



HCS Reports- Baseline Condition
HCS Reports- Build Condition
HCS Reports- Recommended Improvements
Intersection Improvement Maps

HCS REPORTS
“BASELINE” CONDITION

HCS+™ DETAILED REPORT												
General Information						Site Information						
Analyst	scf					Intersection	Hoeffner & Colerain					
Agency or Co.	TranSystems Corp					Area Type	All other areas					
Date Performed	11/7/2006					Jurisdiction						
Time Period	AM DHV					Analysis Year	2030					
						Project ID	MCE Baseline					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N _i	1	1	0	1	1	1	0	2	0	0	2	0
Lane Group	L	TR		L	T	R		LTR			LTR	
Volume, V (vph)	10	0	0	20	0	20	10	120	0	0	250	40
% Heavy Vehicles, %HV	5	5	5	5	5	5	5	5	5	5	5	5
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Pretimed (P) or Actuated (A)	A	A	A	A	A	A	P	P	P	P	P	P
Start-up Lost Time, l _i	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Extension of Effective Green, e	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Arrival Type, AT	3	3		3	3	3		3			3	
Unit Extension, UE	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Filtering/Metering, I	1.000	1.000		1.000	1.000	1.000		1.000			1.000	
Initial Unmet Demand, Q _b	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Ped / Bike / RTOR Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	9.0	9.0		10.0	10.0	14.5		10.0			9.5	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N _m												
Buses Stopping, N _b	0	0		0	0	0		0			0	
Min. Time for Pedestrians, G _p	3.2			3.2			3.2			3.2		
Phasing	EW Perm	02	03	04	NS Perm	06	07	08				
Timing	G = 56.5	G =	G =	G =	G = 53.5	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis, T = 0.25						Cycle Length, C = 120.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	11	0		22	0	22		144			322	
Lane Group Capacity, c	60	767		60	795	784		1326			1379	
v/c Ratio, X	0.18	0.00		0.37	0.00	0.03		0.11			0.23	
Total Green Ratio, g/C	0.47	0.47		0.47	0.47	0.47		0.45			0.45	
Uniform Delay, d ₁	18.4	16.8		20.3	16.8	17.0		19.4			20.6	
Progression Factor, PF	1.000	1.000		1.000	1.000	1.000		1.000			1.000	
Delay Calibration, k	0.11	0.11		0.11	0.11	0.11		0.50			0.50	
Incremental Delay, d ₂	1.5	0.0		3.8	0.0	0.0		0.2			0.4	
Initial Queue Delay, d ₃	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Control Delay	19.9	16.8		24.1	16.8	17.0		19.5			21.0	
Lane Group LOS	B	B		C	B	B		B			C	
Approach Delay	19.9			20.6			19.5			21.0		
Approach LOS	B			C			B			C		
Intersection Delay	20.5			X _c = 0.31			Intersection LOS			C		

HCS+™ DETAILED REPORT												
General Information						Site Information						
Analyst	scf					Intersection	Hoeffner & Colerain					
Agency or Co.	TranSystems Corp					Area Type	All other areas					
Date Performed	11/7/2006					Jurisdiction						
Time Period	PM DHV					Analysis Year	2030					
						Project ID	MCE Baseline					
Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N _i	1	1	0	1	1	1	0	2	0	0	2	0
Lane Group	L	TR		L	T	R		LTR			LTR	
Volume, V (vph)	10	0	10	30	0	40	10	370	0	0	210	20
% Heavy Vehicles, %HV	5	5	5	5	5	5	5	5	5	5	5	5
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Pretimed (P) or Actuated (A)	A	A	A	A	A	A	P	P	P	P	P	P
Start-up Lost Time, l _i	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Extension of Effective Green, e	2.0	2.0		2.0	2.0	2.0		2.0			2.0	
Arrival Type, AT	3	3		3	3	3		3			3	
Unit Extension, UE	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Filtering/Metering, I	1.000	1.000		1.000	1.000	1.000		1.000			1.000	
Initial Unmet Demand, Q _b	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Ped / Bike / RTOR Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	9.0	9.0		10.0	10.0	14.5		10.0			9.5	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N _m												
Buses Stopping, N _b	0	0		0	0	0		0			0	
Min. Time for Pedestrians, G _p	3.2			3.2			3.2			3.2		
Phasing	EW Perm	02	03	04	NS Perm	06	07	08				
Timing	G = 53.5	G =	G =	G =	G = 56.5	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis, T = 0.25						Cycle Length, C = 120.0						
Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	11	11		33	0	44		422			255	
Lane Group Capacity, c	60	617		565	753	743		1431			1468	
v/c Ratio, X	0.18	0.02		0.06	0.00	0.06		0.29			0.17	
Total Green Ratio, g/C	0.45	0.45		0.45	0.45	0.45		0.47			0.47	
Uniform Delay, d ₁	20.1	18.6		18.9	18.4	18.9		19.5			18.3	
Progression Factor, PF	1.000	1.000		1.000	1.000	1.000		1.000			1.000	
Delay Calibration, k	0.11	0.11		0.11	0.11	0.11		0.50			0.50	
Incremental Delay, d ₂	1.5	0.0		0.0	0.0	0.0		0.5			0.3	
Initial Queue Delay, d ₃	0.0	0.0		0.0	0.0	0.0		0.0			0.0	
Control Delay	21.5	18.6		19.0	18.4	19.0		20.0			18.6	
Lane Group LOS	C	B		B	B	B		C			B	
Approach Delay	20.1			19.0			20.0			18.6		
Approach LOS	C			B			C			B		
Intersection Delay	19.4			X _c = 0.25			Intersection LOS			B		

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	scf			Intersection	Blue Rock & Colerain		
Agency/Co.	TranSystems Corp			Jurisdiction			
Date Performed	11/7/2006			Analysis Year	2030		
Analysis Time Period	AM DHV						
Project Description MCE Baseline							
East/West Street: Blue Rock Street				North/South Street: Colerain Ave			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		70	80	410	250		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	0	77	88	455	277	0	
Percent Heavy Vehicles	0	--	--	5	--	--	
Median Type	Undivided						
RT Channelized			0				0
Lanes	0	2	0	0	2	0	
Configuration		T	TR	LT	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				40		80	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	0	0	0	44	0	88	
Percent Heavy Vehicles	0	0	0	5	0	5	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	1	0	1	
Configuration				L		R	
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11
Lane Configuration		LT	L		R		
v (veh/h)		455	44		88		
C (m) (veh/h)		1389	122		952		
v/c		0.33	0.36		0.09		
95% queue length		1.44	1.47		0.30		
Control Delay (s/veh)		8.8	50.3		9.2		
LOS		A	F		A		
Approach Delay (s/veh)	--	--	22.9				
Approach LOS	--	--	C				

TWO-WAY STOP CONTROL SUMMARY							
General Information				Site Information			
Analyst	scf			Intersection	Blue Rock & Colerain		
Agency/Co.	TranSystems Corp			Jurisdiction			
Date Performed	11/7/2006			Analysis Year	2030		
Analysis Time Period	PM DHV						
Project Description MCE Baseline							
East/West Street: Blue Rock Street				North/South Street: Colerain Ave			
Intersection Orientation: North-South				Study Period (hrs): 0.25			
Vehicle Volumes and Adjustments							
Major Street	Northbound			Southbound			
Movement	1	2	3	4	5	6	
	L	T	R	L	T	R	
Volume (veh/h)		390	30	250	210		
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	0	433	33	277	233	0	
Percent Heavy Vehicles	0	--	--	5	--	--	
Median Type	Undivided						
RT Channelized			0				0
Lanes	0	2	0	0	2	0	
Configuration		T	TR	LT	T		
Upstream Signal		0			0		
Minor Street	Eastbound			Westbound			
Movement	7	8	9	10	11	12	
	L	T	R	L	T	R	
Volume (veh/h)				20		290	
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly Flow Rate, HFR (veh/h)	0	0	0	22	0	322	
Percent Heavy Vehicles	0	0	0	5	0	5	
Percent Grade (%)	0			0			
Flared Approach		N			N		
Storage		0			0		
RT Channelized			0			0	
Lanes	0	0	0	1	0	1	
Configuration				L		R	
Delay, Queue Length, and Level of Service							
Approach	Northbound	Southbound	Westbound			Eastbound	
Movement	1	4	7	8	9	10	11 12
Lane Configuration		LT	L		R		
v (veh/h)		277	22		322		
C (m) (veh/h)		1071	145		760		
v/c		0.26	0.15		0.42		
95% queue length		1.04	0.52		2.12		
Control Delay (s/veh)		9.5	34.2		13.2		
LOS		A	D		B		
Approach Delay (s/veh)	--	--	14.5				
Approach LOS	--	--	B				

HCS+™ DETAILED REPORT

General Information				Site Information			
Analyst	scf			Intersection	Blue Rock & Hamilton		
Agency or Co.	TranSystems Corp			Area Type	All other areas		
Date Performed	03/13/2008			Jurisdiction			
Time Period	AM DHV			Analysis Year	2030 existing geom		
				Project ID	MCE Baseline		

Volume and Timing Input												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes, N _i	1	1	1	1	1	0		2	0	0	2	0
Lane Group	L	T	R	L	TR			TR			LTR	
Volume, V (vph)	10	140	340	0	100	10		450	0	20	1210	20
% Heavy Vehicles, %HV	5	5	5	5	5	5		5	5	5	5	5
Peak-Hour Factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90	0.90	0.90
Pretimed (P) or Actuated (A)	A	A	A	A	A	A		A	A	A	A	A
Start-up Lost Time, l _i	2.0	2.0	2.0	2.0	2.0			2.0			2.0	
Extension of Effective Green, e	2.0	2.0	2.0	2.0	2.0			2.0			2.0	
Arrival Type, AT	3	3	3	3	3			3			3	
Unit Extension, UE	3.0	3.0	3.0	3.0	3.0			3.0			3.0	
Filtering/Metering, I	1.000	1.000	1.000	1.000	1.000			1.000			1.000	
Initial Unmet Demand, Q _b	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Ped / Bike / RTOR Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width	9.0	9.0	10.0	9.0	9.0			10.0			11.0	
Parking / Grade / Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking Maneuvers, N _m												
Buses Stopping, N _b	0	0	0	0	0			0			0	
Min. Time for Pedestrians, G _p	3.2			3.2			3.2			3.2		
Phasing	EW Perm	02	03	04	NS Perm	06	07	08				
Timing	G = 25.0	G =	G =	G =	G = 35.0	G =	G =	G =				
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =				
Duration of Analysis, T = 0.25							Cycle Length, C = 70.0					

Lane Group Capacity, Control Delay, and LOS Determination												
	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Adjusted Flow Rate, v	11	156	378	0	122			500			1388	
Lane Group Capacity, c	395	582	513	383	574			1608			1567	
v/c Ratio, X	0.03	0.27	0.74	0.00	0.21			0.31			0.89	
Total Green Ratio, g/C	0.36	0.36	0.36	0.36	0.36			0.50			0.50	
Uniform Delay, d ₁	14.6	16.0	19.6	14.5	15.7			10.4			15.7	
Progression Factor, PF	1.000	1.000	1.000	1.000	1.000			1.000			1.000	
Delay Calibration, k	0.11	0.11	0.29	0.11	0.11			0.11			0.41	
Incremental Delay, d ₂	0.0	0.2	5.5	0.0	0.2			0.1			6.5	
Initial Queue Delay, d ₃	0.0	0.0	0.0	0.0	0.0			0.0			0.0	
Control Delay	14.6	16.2	25.2	14.5	15.8			10.5			22.2	
Lane Group LOS	B	B	C	B	B			B			C	
Approach Delay	22.4			15.8			10.5			22.2		
Approach LOS	C			B			B			C		
Intersection Delay	19.6			X _c = 0.82								