APPENDIX D

INTERSECTION CAPACITY ANALYSIS RESULTS – BACKGROUND ONLY (2006)

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	DY
Agency/Co.	Gorove/Slade Associates, Inc
Date Performed	09/15/04
Analysis Time Period	AM Peak

Site Information

Intersection	Columbia Rd & 17th Street
Jurisdiction	
Analysis Year	Future Background 2006

Project Description 1963-001

East/West Street: Columbia Rd | North/South Street: 17th Street

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	388	23	17	577	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	0	388	23	17	577	0
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	32	0	38	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	32	0	38	0	0	0
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0
Percent grade (%)	0			0		
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
Volume, v (vph)		17		70				
Capacity, c_m (vph)		1159		390				
v/c ratio		0.01		0.18				
Queue length (95%)		0.04		0.65				

Control Delay (s/veh)		8.2		16.2				
LOS		A		C				
Approach delay (s/veh)	--	--	16.2					
Approach LOS	--	--	C					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DY	Intersection	Columbia Rd & 17th Street
Agency/Co.	Gorove/Slade Associates, Inc	Jurisdiction	
Date Performed	09/15/04	Analysis Year	Future Background 2006
Analysis Time Period	PM Peak		

Project Description: 1963-001

East/West Street: Columbia Rd | North/South Street: 17th Street

Intersection Orientation: East-West | Study Period (hrs): 0.25

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)	0	581	46	29	516	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	0	581	46	29	516	0
Proportion of heavy vehicles, P_{HV}	0	--	--	0	--	--
Median type	Undivided					
RT Channelized?			0			0
Lanes	0	1	0	1	1	0
Configuration			TR	L	T	
Upstream Signal		0			0	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)	23	0	35	0	0	0
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate (veh/h)	23	0	35	0	0	0
Proportion of heavy vehicles, P_{HV}	0	0	0	0	0	0
Percent grade (%)		0			0	
Flared approach		N			N	
Storage		0			0	
RT Channelized?			0			0
Lanes	0	0	0	0	0	0
Configuration		LR				

Control Delay, Queue Length, Level of Service

Approach	EB	WB	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		L		LR				
Volume, v (vph)		29		58				
Capacity, c_m (vph)		965		321				
v/c ratio		0.03		0.18				
Queue length (95%)		0.09		0.65				

Control Delay (s/veh)		8.8		18.7				
LOS		A		*C				
Approach delay (s/veh)	--	--	18.7					
Approach LOS	--	--	C					

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ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	DY
Agency/Co.	Gorove/Slade Associates, Inc
Date Performed	09/15/04
Analysis Time Period	AM Peak

Site Information

Intersection	Euclid Street & 17th Street
Jurisdiction	
Analysis Year	Future Background 2006

Project ID 1963-001

East/West Street: Euclid Street

North/South Street: 17th Street

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	8	99	14	18	117	16
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	10	28	22	24	33	15
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate	121		151		60		72	
% Heavy Vehicles								
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
Prop. Left-Turns	0.1		0.1		0.2		0.3	
Prop. Right-Turns	0.1		0.1		0.4		0.2	
Prop. Heavy Vehicle								
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	4.32		4.32		4.32		4.32	

Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.11		0.13		0.05		0.06	
hd, final value	4.32		4.32		4.32		4.32	
x, final value	0.15		0.18		0.07		0.09	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	2.3		2.3		2.3		2.3	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	371		401		310		322	
Delay	8.05		8.25		7.77		7.98	
LOS	A		A		A		A	
Approach: Delay	8.05		8.25		7.77		7.98	
LOS	A		A		A		A	
Intersection Delay	8.07							
Intersection LOS	A							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	DY
Agency/Co.	Gorove/Slade Associates,Inc
Date Performed	09/15/04
Analysis Time Period	PM Peak

Site Information

Intersection	Euclid Street & 17th Street
Jurisdiction	
Analysis Year	Future Background 2006

Project ID 1963-001

East/West Street: Euclid Street | North/South Street: 17th Street

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	13	197	27	12	53	11
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	5	21	20	36	24	19
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LTR		LTR		LTR		LTR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate	237		76		46		79	
% Heavy Vehicles								
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
Prop. Left-Turns	0.1		0.2		0.1		0.5	
Prop. Right-Turns	0.1		0.1		0.4		0.2	
Prop. Heavy Vehicle								
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	4.23		4.23		4.23		4.23	

Departure Headway and Service Time

hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.21		0.07		0.04		0.07	
hd, final value	4.23		4.23		4.23		4.23	
x, final value	0.28		0.09		0.06		0.10	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	2.2		2.2		2.2		2.2	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	487		326		296		329	
Delay	8.85		7.85		7.73		8.12	
LOS	A		A		A		A	
Approach: Delay	8.85		7.85		7.73		8.12	
LOS	A		A		A		A	
Intersection Delay	8.43							
Intersection LOS	A							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	DY
Agency/Co.	Gorove/Slade Associates, Inc
Date Performed	09/15/04
Analysis Time Period	AM Peak

Site Information

Intersection	Kalorama Road & 17th Street
Jurisdiction	
Analysis Year	Future Background 2006

Project ID 1963-001

East/West Street: Kalorama Road | North/South Street: 17th Street

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	14	54	0	0	135	27
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	13	8	13	21	0	51
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		TR		LTR		LR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate	68		162		34		72	
% Heavy Vehicles								
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
Prop. Left-Turns	0.2		0.0		0.4		0.3	
Prop. Right-Turns	0.0		0.2		0.4		0.7	
Prop. Heavy Vehicle								
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	4.34		4.34		4.34		4.34	

Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.06		0.14		0.03		0.06	
hd, final value	4.34		4.34		4.34		4.34	
x, final value	0.08		0.18		0.04		0.08	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	2.3		2.3		2.3		2.3	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	318		412		284		322	
Delay	7.73		8.04		7.52		7.44	
LOS	A		A		A		A	
Approach: Delay	7.73		8.04		7.52		7.44	
LOS	A		A		A		A	
Intersection Delay	7.79							
Intersection LOS	A							

ALL-WAY STOP CONTROL ANALYSIS

General Information

Analyst	DY
Agency/Co.	Gorove/Slade Associates, Inc
Date Performed	09/15/04
Analysis Time Period	PM Peak

Site Information

Intersection	Kalorama Street & 17th Street
Jurisdiction	
Analysis Year	Future Background 2006

Project ID 1963-001

East/West Street: Kalorama Street | North/South Street: 17th Street

Volume Adjustments and Site Characteristics

Approach	Eastbound			Westbound		
Movement	L	T	R	L	T	R
Volume	28	79	0	0	60	19
%Thrus Left Lane	50			50		

Approach	Northbound			Southbound		
Movement	L	T	R	L	T	R
Volume	11	11	9	30	0	41
%Thrus Left Lane	50			50		

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Configuration	LT		TR		LTR		LR	
PHF	1.00		1.00		1.00		1.00	
Flow Rate	107		79		31		71	
% Heavy Vehicles								
No. Lanes	1		1		1		1	
Geometry Group	1		1		1		1	
Duration, T	0.25							

Saturation Headway Adjustment Worksheet

	Eastbound		Westbound		Northbound		Southbound	
Prop. Left-Turns	0.3		0.0		0.4		0.4	
Prop. Right-Turns	0.0		0.2		0.3		0.6	
Prop. Heavy Vehicle								
hLT-adj	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
hRT-adj	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
hHV-adj	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
hadj, computed	4.26		4.26		4.26		4.26	

Departure Headway and Service Time

	Eastbound		Westbound		Northbound		Southbound	
hd, initial value	3.20		3.20		3.20		3.20	
x, initial	0.10		0.07		0.03		0.06	
hd, final value	4.26		4.26		4.26		4.26	
x, final value	0.13		0.09		0.04		0.08	
Move-up time, m	2.0		2.0		2.0		2.0	
Service Time	2.3		2.3		2.3		2.3	

Capacity and Level of Service

	Eastbound		Westbound		Northbound		Southbound	
	L1	L2	L1	L2	L1	L2	L1	L2
Capacity	357		329		281		321	
Delay	7.87		7.49		7.45		7.44	
LOS	A		A		A		A	
Approach: Delay	7.87		7.49		7.45		7.44	
LOS	A		A		A		A	
Intersection Delay	7.62							
Intersection LOS	A							

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DY	Intersection	Kalorama Street & 16th Street
Agency/Co.	Gorove/Slade Associates, Inc	Jurisdiction	
Date Performed	09/15/04	Analysis Year	Future Background 2006
Analysis Time Period	AM Peak		

Project Description	1963-001
East/West Street:	Kalorama Street
North/South Street:	16th Street
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	46	508	0	0	2181	101
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	46	508	0	0	2181	101
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	1
Configuration	LT	T			T	R
Upstream Signal		0			1	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	0	37	0	74
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	0	0	0	37	0	74
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)	0			0		
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (vph)	46						111	
C (m) (vph)	304						84	
v/c	0.15						1.32	
95% queue length	0.53						8.36	
Control Delay	18.9						295.4	
LOS	C						F	
Approach Delay	--	--					295.4	
Approach LOS	--	--					F	

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	DY	Intersection	Kalorama St & 16th St
Agency/Co.	Gorove/Slade Associates, Inc	Jurisdiction	
Date Performed	09/15/04	Analysis Year	Future Background 2006
Analysis Time Period	PM Peak		

Project Description	1963-001
East/West Street:	Kalorama St
North/South Street:	16th St
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	38	1235	0	0	1066	55
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	38	1235	0	0	1066	55
Percent Heavy Vehicles	0	--	--	0	--	--
Median Type	Undivided					
RT Channelized			0			0
Lanes	0	2	0	0	2	1
Configuration	LT	T			T	R
Upstream Signal		0			1	

Minor Street	Westbound			Eastbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume	0	0	0	46	0	59
Peak-Hour Factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Hourly Flow Rate, HFR	0	0	0	46	0	59
Percent Heavy Vehicles	0	0	0	0	0	0
Percent Grade (%)		0			0	
Flared Approach		N			N	
Storage		0			0	
RT Channelized			0			0
Lanes	0	0	0	0	0	0
Configuration					LR	

Delay, Queue Length, and Level of Service

Approach	NB	SB	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration	LT						LR	
v (vph)	38						105	
C (m) (vph)	689						165	
v/c	0.06						0.64	
95% queue length	0.17						3.56	
Control Delay	10.5						58.8	
LOS	B						F	
Approach Delay	--	--				58.8		
Approach LOS	--	--				F		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	DY	Intersection	Kolorama Road & 16th Street
Agency or Co.	Gorove/Slade Associates, Inc	Area Type	CBD or Similar
Date Performed	10/04/04	Jurisdiction	
Time Period	AM Peak	Analysis Year	Future Background 2006 Mit
		Project ID	1963-001

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	0	0	0	0	0	0	2	0	0	3	0
Lane group		LR						LT			TR	
Volume, V (vph)	37		74				46	508			2181	101
% Heavy vehicles, %HV	0		0				0	0			0	0
Peak-hour factor, PHF	0.90		0.90				0.90	0.90			0.90	0.90
Pretimed (P) or actuated (A)	P		P				P	P			P	P
Start-up lost time, l_1		2.0						2.0			2.0	
Extension of effective green, e		2.0						2.0			2.0	
Arrival type, AT		3						3			3	
Unit extension, UE		3.0						3.0			3.0	
Filtering/metering, I		1.000						1.000			1.000	
Initial unmet demand, Q_b		0.0						0.0			0.0	
Ped / Bike / RTOR volumes	0		0	0						0		0
Lane width		12.0						12.0			12.0	
Parking / Grade / Parking	N	0	N	N		N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0						0			0	
Min. time for pedestrians, G_p	3.2			3.2						3.2		

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 20.0	G =	G =	G =	G = 70.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 100.0		

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		123						615			2535	
Lane group capacity, c		306						1415			3246	
v/c ratio, X		0.40						0.43			0.78	
Total green ratio, g/C		0.20						0.70			0.70	
Uniform delay, d_1		34.8						6.5			9.9	

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		3.9						1.0			1.9	
Initial queue delay, d_3												
Control delay		38.7						7.4			11.9	
Lane group LOS		D						A			B	
Approach delay	38.7						7.4			11.9		
Approach LOS	D						A			B		
Intersection delay	12.0			X_c = 0.70			Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	DY	Intersection	Kolorama Road & 16th Street
Agency or Co.	Gorove/Slade Associates, Inc	Area Type	CBD or Similar
Date Performed	09/15/04	Jurisdiction	
Time Period	PM Peak	Analysis Year	Future Background 2006 Mit
		Project ID	1963-001

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	0	0	0	0	0	0	2	0	0	3	0
Lane group		LR						LT			TR	
Volume, V (vph)	46		59				38	1235			1066	55
% Heavy vehicles, %HV	0		0				0	0			0	0
Peak-hour factor, PHF	0.90		0.90				0.90	0.90			0.90	0.90
Pretimed (P) or actuated (A)	P		P				P	P			P	P
Start-up lost time, l_1		2.0						2.0			2.0	
Extension of effective green, e		2.0						2.0			2.0	
Arrival type, AT		3						3			3	
Unit extension, UE		3.0						3.0			3.0	
Filtering/metering, I		1.000						1.000			1.000	
Initial unmet demand, Q_b		0.0						0.0			0.0	
Ped / Bike / RTOR volumes	0		0	0						0		0
Lane width		12.0						12.0			12.0	
Parking / Grade / Parking	N	0	N	N		N	N	0	N	N	0	N
Parking maneuvers, N_m												
Buses stopping, N_B		0						0			0	
Min. time for pedestrians, G_p	3.2			3.2						3.2		

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 20.0	G =	G =	G =	G = 70.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis, T = 0.25					Cycle Length, C = 100.0			

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		117						1414			1245	
Lane group capacity, c		309						1951			3244	
v/c ratio, X		0.38						0.72			0.38	
Total green ratio, g/C		0.20						0.70			0.70	
Uniform delay, d_1		34.6						9.1			6.2	

Progression factor, PF		1.000						1.000			1.000	
Delay calibration, k		0.50						0.50			0.50	
Incremental delay, d_2		3.5						2.4			0.3	
Initial queue delay, d_3												
Control delay		38.1						11.5			6.5	
Lane group LOS		D						B			A	
Approach delay	38.1						11.5			6.5		
Approach LOS	D						B			A		
Intersection delay	10.4			X_c = 0.65			Intersection LOS			B		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst	DY	Intersection	Euclid Street & 16th Street
Agency or Co.	Gorove/Slade Associates, Inc	Area Type	CBD or Similar
Date Performed	09/15/04	Jurisdiction	
Time Period	AM Peak	Analysis Year	Future Background 2006
		Project ID	1963-001

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	1	0	0	1	0	0	2	0	0	3	0
Lane group		LTR			LTR			LTR			LTR	
Volume, V (vph)	17	71	42	117	152	40	12	562	28	30	2210	19
% Heavy vehicles, %HV	0	0	0	0	0	0	0	0	0	0	0	0
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)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		2.0			2.0			2.0			2.0	
Extension of effective green, e		2.0			2.0			2.0			2.0	
Arrival type, AT		3			3			3			3	
Unit extension, UE		3.0			3.0			3.0			3.0	
Filtering/metering, I		1.000			1.000			1.000			1.000	
Initial unmet demand, Q_b		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		12.0			12.0			12.0			12.0	
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	
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 = 20.0	G =	G =	G =	G = 70.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 100.0		

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		145			343			668			2510	
Lane group capacity, c		295			251			1931			3007	
v/c ratio, X		0.49			1.37			0.35			0.83	
Total green ratio, g/C		0.20			0.20			0.70			0.70	

Uniform delay, d_1		35.5			40.0			5.9			10.8	
Progression factor, PF		1.000			1.000			1.000			1.000	
Delay calibration, k		0.50			0.50			0.50			0.50	
Incremental delay, d_2		5.8			188.4			0.5			2.9	
Initial queue delay, d_3												
Control delay		41.2			228.4			6.4			13.7	
Lane group LOS		D			F			A			B	
Approach delay	41.2			228.4			6.4			13.7		
Approach LOS	D			F			A			B		
Intersection delay	33.6			X_c = 0.95			Intersection LOS			C		

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HCS2000™ DETAILED REPORT

General Information		Site Information	
Analyst		Intersection	Euclid Street & 16th Street
Agency or Co.	Gorovel Slade Associates, Inc	Area Type	CBD or Similar
Date Performed	09/15/04	Jurisdiction	
Time Period	PM Peak	Analysis Year	Future Background 2006
		Project ID	1963-001

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N_1	0	1	0	0	1	0	0	2	0	0	3	0
Lane group		LTR			LTR			LTR			LTR	
Volume, V (vph)	35	174	36	50	89	84	13	1565	31	67	947	14
% Heavy vehicles, %HV	0	0	0	0	0	0	0	0	0	0	0	0
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)	P	P	P	P	P	P	P	P	P	P	P	P
Start-up lost time, l_1		2.0			2.0			2.0			2.0	
Extension of effective green, e		2.0			2.0			2.0			2.0	
Arrival type, AT		3			3			3			3	
Unit extension, UE		3.0			3.0			3.0			3.0	
Filtering/metering, I		1.000			1.000			1.000			1.000	
Initial unmet demand, Q_b		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		12.0			12.0			12.0			12.0	
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	
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 = 20.0	G =	G =	G =	G = 70.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis, T = 0.25						Cycle Length, C = 100.0		

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		272			248			1787			1142	
Lane group capacity, c		288			227			2134			2281	
v/c ratio, X		0.94			1.09			0.84			0.50	
Total green ratio, g/C		0.20			0.20			0.70			0.70	

Uniform delay, d_1		39.5			40.0			10.9			6.9	
Progression factor, PF		1.000			1.000			1.000			1.000	
Delay calibration, k		0.50			0.50			0.50			0.50	
Incremental delay, d_2		40.5			86.6			4.1			0.8	
Initial queue delay, d_3												
Control delay		80.0			126.6			15.0			7.7	
Lane group LOS		E			F			B			A	
Approach delay	80.0			126.6			15.0			7.7		
Approach LOS	E			F			B			A		
Intersection delay	25.7			X_c = 0.89			Intersection LOS			C		

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