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	2005 EXISTING 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	63	43	14	60	11	19	37	32	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	0.66	0.66	0.66
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		84	48	18	90			121			61	
Lane Group Capacity		763	560	427	528			650			653	
v/c Ratio		0.11	0.09	0.04	0.17			0.19			0.09	
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	12.2			12.8			13.1			12.2		
Approach LOS	B			B			B			B		
Intersection Delay	12.6			Intersection LOS			B					

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	2005 EXISTING 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	115	4	4	104	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		162			173			5			19	
Lane Group Capacity		1144			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			22.6			23.4			23.6	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		0.3			3.7			0.1			0.4	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		6.0			26.3			23.5			24.0	
Lane Group LOS		A			C			C			C	
Approach Delay	6.0			26.3			23.5			24.0		
Approach LOS	A			C			C			C		
Intersection Delay	17.0			Intersection LOS						B		

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	2005 EXISTING 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)		106	17	37	82		7		41			
% 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		143			180			60				
Lane Group Capacity		574			1152			347				
v/c Ratio		0.25			0.16			0.17				
Green Ratio		0.30			0.64			0.24				
Uniform Delay d_1		21.2			5.8			24.3				
Delay Factor k		0.50			0.50			0.50				
Incremental Delay d_2		1.0			0.3			1.1				
PF Factor		1.000			1.000			1.000				
Control Delay		22.2			6.1			25.3				
Lane Group LOS		C			A			C				
Approach Delay	22.2			6.1			25.3					
Approach LOS	C			A			C					
Intersection Delay	15.1			Intersection LOS			B					

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	2005 EXISTING 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	184	117	12	196			42	49
% 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					307		19	316			67	78
Lane Group Capacity					1141		440	594			626	974
v/c Ratio					0.27		0.04	0.53			0.11	0.08
Green Ratio					0.49		0.38	0.38			0.38	0.38
Uniform Delay d_1					12.1		15.9	19.5			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	3.4			0.3	0.2
PF Factor					1.000		1.000	1.000			1.000	1.000
Control Delay					12.7		16.1	22.9			16.6	16.3
Lane Group LOS					B		B	C			B	B
Approach Delay				12.7			22.5			16.4		
Approach LOS				B			C			B		
Intersection Delay	17.6			Intersection LOS						B		

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	2005 EXISTING 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)		185	213				47		201			
% 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		428						128	160			
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		11.3						17.8	17.4			
Delay Factor k		0.50						0.50	0.50			
Incremental Delay d_2		0.6						1.0	0.4			
PF Factor		1.000						1.000	1.000			
Control Delay		12.0						18.8	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					

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	2005 EXISTING 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)	164	211	11					5	10	35	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	202	274						7	12		60	
Lane Group Capacity	890	1833						390	344		285	
v/c Ratio	0.23	0.15						0.02	0.03		0.21	
Green Ratio	0.64	0.64						0.24	0.24		0.24	
Uniform Delay d_1	6.1	5.8						23.4	23.5		24.5	
Delay Factor k	0.50	0.50						0.50	0.50		0.50	
Incremental Delay d_2	0.6	0.2						0.1	0.2		1.7	
PF Factor	1.000	1.000						1.000	1.000		1.000	
Control Delay	6.7	6.0						23.4	23.6		26.2	
Lane Group LOS	A	A						C	C		C	
Approach Delay	6.3						23.6			26.2		
Approach LOS	A						C			C		
Intersection Delay	9.0			Intersection LOS						A		

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	2005 EXISTING 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	104	82		110	28	20	120	31		199	41
% 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	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		151	88		192			228			279	
Lane Group Capacity		1185	648		1344			1126			1335	
v/c Ratio		0.13	0.14		0.14			0.20			0.21	
Green Ratio		0.44	0.44		0.44			0.43			0.43	
Uniform Delay d_1		14.7	14.8		14.8			15.8			15.9	
Delay Factor k		0.50	0.50		0.50			0.50			0.50	
Incremental Delay d_2		0.2	0.4		0.2			0.4			0.4	
PF Factor		1.000	1.000		1.000			1.000			1.000	
Control Delay		14.9	15.2		15.1			16.2			16.2	
Lane Group LOS		B	B		B			B			B	
Approach Delay	15.0			15.1			16.2			16.2		
Approach LOS	B			B			B			B		
Intersection Delay	15.7			Intersection LOS						B		

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	2005 EXISTING 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)				102		13		158	98	24	145	
% 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					148			197	110	29	175	
Lane Group Capacity					492			1569	654	538	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					25.1			11.7	12.3	8.4	8.6	
Lane Group LOS					C			B	B	A	A	
Approach Delay				25.1			11.9			8.5		
Approach LOS				C			B			A		
Intersection Delay	13.8			Intersection LOS						B		

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	2005 EXISTING 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)	77				121	79		109			166	81
% 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	88				158	95		130			189	92
Lane Group Capacity	447				460	380		831			478	406
v/c Ratio	0.20				0.34	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				26.6	25.9		24.5			26.4	25.0
Delay Factor k	0.50				0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2	1.0				2.0	1.6		0.4			2.4	1.3
PF Factor	1.000				1.000	1.000		1.000			1.000	1.000
Control Delay	25.8				28.7	27.5		24.9			28.8	26.3
Lane Group LOS	C				C	C		C			C	C
Approach Delay	25.8			28.2			24.9			28.0		
Approach LOS	C			C			C			C		
Intersection Delay	27.3			Intersection LOS						C		

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	2005 EXISTING 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	42	2		100	71	1	35	30	83	63	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		69			133	95		68		97	79	
Lane Group Capacity		572			636	561		574		447	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			13.1	12.9		12.0		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			0.7	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	12.4	
Lane Group LOS		B			B	B		B		B	B	
Approach Delay	13.1			13.8			12.5			13.1		
Approach LOS	B			B			B			B		
Intersection Delay	13.3			Intersection LOS			B					

SATURDAY CASINO PEAK HOUR

SHORT REPORT

General Information

Analyst	N. Karsko
Agency or Co.	TRANS ASSOCIATES
Date Performed	12/6/2005
Time Period	SATURDAY CASINO PEAK HOUR

Site Information

Intersection	LIBERTY AVE & SEVENTH AVE
Area Type	CBD or Similar
Jurisdiction	CITY OF PITTSBURGH
Analysis Year	2005 EXISTING 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)		185	176		129		108					
% 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		415			147		129					
Lane Group Capacity		1334			2248		541					
v/c Ratio		0.31			0.07		0.24					
Green Ratio		0.51			0.51		0.34					
Uniform Delay d_1		9.8			8.5		16.5					
Delay Factor k		0.50			0.50		0.50					
Incremental Delay d_2		0.6			0.1		1.0					
PF Factor		1.000			1.000		1.000					
Control Delay		10.4			8.6		17.5					
Lane Group LOS		B			A		B					
Approach Delay	10.4			8.6			17.5					
Approach LOS	B			A			B					
Intersection Delay	11.4			Intersection LOS			B					

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	2005 EXISTING 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)		179	6	5	77		52		99			
% 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		213			93		59		113			
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		17.6			
Lane Group LOS		B			A		B		B			
Approach Delay	14.7			8.5			17.1					
Approach LOS	B			A			B					
Intersection Delay	14.3			Intersection LOS			B					

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	2005 EXISTING 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	171	3	2	104	16		133	48	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		207			143			201			20	
Lane Group Capacity		1178			644			1272			449	
v/c Ratio		0.18			0.22			0.16			0.04	
Green Ratio		0.41			0.41			0.43			0.43	
Uniform Delay d_1		12.9			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			14.0			12.5			11.8	
Lane Group LOS		B			B			B			B	
Approach Delay	13.3			14.0			12.5			11.8		
Approach LOS	B			B			B			B		
Intersection Delay	13.1			Intersection LOS						B		

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	2005 EXISTING 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)	171	12	26	7	8	1		356	21		260	44
% 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	192	42		10	13			444			395	
Lane Group Capacity	393	191		392	443			1894			1374	
v/c Ratio	0.49	0.22		0.03	0.03			0.23			0.29	
Green Ratio	0.14	0.14		0.33	0.33			0.43			0.43	
Uniform Delay d_1	61.0	58.7		35.0	35.0			27.5			28.2	
Delay Factor k	0.50	0.50		0.50	0.50			0.50			0.50	
Incremental Delay d_2	4.3	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	65.3	61.3		35.1	35.1			27.8			28.8	
Lane Group LOS	E	E		D	D			C			C	
Approach Delay	64.6			35.1			27.8			28.8		
Approach LOS	E			D			C			C		
Intersection Delay	36.2			Intersection LOS						D		

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	2005 EXISTING 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)	48		133				108	397			172	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	60		166				117	432			235	
Lane Group Capacity	263		232				350	1931			968	
v/c Ratio	0.23		0.72				0.33	0.22			0.24	
Green Ratio	0.17		0.09				0.23	0.61			0.31	
Uniform Delay d_1	54.8		67.6				49.3	13.6			39.7	
Delay Factor k	0.50		0.50				0.50	0.50			0.50	
Incremental Delay d_2	2.0		17.2				2.6	0.3			0.6	
PF Factor	1.000		1.000				1.000	1.000			1.000	
Control Delay	56.8		84.8				51.8	13.9			40.3	
Lane Group LOS	E		F				D	B			D	
Approach Delay	77.4						22.0			40.3		
Approach LOS	E						C			D		
Intersection Delay	38.6			Intersection LOS						D		

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	2005 EXISTING 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	196	32	49	129	159	58	231	78	119	165	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		268			228	204	65	348		147	214	
Lane Group Capacity		794			724	746	625	1149		546	1175	
v/c Ratio		0.34			0.31	0.27	0.10	0.30		0.27	0.18	
Green Ratio		0.30			0.30	0.52	0.59	0.39		0.59	0.39	
Uniform Delay d_1		24.5			24.4	12.0	8.0	19.0		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			1.1	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		25.7			25.5	12.9	8.4	19.7		9.9	18.4	
Lane Group LOS		C			C	B	A	B		A	B	
Approach Delay	25.7			19.5			17.9			15.0		
Approach LOS	C			B			B			B		
Intersection Delay	19.1			Intersection LOS						B		

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	2005 EXISTING 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)	36	128	29	70	166	121	26	210	47	45	193	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		219			425		32	321		52	233	
Lane Group Capacity		462			875		461	1034		413	1050	
v/c Ratio		0.47			0.49		0.07	0.31		0.13	0.22	
Green Ratio		0.42			0.33		0.47	0.36		0.47	0.36	
Uniform Delay d_1		18.8			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		3.5			1.9		0.3	0.8		0.6	0.5	
PF Factor		1.000			1.000		1.000	1.000		1.000	1.000	
Control Delay		22.2			25.8		13.5	21.8		14.1	20.8	
Lane Group LOS		C			C		B	C		B	C	
Approach Delay	22.2			25.8			21.0			19.6		
Approach LOS	C			C			C			B		
Intersection Delay	22.5			Intersection LOS						C		

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	2005 EXISTING 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)	83	129	8	5	217	9	43	29	8	35	95	
% 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	93	153			274		54	46			160	
Lane Group Capacity	489	1588			1584		322	509			843	
v/c Ratio	0.19	0.10			0.17		0.17	0.09			0.19	
Green Ratio	0.53	0.53			0.53		0.31	0.31			0.31	
Uniform Delay d_1	8.6	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		1.1	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		18.5	17.3			18.0	
Lane Group LOS	A	A			A		B	B			B	
Approach Delay	8.8			8.8			17.9			18.0		
Approach LOS	A			A			B			B		
Intersection Delay	11.8			Intersection LOS						B		

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	2005 EXISTING 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)	166	46	48					302	72	81	43	33
% 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	
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	173	63	50					425	72	47	135	
Lane Group Capacity	402	414	301					1063	475	402	624	
v/c Ratio	0.43	0.15	0.17					0.40	0.15	0.12	0.22	
Green Ratio	0.26	0.26	0.26					0.32	0.32	0.22	0.22	
Uniform Delay d_1	24.5	22.7	22.7					20.9	19.2	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	3.3	0.8	1.2					1.1	0.7	0.6	0.8	
PF Factor	1.000	1.000	1.000					1.000	1.000	1.000	1.000	
Control Delay	27.9	23.4	23.9					22.1	19.8	25.3	26.0	
Lane Group LOS	C	C	C					C	B	C	C	
Approach Delay	26.2						21.7			25.8		
Approach LOS	C						C			C		
Intersection Delay	23.8			Intersection LOS						C		

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	2005 EXISTING 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)	71	100	9	2	59	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		237			105			22				
Lane Group Capacity		1068			572			210				
v/c Ratio		0.22			0.18			0.10				
Green Ratio		0.36			0.18			0.15				
Uniform Delay d_1		12.1			19.0			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					

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	2005 EXISTING 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	44	57	10	42	1	46	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		131			69			94			12	
Lane Group Capacity		482			423			660			643	
v/c Ratio		0.27			0.16			0.14			0.02	
Green Ratio		0.30			0.30			0.50			0.50	
Uniform Delay d_1		13.3			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		14.7			13.7			7.2			6.4	
Lane Group LOS		B			B			A			A	
Approach Delay	14.7			13.7			7.2			6.4		
Approach LOS	B			B			A			A		
Intersection Delay	11.9			Intersection LOS			B					

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	2005 EXISTING 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	74	45	14	102	81	35	269	16	27	47	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		165			161	112		356			85	10
Lane Group Capacity		798			785	375		1127			721	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	22.2		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	2.0		0.7			0.3	0.1
PF Factor		1.000			1.000	1.000		1.000			1.000	1.000
Control Delay		22.2			22.2	24.2		22.4			20.7	19.9
Lane Group LOS		C			C	C		C			C	B
Approach Delay		22.2			23.0			22.4			20.6	
Approach LOS		C			C			C			C	
Intersection Delay		22.3			Intersection LOS						C	

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	2005 EXISTING 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)	5	16	3				35	269	16	27	47	9
% Heavy Vehicles	4	4	4				1	1	1	5	5	5
PHF	0.67	0.67	0.67				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
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	63	0	0				135	0	0	47	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		24.1						22.0			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		35						356			85	10
Lane Group Capacity		622						1123			721	389
v/c Ratio		0.06						0.32			0.12	0.03
Green Ratio		0.21						0.30			0.30	0.30
Uniform Delay d_1		25.1						21.7			20.3	19.8
Delay Factor k		0.50						0.50			0.50	0.50
Incremental Delay d_2		0.2						0.7			0.3	0.1
PF Factor		1.000						1.000			1.000	1.000
Control Delay		25.3						22.4			20.7	19.9
Lane Group LOS		C						C			C	B
Approach Delay	25.3						22.4			20.6		
Approach LOS	C						C			C		
Intersection Delay	22.3			Intersection LOS						C		

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	11/21/2005	Jurisdiction	CITY OF PITTSBURGH
Time Period	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)	7	136	1	1	184	2				3	1	14
% Heavy Vehicles	4	4	4	4	4	4				0	0	0
PHF	0.94	0.94	0.94	0.83	0.83	0.83				0.61	0.61	0.61
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	162	0	0				25	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			14.1						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		153			225						30	
Lane Group Capacity		1359			1422						367	
v/c Ratio		0.11			0.16						0.08	
Green Ratio		0.54			0.54						0.30	
Uniform Delay d_1		7.8			8.0						17.6	
Delay Factor k		0.50			0.50						0.50	
Incremental Delay d_2		0.2			0.2						0.4	
PF Factor		1.000			1.000						1.000	
Control Delay		8.0			8.2						18.0	
Lane Group LOS		A			A						B	
Approach Delay	8.0			8.2						18.0		
Approach LOS	A			A						B		
Intersection Delay	8.9			Intersection LOS						A		

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)	21	76	56	11	55	13	28	50	34	11	29	30
% Heavy Vehicles	5	5	5	4	4	4	5	5	5	6	6	6
PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.85	0.85	0.85	0.65	0.65	0.65
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	3
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		124	72	13	79			132			104	
Lane Group Capacity		729	549	421	534			624			644	
v/c Ratio		0.17	0.13	0.03	0.15			0.21			0.16	
Green Ratio		0.43	0.43	0.43	0.43			0.43			0.43	
Uniform Delay d_1		12.3	12.1	11.6	12.2			12.6			12.3	
Delay Factor k		0.50	0.50	0.50	0.50			0.50			0.50	
Incremental Delay d_2		0.5	0.5	0.1	0.6			0.8			0.5	
PF Factor		1.000	1.000	1.000	1.000			1.000			1.000	
Control Delay		12.8	12.6	11.7	12.8			13.3			12.8	
Lane Group LOS		B	B	B	B			B			B	
Approach Delay	12.7			12.6			13.3			12.8		
Approach LOS	B			B			B			B		
Intersection Delay	12.9			Intersection LOS						B		

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)	9	101	1	1	74	11	1	1	1	1	1	2
% Heavy Vehicles	8	8	8	8	8	8	0	0	0	0	0	0
PHF	0.75	0.75	0.75	0.63	0.63	0.63	0.25	0.25	0.25	0.50	0.50	0.50
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	1	25	0	0	25	0	0
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	148	135	12	8
Lane Group Capacity	1138	380	301	306
v/c Ratio	0.13	0.36	0.04	0.03
Green Ratio	0.64	0.30	0.24	0.24
Uniform Delay d_1	5.7	21.9	23.5	23.4
Delay Factor k	0.50	0.50	0.50	0.50
Incremental Delay d_2	0.2	2.6	0.2	0.2
PF Factor	1.000	1.000	1.000	1.000
Control Delay	6.0	24.5	23.7	23.6
Lane Group LOS	A	C	C	C
Approach Delay	6.0	24.5	23.7	23.6
Approach LOS	A	C	C	C
Intersection Delay	15.4	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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)		96	29	28	49		6		15			
% Heavy Vehicles		0	0	0	0		0		0			
PHF		0.73	0.73	0.70	0.70		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	168	110	28	
Lane Group Capacity	565	1143	351	
v/c Ratio	0.30	0.10	0.08	
Green Ratio	0.30	0.64	0.24	
Uniform Delay d_1	21.5	5.6	23.7	
Delay Factor k	0.50	0.50	0.50	
Incremental Delay d_2	1.3	0.2	0.4	
PF Factor	1.000	1.000	1.000	
Control Delay	22.9	5.8	24.1	
Lane Group LOS	C	A	C	
Approach Delay	22.9	5.8	24.1	
Approach LOS	C	A	C	
Intersection Delay	16.8	Intersection LOS		B

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)				8	290	91	26	148			63	114
% Heavy Vehicles				4	4	4	0	0			3	3
PHF				0.81	0.81	0.81	0.84	0.84			0.73	0.73
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				17	0	9	0	0		12	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					25.3			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					469		31	176			86	156
Lane Group Capacity					1220		429	594			608	931
v/c Ratio					0.38		0.07	0.30			0.14	0.17
Green Ratio					0.49		0.38	0.38			0.38	0.38
Uniform Delay d_1					12.9		16.1	17.6			16.5	16.7
Delay Factor k					0.50		0.50	0.50			0.50	0.50
Incremental Delay d_2					0.9		0.3	1.3			0.5	0.4
PF Factor					1.000		1.000	1.000			1.000	1.000
Control Delay					13.8		16.4	18.8			17.0	17.1
Lane Group LOS					B		B	B			B	B
Approach Delay				13.8			18.5			17.0		
Approach LOS				B			B			B		
Intersection Delay	15.7			Intersection LOS						B		

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)		173	202				42		184			
% Heavy Vehicles		3	3				1		1			
PHF		0.88	0.88				0.72		0.72			
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	18			
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		427						127	162			
Lane Group Capacity		1381						533	892			
v/c Ratio		0.31						0.24	0.18			
Green Ratio		0.51						0.36	0.36			
Uniform Delay d_1		11.3						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		11.9						18.8	17.8			
Lane Group LOS		B						B	B			
Approach Delay	11.9						18.3					
Approach LOS	B						B					
Intersection Delay	14.5			Intersection LOS			B					

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)	138	209	10					29	11	51	10	
% Heavy Vehicles	4	4	4					0	0	0	0	
PHF	0.86	0.86	0.86					0.33	0.33	0.76	0.76	
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	17	0	0				8	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		13.8						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	160	255						88	30		80	
Lane Group Capacity	915	1886						390	340		252	
v/c Ratio	0.17	0.14						0.23	0.09		0.32	
Green Ratio	0.64	0.64						0.24	0.24		0.24	
Uniform Delay d_1	5.9	5.8						24.6	23.8		25.2	
Delay Factor k	0.50	0.50						0.50	0.50		0.50	
Incremental Delay d_2	0.4	0.1						1.3	0.5		3.3	
PF Factor	1.000	1.000						1.000	1.000		1.000	
Control Delay	6.3	5.9						25.9	24.3		28.4	
Lane Group LOS	A	A						C	C		C	
Approach Delay	6.1						25.5			28.4		
Approach LOS	A						C			C		
Intersection Delay	12.7			Intersection LOS						B		

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)	24	133	109		140	29	26	198	35		294	36
% Heavy Vehicles	0	0	0		0	0	0	0	0		0	0
PHF	0.94	0.94	0.94		0.81	0.81	0.80	0.80	0.80		0.88	0.88
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	11	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		167	104		209			323			375	
Lane Group Capacity		1242	673		1407			1180			1348	
v/c Ratio		0.13	0.15		0.15			0.27			0.28	
Green Ratio		0.44	0.44		0.44			0.43			0.43	
Uniform Delay d_1		14.8	14.9		14.9			16.4			16.4	
Delay Factor k		0.50	0.50		0.50			0.50			0.50	
Incremental Delay d_2		0.2	0.5		0.2			0.6			0.5	
PF Factor		1.000	1.000		1.000			1.000			1.000	
Control Delay		15.0	15.4		15.1			17.0			16.9	
Lane Group LOS		B	B		B			B			B	
Approach Delay	15.2			15.1			17.0			16.9		
Approach LOS	B			B			B			B		
Intersection Delay	16.2			Intersection LOS						B		

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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		6		253	100	27	272	
% Heavy Vehicles				0		0		1	1	2	2	
PHF				0.76		0.76		0.87	0.87	0.71	0.71	
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					145			291	103	38	383	
Lane Group Capacity					499			1569	654	478	1872	
v/c Ratio					0.29			0.19	0.16	0.08	0.20	
Green Ratio					0.31			0.51	0.51	0.58	0.58	
Uniform Delay d_1					23.5			11.9	11.7	8.3	9.1	
Delay Factor k					0.50			0.50	0.50	0.50	0.50	
Incremental Delay d_2					1.5			0.3	0.5	0.3	0.2	
PF Factor					1.000			1.000	1.000	1.000	1.000	
Control Delay					24.9			12.1	12.2	8.7	9.3	
Lane Group LOS					C			B	B	A	A	
Approach Delay				24.9			12.2			9.3		
Approach LOS				C			B			A		
Intersection Delay	12.8			Intersection LOS						B		

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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)	86				87	89		186			280	96
% Heavy Vehicles	0				1	1		1			1	1
PHF	0.71				0.85	0.85		0.70			0.80	0.80
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	121				107	100		266			350	120
Lane Group Capacity	451				458	380		823			473	402
v/c Ratio	0.27				0.23	0.26		0.32			0.74	0.30
Green Ratio	0.28				0.27	0.27		0.28			0.28	0.28
Uniform Delay d_1	25.4				25.8	26.0		25.8			29.5	25.6
Delay Factor k	0.50				0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2	1.5				1.2	1.7		1.0			10.0	1.9
PF Factor	1.000				1.000	1.000		1.000			1.000	1.000
Control Delay	26.8				27.0	27.7		26.8			39.5	27.5
Lane Group LOS	C				C	C		C			D	C
Approach Delay	26.8			27.3			26.8			36.5		
Approach LOS	C			C			C			D		
Intersection Delay	31.2			Intersection LOS						C		

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	SATURDAY CASINO PEAK HOUR	Analysis Year	2005 EXISTING 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	140	1		102	75	2	35	28	74	69	10
% Heavy Vehicles	1	1	1		4	4	2	2	2	3	3	3
PHF	0.86	0.86	0.86		0.90	0.90	0.68	0.68	0.68	0.89	0.89	0.89
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		165			113	83		91		83	89	
Lane Group Capacity		584			642	566		591		447	657	
v/c Ratio		0.28			0.18	0.15		0.15		0.19	0.14	
Green Ratio		0.41			0.41	0.41		0.43		0.43	0.43	
Uniform Delay d_1		13.6			13.0	12.8		12.2		12.4	12.1	
Delay Factor k		0.50			0.50	0.50		0.50		0.50	0.50	
Incremental Delay d_2		1.2			0.6	0.5		0.6		0.9	0.4	
PF Factor		1.000			1.000	1.000		1.000		1.000	1.000	
Control Delay		14.8			13.5	13.3		12.8		13.3	12.6	
Lane Group LOS		B			B	B		B		B	B	
Approach Delay	14.8			13.5			12.8			12.9		
Approach LOS	B			B			B			B		
Intersection Delay	13.6			Intersection LOS						B		

APPENDIX F

Parking Patrons

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Projected Parking Accumulation

Based upon average vehicle occupancy = 1.18
Based upon other parking factors = 1.00

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	193	235	319	485	904	890
6:00 AM	100	137	217	365	853	1347
7:00 AM	62	97	176	317	650	1627
8:00 AM	436	489	583	796	499	1907
9:00 AM	940	1019	1131	1442	1133	1882
10:00 AM	1350	1450	1578	1968	1715	2111
11:00 AM	1518	1627	1760	2183	1387	2314
12:00 PM	1704	1823	1963	2423	1565	2542
1:00 PM	1704	1823	1963	2423	2199	2670
2:00 PM	1779	1902	2043	2519	2097	2848
3:00 PM	1648	1764	1901	2352	2629	2721
4:00 PM	1742	1863	2003	2471	2933	2645
5:00 PM	1630	1745	1881	2328	2832	3052
6:00 PM	1780	1903	2043	2519	3085	3687
7:00 PM	1780	1903	2043	2519	3287	3382
8:00 PM	1873	2001	2145	2638	3567	3281
9:00 PM	1704	1825	1962	2423	3542	3789
10:00 PM	1686	1805	1942	2399	3897	3535
11:00 PM	1442	1551	1678	2088	3466	3586
12:00 AM	1536	1649	1779	2208	3517	3256
1:00 AM	1275	1375	1495	1874	3238	2442
2:00 AM	1107	1197	1312	1658	2883	1629
3:00 AM	733	805	905	1180	1693	868
4:00 AM	210	256	336	509	704	664

APPENDIX G

Casino Trip Generation and Parking Accumulation

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Methodology

Patronage data was provided by the Isle of Capri on an hourly basis for a similar urban casino located in Kansas City, as summarized on Sheet 2.

Data was not available on hourly trip generation. These calculations were performed to estimate the hourly trip generation rates based on the available data.

As shown on Sheet 2, the number of hourly patrons was summed and divided by the average length of stay to estimate the daily number of patrons.

ITE hourly trip generation data is tabulated on Sheets 3 and 4, and was used as a baseline for this calculation.

For this calculation, the hourly trip generation percentages (entering and exiting) shown on sheets 5 and 6 were multiplied by the daily number of patrons to yield hourly patron flows, as shown on Sheets 7 and 8. The hourly accumulation of patrons was then calculated as shown on Sheet 9. The difference between the actual patron counts and the calculated accummulation is shown on Sheet 10, with Sheet 11 showing this difference as a percentage. The hourly percentage distribution shown on Sheets 5 and 6 was calculated by an iterative method to minimize the hourly percentage differences. Generally, the model provides a good match, but some error exists particularly between the hours of 3 AM and 6 AM, due to limited data in this time period, as well as the differing behaviour of patrons overnight. Unlike most land uses, the daily number of entering trips are not necessarily equal to the daily number of exiting trips because of the varying length of stay, which may encompass more than one calendar day.

The number of patron trips is converted to vehicular trips on Sheets 12 and 13. Sheet 14 shows the sum of hourly entering and exiting trips, used to calculate the generator peak hours. For Fridays and Saturdays, the vehicular trip departures are one hour later than the patron departure, representing time that may be spent in dining or visiting the other non-gaming-floor uses on the site.

For typical weekdays, the values tabulated for Mondays best represent the peak generation. Fridays and Saturdays are tabulated separately. Sunday conditions were not required for study, and have been removed from the trip generation and parking accumulation analyses.

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Projected Parking Accumulation

Based upon average vehicle occupancy = 1.18
Based upon other parking factors = 1.00

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	193	235	319	485	904	890
6:00 AM	100	137	217	365	853	1347
7:00 AM	62	97	176	317	650	1627
8:00 AM	436	489	583	796	499	1907
9:00 AM	940	1019	1131	1442	1133	1882
10:00 AM	1350	1450	1578	1968	1715	2111
11:00 AM	1518	1627	1760	2183	1387	2314
12:00 PM	1704	1823	1963	2423	1565	2542
1:00 PM	1704	1823	1963	2423	2199	2670
2:00 PM	1779	1902	2043	2519	2097	2848
3:00 PM	1648	1764	1901	2352	2629	2721
4:00 PM	1742	1863	2003	2471	2933	2645
5:00 PM	1630	1745	1881	2328	2832	3052
6:00 PM	1780	1903	2043	2519	3085	3687
7:00 PM	1780	1903	2043	2519	3287	3382
8:00 PM	1873	2001	2145	2638	3567	3281
9:00 PM	1704	1825	1962	2423	3542	3789
10:00 PM	1686	1805	1942	2399	3897	3535
11:00 PM	1442	1551	1678	2088	3466	3586
12:00 AM	1536	1649	1779	2208	3517	3256
1:00 AM	1275	1375	1495	1874	3238	2442
2:00 AM	1107	1197	1312	1658	2883	1629
3:00 AM	733	805	905	1180	1693	868
4:00 AM	210	256	336	509	704	664

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Methodology

Patronage data was provided by the Isle of Capri on an hourly basis for a similar urban casino located in Kansas City, as summarized on Sheet 2.

Data was not available on hourly trip generation. These calculations were performed to estimate the hourly trip generation rates based on the available data.

As shown on Sheet 2, the number of hourly patrons was summed and divided by the average length of stay to estimate the daily number of patrons.

ITE hourly trip generation data is tabulated on Sheets 3 and 4, and was used as a baseline for this calculation.

For this calculation, the hourly trip generation percentages (entering and exiting) shown on sheets 5 and 6 were multiplied by the daily number of patrons to yield hourly patron flows, as shown on Sheets 7 and 8. The hourly accumulation of patrons was then calculated as shown on Sheet 9. The difference between the actual patron counts and the calculated accummulation is shown on Sheet 10, with Sheet 11 showing this difference as a percentage. The hourly percentage distribution shown on Sheets 5 and 6 was calculated by an iterative method to minimize the hourly percentage differences. Generally, the model provides a good match, but some error exists particularly between the hours of 3 AM and 6 AM, due to limited data in this time period, as well as the differing behaviour of patrons overnight. Unlike most land uses, the daily number of entering trips are not necessarily equal to the daily number of exiting trips because of the varying length of stay, which may encompass more than one calendar day.

The number of patron trips is converted to vehicular trips on Sheets 12 and 13. Sheet 14 shows the sum of hourly entering and exiting trips, used to calculate the generator peak hours. For Fridays and Saturdays, the vehicular trip departures are one hour later than the patron departure, representing time that may be spent in dining or visiting the other non-gaming-floor uses on the site.

For typical weekdays, the values tabulated for Mondays best represent the peak generation. Fridays and Saturdays are tabulated separately. Sunday conditions were not required for study, and have been removed from the trip generation and parking accumulation analyses.

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Projected Daily Site Patronage
Projected by IOC

	Monday	Tuesday	Wednesda	Thursday	Friday	Saturday	Sunday	
5:00 AM	-	-	-		1,067	1,050	-	
6:00 AM	-	-	-		-	946	853	
7:00 AM	-	-	-		-	959	894	
8:00 AM	617	576	550	792	609	1,253	1,209	
9:00 AM	1,218	1,058	1,060	1,404	1,211	1,534	1,541	
10:00 AM	1,613	1,587	1,485	1,945	1,833	1,936	1,953	
11:00 AM	1,752	1,770	1,759	2,027	1,994	2,073	1,957	
12:00 PM	1,989	2,003	1,985	2,146	2,166	2,253	2,096	
1:00 PM	1,976	1,977	2,019	2,143	2,170	2,256	2,114	
2:00 PM	2,092	2,115	2,053	2,248	2,314	2,472	2,263	
3:00 PM	1,934	1,970	1,903	2,109	2,244	2,404	2,259	
4:00 PM	2,043	2,053	2,068	2,139	2,376	2,496	2,356	
5:00 PM	1,812	1,998	1,981	2,069	2,294	2,376	2,273	
6:00 PM	1,980	2,150	2,073	2,276	2,487	2,509	2,397	
7:00 PM	1,942	2,095	2,127	2,328	2,453	2,460	2,292	
8:00 PM	1,985	2,228	2,286	2,446	2,664	2,617	2,309	
9:00 PM	1,793	2,012	2,124	2,267	2,492	2,483	2,067	
10:00 PM	1,802	1,910	2,071	2,288	2,593	2,616	2,111	
11:00 PM	1,575	1,702	1,759	2,006	2,388	2,437	1,856	
12:00 AM	1,558	1,667	1,894	2,449	2,449	1,797	1,456	
1:00 AM	1,267	1,323	1,591	2,201	2,163	1,397	1,162	
2:00 AM	1,042	1,174	1,440	2,061	1,846	1,221	972	
3:00 AM	714	863	1,081	1,647	1,578	858	708	Average of
4:00 AM	373	495	657	1,361	1,464	570	433	M T W TH
patron-hours	33,077	34,726	35,966	42,352	44,855	44,973	39,531	36,530
equiv patron	22,051	23,151	23,977	28,235	29,903	29,982	26,354	24,354

Average stay = 1.5 hours Monday-Thursday
Average stay = 1.5 hours Friday
Average stay = 1.5 hours Saturday
Average stay = 1.5 hours Sunday

Average vehicle occupancy = 1.18 patrons per vehicle Source: San Pablo Casino Traffic Analysis; Katz, Okitsu and Associates.

Source: Patronage data provided by Isle of Capri for Kansas City location.

Q:\AYHPL00\05380\calculations\Final Casino Trip Generation revised

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

ITE Trip Generation Rates
Hourly Entering

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
12:00 AM	2.5%	2.5%	2.5%	2.5%	2.5%	3.0%
1:00 AM	1.8%	1.8%	1.8%	1.8%	1.8%	2.7%
2:00 AM	1.2%	1.2%	1.2%	1.2%	1.2%	1.3%
3:00 AM	0.7%	0.7%	0.7%	0.7%	0.7%	0.8%
4:00 AM	1.0%	1.0%	1.0%	1.0%	1.0%	0.6%
5:00 AM	0.7%	0.7%	0.7%	0.7%	0.7%	0.6%
6:00 AM	1.0%	1.0%	1.0%	1.0%	1.0%	0.7%
7:00 AM	1.6%	1.6%	1.6%	1.6%	1.6%	1.1%
8:00 AM	3.9%	3.9%	3.9%	3.9%	3.9%	3.3%
9:00 AM	5.6%	5.6%	5.6%	5.6%	5.6%	4.7%
10:00 AM	5.2%	5.2%	5.2%	5.2%	5.2%	4.3%
11:00 AM	5.3%	5.3%	5.3%	5.3%	5.3%	4.9%
12:00 PM	5.8%	5.8%	5.8%	5.8%	5.8%	4.8%
1:00 PM	6.1%	6.1%	6.1%	6.1%	6.1%	5.2%
2:00 PM	5.4%	5.4%	5.4%	5.4%	5.4%	5.6%
3:00 PM	5.2%	5.2%	5.2%	5.2%	5.2%	5.6%
4:00 PM	5.3%	5.3%	5.3%	5.3%	5.3%	5.7%
5:00 PM	5.9%	5.9%	5.9%	5.9%	5.9%	6.7%
6:00 PM	7.9%	7.9%	7.9%	7.9%	7.9%	7.8%
7:00 PM	7.5%	7.5%	7.5%	7.5%	7.5%	7.7%
8:00 PM	6.4%	6.4%	6.4%	6.4%	6.4%	6.5%
9:00 PM	5.3%	5.3%	5.3%	5.3%	5.3%	6.1%
10:00 PM	4.7%	4.7%	4.7%	4.7%	4.7%	5.7%
11:00 PM	4.0%	4.0%	4.0%	4.0%	4.0%	4.6%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Casino Gaming Traffic, Paul C Box and William Bunte, ITE Journal, March, 1998.

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

ITE Trip Generation Rates
Hourly Exiting

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
12:00 AM	4.3%	4.3%	4.3%	4.3%	4.3%	5.9%
1:00 AM	3.9%	3.9%	3.9%	3.9%	3.9%	4.4%
2:00 AM	3.3%	3.3%	3.3%	3.3%	3.3%	4.2%
3:00 AM	3.2%	3.2%	3.2%	3.2%	3.2%	4.7%
4:00 AM	3.3%	3.3%	3.3%	3.3%	3.3%	3.7%
5:00 AM	1.6%	1.6%	1.6%	1.6%	1.6%	2.0%
6:00 AM	0.6%	0.6%	0.6%	0.6%	0.6%	0.7%
7:00 AM	0.6%	0.6%	0.6%	0.6%	0.6%	0.5%
8:00 AM	1.2%	1.2%	1.2%	1.2%	1.2%	0.9%
9:00 AM	1.3%	1.3%	1.3%	1.3%	1.3%	0.9%
10:00 AM	2.1%	2.1%	2.1%	2.1%	2.1%	1.7%
11:00 AM	3.0%	3.0%	3.0%	3.0%	3.0%	2.6%
12:00 PM	4.1%	4.1%	4.1%	4.1%	4.1%	2.8%
1:00 PM	5.2%	5.2%	5.2%	5.2%	5.2%	3.5%
2:00 PM	6.1%	6.1%	6.1%	6.1%	6.1%	4.1%
3:00 PM	6.4%	6.4%	6.4%	6.4%	6.4%	5.8%
4:00 PM	7.1%	7.1%	7.1%	7.1%	7.1%	6.3%
5:00 PM	6.6%	6.6%	6.6%	6.6%	6.6%	6.8%
6:00 PM	7.0%	7.0%	7.0%	7.0%	7.0%	6.9%
7:00 PM	5.7%	5.7%	5.7%	5.7%	5.7%	6.4%
8:00 PM	5.3%	5.3%	5.3%	5.3%	5.3%	6.7%
9:00 PM	5.7%	5.7%	5.7%	5.7%	5.7%	6.1%
10:00 PM	6.3%	6.3%	6.3%	6.3%	6.3%	6.0%
11:00 PM	6.1%	6.1%	6.1%	6.1%	6.1%	6.4%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Casino Gaming Traffic, Paul C Box and William Bunte, ITE Journal, March, 1998.

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Adjusted Trip Generation Rates
Hourly Entering Patrons as percentage of Daily Patrons

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	0.6%	0.6%	0.6%	0.6%	2.0%	0.9%
6:00 AM	0.5%	0.5%	0.5%	0.5%	1.8%	2.7%
7:00 AM	1.0%	1.0%	1.0%	1.0%	1.2%	4.1%
8:00 AM	3.8%	3.8%	3.8%	3.8%	1.3%	5.2%
9:00 AM	4.1%	4.1%	4.1%	4.1%	4.4%	4.1%
10:00 AM	5.8%	5.8%	5.8%	5.8%	4.7%	4.1%
11:00 AM	4.7%	4.7%	4.7%	4.7%	1.3%	3.5%
12:00 PM	5.2%	5.2%	5.2%	5.2%	1.3%	4.0%
1:00 PM	5.0%	5.0%	5.0%	5.0%	3.1%	3.9%
2:00 PM	4.8%	4.8%	4.8%	4.8%	2.6%	4.6%
3:00 PM	4.7%	4.7%	4.7%	4.7%	4.1%	3.3%
4:00 PM	6.2%	6.2%	6.2%	6.2%	5.6%	3.3%
5:00 PM	5.7%	5.7%	5.7%	5.7%	4.6%	4.6%
6:00 PM	6.0%	6.0%	6.0%	6.0%	6.0%	7.5%
7:00 PM	5.8%	5.8%	5.8%	5.8%	6.0%	5.8%
8:00 PM	6.7%	6.7%	6.7%	6.7%	7.2%	5.6%
9:00 PM	5.3%	5.3%	5.3%	5.3%	6.3%	7.1%
10:00 PM	5.0%	5.0%	5.0%	5.0%	8.4%	6.5%
11:00 PM	4.6%	4.6%	4.6%	4.6%	6.2%	6.3%
12:00 AM	4.7%	4.7%	4.7%	4.7%	7.4%	5.6%
1:00 AM	3.9%	3.9%	3.9%	3.9%	6.1%	4.5%
2:00 AM	2.4%	2.4%	2.4%	2.4%	5.9%	2.6%
3:00 AM	2.0%	2.0%	2.0%	2.0%	2.5%	0.2%
4:00 AM	1.5%	1.5%	1.5%	1.5%	0.0%	0.0%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Optimization by Trans Associates

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Estimated Entering Patron Trips

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	141	148	153	181	598	270
6:00 AM	110	116	120	141	538	810
7:00 AM	220	231	240	282	359	1229
8:00 AM	838	879	911	1073	389	1559
9:00 AM	904	949	983	1157	1316	1229
10:00 AM	1278	1342	1390	1637	1405	1229
11:00 AM	1036	1088	1126	1327	389	1049
12:00 PM	1146	1203	1246	1468	389	1199
1:00 PM	1102	1157	1198	1411	927	1169
2:00 PM	1058	1111	1150	1355	777	1379
3:00 PM	1036	1088	1126	1327	1226	989
4:00 PM	1367	1435	1486	1750	1675	989
5:00 PM	1256	1319	1366	1609	1376	1379
6:00 PM	1323	1389	1438	1693	1794	2249
7:00 PM	1278	1342	1390	1637	1794	1739
8:00 PM	1477	1551	1606	1891	2153	1679
9:00 PM	1168	1227	1270	1496	1884	2129
10:00 PM	1102	1157	1198	1411	2512	1949
11:00 PM	1014	1065	1103	1298	1854	1889
12:00 AM	1036	1088	1126	1327	2213	1679
1:00 AM	860	903	935	1101	1824	1349
2:00 AM	529	555	575	677	1764	780
3:00 AM	441	463	479	564	748	60
4:00 AM	331	347	360	423	0	0
	22,051	23,153	23,975	28,236	29,904	29,981

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Adjusted Trip Generation Rates
Hourly Exiting Patrons as percentage of Daily Patrons

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	0.7%	0.7%	0.7%	0.7%	2.0%	0.9%
6:00 AM	1.0%	1.0%	1.0%	1.0%	2.0%	3.0%
7:00 AM	1.2%	1.2%	1.2%	1.2%	1.9%	4.1%
8:00 AM	1.8%	1.8%	1.8%	1.8%	1.9%	4.2%
9:00 AM	1.4%	1.4%	1.4%	1.4%	2.4%	3.2%
10:00 AM	3.6%	3.6%	3.6%	3.6%	2.6%	2.7%
11:00 AM	3.8%	3.8%	3.8%	3.8%	0.6%	3.1%
12:00 PM	4.2%	4.2%	4.2%	4.2%	0.6%	3.4%
1:00 PM	5.0%	5.0%	5.0%	5.0%	3.0%	3.9%
2:00 PM	4.4%	4.4%	4.4%	4.4%	2.0%	3.8%
3:00 PM	5.4%	5.4%	5.4%	5.4%	4.4%	3.6%
4:00 PM	5.7%	5.7%	5.7%	5.7%	5.0%	3.0%
5:00 PM	6.3%	6.3%	6.3%	6.3%	5.0%	5.0%
6:00 PM	5.2%	5.2%	5.2%	5.2%	5.2%	7.0%
7:00 PM	5.8%	5.8%	5.8%	5.8%	6.1%	6.0%
8:00 PM	6.2%	6.2%	6.2%	6.2%	6.4%	5.1%
9:00 PM	6.2%	6.2%	6.2%	6.2%	7.0%	7.5%
10:00 PM	5.1%	5.1%	5.1%	5.1%	7.9%	6.1%
11:00 PM	5.9%	5.9%	5.9%	5.9%	7.2%	6.9%
12:00 AM	4.2%	4.2%	4.2%	4.2%	7.2%	7.7%
1:00 AM	5.3%	5.3%	5.3%	5.3%	7.3%	5.8%
2:00 AM	3.3%	3.3%	3.3%	3.3%	7.2%	3.2%
3:00 AM	4.0%	4.0%	4.0%	4.0%	3.9%	0.8%
4:00 AM	4.3%	4.3%	4.3%	4.3%	1.2%	0.0%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Source: Optimization by Trans Associates

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Estimated Exiting Patron Trips

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	163	171	177	209	598	270
6:00 AM	220	231	240	282	598	899
7:00 AM	265	278	288	339	568	1229
8:00 AM	397	417	431	508	568	1259
9:00 AM	309	324	336	395	718	959
10:00 AM	794	833	863	1016	777	810
11:00 AM	838	879	911	1073	179	929
12:00 PM	926	972	1007	1185	179	1019
1:00 PM	1102	1157	1198	1411	897	1169
2:00 PM	970	1018	1055	1242	598	1139
3:00 PM	1190	1250	1294	1524	1316	1079
4:00 PM	1256	1319	1366	1609	1495	899
5:00 PM	1389	1458	1510	1778	1495	1499
6:00 PM	1146	1203	1246	1468	1555	2099
7:00 PM	1278	1342	1390	1637	1824	1799
8:00 PM	1367	1435	1486	1750	1914	1529
9:00 PM	1367	1435	1486	1750	2093	2249
10:00 PM	1124	1180	1222	1439	2362	1829
11:00 PM	1301	1365	1414	1665	2153	2069
12:00 AM	926	972	1007	1185	2153	2309
1:00 AM	1168	1227	1270	1496	2183	1739
2:00 AM	727	764	791	931	2153	959
3:00 AM	882	926	959	1129	1166	240
4:00 AM	948	995	1031	1214	359	0
	22,053	23,151	23,978	28,235	29,901	29,980

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Patron Accumulation based on entering and exiting trip projections
Adjusted

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Start Time	250	300	400	600	1067	1050
5:00 AM	228	277	376	572	1067	1050
6:00 AM	118	162	256	431	1007	961
7:00 AM	73	115	208	374	798	961
8:00 AM	514	577	688	939	619	1261
9:00 AM	1109	1202	1335	1701	1217	1531
10:00 AM	1593	1711	1862	2322	1845	1950
11:00 AM	1791	1920	2077	2576	2055	2070
12:00 PM	2011	2151	2316	2859	2265	2250
1:00 PM	2011	2151	2316	2859	2295	2250
2:00 PM	2099	2244	2411	2972	2474	2490
3:00 PM	1945	2082	2243	2775	2384	2400
4:00 PM	2056	2198	2363	2916	2564	2490
5:00 PM	1923	2059	2219	2747	2445	2370
6:00 PM	2100	2245	2411	2972	2684	2520
7:00 PM	2100	2245	2411	2972	2654	2460
8:00 PM	2210	2361	2531	3113	2893	2610
9:00 PM	2011	2153	2315	2859	2684	2490
10:00 PM	1989	2130	2291	2831	2834	2610
11:00 PM	1702	1830	1980	2464	2535	2430
12:00 AM	1812	1946	2099	2606	2595	1800
1:00 AM	1504	1622	1764	2211	2236	1410
2:00 AM	1306	1413	1548	1957	1847	1231
3:00 AM	865	950	1068	1392	1429	1051
4:00 AM	248	302	397	601	1070	1051

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Difference between Observed and Calculated Patron Accumulation

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM					0	0
6:00 AM						15
7:00 AM						2
8:00 AM	-103	1	138	147	10	8
9:00 AM	-109	144	275	297	6	-3
10:00 AM	-20	124	377	377	12	14
11:00 AM	39	150	318	549	61	-3
12:00 PM	22	148	331	713	99	-3
1:00 PM	35	174	297	716	125	-6
2:00 PM	7	129	358	724	160	18
3:00 PM	11	112	340	666	140	-4
4:00 PM	13	145	295	777	188	-6
5:00 PM	111	61	238	678	151	-6
6:00 PM	120	95	338	696	197	11
7:00 PM	158	150	284	644	201	0
8:00 PM	225	133	245	667	229	-7
9:00 PM	218	141	191	592	192	7
10:00 PM	187	220	220	543	241	-6
11:00 PM	127	128	221	458	147	-7
12:00 AM	254	279	205	157	146	3
1:00 AM	237	299	173	10	73	13
2:00 AM	264	239	108	-104	1	10
3:00 AM	151	87	-13	-255	-149	193
4:00 AM	-125	-193	-260	-760	-394	481

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Percentage Difference between Observed and Calculated Patron Accumulation
Adjusted

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	entering	exiting
5:00 AM					0.0%	0.0%	2.0%	2.0%
6:00 AM						1.6%	1.8%	2.0%
7:00 AM						0.2%	1.2%	1.9%
8:00 AM	-16.7%	0.2%	25.1%	18.6%	1.6%	0.6%	1.3%	1.9%
9:00 AM	-8.9%	13.6%	25.9%	21.2%	0.5%	-0.2%	4.4%	2.4%
10:00 AM	-1.2%	7.8%	25.4%	19.4%	0.7%	0.7%	4.7%	2.6%
11:00 AM	2.2%	8.5%	18.1%	27.1%	3.1%	-0.1%	1.3%	0.6%
12:00 PM	1.1%	7.4%	16.7%	33.2%	4.6%	-0.1%	1.3%	0.6%
1:00 PM	1.8%	8.8%	14.7%	33.4%	5.8%	-0.3%	3.1%	3.0%
2:00 PM	0.3%	6.1%	17.4%	32.2%	6.9%	0.7%	2.6%	2.0%
3:00 PM	0.6%	5.7%	17.9%	31.6%	6.2%	-0.2%	4.1%	4.4%
4:00 PM	0.6%	7.1%	14.3%	36.3%	7.9%	-0.2%	5.6%	5.0%
5:00 PM	6.1%	3.1%	12.0%	32.8%	6.6%	-0.3%	4.6%	5.0%
6:00 PM	6.1%	4.4%	16.3%	30.6%	7.9%	0.4%	6.0%	5.2%
7:00 PM	8.1%	7.2%	13.4%	27.7%	8.2%	0.0%	6.0%	6.1%
8:00 PM	11.3%	6.0%	10.7%	27.3%	8.6%	-0.3%	7.2%	6.4%
9:00 PM	12.2%	7.0%	9.0%	26.1%	7.7%	0.3%	6.3%	7.0%
10:00 PM	10.4%	11.5%	10.6%	23.7%	9.3%	-0.2%	8.4%	7.9%
11:00 PM	8.1%	7.5%	12.6%	22.8%	6.2%	-0.3%	6.2%	7.2%
12:00 AM	16.3%	16.7%	10.8%	6.4%	6.0%	0.2%	7.4%	7.2%
1:00 AM	18.7%	22.6%	10.9%	0.5%	3.4%	0.9%	6.1%	7.3%
2:00 AM	25.3%	20.4%	7.5%	-5.0%	0.1%	0.8%	5.9%	7.2%
3:00 AM	21.1%	10.1%	-1.2%	-15.5%	-9.4%	22.5%	2.5%	3.9%
4:00 AM	-33.5%	-39.0%	-39.6%	-55.8%	-26.9%	84.4%	0.0%	1.2%
					0.65		100.0%	100.0%

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Projected Entering Vehicular trips

Based upon average vehicle occupancy = 1.18
Based upon average weekday patronage = 24354

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	132	132	132	132	507	229
6:00 AM	103	103	103	103	456	686
7:00 AM	206	206	206	206	304	1042
8:00 AM	784	784	784	784	330	1321
9:00 AM	846	846	846	846	1115	1042
10:00 AM	1197	1197	1197	1197	1191	1042
11:00 AM	970	970	970	970	330	889
12:00 PM	1073	1073	1073	1073	330	1016
1:00 PM	1032	1032	1032	1032	786	991
2:00 PM	990	990	990	990	658	1169
3:00 PM	970	970	970	970	1039	838
4:00 PM	1279	1279	1279	1279	1419	838
5:00 PM	1176	1176	1176	1176	1166	1169
6:00 PM	1238	1238	1238	1238	1520	1906
7:00 PM	1197	1197	1197	1197	1520	1474
8:00 PM	1382	1382	1382	1382	1825	1423
9:00 PM	1093	1093	1093	1093	1597	1804
10:00 PM	1032	1032	1032	1032	2129	1652
11:00 PM	949	949	949	949	1571	1601
12:00 AM	970	970	970	970	1875	1423
1:00 AM	805	805	805	805	1546	1143
2:00 AM	495	495	495	495	1495	661
3:00 AM	413	413	413	413	634	51
4:00 AM	309	309	309	309	0	0

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Projected Exiting Vehicular trips

Based upon average vehicle occupancy = 1.18
Based upon average weekday patronage = 24354

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	152	152	152	152	507	229
6:00 AM	206	206	206	206	507	229
7:00 AM	248	248	248	248	507	762
8:00 AM	371	371	371	371	481	1042
9:00 AM	289	289	289	289	481	1067
10:00 AM	743	743	743	743	608	813
11:00 AM	784	784	784	784	658	686
12:00 PM	866	866	866	866	152	787
1:00 PM	1032	1032	1032	1032	152	864
2:00 PM	908	908	908	908	760	991
3:00 PM	1114	1114	1114	1114	507	965
4:00 PM	1176	1176	1176	1176	1115	914
5:00 PM	1300	1300	1300	1300	1267	762
6:00 PM	1073	1073	1073	1073	1267	1270
7:00 PM	1197	1197	1197	1197	1318	1779
8:00 PM	1279	1279	1279	1279	1546	1525
9:00 PM	1279	1279	1279	1279	1622	1296
10:00 PM	1052	1052	1052	1052	1774	1906
11:00 PM	1217	1217	1217	1217	2002	1550
12:00 AM	866	866	866	866	1825	1753
1:00 AM	1093	1093	1093	1093	1825	1957
2:00 AM	681	681	681	681	1850	1474
3:00 AM	825	825	825	825	1825	813
4:00 AM	887	887	887	887	988	203

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Sum of Projected Entering and Exiting Vehicular Trips
Based upon average vehicle occupancy = 1.18

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	284	284	284	284	1014	458
6:00 AM	309	309	309	309	963	915
7:00 AM	454	454	454	454	811	1804
8:00 AM	1155	1155	1155	1155	811	2363
9:00 AM	1135	1135	1135	1135	1596	2109
10:00 AM	1940	1940	1940	1940	1799	1855
11:00 AM	1754	1754	1754	1754	988	1575
12:00 PM	1939	1939	1939	1939	482	1803
1:00 PM	2064	2064	2064	2064	938	1855
2:00 PM	1898	1898	1898	1898	1418	2160
3:00 PM	2084	2084	2084	2084	1546	1803
4:00 PM	2455	2455	2455	2455	2534	1752
5:00 PM	2476	2476	2476	2476	2433	1931
6:00 PM	2311	2311	2311	2311	2787	3176
7:00 PM	2394	2394	2394	2394	2838	3253
8:00 PM	**2661**	**2661**	**2661**	**2661**	3371	2948
9:00 PM	2372	2372	2372	2372	3219	3100
10:00 PM	2084	2084	2084	2084	**3903**	**3558**
11:00 PM	2166	2166	2166	2166	3573	3151
12:00 AM	1836	1836	1836	1836	3700	3176
1:00 AM	1898	1898	1898	1898	3371	3100
2:00 AM	1176	1176	1176	1176	3345	2135
3:00 AM	1238	1238	1238	1238	2459	864
4:00 AM	1196	1196	1196	1196	988	203

xxx = Peak Hour of Generator

Pittsburgh First Master Plan
Trip Generation Calculations
90 Minute Patron Visit

Projected Parking Accumulation

Based upon average vehicle occupancy = 1.18
Based upon other parking factors = 1.00

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5:00 AM	193	235	319	485	904	890
6:00 AM	100	137	217	365	853	1347
7:00 AM	62	97	176	317	650	1627
8:00 AM	436	489	583	796	499	1907
9:00 AM	940	1019	1131	1442	1133	1882
10:00 AM	1350	1450	1578	1968	1715	2111
11:00 AM	1518	1627	1760	2183	1387	2314
12:00 PM	1704	1823	1963	2423	1565	2542
1:00 PM	1704	1823	1963	2423	2199	2670
2:00 PM	1779	1902	2043	2519	2097	2848
3:00 PM	1648	1764	1901	2352	2629	2721
4:00 PM	1742	1863	2003	2471	2933	2645
5:00 PM	1630	1745	1881	2328	2832	3052
6:00 PM	1780	1903	2043	2519	3085	3687
7:00 PM	1780	1903	2043	2519	3287	3382
8:00 PM	1873	2001	2145	2638	3567	3281
9:00 PM	1704	1825	1962	2423	3542	3789
10:00 PM	1686	1805	1942	2399	3897	3535
11:00 PM	1442	1551	1678	2088	3466	3586
12:00 AM	1536	1649	1779	2208	3517	3256
1:00 AM	1275	1375	1495	1874	3238	2442
2:00 AM	1107	1197	1312	1658	2883	1629
3:00 AM	733	805	905	1180	1693	868
4:00 AM	210	256	336	509	704	664

APPENDIX H

Master Plan Trip Generation

TRANS ASSOCIATES
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
(412) 490-0630 - Fax (412) 490-0631

PROJECT Pittsburgh First Master Plan | Made by DCP | Date 12/04/05
SUBJECT Trip Generation | Checked by JS | Date 12/06/05
Sheet No. 1 of 8

The project site is divided into two parcels by Centre Avenue. As shown on the attached sheet and site plan, the south site will include the casino, the arena, a hotel, a 4300-space parking structure and a very limited amount of retail frontage along Fifth Avenue. The north site will consist of a mix of residential, retail, office as well as several parking structures, and will be divided by several internal streets.

Trip generation for the two parts of the site are considered separately.

South Site - Casino
Refer to separate calculations for trip generation for the casino, including all captive restaurant and commercial space.

South Site - Arena
Refer to separate calculations for trip generation for the casino.

South Site Hotel
Current site plans call for a 400-room hotel to be built over the casino, with shared usage of the casino parking garage and patron drop off/pick up areas.

Using equations and rates from ITE Trip Generation, 7th Edition, for Land Use 310, Hotel, the trip generation below has been estimated. ITE data is based upon locations outside central business districts. Due to the central location of this site, different trip generation characteristics can be expected to apply. In particular, a significant number of employees can be expected to arrive and depart via transit. While most patrons will arrive either by private auto or by taxi, it can be anticipated that a number of patrons will be able to walk to adjacent locations for business or pleasure activities. For these reasons, TA anticipates that actual trip generation will be 20% lower than estimated using ITE rates.

A.M. peak hour of adjacent street traffic:

Ln (T) = 1.24 Ln (X) -2.00
Ln (T) = 1.24 Ln (400) - 2.00
Ln (T) = 5.43
T = 228 trips
228 - 20% = 182 trips after transit/walking reduction
61% entering = 111 trips
39% exiting = 71 trips

P.M. Peak hour of adjacent street traffic

ITE rate = 0.59 trips per room
T = 0.59 x 400
T = 236
236 - 20% = 189 trips after transit/walking reduction
53% entering = 100 trips
47% exiting = 89 trips exiting

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South Site Hotel (continued)

Weekday Hockey Peak

This peak period is assumed to occur in the evening, following the PM peak hour of adjacent street traffic. ITE does not provide any data on this time period. For this analyis, it is assumed that site traffic will be 50% of the traffic generated during the P.M. peak hour of the generator, subject to the 20% reduction for transit and walking.

Ln (T) = 1.00 (X) - 0.58
Ln (T) = 1.00 (400) - 0.58
Ln (T) = 5.41
T = 224
50% of 224 = 112
122 - 20% = 90 trips after reduction for transit/walking
58% entering = 52 trips
42% entering = 38 trips

Friday Casino Peak

This peak period is assumed to occur in the evening, at approximately 9:00 PM.
ITE does not provide any data on this time period. For this analyis, it is assumed that site traffic will be 50% of the traffic generated during the P.M. peak hour of the generator, subject to the 20% reduction for transit and walking.

Ln (T) = 1.00 (X) - 0.58
Ln (T) = 1.00 (400) - 0.58
Ln (T) = 5.41
T = 224
50% of 224 = 112
122 - 20% = 90 trips after reduction for transit/walking
58% entering = 52 trips
42% entering = 38 trips

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South Site Hotel (continued)

Saturday Casino Peak

This peak period is assumed to occur in the evening, at approximately 9:00 PM.
ITE does not provide any data on this time period. For this analyis, it is assumed that site traffic will be 50% of the traffic generated during the Saturday peak hour of the generator, subject to the 20% reduction for transit and walking.

T = 0.69 (X) + 4.32
T = 0.69 (400) + 4.32
T = 280 trips
50% of 280 = 140 trips
140 - 20% = 112 trips after transit/walking reduction
56% entering = 63 trips
44% exiting = 49 trips

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North Site

The north site is assumed to consist of the following development:

1707 residential units
71,200 square feet of retail
200,000 square feet of office
1910 structured parking spaces for residents
3590 structured parking spaces for public

The exact number, location and configuration of these facilities is subject to change. This analysis is approximate.

North Site Residential

This analysis is based upon ITE Trip Generation, 7th Edition, for Land Use 223, mid-rise apartment.

A.M. Peak Hour of Adjacent Street Traffic

Because of the proximity of the site to downtown, it is anticipated that a high proportion of residents will work in Downtown Pittsburgh or in other nearby employment centers. For this calculation, it is assumed that 50% of residents will be so employed. ITE trip generation data is based upon suburban locations, with negligible transit usage. The site is within walking distance of downtown, and is well-served by an extensive transit network. It is assumed that 50% of site residents working in and near downtown will chose to walk or use transit for their commute. Accordingly, ITE trip generation rates for the A.M. peak period have been reduced by 50% x 50% or 25% to account for this.

T = 0.41 (X) -13.06
T = 0.41 (1707) - 13.06
T = 687
T = 687 x 0.75 = 515 after transit/walking reduction
31% entering = 160
69% exiting = 355 trips

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North Site Residential (continued)

P.M. Peak Hour of Adjacent Street Traffic

Because of the proximity of the site to downtown, it is anticipated that a high proportion of residents will work in Downtown Pittsburgh or in other nearby employment centers. For this calculation, it is assumed that 50% of residents will be so employed. ITE trip generation data is based upon suburban locations, with negligible transit usage. The site is within walking distance of downtown, and is well-served by an extensive transit network. It is assumed that 50% of site residents working in and near downtown will chose to walk or use transit for their commute. Accordingly, ITE trip generation rates for the P.M. peak period have been reduced by 50% x 50% or 25% to account for this.

T = 0.48 (X) -11.07
T = 0.48 (1707) - 11.07
T = 808 trips
T = 808 trips x 0.75 = 606 trips after transit/walking reduction
58% entering = 352 trips
42% exiting = 255 trips

Weekday Arena Peak
Friday Casino Peak
Saturday Casino Peak

ITE does not provide data on residential trip generation during these time periods. For this calculation, trip generation is assumed to be equal to 50% of that during the P.M. peak hour of the generator. No additional reduction due to transit or walking is assumed.

T = 0.53 (X) -11.27
T = 0.53 (1707) - 11.27
T = 893
T = 893 x 50% = 447 trips
59% entering = 264 trips
41% exiting = 183 trips

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North Site Retail

The site is assumed to consist of 71,200 square feet of retail development. While most of this is anticipated to be local retail servicing local residents and businesses, trip generation calculations are based upon freestanding retail, using ITE land use 820.

Trip generation is based upon ITE land use 820. An adjustment is made for pass-by trips, according to the methodology and data contained in the ITE trip Generation Handbook, Second Edition. Pass-by trips typically represent vehicles already on the road, stopping at the retail center along the way. Thus, they do not represent a new vehicular trip on the roadway, although they generally are counted at the site driveway. TA's experience with travel behavior in the downtown area indicate that such pass-by trips are likely to be made by pedestrians on their way to their vehicle, and thus do not represent a new vehicular trip at all. Per the Trip Generation Handbook, during the P.M. peak hour, pass-by trips account for 34% of the trips to land use 820. No data is tabulated for other time periods, but for this calculation it is assumed that pass-by trips will account for 24% (10% less than the 34% measured during the P.M. peak) during the A.M. peak. Thus, calculated trip generation will be reduced by 34% during the P.M. peak, and by 24% during the A.M. peak. No pass-by reduction will be taken during other periods.

A.M. Peak hour of adjacent Street Traffic

Ln (T) = 0.60 Ln (x) + 2.29
Ln (T) = 0.60 (71.2) + 2.29
Ln (T) = 128 trips
128 trips - 24% = 97 trips
61% entering = 59 trips
39 % exiting = 38 trips

P.M. Peak hour of adjacent Street Traffic

T = 3.75 x (X) Due to small size of retail development, average rate was used rather than equation
T = 267 trips
267 - 34% = 176 trips
48% entering = 85 trips
52% exiting = 92 trips

Weekday Arena Peak

The weekday arena peak has been determined to occur from 6:00 P.M to 7:00 P.M.
Based upon data tabulated in the ITE Trip Generation Manual, entering traffic during this time period is 7.4% of daily traffic, and exiting traffic is 8.3% of daily traffic.

Daily traffic volume
T = 42.94 x (X) Due to small size of retail development, average rate was used rather than equation.
T = 3057
50% entering = 1528 x 0.074 = 113 trips
50% exiting = 1528 x 0.083 = 127 trips

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North Site Retail (continued)

Friday Casino Peak

The weekday casino peak has been determined to occur from 10:00 P.M to 11:00 P.M.
ITE data is not tabulated this late in the evening, but is is assumed to be the same as for 9:00 P.M. to 10:00 PM which indicates 1.9% of daily traffic entering and 1.8 % of daily traffic exiting.

Daily traffic volume
T = 42.94 x (X) Due to small size of retail development, average rate was used rather than equation.
T = 3057
50% entering = 1528 x 0.019 = 29 trips
50% exiting = 1528 x 0.018 = 28 trips

Saturday Casino Peak

The Saturday casino peak has been determined to occur from 10:00 P.M to 11:00 P.M.
ITE data is not tabulated this late in the evening, but is is assumed to be the same as for 9:00 P.M. to 10:00 PM which indicates 2.0% of daily traffic entering and 3.3 % of daily traffic exiting.

Daily traffic volume
T = 49.97 x (X) Due to small size of retail development, average rate was used rather than equation.
T = 3558
50% entering = 1779 x 0.020 = 36 trips
50% exiting = 1779 x 0.033 = 59 trips

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North Site Office

For office development, trip generation calculations were based upon ITE land use 710, general office building.

A.M. peak hour

Ln (T) = 0.86 Ln (X) + 0.24
Ln (T) = 0.86 Ln (200) + 0.24
Ln (T) = 4.2
T = 121 trips
88% entering = 107 trips
12% exiting = 15 trips

P.M. peak hour

T = 0.37 (X) + 60.08
T = 134 trips
17% entering = 23 trips
83% exiting = 111 trips

APPENDIX I

Trip Assignments

Pittsburgh First Master Plan Prepared by DCP
Trip Distribution Calculations 12/2/2005

Calculations are based upon percentage of trips from each county to site, as determined by the City of Pittsburgh Department of City Planning. Proportion of trips within Allegheny County based upon population within each zone. For outlying counties, an approximation of population distribution was used.

Allegheny County population 1281666

			% of county in zone	% of County Trips	% of overall trips
0 Downtown					**0.37%**
Allegheny County					
Golden Triangle	5,222	0	0.41%	89.73%	0.37%
	5,222		0.41%		0.37%
1 Fort Pitt Bridge					**20.70%**
Allegheny County					
Banksville	4,540	1	0.35%	89.73%	0.32%
Beechview	8,772	1	0.68%	89.73%	0.61%
Bridgeville borough	5341	1	0.42%	89.73%	0.37%
Carnegie borough	8389	1	0.65%	89.73%	0.59%
Chartiers City	595	1	0.05%	89.73%	0.04%
Collier township	5265	1	0.41%	89.73%	0.37%
Coraopolis borough	6131	1	0.48%	89.73%	0.43%
Crafton borough	6706	1	0.52%	89.73%	0.47%
Crafton Heights	4,199	1	0.33%	89.73%	0.29%
Crescent township	2314	1	0.18%	89.73%	0.16%
Dormont borough	9305	1	0.73%	89.73%	0.65%
East Carnegie	485	1	0.04%	89.73%	0.03%
Elliott	2,954	1	0.23%	89.73%	0.21%
Esplen	495	1	0.04%	89.73%	0.03%
Fairywood	1,099	1	0.09%	89.73%	0.08%
Findlay township	5145	1	0.40%	89.73%	0.36%
Green Tree borough	4719	1	0.37%	89.73%	0.33%
Heidelberg borough	1225	1	0.10%	89.73%	0.09%
Ingram borough	3712	1	0.29%	89.73%	0.26%
Kennedy township	7504	1	0.59%	89.73%	0.53%
McDonald borough	415	1	0.03%	89.73%	0.03%
McKees Rocks borough	6622	1	0.52%	89.73%	0.46%
Moon township	22290	1	1.74%	89.73%	1.56%
Mount Lebanon township	33017	1	2.58%	89.73%	2.31%
Neville township	1232	1	0.10%	89.73%	0.09%
North Fayette township	12254	1	0.96%	89.73%	0.86%
Oakdale borough	1551	1	0.12%	89.73%	0.11%
Oakwood	1,028	1	0.08%	89.73%	0.07%
Pennsbury Village borougl	738	1	0.06%	89.73%	0.05%
Ridgemont	530	1	0.04%	89.73%	0.04%
Robinson township	12289	1	0.96%	89.73%	0.86%
Rosslyn Farms borough	464	1	0.04%	89.73%	0.03%
Scott township	17288	1	1.35%	89.73%	1.21%
Sheraden	6,049	1	0.47%	89.73%	0.42%

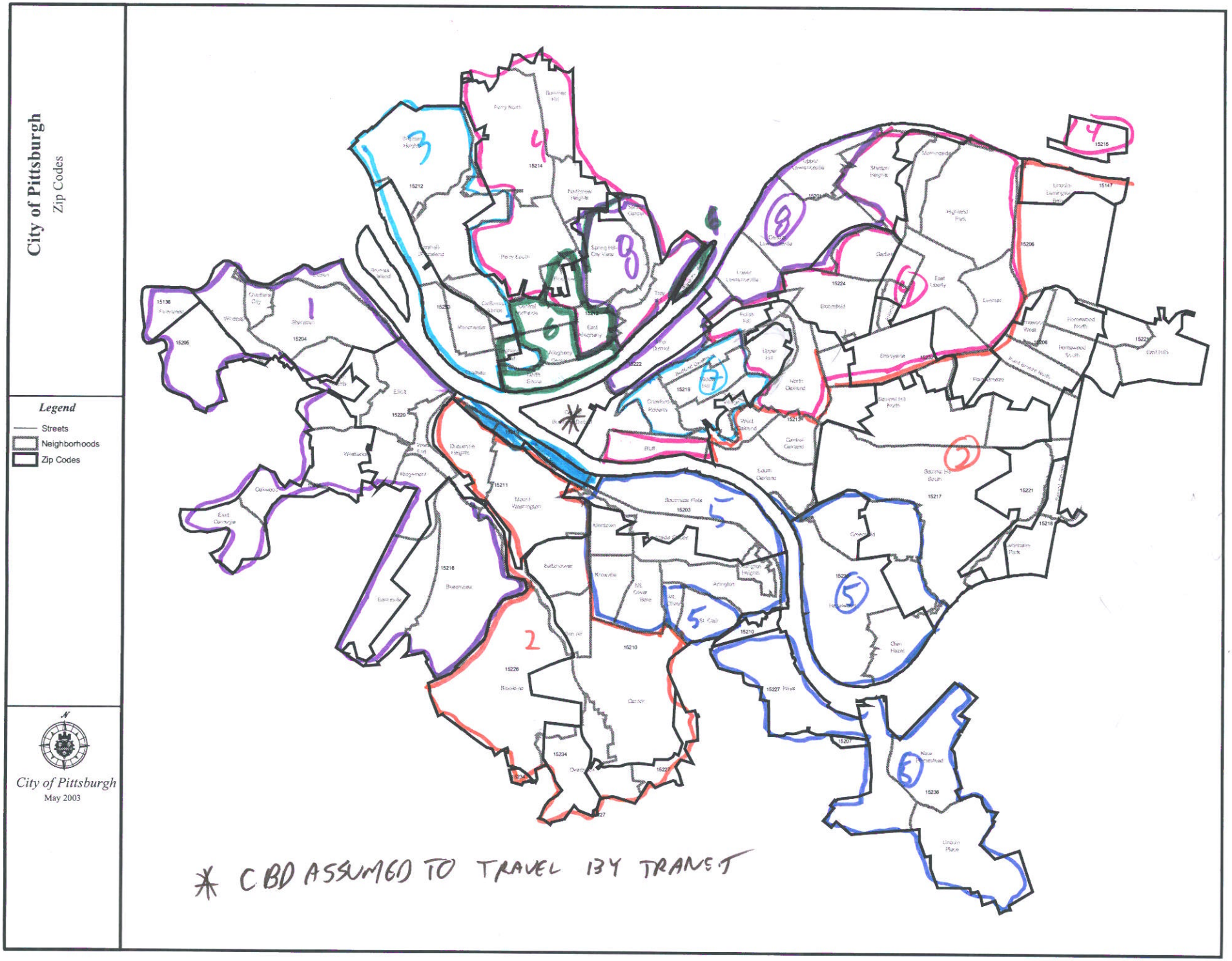
South Fayette township	12271	1	0.96%	89.73%	0.86%	
Stowe township	6706	1	0.52%	89.73%	0.47%	
Thornburg borough	468	1	0.04%	89.73%	0.03%	
Upper St. Clair township	20053	1	1.56%	89.73%	1.40%	
West End	466	1	0.04%	89.73%	0.03%	
Westwood	3,093	1	0.24%	89.73%	0.22%	
Windgap	1,447	1	0.11%	89.73%	0.10%	
Allegheny Ct area total	249,166		19.44%		17.44%	
Beaver County			75.00%	1.36%	1.02%	
Washington County			100.00%	2.24%	2.24%	
Total Zone Share of Trips					20.70%	
2A Liberty Bridge/Blvd of the Allies					**13.10%**	
Allegheny County						
Baldwin borough	10000	2	0.78%	89.73%	0.70%	1.00%
Baldwin township	2244	2	0.18%	89.73%	0.16%	1.00%
Beltzhoover	2,783	2	0.22%	89.73%	0.19%	1.00%
Bethel Park borough	33556	2	2.62%	89.73%	2.35%	1.00%
Bon Air	889	2	0.07%	89.73%	0.06%	1.00%
Brentwood borough	10466	2	0.82%	89.73%	0.73%	1.00%
Brookline	14,318	2	1.12%	89.73%	1.00%	1.00%
Carrick	10,685	2	0.83%	89.73%	0.75%	1.00%
Castle Shannon borough	8556	2	0.67%	89.73%	0.60%	1.00%
Clairton city	8491	2	0.66%	89.73%	0.59%	1.00%
Duquesne Heights	2,696	2	0.21%	89.73%	0.19%	1.00%
Elizabeth borough	1609	2	0.13%	89.73%	0.11%	1.00%
Elizabeth township	13839	2	1.08%	89.73%	0.97%	1.00%
Forward township	3771	2	0.29%	89.73%	0.26%	1.00%
Jefferson Hills borough	9666	2	0.75%	89.73%	0.68%	1.00%
Mount Washington	9,878	2	0.77%	89.73%	0.69%	1.00%
Overbrook	4,041	2	0.32%	89.73%	0.28%	1.00%
Pleasant Hills borough	8397	2	0.66%	89.73%	0.59%	1.00%
South Park township	14340	2	1.12%	89.73%	1.00%	1.00%
West Elizabeth borough	565	2	0.04%	89.73%	0.04%	1.00%
Whitehall borough	14444	2	1.13%	89.73%	1.01%	1.00%
Total Allegh. Co. in zone	185234		14.45%		12.97%	
External Counties			10.00%	1.30%	0.13%	
Total Zone Share of Trips					13.10%	
2B Blvd of the Allies					**27.37%**	
Allegheny County						
Braddock borough	2912	2	0.23%	89.73%	0.20%	2.00%
Braddock Hills borough	1998	2	0.16%	89.73%	0.14%	2.00%
Central Oakland	5,281	2	0.41%	89.73%	0.37%	2.00%
Chalfant borough	870	2	0.07%	89.73%	0.06%	2.00%
Churchill borough	3566	2	0.28%	89.73%	0.25%	2.00%
Dravosburg borough	2015	2	0.16%	89.73%	0.14%	2.00%
Duquesne city	7332	2	0.57%	89.73%	0.51%	2.00%
East Hills	3,951	2	0.31%	89.73%	0.28%	2.00%
East McKeesport borough	2343	2	0.18%	89.73%	0.16%	2.00%
East Pittsburgh borough	2017	2	0.16%	89.73%	0.14%	2.00%
Edgewood borough	3311	2	0.26%	89.73%	0.23%	2.00%
Forest Hills borough	6831	2	0.53%	89.73%	0.48%	2.00%

Glassport borough	4993	2	0.39%	89.73%	0.35%	2.00%
Homestead borough	3569	2	0.28%	89.73%	0.25%	2.00%
Homewood North	4,522	2	0.35%	89.73%	0.32%	2.00%
Homewood South	3,647	2	0.28%	89.73%	0.26%	2.00%
Homewood West	1,114	2	0.09%	89.73%	0.08%	2.00%
Liberty borough	2670	2	0.21%	89.73%	0.19%	2.00%
Lincoln borough	1218	2	0.10%	89.73%	0.09%	2.00%
McKeesport city	24040	2	1.88%	89.73%	1.68%	2.00%
Munhall borough	12264	2	0.96%	89.73%	0.86%	2.00%
Municipality of Monroeville	29349	2	2.29%	89.73%	2.05%	2.00%
North Braddock borough	6410	2	0.50%	89.73%	0.45%	2.00%
North Versailles township	11125	2	0.87%	89.73%	0.78%	2.00%
Penn Hills township	46809	2	3.65%	89.73%	3.28%	2.00%
Pitcairn borough	3689	2	0.29%	89.73%	0.26%	2.00%
Plum borough	26940	2	2.10%	89.73%	1.89%	2.00%
Point Breeze	5,665	2	0.44%	89.73%	0.40%	2.00%
Point Breeze North	2,304	2	0.18%	89.73%	0.16%	2.00%
Port Vue borough	4228	2	0.33%	89.73%	0.30%	2.00%
Rankin borough	2315	2	0.18%	89.73%	0.16%	2.00%
Regent Square	1,131	2	0.09%	89.73%	0.08%	2.00%
South Oakland	3,007	2	0.23%	89.73%	0.21%	2.00%
South Versailles township	351	2	0.03%	89.73%	0.02%	2.00%
Squirrel Hill North	11,395	2	0.89%	89.73%	0.80%	2.00%
Squirrel Hill South	14,507	2	1.13%	89.73%	1.02%	2.00%
Swisshelm Park	1,378	2	0.11%	89.73%	0.10%	2.00%
Swissvale borough	9653	2	0.75%	89.73%	0.68%	2.00%
Trafford borough	31	2	0.00%	89.73%	0.00%	2.00%
Turtle Creek borough	6076	2	0.47%	89.73%	0.43%	2.00%
Versailles borough	1724	2	0.13%	89.73%	0.12%	2.00%
Wall borough	727	2	0.06%	89.73%	0.05%	2.00%
West Mifflin borough	11232	2	0.88%	89.73%	0.79%	2.00%
West Oakland	2,272	2	0.18%	89.73%	0.16%	2.00%
Whitaker borough	1338	2	0.10%	89.73%	0.09%	2.00%
White Oak borough	8437	2	0.66%	89.73%	0.59%	2.00%
Wilkins township	6917	2	0.54%	89.73%	0.48%	2.00%
Wilkinsburg borough	19196	2	1.50%	89.73%	1.34%	2.00%
Wilmerding borough	2145	2	0.17%	89.73%	0.15%	2.00%
Total Allegh. Co. in zone	340815		26.59%		23.86%	
Westmoreland County			90.00%	2.96%	2.66%	
External Counties			65.00%	1.30%	0.85%	
Total Zone Share of Trips					27.37%	
3 Fort Duquesne Bridge/Smithfield Street Bridge					3.95%	
Allegheny County						
Aleppo township	1039	3	0.08%	89.73%	0.07%	
Avalon borough	5294	3	0.41%	89.73%	0.37%	
Bell Acres borough	1382	3	0.11%	89.73%	0.10%	
Bellevue borough	8770	3	0.68%	89.73%	0.61%	
Ben Avon borough	1917	3	0.15%	89.73%	0.13%	
Ben Avon Heights borough	392	3	0.03%	89.73%	0.03%	
Brighton Heights	8,050	3	0.63%	89.73%	0.56%	
California Kirkbride	973	3	0.08%	89.73%	0.07%	
Chateau	39	3	0.00%	89.73%	0.00%	
Edgeworth borough	1730	3	0.13%	89.73%	0.12%	

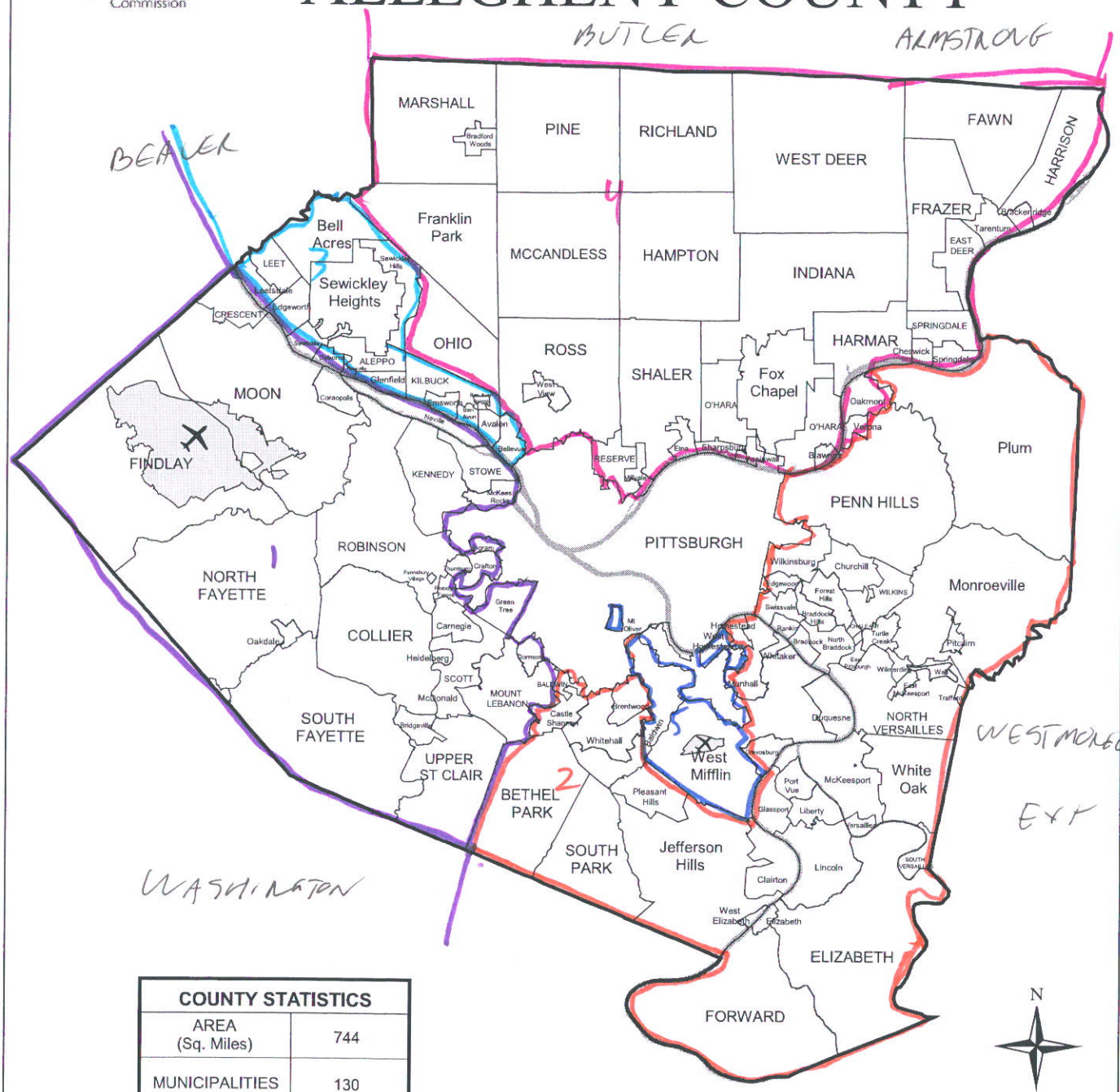
Emsworth borough	2598	3	0.20%	89.73%	0.18%
Glenfield borough	236	3	0.02%	89.73%	0.02%
Haysville borough	78	3	0.01%	89.73%	0.01%
Kilbuck township	723	3	0.06%	89.73%	0.05%
Leet township	1568	3	0.12%	89.73%	0.11%
Leetsdale borough	1232	3	0.10%	89.73%	0.09%
Manchester	2,506	3	0.20%	89.73%	0.18%
Marshall-Shade	6,951	3	0.54%	89.73%	0.49%
Osborne borough	566	3	0.04%	89.73%	0.04%
Sewickley borough	3902	3	0.30%	89.73%	0.27%
Sewickley Heights borougl	981	3	0.08%	89.73%	0.07%
Sewickley Hills borough	652	3	0.05%	89.73%	0.05%
South Shore	56	3	0.00%	89.73%	0.00%
Total Allegh. Co. in zone	51635		4.03%		3.61%
Beaver County			25.00%	1.36%	0.34%
Total Zone Share of Trips					3.95%
4 Veteran's Bridge/I-279 North/Route 28/Bigelow Boulevard					26.68%
Allegheny County					
Aspinwall borough	2960	4	0.23%	89.73%	0.21%
Blawnox borough	1550	4	0.12%	89.73%	0.11%
Bloomfield	9,089	4	0.71%	89.73%	0.64%
Brackenridge borough	3543	4	0.28%	89.73%	0.25%
Bradfordwoods borough	1149	4	0.09%	89.73%	0.08%
Cheswick borough	1899	4	0.15%	89.73%	0.13%
East Deer township	1362	4	0.11%	89.73%	0.10%
East Liberty	6,871	4	0.54%	89.73%	0.48%
Etna borough	3924	4	0.31%	89.73%	0.27%
Fawn township	2504	4	0.20%	89.73%	0.18%
Fox Chapel borough	5436	4	0.42%	89.73%	0.38%
Franklin Park borough	11364	4	0.89%	89.73%	0.80%
Frazer township	1286	4	0.10%	89.73%	0.09%
Friendship	1,791	4	0.14%	89.73%	0.13%
Garfield	5,450	4	0.43%	89.73%	0.38%
Hampton township	17526	4	1.37%	89.73%	1.23%
Harmar township	3242	4	0.25%	89.73%	0.23%
Harrison township	10934	4	0.85%	89.73%	0.77%
Highland Park	6,749	4	0.53%	89.73%	0.47%
Indiana township	6809	4	0.53%	89.73%	0.48%
Larimer	2,602	4	0.20%	89.73%	0.18%
Lincoln-Lemington	5,550	4	0.43%	89.73%	0.39%
Marshall township	5996	4	0.47%	89.73%	0.42%
McCandless township	29022	4	2.26%	89.73%	2.03%
Millvale borough	4028	4	0.31%	89.73%	0.28%
Morningside	3,549	4	0.28%	89.73%	0.25%
North Oakland	9,857	4	0.77%	89.73%	0.69%
Northview Heights	2,526	4	0.20%	89.73%	0.18%
Oakmont borough	6911	4	0.54%	89.73%	0.48%
O'Hara township	8856	4	0.69%	89.73%	0.62%
Ohio township	3086	4	0.24%	89.73%	0.22%
Perry North	4,669	4	0.36%	89.73%	0.33%
Perry South	5,276	4	0.41%	89.73%	0.37%
Pine township	7683	4	0.60%	89.73%	0.54%
Polish Hill	1,488	4	0.12%	89.73%	0.10%

Reserve township	3856	4	0.30%	89.73%	0.27%
Richland township	9231	4	0.72%	89.73%	0.65%
Ross township	32551	4	2.54%	89.73%	2.28%
Shadyside	13,754	4	1.07%	89.73%	0.96%
Shaler township	29757	4	2.32%	89.73%	2.08%
Sharpsburg borough	3594	4	0.28%	89.73%	0.25%
Springdale borough	3828	4	0.30%	89.73%	0.27%
Springdale township	1802	4	0.14%	89.73%	0.13%
Stanton Heights	4,842	4	0.38%	89.73%	0.34%
Summer Hill	1,077	4	0.08%	89.73%	0.08%
Tarentum borough	4993	4	0.39%	89.73%	0.35%
Verona borough	3124	4	0.24%	89.73%	0.22%
West Deer township	11563	4	0.90%	89.73%	0.81%
West View borough	7277	4	0.57%	89.73%	0.51%
Total Allegh. Co. in zone	337786		26.36%		23.65%
Armstrong County			100.00%	0.59%	0.59%
Butler County			100.00%	1.82%	1.82%
External Counties			25.00%	1.30%	0.33%
Westmoreland County			10.00%	2.96%	0.30%
Total Zone Share of Trips					26.68%
5 Tenth Street Bridge/Hot Metal Bridge					4.84%
Allegheny County					
Allentown	3,220	5	0.25%	89.73%	0.23%
Arlington	1,999	5	0.16%	89.73%	0.14%
Arlington Heights	238	5	0.02%	89.73%	0.02%
Baldwin borough	9999	5	0.78%	89.73%	0.70%
Glen Hazel	805	5	0.06%	89.73%	0.06%
Greenfield	7,832	5	0.61%	89.73%	0.55%
Hays	457	5	0.04%	89.73%	0.03%
Hazelwood	5,334	5	0.42%	89.73%	0.37%
Knoxville	4,432	5	0.35%	89.73%	0.31%
Lincoln Place	3,671	5	0.29%	89.73%	0.26%
Mount Oliver	584	5	0.05%	89.73%	0.04%
Mount Oliver borough	3970	5	0.31%	89.73%	0.28%
New Homestead	937	5	0.07%	89.73%	0.07%
Saint Clair	1,453	5	0.11%	89.73%	0.10%
South Side Flats	5,726	5	0.45%	89.73%	0.40%
South Side Slopes	5,007	5	0.39%	89.73%	0.35%
West Homestead borough	2197	5	0.17%	89.73%	0.15%
West Mifflin borough	11232	5	0.88%	89.73%	0.79%
Total Allegh. Co. in zone	69,093		5.39%		4.84%
Total Zone Share of Trips	69,093				4.84%
6 6th/7th and 9th Street Bridges					0.65%
Allegheny County					
Allegheny Center	886	6	0.07%	89.73%	0.06%
Allegheny West	508	6	0.04%	89.73%	0.04%
Central Northside	3,200	6	0.25%	89.73%	0.22%
East Allegheny	2,635	6	0.21%	89.73%	0.18%
Fineview	1,751	6	0.14%	89.73%	0.12%
North Shore	270	6	0.02%	89.73%	0.02%
Total Allegh. Co. in zone	9,250		0		0.65%
Total Zone Share of Trips	9,250				0.65%

7 Centre Avenue					**0.83%**	
Allegheny County						
Bedford Dwellings	2,109	7	0.16%	89.73%	0.15%	
Crawford-Roberts	2,724	7	0.21%	89.73%	0.19%	
Middle Hill	2,143	7	0.17%	89.73%	0.15%	
Terrace Village	2,631	7	0.21%	89.73%	0.18%	
Upper Hill	2,246	7	0.18%	89.73%	0.16%	
Total Allegh. Co. in zone	11,853		0.92%		0.83%	
Total Zone Share of Trips	11,853				0.83%	
8 Liberty Avenue					**1.24%**	
Allegheny County						
Central Lawrenceville	5,106	8	0.40%	89.73%	0.36%	
Lower Lawrenceville	2,585	8	0.20%	89.73%	0.18%	
Spring Garden	1,254	8	0.10%	89.73%	0.09%	
Spring Hill - CV	3,040	8	0.24%	89.73%	0.21%	
Strip District	266	8	0.02%	89.73%	0.02%	
Troy Hill	2,540	8	0.20%	89.73%	0.18%	
Upper Lawrenceville	2,899	8	0.23%	89.73%	0.20%	
Total Allegh. Co. in zone	17,690		1.38%		1.24%	
Total Zone Share of Trips	17,690				1.24%	
9 Forbes/Fifth/Birmingham Bridge					**0.27%**	
Allegheny County						
Bluff	3,922	8	0.31%	89.73%	0.27%	
Total Allegh. Co. in zone	3,922		0.31%		0.27%	
Total Zone Share of Trips	3,922				0.27%	
Summary						
0 Downtown	0				**0.37%**	0.4%
1 Fort Pitt Bridge	0				**20.70%**	20.7%
2A Liberty Bridge/Blvd of the A	0				**13.10%**	13.1%
2B Blvd of the Allies					**27.37%**	27.3%
3 Fort Duquesne Bridge/Smith	0				**3.95%**	4.0%
4 Veteran's Bridge/I-279 North	0				**26.68%**	26.7%
5 Tenth Street Bridge/Hot Met	0				**4.84%**	4.8%
6 6th/7th and 9th Street Bridge	0				**0.65%**	0.7%
7 Centre Avenue	0				**0.83%**	0.8%
8 Liberty Avenue					**1.24%**	1.2%
9 Forbes/Fifth/Birmingham Bri	0				**0.27%**	0.3%
					100.00%	100.0%


City of Pittsburgh
Zip Codes
Legend
Streets
Neighborhoods
Zip Codes
City of Pittsburgh
May 2003
* CBD ASSUMED TO TRAVEL BY TRANSIT

ALLEGHENY COUNTY



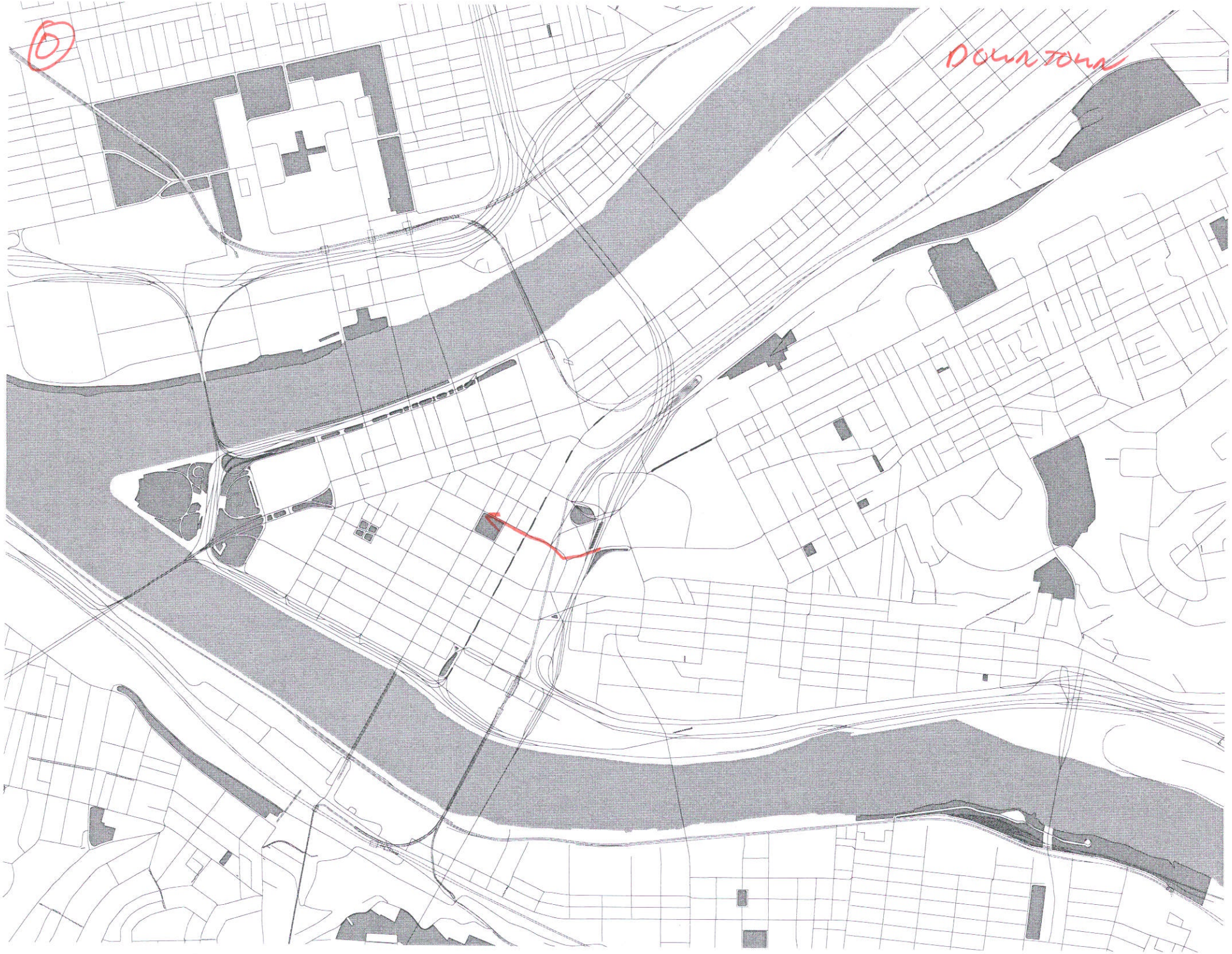
COUNTY STATISTICS	
AREA (Sq. Miles)	744
MUNICIPALITIES	130
POPULATION (2000 Census)	1,281,666
APPROXIMATE # OF TAX PARCELS	560,000

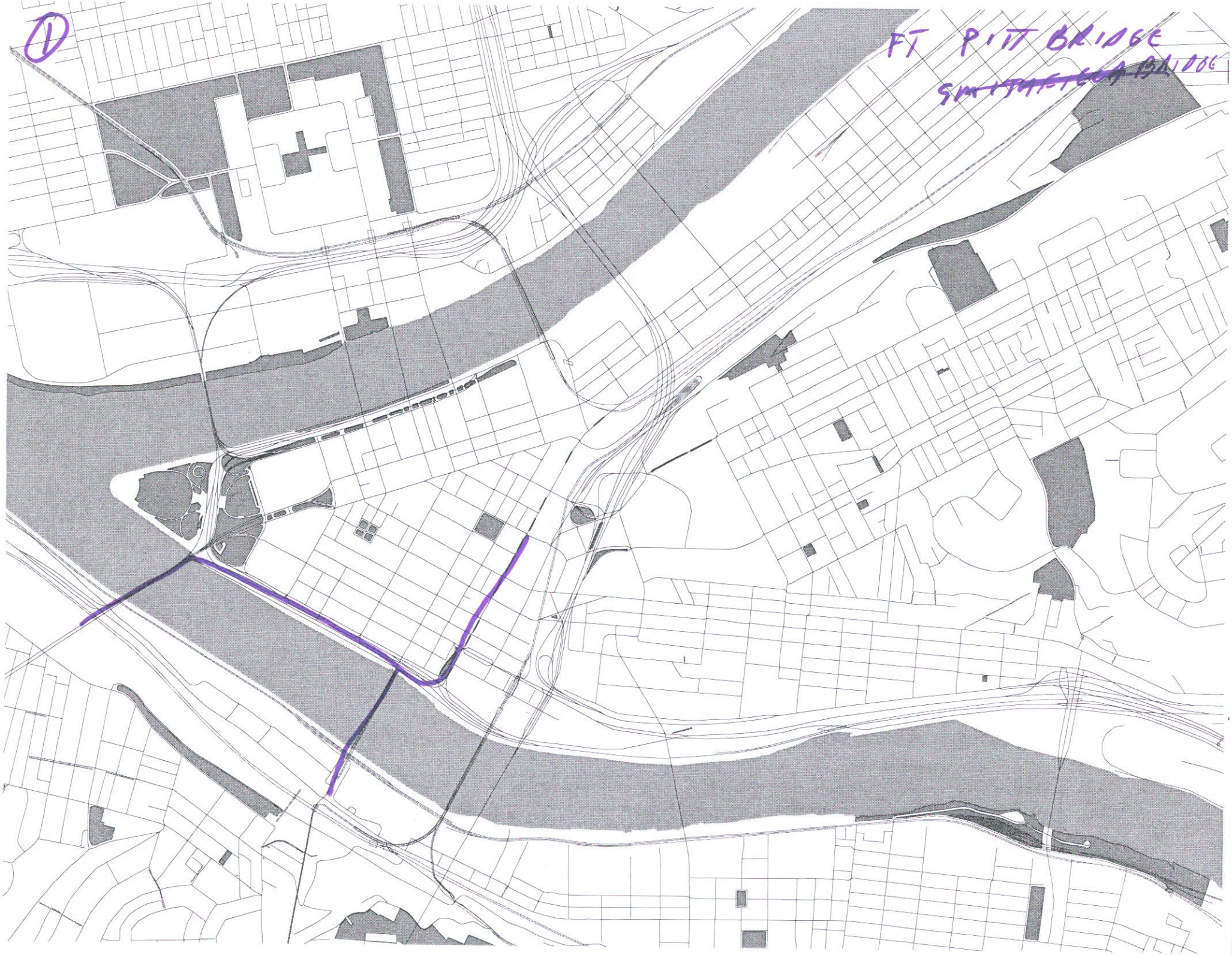
Source: SPC GIS & Census 2000
*Statistics include the City of Pgh.

July 2003

SOUTHWESTERN PENNSYLVANIA COMMISSION: 425 Sixth Avenue, Suite 2500, Pittsburgh PA 15219-1819
Phone: (412) 391-5590 Fax: (412)391-9160 E-Mail: comments@spc9.org www.spcregion.org

comsps.apr


DOWNTOWN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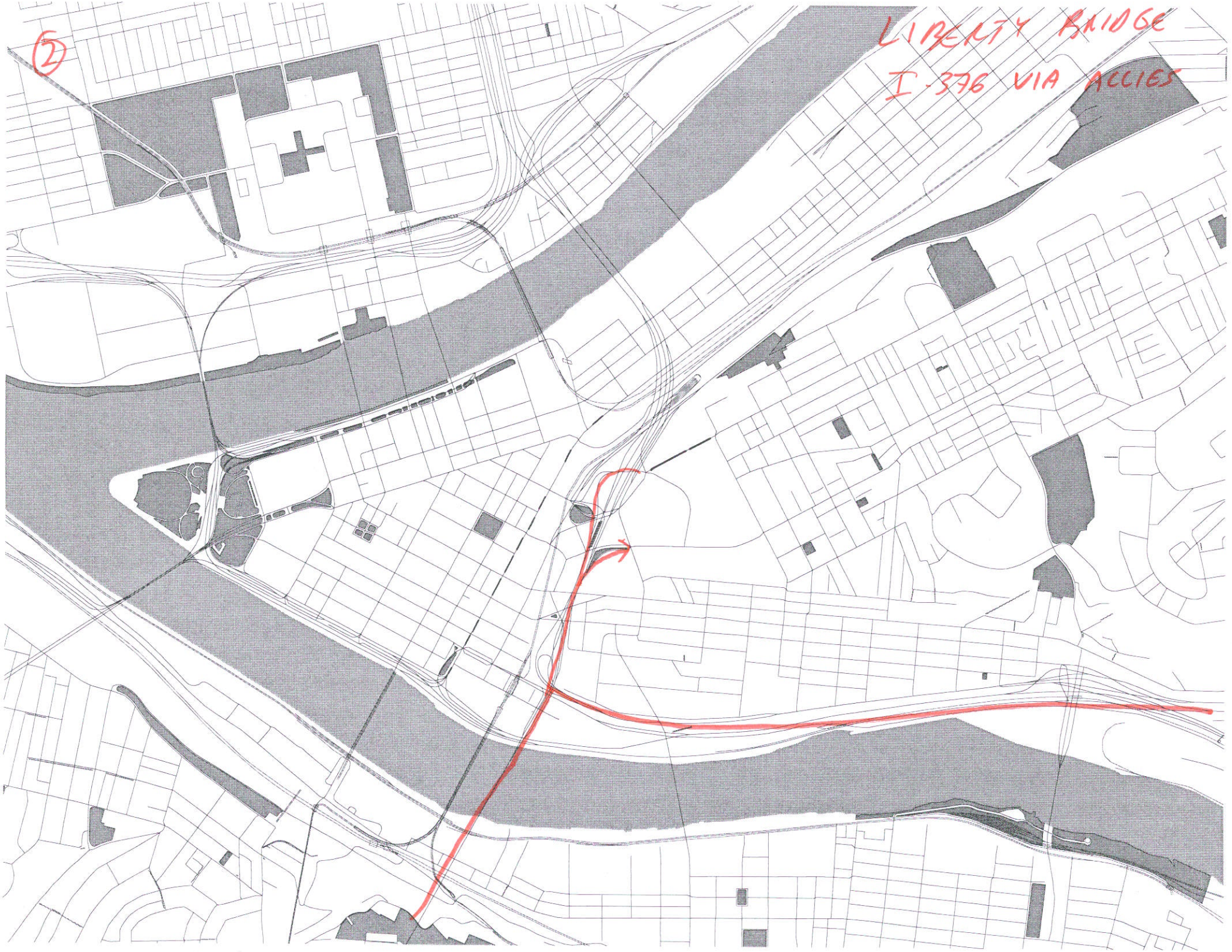
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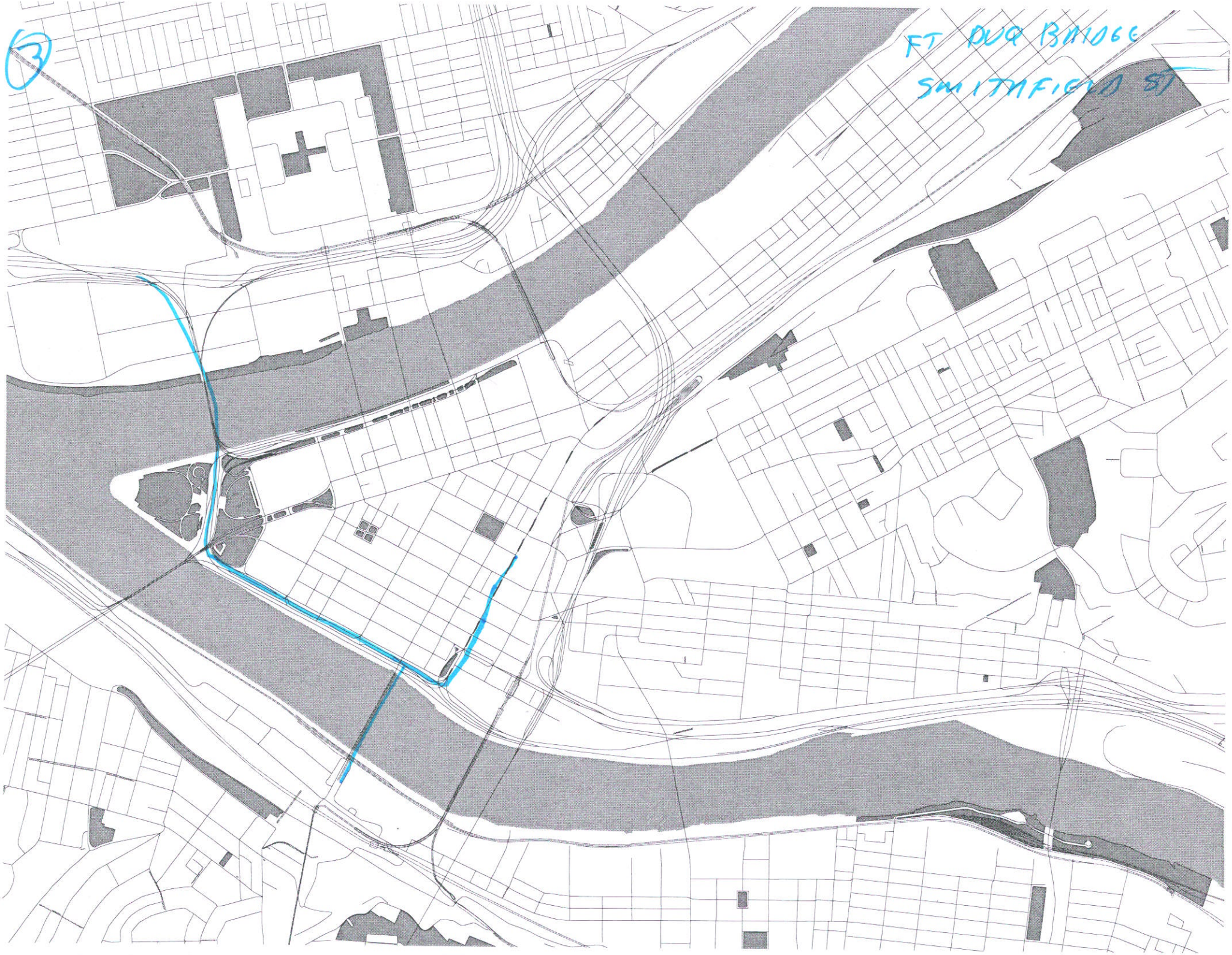
LIBERTY BRIDGE
I-376 VIA ACCESS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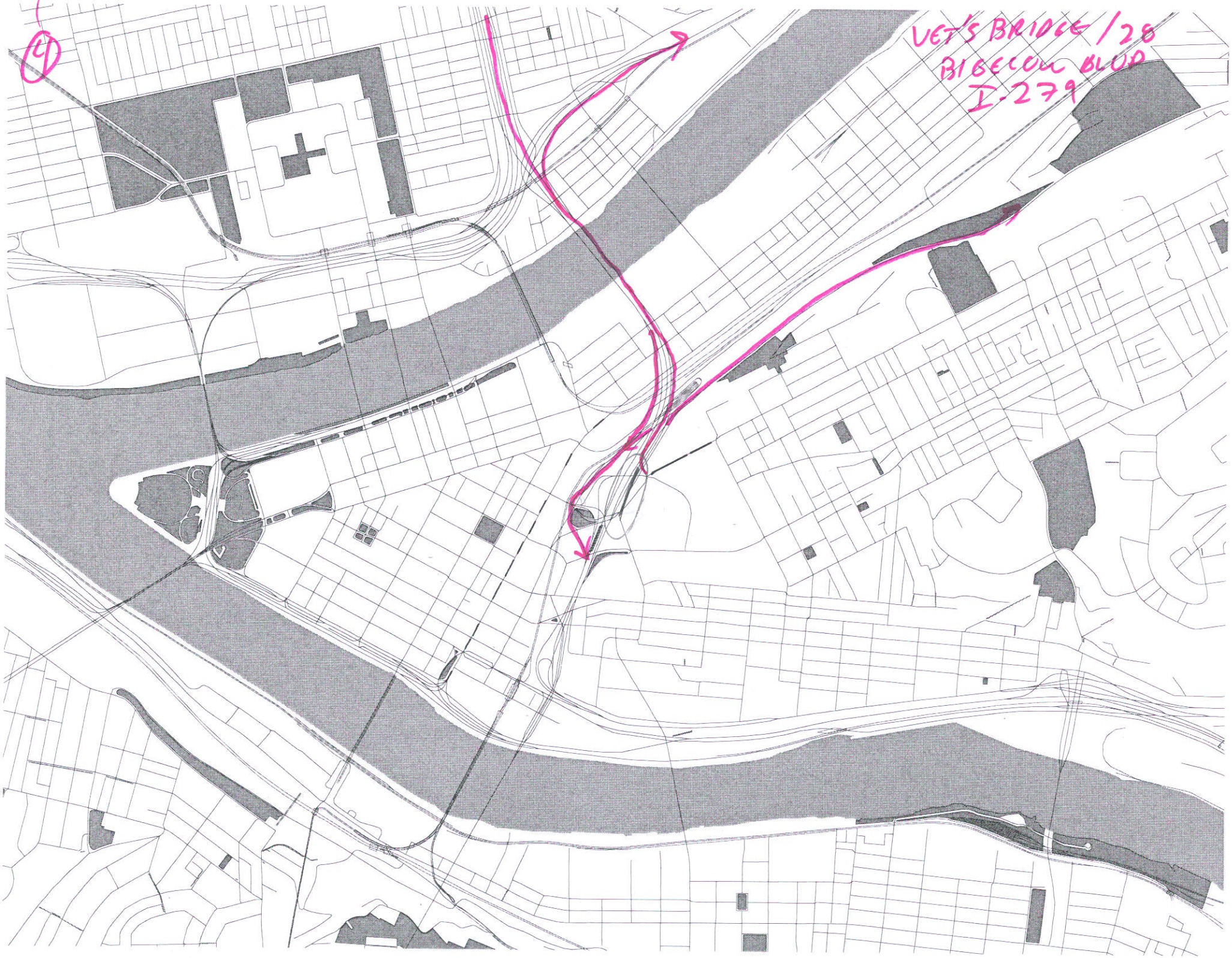
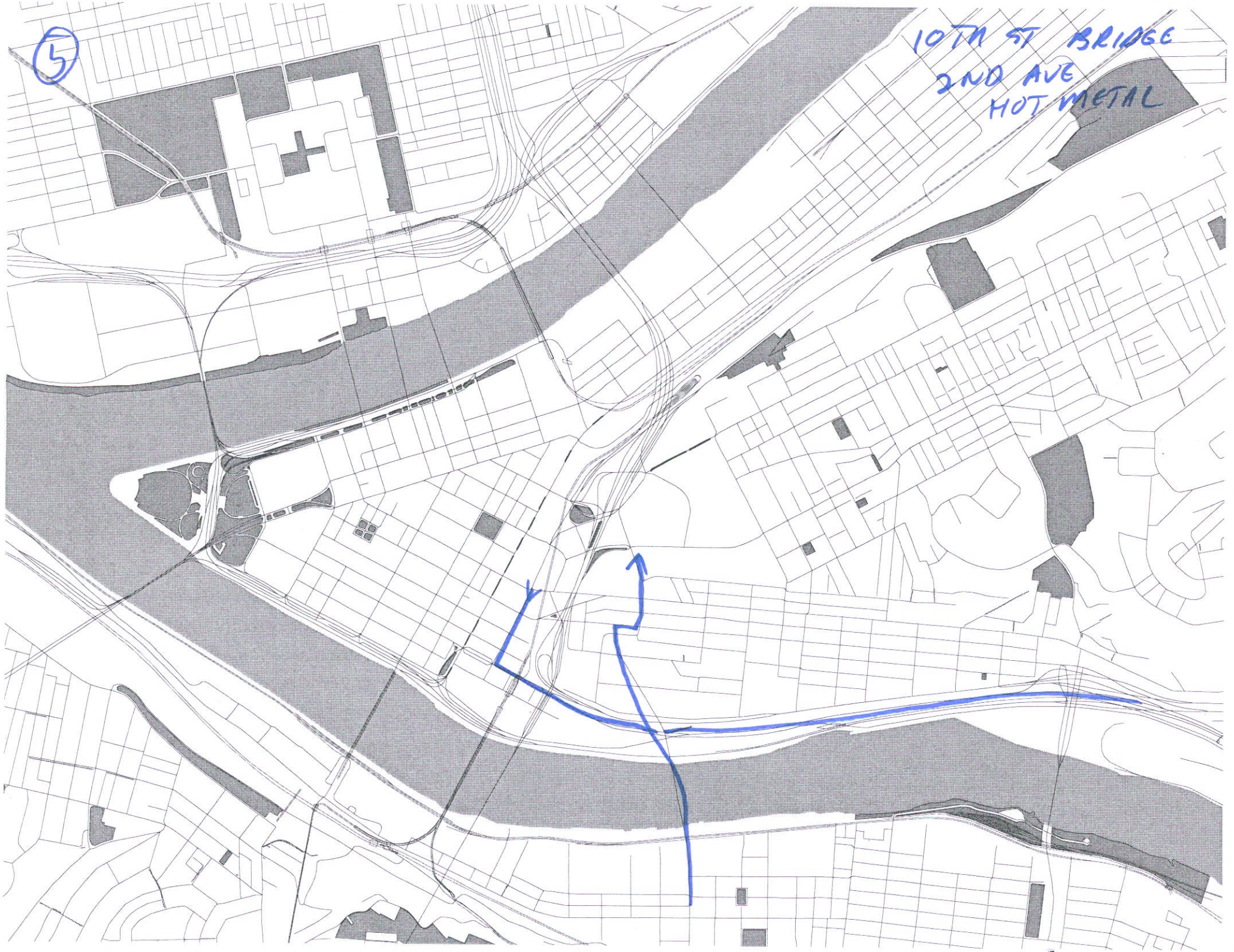

VET'S BRIDGE / 28
BIGELOW BLVD
I-279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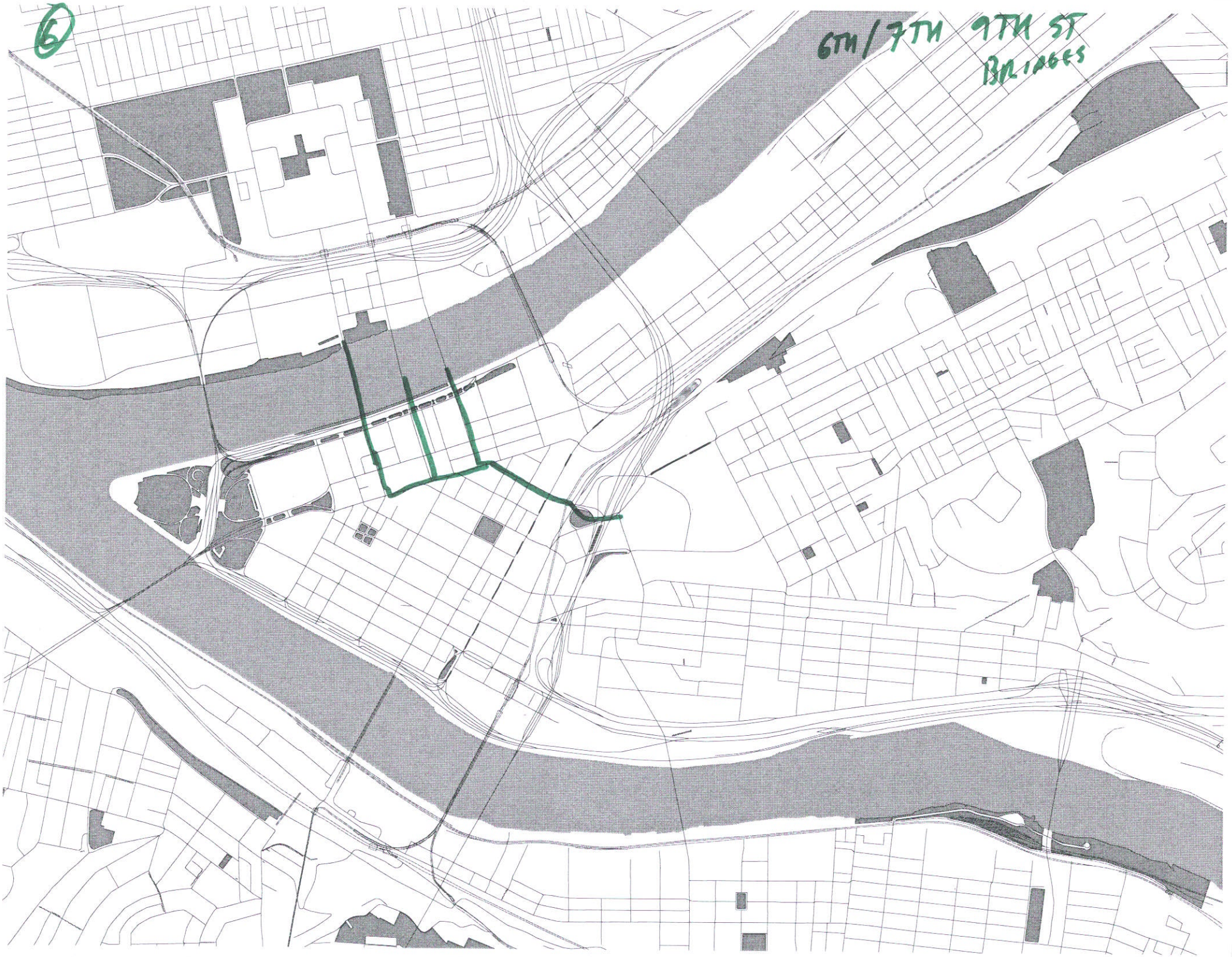
10TH ST BRIDGE
2ND AVE
HOT METAL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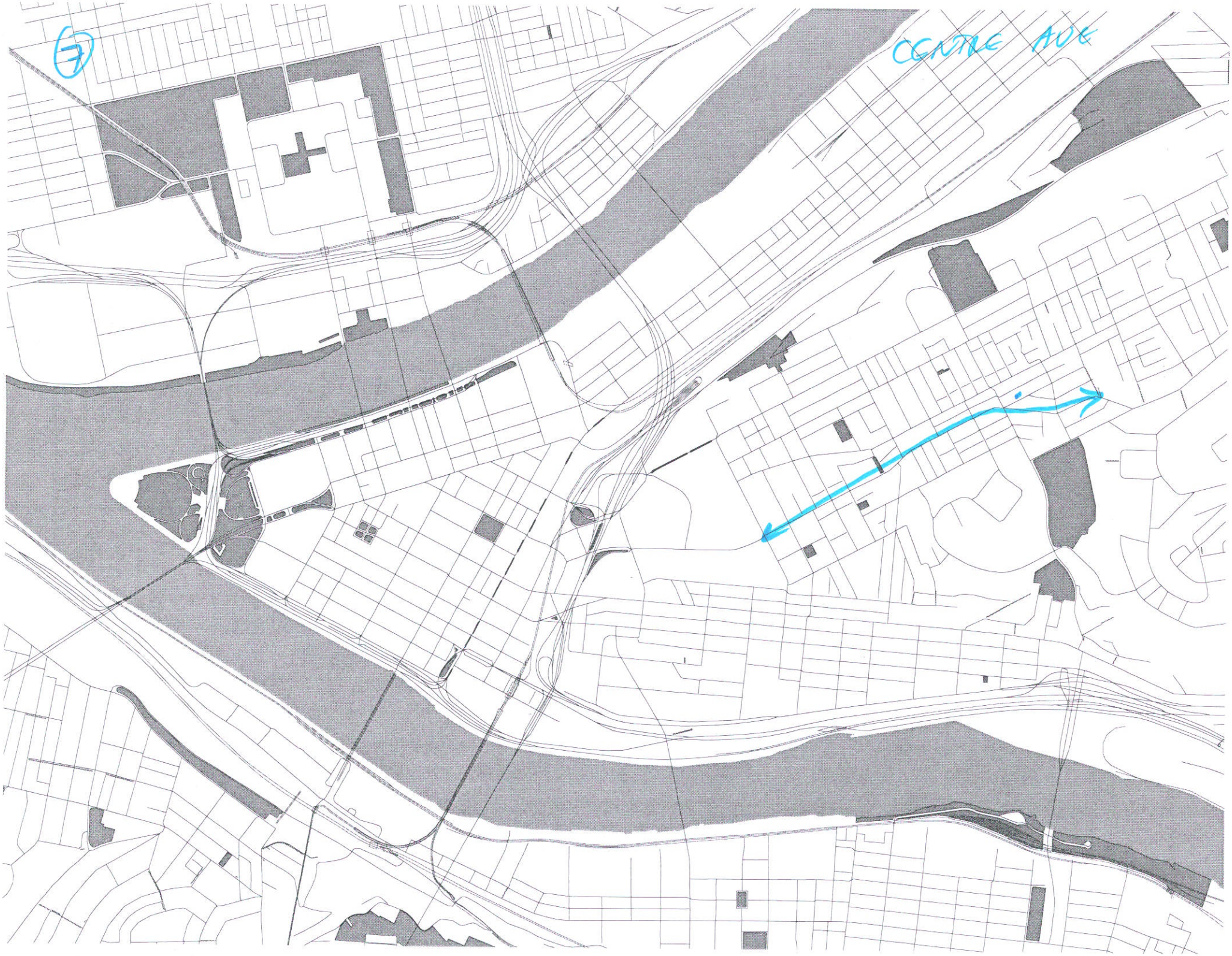
6TH / 7TH 9TH ST
BRIDGES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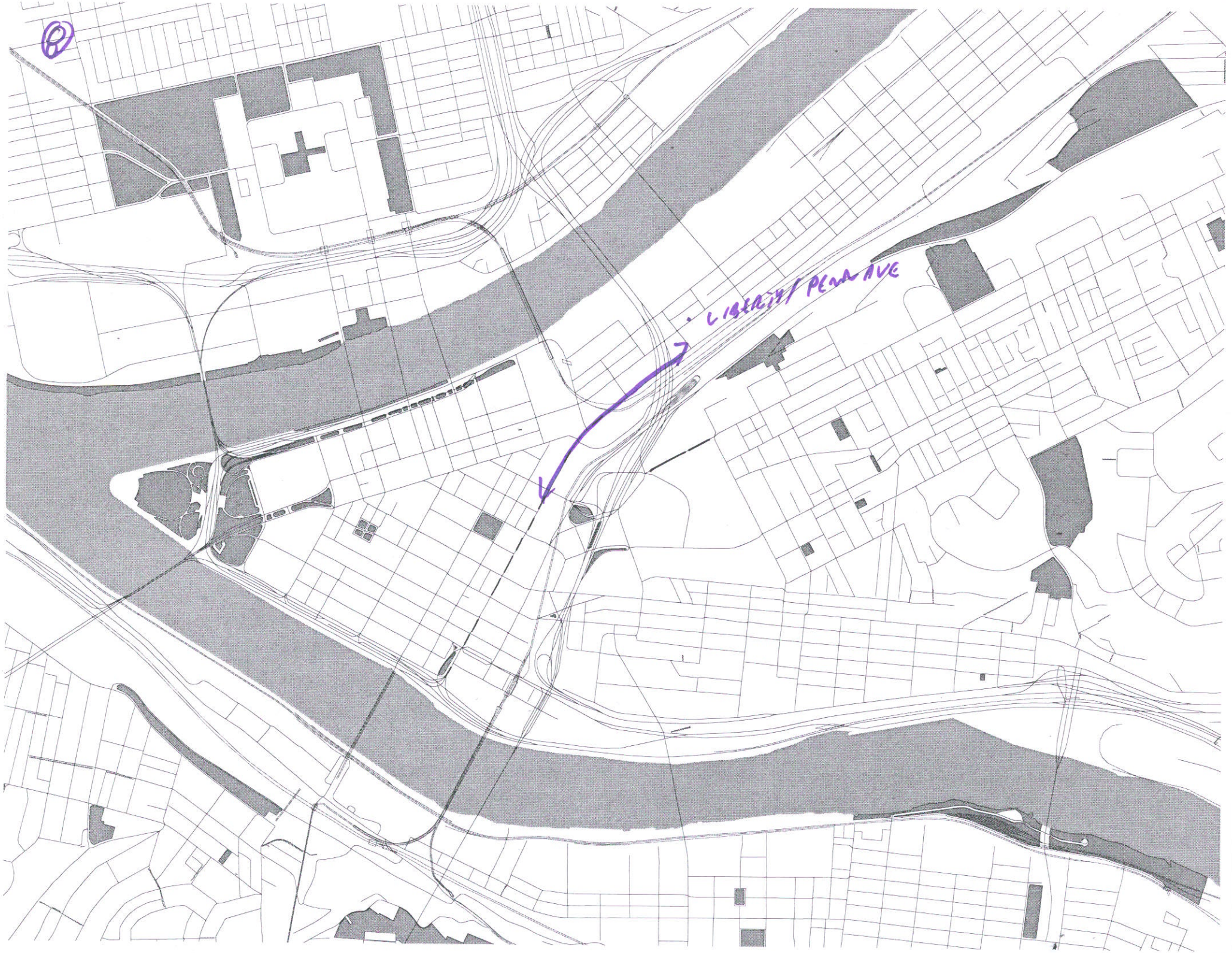
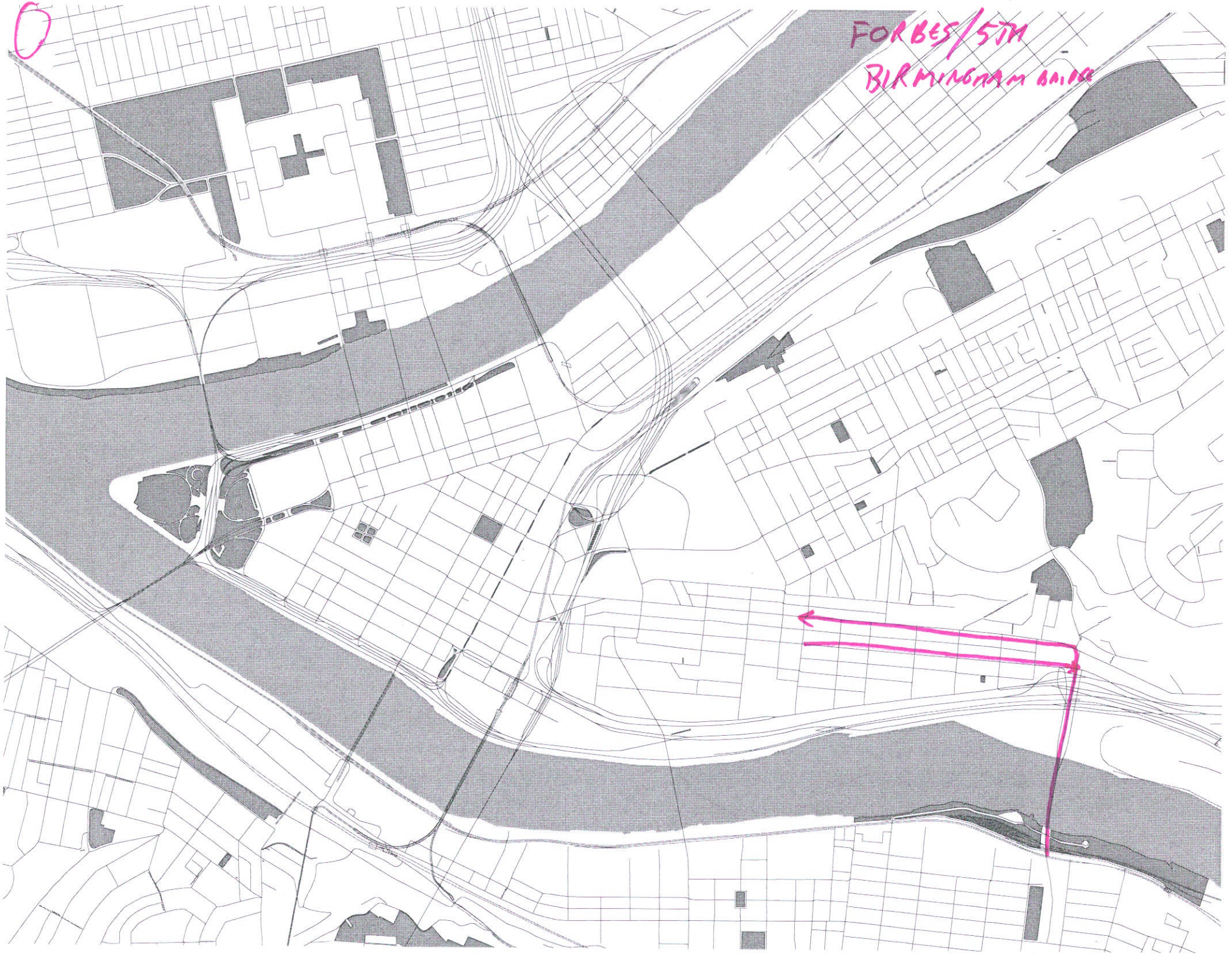

LIBERTY / PENN AVE


FORBES/5TH
BIRMINGHAM BRIDGE

Pittsburgh First Master Plan Created by DCP
Residential Trip Distribution 12/3/2005

The distribution of trips from on-site residences was assumed to be based upon the distribution of regional employment opportunities. Employment statistics were obtained from the U.S. Census Bureau, and were tabulated within Allegheny County based upon the same zones and access routes as were used for casino trips. It is assumed because of the proximity to downtown that downtown will actually account for a disproportionate amount of work trips from site residents. However, this will be balanced by the fact that site residents will be likely to walk or use transit to reach downtown. In approximate numbers, it is assumed that 50% of site residents will work downtown. However, 50% of site residents working downtown will use transit or walk, allowing the rates calculated below to represent the distribution of vehicular trips. It is noted here that trip generation rates for the site will be adjusted to reflect the high transit usage that is anticipated.

Place name[1/]	Total workers working in the place		city pop	% of city empl
Zone 0				
Pittsburgh city, PA	140018	0	280,035	50%
	140018			
	25%			
Zone 1				
Carnegie borough, PA	4,468	1		
Carnot-Moon CDP, PA	8,682	1		
Coraopolis borough, PA	3,753	1		
Crafton borough, PA	2,089	1		
Dormont borough, PA	1,887	1		
Green Tree borough, PA	11,241	1		
Kennedy Township CDP, PA	1,761	1		
McKees Rocks borough, PA	3,086	1		
Mount Lebanon CDP, PA	9,547	1		
Pittsburgh city, PA	5601	1	280,035	2%
Robinson Township CDP, PA	15,167	1		
Scott Township CDP, PA	5,895	1		
Stowe Township CDP, PA	1,989	1		
Upper St. Clair CDP, PA	7,116	1		
	82,282			
	15%			
Zone 2				
Baldwin borough, PA	2,647	2		
Bethel Park borough, PA	12,348	2		
Braddock borough, PA	3,041	2		
Brentwood borough, PA	2,260	2		
Castle Shannon borough, PA	2,918	2		
Clairton city, PA	3,260	2		
Forest Hills borough, PA	2,525	2		
Jefferson Hills borough, PA	4,072	2		
McKeesport city, PA	9,197	2		
Munhall borough, PA	1,913	2		
Municipality of Monroeville borough, PA	25,019	2		
North Versailles CDP, PA	4,735	2		
Penn Hills CDP, PA	10,457	2		
Pittsburgh city, PA	42005	2	280,035	15%
Pleasant Hills borough, PA	4,878	2		15%
Plum borough, PA	6,651	2		
South Park Township CDP, PA	2,026	2		
Swissvale borough, PA	2,467	2		
Turtle Creek borough, PA	1,496	2		
West Mifflin borough, PA	17,704	2		
Whitehall borough, PA	3,059	2		
White Oak borough, PA	2,339	2		
Wilkinsburg borough, PA	5,706	2		
Wilkins Township CDP, PA	4,201	2		

Place name[1/]	Total workers working in the place		city pop	% of city empl
	176,924			
	32%			
Zone 3				
Bellevue borough, PA	2,069	3		
Pittsburgh city, PA	11201	3	280,035	4%
Sewickley borough, PA	3,919	3		
	17,189			
	3%			
Zone 4				
Franklin Park borough, PA	2,035	4		
Hampton Township CDP, PA	4,876	4		
Harrison Township CDP, PA	4,411	4		
McCandless Township CDP, PA	11,090	4		
Oakmont borough, PA	3,634	4		
O'Hara Township CDP, PA	9,904	4		
Pittsburgh city, PA	25203	4	280,035	9%
Ross Township CDP, PA	17,100	4		
Shaler Township CDP, PA	6,317	4		
West View borough, PA	1,527	4		
	86,097			
	15%			
Zone 5				
Pittsburgh city, PA	8401	5	280,035	3%
	2%			
Zone 6				
Pittsburgh city, PA	19602	6	280,035	7%
	4%			
Zone 7				
Pittsburgh city, PA	14002	7	280,035	5%
	3%			
Zone 8				
Pittsburgh city, PA	5601	8	280,035	2%
	1%			
Zone 9				
Pittsburgh city, PA	8401	9	280,035	3%
	2%			
Downtown Employment	**140018**			
Total County Employment	**558,517**			
Non-Downtown Employment	**418,499**			

Place name[1/]	Total workers working in the place		city pop	% of city empl
	% of regional employment			
Zone 0	25%			
Zone 1	15%			
Zone 2	32%			
Zone 3	3%			
Zone 4	15%			
Zone 5	2%			
Zone 6	4%			
Zone 7	3%			
Zone 8	1%			
Zone 9	2%			
	100%			

APPENDIX J

Highway Capacity Software (HCS) Analysis
2008 Base Condition

A.M. PEAK HOUR

SHORT REPORT

General Information		Site Information	
Analyst	CKR/M. Southern	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	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		3		1					
Lane Group		TR			T		L					
Volume (vph)		204	278		298		212					
% Heavy Vehicles		21	21		16		14					
PHF		0.93	0.93		0.94		0.82					
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 = 20.0	G = 28.0	G =	G =	G = 29.0	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		518			317		259					
Lane Group Capacity		1203			2200		464					
v/c Ratio		0.43			0.14		0.56					
Green Ratio		0.57			0.57		0.32					
Uniform Delay d_1		11.2			9.2		25.2					
Delay Factor k		0.50			0.50		0.50					
Incremental Delay d_2		1.1			0.1		4.8					
PF Factor		1.000			1.000		1.000					
Control Delay		12.3			9.3		30.0					
Lane Group LOS		B			A		C					
Approach Delay	12.3			9.3			30.0					
Approach LOS	B			A			C					
Intersection Delay	15.6			Intersection LOS			B					

SHORT REPORT

General Information		Site Information	
Analyst	CKR/M. Southern	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	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	3		1		1			
Lane Group		TR			LT		L		R			
Volume (vph)		203	1	32	224		74		156			
% Heavy Vehicles		36	36	30	30		3		3			
PHF		0.91	0.91	0.79	0.79		0.86		0.86			
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 = 42.0	G =	G =	G = 25.0	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		224			325		86		181			
Lane Group Capacity		1073			1851		428		321			
v/c Ratio		0.21			0.18		0.20		0.56			
Green Ratio		0.47			0.61		0.28		0.28			
Uniform Delay d_1		14.2			7.6		24.9		27.8			
Delay Factor k		0.50			0.50		0.50		0.50			
Incremental Delay d_2		0.4			0.2		1.1		7.0			
PF Factor		1.000			1.000		1.000		1.000			
Control Delay		14.6			7.8		25.9		34.8			
Lane Group LOS		B			A		C		C			
Approach Delay	14.6			7.8			32.0					
Approach LOS	B			A			C					
Intersection Delay	17.6			Intersection LOS			B					

SHORT REPORT

General Information		Site Information	
Analyst	CKR/M. Southern	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	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	1	0		2	0	0	1	0
Lane Group		LTR			LTR			TR			LTR	
Volume (vph)	4	253	1	1	212	31		195	78	8	25	1
% Heavy Vehicles	5	5	5	10	10	10		2	2	94	94	94
PHF	0.89	0.89	0.89	0.89	0.89	0.89		0.90	0.90	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	
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	289	274	304	41
Lane Group Capacity	1180	600	1215	338
v/c Ratio	0.24	0.46	0.25	0.12
Green Ratio	0.41	0.41	0.43	0.43
Uniform Delay d_1	13.4	14.8	12.8	12.1
Delay Factor k	0.50	0.50	0.50	0.50
Incremental Delay d_2	0.5	2.5	0.5	0.7
PF Factor	1.000	1.000	1.000	1.000
Control Delay	13.9	17.3	13.3	12.8
Lane Group LOS	B	B	B	B
Approach Delay	13.9	17.3	13.3	12.8
Approach LOS	B	B	B	B
Intersection Delay	14.7	Intersection LOS		B

SHORT REPORT

General Information		Site Information	
Analyst	CKR/ M. Southern	Intersection	GRANT ST & LIBERTY AVE
Agency or Co.	TRANS ASSOCIATES		
Date Performed	11/21/2005	Area Type	CBD or Similar
Time Period	AM PEAK HOUR	Jurisdiction	CITY OF PITTSBURGH
		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)	180	54	39	32	73	5		630	54		584	158
% Heavy Vehicles	29	29	29	85	85	85		10	10		9	9
PHF	0.94	0.94	0.94	0.63	0.63	0.63		0.84	0.84		0.88	0.88
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 = 26.0	G = 19.0	G = 20.0	G =	G = 49.0	G = 13.0	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	191	98		51	124			814			844	
Lane Group Capacity	307	156		243	299			1756			1236	
v/c Ratio	0.62	0.63		0.21	0.41			0.46			0.68	
Green Ratio	0.13	0.13		0.33	0.33			0.44			0.44	
Uniform Delay d_1	62.9	63.0		37.2	40.1			30.3			34.5	
Delay Factor k	0.50	0.50		0.50	0.50			0.50			0.50	
Incremental Delay d_2	9.2	17.6		2.0	4.2			0.9			3.1	
PF Factor	1.000	1.000		1.000	1.000			1.000			1.000	
Control Delay	72.1	80.6		39.2	44.3			31.2			37.5	
Lane Group LOS	E	F		D	D			C			D	
Approach Delay	75.0			42.8			31.2			37.5		
Approach LOS	E			D			C			D		
Intersection Delay	40.6			Intersection LOS						D		

SHORT REPORT

General Information		Site Information	
Analyst	CKR/M. Southern	Intersection	LIBERTY AVE & ELEVENTH ST
Agency or Co.	TRANS ASSOCIATES	Area Type	CBD or Similar
Date Performed	11/21/2005	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				1	2			2	0
Lane Group	L		R				L	T			TR	
Volume (vph)	119		115				220	595			627	62
% Heavy Vehicles	9		9				5	5			4	4
PHF	0.87		0.87				0.89	0.89			0.88	0.88
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 = 20.0	G = 49.0	G = 13.0	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	137		132				247	669			783	
Lane Group Capacity	246		202				324	1894			984	
v/c Ratio	0.56		0.65				0.76	0.35			0.80	
Green Ratio	0.17		0.08				0.22	0.61			0.32	
Uniform Delay d_1	58.2		67.8				56.3	15.0			47.4	
Delay Factor k	0.50		0.50				0.50	0.50			0.50	
Incremental Delay d_2	8.8		15.3				15.6	0.5			6.6	
PF Factor	1.000		1.000				1.000	1.000			1.000	
Control Delay	67.0		83.1				71.9	15.5			54.1	
Lane Group LOS	E		F				E	B			D	
Approach Delay	74.9						30.7			54.1		
Approach LOS	E						C			D		
Intersection Delay	46.0			Intersection LOS						D		

SHORT REPORT

General Information		Site Information	
Analyst	CKR/M. Southern	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	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	1	1	2	0	1	2	0
Lane Group		LTR			LT	R	L	TR		L	TR	
Volume (vph)	13	294	61	174	458	355	138	428	111	208	414	66
% Heavy Vehicles	5	5	5	1	1	1	14	14	14	8	8	8
PHF	0.91	0.91	0.91	0.95	0.95	0.95	0.86	0.86	0.86	0.88	0.88	0.88
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 = 27.0	G =	G =	G =	G = 16.0	G = 34.0	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		404			665	374	160	627		236	545	
Lane Group Capacity		761			619	714	420	983		411	1044	
v/c Ratio		0.53			1.07	0.52	0.38	0.64		0.57	0.52	
Green Ratio		0.30			0.30	0.53	0.59	0.38		0.59	0.38	
Uniform Delay d_1		26.2			31.5	13.6	9.5	23.0		10.6	21.7	
Delay Factor k		0.50			0.50	0.50	0.50	0.50		0.50	0.50	
Incremental Delay d_2		2.6			57.8	2.7	2.6	3.2		5.7	1.9	
PF Factor		1.000			1.000	1.000	1.000	1.000		1.000	1.000	
Control Delay		28.9			89.3	16.3	12.1	26.1		16.3	23.6	
Lane Group LOS		C			F	B	B	C		B	C	
Approach Delay	28.9			63.0			23.3			21.4		
Approach LOS	C			E			C			C		
Intersection Delay	37.2			Intersection LOS						D		

SHORT REPORT

General Information		Site Information	
Analyst	CKR/M. Southern	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	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	2	0	1	2	0	1	2	0
Lane Group		LTR			LTR		L	TR		L	TR	
Volume (vph)	39	172	17	104	454	211	94	422	107	108	528	13
% Heavy Vehicles	14	14	14	2	2	2	10	10	10	6	6	6
PHF	0.90	0.90	0.90	0.94	0.94	0.94	0.86	0.86	0.86	0.93	0.93	0.93
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	155	0	0	195	0	0	328	0	0	285	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			18.3			17.9			14.1	

Phasing	EB Only	EW Perm	03	04	Excl. Left	NS Perm	07	08
Timing	G = 3.0	G = 34.0	G =	G =	G = 9.0	G = 28.0	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		253			818		109	615		116	582	
Lane Group Capacity		381			985		266	786		262	874	
v/c Ratio		0.66			0.83		0.41	0.78		0.44	0.67	
Green Ratio		0.44			0.38		0.44	0.31		0.44	0.31	
Uniform Delay d_1		19.7			25.4		16.2	28.2		16.4	26.9	
Delay Factor k		0.50			0.50		0.50	0.50		0.50	0.50	
Incremental Delay d_2		8.8			8.1		4.6	7.6		5.3	4.0	
PF Factor		1.000			1.000		1.000	1.000		1.000	1.000	
Control Delay		28.5			33.5		20.8	35.9		21.7	30.9	
Lane Group LOS		C			C		C	D		C	C	
Approach Delay	28.5			33.5			33.6			29.4		
Approach LOS	C			C			C			C		
Intersection Delay	31.9			Intersection LOS						C		

SHORT REPORT

General Information		Site Information	
Analyst	CKR/M. Southern	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	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	3	0	0	2	0	0	2	0	0	2	
Lane Group	DefL	TR			LTR			LTR			LT	
Volume (vph)	137	223	46	23	431	85	52	128	76	174	398	
% Heavy Vehicles	2	2	2	3	3	3	2	2	2	1	1	
PHF	0.93	0.93	0.93	0.84	0.84	0.84	0.88	0.88	0.88	0.89	0.89	
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	9	200	0	8	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	147	286			630			281			643	
Lane Group Capacity	323	1523			1490			639			720	
v/c Ratio	0.46	0.19			0.42			0.44			0.89	
Green Ratio	0.53	0.53			0.53			0.31			0.31	
Uniform Delay d_1	10.2	8.6			10.0			19.1			22.9	
Delay Factor k	0.50	0.50			0.50			0.50			0.50	
Incremental Delay d_2	4.6	0.3			0.9			2.2			15.7	
PF Factor	1.000	1.000			1.000			1.000			1.000	
Control Delay	14.8	8.9			10.9			21.3			38.6	
Lane Group LOS	B	A			B			C			D	
Approach Delay	10.9			10.9			21.3			38.6		
Approach LOS	B			B			C			D		
Intersection Delay	21.3			Intersection LOS						C		

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	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	2	0
Lane Group	L	LTR	R					T	R	L	LTR	
Volume (vph)	503	199	638					449	64	155	116	142
% Heavy Vehicles	2	2	2					2	2	2	2	2
PHF	0.97	0.97	0.97					0.92	0.92	0.90	0.90	0.90
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	150	0	0				0	0	6	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 = 36.0	G =	G =	G =	G = 21.0	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 = 90.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate	493	428	461					488	63	86	373	
Lane Group Capacity	600	536	452					749	334	350	535	
v/c Ratio	0.82	0.80	1.02					0.65	0.19	0.25	0.70	
Green Ratio	0.40	0.40	0.40					0.23	0.23	0.20	0.20	
Uniform Delay d_1	24.1	23.8	27.0					31.2	27.7	30.3	33.5	
Delay Factor k	0.50	0.50	0.50					0.50	0.50	0.50	0.50	
Incremental Delay d_2	12.0	11.8	47.5					4.4	1.2	1.7	7.4	
PF Factor	1.000	1.000	1.000					1.000	1.000	1.000	1.000	
Control Delay	36.2	35.6	74.5					35.6	28.9	32.0	40.8	
Lane Group LOS	D	D	E					D	C	C	D	
Approach Delay	48.8						34.8			39.2		
Approach LOS	D						C			D		
Intersection Delay	43.7			Intersection LOS						D		

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	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	0	1	1
Lane Group		LTR			LT			LR			LT	R
Volume (vph)	37	207	86	12	92		2		3	106	276	312
% Heavy Vehicles	2	2	2	3	3		0		0	2	2	2
PHF	0.91	0.91	0.91	0.80	0.80		0.63		0.90	0.81	0.81	0.81
Pretimed/Actuated (P/A)	A	A	A	A	A		A		A	A	A	A
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	50	0	9	50	0		50	0	0	0	0	31
Lane Width		12.0			12.0			12.0			12.0	12.0
Parking/Grade/Parking	N	10	N	N	-6	N	N	2	Y	N	2	N
Parking/Hour									10			
Bus Stops/Hour		0			0			0			0	0
Minimum Pedestrian Time		14.9			15.9			12.2			3.2	

Phasing	EB Only	WB Only	03	04	NB Only	SB Only	07	08
Timing	G = 12.0	G = 7.0	G =	G =	G = 4.0	G = 20.0	G =	G =
	Y = 5.5	Y = 5.5	Y =	Y =	Y = 5.5	Y = 5.5	Y =	Y =
Duration of Analysis (hrs) = 0.25						Cycle Length C = 65.0		

Lane Group Capacity, Control Delay, and LOS Determination

	EB			WB			NB			SB		
Adjusted Flow Rate		353			130			6			472	347
Lane Group Capacity		519			343			71			504	434
v/c Ratio		0.68			0.38			0.08			0.94	0.80
Green Ratio		0.18			0.11			0.06			0.31	0.31
Uniform Delay d_1		24.7			27.0			28.8			21.9	20.7
Delay Factor k		0.25			0.11			0.11			0.45	0.34
Incremental Delay d_2		3.6			0.7			0.5			25.2	10.2
PF Factor		1.000			1.000			1.000			1.000	1.000
Control Delay		28.3			27.7			29.3			47.1	30.9
Lane Group LOS		C			C			C			D	C
Approach Delay	28.3			27.7			29.3			40.2		
Approach LOS	C			C			C			D		
Intersection Delay	35.7			Intersection LOS						D		

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	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)	1	73	259	24	42	4	69	3	30	1	1	1
% Heavy Vehicles	6	6	6	28	28	28	5	5	5	0	0	0
PHF	0.90	0.90	0.90	0.66	0.66	0.66	0.94	0.94	0.94	0.50	0.50	0.50
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	26	25	0	0	25	0	3	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		341			106			105			6	
Lane Group Capacity		453			299			655			647	
v/c Ratio		0.75			0.35			0.16			0.01	
Green Ratio		0.30			0.30			0.50			0.50	
Uniform Delay d_1		15.8			13.7			6.8			6.3	
Delay Factor k		0.50			0.50			0.50			0.50	
Incremental Delay d_2		11.0			3.3			0.5			0.0	
PF Factor		1.000			1.000			1.000			1.000	
Control Delay		26.8			17.0			7.3			6.3	
Lane Group LOS		C			B			A			A	
Approach Delay	26.8			17.0			7.3			6.3		
Approach LOS	C			B			A			A		
Intersection Delay	21.1			Intersection LOS			C					

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	2	1	0	3	0	0	2	1
Lane Group		LTR			LT	R		LTR			LT	R
Volume (vph)	22	237	259	51	281	71	39	365	63	129	530	5
% Heavy Vehicles	2	2	2	6	6	6	5	5	5	3	3	3
PHF	0.91	0.91	0.91	0.93	0.93	0.93	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	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	117	0	0	288	0	0	17	0	0	9	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		24.5			25.6			21.3			3.3	

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		569			357	76		507			701	5
Lane Group Capacity		764			621	296		992			714	442
v/c Ratio		0.74			0.57	0.26		0.51			0.98	0.01
Green Ratio		0.29			0.29	0.29		0.31			0.31	0.31
Uniform Delay d_1		29.0			27.3	24.6		25.4			30.7	21.4
Delay Factor k		0.50			0.50	0.50		0.50			0.50	0.50
Incremental Delay d_2		6.5			3.8	2.1		1.9			29.5	0.0
PF Factor		1.000			1.000	1.000		1.000			1.000	1.000
Control Delay		35.5			31.1	26.7		27.3			60.3	21.5
Lane Group LOS		D			C	C		C			E	C
Approach Delay	35.5			30.3			27.3			60.0		
Approach LOS	D			C			C			E		
Intersection Delay	40.4			Intersection LOS						D		