

Appendix G

Multimodal Levels of Service Analysis

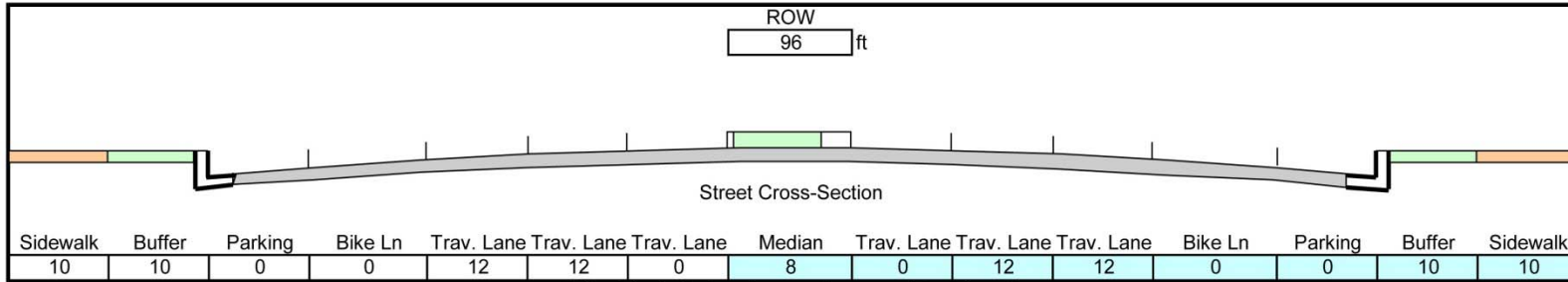
► Existing Conditions – Section 1a

NCHRP 3-70 Multimodal LOS

		Range Check	
ADT	30,000 (>=0 vpd)	OK	Yes
% HV	2% (0-100%)	OK	No
Buses/hr	4 (>=0 bph)	OK	No
Peds/hr	50 (>=0 pph)	OK	If Very High

Ped LOS	LOS	LOS #
Pseg	C	3.12
Pint	B	2.66
Model 1	D	3.82
Model 2	D	4.20
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.83	1.2940
Transit	E	4.54	
Bicycle	F	4.44	
Pedestrian	D	3.82	



Range Checks

OK

Street : River Road (East side)
 Limits: Hudson County Line (mp 3.4) to Gorge Road (mp 3.84)
 Key: Data Entry
 Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Important?	Key Parameters	
Yes	Signal Spacing:	1,000 (200-10,560 ft.)
slight	Progression Quality:	3 (1=poor, 6=excellent)
slight	Speed Limit	35 (15-70 mph)
no	Bus Stops w. Shelter:	50% (0-100%)
no	Pavement Quality:	3 (1=poor, 5=excellent)

OK
OK
OK
OK
OK

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphgl)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				



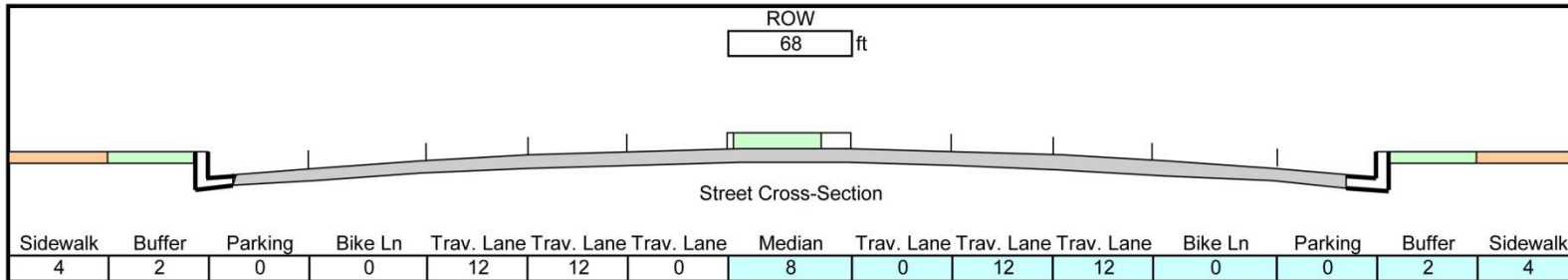
► Existing Conditions - Section 1b and 1d

NCHRP 3-70 Multimodal LOS

		Range Check	
ADT	30,000 (>=0 vpd)	OK	Yes
% HV	2% (0-100%)	OK	No
Buses/hr	4 (>=0 bph)	OK	No
Peds/hr	50 (>=0 pph)	OK	If Very High

Ped LOS	LOS	LOS #
Pseg	D	4.13
Pint	B	2.66
Model 1	D	4.20
Model 2	E	4.75
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.83	1.2940
Transit	E	4.60	
Bicycle	F	4.44	
Pedestrian	D	4.20	



(all entries in feet, enter zero for non-existent lanes)

Range Checks

OK

Street : River Road (East side)
 Limits: Gorge Road (mp 3.84) - Russel Avenue (mp 5.07)

Important?	Key Parameters	
Yes	Signal Spacing:	1,000 (200-10,560 ft.)
slight	Progression Quality:	3 (1=poor, 6=excellent)
slight	Speed Limit	35 (15-70 mph)
no	Bus Stops w. Shelter:	50% (0-100%)
no	Pavement Quality:	3 (1=poor, 5=excellent)

OK
 OK
 OK
 OK
 OK

Key: Data Entry
 Draft, for internal evaluation only
 Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphpl)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				



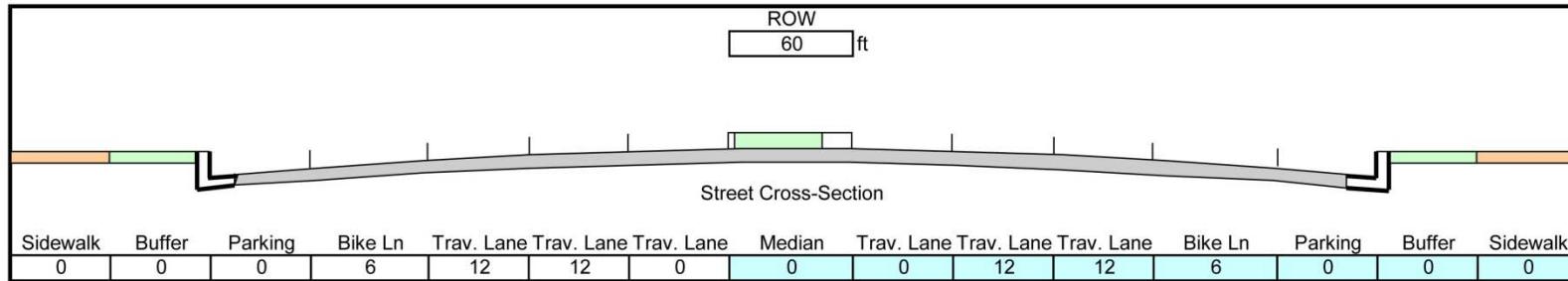
► Existing Conditions – Section 1c

NCHRP 3-70 Multimodal LOS

		Range Check	
ADT	24,000 (>=0 vpd)	OK	Yes
% HV	2% (0-100%)	OK	No
Buses/hr	4 (>=0 bph)	OK	No
Peds/hr	50 (>=0 pph)	OK	If Very High

Ped LOS	LOS	LOS #
Pseg	E	4.76
Pint	B	2.66
Model 1	E	4.44
Model 2	F	5.09
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	3.02	1.0352
Transit	C	3.19	
Bicycle	E	3.65	
Pedestrian	E	4.44	



Range Checks

OK

Street : River Road (East side)
 Limits: Russel Ave (5.07) - Binghamton Way (5.05)

Key: Data Entry
 Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Important?	Key Parameters	
Yes	Signal Spacing:	2,500 (200-10,560 ft.)
slight	Progression Quality:	3 (1=poor, 6=excellent)
slight	Speed Limit	35 (15-70 mph)
no	Bus Stops w. Shelter:	50% (0-100%)
no	Pavement Quality:	3 (1=poor, 5=excellent)

OK
 OK
 OK
 OK
 OK

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphpl)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				

► Existing Conditions – Section 2a

NCHRP 3-70 Multimodal LOS

Ped LOS	LOS	LOS #
Pseg	F	5.94
Pint	B	2.66
Model 1	E	4.89
Model 2	F	5.55
RCDF 1	A	1.20
RCDF 2	A	1.16

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.98	2.0704
Transit	E	4.76	
Bicycle	F	4.97	
Pedestrian	E	4.89	

ADT: 24,000 (>=0 vpd) **OK** Yes
 % HV: 2% (0-100%) **OK** No
 Buses/hr: 4 (>=0 bph) **OK** No
 Peds/hr: 50 (>=0 pph) **OK** If Very High

Range Check

Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk
4	0	0	2	12	0	0	0	0	0	0	12	2	0	0	4

(all entries in feet, enter zero for non-existent lanes)

Street: River Road (East side)
 Limits: Route 5 (mp5.70) - Henry Hudson Drive (mp 7.09)

Key: Data Entry Draft, for internal evaluation only
 Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Important?	Key Parameters	
Yes	Signal Spacing:	2,500 (200-10,560 ft.)
slight	Progression Quality:	3 (1=poor, 6=excellent)
slight	Speed Limit	35 (15-70 mph)
no	Bus Stops w. Shelter:	50% (0-100%)
no	Pavement Quality:	3 (1=poor, 5=excellent)

Range Checks: **OK**

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphgl)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				

► Existing Conditions – Section 2b

NCHRP 3-70 Multimodal LOS

Ped LOS	LOS	LOS #
Pseg	F	5.19
Pint	B	2.66
Model 1	E	4.61
Model 2	F	5.32
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.98	2.0704
Transit	E	4.71	
Bicycle	C	2.57	
Pedestrian	E	4.61	

Range Check			
ADT	24,000 (>=0 vpd)	OK	Yes
% HV	2% (0-100%)	OK	No
Buses/hr	4 (>=0 bph)	OK	No
Peds/hr	50 (>=0 pph)	OK	If Very High

ROW
92 ft

Street Cross-Section

Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk
4	0	0	0	42	0	0	0	0	0	42	0	0	0	4

(all entries in feet, enter zero for non-existent lanes)

Key Parameters		Important?	Range Checks
Signal Spacing:	2,500 (200-10,560 ft.)	Yes	OK
Progression Quality:	3 (1=poor, 6=excellent)	slight	OK
Speed Limit	35 (15-70 mph)	slight	OK
Bus Stops w. Shelter:	50% (0-100%)	no	OK
Pavement Quality:	3 (1=poor, 5=excellent)	no	OK

Street : River Road (East side)
 Limits: Maple Street (mp 6.78 - 6.86)
 Key: Data Entry Draft, for internal evaluation only
 Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphg)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				

► Existing Conditions – Section 2c

NCHRP 3-70 Multimodal LOS

ADT	Range Check	Yes	No	If Very High
24,000 (>=0 vpd)	OK	Yes	No	
% HV 2% (0-100%)	OK	No		
Buses/hr 4 (>=0 bph)	OK	No		
Peds/hr 50 (>=0 pph)	OK	If Very High		

Ped LOS	LOS	LOS #
Pseg	F	6.02
Pint	B	2.66
Model 1	E	4.92
Model 2	F	5.57
RCDF 1	A	1.20
RCDF 2	A	1.16

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.98	2.0704
Transit	E	4.76	
Bicycle	F	5.68	
Pedestrian	E	4.92	

ROW
32 ft

Street Cross-Section

Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk
4	0	0	1	11	0	0	0	0	0	0	11	1	0	0	4

(all entries in feet, enter zero for non-existent lanes)

Street :	Key Parameters	Important?
River Road (East side)	Signal Spacing: 2,500 (200-10,560 ft.)	Yes
Limits: North of North Street (mp 6.30 - 6.32)	Progression Quality: 3 (1=poor, 6=excellent)	slight
	Speed Limit: 35 (15-70 mph)	slight
	Bus Stops w. Shelter: 50% (0-100%)	no
	Pavement Quality: 3 (1=poor, 5=excellent)	no

Key: Data Entry Draft, for internal evaluation only
 Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k) 0.1	Yes	% Parking Occ. 0%	Yes	% On Time 85%	No	Unsig Conflicts/Mile 10	No
Directional Factor (d) 0.6	Yes	Barrier (Yes/No) Yes	Yes	% Stops w. Benches 50%	No		
Peak Hr. Fac. (PHF) 0.92	Yes	RTOR+Perm LT (vph) 100	slight	Load Factor (p/seat) 1.00	No		
Adj. Sat Flow (vphg) 1800	Yes	X-Street Vol. (vph) 600	Yes	CBD (Yes/No) Yes	No		
Through g/c 0.42	slight	X-Street Speed (mph) 25	Yes	Bus Stops/segment 1	No		
Cycle Length (sec) 60	slight	X-Street Lanes (#) 2	slight	Delay/Bus Stop (sec) 20	No		
		Right Turn Islands (#) 0	slight				
		X-Street Walk g/c 0.50	Potential				

► Existing Conditions – Section 3a

NCHRP 3-70 Multimodal LOS

Range Check			
ADT	24,000	(>=0 vpd)	OK Yes
% HV	2%	(0-100%)	OK No
Buses/hr	4	(>=0 bph)	OK No
Peds/hr	50	(>=0 pph)	OK If Very High

Ped LOS	LOS	LOS #
Pseg	B	2.68
Pint	B	2.66
Model 1	D	3.65
Model 2	D	3.96
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	3.02	1.0352
Transit	C	3.07	
Bicycle	E	4.06	
Pedestrian	D	3.65	

ROW
92 ft

Street Cross-Section

Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk
10	10	0	2	12	12	0	0	0	12	12	12	2	0	10	10

(all entries in feet, enter zero for non-existent lanes)

Street : Hudson Terrace (East side)

Limits: Main Street (mp 7.27)- Sylvan Street (mp 7.65)

Key: Data Entry

Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Important?

Key Parameters	
Signal Spacing:	2,500 (200-10,560 ft.)
Progression Quality:	3 (1=poor, 6=excellent)
Speed Limit	35 (15-70 mph)
Bus Stops w. Shelter:	50% (0-100%)
Pavement Quality:	3 (1=poor, 5=excellent)

Range Checks

OK

OK

OK

OK

OK

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1	% Parking Occ.	0%	% On Time	85%	Unsig Conflicts/Mile	10
Directional Factor (d)	0.6	Barrier (Yes/No)	Yes	% Stops w. Benches	50%		
Peak Hr. Fac. (PHF)	0.92	RTOR+Perm LT (vph)	100	Load Factor (p/seat)	1.00		
Adj. Sat Flow (vphgl)	1800	X-Street Vol. (vph)	600	CBD (Yes/No)	Yes		
Through g/c	0.42	X-Street Speed (mph)	25	Bus Stops/segment	1		
Cycle Length (sec)	60	X-Street Lanes (#)	2	Delay/Bus Stop (sec)	20		
		Right Turn Islands (#)	0				
		X-Street Walk g/c	0.50				

Post-Long Term Alternative – Section 1a

NCHRP 3-70 Multimodal LOS

1/30/2013

NCHRP 3-70 Multimodal LOS

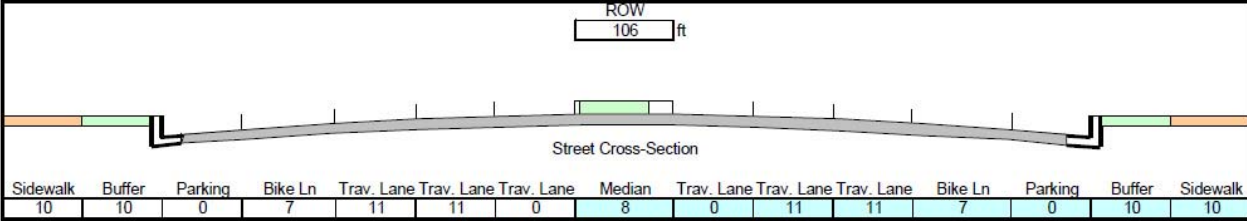
Ped LOS	LOS	LOS #
Pseg	C	3.04
Pint	B	2.66
Model 1	D	3.79
Model 2	D	4.16
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.83	1.2940
Transit	E	4.53	
Bicycle	E	3.61	
Pedestrian	D	3.79	

Range Check			
ADT	30,000 (>=0 vpd)	OK	Yes
% HV	2% (0-100%)	OK	No
Buses/hr	4 (>=0 bph)	OK	No
Peds/hr	50 (>=0 pph)	OK	If Very High

ROW

106 ft



Street Cross-Section																Range Checks
Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk		
10	10	0	7	11	11	0	8	0	11	11	7	0	10	10	OK	

(all entries in feet, enter zero for non-existent lanes)

Street: River Road (East side)

Limits: 1 BUILD - Hudson County Line (mp 3.4) to George Road (mp 3.84)

Key: Data Entry Draft, for internal evaluation only

Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Key Parameters	
Signal Spacing:	1,000 (200-10,560 ft.)
Progression Quality:	3 (1=poor, 6=excellent)
Speed Limit	35 (15-70 mph)
Bus Stops w. Shelter:	50% (0-100%)
Pavement Quality:	3 (1=poor, 5=excellent)

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphg)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				

► Post-Long Term Alternative – Section 1b and 1d

NCHRP 3-70 Multimodal LOS

1/30/2013

NCHRP 3-70 Multimodal LOS

ADT	Range Check	OK	Yes
30,000 (>=0 vpd)	OK		Yes
% HV 2% (0-100%)	OK		No
Buses/hr 4 (>=0 bph)	OK		No
Peds/hr 50 (>=0 pph)	OK		If Very High

Ped LOS	LOS	LOS #
Pseg	C	3.34
Pint	B	2.66
Model 1	D	3.90
Model 2	E	4.32
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.83	1.2940
Transit	E	4.55	
Bicycle	E	3.61	
Pedestrian	D	3.90	

ROW

98 ft

Street Cross-Section

Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk
10	6	0	7	11	11	0	8	0	11	11	7	0	6	10

(all entries in feet, enter zero for non-existent lanes)

Street :	Key Parameters	Important?	OK
River Road (East side)	Signal Spacing: 1,000 (200-10,560 ft.)	Yes	OK
Limits: 2 & 4 BUILD - Gorge Road (mp 3.84) - Russel Avenue (mp 5.07)	Progression Quality: 3 (1=poor, 6=excellent)	slight	OK
	Speed Limit: 35 (15-70 mph)	slight	OK
Key: Data Entry	Bus Stops w. Shelter: 50% (0-100%)	no	OK
Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.	Pavement Quality: 3 (1=poor, 5=excellent)	no	OK

Range Checks: OK

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k) 0.1	Yes	% Parking Occ. 0%	Yes	% On Time 85%	No	Unsig Conflicts/Mile 10	No
Directional Factor (d) 0.6	Yes	Barrier (Yes/No) Yes	Yes	% Stops w. Benches 50%	No		
Peak Hr. Fac. (PHF) 0.92	Yes	RTOR+Perm LT (vph) 100	slight	Load Factor (p/seat) 1.00	No		
Adj. Sat Flow (vphg) 1800	Yes	X-Street Vol. (vph) 600	Yes	CBD (Yes/No) Yes	No		
Through g/c 0.42	slight	X-Street Speed (mph) 25	Yes	Bus Stops/segment 1	No		
Cycle Length (sec) 60	slight	X-Street Lanes (#) 2	slight	Delay/Bus Stop (sec) 20	No		
		Right Turn Islands (#) 0	slight				
		X-Street Walk g/c 0.50	Potential				

► Post-Long Term Alternative – Section 1c

NCHRP 3-70 Multimodal LOS

1/30/2013

NCHRP 3-70 Multimodal LOS

		Ped LOS	LOS	LOS #
ADT		D	D	3.56
% HV		B	B	2.66
Buses/hr		D	D	3.98
Peds/hr		E	E	4.44
		A	A	1.20
		A	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	3.02	1.0352
Transit	C	3.12	
Bicycle	E	3.65	
Pedestrian	D	3.98	

Range Check			
ADT	24,000 (>=0 vpd)	OK	Yes
% HV	2% (0-100%)	OK	No
Buses/hr	4 (>=0 bph)	OK	No
Peds/hr	50 (>=0 pph)	OK	If Very High

Street : **River Road (East side)**

Limits: **3 BUILD - Russel Ave (5.07) - Binghamton Way (5.15)**

Key: **Data Entry** Draft, for internal evaluation only

Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Key Parameters	
Signal Spacing:	2,500 (200-10,560 ft.)
Progression Quality:	3 (1=poor, 6=excellent)
Speed Limit	35 (15-70 mph)
Bus Stops w. Shelter:	50% (0-100%)
Pavement Quality:	3 (1=poor, 5=excellent)

ROW
80 ft

Street Cross-Section															Range Checks
Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk	OK
10	0	0	6	12	12	0	0	0	12	12	6	0	0	10	

(all entries in feet, enter zero for non-existent lanes)

Additional Parameters	
Auto LOS Inputs	
Peaking Factor (k)	0.1 Yes
Directional Factor (d)	0.6 Yes
Peak Hr. Fac. (PHF)	0.92 Yes
Adj. Sat Flow (vphgl)	1800 Yes
Through g/c	0.42 slight
Cycle Length (sec)	60 slight
Pedestrian LOS Inputs	
% Parking Occ.	0% Yes
Barrier (Yes/No)	Yes Yes
RTOR+Perm LT (vph)	100 slight
X-Street Vol. (vph)	600 Yes
X-Street Speed (mph)	25 Yes
X-Street Lanes (#)	2 slight
Right Turn Islands (#)	0 slight
X-Street Walk g/c	0.50 Potential
Transit LOS Inputs	
% On Time	85% No
% Stops w. Benches	50% No
Load Factor (p/seat)	1.00 No
CBD (Yes/No)	Yes No
Bus Stops/segment	1 No
Delay/Bus Stop (sec)	20 No
Bicycle LOS Inputs	
Unsig Conflicts/Mile	10 No

► Post-Long Term Alternative – Section 2a

NCHRP 3-70 Multimodal LOS

1/30/2013

NCHRP 3-70 Multimodal LOS

Ped LOS	LOS	LOS #
Pseg	E	4.86
Pint	B	2.66
Model 1	E	4.48
Model 2	F	5.14
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.98	2.0704
Transit	E	4.70	
Bicycle	E	3.99	
Pedestrian	E	4.48	

Range Check			
ADT	24,000 (>=0 vpd)	OK	Yes
% HV	2% (0-100%)	OK	No
Buses/hr	4 (>=0 bph)	OK	No
Peds/hr	50 (>=0 pph)	OK	If Very High

ROW

68 ft

Street Cross-Section															Range Checks
Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk	
10	6	0	7	11	0	0	0	0	0	11	7	0	6	10	OK

(all entries in feet, enter zero for non-existent lanes)

Street : River Road (East side)

Limits: 5 BUILD Route 5 (mp5.70) - Henry Hudson drive (mp 7.09)

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Key Parameters	
Signal Spacing:	2,500 (200-10,560 ft.)
Progression Quality:	3 (1=poor, 6=excellent)
Speed Limit	35 (15-70 mph)
Bus Stops w. Shelter:	50% (0-100%)
Pavement Quality:	3 (1=poor, 5=excellent)

Important?	
Yes	OK
slight	OK
slight	OK
no	OK
no	OK

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphg)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				

► Post-Long Term Alternative – Section 2b

NCHRP 3-70 Multimodal LOS

1/30/2013

NCHRP 3-70 Multimodal LOS

ADT	Range Check	Yes
24,000 (>=0 vpd)	OK	Yes
2% (0-100%)	OK	No
4 (>=0 bph)	OK	No
50 (>=0 pph)	OK	If Very High

Ped LOS	LOS	LOS #
Pseq	F	5.21
Pint	B	2.66
Model 1	E	4.62
Model 2	F	5.33
RCDF 1	A	1.20
RCDF 2	A	1.20

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.98	2.0704
Transit	E	4.72	
Bicycle	C	2.10	
Pedestrian	E	4.62	

Street Cross-Section

Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk
10	0	12	7	11	0	0	0	0	0	0	11	7	12	0	10

(all entries in feet, enter zero for non-existent lanes)

Street: River Road (East side)

Limits: 6 BUILD Maple Street (mp 6.78 - 6.86)

Key: Data Entry

Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Important?	Key Parameters	
Yes	Signal Spacing:	2,500 (200-10,560 ft.)
slight	Progression Quality:	3 (1=poor, 6=excellent)
slight	Speed Limit	35 (15-70 mph)
no	Bus Stops w. Shelter:	50% (0-100%)
no	Pavement Quality:	3 (1=poor, 5=excellent)

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphg)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				

► Post-Long Term Alternative – Section 2c

NCHRP 3-70 Multimodal LOS

1/30/2013

NCHRP 3-70 Multimodal LOS

ADT	Range Check	OK	Yes
24,000 (>=0 vpd)	OK	Yes	
% HV 2% (0-100%)	OK	No	
Buses/hr 4 (>=0 bph)	OK	No	
Peds/hr 50 (>=0 pph)	OK	If Very High	

Ped LOS	LOS	LOS #
Pseg	F	5.54
Pint	B	2.66
Model 1	E	4.74
Model 2	F	5.45
RCDF 1	A	1.20
RCDF 2	A	1.19

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	5.98	2.0704
Transit	E	4.73	
Bicycle	F	4.41	
Pedestrian	E	4.74	

Street Cross-Section

Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk
10	0	0	5	11	0	0	0	0	0	11	5	0	0	10

(all entries in feet, enter zero for non-existent lanes)

Street : River Road (East side)

Limits : 7 BUILD North of North Street (mp 6.30 - 6.32)

Key: Data Entry

Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Important?	Key Parameters	OK
Yes	Signal Spacing: 2,500 (200-10,560 ft.)	OK
slight	Progression Quality: 3 (1=poor, 6=excellent)	OK
slight	Speed Limit: 35 (15-70 mph)	OK
no	Bus Stops w. Shelter: 50% (0-100%)	OK
no	Pavement Quality: 3 (1=poor, 5=excellent)	OK

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k) 0.1	Yes	% Parking Occ. 0%	Yes	% On Time 85%	No	Unsig Conflicts/Mile 10	No
Directional Factor (d) 0.6	Yes	Barrier (Yes/No) Yes	Yes	% Stops w. Benches 50%	No		
Peak Hr. Fac. (PHF) 0.92	Yes	RTOR+Perm LT (vph) 100	slight	Load Factor (p/seat) 1.00	No		
Adj. Sat Flow (vphgl) 1800	Yes	X-Street Vol. (vph) 600	Yes	CBD (Yes/No) Yes	No		
Through g/c 0.42	slight	X-Street Speed (mph) 25	Yes	Bus Stops/segment 1	No		
Cycle Length (sec) 60	slight	X-Street Lanes (#) 2	slight	Delay/Bus Stop (sec) 20	No		
		Right Turn Islands (#) 0	slight				
		X-Street Walk g/c 0.50	Potential				

► Post-Long Term Alternative – Section 3a

NCHRP 3-70 Multimodal LOS

1/30/2013

NCHRP 3-70 Multimodal LOS

Mode	LOS	LOS #	v/c
Auto	F (v/c>1)	3.02	1.0352
Transit	C	3.07	
Bicycle	E	4.06	
Pedestrian	D	3.65	

Ped LOS	LOS	LOS #
Pseq	B	2.68
Pint	B	2.66
Model 1	D	3.65
Model 2	D	3.96
RCDF 1	A	1.20
RCDF 2	A	1.20

Range Check			
ADT	24,000 (>=0 vpd)	OK	Yes
% HV	2% (0-100%)	OK	No
Buses/hr	4 (>=0 bph)	OK	No
Peds/hr	50 (>=0 pph)	OK	If Very High

ROW

92 ft

Street Cross-Section

Sidewalk	Buffer	Parking	Bike Ln	Trav. Lane	Trav. Lane	Trav. Lane	Trav. Lane	Median	Trav. Lane	Trav. Lane	Trav. Lane	Bike Ln	Parking	Buffer	Sidewalk
10	10	0	2	12	12	12	12	0	0	12	12	2	0	10	10

(all entries in feet, enter zero for non-existent lanes)

Key Parameters		Important?
Signal Spacing:	2,500 (200-10,560 ft.)	OK
Progression Quality:	3 (1=poor, 6=excellent)	OK
Speed Limit	35 (15-70 mph)	OK
Bus Stops w. Shelter:	50% (0-100%)	OK
Pavement Quality:	3 (1=poor, 5=excellent)	OK

Street: Hudson Terrace (East side)
 Limits: 8 BUILD - Main Street (mp 7.27)- Sylvan Street (mp 7.65)

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 Spreadsheet by: R. Dowling, Dowling Associates, Inc., July 5, 2007, Updated 02/12/08.

Additional Parameters

Auto LOS Inputs	Important?	Pedestrian LOS Inputs	Important?	Transit LOS Inputs	Important?	Bicycle LOS Inputs	Important?
Peaking Factor (k)	0.1 Yes	% Parking Occ.	0% Yes	% On Time	85% No	Unsig Conflicts/Mile	10 No
Directional Factor (d)	0.6 Yes	Barrier (Yes/No)	Yes Yes	% Stops w. Benches	50% No		
Peak Hr. Fac. (PHF)	0.92 Yes	RTOR+Perm LT (vph)	100 slight	Load Factor (p/seat)	1.00 No		
Adj. Sat Flow (vphg)	1800 Yes	X-Street Vol. (vph)	600 Yes	CBD (Yes/No)	Yes No		
Through g/c	0.42 slight	X-Street Speed (mph)	25 Yes	Bus Stops/segment	1 No		
Cycle Length (sec)	60 slight	X-Street Lanes (#)	2 slight	Delay/Bus Stop (sec)	20 No		
		Right Turn Islands (#)	0 slight				
		X-Street Walk g/c	0.50 Potential				