SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE/RAMP & WASHINGTON PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0				0	3	0	0	2	1
Lane Group		LTR						LTR			LT	R
Volume (vph)	54	86	112				39	365	63	129	530	5
% Heavy Vehicles	0	0	0				5	5	5	3	3	3
PHF	0.80	0.80	0.80				0.92	0.92	0.92	0.94	0.94	0.94
Pretimed/Actuated (P/A)	P	P	P				P	P	P	P	P	P
Startup Lost Time		2.0						2.0			2.0	2.0
Extension of Effective Green		2.0						2.0			2.0	2.0
Arrival Type		3						3			3	3
Unit Extension		3.0						3.0			3.0	3.0
Ped/Bike/RTOR Volume	117	0	0				17	0	0	9	0	0
Lane Width		12.0						12.0			12.0	12.0
Parking/Grade/Parking	N	6	N				N	6	Y	N	-3	N
Parking/Hour									10			
Bus Stops/Hour		0						0			0	0
Minimum Pedestrian Time		24.5						21.3			3.3	

Phasing	Peds Only	EB Only	03	04	NS Perm	06	07	08
Timing	G = 26.0	G = 20.0	G =	G =	G = 28.0	G =	G =	G =
	Y = 5.5	Y = 5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		314						507			701	5
Lane Group Capacity		602						991			714	439
v/c Ratio		0.52						0.51			0.98	0.01
Green Ratio		0.22						0.31			0.31	0.31
Uniform Delay d_1		30.8						25.4			30.7	21.4
Delay Factor k		0.50						0.50			0.50	0.50
Incremental Delay d_2		3.2						1.9			29.5	0.0
PF Factor		1.000						1.000			1.000	1.000
Control Delay		34.0						27.3			60.3	21.5
Lane Group LOS		C						C			E	C
Approach Delay	34.0						27.3			60.0		
Approach LOS	C						C			E		
Intersection Delay	43.8			Intersection LOS			D					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE AVE & LEMIEUX PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	0				0	1	0
Lane Group		LTR			LTR						LTR	
Volume (vph)	10	364	14	1	222	7				31	6	153
% Heavy Vehicles	3	3	3	4	4	4				1	1	1
PHF	0.82	0.82	0.82	0.88	0.88	0.88				0.62	0.62	0.62
Pretimed/Actuated (P/A)	P	P	P	P	P	P				P	P	P
Startup Lost Time		2.0			2.0						2.0	
Extension of Effective Green		2.0			2.0						2.0	
Arrival Type		3			3						3	
Unit Extension		3.0			3.0						3.0	
Ped/Bike/RTOR Volume	0	0	1	124	0	1				18	0	0
Lane Width		11.0			11.0						12.0	
Parking/Grade/Parking	N	4	Y	N	-2	Y				N	-5	Y
Parking/Hour			20			20						20
Bus Stops/Hour		0			0						0	
Minimum Pedestrian Time		3.2			13.9						21.3	

Phasing	EW Perm	02	03	04	SB Only	06	07	08
Timing	G = 38.0	G =	G =	G =	G = 21.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 70.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		472			260						307	
Lane Group Capacity		1375			1415						363	
v/c Ratio		0.34			0.18						0.85	
Green Ratio		0.54			0.54						0.30	
Uniform Delay d_1		9.0			8.1						23.0	
Delay Factor k		0.50			0.50						0.50	
Incremental Delay d_2		0.7			0.3						20.9	
PF Factor		1.000			1.000						1.000	
Control Delay		9.7			8.4						43.9	
Lane Group LOS		A			A						D	
Approach Delay		9.7			8.4						43.9	
Approach LOS		A			A						D	
Intersection Delay		19.5			Intersection LOS						B	

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SHORT REPORT

General Information		Site Information	
Analyst	*N. Karsko*	Intersection	*CENTRE AVE & CRAWFORD ST*
Agency or Co.	*TRANS ASSOCIATES*	Area Type	*CBD or Similar*
Date Performed	*12/6/2005*	Jurisdiction	*CITY OF PITTSBURGH*
Time Period	*AM PEAK HOUR*	Analysis Year	*2008 BASE CONDITION*

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	*0*	*1*	*1*	*1*	*1*	*0*	*0*	*1*	*0*	*0*	*1*	*0*
Lane Group		*LT*	*R*	*L*	*TR*			*LTR*			*LTR*	
Volume (vph)	*26*	*134*	*117*	*32*	*104*	*17*	*195*	*55*	*30*	*36*	*149*	*113*
% Heavy Vehicles	*7*	*7*	*7*	*7*	*7*	*7*	*6*	*6*	*6*	*11*	*11*	*11*
PHF	*0.89*	*0.89*	*0.89*	*0.85*	*0.85*	*0.85*	*0.93*	*0.93*	*0.93*	*0.85*	*0.85*	*0.85*
Pretimed/Actuated (P/A)	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*	*P*
Startup Lost Time		*2.0*	*2.0*	*2.0*	*2.0*			*2.0*			*2.0*	
Extension of Effective Green		*2.0*	*2.0*	*2.0*	*2.0*			*2.0*			*2.0*	
Arrival Type		*3*	*3*	*3*	*3*			*3*			*3*	
Unit Extension		*3.0*	*3.0*	*3.0*	*3.0*			*3.0*			*3.0*	
Ped/Bike/RTOR Volume	*50*	*0*	*0*	*50*	*0*	*2*	*50*	*0*	*3*	*50*	*0*	*11*
Lane Width		*15.0*	*16.0*	*11.0*	*11.0*			*14.0*			*13.0*	
Parking/Grade/Parking	*N*	*-4*	*Y*	*N*	*8*	*Y*	*N*	*5*	*N*	*N*	*-6*	*N*
Parking/Hour			*10*			*10*						
Bus Stops/Hour		*0*	*0*	*0*	*0*			*0*			*0*	
Minimum Pedestrian Time		*22.7*			*13.5*			*14.7*			*14.7*	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = *30.0*	G =	G =	G =	G = *30.0*	G =	G =	G =
	Y = *5*	Y =	Y =	Y =	Y = *5*	Y =	Y =	Y =
Duration of Analysis (hrs) = *0.25*						Cycle Length C = *70.0*		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		*180*	*131*	*38*	*140*			*298*			*337*	
Lane Group Capacity		*722*	*539*	*391*	*526*			*389*			*607*	
v/c Ratio		*0.25*	*0.24*	*0.10*	*0.27*			*0.77*			*0.56*	
Green Ratio		*0.43*	*0.43*	*0.43*	*0.43*			*0.43*			*0.43*	
Uniform Delay d_1		*12.8*	*12.8*	*11.9*	*12.9*			*17.0*			*15.0*	
Delay Factor k		*0.50*	*0.50*	*0.50*	*0.50*			*0.50*			*0.50*	
Incremental Delay d_2		*0.8*	*1.1*	*0.5*	*1.2*			*13.4*			*3.6*	
PF Factor		*1.000*	*1.000*	*1.000*	*1.000*			*1.000*			*1.000*	
Control Delay		*13.6*	*13.8*	*12.4*	*14.1*			*30.5*			*18.6*	
Lane Group LOS		*B*	*B*	*B*	*B*			*C*			*B*	
Approach Delay	*13.7*			*13.8*			*30.5*			*18.6*		
Approach LOS	*B*			*B*			*C*			*B*		
Intersection Delay	*19.6*			Intersection LOS						*B*		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE AVE & DEVILLERS ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Group		LTR			LTR			LTR			LTR	
Volume (vph)	17	207	6	2	192	11	11	1	4	2	4	31
% Heavy Vehicles	6	6	6	8	8	8	0	0	0	0	0	0
PHF	0.87	0.87	0.87	0.95	0.95	0.95	0.63	0.63	0.63	0.82	0.82	0.82
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	50	0	1	50	0	1	50	0	0	50	0	3
Lane Width		16.0			10.0			11.0			11.0	
Parking/Grade/Parking	N	-2	N	N	-1	Y	N	0	Y	N	-6	Y
Parking/Hour						5			5			5
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		11.5			13.0			14.8			13.5	

Phasing	EW Perm	EB Only	03	04	NS Perm	06	07	08
Timing	G = 24.0	G = 21.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		264			215			25			41	
Lane Group Capacity		1152			384			258			283	
v/c Ratio		0.23			0.56			0.10			0.14	
Green Ratio		0.64			0.30			0.24			0.24	
Uniform Delay d_1		6.2			23.6			23.8			24.1	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		0.5			5.8			0.7			1.1	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		6.6			29.4			24.6			25.2	
Lane Group LOS		A			C			C			C	
Approach Delay	6.6			29.4			24.6			25.2		
Approach LOS	A			C			C			C		
Intersection Delay	17.8			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE AVE & DINWIDDLE ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		1	0	0	1		0		0			
Lane Group		TR			LT			LR				
Volume (vph)		195	22	48	186		19		36			
% Heavy Vehicles		6	6	8	8		0		0			
PHF		0.87	0.87	0.95	0.95		0.79		0.79			
Pretimed/Actuated (P/A)		P	P	P	P		P		P			
Startup Lost Time		2.0			2.0			2.0				
Extension of Effective Green		2.0			2.0			2.0				
Arrival Type		3			3			3				
Unit Extension		3.0			3.0			3.0				
Ped/Bike/RTOR Volume	50	0	2	0	0		50	0	0			
Lane Width		16.0			16.0			16.0				
Parking/Grade/Parking	N	-2	N	N	-1	N	N	4	Y			
Parking/Hour									5			
Bus Stops/Hour		0			0			0				
Minimum Pedestrian Time		16.0			12.7			13.5				

Phasing	EW Perm	WB Only	03	04	NB Only	06	07	08
Timing	G = 24.0	G = 21.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		247			247			70				
Lane Group Capacity		543			1023			354				
v/c Ratio		0.45			0.24			0.20				
Green Ratio		0.30			0.64			0.24				
Uniform Delay d_1		22.7			6.2			24.4				
Delay Factor k		0.50			0.50			0.50				
Incremental Delay d_2		2.7			0.6			1.2				
PF Factor		1.000			1.000			1.000				
Control Delay		25.4			6.8			25.7				
Lane Group LOS		C			A			C				
Approach Delay	25.4			6.8			25.7					
Approach LOS	C			A			C					
Intersection Delay	17.3			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	FIFTH AVE & WASHINGTON/CHATHAM
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				0	2	0	1	1			1	2
Lane Group					LTR		L	T			T	R
Volume (vph)				45	654	178	145	382			209	239
% Heavy Vehicles				7	7	7	1	1			0	0
PHF				0.91	0.91	0.91	0.83	0.83			0.83	0.83
Pretimed/Actuated (P/A)				P	P	P	P	P			P	P
Startup Lost Time					2.0		2.0	2.0			2.0	2.0
Extension of Effective Green					2.0		2.0	2.0			2.0	2.0
Arrival Type					3		3	3			3	3
Unit Extension					3.0		3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume				112	0	18	0	0		9	0	0
Lane Width					11.0		10.0	9.0			11.0	12.0
Parking/Grade/Parking				Y	-2	Y	N	-6	N	N	-2	N
Parking/Hour				20		20						
Bus Stops/Hour					0		0	0			0	0
Minimum Pedestrian Time					25.9			3.2			15.3	

Phasing	WB Only	02	03	04	NS Perm	06	07	08
Timing	G = 39.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate					944		175	460			252	288
Lane Group Capacity					1168		334	588			626	963
v/c Ratio					0.81		0.52	0.78			0.40	0.30
Green Ratio					0.49		0.38	0.38			0.38	0.38
Uniform Delay d_1					17.3		19.4	22.1			18.4	17.6
Delay Factor k					0.50		0.50	0.50			0.50	0.50
Incremental Delay d_2					6.1		5.8	10.0			1.9	0.8
PF Factor					1.000		1.000	1.000			1.000	1.000
Control Delay					23.4		25.2	32.1			20.3	18.4
Lane Group LOS					C		C	C			C	B
Approach Delay					23.4			30.2			19.3	
Approach LOS					C			C			B	
Intersection Delay	24.4			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	FORBES AVE & ARMSTRONG TUNNEL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0				0		2			
Lane Group		TR						LR	R			
Volume (vph)		740	325				189		586			
% Heavy Vehicles		6	6				3		3			
PHF		0.92	0.92				0.86		0.86			
Pretimed/Actuated (P/A)		P	P				P		P			
Startup Lost Time		2.0						2.0	2.0			
Extension of Effective Green		2.0						2.0	2.0			
Arrival Type		3						3	3			
Unit Extension		3.0						3.0	3.0			
Ped/Bike/RTOR Volume	50	0	0				0	0	59			
Lane Width		11.0						11.0	11.0			
Parking/Grade/Parking	N	3	N				N	0	N			
Parking/Hour												
Bus Stops/Hour		0						0	0			
Minimum Pedestrian Time		17.3						3.2				

Phasing	EB Only	02	03	04	NB Only	06	07	08
Timing	G = 41.0	G =	G =	G =	G = 29.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		1157						428	405			
Lane Group Capacity		1409						526	875			
v/c Ratio		0.82						0.81	0.46			
Green Ratio		0.51						0.36	0.36			
Uniform Delay d_1		16.4						23.1	19.5			
Delay Factor k		0.50						0.50	0.50			
Incremental Delay d_2		5.5						12.9	1.8			
PF Factor		1.000						1.000	1.000			
Control Delay		21.9						36.0	21.3			
Lane Group LOS		C						D	C			
Approach Delay	21.9						28.9					
Approach LOS	C						C					
Intersection Delay	24.8			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	FORBES AVE & CHATHAM/McANULTY
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0					1	1	0	1	
Lane Group	L	TR						T	R		LT	
Volume (vph)	481	732	113					20	55	174	83	
% Heavy Vehicles	4	4	4					3	3	1	1	
PHF	0.87	0.87	0.87					0.77	0.77	0.81	0.81	
Pretimed/Actuated (P/A)	P	P	P					P	P	P	P	
Startup Lost Time	2.0	2.0						2.0	2.0		2.0	
Extension of Effective Green	2.0	2.0						2.0	2.0		2.0	
Arrival Type	3	3						3	3		3	
Unit Extension	3.0	3.0						3.0	3.0		3.0	
Ped/Bike/RTOR Volume	44	0	0				23	0	6	21	0	
Lane Width	10.0	11.0						10.0	11.0		10.0	
Parking/Grade/Parking	N	3	N				N	-6	N	N	10	N
Parking/Hour												
Bus Stops/Hour	0	0						0	0		0	
Minimum Pedestrian Time		14.0						12.3			12.3	

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 51.0	G =	G =	G =	G = 19.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	553	971						26	64		317	
Lane Group Capacity	915	1854						379	324		273	
v/c Ratio	0.60	0.52						0.07	0.20		1.16	
Green Ratio	0.64	0.64						0.24	0.24		0.24	
Uniform Delay d_1	8.6	7.9						23.6	24.4		30.5	
Delay Factor k	0.50	0.50						0.50	0.50		0.50	
Incremental Delay d_2	3.0	1.1						0.3	1.4		105.3	
PF Factor	1.000	1.000						1.000	1.000		1.000	
Control Delay	11.5	9.0						24.0	25.8		135.8	
Lane Group LOS	B	A						C	C		F	
Approach Delay	9.9						25.3			135.8		
Approach LOS	A						C			F		
Intersection Delay	31.3			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & BLVD OF ALLIES
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	1		2	0	0	2	0		2	0
Lane Group		LT	R		TR			LTR			TR	
Volume (vph)	55	221	323		508	79	33	753	36		465	72
% Heavy Vehicles	2	2	2		3	3	2	2	2		2	2
PHF	0.91	0.91	0.91		0.79	0.79	0.93	0.93	0.93		0.95	0.95
Pretimed/Actuated (P/A)	P	P	P		P	P	P	P	P		P	P
Startup Lost Time		2.0	2.0		2.0			2.0			2.0	
Extension of Effective Green		2.0	2.0		2.0			2.0			2.0	
Arrival Type		3	3		3			3			3	
Unit Extension		3.0	3.0		3.0			3.0			3.0	
Ped/Bike/RTOR Volume	200	0	32	200	0	0	200	0	0	200	0	0
Lane Width		11.0	12.0		12.0			11.0			11.0	
Parking/Grade/Parking	N	0	N	N	-2	N	N	1	N	N	-1	N
Parking/Hour												
Bus Stops/Hour		0	0		0			0			0	
Minimum Pedestrian Time		19.5			18.5			29.5			20.8	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 40.0	G =	G =	G =	G = 39.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 6	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		303	320		743			884			565	
Lane Group Capacity		991	612		1365			1202			1316	
v/c Ratio		0.31	0.52		0.54			0.74			0.43	
Green Ratio		0.44	0.44		0.44			0.43			0.43	
Uniform Delay d_1		16.1	18.1		18.3			21.2			17.8	
Delay Factor k		0.50	0.50		0.50			0.50			0.50	
Incremental Delay d_2		0.8	3.2		1.6			4.0			1.0	
PF Factor		1.000	1.000		1.000			1.000			1.000	
Control Delay		16.9	21.3		19.9			25.2			18.8	
Lane Group LOS		B	C		B			C			B	
Approach Delay	19.1			19.9			25.2			18.8		
Approach LOS	B			B			C			B		
Intersection Delay	21.2			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & FIRST AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				0		0		2	1	1	2	
Lane Group					LR			T	R	L	T	
Volume (vph)				192		38		785	415	93	349	
% Heavy Vehicles				7		7		1	1	0	0	
PHF				0.84		0.84		0.77	0.77	0.90	0.90	
Pretimed/Actuated (P/A)				P		P		P	P	P	P	
Startup Lost Time					2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green					2.0			2.0	2.0	2.0	2.0	
Arrival Type					3			3	3	3	3	
Unit Extension					3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume				0	0	0	200	0	42	0	0	
Lane Width					12.0			11.0	12.0	10.0	12.0	
Parking/Grade/Parking				N	2	N	N	3	N	N	-3	N
Parking/Hour												
Bus Stops/Hour					0			0	0	0	0	
Minimum Pedestrian Time					18.7			13.6			3.2	

Phasing	WB Only	02	03	04	SB Only	NS Perm	07	08
Timing	G = 28.0	G =	G =	G =	G = 3.0	G = 46.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 3	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate					274			1019	484	103	388	
Lane Group Capacity					462			1569	583	199	1910	
v/c Ratio					0.59			0.65	0.83	0.52	0.20	
Green Ratio					0.31			0.51	0.51	0.58	0.58	
Uniform Delay d_1					26.2			16.1	18.7	11.1	9.1	
Delay Factor k					0.50			0.50	0.50	0.50	0.50	
Incremental Delay d_2					5.5			2.1	12.9	9.3	0.2	
PF Factor					1.000			1.000	1.000	1.000	1.000	
Control Delay					31.7			18.2	31.6	20.4	9.3	
Lane Group LOS					C			B	C	C	A	
Approach Delay				31.7			22.5			11.7		
Approach LOS				C			C			B		
Intersection Delay	21.3			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & FORT PITT/1-376
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1				1	1		2			1	1
Lane Group	L				TR	R		T			T	R
Volume (vph)	164				240	376		621			373	169
% Heavy Vehicles	4				3	3		1			6	6
PHF	0.59				0.80	0.80		0.76			0.95	0.95
Pretimed/Actuated (P/A)	P				P	P		P			P	P
Startup Lost Time	2.0				2.0	2.0		2.0			2.0	2.0
Extension of Effective Green	2.0				2.0	2.0		2.0			2.0	2.0
Arrival Type	3				3	3		3			3	3
Unit Extension	3.0				3.0	3.0		3.0			3.0	3.0
Ped/Bike/RTOR Volume	100	0		0	0	0	0	0		0	0	0
Lane Width	12.0				13.0	12.0		10.0			12.0	12.0
Parking/Grade/Parking	N	0	N	N	2	N	N	3	N	N	-1	N
Parking/Hour												
Bus Stops/Hour	0				0	0		0			0	0
Minimum Pedestrian Time		17.6			3.2			3.2			3.2	

Phasing	EB Only	WB Only	03	04	Thru & RT	06	07	08
Timing	G = 18.0	G = 32.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 5	Y = 5	Y =	Y =	Y = 6	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	278				385	385		817			393	178
Lane Group Capacity	312				584	497		790			432	367
v/c Ratio	0.89				0.66	0.77		1.03			0.91	0.49
Green Ratio	0.20				0.36	0.36		0.27			0.27	0.27
Uniform Delay d_1	35.0				24.4	25.8		33.0			32.0	27.8
Delay Factor k	0.50				0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2	29.5				5.7	11.2		41.1			25.7	4.5
PF Factor	1.000				1.000	1.000		1.000			1.000	1.000
Control Delay	64.5				30.2	37.0		74.1			57.7	32.3
Lane Group LOS	E				C	D		E			E	C
Approach Delay	64.5			33.6			74.1			49.8		
Approach LOS	E			C			E			D		
Intersection Delay	54.5			Intersection LOS			D					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	SECOND AVE/COURT & ROSS ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	AM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0		1	1	0	1	0	1	1	0
Lane Group		LTR			T	R		LTR		L	TR	
Volume (vph)	52	186	28		340	395	3	208	48	173	121	18
% Heavy Vehicles	11	11	11		3	3	0	0	0	6	6	6
PHF	0.73	0.73	0.73		0.87	0.87	0.85	0.85	0.85	0.83	0.83	0.83
Pretimed/Actuated (P/A)	P	P	P		P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0		2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0	2.0		2.0		2.0	2.0	
Arrival Type		3			3	3		3		3	3	
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	100	0	3	100	0	0	100	0	5	100	0	0
Lane Width		13.0			11.0	14.0		14.0		10.0	10.0	
Parking/Grade/Parking	Y	-2	Y	N	5	N	N	2	Y	N	-3	N
Parking/Hour	10		10						10			
Bus Stops/Hour		0			0	0		0		0	0	
Minimum Pedestrian Time		13.2			13.2			12.7			8.7	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		360			391	454		300		208	168	
Lane Group Capacity		384			648	535		627		334	632	
v/c Ratio		0.94			0.60	0.85		0.48		0.62	0.27	
Green Ratio		0.41			0.41	0.41		0.43		0.43	0.43	
Uniform Delay d_1		19.6			16.0	18.5		14.4		15.6	12.9	
Delay Factor k		0.50			0.50	0.50		0.50		0.50	0.50	
Incremental Delay d_2		32.6			4.1	15.4		2.6		8.5	1.0	
PF Factor		1.000			1.000	1.000		1.000		1.000	1.000	
Control Delay		52.2			20.1	33.9		17.0		24.1	13.9	
Lane Group LOS		D			C	C		B		C	B	
Approach Delay	52.2			27.5			17.0			19.5		
Approach LOS	D			C			B			B		
Intersection Delay	29.0			Intersection LOS						C		

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P.M. PEAK HOUR

SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	LIBERTY AVE & SEVENTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0		3		1					
Lane Group		TR			T		L					
Volume (vph)		309	356		316		251					
% Heavy Vehicles		15	15		18		10					
PHF		0.96	0.96		0.80		0.87					
Pretimed/Actuated (P/A)		P	P		P		P					
Startup Lost Time		2.0			2.0		2.0					
Extension of Effective Green		2.0			2.0		2.0					
Arrival Type		3			3		3					
Unit Extension		3.0			3.0		3.0					
Ped/Bike/RTOR Volume	200	0	0	0	0		0	0				
Lane Width		11.0			11.0		12.0					
Parking/Grade/Parking	N	0	N	N	0	N	N	-2	N			
Parking/Hour												
Bus Stops/Hour		0			0		0					
Minimum Pedestrian Time		18.3			3.2			3.2				

Phasing	Thru & RT	Thru & RT	03	04	NB Only	06	07	08
Timing	G = 18.0	G = 27.0	G =	G =	G = 32.0	G =	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		693			395		289					
Lane Group Capacity		1202			2035		530					
v/c Ratio		0.58			0.19		0.55					
Green Ratio		0.53			0.53		0.36					
Uniform Delay d_1		14.2			10.9		23.2					
Delay Factor k		0.50			0.50		0.50					
Incremental Delay d_2		2.0			0.2		4.0					
PF Factor		1.000			1.000		1.000					
Control Delay		16.2			11.1		27.2					
Lane Group LOS		B			B		C					
Approach Delay	16.2			11.1			27.2					
Approach LOS	B			B			C					
Intersection Delay	17.0			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	LIBERTY AVE & SMITHFIELD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0	0	3		1		1			
Lane Group		TR			LT		L		R			
Volume (vph)		309	1	37	215		100		178			
% Heavy Vehicles		28	28	36	36		2		2			
PHF		0.88	0.88	0.86	0.86		0.83		0.83			
Pretimed/Actuated (P/A)		P	P	P	P		P		P			
Startup Lost Time		2.0			2.0		2.0		2.0			
Extension of Effective Green		2.0			2.0		2.0		2.0			
Arrival Type		3			3		3		3			
Unit Extension		3.0			3.0		3.0		3.0			
Ped/Bike/RTOR Volume	200	0	0	0	0		200	0	0			
Lane Width		11.0			11.0		11.0		13.0			
Parking/Grade/Parking	N	1	N	N	-1	N	N	-2	N			
Parking/Hour												
Bus Stops/Hour		0			0		0		0			
Minimum Pedestrian Time		18.0			3.2			18.5				

Phasing	WB Only	EW Perm	03	04	NB Only	06	07	08
Timing	G = 10.0	G = 39.0	G =	G =	G = 28.0	G =	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		352			293		120		214			
Lane Group Capacity		1059			1584		484		374			
v/c Ratio		0.33			0.18		0.25		0.57			
Green Ratio		0.43			0.58		0.31		0.31			
Uniform Delay d_1		16.9			9.0		23.1		26.0			
Delay Factor k		0.50			0.50		0.50		0.50			
Incremental Delay d_2		0.8			0.3		1.2		6.2			
PF Factor		1.000			1.000		1.000		1.000			
Control Delay		17.7			9.2		24.4		32.2			
Lane Group LOS		B			A		C		C			
Approach Delay	17.7			9.2			29.4					
Approach LOS	B			A			C					
Intersection Delay	19.2			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	SEVENTH AVE & SMITHFIELD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	1	0		2	0	0	1	0
Lane Group		LTR			LTR			TR			LTR	
Volume (vph)	4	353	3	1	251	27		247	162	8	28	1
% Heavy Vehicles	2	2	2	9	9	9		1	1	100	100	100
PHF	0.92	0.92	0.92	0.94	0.94	0.94		0.79	0.79	0.82	0.82	0.82
Pretimed/Actuated (P/A)	P	P	P	P	P	P		P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	200	0	0	200	0	0	200	0	0	200	0	0
Lane Width		11.0			11.0			11.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		4.3			12.8			12.8			12.8	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		391			297			518			45	
Lane Group Capacity		1214			610			1187			322	
v/c Ratio		0.32			0.49			0.44			0.14	
Green Ratio		0.41			0.41			0.43			0.43	
Uniform Delay d_1		13.9			15.0			14.1			12.2	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		0.7			2.8			1.2			0.9	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		14.6			17.8			15.2			13.1	
Lane Group LOS		B			B			B			B	
Approach Delay	14.6			17.8			15.2			13.1		
Approach LOS	B			B			B			B		
Intersection Delay	15.6			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	GRANT ST & LIBERTY AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	1	0	1	1	0		3	0		2	0
Lane Group	L	TR		L	TR			TR			TR	
Volume (vph)	497	108	72	74	111	17		737	96		946	136
% Heavy Vehicles	20	20	20	61	61	61		10	10		1	1
PHF	0.75	0.75	0.75	0.77	0.77	0.77		0.79	0.79		0.93	0.93
Pretimed/Actuated (P/A)	P	P	P	P	P	P		P	P		P	P
Startup Lost Time	2.0	2.0		2.0	2.0			2.0			2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0			2.0	
Arrival Type	3	3		3	3			3			3	
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	200	0	0	200	0	0	200	0	0	200	0	0
Lane Width	11.0	11.0		12.0	12.0			11.0			13.0	
Parking/Grade/Parking	N	1	N	N	-2	N	N	-2	N	N	1	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0			0	
Minimum Pedestrian Time		21.7			21.7			27.5			26.0	

Phasing	WB Only	WB Only	EB Only	04	Thru & RT	Thru & RT	07	08
Timing	G = 21.0	G = 19.0	G = 28.0	G =	G = 41.0	G = 18.0	G =	G =
	Y = 5	Y = 5	Y = 6	Y =	Y = 5	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 153.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	663	240		96	166			1055			1163	
Lane Group Capacity	463	236		256	301			1650			1317	
v/c Ratio	1.43	1.02		0.38	0.55			0.64			0.88	
Green Ratio	0.18	0.18		0.29	0.29			0.42			0.42	
Uniform Delay d_1	62.5	62.5		42.8	45.5			35.3			41.0	
Delay Factor k	0.50	0.50		0.50	0.50			0.50			0.50	
Incremental Delay d_2	206.5	63.0		4.2	7.1			1.9			8.8	
PF Factor	1.000	1.000		1.000	1.000			1.000			1.000	
Control Delay	269.0	125.5		47.0	52.6			37.2			49.9	
Lane Group LOS	F	F		D	D			D			D	
Approach Delay	230.9			50.5			37.2			49.9		
Approach LOS	F			D			D			D		
Intersection Delay	94.3			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	GRANT ST & ELEVENTH ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1		2				1	2			2	0
Lane Group	L		R				L	T			TR	
Volume (vph)	142		369				153	856			715	89
% Heavy Vehicles	1		1				4	4			1	1
PHF	0.82		0.82				0.87	0.87			0.87	0.87
Pretimed/Actuated (P/A)	P						P	P			P	P
Startup Lost Time	2.0		2.0				2.0	2.0			2.0	
Extension of Effective Green	2.0		2.0				2.0	2.0			2.0	
Arrival Type	3		3				3	3			3	
Unit Extension	3.0		3.0				3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0				0	0		0	0	0
Lane Width	11.0		12.0				11.0	12.0			12.0	
Parking/Grade/Parking	N	-1	N				N	-1	N	N	1	N
Parking/Hour												
Bus Stops/Hour	0		0				0	0			0	
Minimum Pedestrian Time		3.2						3.2			23.2	

Phasing	EB Only	Peds Only	03	04	NB Only	Thru & RT	NB Only	08
Timing	G = 21.0	G = 19.0	G =	G =	G = 28.0	G = 41.0	G = 18.0	G =
	Y = 5	Y = 5	Y =	Y =	Y = 6	Y = 5	Y = 5	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 153.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	173		450				176	984			924	
Lane Group Capacity	215		301				456	2015			845	
v/c Ratio	0.80		1.50				0.39	0.49			1.09	
Green Ratio	0.14		0.12				0.30	0.64			0.27	
Uniform Delay d_1	64.0		67.5				42.3	14.4			56.0	
Delay Factor k	0.50		0.50				0.50	0.50			0.50	
Incremental Delay d_2	26.5		239.6				2.5	0.8			59.6	
PF Factor	1.000		1.000				1.000	1.000			1.000	
Control Delay	90.5		307.1				44.8	15.2			115.6	
Lane Group LOS	F		F				D	B			F	
Approach Delay	246.9						19.7			115.6		
Approach LOS	F						B			F		
Intersection Delay	104.8			Intersection LOS			F					

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	GRANT ST & SEVENTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	1	1	2	0	1	2	0
Lane Group		LTR			LT	R	L	TR		L	TR	
Volume (vph)	11	527	79	116	340	229	87	404	166	412	560	55
% Heavy Vehicles	5	5	5	4	4	4	12	12	12	4	4	4
PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.89	0.89	0.89	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Arrival Type		3			3	3	3	3		3	3	
Unit Extension		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	200	0	0	200	0	0	200	0	0	200	0	0
Lane Width		11.0			10.0	13.0	11.0	11.0		11.0	11.0	
Parking/Grade/Parking	N	5	N	N	-5	N	N	-1	N	N	2	N
Parking/Hour												
Bus Stops/Hour		0			0	0	0	0		0	0	
Minimum Pedestrian Time		18.3			18.5			19.5			18.3	

Phasing	EW Perm	02	03	04	Excl. Left	NS Perm	07	08
Timing	G = 26.0	G =	G =	G =	G = 23.0	G = 28.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		710			524	263	98	641		448	669	
Lane Group Capacity		757			469	791	451	793		486	904	
v/c Ratio		0.94			1.12	0.33	0.22	0.81		0.92	0.74	
Green Ratio		0.29			0.29	0.60	0.60	0.31		0.60	0.31	
Uniform Delay d_1		31.2			32.0	9.0	9.3	28.5		18.2	27.7	
Delay Factor k		0.50			0.50	0.50	0.50	0.50		0.50	0.50	
Incremental Delay d_2		20.7			77.6	1.1	1.1	8.7		25.4	5.4	
PF Factor		1.000			1.000	1.000	1.000	1.000		1.000	1.000	
Control Delay		51.9			109.6	10.1	10.4	37.2		43.6	33.2	
Lane Group LOS		D			F	B	B	D		D	C	
Approach Delay	51.9			76.4			33.7			37.4		
Approach LOS	D			E			C			D		
Intersection Delay	48.8			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	GRANT ST & SIXTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	2	0	1	2	0	1	2	0
Lane Group		LTR			LTR		L	TR		L	TR	
Volume (vph)	82	284	50	105	290	200	115	376	182	171	540	44
% Heavy Vehicles	7	7	7	4	4	4	12	12	12	4	4	4
PHF	0.83	0.83	0.83	0.94	0.94	0.94	0.95	0.95	0.95	0.75	0.75	0.75
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0		2.0	2.0		2.0	2.0	
Arrival Type		3			3		3	3		3	3	
Unit Extension		3.0			3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	224	0	0	340	0	0	569	0	0	236	0	0
Lane Width		12.0			11.0		12.0	10.0		12.0	10.0	
Parking/Grade/Parking	N	4	N	N	-5	N	N	-1	N	N	2	N
Parking/Hour												
Bus Stops/Hour		0			0		0	0		0	0	
Minimum Pedestrian Time		18.5			19.2			19.5			13.8	

Phasing	EB Only	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 7.0	G = 30.0	G =	G =	G = 7.0	G = 30.0	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		501			634		121	588		228	779	
Lane Group Capacity		322			755		199	768		255	938	
v/c Ratio		1.56			0.84		0.61	0.77		0.89	0.83	
Green Ratio		0.44			0.33		0.44	0.33		0.44	0.33	
Uniform Delay d_1		25.0			27.8		17.4	26.9		28.5	27.7	
Delay Factor k		0.50			0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2		264.9			10.9		13.1	7.2		34.6	8.5	
PF Factor		1.000			1.000		1.000	1.000		1.000	1.000	
Control Delay		289.9			38.6		30.5	34.0		63.0	36.1	
Lane Group LOS		F			D		C	C		E	D	
Approach Delay	289.9			38.6			33.4			42.2		
Approach LOS	F			D			C			D		
Intersection Delay	82.8			Intersection LOS			F					

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	SIXTH AVE & ROSS ST/BIGELOW
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	3	0	0	2	0	0	2	0	0	2	
Lane Group	DefL	TR			LTR			LTR		DefL	T	
Volume (vph)	276	319	42	38	334	122	88	286	43	174	264	
% Heavy Vehicles	1	1	1	2	2	2	2	2	2	1	1	
PHF	0.82	0.82	0.82	0.93	0.93	0.93	0.77	0.77	0.77	0.87	0.87	
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	
Startup Lost Time	2.0	2.0			2.0			2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0			2.0			2.0		2.0	2.0	
Arrival Type	3	3			3			3		3	3	
Unit Extension	3.0	3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	200	0	4	200	0	12	200	0	4	200	0	
Lane Width	12.0	11.0			11.0			12.0		12.0	11.0	
Parking/Grade/Parking	N	5	N	N	-6	N	N	-1	N	N	-1	N
Parking/Hour												
Bus Stops/Hour	0	0			0			0		0	0	
Minimum Pedestrian Time		18.3			17.8			20.8			8.0	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 37.0	G =	G =	G =	G = 22.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	337	435			518			536		200	303	
Lane Group Capacity	376	1561			1405			760		188	517	
v/c Ratio	0.90	0.28			0.37			0.71		1.06	0.59	
Green Ratio	0.53	0.53			0.53			0.31		0.31	0.31	
Uniform Delay d_1	14.8	9.1			9.7			21.1		24.0	20.2	
Delay Factor k	0.50	0.50			0.50			0.50		0.50	0.50	
Incremental Delay d_2	26.4	0.4			0.7			5.4		83.6	4.8	
PF Factor	1.000	1.000			1.000			1.000		1.000	1.000	
Control Delay	41.2	9.6			10.4			26.6		107.6	25.0	
Lane Group LOS	D	A			B			C		F	C	
Approach Delay	23.4			10.4			26.6			57.8		
Approach LOS	C			B			C			E		
Intersection Delay	28.7			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	WASHINGTON PL & BEDFORD/CENTRE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	1					2	1	1	2	0
Lane Group	L	LTR	R					T	R	L	LTR	
Volume (vph)	895	167	83					1163	261	277	159	134
% Heavy Vehicles	1	1	1					0	0	3	3	3
PHF	0.97	0.97	0.97					0.92	0.92	0.89	0.89	0.89
Pretimed/Actuated (P/A)	P	P	P					P	P	P	P	
Startup Lost Time	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Arrival Type	3	3	3					3	3	3	3	
Unit Extension	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	150	0	0				0	0	26	0	0	0
Lane Width	11.0	11.0	12.0					12.0	12.0	16.0	10.0	
Parking/Grade/Parking	N	5	N				N	-1	N	N	6	N
Parking/Hour												
Bus Stops/Hour	0	0	0					0	0	0	0	
Minimum Pedestrian Time		15.5						3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = 26.0	G =	G =	G =	G = 29.0	G = 20.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	545	554	82				1264	255	156	485		
Lane Group Capacity	438	444	300				1054	471	385	597		
v/c Ratio	1.24	1.25	0.27				1.20	0.54	0.41	0.81		
Green Ratio	0.29	0.29	0.29				0.32	0.32	0.22	0.22		
Uniform Delay d_1	32.0	32.0	24.7				30.5	25.0	29.9	33.2		
Delay Factor k	0.50	0.50	0.50				0.50	0.50	0.50	0.50		
Incremental Delay d_2	127.9	129.1	2.2				99.0	4.4	3.1	11.5		
PF Factor	1.000	1.000	1.000				1.000	1.000	1.000	1.000		
Control Delay	159.9	161.1	26.9				129.5	29.5	33.1	44.7		
Lane Group LOS	F	F	C				F	C	C	D		
Approach Delay	151.2						112.7		41.9			
Approach LOS	F						F		D			
Intersection Delay	112.7			Intersection LOS					F			

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	BEDFORD AVE & LEMIEUX PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	0	0	1	0			
Lane Group		LTR			LTR			LTR				
Volume (vph)	495	129	1	19	164	152	69	69	3			
% Heavy Vehicles	0	0	0	0	0	0	0	0	0			
PHF	0.90	0.90	0.90	0.86	0.86	0.86	0.94	0.94	0.94			
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A			
Startup Lost Time		2.0			2.0			2.0				
Extension of Effective Green		2.0			2.0			2.0				
Arrival Type		3			3			3				
Unit Extension		3.0			3.0			3.0				
Ped/Bike/RTOR Volume	50	0	0	50	0	0	50	0	0			
Lane Width		12.0			12.0			12.0				
Parking/Grade/Parking	N	10	N	N	-6	N	N	2	Y			
Parking/Hour									10			
Bus Stops/Hour		0			0			0				
Minimum Pedestrian Time		14.9			15.9			12.2				

Phasing	EB Only	WB Only	03	04	NB Only	06	07	08
Timing	G = 18.0	G = 10.5	G =	G =	G = 10.0	G =	G =	G =
	Y = 5.5	Y = 5.5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 55.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		694			390			149				
Lane Group Capacity		973			572			254				
v/c Ratio		0.71			0.68			0.59				
Green Ratio		0.33			0.19			0.18				
Uniform Delay d_1		16.2			20.7			20.6				
Delay Factor k		0.28			0.25			0.18				
Incremental Delay d_2		2.5			3.3			3.5				
PF Factor		1.000			1.000			1.000				
Control Delay		18.7			24.0			24.1				
Lane Group LOS		B			C			C				
Approach Delay	18.7			24.0			24.1					
Approach LOS	B			C			C					
Intersection Delay	21.1			Intersection LOS			C					

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	CRAWFORD ST & BEDFORD AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Group		LTR			LTR			LTR			LTR	
Volume (vph)	1	47	82	27	57	1	225	1	39	2	6	3
% Heavy Vehicles	2	2	2	2	2	2	3	3	3	0	0	0
PHF	0.88	0.88	0.88	0.87	0.87	0.87	0.89	0.89	0.89	0.55	0.55	0.55
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	25	0	8	25	0	0	25	0	4	25	0	0
Lane Width		16.0			12.0			14.0			10.0	
Parking/Grade/Parking	N	10	N	N	-6	Y	N	8	N	N	-6	Y
Parking/Hour						5						5
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		14.5			7.8			12.3			20.3	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 15.0	G =	G =	G =	G = 25.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 50.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		138			98			293			20	
Lane Group Capacity		484			396			604			655	
v/c Ratio		0.29			0.25			0.49			0.03	
Green Ratio		0.30			0.30			0.50			0.50	
Uniform Delay d_1		13.4			13.2			8.3			6.3	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		1.5			1.5			2.8			0.1	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		14.9			14.7			11.0			6.4	
Lane Group LOS		B			B			B			A	
Approach Delay	14.9			14.7			11.0			6.4		
Approach LOS	B			B			B			A		
Intersection Delay	12.5			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	CENTRE/RAMP & WASHINGTON PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	1	0	3	0	0	2	1
Lane Group		LTR			LT	R		LTR			LT	R
Volume (vph)	91	172	138	29	334	385	13	918	14	25	140	41
% Heavy Vehicles	2	2	2	2	2	2	1	1	1	9	9	9
PHF	0.77	0.77	0.77	0.87	0.87	0.87	0.84	0.84	0.84	0.91	0.91	0.91
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0		2.0			2.0	2.0
Extension of Effective Green		2.0			2.0	2.0		2.0			2.0	2.0
Arrival Type		3			3	3		3			3	3
Unit Extension		3.0			3.0	3.0		3.0			3.0	3.0
Ped/Bike/RTOR Volume	138	0	0	291	0	0	12	0	0	57	0	0
Lane Width		13.0			10.0	13.0		12.0			12.0	12.0
Parking/Grade/Parking	N	-1	N	N	-6	N	N	6	Y	N	-3	N
Parking/Hour									10			
Bus Stops/Hour		0			0	0		0			0	0
Minimum Pedestrian Time		24.6			25.7			21.3			3.6	

Phasing	EW Perm	Peds Only	03	04	NS Perm	06	07	08
Timing	G = 26.0	G = 20.0	G =	G =	G = 28.0	G =	G =	G =
	Y = 5.5	Y = 5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 90.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		520			417	443		1125			181	45
Lane Group Capacity		588			773	307		1232			680	398
v/c Ratio		0.88			0.54	1.44		0.91			0.27	0.11
Green Ratio		0.29			0.29	0.29		0.31			0.31	0.31
Uniform Delay d_1		30.6			27.0	32.0		29.8			23.3	22.1
Delay Factor k		0.50			0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2		17.5			2.7	216.9		11.8			1.0	0.6
PF Factor		1.000			1.000	1.000		1.000			1.000	1.000
Control Delay		48.1			29.6	248.9		41.6			24.2	22.7
Lane Group LOS		D			C	F		D			C	C
Approach Delay	48.1			142.6			41.6			23.9		
Approach LOS	D			F			D			C		
Intersection Delay	73.2			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	CENTRE/RAMP & WASHINGTON PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0				0	3	0	0	2	1
Lane Group		LTR						LTR			LT	R
Volume (vph)	31	16	16				13	918	14	25	140	41
% Heavy Vehicles	0	0	0				1	1	1	9	9	9
PHF	0.81	0.81	0.81				0.84	0.84	0.84	0.91	0.91	0.91
Pretimed/Actuated (P/A)	P	P	P				P	P	P	P	P	P
Startup Lost Time		2.0						2.0			2.0	2.0
Extension of Effective Green		2.0						2.0			2.0	2.0
Arrival Type		3						3			3	3
Unit Extension		3.0						3.0			3.0	3.0
Ped/Bike/RTOR Volume	138	0	0				12	0	0	57	0	0
Lane Width		12.0						12.0			12.0	12.0
Parking/Grade/Parking	N	6	N				N	6	Y	N	-3	N
Parking/Hour									10			
Bus Stops/Hour		0						0			0	0
Minimum Pedestrian Time		24.6						21.3			3.6	

Phasing	Peds Only	EB Only	03	04	NS Perm	06	07	08
Timing	G = 26.0	G = 20.0	G =	G =	G = 28.0	G =	G =	G =
	Y = 5.5	Y = 5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		78						1125			181	45
Lane Group Capacity		627						1232			680	383
v/c Ratio		0.12						0.91			0.27	0.12
Green Ratio		0.22						0.31			0.31	0.31
Uniform Delay d_1		28.0						29.8			23.3	22.2
Delay Factor k		0.50						0.50			0.50	0.50
Incremental Delay d_2		0.4						11.8			1.0	0.6
PF Factor		1.000						1.000			1.000	1.000
Control Delay		28.4						41.6			24.2	22.8
Lane Group LOS		C						D			C	C
Approach Delay		28.4						41.6			24.0	
Approach LOS		C						D			C	
Intersection Delay		38.1			Intersection LOS						D	

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	CENTRE AVE & LEMIEUX PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	0				0	1	0
Lane Group		LTR			LTR						LTR	
Volume (vph)	46	264	2	1	664	85				9	1	61
% Heavy Vehicles	3	3	3	1	1	1				0	0	0
PHF	0.86	0.86	0.86	0.85	0.85	0.85				0.64	0.64	0.64
Pretimed/Actuated (P/A)	P	P	P	P	P	P				P	P	P
Startup Lost Time		2.0			2.0						2.0	
Extension of Effective Green		2.0			2.0						2.0	
Arrival Type		3			3						3	
Unit Extension		3.0			3.0						3.0	
Ped/Bike/RTOR Volume	0	0	0	120	0	9				54	0	0
Lane Width		11.0			11.0						12.0	
Parking/Grade/Parking	N	4	Y	N	-2	Y				N	-5	Y
Parking/Hour			20			20						20
Bus Stops/Hour		0			0						0	
Minimum Pedestrian Time		3.2			13.8						21.5	

Phasing	EW Perm	02	03	04	SB Only	06	07	08
Timing	G = 38.0	G =	G =	G =	G = 21.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		362			871						111	
Lane Group Capacity		1126			1429						353	
v/c Ratio		0.32			0.61						0.31	
Green Ratio		0.54			0.54						0.30	
Uniform Delay d_1		8.9			10.9						18.9	
Delay Factor k		0.50			0.50						0.50	
Incremental Delay d_2		0.8			1.9						2.3	
PF Factor		1.000			1.000						1.000	
Control Delay		9.6			12.9						21.3	
Lane Group LOS		A			B						C	
Approach Delay	9.6			12.9						21.3		
Approach LOS	A			B						C		
Intersection Delay	12.7			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	CENTRE AVE & CRAWFORD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	1	1	1	0	0	1	0	0	1	0
Lane Group		LT	R	L	TR			LTR			LTR	
Volume (vph)	53	143	214	25	183	38	155	188	76	18	61	63
% Heavy Vehicles	5	5	5	4	4	4	4	4	4	9	9	9
PHF	0.87	0.87	0.87	0.90	0.90	0.90	0.83	0.83	0.83	0.85	0.85	0.85
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0	2.0	2.0	2.0			2.0			2.0	
Extension of Effective Green		2.0	2.0	2.0	2.0			2.0			2.0	
Arrival Type		3	3	3	3			3			3	
Unit Extension		3.0	3.0	3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	50	0	0	50	0	4	50	0	8	50	0	6
Lane Width		15.0	16.0	11.0	11.0			14.0			13.0	
Parking/Grade/Parking	N	-4	Y	N	8	Y	N	5	N	N	-6	N
Parking/Hour			10			10						
Bus Stops/Hour		0	0	0	0			0			0	
Minimum Pedestrian Time		22.7			13.5			14.7			14.7	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 30.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		225	246	28	241			496			160	
Lane Group Capacity		668	549	378	538			570			604	
v/c Ratio		0.34	0.45	0.07	0.45			0.87			0.26	
Green Ratio		0.43	0.43	0.43	0.43			0.43			0.43	
Uniform Delay d_1		13.4	14.1	11.8	14.1			18.2			12.9	
Delay Factor k		0.50	0.50	0.50	0.50			0.50			0.50	
Incremental Delay d_2		1.4	2.6	0.4	2.7			16.5			1.1	
PF Factor		1.000	1.000	1.000	1.000			1.000			1.000	
Control Delay		14.7	16.8	12.2	16.8			34.7			14.0	
Lane Group LOS		B	B	B	B			C			B	
Approach Delay	15.8			16.3			34.7			14.0		
Approach LOS	B			B			C			B		
Intersection Delay	22.4			Intersection LOS			C					

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	CENTRE AVE & DEVILLERS ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Group		LTR			LTR			LTR			LTR	
Volume (vph)	51	262	4	2	270	30	4	2	7	4	1	40
% Heavy Vehicles	4	4	4	6	6	6	0	0	0	0	0	0
PHF	0.89	0.89	0.89	0.96	0.96	0.96	0.65	0.65	0.65	0.83	0.83	0.83
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	50	0	0	50	0	3	50	0	1	50	0	4
Lane Width		16.0			10.0			11.0			11.0	
Parking/Grade/Parking	N	-2	N	N	-1	Y	N	0	Y	N	-6	Y
Parking/Hour						5			5			5
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		11.5			13.0			14.8			13.5	

Phasing	EW Perm	EB Only	03	04	NS Perm	06	07	08
Timing	G = 24.0	G = 21.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		355			311			18			49	
Lane Group Capacity		1115			389			275			275	
v/c Ratio		0.32			0.80			0.07			0.18	
Green Ratio		0.64			0.30			0.24			0.24	
Uniform Delay d_1		6.6			25.8			23.6			24.3	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		0.8			15.7			0.5			1.4	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		7.3			41.5			24.1			25.7	
Lane Group LOS		A			D			C			C	
Approach Delay		7.3			41.5			24.1			25.7	
Approach LOS		A			D			C			C	
Intersection Delay		23.5			Intersection LOS						C	

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	CENTRE AVE & DINWIDDLE ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		1	0	0	1		0		0			
Lane Group		TR			LT			LR				
Volume (vph)		232	44	60	254		20		84			
% Heavy Vehicles		4	4	6	6		2		2			
PHF		0.89	0.89	0.96	0.96		0.86		0.86			
Pretimed/Actuated (P/A)		P	P	P	P		P		P			
Startup Lost Time		2.0			2.0			2.0				
Extension of Effective Green		2.0			2.0			2.0				
Arrival Type		3			3			3				
Unit Extension		3.0			3.0			3.0				
Ped/Bike/RTOR Volume	50	0	4	0	0		50	0	0			
Lane Width		16.0			16.0			16.0				
Parking/Grade/Parking	N	-2	N	N	-1	N	N	4	Y			
Parking/Hour									5			
Bus Stops/Hour		0			0			0				
Minimum Pedestrian Time		16.0			12.7			13.5				

Phasing	EW Perm	WB Only	03	04	NB Only	06	07	08
Timing	G = 24.0	G = 21.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		306			328			121				
Lane Group Capacity		547			970			341				
v/c Ratio		0.56			0.34			0.35				
Green Ratio		0.30			0.64			0.24				
Uniform Delay d_1		23.6			6.7			25.4				
Delay Factor k		0.50			0.50			0.50				
Incremental Delay d_2		4.1			0.9			2.9				
PF Factor		1.000			1.000			1.000				
Control Delay		27.6			7.6			28.3				
Lane Group LOS		C			A			C				
Approach Delay	27.6			7.6			28.3					
Approach LOS	C			A			C					
Intersection Delay	19.1			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	FIFTH AVE & WASHINGTON/CHATHAM
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				0	2	0	1	1			1	2
Lane Group					LTR		L	T			T	R
Volume (vph)				54	779	236	130	395			151	254
% Heavy Vehicles				5	5	5	0	0			2	2
PHF				0.86	0.86	0.86	0.82	0.82			0.80	0.80
Pretimed/Actuated (P/A)				P	P	P	P	P			P	P
Startup Lost Time					2.0		2.0	2.0			2.0	2.0
Extension of Effective Green					2.0		2.0	2.0			2.0	2.0
Arrival Type					3		3	3			3	3
Unit Extension					3.0		3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume				193	0	24	0	0		21	0	0
Lane Width					11.0		10.0	9.0			11.0	12.0
Parking/Grade/Parking				Y	-2	Y	N	-6	N	N	-2	N
Parking/Hour				20		20						
Bus Stops/Hour					0		0	0			0	0
Minimum Pedestrian Time					26.4			3.2			15.3	

Phasing	WB Only	02	03	04	NS Perm	06	07	08
Timing	G = 39.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate					1216		159	482			189	317
Lane Group Capacity					1165		384	594			614	929
v/c Ratio					1.04		0.41	0.81			0.31	0.34
Green Ratio					0.49		0.38	0.38			0.38	0.38
Uniform Delay d_1					20.5		18.5	22.5			17.7	17.9
Delay Factor k					0.50		0.50	0.50			0.50	0.50
Incremental Delay d_2					38.5		3.3	11.5			1.3	1.0
PF Factor					1.000		1.000	1.000			1.000	1.000
Control Delay					59.0		21.8	33.9			19.0	18.9
Lane Group LOS					E		C	C			B	B
Approach Delay					59.0			30.9			18.9	
Approach LOS					E			C			B	
Intersection Delay	42.8			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	FORBES AVE & ARMSTRONG TUNNEL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0				0		2			
Lane Group		TR						LR	R			
Volume (vph)		569	608				107		434			
% Heavy Vehicles		4	4				1		1			
PHF		0.90	0.90				0.97		0.97			
Pretimed/Actuated (P/A)		P	P				P		P			
Startup Lost Time		2.0						2.0	2.0			
Extension of Effective Green		2.0						2.0	2.0			
Arrival Type		3						3	3			
Unit Extension		3.0						3.0	3.0			
Ped/Bike/RTOR Volume	50	0	0				0	0	43			
Lane Width		11.0						11.0	11.0			
Parking/Grade/Parking	N	3	N				N	0	N			
Parking/Hour												
Bus Stops/Hour		0						0	0			
Minimum Pedestrian Time		17.3						3.2				

Phasing	EB Only	02	03	04	NB Only	06	07	08
Timing	G = 41.0	G =	G =	G =	G = 29.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		1308						263	250			
Lane Group Capacity		1374						530	892			
v/c Ratio		0.95						0.50	0.28			
Green Ratio		0.51						0.36	0.36			
Uniform Delay d_1		18.6						19.8	18.1			
Delay Factor k		0.50						0.50	0.50			
Incremental Delay d_2		15.2						3.3	0.8			
PF Factor		1.000						1.000	1.000			
Control Delay		33.8						23.1	18.9			
Lane Group LOS		C						C	B			
Approach Delay	33.8						21.1					
Approach LOS	C						C					
Intersection Delay	30.2			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	FORBES AVE & CHATHAM/McANULTY
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0					1	1	0	1	
Lane Group	L	TR						T	R		LT	
Volume (vph)	348	585	71					170	134	154	54	
% Heavy Vehicles	4	4	4					0	0	1	1	
PHF	0.88	0.88	0.88					0.71	0.71	0.80	0.80	
Pretimed/Actuated (P/A)	P	P	P					P	P	P	P	
Startup Lost Time	2.0	2.0						2.0	2.0		2.0	
Extension of Effective Green	2.0	2.0						2.0	2.0		2.0	
Arrival Type	3	3						3	3		3	
Unit Extension	3.0	3.0						3.0	3.0		3.0	
Ped/Bike/RTOR Volume	87	0	0				59	0	13	21	0	
Lane Width	10.0	11.0						10.0	11.0		10.0	
Parking/Grade/Parking	N	3	N				N	-6	N	N	10	N
Parking/Hour												
Bus Stops/Hour	0	0						0	0		0	
Minimum Pedestrian Time		14.2						12.6			12.3	

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 51.0	G =	G =	G =	G = 19.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	395	746						239	170		259	
Lane Group Capacity	915	1856						390	318		125	
v/c Ratio	0.43	0.40						0.61	0.53		2.07	
Green Ratio	0.64	0.64						0.24	0.24		0.24	
Uniform Delay d_1	7.3	7.1						27.2	26.6		30.5	
Delay Factor k	0.50	0.50						0.50	0.50		0.50	
Incremental Delay d_2	1.5	0.7						7.0	6.3		508.8	
PF Factor	1.000	1.000						1.000	1.000		1.000	
Control Delay	8.7	7.7						34.2	32.9		539.3	
Lane Group LOS	A	A						C	C		F	
Approach Delay	8.1						33.7			539.3		
Approach LOS	A						C			F		
Intersection Delay	89.9			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	GRANT ST & BLVD OF ALLIES
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	1		2	0	0	2	0		2	0
Lane Group		LT	R		TR			LTR			TR	
Volume (vph)	19	730	407		385	79	51	587	161		852	116
% Heavy Vehicles	0	0	0		4	4	0	0	0		0	0
PHF	0.93	0.93	0.93		0.88	0.88	0.82	0.82	0.82		0.91	0.91
Pretimed/Actuated (P/A)	P	P	P		P	P	P	P	P		P	P
Startup Lost Time		2.0	2.0		2.0			2.0			2.0	
Extension of Effective Green		2.0	2.0		2.0			2.0			2.0	
Arrival Type		3	3		3			3			3	
Unit Extension		3.0	3.0		3.0			3.0			3.0	
Ped/Bike/RTOR Volume	200	0	8	200	0	0	200	0	0	200	0	0
Lane Width		11.0	12.0		12.0			11.0			11.0	
Parking/Grade/Parking	N	0	N	N	-2	N	N	1	N	N	-1	N
Parking/Hour												
Bus Stops/Hour		0	0		0			0			0	
Minimum Pedestrian Time		19.5			18.5			29.5			20.8	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 40.0	G =	G =	G =	G = 39.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 6	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		805	429		528			974			1063	
Lane Group Capacity		1306	624		1338			911			1346	
v/c Ratio		0.62	0.69		0.39			1.07			0.79	
Green Ratio		0.44	0.44		0.44			0.43			0.43	
Uniform Delay d_1		19.1	20.0		16.8			25.5			22.0	
Delay Factor k		0.50	0.50		0.50			0.50			0.50	
Incremental Delay d_2		2.2	6.1		0.9			50.1			4.8	
PF Factor		1.000	1.000		1.000			1.000			1.000	
Control Delay		21.3	26.1		17.7			75.6			26.7	
Lane Group LOS		C	C		B			E			C	
Approach Delay	23.0			17.7			75.6			26.7		
Approach LOS	C			B			E			C		
Intersection Delay	36.8			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	GRANT ST & FIRST AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				0		0		2	1	1	2	
Lane Group					LR			T	R	L	T	
Volume (vph)				368		59		740	159	80	714	
% Heavy Vehicles				3		3		2	2	1	1	
PHF				0.81		0.81		0.87	0.87	0.91	0.91	
Pretimed/Actuated (P/A)				P		P		P	P	P	P	
Startup Lost Time					2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green					2.0			2.0	2.0	2.0	2.0	
Arrival Type					3			3	3	3	3	
Unit Extension					3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume				0	0	0	200	0	16	0	0	
Lane Width					12.0			11.0	12.0	10.0	12.0	
Parking/Grade/Parking				N	2	N	N	3	N	N	-3	N
Parking/Hour												
Bus Stops/Hour					0			0	0	0	0	
Minimum Pedestrian Time					18.7			13.6			3.2	

Phasing	WB Only	02	03	04	SB Only	NS Perm	07	08
Timing	G = 29.0	G =	G =	G =	G = 3.0	G = 45.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 3	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate					527			851	164	88	785	
Lane Group Capacity					498			1520	562	236	1854	
v/c Ratio					1.06			0.56	0.29	0.37	0.42	
Green Ratio					0.32			0.50	0.50	0.57	0.57	
Uniform Delay d_1					30.5			15.6	13.2	10.5	11.1	
Delay Factor k					0.50			0.50	0.50	0.50	0.50	
Incremental Delay d_2					56.6			1.5	1.3	4.5	0.7	
PF Factor					1.000			1.000	1.000	1.000	1.000	
Control Delay					87.1			17.1	14.5	14.9	11.8	
Lane Group LOS					F			B	B	B	B	
Approach Delay					87.1			16.7			12.1	
Approach LOS					F			B			B	
Intersection Delay	30.4			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	GRANT ST & FORT PITT/1-376
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1				1	1		2			1	1
Lane Group	L				TR	R		T			T	R
Volume (vph)	226				355	227		464			581	501
% Heavy Vehicles	1				2	2		1			1	1
PHF	0.89				0.85	0.85		0.81			0.96	0.96
Pretimed/Actuated (P/A)	P				P	P		P			P	P
Startup Lost Time	2.0				2.0	2.0		2.0			2.0	2.0
Extension of Effective Green	2.0				2.0	2.0		2.0			2.0	2.0
Arrival Type	3				3	3		3			3	3
Unit Extension	3.0				3.0	3.0		3.0			3.0	3.0
Ped/Bike/RTOR Volume	100	0		0	0	0	0	0		0	0	0
Lane Width	12.0				13.0	12.0		10.0			12.0	12.0
Parking/Grade/Parking	N	0	N	N	2	N	N	3	N	N	-1	N
Parking/Hour												
Bus Stops/Hour	0				0	0		0			0	0
Minimum Pedestrian Time		17.6			3.2			3.2			3.2	

Phasing	EB Only	WB Only	03	04	Thru & RT	06	07	08
Timing	G = 27.0	G = 25.0	G =	G =	G = 22.0	G =	G =	G =
	Y = 5	Y = 5	Y =	Y =	Y = 6	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	254				431	254		573			605	522
Lane Group Capacity	482				474	392		725			416	353
v/c Ratio	0.53				0.91	0.65		0.79			1.45	1.48
Green Ratio	0.30				0.28	0.28		0.24			0.24	0.24
Uniform Delay d_1	26.2				31.4	28.6		31.8			34.0	34.0
Delay Factor k	0.50				0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2	4.1				24.0	8.0		8.6			217.5	230.2
PF Factor	1.000				1.000	1.000		1.000			1.000	1.000
Control Delay	30.3				55.4	36.7		40.4			251.5	264.2
Lane Group LOS	C				E	D		D			F	F
Approach Delay	30.3			48.4			40.4			257.4		
Approach LOS	C			D			D			F		
Intersection Delay	134.2			Intersection LOS						F		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	SECOND AVE/COURT & ROSS ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	PM PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0		1	1	0	1	0	1	1	0
Lane Group		LTR			T	R		LTR		L	TR	
Volume (vph)	16	283	4		374	185	10	163	96	322	104	23
% Heavy Vehicles	0	0	0		5	5	0	0	0	4	4	4
PHF	0.82	0.82	0.82		0.85	0.85	0.86	0.86	0.86	0.85	0.85	0.85
Pretimed/Actuated (P/A)	P	P	P		P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0		2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0	2.0		2.0		2.0	2.0	
Arrival Type		3			3	3		3		3	3	
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	10	100	0	0
Lane Width		13.0			11.0	14.0		14.0		10.0	10.0	
Parking/Grade/Parking	Y	-2	Y	N	5	N	N	2	Y	N	-3	N
Parking/Hour	10		10						10			
Bus Stops/Hour		0			0	0		0		0	0	
Minimum Pedestrian Time		13.2			13.2			12.7			8.7	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		370			440	218		302		379	149	
Lane Group Capacity		568			636	524		595		340	636	
v/c Ratio		0.65			0.69	0.42		0.51		1.11	0.23	
Green Ratio		0.41			0.41	0.41		0.43		0.43	0.43	
Uniform Delay d_1		16.4			16.8	14.5		14.6		20.0	12.7	
Delay Factor k		0.50			0.50	0.50		0.50		0.50	0.50	
Incremental Delay d_2		5.7			6.1	2.4		3.1		83.4	0.9	
PF Factor		1.000			1.000	1.000		1.000		1.000	1.000	
Control Delay		22.2			22.9	16.9		17.7		103.4	13.6	
Lane Group LOS		C			C	B		B		F	B	
Approach Delay	22.2			20.9			17.7			78.1		
Approach LOS	C			C			B			E		
Intersection Delay	36.9			Intersection LOS						D		

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ARENA PEAK HOUR

SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	LIBERTY AVE & SEVENTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0		3		1					
Lane Group		TR			T		L					
Volume (vph)		168	345		181		259					
% Heavy Vehicles		9	9		8		7					
PHF		0.93	0.93		0.87		0.88					
Pretimed/Actuated (P/A)		P	P		P		P					
Startup Lost Time		2.0			2.0		2.0					
Extension of Effective Green		2.0			2.0		2.0					
Arrival Type		3			3		3					
Unit Extension		3.0			3.0		3.0					
Ped/Bike/RTOR Volume	100	0	0	0	0		0	0				
Lane Width		11.0			11.0		12.0					
Parking/Grade/Parking	N	0	N	N	0	N	N	-2	N			
Parking/Hour												
Bus Stops/Hour		0			0		0					
Minimum Pedestrian Time		17.5			3.2			3.2				

Phasing	Thru & RT	Thru & RT	03	04	NB Only	06	07	08
Timing	G = 9.0	G = 24.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 70.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		552			208		294					
Lane Group Capacity		1245			2144		526					
v/c Ratio		0.44			0.10		0.56					
Green Ratio		0.51			0.51		0.34					
Uniform Delay d_1		10.7			8.7		18.7					
Delay Factor k		0.50			0.50		0.50					
Incremental Delay d_2		1.1			0.1		4.2					
PF Factor		1.000			1.000		1.000					
Control Delay		11.8			8.8		22.9					
Lane Group LOS		B			A		C					
Approach Delay	11.8			8.8			22.9					
Approach LOS	B			A			C					
Intersection Delay	14.3			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	LIBERTY AVE & SMITHFIELD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0	0	3		1		1			
Lane Group		TR			LT		L		R			
Volume (vph)		169	1	17	111		70		112			
% Heavy Vehicles		16	16	19	19		3		3			
PHF		0.82	0.82	0.83	0.83		0.89		0.89			
Pretimed/Actuated (P/A)		P	P	P	P		P		P			
Startup Lost Time		2.0			2.0		2.0		2.0			
Extension of Effective Green		2.0			2.0		2.0		2.0			
Arrival Type		3			3		3		3			
Unit Extension		3.0			3.0		3.0		3.0			
Ped/Bike/RTOR Volume	100	0	0	0	0		100	0	0			
Lane Width		11.0			11.0		11.0		13.0			
Parking/Grade/Parking	N	1	N	N	-1	N	N	-2	N			
Parking/Hour												
Bus Stops/Hour		0			0		0		0			
Minimum Pedestrian Time		17.2			3.2			17.7				

Phasing	WB Only	EW Perm	03	04	NB Only	06	07	08
Timing	G = 6.0	G = 27.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		207			154		79		126			
Lane Group Capacity		1040			1744		528		461			
v/c Ratio		0.20			0.09		0.15		0.27			
Green Ratio		0.39			0.51		0.34		0.34			
Uniform Delay d_1		14.3			8.6		15.9		16.7			
Delay Factor k		0.50			0.50		0.50		0.50			
Incremental Delay d_2		0.4			0.1		0.6		1.5			
PF Factor		1.000			1.000		1.000		1.000			
Control Delay		14.7			8.7		16.5		18.1			
Lane Group LOS		B			A		B		B			
Approach Delay		14.7			8.7		17.5					
Approach LOS		B			A		B					
Intersection Delay		14.1			Intersection LOS				B			

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	SEVENTH AVE & SMITHFIELD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	1	0		2	0	0	1	0
Lane Group		LTR			LTR			TR			LTR	
Volume (vph)	4	343	1	2	259	25		152	105	7	11	1
% Heavy Vehicles	3	3	3	4	4	4		2	2	82	82	82
PHF	0.93	0.93	0.93	0.86	0.86	0.86		0.86	0.86	0.71	0.71	0.71
Pretimed/Actuated (P/A)	P	P	P	P	P	P		P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	0	100	0	0
Lane Width		11.0			11.0			11.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		3.7			12.2			12.2			12.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB	SB
Adjusted Flow Rate	374	332	299	26
Lane Group Capacity	1205	645	1206	349
v/c Ratio	0.31	0.51	0.25	0.07
Green Ratio	0.41	0.41	0.43	0.43
Uniform Delay d_1	13.8	15.3	12.8	11.8
Delay Factor k	0.50	0.50	0.50	0.50
Incremental Delay d_2	0.7	2.9	0.5	0.4
PF Factor	1.000	1.000	1.000	1.000
Control Delay	14.4	18.2	13.3	12.2
Lane Group LOS	B	B	B	B
Approach Delay	14.4	18.2	13.3	12.2
Approach LOS	B	B	B	B
Intersection Delay	15.3	Intersection LOS		B

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & LIBERTY AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	1	0	1	1	0		3	0		2	0
Lane Group	L	TR		L	TR			TR			TR	
Volume (vph)	156	29	44	38	34	14		456	36		574	71
% Heavy Vehicles	14	14	14	30	30	30		5	5		1	1
PHF	0.72	0.72	0.72	0.70	0.70	0.70		0.85	0.85		0.94	0.94
Pretimed/Actuated (P/A)	P	P	P	P	P	P		P	P		P	P
Startup Lost Time	2.0	2.0		2.0	2.0			2.0			2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0			2.0	
Arrival Type	3	3		3	3			3			3	
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	0	100	0	0
Lane Width	11.0	11.0		12.0	12.0			11.0			13.0	
Parking/Grade/Parking	N	1	N	N	-2	N	N	-2	N	N	1	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0			0	
Minimum Pedestrian Time		20.6			20.6			26.3			24.8	

Phasing	WB Only	WB Only	EB Only	04	Thru & RT	Thru & RT	07	08
Timing	G = 26.0	G = 19.0	G = 21.0	G =	G = 47.0	G = 14.0	G =	G =
	Y = 5	Y = 5	Y = 6	Y =	Y = 5	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 153.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	217	101		54	69			578			687	
Lane Group Capacity	365	180		379	404			1832			1387	
v/c Ratio	0.59	0.56		0.14	0.17			0.32			0.50	
Green Ratio	0.14	0.14		0.33	0.33			0.43			0.43	
Uniform Delay d_1	62.0	61.7		36.4	36.7			28.6			31.5	
Delay Factor k	0.50	0.50		0.50	0.50			0.50			0.50	
Incremental Delay d_2	7.0	12.0		0.8	0.9			0.5			1.3	
PF Factor	1.000	1.000		1.000	1.000			1.000			1.000	
Control Delay	69.0	73.7		37.2	37.6			29.1			32.7	
Lane Group LOS	E	E		D	D			C			C	
Approach Delay	70.5			37.4			29.1			32.7		
Approach LOS	E			D			C			C		
Intersection Delay	38.9			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & ELEVENTH ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1		2				1	2			2	0
Lane Group	L		R				L	T			TR	
Volume (vph)	99		158				100	522			486	53
% Heavy Vehicles	8		8				0	0			1	1
PHF	0.75		0.75				0.91	0.91			0.78	0.78
Pretimed/Actuated (P/A)	P						P	P			P	P
Startup Lost Time	2.0		2.0				2.0	2.0			2.0	
Extension of Effective Green	2.0		2.0				2.0	2.0			2.0	
Arrival Type	3		3				3	3			3	
Unit Extension	3.0		3.0				3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0				0	0		0	0	0
Lane Width	11.0		12.0				11.0	12.0			12.0	
Parking/Grade/Parking	N	-1	N				N	-1	N	N	1	N
Parking/Hour												
Bus Stops/Hour	0		0				0	0			0	
Minimum Pedestrian Time		3.2						3.2			23.2	

Phasing	EB Only	Peds Only	03	04	NB Only	Thru & RT	NB Only	08
Timing	G = 26.0	G = 19.0	G =	G =	G = 21.0	G = 47.0	G = 14.0	G =
	Y = 5	Y = 5	Y =	Y =	Y = 6	Y = 5	Y = 5	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 153.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	132		211				110	574			691	
Lane Group Capacity	248		219				361	1989			971	
v/c Ratio	0.53		0.96				0.30	0.29			0.71	
Green Ratio	0.17		0.09				0.23	0.61			0.31	
Uniform Delay d_1	58.0		69.2				48.9	14.3			47.0	
Delay Factor k	0.50		0.50				0.50	0.50			0.50	
Incremental Delay d_2	8.0		52.0				2.2	0.4			4.4	
PF Factor	1.000		1.000				1.000	1.000			1.000	
Control Delay	65.9		121.3				51.1	14.6			51.4	
Lane Group LOS	E		F				D	B			D	
Approach Delay	100.0						20.5			51.4		
Approach LOS	F						C			D		
Intersection Delay	48.8			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & SEVENTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	1	1	2	0	1	2	0
Lane Group		LTR		DefL	T	R	L	TR		L	TR	
Volume (vph)	9	447	37	109	193	195	55	229	184	345	294	21
% Heavy Vehicles	4	4	4	2	2	2	3	3	3	1	1	1
PHF	0.91	0.91	0.91	0.88	0.88	0.88	0.80	0.80	0.80	0.94	0.94	0.94
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Extension of Effective Green		2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Arrival Type		3		3	3	3	3	3		3	3	
Unit Extension		3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	0	100	0	0
Lane Width		11.0		10.0	10.0	13.0	11.0	11.0		11.0	11.0	
Parking/Grade/Parking	N	5	N	N	-5	N	N	-1	N	N	2	N
Parking/Hour												
Bus Stops/Hour		0		0	0	0	0	0		0	0	
Minimum Pedestrian Time		17.6			17.9			18.9			17.6	

Phasing	EW Perm	02	03	04	Excl. Left	NS Perm	07	08
Timing	G = 27.0	G =	G =	G =	G = 15.0	G = 35.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		542		124	219	222	69	516		367	335	
Lane Group Capacity		823		155	481	739	555	1076		481	1182	
v/c Ratio		0.66		0.80	0.46	0.30	0.12	0.48		0.76	0.28	
Green Ratio		0.30		0.30	0.30	0.52	0.59	0.39		0.59	0.39	
Uniform Delay d_1		27.5		29.0	25.5	12.2	8.2	20.7		11.1	18.9	
Delay Factor k		0.50		0.50	0.50	0.50	0.50	0.50		0.50	0.50	
Incremental Delay d_2		4.1		33.8	3.1	1.0	0.5	1.5		10.9	0.6	
PF Factor		1.000		1.000	1.000	1.000	1.000	1.000		1.000	1.000	
Control Delay		31.6		62.8	28.6	13.2	8.7	22.2		22.0	19.5	
Lane Group LOS		C		E	C	B	A	C		C	B	
Approach Delay	31.6			30.1			20.6			20.8		
Approach LOS	C			C			C			C		
Intersection Delay	25.4			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & SIXTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	2	0	1	2	0	1	2	0
Lane Group		LTR			LTR		L	TR		L	TR	
Volume (vph)	57	340	32	85	202	112	59	299	245	149	262	28
% Heavy Vehicles	3	3	3	2	2	2	1	1	1	2	2	2
PHF	0.96	0.96	0.96	0.83	0.83	0.83	0.92	0.92	0.92	0.92	0.92	0.92
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0		2.0	2.0		2.0	2.0	
Arrival Type		3			3		3	3		3	3	
Unit Extension		3.0			3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	152	0	0	158	0	0	149	0	0	98	0	0
Lane Width		12.0			11.0		12.0	10.0		12.0	10.0	
Parking/Grade/Parking	N	4	N	N	-5	N	N	-1	N	N	2	N
Parking/Hour												
Bus Stops/Hour		0			0		0	0		0	0	
Minimum Pedestrian Time		18.0			18.0			16.7			12.9	

Phasing	EB Only	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 5.0	G = 30.0	G =	G =	G = 7.0	G = 32.0	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		446			480		64	591		162	315	
Lane Group Capacity		410			826		418	946		293	1025	
v/c Ratio		1.09			0.58		0.15	0.62		0.55	0.31	
Green Ratio		0.42			0.33		0.47	0.36		0.47	0.36	
Uniform Delay d_1		26.0			24.8		13.6	24.0		15.4	21.0	
Delay Factor k		0.50			0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2		70.1			3.0		0.8	3.1		7.3	0.8	
PF Factor		1.000			1.000		1.000	1.000		1.000	1.000	
Control Delay		96.1			27.8		14.3	27.1		22.7	21.8	
Lane Group LOS		F			C		B	C		C	C	
Approach Delay	96.1			27.8			25.9			22.1		
Approach LOS	F			C			C			C		
Intersection Delay	40.7			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	SIXTH AVE & ROSS ST/BIGELOW
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	3	0	0	2	0	0	2	0	0	2	
Lane Group	DefL	TR			LTR			LTR		DefL	T	
Volume (vph)	250	459	25	15	202	51	27	120	69	175	170	
% Heavy Vehicles	0	0	0	2	2	2	2	2	2	1	1	
PHF	0.87	0.87	0.87	0.78	0.78	0.78	0.86	0.86	0.86	0.83	0.83	
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	
Startup Lost Time	2.0	2.0			2.0			2.0		2.0	2.0	
Extension of Effective Green	2.0	2.0			2.0			2.0		2.0	2.0	
Arrival Type	3	3			3			3		3	3	
Unit Extension	3.0	3.0			3.0			3.0		3.0	3.0	
Ped/Bike/RTOR Volume	100	0	3	100	0	5	100	0	7	100	0	
Lane Width	12.0	11.0			11.0			12.0		11.0	11.0	
Parking/Grade/Parking	N	5	N	N	-6	N	N	-1	N	N	-1	N
Parking/Hour												
Bus Stops/Hour	0	0			0			0		0	0	
Minimum Pedestrian Time		17.7			17.2			20.2			7.5	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 37.0	G =	G =	G =	G = 22.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	287	553			337			243		211	205	
Lane Group Capacity	467	1607			1481			833		289	517	
v/c Ratio	0.61	0.34			0.23			0.29		0.73	0.40	
Green Ratio	0.53	0.53			0.53			0.31		0.31	0.31	
Uniform Delay d_1	11.5	9.5			8.8			18.1		21.4	18.8	
Delay Factor k	0.50	0.50			0.50			0.50		0.50	0.50	
Incremental Delay d_2	5.9	0.6			0.4			0.9		15.0	2.3	
PF Factor	1.000	1.000			1.000			1.000		1.000	1.000	
Control Delay	17.5	10.1			9.2			19.0		36.4	21.1	
Lane Group LOS	B	B			A			B		D	C	
Approach Delay	12.6			9.2			19.0			28.8		
Approach LOS	B			A			B			C		
Intersection Delay	16.5			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	WASHINGTON PL & BEDFORD/CENTRE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	1					2	1	1	2	0
Lane Group	L	LTR	R					T	R	L	LTR	
Volume (vph)	505	292	323					651	212	258	178	110
% Heavy Vehicles	2	2	2					0	0	2	2	2
PHF	0.93	0.93	0.93					0.81	0.81	0.95	0.95	0.95
Pretimed/Actuated (P/A)	P	P	P					P	P	P	P	
Startup Lost Time	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Arrival Type	3	3	3					3	3	3	3	
Unit Extension	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	100	0	0				0	0	21	0	0	0
Lane Width	11.0	11.0	12.0					12.0	12.0	16.0	10.0	
Parking/Grade/Parking	N	5	N				N	-1	N	N	6	N
Parking/Hour												
Bus Stops/Hour	0	0	0					0	0	0	0	
Minimum Pedestrian Time		15.1						3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = 21.0	G =	G =	G =	G = 26.0	G = 18.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	516	358	330					804	236	136	439	
Lane Group Capacity	394	406	295					1063	475	394	615	
v/c Ratio	1.31	0.88	1.12					0.76	0.50	0.35	0.71	
Green Ratio	0.26	0.26	0.26					0.32	0.32	0.22	0.22	
Uniform Delay d_1	29.5	28.3	29.5					24.2	21.7	26.0	28.6	
Delay Factor k	0.50	0.50	0.50					0.50	0.50	0.50	0.50	
Incremental Delay d_2	156.5	23.1	88.2					5.0	3.7	2.4	6.9	
PF Factor	1.000	1.000	1.000					1.000	1.000	1.000	1.000	
Control Delay	186.0	51.4	117.7					29.2	25.4	28.4	35.5	
Lane Group LOS	F	D	F					C	C	C	D	
Approach Delay	127.3						28.3			33.9		
Approach LOS	F						C			C		
Intersection Delay	71.7			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	BEDFORD AVE & LEMIEUX PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	0	0	1	0			
Lane Group		LTR			LTR			LTR				
Volume (vph)	164	310	202	25	106	27	5	1	8			
% Heavy Vehicles	2	2	2	2	2	2	0	0	0			
PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.46	0.46	0.46			
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A			
Startup Lost Time		2.0			2.0			2.0				
Extension of Effective Green		2.0			2.0			2.0				
Arrival Type		3			3			3				
Unit Extension		3.0			3.0			3.0				
Ped/Bike/RTOR Volume	75	0	20	75	0	0	75	0	1			
Lane Width		12.0			12.0			12.0				
Parking/Grade/Parking	N	10	N	N	-6	N	N	2	Y			
Parking/Hour									10			
Bus Stops/Hour		0			0			0				
Minimum Pedestrian Time		15.0			16.0			12.3				

Phasing	EB Only	WB Only	03	04	NB Only	06	07	08
Timing	G = 20.0	G = 10.0	G =	G =	G = 8.5	G =	G =	G =
	Y = 5.5	Y = 5.5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 55.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB	SB
Adjusted Flow Rate	887	213	28	
Lane Group Capacity	1014	561	187	
v/c Ratio	0.87	0.38	0.15	
Green Ratio	0.36	0.18	0.15	
Uniform Delay d_1	16.3	19.8	20.1	
Delay Factor k	0.40	0.11	0.11	
Incremental Delay d_2	8.6	0.4	0.4	
PF Factor	1.000	1.000	1.000	
Control Delay	25.0	20.2	20.5	
Lane Group LOS	C	C	C	
Approach Delay	25.0	20.2	20.5	
Approach LOS	C	C	C	
Intersection Delay	24.0	Intersection LOS		C

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CRAWFORD ST & BEDFORD AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Group		LTR			LTR			LTR			LTR	
Volume (vph)	1	53	168	17	57	2	104	1	46	2	3	3
% Heavy Vehicles	5	5	5	1	1	1	3	3	3	0	0	0
PHF	0.92	0.92	0.92	0.89	0.89	0.89	0.74	0.74	0.74	0.40	0.40	0.40
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	25	0	17	25	0	0	25	0	5	25	0	0
Lane Width		16.0			12.0			14.0			10.0	
Parking/Grade/Parking	N	10	N	N	-6	Y	N	8	N	N	-6	Y
Parking/Hour						5						5
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		14.5			7.8			12.3			20.3	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 15.0	G =	G =	G =	G = 25.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 50.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		223			85			197			19	
Lane Group Capacity		459			412			632			638	
v/c Ratio		0.49			0.21			0.31			0.03	
Green Ratio		0.30			0.30			0.50			0.50	
Uniform Delay d_1		14.3			13.1			7.4			6.3	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		3.6			1.1			1.3			0.1	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		18.0			14.2			8.7			6.4	
Lane Group LOS		B			B			A			A	
Approach Delay	18.0			14.2			8.7			6.4		
Approach LOS	B			B			A			A		
Intersection Delay	13.5			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE/RAMP & WASHINGTON PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	1	0	3	0	0	2	1
Lane Group		LTR			LT	R		LTR		DefL	T	R
Volume (vph)	116	368	200	42	122	148	10	535	141	137	186	17
% Heavy Vehicles	0	0	0	5	5	5	1	1	1	2	2	2
PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.96	0.96	0.96	0.94	0.94	0.94
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0		2.0		2.0	2.0	2.0
Extension of Effective Green		2.0			2.0	2.0		2.0		2.0	2.0	2.0
Arrival Type		3			3	3		3		3	3	3
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	691	0	0	683	0	0	917	0	0	45	0	0
Lane Width		13.0			10.0	13.0		12.0		11.0	12.0	12.0
Parking/Grade/Parking	N	-1	N	N	-6	N	N	6	Y	N	-3	N
Parking/Hour									10			
Bus Stops/Hour		0			0	0		0		0	0	0
Minimum Pedestrian Time		27.8			27.8			26.7			3.5	

Phasing	EW Perm	Peds Only	03	04	NS Perm	06	07	08
Timing	G = 23.0	G = 17.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 5.5	Y = 5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		720			184	166		714		146	198	18
Lane Group Capacity		666			547	262		1055		129	511	414
v/c Ratio		1.08			0.34	0.63		0.68		1.13	0.39	0.04
Green Ratio		0.29			0.29	0.29		0.30		0.30	0.30	0.30
Uniform Delay d_1		28.5			22.5	24.8		24.6		28.0	22.2	19.9
Delay Factor k		0.50			0.50	0.50		0.50		0.50	0.50	0.50
Incremental Delay d_2		58.8			1.7	11.1		3.5		119.0	2.2	0.2
PF Factor		1.000			1.000	1.000		1.000		1.000	1.000	1.000
Control Delay		87.3			24.1	36.0		28.1		147.0	24.4	20.1
Lane Group LOS		F			C	D		C		F	C	C
Approach Delay	87.3			29.7			28.1			73.6		
Approach LOS	F			C			C			E		
Intersection Delay	55.9			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE/RAMP & WASHINGTON PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0				0	3	0	0	2	1
Lane Group		LTR						LTR		DefL	T	R
Volume (vph)	64	178	107				10	535	141	137	186	17
% Heavy Vehicles	0	0	0				1	1	1	2	2	2
PHF	0.71	0.71	0.71				0.96	0.96	0.96	0.94	0.94	0.94
Pretimed/Actuated (P/A)	P	P	P				P	P	P	P	P	P
Startup Lost Time		2.0						2.0		2.0	2.0	2.0
Extension of Effective Green		2.0						2.0		2.0	2.0	2.0
Arrival Type		3						3		3	3	3
Unit Extension		3.0						3.0		3.0	3.0	3.0
Ped/Bike/RTOR Volume	691	0	0				917	0	0	45	0	0
Lane Width		12.0						12.0		11.0	12.0	12.0
Parking/Grade/Parking	N	6	N				N	6	Y	N	-3	N
Parking/Hour									10			
Bus Stops/Hour		0						0		0	0	0
Minimum Pedestrian Time		27.8						26.7			3.5	

Phasing	Peds Only	EB Only	03	04	NS Perm	06	07	08
Timing	G = 23.0	G = 17.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 5.5	Y = 5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		492						714		146	198	18
Lane Group Capacity		550						1054		129	511	401
v/c Ratio		0.89						0.68		1.13	0.39	0.04
Green Ratio		0.21						0.30		0.30	0.30	0.30
Uniform Delay d_1		30.6						24.6		28.0	22.2	19.9
Delay Factor k		0.50						0.50		0.50	0.50	0.50
Incremental Delay d_2		19.6						3.5		119.0	2.2	0.2
PF Factor		1.000						1.000		1.000	1.000	1.000
Control Delay		50.3						28.1		147.0	24.4	20.1
Lane Group LOS		D						C		F	C	C
Approach Delay	50.3						28.1			73.6		
Approach LOS	D						C			E		
Intersection Delay	45.6			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE AVE & LEMIEUX PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	0				0	1	0
Lane Group		LTR			LTR						LTR	
Volume (vph)	10	598	159	21	353	1				3	1	9
% Heavy Vehicles	2	2	2	4	4	4				17	17	17
PHF	0.83	0.83	0.83	0.75	0.75	0.75				0.75	0.75	0.75
Pretimed/Actuated (P/A)	P	P	P	P	P	P				P	P	P
Startup Lost Time		2.0			2.0						2.0	
Extension of Effective Green		2.0			2.0						2.0	
Arrival Type		3			3						3	
Unit Extension		3.0			3.0						3.0	
Ped/Bike/RTOR Volume	0	0	16	47	0	0				1414	0	0
Lane Width		11.0			11.0						12.0	
Parking/Grade/Parking	N	4	Y	N	-2	Y				N	-5	Y
Parking/Hour			20			20						20
Bus Stops/Hour		0			0						0	
Minimum Pedestrian Time		3.2			13.4						28.6	

Phasing	EW Perm	02	03	04	SB Only	06	07	08
Timing	G = 38.0	G =	G =	G =	G = 21.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		904			500						17	
Lane Group Capacity		1359			1314						203	
v/c Ratio		0.67			0.38						0.08	
Green Ratio		0.54			0.54						0.30	
Uniform Delay d_1		11.4			9.2						17.6	
Delay Factor k		0.50			0.50						0.50	
Incremental Delay d_2		2.6			0.8						0.8	
PF Factor		1.000			1.000						1.000	
Control Delay		14.0			10.1						18.4	
Lane Group LOS		B			B						B	
Approach Delay	14.0			10.1						18.4		
Approach LOS	B			B						B		
Intersection Delay	12.7			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE AVE & CRAWFORD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	1	1	1	0	0	1	0	0	1	0
Lane Group		LT	R	L	TR			LTR			LTR	
Volume (vph)	67	94	110	25	107	24	248	88	51	15	69	136
% Heavy Vehicles	3	3	3	5	5	5	1	1	1	2	2	2
PHF	0.89	0.89	0.89	0.88	0.88	0.88	0.84	0.84	0.84	0.94	0.94	0.94
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0	2.0	2.0	2.0			2.0			2.0	
Extension of Effective Green		2.0	2.0	2.0	2.0			2.0			2.0	
Arrival Type		3	3	3	3			3			3	
Unit Extension		3.0	3.0	3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	50	0	0	50	0	2	50	0	5	50	0	14
Lane Width		15.0	16.0	11.0	11.0			14.0			13.0	
Parking/Grade/Parking	N	-4	Y	N	8	Y	N	5	N	N	-6	N
Parking/Hour			10			10						
Bus Stops/Hour		0	0	0	0			0			0	
Minimum Pedestrian Time		22.7			13.5			14.7			14.7	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 30.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		181	124	28	147			455			219	
Lane Group Capacity		648	560	398	531			491			651	
v/c Ratio		0.28	0.22	0.07	0.28			0.93			0.34	
Green Ratio		0.43	0.43	0.43	0.43			0.43			0.43	
Uniform Delay d_1		13.0	12.6	11.8	13.0			19.0			13.4	
Delay Factor k		0.50	0.50	0.50	0.50			0.50			0.50	
Incremental Delay d_2		1.1	0.9	0.3	1.3			25.9			1.4	
PF Factor		1.000	1.000	1.000	1.000			1.000			1.000	
Control Delay		14.1	13.5	12.1	14.3			44.9			14.7	
Lane Group LOS		B	B	B	B			D			B	
Approach Delay	13.8			13.9			44.9			14.7		
Approach LOS	B			B			D			B		
Intersection Delay	26.3			Intersection LOS			C					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE AVE & DEVILLERS ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Group		LTR			LTR			LTR			LTR	
Volume (vph)	42	188	5	2	217	19	5	1	1	7	2	24
% Heavy Vehicles	6	6	6	9	9	9	0	0	0	3	3	3
PHF	0.71	0.71	0.71	0.88	0.88	0.88	0.50	0.50	0.50	0.75	0.75	0.75
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	25	0	1	25	0	2	25	0	0	25	0	2
Lane Width		16.0			10.0			11.0			11.0	
Parking/Grade/Parking	N	-2	N	N	-1	Y	N	0	Y	N	-6	Y
Parking/Hour						5			5			5
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		11.4			12.9			14.6			13.4	

Phasing	EW Perm	EB Only	03	04	NS Perm	06	07	08
Timing	G = 24.0	G = 21.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		330			268			14			41	
Lane Group Capacity		1101			380			280			283	
v/c Ratio		0.30			0.71			0.05			0.14	
Green Ratio		0.64			0.30			0.24			0.24	
Uniform Delay d_1		6.5			24.9			23.5			24.1	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		0.7			10.5			0.3			1.1	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		7.2			35.4			23.9			25.2	
Lane Group LOS		A			D			C			C	
Approach Delay	7.2			35.4			23.9			25.2		
Approach LOS	A			D			C			C		
Intersection Delay	20.2			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE AVE & DINWIDDLE ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		1	0	0	1		0		0			
Lane Group		TR			LT			LR				
Volume (vph)		169	27	69	178		25		66			
% Heavy Vehicles		6	6	9	9		1		1			
PHF		0.71	0.71	0.88	0.88		0.75		0.75			
Pretimed/Actuated (P/A)		P	P	P	P		P		P			
Startup Lost Time		2.0			2.0			2.0				
Extension of Effective Green		2.0			2.0			2.0				
Arrival Type		3			3			3				
Unit Extension		3.0			3.0			3.0				
Ped/Bike/RTOR Volume	25	0	3	0	0		25	0	0			
Lane Width		16.0			16.0			16.0				
Parking/Grade/Parking	N	-2	N	N	-1	N	N	4	Y			
Parking/Hour									5			
Bus Stops/Hour		0			0			0				
Minimum Pedestrian Time		15.9			12.7			13.4				

Phasing	EW Perm	WB Only	03	04	NB Only	06	07	08
Timing	G = 24.0	G = 21.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		272			280			121				
Lane Group Capacity		542			925			348				
v/c Ratio		0.50			0.30			0.35				
Green Ratio		0.30			0.64			0.24				
Uniform Delay d_1		23.1			6.5			25.3				
Delay Factor k		0.50			0.50			0.50				
Incremental Delay d_2		3.3			0.8			2.7				
PF Factor		1.000			1.000			1.000				
Control Delay		26.4			7.4			28.1				
Lane Group LOS		C			A			C				
Approach Delay	26.4			7.4			28.1					
Approach LOS	C			A			C					
Intersection Delay	18.8			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	FIFTH AVE & WASHINGTON/CHATHAM
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				0	2	0	1	1			1	2
Lane Group					LTR		L	T			T	R
Volume (vph)				58	433	272	94	386			125	88
% Heavy Vehicles				4	4	4	1	1			1	1
PHF				0.84	0.84	0.84	0.87	0.87			0.89	0.89
Pretimed/Actuated (P/A)				P	P	P	P	P			P	P
Startup Lost Time					2.0		2.0	2.0			2.0	2.0
Extension of Effective Green					2.0		2.0	2.0			2.0	2.0
Arrival Type					3		3	3			3	3
Unit Extension					3.0		3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume				88	0	27	0	0		159	0	0
Lane Width					11.0		10.0	9.0			11.0	12.0
Parking/Grade/Parking				Y	-2	Y	N	-6	N	N	-2	N
Parking/Hour				20		20						
Bus Stops/Hour					0		0	0			0	0
Minimum Pedestrian Time					25.7			3.2			16.2	

Phasing	WB Only	02	03	04	NS Perm	06	07	08
Timing	G = 39.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate					876		108	444			140	99
Lane Group Capacity					1163		365	588			620	760
v/c Ratio					0.75		0.30	0.76			0.23	0.13
Green Ratio					0.49		0.38	0.38			0.38	0.38
Uniform Delay d_1					16.6		17.6	21.8			17.1	16.4
Delay Factor k					0.50		0.50	0.50			0.50	0.50
Incremental Delay d_2					4.5		2.1	8.7			0.8	0.4
PF Factor					1.000		1.000	1.000			1.000	1.000
Control Delay					21.1		19.6	30.5			17.9	16.8
Lane Group LOS					C		B	C			B	B
Approach Delay					21.1			28.4			17.4	
Approach LOS					C			C			B	
Intersection Delay	23.0			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	FORBES AVE & ARMSTRONG TUNNEL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0				0		2			
Lane Group		TR						LR	R			
Volume (vph)		573	314				55		484			
% Heavy Vehicles		4	4				1		1			
PHF		0.95	0.95				0.87		0.87			
Pretimed/Actuated (P/A)		P	P				P		P			
Startup Lost Time		2.0						2.0	2.0			
Extension of Effective Green		2.0						2.0	2.0			
Arrival Type		3						3	3			
Unit Extension		3.0						3.0	3.0			
Ped/Bike/RTOR Volume	50	0	0				0	0	48			
Lane Width		11.0						11.0	11.0			
Parking/Grade/Parking	N	3	N				N	0	N			
Parking/Hour												
Bus Stops/Hour		0						0	0			
Minimum Pedestrian Time		17.3						3.2				

Phasing	EB Only	02	03	04	NB Only	06	07	08
Timing	G = 41.0	G =	G =	G =	G = 29.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		934						213	351			
Lane Group Capacity		1422						523	892			
v/c Ratio		0.66						0.41	0.39			
Green Ratio		0.51						0.36	0.36			
Uniform Delay d_1		14.3						19.1	19.0			
Delay Factor k		0.50						0.50	0.50			
Incremental Delay d_2		2.4						2.3	1.3			
PF Factor		1.000						1.000	1.000			
Control Delay		16.7						21.4	20.3			
Lane Group LOS		B						C	C			
Approach Delay	16.7						20.7					
Approach LOS	B						C					
Intersection Delay	18.2			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	FORBES AVE & CHATHAM/McANULTY
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0					1	1	0	1	
Lane Group	L	TR						T	R		LT	
Volume (vph)	444	555	58					92	86	160	19	
% Heavy Vehicles	2	2	2					0	0	1	1	
PHF	0.86	0.86	0.86					0.88	0.88	0.90	0.90	
Pretimed/Actuated (P/A)	P	P	P					P	P	P	P	
Startup Lost Time	2.0	2.0						2.0	2.0		2.0	
Extension of Effective Green	2.0	2.0						2.0	2.0		2.0	
Arrival Type	3	3						3	3		3	
Unit Extension	3.0	3.0						3.0	3.0		3.0	
Ped/Bike/RTOR Volume	38	0	0				138	0	9	21	0	
Lane Width	10.0	11.0						10.0	11.0		10.0	
Parking/Grade/Parking	N	3	N				N	-6	N	N	10	N
Parking/Hour												
Bus Stops/Hour	0	0						0	0		0	
Minimum Pedestrian Time		13.9						13.0			12.3	

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 51.0	G =	G =	G =	G = 19.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	516	712						105	88		199	
Lane Group Capacity	933	1905						390	284		187	
v/c Ratio	0.55	0.37						0.27	0.31		1.06	
Green Ratio	0.64	0.64						0.24	0.24		0.24	
Uniform Delay d_1	8.1	6.9						24.8	25.1		30.5	
Delay Factor k	0.50	0.50						0.50	0.50		0.50	
Incremental Delay d_2	2.4	0.6						1.7	2.8		83.9	
PF Factor	1.000	1.000						1.000	1.000		1.000	
Control Delay	10.5	7.5						26.5	27.9		114.4	
Lane Group LOS	B	A						C	C		F	
Approach Delay	8.7						27.2			114.4		
Approach LOS	A						C			F		
Intersection Delay	23.9			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & BLVD OF ALLIES
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	1		2	0	0	2	0		2	0
Lane Group		LT	R		TR			LTR			TR	
Volume (vph)	64	446	300		385	81	32	561	147		526	74
% Heavy Vehicles	0	0	0		0	0	0	0	0		0	0
PHF	0.77	0.77	0.77		0.83	0.83	0.83	0.83	0.83		0.79	0.79
Pretimed/Actuated (P/A)	P	P	P		P	P	P	P	P		P	P
Startup Lost Time		2.0	2.0		2.0			2.0			2.0	
Extension of Effective Green		2.0	2.0		2.0			2.0			2.0	
Arrival Type		3	3		3			3			3	
Unit Extension		3.0	3.0		3.0			3.0			3.0	
Ped/Bike/RTOR Volume	100	0	8	100	0	0	100	0	0	100	0	0
Lane Width		11.0	12.0		12.0			11.0			11.0	
Parking/Grade/Parking	N	0	N	N	-2	N	N	1	N	N	-1	N
Parking/Hour												
Bus Stops/Hour		0	0		0			0			0	
Minimum Pedestrian Time		18.9			17.9			28.9			20.1	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 40.0	G =	G =	G =	G = 39.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 6	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB		WB		NB		SB	
Adjusted Flow Rate	662	379	562		892		760	
Lane Group Capacity	1105	673	1407		1164		1345	
v/c Ratio	0.60	0.56	0.40		0.77		0.57	
Green Ratio	0.44	0.44	0.44		0.43		0.43	
Uniform Delay d_1	18.9	18.5	16.9		21.6		19.1	
Delay Factor k	0.50	0.50	0.50		0.50		0.50	
Incremental Delay d_2	2.4	3.4	0.8		4.8		1.7	
PF Factor	1.000	1.000	1.000		1.000		1.000	
Control Delay	21.3	21.9	17.7		26.5		20.9	
Lane Group LOS	C	C	B		C		C	
Approach Delay	21.5		17.7		26.5		20.9	
Approach LOS	C		B		C		C	
Intersection Delay	22.1		Intersection LOS				C	

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & FIRST AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				0		0		2	1	1	2	
Lane Group					LR			T	R	L	T	
Volume (vph)				248		15		736	366	64	429	
% Heavy Vehicles				4		4		3	3	3	3	
PHF				0.85		0.85		0.82	0.82	0.85	0.85	
Pretimed/Actuated (P/A)				P		P		P	P	P	P	
Startup Lost Time					2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green					2.0			2.0	2.0	2.0	2.0	
Arrival Type					3			3	3	3	3	
Unit Extension					3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume				0	0	0	100	0	36	0	0	
Lane Width					12.0			11.0	12.0	10.0	12.0	
Parking/Grade/Parking				N	2	N	N	3	N	N	-3	N
Parking/Hour												
Bus Stops/Hour					0			0	0	0	0	
Minimum Pedestrian Time					18.7			12.9			3.2	

Phasing	WB Only	02	03	04	SB Only	NS Perm	07	08
Timing	G = 28.0	G =	G =	G =	G = 3.0	G = 46.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 3	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate					310			898	402	75	505	
Lane Group Capacity					480			1538	641	230	1854	
v/c Ratio					0.65			0.58	0.63	0.33	0.27	
Green Ratio					0.31			0.51	0.51	0.58	0.58	
Uniform Delay d_1					26.7			15.3	15.8	10.1	9.5	
Delay Factor k					0.50			0.50	0.50	0.50	0.50	
Incremental Delay d_2					6.6			1.6	4.6	3.7	0.4	
PF Factor					1.000			1.000	1.000	1.000	1.000	
Control Delay					33.3			17.0	20.4	13.8	9.9	
Lane Group LOS					C			B	C	B	A	
Approach Delay				33.3			18.0			10.4		
Approach LOS				C			B			B		
Intersection Delay	18.2			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & FORT PITT/1-376
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1				1	1		2			1	1
Lane Group	L				TR	R		T			T	R
Volume (vph)	216				309	271		615			499	178
% Heavy Vehicles	4				2	2		0			1	1
PHF	0.67				0.93	0.93		0.88			0.87	0.87
Pretimed/Actuated (P/A)	P				P	P		P			P	P
Startup Lost Time	2.0				2.0	2.0		2.0			2.0	2.0
Extension of Effective Green	2.0				2.0	2.0		2.0			2.0	2.0
Arrival Type	3				3	3		3			3	3
Unit Extension	3.0				3.0	3.0		3.0			3.0	3.0
Ped/Bike/RTOR Volume	100	0		0	0	0	0	0		0	0	0
Lane Width	12.0				13.0	12.0		10.0			12.0	12.0
Parking/Grade/Parking	N	0	N	N	2	N	N	3	N	N	-1	N
Parking/Hour												
Bus Stops/Hour	0				0	0		0			0	0
Minimum Pedestrian Time		17.6			3.2			3.2			3.2	

Phasing	EB Only	WB Only	03	04	Thru & RT	06	07	08
Timing	G = 25.0	G = 24.0	G =	G =	G = 25.0	G =	G =	G =
	Y = 5	Y = 5	Y =	Y =	Y = 6	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	322				347	276		699			574	205
Lane Group Capacity	434				454	376		831			473	402
v/c Ratio	0.74				0.76	0.73		0.84			1.21	0.51
Green Ratio	0.28				0.27	0.27		0.28			0.28	0.28
Uniform Delay d_1	29.6				30.4	30.1		30.6			32.5	27.3
Delay Factor k	0.50				0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2	10.9				11.6	12.0		10.1			114.3	4.6
PF Factor	1.000				1.000	1.000		1.000			1.000	1.000
Control Delay	40.5				42.0	42.1		40.7			146.8	31.9
Lane Group LOS	D				D	D		D			F	C
Approach Delay	40.5			42.0			40.7			116.5		
Approach LOS	D			D			D			F		
Intersection Delay	65.4			Intersection LOS						E		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	SECOND AVE/COURT & ROSS ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	ARENA PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0		1	1	0	1	0	1	1	0
Lane Group		LTR			T	R		LTR		L	TR	
Volume (vph)	18	183	9		353	256	9	217	56	175	98	20
% Heavy Vehicles	3	3	3		3	3	4	4	4	7	7	7
PHF	0.85	0.85	0.85		0.92	0.92	0.87	0.87	0.87	0.85	0.85	0.85
Pretimed/Actuated (P/A)	P	P	P		P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0		2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0	2.0		2.0		2.0	2.0	
Arrival Type		3			3	3		3		3	3	
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	50	0	1	50	0	0	50	0	6	50	0	0
Lane Width		13.0			11.0	14.0		14.0		10.0	10.0	
Parking/Grade/Parking	Y	-2	Y	N	5	N	N	2	Y	N	-3	N
Parking/Hour	10		10						10			
Bus Stops/Hour		0			0	0		0		0	0	
Minimum Pedestrian Time		13.0			13.0			12.5			8.5	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		245			384	278		316		206	139	
Lane Group Capacity		542			648	572		605		335	626	
v/c Ratio		0.45			0.59	0.49		0.52		0.61	0.22	
Green Ratio		0.41			0.41	0.41		0.43		0.43	0.43	
Uniform Delay d_1		14.8			15.9	15.0		14.7		15.5	12.6	
Delay Factor k		0.50			0.50	0.50		0.50		0.50	0.50	
Incremental Delay d_2		2.7			4.0	2.9		3.2		8.2	0.8	
PF Factor		1.000			1.000	1.000		1.000		1.000	1.000	
Control Delay		17.5			19.9	18.0		17.9		23.7	13.4	
Lane Group LOS		B			B	B		B		C	B	
Approach Delay	17.5			19.1			17.9			19.6		
Approach LOS	B			B			B			B		
Intersection Delay	18.7			Intersection LOS						B		

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FRIDAY CASINO PEAK HOUR

SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	LIBERTY AVE & SEVENTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0		3		1					
Lane Group		TR			T		L					
Volume (vph)		173	255		154		116					
% Heavy Vehicles		4	4		3		5					
PHF		0.78	0.78		0.86		0.81					
Pretimed/Actuated (P/A)		P	P		P		P					
Startup Lost Time		2.0			2.0		2.0					
Extension of Effective Green		2.0			2.0		2.0					
Arrival Type		3			3		3					
Unit Extension		3.0			3.0		3.0					
Ped/Bike/RTOR Volume	100	0	0	0	0		0	0				
Lane Width		11.0			11.0		12.0					
Parking/Grade/Parking	N	0	N	N	0	N	N	-2	N			
Parking/Hour												
Bus Stops/Hour		0			0		0					
Minimum Pedestrian Time		17.5			3.2			3.2				

Phasing	Thru & RT	Thru & RT	03	04	NB Only	06	07	08
Timing	G = 9.0	G = 24.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 70.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		549			179		143					
Lane Group Capacity		1333			2248		536					
v/c Ratio		0.41			0.08		0.27					
Green Ratio		0.51			0.51		0.34					
Uniform Delay d_1		10.5			8.6		16.6					
Delay Factor k		0.50			0.50		0.50					
Incremental Delay d_2		0.9			0.1		1.2					
PF Factor		1.000			1.000		1.000					
Control Delay		11.4			8.7		17.9					
Lane Group LOS		B			A		B					
Approach Delay	11.4			8.7			17.9					
Approach LOS	B			A			B					
Intersection Delay	11.9			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	LIBERTY AVE & SMITHFIELD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0	0	3		1		1			
Lane Group		TR			LT		L		R			
Volume (vph)		168	5	8	95		59		112			
% Heavy Vehicles		7	7	8	8		0		0			
PHF		0.90	0.90	0.85	0.85		0.92		0.92			
Pretimed/Actuated (P/A)		P	P	P	P		P		P			
Startup Lost Time		2.0			2.0		2.0		2.0			
Extension of Effective Green		2.0			2.0		2.0		2.0			
Arrival Type		3			3		3		3			
Unit Extension		3.0			3.0		3.0		3.0			
Ped/Bike/RTOR Volume	100	0	0	0	0		100	0	0			
Lane Width		11.0			11.0		11.0		13.0			
Parking/Grade/Parking	N	1	N	N	-1	N	N	-2	N			
Parking/Hour												
Bus Stops/Hour		0			0		0		0			
Minimum Pedestrian Time		17.2			3.2			17.7				

Phasing	WB Only	EW Perm	03	04	NB Only	06	07	08
Timing	G = 6.0	G = 27.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 70.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		193			121		64		122			
Lane Group Capacity		1119			1983		544		475			
v/c Ratio		0.17			0.06		0.12		0.26			
Green Ratio		0.39			0.51		0.34		0.34			
Uniform Delay d_1		14.1			8.5		15.7		16.6			
Delay Factor k		0.50			0.50		0.50		0.50			
Incremental Delay d_2		0.3			0.1		0.4		1.3			
PF Factor		1.000			1.000		1.000		1.000			
Control Delay		14.5			8.6		16.2		17.9			
Lane Group LOS		B			A		B		B			
Approach Delay	14.5			8.6			17.3					
Approach LOS	B			A			B					
Intersection Delay	14.1			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	SEVENTH AVE & SMITHFIELD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	1	0		2	0	0	1	0
Lane Group		LTR			LTR			TR			LTR	
Volume (vph)	1	254	1	1	114	12		157	80	6	5	2
% Heavy Vehicles	2	2	2	9	9	9		1	1	100	100	100
PHF	0.92	0.92	0.92	0.94	0.94	0.94		0.79	0.79	0.82	0.82	0.82
Pretimed/Actuated (P/A)	P	P	P	P	P	P		P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	200	0	0	200	0	0	200	0	0	200	0	0
Lane Width		11.0			11.0			11.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		4.3			12.8			12.8			12.8	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		278			135			300			15	
Lane Group Capacity		1218			610			1209			297	
v/c Ratio		0.23			0.22			0.25			0.05	
Green Ratio		0.41			0.41			0.43			0.43	
Uniform Delay d_1		13.3			13.2			12.8			11.7	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		0.4			0.8			0.5			0.3	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		13.7			14.1			13.3			12.0	
Lane Group LOS		B			B			B			B	
Approach Delay	13.7			14.1			13.3			12.0		
Approach LOS	B			B			B			B		
Intersection Delay	13.6			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	GRANT ST & LIBERTY AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	1	0	1	1	0		3	0		2	0
Lane Group	L	TR		L	TR			TR			TR	
Volume (vph)	186	18	36	17	16	1		400	29		355	40
% Heavy Vehicles	5	5	5	21	21	21		2	2		1	1
PHF	0.88	0.88	0.88	0.77	0.77	0.77		0.84	0.84		0.89	0.89
Pretimed/Actuated (P/A)	P	P	P	P	P	P		P	P		P	P
Startup Lost Time	2.0	2.0		2.0	2.0			2.0			2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0			2.0	
Arrival Type	3	3		3	3			3			3	
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	0	100	0	0
Lane Width	11.0	11.0		12.0	12.0			11.0			13.0	
Parking/Grade/Parking	N	1	N	N	-2	N	N	-2	N	N	1	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0			0	
Minimum Pedestrian Time		20.6			20.6			26.3			24.8	

Phasing	WB Only	WB Only	EB Only	04	Thru & RT	Thru & RT	07	08
Timing	G = 26.0	G = 19.0	G = 21.0	G =	G = 47.0	G = 14.0	G =	G =
	Y = 5	Y = 5	Y = 6	Y =	Y = 5	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 153.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	211	61		22	22			511			444	
Lane Group Capacity	397	193		406	461			1888			1391	
v/c Ratio	0.53	0.32		0.05	0.05			0.27			0.32	
Green Ratio	0.14	0.14		0.33	0.33			0.43			0.43	
Uniform Delay d_1	61.4	59.5		35.3	35.2			28.0			28.7	
Delay Factor k	0.50	0.50		0.50	0.50			0.50			0.50	
Incremental Delay d_2	5.0	4.3		0.3	0.2			0.4			0.6	
PF Factor	1.000	1.000		1.000	1.000			1.000			1.000	
Control Delay	66.4	63.8		35.5	35.4			28.4			29.3	
Lane Group LOS	E	E		D	D			C			C	
Approach Delay	65.8			35.5			28.4			29.3		
Approach LOS	E			D			C			C		
Intersection Delay	37.0			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	GRANT ST & ELEVENTH ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1		2				1	2			2	0
Lane Group	L		R				L	T			TR	
Volume (vph)	43		131				104	483			264	36
% Heavy Vehicles	1		1				2	2			0	0
PHF	0.82		0.82				0.89	0.89			0.77	0.77
Pretimed/Actuated (P/A)	P						P	P			P	P
Startup Lost Time	2.0		2.0				2.0	2.0			2.0	
Extension of Effective Green	2.0		2.0				2.0	2.0			2.0	
Arrival Type	3		3				3	3			3	
Unit Extension	3.0		3.0				3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0				0	0		0	0	0
Lane Width	11.0		12.0				11.0	12.0			12.0	
Parking/Grade/Parking	N	-1	N				N	-1	N	N	1	N
Parking/Hour												
Bus Stops/Hour	0		0				0	0			0	
Minimum Pedestrian Time		3.2						3.2			23.2	

Phasing	EB Only	Peds Only	03	04	NB Only	Thru & RT	NB Only	08
Timing	G = 26.0	G = 19.0	G =	G =	G = 21.0	G = 47.0	G = 14.0	G =
	Y = 5	Y = 5	Y =	Y =	Y = 6	Y = 5	Y = 5	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 153.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	52		160				117	543			390	
Lane Group Capacity	266		234				354	1950			977	
v/c Ratio	0.20		0.68				0.33	0.28			0.40	
Green Ratio	0.17		0.09				0.23	0.61			0.31	
Uniform Delay d_1	54.5		67.4				49.2	14.2			41.9	
Delay Factor k	0.50		0.50				0.50	0.50			0.50	
Incremental Delay d_2	1.6		15.0				2.5	0.4			1.2	
PF Factor	1.000		1.000				1.000	1.000			1.000	
Control Delay	56.2		82.4				51.7	14.5			43.1	
Lane Group LOS	E		F				D	B			D	
Approach Delay	76.0						21.1			43.1		
Approach LOS	E						C			D		
Intersection Delay	37.1			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	GRANT ST & SEVENTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	1	1	2	0	1	2	0
Lane Group		LTR			LT	R	L	TR		L	TR	
Volume (vph)	5	294	34	35	162	160	44	227	82	201	186	14
% Heavy Vehicles	4	4	4	3	3	3	2	2	2	2	2	2
PHF	0.66	0.66	0.66	0.90	0.90	0.90	0.87	0.87	0.87	0.87	0.87	0.87
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Arrival Type		3			3	3	3	3		3	3	
Unit Extension		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	0	100	0	0
Lane Width		11.0			10.0	13.0	11.0	11.0		11.0	11.0	
Parking/Grade/Parking	N	5	N	N	-5	N	N	-1	N	N	2	N
Parking/Hour												
Bus Stops/Hour		0			0	0	0	0		0	0	
Minimum Pedestrian Time		17.6			17.9			18.9			17.6	

Phasing	EW Perm	02	03	04	Excl. Left	NS Perm	07	08
Timing	G = 27.0	G =	G =	G =	G = 15.0	G = 35.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		505			219	178	51	355		231	230	
Lane Group Capacity		818			733	732	610	1134		543	1169	
v/c Ratio		0.62			0.30	0.24	0.08	0.31		0.43	0.20	
Green Ratio		0.30			0.30	0.52	0.59	0.39		0.59	0.39	
Uniform Delay d_1		27.1			24.2	11.8	8.0	19.1		9.3	18.2	
Delay Factor k		0.50			0.50	0.50	0.50	0.50		0.50	0.50	
Incremental Delay d_2		3.5			1.0	0.8	0.3	0.7		2.4	0.4	
PF Factor		1.000			1.000	1.000	1.000	1.000		1.000	1.000	
Control Delay		30.5			25.3	12.6	8.2	19.9		11.8	18.6	
Lane Group LOS		C			C	B	A	B		B	B	
Approach Delay	30.5			19.6			18.4			15.2		
Approach LOS	C			B			B			B		
Intersection Delay	21.3			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	GRANT ST & SIXTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	2	0	1	2	0	1	2	0
Lane Group		LTR			LTR		L	TR		L	TR	
Volume (vph)	37	175	15	46	154	134	37	183	87	62	125	67
% Heavy Vehicles	1	1	1	3	3	3	0	0	0	2	2	2
PHF	0.64	0.64	0.64	0.72	0.72	0.72	0.75	0.75	0.75	0.68	0.68	0.68
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0		2.0	2.0		2.0	2.0	
Arrival Type		3			3		3	3		3	3	
Unit Extension		3.0			3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	30	0	0	25	0	0	16	0	0	38	0	0
Lane Width		12.0			11.0		12.0	10.0		12.0	10.0	
Parking/Grade/Parking	N	4	N	N	-5	N	N	-1	N	N	2	N
Parking/Hour												
Bus Stops/Hour		0			0		0	0		0	0	
Minimum Pedestrian Time		17.2			17.1			15.8			12.5	

Phasing	EB Only	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 5.0	G = 30.0	G =	G =	G = 7.0	G = 32.0	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		354			464		49	360		91	283	
Lane Group Capacity		423			877		449	1029		400	983	
v/c Ratio		0.84			0.53		0.11	0.35		0.23	0.29	
Green Ratio		0.42			0.33		0.47	0.36		0.47	0.36	
Uniform Delay d_1		23.2			24.3		13.4	21.3		13.9	20.8	
Delay Factor k		0.50			0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2		17.6			2.3		0.5	0.9		1.3	0.7	
PF Factor		1.000			1.000		1.000	1.000		1.000	1.000	
Control Delay		40.8			26.6		13.9	22.3		15.2	21.6	
Lane Group LOS		D			C		B	C		B	C	
Approach Delay	40.8			26.6			21.3			20.0		
Approach LOS	D			C			C			C		
Intersection Delay	26.8			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	SIXTH AVE & ROSS ST/BIGELOW
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	3	0	0	2	0	0	2	0	0	2	
Lane Group	DefL	TR			LTR			LTR			LT	
Volume (vph)	104	195	25	7	188	9	41	56	26	38	106	
% Heavy Vehicles	1	1	1	2	2	2	2	2	2	1	1	
PHF	0.82	0.82	0.82	0.93	0.93	0.93	0.77	0.77	0.77	0.87	0.87	
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	
Startup Lost Time	2.0	2.0			2.0			2.0			2.0	
Extension of Effective Green	2.0	2.0			2.0			2.0			2.0	
Arrival Type	3	3			3			3			3	
Unit Extension	3.0	3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	200	0	3	200	0	0	200	0	3	200	0	
Lane Width	12.0	11.0			11.0			12.0			11.0	
Parking/Grade/Parking	N	5	N	N	-6	N	N	-1	N	N	-1	N
Parking/Hour												
Bus Stops/Hour	0	0			0			0			0	
Minimum Pedestrian Time		18.3			17.8			20.8			8.0	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 37.0	G =	G =	G =	G = 22.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	127	265			220			156			166	
Lane Group Capacity	492	1563			1563			732			802	
v/c Ratio	0.26	0.17			0.14			0.21			0.21	
Green Ratio	0.53	0.53			0.53			0.31			0.31	
Uniform Delay d_1	9.0	8.5			8.4			17.6			17.6	
Delay Factor k	0.50	0.50			0.50			0.50			0.50	
Incremental Delay d_2	1.3	0.2			0.2			0.7			0.6	
PF Factor	1.000	1.000			1.000			1.000			1.000	
Control Delay	10.3	8.8			8.6			18.3			18.2	
Lane Group LOS	B	A			A			B			B	
Approach Delay	9.3			8.6			18.3			18.2		
Approach LOS	A			A			B			B		
Intersection Delay	12.2			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	WASHINGTON PL & BEDFORD/CENTRE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	1					2	1	1	2	0
Lane Group	L	LTR	R					T	R	L	LTR	
Volume (vph)	315	61	64					340	72	154	42	44
% Heavy Vehicles	2	2	2					0	0	2	2	2
PHF	0.81	0.81	0.81					0.80	0.80	0.66	0.66	0.66
Pretimed/Actuated (P/A)	P	P	P					P	P	P	P	
Startup Lost Time	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Arrival Type	3	3	3					3	3	3	3	
Unit Extension	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	100	0	0				0	0	7	0	0	0
Lane Width	11.0	11.0	12.0					12.0	12.0	16.0	10.0	
Parking/Grade/Parking	N	5	N				N	-1	N	N	6	N
Parking/Hour												
Bus Stops/Hour	0	0	0					0	0	0	0	
Minimum Pedestrian Time		15.1						3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = 21.0	G =	G =	G =	G = 26.0	G = 18.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	370	98	75					425	81	117	247	
Lane Group Capacity	394	405	295					1063	475	394	609	
v/c Ratio	0.94	0.24	0.25					0.40	0.17	0.30	0.41	
Green Ratio	0.26	0.26	0.26					0.32	0.32	0.22	0.22	
Uniform Delay d_1	28.9	23.2	23.3					20.9	19.3	25.7	26.4	
Delay Factor k	0.50	0.50	0.50					0.50	0.50	0.50	0.50	
Incremental Delay d_2	32.3	1.4	2.1					1.1	0.8	1.9	2.0	
PF Factor	1.000	1.000	1.000					1.000	1.000	1.000	1.000	
Control Delay	61.2	24.6	25.4					22.1	20.1	27.7	28.4	
Lane Group LOS	E	C	C					C	C	C	C	
Approach Delay	49.7						21.8			28.2		
Approach LOS	D						C			C		
Intersection Delay	34.1			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	BEDFORD AVE & LEMIEUX PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	0	0	1	0			
Lane Group		LTR			LTR			LTR				
Volume (vph)	27	63	2	3	59	7	2	1	1			
% Heavy Vehicles	2	2	2	0	0	0	0	0	0			
PHF	0.91	0.91	0.91	0.74	0.74	0.74	0.50	0.50	0.50			
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A			
Startup Lost Time		2.0			2.0			2.0				
Extension of Effective Green		2.0			2.0			2.0				
Arrival Type		3			3			3				
Unit Extension		3.0			3.0			3.0				
Ped/Bike/RTOR Volume	75	0	0	75	0	0	75	0	0			
Lane Width		12.0			12.0			12.0				
Parking/Grade/Parking	N	10	N	N	-6	N	N	2	Y			
Parking/Hour									10			
Bus Stops/Hour		0			0			0				
Minimum Pedestrian Time		15.0			16.0			12.3				

Phasing	EB Only	WB Only	03	04	NB Only	06	07	08
Timing	G = 20.0	G = 10.0	G =	G =	G = 8.5	G =	G =	G =
	Y = 5.5	Y = 5.5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 55.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		101			93			8				
Lane Group Capacity		1081			588			202				
v/c Ratio		0.09			0.16			0.04				
Green Ratio		0.36			0.18			0.15				
Uniform Delay d_1		11.5			19.0			19.8				
Delay Factor k		0.11			0.11			0.11				
Incremental Delay d_2		0.0			0.1			0.1				
PF Factor		1.000			1.000			1.000				
Control Delay		11.6			19.1			19.9				
Lane Group LOS		B			B			B				
Approach Delay	11.6			19.1			19.9					
Approach LOS	B			B			B					
Intersection Delay	15.4			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	CRAWFORD ST & BEDFORD AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Group		LTR			LTR			LTR			LTR	
Volume (vph)	1	32	28	9	27	1	42	2	18	1	1	1
% Heavy Vehicles	17	17	17	3	3	3	5	5	5	0	0	0
PHF	0.83	0.83	0.83	0.69	0.69	0.69	0.73	0.73	0.73	0.25	0.25	0.25
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	25	0	0	25	0	0	25	0	0	25	0	0
Lane Width		16.0			12.0			14.0			10.0	
Parking/Grade/Parking	N	10	N	N	-6	Y	N	8	N	N	-6	Y
Parking/Hour						5						5
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		14.5			7.8			12.3			20.3	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 15.0	G =	G =	G =	G = 25.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 50.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		74			53			86			12	
Lane Group Capacity		433			416			663			644	
v/c Ratio		0.17			0.13			0.13			0.02	
Green Ratio		0.30			0.30			0.50			0.50	
Uniform Delay d_1		12.9			12.7			6.7			6.3	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		0.9			0.6			0.4			0.1	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		13.8			13.4			7.1			6.4	
Lane Group LOS		B			B			A			A	
Approach Delay	13.8			13.4			7.1			6.4		
Approach LOS	B			B			A			A		
Intersection Delay	10.7			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	CENTRE/RAMP & WASHINGTON PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	1	0	3	0	0	2	1
Lane Group		LTR			LT	R		LTR			LT	R
Volume (vph)	37	68	41	7	60	54	15	305	10	27	57	8
% Heavy Vehicles	1	1	1	3	3	3	1	1	1	4	4	4
PHF	0.70	0.70	0.70	0.73	0.73	0.73	0.80	0.80	0.80	0.78	0.78	0.78
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0		2.0			2.0	2.0
Extension of Effective Green		2.0			2.0	2.0		2.0			2.0	2.0
Arrival Type		3			3	3		3			3	3
Unit Extension		3.0			3.0	3.0		3.0			3.0	3.0
Ped/Bike/RTOR Volume	5	0	0	5	0	0	0	0	0	4	0	0
Lane Width		13.0			10.0	13.0		12.0			12.0	12.0
Parking/Grade/Parking	N	-1	N	N	-6	N	N	6	Y	N	-3	N
Parking/Hour									10			
Bus Stops/Hour		0			0	0		0			0	0
Minimum Pedestrian Time		23.7			23.7			21.2			3.2	

Phasing	EW Perm	Peds Only	03	04	NS Perm	06	07	08
Timing	G = 23.0	G = 17.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 5.5	Y = 5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		209			92	74		412			108	10
Lane Group Capacity		790			804	430		1175			742	424
v/c Ratio		0.26			0.11	0.17		0.35			0.15	0.02
Green Ratio		0.29			0.29	0.29		0.30			0.30	0.30
Uniform Delay d_1		22.0			21.0	21.4		21.9			20.5	19.7
Delay Factor k		0.50			0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2		0.8			0.3	0.9		0.8			0.4	0.1
PF Factor		1.000			1.000	1.000		1.000			1.000	1.000
Control Delay		22.8			21.3	22.2		22.7			20.9	19.8
Lane Group LOS		C			C	C		C			C	B
Approach Delay	22.8			21.7			22.7			20.8		
Approach LOS	C			C			C			C		
Intersection Delay	22.3			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	CENTRE/RAMP & WASHINGTON PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0				0	3	0	0	2	1
Lane Group		LTR						LTR			LT	R
Volume (vph)	9	7	9				15	305	10	27	57	8
% Heavy Vehicles	0	0	0				1	1	1	4	4	4
PHF	0.56	0.56	0.56				0.80	0.80	0.80	0.78	0.78	0.78
Pretimed/Actuated (P/A)	P	P	P				P	P	P	P	P	P
Startup Lost Time		2.0						2.0			2.0	2.0
Extension of Effective Green		2.0						2.0			2.0	2.0
Arrival Type		3						3			3	3
Unit Extension		3.0						3.0			3.0	3.0
Ped/Bike/RTOR Volume	5	0	0				0	0	0	4	0	0
Lane Width		12.0						12.0			12.0	12.0
Parking/Grade/Parking	N	6	N				N	6	Y	N	-3	N
Parking/Hour									10			
Bus Stops/Hour		0						0			0	0
Minimum Pedestrian Time		23.7						21.2			3.2	

Phasing	Peds Only	EB Only	03	04	NS Perm	06	07	08
Timing	G = 23.0	G = 17.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 5.5	Y = 5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		44						412			108	10
Lane Group Capacity		622						1174			742	423
v/c Ratio		0.07						0.35			0.15	0.02
Green Ratio		0.21						0.30			0.30	0.30
Uniform Delay d_1		25.2						21.9			20.5	19.7
Delay Factor k		0.50						0.50			0.50	0.50
Incremental Delay d_2		0.2						0.8			0.4	0.1
PF Factor		1.000						1.000			1.000	1.000
Control Delay		25.4						22.7			20.9	19.8
Lane Group LOS		C						C			C	B
Approach Delay	25.4						22.7			20.8		
Approach LOS	C						C			C		
Intersection Delay	22.5			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	CKR	Intersection	CENTRE AVE & LEMIEUX PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	0				0	1	0
Lane Group		LTR			LTR						LTR	
Volume (vph)	1	124	1	1	105	1				1	1	6
% Heavy Vehicles	4	4	4	5	5	5				0	0	0
PHF	0.88	0.88	0.88	0.81	0.81	0.81				0.58	0.58	0.58
Pretimed/Actuated (P/A)	P	P	P	P	P	P				P	P	P
Startup Lost Time		2.0			2.0						2.0	
Extension of Effective Green		2.0			2.0						2.0	
Arrival Type		3			3						3	
Unit Extension		3.0			3.0						3.0	
Ped/Bike/RTOR Volume	6	0	0	6	0	0				0	0	0
Lane Width		11.0			11.0						12.0	
Parking/Grade/Parking	N	4	Y	N	-2	Y				N	-5	Y
Parking/Hour			20			20						20
Bus Stops/Hour		0			0						0	
Minimum Pedestrian Time		3.2			13.2						21.2	

Phasing	EW Perm	02	03	04	SB Only	06	07	08
Timing	G = 38.0	G =	G =	G =	G = 21.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		143			132						14	
Lane Group Capacity		1381			1410						377	
v/c Ratio		0.10			0.09						0.04	
Green Ratio		0.54			0.54						0.30	
Uniform Delay d_1		7.7			7.7						17.3	
Delay Factor k		0.50			0.50						0.50	
Incremental Delay d_2		0.2			0.1						0.2	
PF Factor		1.000			1.000						1.000	
Control Delay		7.9			7.8						17.5	
Lane Group LOS		A			A						B	
Approach Delay	7.9			7.8						17.5		
Approach LOS	A			A						B		
Intersection Delay	8.3			Intersection LOS						A		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	CENTRE AVE & CRAWFORD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	1	1	1	0	0	1	0	0	1	0
Lane Group		LT	R	L	TR			LTR			LTR	
Volume (vph)	13	64	44	14	61	11	19	38	33	5	16	21
% Heavy Vehicles	3	3	3	6	6	6	2	2	2	5	5	5
PHF	0.90	0.90	0.90	0.79	0.79	0.79	0.73	0.73	0.73	0.64	0.64	0.64
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0	2.0	2.0	2.0			2.0			2.0	
Extension of Effective Green		2.0	2.0	2.0	2.0			2.0			2.0	
Arrival Type		3	3	3	3			3			3	
Unit Extension		3.0	3.0	3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	50	0	0	50	0	0	50	0	0	50	0	2
Lane Width		15.0	16.0	11.0	11.0			14.0			13.0	
Parking/Grade/Parking	N	-4	Y	N	8	Y	N	5	N	N	-6	N
Parking/Hour			10			10						
Bus Stops/Hour		0	0	0	0			0			0	
Minimum Pedestrian Time		22.7			13.5			14.7			14.7	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 30.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		85	49	18	91			123			63	
Lane Group Capacity		763	560	427	528			651			654	
v/c Ratio		0.11	0.09	0.04	0.17			0.19			0.10	
Green Ratio		0.43	0.43	0.43	0.43			0.43			0.43	
Uniform Delay d_1		12.0	11.9	11.6	12.3			12.4			11.9	
Delay Factor k		0.50	0.50	0.50	0.50			0.50			0.50	
Incremental Delay d_2		0.3	0.3	0.2	0.7			0.6			0.3	
PF Factor		1.000	1.000	1.000	1.000			1.000			1.000	
Control Delay		12.3	12.2	11.8	13.0			13.1			12.2	
Lane Group LOS		B	B	B	B			B			B	
Approach Delay	12.3			12.8			13.1			12.2		
Approach LOS	B			B			B			B		
Intersection Delay	12.6			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	CENTRE AVE & DEVILLERS ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Group		LTR			LTR			LTR			LTR	
Volume (vph)	28	117	4	4	106	17	2	1	1	1	1	13
% Heavy Vehicles	4	4	4	5	5	5	0	0	0	0	0	0
PHF	0.90	0.90	0.90	0.71	0.71	0.71	0.75	0.75	0.75	0.70	0.70	0.70
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	25	0	1	25	0	2	25	0	0	25	0	1
Lane Width		16.0			10.0			11.0			11.0	
Parking/Grade/Parking	N	-2	N	N	-1	Y	N	0	Y	N	-6	Y
Parking/Hour						5			5			5
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		11.4			12.9			14.6			13.4	

Phasing	EW Perm	EB Only	03	04	NS Perm	06	07	08
Timing	G = 24.0	G = 21.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB	SB
Adjusted Flow Rate	164	176	5	19
Lane Group Capacity	1145	388	295	294
v/c Ratio	0.14	0.45	0.02	0.06
Green Ratio	0.64	0.30	0.24	0.24
Uniform Delay d_1	5.8	22.7	23.4	23.6
Delay Factor k	0.50	0.50	0.50	0.50
Incremental Delay d_2	0.3	3.8	0.1	0.4
PF Factor	1.000	1.000	1.000	1.000
Control Delay	6.0	26.5	23.5	24.0
Lane Group LOS	A	C	C	C
Approach Delay	6.0	26.5	23.5	24.0
Approach LOS	A	C	C	C
Intersection Delay	17.1	Intersection LOS		B

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	CENTRE AVE & DINWIDDLE ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		1	0	0	1		0		0			
Lane Group		TR			LT			LR				
Volume (vph)		108	17	38	83		7		42			
% Heavy Vehicles		0	0	0	0		0		0			
PHF		0.85	0.85	0.66	0.66		0.80		0.80			
Pretimed/Actuated (P/A)		P	P	P	P		P		P			
Startup Lost Time		2.0			2.0			2.0				
Extension of Effective Green		2.0			2.0			2.0				
Arrival Type		3			3			3				
Unit Extension		3.0			3.0			3.0				
Ped/Bike/RTOR Volume	25	0	2	0	0		25	0	0			
Lane Width		16.0			16.0			16.0				
Parking/Grade/Parking	N	-2	N	N	-1	N	N	4	Y			
Parking/Hour									5			
Bus Stops/Hour		0			0			0				
Minimum Pedestrian Time		15.9			12.7			13.4				

Phasing	EW Perm	WB Only	03	04	NB Only	06	07	08
Timing	G = 24.0	G = 21.0	G =	G =	G = 19.0	G =	G =	G =
	Y = 6	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25					Cycle Length C = 80.0			

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		145			184			61				
Lane Group Capacity		575			1149			347				
v/c Ratio		0.25			0.16			0.18				
Green Ratio		0.30			0.64			0.24				
Uniform Delay d_1		21.2			5.9			24.3				
Delay Factor k		0.50			0.50			0.50				
Incremental Delay d_2		1.1			0.3			1.1				
PF Factor		1.000			1.000			1.000				
Control Delay		22.3			6.2			25.4				
Lane Group LOS		C			A			C				
Approach Delay	22.3			6.2			25.4					
Approach LOS	C			A			C					
Intersection Delay	15.1			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	FIFTH AVE & WASHINGTON/CHATHAM
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				0	2	0	1	1			1	2
Lane Group					LTR		L	T			T	R
Volume (vph)				6	187	119	12	199			43	50
% Heavy Vehicles				9	9	9	0	0			0	0
PHF				0.96	0.96	0.96	0.62	0.62			0.63	0.63
Pretimed/Actuated (P/A)				P	P	P	P	P			P	P
Startup Lost Time					2.0		2.0	2.0			2.0	2.0
Extension of Effective Green					2.0		2.0	2.0			2.0	2.0
Arrival Type					3		3	3			3	3
Unit Extension					3.0		3.0	3.0			3.0	3.0
Ped/Bike/RTOR Volume				4	0	12	0	0		0	0	0
Lane Width					11.0		10.0	9.0			11.0	12.0
Parking/Grade/Parking				Y	-2	Y	N	-6	N	N	-2	N
Parking/Hour				20		20						
Bus Stops/Hour					0		0	0			0	0
Minimum Pedestrian Time					25.2			3.2			15.2	

Phasing	WB Only	02	03	04	NS Perm	06	07	08
Timing	G = 39.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate					312		19	321			68	79
Lane Group Capacity					1141		440	594			626	974
v/c Ratio					0.27		0.04	0.54			0.11	0.08
Green Ratio					0.49		0.38	0.38			0.38	0.38
Uniform Delay d_1					12.1		15.9	19.6			16.3	16.1
Delay Factor k					0.50		0.50	0.50			0.50	0.50
Incremental Delay d_2					0.6		0.2	3.5			0.4	0.2
PF Factor					1.000		1.000	1.000			1.000	1.000
Control Delay					12.7		16.1	23.1			16.6	16.3
Lane Group LOS					B		B	C			B	B
Approach Delay				12.7			22.7			16.4		
Approach LOS				B			C			B		
Intersection Delay	17.7			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	FORBES AVE & ARMSTRONG TUNNEL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0				0		2			
Lane Group		TR						LR	R			
Volume (vph)		188	216				48		204			
% Heavy Vehicles		5	5				0		0			
PHF		0.93	0.93				0.79		0.79			
Pretimed/Actuated (P/A)		P	P				P		P			
Startup Lost Time		2.0						2.0	2.0			
Extension of Effective Green		2.0						2.0	2.0			
Arrival Type		3						3	3			
Unit Extension		3.0						3.0	3.0			
Ped/Bike/RTOR Volume	50	0	0				0	0	20			
Lane Width		11.0						11.0	11.0			
Parking/Grade/Parking	N	3	N				N	0	N			
Parking/Hour												
Bus Stops/Hour		0						0	0			
Minimum Pedestrian Time		17.3						3.2				

Phasing	EB Only	02	03	04	NB Only	06	07	08
Timing	G = 41.0	G =	G =	G =	G = 29.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		434						131	163			
Lane Group Capacity		1356						539	902			
v/c Ratio		0.32						0.24	0.18			
Green Ratio		0.51						0.36	0.36			
Uniform Delay d_1		11.4						17.8	17.4			
Delay Factor k		0.50						0.50	0.50			
Incremental Delay d_2		0.6						1.1	0.4			
PF Factor		1.000						1.000	1.000			
Control Delay		12.0						18.9	17.8			
Lane Group LOS		B						B	B			
Approach Delay	12.0						18.3					
Approach LOS	B						B					
Intersection Delay	14.5			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	FORBES AVE & CHATHAM/McANULTY
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	2	0					1	1	0	1	
Lane Group	L	TR						T	R		LT	
Volume (vph)	122	156	8					5	10	36	8	
% Heavy Vehicles	7	7	7					0	0	0	0	
PHF	0.81	0.81	0.81					0.75	0.75	0.72	0.72	
Pretimed/Actuated (P/A)	P	P	P					P	P	P	P	
Startup Lost Time	2.0	2.0						2.0	2.0		2.0	
Extension of Effective Green	2.0	2.0						2.0	2.0		2.0	
Arrival Type	3	3						3	3		3	
Unit Extension	3.0	3.0						3.0	3.0		3.0	
Ped/Bike/RTOR Volume	5	0	0				0	0	1	21	0	
Lane Width	10.0	11.0						10.0	11.0		10.0	
Parking/Grade/Parking	N	3	N				N	-6	N	N	10	N
Parking/Hour												
Bus Stops/Hour	0	0						0	0		0	
Minimum Pedestrian Time		13.7						12.2			12.3	

Phasing	EB Only	02	03	04	NS Perm	06	07	08
Timing	G = 51.0	G =	G =	G =	G = 19.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 — Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	151	203						7	12		61	
Lane Group Capacity	890	1833						390	344		284	
v/c Ratio	0.17	0.11						0.02	0.03		0.21	
Green Ratio	0.64	0.64						0.24	0.24		0.24	
Uniform Delay d_1	5.9	5.7						23.4	23.5		24.5	
Delay Factor k	0.50	0.50						0.50	0.50		0.50	
Incremental Delay d_2	0.4	0.1						0.1	0.2		1.7	
PF Factor	1.000	1.000						1.000	1.000		1.000	
Control Delay	6.3	5.8						23.4	23.6		26.2	
Lane Group LOS	A	A						C	C		C	
Approach Delay	6.0						23.6			26.2		
Approach LOS	A						C			C		
Intersection Delay	9.6			Intersection LOS						A		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	GRANT ST & BLVD OF ALLIES
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	1		2	0	0	2	0		2	0
Lane Group		LT	R		TR			LTR			TR	
Volume (vph)	23	106	84		112	28	20	122	31		202	42
% Heavy Vehicles	4	4	4		4	4	5	5	5		0	0
PHF	0.84	0.84	0.84		0.72	0.72	0.75	0.75	0.75		0.86	0.86
Pretimed/Actuated (P/A)	P	P	P		P	P	P	P	P		P	P
Startup Lost Time		2.0	2.0		2.0			2.0			2.0	
Extension of Effective Green		2.0	2.0		2.0			2.0			2.0	
Arrival Type		3	3		3			3			3	
Unit Extension		3.0	3.0		3.0			3.0			3.0	
Ped/Bike/RTOR Volume	100	0	4	100	0	0	100	0	0	100	0	0
Lane Width		11.0	12.0		12.0			11.0			11.0	
Parking/Grade/Parking	N	0	N	N	-2	N	N	1	N	N	-1	N
Parking/Hour												
Bus Stops/Hour		0	0		0			0			0	
Minimum Pedestrian Time		18.9			17.9			28.9			20.1	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 40.0	G =	G =	G =	G = 39.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 6	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		153	95		195			231			284	
Lane Group Capacity		1186	648		1345			1126			1335	
v/c Ratio		0.13	0.15		0.14			0.21			0.21	
Green Ratio		0.44	0.44		0.44			0.43			0.43	
Uniform Delay d_1		14.7	14.9		14.8			15.9			15.9	
Delay Factor k		0.50	0.50		0.50			0.50			0.50	
Incremental Delay d_2		0.2	0.5		0.2			0.4			0.4	
PF Factor		1.000	1.000		1.000			1.000			1.000	
Control Delay		15.0	15.3		15.1			16.3			16.3	
Lane Group LOS		B	B		B			B			B	
Approach Delay	15.1			15.1			16.3			16.3		
Approach LOS	B			B			B			B		
Intersection Delay	15.7			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	GRANT ST & FIRST AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes				0		0		2	1	1	2	
Lane Group					LR			T	R	L	T	
Volume (vph)				104		13		160	100	24	147	
% Heavy Vehicles				1		1		1	1	0	0	
PHF				0.78		0.78		0.80	0.80	0.83	0.83	
Pretimed/Actuated (P/A)				P		P		P	P	P	P	
Startup Lost Time					2.0			2.0	2.0	2.0	2.0	
Extension of Effective Green					2.0			2.0	2.0	2.0	2.0	
Arrival Type					3			3	3	3	3	
Unit Extension					3.0			3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume				0	0	0	100	0	10	0	0	
Lane Width					12.0			11.0	12.0	10.0	12.0	
Parking/Grade/Parking				N	2	N	N	3	N	N	-3	N
Parking/Hour												
Bus Stops/Hour					0			0	0	0	0	
Minimum Pedestrian Time					18.7			12.9			3.2	

Phasing	WB Only	02	03	04	SB Only	NS Perm	07	08
Timing	G = 28.0	G =	G =	G =	G = 3.0	G = 46.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 3	Y = 5	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate					150			200	112	29	177	
Lane Group Capacity					492			1569	654	536	1910	
v/c Ratio					0.30			0.13	0.17	0.05	0.09	
Green Ratio					0.31			0.51	0.51	0.58	0.58	
Uniform Delay d_1					23.6			11.5	11.8	8.2	8.5	
Delay Factor k					0.50			0.50	0.50	0.50	0.50	
Incremental Delay d_2					1.6			0.2	0.6	0.2	0.1	
PF Factor					1.000			1.000	1.000	1.000	1.000	
Control Delay					25.2			11.7	12.4	8.4	8.6	
Lane Group LOS					C			B	B	A	A	
Approach Delay				25.2			11.9			8.6		
Approach LOS				C			B			A		
Intersection Delay	13.9			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	GRANT ST & FORT PITT/1-376
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1				1	1		2			1	1
Lane Group	L				TR	R		T			T	R
Volume (vph)	78				123	80		111			169	82
% Heavy Vehicles	1				1	1		0			0	0
PHF	0.88				0.79	0.79		0.84			0.88	0.88
Pretimed/Actuated (P/A)	P				P	P		P			P	P
Startup Lost Time	2.0				2.0	2.0		2.0			2.0	2.0
Extension of Effective Green	2.0				2.0	2.0		2.0			2.0	2.0
Arrival Type	3				3	3		3			3	3
Unit Extension	3.0				3.0	3.0		3.0			3.0	3.0
Ped/Bike/RTOR Volume	100	0		0	0	0	0	0		0	0	0
Lane Width	12.0				13.0	12.0		10.0			12.0	12.0
Parking/Grade/Parking	N	0	N	N	2	N	N	3	N	N	-1	N
Parking/Hour												
Bus Stops/Hour	0				0	0		0			0	0
Minimum Pedestrian Time		17.6			3.2			3.2			3.2	

Phasing	EB Only	WB Only	03	04	Thru & RT	06	07	08
Timing	G = 25.0	G = 24.0	G =	G =	G = 25.0	G =	G =	G =
	Y = 5	Y = 5	Y =	Y =	Y = 6	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25

Cycle Length C = 90.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	89				161	96		132			192	93
Lane Group Capacity	447				460	380		831			478	406
v/c Ratio	0.20				0.35	0.25		0.16			0.40	0.23
Green Ratio	0.28				0.27	0.27		0.28			0.28	0.28
Uniform Delay d_1	24.8				26.7	25.9		24.6			26.4	25.1
Delay Factor k	0.50				0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2	1.0				2.1	1.6		0.4			2.5	1.3
PF Factor	1.000				1.000	1.000		1.000			1.000	1.000
Control Delay	25.8				28.8	27.5		25.0			28.9	26.4
Lane Group LOS	C				C	C		C			C	C
Approach Delay	25.8			28.3			25.0			28.1		
Approach LOS	C			C			C			C		
Intersection Delay	27.4			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	M. Southern	Intersection	SECOND AVE/COURT & ROSS ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	FRIDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0		1	1	0	1	0	1	1	0
Lane Group		LTR			T	R		LTR		L	TR	
Volume (vph)	1	43	2		102	72	1	36	31	84	64	5
% Heavy Vehicles	2	2	2		5	5	5	5	5	5	5	5
PHF	0.66	0.66	0.66		0.75	0.75	0.92	0.92	0.92	0.86	0.86	0.86
Pretimed/Actuated (P/A)	P	P	P		P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0		2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0	2.0		2.0		2.0	2.0	
Arrival Type		3			3	3		3		3	3	
Unit Extension		3.0			3.0	3.0		3.0		3.0	3.0	
Ped/Bike/RTOR Volume	50	0	0	50	0	0	50	0	3	50	0	0
Lane Width		13.0			11.0	14.0		14.0		10.0	10.0	
Parking/Grade/Parking	Y	-2	Y	N	5	N	N	2	Y	N	-3	N
Parking/Hour	10		10						10			
Bus Stops/Hour		0			0	0		0		0	0	
Minimum Pedestrian Time		13.0			13.0			12.5			8.5	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		70			136	96		70		98	80	
Lane Group Capacity		572			636	561		574		446	651	
v/c Ratio		0.12			0.21	0.17		0.12		0.22	0.12	
Green Ratio		0.41			0.41	0.41		0.43		0.43	0.43	
Uniform Delay d_1		12.6			13.2	12.9		12.1		12.6	12.1	
Delay Factor k		0.50			0.50	0.50		0.50		0.50	0.50	
Incremental Delay d_2		0.4			0.8	0.7		0.4		1.1	0.4	
PF Factor		1.000			1.000	1.000		1.000		1.000	1.000	
Control Delay		13.1			13.9	13.6		12.5		13.7	12.5	
Lane Group LOS		B			B	B		B		B	B	
Approach Delay	13.1			13.8			12.5			13.2		
Approach LOS	B			B			B			B		
Intersection Delay	13.3			Intersection LOS			B					

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SATURDAY CASINO PEAK HOUR

SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	LIBERTY AVE & SEVENTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0		3		1					
Lane Group		TR			T		L					
Volume (vph)		188	179		131		110					
% Heavy Vehicles		7	7		3		4					
PHF		0.87	0.87		0.88		0.84					
Pretimed/Actuated (P/A)		P	P		P		P					
Startup Lost Time		2.0			2.0		2.0					
Extension of Effective Green		2.0			2.0		2.0					
Arrival Type		3			3		3					
Unit Extension		3.0			3.0		3.0					
Ped/Bike/RTOR Volume	100	0	0	0	0		0	0				
Lane Width		11.0			11.0		12.0					
Parking/Grade/Parking	N	0	N	N	0	N	N	-2	N			
Parking/Hour												
Bus Stops/Hour		0			0		0					
Minimum Pedestrian Time		17.5			3.2			3.2				

Phasing	Thru & RT	Thru & RT	03	04	NB Only	06	07	08
Timing	G = 9.0	G = 24.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		422			149		131					
Lane Group Capacity		1333			2248		541					
v/c Ratio		0.32			0.07		0.24					
Green Ratio		0.51			0.51		0.34					
Uniform Delay d_1		9.9			8.5		16.5					
Delay Factor k		0.50			0.50		0.50					
Incremental Delay d_2		0.6			0.1		1.1					
PF Factor		1.000			1.000		1.000					
Control Delay		10.5			8.6		17.5					
Lane Group LOS		B			A		B					
Approach Delay	10.5			8.6			17.5					
Approach LOS	B			A			B					
Intersection Delay	11.4			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	LIBERTY AVE & SMITHFIELD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes		2	0	0	3		1		1			
Lane Group		TR			LT		L		R			
Volume (vph)		182	6	5	78		53		101			
% Heavy Vehicles		8	8	7	7		0		0			
PHF		0.87	0.87	0.89	0.89		0.88		0.88			
Pretimed/Actuated (P/A)		P	P	P	P		P		P			
Startup Lost Time		2.0			2.0		2.0		2.0			
Extension of Effective Green		2.0			2.0		2.0		2.0			
Arrival Type		3			3		3		3			
Unit Extension		3.0			3.0		3.0		3.0			
Ped/Bike/RTOR Volume	100	0	0	0	0		100	0	0			
Lane Width		11.0			11.0		11.0		13.0			
Parking/Grade/Parking	N	1	N	N	-1	N	N	-2	N			
Parking/Hour												
Bus Stops/Hour		0			0		0		0			
Minimum Pedestrian Time		17.2			3.2			17.7				

Phasing	WB Only	EW Perm	03	04	NB Only	06	07	08
Timing	G = 6.0	G = 27.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 70.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		216			94		60		115			
Lane Group Capacity		1108			2012		544		475			
v/c Ratio		0.19			0.05		0.11		0.24			
Green Ratio		0.39			0.51		0.34		0.34			
Uniform Delay d_1		14.3			8.5		15.7		16.5			
Delay Factor k		0.50			0.50		0.50		0.50			
Incremental Delay d_2		0.4			0.0		0.4		1.2			
PF Factor		1.000			1.000		1.000		1.000			
Control Delay		14.7			8.5		16.1		17.7			
Lane Group LOS		B			A		B		B			
Approach Delay	14.7			8.5			17.2					
Approach LOS	B			A			B					
Intersection Delay	14.4			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	SEVENTH AVE & SMITHFIELD ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	1	0		2	0	0	1	0
Lane Group		LTR			LTR			TR			LTR	
Volume (vph)	2	174	3	2	106	16		135	49	6	1	4
% Heavy Vehicles	5	5	5	3	3	3		0	0	27	27	27
PHF	0.85	0.85	0.85	0.85	0.85	0.85		0.90	0.90	0.55	0.55	0.55
Pretimed/Actuated (P/A)	P	P	P	P	P	P		P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	0	100	0	0
Lane Width		11.0			11.0			11.0			12.0	
Parking/Grade/Parking	N	0	N	N	0	N	N	0	N	N	0	N
Parking/Hour												
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		3.7			12.2			12.2			12.2	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 29.0	G =	G =	G =	G = 30.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB	WB	NB	SB
Adjusted Flow Rate	211	146	204	20
Lane Group Capacity	1178	645	1271	448
v/c Ratio	0.18	0.23	0.16	0.04
Green Ratio	0.41	0.41	0.43	0.43
Uniform Delay d_1	13.0	13.2	12.3	11.7
Delay Factor k	0.50	0.50	0.50	0.50
Incremental Delay d_2	0.3	0.8	0.3	0.2
PF Factor	1.000	1.000	1.000	1.000
Control Delay	13.3	14.1	12.5	11.8
Lane Group LOS	B	B	B	B
Approach Delay	13.3	14.1	12.5	11.8
Approach LOS	B	B	B	B
Intersection Delay	13.2	Intersection LOS		B

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & LIBERTY AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	2	1	0	1	1	0		3	0		2	0
Lane Group	L	TR		L	TR			TR			TR	
Volume (vph)	174	12	26	7	8	1		361	21		264	45
% Heavy Vehicles	6	6	6	25	25	25		2	2		1	1
PHF	0.89	0.89	0.89	0.67	0.67	0.67		0.85	0.85		0.77	0.77
Pretimed/Actuated (P/A)	P	P	P	P	P	P		P	P		P	P
Startup Lost Time	2.0	2.0		2.0	2.0			2.0			2.0	
Extension of Effective Green	2.0	2.0		2.0	2.0			2.0			2.0	
Arrival Type	3	3		3	3			3			3	
Unit Extension	3.0	3.0		3.0	3.0			3.0			3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	0	100	0	0
Lane Width	11.0	11.0		12.0	12.0			11.0			13.0	
Parking/Grade/Parking	N	1	N	N	-2	N	N	-2	N	N	1	N
Parking/Hour												
Bus Stops/Hour	0	0		0	0			0			0	
Minimum Pedestrian Time		20.6			20.6			26.3			24.8	

Phasing	WB Only	WB Only	EB Only	04	Thru & RT	Thru & RT	07	08
Timing	G = 26.0	G = 19.0	G = 21.0	G =	G = 47.0	G = 14.0	G =	G =
	Y = 5	Y = 5	Y = 6	Y =	Y = 5	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 153.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	196	42		10	13			450			401	
Lane Group Capacity	393	191		392	443			1895			1374	
v/c Ratio	0.50	0.22		0.03	0.03			0.24			0.29	
Green Ratio	0.14	0.14		0.33	0.33			0.43			0.43	
Uniform Delay d_1	61.1	58.7		35.0	35.0			27.6			28.3	
Delay Factor k	0.50	0.50		0.50	0.50			0.50			0.50	
Incremental Delay d_2	4.5	2.6		0.1	0.1			0.3			0.5	
PF Factor	1.000	1.000		1.000	1.000			1.000			1.000	
Control Delay	65.6	61.3		35.1	35.1			27.9			28.8	
Lane Group LOS	E	E		D	D			C			C	
Approach Delay	64.8			35.1			27.9			28.8		
Approach LOS	E			D			C			C		
Intersection Delay	36.3			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & ELEVENTH ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1		2				1	2			2	0
Lane Group	L		R				L	T			TR	
Volume (vph)	49		135				115	421			175	23
% Heavy Vehicles	2		2				3	3			1	1
PHF	0.80		0.80				0.92	0.92			0.83	0.83
Pretimed/Actuated (P/A)	P						P	P			P	P
Startup Lost Time	2.0		2.0				2.0	2.0			2.0	
Extension of Effective Green	2.0		2.0				2.0	2.0			2.0	
Arrival Type	3		3				3	3			3	
Unit Extension	3.0		3.0				3.0	3.0			3.0	
Ped/Bike/RTOR Volume	0	0	0				0	0		0	0	0
Lane Width	11.0		12.0				11.0	12.0			12.0	
Parking/Grade/Parking	N	-1	N				N	-1	N	N	1	N
Parking/Hour												
Bus Stops/Hour	0		0				0	0			0	
Minimum Pedestrian Time		3.2						3.2			23.2	

Phasing	EB Only	Peds Only	03	04	NB Only	Thru & RT	NB Only	08
Timing	G = 26.0	G = 19.0	G =	G =	G = 21.0	G = 47.0	G = 14.0	G =
	Y = 5	Y = 5	Y =	Y =	Y = 6	Y = 5	Y = 5	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 153.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	61		169				125	458			239	
Lane Group Capacity	263		232				350	1931			968	
v/c Ratio	0.23		0.73				0.36	0.24			0.25	
Green Ratio	0.17		0.09				0.23	0.61			0.31	
Uniform Delay d_1	54.9		67.6				49.6	13.7			39.7	
Delay Factor k	0.50		0.50				0.50	0.50			0.50	
Incremental Delay d_2	2.1		18.1				2.8	0.3			0.6	
PF Factor	1.000		1.000				1.000	1.000			1.000	
Control Delay	56.9		85.8				52.4	14.0			40.3	
Lane Group LOS	E		F				D	B			D	
Approach Delay	78.1						22.3			40.3		
Approach LOS	E						C			D		
Intersection Delay	38.6			Intersection LOS						D		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & SEVENTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	1	1	2	0	1	2	0
Lane Group		LTR			LT	R	L	TR		L	TR	
Volume (vph)	5	199	33	50	131	161	59	235	79	121	168	8
% Heavy Vehicles	6	6	6	1	1	1	1	1	1	2	2	2
PHF	0.87	0.87	0.87	0.78	0.78	0.78	0.89	0.89	0.89	0.81	0.81	0.81
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0	2.0	2.0	2.0		2.0	2.0	
Arrival Type		3			3	3	3	3		3	3	
Unit Extension		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	100	0	0	100	0	0	100	0	0	100	0	0
Lane Width		11.0			10.0	13.0	11.0	11.0		11.0	11.0	
Parking/Grade/Parking	N	5	N	N	-5	N	N	-1	N	N	2	N
Parking/Hour												
Bus Stops/Hour		0			0	0	0	0		0	0	
Minimum Pedestrian Time		17.6			17.9			18.9			17.6	

Phasing	EW Perm	02	03	04	Excl. Left	NS Perm	07	08
Timing	G = 27.0	G =	G =	G =	G = 15.0	G = 35.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		273			232	206	66	353		149	217	
Lane Group Capacity		794			722	746	623	1149		543	1176	
v/c Ratio		0.34			0.32	0.28	0.11	0.31		0.27	0.18	
Green Ratio		0.30			0.30	0.52	0.59	0.39		0.59	0.39	
Uniform Delay d_1		24.6			24.4	12.0	8.0	19.1		8.7	18.1	
Delay Factor k		0.50			0.50	0.50	0.50	0.50		0.50	0.50	
Incremental Delay d_2		1.2			1.2	0.9	0.3	0.7		1.2	0.3	
PF Factor		1.000			1.000	1.000	1.000	1.000		1.000	1.000	
Control Delay		25.8			25.6	12.9	8.4	19.8		10.0	18.5	
Lane Group LOS		C			C	B	A	B		A	B	
Approach Delay	25.8			19.6			18.0			15.0		
Approach LOS	C			B			B			B		
Intersection Delay	19.2			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	GRANT ST & SIXTH AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	2	0	1	2	0	1	2	0
Lane Group		LTR			LTR		L	TR		L	TR	
Volume (vph)	37	130	29	71	169	123	26	213	48	46	196	8
% Heavy Vehicles	3	3	3	1	1	1	1	1	1	1	1	1
PHF	0.88	0.88	0.88	0.84	0.84	0.84	0.80	0.80	0.80	0.86	0.86	0.86
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0		2.0	2.0		2.0	2.0	
Extension of Effective Green		2.0			2.0		2.0	2.0		2.0	2.0	
Arrival Type		3			3		3	3		3	3	
Unit Extension		3.0			3.0		3.0	3.0		3.0	3.0	
Ped/Bike/RTOR Volume	64	0	0	90	0	0	72	0	0	82	0	0
Lane Width		12.0			11.0		12.0	10.0		12.0	10.0	
Parking/Grade/Parking	N	4	N	N	-5	N	N	-1	N	N	2	N
Parking/Hour												
Bus Stops/Hour		0			0		0	0		0	0	
Minimum Pedestrian Time		17.4			17.6			16.2			12.8	

Phasing	EB Only	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 5.0	G = 30.0	G =	G =	G = 7.0	G = 32.0	G =	G =
	Y = 3	Y = 5	Y =	Y =	Y = 3	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		223			432		32	326		53	237	
Lane Group Capacity		456			874		459	1034		411	1050	
v/c Ratio		0.49			0.49		0.07	0.32		0.13	0.23	
Green Ratio		0.42			0.33		0.47	0.36		0.47	0.36	
Uniform Delay d_1		18.9			23.9		13.2	21.0		13.5	20.3	
Delay Factor k		0.50			0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2		3.7			2.0		0.3	0.8		0.6	0.5	
PF Factor		1.000			1.000		1.000	1.000		1.000	1.000	
Control Delay		22.6			25.9		13.5	21.8		14.1	20.8	
Lane Group LOS		C			C		B	C		B	C	
Approach Delay	22.6			25.9			21.1			19.6		
Approach LOS	C			C			C			B		
Intersection Delay	22.6			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	SIXTH AVE & ROSS ST/BIGELOW
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	3	0	0	2	0	0	2	0	0	2	
Lane Group	DefL	TR			LTR		DefL	TR			LT	
Volume (vph)	84	131	8	5	220	9	44	29	8	36	96	
% Heavy Vehicles	1	1	1	2	2	2	1	1	1	1	1	
PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.79	0.79	0.79	0.81	0.81	
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	
Startup Lost Time	2.0	2.0			2.0		2.0	2.0			2.0	
Extension of Effective Green	2.0	2.0			2.0		2.0	2.0			2.0	
Arrival Type	3	3			3		3	3			3	
Unit Extension	3.0	3.0			3.0		3.0	3.0			3.0	
Ped/Bike/RTOR Volume	100	0	1	100	0	1	100	0	1	100	0	
Lane Width	12.0	11.0			11.0		12.0	12.0			11.0	
Parking/Grade/Parking	N	5	N	N	-6	N	N	-1	N	N	-1	N
Parking/Hour												
Bus Stops/Hour	0	0			0		0	0			0	
Minimum Pedestrian Time		17.7			17.2			20.2			7.5	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 37.0	G =	G =	G =	G = 22.0	G =	G =	G =
	Y = 5.5	Y =	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 70.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	94	155			278		56	46			163	
Lane Group Capacity	488	1589			1584		321	509			842	
v/c Ratio	0.19	0.10			0.18		0.17	0.09			0.19	
Green Ratio	0.53	0.53			0.53		0.31	0.31			0.31	
Uniform Delay d_1	8.7	8.2			8.6		17.4	16.9			17.5	
Delay Factor k	0.50	0.50			0.50		0.50	0.50			0.50	
Incremental Delay d_2	0.9	0.1			0.2		1.2	0.4			0.5	
PF Factor	1.000	1.000			1.000		1.000	1.000			1.000	
Control Delay	9.5	8.3			8.8		18.6	17.3			18.0	
Lane Group LOS	A	A			A		B	B			B	
Approach Delay	8.8			8.8			18.0			18.0		
Approach LOS	A			A			B			B		
Intersection Delay	11.9			Intersection LOS						B		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	WASHINGTON PL & BEDFORD/CENTRE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	1	1	1					2	1	1	2	0
Lane Group	L	LTR	R					T	R	L	LTR	
Volume (vph)	209	47	49					306	73	82	44	34
% Heavy Vehicles	0	0	0					0	0	0	0	0
PHF	0.91	0.91	0.91					0.71	0.71	0.86	0.86	0.86
Pretimed/Actuated (P/A)	P	P	P					P	P	P	P	P
Startup Lost Time	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Extension of Effective Green	2.0	2.0	2.0					2.0	2.0	2.0	2.0	
Arrival Type	3	3	3					3	3	3	3	
Unit Extension	3.0	3.0	3.0					3.0	3.0	3.0	3.0	
Ped/Bike/RTOR Volume	100	0	0				0	0	7	0	0	0
Lane Width	11.0	11.0	12.0					12.0	12.0	16.0	10.0	
Parking/Grade/Parking	N	5	N				N	-1	N	N	6	N
Parking/Hour												
Bus Stops/Hour	0	0	0					0	0	0	0	
Minimum Pedestrian Time		15.1						3.2			3.2	

Phasing	EB Only	02	03	04	NB Only	SB Only	07	08
Timing	G = 21.0	G =	G =	G =	G = 26.0	G = 18.0	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y = 5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 80.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	219	66	51					431	93	48	138	
Lane Group Capacity	402	414	301					1063	475	402	624	
v/c Ratio	0.54	0.16	0.17					0.41	0.20	0.12	0.22	
Green Ratio	0.26	0.26	0.26					0.32	0.32	0.22	0.22	
Uniform Delay d_1	25.4	22.7	22.8					21.0	19.5	24.7	25.3	
Delay Factor k	0.50	0.50	0.50					0.50	0.50	0.50	0.50	
Incremental Delay d_2	5.2	0.8	1.2					1.1	0.9	0.6	0.8	
PF Factor	1.000	1.000	1.000					1.000	1.000	1.000	1.000	
Control Delay	30.6	23.5	24.0					22.1	20.4	25.3	26.1	
Lane Group LOS	C	C	C					C	C	C	C	
Approach Delay	28.2						21.8			25.9		
Approach LOS	C						C			C		
Intersection Delay	24.6			Intersection LOS						C		

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	BEDFORD AVE & LEMIEUX PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	0	0	1	0			
Lane Group		LTR			LTR			LTR				
Volume (vph)	72	102	9	2	60	16	8	4	1			
% Heavy Vehicles	2	2	2	0	0	0	0	0	0			
PHF	0.76	0.76	0.76	0.74	0.74	0.74	0.60	0.60	0.60			
Pretimed/Actuated (P/A)	A	A	A	A	A	A	A	A	A			
Startup Lost Time		2.0			2.0			2.0				
Extension of Effective Green		2.0			2.0			2.0				
Arrival Type		3			3			3				
Unit Extension		3.0			3.0			3.0				
Ped/Bike/RTOR Volume	75	0	0	75	0	0	75	0	0			
Lane Width		12.0			12.0			12.0				
Parking/Grade/Parking	N	10	N	N	-6	N	N	2	Y			
Parking/Hour									10			
Bus Stops/Hour		0			0			0				
Minimum Pedestrian Time		15.0			16.0			12.3				

Phasing	EB Only	WB Only	03	04	NB Only	06	07	08
Timing	G = 20.0	G = 10.0	G =	G =	G = 8.5	G =	G =	G =
	Y = 5.5	Y = 5.5	Y =	Y =	Y = 5.5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 55.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		241			106			22				
Lane Group Capacity		1068			572			210				
v/c Ratio		0.23			0.19			0.10				
Green Ratio		0.36			0.18			0.15				
Uniform Delay d_1		12.1			19.1			20.0				
Delay Factor k		0.11			0.11			0.11				
Incremental Delay d_2		0.1			0.2			0.2				
PF Factor		1.000			1.000			1.000				
Control Delay		12.2			19.2			20.2				
Lane Group LOS		B			B			C				
Approach Delay	12.2			19.2			20.2					
Approach LOS	B			B			C					
Intersection Delay	14.7			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CRAWFORD ST & BEDFORD AVE
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Lane Group		LTR			LTR			LTR			LTR	
Volume (vph)	12	45	58	10	43	1	47	1	12	1	1	1
% Heavy Vehicles	1	1	1	2	2	2	3	3	3	0	0	0
PHF	0.86	0.86	0.86	0.77	0.77	0.77	0.63	0.63	0.63	0.25	0.25	0.25
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0			2.0			2.0	
Extension of Effective Green		2.0			2.0			2.0			2.0	
Arrival Type		3			3			3			3	
Unit Extension		3.0			3.0			3.0			3.0	
Ped/Bike/RTOR Volume	25	0	0	25	0	0	25	0	0	25	0	0
Lane Width		16.0			12.0			14.0			10.0	
Parking/Grade/Parking	N	10	N	N	-6	Y	N	8	N	N	-6	Y
Parking/Hour						5						5
Bus Stops/Hour		0			0			0			0	
Minimum Pedestrian Time		14.5			7.8			12.3			20.3	

Phasing	EW Perm	02	03	04	NS Perm	06	07	08
Timing	G = 15.0	G =	G =	G =	G = 25.0	G =	G =	G =
	Y = 5	Y =	Y =	Y =	Y = 5	Y =	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 50.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		133			70			96			12	
Lane Group Capacity		483			424			659			643	
v/c Ratio		0.28			0.17			0.15			0.02	
Green Ratio		0.30			0.30			0.50			0.50	
Uniform Delay d_1		13.4			12.9			6.7			6.3	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		1.4			0.8			0.5			0.1	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		14.8			13.7			7.2			6.4	
Lane Group LOS		B			B			A			A	
Approach Delay	14.8			13.7			7.2			6.4		
Approach LOS	B			B			A			A		
Intersection Delay	11.9			Intersection LOS			B					

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SHORT REPORT

General Information		Site Information	
Analyst	N. Karsko	Intersection	CENTRE/RAMP & WASHINGTON PL
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	12/6/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2008 BASE CONDITION

Volume and Timing Input

	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of Lanes	0	2	0	0	2	1	0	3	0	0	2	1
Lane Group		LTR			LT	R		LTR			LT	R
Volume (vph)	19	75	46	14	104	82	36	273	16	27	48	9
% Heavy Vehicles	1	1	1	4	4	4	1	1	1	5	5	5
PHF	0.84	0.84	0.84	0.72	0.72	0.72	0.90	0.90	0.90	0.87	0.87	0.87
Pretimed/Actuated (P/A)	P	P	P	P	P	P	P	P	P	P	P	P
Startup Lost Time		2.0			2.0	2.0		2.0			2.0	2.0
Extension of Effective Green		2.0			2.0	2.0		2.0			2.0	2.0
Arrival Type		3			3	3		3			3	3
Unit Extension		3.0			3.0	3.0		3.0			3.0	3.0
Ped/Bike/RTOR Volume	63	0	0	119	0	0	135	0	0	47	0	0
Lane Width		13.0			10.0	13.0		12.0			12.0	12.0
Parking/Grade/Parking	N	-1	N	N	-6	N	N	6	Y	N	-3	N
Parking/Hour									10			
Bus Stops/Hour		0			0	0		0			0	0
Minimum Pedestrian Time		24.1			24.4			22.0			3.5	

Phasing	EW Perm	Peds Only	03	04	NS Perm	06	07	08
Timing	G = 23.0	G = 17.0	G =	G =	G = 24.0	G =	G =	G =
	Y = 5.5	Y = 5	Y =	Y =	Y = 5.5	Y =	Y =	Y =

Duration of Analysis (hrs) = 0.25 | Cycle Length C = 80.0

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		167			163	114		361			86	10
Lane Group Capacity		798			785	375		1126			722	402
v/c Ratio		0.21			0.21	0.30		0.32			0.12	0.02
Green Ratio		0.29			0.29	0.29		0.30			0.30	0.30
Uniform Delay d_1		21.6			21.6	22.3		21.7			20.3	19.7
Delay Factor k		0.50			0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2		0.6			0.6	2.1		0.8			0.3	0.1
PF Factor		1.000			1.000	1.000		1.000			1.000	1.000
Control Delay		22.2			22.2	24.3		22.4			20.7	19.9
Lane Group LOS		C			C	C		C			C	B
Approach Delay	22.2			23.1			22.4			20.6		
Approach LOS	C			C			C			C		
Intersection Delay	22.4			Intersection LOS						C		

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