55	0	43	0	43	100
% Trucks	0	9.1	0	3.7	2.7	0	0	2.7	0	3.3	0	3.3	2.9



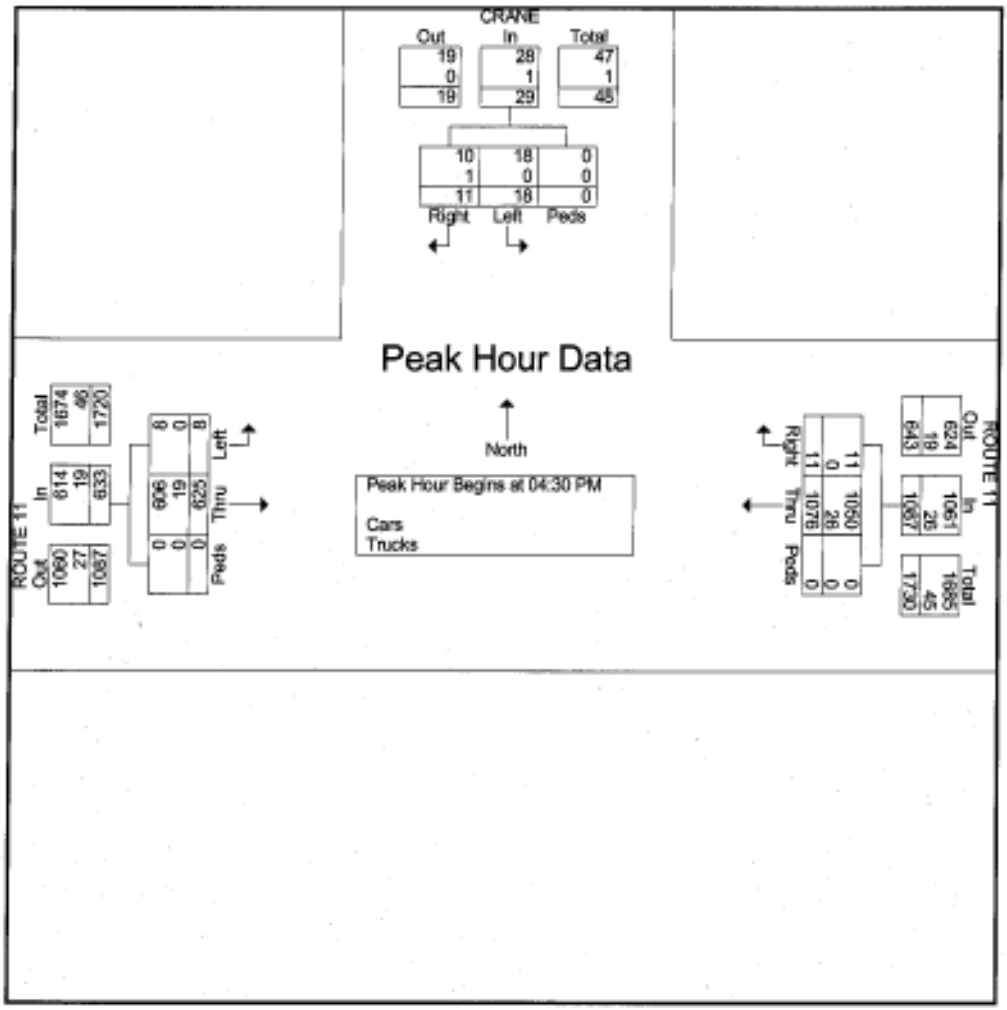
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Crane Dr
Counter#/By: 2536/Dustin
Weather: Fair

File Name : Crane PM
Site Code : 070241
Start Date : 10/2/2007
Page No : 2

	CRANE Southbound				ROUTE 11 Westbound				ROUTE 11 Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. 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	2	0	5	**293**	**5**	0	**298**	0	153	0	153	**456**
04:45 PM	**8**	2	0	**10**	262	1	0	263	2	141	0	143	416
05:00 PM	5	2	0	7	257	4	0	261	**5**	161	0	166	434
05:15 PM	2	**5**	0	7	264	1	0	265	1	**170**	0	**171**	443
Total Volume	18	11	0	29	1076	11	0	1087	8	625	0	633	1749
% App. Total	62.1	37.9	0		99	1	0		1.3	98.7	0		
PHF	.563	.550	.000	.725	.918	.550	.000	.912	.400	.919	.000	.925	.959
Cars	18	10	0	28	1050	11	0	1061	8	606	0	614	1703
% Cars	100	90.9	0	96.6	97.6	100	0	97.6	100	97.0	0	97.0	97.4
Trucks	0	1	0	1	26	0	0	26	0	19	0	19	46
% Trucks	0	9.1	0	3.4	2.4	0	0	2.4	0	3.0	0	3.0	2.6



CLD Consulting Engineers, Inc.

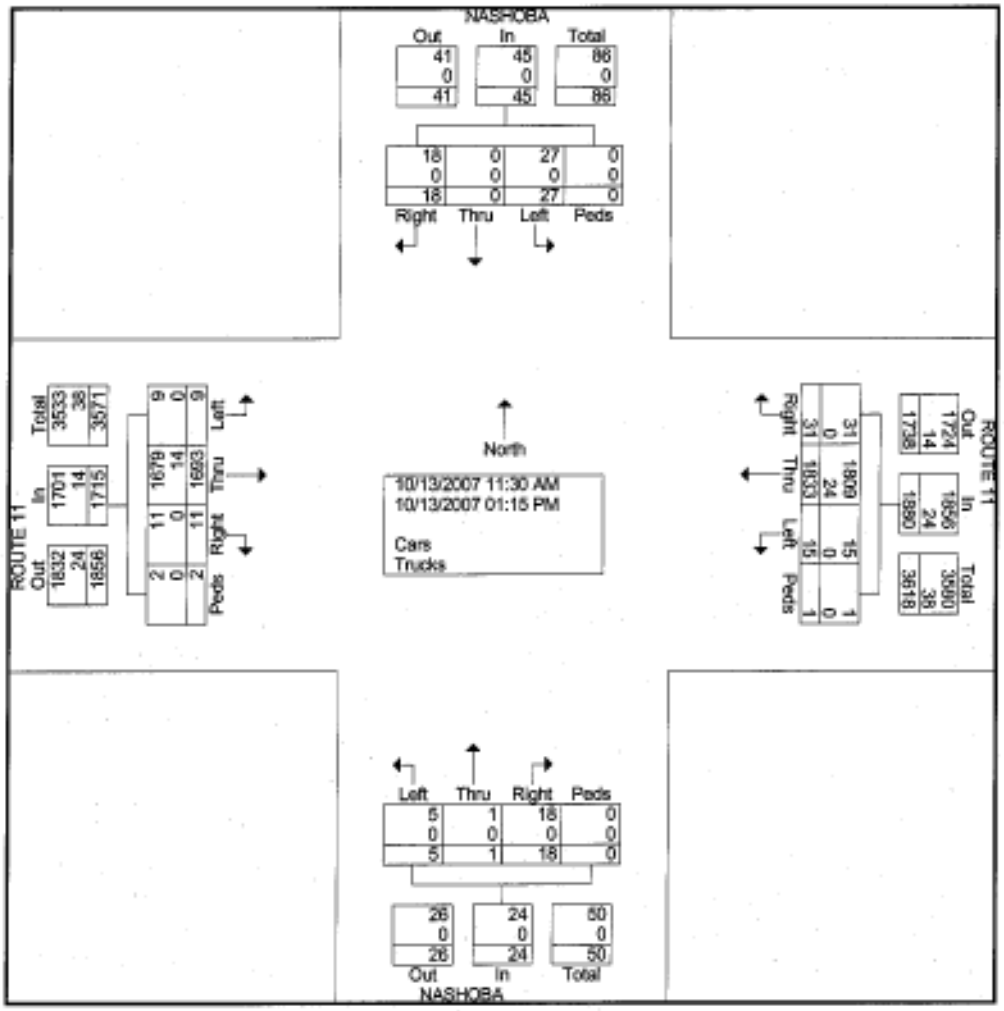
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Nashoba Dr
Counter#/By: 2536/Dustin
Weather: Fair

File Name : Nashoba Sat
Site Code : 070241
Start Date : 10/13/2007
Page No : 1

Groups Printed- Cars - Trucks

	NASHOBA Southbound					ROUTE 11 Westbound					NASHOBA Northbound					ROUTE 11 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
11:30 AM	5	0	4	0	9	3	237	6	0	246	0	0	2	0	2	2	204	1	0	207	464
11:45 AM	2	0	5	0	7	1	245	3	0	249	0	0	2	0	2	2	211	0	1	214	472
Total	7	0	9	0	16	4	482	9	0	495	0	0	4	0	4	4	415	1	1	421	936
12:00 PM	3	0	2	0	5	2	223	8	0	233	2	0	2	0	4	1	227	1	0	229	471
12:15 PM	6	0	2	0	8	1	213	3	0	217	0	0	2	0	2	0	214	4	0	218	445
12:30 PM	2	0	2	0	4	2	243	3	0	248	0	0	4	0	4	1	183	1	1	186	442
12:45 PM	1	0	2	0	3	3	247	4	0	254	1	1	3	0	5	1	218	1	0	220	482
Total	12	0	8	0	20	8	926	18	0	952	3	1	11	0	15	3	842	7	1	853	1840
01:00 PM	4	0	0	0	4	2	209	4	0	215	2	0	1	0	3	1	228	2	0	231	453
01:15 PM	4	0	1	0	5	1	216	0	1	218	0	0	2	0	2	1	208	1	0	210	435
Grand Total	27	0	18	0	45	15	1833	31	1	1880	5	1	18	0	24	9	1693	11	2	1715	3664
Apprch %	60	0	40	0		0.8	97.5	1.6	0.1		20.8	4.2	75	0		0.5	98.7	0.6	0.1		
Total %	0.7	0	0.5	0	1.2	0.4	50	0.8	0	51.3	0.1	0	0.5	0	0.7	0.2	46.2	0.3	0.1	46.8	
Cars	27	0	18	0	45	15	1809										1679				
% Cars	100	0	100	0	100	100	98.7	100	100	98.7	100	100	100	0	100	100	99.2	100	100	99.2	99
Trucks	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	0	14	0	0	14	38
% Trucks	0	0	0	0	0	0	1.3	0	0	1.3	0	0	0	0	0	0	0.8	0	0	0.8	1



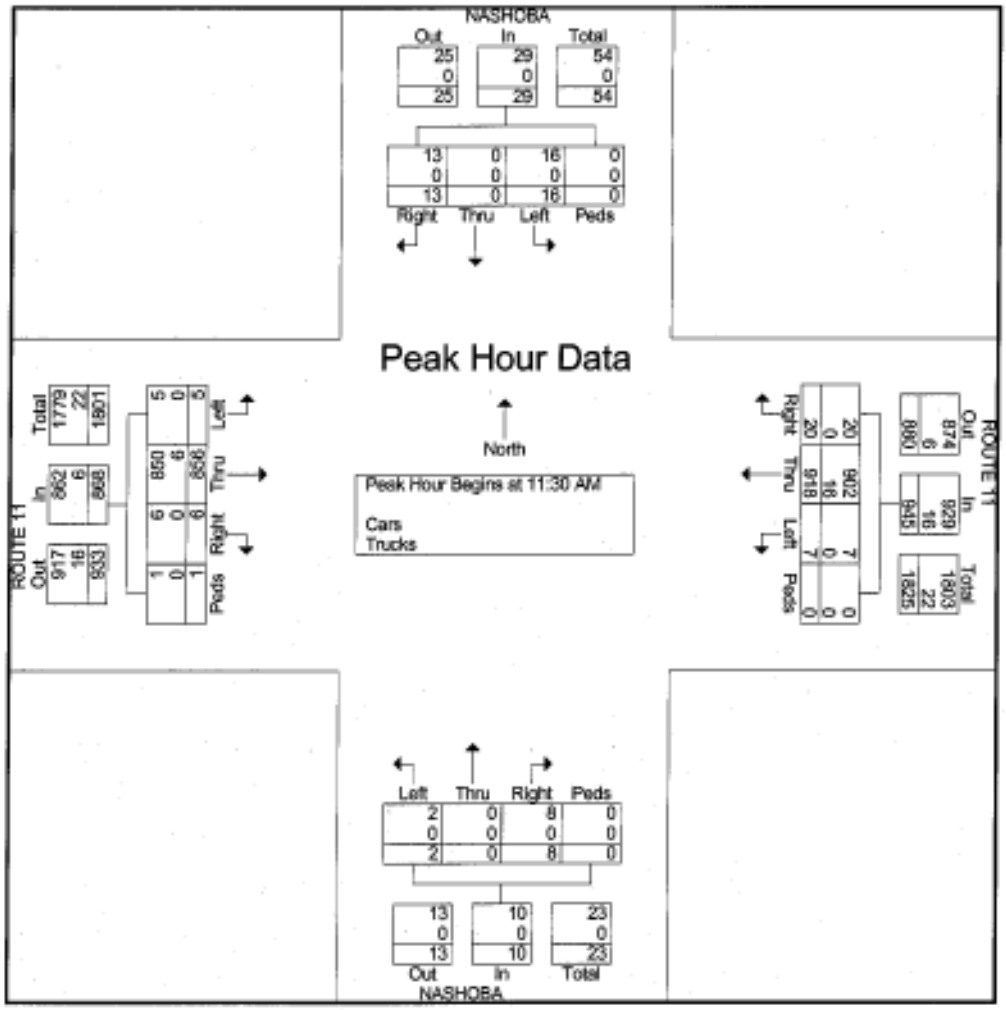
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Nashoba Dr
Counter#/By: 2536/Dustin
Weather: Fair

File Name : Nashoba Sat
Site Code : 070241
Start Date : 10/13/2007
Page No : 2

	NASHOBA Southbound					ROUTE 11 Westbound					NASHOBA Northbound					ROUTE 11 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:30 AM to 01:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:30 AM																					
11:30 AM	5	0	4	0	**9**	**3**	237	6	0	246	0	0	**2**	0	2	**2**	204	1	0	207	464
11:45 AM	2	0	**5**	0	7	1	**245**	3	0	**249**	0	0	2	0	2	2	211	0	**1**	214	**472**
12:00 PM	3	0	2	0	5	2	223	**8**	0	233	**2**	0	2	0	**4**	1	**227**	1	0	**229**	471
12:15 PM	**6**	0	2	0	8	1	213	3	0	217	0	0	2	0	2	0	214	**4**	0	218	445
Total Volume	16	0	13	0	29	7	918	20	0	945	2	0	8	0	10	5	856	6	1	868	1852
% App. Total	55.2	0	44.8	0		0.7	97.1	2.1	0		20	0	80	0		0.6	98.6	0.7	0.1		
PHF	.667	.000	.650	.000	.806	.583	.937	.625	.000	.949	.250	.000	1.000	.000	.625	.625	.943	.375	.250	.948	.981
Cars	16	0	13	0	29	7	902	20	0	929	2	0	8	0	10	5	850	6	1	862	1830
% Cars	100	0	100	0	100	100	98.3	100	0	98.3	100	0	100	0	100	100	99.3	100	100	99.3	98.8
Trucks	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	0	6	0	0	6	22
% Trucks	0	0	0	0	0	0	1.7	0	0	1.7	0	0	0	0	0	0	0.7	0	0	0.7	1.2



CLD Consulting Engineers, Inc.

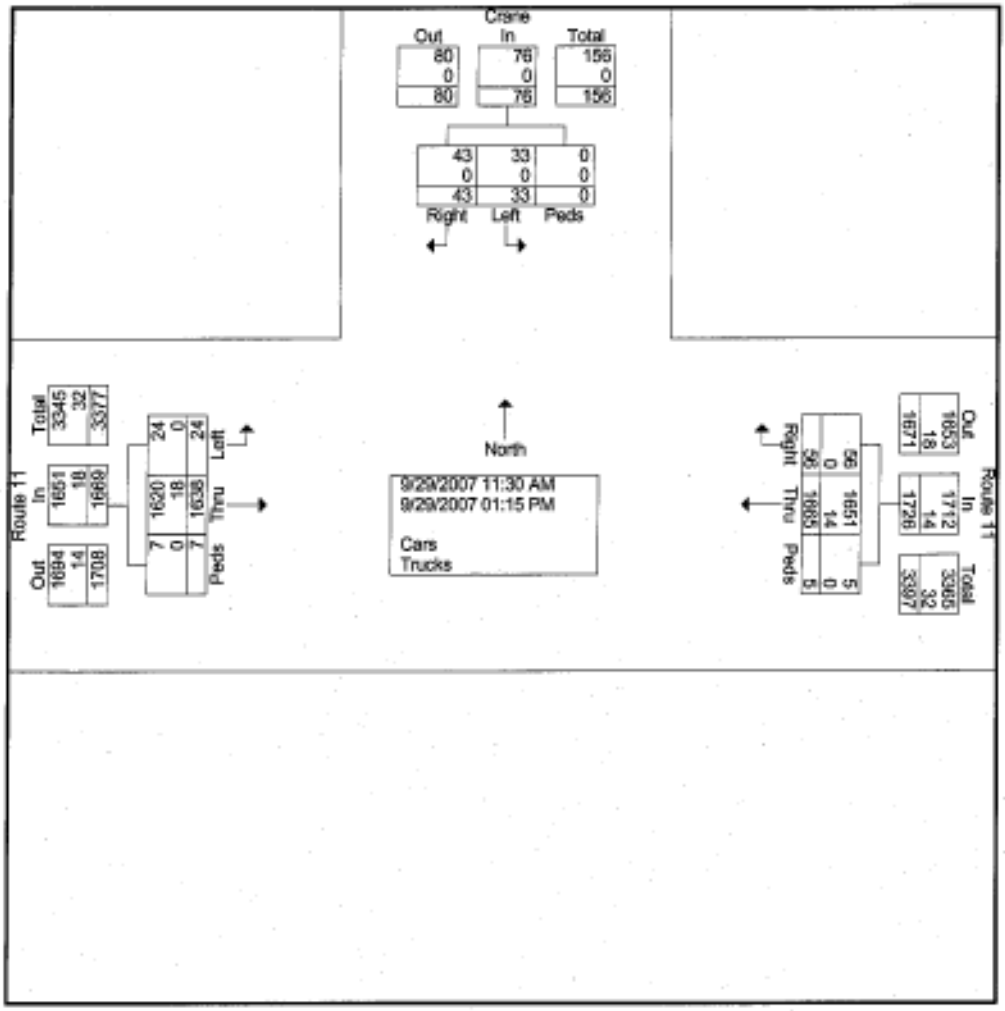
540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Crane Dr
Counter#/By: 2537/Dustin
Weather: Fair

File Name : Crane Sat
Site Code : 070241
Start Date : 9/29/2007
Page No : 1

Groups Printed- Cars - Trucks

	Crane Southbound				Route 11 Westbound				Route 11 Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
11:30 AM	2	2	0	4	211	3	0	214	1	219	1	221	439
11:45 AM	2	5	0	7	198	10	0	208	0	214	2	216	431
Total	4	7	0	11	409	13	0	422	1	433	3	437	870
12:00 PM	2	7	0	9	207	3	0	210	5	204	3	212	431
12:15 PM	4	7	0	11	239	18	0	257	10	205	0	215	483
12:30 PM	11	7	0	18	220	8	3	231	3	198	0	201	450
12:45 PM	1	5	0	6	184	4	2	190	2	194	1	197	393
Total	18	26	0	44	850	33	5	888	20	801	4	825	1757
01:00 PM	10	6	0	16	207	4	0	211	3	199	0	202	429
01:15 PM	1	4	0	5	199	6	0	205	0	205	0	205	415
Grand Total	33	43	0	76	1665	56	5	1726	24	1638	7	1669	3471
Apprch %	43.4	56.6	0		96.5	3.2	0.3		1.4	98.1	0.4		
Total %	1	1.2	0	2.2	48	1.6	0.1	49.7	0.7	47.2	0.2	48.1	
Cars	33	43	0	76	1651	56	5	1712	24	1620	7	1651	3439
% Cars	100	100	0	100	99.2	100	100	99.2	100	98.9	100	98.9	99.1
Trucks	0	0	0	0	14	0	0	14	0	18	0	18	32
% Trucks	0	0	0	0	0.8	0	0	0.8	0	1.1	0	1.1	0.9



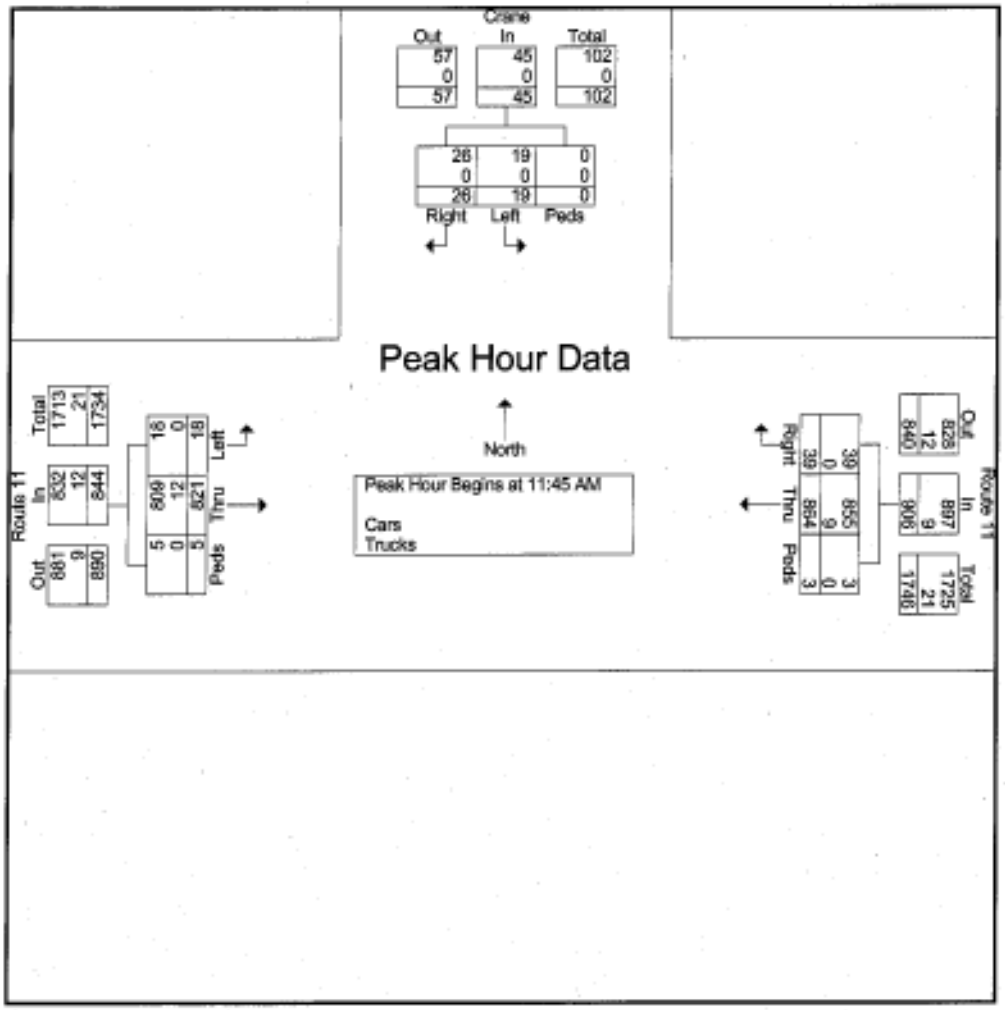
CLD Consulting Engineers, Inc.

540 Commercial Street
Manchester, NH 03101
603-668-8223

Town/State: Rochester, NH
Location: Rte 11 at Crane Dr
Counter#/By: 2537/Dustin
Weather: Fair

File Name : Crane Sat
Site Code : 070241
Start Date : 9/29/2007
Page No : 2

	Crane Southbound				Route 11 Westbound				Route 11 Eastbound				
Start Time	Left	Right	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:30 AM to 01:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	2	5	0	7	198	10	0	208	0	**214**	2	**216**	431
12:00 PM	2	**7**	0	9	207	3	0	210	5	204	**3**	212	431
12:15 PM	4	7	0	11	**239**	**18**	0	**257**	**10**	205	0	215	**483**
12:30 PM	**11**	7	0	**18**	220	8	**3**	231	3	198	0	201	450
Total Volume	19	26	0	45	864	39	3	906	18	821	5	844	1795
% App. Total	42.2	57.8	0		95.4	4.3	0.3		2.1	97.3	0.6		
PHF	.432	.929	.000	.625	.904	.542	.250	.881	.450	.959	.417	.977	.929
Cars	19	26	0	45	855	39	3	897	18	809	5	832	1774
% Cars	100	100	0	100	99.0	100	100	99.0	100	98.5	100	98.6	98.8
Trucks	0	0	0	0	9	0	0	9	0	12	0	12	21
% Trucks	0	0	0	0	1.0	0	0	1.0	0	1.5	0	1.4	1.2



PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdilic.com

N/S: Farmington Road (Route 11)
E/W: Retail Drive/ Walmart Drive
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178A
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars - Trucks

	Farmington Road (Route 11) From North				Retail Drive From East			Farmington Road (Route 11) From South				Walmart Drive From West			
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	Right	Thru	Left	U-Turns	Right	Thru	Left	Int. Total
04:00 PM	30	198	1	0	1	1	4	4	266	66	0	68	1	25	665
04:15 PM	21	171	1	0	3	3	1	8	219	58	0	73	1	35	594
04:30 PM	19	152	3	0	3	1	2	6	244	73	1	35	0	43	582
04:45 PM	15	199	2	0	2	5	4	8	277	59	0	56	0	26	653
Total	85	720	7	0	9	10	11	26	1006	256	1	232	2	129	2494
05:00 PM	21	149	2	0	3	0	5	6	265	68	0	55	0	31	605
05:15 PM	20	131	0	0	0	2	3	3	248	75	0	79	1	29	591
05:30 PM	17	165	3	0	3	0	5	0	265	59	0	60	1	31	609
05:45 PM	22	151	0	0	2	2	3	2	238	58	3	58	2	26	567
Total	80	596	5	0	8	4	16	11	1016	260	3	252	4	117	2372
Grand Total	165	1316	12	0	17	14	27	37	2022	516	4	484	6	246	4866
Apprch %	11.1	88.1	0.8	0	29.3	24.1	46.6	1.4	78.4	20	0.2	65.8	0.8	33.4	
Total %	3.4	27	0.2	0	0.3	0.3	0.6	0.8	41.6	10.6	0.1	9.9	0.1	5.1	
Cars	165	1298	12	0	17	14	27	37	2008	515	4	483	6	246	4832
% Cars	100	98.6	100	0	100	100	100	100	99.3	99.8	100	99.8	100	100	99.3
Trucks	0	18	0	0	0	0	0	0	14	1	0	1	0	0	34
% Trucks	0	1.4	0	0	0	0	0	0	0.7	0.2	0	0.2	0	0	0.7

	Farmington Road (Route 11) From North EB					Retail Drive From East JB				Farmington Road (Route 11) From South GJB					Walmart Drive From West NB				
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Int. 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	30	198	1	0	229	1	1	4	6	4	266	66	0	336	68	1	25	94	665
04:15 PM	21	171	1	0	193	3	3	1	7	8	219	58	0	285	73	1	35	109	594
04:30 PM	19	152	3	0	174	3	1	2	6	6	244	73	1	324	35	0	43	78	582
04:45 PM	15	199	2	0	216	2	5	4	11	8	277	59	0	344	56	0	26	82	653
Total Volume	85	720	7	0	812	9	10	11	30	26	1006	256	1	1289	232	2	129	363	2494
% App. Total	10.5	88.7	0.9	0		30	33.3	36.7		2	78	19.9	0.1		63.9	0.6	35.5		
PHF	.708	.905	.583	.000	.886	.750	.500	.688	.682	.813	.908	.877	.250	.937	.795	.500	.750	.833	.938
Cars	85	710	7	0	802	9	10	11	30	26	998	256	1	1281	232	2	129	363	2476
% Cars	100	98.6	100	0	98.8	100	100	100	100	100	99.2	100	100	99.4	100	100	100	100	99.3
Trucks	0	10	0	0	10	0	0	0	0	0	8	0	0	8	0	0	0	0	18
% Trucks	0	1.4	0	0	1.2	0	0	0	0	0	0.8	0	0	0.6	0	0	0	0	0.7

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

N/S: Farmington Road (Route 11)
E/W: Retail Drive/ Walmart Drive
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178A
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars

	Farmington Road (Route 11) From North				Retail Drive From East			Farmington Road (Route 11) From South				Walmart Drive From West			
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	Right	Thru	Left	U-Turns	Right	Thru	Left	Int. Total
04:00 PM	30	196	1	0	1	1	4	4	265	66	0	68	1	25	662
04:15 PM	21	168	1	0	3	3	1	8	217	58	0	73	1	35	589
04:30 PM	19	149	3	0	3	1	2	6	239	73	1	35	0	43	574
04:45 PM	15	197	2	0	2	5	4	8	277	59	0	56	0	26	651
Total	85	710	7	0	9	10	11	26	998	256	1	232	2	129	2476
05:00 PM	21	146	2	0	3	0	5	6	262	68	0	55	0	31	599
05:15 PM	20	128	0	0	0	2	3	3	245	75	0	79	1	29	585
05:30 PM	17	164	3	0	3	0	5	0	265	58	0	60	1	31	607
05:45 PM	22	150	0	0	2	2	3	2	238	58	3	57	2	26	565
Total	80	588	5	0	8	4	16	11	1010	259	3	251	4	117	2356
Grand Total	165	1298	12	0	17	14	27	37	2008	515	4	483	6	246	4832
Apprch %	11.2	88	0.8	0	29.3	24.1	46.6	1.4	78.3	20.1	0.2	65.7	0.8	33.5	
Total %	3.4	26.9	0.2	0	0.4	0.3	0.6	0.8	41.6	10.7	0.1	10	0.1	5.1	

	Farmington Road (Route 11) From North					Retail Drive From East				Farmington Road (Route 11) From South					Walmart Drive From West				
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Int. 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	**30**	196	1	0	**227**	1	1	**4**	6	4	265	66	0	335	68	**1**	25	94	**662**
04:15 PM	21	168	1	0	190	**3**	3	1	7	**8**	**217**	**58**	**0**	**283**	**73**	1	35	**109**	589
04:30 PM	19	149	**3**	0	171	3	1	2	6	6	239	**73**	**1**	319	35	0	**43**	78	574
04:45 PM	15	**197**	2	0	214	2	**5**	4	**11**	8	**277**	59	0	**344**	56	0	26	82	651
Total Volume	85	710	7	0	802	9	10	11	30	26	998	256	1	1281	232	2	129	363	2476
% App. Total	10.6	88.5	0.9	0		30	33.3	36.7		2	77.9	20	0.1		63.9	0.6	35.5		
PHF	.708	.901	.583	.000	.883	.750	.500	.688	.682	.813	.901	.877	.250	.931	.795	.500	.750	.833	.935

PRECISION
DATA
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
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N/S: Farmington Road (Route 11)
E/W: Retail Drive/ Walmart Drive
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178A
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Trucks

	Farmington Road (Route 11) From North				Retail Drive From East			Farmington Road (Route 11) From South				Walmart Drive From West			
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	Right	Thru	Left	U-Turns	Right	Thru	Left	Int. Total
04:00 PM	0	2	0	0	0	0	0	0	1	0	0	0	0	0	3
04:15 PM	0	3	0	0	0	0	0	0	2	0	0	0	0	0	5
04:30 PM	0	3	0	0	0	0	0	0	5	0	0	0	0	0	8
04:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	10	0	0	0	0	0	0	8	0	0	0	0	0	18
05:00 PM	0	3	0	0	0	0	0	0	3	0	0	0	0	0	6
05:15 PM	0	3	0	0	0	0	0	0	3	0	0	0	0	0	6
05:30 PM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	2
05:45 PM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2
Total	0	8	0	0	0	0	0	0	6	1	0	1	0	0	16
Grand Total	0	18	0	0	0	0	0	0	14	1	0	1	0	0	34
Apprch %	0	100	0	0	0	0	0	0	93.3	6.7	0	100	0	0	
Total %	0	52.9	0	0	0	0	0	0	41.2	2.9	0	2.9	0	0	

	Farmington Road (Route 11) From North					Retail Drive From East				Farmington Road (Route 11) From South					Walmart Drive From West				
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Int. 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	3	0	0	3	0	0	0	0	0	5	0	0	5	0	0	0	0	8
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	3	0	0	3	0	0	0	0	0	3	0	0	3	0	0	0	0	6
05:15 PM	0	3	0	0	3	0	0	0	0	0	3	0	0	3	0	0	0	0	6
Total Volume	0	11	0	0	11	0	0	0	0	0	11	0	0	11	0	0	0	0	22
% App. Total	0	100	0	0		0	0	0		0	100	0	0		0	0	0		
PHF	.000	.917	.000	.000	.917	.000	.000	.000	.000	.000	.550	.000	.000	.550	.000	.000	.000	.000	.688

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
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N/S: Farmington Road (Route 11)
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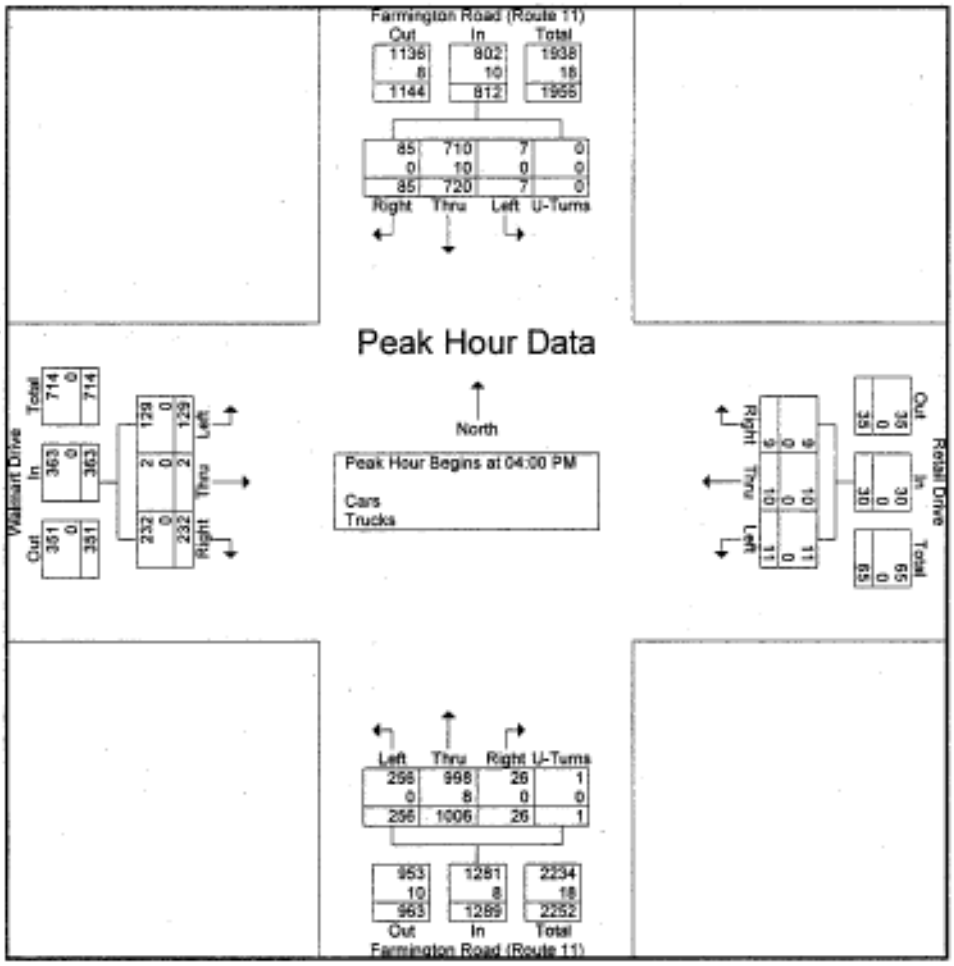
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178A
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

	Farmington Road (Route 11) From North					Retail Drive From East				Farmington Road (Route 11) From South					Walmart Drive From West				
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Int. 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	30	198	1	0	229	1	1	4	6	4	266	66	0	336	68	1	25	94	665
04:15 PM	21	171	1	0	193	3	3	1	7	8	219	58	0	285	73	1	35	109	594
04:30 PM	19	152	3	0	174	3	1	2	6	6	244	73	1	324	35	0	43	78	582
04:45 PM	15	199	2	0	216	2	5	4	11	8	277	59	0	344	56	0	26	82	653
Total Volume	85	720	7	0	812	9	10	11	30	26	1006	256	1	1289	232	2	129	363	2494
% App. Total	10.5	88.7	0.9	0		30	33.3	36.7		2	78	19.9	0.1		63.9	0.6	35.5		
PHF	.708	.905	.583	.000	.886	.750	.500	.688	.682	.813	.908	.877	.250	.937	.795	.500	.750	.833	.938
Cars	85	710	7	0	802	9	10	11	30	26	998	256	1	1281	232	2	129	363	2476
% Cars	100	98.6	100	0	98.8	100	100	100	100	100	99.2	100	100	99.4	100	100	100	100	99.3
Trucks	0	10	0	0	10	0	0	0	0	0	8	0	0	8	0	0	0	0	18
% Trucks	0	1.4	0	0	1.2	0	0	0	0	0	0.8	0	0	0.6	0	0	0	0	0.7



PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
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N/S: Farmington Road (Route 11)
E/W: Retail Drive/ Walmart Drive
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178AA
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Cars - Trucks

	Farmington Road (Route 11) From North				Retail Drive From East			Farmington Road (Route 11) From South				Walmart Drive From West			
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	Right	Thru	Left	U-Turns	Right	Thru	Left	Int. Total
11:00 AM	36	174	4	0	3	3	4	8	207	104	0	81	2	35	661
11:15 AM	40	179	2	0	4	1	8	8	263	93	0	83	6	36	723
11:30 AM	32	149	2	0	4	4	7	7	247	102	0	84	3	41	682
11:45 AM	39	152	4	0	2	5	8	10	222	96	0	91	2	31	662
Total	147	654	12	0	13	13	27	33	939	395	0	339	13	143	2728
12:00 PM	20	202	2	0	3	1	6	5	229	94	1	102	1	32	698
12:15 PM	37	156	2	0	5	3	9	12	217	127	0	89	8	40	705
12:30 PM	22	196	6	0	3	2	10	4	253	84	0	87	0	32	699
12:45 PM	30	170	3	0	2	0	7	5	220	99	0	87	2	39	664
Total	109	724	13	0	13	6	32	26	919	404	1	365	11	143	2766
01:00 PM	37	162	5	0	0	4	6	5	218	78	0	96	2	29	642
01:15 PM	37	193	8	0	2	2	8	6	232	96	0	110	0	35	729
01:30 PM	24	162	3	0	4	3	8	7	177	94	0	97	1	35	615
01:45 PM	16	164	1	1	5	1	3	8	206	82	0	78	2	41	608
Total	114	681	17	1	11	10	25	26	833	350	0	381	5	140	2594
Grand Total	370	2059	42	1	37	29	84	85	2691	1149	1	1085	29	426	8088
Apprch %	15	83.3	1.7	0	24.7	19.3	56	2.2	68.5	29.3	0	70.5	1.9	27.7	
Total %	4.6	25.5	0.5	0	0.5	0.4	1	1.1	33.3	14.2	0	13.4	0.4	5.3	
Cars	370	2041	42	1	37	29	84	85	2679	1149	1	1084	29	426	8057
% Cars	100	99.1	100	100	100	100	100	100	99.6	100	100	99.9	100	100	99.6
Trucks	0	18	0	0	0	0	0	0	12	0	0	1	0	0	31
% Trucks	0	0.9	0	0	0	0	0	0	0.4	0	0	0.1	0	0	0.4

	Farmington Road (Route 11) From North EB					Retail Drive From East SB				Farmington Road (Route 11) From South WB					Walmart Drive From West NB				
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:00 PM																			
12:00 PM	20	**202**	2	0	**224**	3	1	6	10	5	229	94	**1**	329	**102**	1	32	135	698
12:15 PM	**37**	156	2	0	195	**5**	**3**	9	**17**	**12**	**217**	**127**	**0**	**356**	89	**8**	**40**	**137**	**705**
12:30 PM	22	196	**6**	0	224	3	2	**10**	15	4	**253**	84	0	341	87	0	32	119	699
12:45 PM	30	170	3	0	203	2	0	7	9	5	220	99	0	324	87	2	39	128	664
Total Volume	109	724	13	0	846	13	6	32	51	26	919	404	1	1350	365	11	143	519	2766
% App. Total	12.9	85.6	1.5	0		25.5	11.8	62.7		1.9	68.1	29.9	0.1		70.3	2.1	27.6		
PHF	.736	.896	.542	.000	.944	.650	.500	.800	.750	.542	.908	.795	.250	.948	.895	.344	.894	.947	.981
Cars	109	719	13	0	841	13	6	32	51	26	916	404	1	1347	365	11	143	519	2758
% Cars	100	99.3	100	0	99.4	100	100	100	100	100	99.7	100	100	99.8	100	100	100	100	99.7
Trucks	0	5	0	0	5	0	0	0	0	0	3	0	0	3	0	0	0	0	8
% Trucks	0	0.7	0	0	0.6	0	0	0	0	0	0.3	0	0	0.2	0	0	0	0	0.3

PRECISION DATA INDUSTRIES, LLC
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N/S: Farmington Road (Route 11)
E/W: Retail Drive/ Walmart Drive
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178AA
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Cars

	Farmington Road (Route 11) From North				Retail Drive From East			Farmington Road (Route 11) From South				Walmart Drive From West			
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	Right	Thru	Left	U-Turns	Right	Thru	Left	Int. Total
11:00 AM	36	171	4	0	3	3	4	8	207	104	0	80	2	35	657
11:15 AM	40	176	2	0	4	1	8	8	261	93	0	83	6	36	718
11:30 AM	32	148	2	0	4	4	7	7	246	102	0	84	3	41	680
11:45 AM	39	151	4	0	2	5	8	10	220	96	0	91	2	31	659
Total	147	646	12	0	13	13	27	33	934	395	0	338	13	143	2714
12:00 PM	20	202	2	0	3	1	6	5	228	94	1	102	1	32	697
12:15 PM	37	154	2	0	5	3	9	12	217	127	0	89	8	40	703
12:30 PM	22	194	6	0	3	2	10	4	253	84	0	87	0	32	697
12:45 PM	30	169	3	0	2	0	7	5	218	99	0	87	2	39	661
Total	109	719	13	0	13	6	32	26	916	404	1	365	11	143	2758
01:00 PM	37	161	5	0	0	4	6	5	217	78	0	96	2	29	640
01:15 PM	37	192	8	0	2	2	8	6	231	96	0	110	0	35	727
01:30 PM	24	160	3	0	4	3	8	7	175	94	0	97	1	35	611
01:45 PM	16	163	1	1	5	1	3	8	206	82	0	78	2	41	607
Total	114	676	17	1	11	10	25	26	829	350	0	381	5	140	2585
Grand Total	370	2041	42	1	37	29	84	85	2679	1149	1	1084	29	426	8057
Apprch %	15.1	83.2	1.7	0	24.7	19.3	56	2.2	68.4	29.4	0	70.4	1.9	27.7	
Total %	4.6	25.3	0.5	0	0.5	0.4	1	1.1	33.3	14.3	0	13.5	0.4	5.3	

	Farmington Road (Route 11) From North					Retail Drive From East				Farmington Road (Route 11) From South					Walmart Drive From West				
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:00 PM																			
12:00 PM	20	**202**	2	0	**224**	3	1	6	10	5	228	94	**1**	328	**102**	1	32	135	697
12:15 PM	**37**	154	2	0	193	**5**	**3**	9	**17**	**12**	**217**	**127**	**0**	**356**	89	**8**	**40**	**137**	**703**
12:30 PM	22	194	**6**	0	222	3	2	**10**	15	4	**253**	84	0	341	87	0	32	119	697
12:45 PM	30	169	3	0	202	2	0	7	9	5	218	99	0	322	87	2	39	128	661
Total Volume	109	719	13	0	841	13	6	32	51	26	916	404	1	1347	365	11	143	519	2758
% App. Total	13	85.5	1.5	0		25.5	11.8	62.7		1.9	68	30	0.1		70.3	2.1	27.6		
PHF	.736	.890	.542	.000	.939	.650	.500	.800	.750	.542	.905	.795	.250	.946	.895	.344	.894	.947	.981

PRECISION
DATA
INDUSTRIES, LLC
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N/S: Farmington Road (Route 11)
E/W: Retail Drive/ Walmart Drive
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178AA
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Trucks

	Farmington Road (Route 11) From North				Retail Drive From East			Farmington Road (Route 11) From South				Walmart Drive From West			
Start Time	Right	Thru	Left	U-Turns	Right	Thru	Left	Right	Thru	Left	U-Turns	Right	Thru	Left	Int. Total
11:00 AM	0	3	0	0	0	0	0	0	0	0	0	1	0	0	4
11:15 AM	0	3	0	0	0	0	0	0	2	0	0	0	0	0	5
11:30 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
11:45 AM	0	1	0	0	0	0	0	0	2	0	0	0	0	0	3
Total	0	8	0	0	0	0	0	0	5	0	0	1	0	0	14
12:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
12:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
12:45 PM	0	1	0	0	0	0	0	0	2	0	0	0	0	0	3
Total	0	5	0	0	0	0	0	0	3	0	0	0	0	0	8
01:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
01:15 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2
01:30 PM	0	2	0	0	0	0	0	0	2	0	0	0	0	0	4
01:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	5	0	0	0	0	0	0	4	0	0	0	0	0	9
Grand Total	0	18	0	0	0	0	0	0	12	0	0	1	0	0	31
Apprch %	0	100	0	0	0	0	0	0	100	0	0	100	0	0	
Total %	0	58.1	0	0	0	0	0	0	38.7	0	0	3.2	0	0	

	Farmington Road (Route 11) From North					Retail Drive From East				Farmington Road (Route 11) From South					Walmart Drive From West				
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:00 AM																			
11:00 AM	0	**3**	0	0	**3**	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	4
11:15 AM	0	3	0	0	3	0	0	0	0	0	**2**	0	0	**2**	0	0	0	0	**5**
11:30 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	2
11:45 AM	0	1	0	0	1	0	0	0	0	0	2	0	0	2	0	0	0	0	3
Total Volume	0	8	0	0	8	0	0	0	0	0	5	0	0	5	1	0	0	1	14
% App. Total	0	100	0	0		0	0	0		0	100	0	0		100	0	0		
PHF	.000	.667	.000	.000	.667	.000	.000	.000	.000	.000	.625	.000	.000	.625	.250	.000	.000	.250	.700

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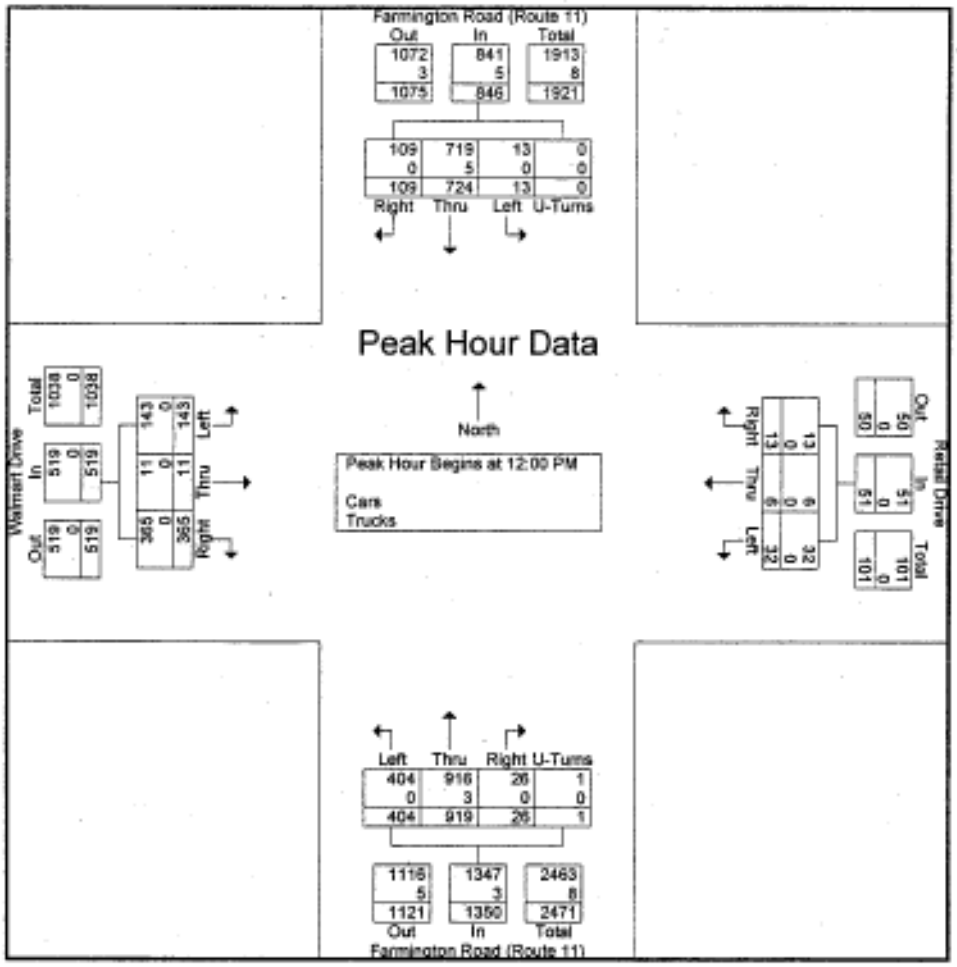
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178AA
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

	Farmington Road (Route 11) From North					Retail Drive From East				Farmington Road (Route 11) From South					Walmart Drive From West				
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:00 PM																			
12:00 PM	20	**202**	2	0	**224**	3	1	6	10	5	229	94	**1**	329	**102**	1	32	135	698
12:15 PM	**37**	156	2	0	195	**5**	**3**	9	**17**	**12**	**217**	**127**	**0**	**356**	89	**8**	**40**	**137**	**705**
12:30 PM	22	196	**6**	0	224	3	2	**10**	15	4	**253**	84	0	341	87	0	32	119	699
12:45 PM	30	170	3	0	203	2	0	7	9	5	220	99	0	324	87	2	39	128	664
Total Volume	109	724	13	0	846	13	6	32	51	26	919	404	1	1350	365	11	143	519	2766
% App. Total	12.9	85.6	1.5	0		25.5	11.8	62.7		1.9	68.1	29.9	0.1		70.3	2.1	27.6		
PHF	.736	.896	.542	.000	.944	.650	.500	.800	.750	.542	.908	.795	.250	.948	.895	.344	.894	.947	.981
Cars	109	719	13	0	841	13	6	32	51	26	916	404	1	1347	365	11	143	519	2758
% Cars	100	99.3	100	0	99.4	100	100	100	100	100	99.7	100	100	99.8	100	100	100	100	99.7
Trucks	0	5	0	0	5	0	0	0	0	0	3	0	0	3	0	0	0	0	8
% Trucks	0	0.7	0	0	0.6	0	0	0	0	0	0.3	0	0	0.2	0	0	0	0	0.3



PRECISION
DATA
INDUSTRIES, LLC
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N/S: Farmington Road (Route 11)
E: Little Falls Bridge Road
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178B
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars - Trucks

	Farmington Road (Route 11) From North		Little Falls Bridge Road From East		Farmington Road (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
04:00 PM	178	59	48	17	20	270	592
04:15 PM	211	40	42	17	22	253	585
04:30 PM	161	45	43	27	24	280	580
04:45 PM	203	50	39	25	26	300	643
Total	753	194	172	86	92	1103	2400
05:00 PM	164	48	41	23	27	308	611
05:15 PM	161	44	55	20	24	275	579
05:30 PM	180	42	36	22	24	307	611
05:45 PM	163	46	35	17	17	246	524
Total	668	180	167	82	92	1136	2325
Grand Total	1421	374	339	168	184	2239	4725
Apprch %	79.2	20.8	66.9	33.1	7.6	92.4	
Total %	30.1	7.9	7.2	3.6	3.9	47.4	
Cars	1403	373	339	167	181	2225	4688
% Cars	98.7	99.7	100	99.4	98.4	99.4	99.2
Trucks	18	1	0	1	3	14	37
% Trucks	1.3	0.3	0	0.6	1.6	0.6	0.8

	Farmington Road (Route 11) From North ED			Little Falls Bridge Road From East SD			Farmington Road (Route 11) From South WB			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. 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	**203**	**50**	**253**	39	**25**	64	26	300	326	**643**
05:00 PM	**164**	**48**	**212**	**41**	**23**	**64**	**27**	**308**	**335**	611
05:15 PM	161	44	205	55	20	75	24	275	299	579
05:30 PM	180	42	222	36	22	58	24	307	331	611
Total Volume	708	184	892	171	90	261	101	1190	1291	2444
% App. Total	79.4	20.6		65.5	34.5		7.8	92.2		
PHF	.872	.920	.881	.777	.900	.870	.935	.966	.963	.950
Cars	699	184	883	171	89	260	99	1183	1282	2425
% Cars	98.7	100	99.0	100	98.9	99.6	98.0	99.4	99.3	99.2
Trucks	9	0	9	0	1	1	2	7	9	19
% Trucks	1.3	0	1.0	0	1.1	0.4	2.0	0.6	0.7	0.8

PRECISION
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N/S: Farmington Road (Route 11)
E: Little Falls Bridge Road
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178B
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars

	Farmington Road (Route 11) From North		Little Falls Bridge Road From East		Farmington Road (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
04:00 PM	176	59	48	17	20	270	590
04:15 PM	209	39	42	17	22	251	580
04:30 PM	158	45	43	27	23	275	571
04:45 PM	201	50	39	25	25	300	640
Total	744	193	172	86	90	1096	2381
05:00 PM	161	48	41	23	26	305	604
05:15 PM	158	44	55	19	24	272	572
05:30 PM	179	42	36	22	24	306	609
05:45 PM	161	46	35	17	17	246	522
Total	659	180	167	81	91	1129	2307
Grand Total	1403	373	339	167	181	2225	4688
Apprch %	79	21	67	33	7.5	92.5	
Total %	29.9	8	7.2	3.6	3.9	47.5	

	Farmington Road (Route 11) From North			Little Falls Bridge Road From East			Farmington Road (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. 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	**201**	**50**	**251**	39	**25**	64	25	300	325	**640**
05:00 PM	**161**	**48**	**209**	**41**	**23**	**64**	**26**	305	**331**	604
05:15 PM	158	44	202	**55**	19	**74**	24	272	296	572
05:30 PM	179	42	221	36	22	58	24	**306**	330	609
Total Volume	699	184	883	171	89	260	99	1183	1282	2425
% App. Total	79.2	20.8		65.8	34.2		7.7	92.3		
PHF	.869	.920	.879	.777	.890	.878	.952	.967	.968	.947

PRECISION
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City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178B
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Trucks

	Farmington Road (Route 11) From North		Little Falls Bridge Road From East		Farmington Road (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
04:00 PM	2	0	0	0	0	0	2
04:15 PM	2	1	0	0	0	2	5
04:30 PM	3	0	0	0	1	5	9
04:45 PM	2	0	0	0	1	0	3
Total	9	1	0	0	2	7	19
05:00 PM	3	0	0	0	1	3	7
05:15 PM	3	0	0	1	0	3	7
05:30 PM	1	0	0	0	0	1	2
05:45 PM	2	0	0	0	0	0	2
Total	9	0	0	1	1	7	18
Grand Total	18	1	0	1	3	14	37
Apprch %	94.7	5.3	0	100	17.6	82.4	
Total %	48.6	2.7	0	2.7	8.1	37.8	

	Farmington Road (Route 11) From North			Little Falls Bridge Road From East			Farmington Road (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. 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	0	3	0	0	0	1	5	6	9
04:45 PM	**2**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**1**	**3**
05:00 PM	**3**	**0**	**3**	**0**	**0**	**0**	**1**	**3**	**4**	**7**
05:15 PM	**3**	**0**	**3**	**0**	**1**	**1**	0	3	3	7
Total Volume	11	0	11	0	1	1	3	11	14	26
% App. Total	100	0		0	100		21.4	78.6		
PHF	.917	.000	.917	.000	.250	.250	.750	.550	.583	.722

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E: Little Falls Bridge Road
City, State: Rochester, NH
Client: VAI/ M. Santos

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Site Code : 5149
Start Date : 6/14/2007
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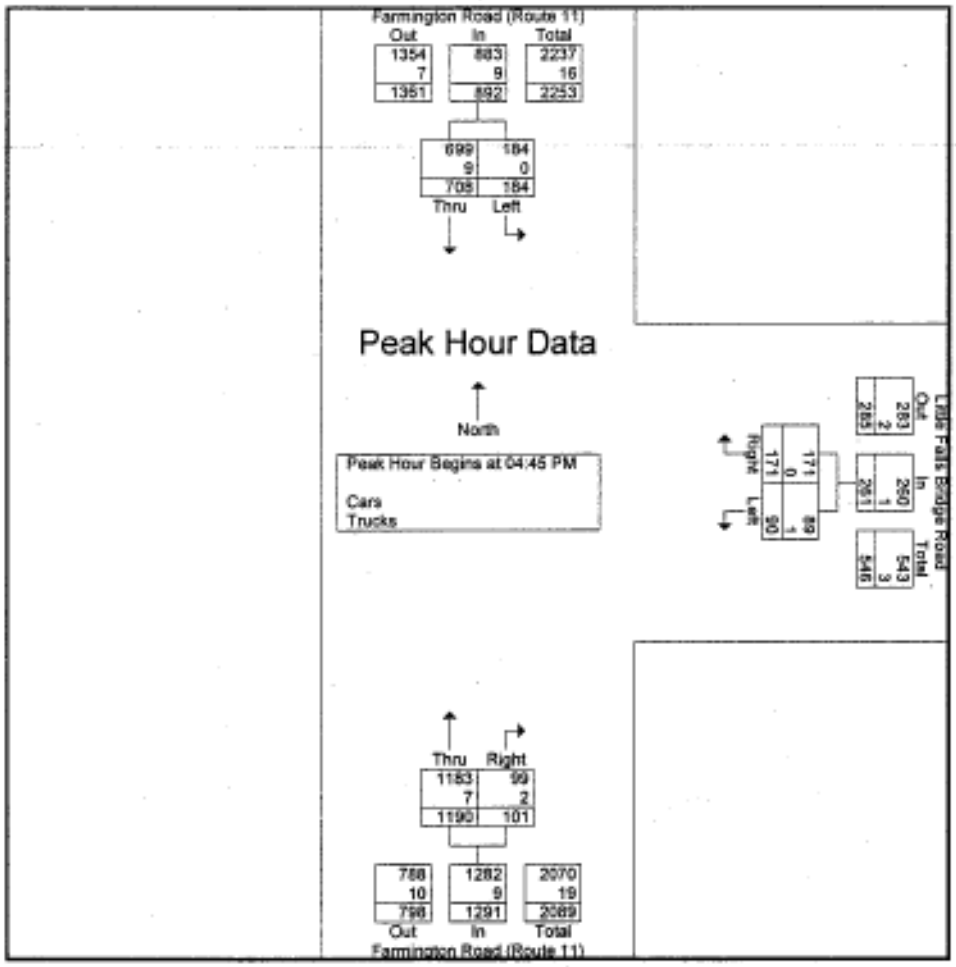
	Farmington Road (Route 11) From North			Little Falls Bridge Road From East			Farmington Road (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	**203**	**50**	**253**	39	**25**	64	26	300	326	**643**
05:00 PM	**164**	**48**	**212**	**41**	**23**	**64**	**27**	**308**	**335**	611
05:15 PM	161	44	205	**55**	20	**75**	24	275	299	579
05:30 PM	180	42	222	36	22	58	24	307	331	611
Total Volume	708	184	892	171	90	261	101	1190	1291	2444
% App. Total	79.4	20.6		65.5	34.5		7.8	92.2		
PHF	.872	.920	.881	.777	.900	.870	.935	.966	.963	.950
Cars	699	184	883	171	89	260	99	1183	1282	2425
% Cars	98.7	100	99.0	100	98.9	99.6	98.0	99.4	99.3	99.2
Trucks	9	0	9	0	1	1	2	7	9	19
% Trucks	1.3	0	1.0	0	1.1	0.4	2.0	0.6	0.7	0.8



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City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178BB
Site Code : 5149
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Groups Printed- Cars - Trucks

	Farmington Road (Route 11) From North		Little Falls Bridge Road From East		Farmington Road (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
11:00 AM	230	43	47	21	23	303	667
11:15 AM	223	44	64	27	14	289	661
11:30 AM	196	52	42	30	16	307	643
11:45 AM	223	44	41	38	14	289	649
Total	872	183	194	116	67	1188	2620
12:00 PM	252	55	52	32	29	275	693
12:15 PM	210	57	58	28	13	292	658
12:30 PM	243	62	58	22	20	279	684
12:45 PM	221	58	49	27	24	286	665
Total	926	232	217	109	86	1130	2700
01:00 PM	212	58	33	43	17	272	635
01:15 PM	275	49	44	26	14	297	705
01:30 PM	223	43	51	27	20	225	589
01:45 PM	196	36	35	18	21	272	578
Total	906	186	163	114	72	1066	2507
Grand Total	2704	601	574	339	225	3384	7827
Apprch %	81.8	18.2	62.9	37.1	6.2	93.8	
Total %	34.5	7.7	7.3	4.3	2.9	43.2	
Cars	2685	600	573	337	224	3373	7792
% Cars	99.3	99.8	99.8	99.4	99.6	99.7	99.6
Trucks	19	1	1	2	1	11	35
% Trucks	0.7	0.2	0.2	0.6	0.4	0.3	0.4

	Farmington Road (Route 11) From North EB			Little Falls Bridge Road From East SB			Farmington Road (Route 11) From South WB			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	**252**	55	**307**	52	**32**	84	**29**	273	302	**693**
12:15 PM	**210**	**57**	**267**	**58**	28	**86**	13	**292**	305	658
12:30 PM	243	**62**	305	58	22	80	20	279	299	684
12:45 PM	221	58	279	49	27	76	24	286	**310**	665
Total Volume	926	232	1158	217	109	326	86	1130	1216	2700
% App. Total	80	20		66.6	33.4		7.1	92.9		
PHF	.919	.935	.943	.935	.852	.948	.741	.967	.981	.974
Cars	920	232	1152	217	108	325	86	1126	1212	2689
% Cars	99.4	100	99.5	100	99.1	99.7	100	99.6	99.7	99.6
Trucks	6	0	6	0	1	1	0	4	4	11
% Trucks	0.6	0	0.5	0	0.9	0.3	0	0.4	0.3	0.4

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Client: VAI/ M. Santos

File Name : 71178BB
Site Code : 5149
Start Date : 6/16/2007
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Groups Printed- Cars

	Farmington Road (Route 11) From North		Little Falls Bridge Road From East		Farmington Road (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
11:00 AM	226	43	47	21	23	303	663
11:15 AM	220	44	63	27	14	288	656
11:30 AM	195	52	42	30	16	306	641
11:45 AM	222	44	41	38	14	287	646
Total	863	183	193	116	67	1184	2606
12:00 PM	252	55	52	32	29	272	692
12:15 PM	208	57	58	27	13	292	655
12:30 PM	240	62	58	22	20	279	681
12:45 PM	220	58	49	27	24	283	661
Total	920	232	217	108	86	1126	2689
01:00 PM	212	57	33	43	17	272	634
01:15 PM	275	49	44	25	14	297	704
01:30 PM	220	43	51	27	20	222	583
01:45 PM	195	36	35	18	20	272	576
Total	902	185	163	113	71	1063	2497
Grand Total	2685	600	573	337	224	3373	7792
Apprch %	81.7	18.3	63	37	6.2	93.8	
Total %	34.5	7.7	7.4	4.3	2.9	43.3	

	Farmington Road (Route 11) From North			Little Falls Bridge Road From East			Farmington Road (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	**252**	55	**307**	52	**32**	84	**29**	272	301	**692**
12:15 PM	**208**	**57**	**265**	**58**	27	**85**	13	**292**	305	655
12:30 PM	240	**62**	302	58	22	80	20	279	299	681
12:45 PM	220	58	278	49	27	76	24	283	**307**	661
Total Volume	920	232	1152	217	108	325	86	1126	1212	2689
% App. Total	79.9	20.1		66.8	33.2		7.1	92.9		
PHF	.913	.935	.938	.935	.844	.956	.741	.964	.987	.971

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Site Code : 5149
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Groups Printed- Trucks

	Farmington Road (Route 11) From North		Little Falls Bridge Road From East		Farmington Road (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
11:00 AM	4	0	0	0	0	0	4
11:15 AM	3	0	1	0	0	1	5
11:30 AM	1	0	0	0	0	1	2
11:45 AM	1	0	0	0	0	2	3
Total	9	0	1	0	0	4	14
12:00 PM	0	0	0	0	0	1	1
12:15 PM	2	0	0	1	0	0	3
12:30 PM	3	0	0	0	0	0	3
12:45 PM	1	0	0	0	0	3	4
Total	6	0	0	1	0	4	11
01:00 PM	0	1	0	0	0	0	1
01:15 PM	0	0	0	1	0	0	1
01:30 PM	3	0	0	0	0	3	6
01:45 PM	1	0	0	0	1	0	2
Total	4	1	0	1	1	3	10
Grand Total	19	1	1	2	1	11	35
Apprch %	95	5	33.3	66.7	8.3	91.7	
Total %	54.3	2.9	2.9	5.7	2.9	31.4	

	Farmington Road (Route 11) From North			Little Falls Bridge Road From East			Farmington Road (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	**4**	0	**4**	0	0	0	0	0	0	4
11:15 AM	3	0	3	**1**	0	**1**	0	1	1	**5**
11:30 AM	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**2**
11:45 AM	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**2**	3
Total Volume	9	0	9	1	0	1	0	4	4	14
% App. Total	100	0		100	0		0	100		
PHF	.563	.000	.563	.250	.000	.250	.000	.500	.500	.700

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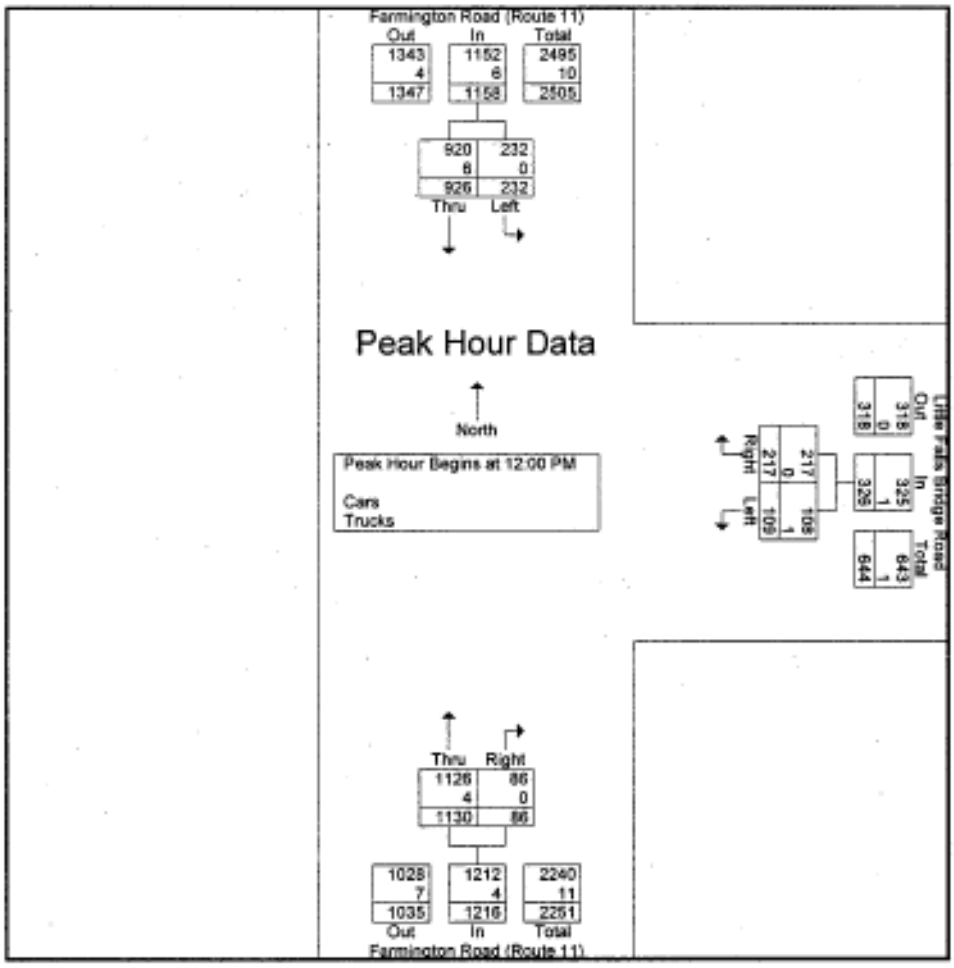
File Name : 71178BB
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

	Farmington Road (Route 11) From North			Little Falls Bridge Road From East			Farmington Road (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:00 PM										
12:00 PM	**252**	55	**307**	52	**32**	84	**29**	273	302	**693**
12:15 PM	**210**	**57**	**267**	**58**	28	**86**	13	**292**	305	658
12:30 PM	243	**62**	305	58	22	80	20	279	299	684
12:45 PM	221	58	279	49	27	76	24	286	**310**	665
Total Volume	926	232	1158	217	109	326	86	1130	1216	2700
% App. Total	80	20		66.6	33.4		7.1	92.9		
PHF	.919	.935	.943	.935	.852	.948	.741	.967	.981	.974
Cars	920	232	1152	217	108	325	86	1126	1212	2689
% Cars	99.4	100	99.5	100	99.1	99.7	100	99.6	99.7	99.6
Trucks	6	0	6	0	1	1	0	4	4	11
% Trucks	0.6	0	0.5	0	0.9	0.3	0	0.4	0.3	0.4



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N/S: Farmington Road (Route 11)
E/W: Spaulding Tpke SB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178C
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars - Trucks

	Farmington Road (Route 11) From North			Spaulding Turnpike SB Off-Ramp From East			Farmington Road (Route 11) From South			Spaulding Turnpike SB On-Ramp From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	100	134	0	19	0	0	0	294	0	0	0	0	547
04:15 PM	96	143	0	32	0	0	0	277	0	0	0	0	548
04:30 PM	71	126	0	29	0	0	0	375	0	0	0	0	601
04:45 PM	103	126	0	42	0	0	0	313	0	0	0	0	584
Total	370	529	0	122	0	0	0	1259	0	0	0	0	2280
05:00 PM	75	129	0	30	0	0	0	328	0	0	0	0	562
05:15 PM	45	93	0	22	0	0	0	320	0	0	0	0	480
05:30 PM	61	133	0	24	0	0	0	273	0	0	0	0	491
05:45 PM	63	139	0	21	0	0	0	222	0	0	0	0	445
Total	244	494	0	97	0	0	0	1143	0	0	0	0	1978
Grand Total	614	1023	0	219	0	0	0	2402	0	0	0	0	4258
Apprch %	37.5	62.5	0	100	0	0	0	100	0	0	0	0	
Total %	14.4	24	0	5.1	0	0	0	56.4	0	0	0	0	
Cars	605	1012	0	217	0	0	0	2383	0	0	0	0	4217
% Cars	98.5	98.9	0	99.1	0	0	0	99.2	0	0	0	0	99
Trucks	9	11	0	2	0	0	0	19	0	0	0	0	41
% Trucks	1.5	1.1	0	0.9	0	0	0	0.8	0	0	0	0	1

	Farmington Road (Route 11) From North EB				Spaulding Turnpike SB Off-Ramp From East SB				Farmington Road (Route 11) From South WB				Spaulding Turnpike SB On-Ramp From West NB				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. 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	96	**143**	0	**239**	32	0	0	32	0	277	0	277	0	0	0	0	548
04:30 PM	71	126	0	197	29	0	0	29	0	**375**	0	**375**	0	0	0	0	**601**
04:45 PM	**103**	126	0	229	**42**	0	0	**42**	0	313	0	313	0	0	0	0	584
05:00 PM	75	129	0	204	30	0	0	30	0	328	0	328	0	0	0	0	562
Total Volume	345	524	0	869	133	0	0	133	0	1293	0	1293	0	0	0	0	2295
% App. Total	39.7	60.3	0		100	0	0		0	100	0		0	0	0		
PHF	.837	.916	.000	.909	.792	.000	.000	.792	.000	.862	.000	.862	.000	.000	.000	.000	.955
Cars	340	519	0	859	132	0	0	132	0	1280	0	1280	0	0	0	0	2271
% Cars	98.6	99.0	0	98.8	99.2	0	0	99.2	0	99.0	0	99.0	0	0	0	0	99.0
Trucks	5	5	0	10	1	0	0	1	0	13	0	13	0	0	0	0	24
% Trucks	1.4	1.0	0	1.2	0.8	0	0	0.8	0	1.0	0	1.0	0	0	0	0	1.0

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City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178C
Site Code : 5149
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Groups Printed- Cars

	Farmington Road (Route 11) From North			Spaulding Turnpike SB Off-Ramp From East			Farmington Road (Route 11) From South			Spaulding Turnpike SB On-Ramp From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	99	133	0	19	0	0	0	294	0	0	0	0	545
04:15 PM	95	142	0	31	0	0	0	276	0	0	0	0	544
04:30 PM	69	125	0	29	0	0	0	369	0	0	0	0	592
04:45 PM	102	125	0	42	0	0	0	309	0	0	0	0	578
Total	365	525	0	121	0	0	0	1248	0	0	0	0	2259
05:00 PM	74	127	0	30	0	0	0	326	0	0	0	0	557
05:15 PM	44	91	0	21	0	0	0	317	0	0	0	0	473
05:30 PM	61	131	0	24	0	0	0	271	0	0	0	0	487
05:45 PM	61	138	0	21	0	0	0	221	0	0	0	0	441
Total	240	487	0	96	0	0	0	1135	0	0	0	0	1958
Grand Total	605	1012	0	217	0	0	0	2383	0	0	0	0	4217
Apprch %	37.4	62.6	0	100	0	0	0	100	0	0	0	0	
Total %	14.3	24	0	5.1	0	0	0	56.5	0	0	0	0	

	Farmington Road (Route 11) From North				Spaulding Turnpike SB Off-Ramp From East				Farmington Road (Route 11) From South				Spaulding Turnpike SB On-Ramp From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. 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	95	**142**	0	**237**	31	0	0	31	0	276	0	276	0	0	0	0	544
04:30 PM	69	125	0	194	29	0	0	29	0	**369**	0	**369**	0	0	0	0	**592**
04:45 PM	**102**	125	0	227	**42**	0	0	**42**	0	309	0	309	0	0	0	0	578
05:00 PM	74	127	0	201	30	0	0	30	0	326	0	326	0	0	0	0	557
Total Volume	340	519	0	859	132	0	0	132	0	1280	0	1280	0	0	0	0	2271
% App. Total	39.6	60.4	0		100	0	0		0	100	0		0	0	0		
PHF	.833	.914	.000	.906	.786	.000	.000	.786	.000	.867	.000	.867	.000	.000	.000	.000	.959

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City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178C
Site Code : 5149
Start Date : 6/14/2007
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Groups Printed- Trucks

	Farmington Road (Route 11) From North			Spaulding Turnpike SB Off-Ramp From East			Farmington Road (Route 11) From South			Spaulding Turnpike SB On-Ramp From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	1	1	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	1	1	0	1	0	0	0	1	0	0	0	0	4
04:30 PM	2	1	0	0	0	0	0	6	0	0	0	0	9
04:45 PM	1	1	0	0	0	0	0	4	0	0	0	0	6
Total	5	4	0	1	0	0	0	11	0	0	0	0	21
05:00 PM	1	2	0	0	0	0	0	2	0	0	0	0	5
05:15 PM	1	2	0	1	0	0	0	3	0	0	0	0	7
05:30 PM	0	2	0	0	0	0	0	2	0	0	0	0	4
05:45 PM	2	1	0	0	0	0	0	1	0	0	0	0	4
Total	4	7	0	1	0	0	0	8	0	0	0	0	20
Grand Total	9	11	0	2	0	0	0	19	0	0	0	0	41
Apprch %	45	55	0	100	0	0	0	100	0	0	0	0	
Total %	22	26.8	0	4.9	0	0	0	46.3	0	0	0	0	

	Farmington Road (Route 11) From North				Spaulding Turnpike SB Off-Ramp From East				Farmington Road (Route 11) From South				Spaulding Turnpike SB On-Ramp From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. 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**	1	0	**3**	0	0	0	0	0	**6**	0	**6**	0	0	0	0	**9**
04:45 PM	1	1	0	2	0	0	0	0	0	4	0	4	0	0	0	0	6
05:00 PM	1	**2**	0	3	0	0	0	0	0	2	0	2	0	0	0	0	5
05:15 PM	1	2	0	3	**1**	0	0	**1**	0	3	0	3	0	0	0	0	7
Total Volume	5	6	0	11	1	0	0	1	0	15	0	15	0	0	0	0	27
% App. Total	45.5	54.5	0		100	0	0		0	100	0		0	0	0		
PHF	.625	.750	.000	.917	.250	.000	.000	.250	.000	.625	.000	.625	.000	.000	.000	.000	.750

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N/S: Farmington Road (Route 11)
E/W: Spaulding Tpke SB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178C
Site Code : 5149
Start Date : 6/14/2007
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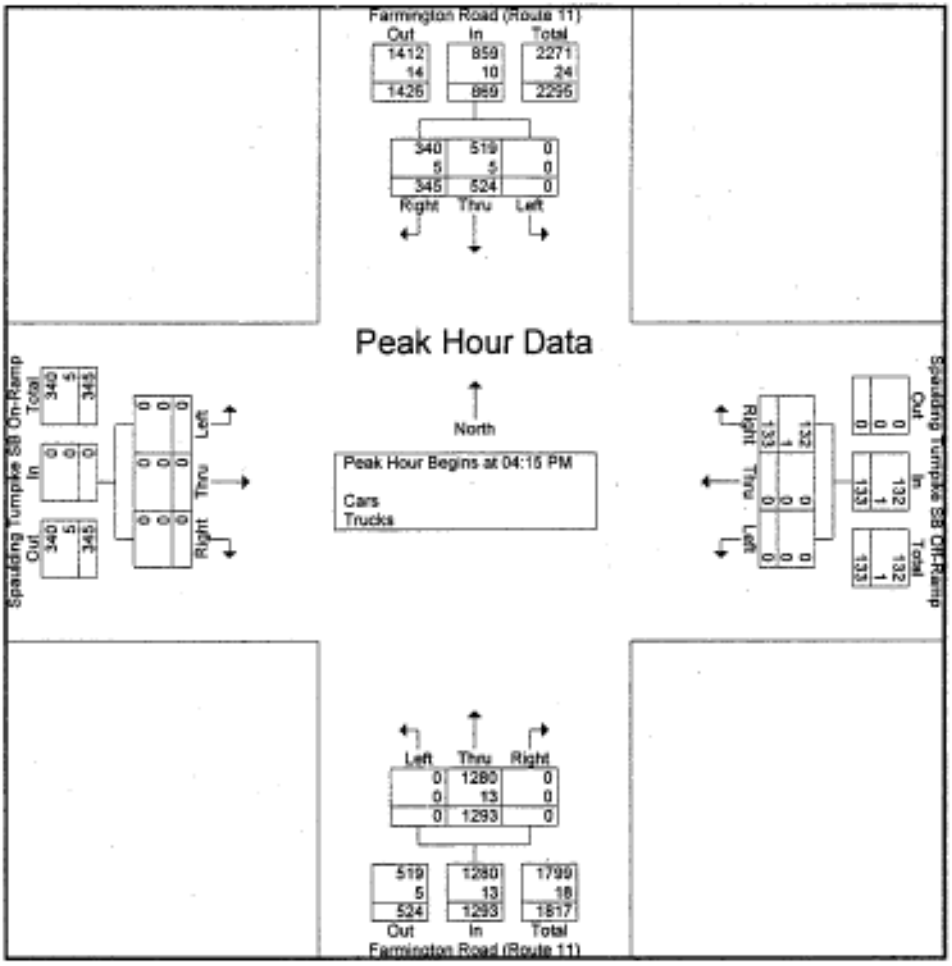
	Farmington Road (Route 11) From North				Spaulding Turnpike SB Off-Ramp From East				Farmington Road (Route 11) From South				Spaulding Turnpike SB On-Ramp From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak 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	96	**143**	0	**239**	32	0	0	32	0	277	0	277	0	0	0	0	548
04:30 PM	71	126	0	197	29	0	0	29	0	**375**	0	**375**	0	0	0	0	**601**
04:45 PM	**103**	126	0	229	**42**	0	0	**42**	0	313	0	313	0	0	0	0	584
05:00 PM	75	129	0	204	30	0	0	30	0	328	0	328	0	0	0	0	562
Total Volume	345	524	0	869	133	0	0	133	0	1293	0	1293	0	0	0	0	2295
% App. Total	39.7	60.3	0		100	0	0		0	100	0		0	0	0		
PHF	.837	.916	.000	.909	.792	.000	.000	.792	.000	.862	.000	.862	.000	.000	.000	.000	.955
Cars	340	519	0	859	132	0	0	132	0	1280	0	1280	0	0	0	0	2271
% Cars	98.6	99.0	0	98.8	99.2	0	0	99.2	0	99.0	0	99.0	0	0	0	0	99.0
Trucks	5	5	0	10	1	0	0	1	0	13	0	13	0	0	0	0	24
% Trucks	1.4	1.0	0	1.2	0.8	0	0	0.8	0	1.0	0	1.0	0	0	0	0	1.0



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E/W: Spaulding Tpke SB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178CC
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Cars - Trucks

	Farmington Road (Route 11) From North			Spaulding Turnpike SB Off-Ramp From East			Farmington Road (Route 11) From South			Spaulding Turnpike SB On-Ramp From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
11:00 AM	86	178	0	49	0	0	0	264	0	0	0	0	577
11:15 AM	92	180	0	74	0	0	0	236	0	0	0	0	582
11:30 AM	83	168	0	45	0	0	0	272	0	0	0	0	568
11:45 AM	96	171	0	48	0	0	0	254	0	0	0	0	569
Total	357	697	0	216	0	0	0	1026	0	0	0	0	2296
12:00 PM	99	198	0	46	0	0	0	281	0	0	0	0	624
12:15 PM	84	159	0	55	0	0	0	268	0	0	0	0	566
12:30 PM	98	157	0	54	0	0	0	268	0	0	0	0	577
12:45 PM	97	172	0	45	0	0	0	254	0	0	0	0	568
Total	378	686	0	200	0	0	0	1071	0	0	0	0	2335
01:00 PM	94	144	0	29	0	0	0	255	0	0	0	0	522
01:15 PM	110	177	0	42	0	0	0	238	1	0	0	0	568
01:30 PM	118	173	0	48	0	0	0	256	0	0	0	0	595
01:45 PM	117	139	0	56	0	0	0	252	0	0	0	0	564
Total	439	633	0	175	0	0	0	1001	1	0	0	0	2249
Grand Total	1174	2016	0	591	0	0	0	3098	1	0	0	0	6880
Apprch %	36.8	63.2	0	100	0	0	0	100	0	0	0	0	
Total %	17.1	29.3	0	8.6	0	0	0	45	0	0	0	0	
Cars	1162	2008	0	590	0	0	0	3084	1	0	0	0	6845
% Cars	99	99.6	0	99.8	0	0	0	99.5	100	0	0	0	99.5
Trucks	12	8	0	1	0	0	0	14	0	0	0	0	35
% Trucks	1	0.4	0	0.2	0	0	0	0.5	0	0	0	0	0.5

	Farmington Road (Route 11) From North EB				Spaulding Turnpike SB Off-Ramp From East SB				Farmington Road (Route 11) From South WB				Spaulding Turnpike SB On-Ramp From West NB				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	92	180	0	272	**74**	0	0	**74**	0	236	0	236	0	0	0	0	582
11:30 AM	83	168	0	251	45	0	0	45	0	272	0	272	0	0	0	0	568
11:45 AM	96	171	0	267	48	0	0	48	0	254	0	254	0	0	0	0	569
12:00 PM	**99**	**198**	0	**297**	46	0	0	46	0	**281**	0	**281**	0	0	0	0	**624**
Total Volume	370	717	0	1087	213	0	0	213	0	1043	0	1043	0	0	0	0	2343
% App. Total	34	66	0		100	0	0		0	100	0		0	0	0		
PHF	.934	.905	.000	.915	.720	.000	.000	.720	.000	.928	.000	.928	.000	.000	.000	.000	.939
Cars	369	715	0	1084	212	0	0	212	0	1039	0	1039	0	0	0	0	2335
% Cars	99.7	99.7	0	99.7	99.5	0	0	99.5	0	99.6	0	99.6	0	0	0	0	99.7
Trucks	1	2	0	3	1	0	0	1	0	4	0	4	0	0	0	0	8
% Trucks	0.3	0.3	0	0.3	0.5	0	0	0.5	0	0.4	0	0.4	0	0	0	0	0.3

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E/W: Spaulding Tpke SB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178CC
Site Code : 5149
Start Date : 6/16/2007
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Groups Printed- Cars

	Farmington Road (Route 11) From North			Spaulding Turnpike SB Off-Ramp From East			Farmington Road (Route 11) From South			Spaulding Turnpike SB On-Ramp From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
11:00 AM	85	176	0	49	0	0	0	262	0	0	0	0	572
11:15 AM	91	180	0	74	0	0	0	236	0	0	0	0	581
11:30 AM	83	167	0	44	0	0	0	270	0	0	0	0	564
11:45 AM	96	170	0	48	0	0	0	253	0	0	0	0	567
Total	355	693	0	215	0	0	0	1021	0	0	0	0	2284
12:00 PM	99	198	0	46	0	0	0	280	0	0	0	0	623
12:15 PM	84	158	0	55	0	0	0	267	0	0	0	0	564
12:30 PM	98	156	0	54	0	0	0	267	0	0	0	0	575
12:45 PM	93	171	0	45	0	0	0	252	0	0	0	0	561
Total	374	683	0	200	0	0	0	1066	0	0	0	0	2323
01:00 PM	94	144	0	29	0	0	0	254	0	0	0	0	521
01:15 PM	108	177	0	42	0	0	0	237	1	0	0	0	565
01:30 PM	115	172	0	48	0	0	0	254	0	0	0	0	589
01:45 PM	116	139	0	56	0	0	0	252	0	0	0	0	563
Total	433	632	0	175	0	0	0	997	1	0	0	0	2238
Grand Total	1162	2008	0	590	0	0	0	3084	1	0	0	0	6845
Apprch %	36.7	63.3	0	100	0	0	0	100	0	0	0	0	
Total %	17	29.3	0	8.6	0	0	0	45.1	0	0	0	0	

	Farmington Road (Route 11) From North				Spaulding Turnpike SB Off-Ramp From East				Farmington Road (Route 11) From South				Spaulding Turnpike SB On-Ramp From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	91	180	0	271	**74**	0	0	**74**	0	236	0	236	0	0	0	0	581
11:30 AM	83	167	0	250	44	0	0	44	0	270	0	270	0	0	0	0	564
11:45 AM	96	170	0	266	48	0	0	48	0	253	0	253	0	0	0	0	567
12:00 PM	**99**	**198**	0	**297**	46	0	0	46	0	**280**	0	**280**	0	0	0	0	**623**
Total Volume	369	715	0	1084	212	0	0	212	0	1039	0	1039	0	0	0	0	2335
% App. Total	34	66	0		100	0	0		0	100	0		0	0	0		
PHF	.932	.903	.000	.912	.716	.000	.000	.716	.000	.928	.000	.928	.000	.000	.000	.000	.937

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N/S: Farmington Road (Route 11)
E/W: Spaulding Tpke SB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178CC
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Trucks

	Farmington Road (Route 11) From North			Spaulding Turnpike SB Off-Ramp From East			Farmington Road (Route 11) From South			Spaulding Turnpike SB On-Ramp From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
11:00 AM	1	2	0	0	0	0	0	2	0	0	0	0	5
11:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	1	0	1	0	0	0	2	0	0	0	0	4
11:45 AM	0	1	0	0	0	0	0	1	0	0	0	0	2
Total	2	4	0	1	0	0	0	5	0	0	0	0	12
12:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
12:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
12:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
12:45 PM	4	1	0	0	0	0	0	2	0	0	0	0	7
Total	4	3	0	0	0	0	0	5	0	0	0	0	12
01:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
01:15 PM	2	0	0	0	0	0	0	1	0	0	0	0	3
01:30 PM	3	1	0	0	0	0	0	2	0	0	0	0	6
01:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	6	1	0	0	0	0	0	4	0	0	0	0	11
Grand Total	12	8	0	1	0	0	0	14	0	0	0	0	35
Apprch %	60	40	0	100	0	0	0	100	0	0	0	0	
Total %	34.3	22.9	0	2.9	0	0	0	40	0	0	0	0	

	Farmington Road (Route 11) From North				Spaulding Turnpike SB Off-Ramp From East				Farmington Road (Route 11) From South				Spaulding Turnpike SB On-Ramp From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:45 PM																	
12:45 PM	**4**	**1**	0	**5**	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**7**
01:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
01:15 PM	2	0	0	2	0	0	0	0	0	1	0	1	0	0	0	0	3
01:30 PM	3	1	0	4	0	0	0	0	0	2	0	2	0	0	0	0	6
Total Volume	9	2	0	11	0	0	0	0	0	6	0	6	0	0	0	0	17
% App. Total	81.8	18.2	0		0	0	0		0	100	0		0	0	0		
PHF	.563	.500	.000	.550	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.607

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Client: VAI/ M. Santos

File Name : 71178CC
Site Code : 5149
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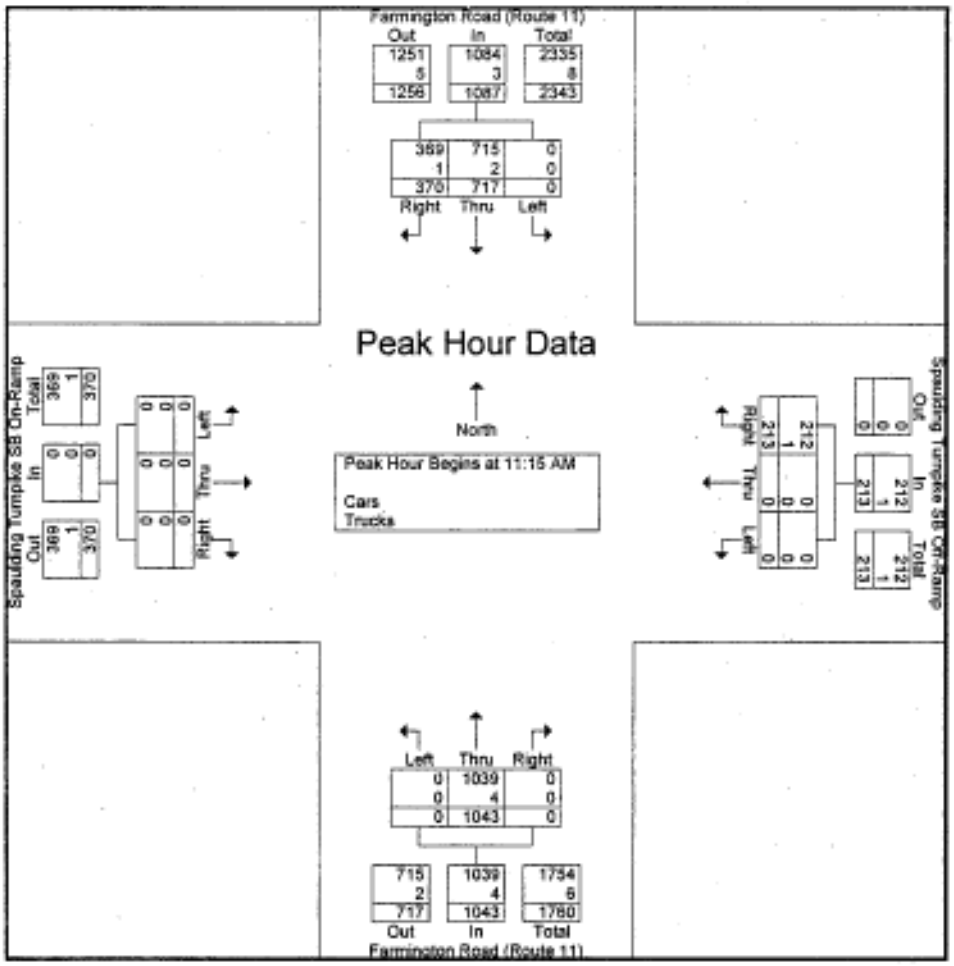
	Farmington Road (Route 11) From North				Spaulding Turnpike SB Off-Ramp From East				Farmington Road (Route 11) From South				Spaulding Turnpike SB On-Ramp From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:15 AM																	
11:15 AM	92	180	0	272	**74**	0	0	**74**	0	236	0	236	0	0	0	0	582
11:30 AM	83	168	0	251	45	0	0	45	0	272	0	272	0	0	0	0	568
11:45 AM	96	171	0	267	48	0	0	48	0	254	0	254	0	0	0	0	569
12:00 PM	**99**	**198**	0	**297**	46	0	0	46	0	**281**	0	**281**	0	0	0	0	**624**
Total Volume	370	717	0	1087	213	0	0	213	0	1043	0	1043	0	0	0	0	2343
% App. Total	34	66	0		100	0	0		0	100	0		0	0	0		
PHF	.934	.905	.000	.915	.720	.000	.000	.720	.000	.928	.000	.928	.000	.000	.000	.000	.939
Cars	369	715	0	1084	212	0	0	212	0	1039	0	1039	0	0	0	0	2335
% Cars	99.7	99.7	0	99.7	99.5	0	0	99.5	0	99.6	0	99.6	0	0	0	0	99.7
Trucks	1	2	0	3	1	0	0	1	0	4	0	4	0	0	0	0	8
% Trucks	0.3	0.3	0	0.3	0.5	0	0	0.5	0	0.4	0	0.4	0	0	0	0	0.3



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N/S: North Main Street (Route 11)
E: Spaulding Turnpike NB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178D
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars - Trucks

	North Main Street (Route 11) From North		Spaulding Turnpike NB Ramps From East		North Main Street (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
04:00 PM	97	37	142	0	55	144	475
04:15 PM	104	40	119	0	85	151	499
04:30 PM	94	19	114	1	99	213	540
04:45 PM	96	37	121	0	80	201	535
Total	391	133	496	1	319	709	2049
05:00 PM	103	32	136	0	108	192	571
05:15 PM	71	22	148	2	75	162	480
05:30 PM	113	35	146	0	63	165	522
05:45 PM	114	26	122	1	67	143	473
Total	401	115	552	3	313	662	2046
Grand Total	792	248	1048	4	632	1371	4095
Apprch %	76.2	23.8	99.6	0.4	31.6	68.4	
Total %	19.3	6.1	25.6	0.1	15.4	33.5	
Cars	786	242	1032	4	626	1367	4057
% Cars	99.2	97.6	98.5	100	99.1	99.7	99.1
Trucks	6	6	16	0	6	4	38
% Trucks	0.8	2.4	1.5	0	0.9	0.3	0.9

	North Main Street (Route 11) From North EB			Spaulding Turnpike NB Ramps From East SB			North Main Street (Route 11) From South WB			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. 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	**104**	**40**	**144**	119	0	119	85	151	236	499
04:30 PM	94	19	113	114	**1**	115	99	**213**	**312**	540
04:45 PM	96	37	133	121	0	121	80	201	281	535
05:00 PM	103	32	135	**136**	0	**136**	**108**	192	300	**571**
Total Volume	**397**	**128**	**525**	**490**	**1**	**491**	**372**	**757**	**1129**	**2145**
% App. Total	**75.6**	**24.4**		**99.8**	**0.2**		**32.9**	**67.1**		
PHF	**.954**	**.800**	**.911**	**.901**	**.250**	**.903**	**.861**	**.888**	**.905**	**.939**
Cars	**395**	**125**	**520**	**478**	**1**	**479**	**367**	**755**	**1122**	**2121**
% Cars	**99.5**	**97.7**	**99.0**	**97.6**	**100**	**97.6**	**98.7**	**99.7**	**99.4**	**98.9**
Trucks	**2**	**3**	**5**	**12**	**0**	**12**	**5**	**2**	**7**	**24**
% Trucks	**0.5**	**2.3**	**1.0**	**2.4**	**0**	**2.4**	**1.3**	**0.3**	**0.6**	**1.1**

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E: Spaulding Turnpike NB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178D
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars

	North Main Street (Route 11) From North		Spaulding Turnpike NB Ramps From East		North Main Street (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
04:00 PM	96	36	141	0	54	144	471
04:15 PM	104	39	118	0	85	151	497
04:30 PM	93	19	109	1	98	212	532
04:45 PM	95	36	117	0	78	201	527
Total	388	130	485	1	315	708	2027
05:00 PM	103	31	134	0	106	191	565
05:15 PM	70	21	147	2	75	161	476
05:30 PM	111	35	145	0	63	164	518
05:45 PM	114	25	121	1	67	143	471
Total	398	112	547	3	311	659	2030
Grand Total	786	242	1032	4	626	1367	4057
Apprch %	76.5	23.5	99.6	0.4	31.4	68.6	
Total %	19.4	6	25.4	0.1	15.4	33.7	

	North Main Street (Route 11) From North			Spaulding Turnpike NB Ramps From East			North Main Street (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. 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	**104**	**39**	**143**	118	0	118	85	151	236	497
04:30 PM	93	19	112	109	**1**	110	98	**212**	**310**	532
04:45 PM	95	36	131	117	0	117	78	201	279	527
05:00 PM	103	31	134	**134**	0	**134**	**106**	191	297	**565**
Total Volume	**395**	**125**	**520**	**478**	**1**	**479**	**367**	**755**	**1122**	**2121**
% App. Total	**76**	**24**		**99.8**	**0.2**		**32.7**	**67.3**		
PHF	**.950**	**.801**	**.909**	**.892**	**.250**	**.894**	**.866**	**.890**	**.905**	**.938**

PRECISION
DATA
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N/S: North Main Street (Route 11)
E: Spaulding Turnpike NB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178D
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Trucks

	North Main Street (Route 11) From North		Spaulding Turnpike NB Ramps From East		North Main Street (Route 11) From South		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
04:00 PM	1	1	1	0	1	0	4
04:15 PM	0	1	1	0	0	0	2
04:30 PM	1	0	5	0	1	1	8
04:45 PM	1	1	4	0	2	0	8
Total	3	3	11	0	4	1	22
05:00 PM	0	1	2	0	2	1	6
05:15 PM	1	1	1	0	0	1	4
05:30 PM	2	0	1	0	0	1	4
05:45 PM	0	1	1	0	0	0	2
Total	3	3	5	0	2	3	16
Grand Total	6	6	16	0	6	4	38
Apprch %	50	50	100	0	60	40	
Total %	15.8	15.8	42.1	0	15.8	10.5	

	North Main Street (Route 11) From North			Spaulding Turnpike NB Ramps From East			North Main Street (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. 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	1	0	1	5	0	5	1	1	2	8
04:45 PM	1	1	2	4	0	4	2	0	2	8
05:00 PM	0	1	1	2	0	2	2	1	3	6
05:15 PM	1	1	2	1	0	1	0	1	1	4
Total Volume	3	3	6	12	0	12	5	3	8	26
% App. Total	50	50		100	0		62.5	37.5		
PHF	.750	.750	.750	.600	.000	.600	.625	.750	.667	.813

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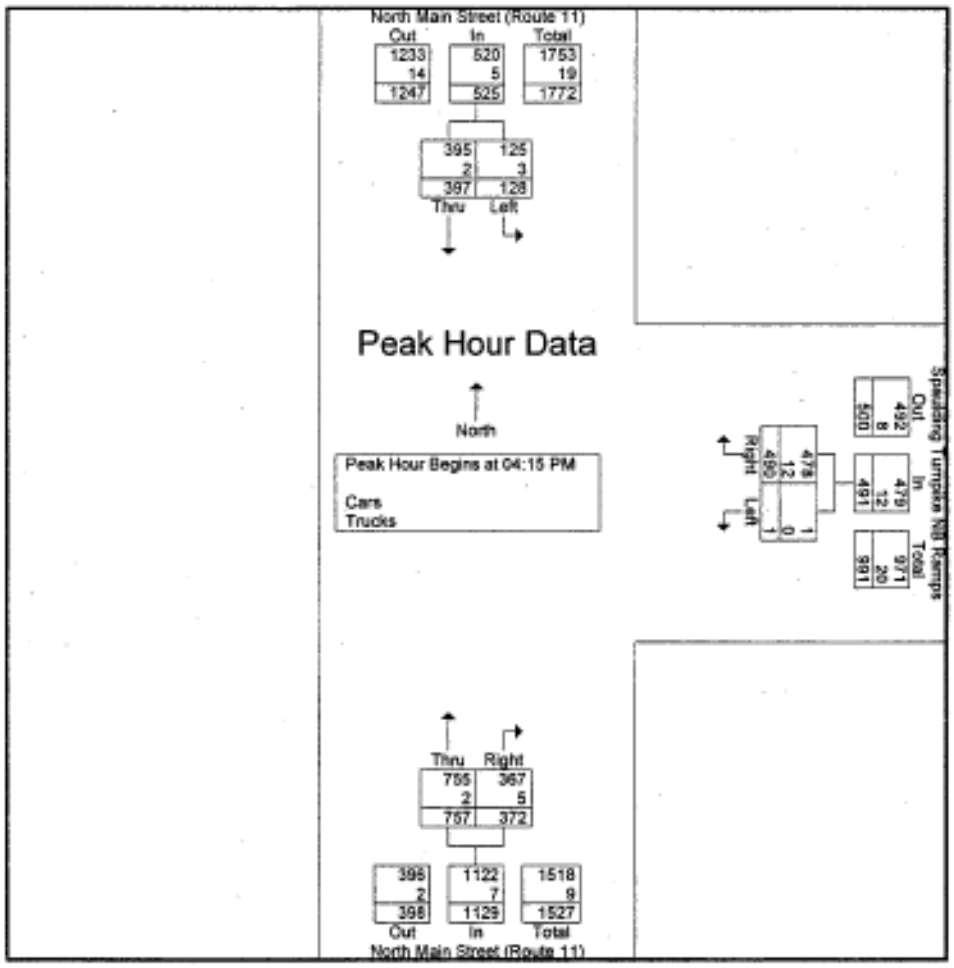
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178D
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

	North Main Street (Route 11) From North			Spaulding Turnpike NB Ramps From East			North Main Street (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. 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	104	40	144	119	0	119	85	151	236	499
04:30 PM	94	19	113	114	1	115	99	213	312	540
04:45 PM	96	37	133	121	0	121	80	201	281	535
05:00 PM	103	32	135	136	0	136	108	192	300	571
Total Volume	397	128	525	490	1	491	372	757	1129	2145
% App. Total	75.6	24.4		99.8	0.2		32.9	67.1		
PHF	.954	.800	.911	.901	.250	.903	.861	.888	.905	.939
Cars	395	125	520	478	1	479	367	755	1122	2121
% Cars	99.5	97.7	99.0	97.6	100	97.6	98.7	99.7	99.4	98.9
Trucks	2	3	5	12	0	12	5	2	7	24
% Trucks	0.5	2.3	1.0	2.4	0	2.4	1.3	0.3	0.6	1.1



PRECISION
DATA
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N/S: North Main Street (Route 11)
E: Spaulding Turnpike NB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178DD
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Cars - Trucks

	North Main Street (Route 11) From North		Spaulding Turnpike NB Ramps From East			North Main Street (Route 11) From South		
Start Time	Thru	Left	Right	Left	U-Turns	Right	Thru	Int. Total
11:00 AM	132	49	124	0	0	60	137	502
11:15 AM	144	33	94	0	1	73	139	484
11:30 AM	115	42	124	0	0	70	150	501
11:45 AM	122	32	109	0	0	68	149	480
Total	513	156	451	0	1	271	575	1967
12:00 PM	160	39	132	0	0	78	149	558
12:15 PM	126	38	141	0	0	64	138	507
12:30 PM	137	35	134	0	1	66	127	500
12:45 PM	160	28	124	0	1	57	141	511
Total	583	140	531	0	2	265	555	2076
01:00 PM	113	34	138	0	0	59	130	474
01:15 PM	132	35	112	0	0	67	142	488
01:30 PM	149	46	97	0	0	46	130	468
01:45 PM	112	24	120	0	0	50	126	432
Total	506	139	467	0	0	222	528	1862
Grand Total	1602	435	1449	0	3	758	1658	5905
Apprch %	78.6	21.4	99.8	0	0.2	31.4	68.6	
Total %	27.1	7.4	24.5	0	0.1	12.8	28.1	
Cars	1599	429	1438	0	3	757	1654	5880
% Cars	99.8	98.6	99.2	0	100	99.9	99.8	99.6
Trucks	3	6	11	0	0	1	4	25
% Trucks	0.2	1.4	0.8	0	0	0.1	0.2	0.4

	North Main Street (Route 11) From North EB			Spaulding Turnpike NB Ramps From East SB				North Main Street (Route 11) From South WB			
Start Time	Thru	Left	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 12:00 PM											
12:00 PM	160	39	199	132	0	0	132	78	149	227	558
12:15 PM	126	38	164	141	0	0	141	64	138	202	507
12:30 PM	137	35	172	134	0	1	135	66	127	193	500
12:45 PM	160	28	188	124	0	1	125	57	141	198	511
Total Volume	583	140	723	531	0	2	533	265	555	820	2076
% App. Total	80.6	19.4		99.6	0	0.4		32.3	67.7		
PHF	.911	.897	.908	.941	.000	.500	.945	.849	.931	.903	.930
Cars	582	137	719	526	0	2	528	265	555	820	2067
% Cars	99.8	97.9	99.4	99.1	0	100	99.1	100	100	100	99.6
Trucks	1	3	4	5	0	0	5	0	0	0	9
% Trucks	0.2	2.1	0.6	0.9	0	0	0.9	0	0	0	0.4

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E: Spaulding Turnpike NB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178DD
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Cars

	North Main Street (Route 11) From North		Spaulding Turnpike NB Ramps From East			North Main Street (Route 11) From South		
Start Time	Thru	Left	Right	Left	U-Turns	Right	Thru	Int. Total
11:00 AM	131	47	122	0	0	59	137	496
11:15 AM	144	33	94	0	1	73	139	484
11:30 AM	115	41	123	0	0	70	150	499
11:45 AM	122	32	107	0	0	68	148	477
Total	512	153	446	0	1	270	574	1956
12:00 PM	160	38	131	0	0	78	149	556
12:15 PM	126	37	140	0	0	64	138	505
12:30 PM	136	35	133	0	1	66	127	498
12:45 PM	160	27	122	0	1	57	141	508
Total	582	137	526	0	2	265	555	2067
01:00 PM	113	34	138	0	0	59	129	473
01:15 PM	132	35	112	0	0	67	141	487
01:30 PM	148	46	96	0	0	46	130	466
01:45 PM	112	24	120	0	0	50	125	431
Total	505	139	466	0	0	222	525	1857
Grand Total	1599	429	1438	0	3	757	1654	5880
Apprch %	78.8	21.2	99.8	0	0.2	31.4	68.6	
Total %	27.2	7.3	24.5	0	0.1	12.9	28.1	

	North Main Street (Route 11) From North			Spaulding Turnpike NB Ramps From East				North Main Street (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 12:00 PM											
12:00 PM	160	38	198	131	0	0	131	78	149	227	556
12:15 PM	126	37	163	140	0	0	140	64	138	202	505
12:30 PM	136	35	171	133	0	1	134	66	127	193	498
12:45 PM	160	27	187	122	0	1	123	57	141	198	508
Total Volume	582	137	719	526	0	2	528	265	555	820	2067
% App. Total	80.9	19.1		99.6	0	0.4		32.3	67.7		
PHF	.909	.901	.908	.939	.000	.500	.943	.849	.931	.903	.929

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E: Spaulding Turnpike NB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178DD
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Trucks

	North Main Street (Route 11) From North		Spaulding Turnpike NB Ramps From East			North Main Street (Route 11) From South		
Start Time	Thru	Left	Right	Left	U-Turns	Right	Thru	Int. Total
11:00 AM	1	2	2	0	0	1	0	6
11:15 AM	0	0	0	0	0	0	0	0
11:30 AM	0	1	1	0	0	0	0	2
11:45 AM	0	0	2	0	0	0	1	3
Total	1	3	5	0	0	1	1	11
12:00 PM	0	1	1	0	0	0	0	2
12:15 PM	0	1	1	0	0	0	0	2
12:30 PM	1	0	1	0	0	0	0	2
12:45 PM	0	1	2	0	0	0	0	3
Total	1	3	5	0	0	0	0	9
01:00 PM	0	0	0	0	0	0	1	1
01:15 PM	0	0	0	0	0	0	1	1
01:30 PM	1	0	1	0	0	0	0	2
01:45 PM	0	0	0	0	0	0	1	1
Total	1	0	1	0	0	0	3	5
Grand Total	3	6	11	0	0	1	4	25
Apprch %	33.3	66.7	100	0	0	20	80	
Total %	12	24	44	0	0	4	16	

	North Main Street (Route 11) From North			Spaulding Turnpike NB Ramps From East				North Main Street (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 11:00 AM											
11:00 AM	1	2	3	2	0	0	2	1	0	1	6
11:15 AM	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	1	1	1	0	0	1	0	0	0	2
11:45 AM	0	0	0	2	0	0	2	0	1	1	3
Total Volume	**1**	**3**	**4**	**5**	**0**	**0**	**5**	**1**	**1**	**2**	**11**
% App. Total	**25**	**75**		**100**	**0**	**0**		**50**	**50**		
PHF	**.250**	**.375**	**.333**	**.625**	**.000**	**.000**	**.625**	**.250**	**.250**	**.500**	**.458**

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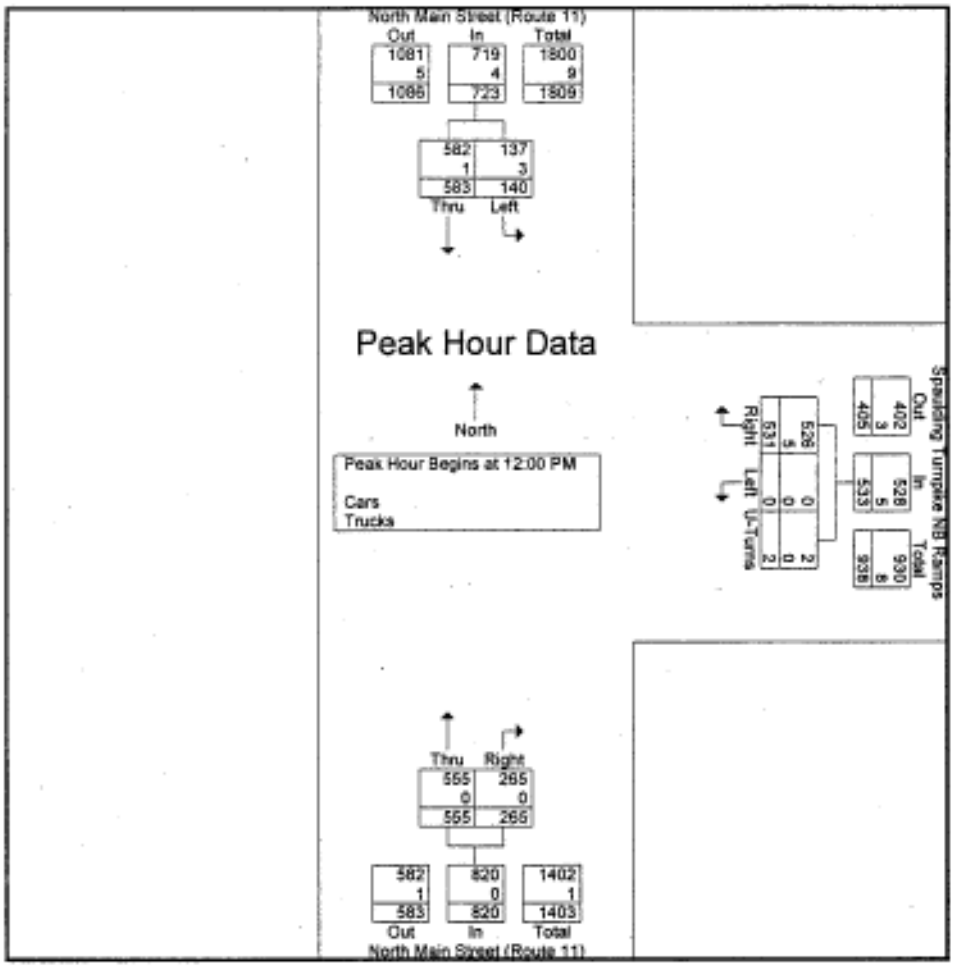
E: Spaulding Turnpike NB Ramps
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178DD
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

	North Main Street (Route 11) From North			Spaulding Turnpike NB Ramps From East				North Main Street (Route 11) From South			
Start Time	Thru	Left	App. Total	Right	Left	U-Turns	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 12:00 PM											
12:00 PM	160	39	199	132	0	0	132	78	149	227	558
12:15 PM	126	38	164	141	0	0	141	64	138	202	507
12:30 PM	137	35	172	134	0	1	135	66	127	193	500
12:45 PM	160	28	188	124	0	1	125	57	141	198	511
Total Volume	583	140	723	531	0	2	533	265	555	820	2076
% App. Total	80.6	19.4		99.6	0	0.4		32.3	67.7		
PHF	.911	.897	.908	.941	.000	.500	.945	.849	.931	.903	.930
Cars	582	137	719	526	0	2	528	265	555	820	2067
% Cars	99.8	97.9	99.4	99.1	0	100	99.1	100	100	100	99.6
Trucks	1	3	4	5	0	0	5	0	0	0	9
% Trucks	0.2	2.1	0.6	0.9	0	0	0.9	0	0	0	0.4



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N/S: North Main Street (Route 11)
E/W: Auto Dealer Driveway/ Ten Rod Road
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178E
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars - Trucks

	North Main Street (Route 11) From North			Auto Dealer Driveway From East			North Main Street (Route 11) From South			Ten Rod Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	2	98	1	0	0	0	1	200	30	59	0	19	410
04:15 PM	6	108	0	1	0	0	0	191	45	45	0	25	421
04:30 PM	6	197	0	0	0	2	0	244	35	75	0	21	580
04:45 PM	6	130	0	0	0	0	0	245	42	67	0	28	518
Total	20	533	1	1	0	2	1	880	152	246	0	93	1929
05:00 PM	3	109	0	0	0	1	0	240	43	81	0	40	517
05:15 PM	5	94	0	0	0	0	0	239	49	83	0	15	485
05:30 PM	7	111	0	0	0	1	0	216	45	63	0	12	455
05:45 PM	4	119	0	0	0	0	0	185	33	83	0	19	443
Total	19	433	0	0	0	2	0	880	170	310	0	86	1900
Grand Total	39	966	1	1	0	4	1	1760	322	556	0	179	3829
Apprch %	3.9	96	0.1	20	0	80	0	84.5	15.5	75.6	0	24.4	
Total %	1	25.2	0	0	0	0.1	0	46	8.4	14.5	0	4.7	
Cars	39	960	1	1	0	4	1	1756	319	554	0	173	3808
% Cars	100	99.4	100	100	0	100	100	99.8	99.1	99.6	0	96.6	99.5
Trucks	0	6	0	0	0	0	0	4	3	2	0	6	21
% Trucks	0	0.6	0	0	0	0	0	0.2	0.9	0.4	0	3.4	0.5

	North Main Street (Route 11) From North EB				Auto Dealer Driveway From East JB				North Main Street (Route 11) From South UB				Ten Rod Road From West NB				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. 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	**6**	**197**	0	**203**	0	0	**2**	**2**	0	244	35	279	75	0	21	96	**580**
04:45 PM	6	130	0	136	0	0	0	0	0	**245**	42	287	67	0	28	95	518
05:00 PM	3	109	0	112	0	0	1	1	0	240	43	283	81	0	**40**	**121**	517
05:15 PM	5	94	0	99	0	0	0	0	0	239	**49**	**288**	**83**	0	15	98	485
Total Volume	20	530	0	550	0	0	3	3	0	968	169	1137	306	0	104	410	2100
% App. Total	3.6	96.4	0		0	0	100		0	85.1	14.9		74.6	0	25.4		
PHF	.833	.673	.000	.677	.000	.000	.375	.375	.000	.988	.862	.987	.922	.000	.650	.847	.905
Cars	20	528	0	548	0	0	3	3	0	965	168	1133	304	0	99	403	2087
% Cars	100	99.6	0	99.6	0	0	100	100	0	99.7	99.4	99.6	99.3	0	95.2	98.3	99.4
Trucks	0	2	0	2	0	0	0	0	0	3	1	4	2	0	5	7	13
% Trucks	0	0.4	0	0.4	0	0	0	0	0	0.3	0.6	0.4	0.7	0	4.8	1.7	0.6

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E/W: Auto Dealer Driveway/ Ten Rod Road
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178E
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Cars

	North Main Street (Route 11) From North			Auto Dealer Driveway From East			North Main Street (Route 11) From South			Ten Rod Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	2	97	1	0	0	0	1	199	29	59	0	19	407
04:15 PM	6	108	0	1	0	0	0	191	44	45	0	24	419
04:30 PM	6	197	0	0	0	2	0	242	34	75	0	20	576
04:45 PM	6	128	0	0	0	0	0	244	42	67	0	28	515
Total	20	530	1	1	0	2	1	876	149	246	0	91	1917
05:00 PM	3	109	0	0	0	1	0	240	43	80	0	37	513
05:15 PM	5	94	0	0	0	0	0	239	49	82	0	14	483
05:30 PM	7	108	0	0	0	1	0	216	45	63	0	12	452
05:45 PM	4	119	0	0	0	0	0	185	33	83	0	19	443
Total	19	430	0	0	0	2	0	880	170	308	0	82	1891
Grand Total	39	960	1	1	0	4	1	1756	319	554	0	173	3808
Apprch %	3.9	96	0.1	20	0	80	0	84.6	15.4	76.2	0	23.8	
Total %	1	25.2	0	0	0	0.1	0	46.1	8.4	14.5	0	4.5	

	North Main Street (Route 11) From North				Auto Dealer Driveway From East				North Main Street (Route 11) From South				Ten Rod Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. 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	**6**	**197**	0	**203**	0	0	**2**	**2**	0	242	34	276	75	0	20	95	**576**
04:45 PM	6	128	0	134	0	0	0	0	0	**244**	42	286	67	0	28	95	515
05:00 PM	3	109	0	112	0	0	1	1	0	240	43	283	80	0	**37**	**117**	513
05:15 PM	5	94	0	99	0	0	0	0	0	239	**49**	**288**	**82**	0	14	96	483
Total Volume	20	528	0	548	0	0	3	3	0	965	168	1133	304	0	99	403	2087
% App. Total	3.6	96.4	0		0	0	100		0	85.2	14.8		75.4	0	24.6		
PHF	.833	.670	.000	.675	.000	.000	.375	.375	.000	.989	.857	.984	.927	.000	.669	.861	.906

PRECISION
D A T A
INDUSTRIES, LLC
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N/S: North Main Street (Route 11)
E/W: Auto Dealer Driveway/ Ten Rod Road
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178E
Site Code : 5149
Start Date : 6/14/2007
Page No : 1

Groups Printed- Trucks

	North Main Street (Route 11) From North			Auto Dealer Driveway From East			North Main Street (Route 11) From South			Ten Rod Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:00 PM	0	1	0	0	0	0	0	1	1	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	2
04:30 PM	0	0	0	0	0	0	0	2	1	0	0	1	4
04:45 PM	0	2	0	0	0	0	0	1	0	0	0	0	3
Total	0	3	0	0	0	0	0	4	3	0	0	2	12
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	3	4
05:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	2
05:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	0	0	0	0	0	0	2	0	4	9
Grand Total	0	6	0	0	0	0	0	4	3	2	0	6	21
Apprch %	0	100	0	0	0	0	0	57.1	42.9	25	0	75	
Total %	0	28.6	0	0	0	0	0	19	14.3	9.5	0	28.6	

	North Main Street (Route 11) From North				Auto Dealer Driveway From East				North Main Street (Route 11) From South				Ten Rod Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. 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	0	0	0	0	0	0	0	0	0	**1**	1	0	0	1	1	2
04:30 PM	0	0	0	0	0	0	0	0	0	**2**	1	**3**	0	0	1	1	**4**
04:45 PM	0	**2**	0	**2**	0	0	0	0	0	1	0	1	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**3**	**4**	4
Total Volume	0	2	0	2	0	0	0	0	0	3	2	5	1	0	5	6	13
% App. Total	0	100	0		0	0	0		0	60	40		16.7	0	83.3		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.375	.500	.417	.250	.000	.417	.375	.813

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File Name : 71178E
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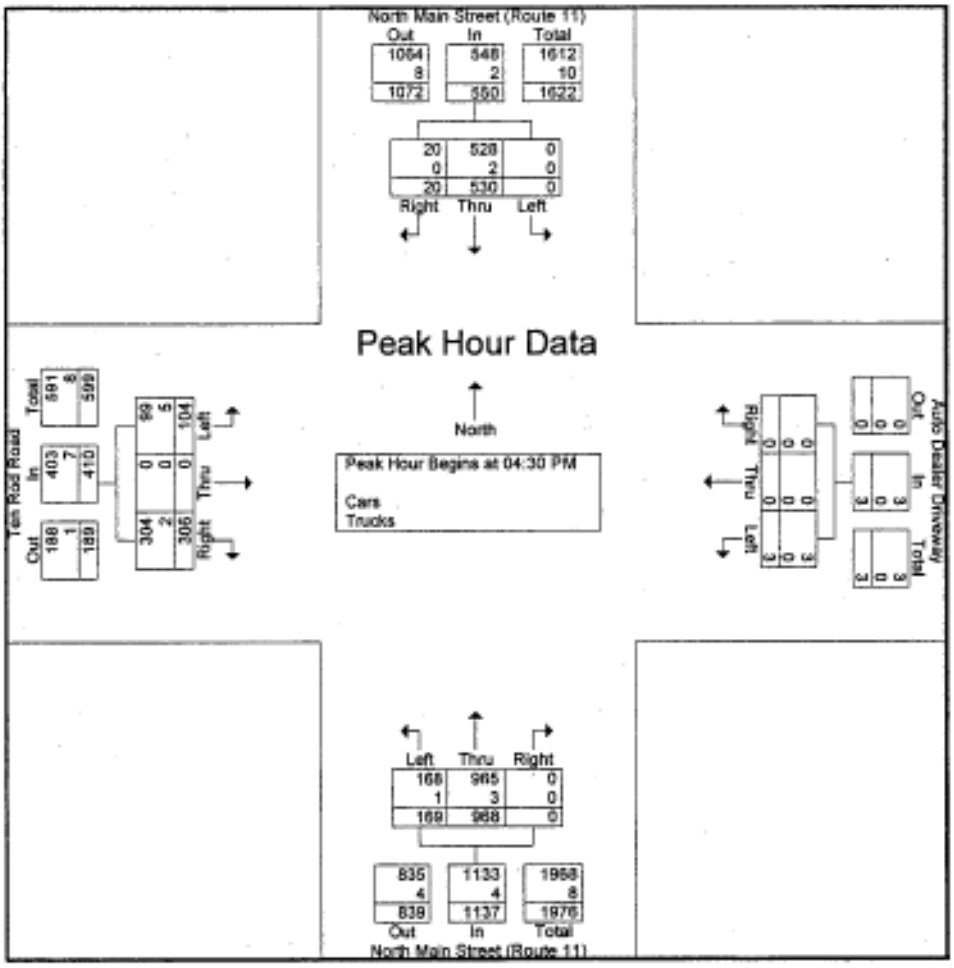
Start Date : 6/14/2007
Page No : 1

	North Main Street (Route 11) From North				Auto Dealer Driveway From East				North Main Street (Route 11) From South				Ten Rod Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. 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	**6**	**197**	0	**203**	0	0	**2**	2	0	244	35	279	75	0	21	96	**580**
04:45 PM	6	130	0	136	0	0	0	0	0	**245**	42	287	67	0	28	95	518
05:00 PM	3	109	0	112	0	0	1	1	0	240	43	283	81	0	**40**	**121**	517
05:15 PM	5	94	0	99	0	0	0	0	0	239	**49**	**288**	**83**	0	15	98	485
Total Volume	20	530	0	550	0	0	3	3	0	968	169	1137	306	0	104	410	2100
% App. Total	3.6	96.4	0		0	0	100		0	85.1	14.9		74.6	0	25.4		
PHF	.833	.673	.000	.677	.000	.000	.375	.375	.000	.988	.862	.987	.922	.000	.650	.847	.905
Cars	20	528	0	548	0	0	3	3	0	965	168	1133	304	0	99	403	2087
% Cars	100	99.6	0	99.6	0	0	100	100	0	99.7	99.4	99.6	99.3	0	95.2	98.3	99.4
Trucks	0	2	0	2	0	0	0	0	0	3	1	4	2	0	5	7	13
% Trucks	0	0.4	0	0.4	0	0	0	0	0	0.3	0.6	0.4	0.7	0	4.8	1.7	0.6



PRECISION
D A T A
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N/S: North Main Street (Route 11)
E/W: Auto Dealer Driveway/ Ten Rod Road
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178EE
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Cars - Trucks

	North Main Street (Route 11) From North			Auto Dealer Driveway From East			North Main Street (Route 11) From South			Ten Rod Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
11:00 AM	6	131	0	0	0	1	1	181	41	74	3	16	454
11:15 AM	1	143	0	0	0	0	0	215	34	55	0	11	459
11:30 AM	2	126	0	0	0	0	0	215	40	54	0	13	450
11:45 AM	5	121	0	0	0	0	0	208	35	67	0	9	445
Total	14	521	0	0	0	1	1	819	150	250	3	49	1808
12:00 PM	3	161	0	1	0	0	0	182	45	72	0	23	487
12:15 PM	0	129	0	0	0	0	1	188	43	79	1	10	451
12:30 PM	3	122	0	0	0	0	1	164	45	67	0	23	425
12:45 PM	4	164	0	0	0	0	0	181	36	81	2	17	485
Total	10	576	0	1	0	0	2	715	169	299	3	73	1848
01:00 PM	3	109	0	0	0	0	1	184	30	74	0	11	412
01:15 PM	2	134	0	0	0	0	0	184	39	74	1	19	453
01:30 PM	3	156	0	0	0	0	0	166	30	65	0	14	434
01:45 PM	3	111	0	0	0	0	1	164	34	78	0	7	398
Total	11	510	0	0	0	0	2	698	133	291	1	51	1697
Grand Total	35	1607	0	1	0	1	5	2232	452	840	7	173	5353
Apprch %	2.1	97.9	0	50	0	50	0.2	83	16.8	82.4	0.7	17	
Total %	0.7	30	0	0	0	0	0.1	41.7	8.4	15.7	0.1	3.2	
Cars	34	1604	0	1	0	1	5	2227	450	835	7	172	5336
% Cars	97.1	99.8	0	100	0	100	100	99.8	99.6	99.4	100	99.4	99.7
Trucks	1	3	0	0	0	0	0	5	2	5	0	1	17
% Trucks	2.9	0.2	0	0	0	0	0	0.2	0.4	0.6	0	0.6	0.3

	North Main Street (Route 11) From North ED				Auto Dealer Driveway From East SD				North Main Street (Route 11) From South WD				Ten Rod Road From West ND				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	3	161	0	164	1	0	0	1	0	182	45	227	72	0	23	95	487
12:15 PM	0	129	0	129	0	0	0	0	1	188	43	232	79	1	10	90	451
12:30 PM	3	122	0	125	0	0	0	0	1	164	45	210	67	0	23	90	425
12:45 PM	4	164	0	168	0	0	0	0	0	181	36	217	81	2	17	100	485
Total Volume	10	576	0	586	1	0	0	1	2	715	169	886	299	3	73	375	1848
% App. Total	1.7	98.3	0		100	0	0		0.2	80.7	19.1		79.7	0.8	19.5		
PHF	.625	.878	.000	.872	.250	.000	.000	.250	.500	.951	.939	.955	.923	.375	.793	.938	.949
Cars	10	575	0	585	1	0	0	1	2	714	169	885	298	3	73	374	1845
% Cars	100	99.8	0	99.8	100	0	0	100	100	99.9	100	99.9	99.7	100	100	99.7	99.8
Trucks	0	1	0	1	0	0	0	0	0	1	0	1	1	0	0	1	3
% Trucks	0	0.2	0	0.2	0	0	0	0	0	0.1	0	0.1	0.3	0	0	0.3	0.2

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N/S: North Main Street (Route 11)
E/W: Auto Dealer Driveway/ Ten Rod Road
City, State: Rochester, NH
Client: VAI/ M. Santos

File Name : 71178EE
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Cars

	North Main Street (Route 11) From North			Auto Dealer Driveway From East			North Main Street (Route 11) From South			Ten Rod Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
11:00 AM	5	131	0	0	0	1	1	180	40	74	3	16	451
11:15 AM	1	143	0	0	0	0	0	215	34	55	0	11	459
11:30 AM	2	125	0	0	0	0	0	215	40	54	0	13	449
11:45 AM	5	121	0	0	0	0	0	207	35	67	0	9	444
Total	13	520	0	0	0	1	1	817	149	250	3	49	1803
12:00 PM	3	161	0	1	0	0	0	182	45	72	0	23	487
12:15 PM	0	129	0	0	0	0	1	188	43	79	1	10	451
12:30 PM	3	121	0	0	0	0	1	163	45	67	0	23	423
12:45 PM	4	164	0	0	0	0	0	181	36	80	2	17	484
Total	10	575	0	1	0	0	2	714	169	298	3	73	1845
01:00 PM	3	109	0	0	0	0	1	183	30	73	0	11	410
01:15 PM	2	134	0	0	0	0	0	183	39	74	1	19	452
01:30 PM	3	155	0	0	0	0	0	166	29	64	0	14	431
01:45 PM	3	111	0	0	0	0	1	164	34	76	0	6	395
Total	11	509	0	0	0	0	2	696	132	287	1	50	1688
Grand Total	34	1604	0	1	0	1	5	2227	450	835	7	172	5336
Apprch %	2.1	97.9	0	50	0	50	0.2	83	16.8	82.3	0.7	17	
Total %	0.6	30.1	0	0	0	0	0.1	41.7	8.4	15.6	0.1	3.2	

	North Main Street (Route 11) From North				Auto Dealer Driveway From East				North Main Street (Route 11) From South				Ten Rod Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	3	161	0	164	**1**	0	0	**1**	0	182	**45**	227	72	0	**23**	95	**487**
12:15 PM	0	129	0	129	0	0	0	0	**1**	**188**	43	**232**	79	1	10	90	451
12:30 PM	3	121	0	124	0	0	0	0	1	163	45	209	67	0	23	90	423
12:45 PM	**4**	**164**	0	**168**	0	0	0	0	0	181	36	217	**80**	**2**	17	**99**	484
Total Volume	10	575	0	585	1	0	0	1	2	714	169	885	298	3	73	374	1845
% App. Total	1.7	98.3	0		100	0	0		0.2	80.7	19.1		79.7	0.8	19.5		
PHF	.625	.877	.000	.871	.250	.000	.000	.250	.500	.949	.939	.954	.931	.375	.793	.944	.947

PRECISION
DATA
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File Name : 71178EE
Site Code : 5149
Start Date : 6/16/2007
Page No : 1

Groups Printed- Trucks

	North Main Street (Route 11) From North			Auto Dealer Driveway From East			North Main Street (Route 11) From South			Ten Rod Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
11:00 AM	1	0	0	0	0	0	0	1	1	0	0	0	3
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	1	1	0	0	0	0	0	2	1	0	0	0	5
12:00 PM	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
12:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
12:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	1	0	0	0	0	0	1	0	1	0	0	3
01:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	2
01:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
01:30 PM	0	1	0	0	0	0	0	0	1	1	0	0	3
01:45 PM	0	0	0	0	0	0	0	0	0	2	0	1	3
Total	0	1	0	0	0	0	0	2	1	4	0	1	9
Grand Total	1	3	0	0	0	0	0	5	2	5	0	1	17
Apprch %	25	75	0	0	0	0	0	71.4	28.6	83.3	0	16.7	
Total %	5.9	17.6	0	0	0	0	0	29.4	11.8	29.4	0	5.9	

	North Main Street (Route 11) From North				Auto Dealer Driveway From East				North Main Street (Route 11) From South				Ten Rod Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 01:00 PM																	
01:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
01:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
01:30 PM	0	1	0	1	0	0	0	0	0	0	1	1	1	0	0	1	3
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	3	3
Total Volume	0	1	0	1	0	0	0	0	0	2	1	3	4	0	1	5	9
% App. Total	0	100	0		0	0	0		0	66.7	33.3		80	0	20		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.500	.250	.750	.500	.000	.250	.417	.750

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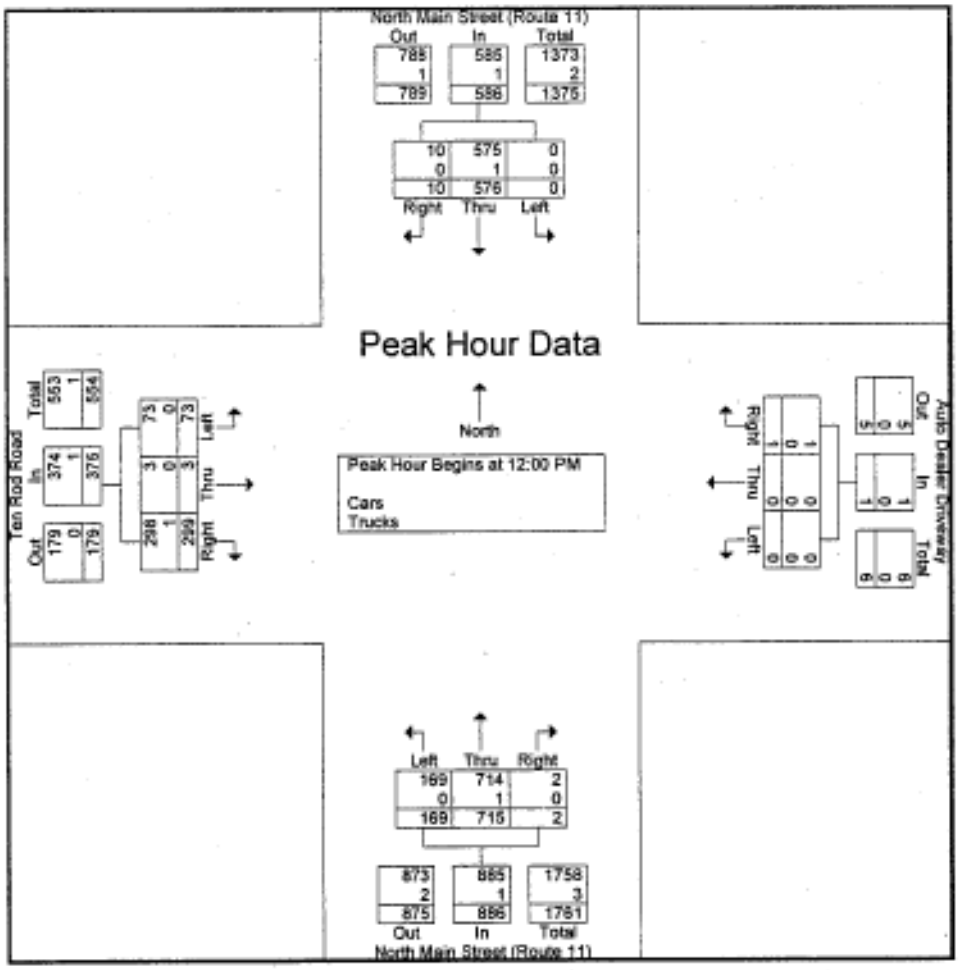
	North Main Street (Route 11) From North				Auto Dealer Driveway From East				North Main Street (Route 11) From South				Ten Rod Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	3	161	0	164	1	0	0	1	0	182	45	227	72	0	23	95	487
12:15 PM	0	129	0	129	0	0	0	0	1	188	43	232	79	1	10	90	451
12:30 PM	3	122	0	125	0	0	0	0	1	164	45	210	67	0	23	90	425
12:45 PM	4	164	0	168	0	0	0	0	0	181	36	217	81	2	17	100	485
Total Volume	10	576	0	586	1	0	0	1	2	715	169	886	299	3	73	375	1848
% App. Total	1.7	98.3	0		100	0	0		0.2	80.7	19.1		79.7	0.8	19.5		
PHF	.625	.878	.000	.872	.250	.000	.000	.250	.500	.951	.939	.955	.923	.375	.793	.938	.949
Cars	10	575	0	585	1	0	0	1	2	714	169	885	298	3	73	374	1845
% Cars	100	99.8	0	99.8	100	0	0	100	100	99.9	100	99.9	99.7	100	100	99.7	99.8
Trucks	0	1	0	1	0	0	0	0	0	1	0	1	1	0	0	1	3
% Trucks	0	0.2	0	0.2	0	0	0	0	0	0.1	0	0.1	0.3	0	0	0.3	0.2



STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

2/26/2007

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF OCTOBER 2005

22 389051 ROCHESTER- NH 11 (HENRY WILSON HWY) AT FARMINGTON TL (EB-WB)(21389128-389129)

MN-	DY	-D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
10	23	1	135	79	44	32	52	67	133	254	360	587	836	952	1108	1074	750	914	908	815	722	571	437	264	178	108	11380
10	18	3	94	50	57	70	161	466	865	1096	1027	808	796	835	836	852	905	1138	1357	1058	1010	625	494	333	251	138	15322
10	19	4	107	52	52	65	163	440	857	1146	992	817	778	799	860	928	848	1098	1330	1200	942	660	475	393	260	157	15419
10	20	5	111	62	63	77	156	439	888	1151	974	846	830	839	749	897	949	1083	1341	1330	1006	687	522	412	290	150	15852
10	21	6	110	60	66	54	130	377	789	1082	1007	881	857	875	954	996	1143	1237	1266	1348	1200	863	645	454	366	310	17070

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
22	389051	2005	October	5	11380	15916	0	*	*		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	587	1108	914
WEEKDAY	1119	918	1344
SATURDAY	*	*	*

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

2/26/2007

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF OCTOBER 2005

21 389128 ROCHESTER- NH 11 (HENRY WILSON HWY) EB AT FARMINGTON TL(22389051) WB

MN-	DY	-D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
10	23	1	98	51	26	20	20	15	36	78	126	220	290	399	478	489	359	458	463	434	423	335	264	152	80	72	5386
10	18	3	77	38	30	27	40	87	180	330	336	313	330	373	387	398	444	637	817	682	609	413	319	218	175	104	7364
10	19	4	87	40	29	30	55	80	185	321	292	320	329	348	397	423	445	641	800	800	593	433	333	273	171	116	7541
10	20	5	89	41	30	38	43	92	171	341	320	347	353	370	317	443	449	641	807	849	614	458	374	277	185	110	7759
10	21	6	86	40	36	28	37	69	150	317	323	354	386	397	513	521	620	681	769	815	681	527	433	299	246	239	8567

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
21	389128	2005	October	5	5386	7808	0	*	*		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	220	489	463
WEEKDAY	340	446	820
SATURDAY	*	*	*

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

2/26/2007

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF OCTOBER 2005

21 389129 ROCHESTER- NH 11 (HENRY WILSON HWY) WB AT FARMINGTON TL(22389051) EB

MN-	DY	-D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
10	23	1	37	28	18	12	32	52	97	176	234	367	546	553	630	585	391	456	445	381	299	236	173	112	98	36	5994
10	18	3	17	12	27	43	121	379	685	766	691	495	466	462	449	454	461	501	540	376	401	212	175	115	76	34	7958
10	19	4	20	12	23	35	108	360	672	825	700	497	449	451	463	505	403	457	530	400	349	227	142	120	89	41	7878
10	20	5	22	21	33	39	113	347	717	810	654	499	477	469	432	454	500	442	534	481	392	229	148	135	105	40	8093
10	21	6	24	20	30	26	93	308	639	765	684	527	471	478	441	475	523	556	497	533	519	336	212	155	120	71	8503

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
21	389129	2005	October	5	5994	8108	0	*	*		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	367	630	456
WEEKDAY	792	482	540
SATURDAY	*	*	*

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

2/26/2007

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2004

82 389096 ROCHESTER- LITTLE FALLS BRIDGE OVER COCHECO RIVER(81389140-389141)(SB-NB)

MN-	DY	-D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
8	15	1	33	21	15	8	3	13	35	91	116	208	301	413	459	449	439	413	340	277	249	169	128	57	35	21	4291
8	16	2	9	6	10	15	21	77	170	194	225	224	260	275	285	293	301	321	416	349	264	222	122	79	34	17	4189
8	17	3	17	7	9	11	26	81	188	218	227	240	252	239	288	275	300	326	394	368	281	226	198	107	51	24	4353
8	12	5	22	8	7	15	24	81	160	213	184	223	230	272	301	289	309	359	412	413	320	283	203	102	42	33	4505
8	13	6	12	13	14	18	23	63	172	212	216	203	290	300	331	311	340	403	383	441	414	289	206	137	63	52	4906
8	14	7	26	17	7	5	7	26	96	171	255	334	427	486	468	429	389	421	411	319	282	270	166	124	87	27	5250

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
82	389096	2004	August	6	4291	4488	5250	4555	141196		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	208	459	439
WEEKDAY	226	303	416
SATURDAY	334	486	421

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2004

2/26/2007

81 389140 ROCHESTER- LITTLE FALLS BRIDGE SB OVER COCHECO RIVER(82389096)

MN-	DY	-D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
8	15	1	13	6	7	1	3	8	19	57	60	102	164	232	238	255	250	217	160	150	125	80	62	30	20	11	2270
8	16	2	0	2	3	9	19	57	103	116	118	109	131	122	126	119	126	157	154	168	125	114	60	35	10	10	1993
8	17	3	8	3	1	8	20	62	122	125	127	107	129	99	129	125	140	142	148	165	142	118	85	61	21	15	2102
8	12	5	12	3	2	8	21	64	101	133	98	124	126	114	158	134	145	144	174	183	152	153	102	54	21	19	2245
8	13	6	5	4	7	8	19	46	112	134	120	99	121	145	150	137	164	164	161	195	183	140	98	67	25	25	2329
8	14	7	13	8	4	3	4	19	61	97	152	167	236	251	231	228	186	218	218	166	139	127	88	62	27	12	2717

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389140	2004	August	6	2270	2167	2717	2255	69898		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	102	255	250
WEEKDAY	128	142	178
SATURDAY	167	251	218

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2004

2/26/2007

81 389141 ROCHESTER- LITTLE FALLS BRIDGE NB OVER COCHECO RIVER(82389096)

MN	DY	D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
8	15	1	20	15	8	7	0	5	16	34	56	108	137	181	221	194	189	196	180	127	124	89	64	27	15	10	2021
8	16	2	9	4	7	6	2	20	67	78	107	115	129	153	159	174	175	164	262	181	139	108	62	44	24	7	2196
8	17	3	9	4	8	3	6	19	66	93	100	133	123	140	159	150	160	184	246	203	139	108	113	46	30	9	2251
8	12	5	10	5	5	7	3	17	59	80	86	99	104	158	143	155	164	215	238	230	168	130	101	48	21	14	2260
8	13	6	7	9	7	10	4	17	60	78	96	104	169	155	181	174	176	239	222	246	231	149	108	70	38	27	2577
8	14	7	13	9	3	2	3	7	35	74	103	167	191	235	237	201	203	203	193	153	143	143	78	62	60	15	2533

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389141	2004	August	6	2021	2321	2533	2300	71299		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	106	221	196
WEEKDAY	113	168	248
SATURDAY	167	237	203

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF JUNE 2003

2/26/2007

81 389195 ROCHESTER- SPAULDING TPK NB OFF RAMP EXIT 15

MN	DY	D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
6	1	1	67	43	33	14	12	14	28	71	101	109	186	177	220	213	242	224	231	229	188	153	121	105	38	45	2864
6	8	1	81	30	20	13	18	13	49	88	138	205	283	360	328	391	288	316	276	258	305	194	153	107	56	58	4028
6	2	2	21	9	8	13	22	62	184	260	224	215	223	274	240	268	308	493	593	588	316	180	158	139	105	66	4969
6	9	2	26	8	10	11	21	51	171	257	244	197	220	233	279	278	382	472	564	546	318	212	174	122	101	78	4975
6	3	3	48	20	20	8	15	57	191	306	247	255	261	217	261	267	349	497	607	590	348	212	188	125	93	65	5247
6	4	4	45	24	18	14	24	60	182	239	248	237	237	244	254	225	325	479	572	529	348	214	183	159	118	80	5058
6	5	5	55	27	14	15	27	64	163	292	255	227	246	269	252	269	352	510	594	515	342	251	182	161	167	116	5365
6	6	6	73	27	19	16	18	66	188	282	287	299	318	305	317	391	451	548	548	492	412	332	270	230	176	140	6205
6	7	7	83	27	25	17	18	47	89	178	313	366	414	413	432	344	333	333	321	296	226	205	197	140	136	113	5066

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389195	2003	June	9	3446	5303	5066	4962	148860		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	157	306	279
WEEKDAY	277	289	580
SATURDAY	366	432	333

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF JUNE 2003

2/26/2007

81 389196 ROCHESTER- SPAULDING TPK NB ON RAMP EXIT 15

MN-	DY	-D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
6	12	5	25	26	15	25	15	40	124	174	197	231	239	273	288	225	316	319	517	479	316	276	196	127	69	36	4548
6	13	6	53	32	26	35	13	40	103	173	207	256	295	289	377	372	346	424	526	615	454	239	219	145	90	40	5369

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389196	2003	June	2	0	4958	0	*	*		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	*	*	*
WEEKDAY	244	332	566
SATURDAY	*	*	*

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF JUNE 2003

2/26/2007

81 389197 ROCHESTER- SPAULDING TPK SB OFF RAMP EXIT 15

MN-	DY	-D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
6	1	1	18	12	2	4	6	4	12	23	36	91	105	117	133	100	91	92	86	75	52	58	47	13	14	6	1197
6	8	1	13	7	4	4	3	7	24	28	61	101	128	157	131	140	109	111	96	102	84	82	41	27	12	7	1479
6	2	2	3	0	2	12	11	33	53	81	70	92	89	76	80	70	89	92	82	82	64	58	41	18	16	3	1217
6	9	2	3	0	4	3	15	38	63	95	87	88	94	84	89	97	92	75	121	82	69	63	43	22	16	9	1352
6	3	3	4	1	4	6	19	46	53	74	69	83	82	89	82	86	91	98	87	81	67	47	35	24	14	6	1248
6	4	4	5	4	5	3	7	30	63	76	82	81	69	72	81	85	88	84	89	79	67	53	41	19	13	12	1208
6	5	5	2	4	4	3	13	38	51	72	82	92	81	88	77	82	95	95	103	86	77	47	37	33	20	26	1308
6	6	6	5	8	6	8	4	34	56	78	103	105	114	113	82	107	99	121	118	123	76	61	67	40	21	14	1563
6	7	7	10	10	6	2	15	12	28	81	88	134	152	118	107	104	119	100	104	95	62	64	32	21	19	13	1496

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389197	2003	June	9	1338	1316	1496	1344	40310		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	96	145	102
WEEKDAY	92	94	104
SATURDAY	134	152	119

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

2/26/2007

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF JUNE 2003

81 389198 ROCHESTER- SPAULDING TPK SB ON RAMP EXIT 15

IMN-	DY	-D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
6	1	1	34	43	26	34	23	43	55	90	161	231	332	394	422	372	348	345	270	238	217	170	94	101	58	16	4117
6	8	1	33	38	32	40	23	54	93	83	167	299	333	414	411	389	385	446	460	468	371	313	234	164	121	86	5457
6	2	2	14	4	14	35	112	348	641	680	420	338	291	270	291	303	355	327	370	321	235	143	113	81	51	27	5784
6	9	2	17	16	22	33	100	352	687	646	430	355	327	335	334	344	328	377	330	331	213	145	111	75	83	31	6022
6	3	3	25	14	12	35	108	332	647	673	465	414	326	291	298	297	359	371	362	345	247	169	130	90	56	35	6101
6	4	4	17	30	21	30	104	384	656	689	459	329	292	281	283	281	318	373	376	340	230	141	128	92	67	27	5948
6	5	5	25	53	23	32	101	349	645	695	498	315	334	295	291	293	351	352	408	310	253	135	115	83	65	39	6060
6	6	6	48	65	61	40	97	331	603	631	426	371	336	307	354	316	374	402	426	388	273	191	177	132	105	66	6520
6	7	7	28	43	21	17	44	120	167	232	239	315	344	330	377	412	406	392	339	309	262	200	166	131	94	64	5052

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389198	2003	June	9	4787	6072	5052	5722	171666		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	265	418	408
WEEKDAY	676	326	388
SATURDAY	315	412	406

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRANSPORTATION PLANNING

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF SEPTEMBER 2004

2/26/2007

82 389032 ROCHESTER- NH 11 NORTH OF SPAULDING TURNPIKE

MN	DY	D	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-0	DAILY TOTAL
9	13	2	63	36	44	93	231	609	1291	1595	1419	1285	1387	1494	1500	1422	1565	1714	1920	1786	1235	934	740	457	246	175	23241
9	14	3	92	47	58	92	206	648	1228	1634	1429	1365	1332	1449	1451	1433	1553	1730	2066	1907	1340	978	732	446	266	173	23655
9	15	4	93	58	71	117	201	648	1216	1566	1447	1388	1350	1427	1514	1472	1551	1789	2080	1875	1339	990	718	488	279	245	23922
9	16	5	161	83	110	122	209	651	1241	1598	1461	1309	1373	1449	1507	1434	1615	1779	2053	1779	1368	1023	733	566	309	239	24172
9	17	6	168	120	97	116	192	562	1189	1618	1506	1503	1588	1639	1752	1663	1818	1887	1998	1993	1579	1091	833	615	585	318	26430

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
82	389032	2004	September	5	0	24284	0	*	*		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	*	*	*
WEEKDAY	1602	1545	2023
SATURDAY	*	*	*

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRAFFIC

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2007

6/26/2008

81 389195 ROCHESTER- SPAULDING TPK NB OFF RAMP EXIT 15

MON	DATE	DAY	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
8	26	1	50	30	16	7	16	16	49	80	136	246	319	400	357	291	265	282	301	285	238	199	106	107	44	48	3888
8	27	2	25	11	10	15	19	64	145	296	227	219	252	296	270	297	372	525	486	515	351	182	127	107	92	55	4957
8	22	4	62	35	19	13	21	70	156	212	257	256	290	307	293	264	358	500	521	551	366	218	203	155	115	82	5324
8	23	5	62	28	21	16	14	53	148	241	235	245	277	294	307	317	359	509	499	518	402	256	231	187	122	80	5421
8	24	6	73	26	21	12	16	61	145	244	257	309	342	340	364	359	409	440	475	450	389	328	332	232	162	136	5922
8	25	7	81	42	23	19	21	33	80	187	302	400	472	464	428	397	343	375	318	278	236	213	208	157	125	84	5286

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389195	2007	August	6	3888	5408	5286	5195	161034		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	246	400	301
WEEKDAY	277	321	517
SATURDAY	400	472	375

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRAFFIC

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2007

6/26/2008

81 389196 ROCHESTER- SPAULDING TPK NB ON RAMP EXIT 15

MON	DATE	DAY	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
8	26	1	32	22	7	9	10	14	38	64	120	227	277	331	352	329	269	271	236	252	187	174	132	82	76	63	3572
8	27	2	19	19	8	10	15	57	118	192	203	191	201	222	336	258	247	347	455	417	243	183	153	81	50	30	4055
8	22	4	14	9	6	28	15	57	131	162	211	218	281	269	282	253	313	338	482	455	300	182	132	97	39	23	4297
8	23	5	26	9	10	27	13	46	118	155	187	224	235	267	320	301	303	346	524	517	307	203	137	95	61	35	4466
8	24	6	28	17	4	20	20	53	120	170	169	261	310	369	407	362	405	453	447	455	380	267	216	135	70	45	5183
8	25	7	36	31	10	6	13	27	61	111	185	290	412	396	400	333	328	295	262	263	237	222	128	105	78	49	4278

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389196	2007	August	6	3572	4500	4278	4352	134906		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	227	352	271
WEEKDAY	226	336	479
SATURDAY	290	412	328

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRAFFIC

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2007

6/26/2008

81 389197 ROCHESTER- SPAULDING TPK SB OFF RAMP EXIT 15

MON	DATE	DAY	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
8	26	1	6	7	6	4	1	1	16	24	61	94	115	150	154	134	121	97	148	126	92	112	95	22	14	6	1606
8	27	2	2	6	3	0	8	24	52	96	57	73	73	91	84	80	72	83	90	78	66	38	28	17	8	4	1133
8	22	4	3	3	6	0	7	24	41	70	72	110	78	84	66	101	75	85	106	79	56	51	35	28	20	4	1204
8	23	5	4	2	2	14	11	22	42	64	85	92	89	111	86	83	88	85	93	96	56	50	40	20	12	21	1268
8	24	6	10	2	5	2	7	22	30	60	56	81	89	103	125	85	82	90	101	138	104	66	52	28	17	10	1365
8	25	7	9	6	3	4	5	15	24	41	69	123	114	133	151	105	90	74	97	100	83	56	55	34	27	9	1427

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389197	2007	August	6	1606	1242	1427	1313	40710		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	94	154	148
WEEKDAY	95	107	108
SATURDAY	123	151	100

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRAFFIC

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2007

6/26/2008

81 389198 ROCHESTER- SPAULDING TPK SB ON RAMP EXIT 15

MON	DATE	DAY	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
8	26	1	10	3	1	3	6	16	22	26	56	80	118	110	115	128	102	104	78	84	99	101	53	52	49	29	1445
8	27	2	21	18	21	10	30	79	142	181	122	145	133	151	139	113	118	155	152	173	96	83	72	23	22	10	2209
8	22	4	5	4	4	11	17	72	139	156	174	113	124	123	131	137	136	198	195	189	96	52	55	25	13	7	2176
8	23	5	6	2	3	16	27	67	134	193	164	143	108	136	137	138	119	158	162	215	109	65	42	27	23	9	2203
8	24	6	3	5	6	10	26	66	112	160	127	136	129	162	155	134	143	137	148	149	90	44	48	39	18	12	2059
8	25	7	5	4	6	8	11	22	34	64	66	98	108	129	99	114	80	72	88	74	74	78	42	41	24	13	1354

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389198	2007	August	6	1445	2162	1354	1965	60916		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	80	128	104
WEEKDAY	177	147	184
SATURDAY	98	129	88

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

Low
AM should be 600+
PM - 350+

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRAFFIC

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2007

6/26/2008

82 389032 ROCHESTER- NH 11 NORTH OF SPAULDING TURNPIKE

MON	DATE	DAY	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
8	14	3	127	97	70	84	175	555	1136	1382	1375	1452	1471	1513	1528	1457	1504	1687	1913	1836	1496	1128	856	632	365	204	24042
8	15	4	122	84	72	84	171	537	1080	1426	1400	1428	1542	1532	1525	1540	1535	1729	1913	1883	1461	1128	952	646	436	269	24495
8	16	5	150	96	72	99	158	549	1132	1469	1377	1378	1462	1548	1537	1495	1519	1730	1837	1970	1652	1200	946	659	422	266	24722

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
82	389032	2007	August	3	0	24420	0	*	*		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	*	*	*
WEEKDAY	1450	1539	1932
SATURDAY	*	*	*

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRAFFIC

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2007

6/26/2008

81 389192 ROCHESTER- SPAULDING TPK NB OFF RAMP EXIT 14

MON	DATE	DAY	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
8	26	1	25	11	9	4	6	7	15	29	57	80	86	103	120	104	81	112	112	99	84	98	79	57	45	54	1477
8	27	2	32	21	14	5	9	45	70	172	111	118	117	137	142	123	145	224	237	203	142	115	135	48	51	24	2440
8	22	4	20	9	8	4	9	43	79	184	163	95	110	131	140	126	172	229	200	199	138	101	86	54	26	19	2345
8	23	5	17	6	3	11	7	45	74	174	130	122	123	141	150	148	166	191	190	194	175	118	71	60	35	35	2386
8	24	6	20	9	4	11	8	34	69	163	124	104	137	160	173	115	123	115	158	115	130	107	121	81	48	38	2167
8	25	7	25	9	9	6	6	13	18	57	67	106	101	103	114	132	125	122	111	92	96	92	62	45	29	26	1566

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389192	2007	August	6	1477	2334	1566	2125	65866		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:	
SUNDAY	80	120	112	AM - 6 AM TO 10 AM
WEEKDAY	173	151	204	MIDDAY - 10 AM TO 2 PM
SATURDAY	106	132	125	PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRAFFIC

6/26/2008

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF AUGUST 2007

81 389193 ROCHESTER- SPAULDING TPK SB OFF RAMP EXIT 14

MON	DATE	DAY	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
8	26	1	7	15	0	3	4	11	33	37	84	124	133	114	100	97	68	55	67	64	76	84	36	42	22	7	1283
8	27	2	2	9	3	5	24	84	99	127	133	112	91	143	138	107	111	126	152	135	84	94	61	35	16	16	1907
8	22	4	0	2	2	7	20	91	97	135	130	114	112	141	122	129	101	156	140	130	82	87	64	31	15	9	1917
8	23	5	0	4	7	10	21	101	90	138	115	103	128	126	125	133	115	124	158	135	86	91	58	34	13	6	1921
8	24	6	6	3	1	8	24	60	93	138	142	138	148	135	133	139	127	139	154	125	123	99	72	41	25	13	2086
8	25	7	11	3	3	6	8	27	47	81	77	109	156	146	131	118	119	109	119	97	80	84	70	35	33	17	1685

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389193	2007	August	6	1283	1958	1685	1835	56900		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	124	133	84
WEEKDAY	137	141	155
SATURDAY	109	156	119

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

STATE OF NEW HAMPSHIRE, DEPARTMENT OF TRANSPORTATION - BUREAU OF TRAFFIC

6/26/2008

IN COOPERATION WITH U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

AUTOMATIC TRAFFIC RECORDER DATA FOR THE MONTH OF JUNE 2003

81 389194 ROCHESTER- SPAULDING TPK SB ON RAMP EXIT 14

MON	DATE	DAY	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Total
6	1	1	14	8	2	5	6	10	13	18	43	58	68	124	108	99	105	82	74	77	43	30	30	16	18	7	1058
6	8	1	5	7	6	1	8	12	24	26	40	70	99	105	109	92	95	98	114	115	90	70	48	20	18	5	1277
6	2	2	4	4	3	6	24	59	111	182	143	76	113	112	149	116	139	148	191	233	112	57	51	37	15	6	2091
6	9	2	5	4	5	3	27	71	125	160	148	113	80	122	110	99	111	144	179	243	102	60	45	29	20	8	2013
6	3	3	4	4	6	9	20	58	125	171	153	106	91	135	118	115	108	131	194	222	110	51	39	35	23	4	2032
6	4	4	4	5	6	8	23	65	128	152	159	102	108	129	125	111	110	138	179	220	97	61	64	32	15	10	2051
6	5	5	5	4	9	7	25	71	130	156	172	122	120	109	132	107	116	142	179	217	104	78	49	26	18	8	2106
6	6	6	1	2	10	8	20	50	117	152	158	121	118	140	156	135	125	140	163	208	102	71	62	43	30	8	2140
6	7	7	11	4	8	1	12	15	48	56	63	91	99	95	125	88	117	106	102	84	53	61	38	27	24	8	1336

TYPE	STATION	YEAR	MONTH	NO. DAYS	AVERAGE SUNDAY	AVERAGE WEEKDAY	AVERAGE SATURDAY	AVERAGE DAILY	COMPUTED VOLUME	PERCENT GAIN	PERCENT LOSS
81	389194	2003	June	9	1168	2072	1336	1823	54697		

PEAK HOUR VOLUMES:

	AVERAGE AM:	AVERAGE MIDDAY:	AVERAGE PM:
SUNDAY	64	116	110
WEEKDAY	167	137	224
SATURDAY	91	125	117

AM - 6 AM TO 10 AM
MIDDAY - 10 AM TO 2 PM
PM - 2 PM TO 8 PM

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 82389032

Counted By: SRPC
ATR #: 82389032
Location: NH 11 N of Spld Tpk
City/Town: Rochester

Rt 11 N of Spldg DOT

Start Time	13-Aug-07 Southbo	13-Aug-07 Northbo	Tue Southbo	Tue Northbo	Wed Southbo	Wed Northbo	Thu Southbo	Thu Northbo	Fri Southbo	Fri Northbo	Sat Southbo	Sat Northbo	Sun Southbo	Sun Northbo	Weekday Average Southbo	Weekday Average Northbo
12:00 AM	*	*	34	93	46	76	52	98	132	132	*	*	*	*	66	100
01:00	*	*	33	64	31	53	42	53	33	54	*	*	*	*	35	56
02:00	*	*	36	34	31	41	33	39	32	28	*	*	*	*	33	36
03:00	*	*	55	29	52	32	59	40	58	43	*	*	*	*	56	36
04:00	*	*	129	46	131	40	122	36	121	45	*	*	*	*	126	42
05:00	*	*	446	109	429	108	424	125	344	101	*	*	*	*	411	111
06:00	*	*	878	258	852	228	862	270	**781**	**270**	*	*	*	*	843	256
07:00	*	*	**1011**	371	**1015**	411	**1070**	399	*	*	*	*	*	*	**1032**	394
08:00	*	*	836	539	900	500	842	535	*	*	*	*	*	*	859	525
09:00	*	*	816	636	786	642	737	641	*	*	*	*	*	*	780	640
10:00	773	677	789	682	841	**701**	753	709	*	*	*	*	*	*	789	692
11:00	**884**	**687**	746	**767**	839	693	817	**731**	*	*	*	*	*	*	822	**720**
12:00 PM	771	704	**823**	705	794	731	756	781	*	*	*	*	*	*	786	730
01:00	790	776	774	683	820	720	803	692	*	*	*	*	*	*	797	718
02:00	**842**	739	790	714	812	723	757	762	*	*	*	*	*	*	**800**	734
03:00	819	865	720	967	**825**	904	**810**	920	*	*	*	*	*	*	794	914
04:00	788	**1088**	778	**1135**	788	**1125**	768	1069	*	*	*	*	*	*	780	1104
05:00	726	1057	740	1096	773	1110	798	**1172**	*	*	*	*	*	*	759	**1108**
06:00	645	834	668	828	652	809	687	965	*	*	*	*	*	*	663	859
07:00	536	489	517	611	550	578	602	598	*	*	*	*	*	*	551	569
08:00	402	412	395	461	458	494	437	509	*	*	*	*	*	*	423	469
09:00	261	292	307	325	299	347	259	400	*	*	*	*	*	*	282	341
10:00	176	207	164	201	193	243	173	249	*	*	*	*	*	*	176	225
11:00	84	148	63	141	80	189	133	133	*	*	*	*	*	*	90	153
Total	8497	8975	12548	11494	12997	11498	12796	11926	1501	673	0	0	0	0	12753	11532
Day	17472		24042		24495		24722		2174		0		0		24285	
AM Peak	11:00	11:00	07:00	11:00	07:00	10:00	07:00	11:00	06:00	06:00					07:00	11:00
Vol.	884	687	1011	767	1015	701	1070	731	781	270					1032	720
PM Peak	14:00	16:00	12:00	16:00	15:00	16:00	15:00	17:00							14:00	17:00
Vol.	842	1088	823	1135	825	1125	810	1172							800	1108
Comb. Total	17472		24042		24495		24722		2174		0		0		24285	

ADT Not Calculated

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 070241-1

Counted By: RWL
ATR #: 5228
Location: Rte 11 N of Spldg TPK
City/Town: Rochester, NH

Tubes pulled up

Rt 11 N of Spldg

Start Time	24-Sep-07 Channel	Channel	Tue Channel	Channel	Wed Channel	Channel	Thu Channel	Channel	Fri Channel	Channel	Sat Channel	Channel	Sun Channel	Channel	Weekday Average Channel	Channel
12:00 AM	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
01:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
02:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
03:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
04:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
05:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
06:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
07:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
08:00	*	*	*	*	*	*	0	0	0	0	0	0	0	0	0	0
09:00	*	*	*	*	663	622	0	0	0	0	0	0	0	0	221	207
10:00	*	*	*	*	662	677	0	0	0	0	0	0	0	0	221	226
11:00	*	*	*	*	**723**	**684**	0	0	0	0	0	0	0	0	**241**	**228**
12:00 PM	*	*	*	*	704	674	0	0	0	0	0	0	0	0	235	225
01:00	*	*	*	*	755	1013	0	0	0	0	0	0	0	0	252	338
02:00	*	*	*	*	1575	**1100**	0	0	0	0	0	0	0	0	525	**367**
03:00	*	*	*	*	**1710**	574	**1**	0	0	0	0	0	0	0	**570**	191
04:00	*	*	*	*	428	268	0	0	0	0	0	0	0	0	143	89
05:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
06:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
07:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
08:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
09:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
10:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
11:00	*	*	*	*	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	7220	5612	1	0	0	0	0	0	0	0	2408	1871
Day	0		0		12832		1		0		0		0		4279	
AM Peak					11:00	11:00									11:00	11:00
Vol.					723	684									241	228
PM Peak					15:00	14:00	15:00								15:00	14:00
Vol.					1710	1100	1								570	367

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 070241-1

Counted By: RWL
ATR #: 5228
Location: Rte 11 N of Spldg TPK
City/Town: Rochester, NH

Tubes pulled up

Rt 11 N of Spldg

Start Time	01-Oct-07 Channel	Channel	Tue Channel	Channel	Wed Channel	Channel	Thu Channel	Channel	Fri Channel	Channel	Sat Channel	Channel	Sun Channel	Channel	Weekday Average Channel	Channel
12:00 AM	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
01:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
02:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
03:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
04:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
05:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
06:00	0	0	3	1	0	0	0	0	*	*	*	*	*	*	1	0
07:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
08:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
09:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
10:00	0	0	0	0	0	0	0	0	*	*	*	*	*	*	0	0
11:00	0	2	0	0	0	0	*	*	*	*	*	*	*	*	0	1
12:00 PM	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
01:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
02:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
03:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
04:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
05:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
06:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
07:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
08:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
09:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
10:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
11:00	0	0	0	0	0	0	*	*	*	*	*	*	*	*	0	0
Total	0	2	3	1	0	0	0	0	0	0	0	0	0	0	1	1
Day	2		4		0		0		0		0		0		2	
AM Peak		11:00	06:00	06:00											06:00	11:00
Vol.		2	3	1											1	1
PM Peak																
Vol.																
Comb. Total	2		4		12832		1		0		0		0		4281	
ADT	Not Calculated															

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 070241-2

Counted By: RWL
ATR #: 6558
Location: N Main N of Ten Rod Road
City/Town: Rochester

RT 11 N OF TEN ROD ROAD

Start Time	24-Sep-07 NB	24-Sep-07 SB	Tue NB	Tue SB	Wed NB	Wed SB	Thu NB	Thu SB	Fri NB	Fri SB	Sat NB	Sat SB	Sun NB	Sun SB	Weekday Average NB	Weekday Average SB
12:00 AM	*	*	*	*	*	*	29	20	44	14	49	23	48	33	36	17
01:00	*	*	*	*	*	*	18	10	25	7	30	17	34	16	22	8
02:00	*	*	*	*	*	*	21	10	18	11	16	8	16	10	20	10
03:00	*	*	*	*	*	*	29	44	47	43	14	11	9	9	38	44
04:00	*	*	*	*	*	*	44	42	35	25	19	23	18	17	40	34
05:00	*	*	*	*	*	*	249	112	144	105	60	39	65	35	196	108
06:00	*	*	*	*	*	*	219	275	213	264	119	97	79	53	216	270
07:00	*	*	*	*	*	*	359	340	346	348	246	184	157	123	352	344
08:00	*	*	*	*	*	*	370	331	429	378	422	263	285	222	400	354
09:00	*	*	*	*	*	*	369	290	494	401	515	376	464	279	432	346
10:00	*	*	*	*	*	*	426	326	598	436	646	445	656	341	512	381
11:00	*	*	*	*	514	356	536	347	574	432	705	451	623	410	541	378
12:00 PM	*	*	*	*	614	386	561	399	700	485	695	431	683	369	625	423
01:00	*	*	*	*	539	357	503	343	661	390	653	418	650	394	568	363
02:00	*	*	*	*	498	354	530	365	657	421	653	399	527	410	562	380
03:00	*	*	*	*	655	313	689	364	785	362	577	424	523	399	710	346
04:00	*	*	*	*	764	476	810	462	903	376	563	361	511	387	826	438
05:00	*	*	*	*	733	358	810	454	842	395	606	361	449	287	795	402
06:00	*	*	*	*	526	278	565	356	646	416	507	349	390	276	579	350
07:00	*	*	*	*	374	261	388	246	473	324	392	266	287	200	412	277
08:00	*	*	*	*	278	177	296	134	329	208	303	193	227	137	301	173
09:00	*	*	*	*	179	114	158	107	241	149	184	115	108	82	193	123
10:00	*	*	*	*	92	62	107	78	176	87	129	72	57	57	125	76
11:00	*	*	*	*	45	24	70	40	120	53	100	40	36	25	78	39
Total	0	0	0	0	5811	3516	8156	5495	9500	6130	8203	5366	6892	4571	8579	5684
Day	0		0		9327		13651		15630		13569		11463		14263	
AM Peak					11:00	11:00	11:00	11:00	10:00	10:00	11:00	11:00	10:00	11:00	11:00	10:00
Vol.					514	356	536	347	598	436	705	451	656	410	541	381
PM Peak					16:00	16:00	16:00	16:00	16:00	12:00	12:00	12:00	12:00	14:00	16:00	16:00
Vol.					764	476	810	462	903	485	695	431	683	410	826	438

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 070241-2

Counted By: RWL
ATR #: 6558
Location: N Main N of Ten Rod Road
City/Town: Rochester

RT 11 N OF TEN ROD ROAD

Start Time	01-Oct-07 NB	01-Oct-07 SB	Tue NB	Tue SB	Wed NB	Wed SB	Thu NB	Thu SB	Fri NB	Fri SB	Sat NB	Sat SB	Sun NB	Sun SB	Weekday Average NB	Weekday Average SB
12:00 AM	22	22	38	24	41	21	25	23	*	*	*	*	*	*	32	22
01:00	15	8	12	7	17	5	16	13	*	*	*	*	*	*	15	8
02:00	14	12	13	8	12	8	18	1	*	*	*	*	*	*	14	7
03:00	19	10	29	29	36	45	49	35	*	*	*	*	*	*	33	30
04:00	35	42	43	38	38	31	46	41	*	*	*	*	*	*	40	38
05:00	251	120	242	113	231	120	222	114	*	*	*	*	*	*	236	117
06:00	224	272	235	285	235	296	257	297	*	*	*	*	*	*	238	288
07:00	340	352	371	346	338	**404**	354	**359**	*	*	*	*	*	*	351	365
08:00	372	310	437	350	418	305	**477**	359	*	*	*	*	*	*	426	331
09:00	459	323	395	335	417	338	446	346	*	*	*	*	*	*	429	336
10:00	478	352	**552**	312	519	359	386	233	*	*	*	*	*	*	484	314
11:00	**565**	**416**	520	**377**	**551**	396	*	*	*	*	*	*	*	*	**545**	**396**
12:00 PM	583	366	595	402	608	382	*	*	*	*	*	*	*	*	595	383
01:00	553	397	513	373	591	376	*	*	*	*	*	*	*	*	552	382
02:00	546	334	546	350	570	353	*	*	*	*	*	*	*	*	554	346
03:00	744	381	682	366	684	364	*	*	*	*	*	*	*	*	703	370
04:00	**840**	**500**	747	**457**	728	**483**	*	*	*	*	*	*	*	*	**772**	**480**
05:00	700	342	**805**	364	**780**	331	*	*	*	*	*	*	*	*	762	346
06:00	523	274	510	264	510	293	*	*	*	*	*	*	*	*	514	277
07:00	346	242	353	223	358	211	*	*	*	*	*	*	*	*	352	225
08:00	203	125	248	153	280	153	*	*	*	*	*	*	*	*	244	144
09:00	174	86	165	91	161	114	*	*	*	*	*	*	*	*	167	97
10:00	94	58	96	59	96	47	*	*	*	*	*	*	*	*	95	55
11:00	56	32	48	21	69	25	*	*	*	*	*	*	*	*	58	26
Total	8156	5376	8195	5347	8288	5460	2296	1821	0	0	0	0	0	0	8211	5383
Day	13532		13542		13748		4117		0		0		0		13594	
AM Peak	11:00	11:00	10:00	11:00	11:00	07:00	08:00	07:00							11:00	11:00
Vol.	565	416	552	377	551	404	477	359							545	396
PM Peak	16:00	16:00	17:00	16:00	17:00	16:00									16:00	16:00
Vol.	840	500	805	457	780	483									772	480
Comb. Total	13532		13542		23075		17768		15630		13569		11463		27857	
ADT	Not Calculated															

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 070241-4

Counted By: RWL
ATR #: 5229
Location: Rt 11 S of WalMart
City/Town: Rochester, NH

WalMart to North
Little Falls Bridge Road to South
Rt 11 S of WalMart

Start Time	24-Sep-07 SB	24-Sep-07 NB	Tue SB	Tue NB	Wed SB	Wed NB	Thu SB	Thu NB	Fri SB	Fri NB	Sat SB	Sat NB	Sun SB	Sun NB	Weekday Average SB	Weekday Average NB
12:00 AM	*	*	*	*	*	*	36	75	46	94	58	123	57	97	41	84
01:00	*	*	*	*	*	*	29	36	23	40	14	49	30	70	26	38
02:00	*	*	*	*	*	*	30	29	41	32	19	28	18	32	36	30
03:00	*	*	*	*	*	*	44	30	50	29	28	24	26	23	47	30
04:00	*	*	*	*	*	*	138	40	114	42	88	43	65	31	126	41
05:00	*	*	*	*	*	*	471	113	376	116	128	71	90	55	424	114
06:00	*	*	*	*	*	*	853	281	797	306	256	153	142	118	825	294
07:00	*	*	*	*	*	*	**951**	539	**888**	500	427	324	306	264	**920**	520
08:00	*	*	*	*	*	*	755	480	867	515	564	535	401	420	811	498
09:00	*	*	*	*	*	*	624	494	708	626	746	722	625	537	666	560
10:00	*	*	*	*	*	*	667	571	827	705	872	910	854	**917**	747	638
11:00	*	*	*	*	*	*	679	**588**	779	**764**	**972**	**949**	**902**	874	729	**676**
12:00 PM	*	*	*	*	663	633	688	635	790	809	**954**	937	886	**884**	714	692
01:00	*	*	*	*	671	654	633	650	748	873	829	**960**	912	805	684	726
02:00	*	*	*	*	686	746	720	733	819	872	872	930	973	751	742	784
03:00	*	*	*	*	713	961	696	929	**840**	1133	914	884	**1011**	777	750	1008
04:00	*	*	*	*	708	**1136**	740	**1151**	834	**1212**	883	794	885	672	761	**1166**
05:00	*	*	*	*	**733**	1076	**854**	1122	838	1096	802	718	791	648	**808**	1099
06:00	*	*	*	*	562	721	657	781	735	878	698	669	637	607	651	793
07:00	*	*	*	*	432	519	361	614	518	688	481	529	480	455	437	607
08:00	*	*	*	*	289	413	262	465	341	527	347	421	322	351	297	468
09:00	*	*	*	*	183	265	186	274	243	402	220	323	180	191	204	314
10:00	*	*	*	*	131	154	157	197	181	324	166	209	131	118	156	225
11:00	*	*	*	*	66	127	60	136	86	199	97	181	67	82	71	154
Total	0	0	0	0	5837	7405	11291	10963	12489	12784	11435	11486	10791	9779	11673	11559
Day	0		0		13242		22254		25273		22921		20570		23232	
AM Peak							07:00	11:00	07:00	11:00	11:00	11:00	11:00	10:00	07:00	11:00
Vol.							951	588	888	764	972	949	902	917	920	676
PM Peak					17:00	16:00	17:00	16:00	15:00	16:00	12:00	13:00	15:00	12:00	17:00	16:00
Vol.					733	1136	854	1151	840	1212	954	960	1011	884	808	1166

NB may be high

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 070241-4

Counted By: RWL
ATR #: 5229
Location: Rt 11 S of WalMart
City/Town: Rochester, NH

WalMart to North
Little Falls Bridge Road to South
Rt 11 S of WalMart

Start Time	01-Oct-07 SB	01-Oct-07 NB	Tue SB	Tue NB	Wed SB	Wed NB	Thu SB	Thu NB	Fri SB	Fri NB	Sat SB	Sat NB	Sun SB	Sun NB	Weekday Average SB	Weekday Average NB
12:00 AM	36	38	46	71	45	68	42	63	*	*	*	*	*	*	42	60
01:00	27	27	24	31	21	35	21	35	*	*	*	*	*	*	23	32
02:00	41	29	27	22	31	19	27	23	*	*	*	*	*	*	32	23
03:00	51	16	52	34	51	33	52	38	*	*	*	*	*	*	52	30
04:00	176	24	137	42	148	50	135	58	*	*	*	*	*	*	149	44
05:00	511	143	521	117	514	126	519	119	*	*	*	*	*	*	516	126
06:00	831	339	884	319	867	318	889	323	*	*	*	*	*	*	868	325
07:00	**1012**	482	**1032**	491	**980**	502	**993**	493	*	*	*	*	*	*	**1004**	492
08:00	773	437	816	500	777	481	787	544	*	*	*	*	*	*	788	490
09:00	618	519	675	544	705	565	662	551	*	*	*	*	*	*	665	545
10:00	724	586	682	**631**	681	**647**	694	**630**	*	*	*	*	*	*	695	624
11:00	673	**657**	681	627	713	635	*	*	*	*	*	*	*	*	689	**640**
12:00 PM	632	658	671	630	655	665	*	*	*	*	*	*	*	*	653	651
01:00	719	691	666	657	682	657	*	*	*	*	*	*	*	*	689	668
02:00	707	725	681	720	735	777	*	*	*	*	*	*	*	*	708	741
03:00	**784**	978	**742**	973	751	945	*	*	*	*	*	*	*	*	759	965
04:00	771	**1158**	733	**1106**	**798**	**1138**	*	*	*	*	*	*	*	*	**767**	**1134**
05:00	707	1055	739	1054	688	1088	*	*	*	*	*	*	*	*	711	1066
06:00	543	694	519	697	585	742	*	*	*	*	*	*	*	*	549	711
07:00	386	492	377	496	377	517	*	*	*	*	*	*	*	*	380	502
08:00	224	297	253	364	283	443	*	*	*	*	*	*	*	*	253	368
09:00	166	217	140	234	178	240	*	*	*	*	*	*	*	*	161	230
10:00	126	147	124	146	110	190	*	*	*	*	*	*	*	*	120	161
11:00	51	107	47	95	55	125	*	*	*	*	*	*	*	*	51	109
Total	11289	10516	11269	10601	11430	11006	4821	2877	0	0	0	0	0	0	11324	10737
Day	21805		21870		22436		7698		0		0		0		22061	
AM Peak	07:00	11:00	07:00	10:00	07:00	10:00	07:00	10:00							07:00	11:00
Vol.	1012	657	1032	631	980	647	993	630							1004	640
PM Peak	15:00	16:00	15:00	16:00	16:00	16:00									16:00	16:00
Vol.	784	1158	742	1106	798	1138									767	1134
Comb. Total	21805		21870		35678		29952		25273		22921		20570		45293	
ADT	Not Calculated															

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 070241-3

Counted By: RWL
ATR #: 6559
Location: Rte 11 at Farmington TL
City/Town: Rochester, NH

Rt 11 at Farmington TL

Start Time	24-Sep-07 NB	24-Sep-07 SB	Tue NB	Tue SB	Wed NB	Wed SB	Thu NB	Thu SB	Fri NB	Fri SB	Sat NB	Sat SB	Sun NB	Sun SB	Weekday Average NB	Weekday Average SB
12:00 AM	*	*	*	*	*	*	73	24	97	32	125	39	104	37	85	28
01:00	*	*	*	*	*	*	40	28	42	20	48	12	69	26	41	24
02:00	*	*	*	*	*	*	25	27	27	36	27	20	28	16	26	32
03:00	*	*	*	*	*	*	29	42	27	46	22	25	26	25	28	44
04:00	*	*	*	*	*	*	30	140	30	115	30	87	23	63	30	128
05:00	*	*	*	*	*	*	85	471	96	368	53	124	39	87	90	420
06:00	*	*	*	*	*	*	234	836	254	794	115	247	90	135	244	815
07:00	*	*	*	*	*	*	438	902	411	878	240	390	186	238	424	890
08:00	*	*	*	*	*	*	366	718	390	804	423	532	293	350	378	761
09:00	*	*	*	*	*	*	362	554	425	625	499	629	342	521	394	590
10:00	*	*	*	*	*	*	417	567	512	687	620	719	630	697	464	627
11:00	*	*	*	*	494	518	461	511	557	591	710	760	626	685	504	540
12:00 PM	*	*	*	*	500	520	459	540	590	590	713	721	671	686	516	550
01:00	*	*	*	*	538	549	509	508	663	565	707	599	585	679	570	541
02:00	*	*	*	*	599	561	577	563	712	624	710	657	560	759	629	583
03:00	*	*	*	*	830	550	793	556	945	647	677	666	602	762	856	584
04:00	*	*	*	*	994	550	993	585	1057	643	627	679	527	734	1015	593
05:00	*	*	*	*	954	567	935	653	927	626	560	585	510	628	939	615
06:00	*	*	*	*	633	403	680	456	761	534	514	517	508	486	691	464
07:00	*	*	*	*	459	288	545	206	569	337	436	318	387	343	524	277
08:00	*	*	*	*	344	204	398	168	431	216	339	246	307	248	391	196
09:00	*	*	*	*	235	116	269	141	386	150	308	147	184	134	297	136
10:00	*	*	*	*	145	89	188	117	299	117	205	130	99	102	211	108
11:00	*	*	*	*	128	46	135	43	211	57	167	68	85	39	158	49
Total	0	0	0	0	6853	4961	9041	9356	10419	10102	8875	8917	7481	8480	9505	9595
Day	0		0		11814		18397		20521		17792		15961		19100	
AM Peak					11:00	11:00	11:00	07:00	11:00	07:00	11:00	11:00	10:00	10:00	11:00	07:00
Vol.					494	518	461	902	557	878	710	760	630	697	504	890
PM Peak					16:00	17:00	16:00	17:00	16:00	15:00	12:00	12:00	12:00	15:00	16:00	17:00
Vol.					994	567	993	653	1057	647	713	721	671	762	1015	615

CLD Consulting Engineers, Inc.
540 Commercial Street
Manchester, N.H. 03101
603-668-8223

Site Code: 070241-3

Counted By: RWL
ATR #: 6559
Location: Rte 11 at Farmington TL
City/Town: Rochester, NH

Rt 11 at Farmington TL

Start Time	01-Oct-07 NB	01-Oct-07 SB	Tue NB	Tue SB	Wed NB	Wed SB	Thu NB	Thu SB	Fri NB	Fri SB	Sat NB	Sat SB	Sun NB	Sun SB	Weekday Average NB	Weekday Average SB
12:00 AM	37	20	80	27	70	28	75	29	*	*	*	*	*	*	66	26
01:00	25	18	28	17	40	20	36	22	*	*	*	*	*	*	32	19
02:00	26	34	21	26	16	24	23	24	*	*	*	*	*	*	22	27
03:00	14	48	28	51	31	53	35	48	*	*	*	*	*	*	27	50
04:00	12	166	32	126	33	133	40	118	*	*	*	*	*	*	29	136
05:00	125	490	85	490	111	459	85	471	*	*	*	*	*	*	102	478
06:00	267	786	254	825	257	846	266	842	*	*	*	*	*	*	261	825
07:00	412	**978**	412	**944**	432	**939**	410	**963**	*	*	*	*	*	*	416	**956**
08:00	335	748	364	782	356	755	414	740	*	*	*	*	*	*	367	756
09:00	370	572	383	609	408	614	411	573	*	*	*	*	*	*	393	592
10:00	404	574	458	544	435	556	**434**	554	*	*	*	*	*	*	433	557
11:00	**494**	504	**477**	541	**488**	520	*	*	*	*	*	*	*	*	**486**	522
12:00 PM	485	438	497	498	470	482	*	*	*	*	*	*	*	*	484	473
01:00	504	575	480	504	499	526	*	*	*	*	*	*	*	*	494	535
02:00	587	538	569	490	582	552	*	*	*	*	*	*	*	*	579	527
03:00	788	**607**	782	**590**	780	584	*	*	*	*	*	*	*	*	783	594
04:00	**1013**	574	**1002**	566	**983**	**646**	*	*	*	*	*	*	*	*	**999**	**595**
05:00	924	541	906	576	964	481	*	*	*	*	*	*	*	*	931	533
06:00	600	356	610	362	632	420	*	*	*	*	*	*	*	*	614	379
07:00	422	258	454	250	446	245	*	*	*	*	*	*	*	*	441	251
08:00	286	159	289	155	371	185	*	*	*	*	*	*	*	*	315	166
09:00	198	129	219	105	233	127	*	*	*	*	*	*	*	*	217	120
10:00	123	83	145	90	183	91	*	*	*	*	*	*	*	*	150	88
11:00	102	35	92	34	129	35	*	*	*	*	*	*	*	*	108	35
Total	8553	9231	8667	9202	8949	9321	2229	4384	0	0	0	0	0	0	8749	9240
Day	17784		17869		18270		6613		0		0		0		17989	
AM Peak	11:00	07:00	11:00	07:00	11:00	07:00	10:00	07:00							11:00	07:00
Vol.	494	978	477	944	488	939	434	963							486	956
PM Peak	16:00	15:00	16:00	15:00	16:00	16:00									16:00	16:00
Vol.	1013	607	1002	590	983	646									999	595

Comb. Total	17784	17869	30084	25010	20521	17792	15961	37089

ADT Not Calculated

APPENDIX C

Traffic Assignment Worksheets

Rochester Route 11 Commercial Area Trips

AM Peak Hour Traffic

Growth Factor at 1% per year

	2008	2013	2018	2023	2028
Factor	1.01	1.06	1.12	1.17	1.23

Movement	Balanced Existing 2007	Adjust for Upcoming 2007	No-Build 2008	No-Build 2013	No-Build 2018	No-Build 2023	No-Build 2028
NH Main at Ten Rod Road							
EB Left							
EB Thru							
EB Right							
WB Left							
WB Thru							
WB Right							
NB Left							
NB Thru							
NB Right							
SB Left							
SB Thru							
SB Right							
Boxed numbers are adjusted for new configuration							
NH Main at Tpk NB Ramps (New configuration)							
EB Left	50	50	50	55	55	60	60
EB Thru	565	565	570	600	635	665	695
WB Thru	250	250	255	270	285	300	305
WB Right	120	120	120	125	135	140	150
NB Left	255	255	260	270	285	300	315
NB Right		25	25	25	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)							
EB Thru	405	405	410	430	455	480	500
EB Right	640	640	645	680	715	750	790
WB Left		25	25	25	30	30	30
WB Thru	490	490	495	520	545	575	605
SB Left		180	180	190	200	210	220
SB Right	85	85	85	90	95	100	105
Rte 11 at Access A							
EB Thru	1000	1000	1010	1060	1120	1170	1230
EB Right							
WB Left							
WB Thru	465	465	470	495	520	545	570
NB Left							
NB Right							
Rte 11 at Nadhobe Drive/Access B							
EB Left	0	0	0	0	0	0	0
EB Thru	975	975	985	1030	1090	1145	1200
EB Right	5	5	5	5	5	5	5
WB Left	5	5	5	5	5	5	5
WB Thru	475	475	475	500	525	550	580
WB Right	5	5	5	5	5	5	5
NB Left	0	0	0	0	0	0	0
NB Thru	0	0	0	0	0	0	0
NB Right	15	15	15	15	15	15	15
SB Left	10	10	10	10	10	10	10
SB Thru	0	0	0	0	0	0	0
SB Right	10	10	10	10	10	10	10
Rte 11 at Crane Drive/Access C							
EB Left	10	10	10	10	10	10	10
EB Thru	980	980	990	1040	1090	1150	1210
EB Right							
WB Left							
WB Thru	460	460	465	490	515	540	565
WB Right	10	10	10	10	10	10	10
NB Left							
NB Thru							
NB Right							
SB Left	0	0	0	0	0	0	0
SB Thru							
SB Right	0	0	0	0	0	0	0
Rte 11 at Little Falls Bridge Road/Access D							
EB Left	130	130	130	140	145	155	160
EB Thru	830	830	840	880	925	975	1020
EB Right							
WB Left							
WB Thru	410	410	415	435	455	480	505
WB Right	20	20	20	20	20	25	25
NB Left							
NB Thru							
NB Right							
SB Left	130	130	130	140	145	155	160
SB Thru							
SB Right	75	75	75	80	85	90	90
Rte 11 at Wal-Mart/Summit Realty							
EB Left	0	0	0	0	0	0	0
EB Thru	890	890	900	940	990	1040	1095
EB Right	35	35	35	35	35	35	35
WB Left	65	65	65	65	65	65	65
WB Thru	420	420	425	450	470	495	520
WB Right	0	0	0	0	0	0	0
NB Left	25	25	25	25	25	25	25
NB Thru	0	0	0	0	0	0	0
NB Right	60	60	60	60	60	60	60
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0
Rte 11 at Two Rod Road							
EB Thru	915	915	925	975	1025	1080	1140
EB Right							
WB Left							
WB Thru	445	445	450	475	500	525	555
NB Left							
NB Right							
Rte 11 at Access E							
EB Thru	915	915	925	975	1025	1080	1140
EB Right							
WB Left							
WB Thru	445	445	450	475	500	525	555
NB Left							
NB Right							
Rte 11 at Access F							
EB Thru	915	915	925	975	1025	1080	1140
EB Right							
WB Left							
WB Thru	445	445	450	475	500	525	555
NB Left							
NB Right							

* - Correction for internal capture for Wal-Mart

Rochester Route 11 Commercial Area Trips

PM Peak Hour Traffic

Growth Factor at 1% per year

2008	2013	2018	2023	2028
1.01	1.06	1.12	1.17	1.23

Columns: Balanced 2007; Adjust for Spaulding 2007; No-Build 2008, 2013, 2018, 2023, 2028; Primary Trips (In/Out; Percent, Trips) for Access A, Access B/Nashoba, Grove Dr/Access C, Access D/Little Falls, Wal-Mart, Gelsons Realty, Two Rod Road, Access E, Access F; Primary Trips; Build with Pass-by 2028; Pass-by; Build 2028

N Main at Ten Rod Road

Movement	Values
EB Left	[illegible]
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
WB Right	[illegible]
NB Left	[illegible]
NB Thru	[illegible]
NB Right	[illegible]
SB Left	[illegible]
SB Thru	[illegible]
SB Right	[illegible]

Shaded numbers are adjusted for new configuration

N Main at Tpk NB Ramps (New configuration)

Movement	Values
EB Left	[illegible]
EB Thru	[illegible]
WB Thru	[illegible]
WB Right	[illegible]
NB Left	[illegible]
NB Right	[illegible]

Rte 11 at Tpk SB Ramps (New configuration)

Movement	Values
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
SB Left	[illegible]
SB Right	[illegible]

Rte 11 at Access A

Movement	Values
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
NB Left	[illegible]
NB Right	[illegible]

Rte 11 at Nashoba Drive/Access B

Movement	Values
EB Left	[illegible]
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
WB Right	[illegible]
NB Left	[illegible]
NB Thru	[illegible]
NB Right	[illegible]
SB Left	[illegible]
SB Thru	[illegible]
SB Right	[illegible]

Rte 11 at Grove Drive/Access C

Movement	Values
EB Left	[illegible]
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
WB Right	[illegible]
NB Left	[illegible]
NB Thru	[illegible]
NB Right	[illegible]
SB Left	[illegible]
SB Thru	[illegible]
SB Right	[illegible]

Rte 11 at Little Falls Bridge Road/Access D

Movement	Values
EB Left	[illegible]
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
WB Right	[illegible]
NB Left	[illegible]
NB Thru	[illegible]
NB Right	[illegible]
SB Left	[illegible]
SB Thru	[illegible]
SB Right	[illegible]

Rte 11 at Wal-Mart/Gelsons Realty

No adjustments

Movement	Values
EB Left	[illegible]
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
WB Right	[illegible]
NB Left	[illegible]
NB Thru	[illegible]
NB Right	[illegible]
SB Left	[illegible]
SB Thru	[illegible]
SB Right	[illegible]

Rte 11 at Two Rod Road

Movement	Values
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
NB Left	[illegible]
NB Right	[illegible]

Rte 11 at Access E

Movement	Values
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
NB Left	[illegible]
NB Right	[illegible]

Rte 11 at Access F

Movement	Values
EB Thru	[illegible]
EB Right	[illegible]
WB Left	[illegible]
WB Thru	[illegible]
NB Left	[illegible]
NB Right	[illegible]

* - Correction for internal capture for Wal-Mart

Rochester Route 11 Commercial Area Trips

Saturday Peak Hour Traffic

Growth Factor at 1% per year	2008	2013	2018	2023	2028
	1.01	1.06	1.12	1.17	1.23

N Main at Ten Rod Road

	Balanced 2007	Adjust for Spreading 2007	No-Build 2008	2013	2018	2023	2028
EB Left	0	0	0	0	0	0	0
EB Thru	660	700	785	825	865	910	955
EB Right	10	20	20	20	20	20	25
WB Left	175	175	175	185	195	205	215
WB Thru	755	755	765	795	835	880	925
WB Right	0	0	0	0	0	0	0
NB Left	75	75	75	80	85	90	90
NB Thru	5	5	5	5	5	5	5
NB Right	310	100	140	150	160	170	180
SB Left	0	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0	0
SB Right	0	0	0	0	0	0	0

Boxed numbers are adjusted for new configuration

N Main at Tpk NB Ramps (New configuration)

	Balanced 2007	Adjust for Spreading 2007	No-Build 2008	2013	2018	2023	2028
EB Left	145	145	145	155	160	170	180
EB Thru	610	795	800	840	880	925	975
WB Thru	1505	610	615	650	680	715	755
WB Right	280	280	285	295	310	330	345
NB Left	560	560	565	595	625	655	690
NB Right		25	25	25	30	30	30

Rte 11 at Tpk SB Ramps (New configuration)

EB Thru, EB Right, WB Left, WB Thru, SB Left, SB Right — [illegible]

Rte 11 at Access A

EB Thru, EB Right, WB Left, WB Thru, NB Left, NB Right — [illegible]

Rte 11 at Heritage Drive/Access B

EB Left, EB Thru, EB Right, WB Left, WB Thru, WB Right, NB Left, NB Thru, NB Right, SB Left, SB Thru, SB Right — [illegible]

Rte 11 at Crane Drive/Access C

EB Left, EB Thru, EB Right, WB Left, WB Thru, WB Right, NB Left, NB Thru, NB Right, SB Left, SB Thru, SB Right — [illegible]

Rte 11 at Little Falls Bridge Road/Access D

EB Left, EB Thru, EB Right, WB Left, WB Thru, WB Right, NB Left, NB Thru, NB Right, SB Left, SB Thru, SB Right — [illegible]

Rte 11 at Wal-Mart/Lowes Realty

EB Left, EB Thru, EB Right, WB Left, WB Thru, WB Right, NB Left, NB Thru, NB Right, SB Left, SB Thru, SB Right — [illegible]

Rte 11 at Two Rod Road

EB Thru, EB Right, WB Left, WB Thru, NB Left, NB Right — [illegible]

Rte 11 at Access E

EB Thru, EB Right, WB Left, WB Thru, NB Left, NB Right — [illegible]

Rte 11 at Access F

EB Thru, EB Right, WB Left, WB Thru, NB Left, NB Right — [illegible]

* -- Correction for internal capture for Walmart

APPENDIX D

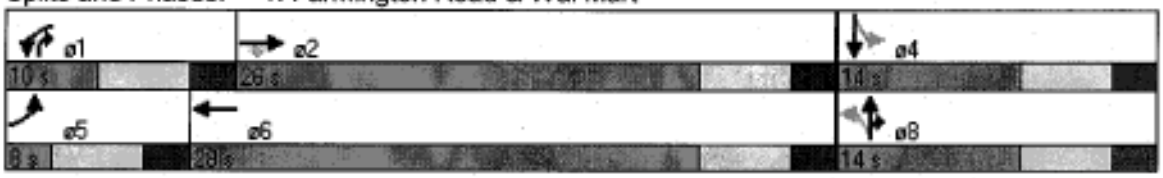
No-Build Capacity Output Sheets

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	ø4	ø5
Lane Configurations									
Volume (vph)	880	35	65	420	25	0	80		
Lane Group Flow (vph)	1048	49	73	467	0	34	90		
Turn Type		Perm	Prot		Perm		pt+ov		
Protected Phases	2		1	6		8	8 1	4	5
Permitted Phases		2			8				
Detector Phases	2	2	1	6	8	8	8 1		
Minimum Initial (s)	5.0	5.0	2.0	5.0	5.0	5.0		5.0	2.0
Minimum Split (s)	22.0	22.0	8.0	22.0	14.0	14.0		14.0	8.0
Total Split (s)	26.0	26.0	10.0	28.0	14.0	14.0	24.0	14.0	8.0
Total Split (%)	52.0%	52.0%	20.0%	56.0%	28.0%	28.0%	48.0%	28%	16%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min		Min	None
v/c Ratio	0.60	0.06	0.28	0.20		0.13	0.13		
Control Delay	12.1	3.3	30.3	1.2		18.2	6.4		
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay	12.1	3.3	30.3	1.2		18.2	6.4		
Queue Length 50th (ft)	119	0	19	3		9	8		
Queue Length 95th (ft)	156	9	49	3		7	28		
Internal Link Dist (ft)	277			855		264			
Turn Bay Length (ft)		150	265						
Base Capacity (vph)	1752	816	260	2341		307	642		
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	0.06	0.28	0.20		0.11	0.14		

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 22 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated

Splits and Phases: 1: Farmington Road & Wal Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	8	8	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3574	1615	1805	3505			1925	1706			
Flt Permitted		1.00	1.00	0.95	1.00			0.76	1.00			
Satd. Flow (perm)		3574	1615	1805	3505			1535	1706			
Volume (vph)	0	880	35	65	420	0	25	0	80	0	0	0
Peak-hour factor, PHF	0.25	0.84	0.71	0.89	0.90	0.25	0.73	0.25	0.89	0.50	0.92	0.92
Adj. Flow (vph)	0	1048	49	73	467	0	34	0	90	0	0	0
RTOR Reduction (vph)	0	0	26	0	0	0	0	0	28	0	0	0
Lane Group Flow (vph)	0	1048	23	73	467	0	0	34	62	0	0	0
Heavy Vehicles (%)	0%	1%	0%	0%	3%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)		21.3	21.3	4.1	31.4			6.6	16.7			
Effective Green, g (s)		23.3	23.3	6.1	33.4			8.6	18.7			
Actuated g/C Ratio		0.47	0.47	0.12	0.67			0.17	0.37			
Clearance Time (s)		6.0	6.0	6.0	6.0			6.0				
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0				
Lane Grp Cap (vph)		1665	753	220	2341			264	638			
v/s Ratio Prot		c0.29		c0.04	0.13				0.04			
v/s Ratio Perm			0.01					c0.02				
v/c Ratio		0.63	0.03	0.33	0.20			0.13	0.10			
Uniform Delay, d1		10.1	7.2	20.1	3.2			17.5	10.2			
Progression Factor		1.00	1.00	1.38	0.31			1.00	1.00			
Incremental Delay, d2		1.8	0.1	0.8	0.2			0.2	0.1			
Delay (s)		11.9	7.3	28.6	1.2			17.7	10.2			
Level of Service		B	A	C	A			B	B			
Approach Delay (s)		11.7			4.9			12.3			0.0	
Approach LOS		B			A			B			A	

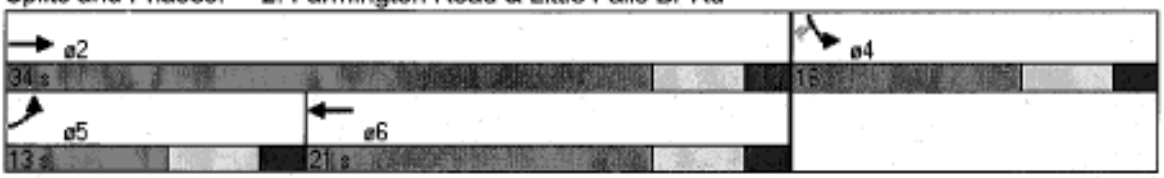
Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	130	830	410	130	75
Lane Group Flow (vph)	146	865	489	236	80
Turn Type	Prot				Perm
Protected Phases	5	2	6	4	
Permitted Phases					4
Detector Phases	5	2	6	4	4
Minimum Initial (s)	2.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	20.0	20.0	14.0	14.0
Total Split (s)	13.0	34.0	21.0	16.0	16.0
Total Split (%)	26.0%	68.0%	42.0%	32.0%	32.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.48	0.41	0.38	0.61	0.21
Control Delay	24.5	0.9	12.9	24.4	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	0.9	12.9	24.4	6.3
Queue Length 50th (ft)	24	3	54	61	0
Queue Length 95th (ft)	m53	4	89	65	25
Internal Link Dist (ft)		855	167	756	
Turn Bay Length (ft)	450				150
Base Capacity (vph)	314	2122	1287	410	398
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	0.46	0.41	0.38	0.58	0.20

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1703	3471	3170		1703	1404
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1703	3471	3170		1703	1404
Volume (vph)	130	830	410	20	130	75
Peak-hour factor, PHF	0.89	0.96	0.90	0.61	0.55	0.94
Adj. Flow (vph)	146	865	456	33	236	80
RTOR Reduction (vph)	0	0	10	0	0	62
Lane Group Flow (vph)	146	865	479	0	236	18
Heavy Vehicles (%)	6%	4%	12%	23%	6%	15%
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	5.8	28.5	16.7		9.5	9.5
Effective Green, g (s)	7.8	30.5	18.7		11.5	11.5
Actuated g/C Ratio	0.16	0.61	0.37		0.23	0.23
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	266	2117	1186		392	323
v/s Ratio Prot	c0.09	c0.25	0.15		c0.14	
v/s Ratio Perm						0.01
v/c Ratio	0.55	0.41	0.40		0.60	0.06
Uniform Delay, d1	19.5	5.1	11.5		17.2	15.0
Progression Factor	1.06	0.08	1.00		1.00	1.00
Incremental Delay, d2	1.9	0.5	1.0		2.6	0.1
Delay (s)	22.5	0.9	12.6		19.8	15.1
Level of Service	C	A	B		B	B
Approach Delay (s)		4.0	12.6		18.6	
Approach LOS		A	B		B	

Intersection Summary			
HCM Average Control Delay	8.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

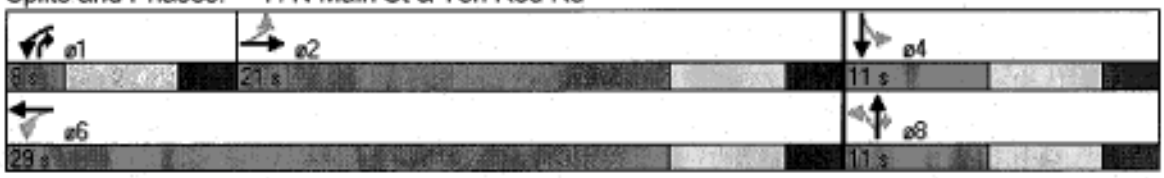
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	ø4
Lane Configurations							
Volume (vph)	355	155	330	50	5	235	
Lane Group Flow (vph)	435	168	359	0	63	270	
Turn Type		pm+pt		Perm		pm+ov	
Protected Phases	2	1	6		8	1	4
Permitted Phases		6		8		8	
Detector Phases	2	1	6	8	8	1	
Minimum Initial (s)	5.0	2.0	5.0	5.0	5.0	2.0	5.0
Minimum Split (s)	20.0	8.0	20.0	11.0	11.0	8.0	11.0
Total Split (s)	21.0	8.0	29.0	11.0	11.0	8.0	11.0
Total Split (%)	52.5%	20.0%	72.5%	27.5%	27.5%	20.0%	28%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead				Lead	
Lead-Lag Optimize?	Yes	Yes				Yes	
Recall Mode	Min	None	Min	None	None	None	None
v/c Ratio	0.47	0.28	0.13		0.27	0.48	
Control Delay	8.8	3.5	2.0		17.1	4.7	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	8.8	3.5	2.0		17.1	4.7	
Queue Length 50th (ft)	24	0	0		5	0	
Queue Length 95th (ft)	115	26	23		35	28	
Internal Link Dist (ft)	260		1019		802		
Turn Bay Length (ft)						260	
Base Capacity (vph)	1000	601	2868		236	568	
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	0.44	0.28	0.13		0.27	0.48	

Intersection Summary

Cycle Length: 40
Actuated Cycle Length: 33.5
Natural Cycle: 40
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: N Main St & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor		1.00		1.00	0.95			1.00	1.00			
Frt		1.00		1.00	1.00			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.96	1.00			
Satd. Flow (prot)		1834		1719	3374			1703	1524			
Flt Permitted		1.00		0.36	1.00			1.00	1.00			
Satd. Flow (perm)		1834		649	3374			1780	1524			
Volume (vph)	0	355	10	155	330	0	50	5	235	0	0	0
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.87	0.87	0.87	0.92	0.92	0.92
Adj. Flow (vph)	0	423	12	168	359	0	57	6	270	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	213	0	0	0
Lane Group Flow (vph)	0	433	0	168	359	0	0	63	57	0	0	0
Heavy Vehicles (%)	0%	3%	11%	5%	7%	0%	4%	33%	6%	2%	2%	2%
Turn Type	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)		15.3		23.4	23.4			1.7	3.8			
Effective Green, g (s)		17.3		25.4	25.4			3.7	7.8			
Actuated g/C Ratio		0.47		0.68	0.68			0.10	0.21			
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0			
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		855		563	2310			178	485			
v/s Ratio Prot		c0.24		c0.03	0.11				0.01			
v/s Ratio Perm				0.17				c0.04	0.02			
v/c Ratio		0.51		0.30	0.16			0.35	0.12			
Uniform Delay, d1		6.9		2.7	2.1			15.6	11.9			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.5		0.3	0.0			1.2	0.1			
Delay (s)		7.4		3.0	2.1			16.8	12.0			
Level of Service		A		A	A			B	B			
Approach Delay (s)		7.4			2.4			12.9			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	37.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	10	980	460	10	0	0
Peak Hour Factor	0.50	0.91	0.88	0.34	0.38	0.38
Hourly flow rate (vph)	20	1077	523	29	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	552				1640	523
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	552				1640	523
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	98				100	100
cM capacity (veh/h)	970				109	558

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	20	1077	523	29	0
Volume Left	20	0	0	0	0
Volume Right	0	0	0	29	0
cSH	970	1700	1700	1700	1700
Volume to Capacity	0.02	0.63	0.31	0.02	0.00
Queue Length 95th (ft)	2	0	0	0	0
Control Delay (s)	8.8	0.0	0.0	0.0	0.0
Lane LOS	A				A
Approach Delay (s)	0.2		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	975	5	5	470	5	0	0	15	15	0	10
Peak Hour Factor	0.50	0.89	0.38	0.50	0.86	0.63	0.63	0.63	0.63	0.81	0.81	0.81
Hourly flow rate (vph)	0	1096	13	10	547	8	0	0	24	19	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	554			1109			1681	1677	1102	1686	1675	547
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	554			1109			1681	1677	1102	1686	1675	547
tC, single (s)	4.1			4.1			7.1	6.5	6.3	7.1	6.5	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.4	3.5	4.0	3.4
p0 queue free %	100			98			100	100	91	72	100	98
cM capacity (veh/h)	1026			637			73	95	251	67	95	522

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	1109	10	547	8	24	31
Volume Left	0	0	10	0	0	0	19
Volume Right	0	13	0	0	8	24	12
cSH	1700	1700	637	1700	1700	251	103
Volume to Capacity	0.00	0.65	0.02	0.32	0.00	0.09	0.30
Queue Length 95th (ft)	0	0	1	0	0	8	28
Control Delay (s)	0.0	0.0	10.7	0.0	0.0	20.8	54.0
Lane LOS			B			C	F
Approach Delay (s)	0.0		0.2			20.8	54.0
Approach LOS						C	F

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NWL	NWR	SWL	SWR
Lane Configurations										
Sign Control		Free			Free		Stop		Yield	
Grade		0%			0%		0%		0%	
Volume (veh/h)	0	435	640	0	490	0	0	0	0	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	473	696	0	533	0	0	0	0	92
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type							None		None	
Median storage veh)										
Upstream signal (ft)										
pX, platoon unblocked										
vC, conflicting volume	533			1168			1446	1353	1701	533
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	533			1168			1446	1353	1701	533
tC, single (s)	4.1			4.1			7.1	6.5	6.5	6.2
tC, 2 stage (s)										
tF (s)	2.2			2.2			3.5	4.0	4.0	3.3
p0 queue free %	100			100			100	100	100	83
cM capacity (veh/h)	1035			598			91	150	92	547

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	1168	533	92
Volume Left	0	0	0
Volume Right	696	0	92
cSH	1700	1700	547
Volume to Capacity	0.69	0.31	0.17
Queue Length 95th (ft)	0	0	15
Control Delay (s)	0.0	0.0	12.9
Lane LOS			B
Approach Delay (s)	0.0	0.0	12.9
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	50	385	235	120	0	255
Peak Hour Factor	0.75	0.93	0.88	0.84	0.92	0.80
Hourly flow rate (vph)	67	414	267	143	0	319
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	410				886	338
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	410				886	338
tC, single (s)	4.2				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	94				100	53
cM capacity (veh/h)	1107				296	679

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	481	410	319
Volume Left	67	0	0
Volume Right	0	143	319
cSH	1107	1700	679
Volume to Capacity	0.06	0.24	0.47
Queue Length 95th (ft)	5	0	63
Control Delay (s)	1.8	0.0	14.9
Lane LOS	A		B
Approach Delay (s)	1.8	0.0	14.9
Approach LOS			B

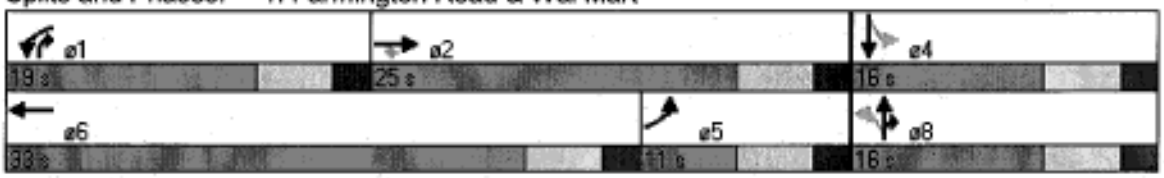
Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	720	85	255	1080	130	0	230	10	10
Lane Group Flow (vph)	9	791	120	290	1218	0	173	288	14	33
Turn Type	Prot		Perm	Prot		Perm		pt+ov	Perm	
Protected Phases	5	2		1	6		8	8 1		4
Permitted Phases			2			8			4	
Detector Phases	5	2	2	1	6	8	8	8 1	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	14.0	14.0		14.0	14.0
Total Split (s)	11.0	25.0	25.0	19.0	33.0	16.0	16.0	35.0	16.0	16.0
Total Split (%)	18.3%	41.7%	41.7%	31.7%	55.0%	26.7%	26.7%	58.3%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	Min	Min		Min	Min
v/c Ratio	0.04	0.59	0.18	0.69	0.53		0.61	0.33	0.08	0.11
Control Delay	24.2	17.7	4.0	25.4	2.1		32.4	8.2	20.8	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	24.2	17.7	4.0	25.4	2.1		32.4	8.2	20.8	15.5
Queue Length 50th (ft)	3	122	0	53	13		57	44	4	6
Queue Length 95th (ft)	9	175	16	m92	39		56	70	13	12
Internal Link Dist (ft)		277			855		264			211
Turn Bay Length (ft)	150		150	265						
Base Capacity (vph)	211	1352	685	451	2281		298	894	194	320
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	0.04	0.59	0.18	0.64	0.53		0.58	0.32	0.07	0.10

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 34 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Farmington Road & Wal Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	8	8	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3574	1615	1805	3562			1925	1723	1564	1549	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.74	1.00	0.58	1.00	
Satd. Flow (perm)	1805	3574	1615	1805	3562			1491	1723	958	1549	
Volume (vph)	5	720	85	255	1080	25	130	0	230	10	10	10
Peak-hour factor, PHF	0.58	0.91	0.71	0.88	0.91	0.81	0.75	0.50	0.80	0.69	0.50	0.75
Adj. Flow (vph)	9	791	120	290	1187	31	173	0	288	14	20	13
RTOR Reduction (vph)	0	0	75	0	3	0	0	0	27	0	11	0
Lane Group Flow (vph)	9	791	45	290	1215	0	0	173	261	14	22	0
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.0	20.7	20.7	11.9	31.6			9.4	27.3	9.4	9.4	
Effective Green, g (s)	3.0	22.7	22.7	13.9	33.6			11.4	29.3	11.4	11.4	
Actuated g/C Ratio	0.05	0.38	0.38	0.23	0.56			0.19	0.49	0.19	0.19	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	90	1352	611	418	1995			283	841	182	294	
v/s Ratio Prot	0.00	c0.22		c0.16	c0.34				0.15		0.01	
v/s Ratio Perm			0.03					c0.12		0.01		
v/c Ratio	0.10	0.59	0.07	0.69	0.61			0.61	0.31	0.08	0.08	
Uniform Delay, d1	27.2	14.9	11.9	21.1	8.8			22.3	9.3	20.0	20.0	
Progression Factor	1.00	1.00	1.00	0.89	0.21			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	1.9	0.2	3.4	1.0			3.9	0.2	0.2	0.1	
Delay (s)	27.7	16.7	12.2	22.2	2.8			26.1	9.5	20.2	20.1	
Level of Service	C	B	B	C	A			C	A	C	C	
Approach Delay (s)		16.3			6.5			15.7			20.1	
Approach LOS		B			A			B			C	

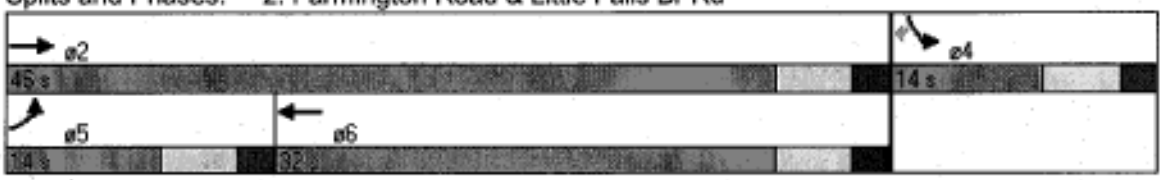
Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	200	765	1190	90	170
Lane Group Flow (vph)	217	879	1333	100	218
Turn Type	Prot				Perm
Protected Phases	5	2	6	4	
Permitted Phases					4
Detector Phases	5	2	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	14.0	14.0
Total Split (s)	14.0	46.0	32.0	14.0	14.0
Total Split (%)	23.3%	76.7%	53.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.71	0.35	0.79	0.35	0.50
Control Delay	39.6	1.1	17.6	26.2	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	1.1	17.6	26.2	8.5
Queue Length 50th (ft)	59	11	200	32	0
Queue Length 95th (ft)	#154	13	280	70	32
Internal Link Dist (ft)		855	167	756	
Turn Bay Length (ft)	450				150
Base Capacity (vph)	305	2540	1688	301	448
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	0.71	0.35	0.79	0.33	0.49

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3574	3529		1805	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1805	3574	3529		1805	1599
Volume (vph)	200	765	1190	100	90	170
Peak-hour factor, PHF	0.92	0.87	0.97	0.94	0.90	0.78
Adj. Flow (vph)	217	879	1227	106	100	218
RTOR Reduction (vph)	0	0	11	0	0	184
Lane Group Flow (vph)	217	879	1323	0	100	34
Heavy Vehicles (%)	0%	1%	1%	2%	0%	1%
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	8.1	40.6	26.5		7.4	7.4
Effective Green, g (s)	10.1	42.6	28.5		9.4	9.4
Actuated g/C Ratio	0.17	0.71	0.48		0.16	0.16
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	304	2538	1676		283	251
v/s Ratio Prot	c0.12	0.25	c0.37		c0.06	
v/s Ratio Perm						0.02
v/c Ratio	0.71	0.35	0.79		0.35	0.14
Uniform Delay, d1	23.6	3.3	13.2		22.6	21.8
Progression Factor	1.08	0.21	1.00		1.00	1.00
Incremental Delay, d2	6.8	0.3	3.9		0.8	0.2
Delay (s)	32.3	1.0	17.1		23.3	22.0
Level of Service	C	A	B		C	C
Approach Delay (s)		7.2	17.1		22.5	
Approach LOS		A	B		C	

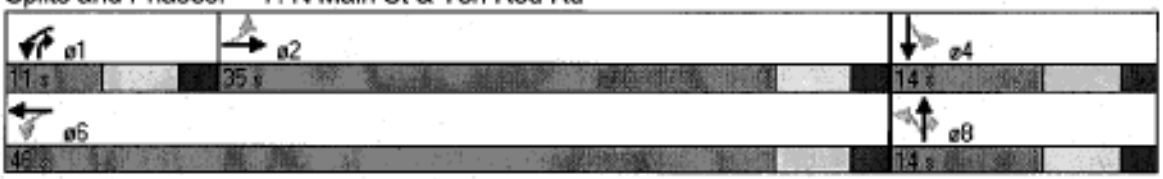
Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations								
Volume (vph)	530	170	970	105	0	305	5	0
Lane Group Flow (vph)	815	198	980	0	162	332	0	13
Turn Type		pm+pt		Perm		pm+ov	Perm	
Protected Phases	2	1	6		8	1		4
Permitted Phases		6		8		8	4	
Detector Phases	2	1	6	8	8	1	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	35.0	11.0	46.0	14.0	14.0	11.0	14.0	14.0
Total Split (%)	58.3%	18.3%	76.7%	23.3%	23.3%	18.3%	23.3%	23.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead				Lead		
Lead-Lag Optimize?	Yes	Yes				Yes		
Recall Mode	Min	None	Min	None	None	None	None	None
v/c Ratio	0.82	0.54	0.36		0.71	0.54		0.07
Control Delay	21.4	12.9	3.8		43.4	12.4		22.2
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	21.4	12.9	3.8		43.4	12.4		22.2
Queue Length 50th (ft)	229	19	59		56	49		4
Queue Length 95th (ft)	217	66	83		#139	113		17
Internal Link Dist (ft)	260		1019		802			348
Turn Bay Length (ft)						260		
Base Capacity (vph)	1029	367	2716		237	612		197
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	0.79	0.54	0.36		0.68	0.54		0.07

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 54.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: N Main St & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor		1.00		1.00	0.95			1.00	1.00		1.00	
Frt		1.00		1.00	1.00			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.95	1.00		0.95	
Satd. Flow (prot)		1874		1787	3574			1719	1599		1805	
Flt Permitted		1.00		0.12	1.00			0.75	1.00		0.59	
Satd. Flow (perm)		1874		227	3574			1355	1599		1121	
Volume (vph)	0	530	20	170	970	0	105	0	305	5	0	0
Peak-hour factor, PHF	0.92	0.67	0.83	0.86	0.99	0.92	0.65	0.92	0.92	0.38	0.92	0.92
Adj. Flow (vph)	0	791	24	198	980	0	162	0	332	13	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	106	0	0	0
Lane Group Flow (vph)	0	813	0	198	980	0	0	162	226	0	13	0
Heavy Vehicles (%)	2%	1%	0%	1%	1%	0%	5%	2%	1%	0%	0%	0%
Turn Type	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)		27.1		38.3	38.3			5.9	11.1		5.9	
Effective Green, g (s)		29.1		40.3	40.3			7.9	15.1		7.9	
Actuated g/C Ratio		0.52		0.72	0.72			0.14	0.27		0.14	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		970		363	2563			190	543		158	
v/s Ratio Prot		c0.43		c0.07	0.27				0.05			
v/s Ratio Perm				0.32				c0.12	0.09		0.01	
v/c Ratio		0.84		0.55	0.38			0.85	0.42		0.08	
Uniform Delay, d1		11.5		8.8	3.1			23.6	16.9		21.0	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		6.4		1.7	0.1			29.0	0.5		0.2	
Delay (s)		18.0		10.4	3.2			52.6	17.4		21.2	
Level of Service		B		B	A			D	B		C	
Approach Delay (s)		18.0			4.4			29.0			21.2	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	10	845	1285	10	20	10
Peak Hour Factor	0.40	0.92	0.92	0.55	0.72	0.72
Hourly flow rate (vph)	25	918	1397	18	28	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1415				2365	1397
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1415				2365	1397
tC, single (s)	4.1				6.4	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.4
p0 queue free %	95				25	92
cM capacity (veh/h)	488				37	167

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	25	918	1397	18	42
Volume Left	25	0	0	0	28
Volume Right	0	0	0	18	14
cSH	488	1700	1700	1700	50
Volume to Capacity	0.05	0.54	0.82	0.01	0.83
Queue Length 95th (ft)	4	0	0	0	86
Control Delay (s)	12.8	0.0	0.0	0.0	206.4
Lane LOS	B				F
Approach Delay (s)	0.3		0.0		206.4
Approach LOS					F

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	875	0	15	1335	10	0	0	10	10	0	5
Peak Hour Factor	0.50	0.93	0.92	0.80	0.92	0.75	0.60	0.60	0.60	0.40	0.40	0.40
Hourly flow rate (vph)	10	941	0	19	1451	13	0	0	17	25	0	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1464			941			2462	2463	941	2466	2449	1451
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1464			941			2462	2463	941	2466	2449	1451
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			100	100	95	0	100	92
cM capacity (veh/h)	467			737			19	29	322	19	30	162

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	10	941	19	1451	13	17	38
Volume Left	10	0	19	0	0	0	25
Volume Right	0	0	0	0	13	17	12
cSH	467	1700	737	1700	1700	322	27
Volume to Capacity	0.02	0.55	0.03	0.85	0.01	0.05	1.38
Queue Length 95th (ft)	2	0	2	0	0	4	111
Control Delay (s)	12.9	0.0	10.0	0.0	0.0	16.8	523.4
Lane LOS	B		B			C	F
Approach Delay (s)	0.1		0.1			16.8	523.4
Approach LOS						C	F

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NWL	NWR	SWL	SWR
Lane Configurations										
Sign Control		Free			Free		Stop		Yield	
Grade		0%			0%		0%		0%	
Volume (veh/h)	0	525	345	0	1295	0	0	0	0	135
Peak Hour Factor	0.92	0.92	0.84	0.92	0.86	0.92	0.92	0.92	0.92	0.79
Hourly flow rate (vph)	0	571	411	0	1506	0	0	0	0	171
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type							None		None	
Median storage veh)										
Upstream signal (ft)										
pX, platoon unblocked										
vC, conflicting volume	1506			981			2453	2282	2487	1506
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	1506			981			2453	2282	2487	1506
tC, single (s)	4.1			4.1			7.1	6.5	6.5	6.2
tC, 2 stage (s)										
tF (s)	2.2			2.2			3.5	4.0	4.0	3.3
p0 queue free %	100			100			0	100	100	0
cM capacity (veh/h)	445			704			0	40	29	150

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	981	1506	171
Volume Left	0	0	0
Volume Right	411	0	171
cSH	1700	1700	150
Volume to Capacity	0.58	0.89	1.14
Queue Length 95th (ft)	0	0	236
Control Delay (s)	0.0	0.0	176.8
Lane LOS			F
Approach Delay (s)	0.0	0.0	176.8
Approach LOS			F

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	130	395	785	370	0	510
Peak Hour Factor	0.80	0.95	0.89	0.86	0.92	0.90
Hourly flow rate (vph)	162	416	882	430	0	567
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1312				1838	1097
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1312				1838	1097
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	69				100	0
cM capacity (veh/h)	527				57	259

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	578	1312	567
Volume Left	162	0	0
Volume Right	0	430	567
cSH	527	1700	259
Volume to Capacity	0.31	0.77	2.19
Queue Length 95th (ft)	32	0	1084
Control Delay (s)	8.5	0.0	577.7
Lane LOS	A		F
Approach Delay (s)	8.5	0.0	577.7
Approach LOS			F

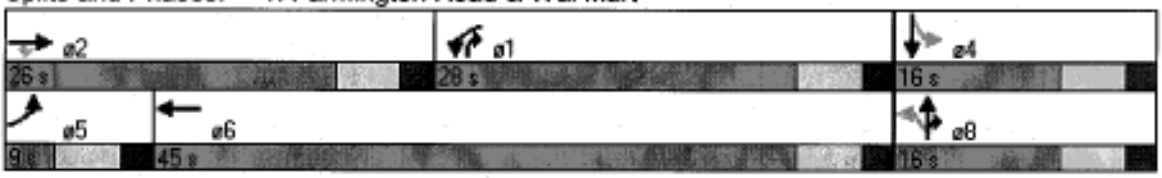
Intersection Summary			
Average Delay	135.2		
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	15	790	110	405	965	145	10	365	30	5
Lane Group Flow (vph)	28	878	149	506	1106	0	192	406	38	33
Turn Type	Prot		Perm	Prot		Perm		pt+ov	Perm	
Protected Phases	5	2		1	6		8	8 1		4
Permitted Phases			2			8			4	
Detector Phases	5	2	2	1	6	8	8	8 1	4	4
Minimum Initial (s)	2.0	5.0	5.0	2.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	8.0	22.0	22.0	8.0	22.0	14.0	14.0		14.0	14.0
Total Split (s)	9.0	26.0	26.0	28.0	45.0	16.0	16.0	44.0	16.0	16.0
Total Split (%)	12.9%	37.1%	37.1%	40.0%	64.3%	22.9%	22.9%	62.9%	22.9%	22.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	Min	Min		Min	Min
v/c Ratio	0.21	0.78	0.24	0.82	0.47		0.76	0.41	0.28	0.12
Control Delay	34.7	27.5	4.7	21.3	1.7		49.6	9.4	31.5	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	34.7	27.5	4.7	21.3	1.7		49.6	9.4	31.5	15.0
Queue Length 50th (ft)	12	178	0	160	15		80	82	14	4
Queue Length 95th (ft)	21	245	21	190	32		48	138	36	10
Internal Link Dist (ft)		277			855		264			211
Turn Bay Length (ft)	150		150	265						
Base Capacity (vph)	133	1131	613	619	2368		255	995	136	272
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	0.21	0.78	0.24	0.82	0.47		0.75	0.41	0.28	0.12

Intersection Summary

Cycle Length: 70
Actuated Cycle Length: 70
Offset: 8 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 1: Farmington Road & Wal Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	8	8	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99			1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1805	3574	1615	1805	3553			1944	1723	1564	1475	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.74	1.00	0.48	1.00	
Satd. Flow (perm)	1805	3574	1615	1805	3553			1490	1723	787	1475	
Volume (vph)	15	790	110	405	965	25	145	10	365	30	5	15
Peak-hour factor, PHF	0.54	0.90	0.74	0.80	0.91	0.54	0.89	0.34	0.90	0.80	0.50	0.65
Adj. Flow (vph)	28	878	149	506	1060	46	163	29	406	38	10	23
RTOR Reduction (vph)	0	0	109	0	4	0	0	0	10	0	19	0
Lane Group Flow (vph)	28	878	40	506	1102	0	0	192	397	38	14	0
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.2	16.6	16.6	25.6	41.0			9.8	41.4	9.8	9.8	
Effective Green, g (s)	3.2	18.6	18.6	27.6	43.0			11.8	43.4	11.8	11.8	
Actuated g/C Ratio	0.05	0.27	0.27	0.39	0.61			0.17	0.62	0.17	0.17	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	83	950	429	712	2183			251	1068	133	249	
v/s Ratio Prot	0.02	c0.25		c0.28	0.31				0.23		0.01	
v/s Ratio Perm			0.02					c0.13		0.05		
v/c Ratio	0.34	0.92	0.09	0.71	0.50			0.76	0.37	0.29	0.06	
Uniform Delay, d1	32.4	25.0	19.3	17.8	7.5			27.8	6.6	25.4	24.4	
Progression Factor	1.00	1.00	1.00	0.50	0.18			1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.4	15.8	0.4	2.5	0.6			13.0	0.2	1.2	0.1	
Delay (s)	34.8	40.8	19.8	11.5	2.0			40.7	6.8	26.6	24.5	
Level of Service	C	D	B	B	A			D	A	C	C	
Approach Delay (s)		37.7			5.0			17.7			25.6	
Approach LOS		D			A			B			C	

Intersection Summary			
HCM Average Control Delay	18.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	235	950	1165	115	230
Lane Group Flow (vph)	250	1033	1323	135	245
Turn Type	Prot				Perm
Protected Phases	5	2	6	4	
Permitted Phases					4
Detector Phases	5	2	6	4	4
Minimum Initial (s)	2.0	5.0	5.0	5.0	5.0
Minimum Split (s)	8.0	20.0	20.0	14.0	14.0
Total Split (s)	19.0	56.0	37.0	14.0	14.0
Total Split (%)	27.1%	80.0%	52.9%	20.0%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.68	0.39	0.77	0.54	0.56
Control Delay	27.5	1.5	18.6	36.4	9.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	1.5	18.6	36.4	9.7
Queue Length 50th (ft)	101	15	235	55	0
Queue Length 95th (ft)	m148	31	318	100	58
Internal Link Dist (ft)		855	167	756	
Turn Bay Length (ft)	450				150
Base Capacity (vph)	387	2670	1725	260	444
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	0.65	0.39	0.77	0.52	0.55

Intersection Summary

Cycle Length: 70

Actuated Cycle Length: 70

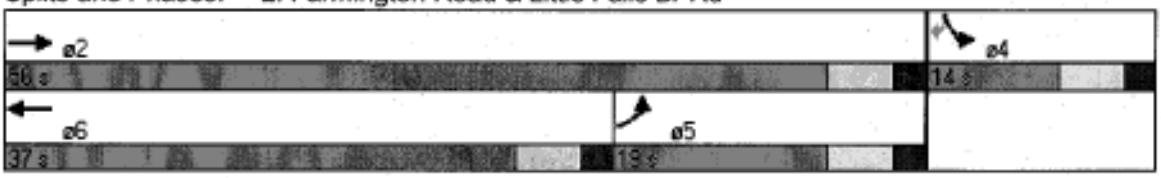
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1805	3574	3528		1787	1615
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1805	3574	3528		1787	1615
Volume (vph)	235	950	1165	90	115	230
Peak-hour factor, PHF	0.94	0.92	0.97	0.74	0.85	0.94
Adj. Flow (vph)	250	1033	1201	122	135	245
RTOR Reduction (vph)	0	0	11	0	0	210
Lane Group Flow (vph)	250	1033	1312	0	135	35
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	12.1	50.1	32.0		7.9	7.9
Effective Green, g (s)	14.1	52.1	34.0		9.9	9.9
Actuated g/C Ratio	0.20	0.74	0.49		0.14	0.14
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	364	2660	1714		253	228
v/s Ratio Prot	c0.14	0.29	c0.37		c0.08	
v/s Ratio Perm						0.02
v/c Ratio	0.69	0.39	0.77		0.53	0.15
Uniform Delay, d1	25.9	3.2	14.7		27.9	26.4
Progression Factor	0.75	0.35	1.00		1.00	1.00
Incremental Delay, d2	4.0	0.3	3.3		2.2	0.3
Delay (s)	23.4	1.5	18.1		30.1	26.7
Level of Service	C	A	B		C	C
Approach Delay (s)		5.7	18.1		27.9	
Approach LOS		A	B		C	

Intersection Summary			
HCM Average Control Delay	14.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

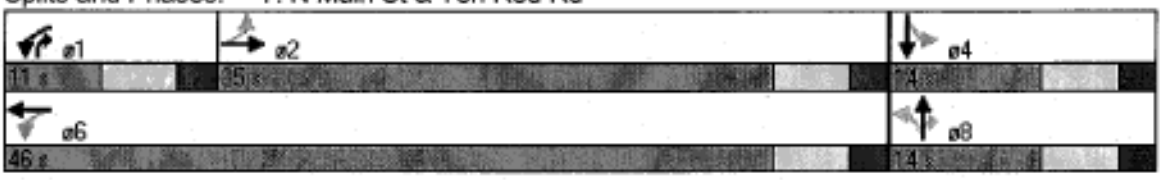
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	ø4
Lane Configurations							
Volume (vph)	605	175	750	75	5	315	
Lane Group Flow (vph)	704	186	789	0	108	342	
Turn Type		pm+pt		Perm		pm+ov	
Protected Phases	2	1	6		8	1	4
Permitted Phases		6		8		8	
Detector Phases	2	1	6	8	8	1	
Minimum Initial (s)	5.0	2.0	5.0	5.0	5.0	2.0	5.0
Minimum Split (s)	20.0	8.0	20.0	14.0	14.0	8.0	14.0
Total Split (s)	35.0	11.0	46.0	14.0	14.0	11.0	14.0
Total Split (%)	58.3%	18.3%	76.7%	23.3%	23.3%	18.3%	23%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead				Lead	
Lead-Lag Optimize?	Yes	Yes				Yes	
Recall Mode	Min	None	Min	None	None	None	None
v/c Ratio	0.74	0.40	0.29		0.44	0.52	
Control Delay	16.7	5.8	3.5		28.2	9.8	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	16.7	5.8	3.5		28.2	9.8	
Queue Length 50th (ft)	178	17	44		33	35	
Queue Length 95th (ft)	284	33	63		30	100	
Internal Link Dist (ft)	260		1019		802		
Turn Bay Length (ft)						260	
Base Capacity (vph)	1041	460	2747		261	664	
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	0.68	0.40	0.29		0.41	0.52	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 52.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: N Main St & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor		1.00		1.00	0.95			1.00	1.00			
Frt		1.00		1.00	1.00			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.96	1.00			
Satd. Flow (prot)		1894		1805	3610			1820	1599			
Flt Permitted		1.00		0.17	1.00			0.75	1.00			
Satd. Flow (perm)		1894		324	3610			1427	1599			
Volume (vph)	0	605	10	175	750	0	75	5	315	0	0	0
Peak-hour factor, PHF	0.92	0.88	0.63	0.94	0.95	0.50	0.79	0.38	0.92	0.92	0.92	0.25
Adj. Flow (vph)	0	688	16	186	789	0	95	13	342	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	137	0	0	0
Lane Group Flow (vph)	0	702	0	186	789	0	0	108	205	0	0	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Turn Type	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		2		1	6			8	1		4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)		24.5		35.8	35.8			5.8	11.1			
Effective Green, g (s)		26.5		37.8	37.8			7.8	15.1			
Actuated g/C Ratio		0.49		0.71	0.71			0.15	0.28			
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0			
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		936		430	2546			208	570			
v/s Ratio Prot		c0.37		0.06	0.22				c0.05			
v/s Ratio Perm				0.25				c0.08	0.08			
v/c Ratio		0.75		0.43	0.31			0.52	0.36			
Uniform Delay, d1		10.9		6.3	3.0			21.2	15.4			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		3.4		0.7	0.1			2.2	0.4			
Delay (s)		14.3		7.0	3.0			23.4	15.8			
Level of Service		B		A	A			C	B			
Approach Delay (s)		14.3			3.8			17.6			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	53.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	20	1065	1230	40	20	25
Peak Hour Factor	0.45	0.96	0.91	0.54	0.63	0.63
Hourly flow rate (vph)	44	1109	1352	74	32	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1426				2550	1352
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1426				2550	1352
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				0	79
cM capacity (veh/h)	483				27	186

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	44	1109	1352	74	71
Volume Left	44	0	0	0	32
Volume Right	0	0	0	74	40
cSH	483	1700	1700	1700	52
Volume to Capacity	0.09	0.65	0.80	0.04	1.38
Queue Length 95th (ft)	8	0	0	0	164
Control Delay (s)	13.2	0.0	0.0	0.0	386.2
Lane LOS	B				F
Approach Delay (s)	0.5		0.0		386.2
Approach LOS					F

Intersection Summary			
Average Delay	10.6		
Intersection Capacity Utilization	74.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	1095	5	5	1285	20	0	0	10	15	0	15
Peak Hour Factor	0.63	0.94	0.38	0.58	0.94	0.63	0.63	0.63	0.63	0.80	0.80	0.80
Hourly flow rate (vph)	8	1165	13	9	1367	32	0	0	16	19	0	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1399			1178			2590	2603	1171	2581	2578	1367
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1399			1178			2590	2603	1171	2581	2578	1367
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	93	0	100	90
cM capacity (veh/h)	495			600			15	24	237	16	25	182

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	8	1178	9	1367	32	16	38
Volume Left	8	0	9	0	0	0	19
Volume Right	0	13	0	0	32	16	19
cSH	495	1700	600	1700	1700	237	29
Volume to Capacity	0.02	0.69	0.01	0.80	0.02	0.07	1.29
Queue Length 95th (ft)	1	0	1	0	0	5	108
Control Delay (s)	12.4	0.0	11.1	0.0	0.0	21.3	471.4
Lane LOS	B		B			C	F
Approach Delay (s)	0.1		0.1			21.3	471.4
Approach LOS						C	F

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NWL	NWR	SWL	SWR
Lane Configurations										
Sign Control		Free			Free		Stop		Yield	
Grade		0%			0%		0%		0%	
Volume (veh/h)	0	755	390	0	1145	0	0	0	0	225
Peak Hour Factor	0.92	0.91	0.94	0.92	0.93	0.92	0.92	0.92	0.92	0.72
Hourly flow rate (vph)	0	830	415	0	1231	0	0	0	0	312
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type							None		None	
Median storage veh)										
Upstream signal (ft)										
pX, platoon unblocked										
vC, conflicting volume	1231			1245			2581	2268	2476	1231
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	1231			1245			2581	2268	2476	1231
tC, single (s)	4.1			4.1			7.1	6.5	6.5	6.2
tC, 2 stage (s)										
tF (s)	2.2			2.2			3.5	4.0	4.0	3.3
p0 queue free %	100			100			0	100	100	0
cM capacity (veh/h)	573			566			0	41	30	217

Direction, Lane #	EB 1	WB 1	SW 1
Volume Total	1245	1231	312
Volume Left	0	0	0
Volume Right	415	0	312
cSH	1700	1700	217
Volume to Capacity	0.73	0.72	1.44
Queue Length 95th (ft)	0	0	458
Control Delay (s)	0.0	0.0	263.1
Lane LOS			F
Approach Delay (s)	0.0	0.0	263.1
Approach LOS			F

Intersection Summary			
Average Delay	29.5		
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	145	610	585	280	0	560
Peak Hour Factor	0.90	0.91	0.93	0.85	0.92	0.94
Hourly flow rate (vph)	161	670	629	329	0	596
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	958				1786	794
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	958				1786	794
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	78				100	0
cM capacity (veh/h)	718				70	390

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	831	958	596
Volume Left	161	0	0
Volume Right	0	329	596
cSH	718	1700	390
Volume to Capacity	0.22	0.56	1.53
Queue Length 95th (ft)	21	0	815
Control Delay (s)	5.6	0.0	276.3
Lane LOS	A		F
Approach Delay (s)	5.6	0.0	276.3
Approach LOS			F

Intersection Summary			
Average Delay	71.0		
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	ø4	ø5
Lane Configurations									
Volume (vph)	1105	35	65	530	25	0	80		
Lane Group Flow (vph)	1201	38	71	576	0	27	87		
Turn Type		Perm	Prot		Perm		pt+ov		
Protected Phases	2		1	6		8	8 1	4	5
Permitted Phases		2			8				
Detector Phases	2	2	1	6	8	8	8 1		
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	22.0	22.0	11.0	22.0	14.0	14.0		14.0	11.0
Total Split (s)	33.0	33.0	12.0	33.0	15.0	15.0	27.0	15.0	12.0
Total Split (%)	55.0%	55.0%	20.0%	55.0%	25.0%	25.0%	45.0%	25%	20%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lead/Lag	Lead	Lead	Lag	Lag					Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					Yes
Recall Mode	C-Max	C-Max	None	C-Max	Min	Min		Min	None
v/c Ratio	0.60	0.04	0.30	0.23		0.12	0.15		
Control Delay	11.4	3.2	12.3	0.7		23.2	9.1		
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay	11.4	3.2	12.3	0.7		23.2	9.1		
Queue Length 50th (ft)	148	0	22	3		9	12		
Queue Length 95th (ft)	227	12	33	3		27	35		
Internal Link Dist (ft)	277			855		264			
Turn Bay Length (ft)		150	265						
Base Capacity (vph)	1991	907	236	2558		276	671		
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	0.04	0.30	0.23		0.10	0.13		

Intersection Summary

Cycle Length: 60

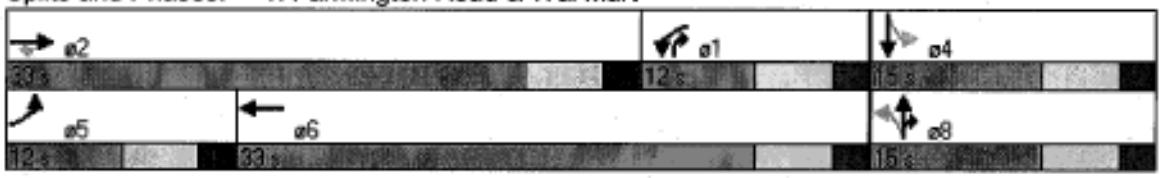
Actuated Cycle Length: 60

Offset: 4 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Splits and Phases: 1: Farmington Road & Wal Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	8	8	12
Total Lost time (s)		4.0	4.0	4.0	4.0			4.0	4.0			
Lane Util. Factor		0.95	1.00	1.00	0.95			1.00	1.00			
Frt		1.00	0.85	1.00	1.00			1.00	0.85			
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3539	1583	1770	3539			1888	1689			
Flt Permitted		1.00	1.00	0.95	1.00			0.76	1.00			
Satd. Flow (perm)		3539	1583	1770	3539			1505	1689			
Volume (vph)	0	1105	35	65	530	0	25	0	80	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1201	38	71	576	0	27	0	87	0	0	0
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	26	0	0	0
Lane Group Flow (vph)	0	1201	21	71	576	0	0	27	61	0	0	0
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)		30.6	30.6	4.8	41.4			6.6	17.4			
Effective Green, g (s)		32.6	32.6	6.8	43.4			8.6	19.4			
Actuated g/C Ratio		0.54	0.54	0.11	0.72			0.14	0.32			
Clearance Time (s)		6.0	6.0	6.0	6.0			6.0				
Vehicle Extension (s)		3.0	3.0	3.0	3.0			3.0				
Lane Grp Cap (vph)		1923	860	201	2560			216	546			
v/s Ratio Prot		c0.34		c0.04	0.16				c0.04			
v/s Ratio Perm			0.01					0.02				
v/c Ratio		0.62	0.02	0.35	0.22			0.12	0.11			
Uniform Delay, d1		9.5	6.3	24.6	2.7			22.4	14.3			
Progression Factor		1.00	1.00	0.38	0.17			1.00	1.00			
Incremental Delay, d2		1.5	0.1	1.0	0.2			0.3	0.1			
Delay (s)		11.0	6.4	10.3	0.6			22.7	14.3			
Level of Service		B	A	B	A			C	B			
Approach Delay (s)		10.9			1.7			16.3			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	8.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

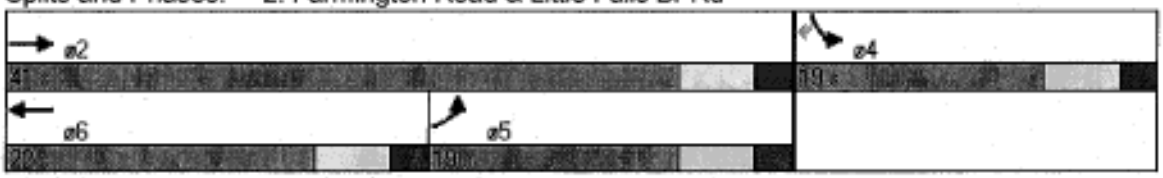
c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	160	1025	505	160	90
Lane Group Flow (vph)	174	1114	576	174	98
Turn Type	Prot				Perm
Protected Phases	5	2	6	4	
Permitted Phases					4
Detector Phases	5	2	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	14.0	14.0
Total Split (s)	19.0	41.0	22.0	19.0	19.0
Total Split (%)	31.7%	68.3%	36.7%	31.7%	31.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.41	0.44	0.36	0.48	0.24
Control Delay	12.0	1.0	14.1	24.9	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	1.0	14.1	24.9	6.5
Queue Length 50th (ft)	51	10	82	55	0
Queue Length 95th (ft)	m70	15	155	101	30
Internal Link Dist (ft)		855	167	756	
Turn Bay Length (ft)	450				150
Base Capacity (vph)	463	2528	1583	443	469
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	0.38	0.44	0.36	0.39	0.21

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3514		1770	1583
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1770	3539	3514		1770	1583
Volume (vph)	160	1025	505	25	160	90
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1114	549	27	174	98
RTOR Reduction (vph)	0	0	5	0	0	80
Lane Group Flow (vph)	174	1114	571	0	174	18
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	11.1	38.9	21.8		9.1	9.1
Effective Green, g (s)	13.1	40.9	23.8		11.1	11.1
Actuated g/C Ratio	0.22	0.68	0.40		0.18	0.18
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	386	2412	1394		327	293
v/s Ratio Prot	0.10	c0.31	0.16		c0.10	
v/s Ratio Perm						0.01
v/c Ratio	0.45	0.46	0.41		0.53	0.06
Uniform Delay, d1	20.3	4.4	13.0		22.1	20.2
Progression Factor	0.50	0.11	0.88		1.00	1.00
Incremental Delay, d2	0.7	0.5	0.9		1.7	0.1
Delay (s)	10.9	1.0	12.3		23.8	20.2
Level of Service	B	A	B		C	C
Approach Delay (s)		2.4	12.3		22.5	
Approach LOS		A	B		C	

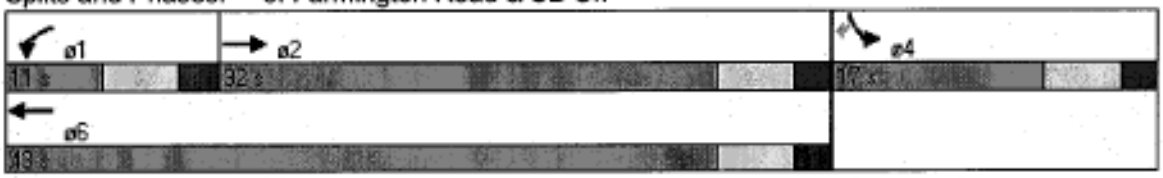
Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	535	30	605	220	105
Lane Group Flow (vph)	1441	33	658	239	114
Turn Type		Prot		Prot	custom
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phases	2	1	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0
Total Split (s)	32.0	11.0	43.0	17.0	17.0
Total Split (%)	53.3%	18.3%	71.7%	28.3%	28.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Min	Min	Min
v/c Ratio	0.64	0.16	0.28	0.65	0.27
Control Delay	2.2	27.4	2.0	31.1	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	2.2	27.4	2.0	31.1	6.7
Queue Length 50th (ft)	0	10	5	79	0
Queue Length 95th (ft)	8	m28	10	#148	34
Internal Link Dist (ft)	355		709		
Turn Bay Length (ft)		200			100
Base Capacity (vph)	2235	210	2334	384	432
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	0.64	0.16	0.28	0.62	0.26

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 54 (90%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
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.

Splits and Phases: 5: Farmington Road & SB Off



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0		4.0
Lane Util. Factor		0.95		1.00	0.95					1.00		1.00
Frt		0.91		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		3223		1770	3539					1770		1583
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		3223		1770	3539					1770		1583
Volume (vph)	0	535	790	30	605	0	0	0	0	220	0	105
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	582	859	33	658	0	0	0	0	239	0	114
RTOR Reduction (vph)	0	394	0	0	0	0	0	0	0	0	0	90
Lane Group Flow (vph)	0	1047	0	33	658	0	0	0	0	239	0	24
Turn Type				Prot						Prot		custom
Protected Phases		2		1	6					4		
Permitted Phases												4
Actuated Green, G (s)		29.6		2.0	37.6					10.4		10.4
Effective Green, g (s)		31.6		4.0	39.6					12.4		12.4
Actuated g/C Ratio		0.53		0.07	0.66					0.21		0.21
Clearance Time (s)		6.0		6.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		1697		118	2336					366		327
v/s Ratio Prot		c0.32		0.02	c0.19					c0.14		
v/s Ratio Perm												0.01
v/c Ratio		0.62		0.28	0.28					0.65		0.07
Uniform Delay, d1		10.0		26.6	4.3					21.8		19.2
Progression Factor		0.20		1.07	0.38					1.00		1.00
Incremental Delay, d2		1.6		1.2	0.3					4.1		0.1
Delay (s)		3.5		29.6	1.9					26.0		19.3
Level of Service		A		C	A					C		B
Approach Delay (s)		3.5			3.2			0.0			23.8	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM Average Control Delay	6.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	60	695	320	315	30
Lane Group Flow (vph)	65	755	511	342	33
Turn Type	Prot			Prot	custom
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phases	5	2	6	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	11.0
Total Split (s)	16.0	40.0	24.0	20.0	20.0
Total Split (%)	26.7%	66.7%	40.0%	33.3%	33.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Max	Min	Min
v/c Ratio	0.23	0.33	0.29	0.46	0.09
Control Delay	21.2	2.8	8.8	22.2	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.2	2.8	8.8	22.2	7.7
Queue Length 50th (ft)	18	26	43	56	0
Queue Length 95th (ft)	m28	50	87	83	17
Internal Link Dist (ft)		709	2148		
Turn Bay Length (ft)	250			200	
Base Capacity (vph)	354	2305	1770	915	446
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	0.18	0.33	0.29	0.37	0.07

Intersection Summary

Cycle Length: 60

Actuated Cycle Length: 60

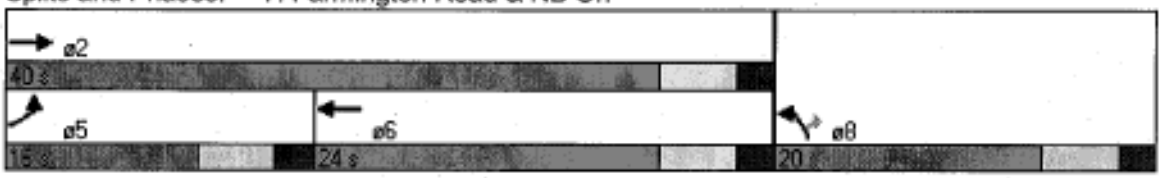
Offset: 32 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 45

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Farmington Road & NB On



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.95		0.97		1.00			
Frt	1.00	1.00			0.95		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1770	3539			3370		3433		1583			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1770	3539			3370		3433		1583			
Volume (vph)	60	695	0	0	320	150	315	0	30	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	65	755	0	0	348	163	342	0	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	74	0	0	0	26	0	0	0
Lane Group Flow (vph)	65	755	0	0	437	0	342	0	7	0	0	0
Turn Type	Prot						Prot		custom			
Protected Phases	5	2			6		8					
Permitted Phases									8			
Actuated Green, G (s)	5.2	37.1			25.9		10.9		10.9			
Effective Green, g (s)	7.2	39.1			27.9		12.9		12.9			
Actuated g/C Ratio	0.12	0.65			0.46		0.22		0.22			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	212	2306			1567		738		340			
v/s Ratio Prot	0.04	c0.21			0.13		c0.10					
v/s Ratio Perm									0.00			
v/c Ratio	0.31	0.33			0.28		0.46		0.02			
Uniform Delay, d1	24.1	4.6			9.9		20.5		18.6			
Progression Factor	0.92	0.49			1.00		1.00		1.00			
Incremental Delay, d2	0.6	0.3			0.4		0.5		0.0			
Delay (s)	22.8	2.6			10.3		21.0		18.6			
Level of Service	C	A			B		C		B			
Approach Delay (s)		4.2			10.3			20.8			0.0	
Approach LOS		A			B			C			A	

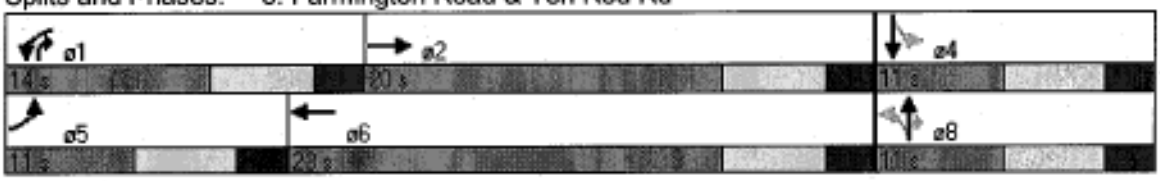
Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	ø4	ø5
Lane Configurations								
Volume (vph)	585	190	405	60	5	140		
Lane Group Flow (vph)	728	207	440	0	70	152		
Turn Type		Prot		Perm		pm+ov		
Protected Phases	2	1	6		8	1	4	5
Permitted Phases				8		8		
Detector Phases	2	1	6	8	8	1		
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	20.0	14.0	23.0	11.0	11.0	14.0	11.0	11.0
Total Split (%)	44.4%	31.1%	51.1%	24.4%	24.4%	31.1%	24%	24%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lag			Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes		Yes
Recall Mode	Min	None	Min	None	None	None	None	None
v/c Ratio	0.42	0.53	0.16		0.34	0.24		
Control Delay	10.2	19.6	2.3		22.0	4.0		
Queue Delay	0.0	0.0	0.0		0.0	0.0		
Total Delay	10.2	19.6	2.3		22.0	4.0		
Queue Length 50th (ft)	72	47	16		16	7		
Queue Length 95th (ft)	114	97	27		44	28		
Internal Link Dist (ft)	260		1019		802			
Turn Bay Length (ft)		200				260		
Base Capacity (vph)	1786	401	2831		203	655		
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	0.52	0.16		0.34	0.23		

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 45.5
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 8: Farmington Road & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00			
Frt		0.98		1.00	1.00			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.96	1.00			
Satd. Flow (prot)		3472		1770	3539			1780	1583			
Flt Permitted		1.00		0.95	1.00			0.77	1.00			
Satd. Flow (perm)		3472		1770	3539			1437	1583			
Volume (vph)	0	585	85	190	405	0	60	5	140	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	636	92	207	440	0	65	5	152	0	0	0
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	72	0	0	0
Lane Group Flow (vph)	0	707	0	207	440	0	0	70	80	0	0	0
Turn Type	Prot			Prot			Perm		pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		19.8		7.2	33.0			3.0	10.2			
Effective Green, g (s)		21.8		9.2	35.0			5.0	14.2			
Actuated g/C Ratio		0.45		0.19	0.73			0.10	0.30			
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0			
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1577		339	2581			150	600			
v/s Ratio Prot		c0.20		c0.12	0.12				0.03			
v/s Ratio Perm								c0.05	0.03			
v/c Ratio		0.45		0.61	0.17			0.47	0.13			
Uniform Delay, d1		9.0		17.8	2.0			20.2	12.4			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.2		3.2	0.0			2.3	0.1			
Delay (s)		9.2		21.0	2.0			22.5	12.5			
Level of Service		A		C	A			C	B			
Approach Delay (s)		9.2			8.1			15.7			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	48.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	10	1210	565	10	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1315	614	11	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	625				1951	614
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	625				1951	614
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	956				70	492

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	11	1315	614	11	0
Volume Left	11	0	0	0	0
Volume Right	0	0	0	11	0
cSH	956	1700	1700	1700	1700
Volume to Capacity	0.01	0.77	0.36	0.01	0.00
Queue Length 95th (ft)	1	0	0	0	0
Control Delay (s)	8.8	0.0	0.0	0.0	0.0
Lane LOS	A				A
Approach Delay (s)	0.1		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	1200	5	5	580	5	0	0	15	15	0	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1304	5	5	630	5	0	0	16	16	0	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	636			1310			1959	1954	1307	1962	1951	630
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	636			1310			1959	1954	1307	1962	1951	630
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	92	62	100	98
cM capacity (veh/h)	948			528			46	63	195	43	64	481

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	0	1310	5	630	5	16	27
Volume Left	0	0	5	0	0	0	16
Volume Right	0	5	0	0	5	16	11
cSH	1700	1700	528	1700	1700	195	68
Volume to Capacity	0.00	0.77	0.01	0.37	0.00	0.08	0.40
Queue Length 95th (ft)	0	0	1	0	0	7	38
Control Delay (s)	0.0	0.0	11.9	0.0	0.0	25.1	89.7
Lane LOS			B			D	F
Approach Delay (s)	0.0		0.1			25.1	89.7
Approach LOS						D	F

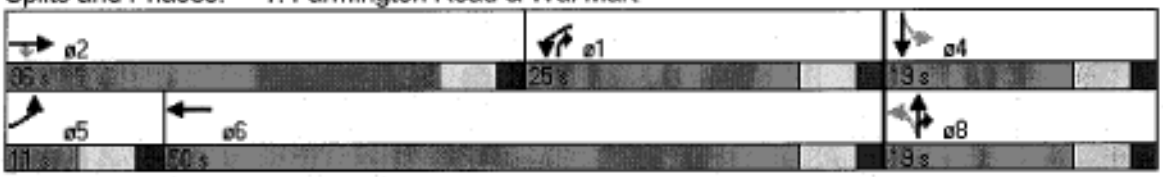
Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	950	85	255	1395	130	0	230	10	10
Lane Group Flow (vph)	5	1033	92	277	1543	0	141	250	11	22
Turn Type	Prot		Perm	Prot		Perm		pt+ov	Perm	
Protected Phases	5	2		1	6		8	8 1		4
Permitted Phases			2			8			4	
Detector Phases	5	2	2	1	6	8	8	8 1	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	14.0	14.0		14.0	14.0
Total Split (s)	11.0	36.0	36.0	25.0	50.0	19.0	19.0	44.0	19.0	19.0
Total Split (%)	13.8%	45.0%	45.0%	31.3%	62.5%	23.8%	23.8%	55.0%	23.8%	23.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	Min	Min		Min	Min
v/c Ratio	0.03	0.69	0.13	0.59	0.61		0.57	0.30	0.07	0.08
Control Delay	34.0	22.2	4.5	15.8	1.2		39.8	11.6	28.1	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	34.0	22.2	4.5	15.8	1.2		39.8	11.6	28.1	19.7
Queue Length 50th (ft)	2	221	1	103	13		64	59	5	5
Queue Length 95th (ft)	13	294	28	m116	m39		120	105	18	24
Internal Link Dist (ft)		277			855		264			211
Turn Bay Length (ft)	150		150	265						
Base Capacity (vph)	162	1506	725	469	2518		280	870	183	292
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	0.03	0.69	0.13	0.59	0.61		0.50	0.29	0.06	0.08

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 14 (18%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Farmington Road & Wal Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	8	8	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3574	1599	1787	3565			1906	1706	1549	1508	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.74	1.00	0.58	1.00	
Satd. Flow (perm)	1787	3574	1599	1787	3565			1491	1706	951	1508	
Volume (vph)	5	950	85	255	1395	25	130	0	230	10	10	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	1033	92	277	1516	27	141	0	250	11	11	11
RTOR Reduction (vph)	0	0	57	0	1	0	0	0	15	0	9	0
Lane Group Flow (vph)	5	1033	35	277	1542	0	0	141	235	11	13	0
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.0	26.9	26.9	23.8	49.7			11.3	41.1	11.3	11.3	
Effective Green, g (s)	3.0	28.9	28.9	25.8	51.7			13.3	43.1	13.3	13.3	
Actuated g/C Ratio	0.04	0.36	0.36	0.32	0.65			0.17	0.54	0.17	0.17	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	67	1291	578	576	2304			248	919	158	251	
v/s Ratio Prot	0.00	c0.29		0.15	c0.43				0.14		0.01	
v/s Ratio Perm			0.02					c0.09		0.01		
v/c Ratio	0.07	0.80	0.06	0.48	0.67			0.57	0.26	0.07	0.05	
Uniform Delay, d1	37.2	23.0	16.7	21.7	8.8			30.7	9.9	28.1	28.0	
Progression Factor	1.00	1.00	1.00	0.50	0.09			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	5.3	0.2	0.3	0.8			3.0	0.1	0.2	0.1	
Delay (s)	37.6	28.2	16.9	11.1	1.5			33.7	10.0	28.3	28.1	
Level of Service	D	C	B	B	A			C	B	C	C	
Approach Delay (s)		27.3			3.0			18.6			28.2	
Approach LOS		C			A			B			C	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

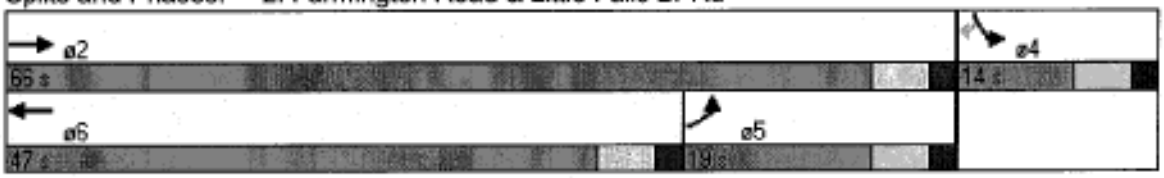
c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	245	945	1465	110	210
Lane Group Flow (vph)	266	1027	1728	120	228
Turn Type	Prot				Perm
Protected Phases	5	2	6	4	
Permitted Phases					4
Detector Phases	5	2	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	14.0	14.0
Total Split (s)	19.0	66.0	47.0	14.0	14.0
Total Split (%)	23.8%	82.5%	58.8%	17.5%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.81	0.37	0.90	0.56	0.58
Control Delay	40.2	0.9	16.6	43.5	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	0.9	16.6	43.5	11.4
Queue Length 50th (ft)	133	9	344	57	0
Queue Length 95th (ft)	m#238	22	#561	110	62
Internal Link Dist (ft)		855	167	756	
Turn Bay Length (ft)	450				150
Base Capacity (vph)	335	2783	1929	223	399
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	0.79	0.37	0.90	0.54	0.57

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
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.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3532		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3532		1787	1599
Volume (vph)	245	945	1465	125	110	210
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	266	1027	1592	136	120	228
RTOR Reduction (vph)	0	0	8	0	0	200
Lane Group Flow (vph)	266	1027	1720	0	120	28
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	12.8	60.3	41.5		7.7	7.7
Effective Green, g (s)	14.8	62.3	43.5		9.7	9.7
Actuated g/C Ratio	0.18	0.78	0.54		0.12	0.12
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	331	2783	1921		217	194
v/s Ratio Prot	c0.15	0.29	c0.49		c0.07	
v/s Ratio Perm						0.02
v/c Ratio	0.80	0.37	0.90		0.55	0.14
Uniform Delay, d1	31.2	2.7	16.2		33.1	31.4
Progression Factor	0.73	0.21	0.63		1.00	1.00
Incremental Delay, d2	10.8	0.3	5.3		3.0	0.3
Delay (s)	33.5	0.9	15.5		36.1	31.8
Level of Service	C	A	B		D	C
Approach Delay (s)		7.6	15.5		33.3	
Approach LOS		A	B		C	

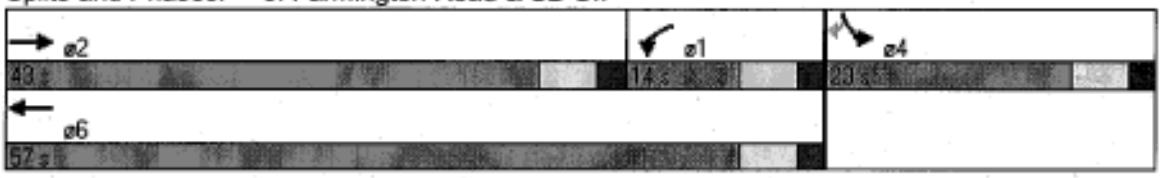
Intersection Summary			
HCM Average Control Delay	14.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	645	30	1595	185	165
Lane Group Flow (vph)	1163	33	1734	201	179
Turn Type		Prot		Prot	custom
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phases	2	1	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0
Total Split (s)	43.0	14.0	57.0	23.0	23.0
Total Split (%)	53.8%	17.5%	71.3%	28.8%	28.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Min	Min	Min
v/c Ratio	0.52	0.17	0.69	0.58	0.53
Control Delay	4.8	28.3	4.0	35.8	29.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.8	28.3	4.0	35.8	29.1
Queue Length 50th (ft)	0	16	14	92	66
Queue Length 95th (ft)	58	m17	m244	150	121
Internal Link Dist (ft)	355		709		
Turn Bay Length (ft)		200			100
Base Capacity (vph)	2236	223	2524	424	404
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	0.52	0.15	0.69	0.47	0.44

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 50 (63%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Farmington Road & SB Off



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0		4.0
Lane Util. Factor		0.95		1.00	0.95					1.00		1.00
Frt		0.94		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		3361		1787	3574					1787		1599
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		3361		1787	3574					1787		1599
Volume (vph)	0	645	425	30	1595	0	0	0	0	185	0	165
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	701	462	33	1734	0	0	0	0	201	0	179
RTOR Reduction (vph)	0	110	0	0	0	0	0	0	0	0	0	26
Lane Group Flow (vph)	0	1053	0	33	1734	0	0	0	0	201	0	153
Turn Type				Prot						Prot		custom
Protected Phases		2		1	6					4		
Permitted Phases												4
Actuated Green, G (s)		45.3		3.2	54.5					13.5		13.5
Effective Green, g (s)		47.3		5.2	56.5					15.5		15.5
Actuated g/C Ratio		0.59		0.06	0.71					0.19		0.19
Clearance Time (s)		6.0		6.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		1987		116	2524					346		310
v/s Ratio Prot		0.31		0.02	c0.49					c0.11		
v/s Ratio Perm												0.10
v/c Ratio		0.53		0.28	0.69					0.58		0.49
Uniform Delay, d1		9.7		35.6	6.7					29.3		28.8
Progression Factor		0.52		0.86	0.45					1.00		1.00
Incremental Delay, d2		1.0		0.6	0.7					2.5		1.2
Delay (s)		6.0		31.3	3.7					31.8		30.0
Level of Service		A		C	A					C		C
Approach Delay (s)		6.0			4.2			0.0			30.9	
Approach LOS		A			A			A			C	

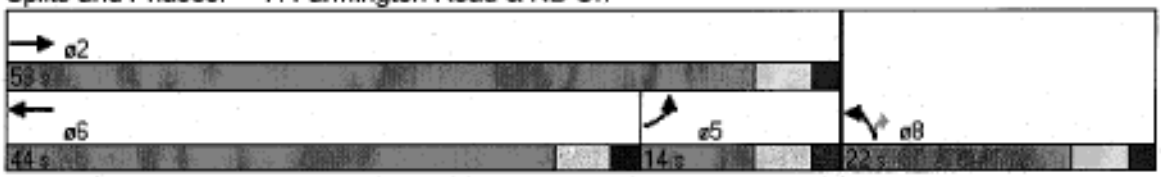
Intersection Summary			
HCM Average Control Delay	7.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	160	670	1000	630	30
Lane Group Flow (vph)	174	728	1582	685	33
Turn Type	Prot			Prot	custom
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phases	5	2	6	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	11.0
Total Split (s)	14.0	58.0	44.0	22.0	22.0
Total Split (%)	17.5%	72.5%	55.0%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Max	Min	Min
v/c Ratio	0.78	0.30	0.89	0.88	0.09
Control Delay	53.9	3.7	24.8	44.4	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	3.7	24.8	44.4	9.8
Queue Length 50th (ft)	90	66	331	171	0
Queue Length 95th (ft)	#191	24	#501	#264	21
Internal Link Dist (ft)		709	2148		
Turn Bay Length (ft)	250			200	
Base Capacity (vph)	223	2412	1769	780	385
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	0.78	0.30	0.89	0.88	0.09

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 48 (60%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Farmington Road & NB On



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.95		0.97		1.00			
Frt	1.00	1.00			0.95		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1787	3574			3407		3467		1599			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1787	3574			3407		3467		1599			
Volume (vph)	160	670	0	0	1000	455	630	0	30	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	728	0	0	1087	495	685	0	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	66	0	0	0	26	0	0	0
Lane Group Flow (vph)	174	728	0	0	1516	0	685	0	7	0	0	0
Turn Type	Prot						Prot		custom			
Protected Phases	5	2			6		8					
Permitted Phases									8			
Actuated Green, G (s)	8.0	52.0			38.0		16.0		16.0			
Effective Green, g (s)	10.0	54.0			40.0		18.0		18.0			
Actuated g/C Ratio	0.12	0.68			0.50		0.22		0.22			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	223	2412			1704		780		360			
v/s Ratio Prot	c0.10	0.20			c0.45		c0.20					
v/s Ratio Perm									0.00			
v/c Ratio	0.78	0.30			0.89		0.88		0.02			
Uniform Delay, d1	33.9	5.3			18.0		29.9		24.1			
Progression Factor	0.92	0.64			1.00		1.00		1.00			
Incremental Delay, d2	14.0	0.3			7.4		11.0		0.0			
Delay (s)	45.3	3.6			25.4		40.9		24.2			
Level of Service	D	A			C		D		C			
Approach Delay (s)		11.7			25.4			40.2			0.0	
Approach LOS		B			C			D			A	

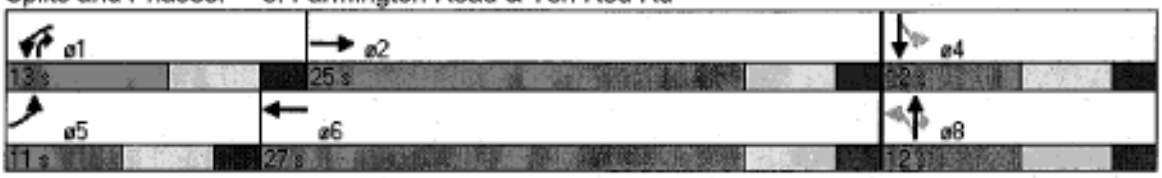
Intersection Summary			
HCM Average Control Delay	24.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	ø5
Lane Configurations									
Volume (vph)	825	210	1195	130	0	205	5	0	
Lane Group Flow (vph)	935	228	1299	0	141	223	0	5	
Turn Type		Prot		Perm		pm+ov	Perm		
Protected Phases	2	1	6		8	1		4	5
Permitted Phases				8		8	4		
Detector Phases	2	1	6	8	8	1	4	4	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	25.0	13.0	27.0	12.0	12.0	13.0	12.0	12.0	11.0
Total Split (%)	50.0%	26.0%	54.0%	24.0%	24.0%	26.0%	24.0%	24.0%	22%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes			Yes
Recall Mode	Min	None	Min	None	None	None	None	None	None
v/c Ratio	0.58	0.69	0.49		0.63	0.34		0.03	
Control Delay	12.4	32.6	4.4		35.1	8.6		18.2	
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	12.4	32.6	4.4		35.1	8.6		18.2	
Queue Length 50th (ft)	105	63	74		39	28		1	
Queue Length 95th (ft)	155	#150	108		#104	65		8	
Internal Link Dist (ft)	260		1019		802			348	
Turn Bay Length (ft)		200				260			
Base Capacity (vph)	1647	332	2644		224	648		198	
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	0.69	0.49		0.63	0.34		0.03	

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 48.5
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Farmington Road & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00		1.00	
Frt		0.99		1.00	1.00			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.95	1.00		0.95	
Satd. Flow (prot)		3552		1787	3574			1787	1599		1787	
Flt Permitted		1.00		0.95	1.00			0.75	1.00		0.67	
Satd. Flow (perm)		3552		1787	3574			1419	1599		1255	
Volume (vph)	0	825	35	210	1195	0	130	0	205	5	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	897	38	228	1299	0	141	0	223	5	0	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	43	0	0	0
Lane Group Flow (vph)	0	929	0	228	1299	0	0	141	180	0	5	0
Turn Type	Prot			Prot			Perm		pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		20.0		7.0	33.0			4.7	11.7		4.7	
Effective Green, g (s)		22.0		9.0	35.0			6.7	15.7		6.7	
Actuated g/C Ratio		0.44		0.18	0.70			0.13	0.32		0.13	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		1572		324	2517			191	634		169	
v/s Ratio Prot		c0.26		c0.13	0.36				0.05			
v/s Ratio Perm								c0.10	0.06		0.00	
v/c Ratio		0.59		0.70	0.52			0.74	0.28		0.03	
Uniform Delay, d1		10.5		19.1	3.4			20.7	12.8		18.7	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		0.6		6.8	0.2			13.8	0.2		0.1	
Delay (s)		11.1		25.9	3.6			34.5	13.0		18.7	
Level of Service		B		C	A			C	B		B	
Approach Delay (s)		11.1			6.9			21.3			18.7	
Approach LOS		B			A			C			B	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	49.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	10	1040	1585	10	20	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	1130	1723	11	22	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1734				2875	1723
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1734				2875	1723
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				0	90
cM capacity (veh/h)	366				18	111

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	11	1130	1723	11	33
Volume Left	11	0	0	0	22
Volume Right	0	0	0	11	11
cSH	366	1700	1700	1700	25
Volume to Capacity	0.03	0.66	1.01	0.01	1.32
Queue Length 95th (ft)	2	0	0	0	101
Control Delay (s)	15.1	0.0	0.0	0.0	526.7
Lane LOS	C				F
Approach Delay (s)	0.1		0.0		526.7
Approach LOS					F

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	1080	0	15	1645	10	0	0	10	10	0	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1174	0	16	1788	11	0	0	11	11	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1799			1174			3011	3016	1174	3016	3005	1788
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1799			1174			3011	3016	1174	3016	3005	1788
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			100	100	95	0	100	95
cM capacity (veh/h)	345			599			8	13	235	8	13	101

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	5	1174	16	1788	11	11	16
Volume Left	5	0	16	0	0	0	11
Volume Right	0	0	0	0	11	11	5
cSH	345	1700	599	1700	1700	235	11
Volume to Capacity	0.02	0.69	0.03	1.05	0.01	0.05	1.48
Queue Length 95th (ft)	1	0	2	0	0	4	71
Control Delay (s)	15.6	0.0	11.2	0.0	0.0	21.1	921.3
Lane LOS	C		B			C	F
Approach Delay (s)	0.1		0.1			21.1	921.3
Approach LOS						C	F

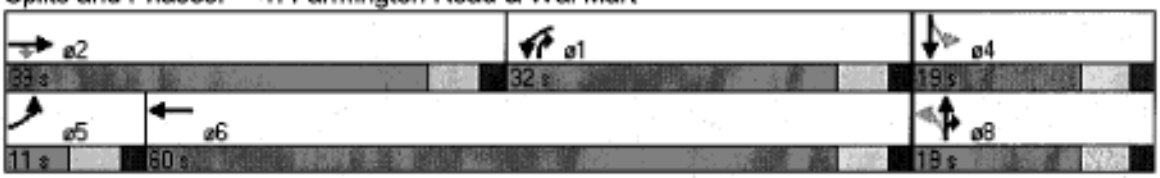
Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	15	1065	110	405	1290	145	10	365	30	5
Lane Group Flow (vph)	16	1158	120	440	1429	0	169	397	33	21
Turn Type	Prot		Perm	Prot		Perm		pt+ov	Perm	
Protected Phases	5	2		1	6		8	8 1		4
Permitted Phases			2			8			4	
Detector Phases	5	2	2	1	6	8	8	8 1	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	14.0	14.0		14.0	14.0
Total Split (s)	11.0	39.0	39.0	32.0	60.0	19.0	19.0	51.0	19.0	19.0
Total Split (%)	12.2%	43.3%	43.3%	35.6%	66.7%	21.1%	21.1%	56.7%	21.1%	21.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	Min	Min		Min	Min
v/c Ratio	0.11	0.82	0.17	0.79	0.55		0.73	0.45	0.26	0.09
Control Delay	40.7	30.4	7.0	20.3	2.0		55.2	14.8	38.7	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Delay	40.7	30.4	7.0	20.3	2.0		55.2	14.8	38.7	18.4
Queue Length 50th (ft)	9	306	10	170	35		92	126	17	2
Queue Length 95th (ft)	29	394	45	m221	m52		#183	197	45	23
Internal Link Dist (ft)		277			855		264			211
Turn Bay Length (ft)	150		150	265						
Base Capacity (vph)	141	1417	688	556	2594		243	900	132	254
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	0.11	0.82	0.17	0.79	0.55		0.70	0.44	0.25	0.08

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 6 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
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.

Splits and Phases: 1: Farmington Road & Wal Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	8	8	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3574	1599	1787	3564			1917	1706	1549	1444	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.72	1.00	0.48	1.00	
Satd. Flow (perm)	1787	3574	1599	1787	3564			1454	1706	775	1444	
Volume (vph)	15	1065	110	405	1290	25	145	10	365	30	5	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1158	120	440	1402	27	158	11	397	33	5	16
RTOR Reduction (vph)	0	0	59	0	1	0	0	0	8	0	13	0
Lane Group Flow (vph)	16	1158	61	440	1428	0	0	169	389	33	8	0
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.0	28.9	28.9	30.8	58.7			12.3	49.1	12.3	12.3	
Effective Green, g (s)	3.0	30.9	30.9	32.8	60.7			14.3	51.1	14.3	14.3	
Actuated g/C Ratio	0.03	0.34	0.34	0.36	0.67			0.16	0.57	0.16	0.16	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	60	1227	549	651	2404			231	969	123	229	
v/s Ratio Prot	0.01	c0.32		c0.25	0.40				0.23		0.01	
v/s Ratio Perm			0.04					c0.12		0.04		
v/c Ratio	0.27	0.94	0.11	0.68	0.59			0.73	0.40	0.27	0.03	
Uniform Delay, d1	42.4	28.7	20.2	24.1	8.0			36.0	10.9	33.3	32.0	
Progression Factor	1.00	1.00	1.00	0.47	0.25			1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.4	15.3	0.4	1.4	0.5			11.3	0.3	1.2	0.1	
Delay (s)	44.8	44.0	20.6	12.7	2.5			47.3	11.2	34.4	32.1	
Level of Service	D	D	C	B	A			D	B	C	C	
Approach Delay (s)		41.9			4.9			22.0			33.5	
Approach LOS		D			A			C			C	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		

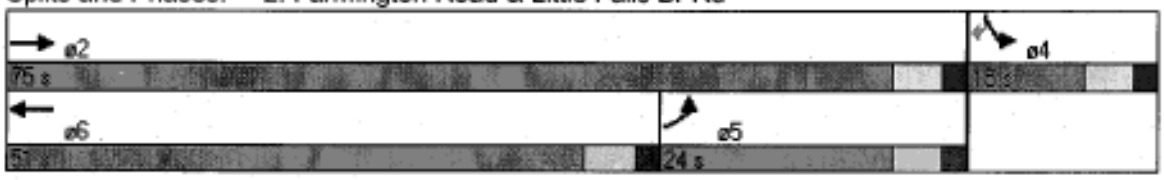
c Critical Lane Group

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	290	1170	1435	140	285
Lane Group Flow (vph)	315	1272	1680	152	310
Turn Type	Prot				Perm
Protected Phases	5	2	6	4	
Permitted Phases					4
Detector Phases	5	2	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	14.0	14.0
Total Split (s)	24.0	75.0	51.0	15.0	15.0
Total Split (%)	26.7%	83.3%	56.7%	16.7%	16.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag		Lead		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Min	None	None
v/c Ratio	0.82	0.45	0.89	0.70	0.67
Control Delay	45.9	1.1	13.1	56.9	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.9	1.1	13.1	56.9	12.3
Queue Length 50th (ft)	191	25	104	84	0
Queue Length 95th (ft)	m#251	27	#316	#171	76
Internal Link Dist (ft)		855	167	756	
Turn Bay Length (ft)	450				150
Base Capacity (vph)	397	2824	1883	218	468
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	0.79	0.45	0.89	0.70	0.66

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
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.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	3536		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1787	3574	3536		1787	1599
Volume (vph)	290	1170	1435	110	140	285
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	315	1272	1560	120	152	310
RTOR Reduction (vph)	0	0	6	0	0	272
Lane Group Flow (vph)	315	1272	1674	0	152	38
Turn Type	Prot					Perm
Protected Phases	5	2	6		4	
Permitted Phases						4
Actuated Green, G (s)	17.3	69.1	45.8		8.9	8.9
Effective Green, g (s)	19.3	71.1	47.8		10.9	10.9
Actuated g/C Ratio	0.21	0.79	0.53		0.12	0.12
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	383	2823	1878		216	194
v/s Ratio Prot	c0.18	0.36	c0.47		c0.09	
v/s Ratio Perm						0.02
v/c Ratio	0.82	0.45	0.89		0.70	0.19
Uniform Delay, d1	33.7	3.1	18.8		38.0	35.6
Progression Factor	0.95	0.23	0.34		1.00	1.00
Incremental Delay, d2	9.5	0.4	5.5		9.9	0.5
Delay (s)	41.7	1.1	12.0		47.9	36.1
Level of Service	D	A	B		D	D
Approach Delay (s)		9.1	12.0		40.0	
Approach LOS		A	B		D	

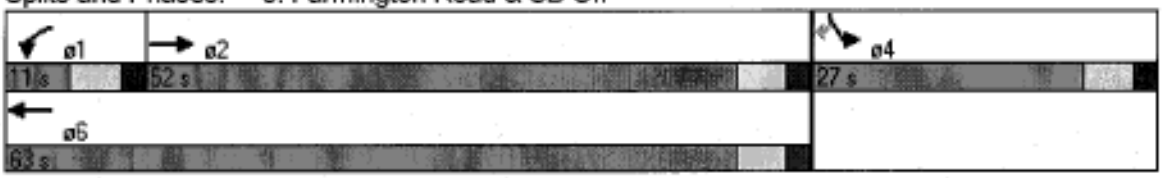
Intersection Summary			
HCM Average Control Delay	14.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	930	30	1410	220	275
Lane Group Flow (vph)	1533	33	1533	239	299
Turn Type		Prot		Prot	custom
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phases	2	1	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0
Total Split (s)	52.0	11.0	63.0	27.0	27.0
Total Split (%)	57.8%	12.2%	70.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Min	Min	Min
v/c Ratio	0.71	0.22	0.62	0.61	0.77
Control Delay	9.4	41.8	9.3	38.0	41.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	41.8	9.3	38.0	41.1
Queue Length 50th (ft)	101	17	240	120	133
Queue Length 95th (ft)	271	m23	288	191	220
Internal Link Dist (ft)	355		709		
Turn Bay Length (ft)		200			100
Base Capacity (vph)	2145	152	2472	457	444
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	0.71	0.22	0.62	0.52	0.67

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 6 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Farmington Road & SB Off



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0		4.0
Lane Util. Factor		0.95		1.00	0.95					1.00		1.00
Frt		0.95		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		3392		1787	3574					1787		1599
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		3392		1787	3574					1787		1599
Volume (vph)	0	930	480	30	1410	0	0	0	0	220	0	275
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1011	522	33	1533	0	0	0	0	239	0	299
RTOR Reduction (vph)	0	65	0	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	1468	0	33	1533	0	0	0	0	239	0	262
Turn Type				Prot						Prot		custom
Protected Phases		2		1	6					4		
Permitted Phases												4
Actuated Green, G (s)		50.9		3.3	60.2					17.8		17.8
Effective Green, g (s)		52.9		5.3	62.2					19.8		19.8
Actuated g/C Ratio		0.59		0.06	0.69					0.22		0.22
Clearance Time (s)		6.0		6.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		1994		105	2470					393		352
v/s Ratio Prot		c0.43		0.02	c0.43					0.13		
v/s Ratio Perm												c0.16
v/c Ratio		0.74		0.31	0.62					0.61		0.75
Uniform Delay, d1		13.5		40.6	7.5					31.6		32.7
Progression Factor		0.59		1.02	1.04					1.00		1.00
Incremental Delay, d2		2.3		1.0	0.7					2.7		8.3
Delay (s)		10.2		42.4	8.5					34.3		41.1
Level of Service		B		D	A					C		D
Approach Delay (s)		10.2			9.2			0.0			38.0	
Approach LOS		B			A			A			D	

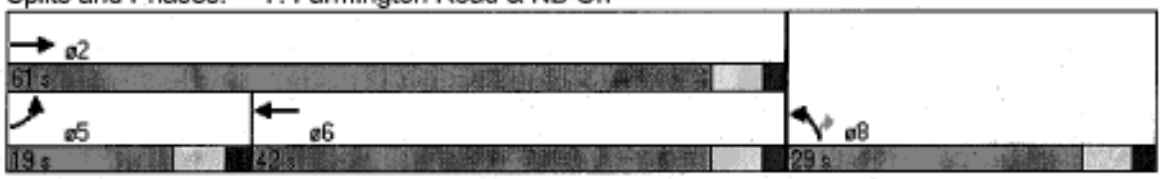
Intersection Summary			
HCM Average Control Delay	13.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	180	975	750	690	30
Lane Group Flow (vph)	196	1060	1190	750	33
Turn Type	Prot			Prot	custom
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phases	5	2	6	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	11.0
Total Split (s)	19.0	61.0	42.0	29.0	29.0
Total Split (%)	21.1%	67.8%	46.7%	32.2%	32.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Max	Min	Min
v/c Ratio	0.70	0.46	0.76	0.81	0.07
Control Delay	49.9	4.7	23.6	38.6	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	49.9	4.7	23.6	38.6	9.2
Queue Length 50th (ft)	108	80	277	202	0
Queue Length 95th (ft)	m150	101	363	269	22
Internal Link Dist (ft)		709	2148		
Turn Bay Length (ft)	250			200	
Base Capacity (vph)	298	2301	1563	963	468
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	0.66	0.46	0.76	0.78	0.07

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 48 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Farmington Road & NB On



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	1.00	0.95			0.95		0.97		1.00			
Frt	1.00	1.00			0.95		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	1787	3574			3405		3467		1599			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	1787	3574			3405		3467		1599			
Volume (vph)	180	975	0	0	750	345	690	0	30	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	1060	0	0	815	375	750	0	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	58	0	0	0	24	0	0	0
Lane Group Flow (vph)	196	1060	0	0	1132	0	750	0	9	0	0	0
Turn Type	Prot						Prot		custom			
Protected Phases	5	2			6		8					
Permitted Phases									8			
Actuated Green, G (s)	12.2	55.9			37.7		22.1		22.1			
Effective Green, g (s)	14.2	57.9			39.7		24.1		24.1			
Actuated g/C Ratio	0.16	0.64			0.44		0.27		0.27			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	282	2299			1502		928		428			
v/s Ratio Prot	c0.11	0.30			c0.33		c0.22					
v/s Ratio Perm									0.01			
v/c Ratio	0.70	0.46			0.75		0.81		0.02			
Uniform Delay, d1	35.9	8.1			21.1		30.8		24.3			
Progression Factor	1.11	0.50			1.00		1.00		1.00			
Incremental Delay, d2	5.2	0.5			3.6		5.2		0.0			
Delay (s)	44.9	4.5			24.6		36.0		24.3			
Level of Service	D	A			C		D		C			
Approach Delay (s)		10.8			24.6			35.5			0.0	
Approach LOS		B			C			D			A	

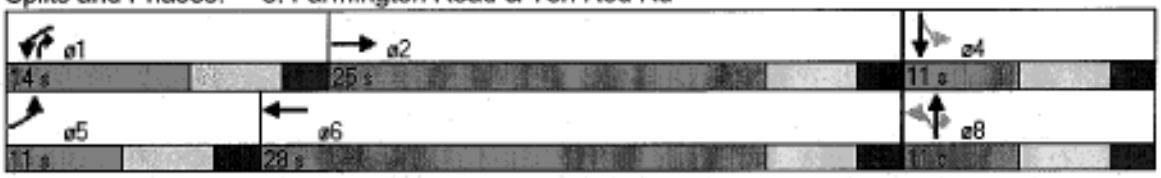
Intersection Summary			
HCM Average Control Delay	21.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	ø4	ø5
Lane Configurations								
Volume (vph)	955	215	925	90	5	180		
Lane Group Flow (vph)	1065	234	1005	0	103	196		
Turn Type		Prot		Perm		pm+ov		
Protected Phases	2	1	6		8	1	4	5
Permitted Phases				8		8		
Detector Phases	2	1	6	8	8	1		
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	25.0	14.0	28.0	11.0	11.0	14.0	11.0	11.0
Total Split (%)	50.0%	28.0%	56.0%	22.0%	22.0%	28.0%	22%	22%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lag			Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes		Yes
Recall Mode	Min	None	Min	None	None	None	None	None
v/c Ratio	0.65	0.66	0.37		0.54	0.31		
Control Delay	13.4	29.1	3.3		32.9	9.2		
Queue Delay	0.0	0.0	0.0		0.0	0.0		
Total Delay	13.4	29.1	3.3		32.9	9.2		
Queue Length 50th (ft)	127	64	46		29	28		
Queue Length 95th (ft)	186	#143	67		#79	62		
Internal Link Dist (ft)	260		1019		802			
Turn Bay Length (ft)		200				260		
Base Capacity (vph)	1648	362	2716		189	629		
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	0.65	0.65	0.37		0.54	0.31		

Intersection Summary

Cycle Length: 50
Actuated Cycle Length: 49.2
Natural Cycle: 50
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Farmington Road & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00			
Frt		1.00		1.00	1.00			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3561		1787	3574			1796	1599			
Flt Permitted		1.00		0.95	1.00			0.74	1.00			
Satd. Flow (perm)		3561		1787	3574			1385	1599			
Volume (vph)	0	955	25	215	925	0	90	5	180	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1038	27	234	1005	0	98	5	196	0	0	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	27	0	0	0
Lane Group Flow (vph)	0	1062	0	234	1005	0	0	103	169	0	0	0
Turn Type	Prot			Prot			Perm		pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		20.8		7.8	34.6			3.9	11.7			
Effective Green, g (s)		22.8		9.8	36.6			5.9	15.7			
Actuated g/C Ratio		0.45		0.19	0.72			0.12	0.31			
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0			
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1608		347	2590			162	624			
v/s Ratio Prot		c0.30		c0.13	0.28				0.05			
v/s Ratio Perm								c0.07	0.05			
v/c Ratio		0.66		0.67	0.39			0.64	0.27			
Uniform Delay, d1		10.8		18.9	2.7			21.3	13.1			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		1.0		5.1	0.1			7.9	0.2			
Delay (s)		11.9		24.0	2.8			29.2	13.3			
Level of Service		B		C	A			C	B			
Approach Delay (s)		11.9			6.8			18.8			0.0	
Approach LOS		B			A			B			A	

Intersection Summary			
HCM Average Control Delay	10.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	20	1310	1515	40	20	25
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1424	1647	43	22	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1690				3114	1647
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1690				3114	1647
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				0	78
cM capacity (veh/h)	380				12	123

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	22	1424	1647	43	49
Volume Left	22	0	0	0	22
Volume Right	0	0	0	43	27
cSH	380	1700	1700	1700	24
Volume to Capacity	0.06	0.84	0.97	0.03	2.02
Queue Length 95th (ft)	5	0	0	0	153
Control Delay (s)	15.0	0.0	0.0	0.0	819.0
Lane LOS	C				F
Approach Delay (s)	0.2		0.0		819.0
Approach LOS					F

Intersection Summary			
Average Delay	12.7		
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	1350	5	5	1585	20	0	0	10	15	0	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1467	5	5	1723	22	0	0	11	16	0	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1745			1473			3231	3236	1470	3223	3217	1723
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1745			1473			3231	3236	1470	3223	3217	1723
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			100	100	93	0	100	85
cM capacity (veh/h)	362			461			5	9	157	5	10	111

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	5	1473	5	1723	22	11	33
Volume Left	5	0	5	0	0	0	16
Volume Right	0	5	0	0	22	11	16
cSH	362	1700	461	1700	1700	157	10
Volume to Capacity	0.02	0.87	0.01	1.01	0.01	0.07	3.23
Queue Length 95th (ft)	1	0	1	0	0	6	Err
Control Delay (s)	15.1	0.0	12.9	0.0	0.0	29.6	Err
Lane LOS	C		B			D	F
Approach Delay (s)	0.1		0.0			29.6	Err
Approach LOS						D	F

Intersection Summary			
Average Delay	99.8		
Intersection Capacity Utilization	98.5%	ICU Level of Service	F
Analysis Period (min)	15		

APPENDIX E

Trip Generation Worksheet

Trip Generation

Lot ID	Access	KSF	Land Use	Trip Rates AM Total	AM In	AM Out	PM Total	PM In	PM Out	Sat Total	Sat In	Sat Out
218-1&3&5 & 221-153	Access A	58	58 Residential (210)	0.76	25%	75%	1.01	63%	37%	0.94	54%	46%
218-1&3&5 & 221-153	Access A	40	40 KSF Shop. Center (820)	1.03	61%	39%	3.76	48%	52%	4.07	52%	48%
218-4	Access B/Waterside	40	Shopping Center (820)	1.03	61%	39%	3.76	48%	52%	4.07	52%	48%
218-0	Access C/Crane	180	180 Room Hotel (310)	0.55	61%	39%	0.59	53%	47%	0.72	55%	45%
218-7	Access C/Crane	40	Shopping Center (820)	1.03	61%	39%	3.76	48%	52%	4.07	52%	48%
218-8&9	Access C/Crane	50	Shopping Center (820)	1.03	61%	39%	3.76	48%	52%	4.07	52%	48%
218-8&9	Access C/Crane	3	Fast Food (934)	53.11	51%	49%	34.84	52%	48%	58.20	51%	49%
218-8&9	Access C/Crane	4	Convenience Store (853)	17.17	50%	50%	19.22	50%	50%	20.00	50%	50%
218-11	Access D/UTER	220	Shopping Center (820)	1.03	61%	39%	3.76	48%	52%	4.07	52%	48%
209-8	Access B	7	High Turn Rest (932)	11.52	52%	48%	10.92	61%	39%	13.03	63%	37%
209-6	Access E	2	Fast Food (934)	53.11	51%	49%	34.84	52%	48%	58.20	51%	49%
209-6	Access F	180	General (710)	1.55	88%	12%	1.49	17%	83%	0.41	54%	46%
209-1	Two Rod Rd	78	Shopping Center (820)	1.03	61%	39%	3.76	48%	52%	4.07	52%	48%
209-2	Two Rod Rd	165	Discount Club (861)	0.98	71%	29%	4.34	50%	50%	5.58	50%	50%
209-4	Two Rod Rd	10	Pharmacy (880)	2.08	57%	43%	8.62	49%	51%	7.85	50%	50%
209-1	Two Rod Rd	550	General (710)	1.55	88%	12%	1.49	17%	83%	0.41	54%	46%
209-3	Two Rod Rd	65	Medical Dental (720)	3.53	79%	21%	1.08	34%	66%	0.88	57%	43%
	Summit Realty/Wal-Mart	40	General (710)	1.55	88%	12%	1.49	17%	83%	0.41	54%	46%
	Crane Dr Expansion		Double residing Villa									
	Wal-Mart		Wal-Mart (813)							Data from traffic counts		

Lot ID	Access	Total Trips AM In	AM Out	PM In	PM Out	Sat In	Sat Out	Internal Trips from Int Capture Proc AM In	AM Out	PM In	PM Out	Sat In	Sat Out
218-1&3&5 & 221-153	Access A	8	28	32	19	25	22	0	0	0	0	0	0
218-1&3&5 & 221-153	Access A	26	16	72	78	103	86	0	0	0	0	0	0
		35	44	104	97	128	117						
218-4	Access B/Waterside	41	26	117	127	168	156	0	0	0	0	0	0
218-0	Access C/Crane	34	22	31	28	40	32	0	0	3	3	4	3
218-7	Access C/Crane	26	16	61	58	116	107	0	0	8	9	12	11
218-8&9	Access C/Crane	31	20	90	98	129	119	0	0	8	10	13	12
218-8&9	Access C/Crane	135	130	83	83	151	145	0	0	9	5	16	10
218-8&9	Access C/Crane	34	34	38	38	40	40	0	0	4	4	4	4
		284	224	331	305	477	443	0	0	33	33	49	40
								10% Int Cap assumed for Access C (small area)					
218-11	Access D/UTER	120	80	348	429	559	525	0	0	84	81	120	120
209-8	Access B	42	30	47	30	88	52	0	0	0	0	0	0
209-6	Access E	54	52	28	33	60	58	0	0	0	0	0	0
		96	81	83	83	149	110	0	0	0	0	0	0
209-6	Access F	177	24	33	181	39	25	0	0	0	0	0	0
209-1	Two Rod Rd	47	30	136	146	194	179	0	0	23	25	30	36
209-2	Two Rod Rd	69	27	300	350	505	585	0	0	89	98	85	95
209-4	Two Rod Rd	15	11	42	44	28	30	0	0	7	7	6	2
		129	68	527	540	708	783	0	0	89	91	100	132
209-1	Two Rod Rd	760	102	138	680	122	104						
209-3	Two Rod Rd	19	5	18	31	23	17						
		769	107	156	712	144	121	0	0	43	29	55	39
	Summit Realty/Wal-Mart	55	7	10	49	9	8	0	0	0	0	0	0
	Crane Dr Expansion	20	0	20	30	60	45	0	0	0	0	0	0
	Wal-Mart	103	106	280	300	520	520	0	0	77	83	114	120

Lot ID	Access	External Trips (Pass-by/Diverted) AM In	AM Out	PM In	PM Out	Sat In	Sat Out	Pass-by (%Adj) AM	PM	Sat	Pass-by Trips AM In	AM Out	PM In	PM Out	Sat In	Sat Out	New Trips AM In	AM Out	PM In	PM Out	Sat In	Sat Out
218-1&3&5 & 221-153	Access A	8	28	32	19	25	22	0%	0%	0%	0	0	0	0	0	0						
218-1&3&5 & 221-153	Access A	26	16	72	78	103	86	0%	34%	39%	0	0	26	26	35	35						
		35	44	104	97	128	117				0	0	26	26	35	35	35	44	78	71	94	82
218-4	Access B/Waterside	41	26	117	127	168	156	0%	34%	39%	0	0	41	41	57	57	41	26	76	86	111	99
218-0	Access C/Crane	34	22	28	25	36	29	0%	0%	0%	0	0	0	0	0	0						
218-7	Access C/Crane	26	16	73	78	105	97	0%	34%	39%	0	0	26	26	35	35						
218-8&9	Access C/Crane	31	20	81	88	116	107	0%	34%	35%	0	0	29	29	39	39						
218-8&9	Access C/Crane	135	130	81	75	136	131	40%	50%	50%	55	55	39	39	67	67						
218-8&9	Access C/Crane	34	34	38	38	36	36	60%	65%	65%	22	22	22	22	24	24						
		284	224	296	301	429	356				87	87	116	116	165	165	177	136	191	155	264	234
218-11	Access D/UTER	130	68	312	338	446	405	0%	34%	35%	0	0	111	111	149	149	108	68	202	228	297	256
209-8	Access B	42	38	47	38	88	52	40%	40%	40%	18	16	18	16	34	34						
209-6	Access E	54	53	55	33	60	58	48%	50%	50%	26	26	12	12	28	30						
		96	91	83	83	149	110				42	42	34	34	64	64	54	49	49	29	85	46
209-6	Access F	177	24	33	181	39	25	0%	0%	0%	0	0	0	0	0	0	177	24	33	181	39	25
209-1	Two Rod Rd	47	30	112	122	165	149	0%	34%	35%	0	0	40	40	55	55						
209-2	Two Rod Rd	69	27	291	291	480	470	20%	20%	20%	0	0	58	58	95	95						
209-4	Two Rod Rd	15	11	35	37	33	30	30%	30%	30%	4	4	10	10	17	17						
		129	68	438	449	678	651				13	13	117	117	167	167	116	55	321	332	511	484
209-1	Two Rod Rd	760	102	118	667	89	83	0%	0%	0%	0	0	0	0	0	0	760	102	118	667	89	83
209-3	Two Rod Rd	19	5	18	31	23	17										684	102	437	1219	600	567
		769	107	136	712	144	121															
	Summit Realty/Wal-Mart	55	7	10	49	9	8	0%	0%	0%	0	0	0	0	0	0	55	7	10	49	9	8
	Crane Dr Expansion	20	0	20	30	60	45	0%	0%	0%	0	0	0	0	0	0	20	0	20	30	60	45
	Wal-Mart	100	105	273	277	408	400	39%	28%	28%	39	28	76	78	114	112	72	78	197	199	292	288

Wal-Mart already includes pass-by trips

Total Trips AM In	AM Out	PM In	PM Out	Sat In	Sat Out	Internal Trips from Int Capture Proc AM In	AM Out	PM In	PM Out	Sat In	Sat Out	External Trips (Pass-by/Diverted) AM In	AM Out	PM In	PM Out	Sat In	Sat Out
1722	691	1776	2642	2931	2331	0	0	246	249	343	354	1722	691	1530	2392	2188	1977
AM Total 2413		PM Total 4418		Sat Total 4862		AM Total 0		PM Total 497		Sat Total 697		AM Total 2413		PM Total 3921		Sat Total 4165	

Pass-by Trips AM In	AM Out	PM In	PM Out	Sat In	Sat Out	New Trips AM In	AM Out	PM In	PM Out	Sat In	Sat Out
142	142	414	444	637	531	1508	506	1365	1857	1862	1380
Adj Total 284		PM Total 858		Sat Total 1273		AM Total 2116		PM Total 2943		Sat Total 2912	

APPENDIX F

Internal Capture Worksheets

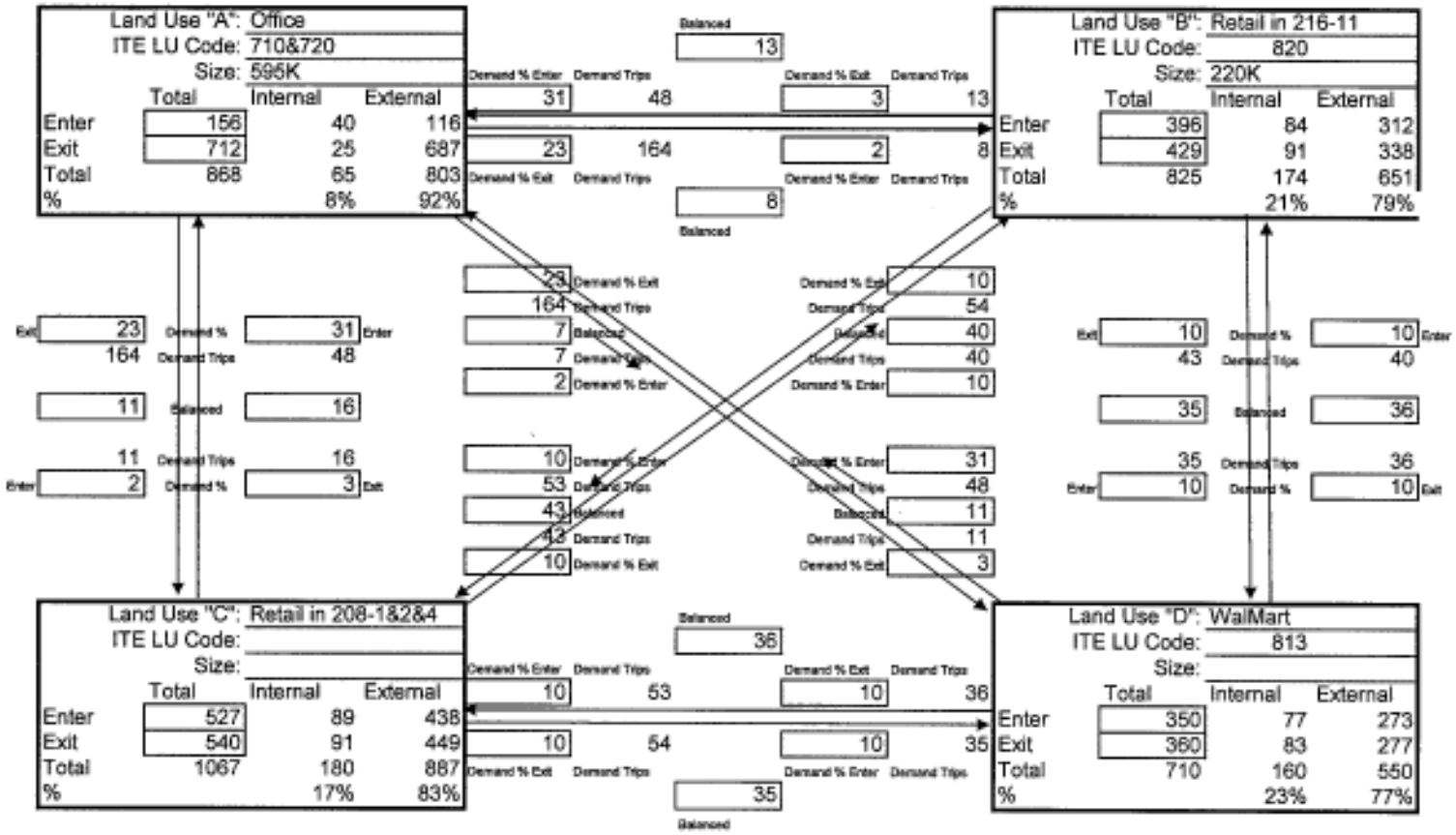
CLD Consulting Engineers

Analyst: RWL
Date: 3/21/2008
Development: Rochester Granite Ridge
Time Period: PM

Multi-Use Development
Trip Generation
and Internal Capture Summary
Reduced Rates

Adapted from ITE Trip Generation Handbook (3/01)

Enter data in Blue Boxes
Enter info on Red Lines



Net External Trips for Multi-Use Development

	LU "A"	LU "B"	LU "C"	LU "D"	Total
Enter	116	312	438	273	1139
Exit	687	338	449	277	1751
Total	803	651	887	550	2890
Single Use Trip Gen Est	868	825	1067	710	3470

Internal Capture: 17%

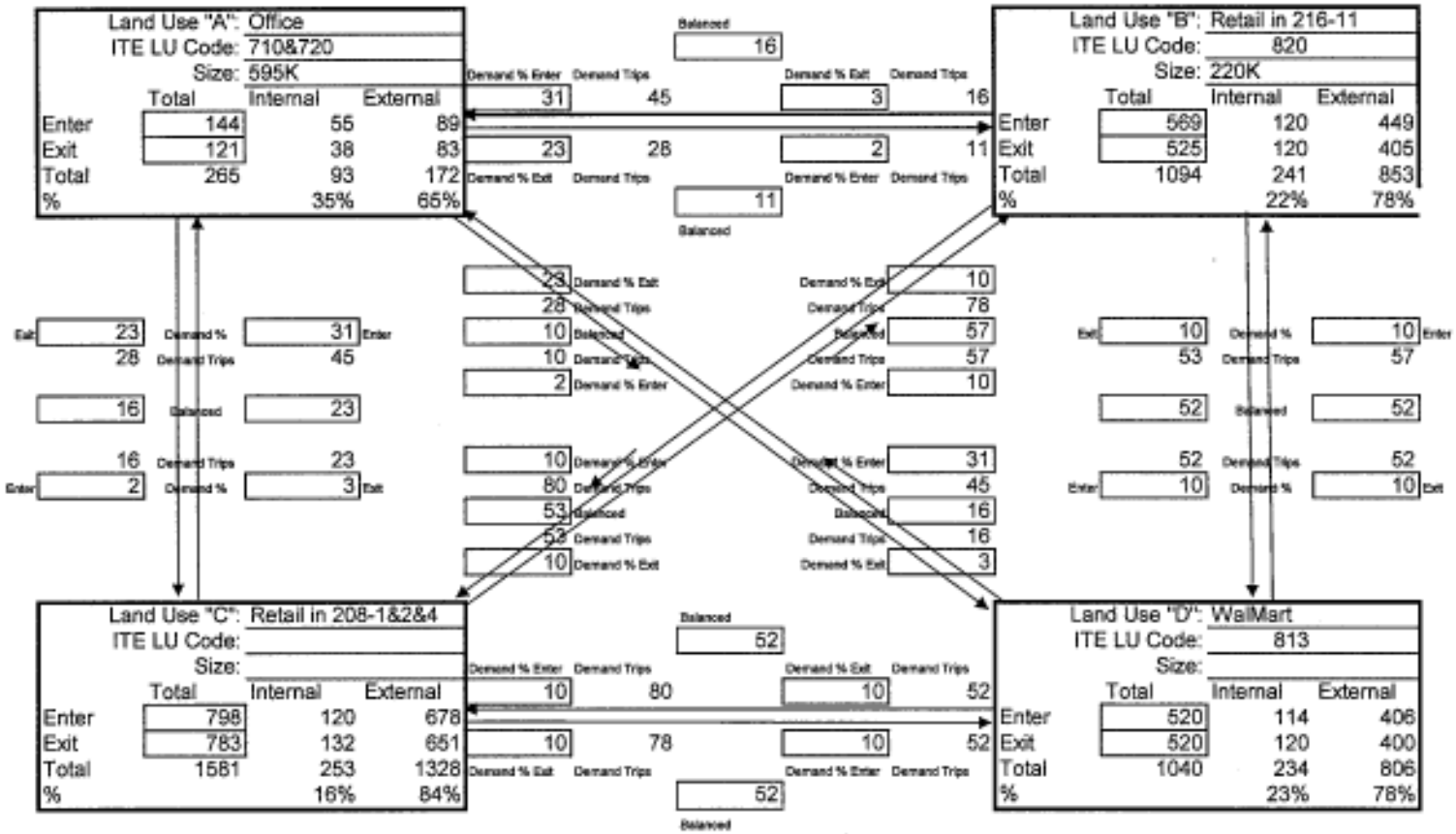
CLD Consulting Engineers

Analyst: RWL
Date: 3/21/2008
Development: Rochester Granite Ridge
Time Period: Saturday (use PM Rates)

Multi-Use Development
Trip Generation
and Internal Capture Summary
Reduced Rates

Adapted from ITE Trip Generation Handbook (3/01)

Enter data in Blue Boxes
Enter info on Red Lines



Net External Trips for Multi-Use Development

	LU "A"	LU "B"	LU "C"	LU "D"	Total
Enter	89	449	678	406	1621
Exit	83	405	651	400	1539
Total	172	853	1328	806	3160
Single Use Trip Gen Est	265	1094	1581	1040	3980

Internal Capture
21%

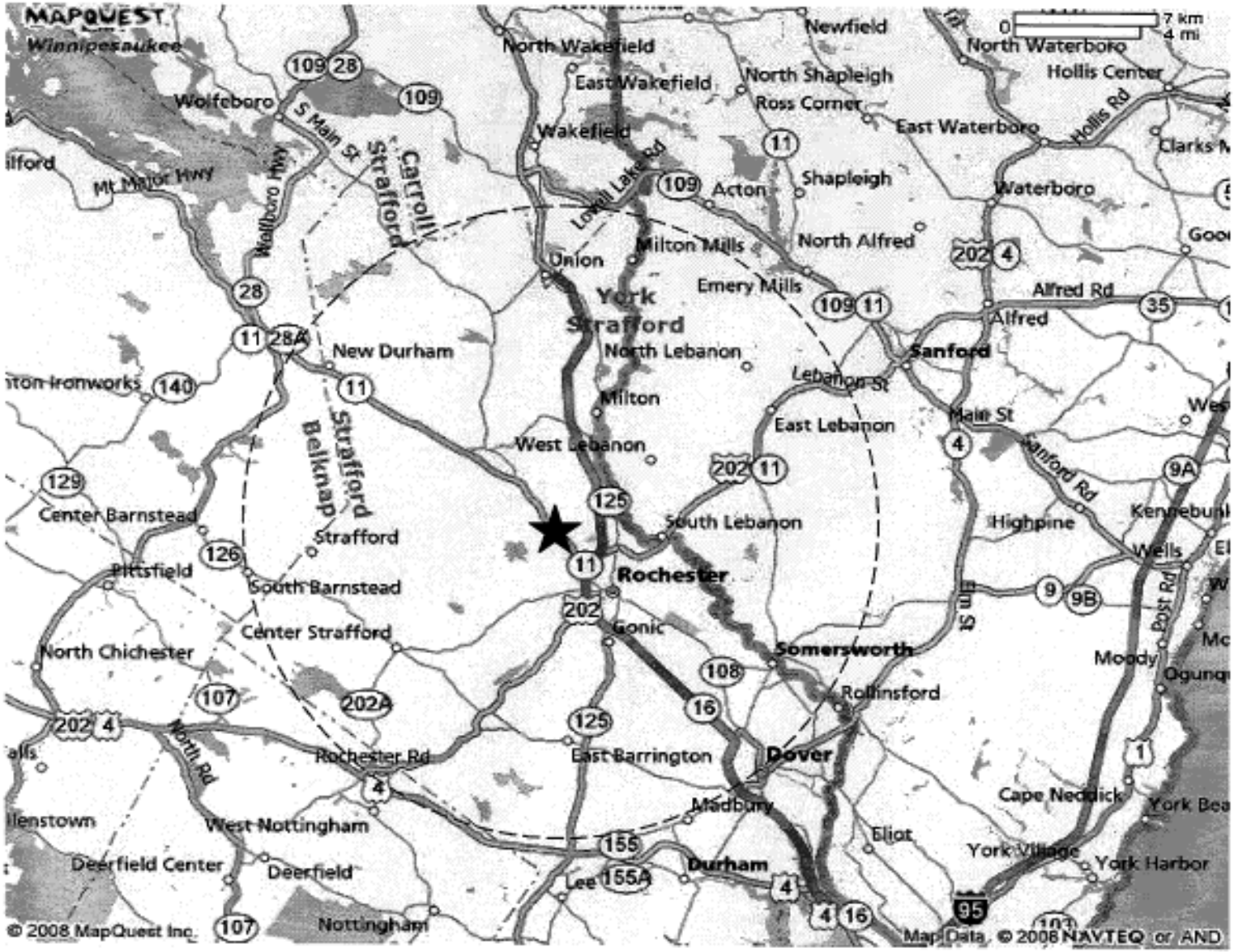
APPENDIX G

Trip Distribution Backup

Trip Distribution

2006 Town Populations	Route		Population	Distance
Maine				
Acton	Tpk North		2264	12
Berwick	Tpk South		7433	9
Lebanon	Tpk North		5589	8
North Berwick	N Main		4829	13
Sanford	Tpk North		21534	12
NH				
Alton	Rte 11 N		5031	12
Barnstead	Rte 11 N		4523	12
Barrington	Tpk South		8261	6
Dover	Tpk South		28703	10
Durham	Tpk South		13626	12
Farmington	Rte 11 N		6817	3
Lee	Tpk South		4414	12
Madbury	Tpk South		1762	10
Middleton	Rte 11 N		1849	9
Milton	Tpk North		4540	4
New Durham	Rte 11 N		2548	9
Northwood	Tpk South		4049	12
Nottingham	Tpk South		4430	11
Rochester		30627		
via LFBR	LFBR	10%	3063	2
via Tpk South	Tpk South	30%	9188	4
via Tpk North	Tpk North	10%	3063	3
via N Main	N Main	50%	15314	3
Rollinsford	Tpk South		2646	11
Somersworth	N Main		11898	8
Strafford	Tpk South		3996	7
Wakefield	Tpk North		4252	12

Distribution Calculations									
Town	Route	Population		Distance	Pop/Dist		Pop/Dist^2	
Roch via LFBR	LFBR	3063	2%	2	1531	5%	766	13%
North Berwick, ME	N Main	4829		13	371		29	
Roch via N Main	N Main	15314		3	5105		1702	
Somersworth	N Main	11898		8	1487		186	
		32041	17%		6963	25%	1916	32%
Alton	Rte 11 N	5031		12	419		35	
Barnstead	Rte 11 N	4523		12	377		31	
Farmington	Rte 11 N	6817		3	2272		757	
Middleton	Rte 11 N	1849		9	205		23	
New Durham	Rte 11 N	2548		9	283		31	
		20768	11%		3557	13%	878	15%
Acton, ME	Tpk North	2264		12	189		16	
Lebanon, ME	Tpk North	5589		8	699		87	
Sanford, ME	Tpk North	21534		12	1795		150	
Milton	Tpk North	4540		4	1135		284	
Roch via Tpk North	Tpk North	3063		3	1021		340	
Wakefield	Tpk North	4252		12	354		30	
		41242	22%		5192	19%	906	15%
Berwick, ME	Tpk South	7433		9	826		92	
Barrington	Tpk South	8261		6	1377		229	
Dover	Tpk South	28703		10	2870		287	
Durham	Tpk South	13626		12	1136		95	
Lee	Tpk South	4414		12	368		31	
Madbury	Tpk South	1762		10	176		18	
Northwood	Tpk South	4049		12	337		28	
Nottingham	Tpk South	4430		11	403		37	
Roch via Tpk South	Tpk South	9188		4	2297		574	
Rollinsford	Tpk South	2646		11	241		22	
Strafford	Tpk South	3996		7	571		82	
		88508	48%		10601	38%	1494	25%
	Grand Total	185621	100%		27845	100%	5959	100%


MAPQUEST
Winnipesaukee
Wolfeboro
S Main St
Carroll
Strafford
Wolfboro Hwy
Mt Major Hwy
North Wakefield
East Wakefield
Wakefield
Newfield
North Shapleigh
Ross Corner
North Waterboro
Hollis Center
East Waterboro
Hollis Rd
Clarks
Shapleigh
Acton
Lowell Lake Rd
Waterboro
Milton Mills
North Alfred
Union
Emery Mills
York
Strafford
Alfred Rd
Alfred
Sanford
New Durham
North Lebanon
Lebanon St
Milton
East Lebanon
Main St
West Lebanon
Sanford Rd
Belknap
Strafford
Center Barnstead
Strafford
South Lebanon
Highpine
Kennebunk
Wells
Pittsfield
South Barnstead
Rochester
Gonic
Center Strafford
Somersworth
Moody
Post Rd
North Chichester
Rollinsford
Rochester Rd
East Barrington
Dover
North Rd
Madbury
Cape Neddick
West Nottingham
Eliot
York Village
Deerfield Center
Deerfield
Durham
York Harbor
Lee
Nottingham
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7 km
4 mi

Municipality	Total Population U.S. Census 1990	Total Population U.S. Census 2000	Total Population OEP Estimate 2006	2006 Group Quarters Pop	2006 Persons per Square Mile
Alton	3,286	4,502	5,031	0	78.7
Barnstead	3,100	3,886	4,523	0	105.4
Belmont	5,796	6,716	7,167	11	238.1
Center Harbor	996	996	1,085	9	81.6
Gilford	5,867	6,803	7,306	2	188.3
Gilmanton	2,609	3,060	3,431	7	59.6
Laconia	15,743	16,411	17,104	717	850.9
Meredith	4,837	5,943	6,401	157	158.8
New Hampton	1,606	1,950	2,135	3	58.0
Sanbornton	2,136	2,581	2,859	0	60.4
Tilton	3,240	3,477	3,648	272	320.0
Belknap Co.	49,216	56,325	60,690	1,178	150.8

Water area not included in persons per sq. mi calculations
Group Quarters population is included in total population

Municipality	Total Population U.S. Census 1990	Total Population U.S. Census 2000	Total Population OEP Estimate 2006	2006 Group Quarters Pop	2006 Persons per Square Mile
Albany	536	654	688	3	9.1
Bartlett	2,290	2,705	2921	0	39.1
Brookfield	518	604	673	0	29.4
Chatham	268	260	276	0	4.9
Conway	7,940	8,604	9202	150	132.0
Eaton	362	375	424	2	17.4
Effingham	941	1,273	1459	127	37.5
Freedom	935	1,303	1423	6	41.2
Harts Location	36	37	32	0	1.7
Jackson	678	835	873	13	13.1
Madison	1,704	1,984	2260	0	58.4
Moultonboro	2,956	4,484	4886	31	81.4
Ossipee	3,309	4,211	4654	192	65.6
Sandwich	1,066	1,286	1366	0	15.0
Tamworth	2,165	2,510	2609	6	43.6
Tuftonboro	1,842	2,148	2336	0	57.5
Wakefield	3,057	4,252	4818	0	122.0
Wolfeboro	4,807	6,083	6400	82	132.5
Carroll Co.	35,410	43,608	47,300	612	50.7

Water area not included in persons per sq. mi calculations
Group Quarters population is included in total population

Municipality	Total Population U.S. Census 1990	Total Population U.S. Census 2000	Total Population OEP Estimate 2006	2006 Group Quarters Pop	2006 Persons per Square Mile
Atkinson	5,188	6,178	6,516	4	581.8
Auburn	4,085	4,682	5,110	7	200.4
Brentwood	2,590	3,197	4,129	516	242.9
Candia	3,557	3,911	4,091	0	135.0
Chester	2,691	3,792	4,642	139	178.5
Danville	2,534	4,023	4,445	3	383.2
Deerfield	3,124	3,678	4,314	47	84.9
Derry	29,603	34,021	34,386	234	971.4
East Kingston	1,352	1,784	2,181	0	220.3
Epping	5,162	5,476	6,052	8	231.9
Exeter	12,481	14,058	14,535	346	734.1
Fremont	2,576	3,510	4,159	45	240.4
Greenland	2,768	3,208	3,383	20	322.2
Hampstead	6,732	8,297	8,699	46	649.2
Hampton	12,278	14,937	15,278	245	1107.1
Hampton Falls	1,503	1,880	2,052	0	165.5
Kensington	1,631	1,893	2,089	0	174.1
Kingston	5,591	5,862	6,176	0	310.4
Londonderry	19,781	23,236	24,577	10	585.2
New Castle	840	1,010	1,024	11	1280.0
Newfields	888	1,551	1,634	0	230.1
Newington	990	775	795	26	97.0
Newmarket	7,157	8,027	9,357	42	742.6
Newton	3,473	4,289	4,540	0	463.3
North Hampton	3,637	4,259	4,463	0	321.1
Northwood	3,124	3,640	4,049	3	144.1
Nottingham	2,939	3,701	4,430	0	95.3
Plaistow	7,316	7,747	7,731	11	729.3
Portsmouth	25,925	20,784	20,811	585	1325.5
Raymond	8,713	9,674	10,780	10	374.3
Rye	4,612	5,182	5,219	112	414.2
Salem	25,746	28,112	29,885	126	1205.0
Sandown	4,060	5,143	5,901	33	421.5
Seabrook	6,503	7,934	8,473	0	941.4
South Hampton	740	844	888	0	112.4
Stratham	4,955	6,355	7,180	0	475.5
Windham	9,000	10,709	12,591	135	471.6
Rockingham C	245,845	277,359	296,565	2,764	425.4

Water area not included in persons per sq. mi calculations
Group Quarters population is included in total population

Municipality	Total Population U.S. Census 1990	Total Population U.S. Census 2000	Total Population OEP Estimate 2006	2006 Group Quarters Pop	2006 Persons per Square Mile
Barrington	6,164	7,475	8,261	8	176.9
Dover	25,042	26,884	28,703	947	1075
Durham	11,818	12,664	13,626	5,066	608.3
Farmington	5,739	5,774	6,817	27	186.8
Lee	3,729	4,145	4,414	21	220.7
Madbury	1,404	1,509	1,762	0	153.2
Middleton	1,183	1,440	1,849	2	102.2
Milton	3,691	3,910	4,540	0	137.2
New Durham	1,974	2,220	2,548	1	61.5
Rochester	26,630	28,461	30,627	279	683.6
Rollinsford	2,645	2,648	2,646	0	362.5
Somersworth	11,249	11,477	11,898	33	1214.1
Strafford	2,965	3,626	3,996	9	81.6
Strafford Co.	104,233	112,233	121,687	6,393	331.3

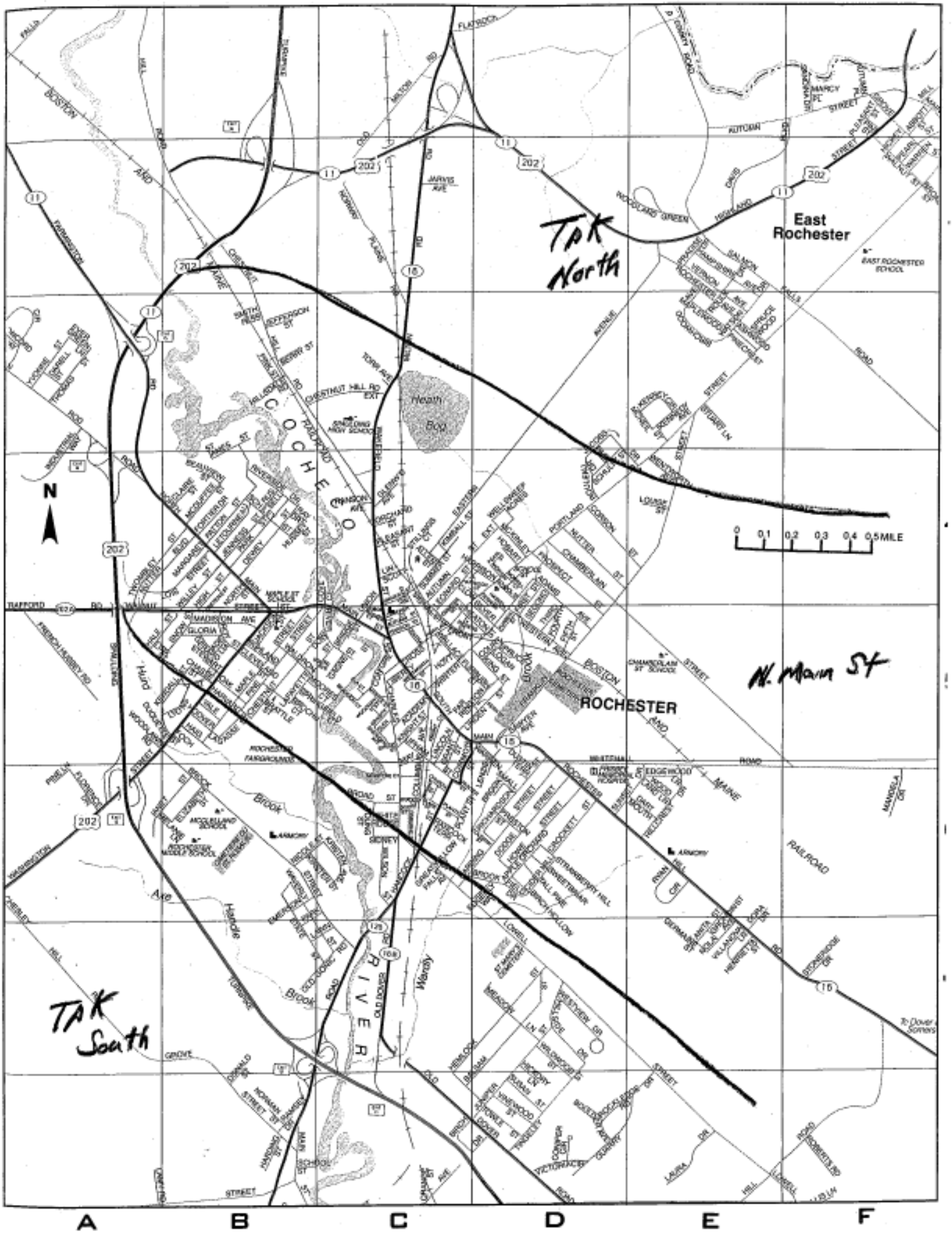
Water area not included in persons per sq. mi calculations
Group Quarters population is included in total population

Municipality	Total Population U.S. Census 1990	Total Population U.S. Census 2000	Total Population OEP Estimate 2006	2006 Group Quarters Pop	2006 Persons per Square Mile
Acworth	776	836	888	0	22.8
Charlestown	4,630	4,749	4,915	20	137.3
Claremont	13,902	13,151	12,972	199	301.0
Cornish	1,659	1,661	1,708	1	40.7
Croydon	627	661	756	1	20.5
Goshen	742	741	813	8	36.3
Grantham	1,247	2,167	2,450	0	90.1
Langdon	580	586	624	0	38.3
Lempster	947	971	1,088	0	33.7
Newport	6,110	6,269	6,363	118	146.3
Plainfield	2,056	2,241	2,419	0	46.3
Springfield	788	945	1,061	0	24.3
Sunapee	2,559	3,055	3,234	0	153.3
Unity	1,341	1,530	1,700	274	45.9
Washington	628	895	971	0	21.3
Sullivan Co.	38,592	40,458	41,962	621	78.0
N.H.	**1,109,117**	**1,235,550**	**1,315,000**	**39,505**	**157.6**

Population of unincorporated places not included in this report
Water area not included in persons per sq. mi. calculations
Group Quarters population is included in total population

Geographic Area	Population Estimates						
	July 1, 2006	July 1, 2005	July 1, 2004	July 1, 2003	July 1, 2002	July 1, 2001	July 1, 2000
State Total	1,314,910	1,312,222	1,308,892	1,303,441	1,294,187	1,284,872	1,277,225
York County	202,232	202,064	200,412	198,244	195,723	192,103	188,131
Acton town	2,264	2,269	2,265	2,248	2,224	2,193	2,159
Alfred town	2,870	2,859	2,784	2,735	2,725	2,634	2,547
Arundel town	4,068	4,025	3,954	3,876	3,779	3,715	3,606
Berwick town	7,433	7,337	7,129	6,985	6,827	6,567	6,411
Biddeford city	21,898	22,112	22,155	22,072	21,906	21,448	21,052
Buxton town	8,171	8,152	8,049	7,883	7,806	7,673	7,510
Cornish town	1,389	1,390	1,376	1,348	1,320	1,301	1,278
Dayton town	2,026	2,011	1,998	1,976	1,949	1,904	1,835
Eliot town	6,383	6,404	6,379	6,317	6,231	6,116	5,998
Hollis town	4,656	4,551	4,494	4,402	4,299	4,211	4,141
Kennebunk town	11,505	11,502	11,452	11,291	11,172	10,951	10,631
Kennebunkport town	4,021	4,027	4,005	3,978	3,875	3,817	3,743
Kittery town	10,495	10,447	10,130	10,020	10,048	9,739	9,602
Lebanon town	5,589	5,552	5,327	5,298	5,265	5,206	5,118
Limerick town	2,580	2,541	2,495	2,404	2,313	2,263	2,249
Limington town	3,715	3,673	3,622	3,544	3,450	3,343	3,270
Lyman town	4,224	4,167	4,108	4,016	3,969	3,907	3,825
Newfield town	1,510	1,502	1,464	1,399	1,384	1,366	1,338
North Berwick town	4,829	4,795	4,741	4,657	4,554	4,453	4,333
Ogunquit town	1,286	1,293	1,288	1,280	1,271	1,257	1,241
Old Orchard Beach town	9,349	9,337	9,312	9,230	9,138	9,036	8,909
Parsonsfield town	1,742	1,739	1,721	1,694	1,667	1,645	1,599
Saco city	18,289	18,207	18,064	17,918	17,623	17,304	16,948
Sanford town	21,534	21,673	21,685	21,632	21,505	21,285	21,000
Shapleigh town	2,510	2,505	2,492	2,471	2,439	2,390	2,343
South Berwick town	7,252	7,291	7,243	7,191	7,067	6,942	6,731
Waterboro town	7,300	7,221	7,170	7,018	6,780	6,542	6,291
Wells town	10,038	10,073	10,016	9,894	9,785	9,666	9,471
York town	13,306	13,409	13,494	13,467	13,352	13,229	12,952

ROCHESTER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East Rochester
EAST ROCHESTER SCHOOL
Heath Bog
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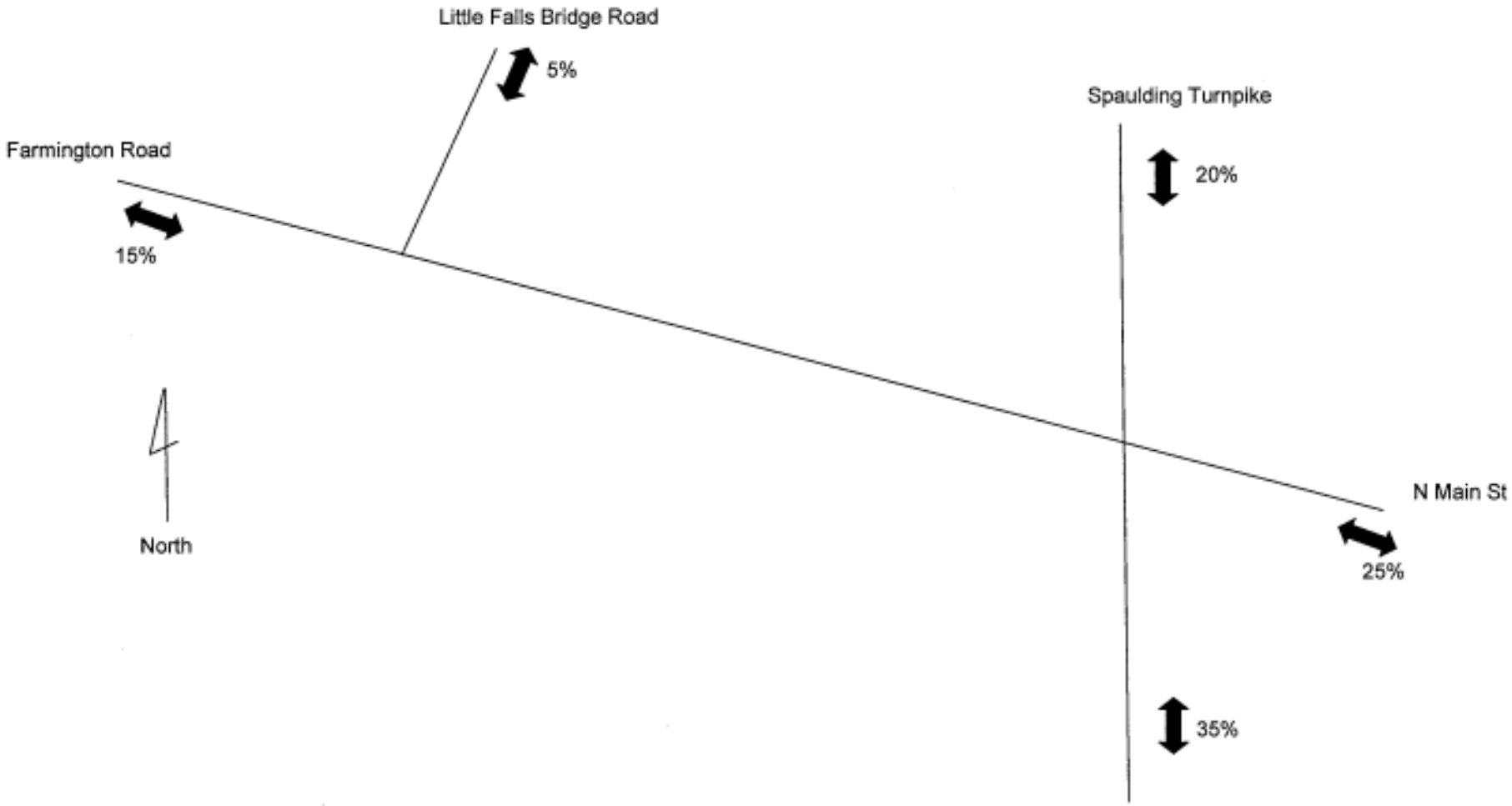
N. Main St
ROCHESTER
TAK South
A
B
C
D
E
F



Percentage Distribution of GRDD Trips

APPENDIX H

Build Capacity Output Sheets

Timings
1: Farmington Road & Wal-Mart 11/12/2008

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL
Lane Configurations									
Volume (vph)	10	1365	35	65	1520	25	0	80	5
Lane Group Flow (vph)	11	1484	38	71	1701	0	27	87	5
Turn Type	Prot		Perm	Prot		Perm		pt+ov	Perm
Protected Phases	5	2		1	6		8	8 1	
Permitted Phases			2			8			4
Detector Phases	5	2	2	1	6	8	8	8 1	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	11.0	11.0		11.0
Total Split (s)	16.0	66.0	66.0	18.0	68.0	16.0	16.0	34.0	16.0
Total Split (%)	16.0%	66.0%	66.0%	18.0%	68.0%	16.0%	16.0%	34.0%	16.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	Min	Min		Min
v/c Ratio	0.08	0.61	0.03	0.31	0.60		0.19	0.19	0.04
Control Delay	64.0	2.1	0.1	30.0	0.9		44.3	16.0	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	64.0	2.1	0.1	30.0	0.9		44.3	16.0	40.6
Queue Length 50th (ft)	8	25	0	45	9		16	21	3
Queue Length 95th (ft)	m11	42	m0	m54	24		42	56	14
Internal Link Dist (ft)		1176			855		413		
Turn Bay Length (ft)	150		150	300				300	
Base Capacity (vph)	212	2416	1091	248	2820		180	538	165
Starvation Cap Reductn	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.05	0.61	0.03	0.29	0.60		0.15	0.16	0.03

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

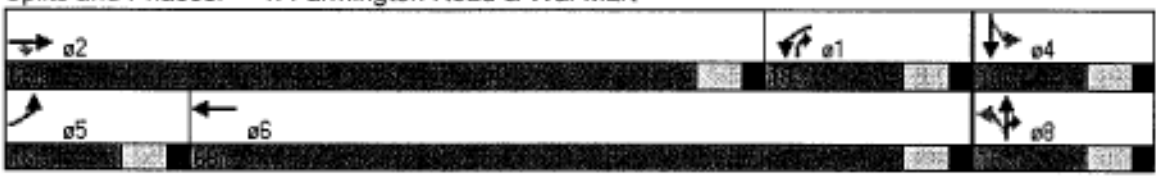
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection

Natural Cycle: 60

Control Type: Actuated-Coordinated

m: Volume for 95th percentile queue is metered by upstream signal

Splits and Phases: 1: Farmington Road & Wal-Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00	1.00		
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00		
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95		
Satd. Flow (prot)	1770	3539	1583	1770	3524			1888	1689	1770		
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.76	1.00	0.74		
Satd. Flow (perm)	1770	3539	1583	1770	3524			1505	1689	1378		
Volume (vph)	10	1365	35	65	1520	45	25	0	80	5	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1484	38	71	1652	49	27	0	87	5	0	0
RTOR Reduction (vph)	0	0	12	0	1	0	0	0	31	0	0	0
Lane Group Flow (vph)	11	1484	26	71	1700	0	0	27	56	5	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.5	61.5	61.5	13.2	73.2			7.3	26.5	7.3		
Effective Green, g (s)	3.5	63.5	63.5	15.2	75.2			9.3	28.5	9.3		
Actuated g/C Ratio	0.04	0.64	0.64	0.15	0.75			0.09	0.28	0.09		
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0		
Lane Grp Cap (vph)	62	2247	1005	269	2650			140	481	128		
v/s Ratio Prot	0.01	c0.42		0.04	c0.48				0.03			
v/s Ratio Perm			0.02					c0.02		0.00		
v/c Ratio	0.18	0.66	0.03	0.26	0.64			0.19	0.12	0.04		
Uniform Delay, d1	46.9	11.5	6.8	37.5	5.9			41.9	26.4	41.3		
Progression Factor	1.51	0.13	0.02	0.72	0.09			1.00	1.00	1.00		
Incremental Delay, d2	0.9	1.0	0.0	0.3	0.6			0.7	0.1	0.1		
Delay (s)	71.5	2.5	0.2	27.2	1.1			42.6	26.5	41.4		
Level of Service	E	A	A	C	A			D	C	D		
Approach Delay (s)		2.9			2.2			30.3			41.4	
Approach LOS		A			A			C			D	

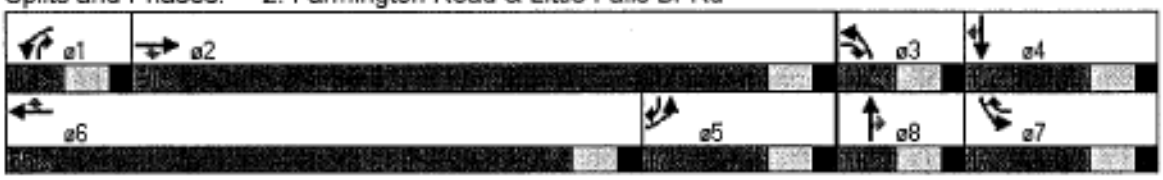
Intersection Summary			
HCM Average Control Delay	3.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	1260	20	110	1470	35	15	5	70	175	5	150
Lane Group Flow (vph)	185	1370	22	120	1598	38	16	5	76	190	5	163
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phases	5	2	3	1	6	7	3	8	1	7	4	5
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	11.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	17.0	61.0	11.0	11.0	55.0	17.0	11.0	11.0	11.0	17.0	17.0	17.0
Total Split (%)	17.0%	61.0%	11.0%	11.0%	55.0%	17.0%	11.0%	11.0%	11.0%	17.0%	17.0%	17.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	Min	None	C-Min	None	Min	Min	None	None	None	None
v/c Ratio	0.80	0.69	0.02	0.85	0.89	0.03	0.04	0.04	0.26	0.82	0.03	0.49
Control Delay	49.5	4.9	0.0	92.9	29.6	1.8	37.0	44.2	10.4	70.5	40.6	18.8
Queue Delay	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 Delay	49.5	4.9	0.0	92.9	29.6	1.8	37.0	44.2	10.4	70.5	40.6	18.8
Queue Length 50th (ft)	118	43	0	78	458	0	8	3	5	120	3	38
Queue Length 95th (ft)	#227	43	m0	#191	572	10	31	15	35	#237	14	66
Internal Link Dist (ft)		855			1947			463			756	
Turn Bay Length (ft)	500		200	350		200	300		300	400		400
Base Capacity (vph)	230	2017	1281	141	1805	1088	368	132	293	231	242	331
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.68	0.02	0.85	0.89	0.03	0.04	0.04	0.26	0.82	0.02	0.49

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 96 (96%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
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.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Volume (vph)	170	1260	20	110	1470	35	15	5	70	175	5	150
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	1370	22	120	1598	38	16	5	76	190	5	163
RTOR Reduction (vph)	0	0	6	0	0	14	0	0	54	0	0	82
Lane Group Flow (vph)	185	1370	16	120	1598	24	16	5	22	190	5	81
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.0	49.1	67.9	5.9	44.0	59.9	18.8	5.1	11.0	15.9	2.2	13.2
Effective Green, g (s)	13.0	51.1	71.9	7.9	46.0	63.9	20.8	7.1	15.0	17.9	4.2	17.2
Actuated g/C Ratio	0.13	0.51	0.72	0.08	0.46	0.64	0.21	0.07	0.15	0.18	0.04	0.17
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	230	1808	1201	140	1628	1075	368	132	237	317	78	272
v/s Ratio Prot	0.10	c0.39	0.00	0.07	c0.45	0.00	0.01	0.00	c0.01	c0.11	0.00	0.04
v/s Ratio Perm			0.01			0.01			0.01			0.01
v/c Ratio	0.80	0.76	0.01	0.86	0.98	0.02	0.04	0.04	0.09	0.60	0.06	0.30
Uniform Delay, d1	42.3	19.5	4.0	45.5	26.6	6.6	31.6	43.3	36.6	37.8	46.0	36.1
Progression Factor	0.61	0.21	0.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.2	2.5	0.0	37.2	18.3	0.0	0.0	0.1	0.2	3.0	0.3	0.6
Delay (s)	41.1	6.5	0.1	82.6	44.9	6.6	31.7	43.4	36.8	40.8	46.4	36.7
Level of Service	D	A	A	F	D	A	C	D	D	D	D	D
Approach Delay (s)		10.5			46.7			36.3			39.0	
Approach LOS		B			D			D			D	

Intersection Summary			
HCM Average Control Delay	30.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

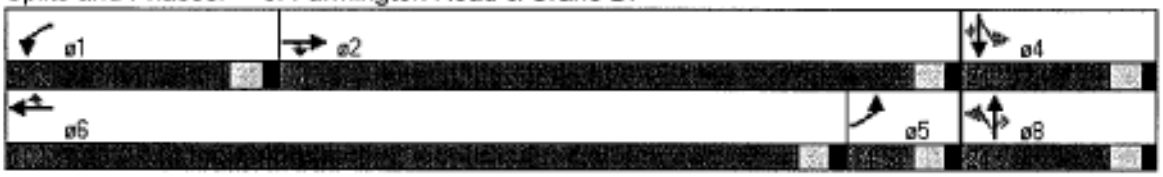
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	ø4
Lane Configurations										
Volume (vph)	15	1450	75	185	1580	25	75	0	150	
Lane Group Flow (vph)	16	1576	82	201	1717	27	0	82	163	
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	
Protected Phases	5	2		1	6			8		4
Permitted Phases			2			6	8		8	
Detector Phases	5	2	2	1	6	6	8	8	8	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	11.0	11.0	11.0
Total Split (s)	14.0	83.0	83.0	33.0	102.0	102.0	24.0	24.0	24.0	24.0
Total Split (%)	10.0%	59.3%	59.3%	23.6%	72.9%	72.9%	17.1%	17.1%	17.1%	17%
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)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Min	Min	Min	Min
v/c Ratio	0.15	0.69	0.08	0.72	0.61	0.02		0.54	0.52	
Control Delay	64.6	19.2	7.9	64.5	8.4	2.8		71.5	13.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	64.6	19.2	7.9	64.5	8.4	2.8		71.5	13.8	
Queue Length 50th (ft)	14	452	17	176	206	1		72	0	
Queue Length 95th (ft)	39	670	47	250	540	m6		125	66	
Internal Link Dist (ft)		1947			1318			481		
Turn Bay Length (ft)	200		100	350		200			250	
Base Capacity (vph)	126	2293	1036	367	2814	1263		201	366	
Starvation Cap Reductn	0	0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0	0		0	0	
Storage Cap Reductn	0	0	0	0	0	0		0	0	
Reduced v/c Ratio	0.13	0.69	0.08	0.55	0.61	0.02		0.41	0.45	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 118 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Farmington Road & Crane Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00			
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85			
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00			
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583		1770	1583			
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.76	1.00			
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583		1410	1583			
Volume (vph)	15	1450	75	185	1580	25	75	0	150	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1576	82	201	1717	27	82	0	163	0	0	0
RTOR Reduction (vph)	0	0	10	0	0	5	0	0	145	0	0	0
Lane Group Flow (vph)	16	1576	72	201	1717	22	0	82	18	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	3.2	88.7	88.7	20.2	105.7	105.7		13.1	13.1			
Effective Green, g (s)	5.2	90.7	90.7	22.2	107.7	107.7		15.1	15.1			
Actuated g/C Ratio	0.04	0.65	0.65	0.16	0.77	0.77		0.11	0.11			
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0			
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0			
Lane Grp Cap (vph)	66	2293	1026	281	2723	1218		152	171			
v/s Ratio Prot	0.01	c0.45		c0.11	0.49							
v/s Ratio Perm			0.05			0.01		c0.06	0.01			
v/c Ratio	0.24	0.69	0.07	0.72	0.63	0.02		0.54	0.10			
Uniform Delay, d1	65.5	15.6	9.1	55.9	7.2	3.8		59.2	56.3			
Progression Factor	1.00	1.00	1.00	0.96	1.03	1.10		1.00	1.00			
Incremental Delay, d2	1.9	1.7	0.1	6.7	0.9	0.0		3.7	0.3			
Delay (s)	67.4	17.4	9.2	60.2	8.3	4.2		62.8	56.6			
Level of Service	E	B	A	E	A	A		E	E			
Approach Delay (s)		17.4			13.6			58.7			0.0	
Approach LOS		B			B			E			A	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	ø5
Lane Configurations											
Volume (vph)	1580	15	65	1785	5	15	0	35	15	0	
Lane Group Flow (vph)	1717	16	71	1940	5	0	16	38	0	27	
Turn Type		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	2		1	6			8			4	5
Permitted Phases		2			6	8		8	4		
Detector Phases	2	2	1	6	6	8	8	8	4	4	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	20.0	11.0	20.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	97.0	97.0	24.0	102.0	102.0	19.0	19.0	19.0	19.0	19.0	19.0
Total Split (%)	69.3%	69.3%	17.1%	72.9%	72.9%	13.6%	13.6%	13.6%	13.6%	13.6%	14%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag						Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes						Yes
Recall Mode	C-Max	C-Max	None	C-Max	C-Max	Min	Min	Min	Min	Min	None
v/c Ratio	0.66	0.01	0.32	0.63	0.00		0.16	0.27		0.25	
Control Delay	3.0	0.1	58.4	3.5	1.2		64.3	22.3		47.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	3.0	0.1	58.4	3.5	1.2		64.3	22.3		47.5	
Queue Length 50th (ft)	21	0	59	172	0		14	0		14	
Queue Length 95th (ft)	43	m0	108	257	2		38	37		46	
Internal Link Dist (ft)	1318			633			435			327	
Turn Bay Length (ft)		200	250		100			200			
Base Capacity (vph)	2616	1173	253	3102	1387		162	204		169	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	
Reduced v/c Ratio	0.66	0.01	0.28	0.63	0.00		0.10	0.19		0.16	

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

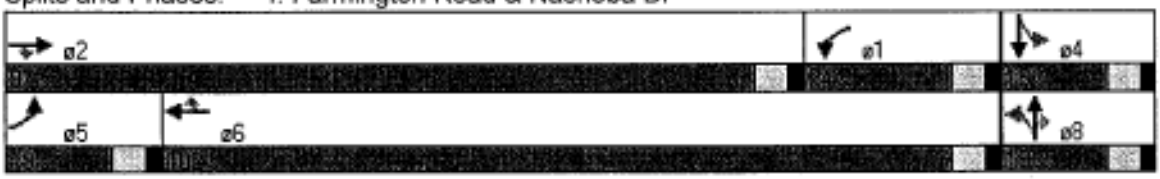
Offset: 12 (9%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Farmington Road & Nashoba Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor		0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt		1.00	0.85	1.00	1.00	0.85		1.00	0.85		0.94	
Flt Protected		1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.97	
Satd. Flow (prot)		3539	1583	1770	3539	1583		1770	1583		1710	
Flt Permitted		1.00	1.00	0.95	1.00	1.00		0.85	1.00		0.81	
Satd. Flow (perm)		3539	1583	1770	3539	1583		1576	1583		1424	
Volume (vph)	0	1580	15	65	1785	5	15	0	35	15	0	10
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1717	16	71	1940	5	16	0	38	16	0	11
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	35	0	10	0
Lane Group Flow (vph)	0	1717	13	71	1940	5	0	16	3	0	17	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		
Actuated Green, G (s)		100.3	100.3	14.4	120.7	120.7		7.3	7.3		7.3	
Effective Green, g (s)		102.3	102.3	16.4	122.7	122.7		9.3	9.3		9.3	
Actuated g/C Ratio		0.73	0.73	0.12	0.88	0.88		0.07	0.07		0.07	
Clearance Time (s)		6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)		2586	1157	207	3102	1387		105	105		95	
v/s Ratio Prot		c0.49		0.04	c0.55							
v/s Ratio Perm			0.01			0.00		0.01	0.00		c0.01	
v/c Ratio		0.66	0.01	0.34	0.63	0.00		0.15	0.02		0.18	
Uniform Delay, d1		9.9	5.1	56.8	2.4	1.1		61.6	61.1		61.7	
Progression Factor		0.19	0.02	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2		1.0	0.0	1.0	1.0	0.0		0.7	0.1		0.9	
Delay (s)		2.9	0.1	57.8	3.3	1.1		62.3	61.2		62.6	
Level of Service		A	A	E	A	A		E	E		E	
Approach Delay (s)		2.8			5.2			61.5			62.6	
Approach LOS		A			A			E			E	

Intersection Summary			
HCM Average Control Delay	5.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

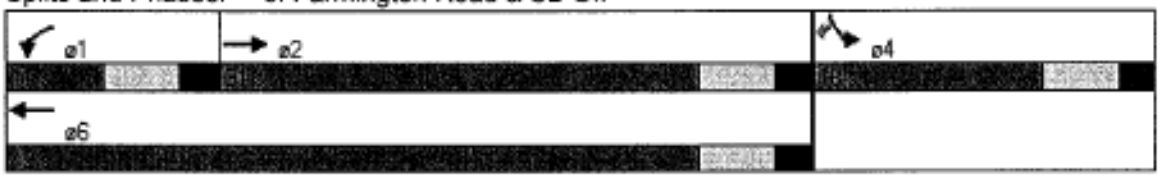
c Critical Lane Group

Lane Group	EBT	WBL	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	780	30	1555	220	420
Lane Group Flow (vph)	1913	33	1690	239	457
Turn Type		Prot		Prot	custom
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phases	2	1	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0
Total Split (s)	31.0	11.0	42.0	18.0	18.0
Total Split (%)	51.7%	18.3%	70.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Min	Min	Min
v/c Ratio	0.88dr	0.16	0.74	0.60	0.69
Control Delay	7.6	26.0	3.9	27.9	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.6	26.0	3.9	27.9	24.7
Queue Length 50th (ft)	67	9	89	77	75
Queue Length 95th (ft)	181	m13	70	140	123
Internal Link Dist (ft)	898		587		
Turn Bay Length (ft)		100			
Base Capacity (vph)	2947	210	2273	413	690
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	0.65	0.16	0.74	0.58	0.66

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 30 (50%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 5: Farmington Road & SB Off



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0		4.0
Lane Util. Factor		0.91		1.00	0.95					1.00		0.88
Frt		0.92		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		4661		1770	3539					1770		2787
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		4661		1770	3539					1770		2787
Volume (vph)	0	780	980	30	1555	0	0	0	0	220	0	420
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	848	1065	33	1690	0	0	0	0	239	0	457
RTOR Reduction (vph)	0	338	0	0	0	0	0	0	0	0	0	40
Lane Group Flow (vph)	0	1575	0	33	1690	0	0	0	0	239	0	417
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type				Prot						Prot		custom
Protected Phases		2		1	6					4		
Permitted Phases												4
Actuated Green, G (s)		28.5		2.0	36.5					11.5		11.5
Effective Green, g (s)		30.5		4.0	38.5					13.5		13.5
Actuated g/C Ratio		0.51		0.07	0.64					0.22		0.22
Clearance Time (s)		6.0		6.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		2369		118	2271					398		627
v/s Ratio Prot		0.34		0.02	c0.48					0.14		
v/s Ratio Perm												c0.15
v/c Ratio		0.88dr		0.28	0.74					0.60		0.66
Uniform Delay, d1		11.0		26.6	7.4					20.8		21.2
Progression Factor		1.00		1.03	0.32					1.00		1.00
Incremental Delay, d2		1.5		0.7	1.3					2.5		2.7
Delay (s)		12.4		28.2	3.7					23.4		23.8
Level of Service		B		C	A					C		C
Approach Delay (s)		12.4			4.2			0.0			23.7	
Approach LOS		B			A			A			C	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	170	830	715	870	30
Lane Group Flow (vph)	185	902	940	946	33
Turn Type	Prot			Prot	custom
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phases	5	2	6	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	11.0
Total Split (s)	11.0	35.0	24.0	25.0	25.0
Total Split (%)	18.3%	58.3%	40.0%	41.7%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Max	Min	Min
v/c Ratio	0.44	0.49	0.79	0.80	0.06
Control Delay	26.9	8.4	23.4	24.4	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	26.9	8.4	23.4	24.4	5.7
Queue Length 50th (ft)	34	103	151	154	0
Queue Length 95th (ft)	m47	112	#225	#220	15
Internal Link Dist (ft)		587	2148		
Turn Bay Length (ft)	400				
Base Capacity (vph)	416	1855	1189	1202	576
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	0.44	0.49	0.79	0.79	0.06

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
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.

Splits and Phases: 6: Farmington Road & NB On

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	0.97	0.95			0.95		0.97		1.00			
Frt	1.00	1.00			0.97		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3433	3539			3447		3433		1583			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	3433	3539			3447		3433		1583			
Volume (vph)	170	830	0	0	715	150	870	0	30	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	185	902	0	0	777	163	946	0	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	29	0	0	0	22	0	0	0
Lane Group Flow (vph)	185	902	0	0	911	0	946	0	11	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot						Prot		custom			
Protected Phases	5	2			6		8					
Permitted Phases									8			
Actuated Green, G (s)	5.3	29.5			18.2		18.5		18.5			
Effective Green, g (s)	7.3	31.5			20.2		20.5		20.5			
Actuated g/C Ratio	0.12	0.52			0.34		0.34		0.34			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	418	1858			1160		1173		541			
v/s Ratio Prot	0.05	c0.25			c0.26		c0.28					
v/s Ratio Perm									0.01			
v/c Ratio	0.44	0.49			0.79		0.81		0.02			
Uniform Delay, d1	24.5	9.1			17.9		17.9		13.1			
Progression Factor	0.97	0.81			1.00		1.00		1.00			
Incremental Delay, d2	0.6	0.7			5.4		4.2		0.0			
Delay (s)	24.3	8.1			23.3		22.1		13.1			
Level of Service	C	A			C		C		B			
Approach Delay (s)		10.8			23.3			21.8			0.0	
Approach LOS		B			C			C			A	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

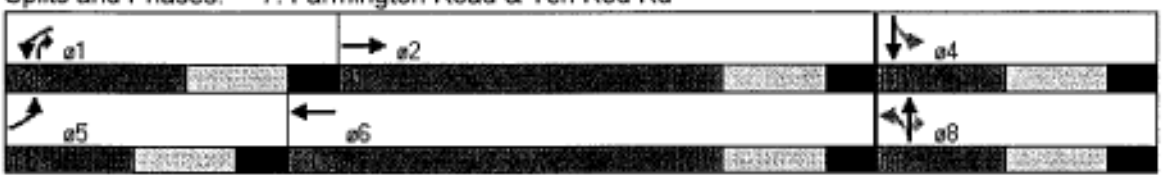
c Critical Lane Group

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	ø4	ø5
Lane Configurations								
Volume (vph)	720	190	800	60	5	140		
Lane Group Flow (vph)	875	207	870	0	70	152		
Turn Type		Prot		Perm		pm+ov		
Protected Phases	2	1	6		8	1	4	5
Permitted Phases				8		8		
Detector Phases	2	1	6	8	8	1		
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	21.0	13.0	23.0	11.0	11.0	13.0	11.0	11.0
Total Split (%)	46.7%	28.9%	51.1%	24.4%	24.4%	28.9%	24%	24%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lag			Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes		Yes
Recall Mode	Min	None	Min	None	None	None	None	None
v/c Ratio	0.48	0.59	0.31		0.35	0.26		
Control Delay	10.3	23.1	2.8		22.2	5.7		
Queue Delay	0.0	0.0	0.0		0.0	0.0		
Total Delay	10.3	23.1	2.8		22.2	5.7		
Queue Length 50th (ft)	89	49	37		16	12		
Queue Length 95th (ft)	138	#114	58		44	36		
Internal Link Dist (ft)	260		1019		802			
Turn Bay Length (ft)		200				260		
Base Capacity (vph)	1850	355	2831		200	595		
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	0.58	0.31		0.35	0.26		

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 46.8
Natural Cycle: 45
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Farmington Road & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00			
Frt		0.98		1.00	1.00			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.96	1.00			
Satd. Flow (prot)		3483		1770	3539			1780	1583			
Flt Permitted		1.00		0.95	1.00			0.76	1.00			
Satd. Flow (perm)		3483		1770	3539			1409	1583			
Volume (vph)	0	720	85	190	800	0	60	5	140	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	783	92	207	870	0	65	5	152	0	0	0
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	50	0	0	0
Lane Group Flow (vph)	0	858	0	207	870	0	0	70	102	0	0	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm		pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		21.5		6.5	34.0			3.1	9.6			
Effective Green, g (s)		23.5		8.5	36.0			5.1	13.6			
Actuated g/C Ratio		0.48		0.17	0.73			0.10	0.28			
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0			
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1667		306	2595			146	567			
v/s Ratio Prot		c0.25		c0.12	0.25				0.03			
v/s Ratio Perm								c0.05	0.03			
v/c Ratio		0.51		0.68	0.34			0.48	0.18			
Uniform Delay, d1		8.9		19.0	2.3			20.7	13.5			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		0.3		5.8	0.1			2.5	0.2			
Delay (s)		9.1		24.8	2.4			23.2	13.7			
Level of Service		A		C	A			C	B			
Approach Delay (s)		9.1			6.7			16.7			0.0	
Approach LOS		A			A			B			A	

Intersection Summary			
HCM Average Control Delay	8.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

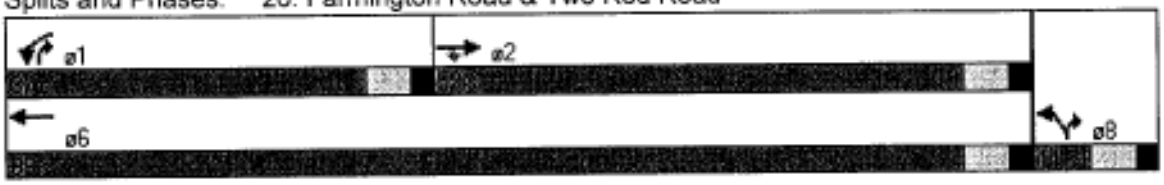
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1265	140	815	730	50	145
Lane Group Flow (vph)	1375	152	886	793	54	158
Turn Type		Perm	Prot			pt+ov
Protected Phases	2		1	6	8	8 1
Permitted Phases		2				
Detector Phases	2	2	1	6	8	8 1
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	20.0	11.0	20.0	11.0	
Total Split (s)	52.0	52.0	37.0	89.0	11.0	48.0
Total Split (%)	52.0%	52.0%	37.0%	89.0%	11.0%	48.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	
v/c Ratio	0.79	0.18	0.81	0.26	0.22	0.25
Control Delay	25.5	4.2	22.1	2.1	33.8	12.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	4.2	22.1	2.1	33.8	12.5
Queue Length 50th (ft)	378	7	151	31	16	72
Queue Length 95th (ft)	473	40	267	56	23	90
Internal Link Dist (ft)	726			1176	497	
Turn Bay Length (ft)		200	400			500
Base Capacity (vph)	1746	847	1133	3008	240	646
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	0.79	0.18	0.78	0.26	0.23	0.24

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 68 (68%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 26: Farmington Road & Two Rod Road



Movement	EBL	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3539	1583	3433	3539	3433	1441
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3539	1583	3433	3539	3433	1441
Volume (vph)	1265	140	815	730	50	145
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1375	152	886	793	54	158
RTOR Reduction (vph)	0	66	0	0	0	13
Lane Group Flow (vph)	1375	86	886	793	54	145
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Turn Type		Perm	Prot			pt+ov
Protected Phases	2		1	6	8	8 1
Permitted Phases		2				
Actuated Green, G (s)	47.3	47.3	29.7	83.0	5.0	40.7
Effective Green, g (s)	49.3	49.3	31.7	85.0	7.0	42.7
Actuated g/C Ratio	0.49	0.49	0.32	0.85	0.07	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1745	780	1088	3008	240	615
v/s Ratio Prot	c0.39		c0.26	0.22	0.02	c0.10
v/s Ratio Perm		0.05				
v/c Ratio	0.79	0.11	0.81	0.26	0.22	0.24
Uniform Delay, d1	21.0	13.6	31.4	1.4	43.9	18.3
Progression Factor	1.00	1.00	0.52	1.34	0.72	0.74
Incremental Delay, d2	3.7	0.3	3.9	0.2	0.5	0.2
Delay (s)	24.7	13.9	20.4	2.1	31.9	13.7
Level of Service	C	B	C	A	C	B
Approach Delay (s)	23.6			11.8	18.4	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	NBT	SBT	SBR	ø3	ø4	ø8
Lane Configurations							
Volume (vph)	90	105	770	185			
Lane Group Flow (vph)	98	114	837	201			
Turn Type	Prot			Free			
Protected Phases	7	2	6		3	4	8
Permitted Phases				Free			
Detector Phases	7	2	6				
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0		11.0	20.0	20.0
Total Split (s)	16.0	64.0	64.0	0.0	11.0	25.0	20.0
Total Split (%)	16.0%	64.0%	64.0%	0.0%	11%	25%	20%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	2.0
Lead/Lag	Lag				Lead	Lag	Lead
Lead-Lag Optimize?	Yes				Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min		None	None	None
v/c Ratio	0.43	0.04	0.55	0.13			
Control Delay	45.1	2.6	7.5	0.1			
Queue Delay	0.0	0.0	0.4	0.0			
Total Delay	45.1	2.6	7.9	0.1			
Queue Length 50th (ft)	58	6	278	0			
Queue Length 95th (ft)	104	14	242	m0			
Internal Link Dist (ft)		741	497				
Turn Bay Length (ft)	400						
Base Capacity (vph)	244	2915	1534	1583			
Starvation Cap Reductn	0	0	264	0			
Spillback Cap Reductn	0	0	0	0			
Storage Cap Reductn	0	0	0	0			
Reduced v/c Ratio	0.40	0.04	0.66	0.13			

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

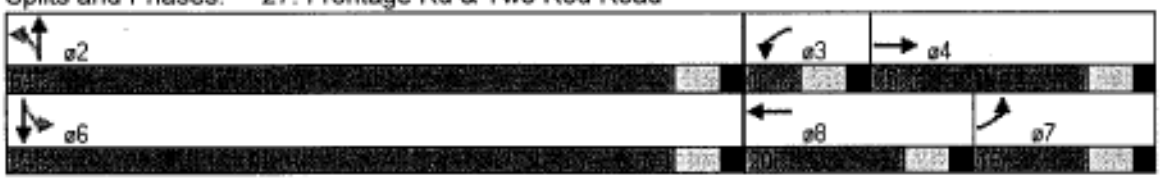
Offset: 40 (40%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: Frontage Rd & Two Rod Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0							4.0			4.0	4.0
Lane Util. Factor	1.00							0.95			1.00	1.00
Frt	1.00							1.00			1.00	0.85
Flt Protected	0.95							1.00			1.00	1.00
Satd. Flow (prot)	1770							3539			1863	1583
Flt Permitted	0.95							1.00			1.00	1.00
Satd. Flow (perm)	1770							3539			1863	1583
Volume (vph)	90	0	0	0	0	0	0	105	0	0	770	185
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	0	0	0	0	0	0	114	0	0	837	201
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	98	0	0	0	0	0	0	114	0	0	837	201
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot			Prot			Perm			Perm		Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		Free
Actuated Green, G (s)	9.6							78.4			78.4	100.0
Effective Green, g (s)	11.6							80.4			80.4	100.0
Actuated g/C Ratio	0.12							0.80			0.80	1.00
Clearance Time (s)	6.0							6.0			6.0	
Vehicle Extension (s)	3.0							3.0			3.0	
Lane Grp Cap (vph)	205							2845			1498	1583
v/s Ratio Prot	c0.06							0.03			c0.45	
v/s Ratio Perm												0.13
v/c Ratio	0.48							0.04			0.56	0.13
Uniform Delay, d1	41.4							2.0			3.5	0.0
Progression Factor	1.00							1.00			1.50	1.00
Incremental Delay, d2	1.8							0.0			1.0	0.1
Delay (s)	43.1							2.0			6.3	0.1
Level of Service	D							A			A	A
Approach Delay (s)		43.1			0.0			2.0			5.1	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM Average Control Delay	7.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	5	2060	75	190	1925	120	0	160	50	10
Lane Group Flow (vph)	5	2239	82	207	2130	0	130	174	54	27
Turn Type	Prot		Perm	Prot		Perm		pt+ov	Perm	
Protected Phases	5	2		1	6		8	8 1		4
Permitted Phases			2			8			4	
Detector Phases	5	2	2	1	6	8	8	8 1	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	11.0	11.0		11.0	11.0
Total Split (s)	11.0	98.0	98.0	23.0	110.0	19.0	19.0	42.0	19.0	19.0
Total Split (%)	7.9%	70.0%	70.0%	16.4%	78.6%	13.6%	13.6%	30.0%	13.6%	13.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	Min	Min		Min	Min
v/c Ratio	0.06	0.93	0.08	0.87	0.73		0.83	0.37	0.65	0.14
Control Delay	58.6	17.2	2.7	61.3	2.3		98.6	41.6	94.5	34.0
Queue Delay	0.0	1.5	0.0	0.0	0.3		0.0	0.0	0.0	0.0
Total Delay	58.6	18.7	2.7	61.3	2.6		98.6	41.6	94.5	34.0
Queue Length 50th (ft)	5	525	4	193	58		118	121	48	9
Queue Length 95th (ft)	m5	651	m12	m208	m103		#233	192	#117	40
Internal Link Dist (ft)		1176			855		413			320
Turn Bay Length (ft)	150		150	300				300		
Base Capacity (vph)	89	2413	1092	243	2928		159	461	84	198
Starvation Cap Reductn	0	0	0	0	250		0	0	0	0
Spillback Cap Reductn	0	72	0	0	0		0	0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0	0	0
Reduced v/c Ratio	0.06	0.96	0.08	0.85	0.80		0.82	0.38	0.64	0.14

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection

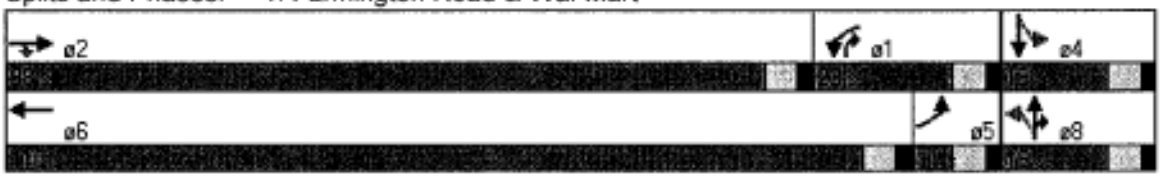
Natural Cycle: 90

Control Type: Actuated-Coordinated

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.

Splits and Phases: 1: Farmington Road & Wal-Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3574	1599	1787	3565			1906	1706	1787	1714	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.74	1.00	0.41	1.00	
Satd. Flow (perm)	1787	3574	1599	1787	3565			1484	1706	775	1714	
Volume (vph)	5	2060	75	190	1925	35	120	0	160	50	10	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2239	82	207	2092	38	130	0	174	54	11	16
RTOR Reduction (vph)	0	0	14	0	1	0	0	0	8	0	14	0
Lane Group Flow (vph)	5	2239	68	207	2129	0	0	130	166	54	13	0
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	1.0	87.7	87.7	21.5	108.2			12.8	40.3	12.8	12.8	
Effective Green, g (s)	3.0	89.7	89.7	23.5	110.2			14.8	42.3	14.8	14.8	
Actuated g/C Ratio	0.02	0.64	0.64	0.17	0.79			0.11	0.30	0.11	0.11	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	38	2290	1025	300	2806			157	515	82	181	
v/s Ratio Prot	0.00	c0.63		c0.12	c0.60				0.10		0.01	
v/s Ratio Perm			0.04					c0.09		0.07		
v/c Ratio	0.13	0.98	0.07	0.69	0.76			0.83	0.32	0.66	0.07	
Uniform Delay, d1	67.2	24.2	9.4	54.8	7.9			61.4	37.8	60.2	56.4	
Progression Factor	0.91	0.57	0.57	0.79	0.27			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	10.5	0.1	2.3	0.7			28.7	0.4	17.5	0.2	
Delay (s)	62.1	24.3	5.4	45.8	2.8			90.0	38.1	77.7	56.6	
Level of Service	E	C	A	D	A			F	D	E	E	
Approach Delay (s)		23.7			6.6			60.3			70.6	
Approach LOS		C			A			E			E	

Intersection Summary			
HCM Average Control Delay	18.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	305	1880	85	215	1830	145	90	10	240	130	10	235
Lane Group Flow (vph)	332	2043	92	234	1989	158	98	11	261	141	11	255
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phases	5	2	3	1	6	7	3	8	1	7	4	5
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	11.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	31.0	90.0	15.0	23.0	82.0	16.0	15.0	11.0	23.0	16.0	12.0	31.0
Total Split (%)	22.1%	64.3%	10.7%	16.4%	58.6%	11.4%	10.7%	7.9%	16.4%	11.4%	8.6%	22.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	Min	None	C-Min	None	Min	Min	None	None	None	None
v/c Ratio	0.96	0.95	0.08	0.90	1.00	0.15	0.42	0.12	0.79	0.92	0.10	0.69
Control Delay	72.4	17.6	1.1	83.8	43.0	2.6	64.1	66.5	53.7	117.2	65.0	47.7
Queue Delay	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.4	19.7	1.1	83.8	43.0	2.6	64.1	66.5	53.7	117.2	65.0	47.7
Queue Length 50th (ft)	314	294	0	210	906	8	80	10	173	130	10	198
Queue Length 95th (ft)	m#372	707	m5	m#346	#1114	m25	#175	31	#280	#263	31	225
Internal Link Dist (ft)		855			1947			463			756	
Turn Bay Length (ft)	500		200	350		200	300		300	400		400
Base Capacity (vph)	345	2195	1218	261	1991	1063	232	94	331	153	107	369
Starvation Cap Reductn	0	75	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	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	0
Reduced v/c Ratio	0.96	0.96	0.08	0.90	1.00	0.15	0.42	0.12	0.79	0.92	0.10	0.69

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 10 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Green

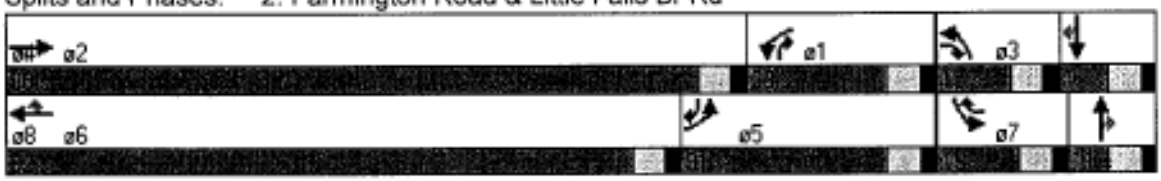
Natural Cycle: 130

Control Type: Actuated-Coordinated

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.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3574	1599	1787	3574	1599	1787	1881	1599	1787	1881	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3574	1599	1787	3574	1599	1787	1881	1599	1787	1881	1599
Volume (vph)	305	1880	85	215	1830	145	90	10	240	130	10	235
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	332	2043	92	234	1989	158	98	11	261	141	11	255
RTOR Reduction (vph)	0	0	19	0	0	38	0	0	18	0	0	23
Lane Group Flow (vph)	332	2043	73	234	1989	120	98	11	243	141	11	232
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	25.0	79.0	95.2	18.4	72.4	82.4	16.2	8.6	27.0	10.0	2.4	27.4
Effective Green, g (s)	27.0	81.0	99.2	20.4	74.4	86.4	18.2	10.6	31.0	12.0	4.4	31.4
Actuated g/C Ratio	0.19	0.58	0.71	0.15	0.53	0.62	0.13	0.08	0.22	0.09	0.03	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	2068	1133	260	1899	987	232	142	354	153	59	359
v/s Ratio Prot	c0.19	c0.57	0.01	0.13	c0.56	0.01	0.05	0.01	c0.10	c0.08	0.01	0.12
v/s Ratio Perm			0.04			0.06			0.05			0.02
v/c Ratio	0.96	0.99	0.06	0.90	1.05	0.12	0.42	0.08	0.69	0.92	0.19	0.65
Uniform Delay, d1	56.0	29.0	6.2	58.8	32.8	11.1	56.1	60.2	50.0	63.5	66.1	49.3
Progression Factor	0.85	0.46	0.76	1.01	0.87	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.3	10.7	0.0	21.8	30.4	0.0	1.2	0.2	5.5	49.9	1.5	4.0
Delay (s)	70.9	24.0	4.8	81.1	59.1	11.7	57.3	60.4	55.5	113.5	67.6	53.2
Level of Service	E	C	A	F	E	B	E	E	E	F	E	D
Approach Delay (s)		29.6			58.1			56.1			74.5	
Approach LOS		C			E			E			E	

Intersection Summary			
HCM Average Control Delay	46.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	2135	95	205	2080	25	95	0	205	45	0	15
Lane Group Flow (vph)	16	2321	103	223	2261	27	0	103	223	0	49	16
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Detector Phases	5	2	2	1	6	6	8	8	8	4	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	100.0	100.0	24.0	113.0	113.0	16.0	16.0	16.0	16.0	16.0	16.0
Total Split (%)	7.9%	71.4%	71.4%	17.1%	80.7%	80.7%	11.4%	11.4%	11.4%	11.4%	11.4%	11.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Min	Min	Min	Min	Min	Min
v/c Ratio	0.18	0.94	0.09	0.88	0.77	0.02		0.88	0.71		0.64	0.11
Control Delay	50.4	10.7	1.4	77.1	8.5	1.7		118.4	25.4		97.8	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	50.4	10.7	1.4	77.1	8.5	1.7		118.4	25.4		97.8	25.7
Queue Length 50th (ft)	14	194	3	202	292	0		94	25		44	0
Queue Length 95th (ft)	m14	#207	m3	m#283	702	m3		#209	115		#109	24
Internal Link Dist (ft)		1947			1318			481			413	
Turn Bay Length (ft)	200		100	350		200			250			150
Base Capacity (vph)	89	2457	1109	255	2951	1324		117	314		76	152
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.18	0.94	0.09	0.87	0.77	0.02		0.88	0.71		0.64	0.11

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 34 (24%), Referenced to phase 2:EBT and 6:WBT, Start of Green

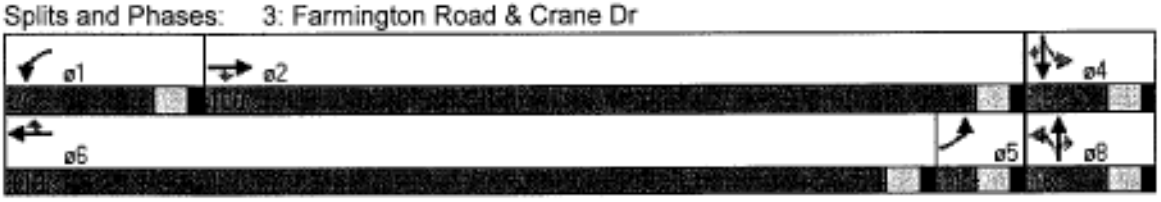
Natural Cycle: 90

Control Type: Actuated-Coordinated

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.

Splits and Phases: 3: Farmington Road & Crane Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	1599	1787	3574	1599		1787	1599		1787	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.73	1.00		0.47	1.00
Satd. Flow (perm)	1787	3574	1599	1787	3574	1599		1364	1599		891	1599
Volume (vph)	15	2135	95	205	2080	25	95	0	205	45	0	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	2321	103	223	2261	27	103	0	223	49	0	16
RTOR Reduction (vph)	0	0	11	0	0	5	0	0	177	0	0	15
Lane Group Flow (vph)	16	2321	92	223	2261	22	0	103	46	0	49	1
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	2.0	94.2	94.2	17.8	110.0	110.0		10.0	10.0		10.0	10.0
Effective Green, g (s)	4.0	96.2	96.2	19.8	112.0	112.0		12.0	12.0		12.0	12.0
Actuated g/C Ratio	0.03	0.69	0.69	0.14	0.80	0.80		0.09	0.09		0.09	0.09
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	51	2456	1099	253	2859	1279		117	137		76	137
v/s Ratio Prot	0.01	c0.65		c0.12	0.63							
v/s Ratio Perm			0.06			0.01		c0.08	0.03		0.05	0.00
v/c Ratio	0.31	0.95	0.08	0.88	0.79	0.02		0.88	0.33		0.64	0.01
Uniform Delay, d1	66.7	19.5	7.3	58.9	7.6	2.8		63.3	60.2		61.9	58.6
Progression Factor	0.76	0.30	0.27	0.93	1.06	1.24		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	4.0	0.1	18.1	1.3	0.0		48.2	1.4		17.2	0.0
Delay (s)	51.9	9.8	2.0	73.2	9.4	3.5		111.5	61.7		79.2	58.6
Level of Service	D	A	A	E	A	A		F	E		E	E
Approach Delay (s)		9.8			15.0			77.4			74.1	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM Average Control Delay	17.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	5	2370	35	170	2295	10	65	0	100	10	0
Lane Group Flow (vph)	5	2576	38	185	2495	11	0	71	109	0	16
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm	
Protected Phases	5	2		1	6			8			4
Permitted Phases			2			6	8		8	4	
Detector Phases	5	2	2	1	6	6	8	8	8	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	108.0	108.0	20.0	117.0	117.0	12.0	12.0	12.0	12.0	12.0
Total Split (%)	7.9%	77.1%	77.1%	14.3%	83.6%	83.6%	8.6%	8.6%	8.6%	8.6%	8.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Min	Min	Min	Min	Min
v/c Ratio	0.06	0.97	0.03	0.91	0.80	0.01		0.89	0.63		0.24
Control Delay	59.2	9.8	0.2	103.5	7.3	1.4		137.3	34.8		57.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	59.2	9.8	0.2	103.5	7.3	1.4		137.3	34.8		57.6
Queue Length 50th (ft)	4	66	0	169	304	1		65	19		10
Queue Length 95th (ft)	m5	#116	m0	#313	756	4		#164	#84		35
Internal Link Dist (ft)		1318			633			435			327
Turn Bay Length (ft)	200		200	250		100			200		
Base Capacity (vph)	89	2655	1194	204	3110	1392		80	174		68
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	0.06	0.97	0.03	0.91	0.80	0.01		0.89	0.63		0.24

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 50 (36%), Referenced to phase 2:EBT and 6:WBT, Start of Green

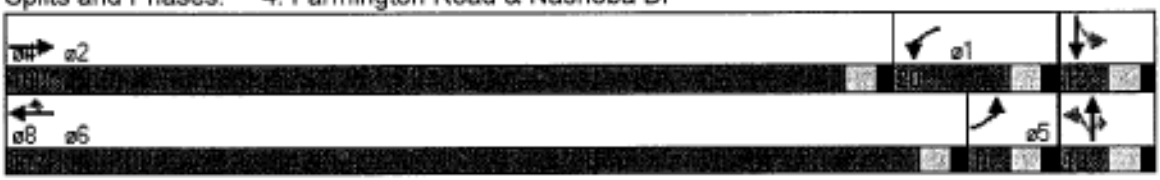
Natural Cycle: 110

Control Type: Actuated-Coordinated

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.

Splits and Phases: 4: Farmington Road & Nashoba Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.97	
Satd. Flow (prot)	1787	3574	1599	1787	3574	1599		1787	1599		1742	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.75	1.00		0.62	
Satd. Flow (perm)	1787	3574	1599	1787	3574	1599		1405	1599		1112	
Volume (vph)	5	2370	35	170	2295	10	65	0	100	10	0	5
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2576	38	185	2495	11	71	0	109	11	0	5
RTOR Reduction (vph)	0	0	7	0	0	1	0	0	83	0	5	0
Lane Group Flow (vph)	5	2576	31	185	2495	10	0	71	26	0	11	0
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		
Actuated Green, G (s)	1.0	97.2	97.2	18.8	115.0	115.0		6.0	6.0		6.0	
Effective Green, g (s)	3.0	99.2	99.2	20.8	117.0	117.0		8.0	8.0		8.0	
Actuated g/C Ratio	0.02	0.71	0.71	0.15	0.84	0.84		0.06	0.06		0.06	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	38	2532	1133	265	2987	1336		80	91		64	
v/s Ratio Prot	0.00	c0.72		c0.10	c0.70							
v/s Ratio Perm			0.02			0.01		c0.05	0.02		0.01	
v/c Ratio	0.13	1.02	0.03	0.70	0.84	0.01		0.89	0.29		0.18	
Uniform Delay, d1	67.2	20.4	6.1	56.6	6.3	1.9		65.6	63.3		62.9	
Progression Factor	0.92	0.15	0.09	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.6	15.9	0.0	7.8	2.9	0.0		63.6	1.7		1.3	
Delay (s)	62.6	18.9	0.6	64.4	9.2	1.9		129.1	65.0		64.2	
Level of Service	E	B	A	E	A	A		F	E		E	
Approach Delay (s)		18.8			13.0			90.3			64.2	
Approach LOS		B			B			F			E	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	1445	30	2200	185	365
Lane Group Flow (vph)	2707	33	2391	201	397
Turn Type		Prot		Prot	custom
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phases	2	1	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0
Total Split (s)	60.0	11.0	71.0	19.0	19.0
Total Split (%)	66.7%	12.2%	78.9%	21.1%	21.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Min	Min	Min
v/c Ratio	0.93dr	0.24	0.90	0.68	0.82
Control Delay	12.2	27.8	4.5	48.1	48.9
Queue Delay	0.0	0.0	0.5	0.0	0.0
Total Delay	12.2	27.8	5.0	48.1	48.9
Queue Length 50th (ft)	365	17	34	109	117
Queue Length 95th (ft)	447	m14	m3	#197	#197
Internal Link Dist (ft)	898		587		
Turn Bay Length (ft)		100			
Base Capacity (vph)	3359	139	2664	298	489
Starvation Cap Reductn	0	0	64	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.81	0.24	0.92	0.67	0.81

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 14 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 75

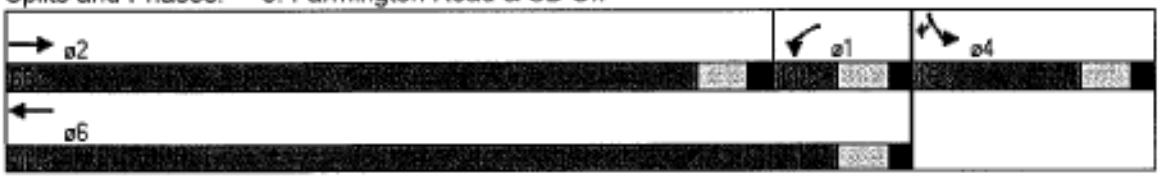
Control Type: Actuated-Coordinated

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.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 5: Farmington Road & SB Off



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0		4.0
Lane Util. Factor		0.91		1.00	0.95					1.00		0.88
Frt		0.94		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		4812		1787	3574					1787		2814
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		4812		1787	3574					1787		2814
Volume (vph)	0	1445	1045	30	2200	0	0	0	0	185	0	365
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1571	1136	33	2391	0	0	0	0	201	0	397
RTOR Reduction (vph)	0	136	0	0	0	0	0	0	0	0	0	20
Lane Group Flow (vph)	0	2571	0	33	2391	0	0	0	0	201	0	377
Turn Type				Prot						Prot		custom
Protected Phases		2		1	6					4		
Permitted Phases												4
Actuated Green, G (s)		56.1		3.0	65.1					12.9		12.9
Effective Green, g (s)		58.1		5.0	67.1					14.9		14.9
Actuated g/C Ratio		0.65		0.06	0.75					0.17		0.17
Clearance Time (s)		6.0		6.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		3106		99	2665					296		466
v/s Ratio Prot		0.53		0.02	c0.67					0.11		
v/s Ratio Perm												c0.13
v/c Ratio		0.93dr		0.33	0.90					0.68		0.81
Uniform Delay, d1		12.1		40.9	8.8					35.3		36.2
Progression Factor		1.00		0.70	0.37					1.00		1.00
Incremental Delay, d2		2.7		0.2	0.5					6.1		10.0
Delay (s)		14.8		28.6	3.8					41.4		46.1
Level of Service		B		C	A					D		D
Approach Delay (s)		14.8			4.1			0.0			44.5	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM Average Control Delay	13.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	515	1115	1250	985	30
Lane Group Flow (vph)	560	1212	1854	1071	33
Turn Type	Prot			Prot	custom
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phases	5	2	6	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	11.0
Total Split (s)	17.0	62.0	45.0	28.0	28.0
Total Split (%)	18.9%	68.9%	50.0%	31.1%	31.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Max	Min	Min
v/c Ratio	1.12	0.53	1.16	1.16	0.07
Control Delay	103.2	12.5	102.3	115.2	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	103.2	12.5	102.3	115.2	9.5
Queue Length 50th (ft)	~198	227	~651	~375	0
Queue Length 95th (ft)	m#287	288	#792	#497	22
Internal Link Dist (ft)		587	2148		
Turn Bay Length (ft)	400				
Base Capacity (vph)	501	2303	1604	925	451
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	1.12	0.53	1.16	1.16	0.07

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 130

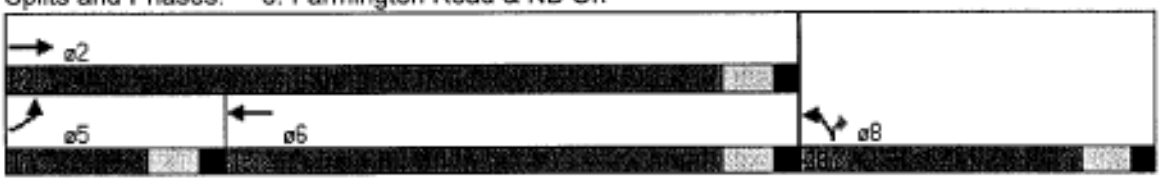
Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 6: Farmington Road & NB On



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	0.97	0.95			0.95		0.97		1.00			
Frt	1.00	1.00			0.96		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3467	3574			3431		3467		1599			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	3467	3574			3431		3467		1599			
Volume (vph)	515	1115	0	0	1250	455	985	0	30	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	560	1212	0	0	1359	495	1071	0	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	41	0	0	0	24	0	0	0
Lane Group Flow (vph)	560	1212	0	0	1813	0	1071	0	9	0	0	0
Turn Type	Prot						Prot		custom			
Protected Phases	5	2			6		8					
Permitted Phases									8			
Actuated Green, G (s)	11.0	56.0			39.0		22.0		22.0			
Effective Green, g (s)	13.0	58.0			41.0		24.0		24.0			
Actuated g/C Ratio	0.14	0.64			0.46		0.27		0.27			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	501	2303			1563		925		426			
v/s Ratio Prot	c0.16	0.34			c0.53		c0.31					
v/s Ratio Perm									0.01			
v/c Ratio	1.12	0.53			1.16		1.16		0.02			
Uniform Delay, d1	38.5	8.6			24.5		33.0		24.3			
Progression Factor	0.91	1.36			1.00		1.00		1.00			
Incremental Delay, d2	68.4	0.5			79.4		83.2		0.0			
Delay (s)	103.6	12.2			103.9		116.2		24.4			
Level of Service	F	B			F		F		C			
Approach Delay (s)		41.1			103.9			113.5			0.0	
Approach LOS		D			F			F			A	

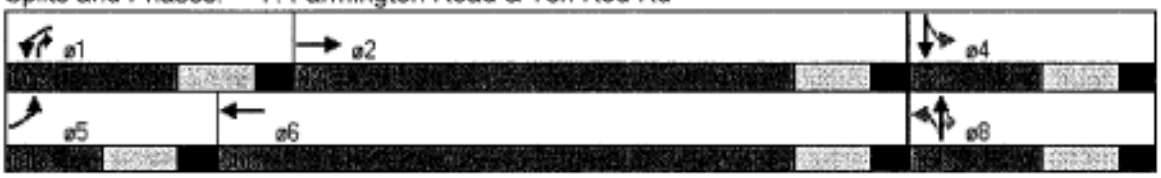
Intersection Summary			
HCM Average Control Delay	82.6	HCM Level of Service	F
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WB	WBT	NBL	NBT	NBR	SBL	SBT	ø5
Lane Configurations									
Volume (vph)	1270	210	1445	130	0	205	5	0	
Lane Group Flow (vph)	1418	228	1571	0	141	223	0	5	
Turn Type		Prot		Perm		pm+ov	Perm		
Protected Phases	2	1	6		8	1		4	5
Permitted Phases				8		8	4		
Detector Phases	2	1	6	8	8	1	4	4	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	32.0	15.0	36.0	13.0	13.0	15.0	13.0	13.0	11.0
Total Split (%)	53.3%	25.0%	60.0%	21.7%	21.7%	25.0%	21.7%	21.7%	18%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lag			Lead			Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes			Yes
Recall Mode	Min	None	Min	None	None	None	None	None	None
v/c Ratio	0.80	0.69	0.57		0.67	0.38		0.03	
Control Delay	17.8	35.5	4.8		42.7	13.7		22.4	
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	17.8	35.5	4.8		42.7	13.7		22.4	
Queue Length 50th (ft)	223	78	113		49	49		2	
Queue Length 95th (ft)	#330	#167	157		#122	95		10	
Internal Link Dist (ft)	260		1019		802			348	
Turn Bay Length (ft)		200				260			
Base Capacity (vph)	1782	344	2764		213	597		181	
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	0.80	0.66	0.57		0.66	0.37		0.03	

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 57.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Farmington Road & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0		4.0	
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00		1.00	
Frt		1.00		1.00	1.00			1.00	0.85		1.00	
Flt Protected		1.00		0.95	1.00			0.95	1.00		0.95	
Satd. Flow (prot)		3560		1787	3574			1787	1599		1787	
Flt Permitted		1.00		0.95	1.00			0.75	1.00		0.63	
Satd. Flow (perm)		3560		1787	3574			1419	1599		1193	
Volume (vph)	0	1270	35	210	1445	0	130	0	205	5	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1380	38	228	1571	0	141	0	223	5	0	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	0	1415	0	228	1571	0	0	141	210	0	5	0
Turn Type	Prot			Prot			Perm		pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		26.7		8.6	41.3			5.3	13.9		5.3	
Effective Green, g (s)		28.7		10.6	43.3			7.3	17.9		7.3	
Actuated g/C Ratio		0.49		0.18	0.74			0.12	0.31		0.12	
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0		6.0	
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)		1744		323	2641			177	598		149	
v/s Ratio Prot		c0.40		c0.13	0.44				0.06			
v/s Ratio Perm								c0.10	0.07		0.00	
v/c Ratio		0.81		0.71	0.59			0.80	0.35		0.03	
Uniform Delay, d1		12.7		22.5	3.6			24.9	15.8		22.5	
Progression Factor		1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2		3.0		6.9	0.4			21.5	0.4		0.1	
Delay (s)		15.6		29.4	3.9			46.4	16.2		22.6	
Level of Service		B		C	A			D	B		C	
Approach Delay (s)		15.6			7.2			27.9			22.6	
Approach LOS		B			A			C			C	

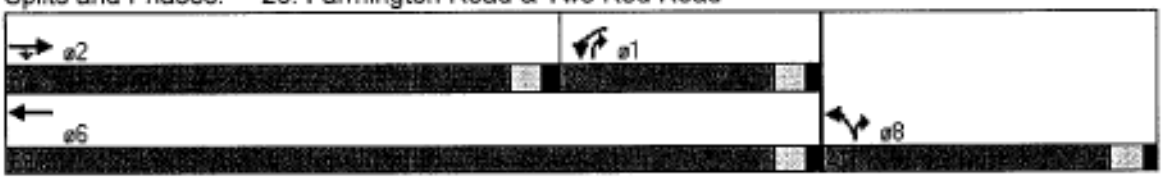
Intersection Summary			
HCM Average Control Delay	12.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	58.6	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1225	115	500	1560	245	915
Lane Group Flow (vph)	1332	125	543	1696	763	498
Turn Type		Perm	Prot			pt+ov
Protected Phases	2		1	6	8	8 1
Permitted Phases		2				
Detector Phases	2	2	1	6	8	8 1
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	20.0	11.0	20.0	11.0	
Total Split (s)	67.0	67.0	32.0	99.0	41.0	73.0
Total Split (%)	47.9%	47.9%	22.9%	70.7%	29.3%	52.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	
v/c Ratio	0.75	0.15	0.78	0.65	0.80	0.76
Control Delay	32.2	9.5	44.8	5.4	26.9	26.5
Queue Delay	0.2	0.0	0.0	0.0	0.3	0.3
Total Delay	32.4	9.5	44.8	5.4	27.2	26.7
Queue Length 50th (ft)	502	23	228	202	246	459
Queue Length 95th (ft)	650	65	m300	256	m113	m289
Internal Link Dist (ft)	726			1176	497	
Turn Bay Length (ft)		200	400			500
Base Capacity (vph)	1784	836	693	2601	1097	727
Starvation Cap Reductn	0	0	0	0	60	27
Spillback Cap Reductn	61	0	0	0	2	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.15	0.78	0.65	0.74	0.71

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 26 (19%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal

Splits and Phases: 26: Farmington Road & Two Rod Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frt	1.00	0.85	1.00	1.00	0.90	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.98	1.00
Satd. Flow (prot)	3574	1599	3467	3574	3237	1455
Flt Permitted	1.00	1.00	0.95	1.00	0.98	1.00
Satd. Flow (perm)	3574	1599	3467	3574	3237	1455
Volume (vph)	1225	115	500	1560	245	915
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1332	125	543	1696	266	995
RTOR Reduction (vph)	0	38	0	0	257	11
Lane Group Flow (vph)	1332	87	543	1696	506	487
Turn Type		Perm	Prot			pt+ov
Protected Phases	2		1	6	8	8 1
Permitted Phases		2				
Actuated Green, G (s)	67.9	67.9	26.0	99.9	28.1	60.1
Effective Green, g (s)	69.9	69.9	28.0	101.9	30.1	62.1
Actuated g/C Ratio	0.50	0.50	0.20	0.73	0.22	0.44
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1784	798	693	2601	696	645
v/s Ratio Prot	c0.37		0.16	0.47	0.16	c0.33
v/s Ratio Perm		0.05				
v/c Ratio	0.75	0.11	0.78	0.65	0.73	0.76
Uniform Delay, d1	28.0	18.6	53.1	9.9	51.1	32.6
Progression Factor	1.00	1.00	0.73	0.42	0.75	0.65
Incremental Delay, d2	2.9	0.3	3.9	0.9	2.9	3.9
Delay (s)	30.9	18.8	42.6	5.0	41.2	25.1
Level of Service	C	B	D	A	D	C
Approach Delay (s)	29.8			14.1	34.9	
Approach LOS	C			B	C	

Intersection Summary			
HCM Average Control Delay	24.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations								
Volume (vph)	475	75	25	80	10	685	115	500
Lane Group Flow (vph)	516	98	27	87	0	772	125	543
Turn Type	Prot		Prot		Perm			Free
Protected Phases	7	4	3	8		2	6	
Permitted Phases					2			Free
Detector Phases	7	4	3	8	2	2	6	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	20.0	11.0	20.0	20.0	20.0	20.0	
Total Split (s)	64.0	73.0	16.0	25.0	51.0	51.0	51.0	0.0
Total Split (%)	45.7%	52.1%	11.4%	17.9%	36.4%	36.4%	36.4%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lag	Lag	Lead	Lead				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	
v/c Ratio	0.89	0.14	0.22	0.48		0.46	0.14	0.34
Control Delay	61.7	24.0	65.3	67.6		26.8	8.2	8.0
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	61.7	24.0	65.3	67.6		26.8	8.2	8.0
Queue Length 50th (ft)	447	54	24	76		236	15	220
Queue Length 95th (ft)	517	81	55	130		370	m80	228
Internal Link Dist (ft)		735		1180		741	497	
Turn Bay Length (ft)	400		200					
Base Capacity (vph)	766	910	153	282		1665	923	1599
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.67	0.11	0.18	0.31		0.46	0.14	0.34

Intersection Summary

Cycle Length: 140

Actuated Cycle Length: 140

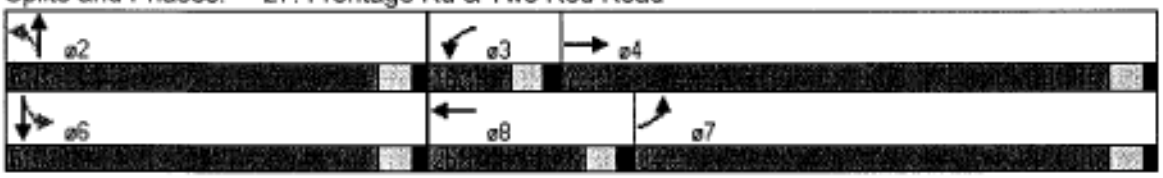
Offset: 122 (87%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 70

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: Frontage Rd & Two Rod Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			1.00	1.00
Frt	1.00	0.98		1.00	1.00			1.00			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			1.00			1.00	1.00
Satd. Flow (prot)	1787	1835		1787	1881			3561			1881	1599
Flt Permitted	0.95	1.00		0.95	1.00			0.95			1.00	1.00
Satd. Flow (perm)	1787	1835		1787	1881			3389			1881	1599
Volume (vph)	475	75	15	25	80	0	10	685	15	0	115	500
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	516	82	16	27	87	0	11	745	16	0	125	543
RTOR Reduction (vph)	0	6	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	516	92	0	27	87	0	0	771	0	0	125	543
Turn Type	Prot			Prot			Perm			Perm		Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		Free
Actuated Green, G (s)	46.0	52.4		5.2	11.6			64.4			64.4	140.0
Effective Green, g (s)	48.0	54.4		7.2	13.6			66.4			66.4	140.0
Actuated g/C Ratio	0.34	0.39		0.05	0.10			0.47			0.47	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	613	713		92	183			1607			892	1599
v/s Ratio Prot	c0.29	0.05		0.02	c0.05						0.07	
v/s Ratio Perm								c0.23				0.34
v/c Ratio	0.84	0.13		0.29	0.48			0.48			0.14	0.34
Uniform Delay, d1	42.5	27.5		64.0	59.8			25.0			20.7	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			0.35	1.00
Incremental Delay, d2	10.2	0.1		1.8	1.9			1.0			0.2	0.4
Delay (s)	52.7	27.6		65.7	61.8			26.1			7.4	0.4
Level of Service	D	C		E	E			C			A	A
Approach Delay (s)		48.7			62.7			26.1			1.7	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM Average Control Delay	26.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Volume (vph)	15	1730	95	310	2005	125	10	265	35	5
Lane Group Flow (vph)	16	1880	103	337	2217	0	147	288	38	21
Turn Type	Prot		Perm	Prot		Perm		pt+ov	Perm	
Protected Phases	5	2		1	6		8	8 1		4
Permitted Phases			2			8			4	
Detector Phases	5	2	2	1	6	8	8	8 1	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0
Minimum Split (s)	11.0	22.0	22.0	11.0	22.0	11.0	11.0		11.0	11.0
Total Split (s)	11.0	72.0	72.0	29.0	90.0	19.0	19.0	48.0	19.0	19.0
Total Split (%)	9.2%	60.0%	60.0%	24.2%	75.0%	15.8%	15.8%	40.0%	15.8%	15.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	Min	Min		Min	Min
v/c Ratio	0.15	0.92	0.11	0.92	0.80		0.82	0.46	0.39	0.10
Control Delay	49.8	19.2	4.4	44.5	3.1		84.8	30.9	60.7	25.1
Queue Delay	0.0	0.0	0.0	0.0	1.3		0.0	0.0	0.0	0.0
Total Delay	49.8	19.2	4.4	44.5	4.4		84.8	30.9	60.7	25.1
Queue Length 50th (ft)	12	312	4	265	98		112	162	27	3
Queue Length 95th (ft)	m17	#480	m18	m259	m132		#224	244	65	28
Internal Link Dist (ft)		1176			855		413			320
Turn Bay Length (ft)	150		150	300				300		
Base Capacity (vph)	104	2042	935	372	2759		182	622	100	222
Starvation Cap Reductn	0	0	0	0	317		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	0.15	0.92	0.11	0.91	0.91		0.81	0.46	0.38	0.09

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green, Master Intersection

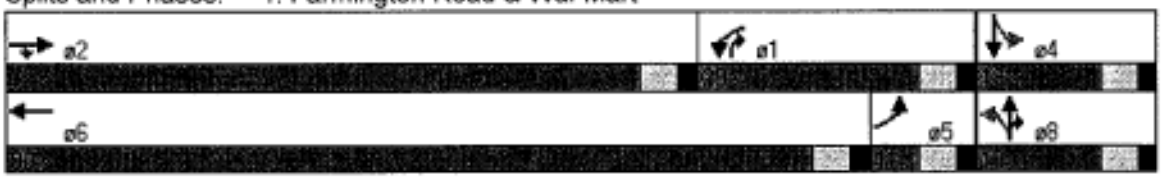
Natural Cycle: 90

Control Type: Actuated-Coordinated

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.

Splits and Phases: 1: Farmington Road & Wal-Mart



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	14	14	12	12	12
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95			1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00			1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00			0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3574	1599	1787	3565			1918	1706	1787	1666	
Flt Permitted	0.95	1.00	1.00	0.95	1.00			0.73	1.00	0.42	1.00	
Satd. Flow (perm)	1787	3574	1599	1787	3565			1458	1706	793	1666	
Volume (vph)	15	1730	95	310	2005	35	125	10	265	35	5	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	1880	103	337	2179	38	136	11	288	38	5	16
RTOR Reduction (vph)	0	0	23	0	1	0	0	0	7	0	14	0
Lane Group Flow (vph)	16	1880	80	337	2216	0	0	147	281	38	7	0
Turn Type	Prot		Perm	Prot			Perm		pt+ov	Perm		
Protected Phases	5	2		1	6			8	8 1		4	
Permitted Phases			2				8			4		
Actuated Green, G (s)	2.0	63.0	63.0	26.3	87.3			12.7	45.0	12.7	12.7	
Effective Green, g (s)	4.0	65.0	65.0	28.3	89.3			14.7	47.0	14.7	14.7	
Actuated g/C Ratio	0.03	0.54	0.54	0.24	0.74			0.12	0.39	0.12	0.12	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0			6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	60	1936	866	421	2653			179	668	97	204	
v/s Ratio Prot	0.01	c0.53		c0.19	c0.62				0.16		0.00	
v/s Ratio Perm			0.05					c0.10		0.05		
v/c Ratio	0.27	0.97	0.09	0.80	0.84			0.82	0.42	0.39	0.03	
Uniform Delay, d1	56.6	26.6	13.3	43.2	10.4			51.4	26.6	48.5	46.4	
Progression Factor	0.88	0.55	0.64	0.84	0.30			1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.5	10.7	0.1	1.0	0.3			25.1	0.4	2.6	0.1	
Delay (s)	51.5	25.4	8.7	37.2	3.4			76.4	27.0	51.1	46.5	
Level of Service	D	C	A	D	A			E	C	D	D	
Approach Delay (s)		24.7			7.9			43.7			49.5	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	315	1600	115	320	1910	135	120	15	275	165	15	315
Lane Group Flow (vph)	342	1739	125	348	2076	147	130	16	299	179	16	342
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Detector Phases	5	2	3	1	6	7	3	8	1	7	4	5
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	11.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	25.0	66.0	13.0	28.0	69.0	15.0	13.0	11.0	28.0	15.0	13.0	25.0
Total Split (%)	20.8%	55.0%	10.8%	23.3%	57.5%	12.5%	10.8%	9.2%	23.3%	12.5%	10.8%	20.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	Min	None	C-Min	None	Min	Min	None	None	None	None
v/c Ratio	1.09	0.94	0.11	0.97	1.07	0.14	0.52	0.15	0.62	1.09	0.12	1.00
Control Delay	101.6	23.3	0.7	73.0	59.4	0.9	58.2	56.9	41.0	147.4	54.4	88.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.6	23.3	0.7	73.0	59.4	0.9	58.2	56.9	41.0	147.4	54.4	88.6
Queue Length 50th (ft)	~306	591	5	259	~945	7	90	12	188	~157	12	~304
Queue Length 95th (ft)	m#377	m#842	m6	m#350	#1072	m8	#231	36	287	#303	35	#297
Internal Link Dist (ft)		855			1947			463			756	
Turn Bay Length (ft)	500		200	350		200	300		300	400		400
Base Capacity (vph)	313	1847	1134	357	1936	1049	250	110	480	164	141	342
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.94	0.11	0.97	1.07	0.14	0.52	0.15	0.62	1.09	0.11	1.00

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 28 (23%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 140

Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 2: Farmington Road & Little Falls Br Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1787	3574	1599	1787	3574	1599	1787	1881	1599	1787	1881	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1787	3574	1599	1787	3574	1599	1787	1881	1599	1787	1881	1599
Volume (vph)	315	1600	115	320	1910	135	120	15	275	165	15	315
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	1739	125	348	2076	147	130	16	299	179	16	342
RTOR Reduction (vph)	0	0	37	0	0	39	0	0	14	0	0	13
Lane Group Flow (vph)	342	1739	88	348	2076	108	130	16	285	179	16	329
Turn Type	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov	Prot		pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2			6			8			4
Actuated Green, G (s)	19.0	56.4	71.2	22.0	59.4	68.4	14.8	8.6	30.6	9.0	12.8	21.8
Effective Green, g (s)	21.0	58.4	75.2	24.0	61.4	72.4	16.8	10.6	34.6	11.0	4.8	25.8
Actuated g/C Ratio	0.18	0.49	0.63	0.20	0.51	0.60	0.14	0.09	0.29	0.09	0.04	0.22
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	313	1739	1055	357	1829	965	250	166	514	164	75	344
v/s Ratio Prot	0.19	c0.49	0.01	0.19	c0.58	0.01	c0.07	0.01	c0.11	c0.10	0.01	0.17
v/s Ratio Perm			0.04			0.06			0.07			0.04
v/c Ratio	1.09	1.00	0.08	0.97	1.14	0.11	0.52	0.10	0.56	1.09	0.21	0.96
Uniform Delay, d1	49.5	30.8	8.8	47.7	29.3	10.1	47.9	50.3	36.2	54.5	55.8	46.5
Progression Factor	0.78	0.59	0.22	0.94	0.72	0.43	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	63.7	15.2	0.0	26.4	64.5	0.0	1.9	0.3	1.3	96.8	1.4	36.6
Delay (s)	102.1	33.4	2.0	71.4	85.5	4.4	49.8	50.6	37.5	151.3	57.2	83.1
Level of Service	F	C	A	E	F	A	D	D	D	F	E	F
Approach Delay (s)		42.3			79.0			41.6			105.1	
Approach LOS		D			E			D			F	

Intersection Summary			
HCM Average Control Delay	64.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	1900	130	300	2190	90	135	0	265	55	0	35
Lane Group Flow (vph)	33	2065	141	326	2380	98	0	147	288	0	60	38
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Detector Phases	5	2	2	1	6	6	8	8	8	4	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	76.0	76.0	26.0	91.0	91.0	18.0	18.0	18.0	18.0	18.0	18.0
Total Split (%)	9.2%	63.3%	63.3%	21.7%	75.8%	75.8%	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	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Min	Min	Min	Min	Min	Min
v/c Ratio	0.32	0.96	0.14	0.99	0.87	0.08		0.93	0.68		0.67	0.17
Control Delay	73.5	17.1	2.8	76.9	10.3	1.1		108.4	16.8		86.3	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	73.5	17.1	2.8	76.9	10.3	1.1		108.4	16.8		86.3	16.7
Queue Length 50th (ft)	27	193	8	255	651	2		115	15		45	0
Queue Length 95th (ft)	m30	m#391	m10	m#321	m417	m3		#244	105		#117	34
Internal Link Dist (ft)		1947			1318			481			413	
Turn Bay Length (ft)	200		100	350		200			250			150
Base Capacity (vph)	104	2144	979	328	2722	1236		158	422		89	220
Starvation Cap Reductn	0	0	0	0	0	0		0	0		0	0
Spillback Cap Reductn	0	0	0	0	0	0		0	0		0	0
Storage Cap Reductn	0	0	0	0	0	0		0	0		0	0
Reduced v/c Ratio	0.32	0.96	0.14	0.99	0.87	0.08		0.93	0.68		0.67	0.17

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 64 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Green

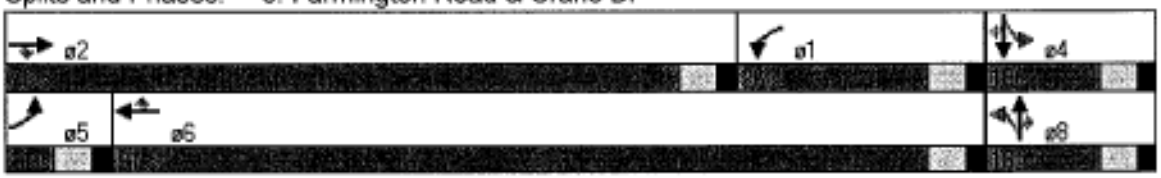
Natural Cycle: 90

Control Type: Actuated-Coordinated

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.

Splits and Phases: 3: Farmington Road & Crane Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.95	1.00
Satd. Flow (prot)	1787	3574	1599	1787	3574	1599		1787	1599		1787	1599
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.72	1.00		0.41	1.00
Satd. Flow (perm)	1787	3574	1599	1787	3574	1599		1350	1599		764	1599
Volume (vph)	30	1900	130	300	2190	90	135	0	265	55	0	35
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	2065	141	326	2380	98	147	0	288	60	0	38
RTOR Reduction (vph)	0	0	21	0	0	20	0	0	236	0	0	34
Lane Group Flow (vph)	33	2065	120	326	2380	78	0	147	52	0	60	4
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		4
Actuated Green, G (s)	3.0	67.6	67.6	22.4	87.0	87.0		12.0	12.0		12.0	12.0
Effective Green, g (s)	5.0	69.6	69.6	24.4	89.0	89.0		14.0	14.0		14.0	14.0
Actuated g/C Ratio	0.04	0.58	0.58	0.20	0.74	0.74		0.12	0.12		0.12	0.12
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	74	2073	927	363	2651	1186		158	187		89	187
v/s Ratio Prot	0.02	c0.58		0.18	c0.67							
v/s Ratio Perm			0.08			0.05		c0.11	0.03		0.08	0.00
v/c Ratio	0.45	1.00	0.13	0.90	0.90	0.07		0.93	0.28		0.67	0.02
Uniform Delay, d1	56.1	25.1	11.4	46.6	12.0	4.2		52.5	48.4		50.8	46.9
Progression Factor	1.28	0.42	0.40	0.92	0.68	0.67		1.00	1.00		1.00	1.00
Incremental Delay, d2	1.8	11.8	0.1	12.1	2.4	0.0		51.3	0.8		18.3	0.1
Delay (s)	73.7	22.2	4.7	54.9	10.6	2.9		103.8	49.2		69.1	47.0
Level of Service	E	C	A	D	B	A		F	D		E	D
Approach Delay (s)		21.9			15.5			67.7			60.5	
Approach LOS		C			B			E			E	

Intersection Summary			
HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Volume (vph)	5	2190	55	220	2520	20	85	0	115	15	0
Lane Group Flow (vph)	5	2380	60	239	2739	22	0	92	125	0	32
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm	
Protected Phases	5	2		1	6			8			4
Permitted Phases			2			6	8		8	4	
Detector Phases	5	2	2	1	6	6	8	8	8	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	20.0	20.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	11.0	88.0	88.0	21.0	98.0	98.0	11.0	11.0	11.0	11.0	11.0
Total Split (%)	9.2%	73.3%	73.3%	17.5%	81.7%	81.7%	9.2%	9.2%	9.2%	9.2%	9.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Min	Min	Min	Min	Min
v/c Ratio	0.05	0.95	0.05	0.94	0.89	0.02		0.95	0.59		0.44
Control Delay	38.8	8.7	0.1	95.5	11.5	1.4		135.0	21.5		53.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	38.8	8.7	0.1	95.5	11.5	1.4		135.0	21.5		53.1
Queue Length 50th (ft)	4	68	0	186	387	1		72	0		12
Queue Length 95th (ft)	m3	m79	m0	#344	#1264	7		#180	61		#50
Internal Link Dist (ft)		1318			633			435			327
Turn Bay Length (ft)	200		200	250		100			200		
Base Capacity (vph)	104	2502	1132	253	3062	1372		97	211		72
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	0.05	0.95	0.05	0.94	0.89	0.02		0.95	0.59		0.44

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 68 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Green

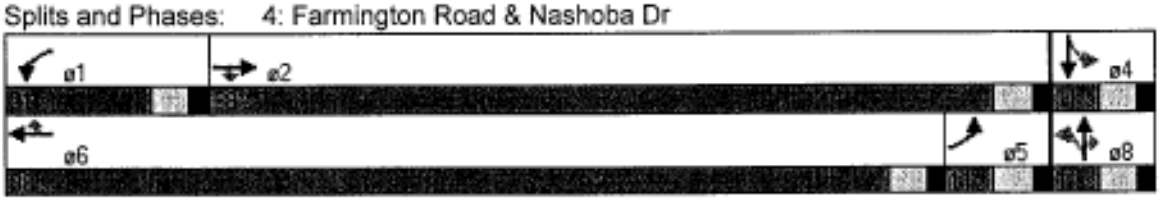
Natural Cycle: 110

Control Type: Actuated-Coordinated

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.

Splits and Phases: 4: Farmington Road & Nashoba Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00		1.00	1.00		1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85		0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00		0.98	
Satd. Flow (prot)	1787	3574	1599	1787	3574	1599		1787	1599		1711	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.88	1.00		0.56	
Satd. Flow (perm)	1787	3574	1599	1787	3574	1599		1662	1599		978	
Volume (vph)	5	2190	55	220	2520	20	85	0	115	15	0	15
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	2380	60	239	2739	22	92	0	125	16	0	16
RTOR Reduction (vph)	0	0	13	0	0	2	0	0	118	0	15	0
Lane Group Flow (vph)	5	2380	47	239	2739	20	0	92	7	0	17	0
Turn Type	Prot		Perm	Prot		Perm	Perm		Perm	Perm		
Protected Phases	5	2		1	6			8			4	
Permitted Phases			2			6	8		8	4		
Actuated Green, G (s)	1.0	82.0	82.0	15.0	96.0	96.0		5.0	5.0		5.0	
Effective Green, g (s)	3.0	84.0	84.0	17.0	98.0	98.0		7.0	7.0		7.0	
Actuated g/C Ratio	0.02	0.70	0.70	0.14	0.82	0.82		0.06	0.06		0.06	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	
Lane Grp Cap (vph)	45	2502	1119	253	2919	1306		97	93		57	
v/s Ratio Prot	0.00	c0.67		0.13	c0.77							
v/s Ratio Perm			0.03			0.01		c0.06	0.00		0.02	
v/c Ratio	0.11	0.95	0.04	0.94	0.94	0.02		0.95	0.08		0.30	
Uniform Delay, d1	57.2	16.2	5.6	51.0	8.6	2.0		56.3	53.4		54.1	
Progression Factor	0.72	0.19	0.03	1.00	1.00	1.00		1.00	1.00		1.00	
Incremental Delay, d2	0.4	4.6	0.0	41.3	7.4	0.0		73.8	0.4		2.9	
Delay (s)	41.4	7.6	0.2	92.3	16.0	2.1		130.1	53.8		57.1	
Level of Service	D	A	A	F	B	A		F	D		E	
Approach Delay (s)		7.5			22.0			86.2			57.1	
Approach LOS		A			C			F			E	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	SBL	SBR
Lane Configurations					
Volume (vph)	1490	30	2275	220	565
Lane Group Flow (vph)	2615	33	2473	239	614
Turn Type		Prot		Prot	custom
Protected Phases	2	1	6	4	
Permitted Phases					4
Detector Phases	2	1	6	4	4
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0
Total Split (s)	63.0	11.0	74.0	26.0	26.0
Total Split (%)	63.0%	11.0%	74.0%	26.0%	26.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead			
Lead-Lag Optimize?	Yes	Yes			
Recall Mode	C-Max	None	C-Min	Min	Min
v/c Ratio	0.88dr	0.26	0.99	0.61	0.97
Control Delay	16.3	50.1	9.8	42.7	68.7
Queue Delay	0.0	0.0	5.8	0.2	0.0
Total Delay	16.3	50.1	15.5	42.9	68.7
Queue Length 50th (ft)	445	20	308	138	217
Queue Length 95th (ft)	528	m18	m135	220	#344
Internal Link Dist (ft)	898		587		
Turn Bay Length (ft)		100			
Base Capacity (vph)	3169	125	2502	393	631
Starvation Cap Reductn	0	0	60	0	0
Spillback Cap Reductn	2	0	0	10	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.26	1.01	0.62	0.97

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 16 (16%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

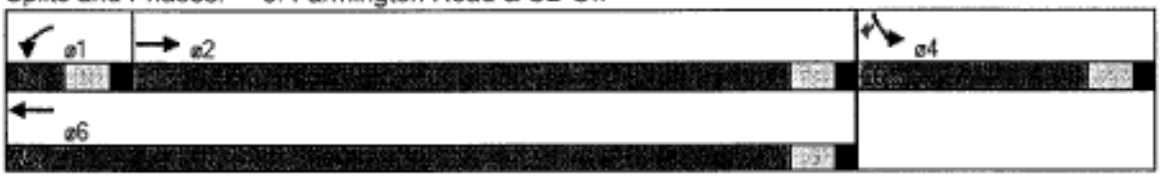
Control Type: Actuated-Coordinated

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.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 5: Farmington Road & SB Off



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0					4.0		4.0
Lane Util. Factor		0.91		1.00	0.95					1.00		0.88
Frt		0.94		1.00	1.00					1.00		0.85
Flt Protected		1.00		0.95	1.00					0.95		1.00
Satd. Flow (prot)		4843		1787	3574					1787		2814
Flt Permitted		1.00		0.95	1.00					0.95		1.00
Satd. Flow (perm)		4843		1787	3574					1787		2814
Volume (vph)	0	1490	915	30	2275	0	0	0	0	220	0	565
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1620	995	33	2473	0	0	0	0	239	0	614
RTOR Reduction (vph)	0	105	0	0	0	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	2510	0	33	2473	0	0	0	0	239	0	602
Turn Type				Prot						Prot		custom
Protected Phases		2		1	6					4		
Permitted Phases												4
Actuated Green, G (s)		59.0		3.0	68.0					20.0		20.0
Effective Green, g (s)		61.0		5.0	70.0					22.0		22.0
Actuated g/C Ratio		0.61		0.05	0.70					0.22		0.22
Clearance Time (s)		6.0		6.0	6.0					6.0		6.0
Vehicle Extension (s)		3.0		3.0	3.0					3.0		3.0
Lane Grp Cap (vph)		2954		89	2502					393		619
v/s Ratio Prot		0.52		0.02	c0.69					0.13		
v/s Ratio Perm												c0.21
v/c Ratio		0.88dr		0.37	0.99					0.61		0.97
Uniform Delay, d1		15.8		46.0	14.6					35.1		38.7
Progression Factor		1.00		1.11	0.31					1.00		1.00
Incremental Delay, d2		3.3		0.2	3.4					2.7		29.3
Delay (s)		19.1		51.4	7.9					37.8		68.0
Level of Service		B		D	A					D		E
Approach Delay (s)		19.1			8.4			0.0			59.5	
Approach LOS		B			A			A			E	

Intersection Summary			
HCM Average Control Delay	20.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	139.2%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group

Lane Group	EBL	EBT	WBT	NBL	NBR
Lane Configurations					
Volume (vph)	430	1285	1110	1195	30
Lane Group Flow (vph)	467	1397	1582	1299	33
Turn Type	Prot			Prot	custom
Protected Phases	5	2	6	8	
Permitted Phases					8
Detector Phases	5	2	6	8	8
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	20.0	20.0	11.0	11.0
Total Split (s)	17.0	62.0	45.0	38.0	38.0
Total Split (%)	17.0%	62.0%	45.0%	38.0%	38.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lead		Lag		
Lead-Lag Optimize?	Yes		Yes		
Recall Mode	None	C-Min	C-Max	Min	Min
v/c Ratio	1.04	0.67	1.10	1.10	0.06
Control Delay	79.4	24.7	83.7	91.2	9.2
Queue Delay	0.0	1.1	0.0	0.0	0.0
Total Delay	79.4	25.8	83.7	91.2	9.2
Queue Length 50th (ft)	~167	460	~595	~488	1
Queue Length 95th (ft)	m#237	540	#736	#619	22
Internal Link Dist (ft)		587	2148		
Turn Bay Length (ft)	400				
Base Capacity (vph)	451	2073	1442	1179	563
Starvation Cap Reductn	0	402	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.04	0.84	1.10	1.10	0.06

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 84 (84%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 120

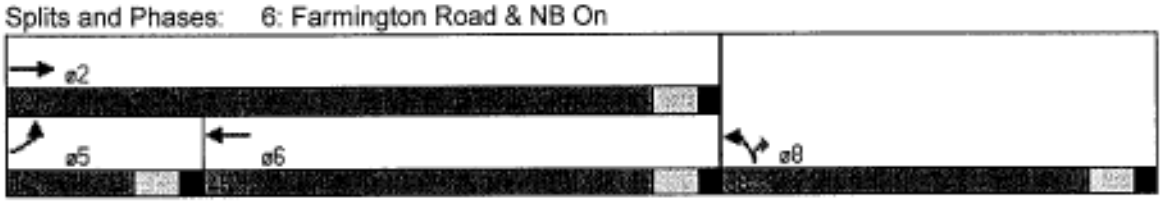
Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 6: Farmington Road & NB On



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0		4.0			
Lane Util. Factor	0.97	0.95			0.95		0.97		1.00			
Frt	1.00	1.00			0.96		1.00		0.85			
Flt Protected	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (prot)	3467	3574			3447		3467		1599			
Flt Permitted	0.95	1.00			1.00		0.95		1.00			
Satd. Flow (perm)	3467	3574			3447		3467		1599			
Volume (vph)	430	1285	0	0	1110	345	1195	0	30	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	467	1397	0	0	1207	375	1299	0	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	30	0	0	0	20	0	0	0
Lane Group Flow (vph)	467	1397	0	0	1553	0	1299	0	13	0	0	0
Turn Type	Prot						Prot		custom			
Protected Phases	5	2			6		8					
Permitted Phases									8			
Actuated Green, G (s)	11.0	56.0			39.0		32.0		32.0			
Effective Green, g (s)	13.0	58.0			41.0		34.0		34.0			
Actuated g/C Ratio	0.13	0.58			0.41		0.34		0.34			
Clearance Time (s)	6.0	6.0			6.0		6.0		6.0			
Vehicle Extension (s)	3.0	3.0			3.0		3.0		3.0			
Lane Grp Cap (vph)	451	2073			1413		1179		544			
v/s Ratio Prot	c0.13	0.39			c0.45		c0.37					
v/s Ratio Perm									0.01			
v/c Ratio	1.04	0.67			1.10		1.10		0.02			
Uniform Delay, d1	43.5	14.5			29.5		33.0		22.0			
Progression Factor	0.84	1.60			1.00		1.00		1.00			
Incremental Delay, d2	41.8	1.0			55.7		58.7		0.0			
Delay (s)	78.2	24.2			85.2		91.7		22.0			
Level of Service	E	C			F		F		C			
Approach Delay (s)		37.8			85.2			90.0			0.0	
Approach LOS		D			F			F			A	

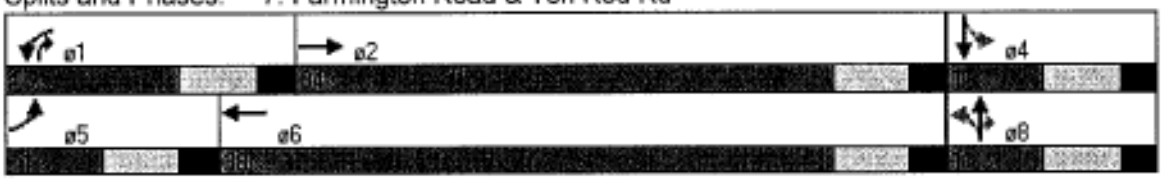
Intersection Summary			
HCM Average Control Delay	68.0	HCM Level of Service	E
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	139.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBL	WBT	NBL	NBT	NBR	ø4	ø5
Lane Configurations								
Volume (vph)	1265	215	1285	90	5	180		
Lane Group Flow (vph)	1402	234	1397	0	103	196		
Turn Type		Prot		Perm		pm+ov		
Protected Phases	2	1	6		8	1	4	5
Permitted Phases				8		8		
Detector Phases	2	1	6	8	8	1		
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	20.0	11.0	20.0	11.0	11.0	11.0	11.0	11.0
Total Split (s)	34.0	15.0	38.0	11.0	11.0	15.0	11.0	11.0
Total Split (%)	56.7%	25.0%	63.3%	18.3%	18.3%	25.0%	18%	18%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag	Lag	Lead	Lag			Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes		Yes
Recall Mode	Min	None	Min	None	None	None	None	None
v/c Ratio	0.75	0.70	0.49		0.63	0.36		
Control Delay	14.6	36.4	3.4		45.9	14.0		
Queue Delay	0.0	0.0	0.0		0.0	0.0		
Total Delay	14.6	36.4	3.4		45.9	14.0		
Queue Length 50th (ft)	201	80	75		36	42		
Queue Length 95th (ft)	282	#173	105		#100	86		
Internal Link Dist (ft)	260		1019		802			
Turn Bay Length (ft)		200				260		
Base Capacity (vph)	1880	342	2860		163	558		
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	0.75	0.68	0.49		0.63	0.35		

Intersection Summary

Cycle Length: 60
Actuated Cycle Length: 57.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Farmington Road & Ten Rod Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0			4.0	4.0			
Lane Util. Factor		0.95		1.00	0.95			1.00	1.00			
Frt		1.00		1.00	1.00			1.00	0.85			
Flt Protected		1.00		0.95	1.00			0.95	1.00			
Satd. Flow (prot)		3564		1787	3574			1796	1599			
Flt Permitted		1.00		0.95	1.00			0.74	1.00			
Satd. Flow (perm)		3564		1787	3574			1385	1599			
Volume (vph)	0	1265	25	215	1285	0	90	5	180	0	0	0
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1375	27	234	1397	0	98	5	196	0	0	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	0	1400	0	234	1397	0	0	103	177	0	0	0
Turn Type	Prot			Prot			Perm		pm+ov	Perm		
Protected Phases	5	2		1	6			8	1		4	
Permitted Phases							8		8	4		
Actuated Green, G (s)		28.4		8.7	43.1			3.8	12.5			
Effective Green, g (s)		30.4		10.7	45.1			5.8	16.5			
Actuated g/C Ratio		0.52		0.18	0.77			0.10	0.28			
Clearance Time (s)		6.0		6.0	6.0			6.0	6.0			
Vehicle Extension (s)		3.0		3.0	3.0			3.0	3.0			
Lane Grp Cap (vph)		1839		325	2737			136	557			
v/s Ratio Prot		c0.39		c0.13	0.39				0.06			
v/s Ratio Perm								c0.07	0.05			
v/c Ratio		0.76		0.72	0.51			0.76	0.32			
Uniform Delay, d1		11.4		22.7	2.7			25.9	16.8			
Progression Factor		1.00		1.00	1.00			1.00	1.00			
Incremental Delay, d2		1.9		7.6	0.2			21.1	0.3			
Delay (s)		13.3		30.3	2.8			47.0	17.1			
Level of Service		B		C	A			D	B			
Approach Delay (s)		13.3			6.8			27.4			0.0	
Approach LOS		B			A			C			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	58.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1280	170	705	1440	215	560
Lane Group Flow (vph)	1391	185	766	1565	406	437
Turn Type		Perm	Prot			pt+ov
Protected Phases	2		1	6	8	8 1
Permitted Phases		2				
Detector Phases	2	2	1	6	8	8 1
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	20.0	11.0	20.0	11.0	
Total Split (s)	61.0	61.0	37.0	98.0	22.0	59.0
Total Split (%)	50.8%	50.8%	30.8%	81.7%	18.3%	49.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes			
Recall Mode	C-Max	C-Max	None	C-Max	None	
v/c Ratio	0.81	0.22	0.80	0.55	0.69	0.65
Control Delay	31.3	6.7	32.4	2.3	21.5	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	31.3	6.7	32.4	2.3	21.5	10.3
Queue Length 50th (ft)	474	23	258	80	108	34
Queue Length 95th (ft)	573	64	344	75	m107	m120
Internal Link Dist (ft)	726			1176	497	
Turn Bay Length (ft)		200	400			500
Base Capacity (vph)	1719	837	953	2821	610	678
Starvation Cap Reductn	0	0	0	0	0	37
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.22	0.80	0.55	0.67	0.68

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

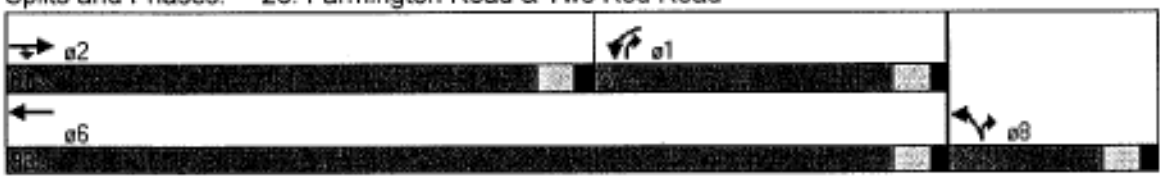
Offset: 6 (5%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: Farmington Road & Two Rod Road



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.95	1.00	0.97	0.95	0.97	0.91
Frt	1.00	0.85	1.00	1.00	0.94	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.97	1.00
Satd. Flow (prot)	3574	1599	3467	3574	3322	1455
Flt Permitted	1.00	1.00	0.95	1.00	0.97	1.00
Satd. Flow (perm)	3574	1599	3467	3574	3322	1455
Volume (vph)	1280	170	705	1440	215	560
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1391	185	766	1565	234	609
RTOR Reduction (vph)	0	67	0	0	113	11
Lane Group Flow (vph)	1391	118	766	1565	293	426
Turn Type		Perm	Prot			pt+ov
Protected Phases	2		1	6	8	8 1
Permitted Phases		2				
Actuated Green, G (s)	55.7	55.7	31.0	92.7	15.3	52.3
Effective Green, g (s)	57.7	57.7	33.0	94.7	17.3	54.3
Actuated g/C Ratio	0.48	0.48	0.28	0.79	0.14	0.45
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	1718	769	953	2820	479	658
v/s Ratio Prot	c0.39		c0.22	0.44	0.09	c0.29
v/s Ratio Perm		0.07				
v/c Ratio	0.81	0.15	0.80	0.55	0.61	0.65
Uniform Delay, d1	26.5	17.5	40.5	4.7	48.2	25.4
Progression Factor	1.00	1.00	0.69	0.37	0.55	0.29
Incremental Delay, d2	4.2	0.4	2.9	0.5	1.3	1.2
Delay (s)	30.7	17.9	30.8	2.2	27.8	8.6
Level of Service	C	B	C	A	C	A
Approach Delay (s)	29.2			11.6	17.9	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBT	SBR
Lane Configurations								
Volume (vph)	690	110	30	105	15	85	90	785
Lane Group Flow (vph)	750	147	33	114	0	130	98	853
Turn Type	Prot		Prot		Perm			Free
Protected Phases	7	4	3	8		2	6	
Permitted Phases					2			Free
Detector Phases	7	4	3	8	2	2	6	
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	11.0	20.0	11.0	20.0	20.0	20.0	20.0	
Total Split (s)	74.0	83.0	14.0	23.0	23.0	23.0	23.0	0.0
Total Split (%)	61.7%	69.2%	11.7%	19.2%	19.2%	19.2%	19.2%	0.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	
v/c Ratio	0.90	0.15	0.24	0.50		0.13	0.17	0.53
Control Delay	43.9	10.8	55.4	56.5		30.6	45.3	12.7
Queue Delay	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.9	10.8	55.4	56.5		30.6	45.3	12.7
Queue Length 50th (ft)	522	51	24	84		32	74	352
Queue Length 95th (ft)	548	59	57	138		71	m106	345
Internal Link Dist (ft)		735		1180		741	497	
Turn Bay Length (ft)	400		200					
Base Capacity (vph)	1043	1211	155	299		1018	595	1599
Starvation Cap Reductn	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0		0	0	0
Reduced v/c Ratio	0.72	0.12	0.21	0.38		0.13	0.16	0.53

Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

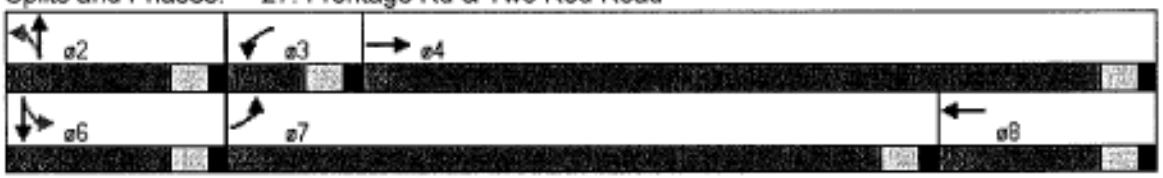
Offset: 36 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 27: Frontage Rd & Two Rod Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00			0.95			1.00	1.00
Frt	1.00	0.97		1.00	1.00			0.97			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			1.00	1.00
Satd. Flow (prot)	1787	1829		1787	1881			3462			1881	1599
Flt Permitted	0.95	1.00		0.95	1.00			0.92			1.00	1.00
Satd. Flow (perm)	1787	1829		1787	1881			3207			1881	1599
Volume (vph)	690	110	25	30	105	0	15	85	20	0	90	785
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	750	120	27	33	114	0	16	92	22	0	98	853
RTOR Reduction (vph)	0	9	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	750	138	0	33	114	0	0	118	0	0	98	853
Turn Type	Prot			Prot			Perm			Perm		Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases							2			6		Free
Actuated Green, G (s)	53.7	63.5		5.1	14.9			33.4			33.4	120.0
Effective Green, g (s)	55.7	65.5		7.1	16.9			35.4			35.4	120.0
Actuated g/C Ratio	0.46	0.55		0.06	0.14			0.30			0.30	1.00
Clearance Time (s)	6.0	6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	829	998		106	265			946			555	1599
v/s Ratio Prot	c0.42	0.08		0.02	0.06						0.05	
v/s Ratio Perm								0.04				c0.53
v/c Ratio	0.90	0.14		0.31	0.43			0.12			0.18	0.53
Uniform Delay, d1	29.7	13.4		54.1	47.1			31.0			31.5	0.0
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.25	1.00
Incremental Delay, d2	13.2	0.1		1.7	1.1			0.3			0.5	0.9
Delay (s)	42.9	13.4		55.8	48.3			31.2			39.9	0.9
Level of Service	D	B		E	D			C			D	A
Approach Delay (s)		38.1			50.0			31.2			4.9	
Approach LOS		D			D			C			A	

Intersection Summary			
HCM Average Control Delay	23.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	0	0	105	0	0	100	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	114	0	0	109	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											493	
pX, platoon unblocked												
vC, conflicting volume	223	223	109	223	223	114	109			114		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	223	223	109	223	223	114	109			114		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	733	676	945	733	676	938	1482			1475		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	114	109
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1482	1475
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1335	35	0	785	0	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1451	38	0	853	0	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				806		
pX, platoon unblocked					1.00	
vC, conflicting volume			1489		1878	726
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1489		1877	726
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	79
cM capacity (veh/h)			447		63	367

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	726	726	38	427	427	76
Volume Left	0	0	0	0	0	0
Volume Right	0	0	38	0	0	76
cSH	1700	1700	1700	1700	1700	367
Volume to Capacity	0.43	0.43	0.02	0.25	0.25	0.21
Queue Length 95th (ft)	0	0	0	0	0	19
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	17.3
Lane LOS						C
Approach Delay (s)	0.0			0.0		17.3
Approach LOS						C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	60	0	70	20	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	0	76	22	0	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	125	87			98	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	125	87			98	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	870	972			1495	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	65	98	38
Volume Left	65	0	0
Volume Right	0	22	0
cSH	870	1700	1495
Volume to Capacity	0.07	0.06	0.00
Queue Length 95th (ft)	6	0	0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1635	5	0	1655	0	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1777	5	0	2016	0	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	713					
pX, platoon unblocked			0.71		0.71	0.71
vC, conflicting volume			1783		2785	889
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1695		3101	442
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	91
cM capacity (veh/h)			266		6	402

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	889	889	5	1008	1008	38
Volume Left	0	0	0	0	0	0
Volume Right	0	0	5	0	0	38
cSH	1700	1700	1700	1700	1700	402
Volume to Capacity	0.52	0.52	0.00	0.59	0.59	0.09
Queue Length 95th (ft)	0	0	0	0	0	8
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	14.9
Lane LOS						B
Approach Delay (s)	0.0			0.0		14.9
Approach LOS						B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	0	0	90	0	0	135	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	98	0	0	147	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											543	
pX, platoon unblocked												
vC, conflicting volume	245	245	147	245	245	98	147			98		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	245	245	147	245	245	98	147			98		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	709	657	900	709	657	958	1435			1495		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	0	0	98	147	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	1700	1700	1435	1495	1700
Volume to Capacity	0.00	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS	A	A			
Approach Delay (s)	0.0	0.0	0.0	0.0	
Approach LOS	A	A			

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	10.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	0	0	225	0	0	260	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	245	0	0	283	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											561	
pX, platoon unblocked												
vC, conflicting volume	527	527	283	527	527	245	283			245		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	527	527	283	527	527	245	283			245		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	462	456	756	462	456	794	1280			1322		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	245	283
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1280	1322
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	10	0	25	0	30	40	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	11	0	27	0	33	43	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											515	
pX, platoon unblocked												
vC, conflicting volume	147	136	43	136	136	27	43			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	147	136	43	136	136	27	43			27		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	99	100			98		
cM capacity (veh/h)	800	739	1027	822	739	1048	1565			1587		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	11	27	76
Volume Left	0	0	0	33
Volume Right	0	11	0	0
cSH	1700	1048	1565	1587
Volume to Capacity	0.00	0.01	0.00	0.02
Queue Length 95th (ft)	0	1	0	2
Control Delay (s)	0.0	8.5	0.0	3.2
Lane LOS	A	A		A
Approach Delay (s)	0.0	8.5	0.0	3.2
Approach LOS	A	A		

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	30	10	35	5	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	33	11	38	5	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	65	5	5			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	65	5	5			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	99			
cM capacity (veh/h)	934	1078	1616			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	33	49	5
Volume Left	0	11	0
Volume Right	33	0	0
cSH	1078	1616	1700
Volume to Capacity	0.03	0.01	0.00
Queue Length 95th (ft)	2	1	0
Control Delay (s)	8.4	1.6	0.0
Lane LOS	A	A	
Approach Delay (s)	8.4	1.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1350	25	150	630	5	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1467	27	163	685	5	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1495		2149	747
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1495		2149	747
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			63		79	94
cM capacity (veh/h)			445		26	355

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	978	516	163	342	342	27
Volume Left	0	0	163	0	0	5
Volume Right	0	27	0	0	0	22
cSH	1700	1700	445	1700	1700	131
Volume to Capacity	0.58	0.30	0.37	0.20	0.20	0.21
Queue Length 95th (ft)	0	0	41	0	0	19
Control Delay (s)	0.0	0.0	17.7	0.0	0.0	47.8
Lane LOS			C			E
Approach Delay (s)	0.0		3.4			47.8
Approach LOS						E

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	50	45	35	55	0	50	280	35	0	275	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	54	49	38	60	0	54	304	38	0	299	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											493	
pX, platoon unblocked												
vC, conflicting volume	761	750	299	807	731	323	299			342		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	761	750	299	807	731	323	299			342		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	83	93	84	82	100	96			100		
cM capacity (veh/h)	270	327	743	237	335	720	1268			1222		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	103	98	397	299
Volume Left	0	38	54	0
Volume Right	49	0	38	0
cSH	445	289	1268	1222
Volume to Capacity	0.23	0.34	0.04	0.00
Queue Length 95th (ft)	22	36	3	0
Control Delay (s)	15.5	23.7	1.5	0.0
Lane LOS	C	C	A	
Approach Delay (s)	15.5	23.7	1.5	0.0
Approach LOS	C	C		

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1300	20	0	1805	0	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1413	22	0	1962	0	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				806		
pX, platoon unblocked					0.69	
vC, conflicting volume			1435		2394	707
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1435		2570	707
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	89
cM capacity (veh/h)			474		15	380

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	707	707	22	981	981	43
Volume Left	0	0	0	0	0	0
Volume Right	0	0	22	0	0	43
cSH	1700	1700	1700	1700	1700	380
Volume to Capacity	0.42	0.42	0.01	0.58	0.58	0.11
Queue Length 95th (ft)	0	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	15.7
Lane LOS						C
Approach Delay (s)	0.0			0.0		15.7
Approach LOS						C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	60	0	40	25	0	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	65	0	43	27	0	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	79	57			71	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	79	57			71	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	926	1012			1536	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	65	71	22
Volume Left	65	0	0
Volume Right	0	27	0
cSH	926	1700	1536
Volume to Capacity	0.07	0.04	0.00
Queue Length 95th (ft)	6	0	0
Control Delay (s)	9.2	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.2	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	13.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	2455	30	0	2480	0	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2668	33	0	2696	0	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	713					
pX, platoon unblocked			0.30		0.30	0.30
vC, conflicting volume			2701		4016	1334
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			4343		8739	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	77
cM capacity (veh/h)			10		0	325

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	1334	1334	33	1348	1348	76
Volume Left	0	0	0	0	0	0
Volume Right	0	0	33	0	0	76
cSH	1700	1700	1700	1700	1700	325
Volume to Capacity	0.78	0.78	0.02	0.79	0.79	0.23
Queue Length 95th (ft)	0	0	0	0	0	22
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	19.4
Lane LOS						C
Approach Delay (s)	0.0			0.0		19.4
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	85	0	0	0	90	340	0	0	310	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	92	0	0	0	98	370	0	0	337	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											543	
pX, platoon unblocked												
vC, conflicting volume	902	902	337	995	902	370	337			370		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	902	902	337	995	902	370	337			370		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	87	100	100	100	92			100		
cM capacity (veh/h)	244	256	707	183	256	678	1228			1194		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	92	0	467	337	0
Volume Left	0	0	98	0	0
Volume Right	92	0	0	0	0
cSH	707	1700	1228	1194	1700
Volume to Capacity	0.13	0.00	0.08	0.00	0.00
Queue Length 95th (ft)	11	0	6	0	0
Control Delay (s)	10.9	0.0	2.4	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	10.9	0.0	2.4	0.0	
Approach LOS	B	A			

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	0	0	300	0	0	300	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	326	0	0	326	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											561	
pX, platoon unblocked												
vC, conflicting volume	652	652	326	652	652	326	326			326		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652	652	326	652	652	326	326			326		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	382	388	717	382	388	717	1239			1239		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	326	326
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1239	1239
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	30	0	125	0	75	115	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	33	0	136	0	82	125	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											515	
pX, platoon unblocked												
vC, conflicting volume	457	424	125	424	424	136	125			136		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	457	424	125	424	424	136	125			136		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	96	100			94		
cM capacity (veh/h)	476	494	928	519	494	915	1468			1455		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	33	136	207
Volume Left	0	0	0	82
Volume Right	0	33	0	0
cSH	1700	915	1468	1455
Volume to Capacity	0.00	0.04	0.00	0.06
Queue Length 95th (ft)	0	3	0	4
Control Delay (s)	0.0	9.1	0.0	3.3
Lane LOS	A	A		A
Approach Delay (s)	0.0	9.1	0.0	3.3
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	75	30	70	30	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	82	33	76	33	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	174	33	33			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	174	33	33			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	92	98			
cM capacity (veh/h)	801	1044	1586			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	82	109	33
Volume Left	0	33	0
Volume Right	82	0	0
cSH	1044	1586	1700
Volume to Capacity	0.08	0.02	0.02
Queue Length 95th (ft)	6	2	0
Control Delay (s)	8.7	2.3	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	2.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1185	5	30	1775	25	135
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1288	5	33	1929	27	147
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1293		2321	647
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1293		2321	647
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		9	65
cM capacity (veh/h)			537		30	416

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	859	435	33	965	965	174
Volume Left	0	0	33	0	0	27
Volume Right	0	5	0	0	0	147
cSH	1700	1700	537	1700	1700	192
Volume to Capacity	0.51	0.26	0.06	0.57	0.57	0.91
Queue Length 95th (ft)	0	0	5	0	0	176
Control Delay (s)	0.0	0.0	12.1	0.0	0.0	66.4
Lane LOS			B			F
Approach Delay (s)	0.0		0.2			66.4
Approach LOS						F

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	70	60	50	70	0	65	400	50	0	405	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	76	65	54	76	0	71	435	54	0	440	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											493	
pX, platoon unblocked												
vC, conflicting volume	1082	1071	440	1147	1043	462	440			489		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1082	1071	440	1147	1043	462	440			489		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	63	89	50	65	100	94			100		
cM capacity (veh/h)	136	208	619	108	216	602	1125			1079		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	141	130	560	440
Volume Left	0	54	71	0
Volume Right	65	0	54	0
cSH	300	153	1125	1079
Volume to Capacity	0.47	0.86	0.06	0.00
Queue Length 95th (ft)	60	144	5	0
Control Delay (s)	27.3	96.7	1.7	0.0
Lane LOS	D	F	A	
Approach Delay (s)	27.3	96.7	1.7	0.0
Approach LOS	D	F		

Intersection Summary			
Average Delay	13.7		
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1380	40	0	1655	0	70
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1500	43	0	1799	0	76
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)				806		
pX, platoon unblocked					0.81	
vC, conflicting volume			1543		2399	750
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1543		2495	750
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	79
cM capacity (veh/h)			431		20	356

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	750	750	43	899	899	76
Volume Left	0	0	0	0	0	0
Volume Right	0	0	43	0	0	76
cSH	1700	1700	1700	1700	1700	356
Volume to Capacity	0.44	0.44	0.03	0.53	0.53	0.21
Queue Length 95th (ft)	0	0	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	17.8
Lane LOS						C
Approach Delay (s)	0.0			0.0		17.8
Approach LOS						C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	105	0	70	40	0	40
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	114	0	76	43	0	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	141	98			120	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	141	98			120	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	100			100	
cM capacity (veh/h)	854	961			1475	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	114	120	43
Volume Left	114	0	0
Volume Right	0	43	0
cSH	854	1700	1475
Volume to Capacity	0.13	0.07	0.00
Queue Length 95th (ft)	12	0	0
Control Delay (s)	9.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↱		↑↑		↱
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	2285	35	0	2760	0	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2484	38	0	3000	0	87
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	713					
pX, platoon unblocked			0.32		0.32	0.32
vC, conflicting volume			2522		3984	1242
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			3608		8112	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	75
cM capacity (veh/h)			21		0	353

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1
Volume Total	1242	1242	38	1500	1500	87
Volume Left	0	0	0	0	0	0
Volume Right	0	0	38	0	0	87
cSH	1700	1700	1700	1700	1700	353
Volume to Capacity	0.73	0.73	0.02	0.88	0.88	0.25
Queue Length 95th (ft)	0	0	0	0	0	24
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	18.5
Lane LOS						C
Approach Delay (s)	0.0			0.0		18.5
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	120	0	0	0	120	405	0	0	450	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	130	0	0	0	130	440	0	0	489	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											543	
pX, platoon unblocked												
vC, conflicting volume	1190	1190	489	1321	1190	440	489			440		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1190	1190	489	1321	1190	440	489			440		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	78	100	100	100	88			100		
cM capacity (veh/h)	150	166	581	95	166	619	1079			1125		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	130	0	571	489	0
Volume Left	0	0	130	0	0
Volume Right	130	0	0	0	0
cSH	581	1700	1079	1125	1700
Volume to Capacity	0.22	0.00	0.12	0.00	0.00
Queue Length 95th (ft)	21	0	10	0	0
Control Delay (s)	13.0	0.0	3.1	0.0	0.0
Lane LOS	B	A	A		
Approach Delay (s)	13.0	0.0	3.1	0.0	
Approach LOS	B	A			

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	0	0	400	0	0	430	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	435	0	0	467	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											561	
pX, platoon unblocked												
vC, conflicting volume	902	902	467	902	902	435	467			435		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	902	902	467	902	902	435	467			435		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	260	278	598	260	278	623	1099			1130		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	0	435	467
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	1700	1700	1099	1130
Volume to Capacity	0.00	0.00	0.00	0.00
Queue Length 95th (ft)	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	0.0	0.0	0.0	0.0
Approach LOS	A	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	26.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	0	0	0	0	35	0	155	0	95	170	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	0	0	38	0	168	0	103	185	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											515	
pX, platoon unblocked												
vC, conflicting volume	598	560	185	560	560	168	185			168		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	598	560	185	560	560	168	185			168		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	96	100			93		
cM capacity (veh/h)	375	407	860	416	407	878	1396			1415		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	0	38	168	288
Volume Left	0	0	0	103
Volume Right	0	38	0	0
cSH	1700	878	1396	1415
Volume to Capacity	0.00	0.04	0.00	0.07
Queue Length 95th (ft)	0	3	0	6
Control Delay (s)	0.0	9.3	0.0	3.2
Lane LOS	A	A		A
Approach Delay (s)	0.0	9.3	0.0	3.2
Approach LOS	A	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	95	35	80	35	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	103	38	87	38	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	201	38	38			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	201	38	38			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	90	98			
cM capacity (veh/h)	771	1037	1579			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	103	125	38
Volume Left	0	38	0
Volume Right	103	0	0
cSH	1037	1579	1700
Volume to Capacity	0.10	0.02	0.02
Queue Length 95th (ft)	8	2	0
Control Delay (s)	8.9	2.4	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	2.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	25.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1400	5	25	1630	5	20
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1522	5	27	1772	5	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						4
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			1527		2465	764
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1527		2465	764
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		77	94
cM capacity (veh/h)			437		24	349

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1014	513	27	886	886	27
Volume Left	0	0	27	0	0	5
Volume Right	0	5	0	0	0	22
cSH	1700	1700	437	1700	1700	119
Volume to Capacity	0.60	0.30	0.06	0.52	0.52	0.23
Queue Length 95th (ft)	0	0	5	0	0	21
Control Delay (s)	0.0	0.0	13.8	0.0	0.0	52.0
Lane LOS			B			F
Approach Delay (s)	0.0		0.2			52.0
Approach LOS						F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

APPENDIX I

Sensitivity Analysis Worksheets

Sensitivity Calculations for West Section of Farmington Road

	Datamon		No-Build				Primary Trips										2023 with added primary trips										2023 with added primary trips										2018 with added primary trips										2013 with added primary trips									
	2007	2008	2013	2018	2023	2028	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%
PM Peak																																																								
Rte 11 at Jerome F																																																								
EB Thru	815	835	875	930	980	1040	145	15	29	44	59	73	85	102	117	132	1986	1988	1989	1994	1999	1113	1128	1142	1157	1172	1125	998	1012	1025	1042	1055	1070	1080	1095	1110	1075	948	962	975	988	1000	1020	1030	1045	1060	1015	888	903	918	930	945	960	975	985	1000
EB Right							5	0	1	1	2	2	3	3	4	4	5	0	1	1	2	2	3	3	4	4	5	0	0	0	0	0	0	5	5	5	5	0	0	0	0	0	0	5	5	5	5	0	0	0	0	0	0	5	5	5
WB Left							26	0	6	8	11	14	17	20	22	25	26	3	6	8	11	14	17	20	22	25	30	5	8	10	13	15	18	20	23	25	30	5	8	10	13	15	18	20	23	25	30	5	8	10	13	15	18	20	23	25
WB Thru	1230	1230	1325	1390	1455	1535	242	34	48	73	87	121	145	169	194	219	1777	1568	1583	1608	1632	1655	1680	1704	1729	1753	1608	1488	1505	1530	1555	1575	1600	1625	1650	1675	1620	1408	1430	1455	1475	1500	1525	1550	1575	1600	1548	1330	1358	1380	1400	1425	1450	1475	1500	1525
NB Left							24	2	5	7	10	12	14	17	19	22	24	3	5	7	10	12	14	17	19	22	29	5	5	5	18	10	15	15	20	20	29	5	5	5	18	10	15	15	20	20	29	0	5	5	18	10	15	15	20	20
NB Right							137	14	27	41	55	68	82	96	109	123	137	14	27	41	55	68	82	96	109	123	139	15	28	40	55	70	85	95	110	125	139	15	28	40	55	70	85	95	110	125	139	15	28	40	55	70	85	95	110	125
EB West	815	835	875	930	980	1040	181	15	30	45	61	76	91	106	121	136	1160	1055	1070	1085	1100	1115	1130	1145	1160	1175	1135	995	1010	1025	1040	1055	1070	1085	1100	1115	1080	945	960	975	990	1005	1020	1035	1050	1065	1020	885	900	915	930	945	960	975	990	1005
WB West	1230	1230	1325	1390	1455	1535	286	27	53	82	108	135	160	186	213	240	1800	1585	1610	1635	1660	1685	1710	1735	1760	1785	1725	1490	1515	1535	1560	1585	1610	1635	1660	1685	1645	1405	1435	1450	1485	1515	1540	1565	1590	1620	1570	1330	1365	1385	1415	1440	1465	1490	1520	1545
WB Factored*	1330	1340	1425	1505	1585	1670											1950	1730	1760	1785	1815	1840	1870	1895	1925	1950	1875	1610	1645	1670	1700	1730	1760	1785	1820	1845	1790	1535	1565	1590	1615	1650	1675	1705	1735	1765	1710	1450	1485	1510	1535	1570	1595	1625	1655	1685

* - Factored for pickand 'SUT to obtain equivalent passenger car's

Sensitivity Calculations for Reconfigured Turnpike Ramps

	Balanced 2007	No Build 2008	2013	2018	2023	2028	Primary Trips 100%	10%	20%	30%	40%	50%	60%	70%	80%	90%
AM Peak																
N Main at Tpk NB Ramps (New configuration)																
EB Left	55	60	55	55	55	60	108	11	22	32	43	54	65	76	86	97
EB Thru	555	570	600	630	665	690	135	13	27	40	54	67	81	94	108	121
WB Thru	260	260	275	290	305	320	395	40	79	119	158	198	237	277	316	356
WB Right	120	120	125	135	140	150	0	0	0	0	0	0	0	0	0	0
NB Left	255	260	270	285	300	315	553	55	111	166	221	277	332	387	442	498
NB Right	25	25	25	30	30	30	0	0	0	0	0	0	0	0	0	0
Rte 11 at Tpk SB Ramps (New configuration)																
EB Thru	430	440	460	485	510	535	242	24	48	73	97	121	145	170	194	218
EB Right	640	648	690	715	750	790	189	19	38	57	76	94	113	132	151	170
WB Left	25	25	25	30	30	30	0	0	0	0	0	0	0	0	0	0
WB Thru	460	485	520	545	575	605	948	95	190	284	379	474	569	664	758	853
SB Left	180	185	190	200	210	220	0	0	0	0	0	0	0	0	0	0
SB Right	85	85	90	95	100	105	316	32	63	95	126	158	190	221	253	284
PM Peak																
N Main at Tpk NB Ramps (New configuration)																
EB Left	130	135	140	145	150	160	355	35	71	106	142	177	213	248	284	319
EB Thru	545	550	580	610	640	670	444	44	89	133	177	222	266	310	355	399
WB Thru	810	820	860	905	950	1000	252	25	50	76	101	126	151	176	202	227
WB Right	370	375	385	410	430	455	0	0	0	0	0	0	0	0	0	0
NB Left	510	515	545	570	600	630	353	35	71	106	141	176	212	247	282	318
NB Right	25	25	25	30	30	30	0	0	0	0	0	0	0	0	0	0
Rte 11 at Tpk SB Ramps (New configuration)																
EB Thru	525	530	555	585	615	645	798	80	160	240	319	399	479	559	639	719
EB Right	345	350	365	385	405	425	621	62	124	186	248	310	373	435	497	559
WB Left	25	25	25	30	30	30	0	0	0	0	0	0	0	0	0	0
WB Thru	1290	1310	1375	1445	1520	1595	605	61	121	182	242	303	363	424	484	545
SB Left	155	160	160	165	175	185	0	0	0	0	0	0	0	0	0	0
SB Right	135	135	145	150	160	165	202	20	40	61	81	101	121	141	161	182
Sat Peak																
N Main at Tpk NB Ramps (New configuration)																
EB Left	145	145	155	155	170	180	248	25	50	74	99	124	149	174	198	223
EB Thru	755	800	840	880	925	975	310	31	62	93	124	155	186	217	248	279
WB Thru	615	615	650	680	715	750	355	36	72	108	144	180	216	252	288	323
WB Right	265	265	295	310	330	345	0	0	0	0	0	0	0	0	0	0
NB Left	560	565	595	625	655	690	503	50	101	151	201	252	302	352	403	453
NB Right	25	25	25	30	30	30	0	0	0	0	0	0	0	0	0	0
Rte 11 at Tpk SB Ramps (New configuration)																
EB Thru	755	780	800	840	885	930	558	56	112	167	223	279	335	391	446	502
EB Right	350	380	415	435	455	480	434	43	87	130	174	217	260	304	347	391
WB Left	25	25	25	30	30	30	0	0	0	0	0	0	0	0	0	0
WB Thru	1145	1180	1215	1275	1340	1410	860	86	172	258	345	431	516	604	690	775
SB Left	180	180	190	200	210	220	0	0	0	0	0	0	0	0	0	0
SB Right	225	225	240	250	265	275	288	29	58	86	115	144	173	201	230	259

	2008 with added primary trips 10%	20%	30%	40%	50%	60%	70%	80%	90%
AM Peak									
N Main at Tpk NB Ramps (New configuration)									
EB Left	70	80	90	100	110	120	130	140	150
EB Thru	710	720	735	750	760	775	790	805	815
WB Thru	360	400	440	480	520	555	595	635	675
WB Right	150	150	150	150	150	150	150	150	150
NB Left	370	425	480	535	590	645	700	755	815
NB Right	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)									
EB Thru	560	585	610	630	655	680	705	730	755
EB Right	610	630	645	665	685	705	720	740	760
WB Left	30	30	30	30	30	30	30	30	30
WB Thru	700	795	890	985	1080	1175	1270	1365	1460
SB Left	220	220	220	220	220	220	220	220	220
SB Right	135	170	200	230	265	295	325	360	390
PM Peak									
N Main at Tpk NB Ramps (New configuration)									
EB Left	195	230	265	300	335	375	410	445	480
EB Thru	715	760	800	845	890	935	980	1025	1070
WB Thru	1025	1050	1075	1100	1125	1150	1175	1200	1225
WB Right	455	455	455	455	455	455	455	455	455
NB Left	665	700	735	770	805	840	875	910	950
NB Right	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)									
EB Thru	725	805	885	965	1045	1125	1205	1285	1365
EB Right	485	550	610	675	735	800	860	920	985
WB Left	30	30	30	30	30	30	30	30	30
WB Thru	1655	1715	1775	1835	1900	1960	2020	2080	2140
SB Left	185	185	185	185	185	185	185	185	185
SB Right	185	205	225	245	265	285	305	325	345
Sat Peak									
N Main at Tpk NB Ramps (New configuration)									
EB Left	205	230	255	280	305	330	355	380	405
EB Thru	1005	1035	1070	1100	1130	1160	1190	1225	1255
WB Thru	785	820	855	890	930	965	1000	1040	1075
WB Right	345	345	345	345	345	345	345	345	345
NB Left	745	795	845	895	945	995	1045	1095	1145
NB Right	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)									
EB Thru	985	1040	1095	1155	1210	1265	1320	1375	1430
EB Right	525	565	610	655	695	740	785	825	870
WB Left	30	30	30	30	30	30	30	30	30
WB Thru	1495	1585	1670	1755	1840	1930	2015	2100	2185
SB Left	220	220	220	220	220	220	220	220	220
SB Right	305	335	365	390	420	450	475	505	535

	2023 with added primary trips 100%	10%	20%	30%	40%	50%	60%	70%	80%	90%
AM Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	170	70	80	90	105	115	125	135	145	155
EB Thru	855	690	695	705	720	730	745	760	775	785
WB Thru	780	345	385	425	465	505	540	580	620	660
WB Right	140	140	140	140	140	140	140	140	140	140
NB Left	885	355	410	465	520	575	630	685	745	800
NB Right	30	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	795	555	580	605	605	630	655	680	705	730
EB Right	940	710	790	805	825	845	860	880	900	920
WB Left	30	30	30	30	30	30	30	30	30	30
WB Thru	1525	610	705	800	895	990	1145	1240	1335	1400
SB Left	210	210	210	210	210	210	210	210	210	210
SB Right	415	130	165	195	225	260	290	320	355	385
PM Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	505	185	220	255	290	320	355	390	425	460
EB Thru	1085	685	730	775	815	860	905	950	995	1040
WB Thru	1200	975	1000	1025	1050	1075	1100	1125	1150	1175
WB Right	435	435	435	435	435	435	435	435	435	435
NB Left	955	635	670	705	740	775	810	845	880	920
NB Right	30	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	1415	695	775	855	935	1015	1095	1175	1255	1335
EB Right	1025	460	520	580	645	710	770	835	900	965
WB Left	30	30	30	30	30	30	30	30	30	30
WB Thru	2125	1580	1640	1700	1760	1820	1880	1945	2005	2065
SB Left	175	175	175	175	175	175	175	175	175	175
SB Right	360	180	200	220	240	260	280	300	320	340
Sat Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	420	190	220	245	270	295	320	345	370	395
EB Thru	1235	955	985	1020	1050	1080	1110	1140	1175	1205
WB Thru	1075	750	785	820	855	890	925	960	1005	1040
WB Right	330	330	330	330	330	330	330	330	330	330
NB Left	1160	705	755	805	855	905	955	1005	1060	1110
NB Right	30	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	1445	940	995	1050	1110	1165	1220	1275	1330	1385
EB Right	890	500	540	585	625	670	715	760	800	845
WB Left	30	30	30	30	30	30	30	30	30	30
WB Thru	2210	1435	1520	1605	1690	1775	1860	1950	2035	2120
SB Left	210	210	210	210	210	210	210	210	210	210
SB Right	555	295	325	355	385	410	440	465	495	525

	2018 with added primary trips 100%	10%	20%	30%	40%	50%	60%	70%	80%	90%
AM Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	165	65	75	85	100	110	120	130	140	150
EB Thru	760	640	650	670	685	695	710	725	740	755
WB Thru	680	330	370	410	450	490	525	565	605	645
WB Right	135	135	135	135	135	135	135	135	135	135
NB Left	840	340	395	450	505	560	615	670	725	785
NB Right	30	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	730	510	535	560	580	605	630	655	680	705
EB Right	985	735	755	775	795	810	830	850	865	885
WB Left	30	30	30	30	30	30	30	30	30	30
WB Thru	1485	640	735	830	925	1020	1115	1210	1305	1400
SB Left	200	200	200	200	200	200	200	200	200	200
SB Right	410	125	155	190	220	250	285	315	350	380
PM Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	500	185	215	250	285	320	350	385	420	455
EB Thru	1030	655	700	740	785	830	875	920	965	1010
WB Thru	1130	905	950	990	1035	1030	1065	1085	1105	1150
WB Right	415	415	415	415	415	415	415	415	415	415
NB Left	925	605	640	675	710	745	780	815	850	890
NB Right	30	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	1365	655	745	835	925	990	1060	1145	1225	1305
EB Right	1005	445	510	575	635	700	760	825	880	945
WB Left	30	30	30	30	30	30	30	30	30	30
WB Thru	2055	1505	1565	1625	1685	1750	1810	1870	1930	1990
SB Left	155	155	165	165	165	165	165	165	165	165
SB Right	355	170	190	210	230	250	270	290	310	330
Sat Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	415	185	210	235	260	285	310	335	360	385
EB Thru	1190	910	940	975	1005	1035	1065	1095	1130	1160
WB Thru	1040	715	750	780	825	855	890	930	970	1005
WB Right	310	310	310	310	310	310	310	310	310	310
NB Left	1130	675	725	775	825	875	925	975	1030	1080
NB Right	30	30	30	30	30	30	30	30	30	30
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	1400	890	950	1005	1065	1120	1175	1230	1285	1340
EB Right	870	480	520	560	610	650	695	740	780	825
WB Left	30	30	30	30	30	30	30	30	30	30
WB Thru	2140	1380	1460	1535	1620	1705	1795	1880	1965	2050
SB Left	200	200	200	200	200	200	200	200	200	200
SB Right	540	280	310	335	365	395	425	455	480	510

	2013 with added primary trips 100%	10%	20%	30%	40%	50%	60%	70%	80%	90%
AM Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	165	65	75	85	100	110	120	130	140	150
EB Thru	735	615	625	640	655	665	680	695	710	720
WB Thru	675	315	355	395	435	475	515	555	590	630
WB Right	125	125	125	125	125	125	125	125	125	125
NB Left	825	325	380	435	490	545	600	655	710	775
NB Right	25	25	25	25	25	25	25	25	25	25
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	705	485	510	535	555	580	605	630	655	680
EB Right	975	705	720	735	755	775	795	810	830	850
WB Left	25	25	25	25	25	25	25	25	25	25
WB Thru	1475	615	710	805	900	995	1090	1185	1280	1375
SB Left	190	190	190	190	190	190	190	190	190	190
SB Right	400	120	155	185	215	250	280	310	340	375
PM Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	495	175	210	245	280	315	355	390	425	460
EB Thru	1025	625	670	715	755	800	845	890	935	980
WB Thru	1115	865	910	955	995	1035	1075	1120	1160	1205
WB Right	395	395	395	395	395	395	395	395	395	395
NB Left	895	575	610	645	680	715	750	785	820	855
NB Right	25	25	25	25	25	25	25	25	25	25
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	1355	635	715	795	875	955	1035	1115	1195	1275
EB Right	985	425	490	550	615	675	740	800	860	925
WB Left	25	25	25	25	25	25	25	25	25	25
WB Thru	1990	1435	1495	1555	1615	1680	1740	1800	1860	1920
SB Left	160	160	160	160	160	160	160	160	160	160
SB Right	345	165	185	205	225	245	265	285	305	325
Sat Peak										
N Main at Tpk NB Ramps (New configuration)										
EB Left	405	180	205	230	255	280	305	330	355	380
EB Thru	1150	870	900	930	965	995	1025	1055	1090	1120
WB Thru	1015	685	720	750	785	820	855	890	940	975
WB Right	295	295	295	295	295	295	295	295	295	295
NB Left	1100	645	695	745	795	845	895	945	1000	1050
NB Right	25	25	25	25	25	25	25	25	25	25
Rte 11 at Tpk SB Ramps (New configuration)										
EB Thru	1360	855	910	965	1020	1080	1135	1190	1245	1300
EB Right	850	460	500	545	590	630	675	720	760	805
WB Left	25	25	25	25	25	25	25	25	25	25
WB Thru	2080	1330	1390	1475	1560	1645	1735	1820	1905	1990
SB Left	190	190	190	190	190	190	190	190	190	190
SB Right	530	270	300	325	355	385	415	440	470	500

Sensitivity Calculations for LFBR

	Removed	No-Build					Non-Access D Saturday Trips										2013 with added trips										2014 with added trips										2023 with added trips										2024 with added trips									
	2007	2008	2013	2018	2023	2028	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	10%	20%	30%	40%	50%	60%	70%	80%	90%
Saturday Peak																																																								
Rte 11 at Little Falls Bridge Rampl/Access D																																																								
EB Left	235	235	250	260	270	280	52	5	10	16	21	26	31	37	42	47	280	285	290	295	270	275	280	285	290	295	270	265	270	275	280	285	290	295	300	305	285	290	295	300	305	300	305	310	315	320	290	295	300	305	310	315	320	325	330	335
EB Thru	950	960	1010	1080	1110	1170	382	38	192	289	385	481	571	673	765	860	1070	1180	1280	1380	1290	1490	1580	1680	1790	1875	2020	1165	1260	1360	1440	1540	1630	1720	1820	1925	2075	1210	1305	1405	1500	1595	1690	1790	1895	1990	2130	1255	1360	1460	1555	1650	1745	1845	1940	2035
EB Right	0	0	0	0	0	0																																																		
WB Left	0	0	0	0	0	0																																																		
WB Thru	1105	1135	1235	1350	1395	1495	1317	132	263	389	497	589	672	773	874	915	2250	1335	1440	1540	1640	1730	1830	1940	2030	2150	2315	1460	1595	1695	1790	1910	1910	2010	2110	2210	2390	1405	1510	1610	1710	1815	1915	2010	2160	2260	2450	1525	1640	1740	1835	1940	2040	2145	2235	2350
WB Right	90	90	95	100	105	110	38	4	8	11	15	19	23	27	30	34	105	105	105	105	110	115	120	120	125	130	140	105	110	110	115	120	120	125	130	135	145	110	115	115	120	125	130	130	135	140	150	115	120	120	125	130	130	135	140	145
NB Left	0	0	0	0	0	0																																																		
NB Thru	0	0	0	0	0	0																																																		
NB Right	0	0	0	0	0	0																																																		
SB Left	115	115	120	130	135	140	42	4	8	13	17	21	25	29	33	38	180	120	130	135	135	140	145	150	155	160	170	130	140	145	145	150	155	160	165	170	175	140	145	150	150	155	160	165	170	175	180	145	150	150	155	160	165	170	175	180
SB Thru	0	0	0	0	0	0																																																		
SB Right	230	230	245	255	270	285	52	5	10	16	21	26	31	37	42	47	285	290	295	300	305	310	315	320	325	330	280	285	290	270	275	280	285	290	295	300	320	275	280	285	290	295	300	305	310	315	295	300	295	300	305	310	315	320	325	330
Rte 11 at Wal-Mart/Summit Realty																																																								
EB Left	10	10	10	10	10	10											10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
EB Thru	790	800	865	925	985	1055	1044	101	203	304	406	507	609	716	811	910	1080	985	1075	1175	1275	1375	1475	1575	1675	1790	1940	1025	1130	1230	1330	1430	1530	1630	1725	1840	2010	1095	1200	1300	1400	1500	1605	1705	1805	1910	2080	1155	1270	1370	1470	1570	1675	1775	1875	1980
EB Right	110	110	110	110	110	110											110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110	110
WB Left	405	405	405	405	405	405											405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405	405
WB Thru	865	870	1005	1125	1235	1350	1059	107	214	321	428	535	642	748	855	962	2125	1155	1265	1375	1485	1595	1695	1805	1915	2010	2130	1235	1345	1445	1555	1665	1765	1875	1985	2085	2375	1310	1420	1525	1635	1740	1845	1955	2060	2165	2380	1395	1505	1610	1720	1825	1930	2040	2145	2250
WB Right	25	25	25	25	25	25											25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
NB Left	145	145	145	145	145	145											145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145	145
NB Thru	10	10	10	10	10	10											10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
NB Right	365	365	365	365	365	365											365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365	365
SB Left	30	30	30	30	30	30											30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
SB Thru	5	5	5	5	5	5											5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
SB Right	15	15	15	15	15	15											15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15

APPENDIX J

Roadway Cost Backup

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

SUMMARY

City of: ROCHESTER
Name of Road: FARMINGTON ROAD
Type: Widen and Overlay

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

LOCATION	AMOUNT
FRONTAGE ROAD AND INTERIOR INTERSECTIONS	$4,330,000
ACCESS A	$1,010,000
ACCESS B	$1,530,000
ACCESS C	$1,900,000
ACCESS D	$1,770,000
TWO ROD ROAD	$2,015,000
ACCESS E	$695,000
ACCESS F	$1,115,000
TOTAL:	**$14,365,000**

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

FRONTAGE ROAD AND INTERIOR INTERSECTIONS

City of: ROCHESTER
Name of Road: FRONTAGE ROAD
Type: Full Depth Construction

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	PRICE*	AMOUNT
203.1	COMMON EXCAVATION	CY	25852	$16.00	$413,632.00
203.2	ROCK EXCAVATION (assume 20%)	CY	5170	$75.00	$387,750.00
209.1	GRANULAR BACKFILL	CY	0	$20.00	$0.00
214	FINE GRADING	U	1	$45,000.00	$45,000.00
304.2	GRAVEL	CY	16619	$20.00	$332,380.00
304.3	CRUSHED GRAVEL	CY	5540	$30.00	$166,200.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	7578	$75.00	$568,350.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	0	$130.00	$0.00
608.26	6" CONCRETE SIDEWALK (raised median islands)	SY	0	$55.00	$0.00
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	0	$20.00	$0.00
			Item Subtotal:		$1,913,312.00

Earthwork	(25%)	$478,328.00
Retaining Walls	(2%)	$28,699.68
Erosion Control	(2%)	$28,699.68
Disposal of Contaminated Materials	(1%)	$19,133.12
Guardrail	(1%)	$19,133.12
Drainage (% of roadway items only)	(30%)	$573,993.60
Item Subtotal:		$3,061,299.20
Mobilization	(10%)	$306,129.92
Traffic Signals (Two Rod Rd at Frontage Rd)		$150,000.00
Signing & Striping	(3%)	$91,838.98
Landscaping	(5%)	$153,064.96
Traffic Control (Officers, flaggers & maint. of traffic)	(0%)	$0.00
Item Subtotal:		$3,762,333.06
Contingencies	(15%)	$564,349.96
Subtotal:		$4,326,683.01
TOTAL:		**$4,326,683.01**
	SAY:	**$4,330,000**

*Unit Prices based on NHDOT 2008 Q1-Q3 and 2007 Q4 Group "A" Prices and Recent Bids Prices from Similar Local Projects.

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

ACCESS A

City of: ROCHESTER
Name of Road: FARMINGTON ROAD
Type: Widen and Overlay

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	PRICE*	AMOUNT
203.1	COMMON EXCAVATION	CY	12520	$16.00	$200,320.00
203.2	ROCK EXCAVATION (assume 5%)	CY	626	$75.00	$46,950.00
209.1	GRANULAR BACKFILL	CY	23	$20.00	$460.00
214	FINE GRADING	U	1	$21,000.00	$21,000.00
304.2	GRAVEL	CY	2958	$20.00	$59,160.00
304.3	CRUSHED GRAVEL	CY	1417	$30.00	$42,510.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	2737	$75.00	$205,275.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	34	$130.00	$4,420.00
608.26	6" CONCRETE SIDEWALK (raised median islands)	SY	56	$55.00	$3,080.00
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	96	$20.00	$1,920.00
			Item Subtotal:		$585,095.00

Earthwork	(15%)	$87,764.25
Retaining Walls	(0%)	$0.00
Erosion Control	(2%)	$11,701.90
Disposal of Contaminated Materials	(1%)	$5,850.95
Guardrail	(0%)	$0.00
Drainage (% of roadway items only)	(10%)	$58,509.50
Item Subtotal:		$748,921.60
Mobilization	(10%)	$74,892.16
Traffic Signals		$0.00
Signing & Striping	(1%)	$7,489.22
Landscaping	(1%)	$7,489.22
Traffic Control (Officers, flaggers & maint. of traffic)	(5%)	$37,446.08
Item Subtotal:		$876,238.27
Contingencies	(15%)	$131,435.74
Subtotal:		$1,007,674.01
TOTAL:		**$1,007,674.01**
SAY:		**$1,010,000**

*Unit Prices based on NHDOT 2008 Q1-Q3 and 2007 Q4 Group "A" Prices and Recent Bids Prices from Similar Local Projects.

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

ACCESS B

City of: ROCHESTER
Name of Road: FARMINGTON ROAD
Type: Widen and Overlay

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	PRICE*	AMOUNT
203.1	COMMON EXCAVATION	CY	11000	$16.00	$176,000.00
203.2	ROCK EXCAVATION (assume 5%)	CY	550	$75.00	$41,250.00
209.1	GRANULAR BACKFILL	CY	359	$20.00	$7,180.00
214	FINE GRADING	U	1	$19,000.00	$19,000.00
304.2	GRAVEL	CY	3881	$20.00	$77,620.00
304.3	CRUSHED GRAVEL	CY	1725	$30.00	$51,750.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	2891	$75.00	$216,825.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	34	$130.00	$4,420.00
608.26	6" CONCRETE SIDEWALK (raised median islands)	SY	681	$55.00	$37,455.00
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	2072	$20.00	$41,440.00
			Item Subtotal:		$672,940.00

Earthwork	(15%)	$100,941.00
Retaining Walls	(1%)	$6,729.40
Erosion Control	(2%)	$13,458.80
Disposal of Contaminated Materials	(1%)	$6,729.40
Guardrail	(1%)	$6,729.40
Drainage (% of roadway items only)	(20%)	$134,588.00
Item Subtotal:		$942,116.00
Mobilization	(10%)	$94,211.60
Traffic Signals		$150,000.00
Signing & Striping	(3%)	$28,263.48
Landscaping	(2%)	$18,842.32
Traffic Control (Officers, flaggers & maint. of traffic)	(10%)	$94,211.60
Item Subtotal:		$1,327,645.00
Contingencies	(15%)	$199,146.75
Subtotal:		$1,526,791.75
TOTAL:		**$1,526,791.75**
	SAY:	**$1,530,000**

*Unit Prices based on NHDOT 2008 Q1-Q3 and 2007 Q4 Group "A" Prices and Recent Bids Prices from Similar Local Projects.

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

ACCESS C

City of: ROCHESTER
Name of Road: FARMINGTON ROAD
Type: Widen and Overlay

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	PRICE*	AMOUNT
203.1	COMMON EXCAVATION	CY	14405	$16.00	$230,480.00
203.2	ROCK EXCAVATION (assume 5%)	CY	720	$75.00	$54,000.00
209.1	GRANULAR BACKFILL	CY	466	$20.00	$9,320.00
214	FINE GRADING	U	1	$24,000.00	$24,000.00
304.2	GRAVEL	CY	4746	$20.00	$94,920.00
304.3	CRUSHED GRAVEL	CY	2139	$30.00	$64,170.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	3651	$75.00	$273,825.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	34	$130.00	$4,420.00
608.26	6" CONCRETE SIDEWALK (raised median islands)	SY	885	$55.00	$48,675.00
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	2696	$20.00	$53,920.00
			Item Subtotal:		$857,730.00

Earthwork	(15%)	$128,659.50
Retaining Walls	(1%)	$8,577.30
Erosion Control	(2%)	$17,154.60
Disposal of Contaminated Materials	(1%)	$8,577.30
Guardrail	(1%)	$8,577.30
Drainage (% of roadway items only)	(20%)	$171,546.00
Item Subtotal:		$1,200,822.00
Mobilization	(10%)	$120,082.20
Traffic Signals		$150,000.00
Signing & Striping	(3%)	$36,024.66
Landscaping	(2%)	$24,016.44
Traffic Control (Officers, flaggers & maint. of traffic)	(10%)	$120,082.20
Item Subtotal:		$1,651,027.50
Contingencies	(15%)	$247,654.13
Subtotal:		$1,898,681.63
TOTAL:		**$1,898,681.63**
	SAY:	**$1,900,000**

*Unit Prices based on NHDOT 2008 Q1-Q3 and 2007 Q4 Group "A" Prices and Recent Bids Prices from Similar Local Projects.

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

ACCESS D

City of: ROCHESTER
Name of Road: FARMINGTON ROAD
Type: Widen and Overlay

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	PRICE*	AMOUNT
203.1	COMMON EXCAVATION	CY	14134	$16.00	$226,144.00
203.2	ROCK EXCAVATION (assume 5%)	CY	707	$75.00	$53,025.00
209.1	GRANULAR BACKFILL	CY	395	$20.00	$7,900.00
214	FINE GRADING	U	1	$24,000.00	$24,000.00
304.2	GRAVEL	CY	4621	$20.00	$92,420.00
304.3	CRUSHED GRAVEL	CY	1814	$30.00	$54,420.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	3223	$75.00	$241,725.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	34	$130.00	$4,420.00
608.26	6" CONCRETE SIDEWALK (raised median islands)	SY	970	$55.00	$53,350.00
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	1799	$20.00	$35,980.00
			Item Subtotal:		$793,384.00

Earthwork	(25%)	$198,346.00
Retaining Walls	(2%)	$15,867.68
Erosion Control	(2%)	$15,867.68
Disposal of Contaminated Materials	(1%)	$7,933.84
Guardrail	(1%)	$7,933.84
Drainage	(20%)	$158,676.80
(% of roadway items only)		
Item Subtotal:		$1,198,009.84
Mobilization	(10%)	$119,800.98
Traffic Signals (modification)		$50,000.00
Signing & Striping	(2%)	$23,960.20
Landscaping	(2%)	$23,960.20
Traffic Control	(10%)	$119,800.98
(Officers, flaggers & maint. of traffic)		
Item Subtotal:		$1,535,532.20
Contingencies	(15%)	$230,329.83
Subtotal:		$1,765,862.03
TOTAL:		**$1,765,862.03**
	SAY:	**$1,770,000**

*Unit Prices based on NHDOT 2008 Q1-Q3 and 2007 Q4 Group "A" Prices and Recent Bids Prices from Similar Local Projects.

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

TWO ROD ROAD

City of: ROCHESTER
Name of Road: FARMINGTON ROAD
Type: Widen and Overlay

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	PRICE*	AMOUNT
203.1	COMMON EXCAVATION	CY	15134	$16.00	$242,144.00
203.2	ROCK EXCAVATION (assume 5%)	CY	757	$75.00	$56,775.00
209.1	GRANULAR BACKFILL	CY	557	$20.00	$11,140.00
214	FINE GRADING	U	1	$26,000.00	$26,000.00
304.2	GRAVEL	CY	5103	$20.00	$102,060.00
304.3	CRUSHED GRAVEL	CY	2210	$30.00	$66,300.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	3802	$75.00	$285,150.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	34	$130.00	$4,420.00
608.26	6" CONCRETE SIDEWALK (raised median islands)	SY	1391	$55.00	$76,505.00
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	2480	$20.00	$49,600.00
			Item Subtotal:		$920,094.00

Earthwork	(15%)	$138,014.10
Retaining Walls	(0%)	$0.00
Erosion Control	(2%)	$18,401.88
Disposal of Contaminated Materials	(1%)	$9,200.94
Guardrail	(1%)	$9,200.94
Drainage (% of roadway items only)	(20%)	$184,018.80
Item Subtotal:		$1,278,930.66
Mobilization	(10%)	$127,893.07
Traffic Signals		$150,000.00
Signing & Striping	(3%)	$38,367.92
Landscaping	(2%)	$25,578.61
Traffic Control (Officers, flaggers & maint. of traffic)	(10%)	$127,893.07
Item Subtotal:		$1,748,663.33
Contingencies	(15%)	$262,299.50
Subtotal:		$2,010,962.82
TOTAL:		**$2,010,962.82**
SAY:		**$2,015,000**

*Unit Prices based on NHDOT 2008 Q1-Q3 and 2007 Q4 Group "A" Prices and Recent Bids Prices from Similar Local Projects.

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

ACCESS E

City of: ROCHESTER
Name of Road: FARMINGTON ROAD
Type: Widen and Overlay

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	PRICE*	AMOUNT
203.1	COMMON EXCAVATION	CY	7149	$16.00	$114,384.00
203.2	ROCK EXCAVATION (assume 5%)	CY	357	$75.00	$26,775.00
209.1	GRANULAR BACKFILL	CY	16	$20.00	$320.00
214	FINE GRADING	U	1	$12,000.00	$12,000.00
304.2	GRAVEL	CY	1936	$20.00	$38,720.00
304.3	CRUSHED GRAVEL	CY	864	$30.00	$25,920.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	1599	$75.00	$119,925.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	34	$130.00	$4,420.00
608.26	6" CONCRETE SIDEWALK (raised median islands)	SY	37	$55.00	$2,035.00
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	75	$20.00	$1,500.00
			Item Subtotal:		$345,999.00

Earthwork	(15%)	$51,899.85
Retaining Walls	(0%)	$0.00
Erosion Control	(2%)	$6,919.98
Disposal of Contaminated Materials	(1%)	$3,459.99
Guardrail	(1%)	$3,459.99
Drainage	(20%)	$69,199.80
(% of roadway items only)		
Item Subtotal:		$480,938.61
Mobilization	(10%)	$48,093.86
Traffic Signals		$0.00
Signing & Striping	(3%)	$14,428.16
Landscaping	(2%)	$9,618.77
Traffic Control	(10%)	$48,093.86
(Officers, flaggers & maint. of traffic)		
Item Subtotal:		$601,173.26
Contingencies	(15%)	$90,175.99
Subtotal:		$691,349.25
TOTAL:		**$691,349.25**
	SAY:	**$695,000**

*Unit Prices based on NHDOT 2008 Q1-Q3 and 2007 Q4 Group "A" Prices and Recent Bids Prices from Similar Local Projects.

Dated: 11/14/08

CITY OF ROCHESTER~DEPARTMENT OF PUBLIC WORKS

GRANITE RIDGE DEVELOPMENT STUDY
CONCEPTUAL COST ESTIMATE
(2008 DOLLARS)

ACCESS F

City of: ROCHESTER
Name of Road: FARMINGTON ROAD
Type: Widen and Overlay

Estimate Prepared By: CLD Consulting Engineers
CLD Reference No. 07-0241
Dated: 14-Nov-08

ITEM NO	ITEM DESCRIPTION	UNIT	QTY	PRICE*	AMOUNT
203.1	COMMON EXCAVATION	CY	10198	$16.00	$163,168.00
203.2	ROCK EXCAVATION (assume 5%)	CY	510	$75.00	$38,250.00
209.1	GRANULAR BACKFILL	CY	282	$20.00	$5,640.00
214	FINE GRADING	U	1	$17,000.00	$17,000.00
304.2	GRAVEL	CY	2713	$20.00	$54,260.00
304.3	CRUSHED GRAVEL	CY	1232	$30.00	$36,960.00
403.11	HOT BITUMINOUS PAVEMENT, MACHINE METHOD	TON	2329	$75.00	$174,675.00
403.12	HOT BITUMINOUS PAVEMENT, HAND METHOD	T	34	$130.00	$4,420.00
608.26	6" CONCRETE SIDEWALK (raised median islands)	SY	703	$55.00	$38,665.00
609.216	STRAIGHT GRANITE SLOPE CURB 6" HIGH	LF	1240	$20.00	$24,800.00
			Item Subtotal:		$557,838.00

Earthwork	(15%)	$83,675.70
Retaining Walls	(0%)	$0.00
Erosion Control	(2%)	$11,156.76
Disposal of Contaminated Materials	(1%)	$5,578.38
Guardrail	(1%)	$5,578.38
Drainage	(20%)	$111,567.60
(% of roadway items only)		
Item Subtotal:		$775,394.82
Mobilization	(10%)	$77,539.48
Traffic Signals		$0.00
Signing & Striping	(3%)	$23,261.84
Landscaping	(2%)	$15,507.90
Traffic Control	(10%)	$77,539.48
(Officers, flaggers & maint. of traffic)		
Item Subtotal:		$969,243.53
Contingencies	(15%)	$145,386.53
Subtotal:		$1,114,630.05
TOTAL:		**$1,114,630.05**
	SAY:	**$1,115,000**

*Unit Prices based on NHDOT 2008 Q1-Q3 and 2007 Q4 Group "A" Prices and Recent Bids Prices from Similar Local Projects.

APPENDIX K

Water and Sewer Cost Backup

Water and Sewer Assumptions

The following assumptions were made to calculate the costs of installing the water and sewer infrastructure for the GRDD

- A private road may extend into the GRDD west of Walmart but our quantity takeoffs and cost estimate do not include for any utility extensions there.

- Water and sewer infrastructure is envisioned to be installed when the roadway is built so costs for major clearing and earthwork stripping efforts have not been included in these two estimates. Phasing has not been considered in development of this water distribution and sewer collection concept.

- Trench ledge: Since ledge is believed to be shallow, we have assumed a nominal soil depth underlain by ledge. We have included for ledge removal costs for a geometry extending 6 feet deep by 3 feet wide for both water and sewer installation. At this time, no cost savings have been included for locations where combined gravity sewer and force main lines share a common trench.

- Hydrant spacing is 350 ft. and sanitary manhole spacing is 300 ft. to conform to dimensions outlined in the Rochester Subdivision Regulations.

- The estimates have included for 60 service connections to water and sewer customers.

- Design, permitting costs, and field engineering efforts would be hard to estimate until this approach is critiqued and further refined. The project would need a NHDES Sewer Connection Permit for the sewer and pump station elements, and a separate NHDES Construction Permit for water main installation. Permits would be required from NHDOT in order to work within the ROW limits.

- Only direct costs associated with installation of water mains, sewers, and pump stations are included in the estimated construction costs. Ancillary construction costs such as maintenance and protection of traffic, mobilization, flagging, and uniformed policemen have not been quantified within these two estimates.

- Costs are shown in 2007 / 2008 dollars, but it should be noted that steel, copper, and fuel have experienced great fluctuations in cost during the 2008 season.

CLD 07-0241

Granite Ridge Commercial Development
Land Use and Sewerage Generation

Lot ID	Access	KSF	Land Use	Unit	GPD / Person	Wastewater Quantity
208-5	Access E	7	High Turn Rest (932)	eat in / seat; not pap	40	6
208-6	Access E	2	Fast Food (934)	eat in / seat	20	6
208-8	Access F	130	General Office (710)	per 100 SF	15	130
208-1	Two Rod Rd	75	Shopping Center (820)	store - / 100 SF	5	75
208-2	Two Rod Rd	165	Discount Club (861)	store - / 100 SF	5	165
208-4	Two Rod Rd	10	Pharmacy (880)	store - / 100 SF	5	10
208-1	Two Rod Rd	550	General Office (710)	per 100 SF	15	550
208-2	Two Rod Rd	45	Medical-Dental (720)	250 / doctor	7	25
	Summit Realty/Wal-Mart	40	General (710)	per 100 SF	15	40
	Crane Dr Expansion		Double existing trips			

West area inflow (roughly 2000 LF of 8-inch); (2000 ft / 5280 ft/mile) x 300 GPD / in -mile x 8 in. =
subtotal
add 25% contingency
total daily flow
West PS Req'd Capacity add 6 x peaking factor

216-1&2&3 & 221-163	Access A	50 Units	50 Residential (210)	house	450	5
216-1&2&3 & 221-163	Access A	40	40 KSF Shop. Center (820)	store - / 100 SF	5	40
216-4	Access B/Nashoba	65	Shopping Center (820)	store - / 100 SF	5	65
216-6	Access C/Crane	100 Rooms	100 Room Hotel (310)	per room	100	20
216-7	Access C/Crane	45	Shopping Center (820)	store - / 100 SF	5	40
216-8&9	Access C/Crane	50	Shopping Center (820)	store - / 100 SF	5	40
216-8&9	Access C/Crane	5	Fast Food (934)	eat in / seat	20	6
216-8&9	Access C/Crane	4	Convenience Store (853)	per store	100	
216-11	Access D/LFBR	220	Shopping Center (820)	store - / 100 SF	5	220

East area inflow (roughly 4500 LF of 8-inch); (4500 ft / 5280 ft/mile) x 300 GPD / in -mile x 8 in. =
subtotal
add 25% contingency
total daily flow

Gravity Flow from Lots
East of Super Walmart add 6 x peaking factor

(from West PS - see above)

Combined Granite Ridge Flows from New Development to Existing Route 11 Pump Station
Includes flows from both West PS and Gravity Flow from Lots east of Super Walmart
Addt'l Req'd Capacity to the Existing Rte 11 Pump Station

Notes:
Wastewater generation from NHDES Env-Wq 1000, Table 1008-1 Unit Design Flow Figures
Peaking factor shall be 6 for GPD less than 100, 000 GPD
Use Inflow rate per NHDES Env-Wq 700.03 Design Flow Basis

Granite Ridge
CLD 07-0241

WATER FEATURES

Description	Estimated Quantity	Unit	Unit Price	Ext.	Notes
Pipe, 6-inch, DI, Class 52	1,500	LF	$50	$75,000	Used for sprinklered water services: Brock Edmunds bid of $50 / LF for force main; say 60 initial services x 25 LF
Pipe, 12-inch, DI, Class 52	8,100	EA	$90	$729,000	SMS Edmunds: $90
Pipe, 16-inch, DI, Class 52	2,700	LF	$100	$270,000	Brock St. SUR: $75
Valves, 6-inch gate	60	EA	$1,200	$72,000	Estimated unit cost; one / initial service
Valves, 12-inch gate	27	EA	$2,400	$64,800	SMS Merrill: $2400; space every 300 LF with hydrants
Valves, 16-inch gate	9	EA	$5,400	$48,600	Brock St. SUR: $5,400; space every 300 LF with hydrants
Hydrants	36	EA	$2,500	$90,000	Combined water main length / 300 LF spacing
Trench ledge, water	7,380	CY	$150	$1,107,000	6' x 3' / LF of pipe = 0.60 CY / LF of total pipe

TOTAL (2008 $)	**$2,456,400**
20% Contingency	$491,280
	$2,947,680
Raw Water Construction (rounded)	**$3,000,000**

Notes
- Construction engineering costs not included
- Construction engineering costs not incl.
- No environmental (wetlands) or other NHDES required monitoring included
- 9-foot-deep pipe: Minimal soil depth is assumed; bottom 5 ft. (plus 1 ft bedding) assumed ledge

Projects: South Main St. bids opened Nov. 2006 and Brock Intersection opened Nov. 2007
Bidder Names: R.D. Edmunds & Sons / F.L. Merrill Construction / SUR Construction, Inc.

Granite Ridge
CLD 07-0241

SEWER FEATURES

Description	Estimated Quantity	Unit	Unit Price	Ext.	Notes
Pipe, 8-inch, SDR 35	10,200	LF	$80	$816,000	SMS Edmunds $70/LF; Brock SUR: $52 / LF
Pipe, 18-inch, SDR 35 (South Side)	3,300	LF	$100	$330,000	SMS Merrill bid $95/LF for 15" Dia.
Pipe, 18-inch, SDR 35 (Replace North side)	2,900	LF	$100	$290,000	SMS Merrill bid $95/LF for 15" Dia.
Directional Drilled Crossing	150	EA	$450	$67,500	Henniker Directional Drilling: $450/ LF
Manholes (typ 9-ft. depth; 4-ft. dia)	492	VLF	$300	$147,600	SMS Edmunds $300/VLF; 300 ft spacing
Frames & Covers (Pamrex)	55	EA	$500	$27,333	SMS Edmunds $500 / Ea
Sewer services	60	EA	$1,000	$60,000	SMS Edmunds $ 1000/EA; say 60 services
West Pump Station & Genset	1	EA	$500,000	$500,000	SMS Edmunds $440k
Replace Route 11 PS	1	EA	$500,000	$500,000	SMS Edmunds $440k
Force main - 10"	2,800	LF	$100	$280,000	SMS Merrill bid $100 for 8"
Trench ledge, sewer	9,840	CY	$150	$1,476,000	6' x 3' / LF of pipe = 0.60 CY / LF of total pipe

TOTAL (2008 $)	**$4,494,433**
20% Contingency	$898,887
	$5,393,320
Raw Sewer Construction (rounded)	**$5,400,000**

Notes

Construction engineering costs not included
No environmental (wetlands) or other NHDES required monitoring included
9-foot-deep pipe: Minimal soil depth is assumed; bottom 5 ft. (plus 1 ft bedding) assumed ledge
Neglect trench savings if gravity sewer and force-main laid together

Projects: SMS - South Main St. bids opened Nov. 2006 and Brock Intersection opened Nov 2007
Bidder Names: R.D. Edmunds & Sons / F.L. Merrill Construction / SUR Construction, Inc.

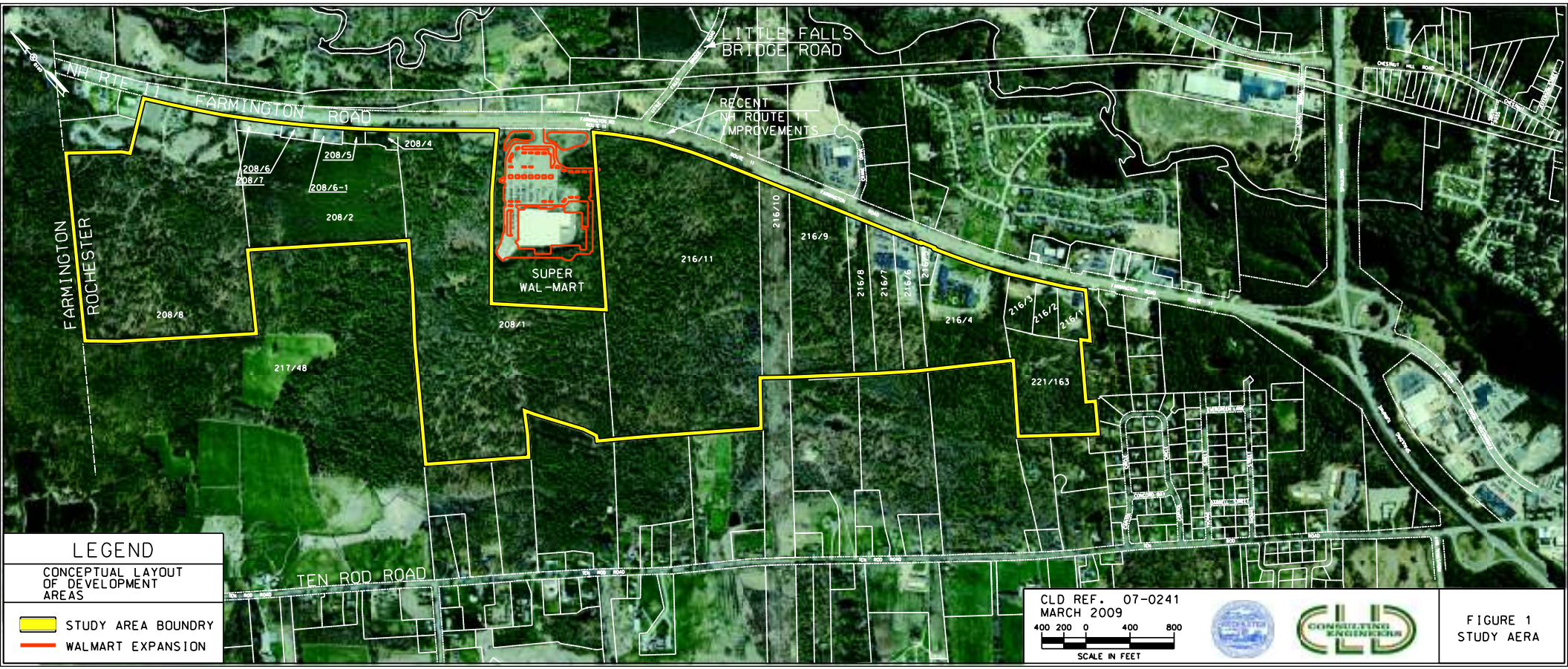


FIGURE 1
STUDY AERA

FIGURE 2
PROPOSED RAMP INTERSECTION

ROCHESTER ROUTE 11
GRANITE RIDGE
DEVELOPMENT DISTRICT
CLD REFERENCE # 07-0241

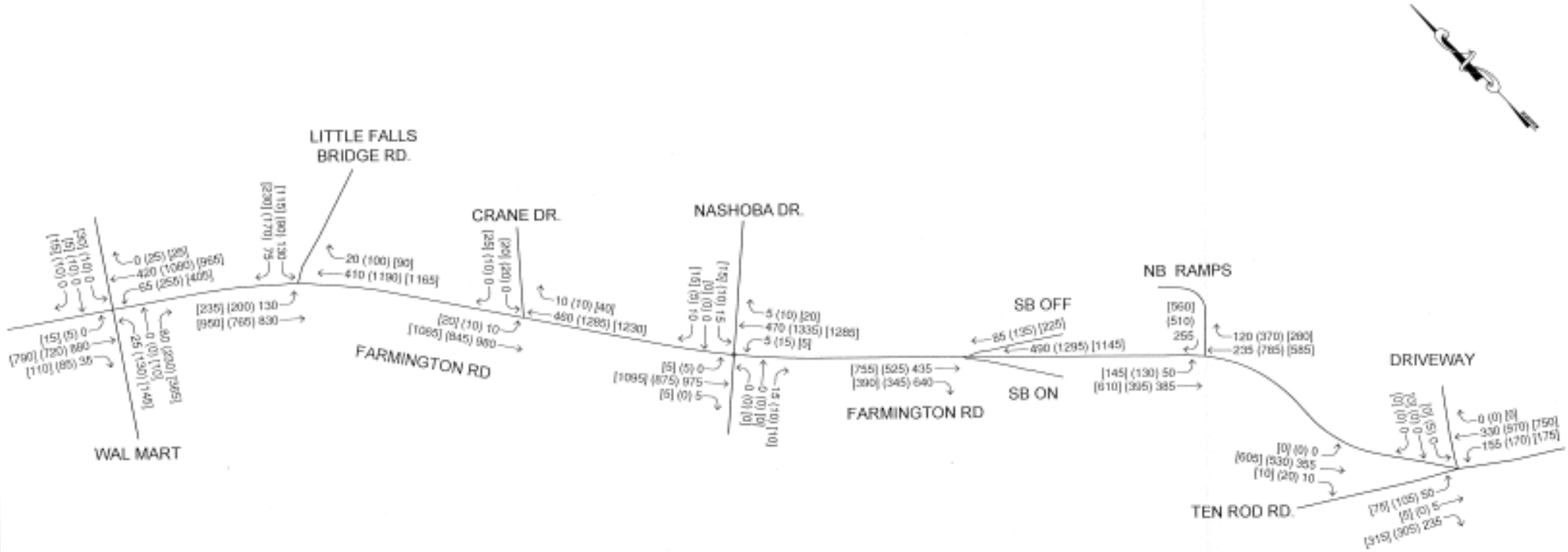
CLD CONSULTING ENGINEERS
546 Commercial Street - Manchester, NH 03101
(603) 668-8223 - Fax: (603) 668-8802
cld@cldengineers.com - www.cldengineers.com
Maine - New Hampshire - Vermont
Inc.

CHA
CLOUGH HARBOUR & ASSOCIATES LLP

STATE OF NEW HAMPSHIRE
DEPARTMENT OF TRANSPORTATION - BUREAU OF HIGHWAY DESIGN
COLOR PLAN CONTRACT 10620-I
NH ROUTE 16, ROCHESTER N.H.

FEDERAL PROJECT NO.	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
	10620-I		

SOURCE - NHDOT



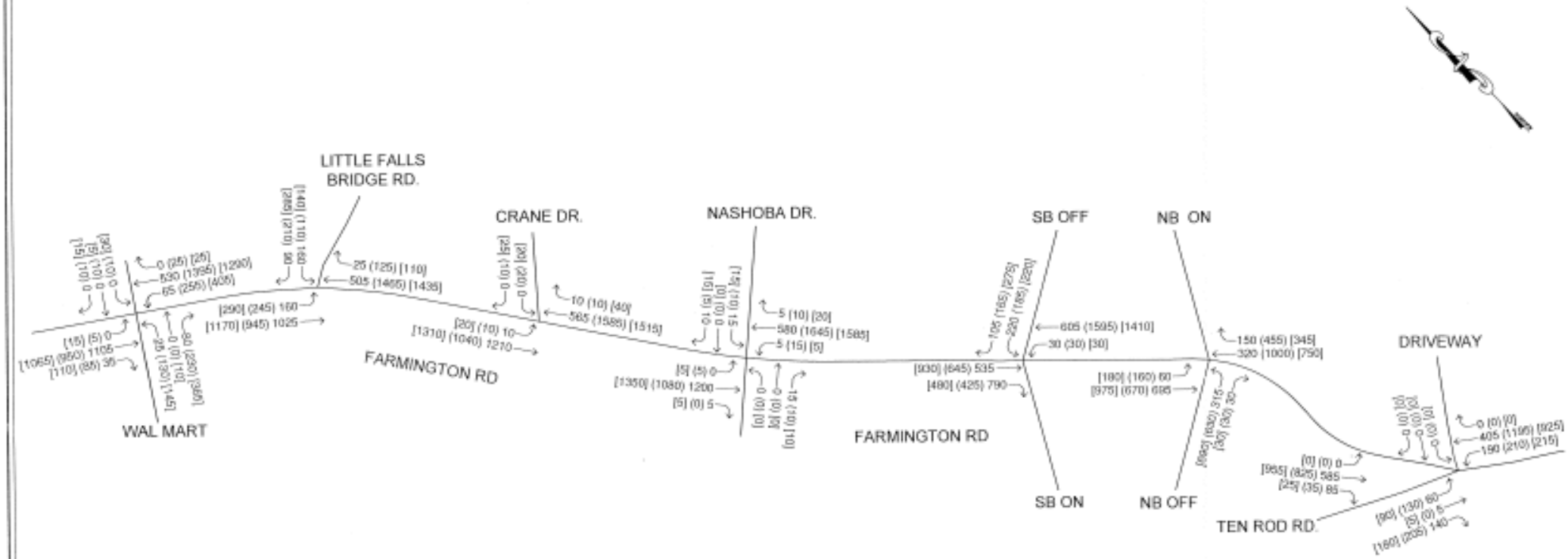
KEY

XX - AM PEAK
(XX) - PM PEAK
[XX] - SAT PEAK

NUMBERS MAY NOT ADD DUE TO ROUNDING OR INTERVENING DRIVEWAYS

FIGURE 3
2007 NO-BUILD
TRAFFIC VOLUME
NOT TO SCALE

ROCHESTER ROUTE 11
GRANITE RIDGE
DEVELOPMENT STUDY
CLD REFERENCE # 07-0241



KEY

XX - AM PEAK
(XX) - PM PEAK
[XX] - SAT PEAK

NUMBERS MAY NOT ADD DUE TO ROUNDING OR INTERVENING DRIVEWAYS

FIGURE 4
2028 NO-BUILD
TRAFFIC VOLUME
NOT TO SCALE

ROCHESTER ROUTE 11
GRANITE RIDGE
DEVELOPMENT STUDY
CLD REFERENCE # 07-0241

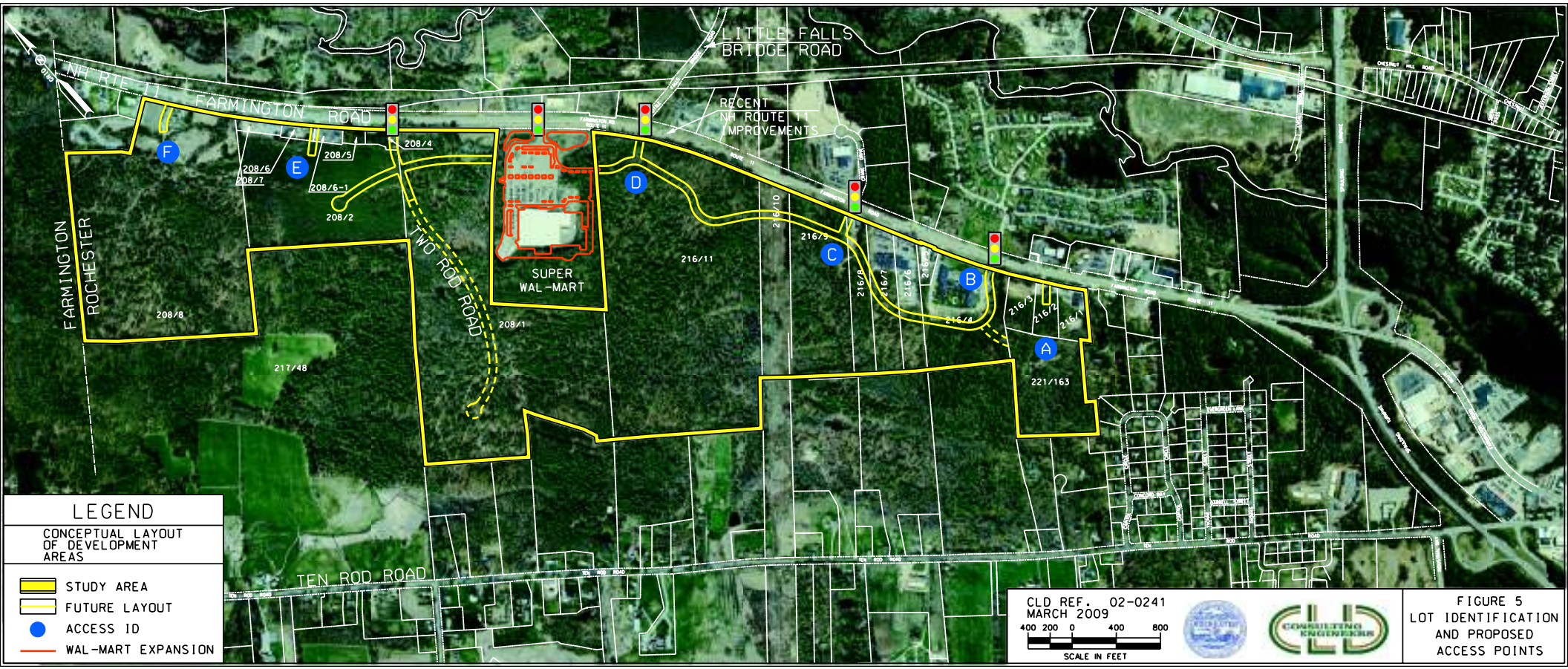
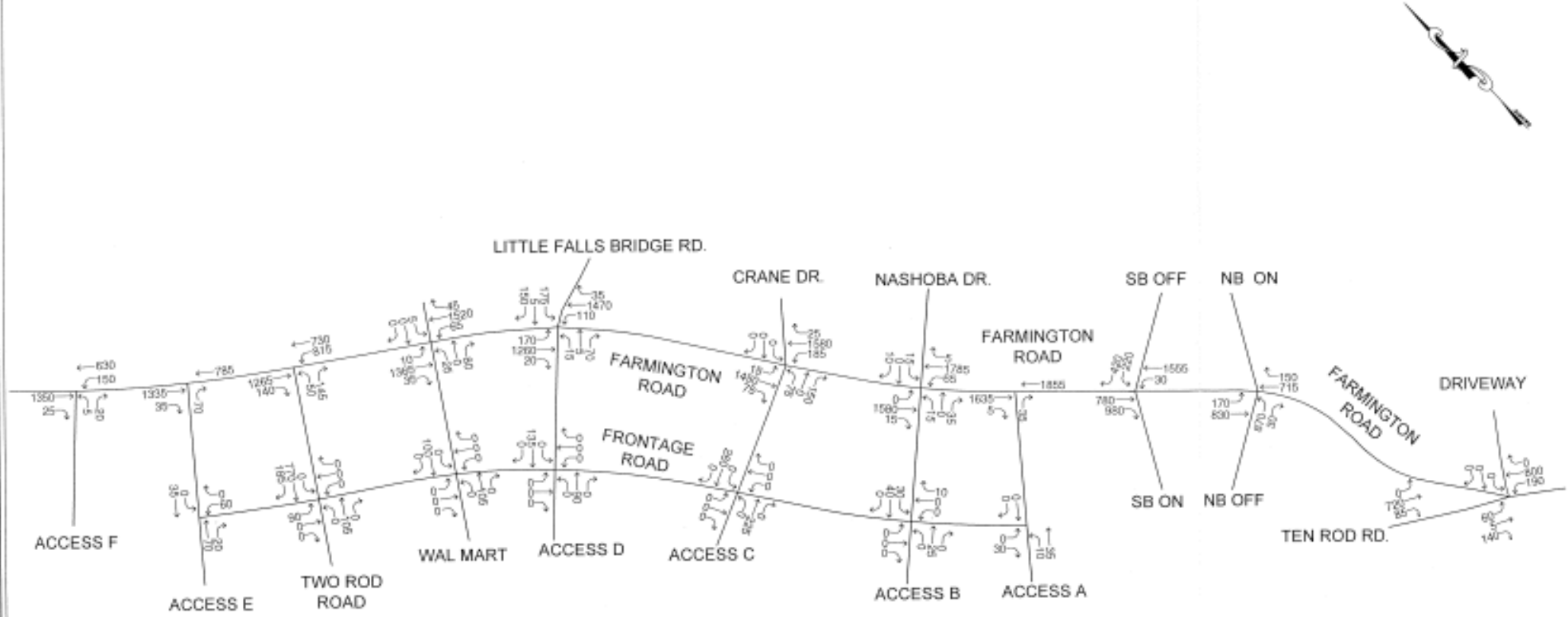


FIGURE 5
LOT IDENTIFICATION AND PROPOSED ACCESS POINTS



AM BUILD WITH FRONTAGE ROAD

KEY

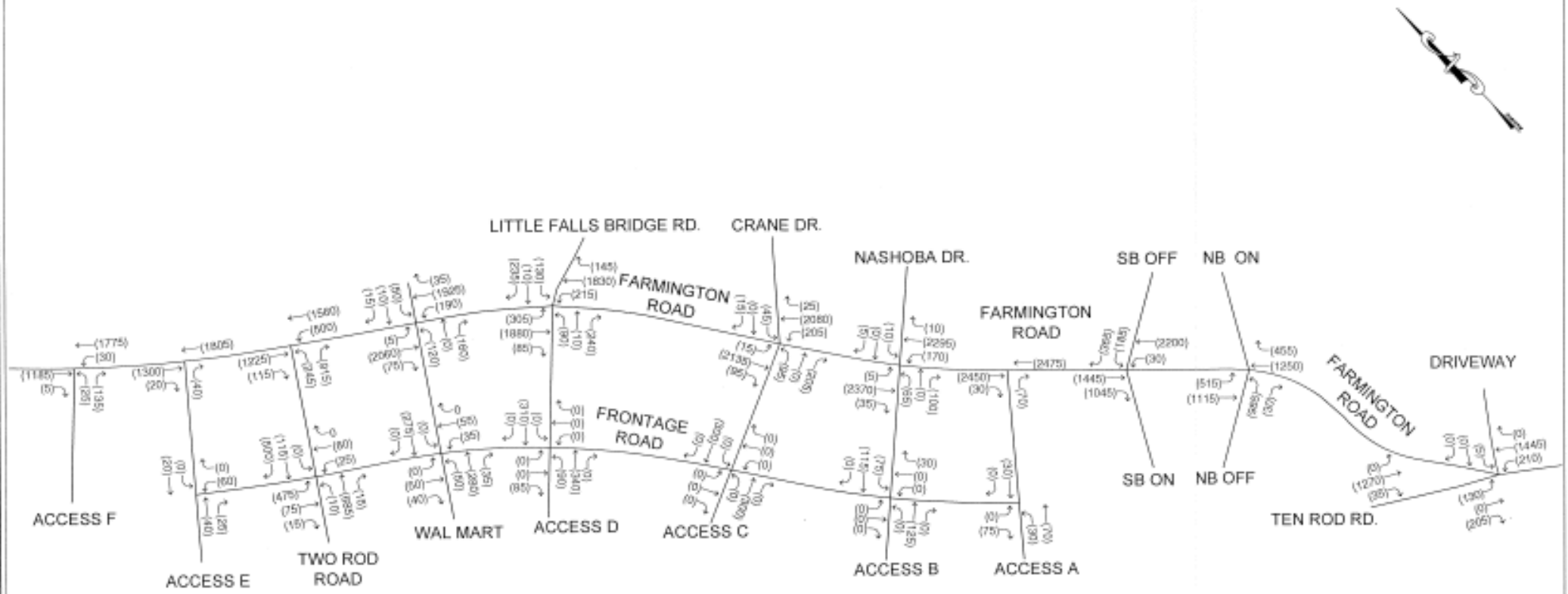
XX - AM PEAK
(XX) - PM PEAK
[XX] - SAT PEAK

NUMBERS MAY NOT ADD DUE TO ROUNDING OR INTERVENING DRIVEWAYS

FIGURE 6A
2028 BUILD W/ FRONTAGE RD.
TRAFFIC VOLUME
NOT TO SCALE

ROCHESTER ROUTE 11
GRANITE RIDGE
DEVELOPMENT STUDY
CLD REFERENCE # 07-0241

CLD CONSULTING ENGINEERS



PM BUILD WITH FRONTAGE ROAD

KEY

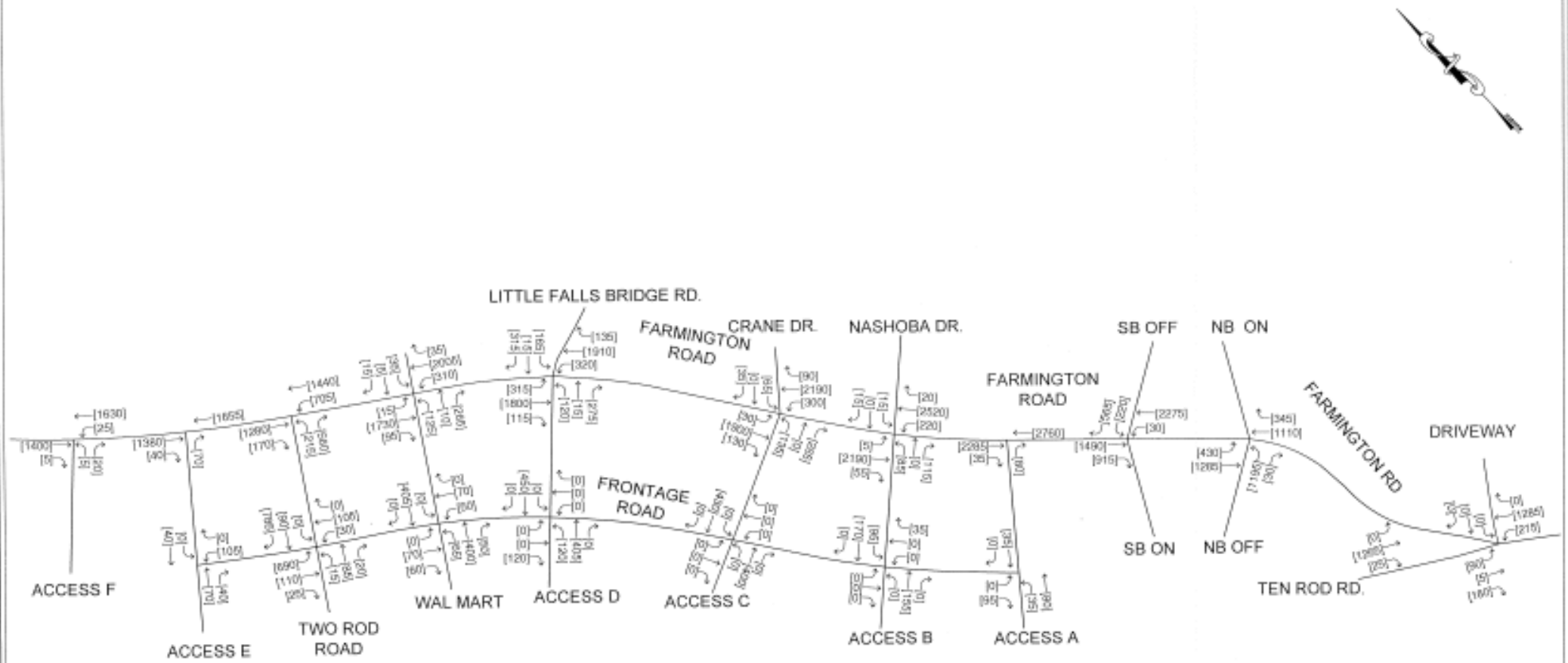
XX - AM PEAK
(XX) - PM PEAK
[XX] - SAT PEAK

NUMBERS MAY NOT ADD DUE TO ROUNDING OR INTERVENING DRIVEWAYS

FIGURE 6B
2028 BUILD W/ FRONTAGE RD.
TRAFFIC VOLUME
NOT TO SCALE

ROCHESTER ROUTE 11
GRANITE RIDGE
DEVELOPMENT STUDY
CLD REFERENCE # 07-0241

CLD CONSULTING ENGINEERS



SATURDAY BUILD WITH FRONTAGE ROAD

KEY

XX - AM PEAK
(XX) - PM PEAK
[XX] - SAT PEAK

NUMBERS MAY NOT ADD DUE TO ROUNDING OR INTERVENING DRIVEWAYS

FIGURE 6C
2028 BUILD W/ FRONTAGE RD.
TRAFFIC VOLUME
NOT TO SCALE

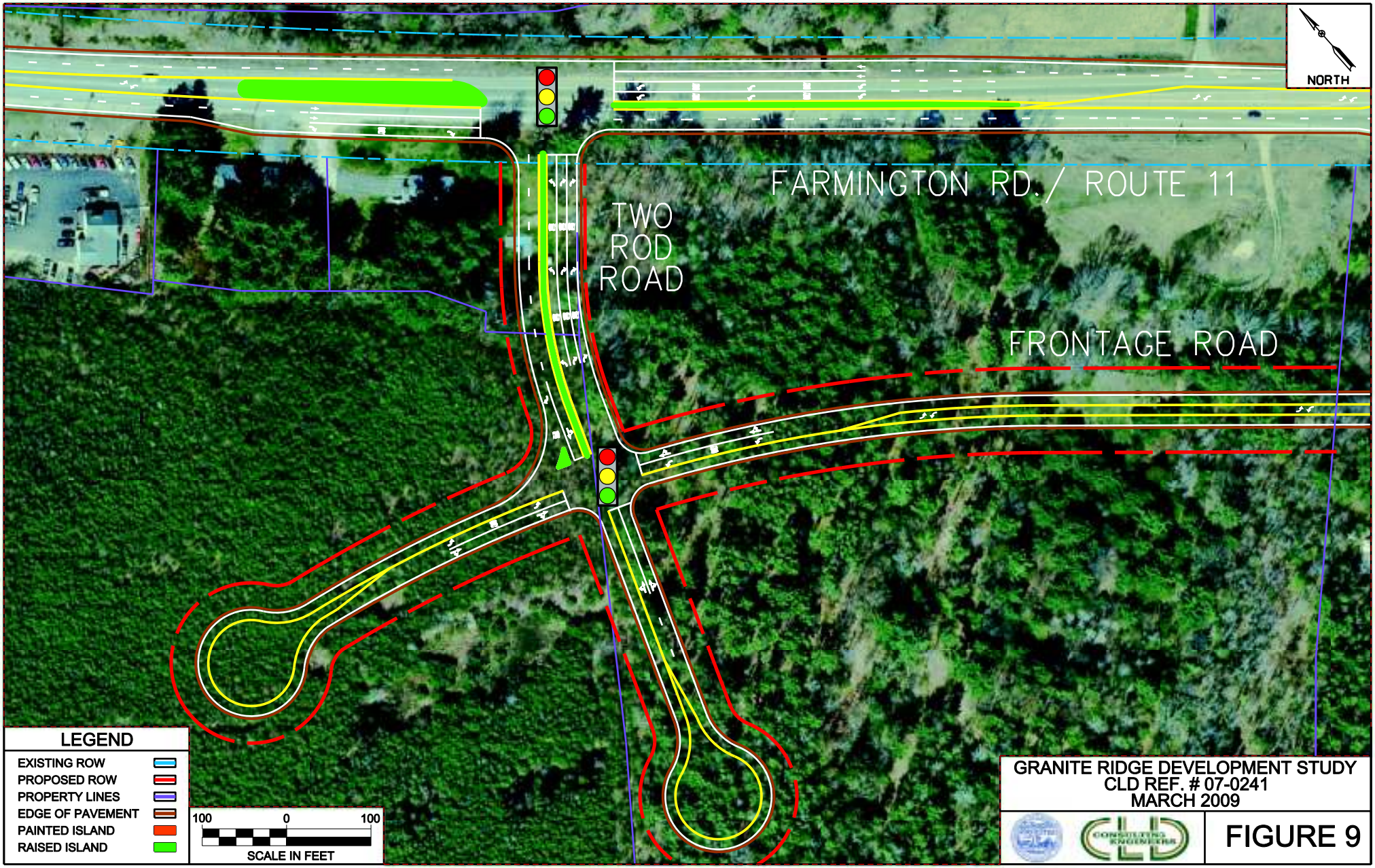
ROCHESTER ROUTE 11
GRANITE RIDGE
DEVELOPMENT STUDY
CLD REFERENCE # 07-0241

GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 07-0241
MARCH 2009

FIGURE 7

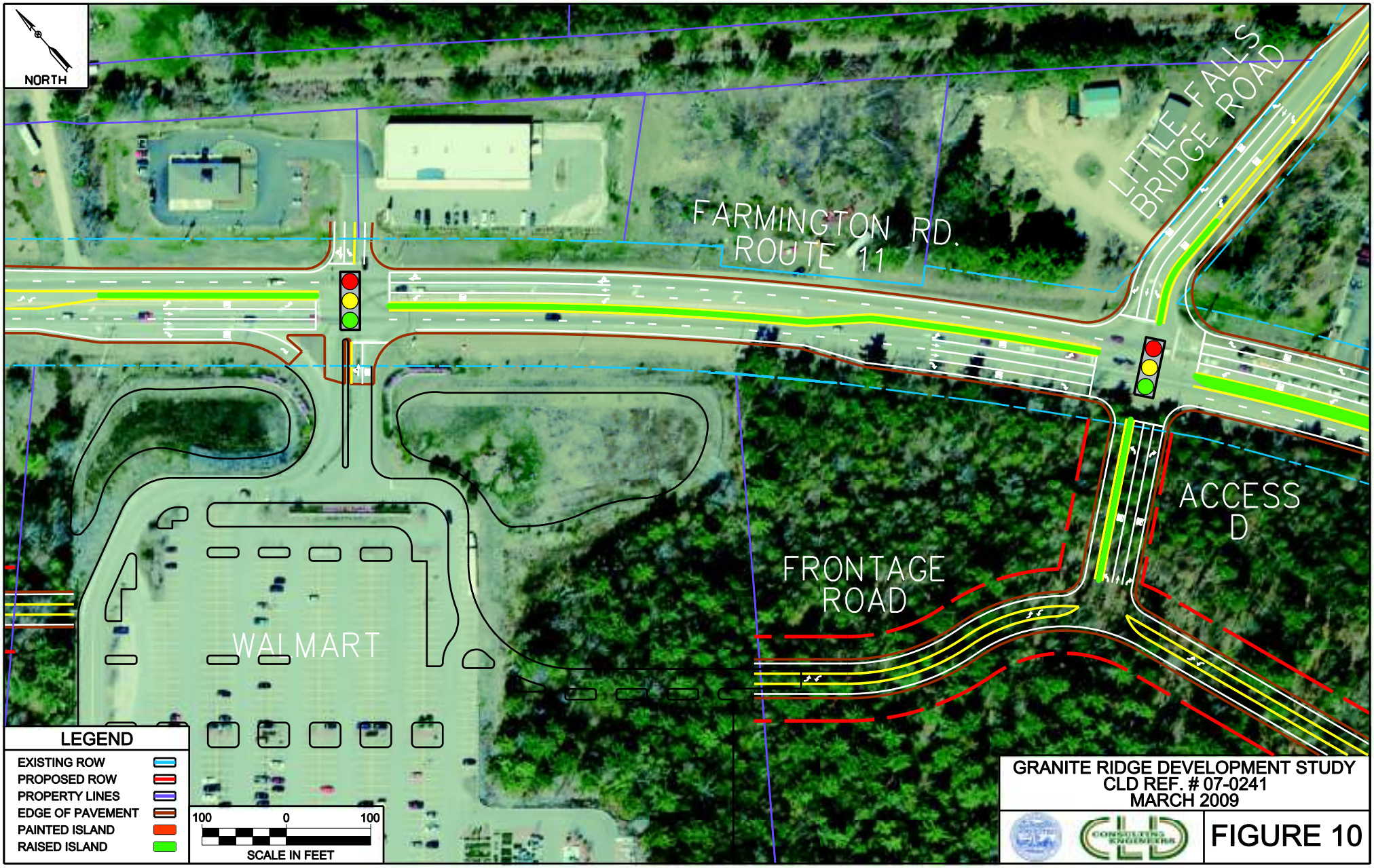
GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 07-0241
MARCH 2009

FIGURE 8



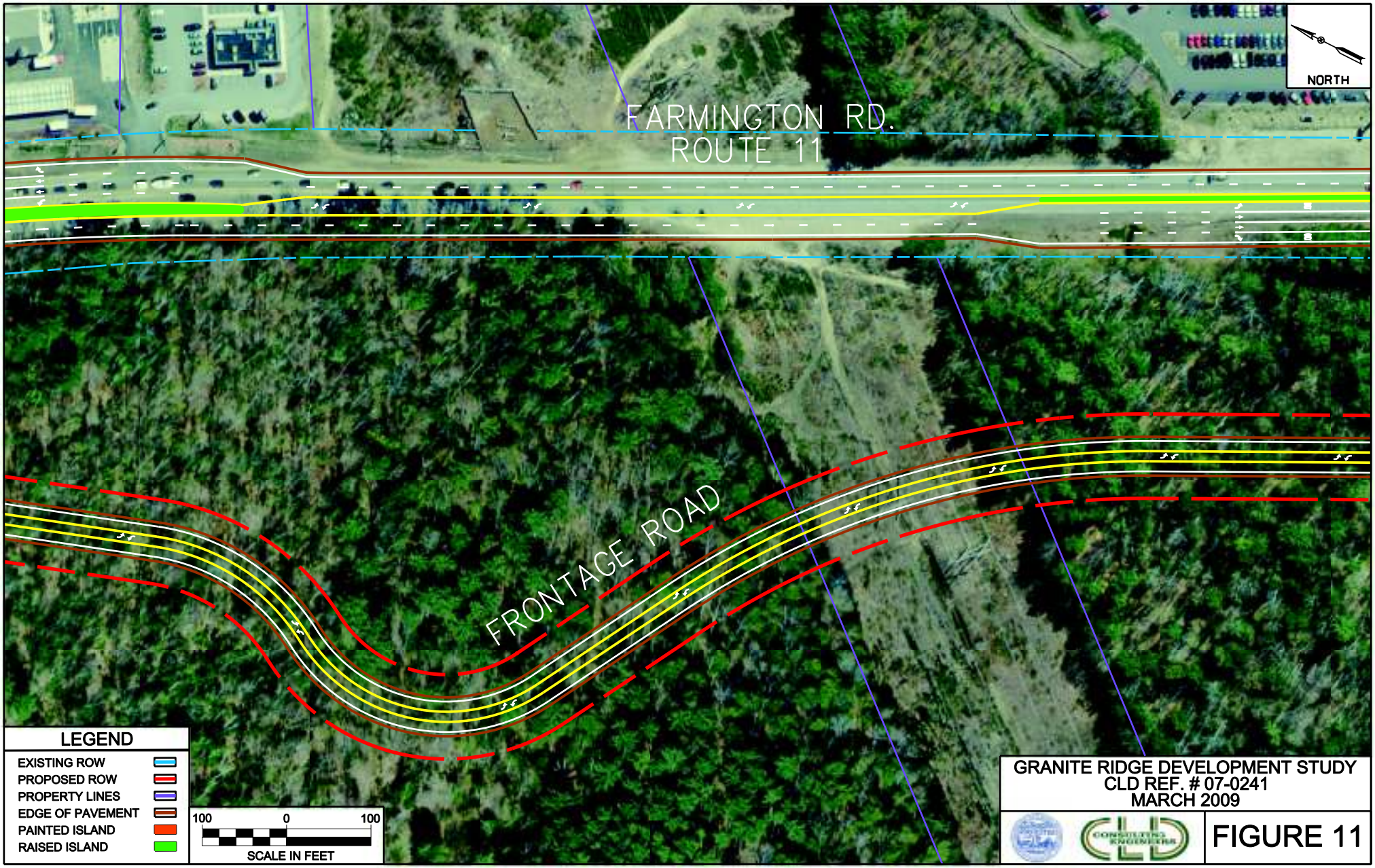
GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 07-0241
MARCH 2009

FIGURE 9



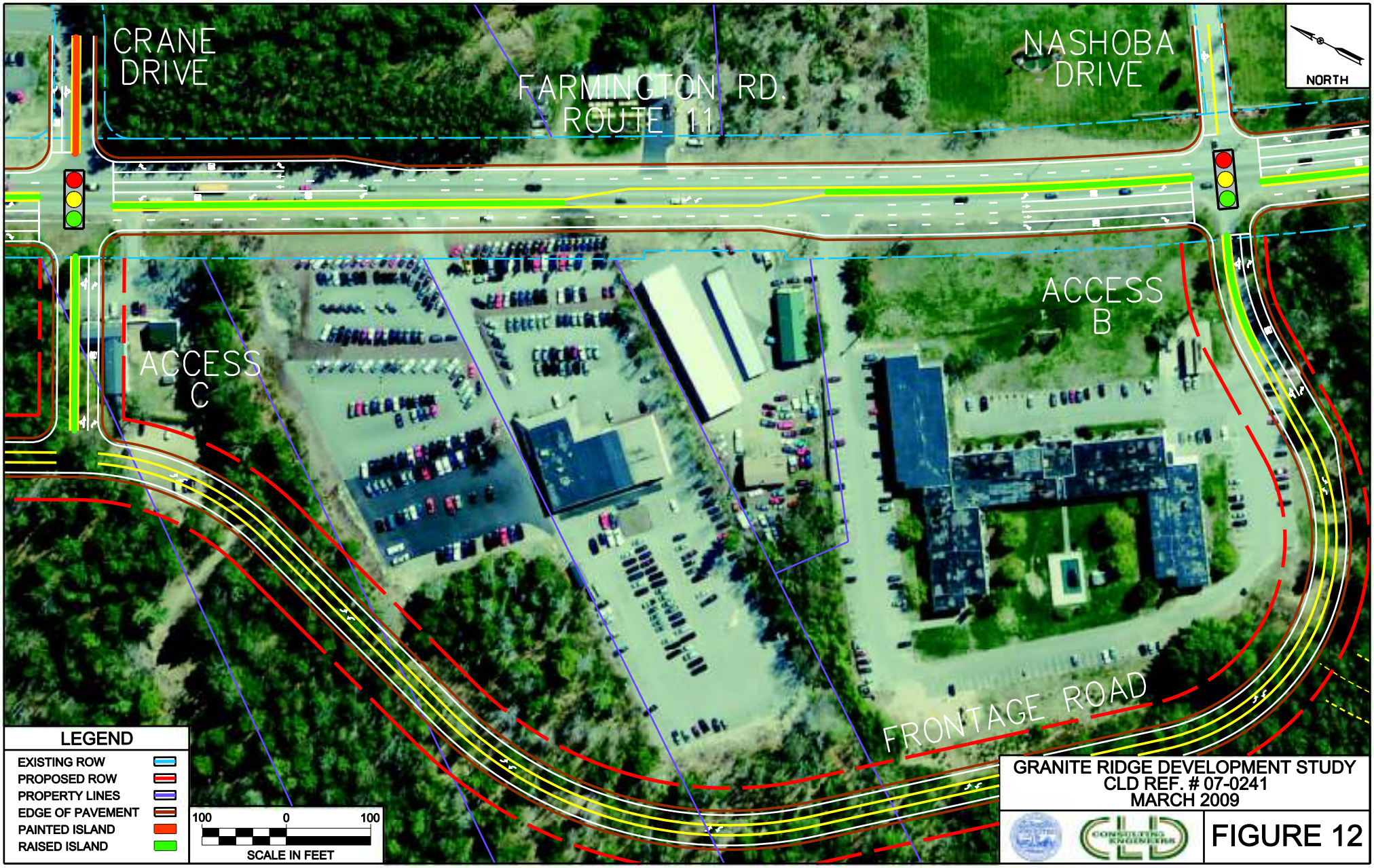
GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 07-0241
MARCH 2009

FIGURE 10



GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 07-0241
MARCH 2009

FIGURE 11

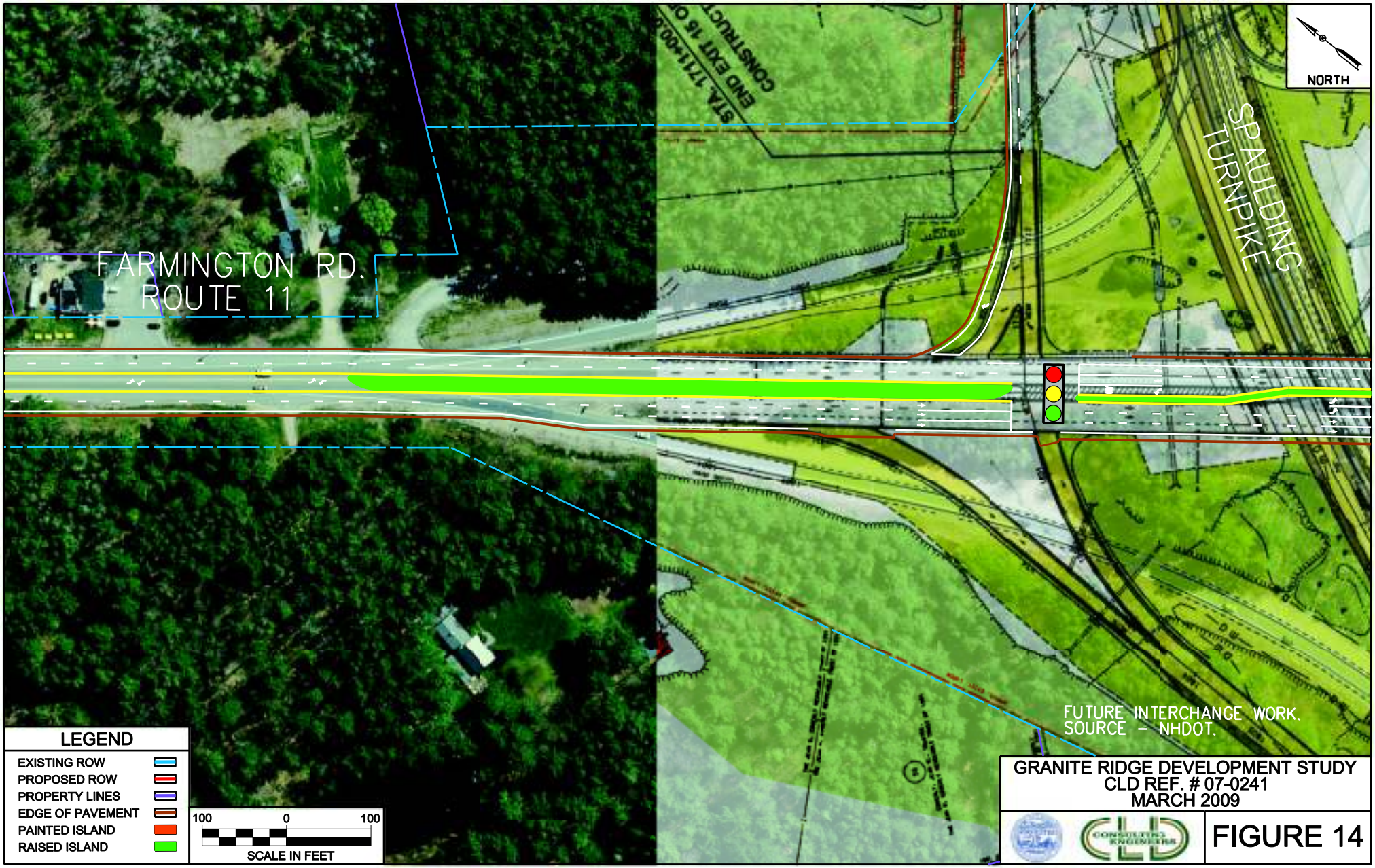


GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 07-0241
MARCH 2009

FIGURE 12

GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 07-0241
MARCH 2009

FIGURE 13

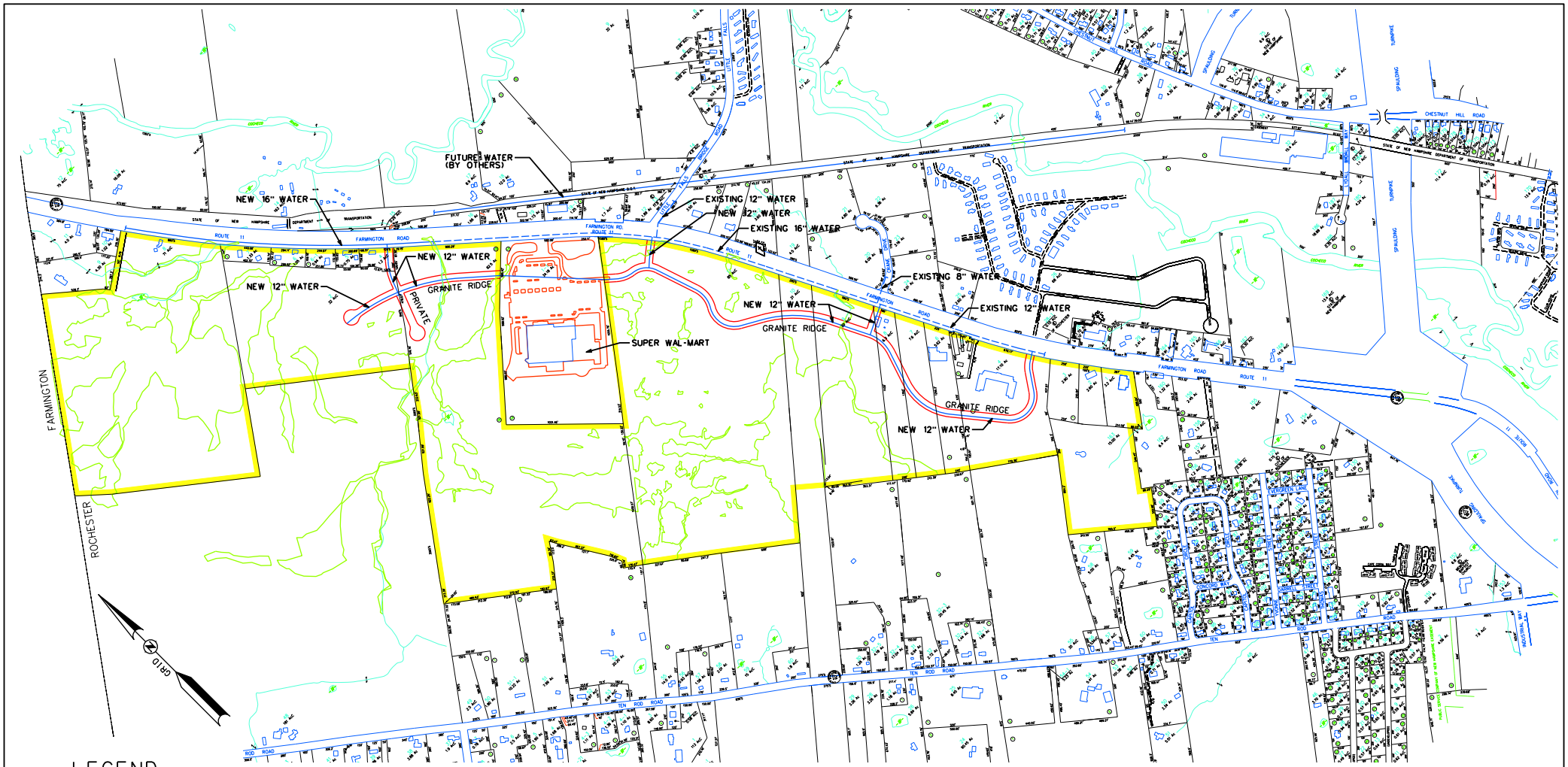


GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 07-0241
MARCH 2009

FIGURE 14

GRANITE RIDGE DEVELOPMENT STUDY
CLD REF. # 02-0241
MARCH 2009

FIGURE 15



LEGEND

FIGURE 16
CONCEPTUAL LAYOUT
GRANITE RIDGE
WATER IMPROVEMENTS

- STUDY AREA
- DELINEATED WETLAND
- EXISTING WATERLINE
- PROPOSED WATERLINE
- FUTURE LAYOUT

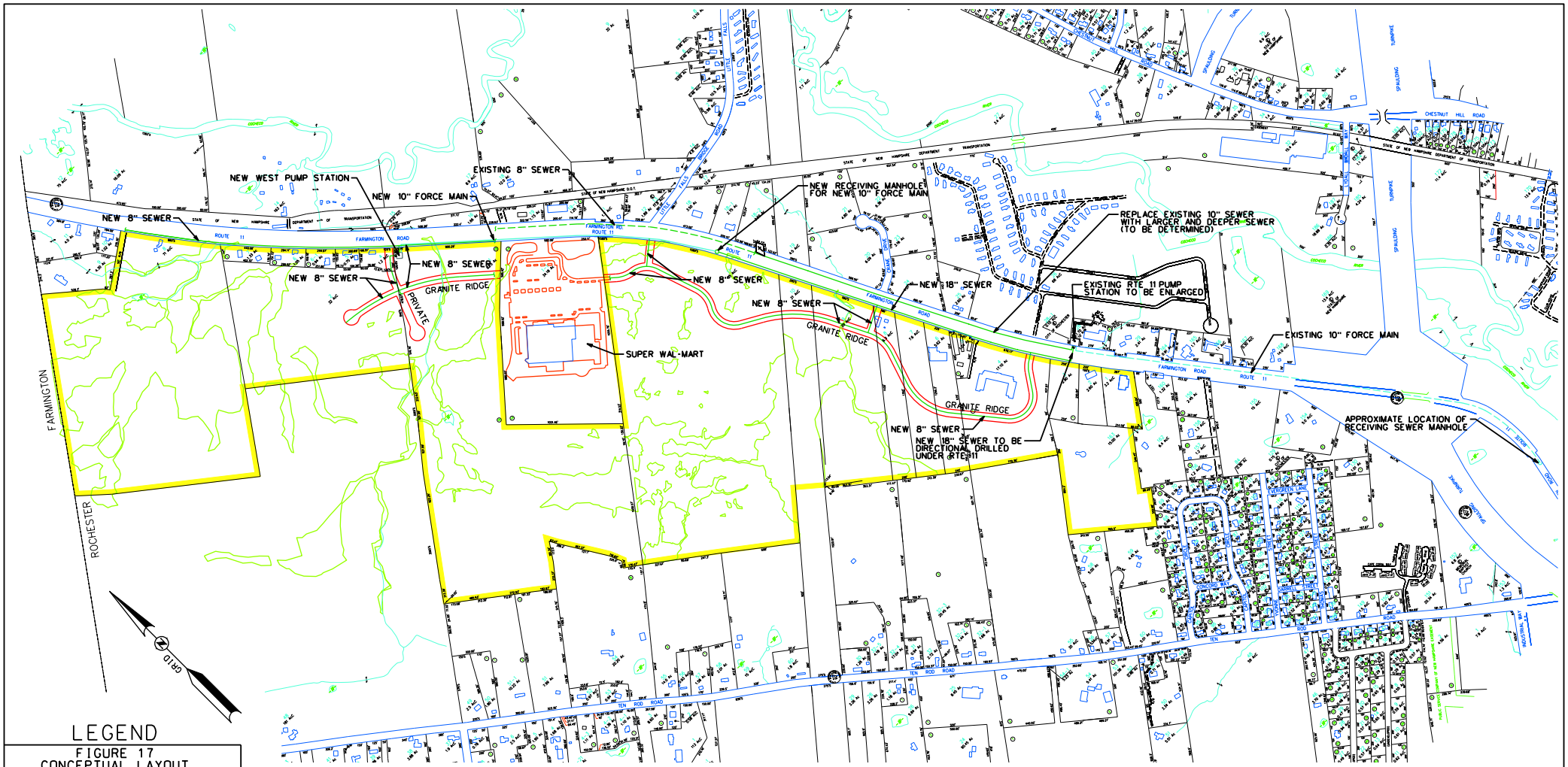
CONCEPTUAL

MARCH 2009

400 200 0 400 800
SCALE IN FEET

REFERENCE: EXISTING WATER MAIN SHOWN ON CLD ROUTE 11 CONSTRUCTION PLANS, SEPTEMBER 2005, CLD REF. 04-0395

CONSULTING ENGINEERS



LEGEND

FIGURE 17
CONCEPTUAL LAYOUT
GRANITE RIDGE
SEWER IMPROVEMENTS

- STUDY AREA
- DELINEATED WETLAND
- EXISTING SEWER
- PROPOSED SEWER
- EXISTING FORCE MAIN
- PROPOSED FORCE MAIN
- FUTURE LAYOUT

CONCEPTUAL

MARCH 2009

400 200 0 400 800
SCALE IN FEET

REFERENCE: EXISTING SEWER MAIN SHOWN ON CLD ROUTE 11 CONSTRUCTION PLANS, SEPTEMBER 2005, CLD REF. 04-0395
EXISTING RTE 11 PUMP STATION, FORCEMAIN, AND RECEIVING MANHOLE SHOWN ON CITY SEWER COLLECTION SHEET 114

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