

Appendix E – Traffic Impact Study

TRAFFIC IMPACT STUDY

for
Duncan Meadows
Planned Unit Development
Town of Brunswick

PREPARED BY:

Ingalls & Associates, LLP

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I. INTRODUCTION

This report examines the traffic impacts on the surrounding highway infrastructure that may result from a proposed residential development on property located along MacChesney Avenue in the Town of Brunswick. Existing conditions were quantified; traffic generation volumes were developed; and the existing and proposed intersections were analyzed for capacity using methodology presented in the Highway Capacity Manual, and for adequate geometric configuration using standards presented by AASHTO and the NYSDOT.

II. SITE AND PROJECT DESCRIPTION

The proposed Project consists of the development of 100.5 acres as a mixed residential-use development. The property is located at the intersection McChesney Avenue and McChesney Avenue Extension, on the north, southeast, and southwest quadrants of the intersection.

The project will include three separate residential components: a townhouse community of 78 units, in buildings of 2-4 units; a condominium community of 88 units, in buildings of 8 units; and a senior apartment building with 48 units; all comprising a total of 214 units.

There will be three unsignalized intersections with existing highways created with this project, two along McChesney Avenue Extension and one along McChesney Avenue.

III. ANALYSIS CRITERIA

All analysis for this study was done in accordance with the methodology presented in the Highway Capacity Manual 2000. Level of Service is determined by the following criteria:

- Signalized Intersections - Time delay of approach
- Unsignalized Intersections - Time delay of approach

A “significant impact” shall be considered a decrease of at least one Level of Service due to the projected traffic increase.

IV. EXISTING TRAFFIC CONDITIONS

The existing traffic conditions have been examined extensively in the area due to numerous projects, which have been proposed of varying size, use and intensity.

McChesney Avenue (CR-134) acts as a collector road, managing the traffic from Route 7. McChesney Avenue Extension (CR-134) is increasingly utilized as a crossover between Route 7 and Route 2. A traffic sampling including the following intersections will assist in understanding the usage of the roads:

- Intersections along Hoosick Street (Route 7)
 - McChesney Avenue (CR-134)/East (2)
 - McChesney Avenue (CR-134)/West (1)
 - Lake Avenue (North/South) (6)
- Intersections along McChesney Avenue Extension (County Route 134)
 - McChesney Avenue (CR-134) (3)
 - Moonlawn Road (4)
- Intersections along Brunswick Road (NYS Route 2)
 - Moonlawn Road (5)

Existing volumes (for year 2008) are derived from previously published studies, with volumes increased by a growth rate of 1%. These volumes were projected forward to estimated time of project completion of year 2013 by the same annual background growth rate. In addition, it was assumed that the adjacent and nearby projects (Hudson Hills apartments, Highland Creek, and redevelopment of former Grand Union site) will be completed and operational in the year 2013.

Existing and projected (pre-development) Levels of Service for the analyzed intersections are presented in the following table:

Intersection	Approach	Control	2008 Existing		2013 No Build	
			AM	PM	A M	PM
1	Rt7 EB T	S	A	A	A	A
	Rt7 EB R		A	A	A	A
	Rt7 WB T		A	A	A	A
	Rt7 WB L		B	B	B	B
	McChesney LR		C	C	C	C
2	Rt7 WB L	U	A	A	A	B
	McChesney LR		B	C	C	F
3	McChesney WB L	U	A	A	A	A
	McChesney EXT LR		A	B	B	B
4	Moonlawn L	U	A	A	A	A
	McChesney EXT LR		A	A	A	B
5	RT 2 EB L	U	A	A	A	A
	Moonlawn LR		A	C	B	C
6	Rt7 EB L	S	D	E	D	E
	Rt7 EB TR		D	F	D	F
	Rt7 WB L		C	E	D	E
	Rt7 WB TR		F	E	F	E
	N. Lake SB L		D	F	D	F
	N. Lake SB TR		E	E	E	E
	S. Lake NB L		D	F	E	F
	S. Lake NB T		D	E	D	E
	S. Lake NB R		D	F	D	F

V. PROPOSED TRAFFIC GENERATION AND DISTRIBUTION

Traffic generation figures were taken from the ITE Trip Generation Handbook (7th edition) as follows:

Use (ITE Code)	AM Peak	PM Peak
Senior Housing (#252) 48 Units	4	6
Condominium (#230) 166 Units	89	103
Total trip ends	93	109

To simplify analysis, no pass-by credit was taken. Although a small percentage of potential users may currently be travelling in this corridor, there is no way to quantify this amount.

Origins and destinations of travelers were roughly distributed primarily to the north, towards the Route 7 corridor and the existing commercial destinations. A small percentage was allocated to the south over McChesney Avenue Extension towards Eagle Mills and NYS Route 2.

VI. RESULTS OF ANALYSIS

A Level of Service analysis was performed on all examined intersections for the No-Build and Build conditions at the Design Year of 2013. The potential impact of the proposed project is assessed based on the comparative Levels of Service between the Build and No Build options for each intersection. The results of this analysis are summarized as follows:

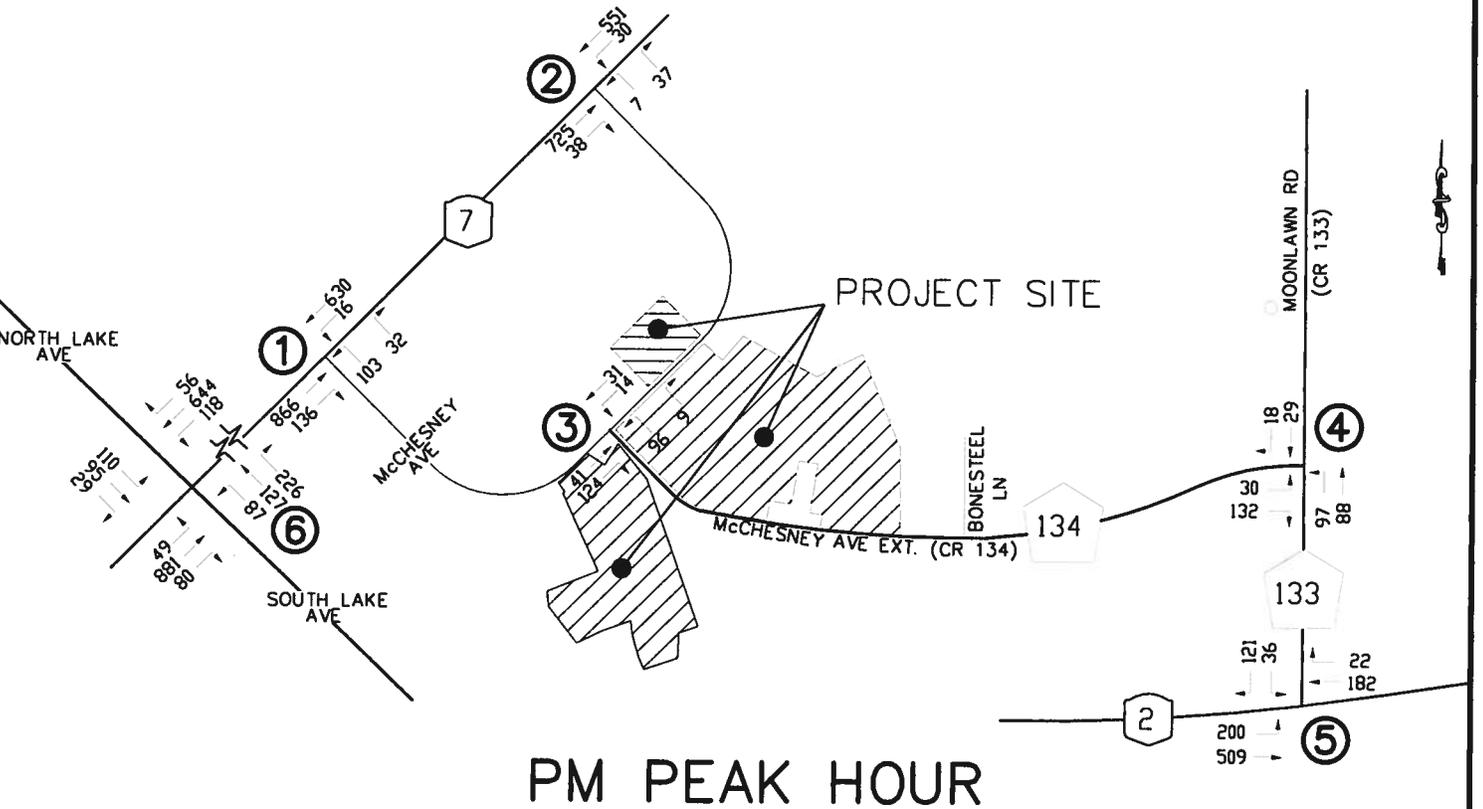
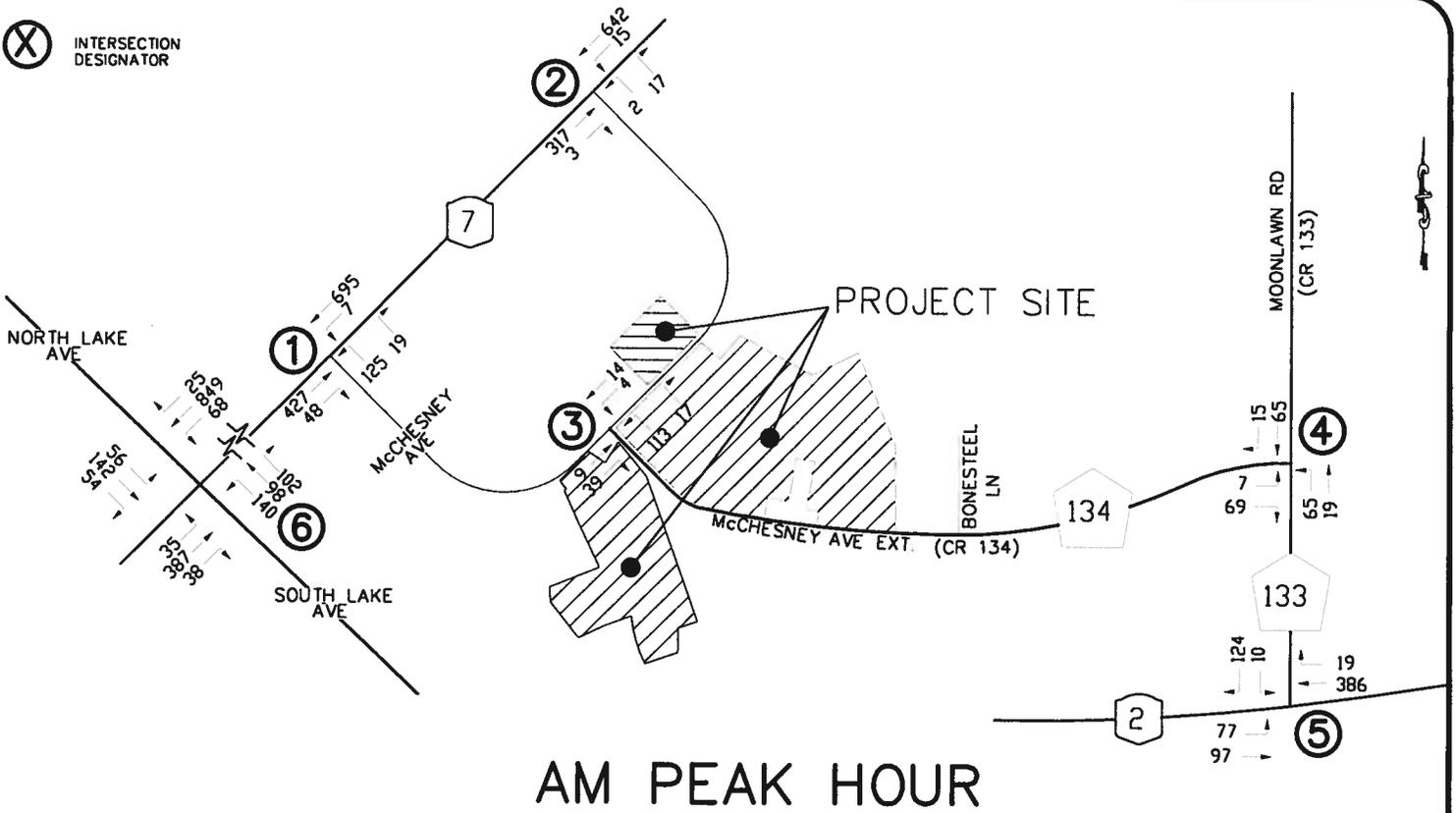
Intersection	Approach	Control	2008 Existing		2013 No Build		2013 Build	
			AM	PM	AM	PM	AM	PM
1	Rt7 EB T	S	A	A	A	A	A	A
	Rt7 EB R		A	A	A	A	A	A
	Rt7 WB T		A	A	A	A	A	A
	Rt7 WB L		B	B	B	B	B	B
	McChesney LR		C	C	C	C	C	C
2	Rt7 WB L	U	A	A	A	B	A	B
	McChesney LR		B	C	C	F	C	F
3	McChesney WB L	U	A	A	A	A	A	A
	McChesney EXT LR		A	B	B	B	B	B
4	Moonlawn L	U	A	A	A	A	A	A
	McChesney EXT LR		A	A	A	B	A	B
5	RT 2 EB L	U	A	A	A	A	A	A
	Moonlawn LR		A	C	B	C	B	C
6	Rt7 EB L	S	D	E	D	E	D	E
	Rt7 EB TR		D	F	D	F	D	F
	Rt7 WB L		C	E	D	E	D	E
	Rt7 WB TR		F	E	F	E	F	E
	N. Lake SB L		D	F	D	F	D	F
	N. Lake SB TR		E	E	E	E	E	E
	S. Lake NB L		D	F	E	F	E	F
	S. Lake NB T		D	E	D	E	D	E
	S. Lake NB R		D	F	D	F	D	F

There are no degradations in Level of Service as a result of this development for the intersections studied.

With respect to intersections with marginally operating approaches, particularly Route 7 and Lake Avenue and the eastward non-signalized intersection of McChesney Avenue and Route 7, these conditions can be attributed to mainline traffic volumes on Route 7 and not the minimal traffic generated by the proposal.

2008 Existing

(X) INTERSECTION DESIGNATOR



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EXISTING TRAFFIC VOLUMES 2008
DUNCAN MEADOWS
McCHESNEY AVENUE

TOWN OF BRUNSWICK
COUNTY OF RENNELAER STATE OF NEW YORK

DRAWN BY: T.O.L.
CADD FILE: PLOT

CHECKED BY: F.J.B.
JOB NO. 07-072

DATE:
07-21-2008

SCALE: N.T.S.

SHEET 1 OF 1

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	#1		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	7/23/2008			Jurisdiction	Town of Brunswick		
Time Period	AM			Analysis Year	2008 Existing		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	1	1	0	0	0	0	0	0	0
Lane group		TR		L	T			LR				
Volume (vph)		427	48	7	695		125		19			
% Heavy veh		11	2	0	5		2		0			
PHF		0.91	0.91	0.94	0.94		0.87		0.87			
Actuated (P/A)		A	A	A	A		A		A			
Startup lost time		2.0		2.0	2.0			2.0				
Ext. eff. green		2.0		2.0	2.0			2.0				
Arrival type		3		3	3			3				
Unit Extension		3.0		3.0	3.0			3.0				
Ped/Bike/RTOR Volume	0		16				0		4	0		
Lane Width		12.0		11.0	11.0			11.0				
Parking/Grade/Parking	N	0	N	N	0	N	N	-4	N	N		N
Parking/hr												
Bus stops/hr		0		0	0			0				
Unit Extension		3.0		3.0	3.0			3.0				
Phasing	EW Perm	02	03	04	NB Only	06	07	08				
Timing	G = 44.0	G =	G =	G =	G = 17.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 71.0						

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adj. flow rate		504		7	739			161				
Lane group cap.		2010		532	1084			416				
v/c ratio		0.25		0.01	0.68			0.39				
Green ratio		0.62		0.62	0.62			0.24				
Unif. delay d1		6.1		5.2	8.9			22.6				
Delay factor k		0.11		0.11	0.25			0.11				
Increm. delay d2		0.1		0.0	1.8			0.6				
PF factor		1.000		1.000	1.000			1.000				
Control delay		6.1		5.2	10.7			23.2				
Lane group LOS		A		A	B			C				
Apprch. delay		6.1		10.6				23.2				
Approach LOS		A		B				C				
Intersec. delay		10.5		Intersection LOS								B

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	#1		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	7/23/2008			Jurisdiction	Town of Brunswick		
Time Period	PM			Analysis Year	2008 Existing		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	1	1	0	0	0	0	0	0	0
Lane group		TR		L	T			LR				
Volume (vph)		866	136	16	630		103		32			
% Heavy veh		2	0	0	6		2		0			
PHF		0.96	0.96	0.86	0.86		0.93		0.93			
Actuated (P/A)		A	A	A	A		A		A			
Startup lost time		2.0		2.0	2.0			2.0				
Ext. eff. green		2.0		2.0	2.0			2.0				
Arrival type		3		3	3			3				
Unit Extension		3.0		3.0	3.0			3.0				
Ped/Bike/RTOR Volume	0		36				0		4	0		
Lane Width		12.0		11.0	11.0			11.0				
Parking/Grade/Parking	N	0	N	N	0	N	N	-4	N	N		N
Parking/hr												
Bus stops/hr		0		0	0			0				
Unit Extension		3.0		3.0	3.0			3.0				
Phasing	EW Perm	02	03	04	NB Only	06	07	08				
Timing	G = 45.0	G =	G =	G =	G = 17.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 72.0						

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	Adj. flow rate		1006		19	733			141			
Lane group cap.		2187		283	1083			407				
v/c ratio		0.46		0.07	0.68			0.35				
Green ratio		0.63		0.63	0.63			0.24				
Unif. delay d1		7.1		5.3	8.8			22.9				
Delay factor k		0.11		0.11	0.25			0.11				
Increm. delay d2		0.2		0.1	1.7			0.5				
PF factor		1.000		1.000	1.000			1.000				
Control delay		7.3		5.4	10.5			23.4				
Lane group LOS		A		A	B			C				
Approch. delay		7.3		10.4				23.4				
Approach LOS		A		B				C				
Intersec. delay		9.7		Intersection LOS							A	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#2</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	<i>Town of Brunswick</i>
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2008 Existing</i>
Analysis Time Period	<i>AM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>Route 7</i>		North/South Street: <i>MacChesney Avenue</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	317	3	15	642	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	0	352	3	16	713	0
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--
Median type	<i>Undivided</i>					
RT Channelized?			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	2	0	17	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	2	0	18	0	0	0
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
Volume, v (vph)		16		20				
Capacity, c _m (vph)		1215		582				
v/c ratio		0.01		0.03				
Queue length (95%)		0.04		0.11				
Control Delay (s/veh)		8.0		11.4				

LOS		A	B			
Approach delay (s/veh)	--	--	11.4			
Approach LOS	--	--	B			

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	FJB	Intersection	#2
Agency/Co.	Ingalls & Associates, LLP	Jurisdiction	Town of Brunswick
Date Performed	7/23/2008	Analysis Year	2008 Existing
Analysis Time Period	PM		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>Route 7</i>		North/South Street: <i>McChesney Avenue</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	725	38	30	551	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	0	805	42	33	612	0
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--
Median type	<i>Undivided</i>					
RT Channelized?			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	
Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	7	0	37	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	7	0	41	0	0	0
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
Volume, v (vph)		33		48				
Capacity, c _m (vph)		799		302				
v/c ratio		0.04		0.16				
Queue length (95%)		0.13		0.56				
Control Delay (s/veh)		9.7		19.2				

LOS		A	C			
Approach delay (s/veh)	--	--	19.2			
Approach LOS	--	--	C			

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	FJB	Intersection	#3
Agency/Co.	Ingalls & Associates, LLP	Jurisdiction	Town of Brunswick
Date Performed	7/23/2008	Analysis Year	2008 Existing
Analysis Time Period	AM		

Project Description <i>Duncan Meadows</i>	
East/West Street: <i>McChesney Avenue</i>	North/South Street: <i>McChesney Avenue Extension</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	9	39	4	14	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	0	10	43	4	15	0
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--
Median type	<i>Undivided</i>					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	113	0	17	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	125	0	18	0	0	0
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		<i>LR</i>				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
Volume, v (vph)		4		143				
Capacity, c _m (vph)		1566		967				
v/c ratio		0.00		0.15				
Queue length (95%)		0.01		0.52				
Control Delay (s/veh)		7.3		9.4				

LOS		A	A			
Approach delay (s/veh)	--	--	9.4			
Approach LOS	--	--	A			

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	FJB	Intersection	#3
Agency/Co.	Ingalls & Associates, LLP	Jurisdiction	Town of Brunswick
Date Performed	7/23/2008	Analysis Year	2008 Existing
Analysis Time Period	PM		

Project Description <i>Duncan Meadows</i>	
East/West Street: <i>McChesney Avenue</i>	North/South Street: <i>McChesney Avenue Extension</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	41	124	14	31	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	0	45	137	15	34	0
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--
Median type	<i>Undivided</i>					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration			TR	LT		
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	96	0	9	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	106	0	10	0	0	0
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
Volume, v (vph)		15		116				
Capacity, c _m (vph)		1405		817				
v/c ratio		0.01		0.14				
Queue length (95%)		0.03		0.49				
Control Delay (s/veh)		7.6		10.1				

LOS		A	B				
Approach delay (s/veh)	--	--	10.1				
Approach LOS	--	--	B				

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#4</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	<i>Town of Brunswick</i>
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2008 Existing</i>
Analysis Time Period	<i>AM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue Extension</i>		North/South Street: <i>Moonlawn Road</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume	65	19	0	0	65	15
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	72	21	0	0	72	16
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	0	7	0	69
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	0	0	7	0	76
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					<i>LR</i>	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (vph)	72						83	
C (m) (vph)	1520						955	
v/c	0.05						0.09	
95% queue length	0.15						0.28	
Control Delay	7.5						9.1	
LOS	<i>A</i>						<i>A</i>	
Approach Delay	--	--					9.1	
Approach LOS	--	--					<i>A</i>	

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#4</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	<i>Town of Brunswick</i>
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2008 Existing</i>
Analysis Time Period	<i>PM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue Extension</i>		North/South Street: <i>Moonlawn Road</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume		<i>97</i>	<i>88</i>	<i>0</i>	<i>0</i>	<i>29</i>	<i>18</i>
Peak-Hour Factor, PHF		<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate, HFR		<i>107</i>	<i>97</i>	<i>0</i>	<i>0</i>	<i>32</i>	<i>20</i>
Percent Heavy Vehicles		<i>0</i>	<i>--</i>	<i>--</i>	<i>0</i>	<i>--</i>	<i>--</i>
Median Type	<i>Undivided</i>						
RT Channelized				<i>0</i>			<i>0</i>
Lanes		<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>
Configuration		<i>LT</i>					<i>TR</i>
Upstream Signal			<i>0</i>			<i>0</i>	

Minor Street	Westbound			Eastbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume		<i>0</i>	<i>0</i>	<i>0</i>	<i>30</i>	<i>0</i>	<i>132</i>
Peak-Hour Factor, PHF		<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate, HFR		<i>0</i>	<i>0</i>	<i>0</i>	<i>33</i>	<i>0</i>	<i>146</i>
Percent Heavy Vehicles		<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent Grade (%)		<i>0</i>			<i>0</i>		
Flared Approach			<i>N</i>			<i>N</i>	
Storage			<i>0</i>			<i>0</i>	
RT Channelized				<i>0</i>			<i>0</i>
Lanes		<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Configuration						<i>LR</i>	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
			Movement	7	8	9	10	11
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (vph)	<i>107</i>						<i>179</i>	
C (m) (vph)	<i>1567</i>						<i>914</i>	
v/c	<i>0.07</i>						<i>0.20</i>	
95% queue length	<i>0.22</i>						<i>0.72</i>	
Control Delay	<i>7.5</i>						<i>9.9</i>	
LOS	<i>A</i>						<i>A</i>	
Approach Delay	<i>--</i>	<i>--</i>					<i>9.9</i>	
Approach LOS	<i>--</i>	<i>--</i>					<i>A</i>	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#5</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	<i>Town of Brunswick</i>
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2008 Existing</i>
Analysis Time Period	<i>AM</i>		

Project Description <i>Duncan Meadows</i>	
East/West Street: <i>Route 2</i>	North/South Street: <i>Moonlawn Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street Movement	Eastbound			Westbound		
	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	<i>77</i>	<i>97</i>	<i>0</i>	<i>0</i>	<i>386</i>	<i>19</i>
Peak-hour factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)	<i>85</i>	<i>107</i>	<i>0</i>	<i>0</i>	<i>428</i>	<i>21</i>
Proportion of heavy vehicles, P _{HV}	<i>0</i>	<i>--</i>	<i>--</i>	<i>0</i>	<i>--</i>	<i>--</i>
Median type	<i>Undivided</i>					
RT Channelized?			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		<i>0</i>			<i>0</i>	

Minor Street Movement	Northbound			Southbound		
	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	<i>0</i>	<i>0</i>	<i>0</i>	<i>10</i>	<i>0</i>	<i>124</i>
Peak-hour factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)	<i>0</i>	<i>0</i>	<i>0</i>	<i>11</i>	<i>0</i>	<i>137</i>
Proportion of heavy vehicles, P _{HV}	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent grade (%)	<i>0</i>			<i>0</i>		
Flared approach		<i>N</i>			<i>N</i>	
Storage		<i>0</i>			<i>0</i>	
RT Channelized?			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Configuration					<i>LR</i>	

Control Delay, Queue Length, Level of Service

Approach Movement	EB	WB	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
Volume, v (vph)	<i>85</i>						<i>148</i>	
Capacity, c _m (vph)	<i>1122</i>						<i>593</i>	
v/c ratio	<i>0.08</i>						<i>0.25</i>	
Queue length (95%)	<i>0.25</i>						<i>0.98</i>	
Control Delay (s/veh)	<i>8.5</i>						<i>13.1</i>	

LOS	A				B
Approach delay (s/veh)	--	--			13.1
Approach LOS	--	--			B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	FJB	Intersection	#5
Agency/Co.	Ingalls & Associates, LLP	Jurisdiction	Town of Brunswick
Date Performed	7/23/2008	Analysis Year	2008 Existing
Analysis Time Period	PM		

Project Description <i>Duncan Meadows</i>	
East/West Street: <i>Route 2</i>	North/South Street: <i>Moonlawn Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	200	509	0	0	182	22
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	222	565	0	0	202	24
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--
Median type	<i>Undivided</i>					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	0	0	0	36	0	121
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	0	0	0	40	0	134
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration					<i>LR</i>	

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
Volume, v (vph)	222						174	
Capacity, c _m (vph)	1354						434	
v/c ratio	0.16						0.40	
Queue length (95%)	0.59						1.90	
Control Delay (s/veh)	8.2						18.7	

LOS	A					C
Approach delay (s/veh)	--	--				18.7
Approach LOS	--	--				C

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	# 6		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	8/28/2008			Jurisdiction	Town of Brunswick		
Time Period	AM			Analysis Year	2008 Existing		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane group	L	TR		L	TR		L	T	R	L	TR	
Volume (vph)	35	387	38	68	849	25	140	98	102	56	142	54
% Heavy veh	17	13	8	0	7	8	3	6	4	8	5	8
PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.69	0.69	0.69	0.86	0.86	0.86
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0	0		0
Lane Width	11.0	11.0		11.0	11.0		11.0	11.0	12.0	11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0	0	0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Phasing	EB Only	EW Perm	WB Only	Peds Only	NB Only	NS Perm	SB Only	08				
Timing	G = 10.0	G = 21.1	G = 10.0	G = 27.0	G = 17.9	G = 1.0	G = 16.4	G =				
	Y = 0	Y = 5	Y = 5	Y =	Y = 0	Y = 5	Y = 5	Y =				
Duration of Analysis (hrs) = 0.25						Cycle Length C = 123.3						

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	Adj. flow rate	39	478		81	1041		203	142	148	65	228
Lane group cap.	179	772		362	951		303	265	363	339	302	
v/c ratio	0.22	0.62		0.22	1.09		0.67	0.54	0.41	0.19	0.75	
Green ratio	0.25	0.25		0.29	0.29		0.15	0.15	0.23	0.18	0.18	
Unif. delay d1	36.7	40.9		34.0	43.6		46.5	48.2	40.0	40.4	47.8	
Delay factor k	0.11	0.20		0.11	0.50		0.24	0.14	0.11	0.11	0.31	
Increm. delay d2	0.6	1.5		0.3	58.5		5.6	2.1	0.7	0.3	10.4	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control delay	37.3	42.4		34.3	102.2		52.1	50.3	40.8	40.7	58.2	
Lane group LOS	D	D		C	F		D	D	D	D	E	
Apprch. delay	42.0			97.3			48.2			54.3		
Approach LOS	D			F			D			D		
Intersec. delay	70.3			Intersection LOS						E		

SHORT REPORT

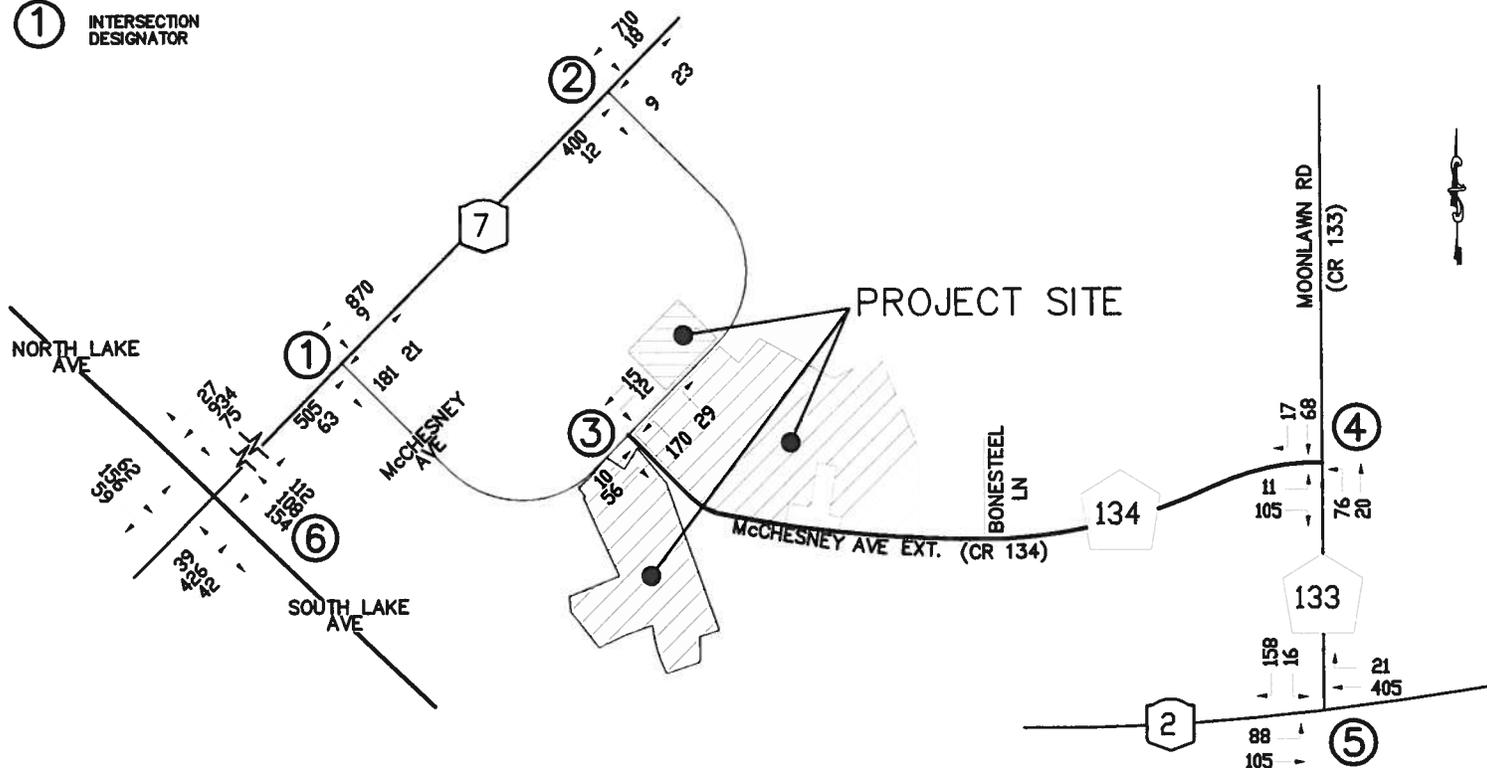
General Information				Site Information			
Analyst	FJB			Intersection	# 6		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	8/28/2008			Jurisdiction	Town of Brunswick		
Time Period	PM			Analysis Year	2008 Existing		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane group	L	TR		L	TR		L	T	R	L	TR	
Volume (vph)	49	881	80	118	644	56	87	127	226	110	95	29
% Heavy veh	17	13	8	0	7	8	3	6	4	8	5	8
PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.69	0.69	0.69	0.86	0.86	0.86
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0	0		0
Lane Width	11.0	11.0		11.0	11.0		11.0	11.0	12.0	11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0	0	0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Phasing	WB Only	Thru & RT	EB Only	Peds Only	SB Only	Thru & RT	NB Only	08				
Timing	G = 30.0	G = 30.0	G = 30.0	G = 27.0	G = 20.0	G = 10.0	G = 20.0	G =				
	Y =	Y = 5	Y = 5	Y =	Y =	Y = 5	Y = 5	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 187.0					

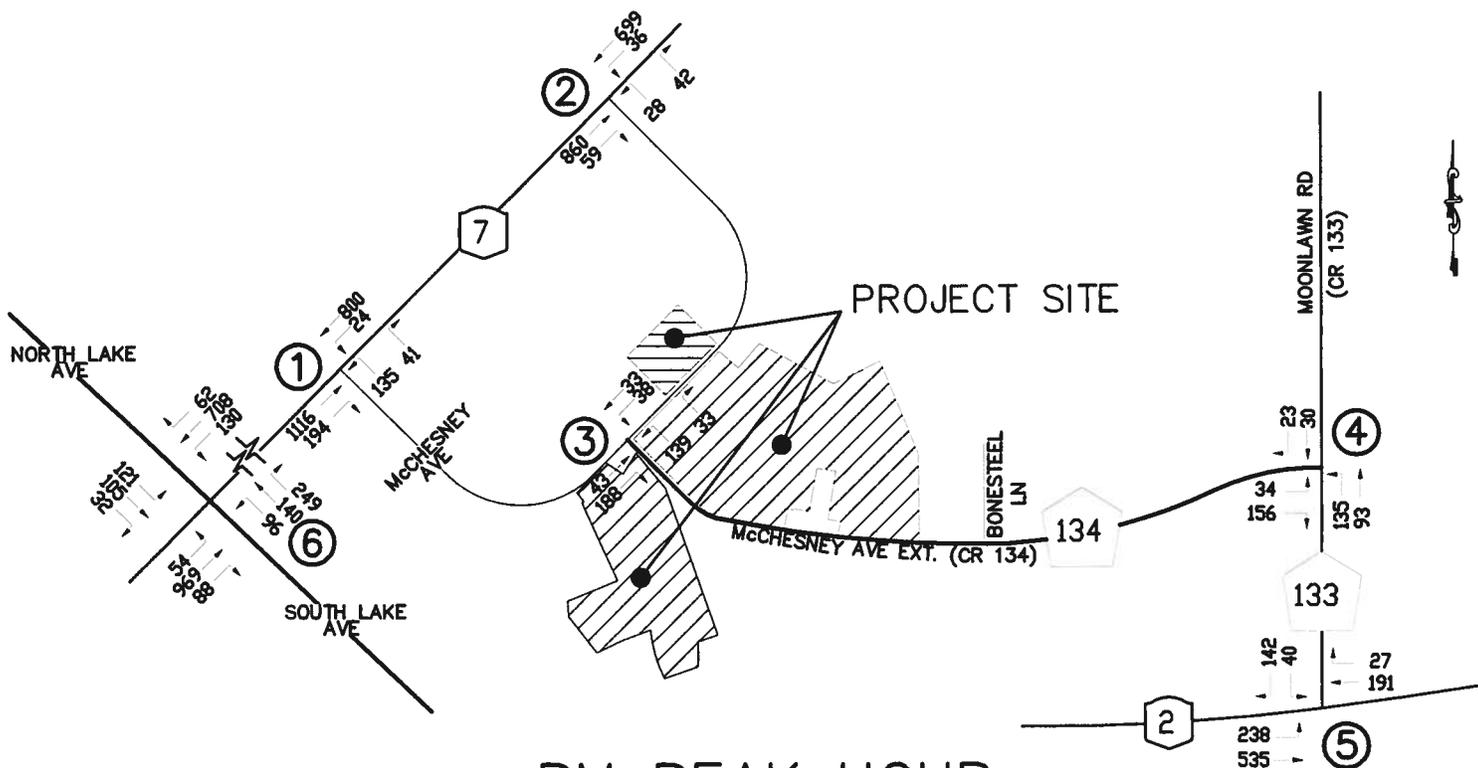
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	Adj. flow rate	55	1080		140	834		126	184	328	128	144
Lane group cap.	239	1066		280	1035		181	324	291	173	269	
v/c ratio	0.23	1.01		0.50	0.81		0.70	0.57	1.13	0.74	0.54	
Green ratio	0.16	0.35		0.16	0.32		0.11	0.19	0.19	0.11	0.16	
Unif. delay d1	68.4	61.0		71.7	58.2		80.6	69.1	76.0	81.0	72.1	
Delay factor k	0.11	0.50		0.11	0.35		0.26	0.16	0.50	0.30	0.14	
Increm. delay d2	0.5	30.9		1.4	4.8		11.1	2.4	91.5	15.5	2.1	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control delay	68.9	91.9		73.1	62.9		91.7	71.5	167.5	96.5	74.2	
Lane group LOS	E	F		E	E		F	E	F	F	E	
Apprch. delay	90.7			64.4			124.8			84.7		
Approach LOS	F			E			F			F		
Intersec. delay	88.9			Intersection LOS						F		

2013 No-Build

① INTERSECTION DESIGNATOR



AM PEAK HOUR



PM PEAK HOUR

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TRAFFIC VOLUMES 2013
NO BUILD
DUNCAN MEADOWS

TOWN OF BRUNSWICK
COUNTY OF RENSSELAER STATE OF NEW YORK

DRAWN BY: T.D.L.

CADD FILE: PLOT

DATE:

07-21-2008

CHECKED BY: F.J.B.

JOB NO. 07-072

SCALE: N.T.S.

SHEET 1 OF 1

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	#1		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	7/23/2008			Jurisdiction	Town of Brunswick		
Time Period	AM			Analysis Year	2013 No Build		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	1	1	0	0	0	0	0	0	0
Lane group		TR		L	T			LR				
Volume (vph)		505	63	9	870		181		21			
% Heavy veh		11	2	0	5		2		0			
PHF		0.91	0.91	0.94	0.94		0.87		0.87			
Actuated (P/A)		A	A	A	A		A		A			
Startup lost time		2.0		2.0	2.0				2.0			
Ext. eff. green		2.0		2.0	2.0				2.0			
Arrival type		3		3	3				3			
Unit Extension		3.0		3.0	3.0				3.0			
Ped/Bike/RTOR Volume	0		16				0		4	0		
Lane Width		12.0		11.0	11.0				11.0			
Parking/Grade/Parking	N	0	N	N	0	N	N	-4	N	N		N
Parking/hr												
Bus stops/hr		0		0	0				0			
Unit Extension		3.0		3.0	3.0				3.0			
Phasing	EW Perm	02	03	04	NB Only	06	07	08				
Timing	G = 44.0	G =	G =	G =	G = 17.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 71.0					

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adj. flow rate		607		10	926				228			
Lane group cap.		2008		472	1084				416			
v/c ratio		0.30		0.02	0.85				0.55			
Green ratio		0.62		0.62	0.62				0.24			
Unif. delay d1		6.3		5.2	10.9				23.6			
Delay factor k		0.11		0.11	0.39				0.15			
Increm. delay d2		0.1		0.0	6.8				1.5			
PF factor		1.000		1.000	1.000				1.000			
Control delay		6.4		5.2	17.7				25.2			
Lane group LOS		A		A	B				C			
Apprch. delay		6.4		17.6					25.2			
Approach LOS		A		B					C			
Intersec. delay		14.7		Intersection LOS							B	

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	#1		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	7/23/2008			Jurisdiction	Town of Brunswick		
Time Period	PM			Analysis Year	2013 No Build		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	1	1	0	0	0	0	0	0	0
Lane group		TR		L	T			LR				
Volume (vph)		1116	194	24	800		135		41			
% Heavy veh		2	0	0	6		2		0			
PHF		0.96	0.96	0.86	0.86		0.93		0.93			
Actuated (P/A)		A	A	A	A		A		A			
Startup lost time		2.0		2.0	2.0			2.0				
Ext. eff. green		2.0		2.0	2.0			2.0				
Arrival type		3		3	3			3				
Unit Extension		3.0		3.0	3.0			3.0				
Ped/Bike/RTOR Volume	0		36				0		4	0		
Lane Width		12.0		11.0	11.0			11.0				
Parking/Grade/Parking	N	0	N	N	0	N	N	-4	N	N		N
Parking/hr												
Bus stops/hr		0		0	0			0				
Unit Extension		3.0		3.0	3.0			3.0				
Phasing	EW Perm	02	03	04	NB Only	06	07	08				
Timing	G = 45.0	G =	G =	G =	G = 17.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 72.0					

Lane Group Capacity, Control Delay, and LOS Determination													
	EB			WB			NB			SB			
	Adj. flow rate		1328		28	930			185				
Lane group cap.		2181		174	1083			407					
v/c ratio		0.61		0.16	0.86			0.45					
Green ratio		0.63		0.63	0.63			0.24					
Unif. delay d1		8.2		5.6	10.9			23.5					
Delay factor k		0.19		0.11	0.39			0.11					
Increm. delay d2		0.5		0.4	7.1			0.8					
PF factor		1.000		1.000	1.000			1.000					
Control delay		8.7		6.1	18.0			24.3					
Lane group LOS		A		A	B			C					
Apprch. delay		8.7			17.7			24.3					
Approach LOS		A			B			C					
Intersec. delay		13.3			Intersection LOS						B		

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	FJB			Intersection	#2		
Agency/Co.	Ingalls & Associates, LLP			Jurisdiction			
Date Performed	7/23/2008			Analysis Year	2013 No Build		
Analysis Time Period	AM						
Project Description <i>Duncan Meadows</i>							
East/West Street: <i>Route 7</i>				North/South Street: <i>McChesney Avenue</i>			
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	0	400	12	18	710	0	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate (veh/h)	0	444	13	20	788	0	
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--	
Median type	<i>Undivided</i>						
RT Channelized?			0			0	
Lanes	0	1	1	1	1	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	9	0	23	0	0	0	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate (veh/h)	10	0	25	0	0	0	
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0	
Percent grade (%)	0			0			
Flared approach		N			N		
Storage		0			0		
RT Channelized?			0			0	
Lanes	0	0	0	0	0	0	
Configuration		LR					
Control Delay, Queue Length, Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		L		LR			
Volume, v (vph)		20		35			
Capacity, c _m (vph)		1114		369			
v/c ratio		0.02		0.09			
Queue length (95%)		0.05		0.31			
Control Delay (s/veh)		8.3		15.8			

LOS		A		C			
Approach delay (s/veh)	--	--	15.8				
Approach LOS	--	--	C				

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	FJB		Intersection	#2				
Agency/Co.	Ingalls & Associates, LLP		Jurisdiction					
Date Performed	7/23/2008		Analysis Year	2013 No Build				
Analysis Time Period	PM							
Project Description <i>Duncan Meadows</i>								
East/West Street: <i>Route 7</i>			North/South Street: <i>McChesney Avenue</i>					
Intersection Orientation: <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	0	860	59	36	699	0		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	955	65	40	776	0		
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--		
Median type	<i>Undivided</i>							
RT Channelized?			0			0		
Lanes	0	1	1	1	1	0		
Configuration		T	R	L	T			
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	28	0	42	0	0	0		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	31	0	46	0	0	0		
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		N			N			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
Volume, v (vph)		40		77				
Capacity, c _m (vph)		688		147				
v/c ratio		0.06		0.52				
Queue length (95%)		0.18		2.55				
Control Delay (s/veh)		10.6		53.7				

LOS		<i>B</i>		<i>F</i>			
Approach delay (s/veh)	--	--	53.7				
Approach LOS	--	--	<i>F</i>				

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#3</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 No Build</i>
Analysis Time Period	<i>AM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue</i>		North/South Street: <i>McChesney Avenue Extension</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	<i>0</i>	<i>10</i>	<i>56</i>	<i>12</i>	<i>15</i>	<i>0</i>
Peak-hour factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)	<i>0</i>	<i>11</i>	<i>62</i>	<i>13</i>	<i>16</i>	<i>0</i>
Proportion of heavy vehicles, P _{HV}	<i>0</i>	--	--	<i>0</i>	--	--
Median type	<i>Undivided</i>					
RT Channelized?			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		<i>0</i>			<i>0</i>	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	<i>170</i>	<i>0</i>	<i>29</i>	<i>0</i>	<i>0</i>	<i>0</i>
Peak-hour factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)	<i>188</i>	<i>0</i>	<i>32</i>	<i>0</i>	<i>0</i>	<i>0</i>
Proportion of heavy vehicles, P _{HV}	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent grade (%)	<i>0</i>			<i>0</i>		
Flared approach		<i>N</i>			<i>N</i>	
Storage		<i>0</i>			<i>0</i>	
RT Channelized?			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Configuration		<i>LR</i>				

Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
Volume, v (vph)		<i>13</i>		<i>220</i>				
Capacity, c _m (vph)		<i>1540</i>		<i>931</i>				
v/c ratio		<i>0.01</i>		<i>0.24</i>				
Queue length (95%)		<i>0.03</i>		<i>0.92</i>				
Control Delay (s/veh)		<i>7.4</i>		<i>10.1</i>				

LOS		A	B			
Approach delay (s/veh)	--	--	10.1			
Approach LOS	--	--	B			

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	FJB			Intersection	#3		
Agency/Co.	Ingalls & Associates, LLP			Jurisdiction			
Date Performed	7/23/2008			Analysis Year	2013 No Build		
Analysis Time Period	PM						
Project Description <i>Duncan Meadows</i>							
East/West Street: <i>McChesney Avenue</i>				North/South Street: <i>McChesney Avenue Extension</i>			
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	0	43	188	38	33	0	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate (veh/h)	0	47	208	42	36	0	
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--	
Median type	<i>Undivided</i>						
RT Channelized?			0			0	
Lanes	0	1	0	0	1	0	
Configuration			TR	LT			
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	139	0	33	0	0	0	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate (veh/h)	154	0	36	0	0	0	
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0	
Percent grade (%)	0			0			
Flared approach		N			N		
Storage		0			0		
RT Channelized?			0			0	
Lanes	0	0	0	0	0	0	
Configuration		LR					
Control Delay, Queue Length, Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		LT		LR			
Volume, v (vph)		42		190			
Capacity, c _m (vph)		1322		731			
v/c ratio		0.03		0.26			
Queue length (95%)		0.10		1.04			
Control Delay (s/veh)		7.8		11.6			

LOS		A	B			
Approach delay (s/veh)	--	--	11.6			
Approach LOS	--	--	B			

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#4</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 No Build</i>
Analysis Time Period	<i>AM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue Extension</i>		North/South Street: <i>Moonlawn Road</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume		76	20	0	0	68	17
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		84	22	0	0	75	18
Percent Heavy Vehicles		0	--	--	0	--	--
Median Type	<i>Undivided</i>						
RT Channelized				0			0
Lanes		0	1	0	0	1	0
Configuration		LT					TR
Upstream Signal			0			0	

Minor Street	Westbound			Eastbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume		0	0	0	11	0	105
Peak-Hour Factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR		0	0	0	12	0	116
Percent Heavy Vehicles		0	0	0	0	0	0
Percent Grade (%)		0			0		
Flared Approach			N			N	
Storage			0			0	
RT Channelized				0			0
Lanes		0	0	0	0	0	0
Configuration						LR	

Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
			7	8	9	10	11	12
Movement	1	4						
Lane Configuration	LT						LR	
v (vph)	84						128	
C (m) (vph)	1514						942	
v/c	0.06						0.14	
95% queue length	0.18						0.47	
Control Delay	7.5						9.4	
LOS	A						A	
Approach Delay	--	--					9.4	
Approach LOS	--	--					A	

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#4</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 No Build</i>
Analysis Time Period	<i>PM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue Extension</i>		North/South Street: <i>Moonlawn Road</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume	<i>135</i>	<i>93</i>	<i>0</i>	<i>0</i>	<i>30</i>	<i>23</i>
Peak-Hour Factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate, HFR	<i>150</i>	<i>103</i>	<i>0</i>	<i>0</i>	<i>33</i>	<i>25</i>
Percent Heavy Vehicles	<i>0</i>	<i>--</i>	<i>--</i>	<i>0</i>	<i>--</i>	<i>--</i>
Median Type	<i>Undivided</i>					
RT Channelized			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		<i>0</i>			<i>0</i>	

Minor Street	Westbound			Eastbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume	<i>0</i>	<i>0</i>	<i>0</i>	<i>34</i>	<i>0</i>	<i>156</i>
Peak-Hour Factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate, HFR	<i>0</i>	<i>0</i>	<i>0</i>	<i>37</i>	<i>0</i>	<i>173</i>
Percent Heavy Vehicles	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent Grade (%)	<i>0</i>			<i>0</i>		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		<i>0</i>			<i>0</i>	
RT Channelized			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Configuration					<i>LR</i>	

Delay, Queue Length, and Level of Service								
Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
v (vph)	<i>150</i>						<i>210</i>	
C (m) (vph)	<i>1559</i>						<i>876</i>	
v/c	<i>0.10</i>						<i>0.24</i>	
95% queue length	<i>0.32</i>						<i>0.94</i>	
Control Delay	<i>7.6</i>						<i>10.4</i>	
LOS	<i>A</i>						<i>B</i>	
Approach Delay	<i>--</i>	<i>--</i>					<i>10.4</i>	
Approach LOS	<i>--</i>	<i>--</i>					<i>B</i>	

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TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	FJB		Intersection	#5				
Agency/Co.	Ingalls & Associates, LLP		Jurisdiction					
Date Performed	7/23/2008		Analysis Year	2013 No Build				
Analysis Time Period	AM							
Project Description <i>Duncan Meadows</i>								
East/West Street: <i>Route 2</i>			North/South Street: <i>Moonlawn Road</i>					
Intersection Orientation: <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	88	105	0	0	405	21		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	97	116	0	0	450	23		
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--		
Median type	<i>Undivided</i>							
RT Channelized?			0			0		
Lanes	0	1	0	0	1	0		
Configuration	<i>LT</i>					<i>TR</i>		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	15	0	158		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	0	0	16	0	175		
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		<i>N</i>			<i>N</i>			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	0	0	0		
Configuration				<i>LR</i>				
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
Volume, v (vph)	97						191	
Capacity, c _m (vph)	1099						567	
v/c ratio	0.09						0.34	
Queue length (95%)	0.29						1.48	
Control Delay (s/veh)	8.6						14.5	

LOS	A				B
Approach delay (s/veh)	--	--			14.5
Approach LOS	--	--			B

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	FJB		Intersection	#5				
Agency/Co.	Ingalls & Associates, LLP		Jurisdiction					
Date Performed	7/23/2008		Analysis Year	2013 No Build				
Analysis Time Period	PM							
Project Description <i>Duncan Meadows</i>								
East/West Street: <i>Route 2</i>			North/South Street: <i>Moonlawn Road</i>					
Intersection Orientation: <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	238	535	0	0	191	27		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	264	594	0	0	212	30		
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--		
Median type	<i>Undivided</i>							
RT Channelized?			0			0		
Lanes	0	1	0	0	1	0		
Configuration	<i>LT</i>					<i>TR</i>		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	40	0	142		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	0	0	44	0	157		
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		<i>N</i>			<i>N</i>			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	0	0	0		
Configuration					<i>LR</i>			
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>						<i>LR</i>	
Volume, v (vph)	264						201	
Capacity, c _m (vph)	1336						388	
v/c ratio	0.20						0.52	
Queue length (95%)	0.73						2.87	
Control Delay (s/veh)	8.4						23.8	

LOS	A					C
Approach delay (s/veh)	--	--				23.8
Approach LOS	--	--				C

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	# 6		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	8/28/2008			Jurisdiction	Town of Brunswick		
Time Period	AM			Analysis Year	2013 Existing		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane group	L	TR		L	TR		L	T	R	L	TR	
Volume (vph)	39	426	42	75	934	27	154	108	112	62	156	59
% Heavy veh	17	13	8	0	7	8	3	6	4	8	5	8
PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.69	0.69	0.69	0.86	0.86	0.86
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0	0		0
Lane Width	11.0	11.0		11.0	11.0		11.0	11.0	12.0	11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0	0	0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Phasing	EB Only	EW Perm	WB Only	Peds Only	NB Only	NS Perm	SB Only	08				
Timing	G = 10.0	G = 21.1	G = 10.0	G = 27.0	G = 17.9	G = 1.0	G = 16.4	G =				
	Y = 0	Y = 5	Y = 5	Y =	Y = 0	Y = 5	Y = 5	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 123.3					

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	Adj. flow rate	44	526		89	1144		223	157	162	72	250
Lane group cap.	179	772		344	951		303	265	363	339	302	
v/c ratio	0.25	0.68		0.26	1.20		0.74	0.59	0.45	0.21	0.83	
Green ratio	0.25	0.25		0.29	0.29		0.15	0.15	0.23	0.18	0.18	
Unif. delay d1	36.8	41.7		35.9	43.6		47.1	48.7	40.4	40.6	48.6	
Delay factor k	0.11	0.25		0.11	0.50		0.29	0.18	0.11	0.11	0.37	
Increm. delay d2	0.7	2.5		0.4	101.4		9.0	3.5	0.9	0.3	17.2	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control delay	37.5	44.1		36.3	145.1		56.2	52.2	41.3	40.9	65.8	
Lane group LOS	D	D		D	F		E	D	D	D	E	
Apprch. delay	43.6			137.2			50.6			60.2		
Approach LOS	D			F			D			E		
Intersec. delay	90.3			Intersection LOS						F		

SHORT REPORT

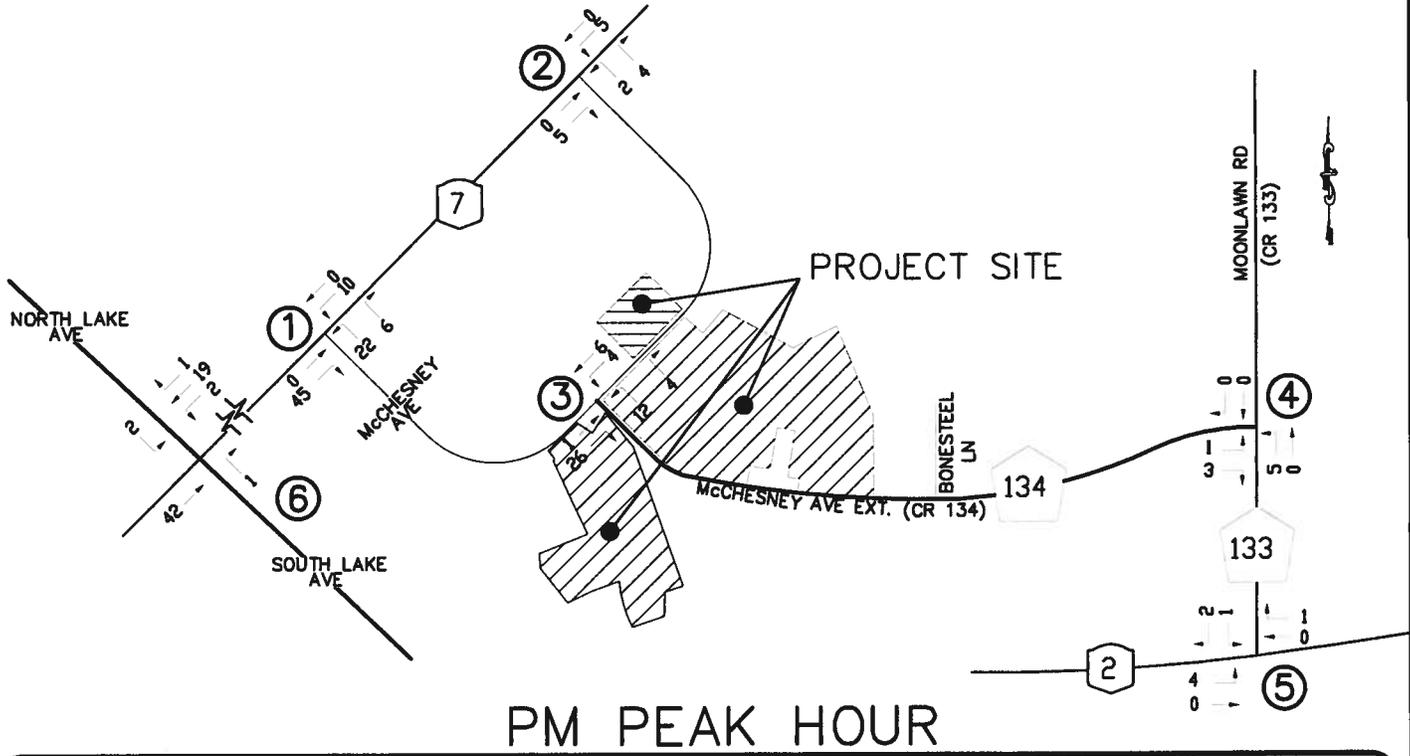
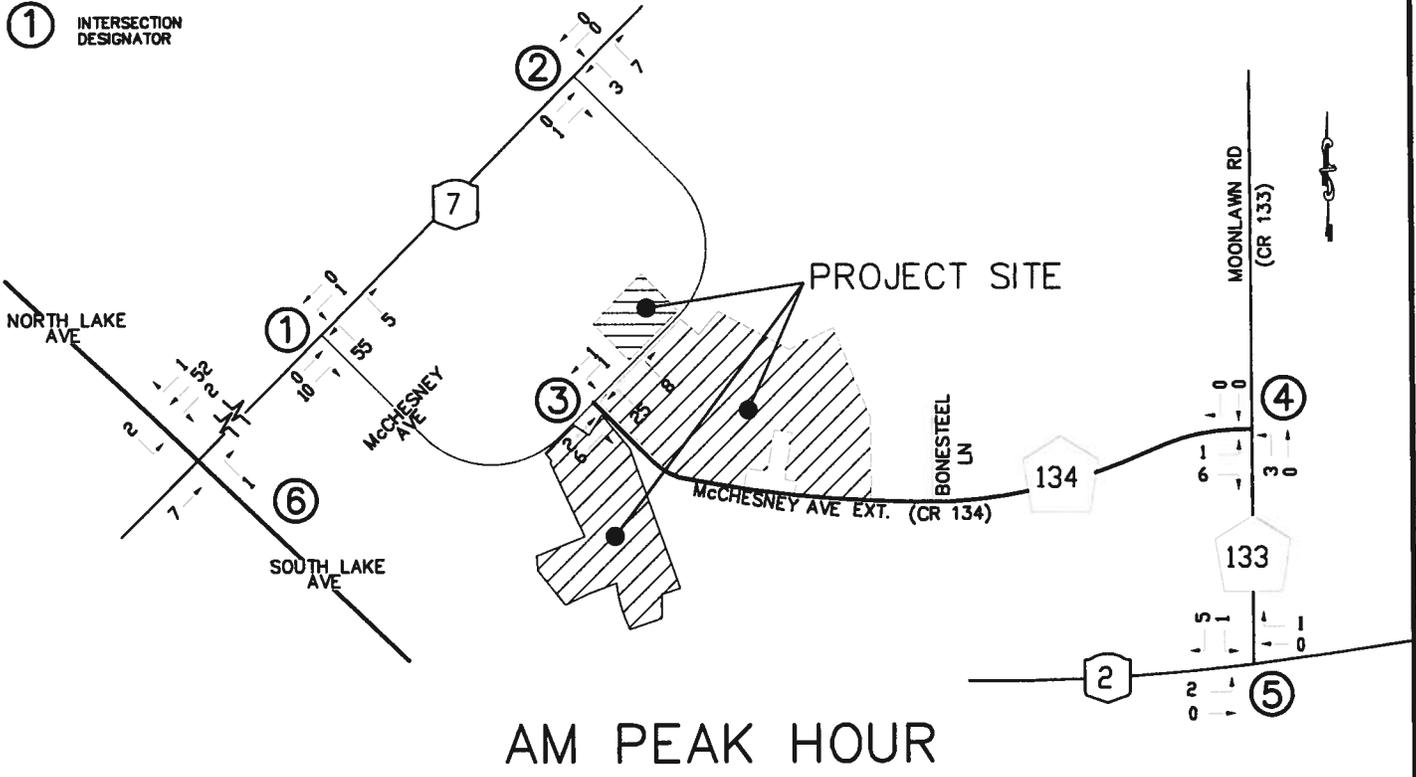
General Information				Site Information			
Analyst	FJB			Intersection	# 6		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	8/28/2008			Jurisdiction	Town of Brunswick		
Time Period	PM			Analysis Year	2013 Existing		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane group	L	TR		L	TR		L	T	R	L	TR	
Volume (vph)	54	969	88	130	708	62	96	140	249	121	105	32
% Heavy veh	17	13	8	0	7	8	3	6	4	8	5	8
PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.69	0.69	0.69	0.86	0.86	0.86
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0	0		0
Lane Width	11.0	11.0		11.0	11.0		11.0	11.0	12.0	11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0	0	0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Phasing	WB Only	Thru & RT	EB Only	Peds Only	SB Only	Thru & RT	NB Only	08				
Timing	G = 30.0	G = 30.0	G = 30.0	G = 27.0	G = 20.0	G = 10.0	G = 20.0	G =				
	Y =	Y = 5	Y = 5	Y =	Y =	Y = 5	Y = 5	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 187.0					

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	Adj. flow rate	61	1188		155	917		139	203	361	141	159
Lane group cap.	239	1066		280	1035		181	324	291	173	269	
v/c ratio	0.26	1.11		0.55	0.89		0.77	0.63	1.24	0.82	0.59	
Green ratio	0.16	0.35		0.16	0.32		0.11	0.19	0.19	0.11	0.16	
Unif. delay d1	68.7	61.0		72.3	60.3		81.2	70.0	76.0	81.7	72.8	
Delay factor k	0.11	0.50		0.15	0.41		0.32	0.21	0.50	0.36	0.18	
Increm. delay d2	0.6	64.6		2.4	9.4		17.9	3.8	134.0	25.1	3.4	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control delay	69.3	125.6		74.7	69.6		99.2	73.8	210.0	106.8	76.2	
Lane group LOS	E	F		E	E		F	E	F	F	E	
Apprch. delay	122.9			70.4			148.8			90.6		
Approach LOS	F			E			F			F		
Intersec. delay	108.5			Intersection LOS						F		

Trip Generation

① INTERSECTION DESIGNATOR



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**PROPOSED TRIP GENERATION
DUNCAN MEADOWS
McCHESNEY AVENUE**

TOWN OF BRUNSWICK
COUNTY OF RENSSELAER STATE OF NEW YORK

DRAWN BY: T.D.L.
CADD FILE: PLOT

CHECKED BY: F.J.B.
JOB NO. 07-072

SCALE: N.T.S.

DATE:
07-21-2008

SHEET 1 OF 1



ingalls & associates, LLP

JOB NAME: _____

SHEET: _____ OF _____

CALCULATED BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

SCALE: _____

USE 252 (Senior Adult Housing - Attached)

0.08 / unit AM 45% in, 55% out
0.11 / unit PM 61% in, 39% out

$$48 \times 0.08 = 4 \quad (2, 3)$$

$$48 \times 0.11 = 5 \quad (4, 2)$$

USE 230 (Residential Condominium/Townhouse)

$$AM = L_n(T) = 0.80 L_n(x) + 0.26 \quad [17\% in, 83\% out]$$

$$PM = L_n(T) = 0.82 L_n(x) + 0.32 \quad [62\% in, 38\% out]$$

88 units

$$AM \quad L_n(T) = 0.80 L_n(88) + 0.26$$

$$T = 47 \quad (8 in, 39 out)$$

$$PM \quad L_n(T) = 0.82 L_n(88) + 0.32$$

$$T = 54 \quad (36 in, 18 out)$$

64 units 78

$$AM \quad L_n(T) = 0.80 L_n(64) + 0.26$$

$$T = 42 \quad (7 in, 35 out)$$

$$PM \quad L_n(T) = 0.82 L_n(64) + 0.32$$

$$T = 47 \quad (28 in, 19 out)$$

$$33, 16 out$$

Residential Condominium/Townhouse (230)

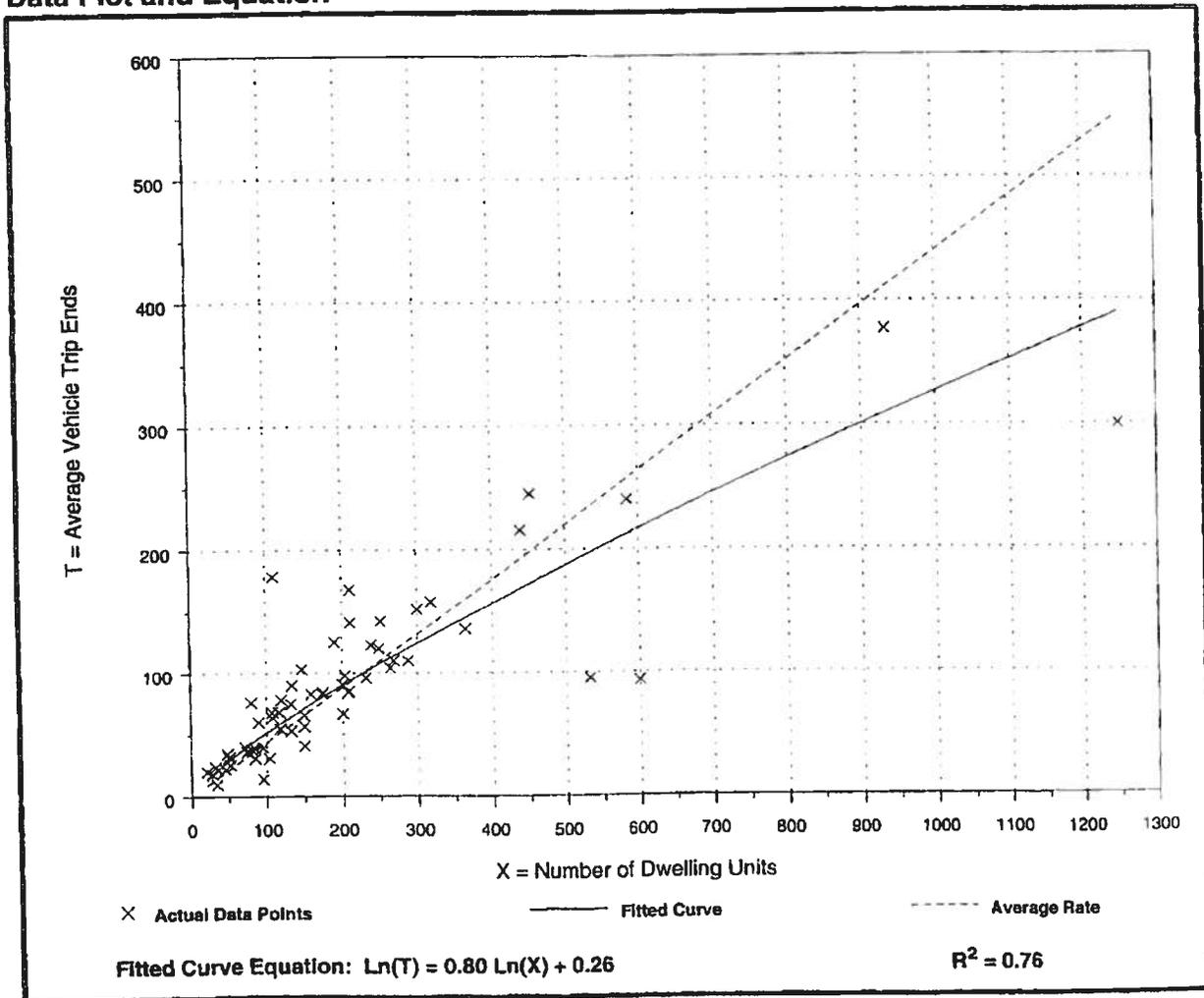
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 59
Avg. Number of Dwelling Units: 213
Directional Distribution: 17% entering, 83% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.44	0.15 - 1.61	0.69

Data Plot and Equation



Residential Condominium/Townhouse (230)

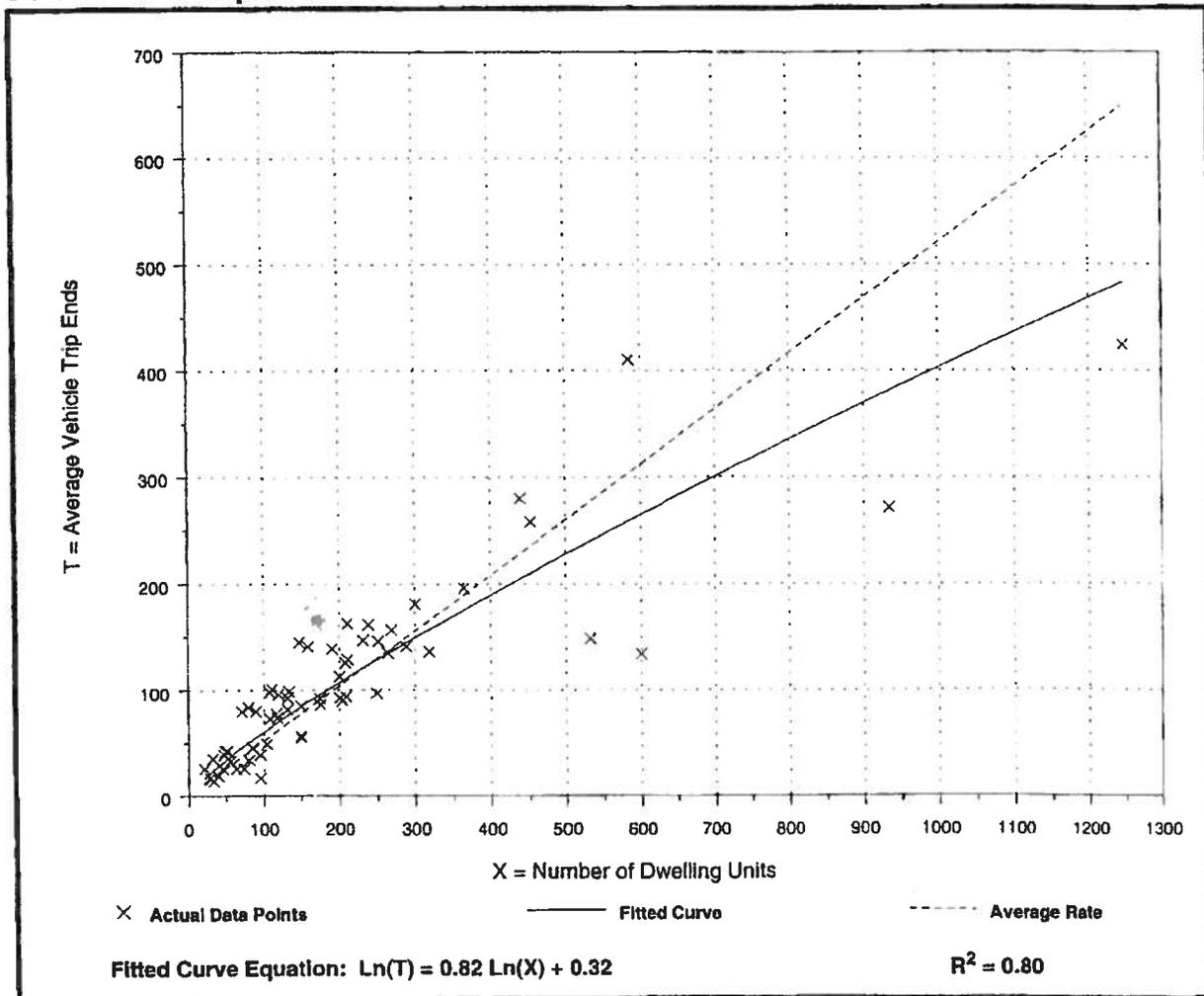
Average Vehicle Trip Ends vs: Dwelling Units
 On a: Weekday,
 Peak Hour of Adjacent Street Traffic,
 One Hour Between 4 and 6 p.m.

Number of Studies: 62
 Avg. Number of Dwelling Units: 205
 Directional Distribution: 67% entering, 33% exiting

Trip Generation per Dwelling Unit

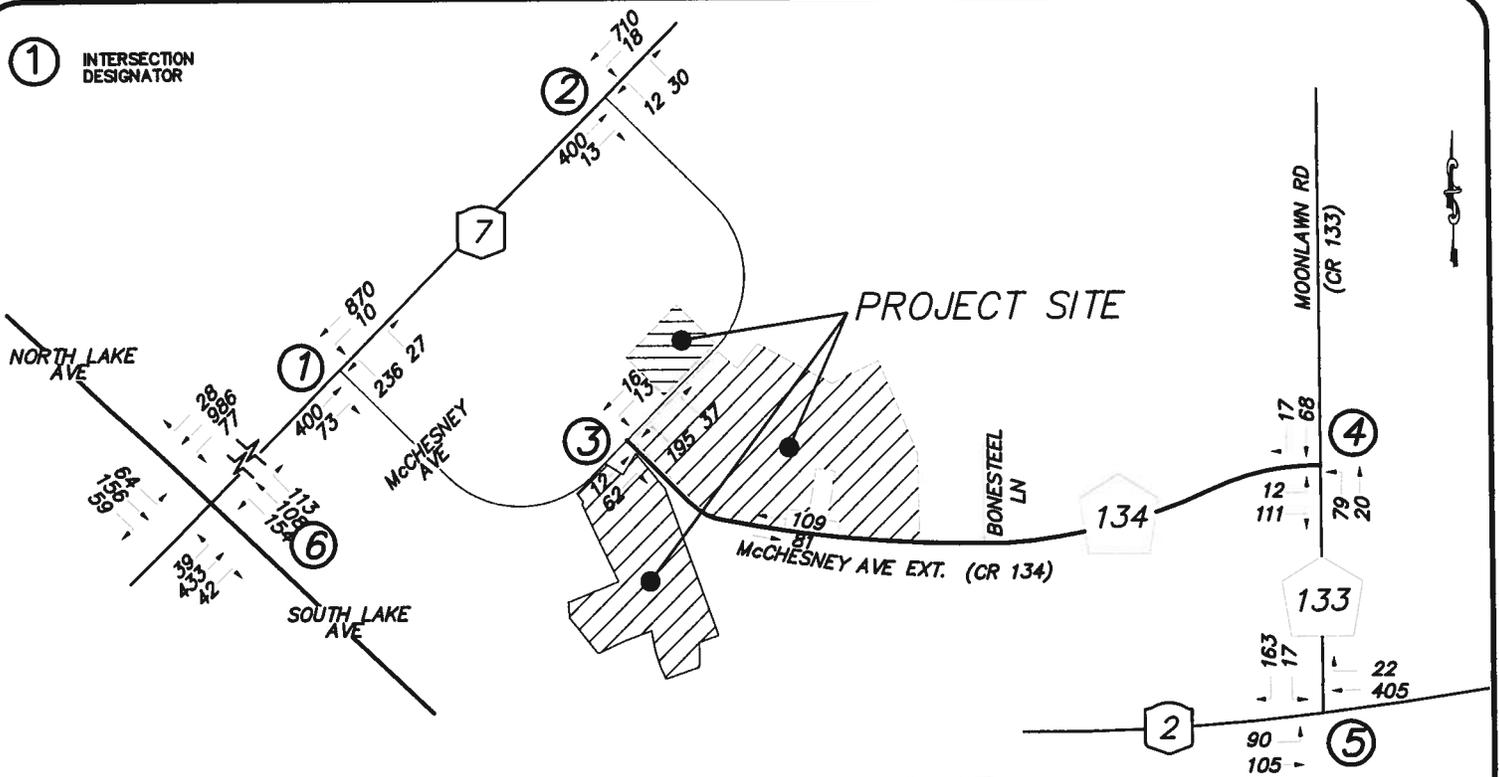
Average Rate	Range of Rates	Standard Deviation
0.52	0.18 - 1.24	0.75

Data Plot and Equation

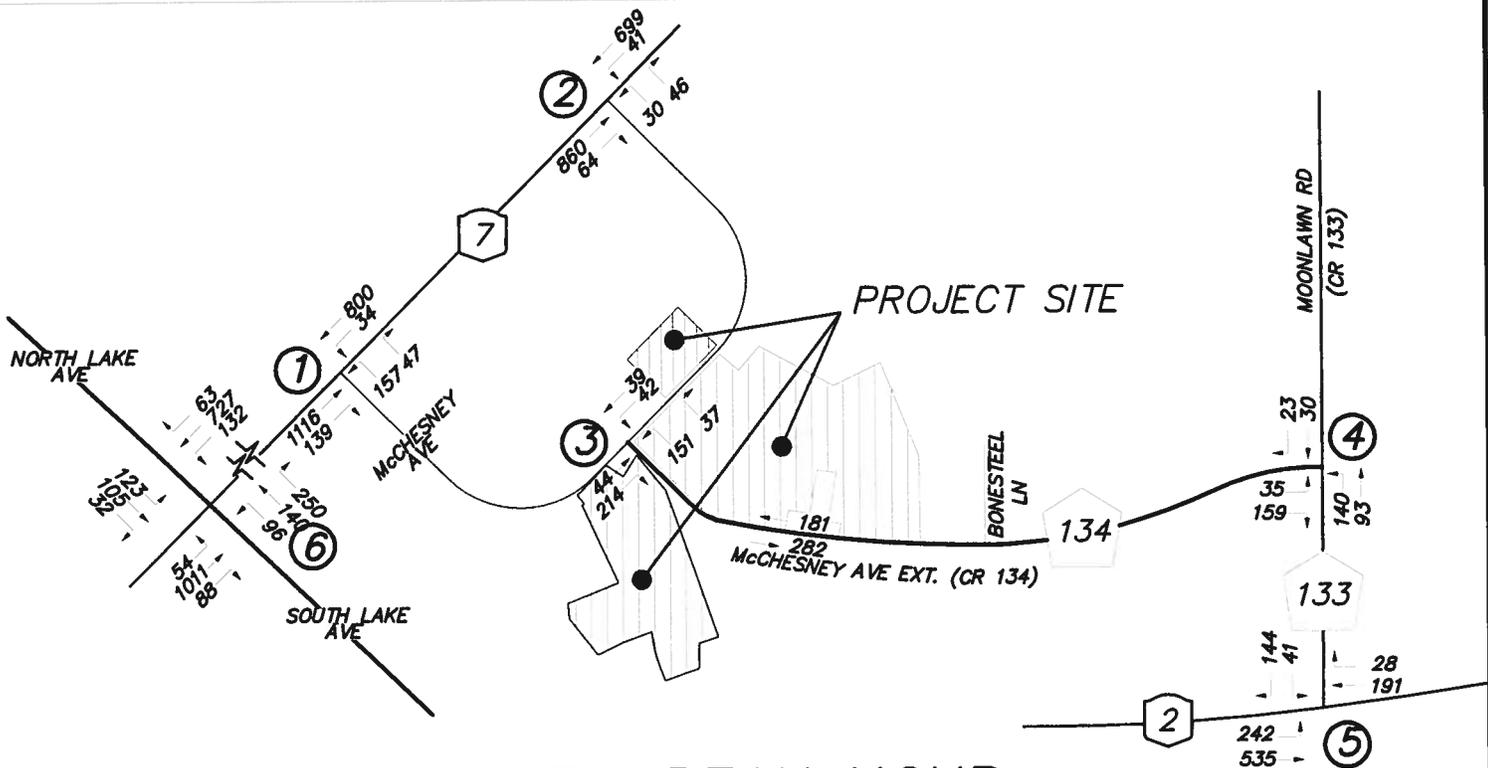


2013 Build

① INTERSECTION DESIGNATOR



AM PEAK HOUR



PM PEAK HOUR

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TRAFFIC VOLUMES 2013 BUILD
DUNCAN MEADOWS
McCHESNEY AVENUE

TOWN OF BRUNSWICK
COUNTY OF RENNELAER STATE OF NEW YORK

DRAWN BY: T.D.L.
CADD FILE: PLOT

CHECKED BY: F.J.B.
JOB NO. 07-072

SCALE: N.T.S.

DATE:
07-21-2008

SHEET 1 OF 1

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	#1		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	7/23/2008			Jurisdiction	Town of Brunswick		
Time Period	PM			Analysis Year	2013 Build		

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	1	1	0	0	0	0	0	0	0
Lane group		TR		L	T			LR				
Volume (vph)		1116	139	34	800		157		47			
% Heavy veh		2	0	0	6		2		0			
PHF		0.96	0.96	0.86	0.86		0.93		0.93			
Actuated (P/A)		A	A	A	A		A		A			
Startup lost time		2.0		2.0	2.0			2.0				
Ext. eff. green		2.0		2.0	2.0			2.0				
Arrival type		3		3	3			3				
Unit Extension		3.0		3.0	3.0			3.0				
Ped/Bike/RTOR Volume	0		36				0		4	0		
Lane Width		12.0		11.0	11.0			11.0				
Parking/Grade/Parking	N	0	N	N	0	N	N	-4	N	N		N
Parking/hr												
Bus stops/hr		0		0	0			0				
Unit Extension		3.0		3.0	3.0			3.0				
Phasing	EW Perm	02	03	04	NB Only	06	07	08				
Timing	G = 45.0	G =	G =	G =	G = 17.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 72.0					

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adj. flow rate		1270		40	930			215				
Lane group cap.		2193		191	1083			407				
v/c ratio		0.58		0.21	0.86			0.53				
Green ratio		0.63		0.63	0.63			0.24				
Unif. delay d1		7.9		5.8	10.9			24.0				
Delay factor k		0.17		0.11	0.39			0.13				
Increm. delay d2		0.4		0.5	7.1			1.3				
PF factor		1.000		1.000	1.000			1.000				
Control delay		8.3		6.4	18.0			25.3				
Lane group LOS		A		A	B			C				
Apprch. delay		8.3		17.5			25.3					
Approach LOS		A		B			C					
Intersec. delay		13.4		Intersection LOS							B	

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	#1		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	7/23/2008			Jurisdiction	Town of Brunswick		
Time Period	AM			Analysis Year	2013 Build		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	0	2	0	1	1	0	0	0	0	0	0	0
Lane group		TR		L	T			LR				
Volume (vph)		400	73	10	870		236		27			
% Heavy veh		11	2	0	5		2		0			
PHF		0.91	0.91	0.94	0.94		0.87		0.87			
Actuated (P/A)		A	A	A	A		A		A			
Startup lost time		2.0		2.0	2.0			2.0				
Ext. eff. green		2.0		2.0	2.0			2.0				
Arrival type		3		3	3			3				
Unit Extension		3.0		3.0	3.0			3.0				
Ped/Bike/RTOR Volume	0		16				0		4	0		
Lane Width		12.0		11.0	11.0			11.0				
Parking/Grade/Parking	N	0	N	N	0	N	N	-4	N	N		N
Parking/hr												
Bus stops/hr		0		0	0			0				
Unit Extension		3.0		3.0	3.0			3.0				
Phasing	EW Perm	02	03	04	NB Only	06	07	08				
Timing	G = 44.0	G =	G =	G =	G = 17.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 71.0					

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	Adj. flow rate		503		11	926			297			
Lane group cap.		2002		532	1084			416				
v/c ratio		0.25		0.02	0.85			0.71				
Green ratio		0.62		0.62	0.62			0.24				
Unif. delay d1		6.1		5.2	10.9			24.8				
Delay factor k		0.11		0.11	0.39			0.28				
Increm. delay d2		0.1		0.0	6.8			5.7				
PF factor		1.000		1.000	1.000			1.000				
Control delay		6.1		5.2	17.7			30.5				
Lane group LOS		A		A	B			C				
Apprch. delay		6.1		17.6			30.5					
Approach LOS		A		B			C					
Intersec. delay		16.5		Intersection LOS							B	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	FJB	Intersection	#2
Agency/Co.	Ingalls & Associates, LLP	Jurisdiction	
Date Performed	7/23/2008	Analysis Year	2013 Build
Analysis Time Period	AM		

Project Description <i>Duncan Meadows</i>	
East/West Street: <i>Route 7</i>	North/South Street: <i>McChesney Avenue</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	400	13	18	710	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	0	444	14	20	788	0
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--
Median type	<i>Undivided</i>					
RT Channelized?			0			0
Lanes	0	1	1	1	1	0
Configuration		T	R	L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	12	0	30	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	13	0	33	0	0	0
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
Volume, v (vph)		20		46				
Capacity, c _m (vph)		1114		371				
v/c ratio		0.02		0.12				
Queue length (95%)		0.05		0.42				
Control Delay (s/veh)		8.3		16.1				

LOS		A	C				
Approach delay (s/veh)	--	--	16.1				
Approach LOS	--	--	C				

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#2</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 Build</i>
Analysis Time Period	<i>PM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>Route 7</i>		North/South Street: <i>McChesney Avenue</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume (veh/h)	<i>0</i>	<i>860</i>	<i>64</i>	<i>41</i>	<i>699</i>	<i>0</i>
Peak-hour factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)	<i>0</i>	<i>955</i>	<i>71</i>	<i>45</i>	<i>776</i>	<i>0</i>
Proportion of heavy vehicles, P _{HV}	<i>0</i>	<i>--</i>	<i>--</i>	<i>0</i>	<i>--</i>	<i>--</i>
Median type	<i>Undivided</i>					
RT Channelized?			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>0</i>
Configuration			<i>TR</i>	<i>L</i>	<i>T</i>	
Upstream Signal		<i>0</i>			<i>0</i>	

Minor Street	Northbound			Southbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume (veh/h)	<i>30</i>	<i>0</i>	<i>46</i>	<i>0</i>	<i>0</i>	<i>0</i>
Peak-hour factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)	<i>33</i>	<i>0</i>	<i>51</i>	<i>0</i>	<i>0</i>	<i>0</i>
Proportion of heavy vehicles, P _{HV}	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent grade (%)	<i>0</i>			<i>0</i>		
Flared approach		<i>N</i>			<i>N</i>	
Storage		<i>0</i>			<i>0</i>	
RT Channelized?			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Configuration		<i>LR</i>				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
	1	4	7	8	9	10	11	12
Movement								
Lane Configuration		<i>L</i>		<i>LR</i>				
Volume, v (vph)		<i>45</i>		<i>84</i>				
Capacity, c _m (vph)		<i>685</i>		<i>141</i>				
v/c ratio		<i>0.07</i>		<i>0.60</i>				
Queue length (95%)		<i>0.21</i>		<i>3.09</i>				
Control Delay (s/veh)		<i>10.6</i>		<i>62.5</i>				

LOS		<i>B</i>		<i>F</i>			
Approach delay (s/veh)	--	--		62.5			
Approach LOS	--	--		<i>F</i>			

TWO-WAY STOP CONTROL SUMMARY

General Information			Site Information					
Analyst	FJB		Intersection	#3				
Agency/Co.	Ingalls & Associates, LLP		Jurisdiction					
Date Performed	7/23/2008		Analysis Year	2013 Build				
Analysis Time Period	AM							
Project Description <i>Duncan Meadows</i>								
East/West Street: <i>McChesney Avenue</i>			North/South Street: <i>McChesney Avenue Extension</i>					
Intersection Orientation: <i>East-West</i>			Study Period (hrs): <i>0.25</i>					
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	0	12	62	13	16	0		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	13	68	14	17	0		
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--		
Median type	<i>Undivided</i>							
RT Channelized?			0			0		
Lanes	0	1	0	0	1	0		
Configuration			TR	LT				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	195	0	37	0	0	0		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	216	0	41	0	0	0		
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		N			N			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	0	0	0		
Configuration		LR						
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		LT		LR				
Volume, v (vph)		14		257				
Capacity, c _m (vph)		1529		923				
v/c ratio		0.01		0.28				
Queue length (95%)		0.03		1.14				
Control Delay (s/veh)		7.4		10.4				

LOS		A	B			
Approach delay (s/veh)	--	--	10.4			
Approach LOS	--	--	B			

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#3</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 Build</i>
Analysis Time Period	<i>PM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue</i>		North/South Street: <i>McChesney Avenue Extension</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments						
Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	<i>0</i>	<i>44</i>	<i>214</i>	<i>42</i>	<i>39</i>	<i>0</i>
Peak-hour factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)	<i>0</i>	<i>48</i>	<i>237</i>	<i>46</i>	<i>43</i>	<i>0</i>
Proportion of heavy vehicles, P _{HV}	<i>0</i>	--	--	<i>0</i>	--	--
Median type	<i>Undivided</i>					
RT Channelized?			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>
Configuration			<i>TR</i>	<i>LT</i>		
Upstream Signal		<i>0</i>			<i>0</i>	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	<i>151</i>	<i>0</i>	<i>37</i>	<i>0</i>	<i>0</i>	<i>0</i>
Peak-hour factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)	<i>167</i>	<i>0</i>	<i>41</i>	<i>0</i>	<i>0</i>	<i>0</i>
Proportion of heavy vehicles, P _{HV}	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent grade (%)	<i>0</i>			<i>0</i>		
Flared approach		<i>N</i>			<i>N</i>	
Storage		<i>0</i>			<i>0</i>	
RT Channelized?			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Configuration		<i>LR</i>				

Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		<i>LT</i>		<i>LR</i>				
Volume, v (vph)		<i>46</i>		<i>208</i>				
Capacity, c _m (vph)		<i>1289</i>		<i>704</i>				
v/c ratio		<i>0.04</i>		<i>0.30</i>				
Queue length (95%)		<i>0.11</i>		<i>1.23</i>				
Control Delay (s/veh)		<i>7.9</i>		<i>12.2</i>				

LOS		A	B			
Approach delay (s/veh)	--	--	12.2			
Approach LOS	--	--	B			

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	FJB	Intersection	#4
Agency/Co.	Ingalls & Associates, LLP	Jurisdiction	
Date Performed	7/23/2008	Analysis Year	2013 Build
Analysis Time Period	AM		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue Extension</i>		North/South Street: <i>Moonlawn Road</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	1	2	3	4	5	6
Movement						
	L	T	R	L	T	R
Volume	79	20	0	0	68	17
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	87	22	0	0	75	18
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	<i>Undivided</i>					
RT Channelized			0			0
Lanes	0	1	0	0	1	0
Configuration	LT					TR
Upstream Signal		0			0	

Minor Street	Westbound			Eastbound		
	7	8	9	10	11	12
Movement						
	L	T	R	L	T	R
Volume	0	0	0	12	0	111
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate, HFR	0	0	0	13	0	123
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Movement								
Lane Configuration	LT						LR	
v (vph)	87						136	
C (m) (vph)	1514						940	
v/c	0.06						0.14	
95% queue length	0.18						0.50	
Control Delay	7.5						9.5	
LOS	A						A	
Approach Delay	--	--					9.5	
Approach LOS	--	--					A	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>#4</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 Build</i>
Analysis Time Period	<i>PM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue Extension</i>		North/South Street: <i>Moonlawn Road</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	1	2	3	4	5	6
Movement	L	T	R	L	T	R
Volume	<i>140</i>	<i>93</i>	<i>0</i>	<i>0</i>	<i>30</i>	<i>23</i>
Peak-Hour Factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate, HFR	<i>155</i>	<i>103</i>	<i>0</i>	<i>0</i>	<i>33</i>	<i>25</i>
Percent Heavy Vehicles	<i>0</i>	<i>--</i>	<i>--</i>	<i>0</i>	<i>--</i>	<i>--</i>
Median Type	<i>Undivided</i>					
RT Channelized			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>
Configuration	<i>LT</i>					<i>TR</i>
Upstream Signal		<i>0</i>			<i>0</i>	

Minor Street	Westbound			Eastbound		
	7	8	9	10	11	12
Movement	L	T	R	L	T	R
Volume	<i>0</i>	<i>0</i>	<i>0</i>	<i>35</i>	<i>0</i>	<i>159</i>
Peak-Hour Factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate, HFR	<i>0</i>	<i>0</i>	<i>0</i>	<i>38</i>	<i>0</i>	<i>176</i>
Percent Heavy Vehicles	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent Grade (%)	<i>0</i>			<i>0</i>		
Flared Approach		<i>N</i>			<i>N</i>	
Storage		<i>0</i>			<i>0</i>	
RT Channelized			<i>0</i>			<i>0</i>
Lanes	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Configuration					<i>LR</i>	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
	1	4	7	8	9	10	11	12
Movement							<i>LR</i>	
Lane Configuration	<i>LT</i>							
v (vph)	<i>155</i>						<i>214</i>	
C (m) (vph)	<i>1559</i>						<i>870</i>	
v/c	<i>0.10</i>						<i>0.25</i>	
95% queue length	<i>0.33</i>						<i>0.97</i>	
Control Delay	<i>7.6</i>						<i>10.5</i>	
LOS	<i>A</i>						<i>B</i>	
Approach Delay	<i>--</i>	<i>--</i>					<i>10.5</i>	
Approach LOS	<i>--</i>	<i>--</i>					<i>B</i>	

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information				
Analyst	FJB			Intersection	#5			
Agency/Co.	Ingalls & Associates, LLP			Jurisdiction				
Date Performed	7/23/2008			Analysis Year	2013 Build			
Analysis Time Period	AM							
Project Description <i>Duncan Meadows</i>								
East/West Street: <i>Route 2</i>				North/South Street: <i>Moonlawn Road</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	90	105	0	0	405	22		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	100	116	0	0	450	24		
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--		
Median type	<i>Undivided</i>							
RT Channelized?			0			0		
Lanes	0	1	0	0	1	0		
Configuration	<i>LT</i>			<i>TR</i>				
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	17	0	163		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	0	0	18	0	181		
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		<i>N</i>			<i>N</i>			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	0	0	0		
Configuration				<i>LR</i>				
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	<i>LT</i>					<i>LR</i>		
Volume, v (vph)	100					199		
Capacity, c _m (vph)	1099					563		
v/c ratio	0.09					0.35		
Queue length (95%)	0.30					1.58		
Control Delay (s/veh)	8.6					14.8		

LOS	A			B		
Approach delay (s/veh)	--	--				14.8
Approach LOS	--	--				B

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	FJB	Intersection	#5
Agency/Co.	Ingalls & Associates, LLP	Jurisdiction	
Date Performed	7/23/2008	Analysis Year	2013 Build
Analysis Time Period	PM		

Project Description <i>Duncan Meadows</i>	
East/West Street: <i>Route 2</i>	North/South Street: <i>Moonlawn Road</i>
Intersection Orientation: <i>East-West</i>	Study Period (hrs): <i>0.25</i>

Vehicle Volumes and Adjustments

Major Street Movement	Eastbound			Westbound		
	1 L	2 T	3 R	4 L	5 T	6 R
Volume (veh/h)	242	535	0	0	191	28
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	268	594	0	0	212	31
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--
Median type	<i>Undivided</i>					
RT Channelized?			0			0
Lanes	0	1	0	0	1	0
Configuration	<i>LT</i>			<i>TR</i>		
Upstream Signal		0			0	

Minor Street Movement	Northbound			Southbound		
	7 L	8 T	9 R	10 L	11 T	12 R
Volume (veh/h)	0	0	0	41	0	144
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)	0	0	0	45	0	160
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		<i>N</i>			<i>N</i>	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration				<i>LR</i>		

Control Delay, Queue Length, Level of Service

Approach Movement	EB	WB	Northbound			Southbound		
			7	8	9	10	11	12
Lane Configuration	<i>LT</i>					<i>LR</i>		
Volume, v (vph)	268					205		
Capacity, c _m (vph)	1335					384		
v/c ratio	0.20					0.53		
Queue length (95%)	0.75					3.03		
Control Delay (s/veh)	8.4					24.6		

LOS	A				C
Approach delay (s/veh)	--	--			24.6
Approach LOS	--	--			C

SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	# 6		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	8/28/2008			Jurisdiction	Town of Brunswick		
Time Period	AM			Analysis Year	2013 Build		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane group	L	TR		L	TR		L	T	R	L	TR	
Volume (vph)	39	433	42	77	986	28	154	108	113	64	156	59
% Heavy veh	17	13	8	0	7	8	3	6	4	8	5	8
PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.69	0.69	0.69	0.86	0.86	0.86
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0	0		0
Lane Width	11.0	11.0		11.0	11.0		11.0	11.0	12.0	11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0	0	0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Phasing	EB Only	EW Perm	WB Only	Peds Only	NB Only	NS Perm	SB Only	08				
Timing	G = 10.0	G = 21.1	G = 10.0	G = 27.0	G = 17.9	G = 1.0	G = 16.4	G =				
	Y = 0	Y = 5	Y = 5	Y =	Y = 0	Y = 5	Y = 5	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 123.3					

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	Adj. flow rate	44	534		92	1207		223	157	164	74	250
Lane group cap.	179	772		341	951		303	265	363	339	302	
v/c ratio	0.25	0.69		0.27	1.27		0.74	0.59	0.45	0.22	0.83	
Green ratio	0.25	0.25		0.29	0.29		0.15	0.15	0.23	0.18	0.18	
Unif. delay d1	36.8	41.8		36.3	43.6		47.1	48.7	40.5	40.6	48.6	
Delay factor k	0.11	0.26		0.11	0.50		0.29	0.18	0.11	0.11	0.37	
Increm. delay d2	0.7	2.7		0.4	129.5		9.0	3.5	0.9	0.3	17.2	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control delay	37.5	44.5		36.8	173.1		56.2	52.2	41.4	41.0	65.8	
Lane group LOS	D	D		D	F		E	D	D	D	E	
Apprch. delay	43.9			163.5			50.6			60.1		
Approach LOS	D			F			D			E		
Intersec. delay	103.7			Intersection LOS						F		

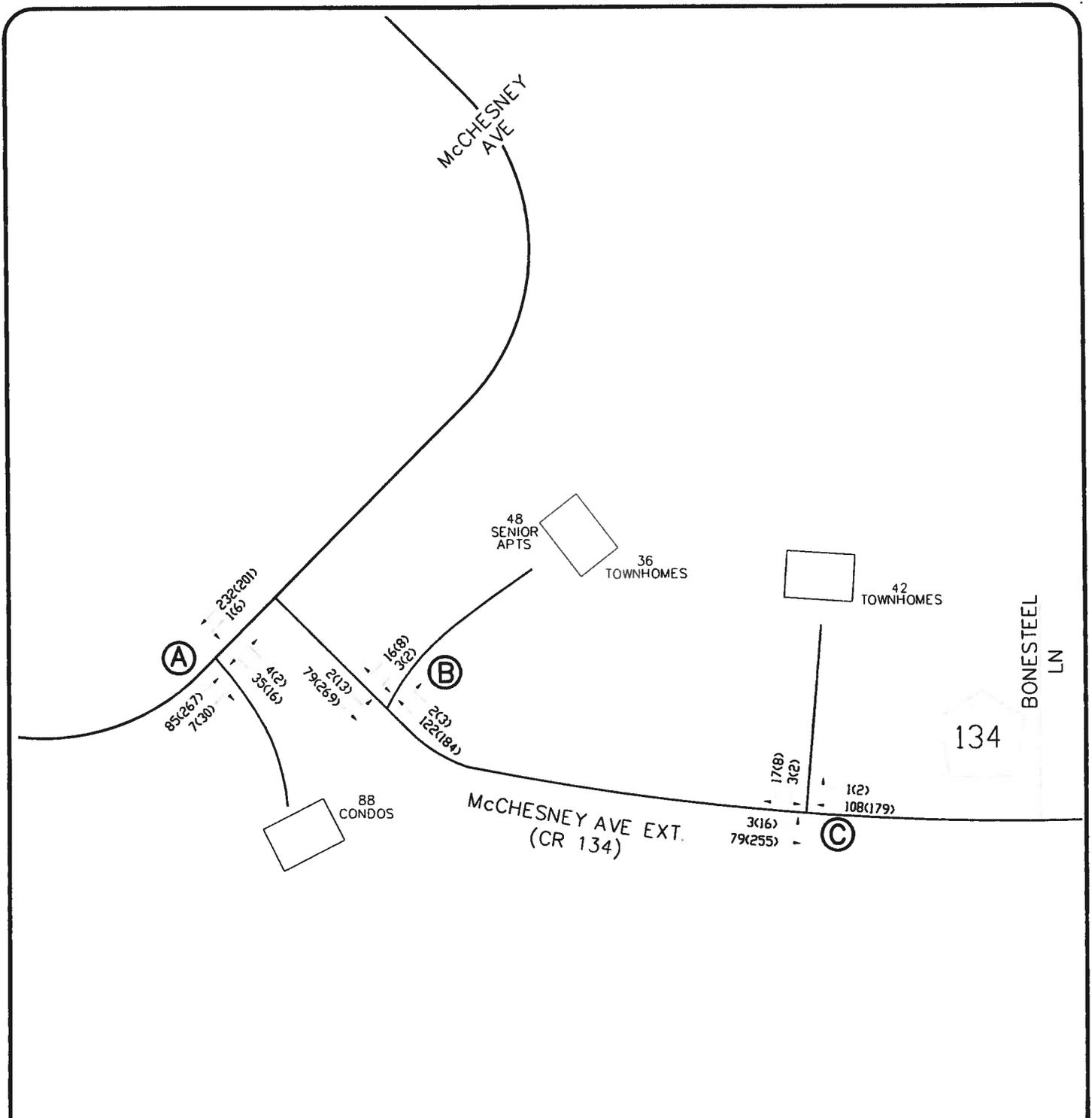
SHORT REPORT

General Information				Site Information			
Analyst	FJB			Intersection	# 6		
Agency or Co.	Ingalls & Associates, LLP			Area Type	All other areas		
Date Performed	8/28/2008			Jurisdiction	Town of Brunswick		
Time Period	PM			Analysis Year	2013 Build		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Num. of Lanes	1	2	0	1	2	0	1	1	1	1	1	0
Lane group	L	TR		L	TR		L	T	R	L	TR	
Volume (vph)	54	1011	88	132	727	63	96	140	250	123	105	32
% Heavy veh	17	13	8	0	7	8	3	6	4	8	5	8
PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.69	0.69	0.69	0.86	0.86	0.86
Actuated (P/A)	A	A	A	A	A	A	A	A	A	A	A	A
Startup lost time	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Ext. eff. green	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Arrival type	3	3		3	3		3	3	3	3	3	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	0		0	0		0	0		0	0		0
Lane Width	11.0	11.0		11.0	11.0		11.0	11.0	12.0	11.0	11.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/hr												
Bus stops/hr	0	0		0	0		0	0	0	0	0	
Unit Extension	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Phasing	WB Only	Thru & RT	EB Only	Peds Only	SB Only	Thru & RT	NB Only	08				
Timing	G = 30.0	G = 30.0	G = 30.0	G = 27.0	G = 20.0	G = 10.0	G = 20.0	G =				
	Y =	Y = 5	Y = 5	Y =	Y =	Y = 5	Y = 5	Y =				
Duration of Analysis (hrs) = 0.25							Cycle Length C = 187.0					

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	Adj. flow rate	61	1235		157	940		139	203	362	143	159
Lane group cap.	239	1066		280	1035		181	324	291	173	269	
v/c ratio	0.26	1.16		0.56	0.91		0.77	0.63	1.24	0.83	0.59	
Green ratio	0.16	0.35		0.16	0.32		0.11	0.19	0.19	0.11	0.16	
Unif. delay d1	68.7	61.0		72.4	60.9		81.2	70.0	76.0	81.8	72.8	
Delay factor k	0.11	0.50		0.16	0.43		0.32	0.21	0.50	0.36	0.18	
Increm. delay d2	0.6	82.1		2.5	11.5		17.9	3.8	135.4	26.9	3.4	
PF factor	1.000	1.000		1.000	1.000		1.000	1.000	1.000	1.000	1.000	
Control delay	69.3	143.1		75.0	72.4		99.2	73.8	211.4	108.7	76.2	
Lane group LOS	E	F		E	E		F	E	F	F	E	
Apprch. delay	139.6			72.8			149.5			91.6		
Approach LOS	F			E			F			F		
Intersec. delay	115.8			Intersection LOS						F		

Site Entrances



(A) INTERSECTION DESIGNATOR

AM(PM) PEAK HOUR

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PROPOSED VOLUMES 2013
SITE ENTRANCES
DUNCAN MEADOWS

TOWN OF BRUNSWICK
COUNTY OF RENSSELAER STATE OF NEW YORK

DRAWN BY: T.D.L.

CADD FILE: PLOT

CHECKED BY: F.J.B.

JOB NO. 07-072

SCALE: N.T.S.

DATE:
07-21-2008

SHEET 1 OF 1

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>A</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 Site Entrances</i>
Analysis Time Period	<i>AM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue</i>		North/South Street: <i>A</i>	
Intersection Orientation: <i>North-South</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
	1	2	3	4	5	6
Movement						
	L	T	R	L	T	R
Volume	<i>35</i>	<i>0</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>0</i>
Peak-Hour Factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate, HFR	<i>38</i>	<i>0</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent Heavy Vehicles	<i>0</i>	<i>--</i>	<i>--</i>	<i>0</i>	<i>--</i>	<i>--</i>
Median Type	<i>Undivided</i>					
RT Channelized			<i>0</i>			<i>0</i>
Lanes	<i>1</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>0</i>
Configuration	<i>L</i>		<i>R</i>			
Upstream Signal		<i>0</i>			<i>0</i>	

Minor Street	Westbound			Eastbound		
	7	8	9	10	11	12
Movement						
	L	T	R	L	T	R
Volume	<i>1</i>	<i>232</i>	<i>0</i>	<i>0</i>	<i>85</i>	<i>7</i>
Peak-Hour Factor, PHF	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate, HFR	<i>1</i>	<i>257</i>	<i>0</i>	<i>0</i>	<i>94</i>	<i>7</i>
Percent Heavy Vehicles	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent Grade (%)		<i>0</i>			<i>0</i>	
Flared Approach		<i>N</i>			<i>N</i>	
Storage		<i>0</i>			<i>0</i>	
RT Channelized			<i>0</i>			<i>0</i>
Lanes	<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>
Configuration	<i>L</i>	<i>T</i>			<i>T</i>	<i>R</i>

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
			7	8	9	10	11	12
Movement	<i>1</i>	<i>4</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>
Lane Configuration	<i>L</i>		<i>L</i>	<i>T</i>			<i>T</i>	<i>R</i>
v (vph)	<i>38</i>		<i>1</i>	<i>257</i>			<i>94</i>	<i>7</i>
C (m) (vph)	<i>1636</i>		<i>756</i>	<i>799</i>			<i>795</i>	<i>1091</i>
v/c	<i>0.02</i>		<i>0.00</i>	<i>0.32</i>			<i>0.12</i>	<i>0.01</i>
95% queue length	<i>0.07</i>		<i>0.00</i>	<i>1.39</i>			<i>0.40</i>	<i>0.02</i>
Control Delay	<i>7.3</i>		<i>9.8</i>	<i>11.6</i>			<i>10.1</i>	<i>8.3</i>
LOS	<i>A</i>		<i>A</i>	<i>B</i>			<i>B</i>	<i>A</i>
Approach Delay	<i>--</i>	<i>--</i>	<i>11.6</i>			<i>10.0</i>		
Approach LOS	<i>--</i>	<i>--</i>	<i>B</i>			<i>B</i>		

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TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information			
Analyst	FJB			Intersection	A		
Agency/Co.	Ingalls & Associates, LLP			Jurisdiction			
Date Performed	7/23/2008			Analysis Year	2013 Site Entrances		
Analysis Time Period	PM						
Project Description <i>Duncan Meadows</i>							
East/West Street: <i>McChesney Avenue</i>				North/South Street: <i>A</i>			
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>			
Vehicle Volumes and Adjustments							
Major Street	Eastbound			Westbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)	0	267	30	6	201	0	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate (veh/h)	0	296	33	6	223	0	
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--	
Median type	<i>Undivided</i>						
RT Channelized?			0			0	
Lanes	0	1	1	1	1	0	
Configuration		T	R	L	T		
Upstream Signal		0			0		
Minor Street	Northbound			Southbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)	16	0	2	0	0	0	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate (veh/h)	17	0	2	0	0	0	
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0	
Percent grade (%)	0			0			
Flared approach		N			N		
Storage		0			0		
RT Channelized?			0			0	
Lanes	1	0	1	0	0	0	
Configuration	L		R				
Control Delay, Queue Length, Level of Service							
Approach	EB	WB	Northbound			Southbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		L	L		R		
Volume, v (vph)		6	17		2		
Capacity, c _m (vph)		1242	510		748		
v/c ratio		0.00	0.03		0.00		
Queue length (95%)		0.01	0.10		0.01		
Control Delay (s/veh)		7.9	12.3		9.8		

LOS		A	B		A		
Approach delay (s/veh)	--	--	12.0				
Approach LOS	--	--	B				

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information				
Analyst	FJB			Intersection	B			
Agency/Co.	Ingalls & Associates, LLP			Jurisdiction				
Date Performed	7/23/2008			Analysis Year	2013 Site Entrances			
Analysis Time Period	AM							
Project Description <i>Duncan Meadows</i>								
East/West Street: <i>McChesney Avenue Extension</i>				North/South Street: <i>B</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	2	79	0	0	122	2		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	2	87	0	0	135	2		
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--		
Median type	<i>Undivided</i>							
RT Channelized?			0			0		
Lanes	1	1	0	0	1	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	3	0	16		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	0	0	3	0	17		
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		N			N			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
Volume, v (vph)	2					3		17
Capacity, c _m (vph)	1459					766		919
v/c ratio	0.00					0.00		0.02
Queue length (95%)	0.00					0.01		0.06
Control Delay (s/veh)	7.5					9.7		9.0

LOS	A				A		A
Approach delay (s/veh)	--	--				9.1	
Approach LOS	--	--				A	

TWO-WAY STOP CONTROL SUMMARY

General Information				Site Information				
Analyst	FJB			Intersection	B			
Agency/Co.	Ingalls & Associates, LLP			Jurisdiction				
Date Performed	7/23/2008			Analysis Year	2013 Site Entrances			
Analysis Time Period	PM							
Project Description <i>Duncan Meadows</i>								
East/West Street: <i>McChesney Avenue Extension</i>				North/South Street: <i>B</i>				
Intersection Orientation: <i>East-West</i>				Study Period (hrs): <i>0.25</i>				
Vehicle Volumes and Adjustments								
Major Street	Eastbound			Westbound				
Movement	1	2	3	4	5	6		
	L	T	R	L	T	R		
Volume (veh/h)	13	269	0	0	184	3		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	14	298	0	0	204	3		
Proportion of heavy vehicles, P _{HV}	0	--	--	0	--	--		
Median type	<i>Undivided</i>							
RT Channelized?			0			0		
Lanes	1	1	0	0	1	1		
Configuration	L	T			T	R		
Upstream Signal		0			0			
Minor Street	Northbound			Southbound				
Movement	7	8	9	10	11	12		
	L	T	R	L	T	R		
Volume (veh/h)	0	0	0	2	0	8		
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		
Hourly Flow Rate (veh/h)	0	0	0	2	0	8		
Proportion of heavy vehicles, P _{HV}	0	0	0	0	0	0		
Percent grade (%)	0			0				
Flared approach		N			N			
Storage		0			0			
RT Channelized?			0			0		
Lanes	0	0	0	1	0	1		
Configuration				L		R		
Control Delay, Queue Length, Level of Service								
Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	L					L		R
Volume, v (vph)	14					2		8
Capacity, c _m (vph)	1376					508		842
v/c ratio	0.01					0.00		0.01
Queue length (95%)	0.03					0.01		0.03
Control Delay (s/veh)	7.6					12.1		9.3

LOS	A				B		A
Approach delay (s/veh)	--	--			9.9		
Approach LOS	--	--			A		

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>C</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 Site Entrances</i>
Analysis Time Period	<i>AM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue Extension</i>		North/South Street: <i>C</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		3	79	0	0	108	1
Peak-hour factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)		3	87	0	0	120	1
Proportion of heavy vehicles, P _{HV}		0	--	--	0	--	--
Median type	<i>Undivided</i>						
RT Channelized?				0			0
Lanes		1	1	0	0	1	1
Configuration		L	T			T	R
Upstream Signal			0			0	

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		0	0	0	3	0	17
Peak-hour factor, PHF		0.90	0.90	0.90	0.90	0.90	0.90
Hourly Flow Rate (veh/h)		0	0	0	3	0	18
Proportion of heavy vehicles, P _{HV}		0	0	0	0	0	0
Percent grade (%)		0			0		
Flared approach			N			N	
Storage			0			0	
RT Channelized?				0			0
Lanes		0	0	0	1	0	1
Configuration					L		R

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
			Movement	7	8	9	10	11
			1	4				
Lane Configuration			L				L	R
Volume, v (vph)			3				3	18
Capacity, c _m (vph)			1479				778	937
v/c ratio			0.00				0.00	0.02
Queue length (95%)			0.01				0.01	0.06
Control Delay (s/veh)			7.4				9.6	8.9

LOS	A				A		A
Approach delay (s/veh)	--	--				9.0	
Approach LOS	--	--				A	

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	<i>FJB</i>	Intersection	<i>C</i>
Agency/Co.	<i>Ingalls & Associates, LLP</i>	Jurisdiction	
Date Performed	<i>7/23/2008</i>	Analysis Year	<i>2013 Site Entrances</i>
Analysis Time Period	<i>PM</i>		
Project Description <i>Duncan Meadows</i>			
East/West Street: <i>McChesney Avenue Extension</i>		North/South Street: <i>C</i>	
Intersection Orientation: <i>East-West</i>		Study Period (hrs): <i>0.25</i>	

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound			
	Movement	1	2	3	4	5	6
		L	T	R	L	T	R
Volume (veh/h)		<i>16</i>	<i>255</i>	<i>0</i>	<i>0</i>	<i>179</i>	<i>2</i>
Peak-hour factor, PHF		<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)		<i>17</i>	<i>283</i>	<i>0</i>	<i>0</i>	<i>198</i>	<i>2</i>
Proportion of heavy vehicles, P _{HV}		<i>0</i>	--	--	<i>0</i>	--	--
Median type	<i>Undivided</i>						
RT Channelized?				<i>0</i>			<i>0</i>
Lanes		<i>1</i>	<i>1</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>1</i>
Configuration		<i>L</i>	<i>T</i>			<i>T</i>	<i>R</i>
Upstream Signal			<i>0</i>			<i>0</i>	

Minor Street	Northbound			Southbound			
	Movement	7	8	9	10	11	12
		L	T	R	L	T	R
Volume (veh/h)		<i>0</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>8</i>
Peak-hour factor, PHF		<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>	<i>0.90</i>
Hourly Flow Rate (veh/h)		<i>0</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>8</i>
Proportion of heavy vehicles, P _{HV}		<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
Percent grade (%)		<i>0</i>			<i>0</i>		
Flared approach			<i>N</i>			<i>N</i>	
Storage			<i>0</i>			<i>0</i>	
RT Channelized?				<i>0</i>			<i>0</i>
Lanes		<i>0</i>	<i>0</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>1</i>
Configuration					<i>L</i>		<i>R</i>

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
			7	8	9	10	11	12
Movement	<i>1</i>	<i>4</i>						
Lane Configuration	<i>L</i>					<i>L</i>		<i>R</i>
Volume, v (vph)	<i>17</i>					<i>2</i>		<i>8</i>
Capacity, c _m (vph)	<i>1384</i>					<i>517</i>		<i>848</i>
v/c ratio	<i>0.01</i>					<i>0.00</i>		<i>0.01</i>
Queue length (95%)	<i>0.04</i>					<i>0.01</i>		<i>0.03</i>
Control Delay (s/veh)	<i>7.6</i>					<i>12.0</i>		<i>9.3</i>

LOS	A			B	A
Approach delay (s/veh)	--	--		9.8	
Approach LOS	--	--		A	