2012 BUILD CONDITIONS

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: ELM STREET

Inter.: AM1BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	3	0	1	3	1
LGConfig					LTR		L	TR		L	T	R
Volume				139	15	98	235	1703	141	167	2053	590
Lane Width					15.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol						0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A	A		
Thru						Thru	A			
Right						Right	A			
Peds		X				Peds	X	X		
WB Left		A			SB	Left	A	A		
Thru		A				Thru	A			
Right		A				Right	A			
Peds		X				Peds	X	X		
NB Right					EB	Right				
SB Right					WB	Right				
Green		20.0					45.0	10.0		
Yellow		3.0					3.0	3.0		
All Red		2.0					2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	402	1811	0.68	0.22	36.8	D	36.8	D
Northbound								
L	367	1718	0.69	0.67	37.0	D		
TR	2432	4863	0.82	0.50	21.6	C	23.3	C
Southbound								
L	367	1718	0.50	0.67	28.9	C		
T	2465	4929	0.91	0.50	25.9	C	26.7	C
R	750	1500	0.85	0.50	29.2	C		

Intersection Delay = 25.8 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM1BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ELM STREET N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				139	15	98	235	1703	141	167	2053	590
% Heavy Veh				5	5	5	5	5	5	5	5	5
PHF				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PK 15 Vol				38	4	27	64	463	38	45	558	160
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	3	0	1	3	1
LGConfig					LTR		L	TR		L	T	R
Lane Width					15.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol					0			0			0	
Adj Flow					274		255	2004		182	2232	641
%InSharedLn												
Prop LTs					0.551		1.000	0.000		1.000	0.000	
Prop RTs				0.391			0.076			0.000	1.000	
Peds Bikes	0			25	0		25	0		25	0	
Buses					0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type					3		3	3		3	3	3
Unit Ext.					3.0		3.0	3.0		3.0	3.0	3.0
I Factor					1.000			1.000			1.000	
Lost Time					2.0		2.0	2.0		2.0	2.0	2.0
Ext of g					2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.2			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: NEW SCHOOL STREET

Inter.: AM2BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	3	0	1	3	0	0	0	0	0	0	0
LGConfig		TR		L	T							
Volume		1845	145	102	1922							
Lane Width		12.0		12.0	12.0							
RTOR Vol			0									

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru	A				Thru			
Right	A				Right			
Peds	X	X			Peds			
WB Left	A	A			SB Left			
Thru	A	A			Thru			
Right					Right			
Peds	X	X			Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	70.0	10.0						
Yellow	3.0	3.0						
All Red	2.0	2.0						

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	3787	4869	0.57	0.78	4.2	A	4.2	A
Westbound								
L	468	1718	0.24	1.00	6.4	A		
T	4929	4929	0.42	1.00	0.1	A	0.4	A
Northbound								
Southbound								

Intersection Delay = 2.3 (sec/veh) Intersection LOS = A

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM2BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEW SCHOOL STREET N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		1845	145	102	1922							
% Heavy Veh		5	5	5	5							
PHF		0.92	0.92	0.92	0.92							
PK 15 Vol		501	39	28	522							
Hi Ln Vol												
% Grade		0			0							
Ideal Sat		1900		1900	1900							
ParkExist												
NumPark												
No. Lanes	0	3	0	1	3	0	0	0	0	0	0	0
LGConfig		TR		L	T							
Lane Width		12.0		12.0	12.0							
RTOR Vol			0									
Adj Flow		2163		111	2089							
%InSharedLn												
Prop LTs		0.000		1.000	0.000							
Prop RTs	0.073			0.000								
Peds Bikes	25	0										
Buses		0		0	0							
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0							
Arriv. Type		3		3	3							
Unit Ext.		3.0		3.0	3.0							
I Factor		1.000			1.000							
Lost Time		2.0		2.0	2.0							
Ext of g		2.0		2.0	2.0							
Ped Min g		3.4										

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: NEPPERHAN AVENUE

Inter.: AM3BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEW MAIN STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	3	0	1	3	0	1	0	1	1	1	1
LGConfig		TR		L	T		L		R	L	LT	R
Volume		1327	49	327	1595		126		216	447	38	175
Lane Width		12.0		12.0	12.0		12.0		12.0	12.0	12.0	12.0
RTOR Vol			0						0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A	A			Thru	A		
Right					Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0	15.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	1904	4897	0.79	0.39	26.4	C	26.4	C
Westbound								
L	461	1715	0.77	0.61	36.8	D		
T	3012	4929	0.58	0.61	10.8	B	15.2	B
Northbound								
L	225	811	0.61	0.28	33.0	C		
							30.9	C
R	416	1497	0.56	0.28	29.6	C		
Southbound								
L	465	1673	0.57	0.28	29.7	C		
LT	471	1697	0.55	0.28	29.1	C	28.9	C
R	416	1497	0.46	0.28	27.7	C		

Intersection Delay = 22.2 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM3BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN AVENUE N/S St: NEW MAIN STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		1327	49	327	1595		126		216	447	38	175
% Heavy Veh		5	5	5	5		5		5	5	5	5
PHF		0.92	0.92	0.92	0.92		0.92		0.92	0.92	0.92	0.92
PK 15 Vol		361	13	89	433		34		59	121	10	48
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900		1900	1900		1900		1900	1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	3	0	1	3	0	1	0	1	1	1	1
LGConfig		TR		L	T		L		R	L	LT	R
Lane Width		12.0		12.0	12.0		12.0		12.0	12.0	12.0	12.0
RTOR Vol			0						0			0
Adj Flow		1495		355	1734		137		235	267	260	190
%InSharedLn										45		
Prop LTs		0.000		1.000	0.000		1.000				0.841	
Prop RTs	0.035			0.000				1.000		0.000	1.000	
Peds Bikes	25	0					25	0		25	0	
Buses		0		0	0		0		0	0	0	
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0		0.0		0.0	0.0	0.0	0.0
Arriv. Type		3		3	3		3		3	3	3	3
Unit Ext.		3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0		2.0	2.0		2.0		2.0	2.0	2.0	2.0
Ext of g		2.0		2.0	2.0		2.0		2.0	2.0	2.0	2.0
Ped Min g		3.4						3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: NEPPERHAN AVENUE

Inter.: AM4BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	1	1	1	1	1	1	0
LGConfig	L	TR		L	T	R	L	T	R	L	TR	
Volume	48	1113	127	449	959	222	94	210	217	46	50	13
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
RTOR Vol			0			0			72			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A	A			NB Left	A			
Thru	A	A			Thru	A			
Right	A	A			Right	A			
Peds	X	X	X		Peds	X			
WB Left		A	A		SB Left	A			
Thru		A	A		Thru	A			
Right		A	A		Right	A			
Peds	X	X	X		Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	10.0	25.0	25.0			20.0			
Yellow	3.0	3.0	3.0			3.0			
All Red	2.0	2.0	2.0			2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	243	1710	0.21	0.40	21.1	C		
TR	1353	3382	1.00	0.40	53.5	D	52.3	D
Westbound								
L	586	1714	0.83	0.55	40.1	D		
T	1895	3445	0.55	0.55	14.9	B	21.5	C
R	827	1503	0.29	0.55	12.3	B		
Northbound								
L	249	1246	0.41	0.20	36.0	D		
T	362	1810	0.63	0.20	40.1	D	38.5	D
R	296	1480	0.53	0.20	37.7	D		
Southbound								
L	146	730	0.34	0.20	35.8	D		
TR	348	1740	0.20	0.20	33.6	C	34.5	C

Intersection Delay = 35.5 (sec/veh) Intersection LOS = D

Phone: Fax:
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OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM4BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN AVENUE N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	48	1113	127	449	959	222	94	210	217	46	50	13
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	13	302	35	122	261	60	26	57	59	12	14	4
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	1	1	1	1	1	1	0
LGConfig	L	TR		L	T	R	L	T	R	L	TR	
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
RTOR Vol		0			0			72			0	
Adj Flow	52	1348		488	1042	241	102	228	158	50	68	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs	0.102			0.000	1.000		0.000	1.000		0.206		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0	0	0	0	0	0	0	
%InProtPhase	0.0			0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Arriv. Type	3	3		3	3	3	3	3	3	3	3	
Unit Ext.	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Ext of g	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: HUDSON STREET

Inter.: AM5BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	0	0
LGConfig		LR						T				
Volume	246		113					422				
Lane Width		15.0						15.0				
RTOR Vol			0									

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru					Thru	A		
Right	A				Right			
Peds	X				Peds	X		
WB Left					SB Left			
Thru					Thru			
Right					Right			
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	40.0					40.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	804	1810	0.49	0.44	18.2	B	18.2	B
Westbound								
Northbound								
T	884	1990	0.52	0.44	18.6	B	18.6	B
Southbound								

Intersection Delay = 18.4 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM5BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HUDSON STREET N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	246		113					422				
% Heavy Veh	5		5					5				
PHF	0.92		0.92					0.92				
PK 15 Vol	67		31					115				
Hi Ln Vol												
% Grade		0						0				
Ideal Sat		1900						1900				
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	0	0
LGConfig		LR						T				
Lane Width		15.0						15.0				
RTOR Vol			0									
Adj Flow		390						459				
%InSharedLn												
Prop LTs		0.685						0.000				
Prop RTs	0.315						0.000					
Peds Bikes	50		0	0								
Buses		0						0				
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0				
Arriv. Type		3						3				
Unit Ext.		3.0						3.0				
I Factor		1.000						1.000				
Lost Time		2.0						2.0				
Ext of g		2.0						2.0				
Ped Min g		3.5			3.2							

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: AM6BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	0	1	0	0	0	0
LGConfig					TR			LT				
Volume					147	78	123	240				
Lane Width					12.0			15.0				
RTOR Vol						0						

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru	A		
Right					Right			
Peds		X			Peds	X		
WB Left					SB Left			
Thru		A			Thru			
Right		A			Right			
Peds		X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green		40.0				40.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	752	1691	0.33	0.44	16.5	B	16.5	B
Northbound								
LT	870	1957	0.45	0.44	17.8	B	17.8	B
Southbound								

Intersection Delay = 17.3 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM6BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume					147	78	123	240				
% Heavy Veh					5	5	5	5				
PHF					0.92	0.92	0.92	0.92				
PK 15 Vol					40	21	33	65				
Hi Ln Vol												
% Grade					0			0				
Ideal Sat					1900			1900				
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	0	1	0	0	0	0
LGConfig					TR			LT				
Lane Width					12.0			15.0				
RTOR Vol						0						
Adj Flow					245			395				
%InSharedLn												
Prop LTs					0.000			0.339				
Prop RTs				0.347			0.000					
Peds Bikes				50	0					0		
Buses					0			0				
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0				
Arriv. Type					3			3				
Unit Ext.					3.0			3.0				
I Factor					1.000			1.000				
Lost Time					2.0			2.0				
Ext of g					2.0			2.0				
Ped Min g					3.5						3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: AM7BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: PALISADE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	0	0	1	0	1
LGConfig								LR		L		R
Volume							5		193	454		220
Lane Width								15.0		12.0		12.0
RTOR Vol									0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru			
Right					Right	A		
Peds					Peds	X	X	
WB Left					SB Left		A	
Thru					Thru			
Right					Right		A	
Peds					Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green						40.0	40.0	
Yellow						3.0	3.0	
All Red						2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
Northbound								
LR	724	1629	0.30	0.44	16.2	B	16.2	B
Southbound								
L	721	1623	0.68	0.44	22.6	C		
							20.8	C
R	645	1452	0.37	0.44	17.0	B		

Intersection Delay = 19.8 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM7BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: PALISADE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume							5		193	454		220
% Heavy Veh							5		5	5		5
PHF							0.92		0.92	0.92		0.92
PK 15 Vol							2		52	123		60
Hi Ln Vol												
% Grade								0			0	
Ideal Sat								1900		1900		1900
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	0	0	1	0	1
LGConfig								LR		L		R
Lane Width								15.0		12.0		12.0
RTOR Vol									0			0
Adj Flow								215		493		239
%InSharedLn												
Prop LTs								0.023				
Prop RTs							0.977					1.000
Peds Bikes							50		0	50		0
Buses								0		0		0
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet								0.0		0.0		0.0
Arriv. Type								3		3		3
Unit Ext.								3.0		3.0		3.0
I Factor								1.000			1.000	
Lost Time								2.0		2.0		2.0
Ext of g								2.0		2.0		2.0
Ped Min g								3.5			3.5	

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM8BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PALISADE AVENUE
North/South Street: LOCUST HILL AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	39	168	46	0	575	102	0	59	17	74	82	108
% Thrus Left Lane						50						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			T	TR			R	
PHF			0.92	0.92			0.92	
Flow Rate			311	423			117	
% Heavy Veh			5	5			5	
No. Lanes			2				1	
Opposing-Lanes			0				0	
Conflicting-lanes			1				2	
Geometry group			1				1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			311	423			117	
Left-Turn			0	0			0	
Right-Turn			0	110			117	
Prop. Left-Turns			0.0	0.0			0.0	
Prop. Right-Turns			0.0	0.3			1.0	
Prop. Heavy Vehicle			0.0	0.0			0.0	
Geometry Group			1				1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2				0.2	

hRT-adj			-0.6				-0.6	
hHV-adj			1.7				1.7	
hadj, computed			0.1	-0.1			-0.5	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			311	423			117	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.28	0.38			0.10	
hd, final value			4.28	4.12			4.66	
x, final value			0.37	0.48			0.15	
Move-up time, m			2.0				2.0	
Service Time			2.3	2.1			2.7	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			311	423			117	
Service Time			2.3	2.1			2.7	
Utilization, x			0.37	0.48			0.15	
Dep. headway, hd			4.28	4.12			4.66	
Capacity			561	673			367	
Delay			9.77	10.94			8.49	
LOS			A	B			A	
Approach:								
Delay				10.44				8.49
LOS				B				A

Intersection Delay 10.17 Intersection LOS B

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: PALISADES AVENUE / ELM STREET

Inter.: AM9BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: PALISADE AVE / NEW SCHOOL ST

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	2	0	0	1	0	0	1	0
LGConfig					LTR			LT			TR	
Volume				49	545	166	31	16			25	306
Lane Width					12.0			12.0			12.0	
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A			
Thru					Thru	A			
Right					Right				
Peds	X				Peds	X			
WB Left	A				SB Left				
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	35.0					35.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	1444	3301	0.57	0.44	17.4	B	17.4	B
Northbound								
LT	580	1326	0.09	0.44	13.2	B	13.2	B
Southbound								
TR	682	1559	0.53	0.44	17.2	B	17.2	B

Intersection Delay = 17.2 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM9BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: PALISADES AVENUE / ELM STREET N/S St: PALISADE AVE / NEW SCHOOL ST

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				49	545	166	31	16			25	306
% Heavy Veh				5	5	5	5	5			5	5
PHF				0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol				13	148	45	8	4			7	83
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	2	0	0	1	0	0	1	0
LGConfig					LTR			LT			TR	
Lane Width					12.0			12.0			12.0	
RTOR Vol						0						0
Adj Flow					825			51			360	
%InSharedLn												
Prop LTs					0.064			0.667			0.000	
Prop RTs				0.218			0.000			0.925		
Peds Bikes	0			25	0					25	0	
Buses					0			0			0	
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0			0.0	
Arriv. Type					3			3			3	
Unit Ext.					3.0			3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0			2.0	
Ext of g					2.0			2.0			2.0	
Ped Min g		3.2			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: AM10BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	8	81	24	99	109	80	65	234	50	130	327	49
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	30.0				50.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	508	1523	0.24	0.33	22.0	C	22.0	C
Westbound								
LTR	435	1305	0.72	0.33	32.0	C	32.0	C
Northbound								
LTR	737	1326	0.51	0.56	13.1	B	13.1	B
Southbound								
LTR	713	1283	0.77	0.56	20.7	C	20.7	C

Intersection Delay = 21.3 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM10BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	8	81	24	99	109	80	65	234	50	130	327	49
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	2	22	7	27	30	22	18	64	14	35	89	13
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		123			313			379			549	
%InSharedLn												
Prop LTs		0.073			0.345			0.187			0.257	
Prop RTs		0.211			0.278			0.142			0.097	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: AM11BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: N. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	1	1	0
LGConfig		LTR			LTR			LTR		L	TR	
Volume	26	210	7	82	175	116	21	257	131	219	276	86
Lane Width		12.0			15.0			12.0		10.0	10.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0				45.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	564	1450	0.47	0.39	21.2	C	21.2	C
Westbound								
LTR	585	1503	0.69	0.39	26.5	C	26.5	C
Northbound								
LTR	750	1500	0.59	0.50	17.2	B	17.2	B
Southbound								
L	334	667	0.71	0.50	24.5	C		
TR	729	1457	0.54	0.50	16.2	B	19.3	B

Intersection Delay = 20.7 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM11BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: N. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	26	210	7	82	175	116	21	257	131	219	276	86
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	7	57	2	22	48	32	6	70	36	60	75	23
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	1	1	0
LGConfig		LTR			LTR			LTR		L	TR	
Lane Width		12.0			15.0			12.0		10.0	10.0	
RTOR Vol		0			0			0			0	
Adj Flow		264			405			444		238	393	
%InSharedLn												
Prop LTs		0.106			0.220			0.052		1.000	0.000	
Prop RTs	0.030			0.311			0.320			0.237		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0		0	0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0		0.0	0.0	
Arriv. Type		3			3			3		3	3	
Unit Ext.		3.0			3.0			3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0		2.0	2.0	
Ext of g		2.0			2.0			2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM12BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: ASHFORD AVENUE
North/South Street: LOCUST HILL ROAD
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		443	83	74	285	
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	
Hourly Flow Rate, HFR		481	90	80	309	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	32		47			
Peak Hour Factor, PHF	0.92		0.92			
Hourly Flow Rate, HFR	34		51			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage		No	/			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		80		85				
C(m) (vph)		987		367				
v/c		0.08		0.23				
95% queue length		0.26		0.88				
Control Delay		9.0		17.7				
LOS		A		C				
Approach Delay				17.7				
Approach LOS				C				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: AM13BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: PALISADE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	1	1	0	0	1	0	0	0	0
LGConfig		LTR		L	TR			LTR				
Volume	74	272	27	235	326	75	86	162	87			
Lane Width		15.0		12.0	12.0			15.0				
RTOR Vol		0			0			0				

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left		A			NB Left	A			
Thru		A			Thru	A			
Right		A			Right	A			
Peds	X	X			Peds	X			
WB Left	A	A			SB Left				
Thru	A	A			Thru				
Right	A	A			Right				
Peds	X	X			Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	10.0	40.0				25.0			
Yellow	3.0	3.0				3.0			
All Red	2.0	2.0				2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	655	1473	0.62	0.44	20.9	C	20.9	C
Westbound								
L	515	1532	0.50	0.61	10.7	B		
TR	964	1577	0.45	0.61	9.7	A	10.1	B
Northbound								
LTR	468	1686	0.78	0.28	38.1	D	38.1	D
Southbound								

Intersection Delay = 20.1 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM13BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: PALISADE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	74	272	27	235	326	75	86	162	87			
% Heavy Veh	5	5	5	5	5	5	5	5	5			
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	20	74	7	64	89	20	23	44	24			
Hi Ln Vol												
% Grade		0			0			0				
Ideal Sat		1900		1900	1900			1900				
ParkExist												
NumPark												
No. Lanes	0	1	0	1	1	0	0	1	0	0	0	0
LGConfig		LTR		L	TR			LTR				
Lane Width		15.0		12.0	12.0			15.0				
RTOR Vol		0			0			0				
Adj Flow		405		255	436			364				
%InSharedLn												
Prop LTs		0.198		1.000	0.000			0.255				
Prop RTs	0.072			0.188			0.261					
Peds Bikes	25	0		25	0		25	0		0		
Buses		0		0	0			0				
%InProtPhase				0.0								

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0			0.0				
Arriv. Type		3		3	3			3				
Unit Ext.		3.0		3.0	3.0			3.0				
I Factor		1.000			1.000			1.000				
Lost Time		2.0		2.0	2.0			2.0				
Ext of g		2.0		2.0	2.0			2.0				
Ped Min g		3.4			3.4			3.4			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: AM14BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	1	1	0	1	2	0	1	2	1
LGConfig	L	TR		L	TR		L	TR		L	T	R
Volume	117	526	62	144	427	47	38	411	133	137	549	141
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X	X	
WB Left	A	A			SB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	30.0	10.0				30.0	10.0	
Yellow	3.0	3.0				3.0	3.0	
All Red	2.0	2.0				2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	303	1538	0.42	0.45	35.8	D		
TR	480	1599	1.33	0.30	197.9	F	171.0	F
Westbound								
L	303	1540	0.52	0.45	38.0	D		
TR	480	1600	1.07	0.30	97.0	F	83.2	F
Northbound								
L	369	1531	0.11	0.45	22.4	C		
TR	887	2957	0.67	0.30	32.6	C	31.9	C
Southbound								
L	371	1530	0.40	0.45	27.3	C		
T	930	3101	0.64	0.30	31.9	C	30.5	C
R	398	1327	0.38	0.30	28.3	C		

Intersection Delay = 79.0 (sec/veh) Intersection LOS = E

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM14BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	117	526	62	144	427	47	38	411	133	137	549	141
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	32	143	17	39	116	13	10	112	36	37	149	38
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	1	1	0	1	1	0	1	2	0	1	2	1
LGConfig	L		TR	L		TR	L		TR	L	T	R
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0
Adj Flow	127	639		157	515		41	592		149	597	153
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs	0.105			0.099			0.245			0.000	1.000	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0		0	0		0	0	0
%InProtPhase	0.0			0.0			0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type	3	3		3	3		3	3		3	3	3
Unit Ext.	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext of g	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: AM15BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NYS ROUTE 9A / WALNUT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	1	0	1	0	1	1	0
LGConfig		LTR			LT	R		LTR		L	TR	
Volume	140	535	57	12	418	224	63	187	24	255	124	171
Lane Width		15.0			12.0	12.0		15.0		12.0	15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	45.0					35.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	550	1100	1.45	0.50	233.9	F	233.9	F
Westbound								
LT	794	1588	0.59	0.50	17.1	B	16.0	B
R	675	1350	0.36	0.50	14.0	B		
Northbound								
LTR	504	1297	0.59	0.39	23.6	C	23.6	C
Southbound								
L	324	833	0.85	0.39	44.7	D		
TR	624	1605	0.51	0.39	21.7	C	32.4	C

Intersection Delay = 93.3 (sec/veh) Intersection LOS = F

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM15BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: NYS ROUTE 9A / WALNUT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	140	535	57	12	418	224	63	187	24	255	124	171
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	38	145	15	3	114	61	17	51	7	69	34	46
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900	1900		1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	1	0	1	0	1	1	0
LGConfig		LTR			LT	R		LTR		L	TR	
Lane Width		15.0			12.0	12.0		15.0		12.0	15.0	
RTOR Vol		0			0			0			0	
Adj Flow		796			467	243		297		277	321	
%InSharedLn												
Prop LTs		0.191			0.028			0.229		1.000	0.000	
Prop RTs	0.078			0.000	1.000		0.088			0.579		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0	0		0		0	0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0	0.0		0.0		0.0	0.0	
Arriv. Type		3			3	3		3		3	3	
Unit Ext.		3.0			3.0	3.0		3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0	2.0		2.0		2.0	2.0	
Ext of g		2.0			2.0	2.0		2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM16BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WALNUT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	1	0
LGConfig	L	TR		L	TR			LTR			LTR	
Volume	15	1471	21	60	1529	43	34	86	146	49	81	63
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0	10.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	331	1717	0.05	0.65	32.2	C		
TR	1719	3437	0.94	0.50	34.8	C	34.7	C
Westbound								
L	331	1717	0.20	0.65	31.1	C		
TR	1715	3429	1.00	0.50	45.8	D	45.2	D
Northbound								
LTR	396	1585	0.73	0.25	41.1	D	41.1	D
Southbound								
LTR	323	1293	0.65	0.25	38.0	D	38.0	D

Intersection Delay = 40.2 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM16BD
Area Type: All other areas
Jurisdiction: W/ CORRIDOR IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: WALNUT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	15	1471	21	60	1529	43	34	86	146	49	81	63
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	4	400	6	16	415	12	9	23	40	13	22	17
Hi Ln Vol												
% Grade		0			0			-6			0	
Ideal Sat	1900	1900		1900	1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	0	0	1	0	0	1	0
LGConfig	L	TR		L	TR			LTR			LTR	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow	16	1622		65	1709			289			209	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000			0.128			0.254	
Prop RTs		0.014			0.028			0.550			0.325	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0			0			0	
%InProtPhase	0.0			0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0			0.0			0.0	
Arriv. Type	3	3		3	3			3			3	
Unit Ext.	3.0	3.0		3.0	3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0			2.0			2.0	
Ext of g	2.0	2.0		2.0	2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM17BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: PRESCOTT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	0	0
LGConfig	L	TR		L	TR			LTR				
Volume	6	1419	21	95	1859	25	13	36	243			
Lane Width	12.0	12.0		12.0	12.0			15.0				
RTOR Vol			0			0			0			

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left		A			NB Left	A			
Thru		A			Thru	A			
Right		A			Right	A			
Peds	X	X			Peds	X			
WB Left	A	A			SB Left				
Thru	A	A			Thru				
Right	A	A			Right				
Peds	X	X			Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	10.0	50.0				25.0			
Yellow	3.0	3.0				3.0			
All Red	2.0	2.0				2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	73	145	0.10	0.50	13.7	B		
TR	1718	3436	0.91	0.50	30.7	C	30.6	C
Westbound								
L	244	1717	0.42	0.65	18.5	B		
TR	2235	3438	0.92	0.65	21.7	C	21.5	C
Northbound								
LTR	443	1770	0.72	0.25	39.7	D	39.7	D
Southbound								

Intersection Delay = 26.5 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM17BD
Area Type: All other areas
Jurisdiction: W/ CORRIDOR IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: PRESCOTT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	6	1419	21	95	1859	25	13	36	243			
% Heavy Veh	5	5	5	5	5	5	5	5	5			
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	2	386	6	26	505	7	4	10	66			
Hi Ln Vol												
% Grade		0			0			-6				
Ideal Sat	1900	1900		1900	1900			1900				
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	0	0	1	0	0	0	0
LGConfig	L	TR		L	TR			LTR				
Lane Width	12.0	12.0		12.0	12.0			15.0				
RTOR Vol			0			0			0			
Adj Flow	7	1565		103	2048			317				
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000			0.044				
Prop RTs		0.015			0.013			0.833				
Peds Bikes		25	0		25	0		25	0		0	
Buses	0	0		0	0			0				
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0			0.0				
Arriv. Type	3	3		3	3			3				
Unit Ext.	3.0	3.0		3.0	3.0			3.0				
I Factor		1.000			1.000			1.000				
Lost Time	2.0	2.0		2.0	2.0			2.0				
Ext of g	2.0	2.0		2.0	2.0			2.0				
Ped Min g		3.4			3.4			3.4			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM18BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: ASHBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	1	0	0	0	1	0	0
LGConfig		T			T	R				L	LR	
Volume		1989			2073	724				944	21	
Lane Width		12.0			12.0	12.0				12.0	12.0	
RTOR Vol					0						0	

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru	A				Thru			
Right					Right			
Peds	X				Peds	X		
WB Left					SB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	60.0					30.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
T	2067	3445	1.05	0.60	53.1	D	53.1	D
Westbound								
T	2067	3445	1.09	0.60	69.2	E	58.0	E
R	904	1507	0.87	0.60	26.0	C		
Northbound								
Southbound								
L	516	1719	1.03	0.30	83.9	F		
LR	514	1713	1.00	0.30	75.2	E	79.6	E

Intersection Delay = 59.9 (sec/veh) Intersection LOS = E

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst:	JCE
Agency/Co.:	JOHN COLLINS ENGINEERS, P.C.
Date Performed:	3/12/2007
Analysis Time Period:	WEEKDAY PEAK AM HIGHWAY HOUR
Intersection:	AM18BD
Area Type:	All other areas
Jurisdiction:	W/ CORRIDOR IMPROVEMENTS
Analysis Year:	2012 BUILD TRAFFIC VOLUMES

Project ID: 281
E/W St: YONKERS AVENUE N/S St: ASHBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		1989			2073	724				944		21
% Heavy Veh		5			5	5				5		5
PHF		0.92			0.92	0.92				0.92		0.92
PK 15 Vol		540			563	197				257		6
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900			1900	1900				1900	1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	0	2	1	0	0	0	1	0	0
LGConfig		T			T	R				L	LR	
Lane Width		12.0			12.0	12.0				12.0	12.0	
RTOR Vol						0						0
Adj Flow		2162			2253	787				534	515	
%InSharedLn										48		
Prop LTs		0.000			0.000						0.956	
Prop RTs	0.000			0.000		1.000				0.045		
Peds Bikes				25		0	0			25		0
Buses		0			0	0				0	0	
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0	0.0				0.0	0.0	
Arriv. Type		3			3	3				3	3	
Unit Ext.		3.0			3.0	3.0				3.0	3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0			2.0	2.0				2.0	2.0	
Ext of g		2.0			2.0	2.0				2.0	2.0	
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM19BD
Area Type: All other areas
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SAW MILL RIVER PARKWAY SB RAMP

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	1	0	2	0	0	0	0	0	0	2
LGConfig		T	R		T							R
Volume		2125	808		2270							527
Lane Width		12.0	12.0		12.0							12.0
RTOR Vol			0									0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru		A			Thru			
Right		A			Right			
Peds					Peds			
WB Left					SB Left			
Thru		A			Thru			
Right					Right	A		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green		70.0				20.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
T	2411	3445	0.96	0.70	24.0	C	21.1	C
R	1130	1615	0.78	0.70	13.4	B		
Westbound								
T	2411	3445	1.02	0.70	39.5	D	39.5	D
Northbound								
Southbound								
							78.1	E
R	572	2859	1.00	0.20	78.1	E		

Intersection Delay = 33.6 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM19BD
Area Type: All other areas
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SAW MILL RIVER PARKWAY SB RAMP

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		2125	808		2270							527
% Heavy Veh		5	0		5							0
PHF		0.92	0.92		0.92							0.92
PK 15 Vol		577	220		617							143
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900	1900		1900							1900
ParkExist												
NumPark												
No. Lanes	0	2	1	0	2	0	0	0	0	0	0	2
LGConfig		T	R		T							R
Lane Width		12.0	12.0		12.0							12.0
RTOR Vol			0									0
Adj Flow		2310	878		2467							573
%InSharedLn												
Prop LTs		0.000			0.000							
Prop RTs	0.000		1.000	0.000								1.000
Peds Bikes	0									0		
Buses		0	0		0							0
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0	0.0		0.0							0.0
Arriv. Type		3	3		3							3
Unit Ext.		3.0	3.0		3.0							3.0
I Factor		1.000			1.000						1.000	
Lost Time		2.0	2.0		2.0							2.0
Ext of g		2.0	2.0		2.0							2.0
Ped Min g		3.2									3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM20BD
Area Type: All other areas
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: SAW MILL RIVER PARKWAY NB RAMP

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	2
LGConfig	L	T			T	R				L		R
Volume	814	1311			1182	290				29		1088
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left			
Thru	A	A			Thru			
Right					Right			
Peds					Peds			
WB Left					SB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds					Peds			
NB Right					EB Right			
SB Right		A			WB Right	A		
Green	50.0	20.0				15.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	554	1805	1.60	0.75	310.2	F		
T	2584	3445	0.55	0.75	5.6	A	122.3	F
Westbound								
T	1723	3445	0.75	0.50	21.8	C	18.6	B
R	1130	1615	0.28	0.70	5.7	A		
Northbound								
Southbound								
L	271	1805	0.12	0.15	37.0	D		
							65.0	E
R	1144	2859	1.03	0.40	65.8	E		

Intersection Delay = 76.3 (sec/veh) Intersection LOS = E

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM20BD
Area Type: All other areas
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SAW MILL RIVER PARKWAY NB RAMP

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	814	1311			1182	290				29		1088
% Heavy Veh	0	5			5	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	221	356			321	79				8		296
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat	1900	1900			1900	1900				1900		1900
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	2
LGConfig	L	T			T	R				L		R
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0
Adj Flow	885	1425			1285	315				32		1183
%InSharedLn												
Prop LTs	1.000	0.000			0.000							
Prop RTs		0.000		0.000		1.000						1.000
Peds				0			0			0		
Bikes												
Buses	0	0			0	0				0		0
%InProtPhase	0.0											
Duration	0.25			Area Type: All other areas								

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0				0.0		0.0
Arriv. Type	3	3			3	3				3		3
Unit Ext.	3.0	3.0			3.0	3.0				3.0		3.0
I Factor		1.000			1.000						1.000	
Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Ext of g	2.0	2.0			2.0	2.0				2.0		2.0
Ped Min g					3.2			3.2			3.2	

HCS+: Unsignalized Intersections Release 5.2

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM21BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: DOCK STREET
North/South Street: BUENA VISTA AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	118	0	54	0	296	82	72	184	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		LT	
PHF			0.92		0.92		0.92	
Flow Rate			186		410		277	
% Heavy Veh			5		5		5	
No. Lanes			1		1		1	
Opposing-Lanes			0		1		1	
Conflicting-lanes			1		1		1	
Geometry group			1		1		1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			186		410		277	
Left-Turn			128		0		78	
Right-Turn			58		89		0	
Prop. Left-Turns			0.7		0.0		0.3	
Prop. Right-Turns			0.3		0.2		0.0	
Prop. Heavy Vehicle			0.0		0.0		0.0	
Geometry Group			1		1		1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.2	

hRT-adj	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7
hadj, computed	0.0	-0.0	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			186		410		277	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.17		0.36		0.25	
hd, final value			5.61		4.80		5.13	
x, final value			0.29		0.55		0.39	
Move-up time, m			2.0		2.0		2.0	
Service Time			3.6		2.8		3.1	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			186		410		277	
Service Time			3.6		2.8		3.1	
Utilization, x			0.29		0.55		0.39	
Dep. headway, hd			5.61		4.80		5.13	
Capacity			436		660		527	
Delay			10.88		13.43		11.44	
LOS			B		B		B	
Approach:								
Delay			10.88		13.43		11.44	
LOS			B		B		B	

Intersection Delay 12.26 Intersection LOS B

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: AM22BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: BEUNA VISTA AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	11	45	132	39	14	170	42	305	16	20	241	11
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0				25.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	588	1412	0.35	0.42	12.3	B	12.3	B
Westbound								
LTR	547	1314	0.44	0.42	13.1	B	13.1	B
Northbound								
LTR	628	1507	0.63	0.42	15.9	B	15.9	B
Southbound								
LTR	645	1548	0.46	0.42	13.1	B	13.1	B

Intersection Delay = 13.9 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM22BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: BEUNA VISTA AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	11	45	132	39	14	170	42	305	16	20	241	11
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	3	12	36	11	4	46	11	83	4	5	65	3
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		204			242			395			296	
%InSharedLn												
Prop LTs		0.059			0.174			0.116			0.074	
Prop RTs		0.701			0.764			0.043			0.041	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM23BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: HUDSON STREET
North/South Street: BUENA VISTA AVENUE
Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		299	43	50	370	
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	
Hourly Flow Rate, HFR		324	46	54	402	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	17		17			
Peak Hour Factor, PHF	0.92		0.92			
Hourly Flow Rate, HFR	18		18			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		54		36				
C(m) (vph)		1172		427				
v/c		0.05		0.08				
95% queue length		0.14		0.27				
Control Delay		8.2		14.2				
LOS		A		B				
Approach Delay				14.2				
Approach LOS				B				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: NEPPERHAN STREET/DOCK STREET

Inter.: AM24BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	0	0	1	1	0	0	2	0
LGConfig		LTR					L	TR			LTR	
Volume	40	75	36				187	284	144	22	634	185
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0						0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left					SB Left	A		
Thru					Thru	A		
Right					Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	20.0				30.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	567	1702	0.29	0.33	15.0	B	15.0	B
Westbound								
Northbound								
L	203	406	1.00	0.50	78.2	E		
TR	767	1533	0.61	0.50	12.2	B	32.2	C
Southbound								
LTR	1398	2795	0.65	0.50	12.3	B	12.3	B

Intersection Delay = 20.2 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM24BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN STREET/DOCK STREET N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	40	75	36				187	284	144	22	634	185
% Heavy Veh	5	5	5				5	5	5	5	5	5
PHF	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
PK 15 Vol	11	20	10				51	77	39	6	172	50
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900					1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	0	0	1	1	0	0	2	0
LGConfig		LTR					L	TR			LTR	
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol		0						0			0	
Adj Flow		164					203	466			914	
%InSharedLn												
Prop LTs		0.262					1.000	0.000			0.026	
Prop RTs	0.238							0.337		0.220		
Peds Bikes	25	0		0			25	0		25	0	
Buses		0					0	0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0					0.0	0.0			0.0	
Arriv. Type		3					3	3			3	
Unit Ext.		3.0					3.0	3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0					2.0	2.0			2.0	
Ext of g		2.0					2.0	2.0			2.0	
Ped Min g		3.3			3.2			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: AM25BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WARBURTON AVE / RIVERDALE AVE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Volume	27		139	88	129	107	144	477			671	49
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru						Thru	A	A		
	Right	A					Right				
	Peds	X					Peds	X	X		
WB	Left	A				SB	Left				
	Thru	A					Thru	A			
	Right	A					Right	A			
	Peds	X					Peds	X	X		
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		35.0						40.0	10.0		
Yellow		3.0						3.0	3.0		
All Red		2.0						2.0	2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	498	1422	0.36	0.35	24.6	C	24.6	C
Westbound								
LTR	583	1667	0.60	0.35	28.6	C	28.6	C
Northbound								
L	388	1537	0.40	0.55	23.6	C		
T	1706	3101	0.30	0.55	12.3	B	14.9	B
Southbound								
TR	1225	3063	0.64	0.40	25.3	C	25.3	C

Intersection Delay = 22.3 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM25BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: WARBURTON AVE / RIVERDALE AVE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	27		139	88	129	107	144	477			671	49
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	7		38	24	35	29	39	130			182	13
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0
Adj Flow		180			352		157	518			782	
%InSharedLn												
Prop LTs		0.161			0.273		1.000	0.000			0.000	
Prop RTs	0.839			0.330			0.000			0.068		
Peds Bikes	25		0	25		0				25		0
Buses		0			0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0			0.0	
Arriv. Type		3			3		3	3			3	
Unit Ext.		3.0			3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0			2.0	
Ext of g		2.0			2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: HUDSON STREET

Inter.: AM26BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	0	0	0	2	1	1	2	0
LGConfig		LTR						T	R	L	T	
Volume	17	53	42					574	187	187	689	
Lane Width		15.0						12.0	12.0	12.0	12.0	
RTOR Vol			0						0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X	X	
WB Left					SB Left	A	A	
Thru					Thru	A	A	
Right					Right			
Peds	X				Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	30.0					40.0	15.0	
Yellow	3.0					3.0	3.0	
All Red	2.0					2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	502	1672	0.24	0.30	26.7	C	26.7	C
Westbound								
Northbound								
T	1240	3101	0.50	0.40	22.9	C	22.6	C
R	536	1341	0.38	0.40	21.7	C		
Southbound								
L	519	1535	0.39	0.60	17.2	B		
T	1861	3101	0.40	0.60	10.7	B	12.1	B

Intersection Delay = 17.6 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM26BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HUDSON STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	17	53	42					574	187	187	689	
% Heavy Veh	5	5	5					5	5	5	5	
PHF	0.92	0.92	0.92					0.92	0.92	0.92	0.92	
PK 15 Vol	5	14	11					156	51	51	187	
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900						1900	1900	1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	0	0	0	2	1	1	2	0
LGConfig		LTR						T	R	L	T	
Lane Width		15.0						12.0	12.0	12.0	12.0	
RTOR Vol			0						0			
Adj Flow		122						624	203	203	749	
%InSharedLn												
Prop LTs		0.148						0.000		1.000	0.000	
Prop RTs	0.377						0.000	1.000		0.000		
Peds Bikes	25	0		0			25	0				
Buses		0						0	0	0	0	
%InProtPhase										0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0	0.0	0.0	0.0	
Arriv. Type		3						3	3	3	3	
Unit Ext.		3.0						3.0	3.0	3.0	3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0						2.0	2.0	2.0	2.0	
Ext of g		2.0						2.0	2.0	2.0	2.0	
Ped Min g		3.4			3.2			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: PROSPECT STREET

Inter.: AM27BD
Area Type: CBD or Similar
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	1	2	0	1	2	1
LGConfig		LTR		L	TR		L	TR		L	T	R
Volume	14	358	4	355	414	312	101	487	464	308	452	38
Lane Width		12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru	A				Thru	A	A		
Right	A				Right	A	A		
Peds	X	X			Peds	X	X	X	
WB Left	A	A			SB Left		A	A	
Thru	A	A			Thru		A	A	
Right	A	A			Right		A	A	
Peds	X	X			Peds	X	X	X	
NB Right					EB Right				
SB Right					WB Right				
Green	23.0	8.0				10.0	22.0	12.0	
Yellow	3.0	3.0				3.0	3.0	3.0	
All Red	2.0	2.0				2.0	2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	584	2538	0.70	0.23	39.0	D	39.0	D
Westbound								
L	344	1530	1.12	0.36	122.8	F		
TR	1035	2875	0.76	0.36	31.6	C	61.6	E
Northbound								
L	281	1534	0.39	0.37	22.9	C		
TR	1053	2846	0.98	0.37	54.3	D	51.3	D
Southbound								
L	334	1541	1.00	0.39	88.4	F		
T	1209	3101	0.41	0.39	22.3	C	47.7	D
R	530	1358	0.08	0.39	19.2	B		

Intersection Delay = 52.4 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM27BD
Area Type: CBD or Similar
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: PROSPECT STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	14	358	4	355	414	312	101	487	464	308	452	38
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	4	97	1	96	112	85	27	132	126	84	123	10
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900		1900	1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	2	0	1	2	0	1	2	0	1	2	1
LGConfig		LTR		L		TR	L		TR	L	T	R
Lane Width		12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol		0			0			0			0	
Adj Flow		408		386	789		110	1033		335	491	41
%InSharedLn												
Prop LTs		0.037		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs	0.010			0.430			0.488			0.000	1.000	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0		0	0		0	0		0	0	0
%InProtPhase				0.0			0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type		3		3	3		3	3		3	3	3
Unit Ext.		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext of g		2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: VARK STREET

Inter.: AM28BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	138	106	25	53	30	46	37	750	176	176	642	25
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X	X		
WB Left	A				SB Left	A	A		
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green	25.0					40.0	10.0		
Yellow	3.0					3.0	3.0		
All Red	2.0					2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	371	1334	0.79	0.28	40.8	D	40.8	D
Westbound								
LTR	363	1305	0.39	0.28	27.0	C	27.0	C
Northbound								
L	470	1537	0.09	0.61	11.3	B		
TR	1332	2996	0.76	0.44	23.4	C	23.0	C
Southbound								
L	381	1541	0.50	0.61	24.6	C		
TR	1369	3080	0.53	0.44	18.6	B	19.8	B

Intersection Delay = 24.2 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM28BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VARK STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	138	106	25	53	30	46	37	750	176	176	642	25
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	37	29	7	14	8	12	10	204	48	48	174	7
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		292			141		40	1006		191	725	
%InSharedLn												
Prop LTs		0.514			0.411		1.000	0.000		1.000	0.000	
Prop RTs	0.092			0.355			0.190			0.037		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: HERRIOT STREET

Inter.: AM29BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig					LTR		L	T			TR	
Volume				56	35	43	49	814			682	15
Lane Width					15.0		12.0	12.0			12.0	
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A	A		
Thru					Thru	A	A		
Right					Right				
Peds		X			Peds	X	X		
WB Left		A			SB Left				
Thru		A			Thru	A			
Right		A			Right	A			
Peds		X			Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green		25.0				40.0	10.0		
Yellow		3.0				3.0	3.0		
All Red		2.0				2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	462	1664	0.32	0.28	26.1	C	26.1	C
Northbound								
L	458	1537	0.12	0.61	12.0	B		
T	1895	3101	0.47	0.61	9.7	A	9.8	A
Southbound								
TR	1373	3089	0.55	0.44	18.9	B	18.9	B

Intersection Delay = 14.8 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM29BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HERRIOT STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				56	35	43	49	814			682	15
% Heavy Veh				5	5	5	5	5			5	5
PHF				0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol				15	10	12	13	221			185	4
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig					LTR		L	T			TR	
Lane Width					15.0		12.0	12.0			12.0	
RTOR Vol						0						0
Adj Flow					146		53	885			757	
%InSharedLn												
Prop LTs					0.418		1.000	0.000			0.000	
Prop RTs				0.322			0.000			0.021		
Peds Bikes	0			25	0					25	0	
Buses					0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0		0.0	0.0			0.0	
Arriv. Type					3		3	3			3	
Unit Ext.					3.0		3.0	3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0		2.0	2.0			2.0	
Ext of g					2.0		2.0	2.0			2.0	
Ped Min g		3.2			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: LUDLOW STREET

Inter.: AM30BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Volume	63		48	94	96	211	50	699			722	63
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru						Thru	A	A		
	Right	A					Right				
	Peds	X					Peds	X	X		
WB	Left	A				SB	Left				
	Thru	A					Thru	A			
	Right	A					Right	A			
	Peds	X					Peds	X	X		
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		25.0						40.0	10.0		
Yellow		3.0						3.0	3.0		
All Red		2.0						2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	245	881	0.49	0.28	28.7	C	28.7	C
Westbound								
LTR	448	1611	0.97	0.28	67.1	E	67.1	E
Northbound								
L	427	1539	0.13	0.61	13.5	B		
T	1895	3101	0.40	0.61	9.2	A	9.4	A
Southbound								
TR	1359	3057	0.63	0.44	20.2	C	20.2	C

Intersection Delay = 25.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM30BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LUDLOW STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	63		48	94	96	211	50	699			722	63
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	17		13	26	26	57	14	190			196	17
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0
Adj Flow		120			435		54	760			853	
%InSharedLn												
Prop LTs		0.567			0.234		1.000	0.000			0.000	
Prop RTs	0.433			0.526			0.000			0.080		
Peds Bikes	25		0	25		0				25		0
Buses		0			0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0			0.0	
Arriv. Type		3			3		3	3			3	
Unit Ext.		3.0			3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0			2.0	
Ext of g		2.0			2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: RADFORD STREET

Inter.: AM31BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	2	0	1	2	0
LGConfig					LR			TR		L	T	
Volume				88		112		401	74	139	521	
Lane Width					15.0			12.0		12.0	12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X	X	
WB Left		A			SB Left	A	A	
Thru					Thru	A	A	
Right		A			Right			
Peds		X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green		25.0				40.0	10.0	
Yellow		3.0				3.0	3.0	
All Red		2.0				2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LR	443	1596	0.49	0.28	28.1	C	28.1	C
Northbound								
TR	1340	3016	0.39	0.44	16.9	B	16.9	B
Southbound								
L	555	1533	0.27	0.61	10.8	B		
T	1895	3101	0.30	0.61	8.4	A	8.9	A

Intersection Delay = 14.6 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM31BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: RADFORD STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				88		112		401	74	139	521	
% Heavy Veh				5		5		5	5	5	5	
PHF				0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol				24		30		109	20	38	142	
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	2	0	1	2	0
LGConfig					LR			TR		L	T	
Lane Width					15.0			12.0		12.0	12.0	
RTOR Vol						0			0			
Adj Flow					218			516		151	566	
%InSharedLn												
Prop LTs					0.440			0.000		1.000	0.000	
Prop RTs				0.560			0.155			0.000		
Peds Bikes	0			25		0	25		0			
Buses					0			0		0	0	
%InProtPhase										0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0		0.0	0.0	
Arriv. Type					3			3		3	3	
Unit Ext.					3.0			3.0		3.0	3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0		2.0	2.0	
Ext of g					2.0			2.0		2.0	2.0	
Ped Min g		3.2			3.4			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: VALENTINE LANE

Inter.: AM32BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	24	76	78	43	95	104	48	369	36	93	436	32
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X	X		
WB Left	A				SB Left	A	A		
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green	25.0					40.0	10.0		
Yellow	3.0					3.0	3.0		
All Red	2.0					2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	434	1562	0.45	0.28	27.5	C	27.5	C
Westbound								
LTR	425	1529	0.62	0.28	31.1	C	31.1	C
Northbound								
L	557	1532	0.09	0.61	9.0	A		
TR	1356	3052	0.32	0.44	16.4	B	15.6	B
Southbound								
L	590	1531	0.17	0.61	9.0	A		
TR	1361	3063	0.37	0.44	16.8	B	15.5	B

Intersection Delay = 19.7 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM32BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VALENTINE LANE N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	24	76	78	43	95	104	48	369	36	93	436	32
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	7	21	21	12	26	28	13	100	10	25	118	9
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		194			263		52	440		101	509	
%InSharedLn												
Prop LTs		0.134			0.179		1.000	0.000		1.000	0.000	
Prop RTs	0.438			0.430			0.089			0.069		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: VARK STREET

Inter.: AM33BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	56	145	60	66	105	55	34	352	47	16	233	89
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left		A			SB Left	A		
Thru		A			Thru	A		
Right		A			Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0	20.0				40.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	421	1685	0.67	0.25	38.1	D	38.1	D
Westbound								
LTR	332	1661	0.74	0.20	46.2	D	46.2	D
Northbound								
LTR	606	1515	0.78	0.40	32.5	C	32.5	C
Southbound								
LTR	604	1511	0.61	0.40	25.6	C	25.6	C

Intersection Delay = 34.2 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM33BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VARK STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	56	145	60	66	105	55	34	352	47	16	233	89
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	15	39	16	18	29	15	9	96	13	4	63	24
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		284			246			471			367	
%InSharedLn												
Prop LTs		0.215			0.293			0.079			0.046	
Prop RTs	0.229			0.244			0.108			0.264		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: HERRIOT STREET

Inter.: AM34BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	0	1	0	0	1	0
LGConfig		LR			LTR			LT			TR	
Volume	71		36	21	86	105	51	350			318	68
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru					Thru	A		
Right	A				Right			
Peds	X				Peds	X		
WB Left	A				SB Left			
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	30.0					50.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	386	1158	0.30	0.33	22.7	C	22.7	C
Westbound								
LTR	542	1626	0.42	0.33	23.8	C	23.8	C
Northbound								
LT	819	1474	0.53	0.56	13.3	B	13.3	B
Southbound								
TR	880	1584	0.48	0.56	12.5	B	12.5	B

Intersection Delay = 15.9 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM34BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HERRIOT STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	71		36	21	86	105	51	350			318	68
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	19		10	6	23	29	14	95			86	18
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	0	1	0	0	1	0
LGConfig		LR			LTR			LT			TR	
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol		0			0						0	
Adj Flow		116			230			435			420	
%InSharedLn												
Prop LTs		0.664			0.100			0.126			0.000	
Prop RTs	0.336			0.496			0.000			0.176		
Peds Bikes	25	0		25	0					25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: BRIGHT PLACE

Inter.: AM35BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig					LR			TR			LT	
Volume				20		30		649	35	7	394	
Lane Width					15.0			12.0			12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X		
WB Left		A			SB Left	A		
Thru					Thru	A		
Right		A			Right			
Peds		X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green		30.0				50.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LR	526	1578	0.10	0.33	20.8	C	20.8	C
Northbound								
TR	897	1615	0.83	0.56	23.0	C	23.0	C
Southbound								
LT	893	1608	0.49	0.56	12.6	B	12.6	B

Intersection Delay = 19.2 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM35BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: BRIGHT PLACE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				20		30		649	35	7	394	
% Heavy Veh				5		5		5	5	5	5	
PHF				0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol				5		8		176	10	2	107	
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig					LR			TR			LT	
Lane Width					15.0			12.0			12.0	
RTOR Vol						0			0			
Adj Flow					55			743			436	
%InSharedLn												
Prop LTs					0.400			0.000			0.018	
Prop RTs				0.600			0.051			0.000		
Peds Bikes	0			25		0	25		0			
Buses					0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0			0.0	
Arriv. Type					3			3			3	
Unit Ext.					3.0			3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0			2.0	
Ext of g					2.0			2.0			2.0	
Ped Min g		3.2			3.4			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: LUDLOW STREET

Inter.: AM36BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig							L	T			TR	
Volume							244	568			447	118
Lane Width							12.0	12.0			12.0	
RTOR Vol											0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A	A		
Thru						Thru	A			
Right						Right				
Peds						Peds	X	X		
WB Left					SB	Left				
Thru						Thru	A			
Right						Right	A			
Peds						Peds	X	X		
NB Right					EB	Right				
SB Right					WB	Right				
Green							55.0	25.0		
Yellow							3.0	3.0		
All Red							2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
Northbound								
L	862	1531	0.31	0.94	2.1	A		
T	995	1629	0.62	0.61	12.2	B	9.1	A
Southbound								
TR	959	1569	0.64	0.61	12.6	B	12.6	B

Intersection Delay = 10.6 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst:	JCE
Agency/Co.:	JOHN COLLINS ENGINEERS, P.C.
Date Performed:	3/12/2007
Analysis Time Period:	WEEKDAY PEAK AM HIGHWAY HOUR
Intersection:	AM36BD
Area Type:	CBD or Similar
Jurisdiction:	
Analysis Year:	2012 BUILD TRAFFIC VOLUMES

Project ID: 281
E/W St: LUDLOW STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume							244	568			447	118
% Heavy Veh							5	5			5	5
PHF							0.92	0.92			0.92	0.92
PK 15 Vol							66	154			121	32
Hi Ln Vol												
% Grade								0			0	
Ideal Sat							1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig							L		T			TR
Lane Width							12.0	12.0			12.0	
RTOR Vol												0
Adj Flow							265	617			614	
%InSharedLn												
Prop LTs							1.000	0.000			0.000	
Prop RTs								0.000		0.208		
Peds Bikes										50	0	
Buses							0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet							0.0	0.0			0.0	
Arriv. Type							3	3			3	
Unit Ext.							3.0	3.0			3.0	
I Factor								1.000			1.000	
Lost Time							2.0	2.0			2.0	
Ext of g							2.0	2.0			2.0	
Ped Min g											3.5	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: MCLEAN AVENUE

Inter.: AM37BD
Area Type: CBD or Similar
Jurisd: W/ PHASING CHANGE
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	1	0	1	1	0
LGConfig				L		R		TR		L	T	
Volume				204		394		303	20	308	324	
Lane Width				12.0		12.0		12.0		12.0	12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X	X	
WB Left		A			SB Left	A	A	
Thru					Thru	A	A	
Right		A			Right			
Peds		X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right	A		
Green		25.0				10.0	40.0	
Yellow		3.0				3.0	3.0	
All Red		2.0				2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
L	430	1547	0.52	0.28	28.5	C		
							26.2	C
R	588	1322	0.73	0.44	25.1	C		
Northbound								
TR	716	1612	0.49	0.44	18.3	B	18.3	B
Southbound								
L	477	1531	0.70	0.61	15.0	B		
T	995	1629	0.35	0.61	8.9	A	11.9	B

Intersection Delay = 18.7 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM37BD
Area Type: CBD or Similar
Jurisdiction: W/ PHASING CHANGE
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MCLEAN AVENUE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				204		394		303	20	308	324	
% Heavy Veh				5		5		5	5	5	5	
PHF				0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol				55		107		82	5	84	88	
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat				1900		1900		1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	1	0	1	0	1	0	1	1	0
LGConfig				L		R		TR		L	T	
Lane Width				12.0		12.0		12.0		12.0	12.0	
RTOR Vol						0			0			
Adj Flow				222		428		351		335	352	
%InSharedLn												
Prop LTs								0.000		1.000	0.000	
Prop RTs						1.000		0.063			0.000	
Peds Bikes	0			25		0		25	0			
Buses				0		0		0		0	0	
%InProtPhase						0.0				0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet				0.0		0.0		0.0		0.0	0.0	
Arriv. Type				3		3		3		3	3	
Unit Ext.				3.0		3.0		3.0		3.0	3.0	
I Factor					1.000			1.000			1.000	
Lost Time				2.0		2.0		2.0		2.0	2.0	
Ext of g				2.0		2.0		2.0		2.0	2.0	
Ped Min g		3.2			3.4			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: RADFORD STREET

Inter.: AM38BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	1	0	1	1	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	30	182	42	83	231	41	87	259	47	28	275	50
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru	A				Thru		A		
Right	A				Right		A		
Peds	X				Peds	X	X		
WB Left	A				SB Left	A	A		
Thru	A				Thru		A		
Right	A				Right		A		
Peds	X				Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green	30.0					10.0	35.0		
Yellow	3.0					3.0	3.0		
All Red	2.0					2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	536	1607	0.52	0.33	25.0	C	25.0	C
Westbound								
LTR	474	1421	0.81	0.33	38.0	D	38.0	D
Northbound								
L	431	1529	0.22	0.56	10.9	B		
TR	616	1583	0.54	0.39	22.2	C	19.7	B
Southbound								
L	445	1528	0.07	0.56	10.0+	B		
TR	616	1583	0.57	0.39	22.9	C	21.9	C

Intersection Delay = 26.1 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM38BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: RADFORD STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	30	182	42	83	231	41	87	259	47	28	275	50
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	8	49	11	23	63	11	24	70	13	8	75	14
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	1	0	1	1	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		277			386		95	333		30	353	
%InSharedLn												
Prop LTs		0.119			0.233		1.000	0.000		1.000	0.000	
Prop RTs	0.166			0.117			0.153			0.153		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: VALENTINE LANE

Inter.: AM39BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig		LR					L	T			TR	
Volume	162		158				117	414			356	81
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru					Thru	A		
Right	A				Right			
Peds	X				Peds	X		
WB Left					SB Left			
Thru					Thru	A		
Right					Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0					35.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 70.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	572	1602	0.61	0.36	20.4	C	20.4	C
Westbound								
Northbound								
L	307	613	0.41	0.50	11.9	B		
T	815	1629	0.55	0.50	12.9	B	12.7	B
Southbound								
TR	790	1580	0.60	0.50	13.8	B	13.8	B

Intersection Delay = 15.0 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM39BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VALENTINE LANE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	162		158				117	414			356	81
% Heavy Veh	5		5				5	5			5	5
PHF	0.92		0.92				0.92	0.92			0.92	0.92
PK 15 Vol	44		43				32	112			97	22
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900					1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig		LR					L	T			TR	
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0									0
Adj Flow		348					127	450			475	
%InSharedLn												
Prop LTs		0.506					1.000	0.000			0.000	
Prop RTs	0.494							0.000		0.185		
Peds Bikes	25		0	0						25		0
Buses		0					0	0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0					0.0	0.0			0.0	
Arriv. Type		3					3	3			3	
Unit Ext.		3.0					3.0	3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0					2.0	2.0			2.0	
Ext of g		2.0					2.0	2.0			2.0	
Ped Min g		3.3			3.2						3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM40BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: MIDLAND AVENUE (WEST)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L	LR	R
Volume	196	1811			1147	110				208		334
Lane Width	12.0	12.0			12.0	12.0				12.0	12.0	12.0
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left			
Thru	A	A			Thru			
Right					Right			
Peds	X	X			Peds	X		
WB Left					SB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0	10.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	328	1543	0.65	0.65	35.9	D		
T	2016	3101	0.98	0.65	31.6	C	32.0	C
Westbound								
T	1551	3101	0.80	0.50	24.1	C	23.2	C
R	675	1350	0.18	0.50	13.8	B		
Northbound								
Southbound								
L	387	1547	0.44	0.25	32.4	C		
LR	351	1405	0.42	0.25	32.2	C	41.1	D
R	329	1315	0.83	0.25	51.3	D		

Intersection Delay = 30.4 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM40BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: MIDLAND AVENUE (WEST)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	196	1811			1147	110				208		334
% Heavy Veh	5	5			5	5				5		5
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	53	492			312	30				57		91
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat	1900	1900			1900	1900				1900	1900	1900
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L	LR	R
Lane Width	12.0	12.0			12.0	12.0				12.0	12.0	12.0
RTOR Vol						0						0
Adj Flow	213	1968			1247	120				170	147	272
%InSharedLn										25		25
Prop LTs	1.000	0.000			0.000						0.384	
Prop RTs		0.000		0.000	1.000					0.617	1.000	
Peds Bikes				25	0		0			25	0	
Buses	0	0			0	0				0	0	0
%InProtPhase	0.0											
Duration	0.25			Area Type: CBD or Similar								

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Arriv. Type	3	3			3	3				3	3	3
Unit Ext.	3.0	3.0			3.0	3.0				3.0	3.0	3.0
I Factor		1.000			1.000						1.000	
Lost Time	2.0	2.0			2.0	2.0				2.0	2.0	2.0
Ext of g	2.0	2.0			2.0	2.0				2.0	2.0	2.0
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM41BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: MIDLAND AVENUE (EAST)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	1	2	0	0	1	0
LGConfig	L	TR		L	TR		L	TR			LTR	
Volume	23	888	101	124	927	6	269	29	78	10	28	60
Lane Width	12.0	12.0		12.0	12.0		10.0	10.0			15.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A	A			Thru	A		
Right	A	A			Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0	10.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	185	370	0.14	0.50	13.7	B		
TR	1523	3045	0.71	0.50	20.8	C	20.7	C
Westbound								
L	370	1541	0.36	0.65	20.9	C		
TR	2013	3097	0.50	0.65	9.3	A	10.7	B
Northbound								
L	253	1010	1.15	0.25	142.2	F		
TR	631	2522	0.19	0.25	29.6	C	110.0	F
Southbound								
LTR	391	1563	0.27	0.25	30.5	C	30.5	C

Intersection Delay = 30.1 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM41BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: MIDLAND AVENUE (EAST)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	23	888	101	124	927	6	269	29	78	10	28	60
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	6	241	27	34	252	2	73	8	21	3	8	16
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes		1	2 0		1	2 0		1	2 0		0	1 0
LGConfig	L		TR	L		TR	L		TR			LTR
Lane Width	12.0	12.0		12.0	12.0		10.0	10.0			15.0	
RTOR Vol			0			0			0			0
Adj Flow	25	1075		135	1015		292	117			106	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000			0.104	
Prop RTs		0.102			0.007			0.726			0.613	
Peds Bikes		25	0		25	0		25	0		25	0
Buses	0	0		0	0		0	0			0	
%InProtPhase				0.0								

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Arriv. Type	3	3		3	3		3	3			3	
Unit Ext.	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0		2.0	2.0			2.0	
Ext of g	2.0	2.0		2.0	2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM42BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SEMINARY AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	0	0	0	0	0
LGConfig		LT			TR						LR	
Volume	42	639			708	37				49		89
Lane Width		12.0			12.0						15.0	
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4		5	6	7	8
EB	Left	A	A			NB	Left			
	Thru	A	A				Thru			
	Right						Right			
	Peds	X	X				Peds	X		
WB	Left					SB	Left	A		
	Thru	A					Thru			
	Right	A					Right	A		
	Peds	X	X				Peds	X		
NB	Right					EB	Right			
SB	Right					WB	Right			
Green		40.0	20.0				25.0			
Yellow		3.0	3.0				3.0			
All Red		2.0	2.0				2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	1769	3090	0.42	0.65	8.6	A	8.6	A
Westbound								
TR	1229	3073	0.66	0.40	25.8	C	25.8	C
Northbound								
Southbound								
LR	394	1575	0.38	0.25	31.7	C	31.7	C

Intersection Delay = 18.8 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM42BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SEMINARY AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	42	639			708	37				49		89
% Heavy Veh	5	5			5	5				5		5
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	11	174			192	10				13		24
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900			1900						1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	0	2	0	0	0	0	0	0	0
LGConfig		LT			TR						LR	
Lane Width		12.0			12.0						15.0	
RTOR Vol					0						0	
Adj Flow		741			810						150	
%InSharedLn												
Prop LTs		0.062			0.000						0.353	
Prop RTs	0.000			0.049						0.647		
Peds Bikes				25	0		0			25	0	
Buses		0			0						0	
%InProtPhase	0.0											

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0						0.0	
Arriv. Type		3			3						3	
Unit Ext.		3.0			3.0						3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0			2.0						2.0	
Ext of g		2.0			2.0						2.0	
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM43BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: CENTRAL PARK AVENUE (SB)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	0	0	0	0	2	0
LGConfig		TR		L	T						LTR	
Volume		473	210	239	598					122	111	119
Lane Width		12.0		12.0	12.0						12.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru		A			Thru			
Right		A			Right			
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A	A			Thru	A		
Right					Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0	55.0				35.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 140.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	1155	2941	0.64	0.39	35.7	D	35.7	D
Westbound								
L	543	1542	0.48	0.68	12.8	B		
T	2104	3101	0.31	0.68	9.2	A	10.3	B
Northbound								
Southbound								
LTR	716	2865	0.53	0.25	46.2	D	46.2	D

Intersection Delay = 26.3 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM43BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: CENTRAL PARK AVENUE (SB)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		473	210	239	598					122	111	119
% Heavy Veh		5	5	5	5					5	5	5
PHF		0.92	0.92	0.92	0.92					0.92	0.92	0.92
PK 15 Vol		129	57	65	162					33	30	32
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900		1900	1900						1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	1	2	0	0	0	0	0	2	0
LGConfig		TR		L	T						LTR	
Lane Width		12.0		12.0	12.0						12.0	
RTOR Vol			0									0
Adj Flow		742		260	650						383	
%InSharedLn												
Prop LTs		0.000		1.000	0.000						0.347	
Prop RTs		0.307			0.000						0.337	
Peds Bikes		25	0					0			25	0
Buses		0		0	0						0	
%InProtPhase					0.0							

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0						0.0	
Arriv. Type		3		3	3						3	
Unit Ext.		3.0		3.0	3.0						3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0		2.0	2.0						2.0	
Ext of g		2.0		2.0	2.0						2.0	
Ped Min g		3.5						3.2			3.5	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: AM44BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: CENTRAL PARK AVENUE (NB)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	2	1	0	0	0
LGConfig	L	T			T	R		LT	R			
Volume	187	408			604	180	232	117	122			
Lane Width	12.0	12.0			12.0	12.0		12.0	12.0			
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A		
Thru	A	A			Thru	A		
Right					Right	A		
Peds	X	X			Peds	X		
WB Left					SB Left			
Thru		A			Thru			
Right		A			Right			
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0	55.0				35.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 140.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	571	1541	0.36	0.68	10.8	B		
T	2104	3101	0.21	0.68	8.5	A	9.2	A
Westbound								
T	1218	3101	0.54	0.39	33.2	C	32.6	C
R	533	1358	0.37	0.39	30.6	C		
Northbound								
LT	750	3001	0.51	0.25	45.6	D	45.3	D
R	336	1343	0.40	0.25	44.5	D		
Southbound								

Intersection Delay = 28.3 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM44BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: CENTRAL PARK AVENUE (NB)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	187	408			604	180	232	117	122			
% Heavy Veh	5	5			5	5	5	5	5			
PHF	0.92	0.92			0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	51	111			164	49	63	32	33			
Hi Ln Vol												
% Grade		0			0			0				
Ideal Sat	1900	1900			1900	1900		1900	1900			
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	2	1	0	0	0
LGConfig	L	T			T	R		LT	R			
Lane Width	12.0	12.0			12.0	12.0		12.0	12.0			
RTOR Vol					0			0				
Adj Flow	203	443			657	196		379	133			
%InSharedLn												
Prop LTs	1.000	0.000			0.000			0.665				
Prop RTs	0.000			0.000	1.000		0.000	1.000				
Peds Bikes				25	0		25	0		0		
Buses	0	0			0	0		0	0			
%InProtPhase	0.0											

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0		0.0	0.0			
Arriv. Type	3	3			3	3		3	3			
Unit Ext.	3.0	3.0			3.0	3.0		3.0	3.0			
I Factor		1.000			1.000			1.000				
Lost Time	2.0	2.0			2.0	2.0		2.0	2.0			
Ext of g	2.0	2.0			2.0	2.0		2.0	2.0			
Ped Min g					3.5			3.5			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: GLENWOOD AVENUE

Inter.: AM45BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	48	25	33	17	15	54	16	253	22	55	327	16
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0					30.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	466	1399	0.25	0.33	15.8	B	15.8	B
Westbound								
LTR	531	1592	0.18	0.33	14.9	B	14.9	B
Northbound								
LTR	862	1723	0.37	0.50	10.4	B	10.4	B
Southbound								
LTR	817	1633	0.53	0.50	12.6	B	12.6	B

Intersection Delay = 12.5 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM45BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: GLENWOOD AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	48	25	33	17	15	54	16	253	22	55	327	16
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	13	7	9	5	4	15	4	69	6	15	89	4
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		115			93			316			432	
%InSharedLn												
Prop LTs		0.452			0.194			0.054			0.139	
Prop RTs	0.313			0.634			0.076			0.039		
Peds Bikes	25			25			25			25		
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: LAMARTINE AVENUE

Inter.: AM46BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	5	33	14	51	55	19	3	280	32	30	402	23
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0				30.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	541	1623	0.10	0.33	14.2	B	14.2	B
Westbound								
LTR	526	1578	0.26	0.33	15.8	B	15.8	B
Northbound								
LTR	881	1761	0.39	0.50	10.6	B	10.6	B
Southbound								
LTR	857	1713	0.58	0.50	13.4	B	13.4	B

Intersection Delay = 12.8 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM46BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LAMARTINE AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	5	33	14	51	55	19	3	280	32	30	402	23
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	2	9	4	14	15	5	1	76	9	8	109	6
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		56			136			342			495	
%InSharedLn												
Prop LTs		0.089			0.404			0.009			0.067	
Prop RTs		0.268			0.154			0.102			0.051	
Peds Bikes		25			25			25			25	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: GLENWOOD AVENUE

Inter.: AM47BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NORTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	47	153	14	43	114	24	30	382	55	30	447	67
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	25.0				45.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	477	1527	0.49	0.31	25.8	C	25.8	C
Westbound								
LTR	503	1609	0.39	0.31	23.8	C	23.8	C
Northbound								
LTR	918	1632	0.55	0.56	13.5	B	13.5	B
Southbound								
LTR	968	1721	0.61	0.56	14.6	B	14.6	B

Intersection Delay = 17.1 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM47BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: GLENWOOD AVENUE N/S St: NORTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	47	153	14	43	114	24	30	382	55	30	447	67
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	13	42	4	12	31	7	8	104	15	8	121	18
Hi Ln Vol												
% Grade		8			-6			4			-4	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		232			197			508			592	
%InSharedLn												
Prop LTs		0.220			0.239			0.065			0.056	
Prop RTs		0.065			0.132			0.118			0.123	
Peds Bikes		25			25			25			25	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: LAMARTINE AVENUE

Inter.: AM48BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NORTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig		LR						LT			TR	
Volume	75		51				49	353			518	135
Lane Width		15.0						12.0			15.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	P				NB Left	P			
Thru					Thru	P			
Right	P				Right				
Peds					Peds				
WB Left					SB Left				
Thru					Thru	P			
Right					Right	P			
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	20.0					30.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	526	1579	0.26	0.33	15.8	B	15.8	B
Westbound								
Northbound								
LT	664	1327	0.66	0.50	16.2	B	16.2	B
Southbound								
TR	871	1741	0.82	0.50	20.9	C	20.9	C

Intersection Delay = 18.8 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM48BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LAMARTINE AVENUE N/S St: NORTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	75		51				49	353			518	135
% Heavy Veh	5		5				5	5			5	5
PHF	0.92		0.92				0.92	0.92			0.92	0.92
PK 15 Vol	20		14				13	96			141	37
Hi Ln Vol												
% Grade		8						0			0	
Ideal Sat		1900						1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig		LR						LT			TR	
Lane Width		15.0						12.0			15.0	
RTOR Vol			0									0
Adj Flow		137						437			710	
%InSharedLn												
Prop LTs		0.599						0.121			0.000	
Prop RTs	0.401						0.000			0.207		
Peds Bikes	25			0						25		
Buses		0						0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0			0.0	
Arriv. Type		3						3			3	
Unit Ext.		3.0						3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0						2.0			2.0	
Ext of g		2.0						2.0			2.0	
Ped Min g		3.3			3.2						3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: LAKE AVENUE

Inter.: AM49BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGE
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	0	1	0	1	1	0	2	0
LGConfig		LT	R	L		R		T	R		LT	
Volume	15	139	45	346		81		463	311	58	601	
Lane Width		12.0	12.0	12.0		12.0		12.0	12.0		10.0	
RTOR Vol			0			0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		A			NB Left			
Thru		A			Thru	A		
Right		A			Right	A		
Peds	X	X			Peds	X		
WB Left	A				SB Left	A		
Thru					Thru	A		
Right	A				Right			
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0	12.0				38.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	218	1638	0.77	0.13	52.7	D	48.9	D
R	178	1333	0.28	0.13	35.9	D		
Westbound								
L	421	1514	0.89	0.28	52.0	D		
							47.0	D
R	367	1322	0.24	0.28	25.5	C		
Northbound								
T	688	1629	0.73	0.42	25.7	C	24.1	C
R	567	1343	0.60	0.42	21.8	C		
Southbound								
LT	931	2205	0.77	0.42	26.2	C	26.2	C

Intersection Delay = 31.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst:	JCE
Agency/Co.:	JOHN COLLINS ENGINEERS, P.C.
Date Performed:	3/12/2007
Analysis Time Period:	WEEKDAY PEAK AM HIGHWAY HOUR
Intersection:	AM49BD
Area Type:	CBD or Similar
Jurisdiction:	W/ TIMING CHANGE
Analysis Year:	2012 BUILD TRAFFIC VOLUMES
Project ID:	281
E/W St:	LAKE AVENUE
N/S St:	NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	15	139	45	346	81			463	311	58	601	
% Heavy Veh	5	5	5	5	5			5	5	5	5	
PHF	0.92	0.92	0.92	0.92	0.92			0.92	0.92	0.92	0.92	
PK 15 Vol	4	38	12	94	22			126	85	16	163	
Hi Ln Vol												
% Grade		-4			0			0			0	
Ideal Sat		1900	1900	1900	1900			1900	1900		1900	
ParkExist												
NumPark												
No. Lanes	0	1	1	1	0	1		0	1	1	0	2	0
LGConfig		LT	R	L		R			T	R		LT	
Lane Width		12.0	12.0	12.0		12.0			12.0	12.0		10.0	
RTOR Vol			0			0				0			
Adj Flow		167	49	376		88			503	338		716	
%InSharedLn													
Prop LTs		0.096						0.000			0.088	
Prop RTs		0.000	1.000			1.000		0.000	1.000		0.000	
Peds Bikes		25	0		25	0		25	0			
Buses		0	0	0		0		0	0		0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0	0.0	0.0		0.0		0.0	0.0		0.0	
Arriv. Type		3	3	3		3		3	3		3	
Unit Ext.		3.0	3.0	3.0		3.0		3.0	3.0		3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0	2.0	2.0		2.0		2.0	2.0		2.0	
Ext of g		2.0	2.0	2.0		2.0		2.0	2.0		2.0	
Ped Min g		3.4			3.4			3.4				

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 4/19/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM50BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PROSPECT STREET
North/South Street: BUENA VISTA AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	30	0	259	0	175	98	370	101	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		LT	
PHF			0.92		0.92		0.92	
Flow Rate			313		296		511	
% Heavy Veh			5		5		5	
No. Lanes			1		1		1	
Opposing-Lanes			0		1		1	
Conflicting-lanes			1		1		1	
Geometry group			1		1		1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			313		296		511	
Left-Turn			32		0		402	
Right-Turn			281		106		0	
Prop. Left-Turns			0.1		0.0		0.8	
Prop. Right-Turns			0.9		0.4		0.0	
Prop. Heavy Vehicle			0.0		0.0		0.0	
Geometry Group			1		1		1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.2	

hRT-adj			-0.6		-0.6		-0.6	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		-0.1		0.2	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			313		296		511	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.28		0.26		0.45	
hd, final value			5.63		5.56		5.58	
x, final value			0.49		0.46		0.79	
Move-up time, m			2.0		2.0		2.0	
Service Time			3.6		3.6		3.6	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			313		296		511	
Service Time			3.6		3.6		3.6	
Utilization, x			0.49		0.46		0.79	
Dep. headway, hd			5.63		5.56		5.58	
Capacity			563		546		634	
Delay			13.92		13.15		26.49	
LOS			B		B		D	
Approach:								
Delay			13.92		13.15		26.49	
LOS			B		B		D	

Intersection Delay 19.45 Intersection LOS C

HCS+: Unsignalized Intersections Release 5.2

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 4/19/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: AM51BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PROSPECT STREET
North/South Street: HAWTHORNE AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	27	414	27	154	289	111	0	0	0	0	0	0
% Thrus Left Lane					0							

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LT	TR	LTR		LTR	
PHF	0.92		0.92	0.92	1.00		1.00	
Flow Rate	507		167	434	0		0	
% Heavy Veh	5		5	5	0		0	
No. Lanes	1		2		1		1	
Opposing-Lanes	2		1		1		1	
Conflicting-lanes	1		1		2		2	
Geometry group	4a		5		2		2	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	507		167	434	0		0	
Left-Turn	29		167	0	0		0	
Right-Turn	29		0	120	0		0	
Prop. Left-Turns	0.1		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.1		0.0	0.3	0.0		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
Geometry Group	4a		5		2		2	
Adjustments Exhibit 17-33:								
hLT-adj	0.2		0.5		0.2		0.2	

hRT-adj	-0.6		-0.7		-0.6		-0.6	
hHV-adj	1.7		1.7		1.7		1.7	
hadj, computed	0.1		0.6	-0.1	0.0		0.0	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	507		167	434	0		0	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.45		0.15	0.39	0.00		0.00	
hd, final value	4.60		5.43	4.73	6.14		6.14	
x, final value	0.65		0.25	0.57	0.00		0.00	
Move-up time, m	2.0		2.3		2.0		2.0	
Service Time	2.6		3.1	2.4	4.1		4.1	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	507		167	434	0		0	
Service Time	2.6		3.1	2.4	4.1		4.1	
Utilization, x	0.65		0.25	0.57	0.00		0.00	
Dep. headway, hd	4.60		5.43	4.73	6.14		6.14	
Capacity	757		417	684	0		0	
Delay	15.65		9.95	13.53	9.14		9.14	
LOS	C		A	B	A		A	
Approach:								
Delay	15.65		12.54		9.14		9.14	
LOS	C		B		A		A	
Intersection Delay 13.96			Intersection LOS B					

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: ELM STREET

Inter.: PM1BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	3	0	1	3	1
LGConfig					LTR		L	TR		L	T	R
Volume				131	15	94	138	2333	203	180	1561	750
Lane Width					15.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol						0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A	A		
Thru					Thru	A			
Right					Right	A			
Peds		X			Peds	X	X		
WB Left		A			SB Left	A	A		
Thru		A			Thru	A			
Right		A			Right	A			
Peds		X			Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green		16.0				49.0	10.0		
Yellow		3.0				3.0	3.0		
All Red		2.0				2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	321	1805	0.81	0.18	49.9	D	49.9	D
Northbound								
L	371	1717	0.40	0.71	23.1	C		
TR	2647	4861	1.04	0.54	50.0	D	48.6	D
Southbound								
L	368	1719	0.53	0.71	30.6	C		
T	2684	4929	0.63	0.54	14.7	B	26.8	C
R	818	1503	1.00	0.54	50.9	D		

Intersection Delay = 38.6 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM1BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ELM STREET N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				131	15	94	138	2333	203	180	1561	750
% Heavy Veh				5	5	5	5	5	5	5	5	5
PHF				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PK 15 Vol				36	4	26	37	634	55	49	424	204
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	3	0	1	3	1
LGConfig					LTR		L	TR		L	T	R
Lane Width					15.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol					0			0			0	
Adj Flow					260		150	2757		196	1697	815
%InSharedLn												
Prop LTs					0.546		1.000	0.000		1.000	0.000	
Prop RTs				0.392			0.080			0.000		1.000
Peds Bikes	0			25	0		25	0		25	0	
Buses					0		0	0		0	0	0
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type					3		3	3		3	3	3
Unit Ext.					3.0		3.0	3.0		3.0	3.0	3.0
I Factor					1.000			1.000			1.000	
Lost Time					2.0		2.0	2.0		2.0	2.0	2.0
Ext of g					2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.2			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: NEW SCHOOL STREET

Inter.: PM2BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	3	0	1	3	0	0	0	0	0	0	0
LGConfig		TR		L	T							
Volume		2607	212	84	1392							
Lane Width		12.0		12.0	12.0							
RTOR Vol			0									

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru	A				Thru			
Right	A				Right			
Peds	X	X			Peds			
WB Left	A	A			SB Left			
Thru	A	A			Thru			
Right					Right			
Peds	X	X			Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	70.0	10.0						
Yellow	3.0	3.0						
All Red	2.0	2.0						

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	3786	4868	0.81	0.78	7.4	A	7.4	A
Westbound								
L	462	1719	0.20	1.00	11.7	B		
T	4929	4929	0.31	1.00	0.0+	A	0.7	A
Northbound								
Southbound								

Intersection Delay = 5.1 (sec/veh) Intersection LOS = A

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM2BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEW SCHOOL STREET N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		2607	212	84	1392							
% Heavy Veh		5	5	5	5							
PHF		0.92	0.92	0.92	0.92							
PK 15 Vol		708	58	23	378							
Hi Ln Vol												
% Grade		0			0							
Ideal Sat		1900		1900	1900							
ParkExist												
NumPark												
No. Lanes	0	3	0	1	3	0	0	0	0	0	0	0
LGConfig		TR		L	T							
Lane Width		12.0		12.0	12.0							
RTOR Vol			0									
Adj Flow		3064		91	1513							
%InSharedLn												
Prop LTs		0.000		1.000	0.000							
Prop RTs	0.075			0.000								
Peds Bikes	25	0										
Buses		0		0	0							
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0							
Arriv. Type		3		3	3							
Unit Ext.		3.0		3.0	3.0							
I Factor		1.000			1.000							
Lost Time		2.0		2.0	2.0							
Ext of g		2.0		2.0	2.0							
Ped Min g		3.4										

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: NEPPERHAN AVENUE

Inter.: PM3BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEW MAIN STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	3	0	1	3	0	1	0	1	1	1	1
LGConfig		TR		L	T		L		R	L	LT	R
Volume		1678	33	287	1105		165		276	865	119	344
Lane Width		12.0		12.0	12.0		12.0		12.0	12.0	12.0	12.0
RTOR Vol			0						0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left					NB	Left	A			
	Thru		A				Thru				
	Right		A				Right	A			
	Peds		X	X			Peds	X			
WB	Left		A	A		SB	Left	A			
	Thru		A	A			Thru	A			
	Right						Right	A			
	Peds		X	X			Peds	X			
NB	Right					EB	Right				
SB	Right					WB	Right				
Green			35.0	10.0				30.0			
Yellow			3.0	3.0				3.0			
All Red			2.0	2.0				2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	1910	4912	0.97	0.39	41.9	D	41.9	D
Westbound								
L	367	1717	0.85	0.56	50.8	D		
T	2738	4929	0.44	0.56	11.9	B	19.9	B
Northbound								
L	84	251	2.13	0.33	576.5	F		
							232.3	F
R	501	1503	0.60	0.33	27.0	C		
Southbound								
L	560	1680	0.94	0.33	53.1	D		
LT	571	1713	0.95	0.33	55.2	E	48.6	D
R	501	1503	0.75	0.33	32.7	C		

Intersection Delay = 54.7 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM3BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN AVENUE N/S St: NEW MAIN STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		1678	33	287	1105		165		276	865	119	344
% Heavy Veh		5	5	5	5		5		5	5	5	5
PHF		0.92	0.92	0.92	0.92		0.92		0.92	0.92	0.92	0.92
PK 15 Vol		456	9	78	300		45		75	235	32	93
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900		1900	1900		1900		1900	1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	3	0	1	3	0	1	0	1	1	1	1
LGConfig		TR		L	T		L		R	L	LT	R
Lane Width		12.0		12.0	12.0		12.0		12.0	12.0	12.0	12.0
RTOR Vol			0						0			0
Adj Flow		1860		312	1201		179		300	526	543	374
%InSharedLn										44		
Prop LTs		0.000		1.000	0.000		1.000				0.762	
Prop RTs		0.019			0.000				1.000		0.000	1.000
Peds Bikes		25	0					25	0		25	0
Buses		0		0	0		0		0	0	0	0
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0		0.0		0.0	0.0	0.0	0.0
Arriv. Type		3		3	3		3		3	3	3	3
Unit Ext.		3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0		2.0	2.0		2.0		2.0	2.0	2.0	2.0
Ext of g		2.0		2.0	2.0		2.0		2.0	2.0	2.0	2.0
Ped Min g		3.4						3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: NEPPERHAN AVENUE

Inter.: PM4BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	1	1	1	1	1	1	0
LGConfig	L	TR		L	T	R	L	T	R	L	TR	
Volume	41	992	123	466	1054	356	111	268	395	130	73	17
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
RTOR Vol			0			0			72			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A	A			NB Left	A			
Thru	A	A			Thru	A			
Right	A	A			Right	A			
Peds	X	X	X		Peds	X			
WB Left		A	A		SB Left	A			
Thru		A	A		Thru	A			
Right		A	A		Right	A			
Peds	X	X	X		Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	10.0	22.0	20.0			28.0			
Yellow	3.0	3.0	3.0			3.0			
All Red	2.0	2.0	2.0			2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	243	1712	0.19	0.37	23.6	C		
TR	1249	3376	0.97	0.37	49.7	D	48.8	D
Westbound								
L	500	1712	1.01	0.47	79.0	E		
T	1619	3445	0.71	0.47	22.5	C	36.0	D
R	704	1497	0.55	0.47	19.9	B		
Northbound								
L	344	1227	0.35	0.28	29.4	C		
T	507	1810	0.57	0.28	32.5	C	39.0	D
R	419	1497	0.84	0.28	47.8	D		
Southbound								
L	198	708	0.71	0.28	43.8	D		
TR	490	1750	0.20	0.28	27.6	C	37.2	D

Intersection Delay = 40.3 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM4BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN AVENUE N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	41	992	123	466	1054	356	111	268	395	130	73	17
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	11	270	33	127	286	97	30	73	107	35	20	5
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	1	1	1	1	1	1	0
LGConfig	L	TR		L	T	R	L	T	R	L	TR	
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
RTOR Vol		0			0			72			0	
Adj Flow	45	1212		507	1146	387	121	291	351	141	97	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs	0.111			0.000	1.000		0.000	1.000		0.186		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0	0	0	0	0	0	0	
%InProtPhase	0.0			0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Arriv. Type	3	3		3	3	3	3	3	3	3	3	
Unit Ext.	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Ext of g	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: HUDSON STREET

Inter.: PM5BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	0	0
LGConfig		LR						T				
Volume	528		180					659				
Lane Width		15.0						15.0				
RTOR Vol			0									

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru					Thru	A		
Right	A				Right			
Peds	X				Peds	X		
WB Left					SB Left			
Thru					Thru			
Right					Right			
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	43.0					37.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	873	1828	0.88	0.48	31.7	C	31.7	C
Westbound								
Northbound								
T	818	1990	0.88	0.41	34.9	C	34.9	C
Southbound								

Intersection Delay = 33.2 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM5BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HUDSON STREET N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	528		180					659				
% Heavy Veh	5		5					5				
PHF	0.92		0.92					0.92				
PK 15 Vol	143		49					179				
Hi Ln Vol												
% Grade		0						0				
Ideal Sat		1900						1900				
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	0	0
LGConfig		LR						T				
Lane Width		15.0						15.0				
RTOR Vol			0									
Adj Flow		770						716				
%InSharedLn												
Prop LTs		0.745						0.000				
Prop RTs	0.255						0.000					
Peds Bikes	50		0	0								
Buses		0						0				
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0				
Arriv. Type		3						3				
Unit Ext.		3.0						3.0				
I Factor		1.000						1.000				
Lost Time		2.0						2.0				
Ext of g		2.0						2.0				
Ped Min g		3.5			3.2							

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: PM6BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	0	1	0	0	0	0
LGConfig					TR			LT				
Volume					211	129	169	409				
Lane Width					12.0			15.0				
RTOR Vol						0						

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru	A		
Right					Right			
Peds		X			Peds	X		
WB Left					SB Left			
Thru		A			Thru			
Right		A			Right			
Peds		X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green		40.0				40.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	747	1680	0.49	0.44	18.3	B	18.3	B
Northbound								
LT	872	1962	0.72	0.44	23.4	C	23.4	C
Southbound								

Intersection Delay = 21.5 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM6BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume					211	129	169	409				
% Heavy Veh					5	5	5	5				
PHF					0.92	0.92	0.92	0.92				
PK 15 Vol					57	35	46	111				
Hi Ln Vol												
% Grade					0			0				
Ideal Sat					1900			1900				
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	0	1	0	0	0	0
LGConfig					TR			LT				
Lane Width					12.0			15.0				
RTOR Vol						0						
Adj Flow					369			629				
%InSharedLn												
Prop LTs					0.000			0.293				
Prop RTs				0.379			0.000					
Peds Bikes				50	0					0		
Buses					0			0				
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0				
Arriv. Type					3			3				
Unit Ext.					3.0			3.0				
I Factor					1.000			1.000				
Lost Time					2.0			2.0				
Ext of g					2.0			2.0				
Ped Min g					3.5						3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: PM7BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: PALISADE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	0	0	1	0	1
LGConfig								LR		L		R
Volume							5		414	811		335
Lane Width								15.0		12.0		12.0
RTOR Vol									0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru			
Right					Right	A		
Peds					Peds	X	X	
WB Left					SB Left		A	
Thru					Thru			
Right					Right		A	
Peds					Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green						30.0	50.0	
Yellow						3.0	3.0	
All Red						2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
Northbound								
LR	532	1595	0.86	0.33	40.9	D	40.9	D
Southbound								
L	912	1642	0.97	0.56	41.3	D		
							32.8	C
R	816	1469	0.45	0.56	12.2	B		

Intersection Delay = 35.0- (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM7BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: PALISADE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume							5		414	811		335
% Heavy Veh							5		5	5		5
PHF							0.92		0.92	0.92		0.92
PK 15 Vol							2		112	220		91
Hi Ln Vol												
% Grade								0			0	
Ideal Sat								1900		1900		1900
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	0	0	1	0	1
LGConfig								LR		L		R
Lane Width								15.0		12.0		12.0
RTOR Vol									0			0
Adj Flow								455		882		364
%InSharedLn												
Prop LTs								0.011				
Prop RTs							0.989					1.000
Peds Bikes							50	0		50	0	
Buses								0		0		0
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet								0.0		0.0		0.0
Arriv. Type								3		3		3
Unit Ext.								3.0		3.0		3.0
I Factor								1.000			1.000	
Lost Time								2.0		2.0		2.0
Ext of g								2.0		2.0		2.0
Ped Min g								3.5			3.5	

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM8BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PALISADE AVENUE
North/South Street: LOCUST HILL AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	39	168	46	0	994	179	0	59	17	74	82	146
% Thrus Left Lane						50						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			T	TR			R	
PHF			0.92	0.92			0.92	
Flow Rate			540	734			158	
% Heavy Veh			5	5			5	
No. Lanes			2				1	
Opposing-Lanes			0				0	
Conflicting-lanes			1				2	
Geometry group			1				1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			540	734			158	
Left-Turn			0	0			0	
Right-Turn			0	194			158	
Prop. Left-Turns			0.0	0.0			0.0	
Prop. Right-Turns			0.0	0.3			1.0	
Prop. Heavy Vehicle			0.0	0.0			0.0	
Geometry Group			1				1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2				0.2	

hRT-adj			-0.6				-0.6	
hHV-adj			1.7				1.7	
hadj, computed			0.1	-0.1			-0.5	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			540	734			158	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.48	0.65			0.14	
hd, final value			4.43	4.27			5.19	
x, final value			0.66	0.87			0.23	
Move-up time, m			2.0				2.0	
Service Time			2.4	2.3			3.2	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			540	734			158	
Service Time			2.4	2.3			3.2	
Utilization, x			0.66	0.87			0.23	
Dep. headway, hd			4.43	4.27			5.19	
Capacity			790	842			408	
Delay			15.74	28.36			9.72	
LOS			C	D			A	
Approach:								
Delay			23.01				9.72	
LOS			C				A	

Intersection Delay 21.54 Intersection LOS C

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: PALISADES AVENUE / ELM STREET

Inter.: PM9BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: PALISADE AVE / NEW SCHOOL ST

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	2	0	0	1	0	0	1	0
LGConfig					LTR			LT			TR	
Volume				140	614	217	152	93			87	239
Lane Width					12.0			12.0			12.0	
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A			
Thru					Thru	A			
Right					Right				
Peds	X				Peds	X			
WB Left	A				SB Left				
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	35.0					35.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	1437	3285	0.73	0.44	20.6	C	20.6	C
Northbound								
LT	377	862	0.71	0.44	24.2	C	24.2	C
Southbound								
TR	704	1610	0.50	0.44	16.8	B	16.8	B

Intersection Delay = 20.4 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM9BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: PALISADES AVENUE / ELM STREET N/S St: PALISADE AVE / NEW SCHOOL ST

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				140	614	217	152	93			87	239
% Heavy Veh				5	5	5	5	5			5	5
PHF				0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol				38	167	59	41	25			24	65
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	2	0	0	1	0	0	1	0
LGConfig					LTR			LT			TR	
Lane Width					12.0			12.0			12.0	
RTOR Vol						0						0
Adj Flow					1055			266			355	
%InSharedLn												
Prop LTs					0.144			0.620			0.000	
Prop RTs				0.224			0.000			0.732		
Peds Bikes	0			25	0					25	0	
Buses					0			0			0	
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0			0.0	
Arriv. Type					3			3			3	
Unit Ext.					3.0			3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0			2.0	
Ext of g					2.0			2.0			2.0	
Ped Min g		3.2			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: PM10BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	18	127	45	76	38	120	30	387	84	133	367	8
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	30.0				50.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	478	1433	0.43	0.33	24.0	C	24.0	C
Westbound								
LTR	419	1258	0.61	0.33	27.6	C	27.6	C
Northbound								
LTR	836	1505	0.65	0.56	15.8	B	15.8	B
Southbound								
LTR	648	1166	0.85	0.56	27.6	C	27.6	C

Intersection Delay = 23.0 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM10BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	18	127	45	76	38	120	30	387	84	133	367	8
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	5	35	12	21	10	33	8	105	23	36	100	2
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		207			254			545			553	
%InSharedLn												
Prop LTs		0.097			0.327			0.061			0.262	
Prop RTs		0.237			0.512			0.167			0.016	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: PM11BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: N. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	1	1	0
LGConfig		LTR			LTR			LTR		L	TR	
Volume	42	267	7	96	208	168	11	339	163	241	213	58
Lane Width		12.0			15.0			12.0		10.0	10.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0				45.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	532	1369	0.65	0.39	25.2	C	25.2	C
Westbound								
LTR	548	1409	0.94	0.39	50.2	D	50.2	D
Northbound								
LTR	767	1534	0.73	0.50	21.1	C	21.1	C
Southbound								
L	282	564	0.93	0.50	56.3	E		
TR	732	1463	0.40	0.50	14.5	B	34.1	C

Intersection Delay = 33.1 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM11BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: N. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	42	267	7	96	208	168	11	339	163	241	213	58
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	11	73	2	26	57	46	3	92	44	65	58	16
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	1	1	0
LGConfig		LTR			LTR			LTR		L	TR	
Lane Width		12.0			15.0			12.0		10.0	10.0	
RTOR Vol		0			0			0			0	
Adj Flow		344			513			557		262	295	
%InSharedLn												
Prop LTs		0.134			0.203			0.022		1.000	0.000	
Prop RTs	0.023			0.357			0.318			0.214		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0		0	0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0		0.0	0.0	
Arriv. Type		3			3			3		3	3	
Unit Ext.		3.0			3.0			3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0		2.0	2.0	
Ext of g		2.0			2.0			2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM12BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: ASHFORD AVENUE
North/South Street: LOCUST HILL ROAD
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		504	154	104	410	
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	
Hourly Flow Rate, HFR		547	167	113	445	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	42		79			
Peak Hour Factor, PHF	0.92		0.92			
Hourly Flow Rate, HFR	45		85			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		113		130				
C(m) (vph)		872		274				
v/c		0.13		0.47				
95% queue length		0.44		2.39				
Control Delay		9.7		29.5				
LOS		A		D				
Approach Delay				29.5				
Approach LOS				D				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: PM13BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: PALISADE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	1	1	0	0	1	0	0	0	0
LGConfig		LTR		L	TR			LTR				
Volume	74	456	81	231	284	80	129	146	146			
Lane Width		15.0		12.0	12.0			15.0				
RTOR Vol		0			0			0				

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		A			NB Left A			
Thru		A			Thru A			
Right		A			Right A			
Peds	X	X			Peds X			
WB Left	A	A			SB Left			
Thru	A	A			Thru			
Right	A	A			Right			
Peds	X	X			Peds X			
NB Right					EB Right			
SB Right					WB Right			
Green	8.0	40.0			27.0			
Yellow	3.0	3.0			3.0			
All Red	2.0	2.0			2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	698	1571	0.95	0.44	46.9	D	46.9	D
Westbound								
L	368	1537	0.68	0.59	18.1	B		
TR	923	1568	0.43	0.59	10.5	B	13.4	B
Northbound								
LTR	497	1658	0.92	0.30	53.2	D	53.2	D
Southbound								

Intersection Delay = 36.3 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM13BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: PALISADE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	74	456	81	231	284	80	129	146	146			
% Heavy Veh	5	5	5	5	5	5	5	5	5			
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	20	124	22	63	77	22	35	40	40			
Hi Ln Vol												
% Grade		0			0			0				
Ideal Sat		1900		1900	1900			1900				
ParkExist												
NumPark												
No. Lanes	0	1	0	1	1	0	0	1	0	0	0	0
LGConfig		LTR		L	TR			LTR				
Lane Width		15.0		12.0	12.0			15.0				
RTOR Vol		0			0			0				
Adj Flow		664		251	396			458				
%InSharedLn												
Prop LTs		0.120		1.000	0.000			0.306				
Prop RTs		0.133			0.220			0.347				
Peds Bikes	25	0		25	0		25	0		0		
Buses		0		0	0			0				
%InProtPhase					0.0							

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0			0.0				
Arriv. Type		3		3	3			3				
Unit Ext.		3.0		3.0	3.0			3.0				
I Factor		1.000			1.000			1.000				
Lost Time		2.0		2.0	2.0			2.0				
Ext of g		2.0		2.0	2.0			2.0				
Ped Min g		3.4			3.4			3.4			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: PM14BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	1	1	0	1	2	0	1	2	1
LGConfig	L	TR		L	TR		L	TR		L	T	R
Volume	129	568	68	176	548	72	100	532	185	173	685	161
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X	X	
WB Left	A	A			SB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	30.0	10.0				30.0	10.0	
Yellow	3.0	3.0				3.0	3.0	
All Red	2.0	2.0				2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	303	1540	0.46	0.45	37.1	D		
TR	479	1598	1.44	0.30	245.7	F	210.6	F
Westbound								
L	303	1541	0.63	0.45	41.5	D		
TR	479	1596	1.41	0.30	230.4	F	188.7	F
Northbound								
L	323	1534	0.34	0.45	30.1	C		
TR	885	2949	0.88	0.30	43.5	D	41.9	D
Southbound								
L	313	1535	0.60	0.45	37.3	D		
T	930	3101	0.80	0.30	37.3	D	36.0	D
R	398	1327	0.44	0.30	29.0	C		

Intersection Delay = 112.5 (sec/veh) Intersection LOS = F

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM14BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	129	568	68	176	548	72	100	532	185	173	685	161
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	35	154	18	48	149	20	27	145	50	47	186	44
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	1	1	0	1	1	0	1	2	0	1	2	1
LGConfig	L	TR		L	TR		L	TR		L	T	R
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol		0			0			0			0	
Adj Flow	140	691		191	674		109	779		188	745	175
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs	0.107			0.116			0.258			0.000	1.000	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0		0	0		0	0	0
%InProtPhase	0.0			0.0			0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type	3	3		3	3		3	3		3	3	3
Unit Ext.	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext of g	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: PM15BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NYS ROUTE 9A / WALNUT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	1	0	1	0	1	1	0
LGConfig		LTR			LT	R		LTR		L	TR	
Volume	222	530	57	11	460	248	69	135	27	205	149	219
Lane Width		15.0			12.0	12.0		15.0		12.0	15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0					30.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	582	1047	1.51	0.56	258.5	F	258.5	F
Westbound								
LT	884	1592	0.58	0.56	14.1	B	13.1	B
R	752	1353	0.36	0.56	11.4	B		
Northbound								
LTR	290	869	0.87	0.33	51.0	D	51.0	D
Southbound								
L	290	871	0.77	0.33	38.8	D		
TR	532	1595	0.75	0.33	32.7	C	34.8	C

Intersection Delay = 107.3 (sec/veh) Intersection LOS = F

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM15BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: NYS ROUTE 9A / WALNUT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	222	530	57	11	460	248	69	135	27	205	149	219
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	60	144	15	3	125	67	19	37	7	56	40	60
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900	1900		1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	1	0	1	0	1	1	0
LGConfig		LTR			LT	R		LTR		L	TR	
Lane Width		15.0			12.0	12.0		15.0		12.0	15.0	
RTOR Vol		0			0			0			0	
Adj Flow		879			512	270		251		223	400	
%InSharedLn												
Prop LTs		0.274			0.023			0.299		1.000	0.000	
Prop RTs		0.071			0.000	1.000		0.116			0.595	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0	0		0		0	0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0	0.0		0.0		0.0	0.0	
Arriv. Type		3			3	3		3		3	3	
Unit Ext.		3.0			3.0	3.0		3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0	2.0		2.0		2.0	2.0	
Ext of g		2.0			2.0	2.0		2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK AM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM16BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WALNUT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	1	0
LGConfig	L	TR		L	TR			LTR			LTR	
Volume	11	1719	23	130	1433	24	24	99	100	42	126	43
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	54.0	10.0				21.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	329	1716	0.04	0.69	22.2	C		
TR	1856	3437	1.02	0.54	49.1	D	48.9	D
Westbound								
L	330	1718	0.43	0.69	35.3	D		
TR	1855	3436	0.85	0.54	23.8	C	24.7	C
Northbound								
LTR	337	1605	0.72	0.21	44.1	D	44.1	D
Southbound								
LTR	290	1381	0.79	0.21	51.4	D	51.4	D

Intersection Delay = 38.6 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK AM HIGHWAY HOUR
Intersection: PM16BD
Area Type: All other areas
Jurisdiction: W/ CORRIDOR IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: WALNUT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	11	1719	23	130	1433	24	24	99	100	42	126	43
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	3	467	6	35	389	7	7	27	27	11	34	12
Hi Ln Vol												
% Grade		0			0			-6			0	
Ideal Sat	1900	1900		1900	1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	0	0	1	0	0	1	0
LGConfig	L	TR		L	TR			LTR			LTR	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow	12	1893		141	1584			243			230	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000			0.107			0.200	
Prop RTs		0.013			0.016			0.449			0.204	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0			0			0	
%InProtPhase	0.0			0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0			0.0			0.0	
Arriv. Type	3	3		3	3			3			3	
Unit Ext.	3.0	3.0		3.0	3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0			2.0			2.0	
Ext of g	2.0	2.0		2.0	2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM17BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: PRESCOTT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	0	0
LGConfig	L	TR		L	TR			LTR				
Volume	7	1877	18	223	2077	35	8	8	104			
Lane Width	12.0	12.0		12.0	12.0			15.0				
RTOR Vol			0			0			0			

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left		A			NB Left	A			
Thru		A			Thru	A			
Right		A			Right	A			
Peds	X	X			Peds	X			
WB Left	A	A			SB Left				
Thru	A	A			Thru				
Right	A	A			Right				
Peds	X	X			Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	10.0	55.0				20.0			
Yellow	3.0	3.0				3.0			
All Red	2.0	2.0				2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	73	132	0.11	0.55	11.4	B		
TR	1892	3440	1.09	0.55	71.9	E	71.7	E
Westbound								
L	245	1718	0.99	0.70	87.8	F		
TR	2405	3436	0.95	0.70	23.4	C	29.6	C
Northbound								
LTR	349	1747	0.38	0.20	35.3	D	35.3	D
Southbound								

Intersection Delay = 48.1 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM17BD
Area Type: All other areas
Jurisdiction: W/ CORRIDOR IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: PRESCOTT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	7	1877	18	223	2077	35	8	8	104			
% Heavy Veh	5	5	5	5	5	5	5	5	5			
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	2	510	5	61	564	10	2	2	28			
Hi Ln Vol												
% Grade		0			0			-6				
Ideal Sat	1900	1900		1900	1900			1900				
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	0	0	1	0	0	0	0
LGConfig	L	TR		L	TR			LTR				
Lane Width	12.0	12.0		12.0	12.0			15.0				
RTOR Vol			0			0			0			
Adj Flow	8	2060		242	2296			131				
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000			0.069				
Prop RTs		0.010			0.017			0.863				
Peds Bikes		25	0		25	0		25	0		0	
Buses	0	0		0	0			0				
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0			0.0				
Arriv. Type	3	3		3	3			3				
Unit Ext.	3.0	3.0		3.0	3.0			3.0				
I Factor		1.000			1.000			1.000				
Lost Time	2.0	2.0		2.0	2.0			2.0				
Ext of g	2.0	2.0		2.0	2.0			2.0				
Ped Min g		3.4			3.4			3.4			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM18BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: ASHBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	1	0	0	0	1	0	0
LGConfig		T			T	R				L	LR	
Volume		2101			2182	809				797	30	
Lane Width		12.0			12.0	12.0				12.0	12.0	
RTOR Vol					0						0	

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru	A				Thru			
Right					Right			
Peds	X				Peds	X		
WB Left					SB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	60.0					30.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
T	2067	3445	1.10	0.60	75.1	E	75.1	E
Westbound								
T	2067	3445	1.15	0.60	92.6	F	79.1	E
R	904	1507	0.97	0.60	42.5	D		
Northbound								
Southbound								
L	516	1719	0.87	0.30	48.3	D		
LR	512	1707	0.88	0.30	49.0	D	48.6	D

Intersection Delay = 73.4 (sec/veh) Intersection LOS = E

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM18BD
Area Type: All other areas
Jurisdiction: W/ CORRIDOR IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: ASHBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		2101			2182	809				797		30
% Heavy Veh		5			5	5				5		5
PHF		0.92			0.92	0.92				0.92		0.92
PK 15 Vol		571			593	220				217		8
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900			1900	1900				1900	1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	0	2	1	0	0	0	1	0	0
LGConfig		T			T	R				L	LR	
Lane Width		12.0			12.0	12.0				12.0	12.0	
RTOR Vol						0						0
Adj Flow		2284			2372	879				450	449	
%InSharedLn										48		
Prop LTs		0.000			0.000						0.926	
Prop RTs	0.000			0.000		1.000				0.073		
Peds Bikes				25		0	0			25		0
Buses		0			0	0				0	0	
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0	0.0				0.0	0.0	
Arriv. Type		3			3	3				3	3	
Unit Ext.		3.0			3.0	3.0				3.0	3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0			2.0	2.0				2.0	2.0	
Ext of g		2.0			2.0	2.0				2.0	2.0	
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM19BD
Area Type: All other areas
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SAW MILL RIVER PARKWAY SB RAMP

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	1	0	2	0	0	0	0	0	0	2
LGConfig		T	R		T							R
Volume		2216	683		2347							644
Lane Width		12.0	12.0		12.0							12.0
RTOR Vol			0									0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru		A			Thru			
Right		A			Right			
Peds					Peds			
WB Left					SB Left			
Thru		A			Thru			
Right					Right	A		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green		70.0				20.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
T	2411	3445	1.00	0.70	33.1	C	27.6	C
R	1130	1615	0.66	0.70	9.7	A		
Westbound								
T	2411	3445	1.06	0.70	51.0	D	51.0	D
Northbound								
Southbound								
							155.7	F
R	572	2859	1.22	0.20	155.7	F		

Intersection Delay = 50.9 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM19BD
Area Type: All other areas
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SAW MILL RIVER PARKWAY SB RAMP

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		2216	683		2347							644
% Heavy Veh		5	0		5							0
PHF		0.92	0.92		0.92							0.92
PK 15 Vol		602	186		638							175
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900	1900		1900							1900
ParkExist												
NumPark												
No. Lanes	0	2	1	0	2	0	0	0	0	0	0	2
LGConfig		T	R		T							R
Lane Width		12.0	12.0		12.0							12.0
RTOR Vol			0									0
Adj Flow		2409	742		2551							700
%InSharedLn												
Prop LTs		0.000			0.000							
Prop RTs	0.000		1.000	0.000								1.000
Peds Bikes	0									0		
Buses		0	0		0							0
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0	0.0		0.0							0.0
Arriv. Type		3	3		3							3
Unit Ext.		3.0	3.0		3.0							3.0
I Factor		1.000			1.000						1.000	
Lost Time		2.0	2.0		2.0							2.0
Ext of g		2.0	2.0		2.0							2.0
Ped Min g		3.2									3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM20BD
Area Type: All other areas
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SAW MILL RIVER PARKWAY NB RAMP

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	2
LGConfig	L	T			T	R				L		R
Volume	623	1593			1088	224				34		1260
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left			
EB Thru	A	A			NB Thru			
EB Right					NB Right			
EB Peds					NB Peds			
WB Left					SB Left	A		
WB Thru	A				SB Thru			
WB Right	A				SB Right	A		
WB Peds					SB Peds			
NB Right					EB Right			
SB Right		A			WB Right	A		
Green	50.0	20.0				15.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	582	1805	1.16	0.75	122.7	F		
T	2584	3445	0.67	0.75	7.0	A	39.5	D
Westbound								
T	1723	3445	0.69	0.50	20.2	C	17.7	B
R	1130	1615	0.22	0.70	5.4	A		
Northbound								
Southbound								
L	271	1805	0.14	0.15	37.1	D		
							125.2	F
R	1144	2859	1.20	0.40	127.6	F		

Intersection Delay = 56.6 (sec/veh) Intersection LOS = E

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM20BD
Area Type: All other areas
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SAW MILL RIVER PARKWAY NB RAMP

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	623	1593			1088	224				34		1260
% Heavy Veh	0	5			5	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	169	433			296	61				9		342
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat	1900	1900			1900	1900				1900		1900
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	2
LGConfig	L	T			T	R				L		R
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0
Adj Flow	677	1732			1183	243				37		1370
%InSharedLn												
Prop LTs	1.000	0.000			0.000							
Prop RTs		0.000		0.000		1.000						1.000
Peds				0			0			0		
Bikes												
Buses	0	0			0	0				0		0
%InProtPhase	0.0											
Duration	0.25			Area Type: All other areas								

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0				0.0		0.0
Arriv. Type	3	3			3	3				3		3
Unit Ext.	3.0	3.0			3.0	3.0				3.0		3.0
I Factor		1.000			1.000						1.000	
Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Ext of g	2.0	2.0			2.0	2.0				2.0		2.0
Ped Min g					3.2			3.2			3.2	

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM21BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: DOCK STREET
North/South Street: BUENA VISTA AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	137	0	42	0	179	59	94	392	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		LT	
PHF			0.92		0.92		0.92	
Flow Rate			193		258		528	
% Heavy Veh			5		5		5	
No. Lanes			1		1		1	
Opposing-Lanes			0		1		1	
Conflicting-lanes			1		1		1	
Geometry group			1		1		1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			193		258		528	
Left-Turn			148		0		102	
Right-Turn			45		64		0	
Prop. Left-Turns			0.8		0.0		0.2	
Prop. Right-Turns			0.2		0.2		0.0	
Prop. Heavy Vehicle			0.0		0.0		0.0	
Geometry Group			1		1		1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.2	

hRT-adj	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7
hadj, computed	0.1	-0.1	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			193		258		528	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.17		0.23		0.47	
hd, final value			5.95		5.17		5.01	
x, final value			0.32		0.37		0.73	
Move-up time, m			2.0		2.0		2.0	
Service Time			4.0		3.2		3.0	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			193		258		528	
Service Time			4.0		3.2		3.0	
Utilization, x			0.32		0.37		0.73	
Dep. headway, hd			5.95		5.17		5.01	
Capacity			443		508		708	
Delay			11.71		11.19		20.56	
LOS			B		B		C	
Approach:								
Delay			11.71		11.19		20.56	
LOS			B		B		C	

Intersection Delay 16.35 Intersection LOS C

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: PM22BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: BEUNA VISTA AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	12	36	89	34	53	49	131	176	8	22	336	13
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0					25.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	591	1418	0.25	0.42	11.6	B	11.6	B
Westbound								
LTR	579	1389	0.26	0.42	11.7	B	11.7	B
Northbound								
LTR	446	1071	0.77	0.42	22.9	C	22.9	C
Southbound								
LTR	652	1566	0.62	0.42	15.5	B	15.5	B

Intersection Delay = 16.8 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM22BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: BEUNA VISTA AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	12	36	89	34	53	49	131	176	8	22	336	13
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	3	10	24	9	14	13	36	48	2	6	91	4
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		149			148			342			403	
%InSharedLn												
Prop LTs		0.087			0.250			0.415			0.060	
Prop RTs		0.651			0.358			0.026			0.035	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM23BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: HUDSON STREET
North/South Street: BUENA VISTA AVENUE
Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		324	14	47	453	
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	
Hourly Flow Rate, HFR		352	15	51	492	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	21		32			
Peak Hour Factor, PHF	0.92		0.92			
Hourly Flow Rate, HFR	22		34			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		51		56				
C(m) (vph)		1175		426				
v/c		0.04		0.13				
95% queue length		0.14		0.45				
Control Delay		8.2		14.7				
LOS		A		B				
Approach Delay				14.7				
Approach LOS				B				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: NEPPERHAN STREET/DOCK STREET

Inter.: PM24BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	0	0	1	1	0	0	2	0
LGConfig		LTR					L	TR			LTR	
Volume	26	76	100				77	315	169	25	795	114
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0						0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X			
WB Left					SB Left	A			
Thru					Thru	A			
Right					Right	A			
Peds	X				Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	25.0					25.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	686	1646	0.32	0.42	12.1	B	12.1	B
Westbound								
Northbound								
L	120	280	0.70	0.42	31.0	C		
TR	636	1527	0.83	0.42	24.4	C	25.3	C
Southbound								
LTR	1179	2829	0.86	0.42	22.6	C	22.6	C

Intersection Delay = 22.3 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM24BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN STREET/DOCK STREET N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	26	76	100				77	315	169	25	795	114
% Heavy Veh	5	5	5				5	5	5	5	5	5
PHF	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
PK 15 Vol	7	21	27				21	86	46	7	216	31
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900					1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	0	0	1	1	0	0	2	0
LGConfig		LTR					L	TR			LTR	
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol		0						0			0	
Adj Flow		220					84	526			1015	
%InSharedLn												
Prop LTs		0.127					1.000	0.000			0.027	
Prop RTs	0.495							0.350		0.122		
Peds Bikes	25	0		0			25	0		25	0	
Buses		0					0	0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0					0.0	0.0			0.0	
Arriv. Type		3					3	3			3	
Unit Ext.		3.0					3.0	3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0					2.0	2.0			2.0	
Ext of g		2.0					2.0	2.0			2.0	
Ped Min g		3.3			3.2			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: PM25BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WARBURTON AVE / RIVERDALE AVE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Volume	47		163	201	68	146	117	349			745	56
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru						Thru	A	A		
	Right	A					Right				
	Peds	X					Peds	X	X		
WB	Left	A				SB	Left				
	Thru	A					Thru	A			
	Right	A					Right	A			
	Peds	X					Peds	X	X		
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		35.0						40.0	10.0		
Yellow		3.0						3.0	3.0		
All Red		2.0						2.0	2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	463	1322	0.49	0.35	26.4	C	26.4	C
Westbound								
LTR	573	1636	0.79	0.35	36.4	D	36.4	D
Northbound								
L	361	1538	0.35	0.55	24.7	C		
T	1706	3101	0.22	0.55	11.6	B	14.9	B
Southbound								
TR	1225	3062	0.71	0.40	27.1	C	27.1	C

Intersection Delay = 26.0 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM25BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: WARBURTON AVE / RIVERDALE AVE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	47		163	201	68	146	117	349			745	56
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	13		44	55	18	40	32	95			202	15
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0
Adj Flow		228			451		127	379			871	
%InSharedLn												
Prop LTs		0.224			0.483		1.000	0.000			0.000	
Prop RTs	0.776			0.353			0.000			0.070		
Peds Bikes	25		0	25		0				25		0
Buses		0			0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0			0.0	
Arriv. Type		3			3		3	3			3	
Unit Ext.		3.0			3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0			2.0	
Ext of g		2.0			2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: HUDSON STREET

Inter.: PM26BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	0	0	0	2	1	1	2	0
LGConfig		LTR						T	R	L	T	
Volume	15	64	38					400	263	276	783	
Lane Width		15.0						12.0	12.0	12.0	12.0	
RTOR Vol			0						0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X	X	
WB Left					SB Left	A	A	
Thru					Thru	A	A	
Right					Right			
Peds	X				Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	30.0					40.0	15.0	
Yellow	3.0					3.0	3.0	
All Red	2.0					2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	507	1689	0.25	0.30	26.8	C	26.8	C
Westbound								
Northbound								
T	1240	3101	0.35	0.40	21.1	C	22.2	C
R	536	1341	0.53	0.40	23.9	C		
Southbound								
L	598	1530	0.50	0.60	15.9	B		
T	1861	3101	0.46	0.60	11.2	B	12.4	B

Intersection Delay = 16.9 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM26BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HUDSON STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	15	64	38					400	263	276	783	
% Heavy Veh	5	5	5					5	5	5	5	
PHF	0.92	0.92	0.92					0.92	0.92	0.92	0.92	
PK 15 Vol	4	17	10					109	71	75	213	
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900						1900	1900	1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	0	0	0	2	1	1	2	0
LGConfig		LTR						T	R	L	T	
Lane Width		15.0						12.0	12.0	12.0	12.0	
RTOR Vol			0						0			
Adj Flow		127						435	286	300	851	
%InSharedLn												
Prop LTs		0.126						0.000		1.000	0.000	
Prop RTs	0.323						0.000	1.000		0.000		
Peds Bikes	25	0		0			25	0				
Buses		0						0	0	0	0	
%InProtPhase										0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0	0.0	0.0	0.0	
Arriv. Type		3						3	3	3	3	
Unit Ext.		3.0						3.0	3.0	3.0	3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0						2.0	2.0	2.0	2.0	
Ext of g		2.0						2.0	2.0	2.0	2.0	
Ped Min g		3.4			3.2			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: PROSPECT STREET

Inter.: PM27BD
Area Type: CBD or Similar
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	1	2	0	1	2	1
LGConfig		LTR		L	TR		L	TR		L	T	R
Volume	13	393	54	482	502	212	119	472	347	374	510	58
Lane Width		12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru	A					Thru	A	A		
	Right	A					Right	A	A		
	Peds	X	X				Peds	X	X	X	
WB	Left	A	A			SB	Left		A	A	
	Thru	A	A				Thru		A	A	
	Right	A	A				Right		A	A	
	Peds	X	X				Peds	X	X	X	
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		25.0	10.0					8.0	20.0	12.0	
Yellow		3.0	3.0					3.0	3.0	3.0	
All Red		2.0	2.0					2.0	2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	678	2710	0.74	0.25	38.7	D	38.7	D
Westbound								
L	360	1534	1.46	0.40	256.6	F		
TR	1179	2947	0.66	0.40	25.8	C	118.8	F
Northbound								
L	216	1534	0.60	0.33	29.9	C		
TR	949	2876	0.94	0.33	48.8	D	46.4	D
Southbound								
L	337	1539	1.21	0.37	156.0	F		
T	1147	3101	0.48	0.37	24.5	C	76.6	E
R	502	1356	0.13	0.37	20.9	C		

Intersection Delay = 77.9 (sec/veh) Intersection LOS = E

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM27BD
Area Type: CBD or Similar
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: PROSPECT STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	13	393	54	482	502	212	119	472	347	374	510	58
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	4	107	15	131	136	58	32	128	94	102	139	16
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900		1900	1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	2	0	1	2	0	1	2	0	1	2	1
LGConfig		LTR		L		TR	L		TR	L	T	R
Lane Width		12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0
Adj Flow		500		524	776		129	890		407	554	63
%InSharedLn												
Prop LTs		0.028		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs	0.118			0.296			0.424			0.000	1.000	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0		0	0		0	0		0	0	0
%InProtPhase				0.0			0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type		3		3	3		3	3		3	3	3
Unit Ext.		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext of g		2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: VARK STREET

Inter.: PM28BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	92	83	39	46	28	64	42	782	156	224	784	45
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X	X	
WB Left	A				SB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	25.0					40.0	10.0	
Yellow	3.0					3.0	3.0	
All Red	2.0					2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	379	1363	0.61	0.28	31.2	C	31.2	C
Westbound								
LTR	384	1384	0.39	0.28	27.0	C	27.0	C
Northbound								
L	412	1539	0.11	0.61	14.1	B		
TR	1337	3009	0.76	0.44	23.7	C	23.3	C
Southbound								
L	378	1541	0.64	0.61	30.0	C		
TR	1365	3071	0.66	0.44	20.8	C	22.8	C

Intersection Delay = 24.0 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM28BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VARK STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	92	83	39	46	28	64	42	782	156	224	784	45
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	25	23	11	12	8	17	11	212	42	61	213	12
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		232			150		46	1020		243	901	
%InSharedLn												
Prop LTs		0.431			0.333		1.000	0.000		1.000	0.000	
Prop RTs	0.181			0.467			0.167			0.054		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: HERRIOT STREET

Inter.: PM29BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig					LTR		L	T			TR	
Volume				33	21	30	28	877			858	22
Lane Width					15.0		12.0	12.0			12.0	
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A	A		
Thru					Thru	A	A		
Right					Right				
Peds		X			Peds	X	X		
WB Left		A			SB Left				
Thru		A			Thru	A			
Right		A			Right	A			
Peds		X			Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green		25.0				40.0	10.0		
Yellow		3.0				3.0	3.0		
All Red		2.0				2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	460	1656	0.20	0.28	25.1	C	25.1	C
Northbound								
L	395	1540	0.08	0.61	14.5	B		
T	1895	3101	0.50	0.61	10.0+	B	10.2	B
Southbound								
TR	1372	3087	0.70	0.44	21.7	C	21.7	C

Intersection Delay = 16.3 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM29BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HERRIOT STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				33	21	30	28	877			858	22
% Heavy Veh				5	5	5	5	5			5	5
PHF				0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol				9	6	8	8	238			233	6
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig					LTR		L	T			TR	
Lane Width					15.0		12.0	12.0			12.0	
RTOR Vol					0						0	
Adj Flow					92		30	953			957	
%InSharedLn												
Prop LTs					0.391		1.000	0.000			0.000	
Prop RTs				0.359			0.000			0.025		
Peds Bikes	0			25	0					25	0	
Buses					0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0		0.0	0.0			0.0	
Arriv. Type					3		3	3			3	
Unit Ext.					3.0		3.0	3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0		2.0	2.0			2.0	
Ext of g					2.0		2.0	2.0			2.0	
Ped Min g		3.2			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: LUDLOW STREET

Inter.: PM30BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Volume	74		103	84	40	160	38	704			914	41
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru						Thru	A	A		
	Right	A					Right				
	Peds	X					Peds	X	X		
WB	Left	A				SB	Left				
	Thru	A					Thru	A			
	Right	A					Right	A			
	Peds	X					Peds	X	X		
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		25.0						40.0	10.0		
Yellow		3.0						3.0	3.0		
All Red		2.0						2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	307	1104	0.63	0.28	32.4	C	32.4	C
Westbound								
LTR	443	1593	0.70	0.28	33.8	C	33.8	C
Northbound								
L	373	1541	0.11	0.61	16.5	B		
T	1895	3101	0.40	0.61	9.2	A	9.5	A
Southbound								
TR	1368	3077	0.76	0.44	23.5	C	23.5	C

Intersection Delay = 20.8 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM30BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LUDLOW STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	74		103	84	40	160	38	704			914	41
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	20		28	23	11	43	10	191			248	11
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0
Adj Flow		192			308		41	765			1038	
%InSharedLn												
Prop LTs		0.417			0.295		1.000	0.000			0.000	
Prop RTs	0.583			0.565			0.000			0.043		
Peds Bikes	25		0	25		0				25		0
Buses		0			0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0			0.0	
Arriv. Type		3			3		3	3			3	
Unit Ext.		3.0			3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0			2.0	
Ext of g		2.0			2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: RADFORD STREET

Inter.: PM31BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	2	0	1	2	0
LGConfig					LR			TR		L	T	
Volume				80		125		545	72	145	685	
Lane Width					15.0			12.0		12.0	12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X	X	
WB Left		A			SB Left	A	A	
Thru					Thru	A	A	
Right		A			Right			
Peds		X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green		25.0				40.0	10.0	
Yellow		3.0				3.0	3.0	
All Red		2.0				2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LR	441	1586	0.51	0.28	28.3	C	28.3	C
Northbound								
TR	1350	3037	0.50	0.44	18.1	B	18.1	B
Southbound								
L	491	1536	0.32	0.61	13.5	B		
T	1895	3101	0.39	0.61	9.1	A	9.9	A

Intersection Delay = 15.2 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM31BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: RADFORD STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				80		125		545	72	145	685	
% Heavy Veh				5		5		5	5	5	5	
PHF				0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol				22		34		148	20	39	186	
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	2	0	1	2	0
LGConfig					LR			TR		L	T	
Lane Width					15.0			12.0		12.0	12.0	
RTOR Vol						0			0			
Adj Flow					223			670		158	745	
%InSharedLn												
Prop LTs					0.390			0.000		1.000	0.000	
Prop RTs				0.610			0.116			0.000		
Peds Bikes	0			25	0		25	0				
Buses					0			0		0	0	
%InProtPhase										0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0		0.0	0.0	
Arriv. Type					3			3		3	3	
Unit Ext.					3.0			3.0		3.0	3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0		2.0	2.0	
Ext of g					2.0			2.0		2.0	2.0	
Ped Min g		3.2			3.4			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: VALENTINE LANE

Inter.: PM32BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	14	58	63	47	57	110	71	486	54	92	590	19
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X	X		
WB Left	A				SB Left	A	A		
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green	25.0					40.0	10.0		
Yellow	3.0					3.0	3.0		
All Red	2.0					2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	441	1587	0.33	0.28	26.3	C	26.3	C
Westbound								
LTR	411	1479	0.57	0.28	29.7	C	29.7	C
Northbound								
L	494	1536	0.16	0.61	11.3	B		
TR	1353	3045	0.43	0.44	17.4	B	16.7	B
Southbound								
L	524	1534	0.19	0.61	10.7	B		
TR	1370	3083	0.48	0.44	18.0	B	17.0	B

Intersection Delay = 19.3 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM32BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VALENTINE LANE N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	14	58	63	47	57	110	71	486	54	92	590	19
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	4	16	17	13	15	30	19	132	15	25	160	5
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		146			233		77	587		100	662	
%InSharedLn												
Prop LTs		0.103			0.219		1.000	0.000		1.000	0.000	
Prop RTs		0.466			0.515			0.101			0.032	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: VARK STREET

Inter.: PM33BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	72	144	82	130	78	27	15	334	52	25	334	58
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left		A			SB Left	A		
Thru		A			Thru	A		
Right		A			Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0	20.0				40.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	417	1667	0.78	0.25	43.9	D	43.9	D
Westbound								
LTR	333	1667	0.77	0.20	48.0	D	48.0	D
Northbound								
LTR	623	1557	0.70	0.40	28.5	C	28.5	C
Southbound								
LTR	610	1524	0.74	0.40	30.5	C	30.5	C

Intersection Delay = 35.9 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM33BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VARK STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	72	144	82	130	78	27	15	334	52	25	334	58
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	20	39	22	35	21	7	4	91	14	7	91	16
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		324			255			436			453	
%InSharedLn												
Prop LTs		0.241			0.553			0.037			0.060	
Prop RTs		0.275			0.114			0.131			0.139	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: HERRIOT STREET

Inter.: PM34BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	0	1	0	0	1	0
LGConfig		LR			LTR			LT			TR	
Volume	32		31	17	63	210	50	363			475	69
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru					Thru	A		
Right	A				Right			
Peds	X				Peds	X		
WB Left	A				SB Left			
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	30.0					50.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	430	1291	0.16	0.33	21.3	C	21.3	C
Westbound								
LTR	521	1564	0.60	0.33	27.0	C	27.0	C
Northbound								
LT	800	1440	0.56	0.56	13.8	B	13.8	B
Southbound								
TR	887	1596	0.67	0.56	16.0	B	16.0	B

Intersection Delay = 18.0 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM34BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HERRIOT STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	32		31	17	63	210	50	363			475	69
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	9		8	5	17	57	14	99			129	19
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	0	1	0	0	1	0
LGConfig		LR			LTR			LT			TR	
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol		0			0						0	
Adj Flow		69			314			449			591	
%InSharedLn												
Prop LTs		0.507			0.057			0.120			0.000	
Prop RTs	0.493			0.726			0.000			0.127		
Peds Bikes	25		0	25		0				25		0
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: BRIGHT PLACE

Inter.: PM35BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig					LR			TR			LT	
Volume				40		36		736	31	4	626	
Lane Width					15.0			12.0			12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X		
WB Left		A			SB Left	A		
Thru					Thru	A		
Right		A			Right			
Peds		X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green		30.0				50.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LR	535	1604	0.15	0.33	21.2	C	21.2	C
Northbound								
TR	899	1618	0.93	0.56	33.8	C	33.8	C
Southbound								
LT	902	1623	0.76	0.56	19.1	B	19.1	B

Intersection Delay = 26.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM35BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: BRIGHT PLACE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				40		36		736	31	4	626	
% Heavy Veh				5		5		5	5	5	5	
PHF				0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol				11		10		200	8	1	170	
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig					LR			TR			LT	
Lane Width					15.0			12.0			12.0	
RTOR Vol						0			0			
Adj Flow					82			834			684	
%InSharedLn												
Prop LTs					0.524			0.000			0.006	
Prop RTs				0.476			0.041			0.000		
Peds Bikes	0			25		0	25		0			
Buses					0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0			0.0	
Arriv. Type					3			3			3	
Unit Ext.					3.0			3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0			2.0	
Ext of g					2.0			2.0			2.0	
Ped Min g		3.2			3.4			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: LUDLOW STREET

Inter.: PM36BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig							L	T			TR	
Volume							216	691			623	156
Lane Width							12.0	12.0			12.0	
RTOR Vol											0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A	A		
Thru						Thru	A			
Right						Right				
Peds						Peds	X	X		
WB Left					SB	Left				
Thru						Thru	A			
Right						Right	A			
Peds						Peds	X	X		
NB Right					EB	Right				
SB Right					WB	Right				
Green							55.0	25.0		
Yellow							3.0	3.0		
All Red							2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
Northbound								
L	770	1536	0.31	0.94	3.5	A		
T	995	1629	0.75	0.61	16.0	B	13.0	B
Southbound								
TR	961	1572	0.88	0.61	24.4	C	24.4	C

Intersection Delay = 18.3 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM36BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LUDLOW STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume							216	691			623	156
% Heavy Veh							5	5			5	5
PHF							0.92	0.92			0.92	0.92
PK 15 Vol							59	188			169	42
Hi Ln Vol												
% Grade								0			0	
Ideal Sat							1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig							L	T			TR	
Lane Width							12.0	12.0			12.0	
RTOR Vol												0
Adj Flow							235	751			847	
%InSharedLn												
Prop LTs							1.000	0.000			0.000	
Prop RTs								0.000		0.201		
Peds Bikes										50	0	
Buses							0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet							0.0	0.0			0.0	
Arriv. Type							3	3			3	
Unit Ext.							3.0	3.0			3.0	
I Factor								1.000			1.000	
Lost Time							2.0	2.0			2.0	
Ext of g							2.0	2.0			2.0	
Ped Min g											3.5	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: MCLEAN AVENUE

Inter.: PM37BD
Area Type: CBD or Similar
Jurisd: W/ PHASING CHANGE
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	1	0	1	1	0
LGConfig				L		R		TR		L	T	
Volume				175		389		385	54	387	516	
Lane Width				12.0		12.0		12.0		12.0	12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X	X	
WB Left		A			SB Left	A	A	
Thru					Thru	A	A	
Right		A			Right			
Peds		X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right	A		
Green		20.0				15.0	40.0	
Yellow		3.0				3.0	3.0	
All Red		2.0				2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
L	344	1547	0.55	0.22	33.0	C		
							27.6	C
R	581	1307	0.73	0.44	25.1	C		
Northbound								
TR	709	1596	0.67	0.44	22.3	C	22.3	C
Southbound								
L	498	1535	0.85	0.67	23.2	C		
T	1086	1629	0.52	0.67	8.1	A	14.6	B

Intersection Delay = 20.2 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM37BD
Area Type: CBD or Similar
Jurisdiction: W/ PHASING CHANGE
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MCLEAN AVENUE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				175	389		385	54		387	516	
% Heavy Veh				5	5		5	5		5	5	
PHF				0.92	0.92		0.92	0.92		0.92	0.92	
PK 15 Vol				48	106		105	15		105	140	
Hi Ln Vol												
% Grade				0			0			0		
Ideal Sat				1900	1900		1900			1900	1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	1	0	1	0	1	0	1	1	0
LGConfig				L		R		TR		L	T	
Lane Width				12.0	12.0		12.0			12.0	12.0	
RTOR Vol					0			0				
Adj Flow				190	423		477			421	561	
%InSharedLn												
Prop LTs							0.000			1.000	0.000	
Prop RTs					1.000		0.124			0.000		
Peds Bikes	0			25	0		25	0				
Buses				0	0		0			0	0	
%InProtPhase					0.0					0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet				0.0	0.0		0.0			0.0	0.0	
Arriv. Type				3	3		3			3	3	
Unit Ext.				3.0	3.0		3.0			3.0	3.0	
I Factor				1.000			1.000			1.000		
Lost Time				2.0	2.0		2.0			2.0	2.0	
Ext of g				2.0	2.0		2.0			2.0	2.0	
Ped Min g	3.2			3.4			3.4					

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: RADFORD STREET

Inter.: PM38BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	1	0	1	1	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	58	163	42	87	211	60	84	345	57	48	342	64
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru	A				Thru		A		
Right	A				Right		A		
Peds	X				Peds	X	X		
WB Left	A				SB Left	A	A		
Thru	A				Thru		A		
Right	A				Right		A		
Peds	X				Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green	30.0					10.0	35.0		
Yellow	3.0					3.0	3.0		
All Red	2.0					2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	469	1406	0.61	0.33	27.4	C	27.4	C
Westbound								
LTR	465	1394	0.84	0.33	40.3	D	40.3	D
Northbound								
L	370	1532	0.25	0.56	11.8	B		
TR	617	1587	0.71	0.39	26.9	C	24.3	C
Southbound								
L	374	1532	0.14	0.56	11.2	B		
TR	615	1582	0.72	0.39	27.4	C	25.7	C

Intersection Delay = 28.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM38BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: RADFORD STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	58	163	42	87	211	60	84	345	57	48	342	64
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	16	44	11	24	57	16	23	94	15	13	93	17
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	1	0	1	1	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		286			389		91	437		52	442	
%InSharedLn												
Prop LTs		0.220			0.244		1.000	0.000		1.000	0.000	
Prop RTs	0.161			0.167			0.142			0.158		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: VALENTINE LANE

Inter.: PM39BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig		LR					L	T			TR	
Volume	198		180				101	496			378	91
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru					Thru	A			
Right	A				Right				
Peds	X				Peds	X			
WB Left					SB Left				
Thru					Thru	A			
Right					Right	A			
Peds	X				Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	25.0					35.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 70.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	574	1606	0.72	0.36	23.7	C	23.7	C
Westbound								
Northbound								
L	289	578	0.38	0.50	11.6	B		
T	815	1629	0.66	0.50	15.1	B	14.5	B
Southbound								
TR	789	1578	0.65	0.50	14.8	B	14.8	B

Intersection Delay = 17.0 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM39BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VALENTINE LANE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	198		180				101	496			378	91
% Heavy Veh	5		5				5	5			5	5
PHF	0.92		0.92				0.92	0.92			0.92	0.92
PK 15 Vol	54		49				27	135			103	25
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900					1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig		LR					L	T			TR	
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0									0
Adj Flow		411					110	539			510	
%InSharedLn												
Prop LTs		0.523					1.000	0.000			0.000	
Prop RTs	0.477							0.000		0.194		
Peds Bikes	25		0	0						25		0
Buses		0					0	0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0					0.0	0.0			0.0	
Arriv. Type		3					3	3			3	
Unit Ext.		3.0					3.0	3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0					2.0	2.0			2.0	
Ext of g		2.0					2.0	2.0			2.0	
Ped Min g		3.3			3.2						3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM40BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: MIDLAND AVENUE (WEST)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L	LR	R
Volume	230	1651			1018	140				129		287
Lane Width	12.0	12.0			12.0	12.0				12.0	12.0	12.0
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left			
Thru	A	A			Thru			
Right					Right			
Peds	X	X			Peds	X		
WB Left					SB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0	10.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	362	1542	0.69	0.65	34.6	C		
T	2016	3101	0.89	0.65	20.0-	B	21.7	C
Westbound								
T	1551	3101	0.71	0.50	21.0	C	20.2	C
R	675	1350	0.23	0.50	14.3	B		
Northbound								
Southbound								
L	387	1547	0.27	0.25	30.6	C		
LR	347	1388	0.33	0.25	31.2	C	36.2	D
R	329	1315	0.71	0.25	41.2	D		

Intersection Delay = 23.0 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM40BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: MIDLAND AVENUE (WEST)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	230	1651			1018	140				129		287
% Heavy Veh	5	5			5	5				5		5
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	62	449			277	38				35		78
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat	1900	1900			1900	1900				1900	1900	1900
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L	LR	R
Lane Width	12.0	12.0			12.0	12.0				12.0	12.0	12.0
RTOR Vol						0						0
Adj Flow	250	1795			1107	152				105	113	234
%InSharedLn										25		25
Prop LTs	1.000	0.000			0.000						0.310	
Prop RTs		0.000		0.000	1.000					0.690	1.000	
Peds Bikes				25	0		0			25	0	
Buses	0	0			0	0				0	0	0
%InProtPhase	0.0											
Duration	0.25			Area Type: CBD or Similar								

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Arriv. Type	3	3			3	3				3	3	3
Unit Ext.	3.0	3.0			3.0	3.0				3.0	3.0	3.0
I Factor		1.000			1.000						1.000	
Lost Time	2.0	2.0			2.0	2.0				2.0	2.0	2.0
Ext of g	2.0	2.0			2.0	2.0				2.0	2.0	2.0
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM41BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: MIDLAND AVENUE (EAST)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	1	2	0	0	1	0
LGConfig	L	TR		L	TR		L	TR			LTR	
Volume	55	896	16	110	910	7	205	36	88	10	17	42
Lane Width	12.0	12.0		12.0	12.0		10.0	10.0			15.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A	A			Thru	A		
Right	A	A			Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0	10.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	190	380	0.32	0.50	15.8	B		
TR	1546	3091	0.64	0.50	19.3	B	19.1	B
Westbound								
L	394	1541	0.30	0.65	17.5	B		
TR	2013	3097	0.50	0.65	9.2	A	10.1	B
Northbound								
L	268	1072	0.83	0.25	55.0+	E		
TR	633	2530	0.21	0.25	29.9	C	45.5	D
Southbound								
LTR	385	1540	0.19	0.25	29.8	C	29.8	C

Intersection Delay = 19.2 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM41BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: MIDLAND AVENUE (EAST)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	55	896	16	110	910	7	205	36	88	10	17	42
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	15	243	4	30	247	2	56	10	24	3	5	11
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	0	1	2	0	0	1	0
LGConfig	L	TR		L	TR		L	TR			LTR	
Lane Width	12.0	12.0		12.0	12.0		10.0	10.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow	60	991		120	997		223	135			75	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000			0.147	
Prop RTs		0.017			0.008			0.711			0.613	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0		0	0			0	
%InProtPhase				0.0								

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Arriv. Type	3	3		3	3		3	3			3	
Unit Ext.	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0		2.0	2.0			2.0	
Ext of g	2.0	2.0		2.0	2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM42BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SEMINARY AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	0	0	0	0	0
LGConfig		LT			TR						LR	
Volume	52	809			900	87				66		92
Lane Width		12.0			12.0						15.0	
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A	A			NB	Left				
	Thru	A	A				Thru				
	Right						Right				
	Peds	X	X				Peds	X			
WB	Left					SB	Left	A			
	Thru	A					Thru				
	Right	A					Right	A			
	Peds	X	X				Peds	X			
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		40.0	20.0					25.0			
Yellow		3.0	3.0					3.0			
All Red		2.0	2.0					2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	1601	3091	0.58	0.65	10.4	B	10.4	B
Westbound								
TR	1220	3051	0.88	0.40	35.4	D	35.4	D
Northbound								
Southbound								
LR	397	1589	0.43	0.25	32.3	C	32.3	C

Intersection Delay = 24.5 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM42BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SEMINARY AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	52	809			900	87				66		92
% Heavy Veh	5	5			5	5				5		5
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	14	220			245	24				18		25
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900			1900						1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	0	2	0	0	0	0	0	0	0
LGConfig		LT			TR						LR	
Lane Width		12.0			12.0						15.0	
RTOR Vol					0						0	
Adj Flow		936			1073						172	
%InSharedLn												
Prop LTs		0.061			0.000						0.419	
Prop RTs	0.000			0.089						0.581		
Peds Bikes				25	0		0			25	0	
Buses		0			0						0	
%InProtPhase	0.0											

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0						0.0	
Arriv. Type		3			3						3	
Unit Ext.		3.0			3.0						3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0			2.0						2.0	
Ext of g		2.0			2.0						2.0	
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM43BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: CENTRAL PARK AVENUE (SB)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	0	0	0	0	2	0
LGConfig		TR		L	T						LTR	
Volume		637	226	276	646					138	159	283
Lane Width		12.0		12.0	12.0						12.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left					NB	Left				
	Thru		A				Thru				
	Right		A				Right				
	Peds	X	X				Peds	X			
WB	Left	A	A			SB	Left	A			
	Thru	A	A				Thru	A			
	Right						Right	A			
	Peds	X	X				Peds	X			
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		35.0	55.0					35.0			
Yellow		3.0	3.0					3.0			
All Red		2.0	2.0					2.0			

Cycle Length: 140.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	1164	2964	0.81	0.39	42.0	D	42.0	D
Westbound								
L	485	1543	0.62	0.68	25.3	C		
T	2104	3101	0.33	0.68	9.4	A	14.2	B
Northbound								
Southbound								
LTR	700	2798	0.90	0.25	65.7	E	65.7	E

Intersection Delay = 37.0 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM43BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: CENTRAL PARK AVENUE (SB)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		637	226	276	646					138	159	283
% Heavy Veh		5	5	5	5					5	5	5
PHF		0.92	0.92	0.92	0.92					0.92	0.92	0.92
PK 15 Vol		173	61	75	176					37	43	77
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900		1900	1900						1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	1	2	0	0	0	0	0	2	0
LGConfig		TR		L	T						LTR	
Lane Width		12.0		12.0	12.0						12.0	
RTOR Vol			0									0
Adj Flow		938		300	702						631	
%InSharedLn												
Prop LTs		0.000		1.000	0.000						0.238	
Prop RTs	0.262			0.000						0.488		
Peds Bikes	25	0					0			25	0	
Buses		0		0	0						0	
%InProtPhase				0.0								

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0						0.0	
Arriv. Type		3		3	3						3	
Unit Ext.		3.0		3.0	3.0						3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0		2.0	2.0						2.0	
Ext of g		2.0		2.0	2.0						2.0	
Ped Min g		3.5						3.2			3.5	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: PM44BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: CENTRAL PARK AVENUE (NB)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	2	1	0	0	0
LGConfig	L	T			T	R		LT	R			
Volume	298	477			472	371	450	180	217			
Lane Width	12.0	12.0			12.0	12.0		12.0	12.0			
RTOR Vol					0				0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A		
Thru	A	A			Thru	A		
Right					Right	A		
Peds	X	X			Peds	X		
WB Left					SB Left			
Thru		A			Thru			
Right		A			Right			
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0	55.0				35.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 140.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	627	1540	0.52	0.68	11.3	B		
T	2104	3101	0.25	0.68	8.7	A	9.7	A
Westbound								
T	1218	3101	0.42	0.39	31.2	C	36.3	D
R	533	1358	0.76	0.39	42.8	D		
Northbound								
LT	749	2994	0.91	0.25	66.8	E	63.6	E
R	336	1343	0.70	0.25	54.2	D		
Southbound								

Intersection Delay = 37.3 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM44BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: CENTRAL PARK AVENUE (NB)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	298	477			472	371	450	180	217			
% Heavy Veh	5	5			5	5	5	5	5			
PHF	0.92	0.92			0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	81	130			128	101	122	49	59			
Hi Ln Vol												
% Grade		0			0			0				
Ideal Sat	1900	1900			1900	1900		1900	1900			
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	2	1	0	0	0
LGConfig	L	T			T	R		LT	R			
Lane Width	12.0	12.0			12.0	12.0		12.0	12.0			
RTOR Vol					0			0				
Adj Flow	324	518			513	403		685	236			
%InSharedLn												
Prop LTs	1.000	0.000			0.000			0.714				
Prop RTs	0.000			0.000	1.000		0.000	1.000				
Peds Bikes				25	0		25	0		0		
Buses	0	0			0	0		0	0			
%InProtPhase	0.0											

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0		0.0	0.0			
Arriv. Type	3	3			3	3		3	3			
Unit Ext.	3.0	3.0			3.0	3.0		3.0	3.0			
I Factor		1.000			1.000			1.000				
Lost Time	2.0	2.0			2.0	2.0		2.0	2.0			
Ext of g	2.0	2.0			2.0	2.0		2.0	2.0			
Ped Min g					3.5			3.5			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: GLENWOOD AVENUE

Inter.: PM45BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	14	19	34	25	34	39	59	335	20	24	321	33
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0				30.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	505	1514	0.14	0.33	14.6	B	14.6	B
Westbound								
LTR	540	1620	0.20	0.33	15.1	B	15.1	B
Northbound								
LTR	798	1596	0.56	0.50	13.3	B	13.3	B
Southbound								
LTR	850	1700	0.48	0.50	11.9	B	11.9	B

Intersection Delay = 13.0 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM45BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: GLENWOOD AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	14	19	34	25	34	39	59	335	20	24	321	33
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	4	5	9	7	9	11	16	91	5	7	87	9
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		73			106			450			411	
%InSharedLn												
Prop LTs		0.205			0.255			0.142			0.063	
Prop RTs		0.507			0.396			0.049			0.088	
Peds Bikes		25			25			25			25	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: LAMARTINE AVENUE

Inter.: PM46BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	19	55	18	29	12	17	3	442	32	31	400	8
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0					30.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	528	1583	0.19	0.33	15.0	B	15.0	B
Westbound								
LTR	505	1514	0.12	0.33	14.4	B	14.4	B
Northbound								
LTR	886	1771	0.58	0.50	13.4	B	13.4	B
Southbound								
LTR	846	1691	0.57	0.50	13.2	B	13.2	B

Intersection Delay = 13.5 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM46BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LAMARTINE AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	19	55	18	29	12	17	3	442	32	31	400	8
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	5	15	5	8	3	5	1	120	9	8	109	2
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		101			63			518			478	
%InSharedLn												
Prop LTs		0.208			0.508			0.006			0.071	
Prop RTs		0.198			0.286			0.068			0.019	
Peds Bikes		25			25			25			25	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: GLENWOOD AVENUE

Inter.: PM47BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NORTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	19	71	7	23	130	40	27	436	28	34	436	48
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	25.0				45.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	492	1573	0.22	0.31	21.3	C	21.3	C
Westbound								
LTR	538	1723	0.39	0.31	23.6	C	23.6	C
Northbound								
LTR	938	1667	0.57	0.56	13.7	B	13.7	B
Southbound								
LTR	961	1708	0.59	0.56	14.0	B	14.0	B

Intersection Delay = 15.9 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM47BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: GLENWOOD AVENUE N/S St: NORTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	19	71	7	23	130	40	27	436	28	34	436	48
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	5	19	2	6	35	11	7	118	8	9	118	13
Hi Ln Vol												
% Grade		8			-6			4			-4	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		106			209			533			563	
%InSharedLn												
Prop LTs		0.198			0.120			0.054			0.066	
Prop RTs	0.075			0.206			0.056			0.092		
Peds Bikes	25			25			25			25		
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: LAMARTINE AVENUE

Inter.: PM48BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NORTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig		LR						LT			TR	
Volume	85		33				46	465			498	48
Lane Width		15.0						12.0			15.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru					Thru	P		
Right	P				Right			
Peds					Peds			
WB Left					SB Left			
Thru					Thru	P		
Right					Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0					30.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	532	1597	0.24	0.33	15.6	B	15.6	B
Westbound								
Northbound								
LT	746	1491	0.74	0.50	18.6	B	18.6	B
Southbound								
TR	885	1770	0.67	0.50	15.3	B	15.3	B

Intersection Delay = 16.7 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM48BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LAMARTINE AVENUE N/S St: NORTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	85		33				46	465			498	48
% Heavy Veh	5		5				5	5			5	5
PHF	0.92		0.92				0.92	0.92			0.92	0.92
PK 15 Vol	23		9				12	126			135	13
Hi Ln Vol												
% Grade		8						0			0	
Ideal Sat		1900						1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig		LR						LT			TR	
Lane Width		15.0						12.0			15.0	
RTOR Vol			0									0
Adj Flow		128						555			593	
%InSharedLn												
Prop LTs		0.719						0.090			0.000	
Prop RTs	0.281						0.000			0.088		
Peds Bikes	25			0						25		
Buses		0						0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0			0.0	
Arriv. Type		3						3			3	
Unit Ext.		3.0						3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0						2.0			2.0	
Ext of g		2.0						2.0			2.0	
Ped Min g		3.3			3.2						3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: WEEKDAY PEAK PM HIGHWAY HOUR
Project ID: 281
E/W St: LAKE AVENUE

Inter.: PM49BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGE
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	0	1	0	1	1	0	2	0
LGConfig		LT	R	L		R		T	R		LT	
Volume	4	32	17	249		80		597	311	57	668	
Lane Width		12.0	12.0	12.0		12.0		12.0	12.0		10.0	
RTOR Vol			0			0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		A			NB Left			
Thru		A			Thru	A		
Right		A			Right	A		
Peds	X	X			Peds	X		
WB Left	A				SB Left	A		
Thru					Thru	A		
Right	A				Right			
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	20.0	10.0				45.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	182	1634	0.21	0.11	37.0	D	36.8	D
R	146	1317	0.12	0.11	36.4	D		
Westbound								
L	333	1498	0.81	0.22	47.5	D		
							43.2	D
R	290	1307	0.30	0.22	29.8	C		
Northbound								
T	815	1629	0.80	0.50	24.2	C	21.3	C
R	675	1350	0.50	0.50	15.6	B		
Southbound								
LT	1077	2153	0.73	0.50	20.3	C	20.3	C

Intersection Delay = 24.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM49BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGE
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LAKE AVENUE N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	4	32	17	249		80		597	311	57	668	
% Heavy Veh	5	5	5	5		5		5	5	5	5	
PHF	0.92	0.92	0.92	0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol	1	9	5	68		22		162	85	15	182	
Hi Ln Vol												
% Grade		-4			0			0			0	
Ideal Sat		1900	1900	1900		1900		1900	1900		1900	
ParkExist												
NumPark												
No. Lanes	0	1	1	1	0	1	0	1	1	0	2	0
LGConfig		LT	R	L		R		T	R		LT	
Lane Width		12.0	12.0	12.0		12.0		12.0	12.0		10.0	
RTOR Vol		0				0			0			
Adj Flow		39	18	271		87		649	338		788	
%InSharedLn												
Prop LTs		0.103						0.000			0.079	
Prop RTs	0.000		1.000			1.000	0.000		1.000	0.000		
Peds Bikes	25	0		25	0		25	0				
Buses	0	0		0		0		0	0		0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0	0.0	0.0		0.0		0.0	0.0		0.0	
Arriv. Type		3	3	3		3		3	3		3	
Unit Ext.		3.0	3.0	3.0		3.0		3.0	3.0		3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0	2.0	2.0		2.0		2.0	2.0		2.0	
Ext of g		2.0	2.0	2.0		2.0		2.0	2.0		2.0	
Ped Min g		3.4			3.4			3.4				

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 4/19/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM50BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PROSPECT STREET
North/South Street: BUENA VISTA AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	48	0	313	0	80	111	436	111	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		LT	
PHF			0.92		0.92		0.92	
Flow Rate			392		206		593	
% Heavy Veh			5		5		5	
No. Lanes			1		1		1	
Opposing-Lanes			0		1		1	
Conflicting-lanes			1		1		1	
Geometry group			1		1		1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			392		206		593	
Left-Turn			52		0		473	
Right-Turn			340		120		0	
Prop. Left-Turns			0.1		0.0		0.8	
Prop. Right-Turns			0.9		0.6		0.0	
Prop. Heavy Vehicle			0.0		0.0		0.0	
Geometry Group			1		1		1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.2	

hRT-adj			-0.6		-0.6		-0.6	
hHV-adj			1.7		1.7		1.7	
hadj, computed			-0.4		-0.3		0.2	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			392		206		593	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.35		0.18		0.53	
hd, final value			5.75		5.91		5.75	
x, final value			0.63		0.34		0.95	
Move-up time, m			2.0		2.0		2.0	
Service Time			3.8		3.9		3.8	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			392		206		593	
Service Time			3.8		3.9		3.8	
Utilization, x			0.63		0.34		0.95	
Dep. headway, hd			5.75		5.91		5.75	
Capacity			609		456		623	
Delay			17.91		11.90		47.89	
LOS			C		B		E	
Approach:								
Delay			17.91		11.90		47.89	
LOS			C		B		E	

Intersection Delay 31.80 Intersection LOS D

HCS+: Unsignalized Intersections Release 5.2

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 4/19/2007
Analysis Time Period: WEEKDAY PEAK PM HIGHWAY HOUR
Intersection: PM51BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PROSPECT STREET
North/South Street: HAWTHORNE AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	40	459	48	185	361	133	0	0	0	0	0	0
% Thrus Left Lane					0							

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LT	TR	LTR		LTR	
PHF	0.92		0.92	0.92	1.00		1.00	
Flow Rate	593		201	536	0		0	
% Heavy Veh	5		5	5	0		0	
No. Lanes	1		2		1		1	
Opposing-Lanes	2		1		1		1	
Conflicting-lanes	1		1		2		2	
Geometry group	4a		5		2		2	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	593		201	536	0		0	
Left-Turn	43		201	0	0		0	
Right-Turn	52		0	144	0		0	
Prop. Left-Turns	0.1		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.1		0.0	0.3	0.0		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
Geometry Group	4a		5		2		2	
Adjustments Exhibit 17-33:								
hLT-adj	0.2		0.5		0.2		0.2	

hRT-adj	-0.6	-0.7	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7
hadj, computed	0.0	0.6	-0.1	0.0	0.0

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	593		201	536	0		0	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.53		0.18	0.48	0.00		0.00	
hd, final value	4.68		5.50	4.80	6.50		6.50	
x, final value	0.77		0.31	0.72	0.00		0.00	
Move-up time, m	2.0		2.3		2.0		2.0	
Service Time	2.7		3.2	2.5	4.5		4.5	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	593		201	536	0		0	
Service Time	2.7		3.2	2.5	4.5		4.5	
Utilization, x	0.77		0.31	0.72	0.00		0.00	
Dep. headway, hd	4.68		5.50	4.80	6.50		6.50	
Capacity	767		451	748	0		0	
Delay	21.59		10.61	18.61	9.50		9.50	
LOS	C		B	C	A		A	
Approach:								
Delay	21.59		16.43		9.50		9.50	
LOS	C		C		A		A	

Intersection Delay 18.73 Intersection LOS C

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: ELM STREET

Inter.: SAT1BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	3	0	1	3	1
LGConfig					LTR		L	TR		L	T	R
Volume				105	12	75	112	1863	162	144	1270	776
Lane Width					15.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol						0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A	A	
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X	X	
WB Left		A			SB Left	A	A	
Thru		A			Thru	A		
Right		A			Right	A		
Peds		X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green		15.0				50.0	10.0	
Yellow		3.0				3.0	3.0	
All Red		2.0				2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	301	1803	0.69	0.17	42.1	D	42.1	D
Northbound								
L	431	1715	0.28	0.72	11.5	B		
TR	2701	4861	0.81	0.56	18.3	B	17.9	B
Southbound								
L	367	1718	0.43	0.72	26.8	C		
T	2738	4929	0.50	0.56	12.5	B	28.0	C
R	835	1503	1.01	0.56	53.5	D		

Intersection Delay = 23.8 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT1BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ELM STREET N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				105	12	75	112	1863	162	144	1270	776
% Heavy Veh				5	5	5	5	5	5	5	5	5
PHF				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PK 15 Vol				29	3	20	30	506	44	39	345	211
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	3	0	1	3	1
LGConfig					LTR		L	TR		L	T	R
Lane Width					15.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol					0			0			0	
Adj Flow					209		122	2201		157	1380	843
%InSharedLn												
Prop LTs					0.545		1.000	0.000		1.000	0.000	
Prop RTs				0.392			0.080			0.000	1.000	
Peds Bikes	0			25	0		25	0		25	0	
Buses					0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type					3		3	3		3	3	3
Unit Ext.					3.0		3.0	3.0		3.0	3.0	3.0
I Factor					1.000			1.000			1.000	
Lost Time					2.0		2.0	2.0		2.0	2.0	2.0
Ext of g					2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.2			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: NEW SCHOOL STREET

Inter.: SAT2BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	3	0	1	3	0	0	0	0	0	0	0
LGConfig		TR		L	T							
Volume		2062	169	67	1141							
Lane Width		12.0		12.0	12.0							
RTOR Vol			0									

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru	A				Thru			
Right	A				Right			
Peds	X	X			Peds			
WB Left	A	A			SB Left			
Thru	A	A			Thru			
Right					Right			
Peds	X	X			Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	70.0	10.0						
Yellow	3.0	3.0						
All Red	2.0	2.0						

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	3785	4867	0.65	0.78	4.9	A	4.9	A
Westbound								
L	462	1718	0.16	1.00	4.9	A		
T	4929	4929	0.26	1.00	0.0+	A	0.3	A
Northbound								
Southbound								

Intersection Delay = 3.3 (sec/veh) Intersection LOS = A

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT2BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEW SCHOOL STREET N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		2062	169	67	1141							
% Heavy Veh		5	5	5	5							
PHF		0.90	0.90	0.90	0.90							
PK 15 Vol		573	47	19	317							
Hi Ln Vol												
% Grade		0			0							
Ideal Sat		1900		1900	1900							
ParkExist												
NumPark												
No. Lanes	0	3	0	1	3	0	0	0	0	0	0	0
LGConfig		TR		L	T							
Lane Width		12.0		12.0	12.0							
RTOR Vol			0									
Adj Flow		2479		74	1268							
%InSharedLn												
Prop LTs		0.000		1.000	0.000							
Prop RTs	0.076			0.000								
Peds Bikes	25	0										
Buses		0		0	0							
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0							
Arriv. Type		3		3	3							
Unit Ext.		3.0		3.0	3.0							
I Factor		1.000			1.000							
Lost Time		2.0		2.0	2.0							
Ext of g		2.0		2.0	2.0							
Ped Min g		3.4										

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: NEPPERHAN AVENUE

Inter.: SAT3BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: NEW MAIN STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	3	0	1	3	0	1	0	1	1	1	1
LGConfig		TR		L	T		L		R	L	LT	R
Volume		1284	30	242	899		133		220	728	127	334
Lane Width		12.0		12.0	12.0		12.0		12.0	12.0	12.0	12.0
RTOR Vol			0						0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A	A			Thru	A		
Right					Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	30.0	10.0				35.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	1636	4908	0.87	0.33	33.8	C	33.8	C
Westbound								
L	366	1714	0.72	0.50	38.6	D		
T	2465	4929	0.40	0.50	14.1	B	19.3	B
Northbound								
L	185	476	0.78	0.39	43.6	D		
							29.2	C
R	587	1509	0.41	0.39	20.4	C		
Southbound								
L	656	1686	0.66	0.39	25.2	C		
LT	670	1722	0.74	0.39	27.9	C	25.9	C
R	587	1509	0.62	0.39	24.1	C		

Intersection Delay = 26.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT3BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN AVENUE N/S St: NEW MAIN STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		1284	30	242	899		133		220	728	127	334
% Heavy Veh		5	5	5	5		5		5	5	5	5
PHF		0.92	0.92	0.92	0.92		0.92		0.92	0.92	0.92	0.92
PK 15 Vol		349	8	66	244		36		60	198	35	91
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900		1900	1900		1900		1900	1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	3	0	1	3	0	1	0	1	1	1	1
LGConfig		TR		L	T		L		R	L	LT	R
Lane Width		12.0		12.0	12.0		12.0		12.0	12.0	12.0	12.0
RTOR Vol			0						0			0
Adj Flow		1429		263	977		145		239	435	494	363
%InSharedLn										45		
Prop LTs		0.000		1.000	0.000		1.000				0.721	
Prop RTs	0.023				0.000				1.000	0.000		1.000
Peds Bikes	25		0				25		0	25		0
Buses		0		0	0		0		0	0	0	0
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0		0.0		0.0	0.0	0.0	0.0
Arriv. Type		3		3	3		3		3	3	3	3
Unit Ext.		3.0		3.0	3.0		3.0		3.0	3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0		2.0	2.0		2.0		2.0	2.0	2.0	2.0
Ext of g		2.0		2.0	2.0		2.0		2.0	2.0	2.0	2.0
Ped Min g		3.4						3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINNERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: NEPPERHAN AVENUE

Inter.: SAT4BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	1	1	1	1	1	1	0
LGConfig	L	TR		L	T	R	L	T	R	L	TR	
Volume	32	791	100	364	923	287	79	255	262	104	59	14
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
RTOR Vol			0			0			72			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A	A			NB	Left	A			
	Thru	A	A				Thru	A			
	Right	A	A				Right	A			
	Peds	X	X	X			Peds	X			
WB	Left		A	A		SB	Left	A			
	Thru		A	A			Thru	A			
	Right		A	A			Right	A			
	Peds	X	X	X			Peds	X			
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		10.0	20.0	20.0				30.0			
Yellow		3.0	3.0	3.0				3.0			
All Red		2.0	2.0	2.0				2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	243	1709	0.14	0.35	25.1	C		
TR	1181	3374	0.82	0.35	34.4	C	34.1	C
Westbound								
L	504	1708	0.79	0.45	39.5	D		
T	1550	3445	0.65	0.45	22.3	C	25.8	C
R	673	1496	0.46	0.45	19.6	B		
Northbound								
L	374	1248	0.23	0.30	26.6	C		
T	543	1810	0.51	0.30	29.7	C	29.1	C
R	450	1500	0.46	0.30	29.2	C		
Southbound								
L	234	780	0.48	0.30	30.2	C		
TR	525	1750	0.15	0.30	25.8	C	28.4	C

Intersection Delay = 28.8 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT4BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN AVENUE N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	32	791	100	364	923	287	79	255	262	104	59	14
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	9	215	27	99	251	78	21	69	71	28	16	4
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	1	1	1	1	1	1	0
LGConfig	L	TR		L	T	R	L	T	R	L	TR	
Lane Width	12.0	12.0		12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
RTOR Vol		0			0			72			0	
Adj Flow	35	969		396	1003	312	86	277	207	113	79	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs	0.112			0.000	1.000		0.000	1.000		0.190		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0	0	0	0	0	0	0	
%InProtPhase	0.0			0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Arriv. Type	3	3		3	3	3	3	3	3	3	3	
Unit Ext.	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Ext of g	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: HUDSON STREET

Inter.: SAT5BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	0	0
LGConfig		LR						T				
Volume	558		144					570				
Lane Width		15.0						12.0				
RTOR Vol			0									

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru					Thru	A		
Right	A				Right			
Peds	X				Peds	X		
WB Left					SB Left			
Thru					Thru			
Right					Right			
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	43.0					37.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	880	1841	0.87	0.48	30.2	C	30.2	C
Westbound								
Northbound								
T	744	1810	0.83	0.41	31.8	C	31.8	C
Southbound								

Intersection Delay = 30.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT5BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HUDSON STREET N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	558		144					570				
% Heavy Veh	5		5					5				
PHF	0.92		0.92					0.92				
PK 15 Vol	152		39					155				
Hi Ln Vol												
% Grade		0						0				
Ideal Sat		1900						1900				
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	0	0
LGConfig		LR						T				
Lane Width		15.0						12.0				
RTOR Vol			0									
Adj Flow		764						620				
%InSharedLn												
Prop LTs		0.795						0.000				
Prop RTs	0.205						0.000					
Peds Bikes	50		0	0								
Buses		0						0				
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0				
Arriv. Type		3						3				
Unit Ext.		3.0						3.0				
I Factor		1.000						1.000				
Lost Time		2.0						2.0				
Ext of g		2.0						2.0				
Ped Min g		3.5			3.2							

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: SAT6BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: SOUTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	0	1	0	0	0	0
LGConfig					TR			LT				
Volume					174	126	135	324				
Lane Width					12.0			15.0				
RTOR Vol						0						

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru	A		
Right					Right			
Peds		X			Peds	X		
WB Left					SB Left			
Thru		A			Thru			
Right		A			Right			
Peds		X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green		42.0				38.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
TR	778	1668	0.42	0.47	16.3	B	16.3	B
Northbound								
LT	828	1962	0.60	0.42	21.4	C	21.4	C
Southbound								

Intersection Delay = 19.4 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT6BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: SOUTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume					174	126	135	324				
% Heavy Veh					5	5	5	5				
PHF					0.92	0.92	0.92	0.92				
PK 15 Vol					47	34	37	88				
Hi Ln Vol												
% Grade					0			0				
Ideal Sat					1900			1900				
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	0	1	0	0	0	0
LGConfig					TR			LT				
Lane Width					12.0			15.0				
RTOR Vol						0						
Adj Flow					326			499				
%InSharedLn												
Prop LTs					0.000			0.295				
Prop RTs				0.420			0.000					
Peds Bikes				50	0					0		
Buses					0			0				
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0				
Arriv. Type					3			3				
Unit Ext.					3.0			3.0				
I Factor					1.000			1.000				
Lost Time					2.0			2.0				
Ext of g					2.0			2.0				
Ped Min g					3.5						3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: SAT7BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: PALISADE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	0	0	1	0	1
LGConfig								LR		L		R
Volume							4		512	615		296
Lane Width								15.0		12.0		12.0
RTOR Vol									0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru			
Right					Right	A		
Peds					Peds	X	X	
WB Left					SB Left		A	
Thru					Thru			
Right					Right		A	
Peds					Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green						38.0	42.0	
Yellow						3.0	3.0	
All Red						2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
Northbound								
LR	684	1621	0.82	0.42	30.9	C	30.9	C
Southbound								
L	759	1627	0.88	0.47	33.4	C		
							28.0	C
R	679	1456	0.47	0.47	17.0	B		

Intersection Delay = 29.0 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT7BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: PALISADE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume							4		512	615		296
% Heavy Veh							5		5	5		5
PHF							0.92		0.92	0.92		0.92
PK 15 Vol							1		139	167		80
Hi Ln Vol												
% Grade								0			0	
Ideal Sat								1900		1900		1900
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	0	0	1	0	1
LGConfig								LR		L		R
Lane Width								15.0		12.0		12.0
RTOR Vol									0			0
Adj Flow								561		668		322
%InSharedLn												
Prop LTs								0.007				
Prop RTs							0.993					1.000
Peds Bikes							50		0	50		0
Buses								0		0		0
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet								0.0		0.0		0.0
Arriv. Type								3		3		3
Unit Ext.								3.0		3.0		3.0
I Factor								1.000			1.000	
Lost Time								2.0		2.0		2.0
Ext of g								2.0		2.0		2.0
Ped Min g								3.5			3.5	

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT8BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PALISADE AVENUE
North/South Street: LOCUST HILL AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	39	168	46	0	757	124	0	59	17	74	82	161
% Thrus Left Lane						50						

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			T	TR			R	
PHF			0.92	0.92			0.92	
Flow Rate			410	545			174	
% Heavy Veh			5	5			5	
No. Lanes			2				1	
Opposing-Lanes			0				0	
Conflicting-lanes			1				2	
Geometry group			1				1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			410	545			174	
Left-Turn			0	0			0	
Right-Turn			0	134			174	
Prop. Left-Turns			0.0	0.0			0.0	
Prop. Right-Turns			0.0	0.2			1.0	
Prop. Heavy Vehicle			0.0	0.0			0.0	
Geometry Group			1				1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2				0.2	

hRT-adj			-0.6				-0.6	
hHV-adj			1.7				1.7	
hadj, computed			0.1	-0.1			-0.5	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			410	545			174	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.36	0.48			0.15	
hd, final value			4.45	4.30			4.95	
x, final value			0.51	0.65			0.24	
Move-up time, m			2.0				2.0	
Service Time			2.5	2.3			2.9	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			410	545			174	
Service Time			2.5	2.3			2.9	
Utilization, x			0.51	0.65			0.24	
Dep. headway, hd			4.45	4.30			4.95	
Capacity			660	795			424	
Delay			11.94	14.97			9.50	
LOS			B	B			A	
Approach:								
Delay				13.67				9.50
LOS				B				A

Intersection Delay 13.02 Intersection LOS B

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: PALISADES AVENUE / ELM STREET

Inter.: SAT9BD
Area Type: All other areas
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: PALISADE AVE / NEW SCHOOL ST

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	2	0	0	1	0	0	1	0
LGConfig					LTR			LT			TR	
Volume				201	524	174	186	110			118	192
Lane Width					12.0			12.0			12.0	
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left	A		
Thru					Thru	A		
Right					Right			
Peds		X			Peds	X		
WB Left		A			SB Left			
Thru		A			Thru	A		
Right		A			Right	A		
Peds		X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green		35.0				35.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	1439	3290	0.68	0.44	19.3	B	19.3	B
Northbound								
LT	388	886	0.83	0.44	33.9	C	33.9	C
Southbound								
TR	718	1640	0.47	0.44	16.4	B	16.4	B

Intersection Delay = 21.6 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT9BD
Area Type: All other areas
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: PALISADES AVENUE / ELM STREET N/S St: PALISADE AVE / NEW SCHOOL ST

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				201	524	174	186	110			118	192
% Heavy Veh				5	5	5	5	5			5	5
PHF				0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol				55	142	47	51	30			32	52
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	2	0	0	1	0	0	1	0
LGConfig					LTR			LT			TR	
Lane Width					12.0			12.0			12.0	
RTOR Vol						0						0
Adj Flow					977			322			337	
%InSharedLn												
Prop LTs					0.223			0.627			0.000	
Prop RTs				0.193			0.000			0.620		
Peds Bikes	0			25	0					25	0	
Buses					0			0			0	
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0			0.0	
Arriv. Type					3			3			3	
Unit Ext.					3.0			3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0			2.0	
Ext of g					2.0			2.0			2.0	
Ped Min g		3.2			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: SAT10BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	14	102	36	63	31	99	24	333	67	107	339	7
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	30.0				50.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	483	1448	0.34	0.33	23.0	C	23.0	C
Westbound								
LTR	432	1296	0.49	0.33	24.7	C	24.7	C
Northbound								
LTR	847	1525	0.54	0.56	13.5	B	13.5	B
Southbound								
LTR	719	1295	0.68	0.56	17.0	B	17.0	B

Intersection Delay = 17.8 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT10BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	14	102	36	63	31	99	24	333	67	107	339	7
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	4	28	10	17	8	27	7	90	18	29	92	2
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		165			210			461			492	
%InSharedLn												
Prop LTs		0.091			0.324			0.056			0.236	
Prop RTs		0.236			0.514			0.158			0.016	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: SAT11BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: N. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	1	1	0
LGConfig		LTR			LTR			LTR		L	TR	
Volume	34	214	6	77	169	154	10	293	134	261	170	48
Lane Width		12.0			15.0			12.0		10.0	10.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0					45.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	552	1420	0.50	0.39	21.6	C	21.6	C
Westbound								
LTR	586	1508	0.74	0.39	28.7	C	28.7	C
Northbound								
LTR	769	1537	0.62	0.50	17.8	B	17.8	B
Southbound								
L	317	634	0.90	0.50	46.6	D		
TR	731	1462	0.32	0.50	13.7	B	31.6	C

Intersection Delay = 25.4 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT11BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: N. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	34	214	6	77	169	154	10	293	134	261	170	48
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	9	58	2	21	46	42	3	80	36	71	46	13
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	1	1	0
LGConfig		LTR			LTR			LTR		L	TR	
Lane Width		12.0			15.0			12.0		10.0	10.0	
RTOR Vol		0			0			0			0	
Adj Flow		277			435			475		284	237	
%InSharedLn												
Prop LTs		0.134			0.193			0.023		1.000	0.000	
Prop RTs	0.025			0.384			0.307			0.219		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0		0	0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0		0.0	0.0	
Arriv. Type		3			3			3		3	3	
Unit Ext.		3.0			3.0			3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0		2.0	2.0	
Ext of g		2.0			2.0			2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed:
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT12BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: ASHFORD AVENUE
North/South Street: LOCUST HILL ROAD
Intersection Orientation: EW Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		431	167	83	350	
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	
Hourly Flow Rate, HFR		468	181	90	380	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	34		45			
Peak Hour Factor, PHF	0.92		0.92			
Hourly Flow Rate, HFR	36		48			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		90		84				
C(m) (vph)		923		313				
v/c		0.10		0.27				
95% queue length		0.32		1.06				
Control Delay		9.3		20.7				
LOS		A		C				
Approach Delay				20.7				
Approach LOS				C				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: SAT13BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: PALISADE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	1	1	0	0	1	0	0	0	0
LGConfig		LTR		L	TR			LTR				
Volume	59	349	90	208	230	64	122	117	134			
Lane Width		15.0		12.0	12.0			15.0				
RTOR Vol		0			0			0				

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left		A			NB Left	A			
Thru		A			Thru	A			
Right		A			Right	A			
Peds	X	X			Peds	X			
WB Left	A	A			SB Left				
Thru	A	A			Thru				
Right	A	A			Right				
Peds	X	X			Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	10.0	40.0				25.0			
Yellow	3.0	3.0				3.0			
All Red	2.0	2.0				2.0			

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	708	1593	0.76	0.44	26.0	C	26.0	C
Westbound								
L	443	1535	0.51	0.61	11.7	B		
TR	958	1568	0.33	0.61	8.8	A	10.0-	A
Northbound								
LTR	458	1650	0.89	0.28	49.7	D	49.7	D
Southbound								

Intersection Delay = 26.6 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT13BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: PALISADE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	59	349	90	208	230	64	122	117	134			
% Heavy Veh	5	5	5	5	5	5	5	5	5			
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	16	95	24	57	62	17	33	32	36			
Hi Ln Vol												
% Grade		0			0			0				
Ideal Sat		1900		1900	1900			1900				
ParkExist												
NumPark												
No. Lanes	0	1	0	1	1	0	0	1	0	0	0	0
LGConfig		LTR		L	TR			LTR				
Lane Width		15.0		12.0	12.0			15.0				
RTOR Vol		0			0			0				
Adj Flow		541		226	320			406				
%InSharedLn												
Prop LTs		0.118		1.000	0.000			0.328				
Prop RTs	0.181			0.219			0.360					
Peds Bikes	25	0		25	0		25	0		0		
Buses		0		0	0			0				
%InProtPhase				0.0								

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0			0.0				
Arriv. Type		3		3	3			3				
Unit Ext.		3.0		3.0	3.0			3.0				
I Factor		1.000			1.000			1.000				
Lost Time		2.0		2.0	2.0			2.0				
Ext of g		2.0		2.0	2.0			2.0				
Ped Min g		3.4			3.4			3.4			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: SAT14BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	1	0	1	1	0	1	2	0	1	2	1
LGConfig	L	TR		L	TR		L	TR		L	T	R
Volume	98	483	62	166	460	58	78	465	154	138	618	128
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X	X	
WB Left	A	A			SB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	30.0	10.0				30.0	10.0	
Yellow	3.0	3.0				3.0	3.0	
All Red	2.0	2.0				2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	303	1539	0.35	0.45	35.6	D		
TR	479	1596	1.24	0.30	158.1	F	139.4	F
Westbound								
L	303	1540	0.59	0.45	36.7	D		
TR	479	1597	1.18	0.30	134.0	F	110.4	F
Northbound								
L	345	1533	0.25	0.45	26.3	C		
TR	886	2954	0.76	0.30	35.6	D	34.5	C
Southbound								
L	345	1533	0.43	0.45	30.2	C		
T	930	3101	0.72	0.30	34.1	C	32.6	C
R	398	1327	0.35	0.30	27.9	C		

Intersection Delay = 75.0 (sec/veh) Intersection LOS = E

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT14BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	98	483	62	166	460	58	78	465	154	138	618	128
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	27	131	17	45	125	16	21	126	42	37	168	35
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	1	1	0	1	1	0	1	2	0	1	2	1
LGConfig	L	TR		L	TR		L	TR		L	T	R
Lane Width	12.0	12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0
Adj Flow	107	592		180	563		85	672		150	672	139
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs		0.113			0.112			0.249			0.000	1.000
Peds Bikes	25	0		25	0		25	0		25	0	
Buses	0	0		0	0		0	0		0	0	0
%InProtPhase	0.0			0.0			0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type	3	3		3	3		3	3		3	3	3
Unit Ext.	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext of g	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: ASHBURTON AVENUE

Inter.: SAT15BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: NYS ROUTE 9A / WALNUT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	1	0	1	0	1	1	0
LGConfig		LTR			LT	R		LTR		L	TR	
Volume	196	440	46	8	367	198	55	108	21	163	120	223
Lane Width		15.0			12.0	12.0		15.0		12.0	15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0					30.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	637	1147	1.16	0.56	109.9	F	109.9	F
Westbound								
LT	891	1603	0.46	0.56	12.3	B	11.8	B
R	752	1353	0.29	0.56	10.8	B		
Northbound								
LTR	341	1022	0.59	0.33	27.5	C	27.5	C
Southbound								
L	316	948	0.56	0.33	26.8	C		
TR	526	1577	0.71	0.33	30.5	C	29.3	C

Intersection Delay = 52.2 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT15BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: ASHBURTON AVENUE N/S St: NYS ROUTE 9A / WALNUT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	196	440	46	8	367	198	55	108	21	163	120	223
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	53	120	12	2	100	54	15	29	6	44	33	61
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900	1900		1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	1	0	1	0	1	1	0
LGConfig		LTR			LT	R		LTR		L	TR	
Lane Width		15.0			12.0	12.0		15.0		12.0	15.0	
RTOR Vol		0			0			0			0	
Adj Flow		741			408	215		200		177	372	
%InSharedLn												
Prop LTs		0.287			0.022			0.300		1.000	0.000	
Prop RTs	0.067			0.000	1.000		0.115			0.651		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0	0		0		0	0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0	0.0		0.0		0.0	0.0	
Arriv. Type		3			3	3		3		3	3	
Unit Ext.		3.0			3.0	3.0		3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0	2.0		2.0		2.0	2.0	
Ext of g		2.0			2.0	2.0		2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT16BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WALNUT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	1	0
LGConfig	L	TR		L	TR			LTR			LTR	
Volume	8	1331	19	104	1242	20	20	79	80	34	101	35
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0	10.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	335	1715	0.03	0.65	20.6	C		
TR	1719	3437	0.85	0.50	26.2	C	26.2	C
Westbound								
L	329	1716	0.34	0.65	31.3	C		
TR	1718	3436	0.80	0.50	23.6	C	24.2	C
Northbound								
LTR	411	1643	0.47	0.25	32.8	C	32.8	C
Southbound								
LTR	397	1587	0.47	0.25	32.7	C	32.7	C

Intersection Delay = 26.0 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst:	JCE
Agency/Co.:	JOHN COLLINS ENGINEERS, P.C.
Date Performed:	3/12/2007
Analysis Time Period:	SATURDAY PEAK HOUR
Intersection:	SAT16BD
Area Type:	All other areas
Jurisdiction:	W/ CORRIDOR IMPROVEMENTS
Analysis Year:	2012 BUILD TRAFFIC VOLUMES
Project ID: 281	
E/W St: YONKERS AVENUE	N/S St: WALNUT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	8	1331	19	104	1242	20	20	79	80	34	101	35
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	2	362	5	28	337	5	5	21	22	9	27	10
Hi Ln Vol												
% Grade		0			0			-6			0	
Ideal Sat	1900	1900		1900	1900			1900			1900	
ParkExist												
NumPark												
No. Lanes		1	2	0	1	2	0	0	1	0	0	1	0
LGConfig	L		TR	L		TR			LTR			LTR	
Lane Width	12.0	12.0		12.0	12.0			12.0			12.0	
RTOR Vol			0			0			0			0
Adj Flow	9	1468		113	1372			195			185	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000			0.113			0.200	
Prop RTs		0.014			0.016			0.446			0.205	
Peds Bikes		25	0		25	0		25	0		25	0
Buses	0	0		0	0			0			0	
%InProtPhase	0.0			0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound		Westbound		Northbound		Southbound	
	L	T R	L	T R	L	T R	L	T R
Init Unmet	0.0	0.0	0.0	0.0		0.0		0.0
Arriv. Type	3	3	3	3		3		3
Unit Ext.	3.0	3.0	3.0	3.0		3.0		3.0
I Factor		1.000		1.000		1.000		1.000
Lost Time	2.0	2.0	2.0	2.0		2.0		2.0
Ext of g	2.0	2.0	2.0	2.0		2.0		2.0
Ped Min g		3.4		3.4		3.4		3.4

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT17BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: PRESCOTT STREET

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	0	1	0	0	0	0
LGConfig	L	TR		L	TR			LTR				
Volume	6	1457	14	178	1757	28	7	7	83			
Lane Width	12.0	12.0		12.0	12.0			15.0				
RTOR Vol			0			0			0			

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		A			NB Left A			
Thru		A			Thru A			
Right		A			Right A			
Peds	X	X			Peds X			
WB Left	A	A			SB Left			
Thru	A	A			Thru			
Right	A	A			Right			
Peds	X	X			Peds X			
NB Right					EB Right			
SB Right					WB Right			
Green	10.0	50.0			25.0			
Yellow	3.0	3.0			3.0			
All Red	2.0	2.0			2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	73	145	0.10	0.50	13.7	B		
TR	1720	3440	0.93	0.50	32.8	C	32.7	C
Westbound								
L	244	1717	0.79	0.65	43.2	D		
TR	2233	3436	0.87	0.65	18.0	B	20.3	C
Northbound								
LTR	441	1762	0.24	0.25	30.2	C	30.2	C
Southbound								

Intersection Delay = 25.8 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT17BD
Area Type: All other areas
Jurisdiction: W/ CORRIDOR IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: PRESCOTT STREET

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	6	1457	14	178	1757	28	7	7	83			
% Heavy Veh	5	5	5	5	5	5	5	5	5			
PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	2	396	4	48	477	8	2	2	23			
Hi Ln Vol												
% Grade		0			0			-6				
Ideal Sat	1900	1900		1900	1900			1900				
ParkExist												
NumPark												
No. Lanes	1	2	0	1	2	0	0	1	0	0	0	0
LGConfig	L	TR		L	TR			LTR				
Lane Width	12.0	12.0		12.0	12.0			15.0				
RTOR Vol			0			0			0			
Adj Flow	7	1599		193	1940			106				
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000			0.075				
Prop RTs		0.009			0.015			0.849				
Peds Bikes		25	0		25	0		25	0		0	
Buses	0	0		0	0			0				
%InProtPhase				0.0								

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0			0.0				
Arriv. Type	3	3		3	3			3				
Unit Ext.	3.0	3.0		3.0	3.0			3.0				
I Factor		1.000			1.000			1.000				
Lost Time	2.0	2.0		2.0	2.0			2.0				
Ext of g	2.0	2.0		2.0	2.0			2.0				
Ped Min g		3.4			3.4			3.4			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT18BD
Area Type: All other areas
Jurisd: W/ CORRIDOR IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: ASHBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	1	0	0	0	1	0	0
LGConfig		T			T	R				L	LR	
Volume		1636			1841	646				653	24	
Lane Width		12.0			12.0	12.0				12.0	12.0	
RTOR Vol					0						0	

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru	A				Thru			
Right					Right			
Peds	X				Peds	X		
WB Left					SB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	60.0					30.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
T	2067	3445	0.86	0.60	20.5	C	20.5	C
Westbound								
T	2067	3445	0.97	0.60	32.2	C	28.9	C
R	904	1507	0.78	0.60	19.3	B		
Northbound								
Southbound								
L	516	1719	0.72	0.30	35.9	D		
LR	512	1708	0.72	0.30	36.0	D	35.9	D

Intersection Delay = 27.0 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT18BD
Area Type: All other areas
Jurisdiction: W/ CORRIDOR IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: ASHBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		1636			1841	646				653		24
% Heavy Veh		5			5	5				5		5
PHF		0.92			0.92	0.92				0.92		0.92
PK 15 Vol		445			500	176				177		7
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900			1900	1900				1900	1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	0	2	1	0	0	0	1	0	0
LGConfig		T			T	R				L	LR	
Lane Width		12.0			12.0	12.0				12.0	12.0	
RTOR Vol					0						0	
Adj Flow		1778			2001	702				369	367	
%InSharedLn										48		
Prop LTs		0.000			0.000						0.929	
Prop RTs	0.000			0.000	1.000					0.071		
Peds Bikes				25	0		0			25	0	
Buses		0			0	0				0	0	
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0	0.0				0.0	0.0	
Arriv. Type		3			3	3				3	3	
Unit Ext.		3.0			3.0	3.0				3.0	3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0			2.0	2.0				2.0	2.0	
Ext of g		2.0			2.0	2.0				2.0	2.0	
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT19BD
Area Type: All other areas
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: SAW MILL RIVER PARKWAY SB RAMP

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	1	0	2	0	0	0	0	0	0	2
LGConfig		T	R		T							R
Volume		1790	500		1949							538
Lane Width		12.0	12.0		12.0							12.0
RTOR Vol			0									0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru		A			Thru			
Right		A			Right			
Peds					Peds			
WB Left					SB Left			
Thru		A			Thru			
Right					Right	A		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green		65.0				25.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
T	2239	3445	0.87	0.65	18.1	B	16.2	B
R	1050	1615	0.52	0.65	9.7	A		
Westbound								
T	2239	3445	0.95	0.65	25.2	C	25.2	C
Northbound								
Southbound								
							42.8	D
R	715	2859	0.82	0.25	42.8	D		

Intersection Delay = 22.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT19BD
Area Type: All other areas
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SAW MILL RIVER PARKWAY SB RAMP

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		1790	500		1949							538
% Heavy Veh		5	0		5							0
PHF		0.92	0.92		0.92							0.92
PK 15 Vol		486	136		530							146
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900	1900		1900							1900
ParkExist												
NumPark												
No. Lanes	0	2	1	0	2	0	0	0	0	0	0	2
LGConfig		T	R		T							R
Lane Width		12.0	12.0		12.0							12.0
RTOR Vol			0									0
Adj Flow		1946	543		2118							585
%InSharedLn												
Prop LTs		0.000			0.000							
Prop RTs	0.000		1.000	0.000								1.000
Peds Bikes	0									0		
Buses		0	0		0							0
%InProtPhase												

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0	0.0		0.0							0.0
Arriv. Type		3	3		3							3
Unit Ext.		3.0	3.0		3.0							3.0
I Factor		1.000			1.000						1.000	
Lost Time		2.0	2.0		2.0							2.0
Ext of g		2.0	2.0		2.0							2.0
Ped Min g		3.2									3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT20BD
Area Type: All other areas
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: SAW MILL RIVER PARKWAY NB RAMP

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	2
LGConfig	L	T			T	R				L		R
Volume	498	1292			921	179				27		1028
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A	A			NB Left				
Thru	A	A			Thru				
Right					Right				
Peds					Peds				
WB Left					SB Left	A			
Thru	A				Thru				
Right	A				Right	A			
Peds					Peds				
NB Right					EB Right				
SB Right		A			WB Right	A			
Green	50.0	20.0				15.0			
Yellow	3.0	3.0				3.0			
All Red	2.0	2.0				2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	639	1805	0.85	0.75	35.9	D		
T	2584	3445	0.54	0.75	5.5	A	14.0	B
Westbound								
T	1723	3445	0.58	0.50	18.1	B	16.0	B
R	1130	1615	0.17	0.70	5.2	A		
Northbound								
Southbound								
L	271	1805	0.11	0.15	36.9	D		
							50.2	D
R	1144	2859	0.98	0.40	50.6	D		

Intersection Delay = 24.2 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT20BD
Area Type: All other areas
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SAW MILL RIVER PARKWAY NB RAMP

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	498	1292			921	179				27		1028
% Heavy Veh	0	5			5	0				0		0
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	135	351			250	49				7		279
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat	1900	1900			1900	1900				1900		1900
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	2
LGConfig	L	T			T	R				L		R
Lane Width	12.0	12.0			12.0	12.0				12.0		12.0
RTOR Vol						0						0
Adj Flow	541	1404			1001	195				29		1117
%InSharedLn												
Prop LTs	1.000	0.000			0.000							
Prop RTs		0.000		0.000		1.000						1.000
Peds	Bikes			0			0			0		
Buses	0	0			0	0				0		0
%InProtPhase	0.0											

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0				0.0		0.0
Arriv. Type	3	3			3	3				3		3
Unit Ext.	3.0	3.0			3.0	3.0				3.0		3.0
I Factor		1.000			1.000						1.000	
Lost Time	2.0	2.0			2.0	2.0				2.0		2.0
Ext of g	2.0	2.0			2.0	2.0				2.0		2.0
Ped Min g					3.2			3.2			3.2	

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINNERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT21BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: DOCK STREET
North/South Street: BUENA VISTA AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	109	0	34	0	142	47	75	305	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		LT	
PHF			0.92		0.92		0.92	
Flow Rate			154		205		412	
% Heavy Veh			5		5		5	
No. Lanes			1		1		1	
Opposing-Lanes			0		1		1	
Conflicting-lanes			1		1		1	
Geometry group			1		1		1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			154		205		412	
Left-Turn			118		0		81	
Right-Turn			36		51		0	
Prop. Left-Turns			0.8		0.0		0.2	
Prop. Right-Turns			0.2		0.2		0.0	
Prop. Heavy Vehicle			0.0		0.0		0.0	
Geometry Group			1		1		1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.2	

hRT-adj	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7
hadj, computed	0.1	-0.1	0.1

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			154		205		412	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.14		0.18		0.37	
hd, final value			5.47		4.80		4.74	
x, final value			0.23		0.27		0.54	
Move-up time, m			2.0		2.0		2.0	
Service Time			3.5		2.8		2.7	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			154		205		412	
Service Time			3.5		2.8		2.7	
Utilization, x			0.23		0.27		0.54	
Dep. headway, hd			5.47		4.80		4.74	
Capacity			404		455		662	
Delay			10.14		9.59		13.21	
LOS			B		A		B	
Approach:								
Delay			10.14		9.59		13.21	
LOS			B		A		B	

Intersection Delay 11.63 Intersection LOS B

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: SAT22BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: BEUNA VISTA AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	9	33	89	27	42	39	104	139	7	18	261	10
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
WB Left	A				SB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0				25.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	593	1423	0.24	0.42	11.6	B	11.6	B
Westbound								
LTR	584	1401	0.20	0.42	11.3	B	11.3	B
Northbound								
LTR	510	1224	0.53	0.42	14.2	B	14.2	B
Southbound								
LTR	655	1573	0.48	0.42	13.3	B	13.3	B

Intersection Delay = 13.0 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT22BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: BEUNA VISTA AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	9	33	89	27	42	39	104	139	7	18	261	10
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	3	9	24	7	11	11	28	38	2	5	71	3
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		12.0			12.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		143			117			272			315	
%InSharedLn												
Prop LTs		0.070			0.248			0.415			0.063	
Prop RTs		0.678			0.359			0.029			0.035	
Peds Bikes	25		0	25		0	25		0	25		0
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Unsignalized Intersections Release 5.2

TWO-WAY STOP CONTROL SUMMARY

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT23BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: HUDSON STREET
North/South Street: BUENA VISTA AVENUE
Intersection Orientation: NS Study period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street: Approach	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume		256	11	37	372	
Peak-Hour Factor, PHF		0.92	0.92	0.92	0.92	
Hourly Flow Rate, HFR		278	11	40	404	
Percent Heavy Vehicles		--	--	5	--	--
Median Type/Storage	Undivided		/			
RT Channelized?						
Lanes		1	0	0	1	
Configuration			TR		LT	
Upstream Signal?		No			No	

Minor Street: Approach	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	17		25			
Peak Hour Factor, PHF	0.92		0.92			
Hourly Flow Rate, HFR	18		27			
Percent Heavy Vehicles	5		5			
Percent Grade (%)		0			0	
Flared Approach: Exists?/Storage			No /			/
Lanes	0		0			
Configuration		LR				

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Config		LT		LR				
v (vph)		40		45				
C(m) (vph)		1256		518				
v/c		0.03		0.09				
95% queue length		0.10		0.28				
Control Delay		8.0		12.6				
LOS		A		B				
Approach Delay				12.6				
Approach LOS				B				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: NEPPERHAN STREET/DOCK STREET

Inter.: SAT24BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	0	0	1	1	0	0	2	0
LGConfig		LTR					L	TR			LTR	
Volume	20	61	80				62	276	135	20	683	92
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0						0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A			
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X			
WB Left					SB Left	A			
Thru					Thru	A			
Right					Right	A			
Peds	X				Peds	X			
NB Right					EB Right				
SB Right					WB Right				
Green	25.0					25.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	686	1646	0.26	0.42	11.6	B	11.6	B
Westbound								
Northbound								
L	161	387	0.42	0.42	14.1	B		
TR	639	1533	0.70	0.42	17.8	B	17.3	B
Southbound								
LTR	1187	2848	0.73	0.42	16.9	B	16.9	B

Intersection Delay = 16.5 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT24BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: NEPPERHAN STREET/DOCK STREET N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	20	61	80				62	276	135	20	683	92
% Heavy Veh	5	5	5				5	5	5	5	5	5
PHF	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
PK 15 Vol	5	17	22				17	75	37	5	186	25
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900					1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	0	0	1	1	0	0	2	0
LGConfig		LTR					L	TR			LTR	
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol		0						0			0	
Adj Flow		175					67	447			864	
%InSharedLn												
Prop LTs		0.126					1.000	0.000			0.025	
Prop RTs	0.497							0.329		0.116		
Peds Bikes	25	0		0			25	0		25	0	
Buses		0					0	0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0					0.0	0.0			0.0	
Arriv. Type		3					3	3			3	
Unit Ext.		3.0					3.0	3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0					2.0	2.0			2.0	
Ext of g		2.0					2.0	2.0			2.0	
Ped Min g		3.3			3.2			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: MAIN STREET

Inter.: SAT25BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGES
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: WARBURTON AVE / RIVERDALE AVE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Volume	38		113	143	54	140	99	280			643	45
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A	A	
Thru					Thru	A	A	
Right	A				Right			
Peds	X				Peds	X	X	
WB Left	A				SB Left			
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	35.0					40.0	10.0	
Yellow	3.0					3.0	3.0	
All Red	2.0					2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	473	1352	0.35	0.35	24.5	C	24.5	C
Westbound								
LTR	569	1626	0.64	0.35	29.8	C	29.8	C
Northbound								
L	398	1536	0.27	0.55	20.0+	C		
T	1706	3101	0.18	0.55	11.3	B	13.6	B
Southbound								
TR	1226	3064	0.61	0.40	24.7	C	24.7	C

Intersection Delay = 23.1 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT25BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGES
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MAIN STREET N/S St: WARBURTON AVE / RIVERDALE AVE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	38		113	143	54	140	99	280			643	45
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	10		31	39	15	38	27	76			175	12
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0
Adj Flow		164			366		108	304			748	
%InSharedLn												
Prop LTs		0.250			0.423		1.000	0.000			0.000	
Prop RTs	0.750			0.415			0.000			0.066		
Peds Bikes	25		0	25		0				25		0
Buses		0			0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0			0.0	
Arriv. Type		3			3		3	3			3	
Unit Ext.		3.0			3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0			2.0	
Ext of g		2.0			2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: HUDSON STREET

Inter.: SAT26BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	0	0	0	2	1	1	2	0
LGConfig		LTR						T	R	L	T	
Volume	12	51	31					327	302	266	594	
Lane Width		15.0						12.0	12.0	12.0	12.0	
RTOR Vol			0						0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left			
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X	X	
WB Left					SB Left	A	A	
Thru					Thru	A	A	
Right					Right			
Peds	X				Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	30.0					40.0	15.0	
Yellow	3.0					3.0	3.0	
All Red	2.0					2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	506	1686	0.20	0.30	26.3	C	26.3	C
Westbound								
Northbound								
T	1240	3101	0.29	0.40	20.5	C	23.1	C
R	536	1341	0.61	0.40	25.9	C		
Southbound								
L	636	1528	0.45	0.60	13.7	B		
T	1861	3101	0.35	0.60	10.2	B	11.3	B

Intersection Delay = 16.9 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT26BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HUDSON STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	12	51	31					327	302	266	594	
% Heavy Veh	5	5	5					5	5	5	5	
PHF	0.92	0.92	0.92					0.92	0.92	0.92	0.92	
PK 15 Vol	3	14	8					89	82	72	161	
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900						1900	1900	1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	0	0	0	2	1	1	2	0
LGConfig		LTR						T	R	L	T	
Lane Width		15.0						12.0	12.0	12.0	12.0	
RTOR Vol			0						0			
Adj Flow		102						355	328	289	646	
%InSharedLn												
Prop LTs		0.127						0.000		1.000	0.000	
Prop RTs	0.333						0.000	1.000		0.000		
Peds Bikes	25	0		0			25	0				
Buses		0						0	0	0	0	
%InProtPhase										0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0	0.0	0.0	0.0	
Arriv. Type		3						3	3	3	3	
Unit Ext.		3.0						3.0	3.0	3.0	3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0						2.0	2.0	2.0	2.0	
Ext of g		2.0						2.0	2.0	2.0	2.0	
Ped Min g		3.4			3.2			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: PROSPECT STREET

Inter.: SAT27BD
Area Type: CBD or Similar
Jurisd: W/ IMPROVEMENTS
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	1	2	0	1	2	1
LGConfig		LTR		L	TR		L	TR		L	T	R
Volume	11	327	44	454	398	175	96	469	278	283	391	47
Lane Width		12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru	A					Thru	A	A		
	Right	A					Right	A	A		
	Peds	X	X				Peds	X	X	X	
WB	Left	A	A			SB	Left		A	A	
	Thru	A	A				Thru		A	A	
	Right	A	A				Right		A	A	
	Peds	X	X				Peds	X	X	X	
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		20.0	15.0					10.0	20.0	10.0	
Yellow		3.0	3.0					3.0	3.0	3.0	
All Red		2.0	2.0					2.0	2.0	2.0	

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	562	2812	0.74	0.20	42.7	D	42.7	D
Westbound								
L	421	1532	1.17	0.40	134.9	F		
TR	1177	2942	0.53	0.40	23.3	C	72.6	E
Northbound								
L	282	1531	0.37	0.35	24.0	C		
TR	1017	2905	0.80	0.35	33.9	C	32.8	C
Southbound								
L	342	1537	0.90	0.35	61.2	E		
T	1085	3101	0.39	0.35	24.7	C	38.9	D
R	474	1355	0.11	0.35	22.1	C		

Intersection Delay = 49.3 (sec/veh) Intersection LOS = D

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT27BD
Area Type: CBD or Similar
Jurisdiction: W/ IMPROVEMENTS
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: PROSPECT STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	11	327	44	454	398	175	96	469	278	283	391	47
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	3	89	12	123	108	48	26	127	76	77	106	13
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900		1900	1900		1900	1900		1900	1900	1900
ParkExist												
NumPark												
No. Lanes	0	2	0	1	2	0	1	2	0	1	2	1
LGConfig		LTR		L	TR		L	TR		L	T	R
Lane Width		12.0		12.0	12.0		12.0	12.0		12.0	12.0	12.0
RTOR Vol		0			0			0			0	
Adj Flow		415		493	623		104	812		308	425	51
%InSharedLn												
Prop LTs		0.029		1.000	0.000		1.000	0.000		1.000	0.000	
Prop RTs	0.116			0.305			0.372			0.000	1.000	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0		0	0		0	0		0	0	0
%InProtPhase				0.0			0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Arriv. Type		3		3	3		3	3		3	3	3
Unit Ext.		3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ext of g		2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: VARK STREET

Inter.: SAT28BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	74	66	31	36	22	51	34	718	125	179	678	36
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X	X		
WB Left	A				SB Left	A	A		
Thru	A				Thru	A			
Right	A				Right	A			
Peds	X				Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green	25.0					40.0	10.0		
Yellow	3.0					3.0	3.0		
All Red	2.0					2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	397	1428	0.47	0.28	27.9	C	27.9	C
Westbound								
LTR	395	1423	0.30	0.28	26.0	C	26.0	C
Northbound								
L	452	1538	0.08	0.61	11.9	B		
TR	1342	3019	0.68	0.44	21.4	C	21.0	C
Southbound								
L	407	1540	0.48	0.61	21.9	C		
TR	1366	3073	0.57	0.44	19.1	B	19.7	B

Intersection Delay = 21.3 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT28BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VARK STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	74	66	31	36	22	51	34	718	125	179	678	36
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	20	18	8	10	6	14	9	195	34	49	184	10
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		186			118		37	916		195	776	
%InSharedLn												
Prop LTs		0.430			0.331		1.000	0.000		1.000	0.000	
Prop RTs	0.183			0.466			0.148			0.050		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: HERRIOT STREET

Inter.: SAT29BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig					LTR		L	T			TR	
Volume				26	17	24	22	794			738	18
Lane Width					15.0		12.0	12.0			12.0	
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left					NB Left	A	A		
Thru					Thru	A	A		
Right					Right				
Peds		X			Peds	X	X		
WB Left		A			SB Left				
Thru		A			Thru	A			
Right		A			Right	A			
Peds		X			Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green		25.0				40.0	10.0		
Yellow		3.0				3.0	3.0		
All Red		2.0				2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LTR	460	1655	0.16	0.28	24.7	C	24.7	C
Northbound								
L	436	1538	0.06	0.61	12.2	B		
T	1895	3101	0.46	0.61	9.6	A	9.7	A
Southbound								
TR	1372	3087	0.60	0.44	19.7	B	19.7	B

Intersection Delay = 14.9 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT29BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HERRIOT STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				26	17	24	22	794			738	18
% Heavy Veh				5	5	5	5	5			5	5
PHF				0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol				7	5	7	6	216			201	5
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig					LTR		L	T			TR	
Lane Width					15.0		12.0	12.0			12.0	
RTOR Vol					0						0	
Adj Flow					72		24	863			822	
%InSharedLn												
Prop LTs					0.389		1.000	0.000			0.000	
Prop RTs				0.361			0.000			0.024		
Peds Bikes	0			25	0					25	0	
Buses					0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0		0.0	0.0			0.0	
Arriv. Type					3		3	3			3	
Unit Ext.					3.0		3.0	3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0		2.0	2.0			2.0	
Ext of g					2.0		2.0	2.0			2.0	
Ped Min g		3.2			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: LUDLOW STREET

Inter.: SAT30BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Volume	59		82	67	32	128	31	656			783	33
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A				NB	Left	A	A		
	Thru						Thru	A	A		
	Right	A					Right				
	Peds	X					Peds	X	X		
WB	Left	A				SB	Left				
	Thru	A					Thru	A			
	Right	A					Right	A			
	Peds	X					Peds	X	X		
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		25.0						40.0	10.0		
Yellow		3.0						3.0	3.0		
All Red		2.0						2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	340	1225	0.45	0.28	27.8	C	27.8	C
Westbound								
LTR	443	1594	0.56	0.28	29.3	C	29.3	C
Northbound								
L	416	1539	0.08	0.61	13.5	B		
T	1895	3101	0.38	0.61	9.0	A	9.2	A
Southbound								
TR	1368	3078	0.65	0.44	20.6	C	20.6	C

Intersection Delay = 18.0 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT30BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LUDLOW STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	59		82	67	32	128	31	656			783	33
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	16		22	18	9	35	8	178			213	9
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	1	2	0	0	2	0
LGConfig		LR			LTR		L	T			TR	
Lane Width		15.0			15.0		12.0	12.0			12.0	
RTOR Vol			0			0						0
Adj Flow		153			247		34	713			887	
%InSharedLn												
Prop LTs		0.418			0.296		1.000	0.000			0.000	
Prop RTs	0.582			0.563			0.000			0.041		
Peds Bikes	25		0	25		0				25		0
Buses		0			0		0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0			0.0	
Arriv. Type		3			3		3	3			3	
Unit Ext.		3.0			3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0			2.0	
Ext of g		2.0			2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: RADFORD STREET

Inter.: SAT31BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	2	0	1	2	0
LGConfig					LR			TR		L	T	
Volume				64		100		529	58	116	600	
Lane Width					15.0			12.0		12.0	12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X	X	
WB Left		A			SB Left	A	A	
Thru					Thru	A	A	
Right		A			Right			
Peds		X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green		25.0				40.0	10.0	
Yellow		3.0				3.0	3.0	
All Red		2.0				2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LR	441	1586	0.41	0.28	27.1	C	27.1	C
Northbound								
TR	1354	3046	0.47	0.44	17.8	B	17.8	B
Southbound								
L	503	1535	0.25	0.61	12.0	B		
T	1895	3101	0.34	0.61	8.7	A	9.3	A

Intersection Delay = 14.7 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT31BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: RADFORD STREET N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				64		100		529	58	116	600	
% Heavy Veh				5		5		5	5	5	5	
PHF				0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol				17		27		144	16	32	163	
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	2	0	1	2	0
LGConfig					LR			TR		L	T	
Lane Width					15.0			12.0		12.0	12.0	
RTOR Vol						0			0			
Adj Flow					179			638		126	652	
%InSharedLn												
Prop LTs					0.391			0.000		1.000	0.000	
Prop RTs				0.609			0.099				0.000	
Peds Bikes	0			25	0		25	0				
Buses					0			0		0	0	
%InProtPhase										0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0		0.0	0.0	
Arriv. Type					3			3		3	3	
Unit Ext.					3.0			3.0		3.0	3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0		2.0	2.0	
Ext of g					2.0			2.0		2.0	2.0	
Ped Min g		3.2			3.4			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: VALENTINE LANE

Inter.: SAT32BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: RIVERDALE AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	11	47	50	37	46	88	57	481	43	74	523	15
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X	X	
WB Left	A				SB Left	A	A	
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X	X	
NB Right					EB Right			
SB Right					WB Right			
Green	25.0					40.0	10.0	
Yellow	3.0					3.0	3.0	
All Red	2.0					2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	444	1599	0.26	0.28	25.6	C	25.6	C
Westbound								
LTR	417	1500	0.45	0.28	27.6	C	27.6	C
Northbound								
L	525	1534	0.12	0.61	10.0-	A		
TR	1358	3055	0.42	0.44	17.3	B	16.6	B
Southbound								
L	532	1534	0.15	0.61	10.1	B		
TR	1372	3086	0.43	0.44	17.3	B	16.5	B

Intersection Delay = 18.5 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT32BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VALENTINE LANE N/S St: RIVERDALE AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	11	47	50	37	46	88	57	481	43	74	523	15
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	3	13	14	10	12	24	15	131	12	20	142	4
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	2	0	1	2	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		117			186		62	570		80	584	
%InSharedLn												
Prop LTs		0.103			0.215		1.000	0.000		1.000	0.000	
Prop RTs	0.462			0.516			0.082			0.027		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: VARK STREET

Inter.: SAT33BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	58	115	65	129	63	21	12	314	42	20	260	47
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left		A			SB Left	A		
Thru		A			Thru	A		
Right		A			Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0	20.0				40.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	417	1666	0.62	0.25	36.1	D	36.1	D
Westbound								
LTR	332	1660	0.70	0.20	43.4	D	43.4	D
Northbound								
LTR	629	1572	0.64	0.40	26.3	C	26.3	C
Southbound								
LTR	612	1530	0.58	0.40	24.9	C	24.9	C

Intersection Delay = 31.1 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT33BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VARK STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	58	115	65	129	63	21	12	314	42	20	260	47
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	16	31	18	35	17	6	3	85	11	5	71	13
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol		0			0			0			0	
Adj Flow		259			231			400			356	
%InSharedLn												
Prop LTs		0.243			0.606			0.032			0.062	
Prop RTs		0.274			0.100			0.115			0.143	
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: HERRIOT STREET

Inter.: SAT34BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	1	0	0	1	0	0	1	0
LGConfig		LR			LTR			LT			TR	
Volume	25		25	14	50	168	40	337			398	55
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol			0			0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru					Thru	A		
Right	A				Right			
Peds	X				Peds	X		
WB Left	A				SB Left			
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	30.0					50.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	440	1319	0.12	0.33	21.0	C	21.0	C
Westbound								
LTR	521	1564	0.48	0.33	24.6	C	24.6	C
Northbound								
LT	829	1493	0.49	0.56	12.7	B	12.7	B
Southbound								
TR	887	1597	0.56	0.56	13.6	B	13.6	B

Intersection Delay = 15.9 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT34BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: HERRIOT STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	25		25	14	50	168	40	337			398	55
% Heavy Veh	5		5	5	5	5	5	5			5	5
PHF	0.92		0.92	0.92	0.92	0.92	0.92	0.92			0.92	0.92
PK 15 Vol	7		7	4	14	46	11	92			108	15
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	1	0	0	1	0	0	1	0
LGConfig		LR			LTR			LT			TR	
Lane Width		15.0			15.0			12.0			12.0	
RTOR Vol		0			0						0	
Adj Flow		54			252			409			493	
%InSharedLn												
Prop LTs		0.500			0.060			0.105			0.000	
Prop RTs	0.500			0.726			0.000			0.122		
Peds Bikes	25		0	25		0				25		0
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4						3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: BRIGHT PLACE

Inter.: SAT35BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig					LR			TR			LT	
Volume				32		29		635	25	3	518	
Lane Width					15.0			12.0			12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X		
WB Left		A			SB Left	A		
Thru					Thru	A		
Right		A			Right			
Peds		X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green		30.0				50.0		
Yellow		3.0				3.0		
All Red		2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
LR	535	1604	0.13	0.33	21.0	C	21.0	C
Northbound								
TR	899	1619	0.80	0.56	21.1	C	21.1	C
Southbound								
LT	902	1624	0.63	0.56	15.0	B	15.0	B

Intersection Delay = 18.5 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT35BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: BRIGHT PLACE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				32		29		635	25	3	518	
% Heavy Veh				5		5		5	5	5	5	
PHF				0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol				9		8		173	7	1	141	
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat					1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig					LR			TR			LT	
Lane Width					15.0			12.0			12.0	
RTOR Vol						0			0			
Adj Flow					67			717			566	
%InSharedLn												
Prop LTs					0.522			0.000			0.005	
Prop RTs				0.478			0.038			0.000		
Peds Bikes	0			25		0	25		0			
Buses					0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet					0.0			0.0			0.0	
Arriv. Type					3			3			3	
Unit Ext.					3.0			3.0			3.0	
I Factor					1.000			1.000			1.000	
Lost Time					2.0			2.0			2.0	
Ext of g					2.0			2.0			2.0	
Ped Min g		3.2			3.4			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: LUDLOW STREET

Inter.: SAT36BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig							L	T			TR	
Volume							173	599			516	125
Lane Width							12.0	12.0			12.0	
RTOR Vol											0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4			5	6	7	8
EB Left					NB	Left	A	A		
Thru						Thru	A			
Right						Right				
Peds						Peds	X	X		
WB Left					SB	Left				
Thru						Thru	A			
Right						Right	A			
Peds						Peds	X	X		
NB Right					EB	Right				
SB Right					WB	Right				
Green							55.0	25.0		
Yellow							3.0	3.0		
All Red							2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
Northbound								
L	826	1533	0.23	0.94	2.2	A		
T	995	1629	0.65	0.61	12.9	B	10.5	B
Southbound								
TR	961	1573	0.73	0.61	15.0	B	15.0	B

Intersection Delay = 12.5 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT36BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LUDLOW STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume							173	599			516	125
% Heavy Veh							5	5			5	5
PHF							0.92	0.92			0.92	0.92
PK 15 Vol							47	163			140	34
Hi Ln Vol												
% Grade								0			0	
Ideal Sat							1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig							L	T			TR	
Lane Width							12.0	12.0			12.0	
RTOR Vol												0
Adj Flow							188	651			697	
%InSharedLn												
Prop LTs							1.000	0.000			0.000	
Prop RTs								0.000			0.195	
Peds Bikes											50	0
Buses							0	0			0	
%InProtPhase							0.0					

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet							0.0	0.0			0.0	
Arriv. Type							3	3			3	
Unit Ext.							3.0	3.0			3.0	
I Factor								1.000			1.000	
Lost Time							2.0	2.0			2.0	
Ext of g							2.0	2.0			2.0	
Ped Min g											3.5	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: MCLEAN AVENUE

Inter.: SAT37BD
Area Type: CBD or Similar
Jurisd: W/ PHASING CHANGE
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	1	0	1	0	1	0	1	1	0
LGConfig				L		R		TR		L	T	
Volume				140		335		330	43	318	423	
Lane Width				12.0		12.0		12.0		12.0	12.0	
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru					Thru	A		
Right					Right	A		
Peds		X			Peds	X	X	
WB Left		A			SB Left	A	A	
Thru					Thru	A	A	
Right		A			Right			
Peds		X			Peds	X	X	
NB Right					EB Right			
SB Right					WB Right	A		
Green		25.0				10.0	40.0	
Yellow		3.0				3.0	3.0	
All Red		2.0				2.0	2.0	

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
Westbound								
L	430	1547	0.35	0.28	26.5	C		
							22.7	C
R	588	1322	0.62	0.44	21.2	C		
Northbound								
TR	710	1598	0.57	0.44	19.7	B	19.7	B
Southbound								
L	447	1532	0.77	0.61	25.2	C		
T	995	1629	0.46	0.61	9.8	A	16.4	B

Intersection Delay = 19.1 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT37BD
Area Type: CBD or Similar
Jurisdiction: W/ PHASING CHANGE
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: MCLEAN AVENUE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume				140		335		330	43	318	423	
% Heavy Veh				5		5		5	5	5	5	
PHF				0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol				38		91		90	12	86	115	
Hi Ln Vol												
% Grade					0			0			0	
Ideal Sat				1900		1900		1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	1	0	1	0	1	0	1	1	0
LGConfig				L		R		TR		L	T	
Lane Width				12.0		12.0		12.0		12.0	12.0	
RTOR Vol						0			0			
Adj Flow				152		364		406		346	460	
%InSharedLn												
Prop LTs								0.000		1.000	0.000	
Prop RTs						1.000		0.116			0.000	
Peds Bikes	0			25		0		25	0			
Buses				0		0		0		0	0	
%InProtPhase						0.0				0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet				0.0		0.0		0.0		0.0	0.0	
Arriv. Type				3		3		3		3	3	
Unit Ext.				3.0		3.0		3.0		3.0	3.0	
I Factor					1.000			1.000			1.000	
Lost Time				2.0		2.0		2.0		2.0	2.0	
Ext of g				2.0		2.0		2.0		2.0	2.0	
Ped Min g		3.2			3.4			3.4				

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: RADFORD STREET

Inter.: SAT38BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	1	1	0	1	1	0
LGConfig		LTR			LTR		L	TR		L	TR	
Volume	47	131	34	70	169	48	67	298	46	38	283	51
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	A				NB Left	A	A		
Thru	A				Thru		A		
Right	A				Right		A		
Peds	X				Peds	X	X		
WB Left	A				SB Left	A	A		
Thru	A				Thru		A		
Right	A				Right		A		
Peds	X				Peds	X	X		
NB Right					EB Right				
SB Right					WB Right				
Green	30.0					10.0	35.0		
Yellow	3.0					3.0	3.0		
All Red	2.0					2.0	2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	501	1504	0.46	0.33	24.3	C	24.3	C
Westbound								
LTR	497	1492	0.63	0.33	27.8	C	27.8	C
Northbound								
L	424	1529	0.17	0.56	10.7	B		
TR	618	1589	0.61	0.39	23.7	C	21.6	C
Southbound								
L	417	1529	0.10	0.56	10.5	B		
TR	616	1584	0.59	0.39	23.3	C	22.0	C

Intersection Delay = 23.5 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT38BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: RADFORD STREET N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	47	131	34	70	169	48	67	298	46	38	283	51
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	13	36	9	19	46	13	18	81	12	10	77	14
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat		1900			1900		1900	1900		1900	1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	1	1	0	1	1	0
LGConfig		LTR			LTR		L	TR		L	TR	
Lane Width		15.0			15.0		12.0	12.0		12.0	12.0	
RTOR Vol		0			0			0			0	
Adj Flow		230			312		73	374		41	363	
%InSharedLn												
Prop LTs		0.222			0.244		1.000	0.000		1.000	0.000	
Prop RTs	0.161			0.167			0.134			0.152		
Peds Bikes	25	0		25	0		25	0		25	0	
Buses		0			0		0	0		0	0	
%InProtPhase							0.0			0.0		

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0		0.0	0.0		0.0	0.0	
Arriv. Type		3			3		3	3		3	3	
Unit Ext.		3.0			3.0		3.0	3.0		3.0	3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Ext of g		2.0			2.0		2.0	2.0		2.0	2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: VALENTINE LANE

Inter.: SAT39BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: S. BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig		LR					L	T			TR	
Volume	159		144				81	419			312	73
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru					Thru	A		
Right	A				Right			
Peds	X				Peds	X		
WB Left					SB Left			
Thru					Thru	A		
Right					Right	A		
Peds	X				Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0					35.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 70.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	574	1606	0.57	0.36	19.6	B	19.6	B
Westbound								
Northbound								
L	337	673	0.26	0.50	10.5	B		
T	815	1629	0.56	0.50	13.0	B	12.6	B
Southbound								
TR	790	1580	0.53	0.50	12.6	B	12.6	B

Intersection Delay = 14.4 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT39BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: VALENTINE LANE N/S St: S. BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	159		144				81	419			312	73
% Heavy Veh	5		5				5	5			5	5
PHF	0.92		0.92				0.92	0.92			0.92	0.92
PK 15 Vol	43		39				22	114			85	20
Hi Ln Vol												
% Grade		0						0			0	
Ideal Sat		1900					1900	1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	1	1	0	0	1	0
LGConfig		LR					L	T			TR	
Lane Width		15.0					12.0	12.0			12.0	
RTOR Vol			0									0
Adj Flow		330					88	455			418	
%InSharedLn												
Prop LTs		0.524					1.000	0.000			0.000	
Prop RTs	0.476							0.000		0.189		
Peds Bikes	25		0	0						25		0
Buses		0					0	0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0					0.0	0.0			0.0	
Arriv. Type		3					3	3			3	
Unit Ext.		3.0					3.0	3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0					2.0	2.0			2.0	
Ext of g		2.0					2.0	2.0			2.0	
Ped Min g		3.3			3.2						3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT40BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: MIDLAND AVENUE (WEST)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L	LR	R
Volume	184	1338			865	112				103		230
Lane Width	12.0	12.0			12.0	12.0				12.0	12.0	12.0
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left			
Thru	A	A			Thru			
Right					Right			
Peds	X	X			Peds	X		
WB Left					SB Left	A		
Thru	A				Thru			
Right	A				Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0	10.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	410	1540	0.49	0.65	21.0	C		
T	2016	3101	0.72	0.65	12.8	B	13.8	B
Westbound								
T	1551	3101	0.61	0.50	18.6	B	18.1	B
R	675	1350	0.18	0.50	13.9	B		
Northbound								
Southbound								
L	387	1547	0.22	0.25	30.0	C		
LR	347	1386	0.26	0.25	30.5	C	32.8	C
R	329	1315	0.57	0.25	35.2	D		

Intersection Delay = 17.5 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT40BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: MIDLAND AVENUE (WEST)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	184	1338			865	112				103		230
% Heavy Veh	5	5			5	5				5		5
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	50	364			235	30				28		62
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat	1900	1900			1900	1900				1900	1900	1900
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	0	0	1	0	1
LGConfig	L	T			T	R				L	LR	R
Lane Width	12.0	12.0			12.0	12.0				12.0	12.0	12.0
RTOR Vol						0						0
Adj Flow	200	1454			940	122				84	90	188
%InSharedLn										25		25
Prop LTs	1.000	0.000			0.000						0.311	
Prop RTs		0.000		0.000	1.000					0.694	1.000	
Peds Bikes				25	0		0			25	0	
Buses	0	0			0	0				0	0	0
%InProtPhase	0.0											

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0				0.0	0.0	0.0
Arriv. Type	3	3			3	3				3	3	3
Unit Ext.	3.0	3.0			3.0	3.0				3.0	3.0	3.0
I Factor		1.000			1.000						1.000	
Lost Time	2.0	2.0			2.0	2.0				2.0	2.0	2.0
Ext of g	2.0	2.0			2.0	2.0				2.0	2.0	2.0
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT41BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: MIDLAND AVENUE (EAST)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	1	2	0	1	2	0	0	1	0
LGConfig	L	TR		L	TR		L	TR			LTR	
Volume	44	734	13	88	780	6	164	29	70	10	14	34
Lane Width	12.0	12.0		12.0	12.0		10.0	10.0			15.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A				NB Left	A		
Thru	A				Thru	A		
Right	A				Right	A		
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A	A			Thru	A		
Right	A	A			Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	50.0	10.0				25.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	233	466	0.21	0.50	14.4	B		
TR	1546	3091	0.53	0.50	17.3	B	17.1	B
Westbound								
L	452	1538	0.21	0.65	12.7	B		
TR	2013	3097	0.42	0.65	8.6	A	9.0	A
Northbound								
L	267	1068	0.67	0.25	40.0	D		
TR	634	2534	0.17	0.25	29.5	C	36.0	D
Southbound								
LTR	385	1540	0.16	0.25	29.5	C	29.5	C

Intersection Delay = 16.4 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT41BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: MIDLAND AVENUE (EAST)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	44	734	13	88	780	6	164	29	70	10	14	34
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	12	199	4	24	212	2	45	8	19	3	4	9
Hi Ln Vol												
% Grade		0			0			0			0	
Ideal Sat	1900	1900		1900	1900		1900	1900			1900	
ParkExist												
NumPark												
No. Lanes		1	2	0	1	2	0	1	2	0	0	1	0
LGConfig	L		TR	L		TR	L		TR		LTR	
Lane Width	12.0	12.0		12.0	12.0		10.0	10.0			15.0	
RTOR Vol			0			0			0			0
Adj Flow	48	812		96	855		178	108			63	
%InSharedLn												
Prop LTs	1.000	0.000		1.000	0.000		1.000	0.000			0.175	
Prop RTs		0.017			0.008			0.704			0.587	
Peds	25		0	25		0	25		0	25		0
Bikes												
Buses	0	0		0	0		0	0			0	
%InProtPhase				0.0								

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0		0.0	0.0		0.0	0.0			0.0	
Arriv. Type	3	3		3	3		3	3			3	
Unit Ext.	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time	2.0	2.0		2.0	2.0		2.0	2.0			2.0	
Ext of g	2.0	2.0		2.0	2.0		2.0	2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT42BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: SEMINARY AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	0	0	0	0	0	0
LGConfig		LT			TR						LR	
Volume	42	665			771	70				53		74
Lane Width		12.0			12.0						15.0	
RTOR Vol						0						0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination		1	2	3	4			5	6	7	8
EB	Left	A	A			NB	Left				
	Thru	A	A				Thru				
	Right						Right				
	Peds	X	X				Peds	X			
WB	Left					SB	Left	A			
	Thru	A					Thru				
	Right	A					Right	A			
	Peds	X	X				Peds	X			
NB	Right					EB	Right				
SB	Right					WB	Right				
Green		40.0	20.0					25.0			
Yellow		3.0	3.0					3.0			
All Red		2.0	2.0					2.0			

Cycle Length: 100.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	1721	3091	0.45	0.65	8.8	A	8.8	A
Westbound								
TR	1222	3054	0.75	0.40	28.3	C	28.3	C
Northbound								
Southbound								
LR	397	1589	0.35	0.25	31.3	C	31.3	C

Intersection Delay = 20.3 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT42BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: SEMINARY AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	42	665			771	70				53		74
% Heavy Veh	5	5			5	5				5		5
PHF	0.92	0.92			0.92	0.92				0.92		0.92
PK 15 Vol	11	181			210	19				14		20
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900			1900						1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	0	2	0	0	0	0	0	0	0
LGConfig		LT			TR						LR	
Lane Width		12.0			12.0						15.0	
RTOR Vol					0						0	
Adj Flow		769			914						138	
%InSharedLn												
Prop LTs		0.060			0.000						0.420	
Prop RTs		0.000			0.083						0.580	
Peds Bikes					25	0		0			25	0
Buses		0			0						0	
%InProtPhase	0.0											

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0						0.0	
Arriv. Type		3			3						3	
Unit Ext.		3.0			3.0						3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0			2.0						2.0	
Ext of g		2.0			2.0						2.0	
Ped Min g					3.4			3.2			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT43BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: CENTRAL PARK AVENUE (SB)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	1	2	0	0	0	0	0	2	0
LGConfig		TR		L	T						LTR	
Volume		519	189	220	544					110	127	250
Lane Width		12.0		12.0	12.0						12.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left					NB Left			
Thru		A			Thru			
Right		A			Right			
Peds	X	X			Peds	X		
WB Left	A	A			SB Left	A		
Thru	A	A			Thru	A		
Right					Right	A		
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0	55.0				35.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 140.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
TR	1164	2962	0.66	0.39	36.3	D	36.3	D
Westbound								
L	534	1542	0.45	0.68	12.8	B		
T	2104	3101	0.28	0.68	9.0	A	10.1	B
Northbound								
Southbound								
LTR	697	2786	0.76	0.25	53.5	D	53.5	D

Intersection Delay = 30.4 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT43BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: CENTRAL PARK AVENUE (SB)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume		519	189	220	544					110	127	250
% Heavy Veh		5	5	5	5					5	5	5
PHF		0.92	0.92	0.92	0.92					0.92	0.92	0.92
PK 15 Vol		141	51	60	148					30	35	68
Hi Ln Vol												
% Grade		0			0						0	
Ideal Sat		1900		1900	1900						1900	
ParkExist												
NumPark												
No. Lanes	0	2	0	1	2	0	0	0	0	0	2	0
LGConfig		TR		L	T						LTR	
Lane Width		12.0		12.0	12.0						12.0	
RTOR Vol			0									0
Adj Flow		769		239	591						530	
%InSharedLn												
Prop LTs		0.000		1.000	0.000						0.226	
Prop RTs		0.267			0.000						0.513	
Peds Bikes		25	0					0			25	0
Buses		0		0	0						0	
%InProtPhase				0.0								

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0		0.0	0.0						0.0	
Arriv. Type		3		3	3						3	
Unit Ext.		3.0		3.0	3.0						3.0	
I Factor		1.000			1.000						1.000	
Lost Time		2.0		2.0	2.0						2.0	
Ext of g		2.0		2.0	2.0						2.0	
Ped Min g		3.5						3.2			3.5	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: YONKERS AVENUE

Inter.: SAT44BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES

N/S St: CENTRAL PARK AVENUE (NB)

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	1	2	0	0	2	1	0	2	1	0	0	0
LGConfig	L	T			T	R		LT	R			
Volume	248	382			382	297	382	144	174			
Lane Width	12.0	12.0			12.0	12.0		12.0	12.0			
RTOR Vol						0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	A	A			NB Left	A		
Thru	A	A			Thru	A		
Right					Right	A		
Peds	X	X			Peds	X		
WB Left					SB Left			
Thru		A			Thru			
Right		A			Right			
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	35.0	55.0				35.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 140.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
L	670	1538	0.40	0.68	9.9	A		
T	2104	3101	0.20	0.68	8.4	A	9.0	A
Westbound								
T	1218	3101	0.34	0.39	30.0	C	32.5	C
R	533	1358	0.61	0.39	35.8	D		
Northbound								
LT	748	2992	0.76	0.25	53.4	D	52.1	D
R	336	1343	0.56	0.25	48.0	D		
Southbound								

Intersection Delay = 32.0 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT44BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: YONKERS AVENUE N/S St: CENTRAL PARK AVENUE (NB)

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	248	382			382	297	382	144	174			
% Heavy Veh	5	5			5	5	5	5	5			
PHF	0.92	0.92			0.92	0.92	0.92	0.92	0.92			
PK 15 Vol	67	104			104	81	104	39	47			
Hi Ln Vol												
% Grade		0			0			0				
Ideal Sat	1900	1900			1900	1900		1900	1900			
ParkExist												
NumPark												
No. Lanes	1	2	0	0	2	1	0	2	1	0	0	0
LGConfig	L	T			T	R		LT	R			
Lane Width	12.0	12.0			12.0	12.0		12.0	12.0			
RTOR Vol					0			0				
Adj Flow	270	415			415	323		572	189			
%InSharedLn												
Prop LTs	1.000	0.000			0.000			0.726				
Prop RTs		0.000		0.000	1.000		0.000	1.000				
Peds Bikes				25	0		25	0		0		
Buses	0	0			0	0		0	0			
%InProtPhase	0.0											

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet	0.0	0.0			0.0	0.0		0.0	0.0			
Arriv. Type	3	3			3	3		3	3			
Unit Ext.	3.0	3.0			3.0	3.0		3.0	3.0			
I Factor		1.000			1.000			1.000				
Lost Time	2.0	2.0			2.0	2.0		2.0	2.0			
Ext of g	2.0	2.0			2.0	2.0		2.0	2.0			
Ped Min g					3.5			3.5			3.2	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: GLENWOOD AVENUE

Inter.: SAT45BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	11	15	27	20	27	31	47	294	16	20	303	26
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0				30.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	507	1522	0.11	0.33	14.3	B	14.3	B
Westbound								
LTR	544	1631	0.16	0.33	14.7	B	14.7	B
Northbound								
LTR	815	1630	0.48	0.50	11.8	B	11.8	B
Southbound								
LTR	860	1719	0.44	0.50	11.3	B	11.3	B

Intersection Delay = 12.0 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT45BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: GLENWOOD AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	11	15	27	20	27	31	47	294	16	20	303	26
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	3	4	7	5	7	8	13	80	4	5	82	7
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		57			85			388			379	
%InSharedLn												
Prop LTs		0.211			0.259			0.131			0.058	
Prop RTs	0.509			0.400			0.044			0.074		
Peds Bikes	25			25			25			25		
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: LAMARTINE AVENUE

Inter.: SAT46BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: WARBURTON AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	15	44	14	23	9	14	3	380	25	25	366	7
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	20.0				30.0			
Yellow	3.0				3.0			
All Red	2.0				2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	532	1597	0.15	0.33	14.6	B	14.6	B
Westbound								
LTR	515	1545	0.10	0.33	14.2	B	14.2	B
Northbound								
LTR	887	1773	0.50	0.50	12.0	B	12.0	B
Southbound								
LTR	859	1717	0.50	0.50	12.1	B	12.1	B

Intersection Delay = 12.4 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT46BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LAMARTINE AVENUE N/S St: WARBURTON AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	15	44	14	23	9	14	3	380	25	25	366	7
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	4	12	4	6	3	4	1	103	7	7	99	2
Hi Ln Vol												
% Grade		8			-6			0			0	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		79			50			443			433	
%InSharedLn												
Prop LTs		0.203			0.500			0.007			0.062	
Prop RTs	0.190			0.300			0.061			0.018		
Peds Bikes	25			25			25			25		
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.3			3.3			3.3			3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: GLENWOOD AVENUE

Inter.: SAT47BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NORTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Volume	15	57	6	19	104	32	21	391	22	27	418	38
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol			0			0			0			0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left	P				NB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
WB Left	P				SB Left	P		
Thru	P				Thru	P		
Right	P				Right	P		
Peds					Peds			
NB Right					EB Right			
SB Right					WB Right			
Green	25.0					45.0		
Yellow	3.0					3.0		
All Red	2.0					2.0		

Cycle Length: 80.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LTR	499	1597	0.17	0.31	20.7	C	20.7	C
Westbound								
LTR	540	1729	0.31	0.31	22.5	C	22.5	C
Northbound								
LTR	948	1685	0.50	0.56	12.5	B	12.5	B
Southbound								
LTR	979	1740	0.54	0.56	13.1	B	13.1	B

Intersection Delay = 14.6 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT47BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: GLENWOOD AVENUE N/S St: NORTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	15	57	6	19	104	32	21	391	22	27	418	38
% Heavy Veh	5	5	5	5	5	5	5	5	5	5	5	5
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
PK 15 Vol	4	15	2	5	28	9	6	106	6	7	114	10
Hi Ln Vol												
% Grade		8			-6			4			-4	
Ideal Sat		1900			1900			1900			1900	
ParkExist												
NumPark												
No. Lanes	0	1	0	0	1	0	0	1	0	0	1	0
LGConfig		LTR			LTR			LTR			LTR	
Lane Width		15.0			15.0			15.0			15.0	
RTOR Vol		0			0			0			0	
Adj Flow		85			169			472			524	
%InSharedLn												
Prop LTs		0.188			0.124			0.049			0.055	
Prop RTs	0.082			0.207			0.051			0.078		
Peds Bikes	25			25			25			25		
Buses		0			0			0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0			0.0			0.0			0.0	
Arriv. Type		3			3			3			3	
Unit Ext.		3.0			3.0			3.0			3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0			2.0			2.0			2.0	
Ext of g		2.0			2.0			2.0			2.0	
Ped Min g		3.4			3.4			3.4			3.4	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: LAMARTINE AVENUE

Inter.: SAT48BD
Area Type: CBD or Similar
Jurisd:
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NORTH BROADWAY

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig		LR						LT			TR	
Volume	68		26				36	414			468	38
Lane Width		15.0						12.0			15.0	
RTOR Vol			0									0

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4		5	6	7	8
EB Left	P				NB Left	P			
Thru					Thru	P			
Right	P				Right				
Peds					Peds				
WB Left					SB Left				
Thru					Thru	P			
Right					Right	P			
Peds					Peds				
NB Right					EB Right				
SB Right					WB Right				
Green	20.0					30.0			
Yellow	3.0					3.0			
All Red	2.0					2.0			

Cycle Length: 60.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LR	533	1598	0.19	0.33	15.0	B	15.0	B
Westbound								
Northbound								
LT	761	1522	0.64	0.50	15.2	B	15.2	B
Southbound								
TR	887	1773	0.62	0.50	14.1	B	14.1	B

Intersection Delay = 14.7 (sec/veh) Intersection LOS = B

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT48BD
Area Type: CBD or Similar
Jurisdiction:
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LAMARTINE AVENUE N/S St: NORTH BROADWAY

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	68		26				36	414			468	38
% Heavy Veh	5		5				5	5			5	5
PHF	0.92		0.92				0.92	0.92			0.92	0.92
PK 15 Vol	18		7				10	112			127	10
Hi Ln Vol												
% Grade		8						0			0	
Ideal Sat		1900						1900			1900	
ParkExist												
NumPark												
No. Lanes	0	0	0	0	0	0	0	1	0	0	1	0
LGConfig		LR						LT			TR	
Lane Width		15.0						12.0			15.0	
RTOR Vol			0									0
Adj Flow		102						489			550	
%InSharedLn												
Prop LTs		0.725						0.080			0.000	
Prop RTs	0.275						0.000			0.075		
Peds Bikes	25			0						25		
Buses		0						0			0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0						0.0			0.0	
Arriv. Type		3						3			3	
Unit Ext.		3.0						3.0			3.0	
I Factor		1.000						1.000			1.000	
Lost Time		2.0						2.0			2.0	
Ext of g		2.0						2.0			2.0	
Ped Min g		3.3			3.2						3.3	

HCS+: Signalized Intersections Release 5.2

Analyst: JCE
Agency: JOHN COLLINS ENGINEERS, P.C.
Date: 3/12/2007
Period: SATURDAY PEAK HOUR
Project ID: 281
E/W St: LAKE AVENUE

Inter.: SAT49BD
Area Type: CBD or Similar
Jurisd: W/ TIMING CHANGE
Year : 2012 BUILD TRAFFIC VOLUMES
N/S St: NEPPERHAN AVENUE

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	1	1	1	0	1	0	1	1	0	2	0
LGConfig		LT	R	L		R		T	R		LT	
Volume	3	25	14	199		64		512	248	46	604	
Lane Width		12.0	12.0	12.0		12.0		12.0	12.0		10.0	
RTOR Vol			0			0			0			

Duration 0.25 Area Type: CBD or Similar

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		A			NB Left			
Thru		A			Thru	A		
Right		A			Right	A		
Peds	X	X			Peds	X		
WB Left	A				SB Left	A		
Thru					Thru	A		
Right	A				Right			
Peds	X	X			Peds	X		
NB Right					EB Right			
SB Right					WB Right			
Green	25.0	15.0				35.0		
Yellow	3.0	3.0				3.0		
All Red	2.0	2.0				2.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios v/c	Ratios g/C	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
Eastbound								
LT	273	1640	0.11	0.17	32.0	C	31.9	C
R	225	1348	0.07	0.17	31.7	C		
Westbound								
L	419	1507	0.52	0.28	28.5	C		
							27.7	C
R	367	1322	0.19	0.28	25.0	C		
Northbound								
T	634	1629	0.88	0.39	38.9	D	33.4	C
R	521	1340	0.52	0.39	22.0	C		
Southbound								
LT	821	2111	0.86	0.39	34.5	C	34.5	C

Intersection Delay = 32.9 (sec/veh) Intersection LOS = C

Phone: Fax:
E-Mail:

OPERATIONAL ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 3/12/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT49BD
Area Type: CBD or Similar
Jurisdiction: W/ TIMING CHANGE
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
E/W St: LAKE AVENUE N/S St: NEPPERHAN AVENUE

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	3	25	14	199		64		512	248	46	604	
% Heavy Veh	5	5	5	5		5		5	5	5	5	
PHF	0.92	0.92	0.92	0.92		0.92		0.92	0.92	0.92	0.92	
PK 15 Vol	1	7	4	54		17		139	67	12	164	
Hi Ln Vol												
% Grade		-4			0			0			0	
Ideal Sat		1900	1900	1900		1900		1900	1900		1900	
ParkExist												
NumPark												
No. Lanes	0	1	1	1	0	1	0	1	1	0	2	0
LGConfig		LT	R	L		R		T	R		LT	
Lane Width		12.0	12.0	12.0		12.0		12.0	12.0		10.0	
RTOR Vol		0				0			0			
Adj Flow		30	15	216		70		557	270		707	
%InSharedLn												
Prop LTs		0.100						0.000			0.071	
Prop RTs		0.000	1.000			1.000		0.000	1.000		0.000	
Peds Bikes		25	0		25	0		25	0			
Buses		0	0	0		0		0	0		0	
%InProtPhase												

Duration 0.25 Area Type: CBD or Similar

OPERATING PARAMETERS

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Init Unmet		0.0	0.0	0.0		0.0		0.0	0.0		0.0	
Arriv. Type		3	3	3		3		3	3		3	
Unit Ext.		3.0	3.0	3.0		3.0		3.0	3.0		3.0	
I Factor		1.000			1.000			1.000			1.000	
Lost Time		2.0	2.0	2.0		2.0		2.0	2.0		2.0	
Ext of g		2.0	2.0	2.0		2.0		2.0	2.0		2.0	
Ped Min g		3.4			3.4			3.4				

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 4/19/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT50BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PROSPECT STREET
North/South Street: BUENA VISTA AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	0	0	0	38	0	249	0	64	89	363	89	0
% Thrus Left Lane												

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration			LR		TR		LT	
PHF			0.92		0.92		0.92	
Flow Rate			311		165		490	
% Heavy Veh			5		5		5	
No. Lanes			1		1		1	
Opposing-Lanes			0		1		1	
Conflicting-lanes			1		1		1	
Geometry group			1		1		1	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane			311		165		490	
Left-Turn			41		0		394	
Right-Turn			270		96		0	
Prop. Left-Turns			0.1		0.0		0.8	
Prop. Right-Turns			0.9		0.6		0.0	
Prop. Heavy Vehicle			0.0		0.0		0.0	
Geometry Group			1		1		1	
Adjustments Exhibit 17-33:								
hLT-adj			0.2		0.2		0.2	

hRT-adj	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7
hadj, computed	-0.4	-0.3	0.2

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate			311		165		490	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial			0.28		0.15		0.44	
hd, final value			5.22		5.26		5.28	
x, final value			0.45		0.24		0.72	
Move-up time, m			2.0		2.0		2.0	
Service Time			3.2		3.3		3.3	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate			311		165		490	
Service Time			3.2		3.3		3.3	
Utilization, x			0.45		0.24		0.72	
Dep. headway, hd			5.22		5.26		5.28	
Capacity			561		415		668	
Delay			12.44		9.92		20.59	
LOS			B		A		C	
Approach:								
Delay			12.44		9.92		20.59	
LOS			B		A		C	

Intersection Delay 16.14 Intersection LOS C

HCS+: Unsignalized Intersections Release 5.2

Phone: Fax:
E-Mail:

ALL-WAY STOP CONTROL(AWSC) ANALYSIS

Analyst: JCE
Agency/Co.: JOHN COLLINS ENGINEERS, P.C.
Date Performed: 4/19/2007
Analysis Time Period: SATURDAY PEAK HOUR
Intersection: SAT51BD
Jurisdiction:
Units: U. S. Customary
Analysis Year: 2012 BUILD TRAFFIC VOLUMES
Project ID: 281
East/West Street: PROSPECT STREET
North/South Street: HAWTHORNE AVENUE

Worksheet 2 - Volume Adjustments and Site Characteristics

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	32	382	38	148	287	106	0	0	0	0	0	0
% Thrus Left Lane					0							

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LT	TR	LTR		LTR	
PHF	0.92		0.92	0.92	1.00		1.00	
Flow Rate	490		160	426	0		0	
% Heavy Veh	5		5	5	0		0	
No. Lanes	1		2		1		1	
Opposing-Lanes	2		1		1		1	
Conflicting-lanes	1		1		2		2	
Geometry group	4a		5		2		2	

Duration, T 0.25 hrs.

Worksheet 3 - Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rates:								
Total in Lane	490		160	426	0		0	
Left-Turn	34		160	0	0		0	
Right-Turn	41		0	115	0		0	
Prop. Left-Turns	0.1		1.0	0.0	0.0		0.0	
Prop. Right-Turns	0.1		0.0	0.3	0.0		0.0	
Prop. Heavy Vehicle	0.0		0.0	0.0	0.0		0.0	
Geometry Group	4a		5		2		2	
Adjustments Exhibit 17-33:								
hLT-adj	0.2		0.5		0.2		0.2	

hRT-adj	-0.6		-0.7		-0.6		-0.6	
hHV-adj	1.7		1.7		1.7		1.7	
hadj, computed	0.0		0.6	-0.1	0.0		0.0	

Worksheet 4 - Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow rate	490		160	426	0		0	
hd, initial value	3.20	3.20	3.20	3.20	3.20	3.20	3.20	3.20
x, initial	0.44		0.14	0.38	0.00		0.00	
hd, final value	4.58		5.42	4.72	6.08		6.08	
x, final value	0.62		0.24	0.56	0.00		0.00	
Move-up time, m	2.0		2.3		2.0		2.0	
Service Time	2.6		3.1	2.4	4.1		4.1	

Worksheet 5 - Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Flow Rate	490		160	426	0		0	
Service Time	2.6		3.1	2.4	4.1		4.1	
Utilization, x	0.62		0.24	0.56	0.00		0.00	
Dep. headway, hd	4.58		5.42	4.72	6.08		6.08	
Capacity	740		410	676	0		0	
Delay	14.82		9.83	13.24	9.08		9.08	
LOS	B		A	B	A		A	
Approach:								
Delay	14.82		12.31		9.08		9.08	
LOS	B		B		A		A	

Intersection Delay 13.45 Intersection LOS B