Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Reduced v/c Ratio	1.20	0.21	0.90			0.53

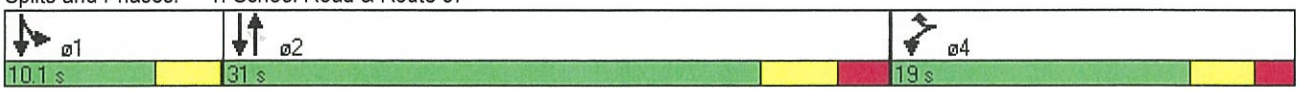
Intersection Summary

Area Type: Other
Cycle Length: 60.1
Actuated Cycle Length: 59.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 57.3 Intersection LOS: E
Intersection Capacity Utilization 80.9% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	270	55	270	420	120	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.918			
Flt Protected	0.950					0.991
Satd. Flow (prot)	1770	1538	1700	0	0	1843
Flt Permitted	0.950					0.541
Satd. Flow (perm)	1770	1538	1700	0	0	1006
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		60	134			
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	293	60	293	457	130	625
Shared Lane Traffic (%)						
Lane Group Flow (vph)	293	60	750	0	0	755
Turn Type		Prot			D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases					2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0		7.0	
Minimum Split (s)	12.0	12.0	21.0		10.1	
Total Split (s)	26.0	26.0	53.0	0.0	11.0	64.0
Total Split (%)	28.9%	28.9%	58.9%	0.0%	12.2%	71.1%
Maximum Green (s)	21.0	21.0	48.0		7.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	2.0	2.0	2.0		0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	3.1	3.1
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5		3.0	
Recall Mode	None	None	C-Min		Min	
Act Effct Green (s)	18.1	18.1	50.9			60.7
Actuated g/C Ratio	0.20	0.20	0.57			0.67
v/c Ratio	0.82	0.17	0.74			1.00
Control Delay	53.4	9.1	17.8			49.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	53.4	9.1	17.8			49.1
LOS	D	A	B			D
Approach Delay	45.9		17.8			49.1
Approach LOS	D		B			D
Stops (vph)	249	13	443			330
Fuel Used(gal)	4	0	7			10
CO Emissions (g/hr)	304	17	468			720

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
NOx Emissions (g/hr)	59	3	91			140
VOC Emissions (g/hr)	70	4	108			167
Dilemma Vehicles (#)	0	0	0			0
Queue Length 50th (ft)	158	0	253			~206
Queue Length 95th (ft)	#260	31	430			#526
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)						
Base Capacity (vph)	413	405	1020			752
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.71	0.15	0.74			1.00

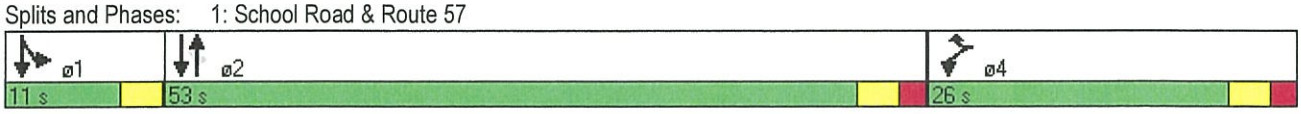
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 35.9 Intersection LOS: D
Intersection Capacity Utilization 103.5% ICU Level of Service G
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	400	135	55	245	80	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.966				0.963	
Flt Protected				0.991	0.965	
Satd. Flow (prot)	1773	0	0	1700	1731	0
Flt Permitted				0.991	0.965	
Satd. Flow (perm)	1773	0	0	1700	1731	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	200			135	97	
Travel Time (s)	5.5			3.7	2.6	
Peak Hour Factor	0.61	0.61	0.60	0.60	0.29	0.29
Heavy Vehicles (%)	4%	2%	45%	3%	2%	2%
Adj. Flow (vph)	656	221	92	408	276	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	877	0	0	500	379	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 61.5% ICU Level of Service B
Analysis Period (min) 15

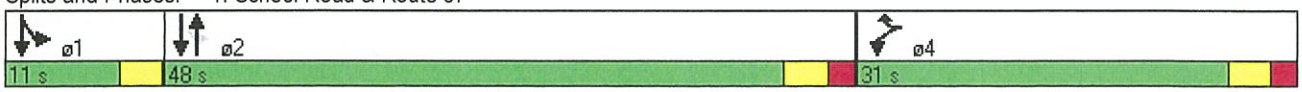
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	350	60	380	160	45	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.960			
Flt Protected	0.950					0.994
Satd. Flow (prot)	1770	1538	1783	0	0	1849
Flt Permitted	0.950					0.900
Satd. Flow (perm)	1770	1538	1783	0	0	1674
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		65	32			
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	380	65	413	174	49	342
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	65	587	0	0	391
Turn Type		Prot			D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases					2	
Detector Phase	4	4	2		1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0		7.0	
Minimum Split (s)	12.0	12.0	21.0		10.1	
Total Split (s)	31.0	31.0	48.0	0.0	11.0	59.0
Total Split (%)	34.4%	34.4%	53.3%	0.0%	12.2%	65.6%
Maximum Green (s)	26.0	26.0	43.0		7.9	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	2.0	2.0	2.0		0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	4.0	3.1	3.1
Lead/Lag			Lag		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5		3.0	
Recall Mode	None	None	C-Min		Min	
Act Effct Green (s)	22.6	22.6	46.6			56.2
Actuated g/C Ratio	0.25	0.25	0.52			0.62
v/c Ratio	0.86	0.15	0.63			0.37
Control Delay	50.9	7.4	19.2			8.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	50.9	7.4	19.2			8.9
LOS	D	A	B			A
Approach Delay	44.6		19.2			8.9
Approach LOS	D		B			A
Stops (vph)	320	12	367			169
Fuel Used(gal)	5	0	6			2
CO Emissions (g/hr)	381	17	385			166

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
NOx Emissions (g/hr)	74	3	75			32
VOC Emissions (g/hr)	88	4	89			38
Dilemma Vehicles (#)	0	0	0			0
Queue Length 50th (ft)	202	0	222			90
Queue Length 95th (ft)	#322	29	355			148
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)						
Base Capacity (vph)	511	491	938			1064
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.74	0.13	0.63			0.37

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 24.3 — Intersection LOS: C
Intersection Capacity Utilization 79.9% — ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57



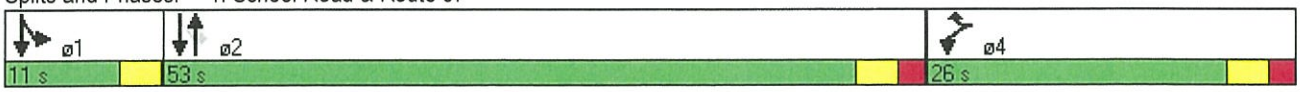
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	270	55	270	420	120	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950					0.991
Satd. Flow (prot)	1770	1538	1863	1568	0	1843
Flt Permitted	0.950					0.887
Satd. Flow (perm)	1770	1538	1863	1568	0	1649
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		60		457		
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	293	60	293	457	130	625
Shared Lane Traffic (%)						
Lane Group Flow (vph)	293	60	293	457	0	755
Turn Type		Prot		Perm	D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases				2	2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0	15.0	7.0	
Minimum Split (s)	12.0	12.0	21.0	21.0	10.1	
Total Split (s)	26.0	26.0	53.0	53.0	11.0	64.0
Total Split (%)	28.9%	28.9%	58.9%	58.9%	12.2%	71.1%
Maximum Green (s)	21.0	21.0	48.0	48.0	7.9	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.1	3.1
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5	2.5	3.0	
Recall Mode	None	None	C-Min	C-Min	Min	
Act Effct Green (s)	18.1	18.1	50.9	50.9		60.7
Actuated g/C Ratio	0.20	0.20	0.57	0.57		0.67
v/c Ratio	0.82	0.17	0.28	0.42		0.67
Control Delay	53.4	9.1	11.6	2.4		12.1
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	53.4	9.1	11.6	2.4		12.1
LOS	D	A	B	A		B
Approach Delay	45.9		6.0			12.1
Approach LOS	D		A			B

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Stops (vph)	249	13	135	26		418
Fuel Used(gal)	4	0	2	1		6
CO Emissions (g/hr)	304	17	144	99		388
NOx Emissions (g/hr)	59	3	28	19		76
VOC Emissions (g/hr)	70	4	33	23		90
Dilemma Vehicles (#)	0	0	0	0		0
Queue Length 50th (ft)	158	0	83	0		191
Queue Length 95th (ft)	#260	31	137	43		306
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)				150		
Base Capacity (vph)	413	405	1054	1085		1129
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.71	0.15	0.28	0.42		0.67

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 77.7% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57



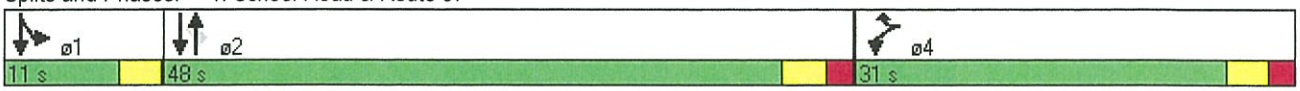
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	350	60	380	160	45	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25	25		25	25	
Satd. Flow (prot)	1770	1538	1863	1568	0	1849
Flt Permitted	0.950					0.923
Satd. Flow (perm)	1770	1538	1863	1568	0	1717
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		65		174		
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	65	413	174	0	391
Turn Type		Prot		Perm	D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases				2	2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0	15.0	7.0	
Minimum Split (s)	12.0	12.0	21.0	21.0	10.1	
Total Split (s)	31.0	31.0	48.0	48.0	11.0	59.0
Total Split (%)	34.4%	34.4%	53.3%	53.3%	12.2%	65.6%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.1	3.1
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	Min	
Act Effct Green (s)	22.6	22.6	46.6	46.6		56.2
Actuated g/C Ratio	0.25	0.25	0.52	0.52		0.62
v/c Ratio	0.86	0.15	0.43	0.19		0.36
Control Delay	50.9	7.4	16.1	2.8		8.8
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	50.9	7.4	16.1	2.8		8.8
LOS	D	A	B	A		A
Approach Delay	44.6		12.1			8.8
Approach LOS	D		B			A
Stops (vph)	320	12	232	16		169
Fuel Used(gal)	5	0	3	1		2
CO Emissions (g/hr)	381	17	244	41		166
NOx Emissions (g/hr)	74	3	47	8		32
VOC Emissions (g/hr)	88	4	56	9		38
Dilemma Vehicles (#)	0	0	0	0		0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	202	0	143	0		90
Queue Length 95th (ft)	#322	29	229	32		148
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)				150		
Base Capacity (vph)	511	491	964	896		1087
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.74	0.13	0.43	0.19		0.36

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 21.4 Intersection LOS: C
Intersection Capacity Utilization 70.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57



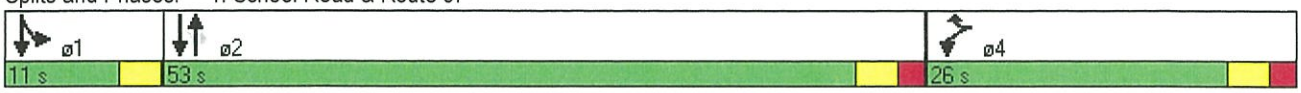
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	270	55	270	420	120	575
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950					0.991
Satd. Flow (prot)	1770	1538	1863	1568	0	2089
Flt Permitted	0.950					0.887
Satd. Flow (perm)	1770	1538	1863	1568	0	1869
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		60		457		
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	293	60	293	457	130	625
Shared Lane Traffic (%)						
Lane Group Flow (vph)	293	60	293	457	0	755
Turn Type		Prot		Perm	D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases				2	2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0	15.0	7.0	
Minimum Split (s)	12.0	12.0	21.0	21.0	10.1	
Total Split (s)	26.0	26.0	53.0	53.0	11.0	64.0
Total Split (%)	28.9%	28.9%	58.9%	58.9%	12.2%	71.1%
Maximum Green (s)	21.0	21.0	48.0	48.0	7.9	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.1	3.1
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5	2.5	3.0	
Recall Mode	None	None	C-Min	C-Min	Min	
Act Effct Green (s)	18.1	18.1	50.9	50.9		60.7
Actuated g/C Ratio	0.20	0.20	0.57	0.57		0.67
v/c Ratio	0.82	0.17	0.28	0.42		0.59
Control Delay	53.4	9.1	11.6	2.4		9.9
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	53.4	9.1	11.6	2.4		9.9
LOS	D	A	B	A		A
Approach Delay	45.9		6.0			9.9

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	D		A			A
Stops (vph)	249	13	135	26		371
Fuel Used(gal)	4	0	2	1		5
CO Emissions (g/hr)	304	17	144	99		348
NOx Emissions (g/hr)	59	3	28	19		68
VOC Emissions (g/hr)	70	4	33	23		81
Dilemma Vehicles (#)	0	0	0	0		0
Queue Length 50th (ft)	158	0	83	0		177
Queue Length 95th (ft)	#260	31	137	43		273
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)				150		
Base Capacity (vph)	413	405	1054	1085		1280
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.71	0.15	0.28	0.42		0.59

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 77.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57



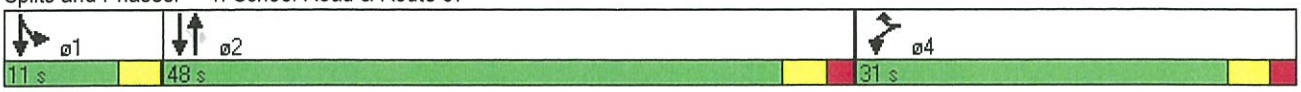
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	350	60	380	160	45	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	16
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	1		1	0	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950					0.994
Satd. Flow (prot)	1770	1538	1863	1568	0	2096
Flt Permitted	0.950					0.923
Satd. Flow (perm)	1770	1538	1863	1568	0	1946
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		65		174		
Link Speed (mph)	25		30			30
Link Distance (ft)	200		324			282
Travel Time (s)	5.5		7.4			6.4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	5%	2%	3%	3%	2%
Adj. Flow (vph)	380	65	413	174	49	342
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	65	413	174	0	391
Turn Type		Prot		Perm	D.P+P	
Protected Phases	4	4	2		1	1 2
Permitted Phases				2	2	
Detector Phase	4	4	2	2	1	1 2
Switch Phase						
Minimum Initial (s)	7.0	7.0	15.0	15.0	7.0	
Minimum Split (s)	12.0	12.0	21.0	21.0	10.1	
Total Split (s)	31.0	31.0	48.0	48.0	11.0	59.0
Total Split (%)	34.4%	34.4%	53.3%	53.3%	12.2%	65.6%
Maximum Green (s)	26.0	26.0	43.0	43.0	7.9	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	0.1	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	3.1	3.1
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	2.5	2.5	3.0	
Recall Mode	None	None	C-Min	C-Min	Min	
Act Effct Green (s)	22.6	22.6	46.6	46.6		56.2
Actuated g/C Ratio	0.25	0.25	0.52	0.52		0.62
v/c Ratio	0.86	0.15	0.43	0.19		0.32
Control Delay	50.9	7.4	16.1	2.8		8.1
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	50.9	7.4	16.1	2.8		8.1
LOS	D	A	B	A		A
Approach Delay	44.6		12.1			8.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Approach LOS	D		B			A
Stops (vph)	320	12	232	16		158
Fuel Used(gal)	5	0	3	1		2
CO Emissions (g/hr)	381	17	244	41		158
NOx Emissions (g/hr)	74	3	47	8		31
VOC Emissions (g/hr)	88	4	56	9		37
Dilemma Vehicles (#)	0	0	0	0		0
Queue Length 50th (ft)	202	0	143	0		87
Queue Length 95th (ft)	#322	29	229	32		141
Internal Link Dist (ft)	120		244			202
Turn Bay Length (ft)				150		
Base Capacity (vph)	511	491	965	896		1233
Starvation Cap Reductn	0	0	0	0		0
Spillback Cap Reductn	0	0	0	0		0
Storage Cap Reductn	0	0	0	0		0
Reduced v/c Ratio	0.74	0.13	0.43	0.19		0.32

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 1 (1%), Referenced to phase 2:NBSB, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 21.2 Intersection LOS: C
Intersection Capacity Utilization 70.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: School Road & Route 57



Cost Estimates

CONCEPTUAL LEVEL CONSTRUCTION COST OPINION
NEAR TERM 1
ROUTE 57 AT SCHOOL ROAD
WESTON, CONNECTICUT

ITEM/DESCRIPTION	UNIT	QTY	UNIT COST	COST
Pavement	SY	520	$ 74.00	$38,480.00
Earthwork	CY	350	$ 30.00	$10,500.00
Pavement Removal, Turf, Topsoil	SY	600	$ 20.00	$12,000.00
Curbing	LF	470	$ 50.00	$23,500.00
				$84,480.00
Drainage (20%)				$ 16,896.00
				$101,376.00
Minor Items (30%)				$ 30,412.80
				$131,788.80
Lump Sum Items (14.5%)				$ 19,109.38
Traffic Person	EA	1	$ 12,000.00	$12,000.00
			Roadway Cost:	***$162,898.18***
Traffic Signal Modifications/Upgrade	Ea.	1	$ 100,000.00	$100,000.00
Streetscape (Lighting and Landscaping)	Est.	1	$ 120,000.00	$120,000.00
			Construction Cost:	***$382,898.18***
			Contingency ±10%:	$38,289.82
			Incidentals to Construction ±30%	$114,869.45
			2012 Project Total:	**$536,057.45**
			2012 Project Total (Rounded):	**$537,000.00**

Note:
Exclusions: Right of Way Impacts, Permitting, Environmental Compliance, Handling of Harzadous materials

CONCEPTUAL LEVEL CONSTRUCTION COST OPINION
LONG TERM 1-ROADWAY
ROUTE 57 AT SCHOOL ROAD
WESTON, CONNECTICUT

ITEM/DESCRIPTION	UNIT	QTY	UNIT COST	COST
Pavement	SY	1,360	$ 74.00	$100,640.00
Earthwork	CY	904	$ 30.00	$27,120.00
Mill	SY	5,010	$ 6.00	$30,060.00
2" Overlay	TON	576	$ 110.00	$63,376.50
Tack Coat	GAL	501	$ 9.00	$4,509.00
Curbing	CF	2,400	$ 10.00	$24,000.00
				$249,705.50
Drainage (20%)				$49,941.10
				$299,646.60
Minor Items (30%)				$ 89,893.98
				$ 389,540.58
Lump Sum Items (14.5%)				$ 56,483.38
Traffic Person	EA	1		$72,000.00
			Roadway Cost:	***$ 518,023.96***
Traffic Signal Modifications/Upgrade	Ea.	1	$ 100,000.00	$100,000.00
			Construction Cost:	***$ 618,023.96***
			Contingency ±10%:	$61,802.40
			Incidentals to Construction ±30%	$185,407.19
			2012 Project Total:	**$865,233.55**
			2012 Project Total (Rounded):	**$866,000.00**

Note:
Exclusions: Right of Way Impacts, Permitting, Environmental Compliance, Handling of Harzadous materials

CONCEPTUAL LEVEL CONSTRUCTION COST OPINION
LONG TERM 2- SIDEWALK
ROUTE 57 AT SCHOOL ROAD
WESTON, CONNECTICUT

ITEM/DESCRIPTION	UNIT	QTY	UNIT COST	COST
Sidewalk	SF	6,900	$ 15.00	$103,500.00
Minor Items (20%)				$ 20,700.00
Traffic Person	EA	1	$ 12,000.00	$ 12,000.00
				$136,200.00
Lump Sum Items (14.5%)				$ 19,749.00
			Roadway Cost:	***$155,949.00***
Streetscape (Lighting and Landscaping)	LF	1,000	$ 350.00	$350,000.00
			Construction Cost:	***$505,949.00***
			Contingency ±10%:	$50,594.90
			Incidentals to Construction ±30%	$151,784.70
			2012 Project Total:	**$708,328.60**
			2012 Project Total (Rounded):	**$709,000.00**

Note:
Exclusions: Right of Way Impacts, Permitting, Environmental Compliance, Handling of Harzadous materials

Report of Meetings

KICK-OFF MEETING NOTES

Weston Route 57-School Road Intersection Study

Westport Route 136 – Bayberry Lane Extension Intersection Study

Held on December 7, 2011

In attendance:

Gayle Weinstein	-	Weston First Selectman
Chief John Troxell	-	Weston Police Department
Chief Dale Call	-	Westport Police Department
Peter Ratkiewich	-	Town of Westport Department of Public Works
Barry Hammons	-	Town of Westport Department of Public Works
Sue Prosi	-	South Western Regional Planning Agency (SWRPA)
Alex Karman	-	South Western Regional Planning Agency (SWRPA)
Ron Malone		
Steve Halstead		
Dave Sullivan	-	Milone & MacBroom (MMI)
Kwesi Brown	-	Milone & MacBroom (MMI)

1. **Introductions and Study Overview**

Sue Prosi from SWRPA welcomed everyone and led introductions around the room. Dave Sullivan from MMI gave a brief overview of the study while Kwesi Brown from MMI discussed the study approach, tasks, deliverables and schedule for the two studies.

2. **Discussion Items**

Weston Route 57 - School Road Intersection

- Data Collection
  - Traffic data collection effort should not be limited to school peak hours but should include commuter hours as well.
  - Collection of school information should be coordinated through Joann Keating, Weston Board of Education.
  - Traffic issues at the Route 57-School Road intersection are also due to the geometric layout of intersection.

- SWRPA will provide available information including previous reports and GIS/survey information.
- There are potential wetland issues north of school road to consider.
- SWRPA to look into obtaining wetland delineation resources.
- MMI to contact CTDOT for wetlands mapping, available information, past studies (including the Project Development Unit review of the intersection, and the current signal upgrade.
- Weston Police Department will provide accident records for study area. This data will cover CTDOT's most recent three year period and accidents that have occurred since then.

- Analysis
  - Anticipated land use changes
    - Possible relocation of school bus depot to town highway department not likely to materialize.
    - Potential long term conversion of school bus depot area to a senior center or some other use. This will not impact current intersection study.

- Alternatives
  - Improvement recommendations from previous Purcell Study required ROW acquisition for turn lanes. The property owner directly opposite School Road was opposed to it.
  - Recommended alternatives for the Route 57-School Road intersection should not be limited to signal improvements. Geometric improvements such as turn lanes should be considered as well.
  - There are currently limited-to-no pedestrian accommodations at the study intersection.
  - The provision of sidewalks along the western side of Route 57 to Northfield Road should be considered at a minimum and as one of the full build alternatives.
  - The "Safe Routes to School" program would be a good source of funding for some of the pedestrian and bicyclist improvements within the study area.
  - MMI to coordinate with Fred Kulakowski and Joe Ouellette of the CTDOT on the
    - CTDOT improvements at Route 57 - School Road intersection.
    - Upgrade of existing signal at Northfield Road.

- Schedule
  - Data collection effort would likely begin after the holidays.
  - Both studies will run concurrent to each other.

Westport Route 136 – Bayberry Lane Extension Intersection

- Data Collection
  - MMI will contact CTDOT Traffic for available information and previous reports, studies, and design concepts.
  - Barry Hammons and Peter Ratkiewich of Westport DPW will provide GIS mapping /shapefiles and CADD based survey files for study area.
  - Westport Police Department will provide accident records for study area. This data will cover CTDOT's most recent three year period and accidents that have occurred since then.

- Analysis
  - The study should consider that there is an elementary school south of Berkley Road.
  - The northwestern corner of the intersection of Route 136 at Bayberry Lane is sometimes used as a pull over area by trucks.

- Alternatives
  - Attendees agreed that bicycle and pedestrian usage was not significant, though will be considered in the analysis as part of the complete streets approach.
  - MMI to develop a roundabout alternative for intersection.
  - MMI to develop alternatives that look into sight line improvement and maintenance issues on Route 136.
  - Vehicular speeds are an issue on Route 136. MMI to look at posted speeds and advance signage improvements.
  - Property, utility and environmental impacts
    - There is currently a Tenneco gas pipeline going through the parcel north of the intersection.
    - There is a seasonal pond on the parcel north of the intersection.
    - There are some other wetlands in the study area.

- Schedule
  - Both studies will run concurrent.

- Meetings
  - Possible consolidation of second meeting for the two studies into one meeting.

MEETING NOTES ON PRELIMINARY IMPROVEMENT ALTERNATIVES

Weston Route 57-School Road Intersection Study

Westport Route 136 – Bayberry Lane Extension Intersection Study

Held on April 10, 2012

In attendance:

Gayle Weinstein	-	Weston First Selectman
Chief John Troxell	-	Weston Police Department
John Conte	-	Town of Weston
Dan Clarke	-	Weston Schools
Jo-Ann Keating	-	Weston Schools
Peter Ratkiewich	-	Town of Westport Department of Public Works
Sue Prosi	-	South Western Regional Planning Agency (SWRPA)
Alex Karman	-	SWRPA
Dave Sullivan	-	Milone & MacBroom (MMI)
Kwesi Brown	-	MMI

1. **Introductions and Study Update**

Dave Sullivan from MMI welcomed everyone and led introductions around the room. Kwesi Brown gave an update on the existing and future conditions assessment for the two study sites and presented the preliminary near term and long term improvement alternatives that were being considered for the intersection of Route 57 at School Road in Weston and the intersection of Route 136 at Bayberry Lane in Westport.

2. **Weston Route 57- School Road Intersection Preliminary Alternatives**

The following improvements were presented as potential improvement alternatives for the intersection of Route 57 at School Road:

<u>Weston Near Term 1</u>

- Close the existing parent-pickup drop off driveway and relocate it further to the east on School Road along the lower western boundary of the baseball field. This will create more separation from the Route 57/School Road intersection and reduce the number of conflict points at that location.

- Implement signal timing improvements and potential coordination with the re-designed traffic signal at the intersection of Route 57 at Norfield Road to the south.
- Remove the existing stop sign on School Road westbound so that School Road becomes free flow.

Weston Near Term 2

- Construct a new parent pickup/drop off driveway further to the east on School along the eastern boundary of the baseball field. While leaving the existing driveway open only for bus access to the school bus depot. This will create more separation from the Route 57/School Road intersection and reduce the number of conflict points within that area.
- Implement signal timing improvements and potential coordination with the re-designed traffic signal at the intersection of Route 57 at Norfield Road to the south.
- Remove the existing stop sign on School Road westbound so that School Road becomes free flow.

Weston Long Term 1

- Widen the Route 57 northbound approach along the eastern side to provide an exclusive right turn lane and a through lane. This would reduce queuing on the northbound approach.
- Install a new sidewalk along the eastern edge of Route 57 from School Road to Norfield Road with a mid-block crosswalk. Provide appropriate signage in advance of the mid-block crosswalk.

Weston Long Term 2

- Widen the Route 57 northbound approach along the eastern side to provide an exclusive right turn lane and a through lane.
- Widen the Route 57 southbound approach along the eastern side to provide a 20 foot bypass to reduce queuing on this approach.
- Install a new sidewalk along the eastern edge of Route 57 from School Road to Norfield Road with a mid-block crosswalk. Provide appropriate signage in advance of the mid-block crosswalk.

Comments on Weston Improvements

- Near Term 1 - Realign the proposed driveway to minimize impacts to the ball field and utilities in that area. Also, provide an All Way Stop at the School Road/new driveway intersection. This alternative with the proposed revisions was acceptable to all as a near term improvement.
- Near Term 2 – According to the town, this alternative would not work as students would have to cross the proposed driveway to get from the playground to the ball field. Also there is currently a sewage system located where the new roadway is proposed. Of the two near term alternatives, Near Term 2 was the least preferred option by the town.
- Long Term Alternatives – It was decided that the sidewalk improvements would serve as one standalone long term alternative while the Route 57 roadway widening improvements would serve as the second long term alternative. The proposed location of the sidewalks along the eastern edge of Route 57 was acceptable to all.

3. Westport Route 136- Bayberry Lane Extension Intersection Preliminary Alternatives

The following improvements were recommended for the intersection of Route 136 at Bayberry Lane:

Westport Near Term 1

- Realign the intersection of Route 136 at Bayberry Lane to slow vehicles down; the Bayberry Lane Extension westbound approach will remain unchanged.
- Provide an All Way Stop control at the intersection of Route 136 at Bayberry Lane to reduce vehicular speeds and improve sightlines.

Westport Near Term 2

- Construct a three point single lane roundabout at the intersection of Route 136 at Bayberry Lane to calm traffic and also to improve sightlines.

Westport Long Term 1

- Reconfigure the intersection into a four-legged intersection with Two-Way stop sign control on the Bayberry Lane approaches.
- The proposed intersection reconfiguration will involve impacts to the property on northwestern quadrant of the intersection.

Westport Long Term 2

- Reconfigure the intersection and construct a four point single lane roundabout. The intersection reconfiguration will involve impacts to the property on northwestern quadrant of the intersection.

Comments on Westport Improvements

- Near Term 1 – It was agreed that the proposed All Way Stop at the intersection may get some push back from the Connecticut Department of Transportation (CTDOT).
- Near Term 2 – It is likely that CTDOT would be open to a roundabout at the intersection.
- Long Term Alternatives – The long term may be a viable option if the town is able to acquire the property on the northwestern quadrant of the intersection. The town of Westport was in favor of all four improvement alternatives

4. Other Items

- There was a discussion on potential funding sources for the two studies. SWRPA identified the STP Urban Grant, the Safe Routes to School Program and the Small Town Economic Assistance Program (STEAP) as potential funding sources. SWRPA also talked about helping the towns of Weston and Westport sign up for the Safe Routes to School Program. It was agreed that MMI should have a section on funding sources in the final report.
- It was decided that MMI will forward the alternatives to CTDOT for their review and input.
- It was confirmed that MMI would quantify ROW impacts by calculating area of impacts as well as conduct cost estimates of the proposed improvements.

General Project Info Report

LEA	Project Number	Project Type	Facility Name	Project Status	Grades	Architect Name	GA Auth. Date	Site Accquisition Costs	Total Costs	Total Area(in Sqft)	Reimb. %
157	157-0011	CV	Weston High School	Cancelled Project				-	$25,000	0	40.95
157	157-0012	CV	Weston Middle School	Cancelled Project				-	$25,000	0	40.95
157	157-0018	P/CV	Weston Middle School	Cancelled Project				-	$45,000	0	40.95
157	157-0019	RR	Weston High School	Audited			6/1/1988	-	$181,147	0	41.19
157	157-0020	CV/AA	Weston High School	Audited				-	$84,914	0	41.19
157	157-0021	CV/AA	Weston Middle School	Audited				-	$110,919	0	41.19
157	157-0022	CV/AA	Hurlbutt Elementary School	Audited				-	$12,060	0	41.19
157	157-0023	CV/AA	Hurlbutt Elementary School	Audited				-	$70,686	0	41.19
157	157-0024	CV/AA	Hurlbutt Elementary School	Audited				-	$125,620	0	41.19
157	157-0026	CV	Weston High School	Audit Issues		DeCarlo & Doll	3/15/1989	-	$2,552,216	0	41.19
157	157-0027	CV	Weston Middle School	Audit Issues		DeCarlo & Doll	3/15/1989	-	$2,764,903	0	41.19
157	157-0028	CV	Hurlbutt Elementary School	Audit Issues			3/15/1989	-	$446,744	0	41.19
157	157-0029	CV	Hurlbutt Elementary School	Audit Issues			3/15/1989	-	$302,208	0	41.19
157	157-0030	CV	Hurlbutt Elementary School	Audit Issues			3/15/1989	-	$564,999	0	41.19
157	157-0031	CV/OT	Weston High School	Audited				-	$41,030	0	41.19
157	157-0032	CV/OT	Weston Middle School	Audited				-	$75,792	0	41.19
157	157-0033		Weston Middle School	LEA Funded No Grant				-	$0	0	0

157	157-0034	E	Hurlbutt Elementary School	Audited	1,2,3,4,G	DeCarlo & Doll	9/24/1991	-	$945,845	82,860	21.43
157	157-0035	RR	Weston Middle School	Audit Issues	5,6,7,8		6/29/1993	-	$807,647	0	21.43
157	157-0036	E/A/EC/O/CV/AA/FC/HC	Hurlbutt Elementary School	Audit Issues	1,2,3,G	Friar Assoc.	6/12/1996	-	$4,896,583	104,911	21.43
157	157-0037	E/A/RR/EC/CV/AA/FC/HC	Central Administration	Cancelled Project			6/12/1996	-	$337,000	4,300	10.715
157	157-0038	A/SI/EC/O/CV/AA/FC/HC	Weston Middle School	Audit Issues	4,5,6,7,8	Friar Assoc.	6/12/1996	-	$1,195,188	169,777	21.43
157	157-0039	N	Central Administration	Audited		Friar Assoc.	6/26/1997	-	$1,048,114	4,000	10.72
157	157-0040	RR	Hurlbutt Elementary School	Audited			6/8/1998	-	$129,120	0	21.43
157	157-0041	EA/RR/EC/O/CV/AA/FC/HC	Weston Middle School	Unresolved Issues	6,7,8	Unknown	6/30/2001	-	$6,357,337	166,900	21.43
157	157-0042	N/PS	Weston Intermediate School	Audited	3,4,5	Unknown	6/30/2001	$608,754	$28,138,288	118,935	21.43
157	157-0043	EA/RR/EC/O/CV/AA/FC/HC	Weston High School	Audit Issues	9,10,11,12	Unknown	6/30/2001	-	$42,123,566	232,561	21.43
157	157-0044	EA/RR/EC/O/CV/AA/FC/HC	Hurlbutt Elementary School	Cancelled Project	1,2,G	Unknown	6/30/2001	-	$474,583	106,893	21.43
157	157-0045	RR	Hurlbutt Elementary School	LEA Funded No Grant			1/10/2001	-	$194,400	0	21.43
157	157-0046	EC/AA	Hurlbutt Elementary School	LEA Funded No Grant	1,2,3,G		6/30/2002	-	$157,188	6,868	21.43
157	157-0047	EC	Hurlbutt Elementary School	Unresolved Issues	1,2,3,4,G	Fletcher-Thompson, Inc.	6/30/2003	-	$600,000	106,497	21.43
157	157-0048	CV	Hurlbutt Elementary School	In Process			8/16/2004	-	$365,000		21.43
157	157-0049	CV	Weston Middle School	In Process			8/16/2004	-	$365,000		21.43
157	157-0050	CV	Hurlbutt Elementary School	In Process			8/12/2005	-	$60,000		21.43
157	157-0051	CV	Weston Middle School	Cancelled Project			8/12/2005	-	$68,000	155,141	21.43
157	157-0052	EC	Weston High School	Estimated Grant Calc	9,10,11,12	Kaestle/Boos	6/30/2011	-	$1,410,105	227,561	21.43

DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS)

OFFICE OF SCHOOL CONSTRUCTION GRANTS & REVIEW (OSCG&R)

BULLETIN - BUILDING AREAS

FORM SCG-3043

The Office of School Construction Grants & Review (SCG) frequently responds to questions regarding *building area* as it applies to school construction projects. The requirements and application of building areas for grant applications may differ from other agencies or other applicable requirements. This bulletin serves to address the application of the building code relative to the project building in determining the maximum allowable building area, the minimum allowed construction type, and the application of building area in OSCG&R grant calculations.

The OSCG&R is not a codes enforcement agency and does not offer interpretations or clarifications of the State Codes. However, we do offer our understanding of the applicability of the codes pertinent to the plan review process and clarification of the agency's position regarding various matters relating to the School Construction Grant process (Connecticut General Statute (C.G.S.) Chapter 173).

A meeting and discussion between staff of the OSCG&R and the office of the State Building Inspector was conducted to help clarify a number of related issues. The following questions and answers attempt to summarize and outline the issues discussed, clarify the concepts and application of the codes, and identify what is expected on the Code Information Sheets (for proper grant calculations), when submitting to the OSCG&R for plan review and approval.

1. **How do we determine what is the proper building area to use?**

For Code Information purposes:
The Building Code defines Building Area (in Chapter 5) as (all) area included **within** surrounding exterior walls and firewalls, exclusive of vent shafts (not mechanical vent shafts) and courts (open courtyards). Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above. The (ICC) commentary explains further and includes the open projected floor areas at vertical openings (such as atriums). Building Area is applied when determining the largest floor area to determine the maximum allowable floor area and building area. The entire area of each floor must be calculated (including the horizontal projected floor areas of multi-story vertical openings) in order to determine the largest floor.

The Building Code also similarly defines Gross Floor Area (in Chapter 10) as the area included **within** surrounding exterior walls. Depending on the use of a space, either *Net Floor Area* or *Gross Floor Area* is used to determine the maximum occupant load for each floor level. Gross floor area is secondary to the issues that this bulletin attempts to address.

For Grant Calculation purposes:
The DAS has relied on the Building Code's definition of Building Area as the basis for what building area is and how it is measured relative to the DAS Space Standards calculations. This has provided a consistent approach when determining the grant calculations. Building Area is one of three primary factors in determining the Space Standards for the grant calculations (for the applicable State Standard Space Specifications refer to C.G.S. 10- 287c-15). Therefore, **"gross square feet of such building" as used in C.G.S. 10-286 is considered by the DAS to be the same value as the Building Area** defined in the Connecticut State Building Code.

2. **What is considered a multi-story space requiring calculating additional floor area for the open area?**
It is easier to address what is not considered a multi-story space. Gymnasiums, cafeterias, auditoriums, and similar multi-purpose rooms are generally considered tall one-story spaces instead of multi-story spaces. However, there may be exceptions. As such, each project is viewed separately on a case-by-case basis.

3. **Does the upper (open) floor area of atriums or vertical openings count in the building area calculations?** Yes, when determining the maximum allowable floor area for height and area. However, some vestibules or vertical openings (or portions of the space) may be very high one story spaces. The open floor area of such spaces is not considered occupied area when determining the maximum occupant load for spaces and floors, in further determining the required exiting capacities.

4. **Are mezzanine (and balcony) areas included in the calculated building area?** Per a review of Section 505.2 of the Building Code, the area of a mezzanine is not considered when applying the provisions for height and area. However, the area of a mezzanine is included in fire areas, and used to determine occupant loads of spaces.

5. **Are areas under roof overhangs and canopies included in the building area?** Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above. However, it's not the intent to include the simple architectural overhangs. If there are large projections, then those areas beneath should be included as building area. This will be viewed on a case-by-case basis. Detached canopies or unenclosed covered walkways, etc., that are not a continuation of the building's roof(s) should not get counted towards building area.

6. **How is building area presented for grant calculations?** Building areas are first presented when an application for a school construction project is submitted to the DCS/SCG. However, it may change by the completion of the project. Therefore, the DAS/SCG relies on the accuracy of the areas identified by the design professionals on the Code Information Sheet (refer to

   "Construction Document Guidelines for School Districts and Design Professionals"). The areas shown in item #4 Building Area, of the Code Information, shall be the same areas that SCG uses in item #16 Building Areas for Grant Calculation.

   Payment requests submitted by the Local Education Agency (LEA) may be impacted by the **space standards**. The OSCG&R Grant Data Unit may make grant calculation adjustments if necessary, based upon the area information on the Code Information Sheets, believing this information to be more current and accurate than what was originally filed (or is on file).

   Exceptions in the codes allow various building areas elements to be exempted from the Height & Area calculations. However, all actual building areas shall be accounted for in the grant calculation.
   It should be noted that although the Building Code definition is utilized in reporting the building area for code and for grant purposes, the actual footprint area is usually larger (by the exterior wall thicknesses). Other building area elements may be identified on the construction documents, either for construction purposes or for grant-calculation purposes. The following common terminology must be used for continuity and clarity. Refer to the "Construction Document Guidelines for School Districts and Design Professionals" for the formatting of this information.

   Open Space Area shall refer to those building areas under excessive roof overhangs (and canopies) and open floor areas of vertical openings. These areas must be identified and itemized whenever a LEA requests a space standard waiver, and the areas shown on the code information must reconcile with the waiver request letter. The areas or portions of those areas may be considered when calculating the grant.

   Total Constructed Building Area shall refer to the area of the building **(all floors)** when measured to **exterior face** of the exterior walls. This is usually the same area that the contractors are using.

7. **What if the building area changes during the project?** If the building areas change between the time of application and the Plan Review/Approval process, SCG relies on the accuracy of the areas identified by the design professionals, on the Code Information Sheet, and may make grant calculation adjustments if necessary, based upon the area information on the Code Information Sheets (believing this information to be more current and accurate).

   However, if changes are required after the review and approval of a project, then follow the procedures outlined below in the **BUILDING AREA ADJUSTMENTS AFTER A PRE-BID CONFORMANCE REVIEW (PCR) SUBMISSION** section of this bulletin.

BUILDING AREA ADJUSTMENTS AFTER A PRE-BID CONFORMANCE REVIEW (PCR) SUBMISSION

When SCG receives an application, the building area indicated by the LEA is presumed to be an estimate. At the time of the PCR meeting, the LEA and design professionals submit project documentation for review. The areas indicated on the drawings are presumed to be more current and more accurate and may supersede the previously submitted application data. SCG may make adjustments to the data necessary for the proper calculations for grant payments.

For any number of reasons, the building area (square feet) may change by the completion of the project. For example, the LEA discovers that the building areas for a particular structure/project (as indicated on the SCG-049 School Construction Project application) were reported incorrectly in the past. If after the PCR and review the LEA discovers the need to change those previously submitted building areas, the procedures listed on this bulletin, must be followed.

1. The LEA will provide a written explanation (to SCG Manager) for what precipitates the need for the change in the previously recorded building area, detailing the specifics of what is to be adjusted, and why, along with supporting documentation

2. To ensure the accuracy of information, the building shall be surveyed. Previously submitted Code Information Plan(s) can be revised to record the survey information, and shall be signed and sealed by the licensed architect or engineer. The design professional shall:

    a. Survey the buildings' exterior perimeter at each floor level.

    b. Transpose the exterior dimensions onto the Code Information Plans (previously submitted as a part of the PCR process). Each floor level must be presented with dimensions.

    c. Identify exterior wall thickness (used to recalculate building areas) for each floor. The wall thicknesses must be indicated on the Code Information Plans.

    d. Revise the Code Information Sheet using the Building Code definition of Building Area, include areas under canopies, roof /floor overhangs or projections, and/or extract open (to air) courts/courtyards or shafts. Include the open areas of the vertical openings at each floor level.

    e. Add a new line to Code Information Sheet (below #16): "17 Total Constructed Building Area" and provide the new calculated area (measured to the exterior face of the building).

3. Provide a copy of the revised Plans (signed and sealed) to SCG, along with the letter from the Superintendent of Schools (described in #1 above) requesting an adjustment. The design professional shall include a certification statement on the revised drawing. The certification shall attest to the revisions based upon a survey of the actual conditions.