TABLE 1
CAPACITY ANALYSIS SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Intersection	Approach	Movement	Level of Service (Delay in Seconds)[1]							
			A.M. Peak Hour				P.M. Peak Hour			
			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Washington Place and Webster Ave./Bedford Ave.	Ramp - Eastbound	Left Turn/Through	F (152.0)	F (141.3)	F (132.2)	F (111.9)	E (60.5)	F (110.8)	F (149.7)	F (153.7)
		Right Turn	D (41.0)	D (38.3)	C (34.2)	C (32.8)	D (40.2)	D (50.2)	D (49.9)	D (53.7)
		Approach	F (118.9)	F (110.8)	F (108.4)	F (92.7)	D (52.8)	F (87.9)	F (114.5)	F (118.4)
	Washington Place - Northbound	Through	D (51.9)	E (55.3)	F (125.7)	D (41.8)	D (40.9)	F (156.9)	F (186.5)	F (155.5)
		Right Turn	F (86.1)	A (7.8)	A (9.5)	A (5.4)	C (34.1)	D (45.7)	C (21.5)	D (41.8)
		Approach	E (56.7)	D (48.7)	F (97.1)	C (32.9)	D (39.2)	F (128.6)	F (142.6)	F (125.2)
	Webster Ave. - Northeastbound	Left Turn	D (42.0)	D (41.5)	D (41.5)	E (74.8)	F (259.6)	F (171.3)	F (171.3)	F (185.5)
		Through	C (24.0)	C (21.8)	C (23.1)	C (29.4)	C (32.9)	C (25.4)	C (29.5)	C (33.1)
		Right Turn	F (113.2)	F (111.1)	D (38.7)	E (66.0)	E (55.7)	D (36.4)	D (35.8)	D (40.1)
		Approach	E (67.2)	E (65.6)	D (35.5)	E (59.5)	F (155.1)	F (103.1)	F (99.7)	F (108.6)
	Overall Intersection		E (74.7)	E (70.4)	E (66.3)	E (57.2)	F (91.4)	F (111.5)	F (120.1)	F (117.1)
								.		
Bedford Ave. and Street 1/Ramps	Street 1 - Westbound	Left Turn/Through/ Right Turn	F (90.0)	F (98.4)	D (44.7)	--	D (46.8)	D (53.1)	F (92.4)	--
		Left Turn	--	--	--	D (44.7)	--	--	--	C (31.2)
		Through/Right Turn	--	--	--	D (41.3)	--	--	--	D (39.3)
		Approach	F (90.0)	F (98.4)	D (44.7)	D (43.8)	D (46.8)	D (53.1)	F (92.4)	D (36.1)
	HOV Lane - Southbound	Left Turn/Through	D (53.2)	E (69.5)	D (39.2)	D (35.3)	--	--	--	--
		Right Turn	D (39.1)	D (54.7)	F (88.4)	E (71.1)	--	--	--	--
		Approach	D (47.0)	E (62.8)	E (65.4)	D (54.4)	--	--	--	--
	Bedford Ave. - Northeastbound	Left Turn	C (25.4)	C (25.8)	C (30.5)	C (31.0)	C (26.4)	C (27.5)	C (27.8)	C (21.8)
		Through/Right Turn	C (33.0)	D (35.9)	D (50.0)	D (51.7)	D (42.7)	E (59.1)	F (134.2)	F (120.7)
		Approach	C (32.3)	C (35.0)	D (48.2)	D (49.8)	D (39.4)	D (52.8)	F (117.2)	E (75.6)
	Bedford Ave. - Southwestbound	Approach	D (35.5)	D (35.7)	D (41.0)	D (41.6)	D (49.2)	E (66.2)	F (85.6)	F (85.6)
	Overall Intersection		D (41.0)	D (50.4)	D (54.9)	D (50.4)	D (43.8)	E (56.5)	F (103.3)	E (68.7)

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City of Pittsburgh, Allegheny County, Pennsylvania

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			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Bedford Ave. and Crawford St.	Bedford Ave. - Eastbound	Through	A (6.9)	A (6.9)	A (7.0)	--	A (6.6)	A (6.6)	A (6.5)	--
		Right Turn	A (8.7)	A (9.0)	A (8.6)	--	A (7.3)	A (7.3)	A (6.9)	--
		Through/Right Turn	--	--	--	A (9.9)	--	--	--	B (12.7)
		Approach	A (8.4)	A (8.6)	A (8.2)	A (9.9)	A (7.1)	A (7.2)	A (6.8)	B (12.7)
	Bedford Ave. - Westbound	Approach	A (6.9)	A (7.0)	A (7.0)	A (7.2)	A (7.2)	A (7.3)	A (7.4)	B (14.1)
	Crawford St. - Northbound	Approach	B (15.5)	B (16.0)	B (16.4)	B (16.4)	E (59.9)	F (90.9)	D (52.9)	B (13.7)
	Overall Intersection		A (9.8)	B (10.1)	B (10.1)	B (11.2)	D (36.6)	D (54.6)	C (34.8)	B (13.6)
Wylie Ave. and Crawford St.	Wylie Ave. - Eastbound	Approach	--	--	B (11.4)	B (11.4)	--	--	A (9.8)	A (9.8)
	Wylie Ave. - Westbound	Approach	C (15.2)	C (16.6)	C (22.4)	C (22.4)	B (14.1)	C (15.1)	C (16.2)	C (16.2)
	Crawford St. - Northbound	Approach	A (0.0)	A (0.0)	A (2.0)	A (2.0)	A (0.0)	A (0.0)	A (1.3)	A (1.3)
	Crawford St. - Southbound	Approach	A (0.3)	A (0.3)	A (0.3)	A (0.3)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	Overall Intersection		A (1.8)	A (2.0)	A (3.4)	A (3.4)	A (1.0)	A (1.1)	A (2.4)	A (2.4)
Centre Ave. and Sixth Ave.	Centre Ave. - Westbound	Left Turn	B (17.0)	C (22.9)	C (23.6)	C (23.6)	B (18.1)	C (23.0)	C (23.9)	C (23.9)
		Right Turn	B (16.8)	C (22.1)	C (22.7)	C (22.7)	B (17.4)	C (21.3)	C (21.7)	C (21.7)
		Approach	B (16.9)	C (22.6)	C (23.3)	C (23.3)	B (17.9)	C (22.5)	C (23.2)	C (23.2)
	Sixth Ave. - Northbound	Approach	A (7.3)	A (3.7)	A (3.2)	A (4.9)	A (5.6)	A (2.4)	A (2.4)	B (18.0)
	Sixth Ave. - Southbound	Left Turn	F (82.0)	D (54.5)	D (37.4)	D (37.4)	B (14.9)	B (12.0)	B (16.3)	B (16.3)
		Through	A (9.6)	A (6.2)	A (6.2)	A (6.2)	B (10.5)	A (7.9)	A (7.9)	A (7.9)
		Approach	D (54.3)	D (35.8)	C (24.7)	C (24.7)	B (11.8)	A (9.1)	B (11.0)	B (11.0)
	Overall Intersection		C (30.9)	C (21.9)	B (16.9)	B (17.5)	B (12.0)	B (11.3)	B (12.8)	B (16.6)

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Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

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			A.M. Peak Hour				P.M. Peak Hour			
			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Centre Ave. and Washington Place	Centre Ave. - Eastbound	Approach	D (38.4)	D (46.1)	F (109.5)	F (90.5)	F (83.2)	D (40.8)	E (71.2)	D (47.3)
	Centre Ave. - Westbound	Left Turn	D (51.2)	E (76.2)	F (239.7)	F (176.5)	F(135.2)	D (49.3)	F (317.7)	F (223.6)
		Through/Right Turn	C (28.8)	C (30.0)	C (32.2)	C (22.6)	F (107.4)	D (35.4)	C (27.9)	B (18.7)
		Approach	C (31.9)	D (36.4)	E (72.2)	D (52.3)	F (112.0)	D (37.7)	F (100.4)	E (70.0)
	Washington Place - Northbound	Approach	C (32.6)	D (35.8)	D (39.6)	D (39.6)	D (43.8)	D (50.7)	F (99.1)	F (118.0)
	Washington Place - Southbound	Left Turn/Through	F (205.2)	F (249.9)	F (119.0)	F (116.9)	E (56.3)	E (60.9)	C (28.6)	D (46.0)
		Right Turn	C (31.6)	A (8.3)	A (9.7)	A (9.1)	D (38.0)	D (38.3)	B (14.9)	C (28.0)
		Approach	F (203.3)	F (246.9)	F (117.3)	F (115.3)	D (52.8)	E (56.5)	C (25.9)	D (42.4)
	Ramps - Northeastbound	Left Turn/Through	D (41.7)	D (44.6)	D (41.2)	D (44.3)	C (30.8)	E (58.3)	E (79.3)	F (144.9)
		Right Turn	F (137.0)	F (169.3)	F (143.5)	F (176.4)	D (35.3)	F (163.1)	F (479.8)	F (156.4)
		Approach	F (88.7)	F (106.0)	F (91.4)	F (109.1)	C (33.0)	F (108.6)	F (273.4)	F (150.5)
	Overall Intersection		F (87.5)	F (104.6)	F (85.5)	E (78.5)	E (72.9)	D (49.0)	F (94.8)	F (81.7)
Centre Avenue and Street 1	Centre Ave. - Eastbound	Approach	B (10.8)	B (11.3)	B (11.0)	A (6.0)	A (9.1)	A (9.5)	B (12.5)	A (4.2)
	Centre Ave. - Westbound	Approach	A (2.5)	A (6.5)	A (3.6)	A (4.2)	A (5.9)	A (7.7)	B (10.5)	B (18.7)
	Street 1 - Southbound	Left Turn/Right Turn	C (30.9)	D (35.4)	--	--	B (19.2)	B (19.4)	--	--
		Left Turn	--	--	B (17.7)	C (31.4)	--	--	B (19.9)	D (37.0)
		Right Turn	--	--	F (134.8)	D (52.3)	--	--	F (208.9)	D (35.4)
		Approach	C (30.9)	D (35.4)	F (115.7)	D (48.9)	B (19.2)	B (19.4)	F (151.3)	D (35.9)
	Overall Intersection		B (13.8)	B (15.8)	D (38.4)	B (17.5)	A (8.0)	A (9.2)	D (46.4)	B (18.0)

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			A.M. Peak Hour				P.M. Peak Hour			
			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Centre Ave. and Parking Garage/Street 2	Centre Ave. - Eastbound	Through/Right Turn	A (0.0)	A (0.0)	--	--	A (0.0)	A (0.0)	--	--
		Left Turn/Through/ Right Turn	--	--	A (4.7)	A (4.0)	--	--	D (31.7)	A (5.8)
		Approach	A (0.0)	A (0.0)	A (2.2)	A (4.0)	A (0.0)	A (0.0)	C (18.1)	A (5.8)
	Centre Ave. - Westbound	Left Turn/Through	A (0.0)	A (0.0)	--	--	A (0.0)	A (0.0)	A (0.0)	--
		Left Turn/Through/ Right Turn	--	--	A (0.3)	A (7.4)	--	--	A (0.0)	A (8.4)
		Approach	A (0.0)	A (0.0)	A (0.1)	A (7.4)	A (0.0)	A (0.0)	A (0.0)	A (8.4)
	Parking Garage - Northbound	Approach	A (9.1)	A (9.0)	B (12.3)	C (30.4)	A (9.9)	A (9.9)	F (>1500.0)	C (33.3)
	Street 2 - Southbound	Approach	--	--	F (>1500.0)	D (38.6)	--	--	F (>1500.0)	D (38.9)
	Overall Intersection		A (0.0)	A (0.0)	F (1129.1)	A (9.2)	A (0.7)	A (0.7)	F (>1500.0)	B (10.8)
Centre Ave. and Crawford St.	Centre Ave. - Eastbound	Left Turn/Through	B (16.0)	B (17.6)	D (42.1)	--	C (31.4)	E (78.5)	D (39.9)	--
		Left Turn	--	--	--	B (18.1)	--	--	--	D (37.5)
		Through	--	--	--	--	--	--	--	--
		Through/Right Turn	--	--	--	C (26.3)				C (20.9)
		Right Turn	C (21.7)	A (3.3)	E (68.1)	--	A (9.1)	B (12.5)	C (32.0)	--
		Approach	B (17.9)	B (12.8)	D (52.1)	C (24.5)	C (23.7)	E (55.6)	D (36.3)	C (25.0)
	Centre Ave. - Westbound	Left Turn	B (12.9)	C (20.4)	C (20.6)	C (7.5)	B (13.5)	B (15.9)	B (14.5)	C (29.8)
		Through/Right Turn	B (13.2)	B (19.6)	B (18.4)	C (22.2)	B (15.3)	B (17.7)	B (18.5)	C (30.1)
		Approach	B (13.1)	B (19.8)	B (19.2)	C (24.0)	B (15.0)	B (17.5)	B (18.0)	C (30.1)
	Crawford St. - Northbound	Left Turn/Through/ Right Turn	D (50.3)	C (20.9)	D (37.3)	--	F (80.6)	F (94.3)	F (341.8)	--
		Left Turn	--	--	--	C (27.4)				C (29.7)
		Through/Right Turn	--	--	--	B (10.2)				B (15.5)
		Approach	D (50.3)	C (20.9)	D (37.3)	C (20.5)				C (22.0)
	Crawford St. - Southbound	Left Turn/Through/ Right Turn	C (32.4)	B (18.4)	B (17.1)	--	B (19.3)	B (18.1)	B (15.3)	--
		Left Turn	--	--	--	B (16.7)				C (23.7)
		Through/Right Turn	--	--	--	C (28.7)				D (48.6)
		Approach	C (32.4)	B (18.4)	B (17.1)	C (27.2)				D (47.6)
	Overall Intersection		C (29.1)	B (17.5)	C (33.0)	C (24.4)	D (36.7)	D (51.2)	F (147.7)	C (28.6)

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			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Crawford St. and Colwell St.	Colwell St. - Eastbound	Approach	B (11.4)	B (11.8)	B (12.4)	B (11.9)	B (11.6)	B (11.9)	B (11.8)	B (11.8)
	Colwell St. - Westbound	Approach	C (24.3)	D (28.4)	E (41.4)	D (26.5)	C (15.8)	C (17.3)	C (23.8)	C (23.8)
	Crawford St. - Northbound	Approach	A (3.0)	A (3.3)	A (3.1)	A (3.2)	A (0.5)	A (0.5)	A (0.4)	A (0.4)
	Crawford St. - Southbound	Approach	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)	A (0.0)
	Overall Intersection		A (2.2)	A (2.4)	A (2.6)	A (2.3)	A (1.8)	A (1.9)	A (1.7)	A (1.7)
Fifth Ave. and Sixth Ave.	Fifth Ave. - Eastbound	Approach	D (43.4)	F (197.4)	F (221.2)	B (19.9)	F (1013.9)	F (1736.7)	F (1730.4)	F (843.2)
	Fifth Ave. - Westbound	Left Turn	B (16.8)	B (17.0)	B (17.0)	B (12.2)	E (57.8)	F (100.3)	F (88.0)	C (23.2)
		Through/Right Turn	F (232.2)	F (301.1)	F (338.6)	F (163.1)	F (526.1)	F (626.6)	F (678.5)	F (420.9)
		Approach	F (223.7)	F (289.6)	F (326.4)	F (157.3)	F (428.4)	F (517.3)	F (565.4)	F (344.7)
	Sixth Ave. - Northbound	Approach	A (4.2)	B (18.7)	B (19.0)	B (19.8)	A (5.5)	A (5.5)	A (5.5)	A (8.5)
	Sixth Ave. - Southbound	Approach	A (7.1)	A (8.4)	A (8.8)	B (12.3)	B (12.2)	B (14.6)	B (16.6)	B (18.3)
	Overall Intersection		F (98.8)	F (145.9)	F (165.3)	E (75.7)	F (321.1)	F (449.0)	F (459.2)	F (259.7)
Fifth Ave. and Diamond St.	Fifth Ave. - Westbound	Approach	A (4.3)	A (4.5)	A (4.4)	A (4.4)	A (4.6)	A (4.7)	A (4.7)	A (4.7)
	Overall Intersection		A (4.3)	A (4.5)	A (4.4)	A (4.4)	A (4.6)	A (4.7)	A (4.7)	A (4.7)
Fifth Avenue and Washington Place/Chatham Square	Fifth Ave. - Westbound	Approach	B (13.6)	E (74.1)	E (66.0)	E (74.1)	B (15.3)	C (32.9)	C (29.9)	C (29.8)
	Chatham Square - Northbound	Left Turn	F (493.2)	F (248.5)	F (241.5)	F (241.5)	C (24.3)	C (25.0)	C (24.6)	C (27.8)
		Through	D (52.2)	C (23.3)	D (48.8)	D (48.8)	C (30.4)	C (32.1)	E (69.2)	E (74.5)
		Approach	F (186.0)	F (91.7)	F (97.3)	F (97.3)	C (28.8)	C (30.2)	E (59.2)	E (64.0)
	Washington Place - Southbound	Through	D (50.6)	C (33.1)	C (33.1)	C (33.1)	C (25.0)	C (25.7)	C (24.5)	C (24.5)
		Right Turn	C (23.4)	B (18.7)	B (19.3)	B (19.3)	C (23.7)	C (24.3)	C (26.6)	C (26.6)
		Approach	D (40.9)	C (28.0)	C (27.7)	C (27.7)	C (24.3)	C (24.9)	C (25.9)	C (25.9)
	Overall Intersection		E (63.1)	E (65.1)	E (63.7)	E (67.2)	C (20.3)	C (30.5)	D (36.3)	D (37.5)

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City of Pittsburgh, Allegheny County, Pennsylvania

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			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Fifth Avenue and Magee St.	Fifth Ave. - Westbound	Approach	A (8.6)	A (8.5)	A (8.7)	B (10.2)	A (8.5)	B (17.4)	B (16.9)	B (16.3)
	Magee St. - Northbound	Approach	D (39.0)	C (22.9)	C (22.5)	C (30.9)	E (76.6)	C (23.0)	C (22.9)	C (22.9)
	Magee St. - Southbound	Approach	A (0.0)	A (0.0)	A (0.0)	A (0.0)	C (21.9)	B (14.0)	B (14.0)	B (14.0)
	Overall Intersection		B (14.2)	B (11.1)	B (11.3)	B (14.1)	C (24.4)	B (18.6)	B (18.3)	B (17.8)
Fifth Avenue and Stevenson St.	Fifth Ave. - Westbound	Approach	A (4.8)	B (11.1)	B (10.5)	B (12.5)	A (3.8)	A (9.8)	A (8.6)	B (11.1)
	Stevenson St. - Northbound	Approach	F (88.4)	C (25.6)	C (25.4)	C (20.7)	E (56.5)	C (22.1)	C (22.0)	C (22.0)
	Stevenson St. - Southbound	Approach	C (24.3)	B (16.3)	B (16.3)	B (16.3)	C (23.5)	B (15.2)	B (15.2)	B (15.2)
	Overall Intersection		C (27.4)	B (15.2)	B (14.8)	B (15.0)	B (16.9)	B (12.9)	B (12.1)	B (13.9)
Fifth Ave. and Crawford St.	Fifth Ave. - Westbound	Approach	B (13.6)	C (20.3)	C (21.3)	C (21.3)	B (14.3)	B (17.0)	C (21.5)	C (21.5)
	Pride St. - Northbound	Approach	C (32.3)	C (27.1)	D (48.1)	D (36.6)	C (29.8)	C (26.7)	C (34.0)	D (40.0)
	Crawford St. - Southbound	Approach	C (24.2)	C (20.1)	C (21.8)	C (21.8)	C (27.6)	C (27.3)	C (26.6)	C (26.6)
	Overall Intersection		B (18.8)	C (21.4)	C (26.6)	C (24.4)	B (19.1)	C (20.4)	C (24.4)	C (25.2)
Diamond St. and Sixth Ave.	Diamond St. - Westbound	Left Turn	B (17.5)	B (17.7)	B (17.7)	B (17.7)	B (18.5)	B (18.8)	B (18.6)	B (18.6)
		Through	C (20.9)	C (22.4)	C (23.3)	C (23.3)	C (21.7)	C (23.4)	C (25.9)	C (25.9)
		Right Turn	B (16.7)	B (16.7)	B (16.7)	B (16.7)	B (16.3)	B (16.3)	B (16.3)	B (16.3)
		Approach	B (19.7)	C (20.8)	C (21.4)	C (21.4)	C (20.4)	C (21.5)	C (23.2)	C (23.2)
	Sixth Ave. - Northbound	Approach	A (6.2)	A (6.2)	A (6.0)	A (6.0)	A (8.3)	A (8.2)	A (8.1)	A (8.1)
	Sixth Ave. - Southbound	Approach	A (7.4)	A (9.4)	A (9.2)	A (4.4)	A (9.6)	A (9.7)	B (11.2)	A (7.8)
	Overall Intersection		B (11.2)	B (12.4)	B (12.5)	B (10.7)	B (12.5)	B (12.9)	B (14.4)	B (12.2)

TABLE 1
CAPACITY ANALYSIS SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Intersection	Approach	Movement	Level of Service (Delay in Seconds)[1]							
			A.M. Peak Hour				P.M. Peak Hour			
			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Forbes Ave./Sixth Ave./Liberty Bridge Ramps	Forbes Ave. - Eastbound	Left Turn/Through	E (74.0)	F (111.2)	F (149.0)	F (149.0)	F (107.8)	F (157.0)	F (224.8)	F (224.8)
		Right Turn	B (16.7)	B (16.7)	B (16.7)	B (16.7)	C (23.2)	C (26.2)	C (26.2)	C (26.2)
		Approach	E (69.9)	F (104.5)	F (140.4)	F (140.4)	F (82.4)	F (117.9)	F (170.3)	F (170.3)
	Forbes Ave. - Westbound	Approach	E (77.1)	F (297.6)	F (654.8)	F (654.8)	C (32.9)	F (192.1)	F (314.1)	F (314.1)
	Ramps - Northbound	Approach	E (69.0)	F (129.4)	F (155.5)	F (155.5)	B (16.3)	B (16.9)	B (17.0)	B (17.0)
	Sixth Ave. - Southbound	Approach	B (12.4)	A (8.0)	A (7.9)	A (7.1)	D (37.4)	E (76.2)	E (72.1)	E (68.6)
	Overall Intersection		D (54.8)	F (106.8)	F (159.9)	F (159.7)	D (50.3)	F (92.7)	F (117.2)	F (115.5)
Forbes Ave. and Armstrong Tunnel	Forbes Ave. - Eastbound	Through/Right Turn	F (93.0)	F (104.3)	F (128.4)	F (128.4)	D (43.4)	D (35.5)	D (48.1)	C (27.7)
	Armstrong Tunnel-Northbound	Left Turn	C (20.7)	C (24.7)	C (24.7)	C (24.7)	B (17.3)	C (21.4)	C (21.4)	C (23.1)
		Right Turn	D (52.4)	F (134.3)	F (180.4)	F (180.4)	C (26.8)	D (53.7)	F (87.6)	F (125.9)
		Approach	D (45.8)	F (111.5)	F (150.2)	F (150.2)	C (25.6)	D (49.7)	F (80.2)	F (114.4)
	Overall Intersection		E (73.5)	F (107.3)	F (137.5)	F (137.5)	D (37.1)	D (40.6)	E (59.8)	E (59.4)
Forbes Ave. and Washington Place	Forbes Ave. - Eastbound	Left Turn	A (8.6)	B (10.5)	B (13.3)	B (13.3)	A (8.4)	B (13.0)	B (14.2)	B (10.4)
		Through/Right Turn	B (12.4)	D (45.6)	E (57.4)	E (57.4)	A (9.5)	B (15.9)	B (16.0)	B (11.5)
		Approach	B (11.5)	D (36.8)	D (44.7)	D (44.7)	A (9.2)	B (15.1)	B (15.5)	B (11.2)
	McAnulty Dr. - Northbound	Through	C (26.7)	C (21.6)	C (21.6)	C (21.6)	C (29.8)	C (23.7)	C (23.7)	C (23.7)
		Right Turn	C (26.4)	C (21.9)	C (21.9)	C (21.9)	C (26.3)	C (23.0)	C (23.2)	C (23.2)
		Approach	C (26.5)	C (21.7)	C (21.7)	C (21.7)	C (28.2)	C (23.4)	C (23.5)	C (23.5)
	Washington Place - Southbound	Approach	F (766.2)	F (568.3)	F (568.3)	F (568.3)	F (443.6)	F (290.6)	F (224.2)	F (222.0)
	Overall Intersection		F (166.0)	F (144.0)	F (144.0)	F (144.0)	F (90.1)	E (65.4)	D (48.7)	D (45.3)

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CAPACITY ANALYSIS SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Intersection	Approach	Movement	Level of Service (Delay in Seconds)[1]							
			A.M. Peak Hour				P.M. Peak Hour			
			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Forbes Ave. and Magee St.	Forbes Ave. - Eastbound	Approach	A (6.1)	B (19.8)	C (20.5)	C (20.8)	B (16.9)	C (21.5)	C (22.8)	C (22.1)
	Magee St. - Northbound	Approach	C (25.2)	B (16.2)	B (16.2)	B (16.2)	C (32.5)	C (31.0)	C (31.8)	C (31.8)
	Magee St. - Southbound	Approach	F (138.9)	C (32.8)	C (32.9)	C (21.9)	D (49.4)	D (47.2)	D (50.9)	D (50.9)
	Overall Intersection		D (43.3)	C (23.2)	C (23.6)	C (20.9)	C (23.5)	C (26.3)	C (27.9)	C (27.4)
Forbes Ave. and Stevenson Rd.	Forbes Ave. - Eastbound	Approach	A (8.5)	A (3.9)	A (4.0)	A (3.7)	A (8.8)	A (4.9)	A (5.2)	A (5.2)
	Stevenson St. - Northbound	Approach	C (26.0)	C (27.1)	C (28.1)	C (28.1)	C (22.1)	C (26.2)	C (26.5)	C (26.5)
	Stevenson St. - Southbound	Approach	C (22.6)	C (25.5)	C (25.8)	B (17.3)	B (13.1)	B (14.0)	B (15.3)	B (17.1)
	Overall Intersection		B (12.8)	A (9.6)	B (10.1)	A (9.7)	B (10.7)	A (8.2)	A (8.6)	A (8.7)
Forbes Ave. and Pride St.	Forbes Ave. - Eastbound	Approach	A (4.6)	A (6.7)	A (8.0)	A (8.0)	A (6.6)	C (20.9)	C (23.4)	C (23.4)
	Pride St. - Northbound	Approach	C (24.5)	B (15.5)	B (15.1)	B (15.1)	C (21.4)	B (14.5)	B (14.9)	B (14.9)
	Pride St. - Southbound	Approach	C (28.0)	B (11.9)	B (18.0)	B (12.2)	D (50.9)	B (15.2)	B (16.3)	C (25.8)
	Overall Intersection		B (12.8)	A (9.4)	B (11.3)	B (10.0)	B (17.7)	B (19.3)	C (21.3)	C (23.3)
Wylie Avenue and Street 1	Wylie Ave. - Eastbound	Approach	--	--	A (8.3)	A (8.3)	--	--	A (8.8)	A (8.8)
	Wylie Ave. - Westbound	Approach	--	--	A (8.2)	A (8.2)	--	--	A (8.8)	A (8.8)
	Street 1. - Northbound	Approach	--	--	A (8.9)	A (8.9)	--	--	A (9.3)	A (9.3)
	Street 1 - Southbound	Approach	--	--	A (8.1)	A (8.1)	--	--	B (11.1)	B (11.1)
	Overall Intersection		--	--	A (8.5)	A (8.5)	--	--	B (10.2)	B (10.2)

TABLE 1
CAPACITY ANALYSIS SUMMARY
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City of Pittsburgh, Allegheny County, Pennsylvania

Intersection	Approach	Movement	Level of Service (Delay in Seconds)[1]							
			A.M. Peak Hour				P.M. Peak Hour			
			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Wylie Avenue and Street 2	Wylie Ave. - Eastbound	Approach	--	--	A (7.4)	A (7.4)	--	--	A (7.5)	A (7.5)
	Wylie Ave. - Westbound	Approach	--	--	A (7.8)	A (7.8)	--	--	A(7.6)	A(7.6)
	Street 2 - Northbound	Approach	--	--	A (7.8)	A (7.8)	--	--	A (8.2)	A (8.2)
	Street 2 - Southbound	Approach	--	--	A (7.8)	A (7.8)	--	--	A (7.4)	A (7.4)
	Overall Intersection		--	--	A (7.8)	A (7.8)	--	--	A (7.9)	A (7.9)
Street 2 and Street 3	Street 3. - Westbound	Approach	--	--	A (8.9)	A (8.9)	--	--	A (9.0)	A (9.0)
	Street 2 - Northbound	Approach	--	--	A (0.0)	A (0.0)	--	--	A (0.0)	A (0.0)
	Street 2 - Southbound	Approach	--	--	A (0.1)	A (0.1)	--	--	A(0.5)	A(0.5)
	Overall Intersection		--	--	A (1.8)	A (1.8)	--	--	A (1.4)	A (1.4)
Street 2 and Street 4	Street 4 - Westbound	Approach	--	--	A (9.1)	A (9.1)	--	--	A (9.3)	A (9.3)
	Street 2 - Northbound	Approach	--	--	A (0.0)	A (0.0)	--	--	A (0.0)	A (0.0)
	Street 2 - Southbound	Approach	--	--	A (0.2)	A (0.2)	--	--	A(1.4)	A(1.4)
	Overall Intersection		--	--	A (2.6)	A (2.6)	--	--	A (1.4)	A (1.4)
Bedford Avenue and Street 2	Bedford Ave. - Westbound	Approach	--	--	A (0.1)	A (0.1)	--	--	A (0.1)	A (0.1)
	Street 2 - Northbound	Approach	--	--	B (11.2)	B (14.1)	--	--	B (13.5)	C (16.2)
	Overall Intersection		--	--	A (0.6)	A (0.8)	--	--	A (1.6)	A (2.0)
Washington Place and Wylie Avenue	Wylie Ave - Westbound	Approach	--	--	B (10.8)	B (10.8)	--	--	B (13.9)	B (13.9)
	Overall Intersection		--	--	A (0.7)	A (0.7)	--	--	A (1.3)	A (1.3)

TABLE 1
CAPACITY ANALYSIS SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Intersection	Approach	Movement	Level of Service (Delay in Seconds)[1]							
			A.M. Peak Hour				P.M. Peak Hour			
			2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Centre Avenue and Street 3	Street 3. - Southbound	Approach	--	--	B (14.9)	B (14.9)	--	--	D (25.8)	D (25.8)
	Overall Intersection		--	--	A (0.5)	A (0.5)	--	--	A (0.8)	A (0.8)

(1) Level of service determined through the use of Synchro Traffic Simulation Software, Version 8. All calculations were performed using the methodologies published in Highway Capacity Manual 2000 by the Transportation Research Board.

Source: Analysis by Trans Associates.

TABLE 2
ILLUSTRATIVE MASTER PLAN PARKING SUPPLY AND DEMAND SUMMARY[1]
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Block	Number of Parking Spaces Provided (Excluding CONSOL Garage)	Development Component	Size[2]		Parking Demand: City of Pittsburgh Zoning Code [1]					Unassigned Spaces Available for	
					Parking Demand Rate	Total Automobile Parking (Includes Spaces for Persons with Disabilities)	Number of Spaces to be Provided for Persons with Disabilities [3]	Potential Multi-Modal Parking Reduction [4][5]	Required Number of Parking Spaces with Maximum Bicycle Parking Reduction [6]	Daytime [8]	Evening/ Weekend Events [9]
A *OLD A & B*	365	Residential	344	units	1 per unit	344	8	101	243	0	0
		Retail	13,390	SF	1 per 500 SF above first 2,400 SF	17	1	5	12		
		Subtotal, A	--	--	--	*361*	*9*	*106*	*255*		
B *OLD D*	247	Residential	224	units	1 per unit	224	7	65	159	79	79
		Retail	10,910	SF	1 per 500 SF above first 2,400 SF	13	1	4	9		
		Subtotal, B	--	--	--	*237*	*8*	*69*	*168*		
C *OLD C & E*	360	Residential	357	units	1 per unit	357	8	105	252	0	0
D *OLD F*	305	Residential	142	units	1 per unit	142	5	41	101	66	150
		Retail	42,200	SF	1 per 500 SF above first 2,400 SF	63	3	18	45		
		Office	116,000	SF	1 per 500 SF above first 2,400 SF	181	6	88	93		
		Subtotal, D	--	--	--	*386*	*14*	*147*	*239*		
E *OLD G*	480	Residential	125	units	1 per unit	125	5	36	89	210	369
		Retail	14,415	SF	1 per 500 SF above first 2,400 SF	18	1	5	13		
		Office	108,370	SF	1 per 500 SF above first 2,400 SF	169	6	82	87		
		Subtotal, E	--	--	--	*312*	*12*	*123*	*189*		
F *OLD H*	0	Retail	24,350	SF	1 per 500 SF above first 2,400 SF	34	2	10	24	0	0
		Cineplex	2,310	seats	1 per 5 seats	462	9	227	235		
		Subtotal, F	--	--	--	*496*	*11*	*237*	*259*		
G *OLD I*	700	Retail	89,836	SF	1 per 500 SF above first 2,400 SF	139	5	40	99	0	216
		Office	407,592	SF	1 per 500 SF above first 2,400 SF	647	13	317	330		
		Hotel [7]	150	rooms	0.62 spaces per room	93	4	2	91		
		Subtotal, G	--	--	--	*879*	18	*359*	*520*		
H *OLD J*	0	Retail	5,000	SF	1 per 500 SF above first 2,400 SF	3	1	1	2	0	0
Total	**2,457**	--	--	--	--	**3,031**	**81**	**1,147**	**1,884**	**355**	**814**

TABLE 2
ILLUSTRATIVE MASTER PLAN PARKING SUPPLY AND DEMAND SUMMARY[1]
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

(1) Based on the *City of Pittsburgh Urban Zoning Code*, Chapter 914: Parking Loading and Access.

(2) Based on section 914.03.C, Calculation of Floor Area, of the City of Pittsburgh Urban Zoning Code, the square footage of floor area utilized in the parking demand calculations is 80% of the total gross floor area for office and retail development components.

(3) Based on Section 914.06.A, Number of Spaces for Persons with Disabilities, of the City of Pittsburgh Urban Zoning Code.

(4) Based on Section 914.05.E, Off-Street Parking Reduction for Bicycle parking, the reduction in the number of automobile spaces shall be reduced by no more than 30% of the total required spaces, excluding parking spaces for persons with disabilities. In addition, parking reductions for hotel use are to be based upon the number of employees. For this study, it was assumed that the hotel would fall into the category of 21-80 employees, which requires 2 bicycle parking spaces.

(5) The multimodal parking reduction for the office and Cineplex uses was assumed to be 50% based on the Pittsburgh Downtown Partnership Travel Mode Survey.

(6) The required number of spaces was determined by subtracting the Potential Multi-Modal Parking Reduction from the Total Automobile Parking (including spaces for persons with disabilities).

(7) The parking demand rate for the hotel was calculated based on data provided for the Shadyside Courtyard Marriott Hotel and also approved for the One Grandview Center Hotel Study.

(8) See Table 2A for details.

(9) See Table 2B for details.

Source: Analysis by Trans Associates.

TABLE 2A
DAYTIME UNASSIGNED OFF-STREET PARKING SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Block (1)	Number of Parking Spaces Provided (2)	Required Number of Parking Spaces with Maximum Bicycle Parking Reduction (2)	Number of Unassigned Spaces Available(3)
A	365	255	0
B*	247	168	79
C	360	252	0
D*	305	239	66
E*	480	189	210 (4)
F	0	259	0
G*	700	520	0 (5)
H	0	2	0
Total	2,457	1,884	355

(1) Blocks with an asterisk (*) indicates shared parking locations. All other blocks (without an asterisk) do not provide parking to any outside parkers.
(2) From Table 2.
(3) Unassigned spaces are intended to provide for program flexibility and changing market conditions.
(4) Number of commuter spaces for Block E was determined by subtracting the total number of required parking spaces for Blocks E, F, G, and H from the number of parking spaces provided for Blocks E, F, G, and H. ([480+0+700+0]-[189+259+520+2] = 210)
(5) Block G does not provide any commuter parking spaces because parkers destined to Block F or H were assumed to fully utilize Block G parking.

Source: Analysis by Trans Associates.

TABLE 2B
EVENING AND WEEKEND EVENT OFF-STREET PARKING SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Block (1)	Number of Parking Spaces Provided (2)	Required Number of Reserved Evening/Weekend Parking Spaces with Maximum Bicycle Parking Reduction (3)	Number of Event (Unassigned) Spaces Available
A	365	255	0
B*	247	168	79
C	360	252	0
D*	305	155	150
E*	480	111	369
F	0	259	216 (4)
G*	700	223	
H	0	2	
Total	2,457	1,425	814

(1) Blocks with an asterisk (*) indicates shared parking locations. All other blocks (without an asterisk) do not provide parking to any outside parkers.
(2) From Table 2.
(3) Required number of spaces reserved (non-event) provide 100% residential parking, 100% retail parking, and 10% office parking, based on the required number of parking spaces from Table 2.
(4) Block F parkers (259 spaces) and Block H parkers (2 spaces) assumed to use Block G parking facility (700-259-223-2=216).

Source: Analysis by Trans Associates.

TABLE 2C
CONSOL ENERGY CENTER PARKING DEMAND
DAYTIME AND EVENTS
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

PARKER CLASSIFICATION	NUMBER OF SPACES REQUIRED	SPACE ASSIGNMENT	
		CONSOL GARAGE	UNASSIGNED
EVENTS - TIER 1 MAXIMUM EVENT			
Season Ticketholders	785	--	785
Penguins Team			
Full-Time Exployees	141	--	141
Part-Time Employees	65	--	65
AEG Staff	295	--	295
ARAMARK Staff	135	--	135
Suite and Loge Seating Ticketholders and Some Club Seat Ticketholders	400	400	--
Reserved Spaces	100	100	--
TOTAL DEMAND, EVENTS	**1,921**	**500**	**1,421**
DAYTIME			
Penguins and CONSOL Energy Center	400	400	--
Misc. Parkers	100	100	--
TOTAL, DAYTIME	**500**	**500**	**--**

Source: Data provided by CONSOL Energy Center

TABLE 3
TRIP GENERATION SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Development Component	Size	ITE Code	Number of Vehicle Trips (1)						
			Average Daily Trips	A.M. Peak Hour			P.M. Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
Master Plan Development Components									
Retail	200,101 s.f.	820	5,330	116	45	161	248	259	507
Hotel (2)	174	310	1,226	59	38	97	54	49	103
Office	631,962 s.f.	710	2,759	361	49	410	67	327	394
Cineplex	2,310	444	810	0	0	0	45	36	81
Apartments	1,148 units	220	3,540	57	227	284	211	114	325
Townhomes	44 units	230	158	3	11	14	11	5	16
Master Plan Development Components Subtotal			*13,823*	*596*	*370*	*966*	*636*	*790*	*1,426*
Master Plan Development Unassigned Parking									
Unassigned Parking (3)	355 spaces	--	710 (4)	122	5	127	9	104	113
TOTAL MASTER PLAN DEVELOPMENT SITE GENERATED TRAFFIC VOLUMES			**14,533**	**718**	**375**	**1,093**	**645**	**894**	**1,539**

(1) Number of vehicle trips generated determined through the use of the methodologies presented in *Trip Generation, 8th Edition* published by the Institute of Transportation Engineers (ITE), reduced by 50% to account for trips to and from development that would use Buses, the "T", Walk, and Bike. Percentage derived from the *Employee Transportation Needs Assessment* Presentation, by Pittsburgh Downtown Partnership, September 2010.

(2) Reduction in site generated trips for the Hotel development component was not assumed, in order to be conservative.

(3) Unassigned spaces were conservatively assumed to function as commuter spaces. Commuter trips based on existing peak hour commuter trip rates calculated for the existing Mellon Arena surface lots. Commuter trip rate calculations are provided in the Appendix to the Lower Hill Site Redevelopment Master Plan Transportation Study.

(4) Commuter parking average daily trips assumed to be two (2) times the total available commuter parking (355 spaces) (355 * 2 = 710).

Source: Analysis by Trans Associates.

TABLE 4
QUEUE LENGTH SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Intersection	Approach	Movement	Queue Length (Feet) [1]								
			Existing Queue Capacity	A.M. Peak Hour				P.M. Peak Hour			
				2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Washington Place and Webster Ave./Bedford Ave.	Ramp - Eastbound	Left Turn	--	408	434	423	413	297	358	402	438
		Right Turn	350	142	148	113	111	148	186	184	197
	Washington Place - Northbound	Through	325	208	257	314	271	290	349	416	506
		Right Turn	325	38	3	4	3	62	61	47	160
	Webster Ave. - Northeastbound	Left Turn	425	489	534	534	587	737	755	755	833
		Through	425	226	232	259	288	225	221	296	328
		Right Turn	425	645	687	464	511	293	264	260	287
Bedford Ave. and Mario Lemieux Place/Ramps	Mario Lemieux Pl. - Northwestbound	Left/Through/Right	980	16	16	37	--	161	172	160	--
		Left Turn	--	--	--	--	36	--	--	--	96
		Through/Righ Turn	--	--	--	--	14	--	--	--	111
	HOV Lane - Southbound	Left Turn	--	452	495	344	309	--	--	--	--
		Right Turn	--	348	406	451	433	--	--	--	--
	Bedford Ave. - Northeastbound	Left Turn	400	45	49	52	53	98	107	98	90
		Through	400	195	235	279	278	250	302	391	338
	Bedford Ave. - Southwestbound	Through	760	83	91	115	115	213	245	265	286
Bedford Ave. and Crawford St.	Bedford Ave. - Eastbound	Through	820	26	28	29	--	19	19	14	--
		Right Turn	820	28	28	27	--	22	23	18	--
		Through/Right Turn	820	--	--	--	30	--	--	--	34
	Bedford Ave. - Westbound	Left Turn/Through	225	24	26	27	28	36	40	43	64
	Crawford St. - Northbound	Left Turn/Right Turn	515	79	87	92	92	333	374	320	190
Centre Ave. and Sixth Ave.	Centre Ave. - Westbound	Left Turn	175	34	42	49	49	83	101	118	118
		Right Turn	175	31	38	45	45	40	47	51	51
	Sixth Ave. - Northeastbound	Through/Right Turn	300	49	21	21	40	12	4	4	30
	Sixth Ave. - Southwestbound	Left Turn	140	373	381	340	340	110	106	170	170
		Through	140	49	41	41	41	86	79	79	79
Centre Ave. and Washington Place	Centre Ave. - Eastbound	Left/Through/Right	660	277	317	357	348	269	260	324	305
	Centre Ave. - Westbound	Left Turn	525	83	101	181	147	148	112	262	249
		Through	525	141	157	191	156	219	195	179	134
	Washington Place - Northbound	Left/Through/Right	530	135	152	194	194	209	248	308	316
	Washington Place - Southbound	Left Turn/Through	300	275	302	301	271	177	233	194	200
		Right Turn	300	5	2	3	3	74	82	42	55
	Ramps - Northeastbound	Left Turn	--	162	190	160	168	55	71	89	110
		Right Turn	175	189	209	188	194	74	132	185	157

TABLE 4
QUEUE LENGTH SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Intersection	Approach	Movement	Queue Length (Feet) [1]								
			Existing Queue Capacity	A.M. Peak Hour				P.M. Peak Hour			
				2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Centre Ave. and Street 1	Centre Ave. - Eastbound	Left Turn/Through	525	134	145	109	68	85	95	141	43
	Centre Ave. - Westbound	Through/Right Turn	850	7	24	17	16	43	53	56	264
	Street 1 - Southbound	Left Turn	--	--	--	28	41	--	--	42	61
		Right Turn	--	--	--	212	164	--	--	311	197
		Left Turn/Right Turn	980	98	108	--	--	30	31	--	--
Centre Ave. and Parking Garage/Street 2	Centre Ave. - Eastbound	Through/Right Turn	330	0	0	--	--	0	0	--	--
		Left/Through/Right	--	--	--	10	36	--	--	66	67
	Centre Ave. - Westbound	Left Turn/Through	320	0	0	--	--	0	0	--	--
		Left/Through/Right	620	--	--	0	69	--	--	0	135
	Parking Garage - Northbound	Right Turn	--	0	0	--	--	9	10	--	--
		Left/Through/Right	--	--	--	0	0	--	--	Error	66
	Street 2 - Southbound	Left/Through/Right	--	--	--	Error	108	--	--	Error	83
Centre Ave. and Crawford St.	Centre Ave. - Eastbound	Left Turn/Through	850	116	74	237	--	244	313	225	--
		Left Turn	--	--	--	--	74	--	--	--	147
		Through	850	--	--	--	--	--	--	--	--
		Through/Right Turn	--	--	--	--	289	--	--	--	95
		Right Turn	850	33	8	74	--	18	26	47	1
	Centre Ave. - Westbound	Left Turn	140	33	45	46	58	24	27	26	40
		Through	--	62	81	57	70	97	114	126	182
	Crawford St. - Northbound	Left/Through/Right	870	252	215	336	--	277	307	549	--
		Left Turn	185	--	--	--	125	--	--	--	182
		Through/Right Turn	870	--	--	--	70	--	--	--	162
	Crawford St. - Southbound	Left/Through/Right	1130	380	297	272	--	130	132	87	--
		Left Turn	50	--	--	--	35	--	--	--	22
		Through/Right Turn	1130	--	--	--	341	--	--	--	178
Fifth Ave. and Sixth Ave.	Fifth Ave. - Eastbound	Left/Through/Right	145	127	134	134	76	256	314	313	308
	Fifth Ave. - Westbound	Left Turn	410	19	21	21	17	217	247	236	193
		Through/Right Turn	410	473	533	572	512	804	896	954	895
	Sixth Ave. - Northbound	Left Turn/Through	170	43	107	109	77	25	27	27	20
	Sixth Ave. - Southbound	Through/Right Turn	315	42	91	96	70	121	231	259	202
Fifth Ave. and Washington Place/Chatham Square	Fifth Ave - Westbound	Left/Through/Right	670	148	511	503	510	143	293	277	277
	Chatham Square - Northbound	Left Turn	185	268	164	180	180	111	97	100	99
		Through	225	331	227	412	412	301	333	464	466
	Washington Place - Southbound	Through	515	294	271	271	271	146	159	136	136
		Right Turn	515	93	90	105	105	91	99	131	131

TABLE 4
QUEUE LENGTH SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

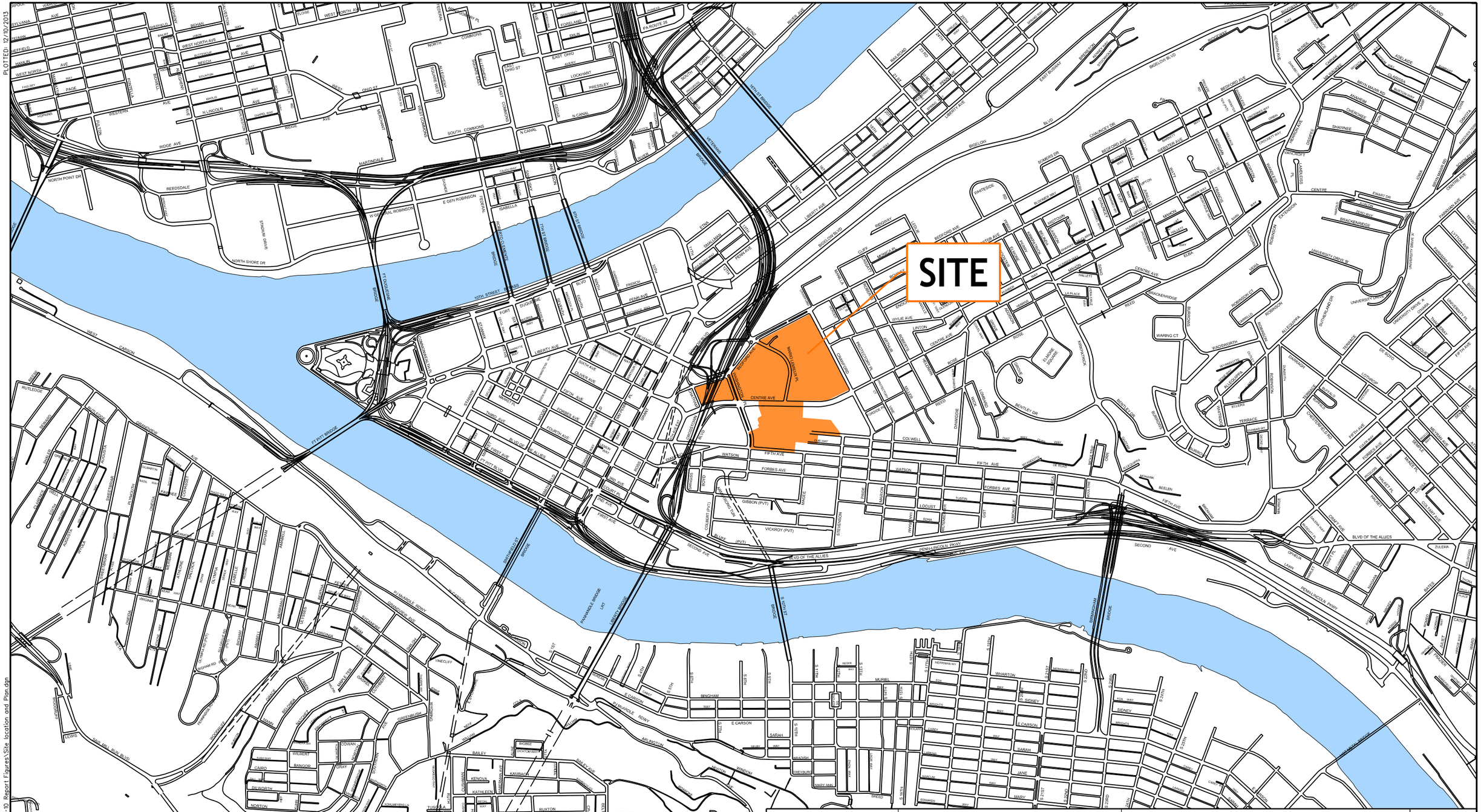
Intersection	Approach	Movement	Queue Length (Feet) [1]								
			Existing Queue Capacity	A.M. Peak Hour				P.M. Peak Hour			
				2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Fifth Ave. and Magee St.	Fifth Ave. - Westbound	Left/Through/Right	450	195	117	123	150	170	308	304	304
	Magee St. - Northbound	Left Turn/Through	250	229	147	145	154	113	102	103	103
	Magee St. - Southbound	Through/Right Turn	60	0	0	0	0	1	2	2	2
Fifth Ave. and Stevenson St.	Fifth Ave. - Westbound	Left/Through/Right	320	71	147	141	154	54	140	123	124
	Stevenson St. - Northbound	Left Turn/Through	250	335	253	252	154	192	146	144	144
	Stevenson St. - Southbound	Through/Right Turn	200	51	65	63	63	38	34	33	33
Fifth Ave. and Crawford St.	Fifth Ave. - Westbound	Left/Through/Right	650	221	305	322	322	250	308	390	390
	Crawford St. - Northbound	Left Turn/Through	248	194	199	271	267	157	148	212	212
	Crawford St. - Southbound	Through/Right Turn	800	143	139	179	179	260	276	264	264
Diamond St. and Sixth Ave.	Diamond St. - Westbound	Left Turn	450	67	72	72	72	109	120	114	114
		Through	450	148	165	173	173	180	200	227	227
		Right Turn	200	22	24	24	24	12	13	13	13
	Sixth Ave. - Northbound	Left Turn/Through	50	23	21	19	19	19	19	19	19
	Sixth Ave. - Southbound	Through/Right Turn	180	54	122	123	41	155	176	192	113
Forbes Ave./Sixth Ave./Liberty Bridge Ramps	Forbes Ave. - Eastbound	Left Turn/Through	415	423	479	532	532	433	492	572	572
		Right Turn	120	29	31	31	31	125	139	139	139
	Forbes Ave. - Westbound	Left/Through/Right	400	222	280	265	265	56	89	101	101
	Ramps - Northbound	Left/Through/Right	--	300	355	379	379	43	48	50	50
	Sixth Ave. - Southbound	Left Turn/Through	50	67	44	44	42	443	514	506	506
Forbes Ave. and Armstrong Tunnels	Forbes Ave. - Eastbound	Through/Right Turn	450	612	676	725	725	498	532	579	541
	Armstrong Tunnel - Northbound	Left Turn	--	134	158	158	158	58	70	70	73
		Right Turn	--	348	430	482	482	195	275	327	346
Forbes Ave. and Washington Place	Forbes Ave. - Eastbound	Left Turn	122	116	143	183	183	92	125	156	129
		Through/Right Turn	160	267	258	248	248	147	233	223	178
	Washington Place - Northbound	Through	600	42	41	41	41	106	104	104	104
		Right Turn	60	35	40	40	40	43	64	68	68
	Washington Place - Southbound	Left Turn Through	240	558	623	626	626	242	231	201	200
Forbes Ave. and Magee St.	Forbes Ave. - Eastbound	Left/Through/Right	685	128	234	240	233	316	389	416	419
	Magee St. - Northbound	Through/Right Turn	460	36	30	30	30	130	141	146	146
	Magee St. - Southbound	Left Turn/Through	265	121	95	95	56	81	87	87	87

TABLE 4
QUEUE LENGTH SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Intersection	Approach	Movement	Queue Length (Feet) [1]								
			Existing Queue Capacity	A.M. Peak Hour				P.M. Peak Hour			
				2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated	2011 Existing	2022 Base	2022 Combined	2022 Combined Mitigated
Forbes Ave. and Stevenson St.	Forbes Ave. - Eastbound	Left/Through/Right	425	224	47	47	46	187	93	102	102
	Stevenson St. - Northbound	Through/Right Turn	250	200	223	240	240	88	107	112	112
	Stevenson St. Southbound	Left Turn/Through	235	26	25	26	19	42	33	34	34
Forbes Ave. and Pride St.	Forbes Ave. - Eastbound	Left/Through/Right	330	0	64	93	116	75	412	435	435
	Pride St. - Northbound	Through/Right Turn	240	114	94	83	83	53	45	57	57
	Pride St. - Southbound	Left Turn/Through	260	91	57	91	35	124	57	48	115

(1) Queue length analysis utilized Synchro, Version 7. The 95th percentile queue length is reported.

Source: Analysis by Trans Associates.



SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT:
Lower Hill Redevelopment Site
Transportation Study

TITLE:
Site Location

FIGURE
1

D.B. CTZ
C.B. MDS
REV. CAD

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Site location and Plan.dgn

Legend:

- - - - - - - - - - SP District Boundary

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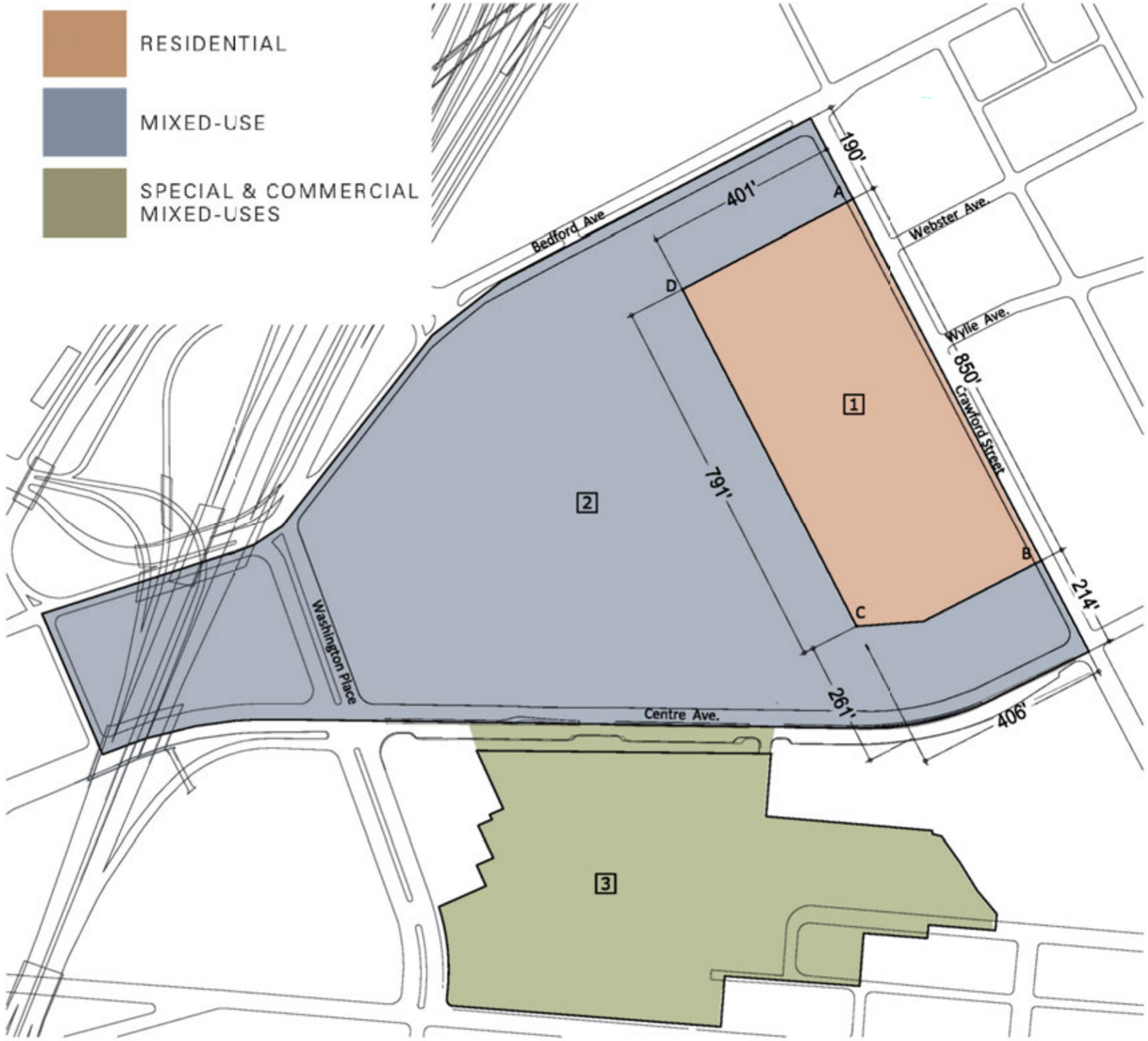
PROJECT NO.	PGHPE00 - 12173
PROJECT:	Lower Hill Redevelopment Site Transportation Study
TITLE:	Site Plan Prepared by UDA
FIGURE	2A
D.B.	CTZ
C.B.	MDS
REV.	CAD

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Site location and Plan.dgn



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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

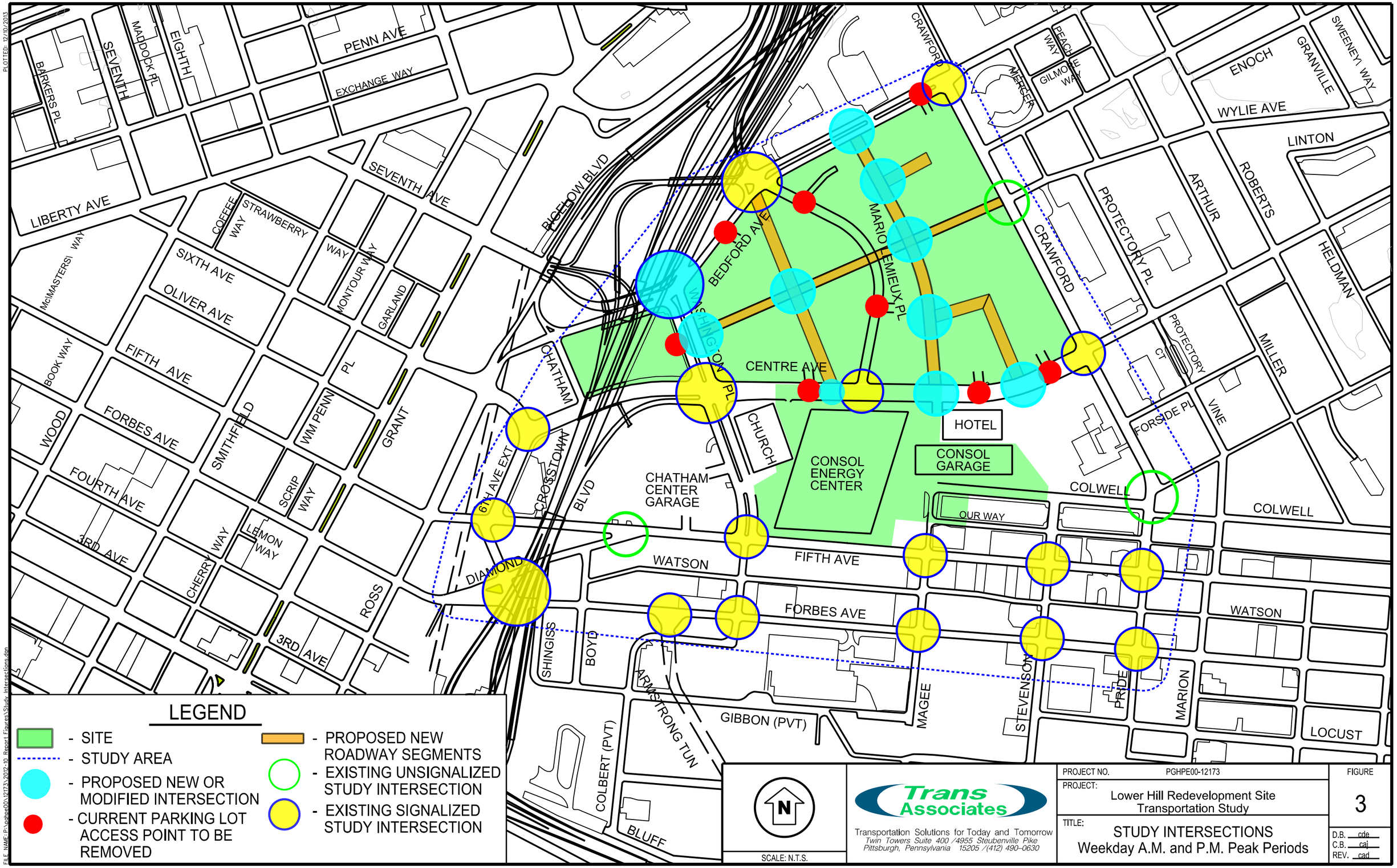
TITLE: Sub Districts Diagram

FIGURE 2B

D.B. CTZ
C.B. MDS
REV. CAD

PLOTTED: 9/8/2014

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Site location and Plan.dgn


PENN AVE
EXCHANGE WAY
SEVENTH AVE
BIGELOW BLVD
LIBERTY AVE
SIXTH AVE
OLIVER AVE
FIFTH AVE
FORBES AVE
FOURTH AVE
3RD AVE
BARKERS PL
SEVENTH
MADDOCK PL
EIGHTH
COFFEE WAY
STRAWBERRY WAY
MONTOUR WAY
GARLAND
McMASTERS WAY
BOOK WAY
WOOD
SMITHFIELD
WM PENN PL
GRANT
SCRIP WAY
LEMON WAY
CHERRY WAY
ROSS
CHATHAM
6TH AVE EXT
CROSSTOWN BLVD
DIAMOND
BEDFORD AVE
MARIO LEMIEUX PL
WASHINGTON PL
CENTRE AVE
CHURCH
CHATHAM CENTER GARAGE
CONSOL ENERGY CENTER
HOTEL
CONSOL GARAGE
OUR WAY
COLWELL
WATSON
FIFTH AVE
FORBES AVE
SHINGISS
BOYD
ARMSTRONG TUN
GIBBON (PVT)
COLBERT (PVT)
BLUFF
MAGEE
STEVENSON
PRIDE
MARION
LOCUST
CRAWFORD
MERCER
BEACH WAY
GILMORE WAY
PROTECTORY PL
PROTECTORY CT
FORSIDE PL
VINE
MILLER
HELDMAN
ARTHUR
ROBERTS
LINTON
WYLIE AVE
ENOCH
GRANVILLE
SWEENEY WAY
LEGEND
- SITE
- STUDY AREA
- PROPOSED NEW OR MODIFIED INTERSECTION
- CURRENT PARKING LOT ACCESS POINT TO BE REMOVED
- PROPOSED NEW ROADWAY SEGMENTS
- EXISTING UNSIGNALIZED STUDY INTERSECTION
- EXISTING SIGNALIZED STUDY INTERSECTION
N
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PROJECT NO. PGHPE00-12173
PROJECT: Lower Hill Redevelopment Site Transportation Study
TITLE: STUDY INTERSECTIONS Weekday A.M. and P.M. Peak Periods
FIGURE 3
D.B. cde
C.B. caj
REV. cad
PLOTTED: 12/10/2013
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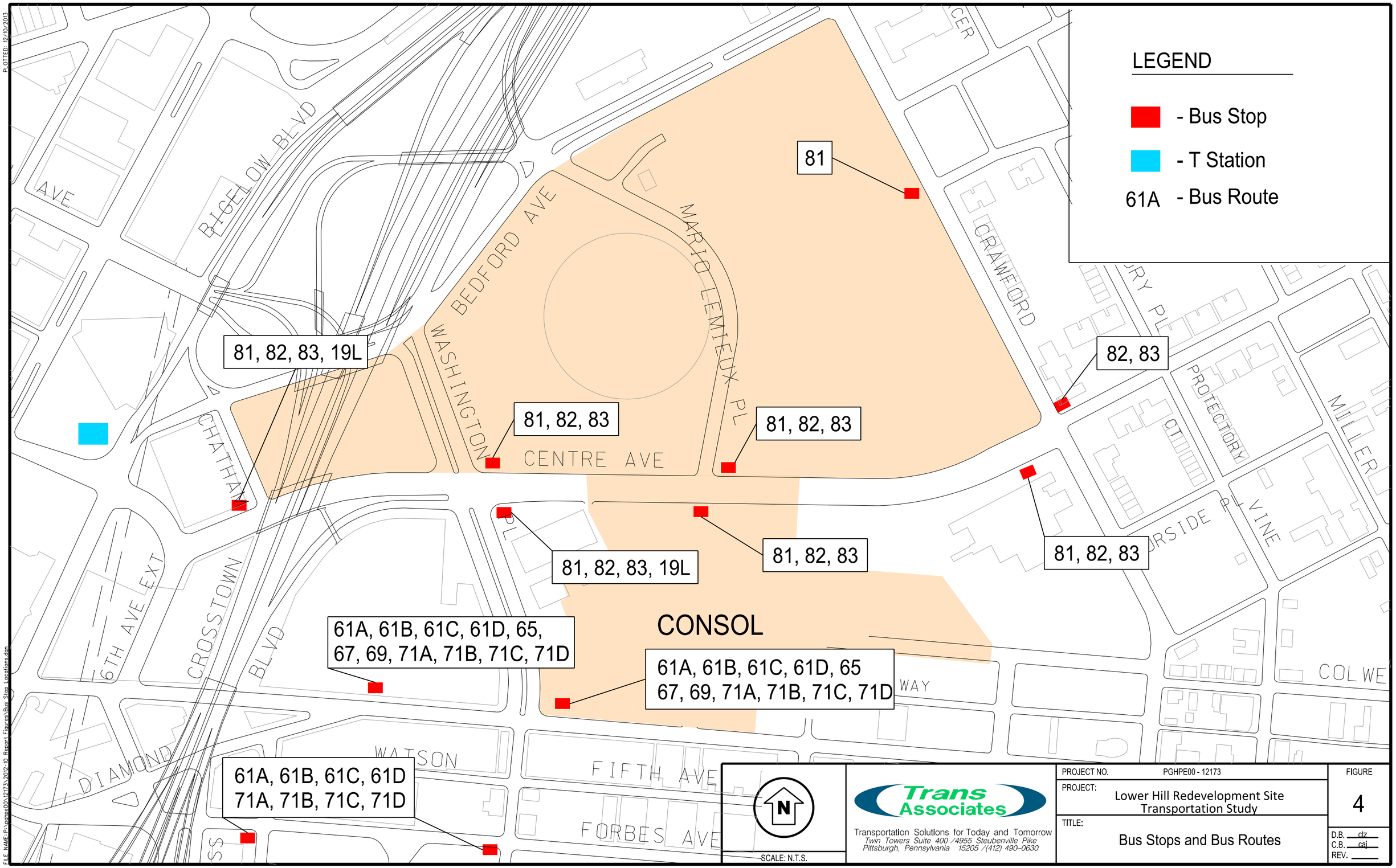
LEGEND
- Bus Stop
- T Station
61A - Bus Route
81
81, 82, 83, 19L
81, 82, 83
81, 82, 83
82, 83
81, 82, 83, 19L
81, 82, 83
81, 82, 83
61A, 61B, 61C, 61D, 65,
67, 69, 71A, 71B, 71C, 71D
61A, 61B, 61C, 61D, 65
67, 69, 71A, 71B, 71C, 71D
61A, 61B, 61C, 61D
71A, 71B, 71C, 71D
CONSOL
BIGELOW BLVD
BEDFORD AVE
MARIO LEMIEUX PL
WASHINGTON
CENTRE AVE
CRAWFORD
PROTECTORY
MILLER
VINE
COLWE
CHATHAM
6TH AVE EXT
CROSSTOWN
BLVD
DIAMOND
WATSON
FIFTH AVE
FORBES AVE
WAY
N
SCALE: N.T.S.
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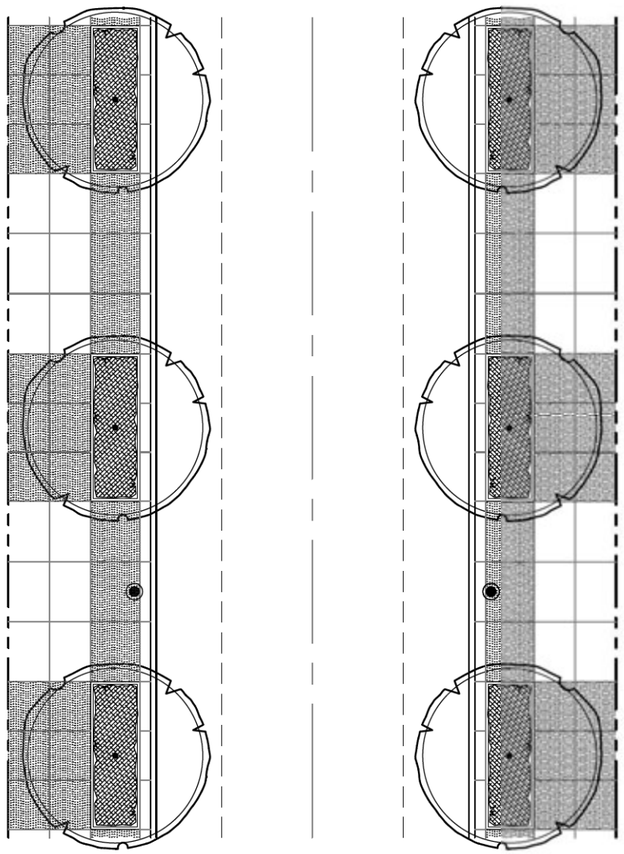
PROJECT NO. PGHPE00 - 12173
PROJECT: Lower Hill Redevelopment Site Transportation Study
TITLE: Bus Stops and Bus Routes
FIGURE 4
D.B. ctz
C.B. caj
REV.
PLOTTED: 12/10/2013
FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Bus Stop Locations.dgn

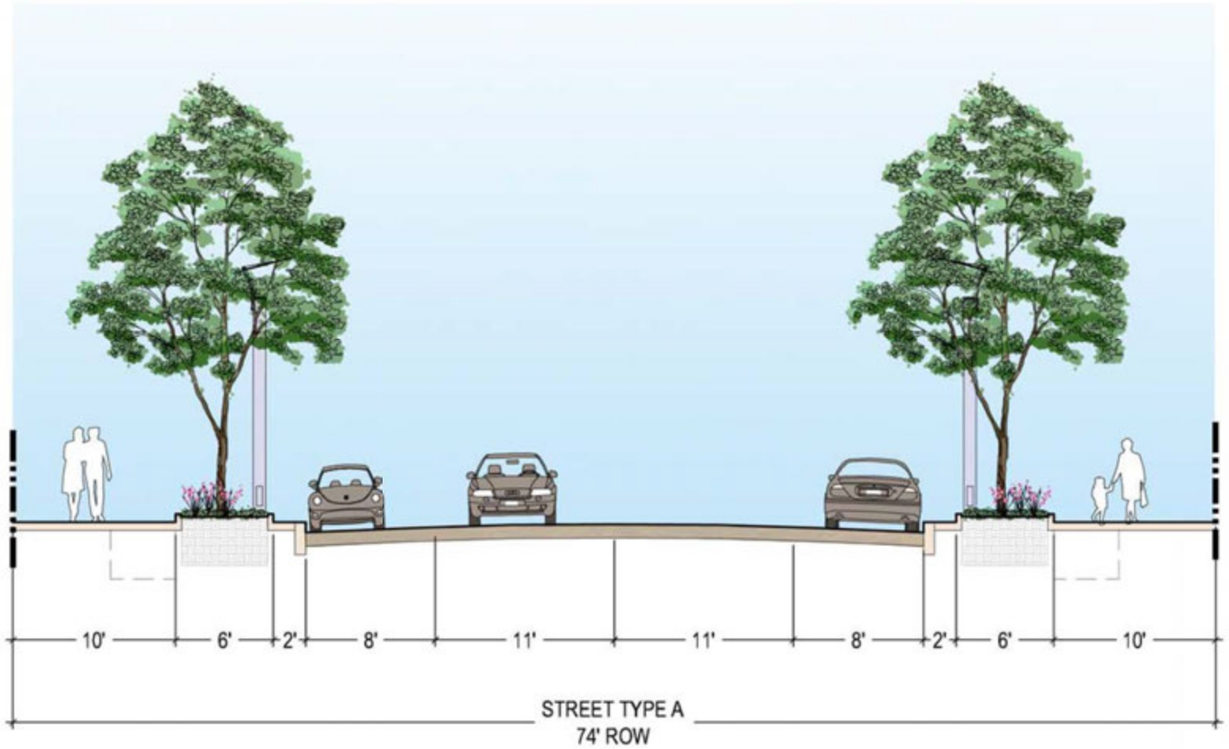
Source: Urban Design Associates.

N SCALE: N.T.S.	Trans Associates Transportation Solutions for Today and Tomorrow Twin Towers Suite 400 /4955 Steubenville Pike Pittsburgh, Pennsylvania 15205 /(412) 490-0630	PROJECT NO. PGHPE00 - 12173 PROJECT: Lower Hill Redevelopment Site Transportation Study TITLE: Street Plan Type	FIGURE 5 D.B. NBS C.B. MDS REV. JMM

PLOTTED: 9/8/2014

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Street Plan Type.dgn





Provided by: LaQuatra Bonci Associates

SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

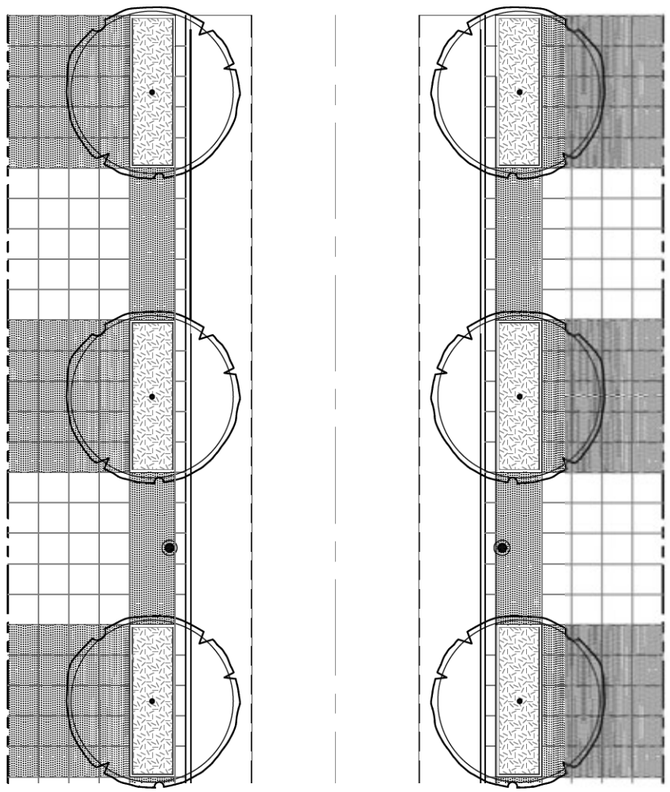
TITLE: Street Plan Type Cross Section

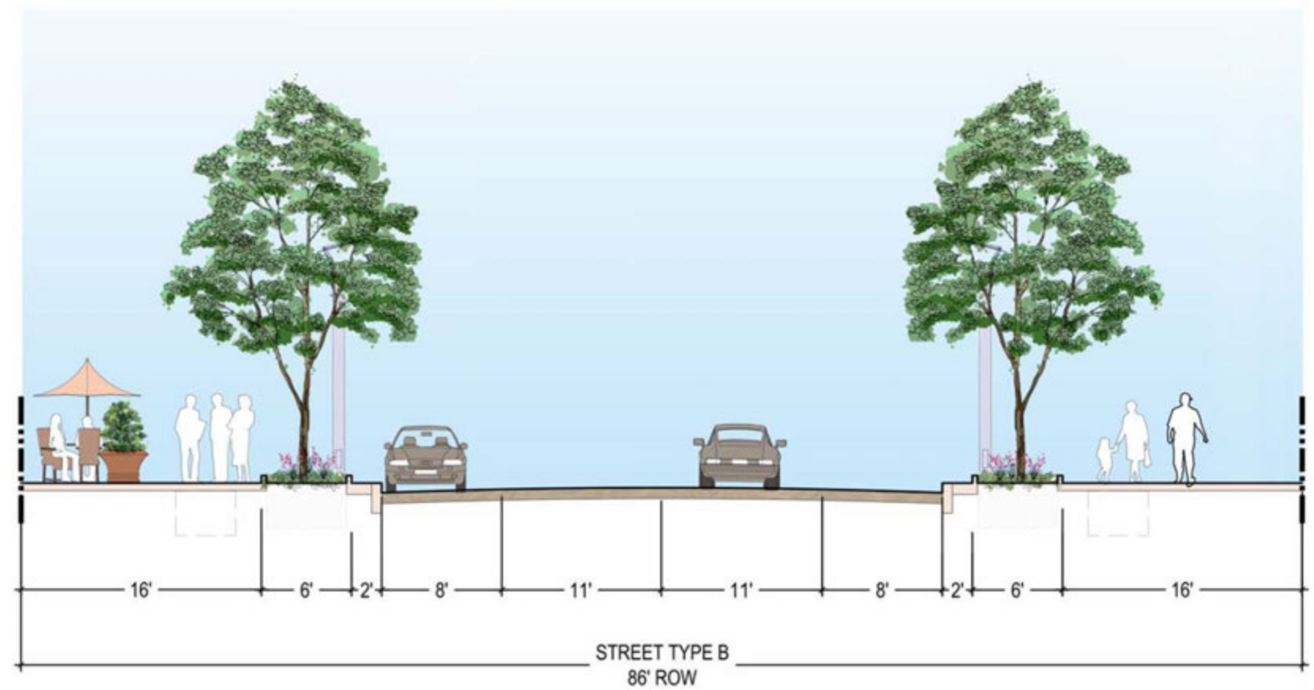
FIGURE 6A

D.B. NBS
C.B. MDS
REV. CAD

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Street Plan Type Cross Section.dgn





Section B

Scale: 1"=10'

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PROJECT: Lower Hill Redevelopment Site Transportation Study

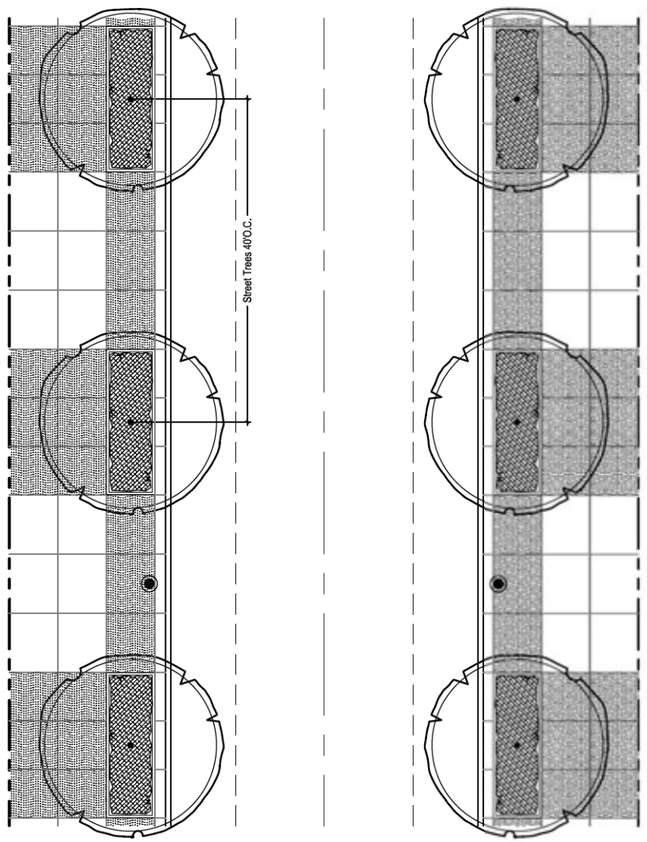
TITLE: Street Plan Type Cross Section

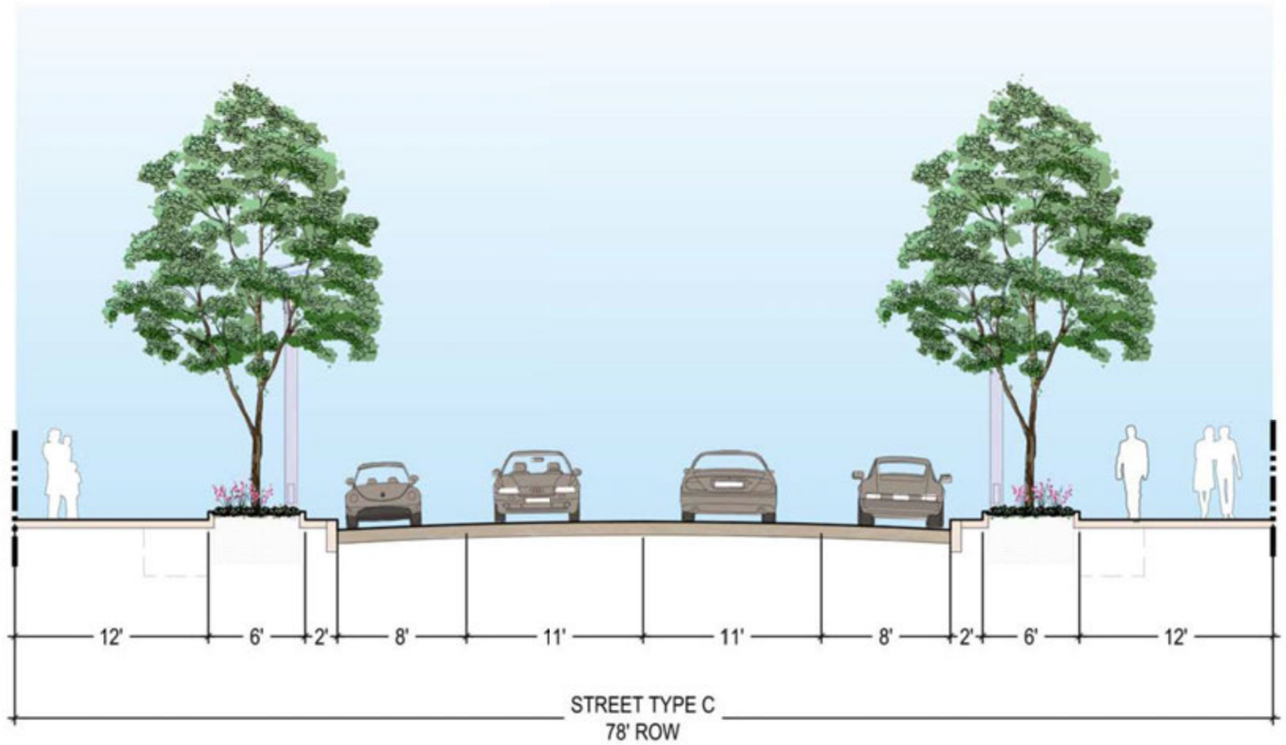
FIGURE 6B

D.B. NBS
C.B. MDS
REV. CAD

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Street Plan Type Cross Section.dgn





Section C

Scale: 1"=10'

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SCALE: N.T.S.

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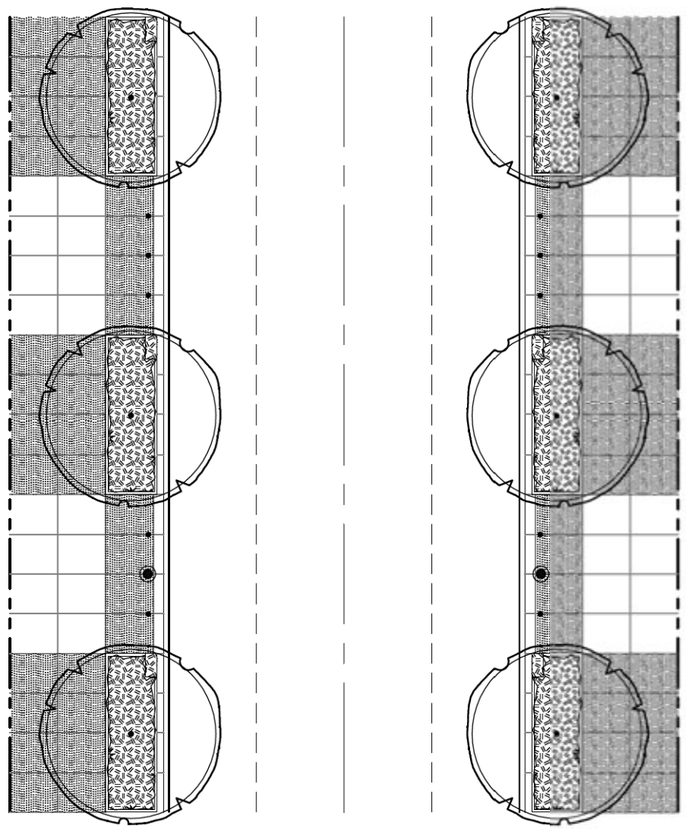
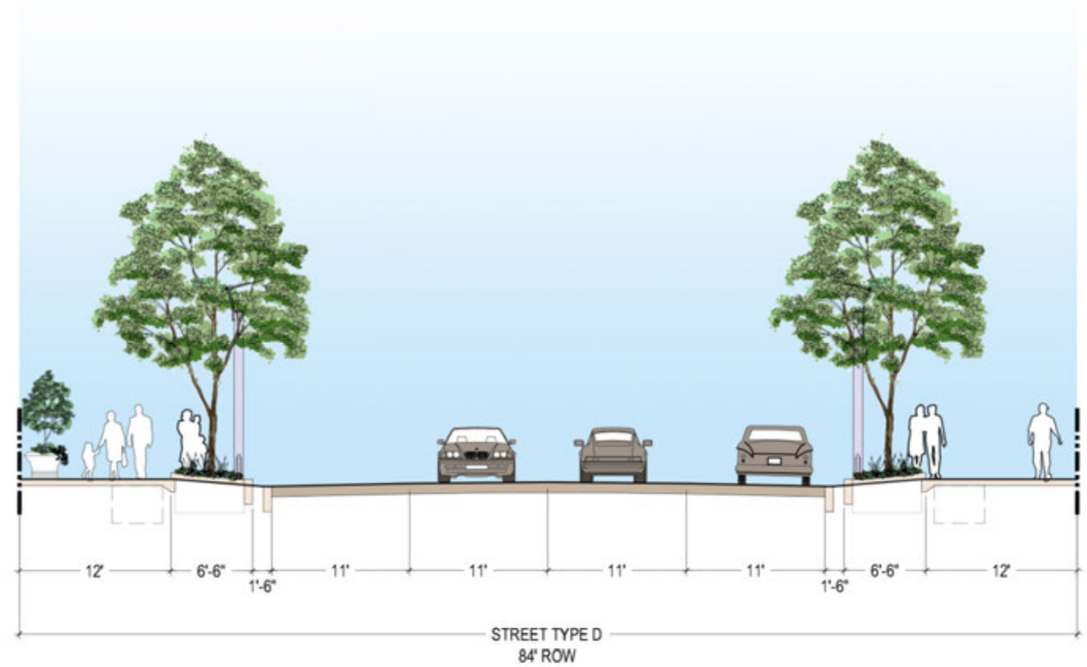
PROJECT NO.	PGHPE00 - 12173
PROJECT:	Lower Hill Redevelopment Site Transportation Study
TITLE:	Street Plan Type Cross Section
FIGURE	6C
D.B.	NBS
C.B.	MDS
REV.	CAD

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Street Plan Type Cross Section.dgn





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SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

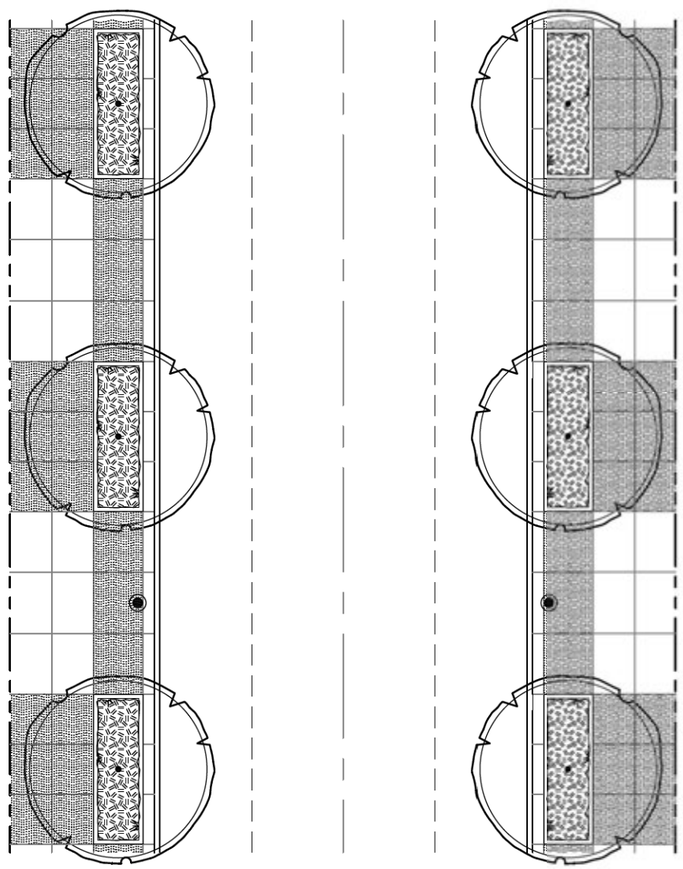
TITLE: Street Plan Type Cross Section

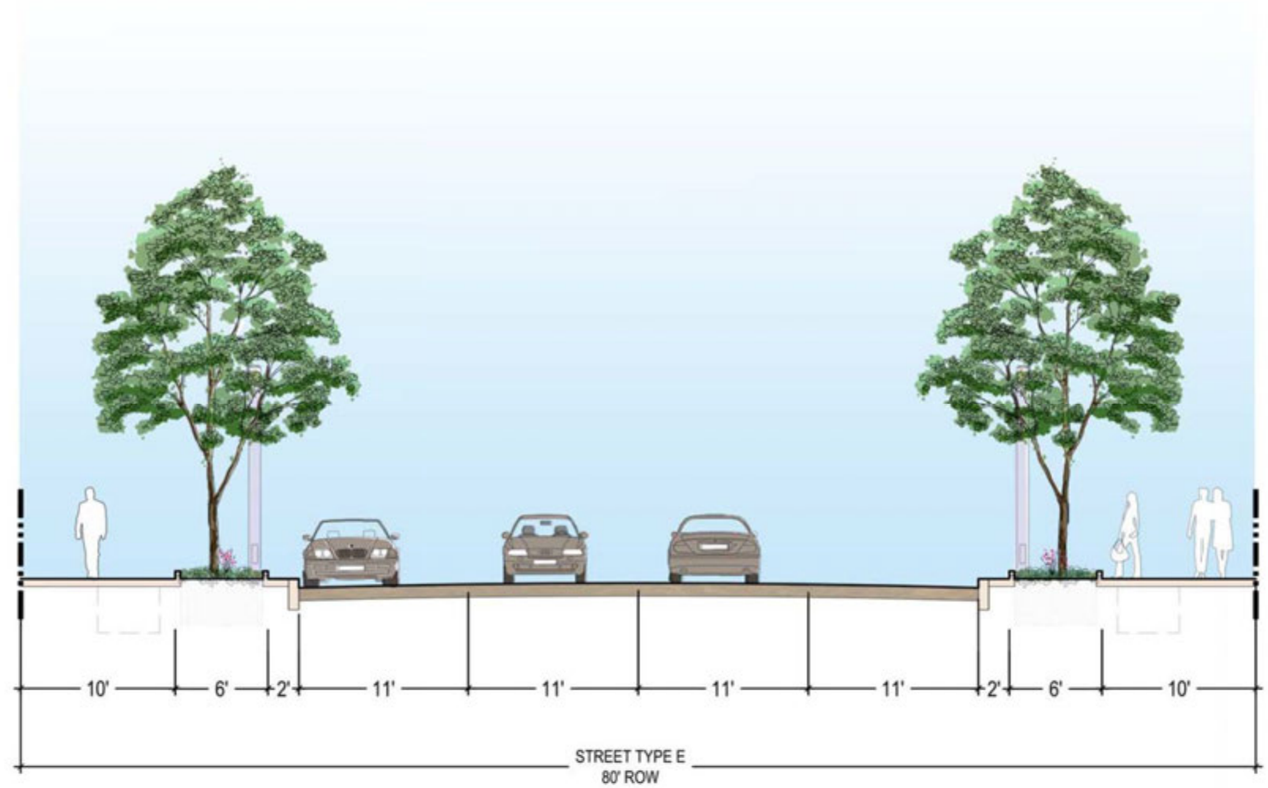
FIGURE 6D

D.B. NBS
C.B. MDS
REV. CAD

PLOTTED: 9/9/2014

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Street Plan Type Cross Section.dgn





Section E

Scale: 1"=10'

Provided by: LaQuatra Bonci Associates

SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

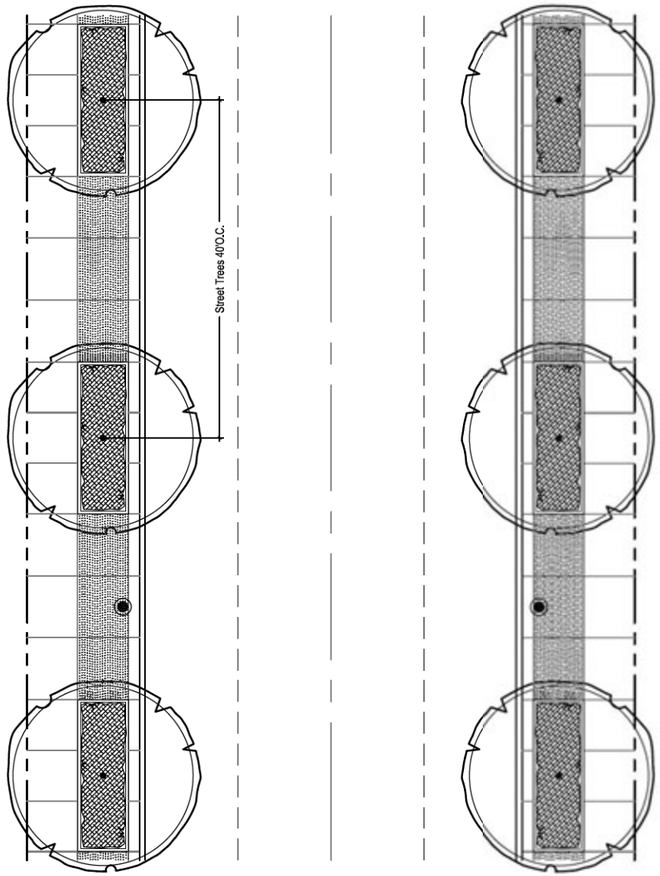
TITLE: Street Plan Type Cross Section

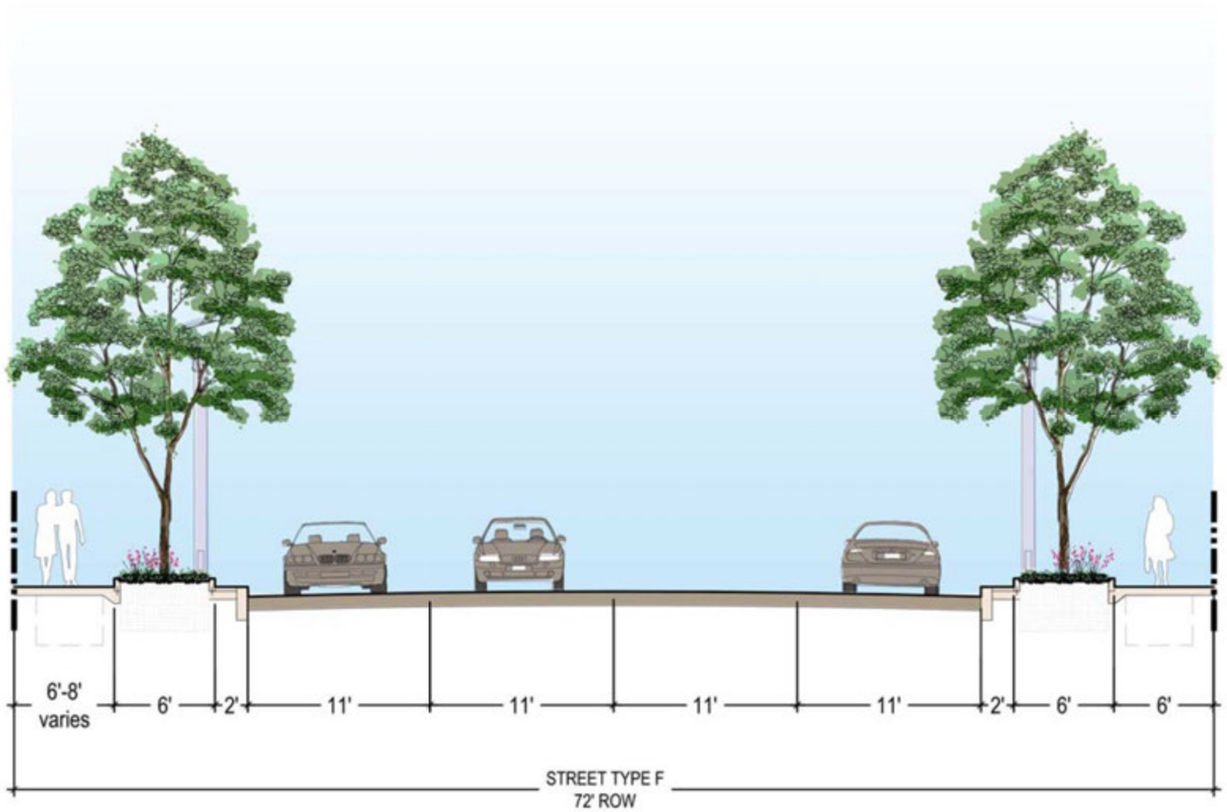
FIGURE 6E

D.B. NBS
C.B. MDS
REV. CAD

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Street Plan Type Cross Section.dgn





Section F

Scale: 1"=10'

Provided by: LaQuatra Bonci Associates

SCALE: N.T.S.

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PROJECT: Lower Hill Redevelopment Site Transportation Study

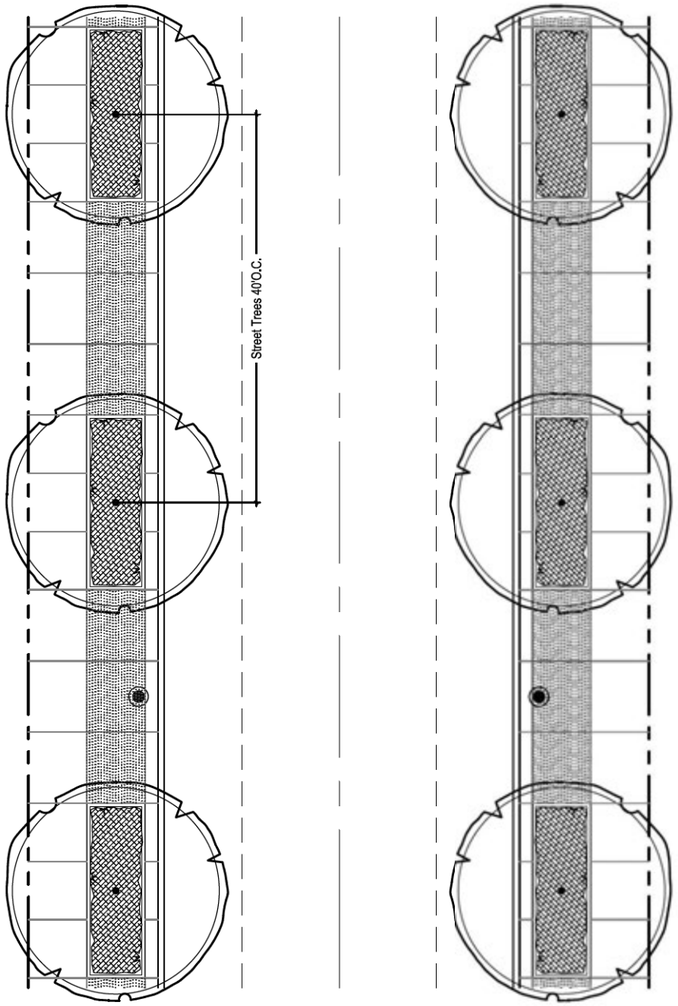
TITLE: Street Plan Type Cross Section

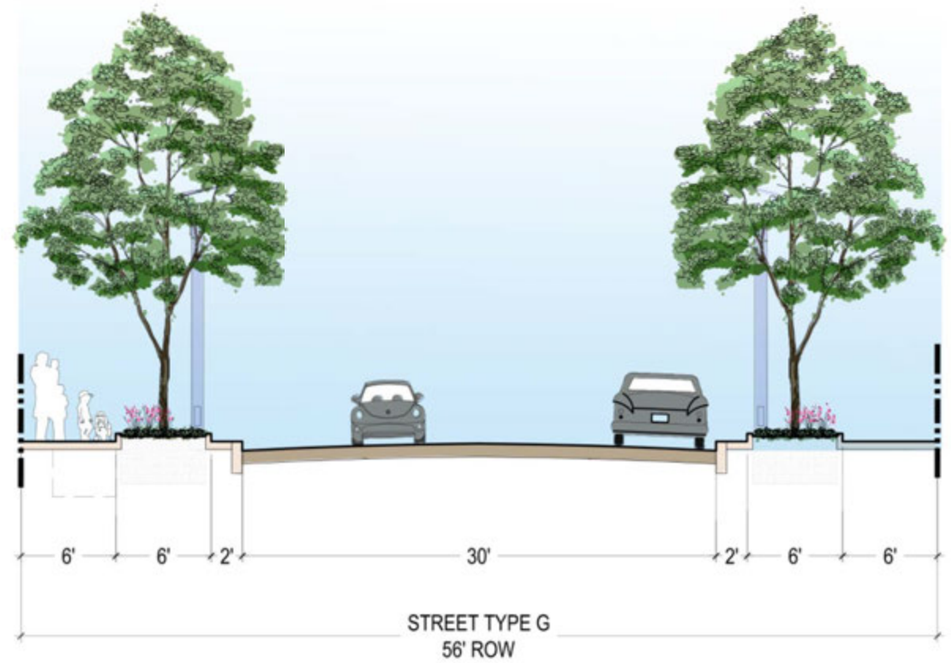
FIGURE 6F

D.B. NBS
C.B. MDS
REV. CAD

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Street Plan Type Cross Section.dgn





Section G

Scale: 1"=10'

Provided by: LaQuatra Bonci Associates

SCALE: N.T.S.

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PROJECT: Lower Hill Redevelopment Site Transportation Study

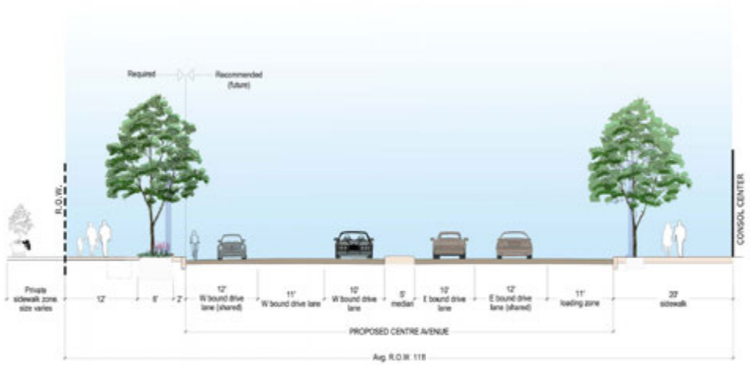
TITLE: Street Plan Type Cross Section

FIGURE 6G

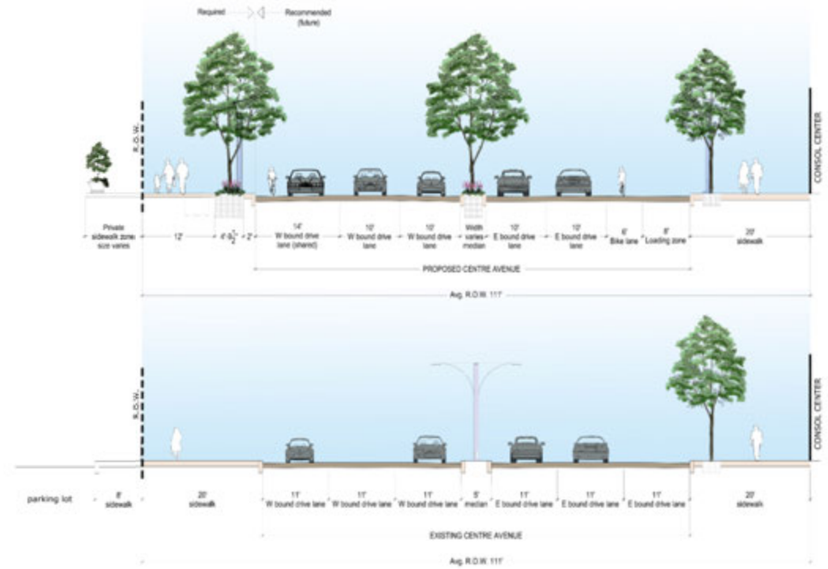
D.B. NBS
C.B. MDS
REV. CAD

PLOTTED: 12/10/2013

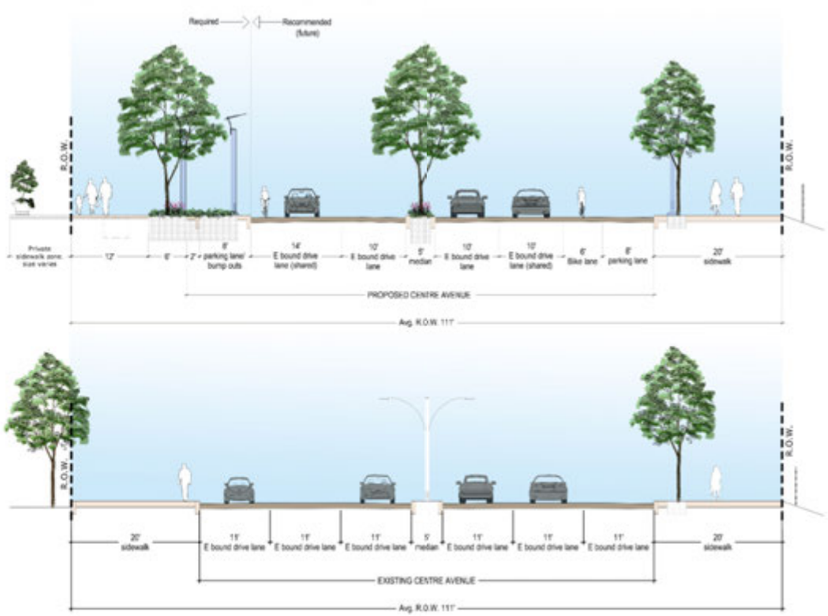
FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Street Plan Type Cross Section.dgn



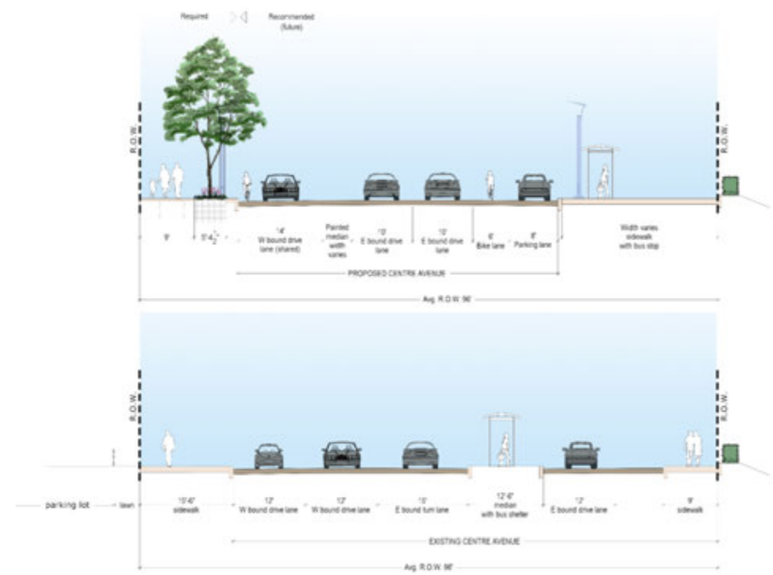
CENTRE AVENUE: H-H'
lower: between Washington Place
and Street 1



CENTRE AVENUE: G-G'
lower: between Streets 1 and 2



CENTRE AVENUE: F-F'
mid: between Streets 2 and 3



CENTRE AVENUE: E-E'
upper: between Street 3 and Crawford

Provided by: LaQuatra Bonci Associates

N

SCALE: N.T.S.

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PROJECT NO.	PGHPE00 - 12173
PROJECT:	Lower Hill Redevelopment Site Transportation Study
TITLE:	Centre Avenue Cross Section
FIGURE	7
D.B.	NBS
C.B.	MDS
REV.	

PLOTTED: 9/9/2014

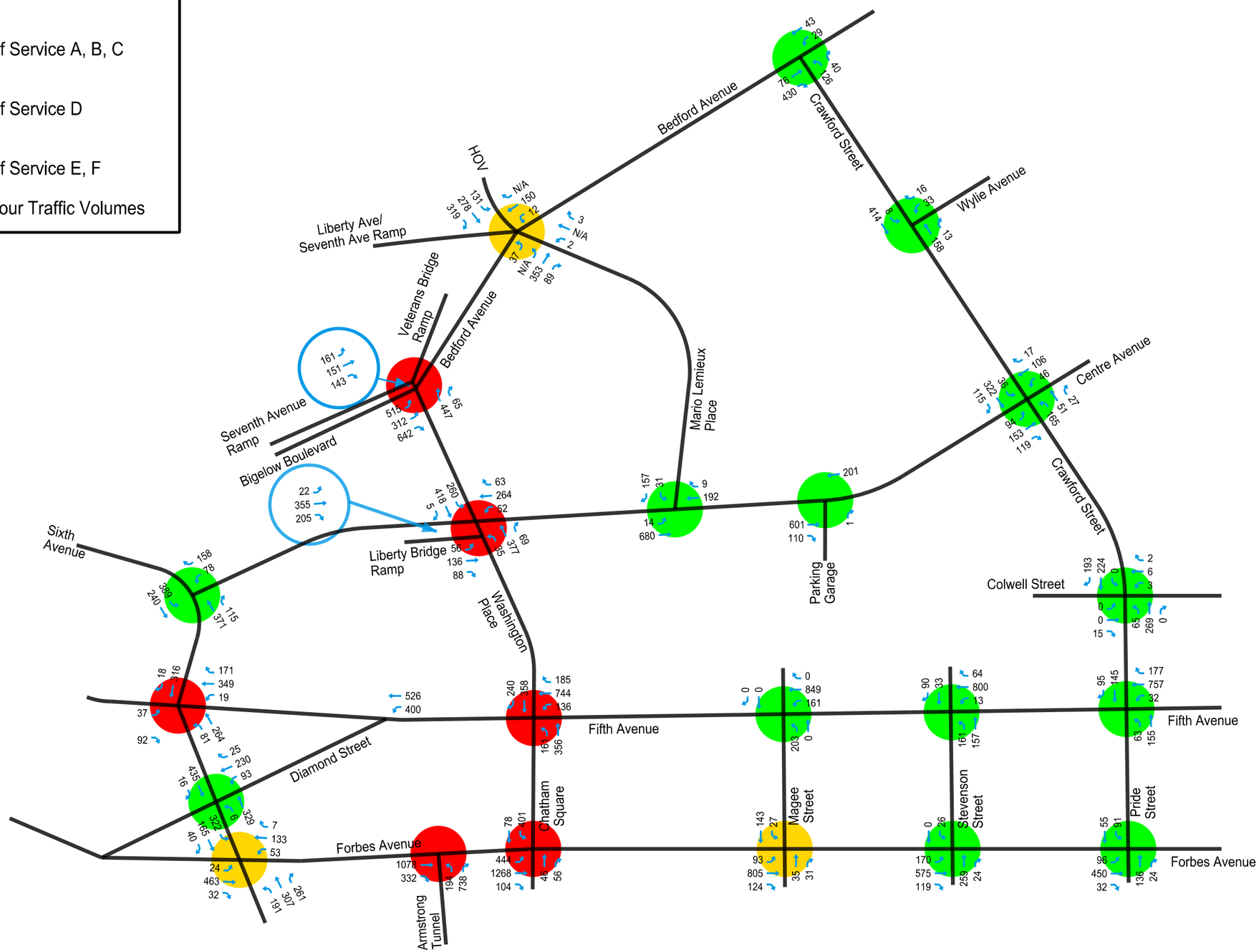
FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Centre Avenue Cross Section.dgn

PLOTTED: 12/10/2013

Legend

- Level of Service A, B, C
- Level of Service D
- Level of Service E, F
- 123 - Peak Hour Traffic Volumes

Note: N/A denotes movement is not applicable due to the inbound flow of the HOV lanes.



SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

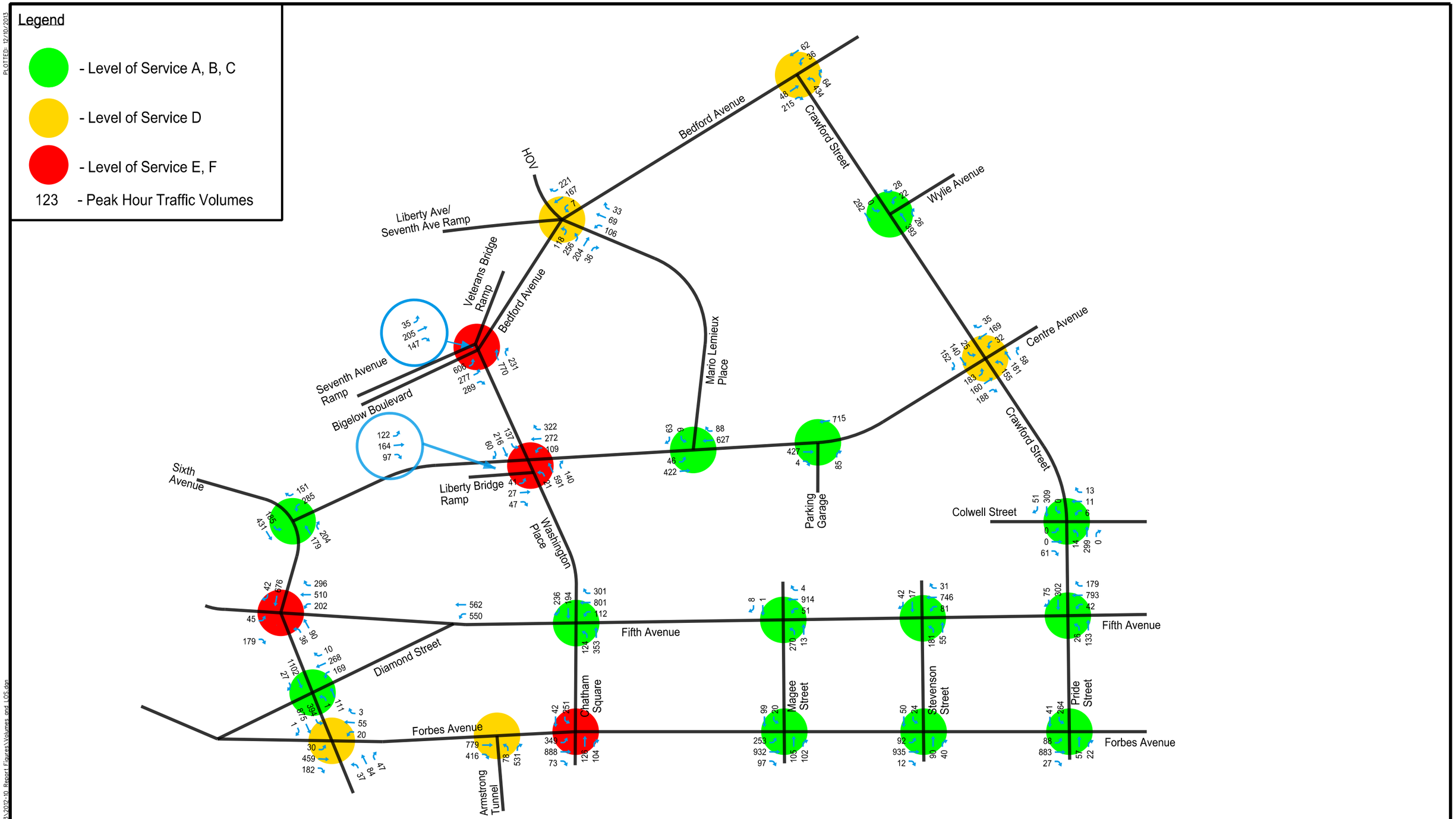
TITLE: 2011 Existing AM Peak Hour Traffic Volumes

FIGURE 8

D.B. CTZ
C.B. MDS
REV.

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn

PLOTTED: 12/10/2013



SCALE: N.T.S.

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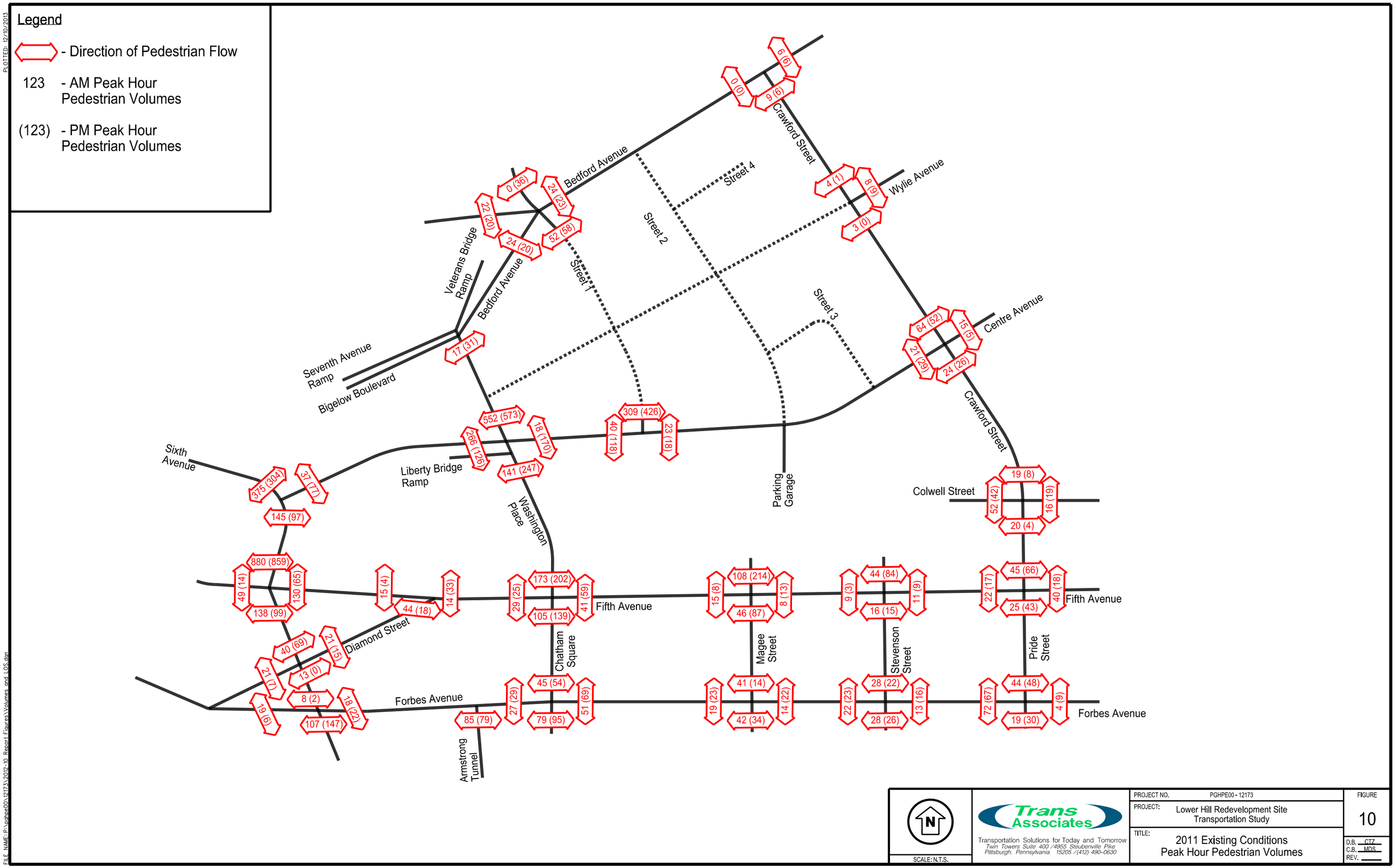
PROJECT NO.	PGHPE00 - 12173
PROJECT:	Lower Hill Redevelopment Site Transportation Study
TITLE:	2011 Existing PM Peak Hour Traffic Volumes
FIGURE	9
D.B.	CTZ
C.B.	MDS
REV.	

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn


Legend
- Direction of Pedestrian Flow
123 - AM Peak Hour Pedestrian Volumes
(123) - PM Peak Hour Pedestrian Volumes
Bedford Avenue
Crawford Street
Wylie Avenue
Centre Avenue
Veterans Bridge Ramp
Seventh Avenue Ramp
Bigelow Boulevard
Sixth Avenue
Liberty Bridge Ramp
Washington Place
Parking Garage
Colwell Street
Fifth Avenue
Diamond Street
Forbes Avenue
Armstrong Tunnel
Chatham Square
Magee Street
Stevenson Street
Pride Street
Street 1
Street 2
Street 3
Street 4
0 (36)
24 (23)
22 (20)
24 (20)
52 (58)
17 (31)
552 (573)
266 (126)
18 (170)
141 (247)
309 (426)
40 (118)
23 (18)
0 (0)
6 (6)
9 (6)
4 (1)
8 (9)
3 (0)
64 (52)
15 (5)
21 (29)
24 (26)
375 (304)
37 (71)
145 (97)
880 (859)
49 (14)
130 (65)
138 (99)
15 (4)
44 (18)
14 (33)
29 (25)
173 (202)
105 (139)
41 (59)
15 (8)
108 (214)
46 (87)
8 (13)
9 (3)
44 (84)
16 (15)
11 (9)
22 (17)
45 (66)
25 (43)
40 (18)
19 (8)
52 (42)
16 (19)
20 (4)
40 (69)
21 (15)
21 (7)
13 (0)
8 (2)
19 (6)
107 (147)
18 (22)
85 (79)
27 (29)
45 (54)
79 (95)
51 (69)
19 (23)
41 (14)
42 (34)
14 (22)
22 (23)
28 (22)
28 (26)
13 (16)
72 (67)
44 (48)
19 (30)
4 (9)
N
SCALE: N.T.S.
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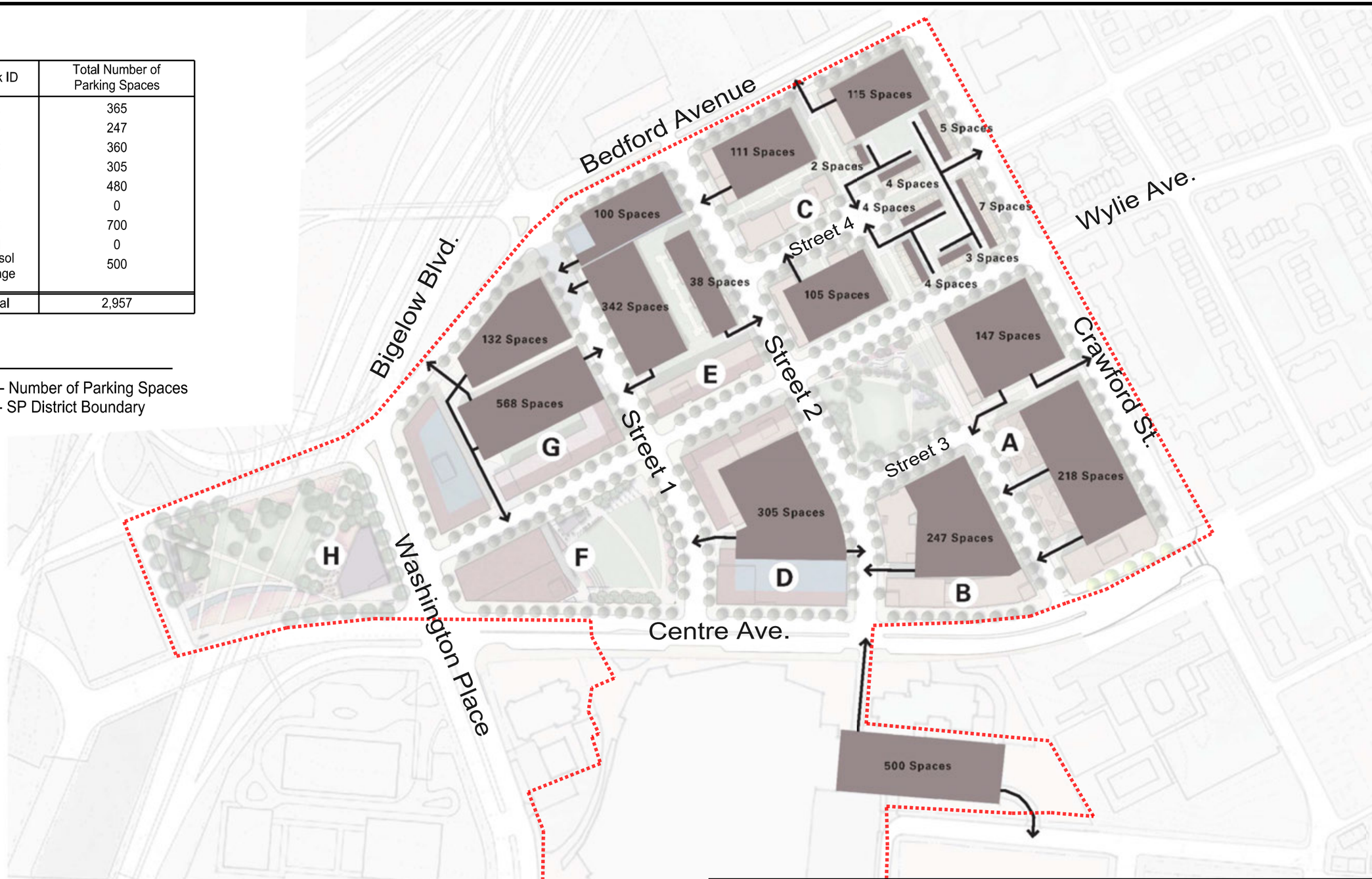
PROJECT NO. PGHPE00 - 12173
PROJECT: Lower Hill Redevelopment Site Transportation Study
TITLE: 2011 Existing Conditions Peak Hour Pedestrian Volumes
FIGURE 10
D.B. CTZ
C.B. MDS
REV.
PLOTTED: 12/10/2013
File NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn

Block ID	Total Number of Parking Spaces
A	365
B	247
C	360
D	305
E	480
F	0
G	700
H	0
Consol Garage	500
Total	2,957

Legend

20 - Number of Parking Spaces

- - - - - - - - - SP District Boundary



Source: Urban Design Associates

SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

TITLE: Proposed Master Plan Parking Locations

FIGURE 11

D.B. ctz
C.B. caj
REV.

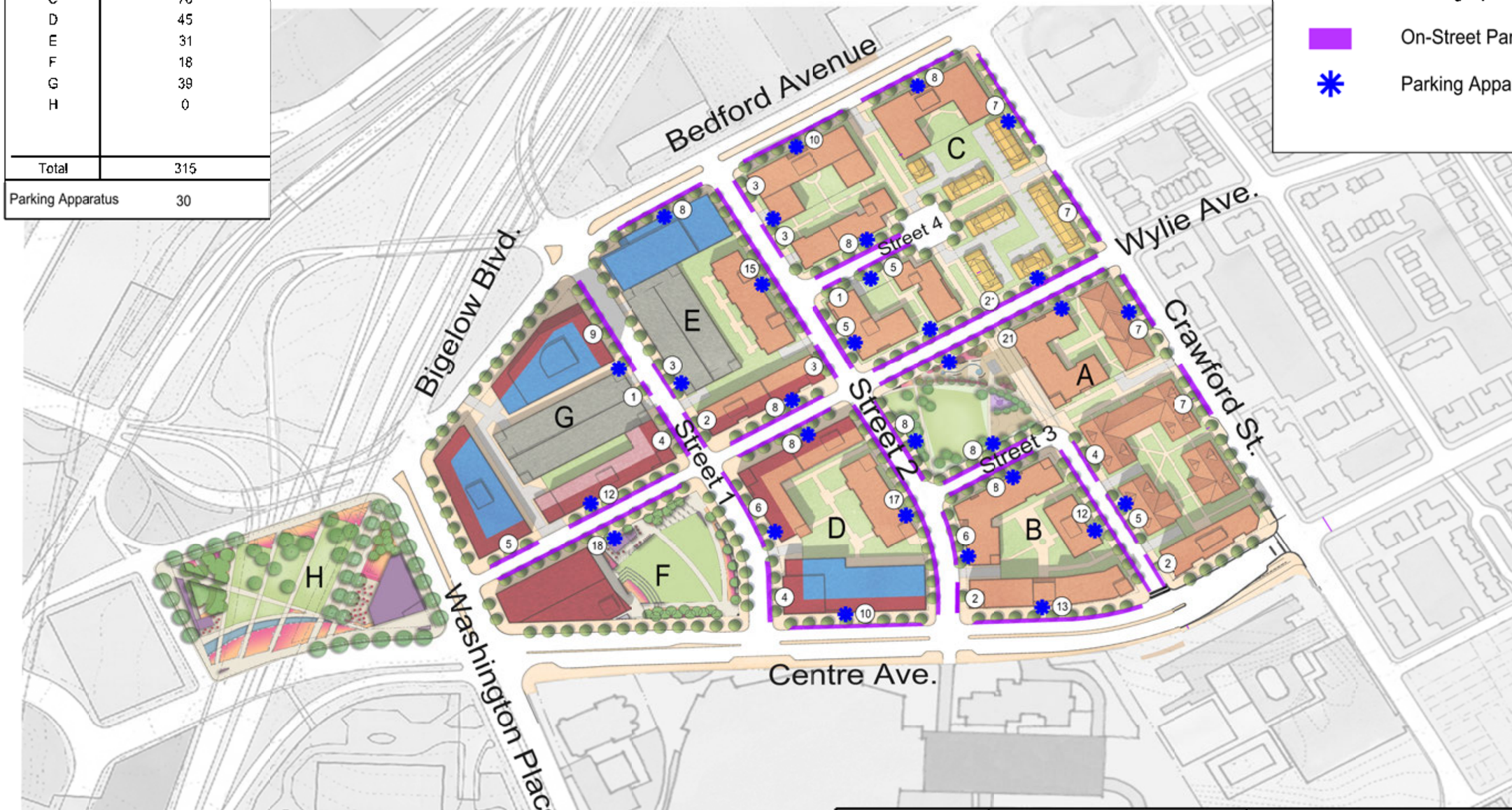
PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Parking Figures.dgn

Block ID	Total On-Street Parking Spaces Available
A	63
B	41
C	78
D	45
E	31
F	18
G	39
H	0
Total	315
Parking Apparatus	30

LEGEND

- (5) Number of On-Street Parking Spaces Available
- On-Street Parking Locations
- Parking Apparatus Locations



SCALE: 1" = 100'

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

TITLE: On-Street Parking Locations

FIGURE 12

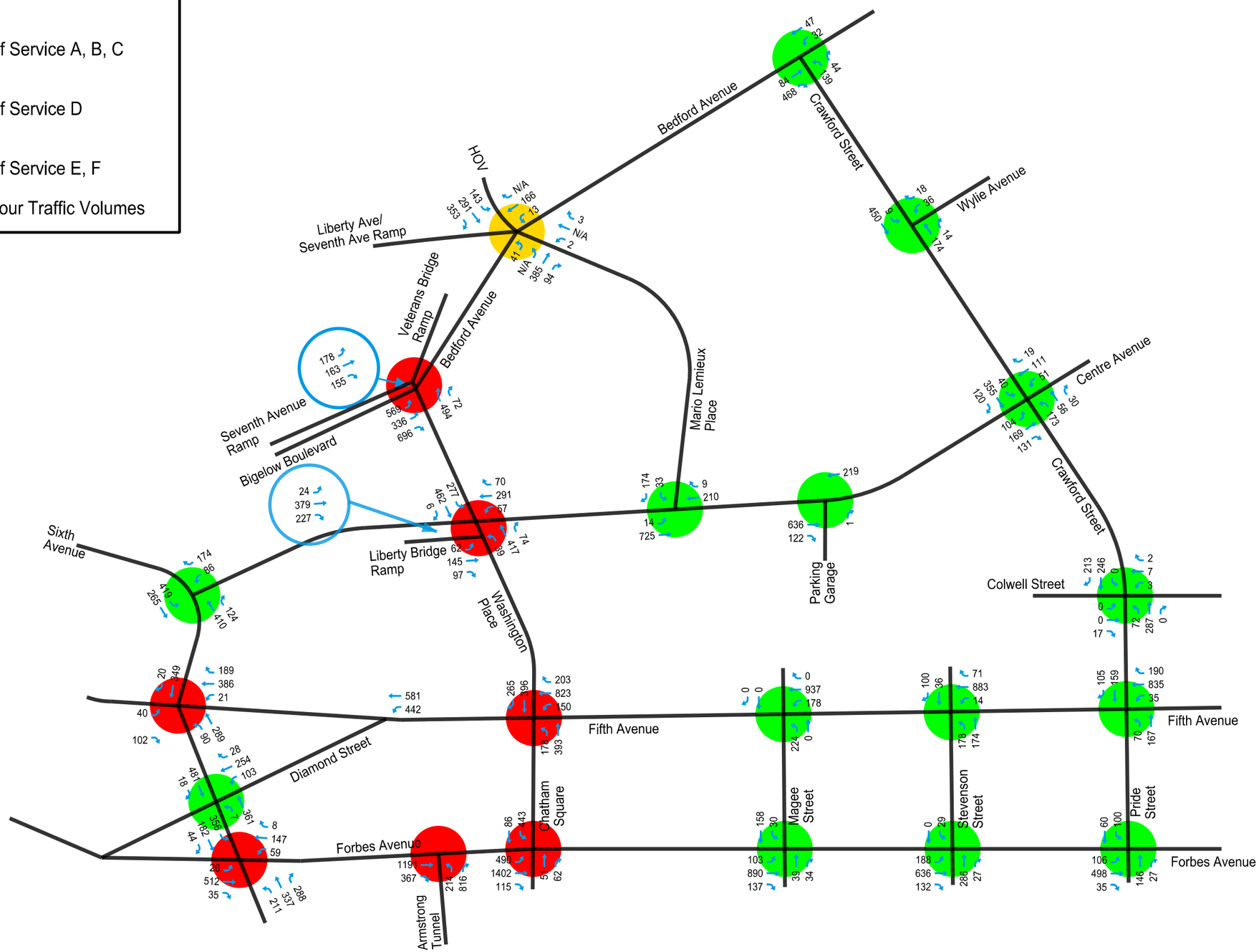
D.B. ___
C.B. ___
REV. ___

PLOTTED: 12/10/2013

Legend

- Level of Service A, B, C
- Level of Service D
- Level of Service E, F
- 123 - Peak Hour Traffic Volumes

Note: N/A denotes movement is not applicable due to the inbound flow of the HOV lanes.



SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

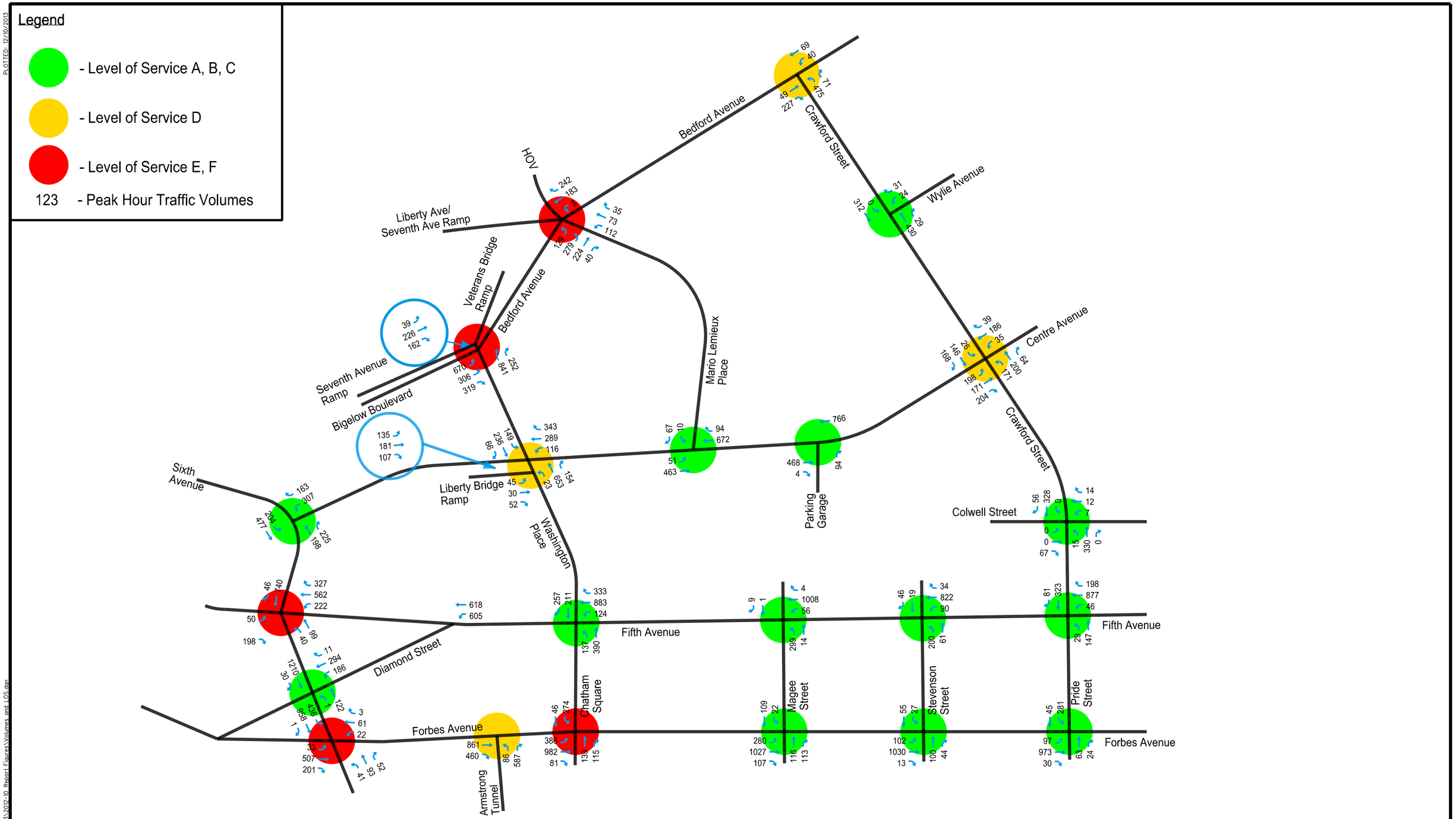
PROJECT: Lower Hill Redevelopment Site
Transportation Study

TITLE: 2022 Base AM
Peak Hour Traffic Volumes

FIGURE 13

D.B. CTZ
C.B. MDS
REV.

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn



SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site
Transportation Study

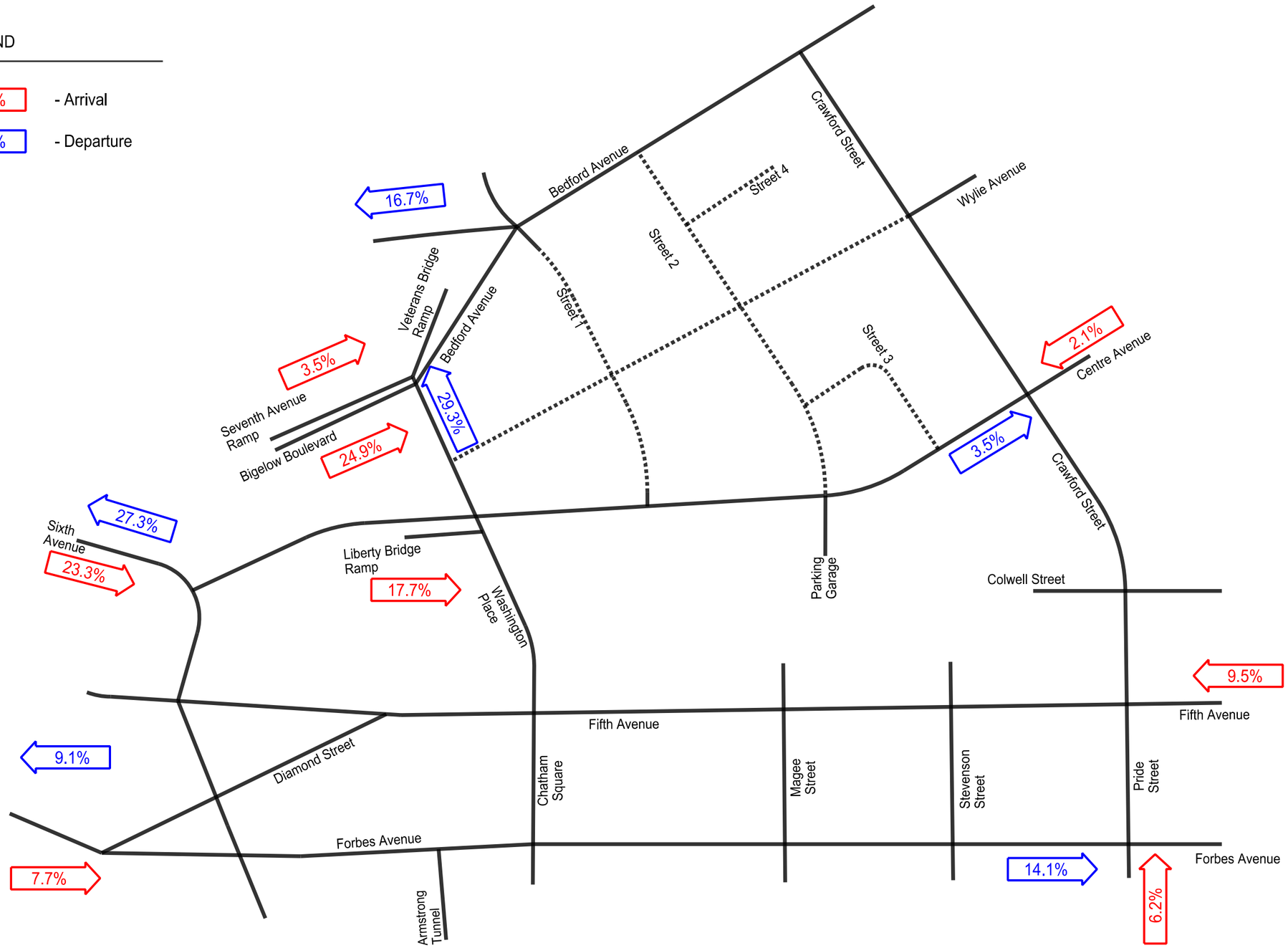
TITLE: 2022 Base PM
Peak Hour Traffic Volumes

FIGURE 14

D.B. CTZ
C.B. MDS
REV.

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn



N

SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

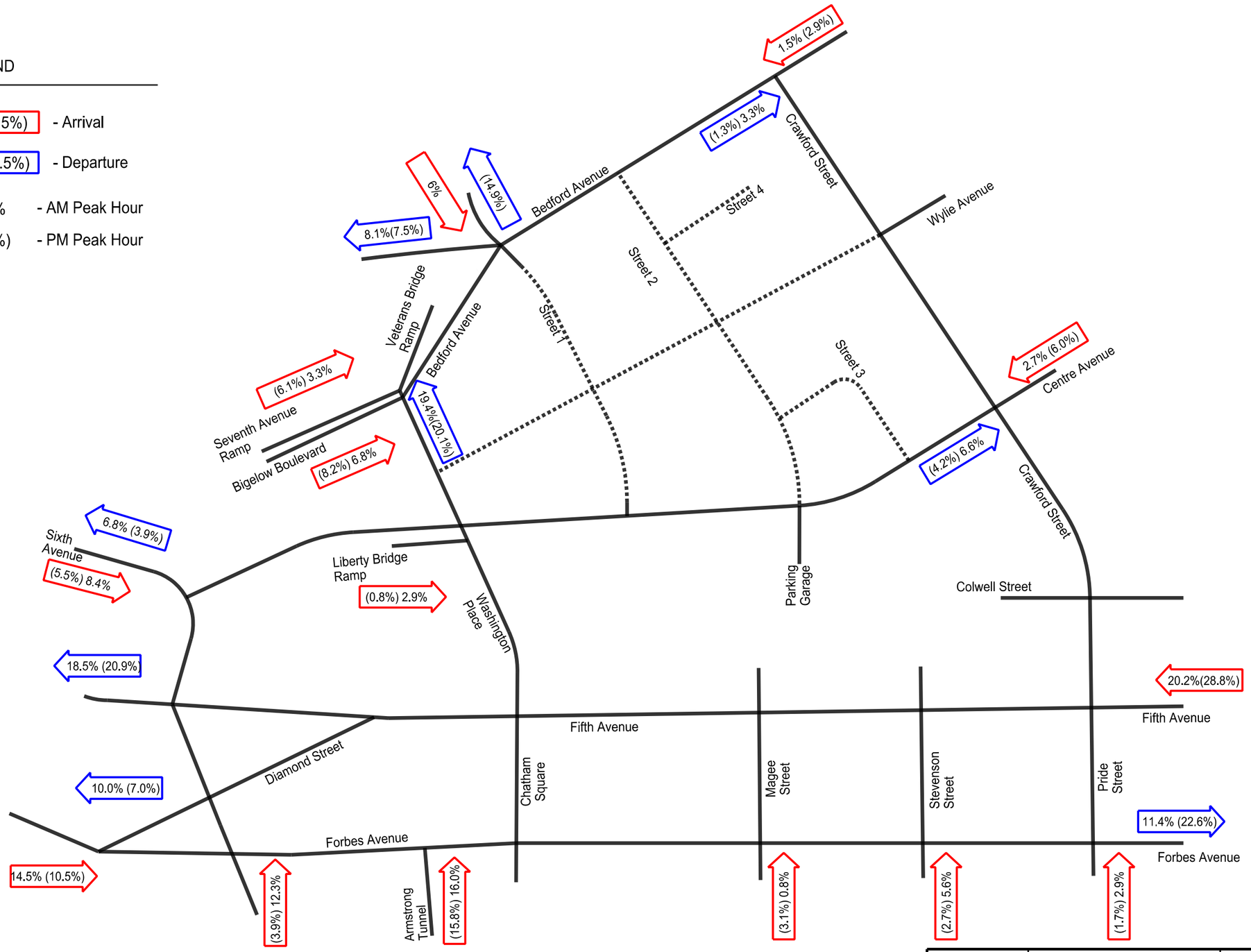
TITLE: Residential Trip Distribution Percentages

FIGURE 15

D.B. CTZ
C.B. MDS
REV.

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn



SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

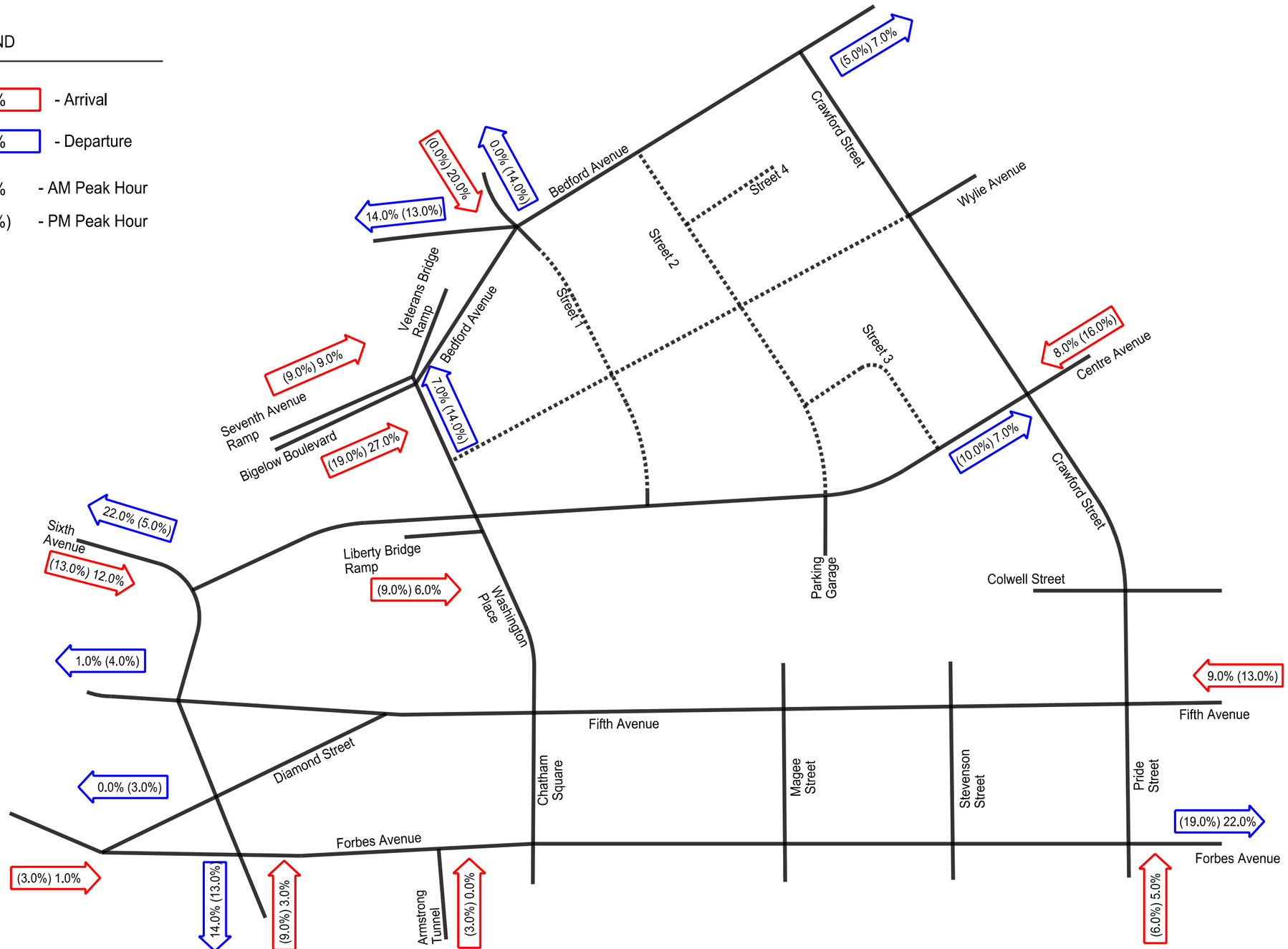
TITLE: Retail/Office/Hotel Trip Distribution Percentages

FIGURE 16

D.B. CTZ
C.B. MDS
REV.

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn



SCALE: N.T.S.

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PROJECT: Lower Hill Redevelopment Site Transportation Study

TITLE: Commuter Trip Distribution Percentages

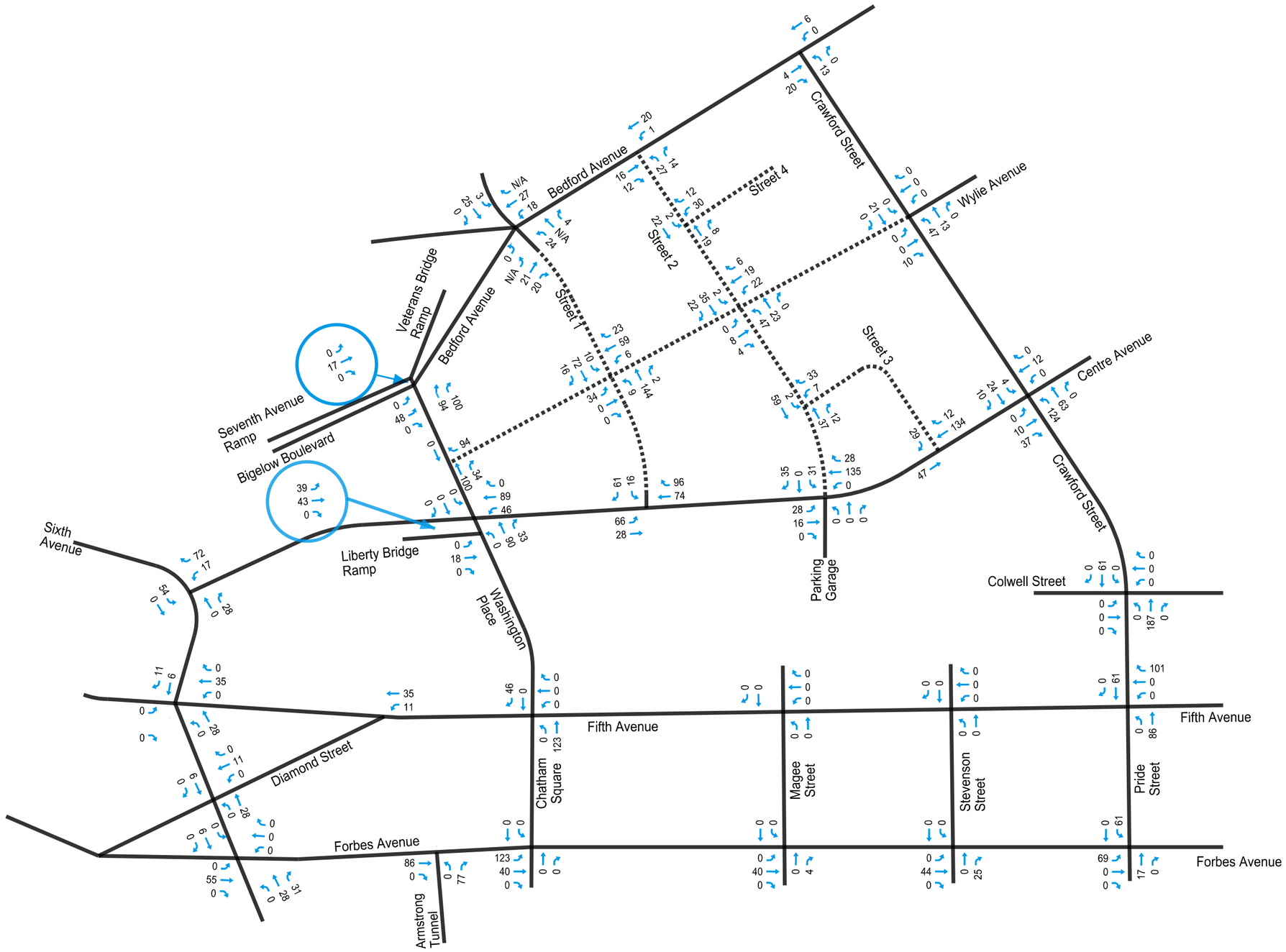
FIGURE 17

D.B. CTZ
C.B. MDS
REV.

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn

Note: N/A denotes movement is not applicable due to the inbound flow of the HOV lanes.



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SCALE: N.T.S.

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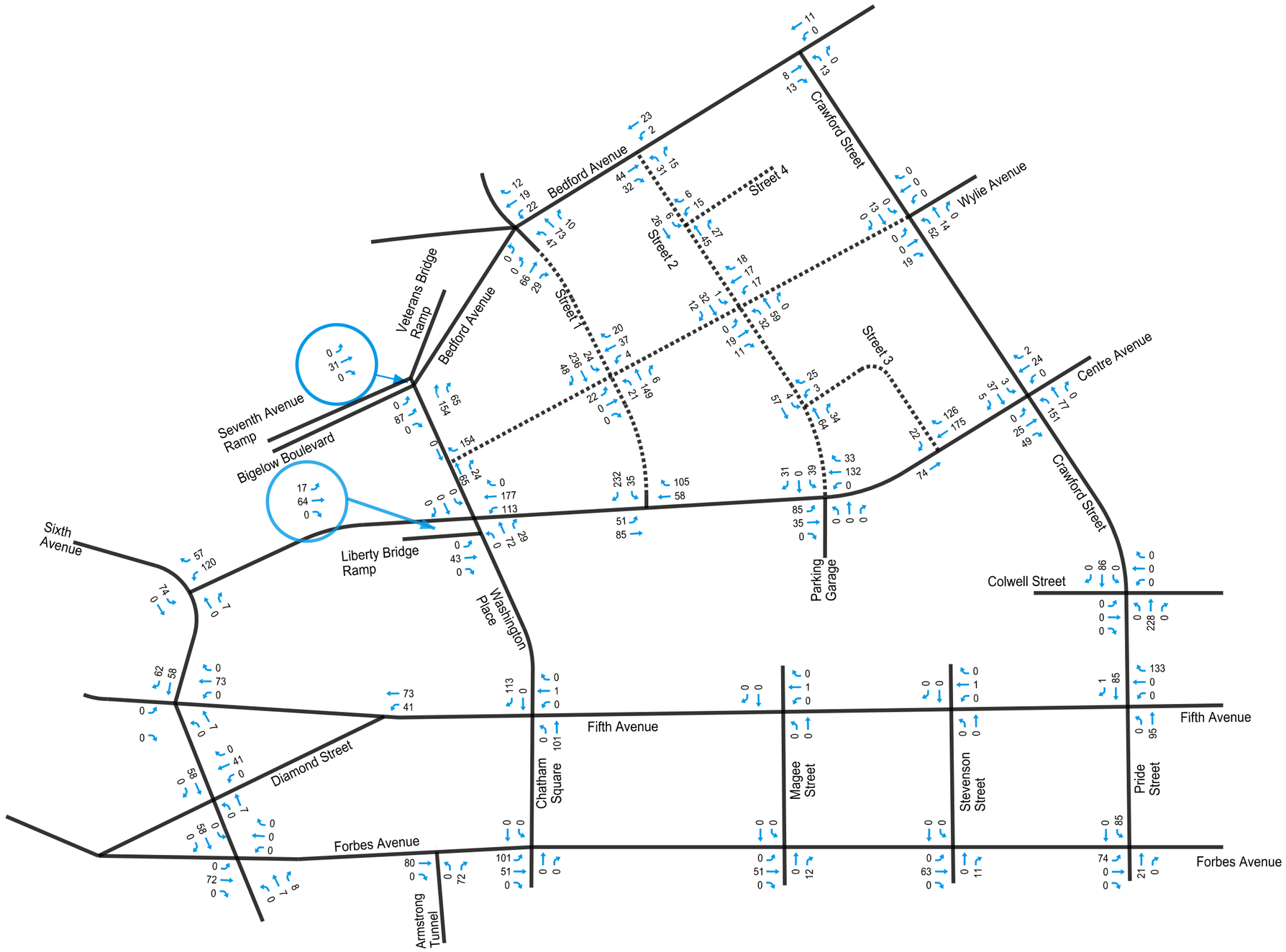
PROJECT NO.	PGHPE00 - 12173
PROJECT:	Lower Hill Redevelopment Site Transportation Study
TITLE:	Site Generated AM Peak Hour Traffic Volumes
FIGURE	18
D.B.	CTZ
C.B.	MDS
REV.	

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn



N

SCALE: N.T.S.

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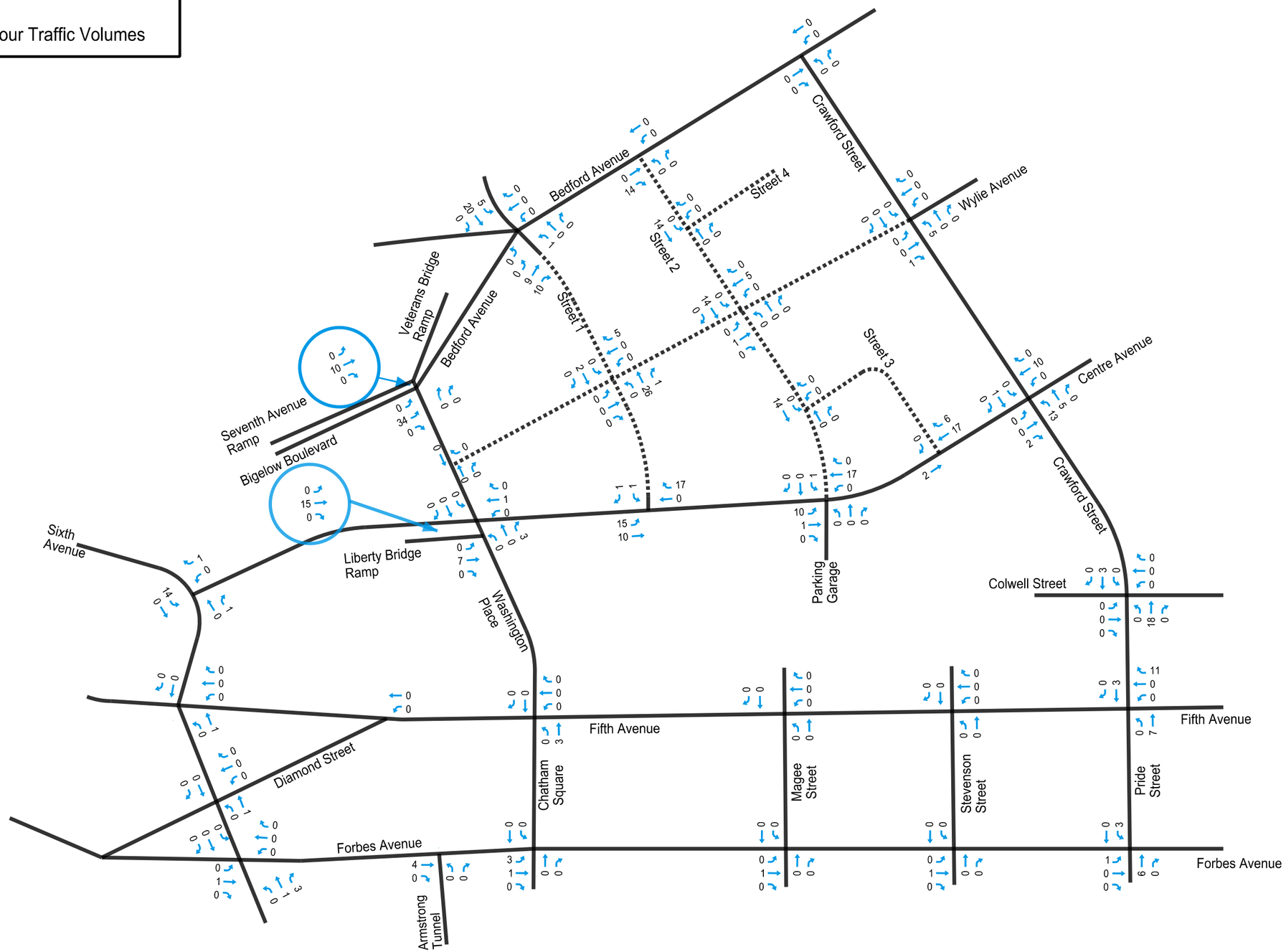
PROJECT NO.	PGHPE00 - 12173
PROJECT:	Lower Hill Redevelopment Site Transportation Study
TITLE:	Site Generated PM Peak Hour Traffic Volumes
FIGURE	19
D.B.	CTZ
C.B.	MDS
REV.	

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn

Legend

123 - Peak Hour Traffic Volumes



SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

TITLE: AM Peak Hour Commuter Traffic Volumes

FIGURE 20

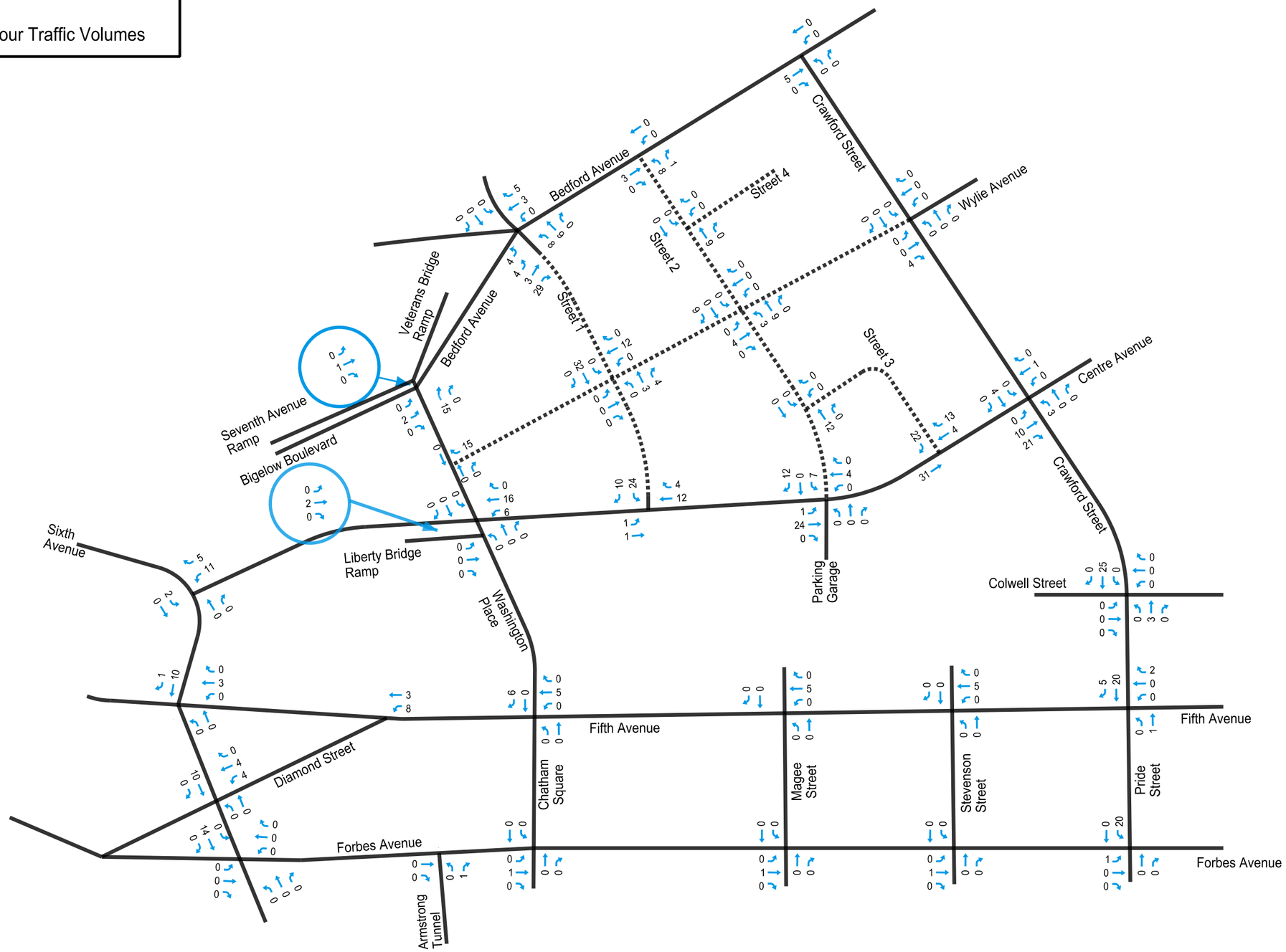
D.B. CTZ
C.B. MDS
REV.

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn

Legend

123 - Peak Hour Traffic Volumes



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SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

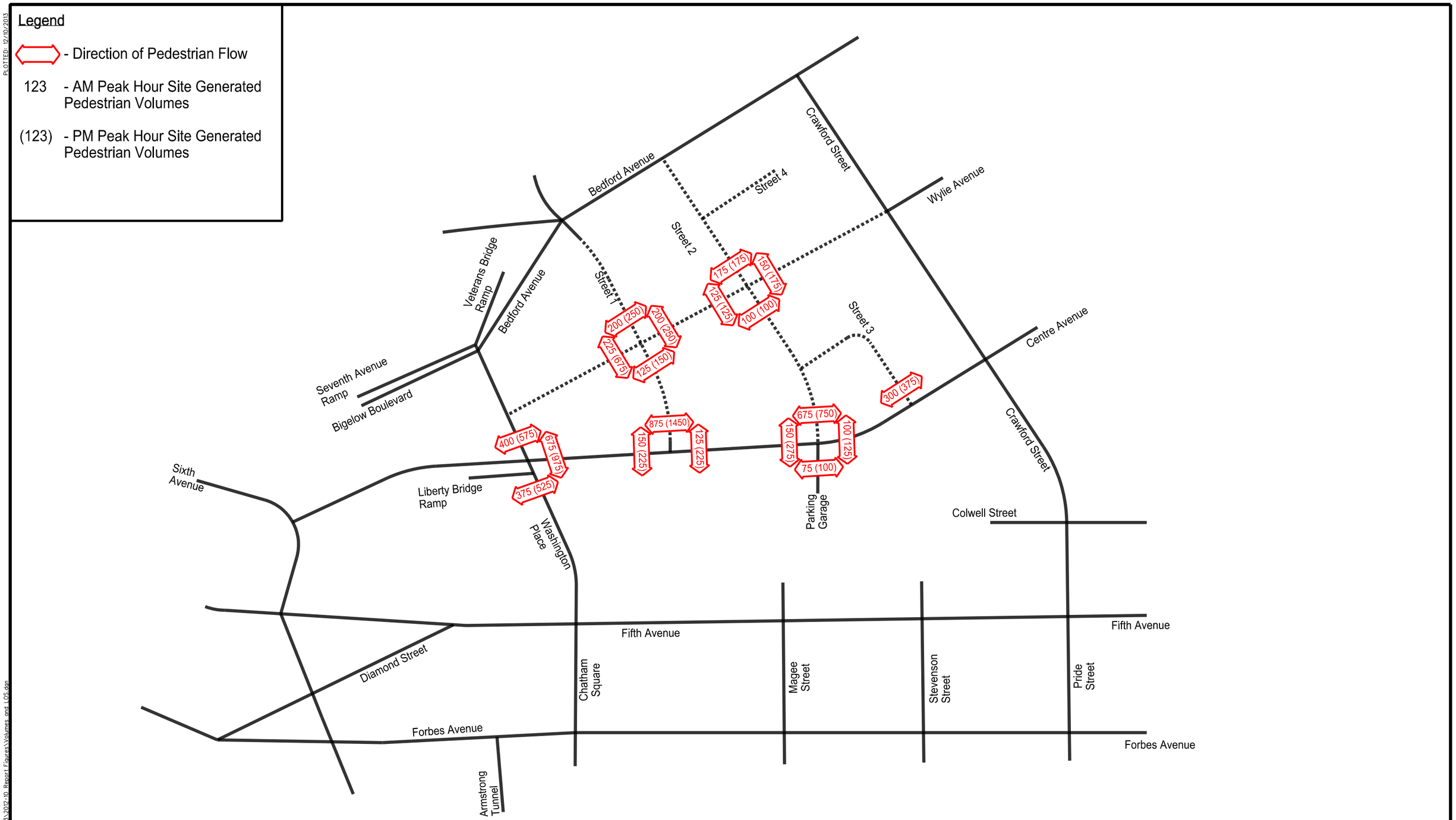
TITLE: PM Peak Hour Commuter Traffic Volumes

FIGURE 21

D.B. CTZ
C.B. MDS
REV.

PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn


Legend
- Direction of Pedestrian Flow
123 - AM Peak Hour Site Generated Pedestrian Volumes
(123) - PM Peak Hour Site Generated Pedestrian Volumes
Bedford Avenue
Crawford Street
Wylie Avenue
Street 4
Street 2
Street 1
Street 3
Veterans Bridge Ramp
Bedford Avenue
Seventh Avenue Ramp
Bigelow Boulevard
Centre Avenue
Crawford Street
Sixth Avenue
Liberty Bridge Ramp
Washington Place
Parking Garage
Colwell Street
Fifth Avenue
Fifth Avenue
Diamond Street
Chatham Square
Magee Street
Stevenson Street
Pride Street
Forbes Avenue
Forbes Avenue
Armstrong Tunnel
200 (250)
200 (250)
225 (675)
125 (150)
175 (175)
150 (175)
125 (125)
100 (100)
300 (375)
400 (575)
675 (975)
375 (525)
875 (1450)
150 (225)
125 (225)
675 (750)
150 (275)
100 (125)
75 (100)
N
SCALE: N.T.S.
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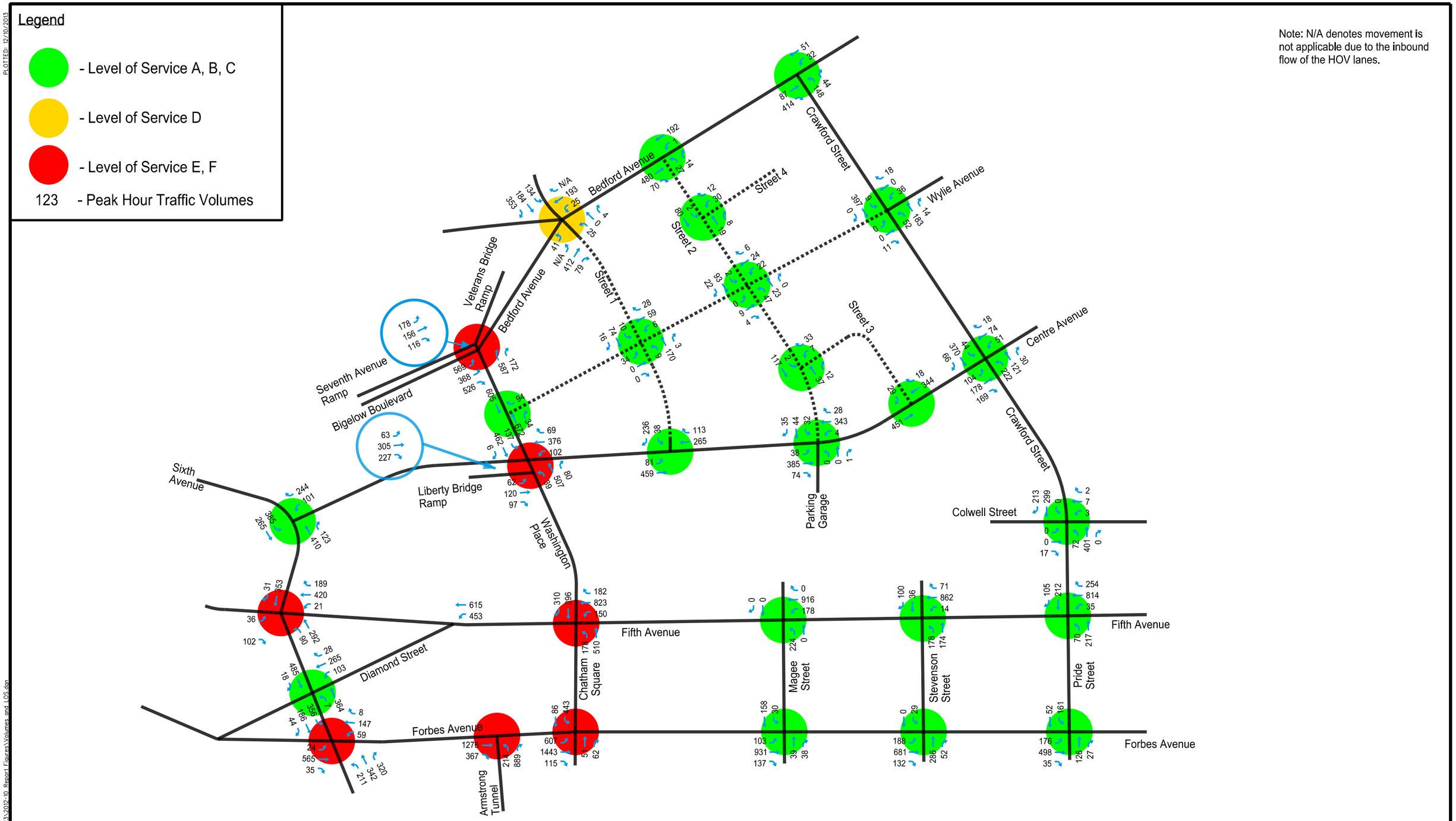
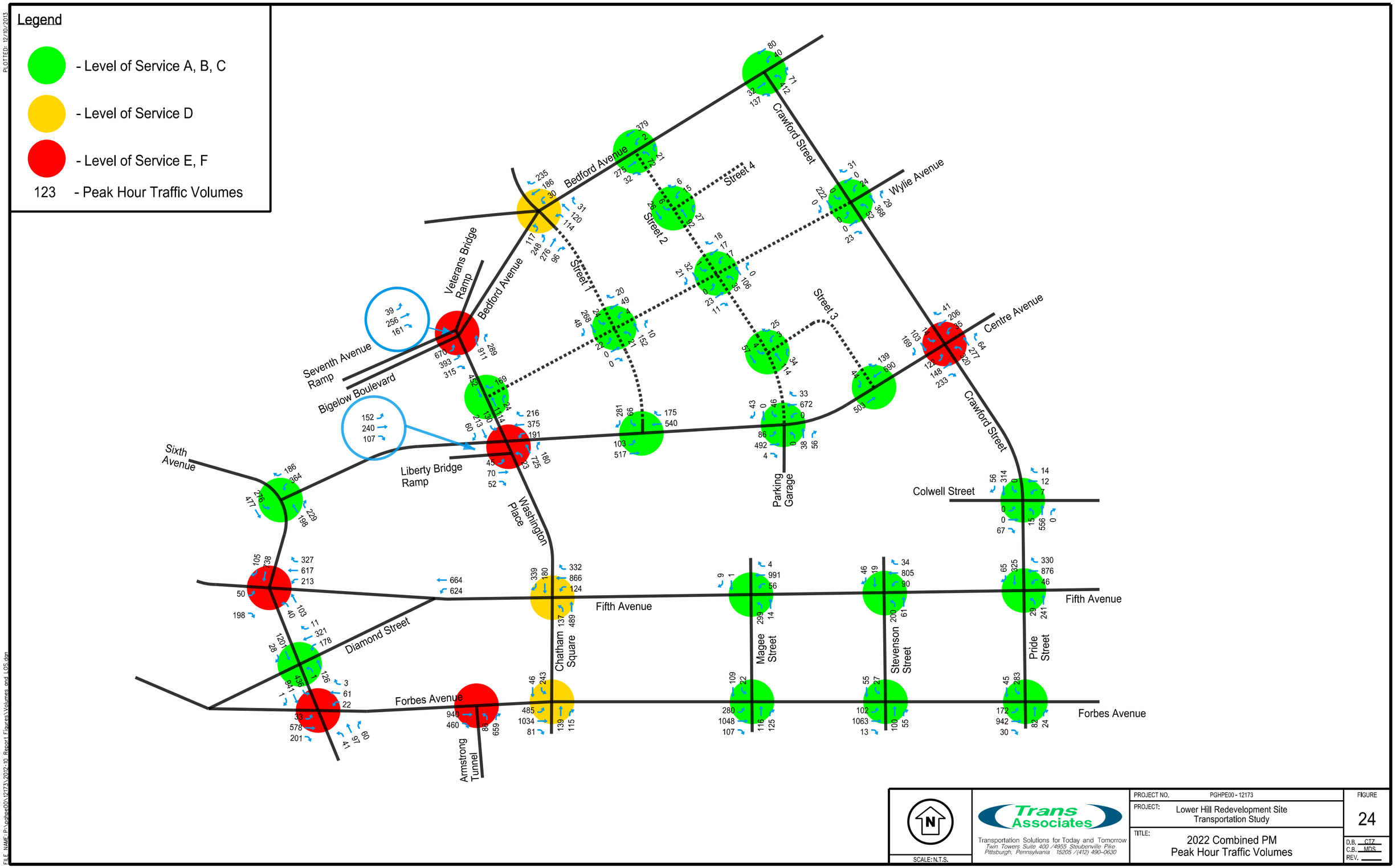
PROJECT NO. PGHPE00 - 12173
PROJECT: Lower Hill Redevelopment Site Transportation Study
TITLE: Site Generated Peak Hour Pedestrian Volumes
FIGURE
22
D.B. CTZ
C.B. MDS
REV.
PLOTTED: 12/10/2013
FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn



PLOTTED: 12/10/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes_and_LOS.dgn


Legend
- Level of Service A, B, C
- Level of Service D
- Level of Service E, F
123 - Peak Hour Traffic Volumes
Bedford Avenue
Crawford Street
Wylie Avenue
Centre Avenue
Veterans Bridge Ramp
Seventh Avenue Ramp
Bigelow Boulevard
Sixth Avenue
Liberty Bridge Ramp
Washington Place
Parking Garage
Colwell Street
Fifth Avenue
Diamond Street
Forbes Avenue
Armstrong Tunnel
Chatham Square
Magee Street
Stevenson Street
Pride Street
Street 1
Street 2
Street 3
Street 4
SCALE: N.T.S.
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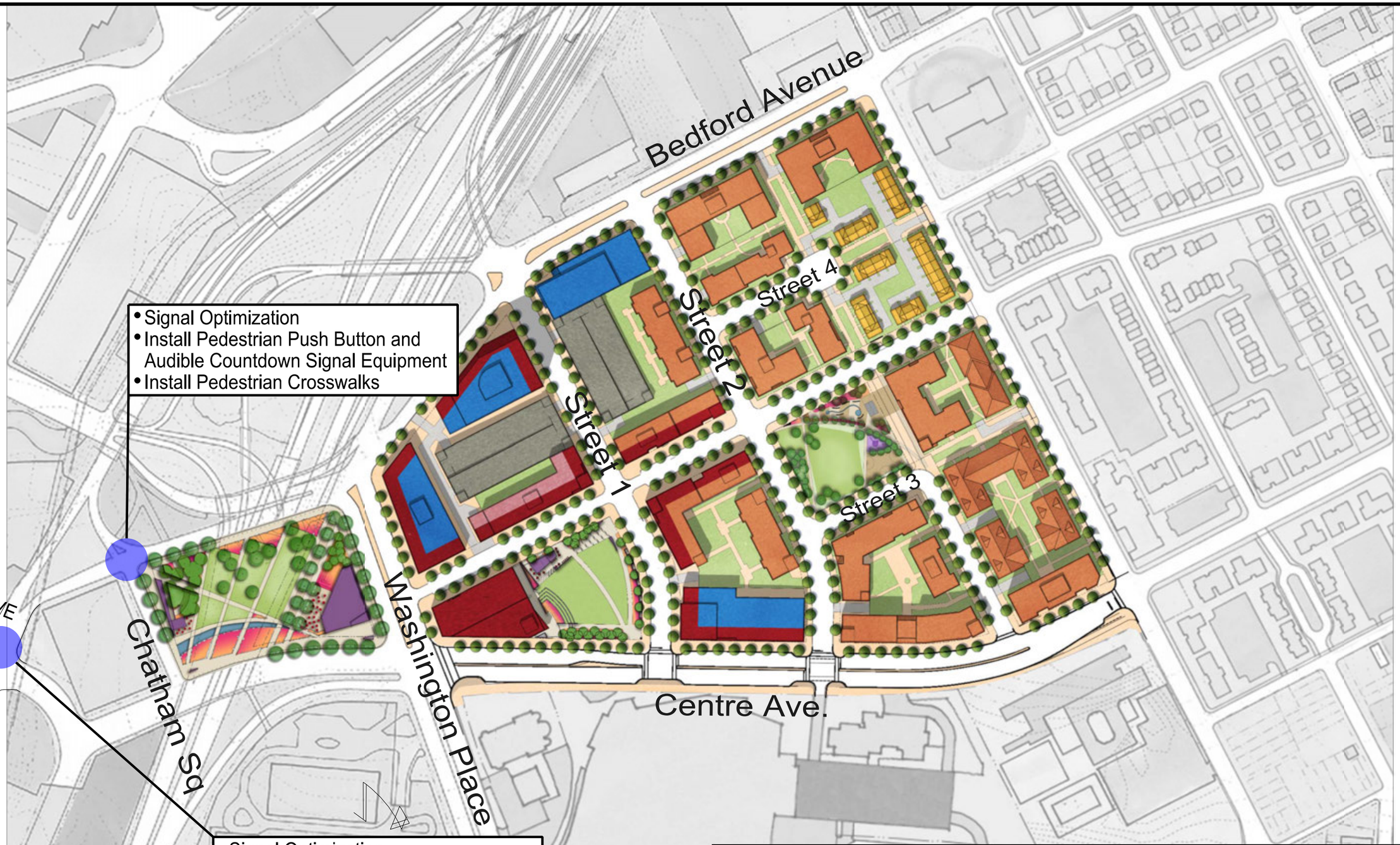
PROJECT NO. PGHPE00 - 12173
PROJECT: Lower Hill Redevelopment Site Transportation Study
TITLE: 2022 Combined PM Peak Hour Traffic Volumes
FIGURE 24
D.B. CTZ
C.B. MDS
REV.
PLOTTED: 12/10/2013
FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Volumes and LOS.dgn



SCALE: N.T.S.

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Twin Towers Suite 400 / 4955 Steubenville Pike
Pittsburgh, Pennsylvania 15205 / (412) 490-0630

PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

TITLE: Off-Site Pedestrian Improvements

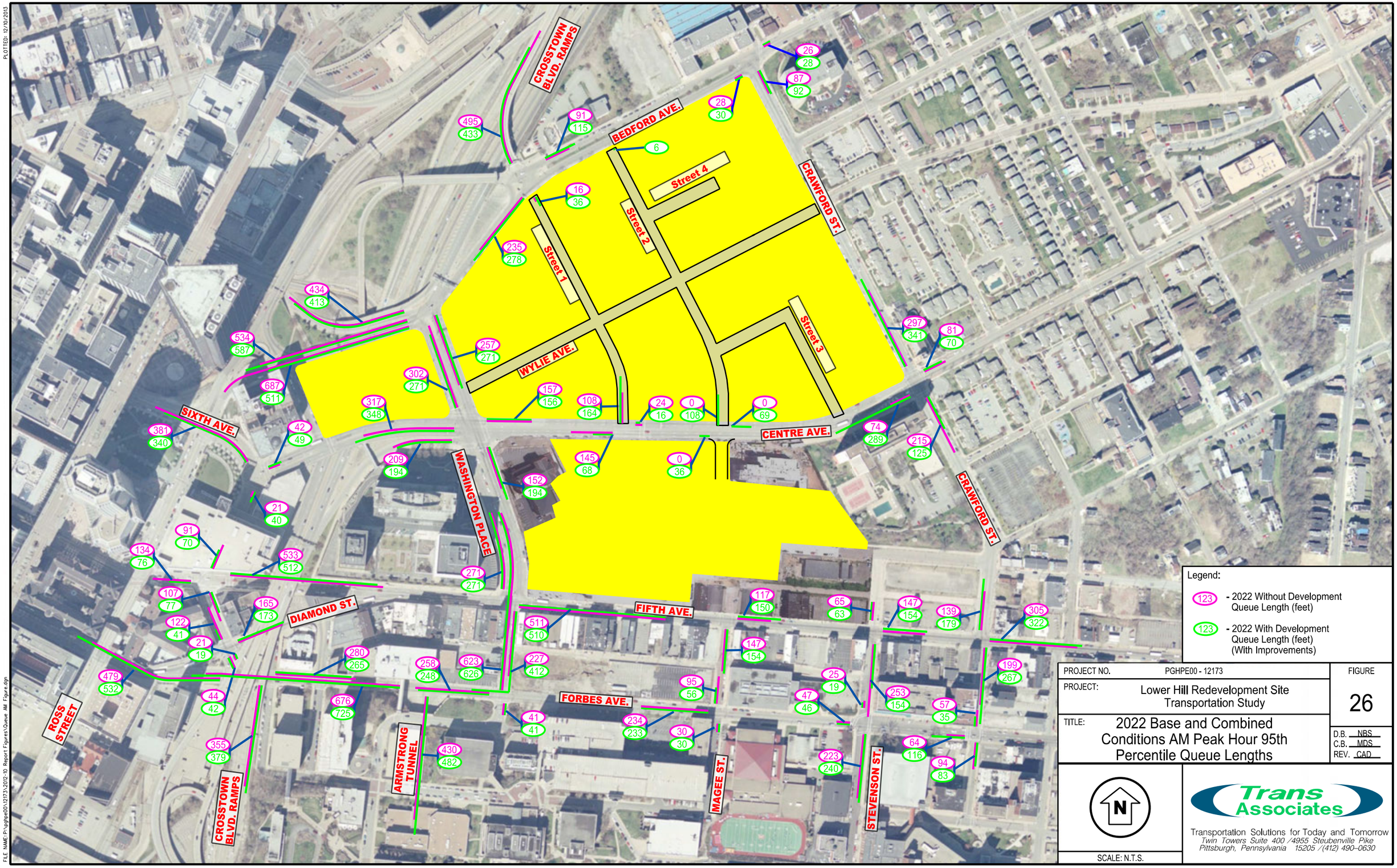
FIGURE 25

D.B. nbs
C.B. mds
REV.

PLOTTED: 12/10/2013

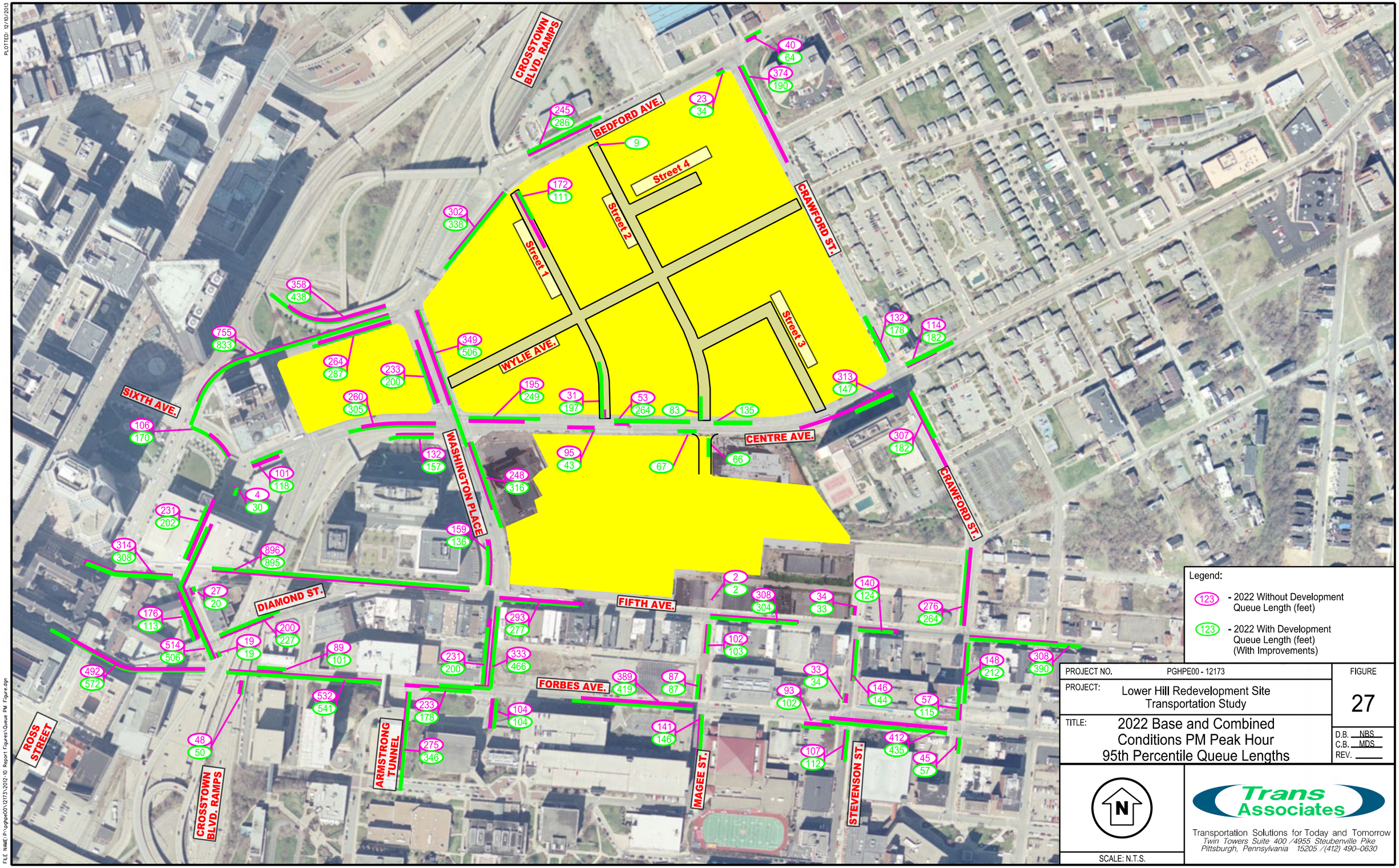
FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Off-Site Ped Improvements.dgn

PLOTTED: 12/10/2013



FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Queue AM Figure.dgn

PLOTTED: 12/10/2013



Legend:

123 - 2022 Without Development Queue Length (feet)

123 - 2022 With Development Queue Length (feet) (With Improvements)

PROJECT NO.	PGHPE00 - 12173	FIGURE
PROJECT:	Lower Hill Redevelopment Site Transportation Study	27
TITLE:	2022 Base and Combined Conditions PM Peak Hour 95th Percentile Queue Lengths	D.B. NBS C.B. MDS REV.

N

SCALE: N.T.S.

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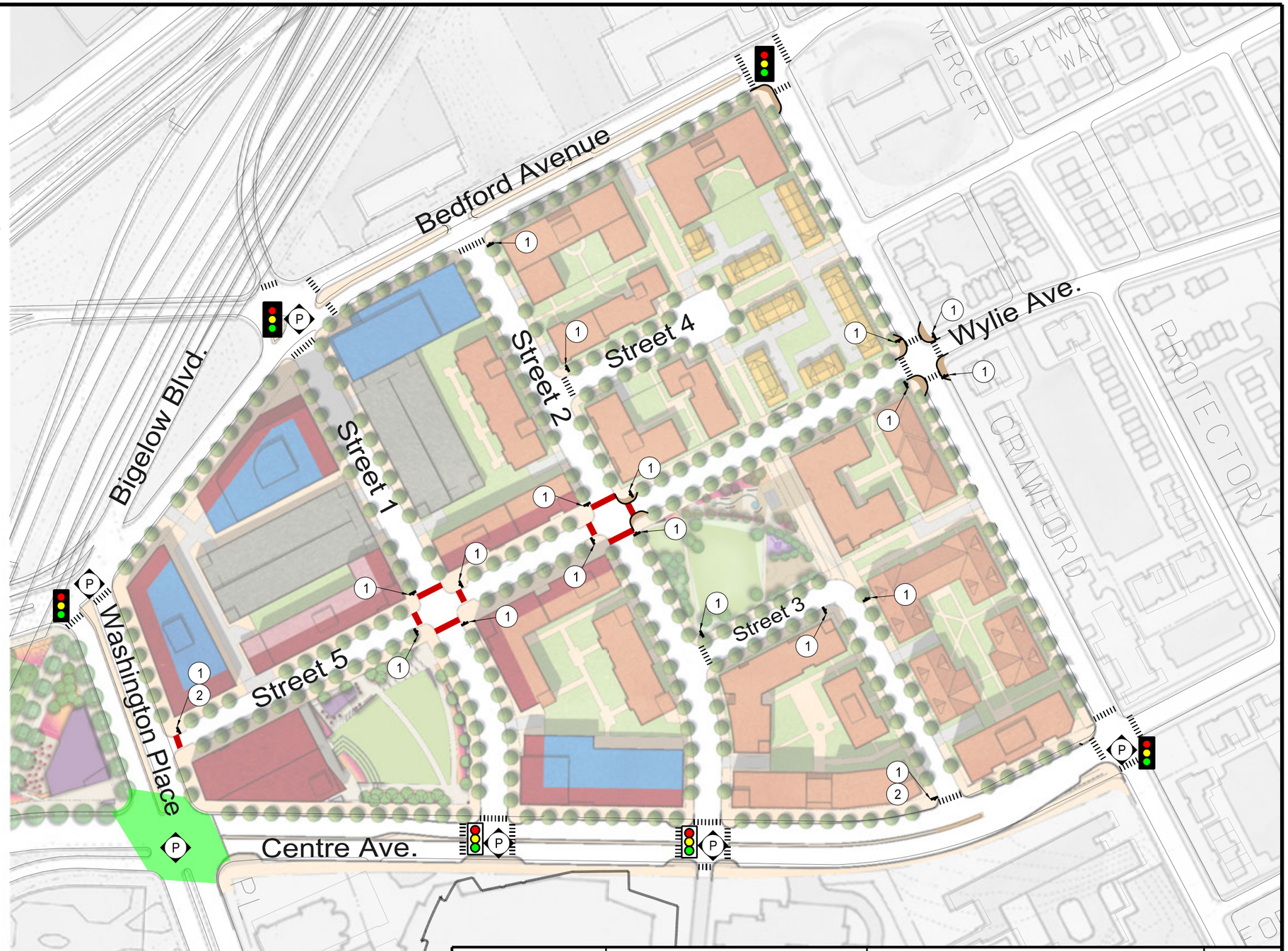
FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Queue PM Figure.dgn

LEGEND

- Install Traffic Signal Control
- Modify Traffic Signal Control/ Optimize Traffic Signal Timings
- Install "Piano Key" Style Crosswalk
- Install Brick Paver Crosswalk
- Install Audible Pedestrian Signal Equipment
- 1
- 2
- Intersection Improvements to be Completed by CBD Signal Project



SCALE: N.T.S.

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PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Master Plan Transportation Study

TITLE: Traffic and Pedestrian Control Improvements

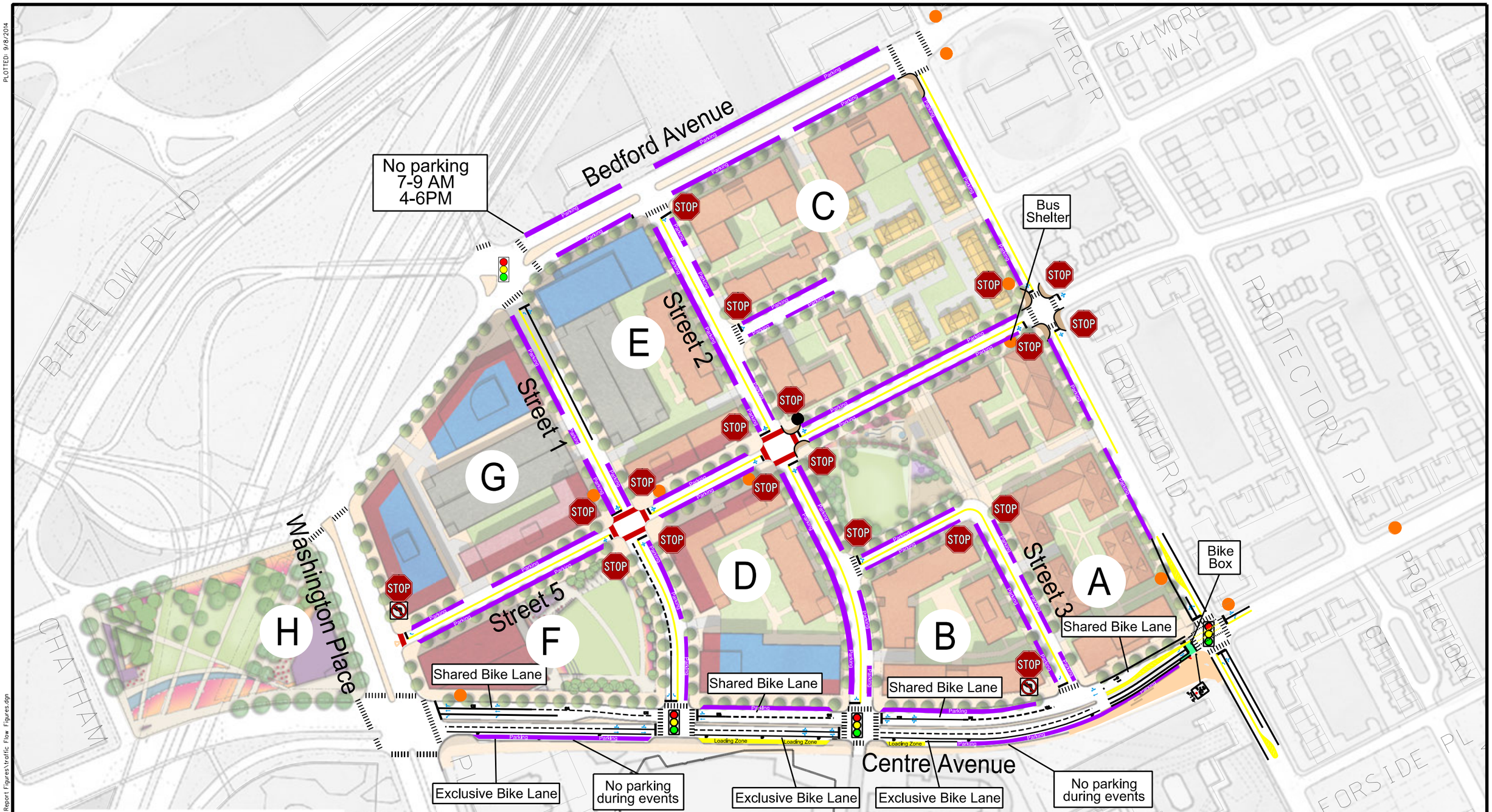
FIGURE 28

D.B. nbs
C.B. mds
REV. cad

PLOTTED: 9/8/2014

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Traffic and Pedestrian Control Improvements.dgn

PLOTTED: 9/8/2014



Legend

- Bus Stop
- Alt. Bus Stop

N

SCALE: N.T.S.

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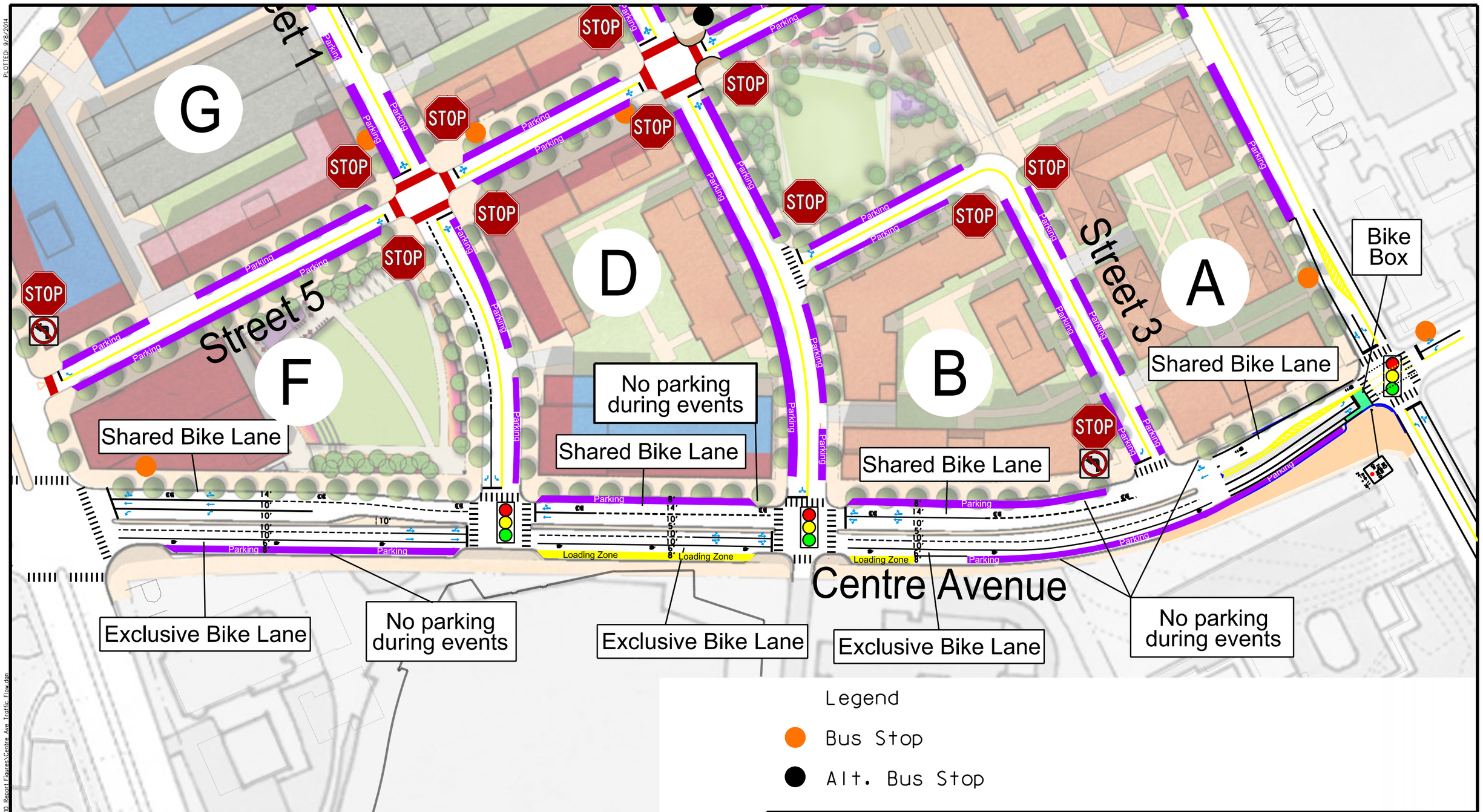
PROJECT NO.	PGHPE00 - 12173
PROJECT:	Lower Hill Redevelopment Site Transportation Study
TITLE:	Recommended Improvements
FIGURE	29
D.B.	CTZ
C.B.	MDS
REV.	cad

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Traffic Flow Figures.dgn



N

SCALE: N.T.S.

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Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

TITLE: Centre Avenue Roadway Configuration and Recommended Improvements

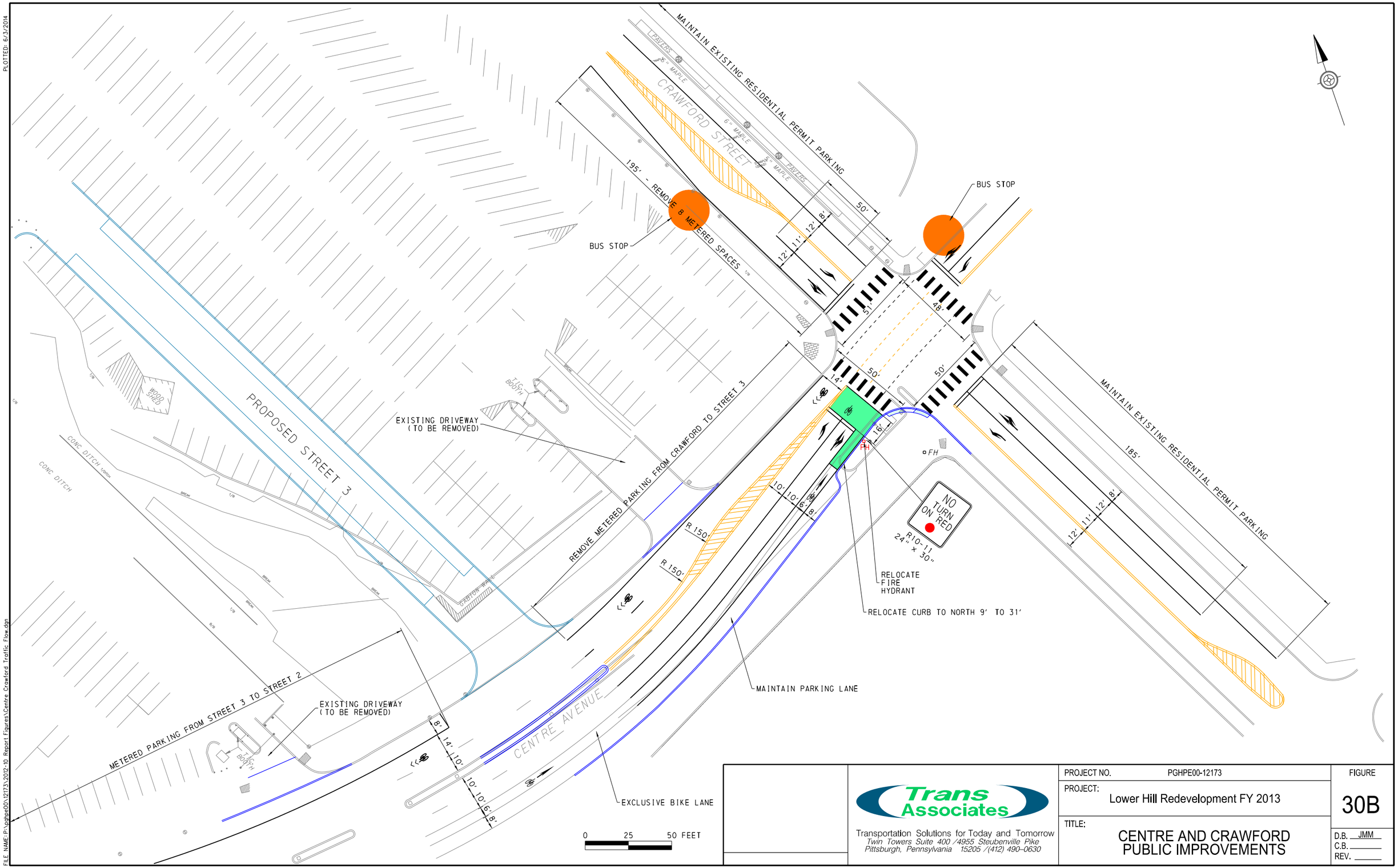
FIGURE 30A

D.B. CTZ
C.B. MDS
REV. cad

PLOTTED: 9/8/2014

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Centre Ave Traffic Flow.dgn

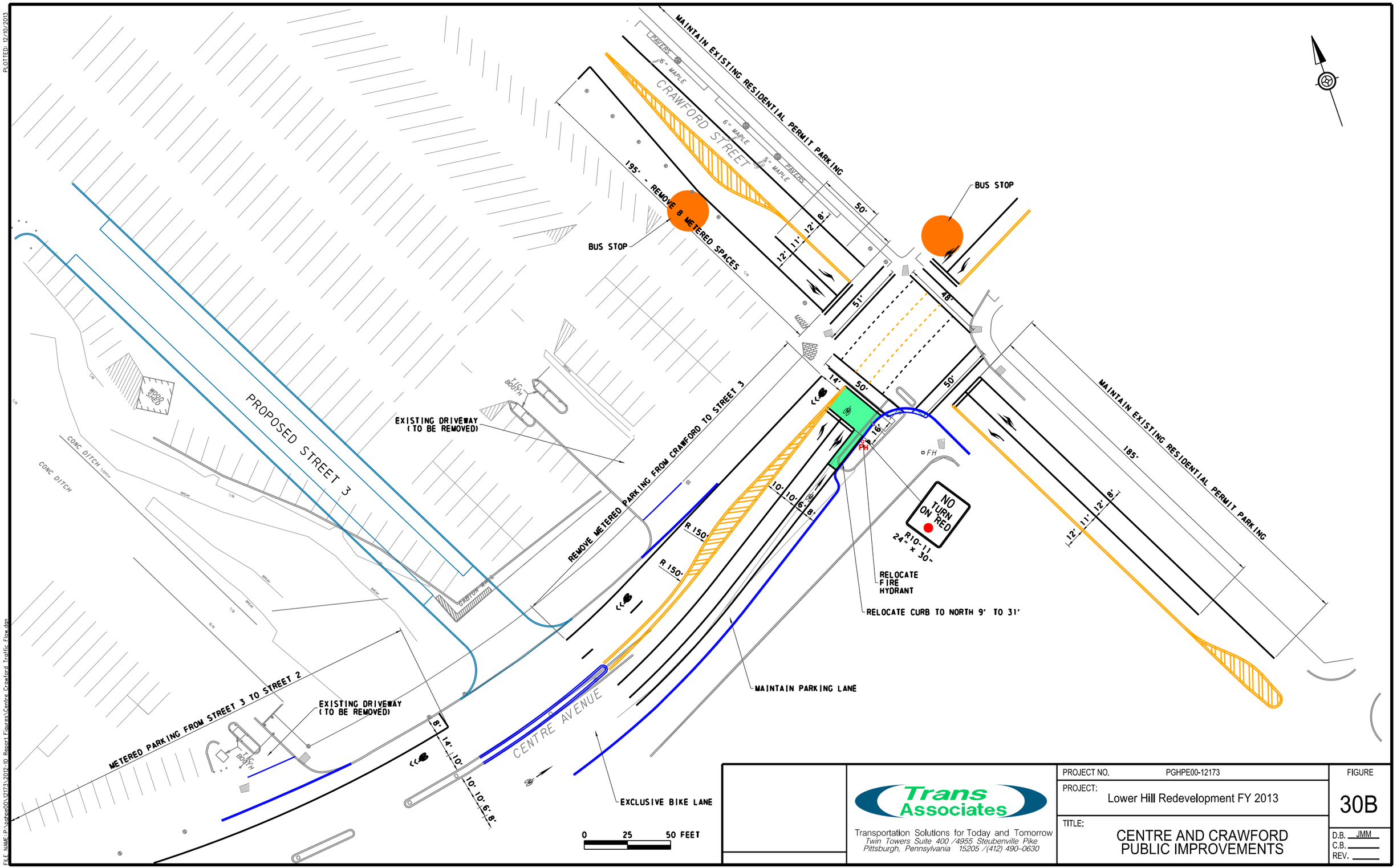
PLOTTED: 6/3/2014



FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Centre Crawford Traffic Flow.dgn

	Trans Associates Transportation Solutions for Today and Tomorrow *Twin Towers Suite 400 /4955 Steubenville Pike* *Pittsburgh, Pennsylvania 15205 /(412) 490-0630*	PROJECT NO. PGHPE00-12173 PROJECT: Lower Hill Redevelopment FY 2013 TITLE: CENTRE AND CRAWFORD PUBLIC IMPROVEMENTS	FIGURE 30B D.B. JMM C.B. REV.

PLOTTED: 12/10/2013



FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Centre-Crawford Traffic Flow.dgn

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Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO. PGHPE00-12173

PROJECT: Lower Hill Redevelopment FY 2013

TITLE: CENTRE AND CRAWFORD PUBLIC IMPROVEMENTS

FIGURE 30B

D.B. JMM
C.B.
REV.

PLOTTED: 12/12/2013

PROHIBIT ON-STREET PARKING ON SOUTHERN AND NORTHERN SIDE OF BEDFORD AVENUE

PROHIBIT ON-STREET PARKING ON BOTH SIDES OF STREET 1

PROHIBIT ON-STREET PARKING ON BOTH SIDES OF CENTRE AVE

PROHIBIT ON-STREET PARKING ON BOTH SIDES OF STREET 2

A Block ID

Prohibit On-Street Parking

Proposed Roadway Configuration

Police Officer Before and After Events

A B C D E F G H

Street 1 Street 2 Street 3 Street 4

WYLIE AVE CRAWFORD CENTRE AVE CHATHAM CROSSTOWN BLVD 6TH AVE EXT DIAMOND WATSON FIFTH AVE FORBES AVE OUR WAY PROTECTORY CT VINE MILLER COLWE

HOTEL

CONSOL GARAGE

SCALE: N.T.S.

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Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

TITLE: Event Management Plan (Maximum Size Event)

FIGURE 31A

D.B. ctz
C.B. caj
REV. cad

FILE NAME: P:\pghpe00\12173\2012-10_Report Figures\Event Plan_MAX.dgn

PROHIBIT
ON-STREET PARKING ON
SOUTHERN AND NORTHERN
SIDE OF BEDFORD AVENUE

PROHIBIT
ON-STREET PARKING
ON BOTH SIDES OF
STREET 1

PROHIBIT ON-STREET
PARKING ON BOTH SIDES OF
STREET 2

PROHIBIT
ON-STREET PARKING
ON BOTH SIDES OF
CENTRE AVE

HOTEL

CONSOL
GARAGE

Street 1
Street 2
Street 3
Street 4

A
B
C
D
E
F
G
H

WYLIE AVE
CRAWFORD
CENTRE AVE
CHATHAM
6TH AVE EXT
CROSSTOWN
BLVD
DIAMOND
WATSON
FIFTH AVE
FORBES AVE
OUR WAY
PROTECTORY
CT
VINE
MILLER
COLWE

Block ID
Prohibit On-Street Parking
Proposed Roadway Configuration
Police Officer Before and After Events
Roadway Closed

N

SCALE: N.T.S.

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Pittsburgh, Pennsylvania 15205 / (412) 490-0630

PROJECT NO. PGHPE00 - 12173

PROJECT: Lower Hill Redevelopment Site Transportation Study

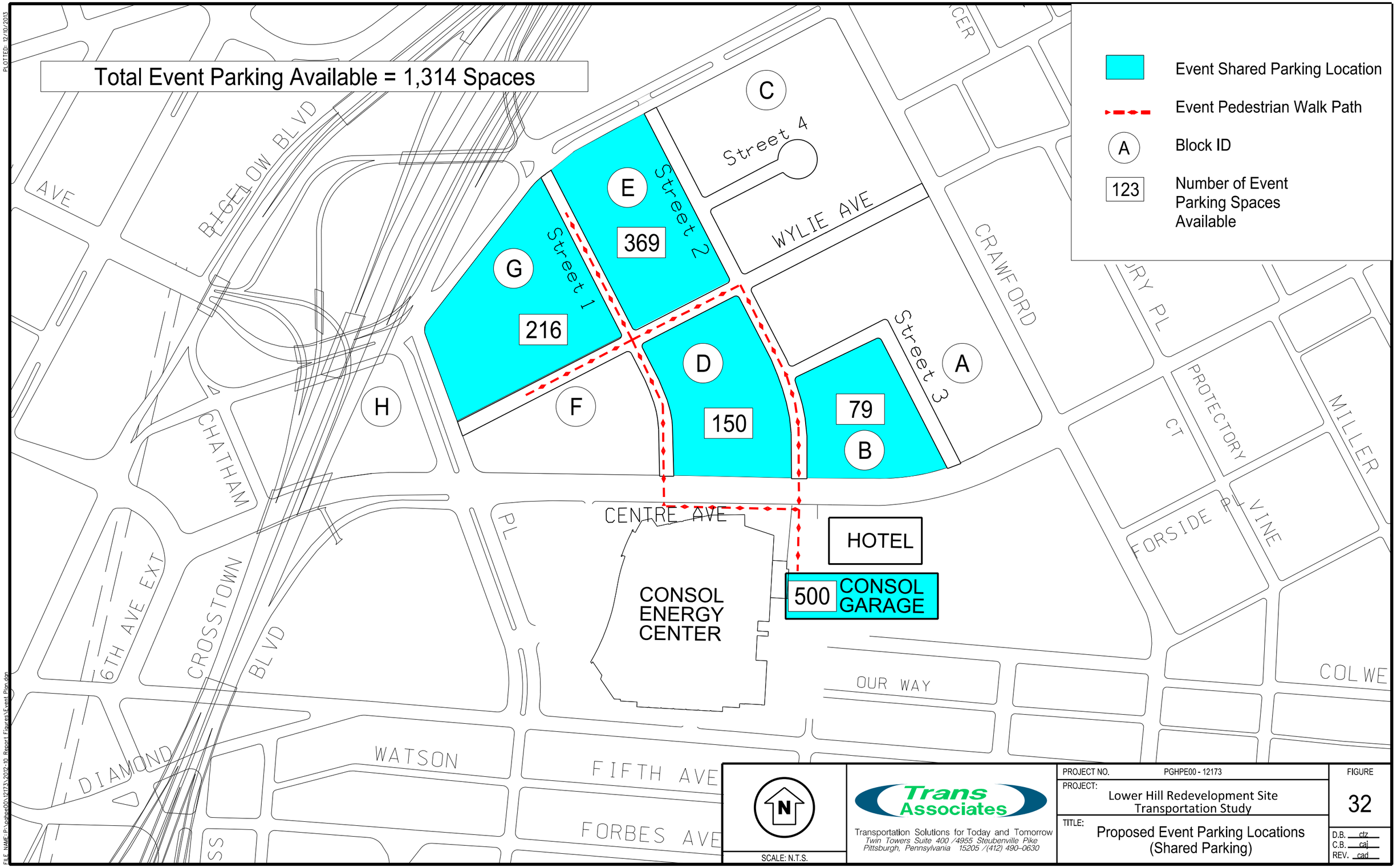
TITLE: Event Management Plan
Street 1 Closed
(Maximum Size Event)

FIGURE
31B

D.B. ctz
C.B. caj
REV. cad

PLOTTED: 12/12/2013

FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Event Plan MAX Lenieux closed.dgn


Total Event Parking Available = 1,314 Spaces
Event Shared Parking Location
Event Pedestrian Walk Path
A
Block ID
123
Number of Event Parking Spaces Available
C
Street 4
E
Street 2
369
WYLIE AVE
G
Street 1
216
D
150
Street 3
79
B
A
H
F
CRAWFORD
RIDGEWAY BLVD
AVE
CHATHAM
CENTRE AVE
HOTEL
CONSOL ENERGY CENTER
500
CONSOL GARAGE
6TH AVE EXT
CROSSTOWN BLVD
OUR WAY
WATSON
FIFTH AVE
FORBES AVE
DIAMOND
PROTECTORY CT
FORSIDE PL
VINE
MILLER
COLWE
N
SCALE: N.T.S.
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Pittsburgh, Pennsylvania 15205 /(412) 490-0630
PROJECT NO. PGHPE00 - 12173
PROJECT: Lower Hill Redevelopment Site Transportation Study
TITLE: Proposed Event Parking Locations (Shared Parking)
FIGURE
32
D.B. ctz
C.B. caj
REV. cad
PLOTTED: 12/10/2013
FILE NAME: P:\pghpe00\12173\2012-10 Report Figures\Event Plan.dgn

Appendices

Appendix A	Form B and Approval Letter
Appendix B	Signal Plans
Appendix C	Turning Movement Counts and Pedestrian Counts
Appendix D	Level of Service Definition
Appendix E	2011 Existing Condition Capacity Analysis
Appendix F	Parking Calculations
Appendix G	2022 Base Condition Traffic Volume Development
Appendix H	2022 Base Condition Capacity Analysis
Appendix I	Trip Generation Calculations
Appendix J	Pedestrian Calculations
Appendix K	2022 Combined Condition Traffic Volume Development
Appendix L	2022 Combined Condition Capacity Analysis
Appendix M	Signal Warrant Analysis
Appendix N	Queuing Analysis
Appendix O	Event Management Plans

APPENDIX A

TRAFFIC, PARKING AND PEDESTRIAN IMPACT STUDY

FORM B SCOPE OF WORK

LAND DEVELOPMENT AND PARKING PLANS

DEPARTMENT OF CITY PLANNING

CITY OF PITTSBURGH

ALL ENTRIES SUBJECT TO APPROVAL BY THE TRANSPORTATION PLANNER, DEPARTMENT OF CITY PLANNING, CITY OF PITTSBURGH

1.0 NAME OF PROJECT **28 Acres SP District**

1.1	Developer/Agent:	Pittsburgh Arena Real Estate Development LP
1.2	Development/Facility:	28 acre mixed use development, total 3,251,750 SF
1.3	Anticipated Development Date:	phased over next 10 years
1.4	Date:	5/19/2011 Revised 6/07/11 to include discussion with DCP and DPW on 6/01/11
1.5	Prepared by:	Trans Associates - Cynthia A. Jampole, P.E.

2.0 PROJECT LOCATION (Please check)

	Geographic Location (Please check)		Name of Neighborhood/Comment
2.1	North		
2.2	East		
2.3	South		
2.4	West		
2.5	East Liberty		
2.6	North Shore		
2.7	Oakland		
2.8	South Side		
2.9	Strip District		
2.1	Central Business District	CBD-Hill District	
2.11	Attach City Neighborhood Map	http://www.city.pittsburgh.pa.us/cp/html/neighborhood_map_list.html	

3.0 PROJECT COMPONENTS

		EXISTING ON-SITE CONDITIONS						FUTURE ON-SITE CONDITIONS			
3.1	LAND USE TYPE	Size (Sq. Ft.)		# Units, Beds, Seats		#Parking Spaces		New Project Components			
	Residential	To Remain	To Remove	To Remain	To Remove	To Remain	To Remove	New Project Size (Sq. Ft.	# Units, Beds, Seats , etc.	# New Parking Spaces	Comment
3.1.1	Single Unit										
3.1.2	Multi-Unit								1,191		
3.1.3	Group Res.										
3.1.4	Elderly										

		EXISTING ON-SITE CONDITIONS						FUTURE ON-SITE CONDITIONS			
3.2	LAND USE TYPE	Size (Sq. Ft.)		# Units, Beds, Seats		# Parking Spaces		New Project Components			
	Non-Residential	To Remain	To Remove	To Remain	To Remove	To Remain	To Remove	New Project Size (Sq. Ft.)	# Units, Beds, Seats, etc.	# New Parking Spaces	Comment
3.2.1	Bank										
3.2.2	Child Care										
3.2.3	Club										
3.2.4	College										
3.2.5	Comm. Center										
3.2.6	Educ. Institution										
3.2.7	Grocery Store										
3.2.8	Hospital										

Comment:

		EXISTING ON-SITE CONDITIONS						FUTURE ON-SITE CONDITIONS			
LAND USE TYPE		Size (Sq. Ft.)		# Units, Beds, Seats		# Parking Spaces		New Project Components			
Non Residential Cont'd		To Remain	To Remove	To Remain	To Remove	To Remain	To Remove	New Project Size (Sq. Ft.	# Units, Beds, Seats, etc.	# New Parking Spaces	Comment
3.2.9	Institutional										
3.2.10	Medical Office										
3.2.11	Gen. Office							606,000 SF			
3.2.12	Commercial							208,750 SF			
3.2.13	Restaurant										
3.2.14	Hotel							150 Rooms			
3.2.15	Service Station										
3.2.16	Open space							5.8 acres			
3.2.17	Warehouse										
3.2.18	Parking Facility		2,400 sp. Lot				2,400	2,215 spaces distributed thru site			
3.2.19	Other (specify)		Arena								

4.0 DESCRIBE STUDY AREA CONDITIONS (Attach DCP map showing study area boundary and site plan)

4.1 Area of Influence See Figure 1. Area is bounded by Bedford Avenue, Crawford Street, Pride Str

4.2 Area of Significant Traffic and Parking Impact

See Figure 1. Traffic impacts throughout the study area, parking on site in surface and structured parking, as well as on-street parking

4.3 Zoning Code Designation of Site (Attach map) See Figure 2.

Comment: Zoning Code AP

4.4 Zoning Code Designation of Adjacent Sites (Attach map) See Figure 2.

Comment: Zoning Codes UNC, RP, RM-VH, and GT-B.

5.0 TRAFFIC ANALYSIS

5.1 Existing Conditions

	Study Intersections (Attach map showing project site and nearby critical intersections)	Unsignalized	Signalized
5.1.1	Bedford Avenue/Mario Lemieux Place/HOV Lanes/Ramp to 7th Avenue		X
5.1.2	Bedford Avenue/Crawford Street		X
5.1.3	Bedford Ave/Washington Pl/Bigelow Blvd/7th Ave ramp/I-579 NB ramp		X
5.1.4	Centre Avenue/Sixth Avenue/Sixth Avenue Extension		X
5.1.5	Centre Avenue/Washington Place		X
5.1.6	Centre Avenue/Mario Lemieux Place		X
5.1.7	Centre Avenue/Crawford Street		X
5.1.8	Fifth Avenue/Sixth Avenue Extension		X
5.1.9	Fifth Avenue/Diamond Street	X	X
5.1.10	Fifth Avenue/Chatham Center Garage Dwy	X	X
5.1.11	Fifth Avenue/Washington Place/Chatham Square		X
5.1.12	Fifth Avenue/Magee Street		X
5.1.13	Fifth Avenue/Stevenson Street		X
5.1.14	Fifth Avenue/Pride Street		X
5.1.15	Forbes Avenue/Diamond Street/Sixth Avenue Extension/Liberty Bridge		X
5.1.16	Forbes Avenue/Armstrong Tunnels		X
5.1.17	Forbes Avenue/Chatham Square		X
5.1.18	Forbes Avenue/Magee Street		X
5.1.19	Forbes Avenue/Stevenson Street		X

5.1.20	Forbes Avenue/Pride Street		X
5.1.21	Crawford Street and Wylie Avenue	X	X
5.1.22	Washington Place/Chatham Center Garage Dwy	X	X

Comment:

5.2 Project Entry/Exit Points (Attach map) See Figure 1.

New internal intersections (see map) See Figure 1.

		Unsignalized	Signalized
5.2.1	Bedford Avenue and wester	X	
5.2.2	Bedford Avenue and easterly street segment	X	
5.2.3	Washington Place and Wylie Avenue Extension	X	
5.2.4	Mario Lemieux Place and Wylie Avenue Extension	X	
5.2.5	Westerly street segment and Wylie Avenue Extension	X	
5.2.6	Easterly street segment and Wylie Avenue Extension	X	
5.2.7	Centre Avenue and westerly street segment	X	
5.2.8	Centre Avenue and easterly street segment	X	
5.2.9		X	

Comment: new street grid shown on Figure 1

5.3 **Count locations for traffic to be removed for future conditions** see Figure 1 -Civic Arena lot driveways

5.3.1	Bedford Avenue/westerly driveway	X	
5.3.2	Bedford Avenue/easterly driveway	X	
5.3.3	Mario Lemieux Place and northerly driveway	X	
5.3.4	Mario Lemieux Place and southerly driveway	X	
5.3.5	Washington Place and driveway	X	
5.3.6	Centre Avenue and westerly driveway	X	
5.3.7	Centre Avenue and middle driveway	X	
5.3.8	Centre Avenue and easterly driveway	X	

6.0 REQUIRED DATA COLLECTION (Show count locations on map)

6.1 **Study intersections (Attach map)** See Figures 1, 2 and 3

		Transit / Heavy Vehicle	Turning Movement	Pedestrians
6.1.1	All existing study intersections (items 5.1.1 through 5.1.22)	X	X	X
6.1.2	All existing parking lot driveways to be removed (items 5.3.1 through 5.3.8)		X	
	Note: Figure 1 for AM and PM peak hours; Figure 2 for pre-event and Figure 3 for post-event			

6.2 **Study Periods (Please check)**

			Comment	
6.2.1	AM Peak	X	7 - 9 AM weekday	See Figure 1
6.2.2	Mid Day Peak			
6.2.3	PM Peak	X	4 - 6 PM weekday	See Figure 1
6.2.4	Evening			
6.2.5	Hospital Peak			
6.2.6	Weekday Event Peak	X	2 hours pre- and 2 hours post-event	See Figures 2 & 3
6.2.7	School Peak			
6.2.8	Saturday Peak	X	2 hours pre- and 2 hours post-event	See Figures 2 & 3
6.2.9	Other Event Peak (specify)			

6.3 **Automatic Traffic Recorder (ATR) Counts (Please check and attach map)** Yes [ ] No [X]

Comment:

6.4 **Video Data Collection** **Type** Yes [ ] No [X]

Comment:

6.0 **REQUIRED DATA COLLECTION CONT'D (Show count locations on map)**

6.5 **Duration / Location**

		Street Name	Between	And
6.5.1	48-hr			
6.5.2	7-day	Street Name	Between	And
6.5.3	Other	Street Name	Between	And

6.6 **Type ATR Count (Please check)**

			Comment
6.6.1	Volume Counts		
6.6.2	15-Minute Increments		
6.6.3	1-Hour Increments		
6.6.4	Include Speed Data		
6.6.5	Include Vehicle Classification Data		

Comment:

6.7 **Project Entry/Exit Points (Attach map)** Yes [X] No [ ]

6.7.1	New access roadways into site (6 locations, see Figure 1)
6.7.2	Proposed access points to internal parking facilities (number and location TBD)
6.7.3	
6.7.4	
6.7.5	

6.8 **Sight Distance Measurements (Show locations on map)** Yes [X] No [ ]

Project Entry/Exit Points

6.8.1	All unsignalized intersections
6.8.2	All proposed new access roadways into site (6 locations, see Figure 1)
6.8.3	
6.8.4	
6.8.5	

Comment:

6.9 **Bicycle** Yes [X] No [ ]

6.9.1 Bicycle Counts Yes [X] No [ ]

Comment: Bicycle traffic will be counted as part of the turning movement count data collection.

6.9.2 Bicycle Rack Counts/Locations Yes [X] No [ ]

Comment: for future projected conditions only

6.9.3 Bikeways/Paths Yes [X] No [ ]

Comment:

6.10 **Other**

6.10.1 _____ Yes [ ] No [ ]

6.10.2 _____ Yes [ ] No [ ]

7.0 PROJECT PHASING

Phase	Year of Completion	Development Components	SF/Phase
1			
2			
3			
4			
10-Year Master Plan	2022	See Figures 3 and 4 - all proposed development components will be included	
Other-Year Master Plan			

8.0 FUTURE BASE 10-YEAR COMPLETION CONDITIONS

8.1 Seasonal Adjustment (Please indicate source and provide comments) N/A

Comment:

8.2 Annual Base Traffic Growth (Please indicate source and provide comments) X

Comment: To be obtained from SPC

8.3 Trip Removals (Please check and comment)

8.3.1	On-Site Removals	Yes	X	No	
8.3.2	Other (Explain)	Yes		No	

Comment: All existing traffic activity generated by the 2,400 parking spaces currently on the 28 acres will be removed from the future base traffic volumes

8.4 New Projects to be Added to base Traffic (As specified by DCP)

8.4.1	to be determined based on information to be provided by DCP
8.4.2	
8.4.3	
8.4.4	

9.0 TRIP GENERATION (Site generated trips)

9.1 Trip Generation Rate (Please check and indicates sources)

			Comment
9.1.1	Institute of Transportation Engineers (ITE)		to be modified based on modal split goals
9.1.2	Independent Survey		
9.1.3	Other (specify)		goals for transit, biking and pedestrians will be incorporated

9.2 Trip Generation Adjustment Factors (check as applicable and explain)

			Comment
9.2.1	Base Traffic Adjustment Factors		
9.2.2	Captured Trips	TBD	
9.2.3	Internal Trips	TBD	
9.2.4	Shared Trips	TBD	
9.2.5	Pass-by Trips	TBD	
9.2.6	Diverted Linked Trips	TBD	

9.3 **Modal Split (Please check)** Yes [X] No [ ]

		Comment
9.3.1	Auto	TBD
9.3.2	Public Transit	T BD with transit goals to be established, mindful of the BRT project
9.3.3	Trucks	TBD
9.3.4	Pedestrians	TBD based on goals for pedestrian activity
9.3.5	Bicycles	TBD based on goals for bicycling activity

9.4 **Parking Space and Trip Reduction based on Proximity to a Transit Facility** Yes [ ] No [X]

(Section 912.07.G.2 (d) City of Pittsburgh Zoning Code)

Comment:

9.5 **Auto Occupancy (Please check)** Yes [X] No [ ]

Comment: to be applied for CONSOL Energy Center events

9.6 **Transit Occupancy (Please check)** Yes [ ] No [X]

Comment:

9.7 **Special Circumstances (Please check)** Yes [ ] No [X]

Comment:

10.0 **ARRIVAL/DEPARTURE DISTRIBUTION/ASSIGNMENT (please check)** Yes [X] No [ ]

Comment: based on existing traffic activity

Existing traffic volumes related to Civic Arena parking lots to be removed will be backed out of the traffic volumes in patterns based on the current traffic distribution

10.1 **Methodology for Trip Assignment (Please check)**

			Yes	No
10.1.1	Gravity Distribution Model			
10.1.2	SPC Model			
10.1.3	Market Study			
10.1.4	Other (Specify)	existing patterns	X	

Comment:

11.0 **CAPACITY ANALYSIS (Check conditions that apply)**

		Yes	No
11.1	Existing Conditions	X	
11.2	Future Base Conditions Without New Project		
11.4	Future Base and Combined Development Conditions Without Mitigation	X	
11.5	Future Base and Combined Conditions With Proposed Mitig	X	
11.6	Year (s) to be Analyzed for Combined Conditions (Please check)	X	

Comments:

11.6.1	Phase 1 Year		Yes	No
11.6.2	Phase 2 Year		Yes	No
11.6.3	Phase 3 Year		Yes	No
11.6.4	Phase 4 Year		Yes	No
11.6.5	10-Year Master Plan Year		Yes X	No
11.6.6	20-year (federally funded)		Yes	No
11.6.7	Other Time Frame		Yes	No

12.0 SYNCHRO ANALYSIS OF QUEUING CONDITIONS (Please check and show area on map) Yes X No

network-wide Synchro analysis for LOS and queuing

13.0 SIGNAL WARRANT ANALYSIS Yes X No

13.1 Locations

13.1.1	All unsignalized intersections
13.1.2	All new 28 acre access roadways
13.1.3	All new internal intersections
13.1.4	
13.1.5	

13.2 Warrant Types

		Comment		
13.2.1	8-Hour		Yes	No X
13.2.2	4-Hour		Yes	No X
13.2.3	Peak-Hour		Yes X	No
13.2.4	Pedestrian Volume		Yes	No X
13.2.5	School Crossing		Yes	No X
13.2.6	Coordinated Signal System		Yes	No X
13.2.7	Crash Experience		Yes	No X
13.2.8	Roadway Network		Yes	No X

13.3 Left Turn Lane Warrant Yes X No

Comment: as needed

13.4 Right Turn Auxiliary Lane Warrant Yes No X

Comment:

14.0 PEDESTRIAN ACCESS, CIRCULATION AND SAFETY (Please check)

14.1 On-site Yes X No

14.2 Off-site Yes X No

Yes X No

Comment: An extensive evaluation of pedestrian flow in and around the site, including heat diagrams of person movements

15.0 ACCIDENT ANALYSIS (Please check) Yes [ ] No [X]

15.1 Locations

15.1.1	
15.1.2	
15.1.3	
15.1.4	
15.1.5	
15.1.6	

15.2 Collision Diagram Yes [ ] No [ ]

15.2.1 3-Year Data Yes [ ] No [ ]

Comment:

15.2.2 5-Year Data Yes [ ] No [ ]

Comment:

15.3 Rate Comparisons Yes [ ] No [ ]

Comment:

16.0 SIGHT DISTANCE ANALYSIS Yes [X] No [ ]

16.1 Locations

16.1.1	all new access points into the 28 acre parcel
16.1.2	
16.1.3	
16.1.4	

16.2 AASHTO Requirements Yes [X] No [ ]

17.0 QUEUING ANALYSIS Yes [X] No [ ]

17.1 Project Driveways/Existing/Auxiliary Turn Lanes (Designate for each location)

17.1.1	all analyses will be done with Synchro to evaluate network-wide queuing
17.1.2	
17.1.3	
17.1.4	

17.2 Queuing Method Yes [ ] No [ ]

Comment: Synchro

17.3 Conflict Analysis Yes [ ] No [X]

Comment:

18.0 PARKING DEMAND/SUPPLY CONDITIONS

18.1 Existing Conditions On-site and Off-site (Please check)

18.1.1	Existing Parking Supply in Study Area (Detailed inventory)	Yes X	No
18.1.2	Existing Parking Demand (Based on accumulation counts)	Yes	No
18.1.3	Existing Parking Supply/Demand Analysis	Yes	No
18.1.4	Existing Parking Space Surplus/Deficit	Yes	No
18.1.5	Existing Parking Management Plan	Yes	No
18.1.6	Existing Residential Permit Parking Program (RPPP) Areas (Show on map)	Yes X	No

18.2 DATA COLLECTION (Please check)

18.2.1 Conduct On and Off Street Parking Inventory (Show on map) (done) — Yes X / No

18.2.2 Conduct Parking Accumulation Counts (Map) — Yes / No X

A Data Collection Interval

1	Every Hour	Yes	No
2	Every 2 Hours	Yes	No
3	Other (Specify)	Yes	No

18.2.3 Count Period

A	Start	AM	PM
B	Finish	AM	PM

18.2.4 Duration/Turnover Counts (Show on map) — Yes / No X

A Data Collection Interval

1	Every Hour	Yes	No
2	Every 2 Hours	Yes	No
3	Other (Specify)	Yes	No

18.3 Existing Conditions Supply and Demand Analysis

18.3.1 Existing Parking Conditions — Surplus / Deficit

Comment: Existing parking and associated parkers are to be removed.

18.4 Parking Conditions Supply and Demand Analysis

18.4.1 **Future Parking Conditions**

Phase 1 Year — Surplus / Deficit

Comment:

Phase 2 Year — Surplus / Deficit

Comment:

Phase 3 Year — Surplus / Deficit

Comment:

Phase 4 Year — Surplus / Deficit

Comment:

10-Year Master Plan Year [X] Surplus [TBD] Deficit [ ]

Comment: calculation of parking needed based on demand and modal split goals

Other-Year Master Plan [ ] Surplus [ ] Deficit [ ]

Comment: Potential areas of parking and other transportation modes available to displaced commuter parkers will be qualitatively discussed in the report.

18.5 Projection of Future Parking Demand

18.5.1 Methodology

		Yes	No
A	ITE Parking Generation Manual		
B	City of Pittsburgh Zoning Code		
C	Site Specific Parking Study Demand Data	X	
D	Other Methodology (Please specify)		

18.6 Recommended Parking Mitigation

18.6.1 Future Parking Management Plan

		Yes	No
A	On-Site	X	
B	Off-Site for displace	X	
		X	

18.7 ADA Requirements Yes [X] No [ ]

Comment: circulation of disabled persons around and within the site will be addressed in concert with the architects

18.8 Parking Management Plan (PMP) Yes [X] No [ ]

Comment: A comprehensive PMP will be prepared

19.0 TRUCK LOADING ANALYSIS

19.1 Truck Trip Generation

		Yes	No
19.1.1	Hourly		X
19.1.2	Daily		X

19.2 Size of Truck or Service Delivery Vehicle Yes [X] No [ ]

19.3 Number of Existing Dock Space Per Zoning Code Yes [X] No [ ]

19.4 Number of Existing Dock Space Per Peak Demand Yes [ ] No [X]

19.5 Proposed Number of Dock Space Per:

		Yes	No
19.5.1	Phase 1 Master Plan		
19.5.2	Phase 2 Master Plan		
19.5.3	Phase 4 Master Plan		
19.5.4	10-Year Master Plan	X	

19.6 Truck Maneuverability On/Off-site Yes [X] No [ ]

19.7 Refuse Storage/Pick-up Analysis (Please show on map) Yes [X] No [ ]

19.8	Truck Loading Management Plan (TLMP)	Yes X	No
19.9	Design Vehicle	Yes X	No
19.10	Turning Radius	Yes X	No

20.0 SITE PLAN REVIEW AND ANALYSIS Yes X No

Comment: Site plan analysis will be performed in coordination with the master plan architects

21.0 PUBLIC TRANSPORTATION

21.1	Port Authority Transit (PAT) Bus Routes to or Near the Site	Yes X	No
21.1.1	Peak and Non Peak Bus Route and Trip Analysis	Yes X	No
21.1.2	Identify Bus Stop and Shelter Locations At or Near the Site	Yes X	No
21.1.3	Identify T service		
21.2	Shuttle Bus /Other Private Carrier Service Analysis	Yes	No X
21.2.1	Peak and Non Peak Bus Route and Trip Analysis	Yes	No
21.2.2	Identify Bus Stop Locations At or Near the Site	Yes	No
21.3	School Buses	Yes	No X
21.3.1	Peak and Non Peak Bus Route and Trip Analysis	Yes	No
21.3.2	Identify Bus Stop Locations At or Near the Site	Yes	No

Comment:

22.0 SUBMISSION REQUIREMENTS

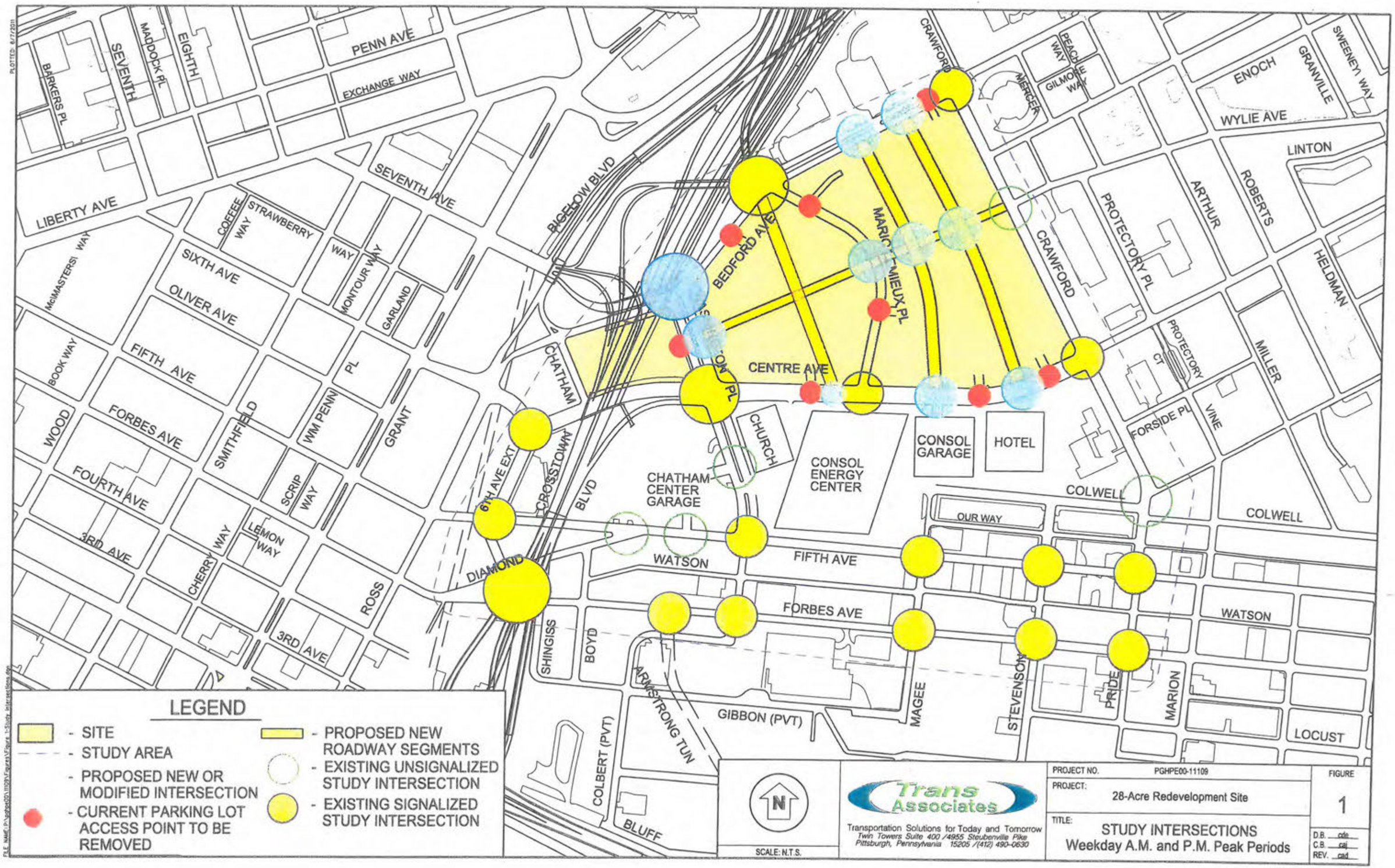
22.1	Final Traffic Impact Study Report (4 copies, including maps, tables and figures)	Yes	No
22.2	Executive Summary (Include in final report)	Yes	No
22.3	Appendix (4 copies)	Yes	No
22.4	Form B (Include approved copy in Final Report)	Yes	No
22.5	Form B approval (Include approved copy in Final Report)	Yes	No
22.5	Correspondence (Include in Final Report)	Yes	No

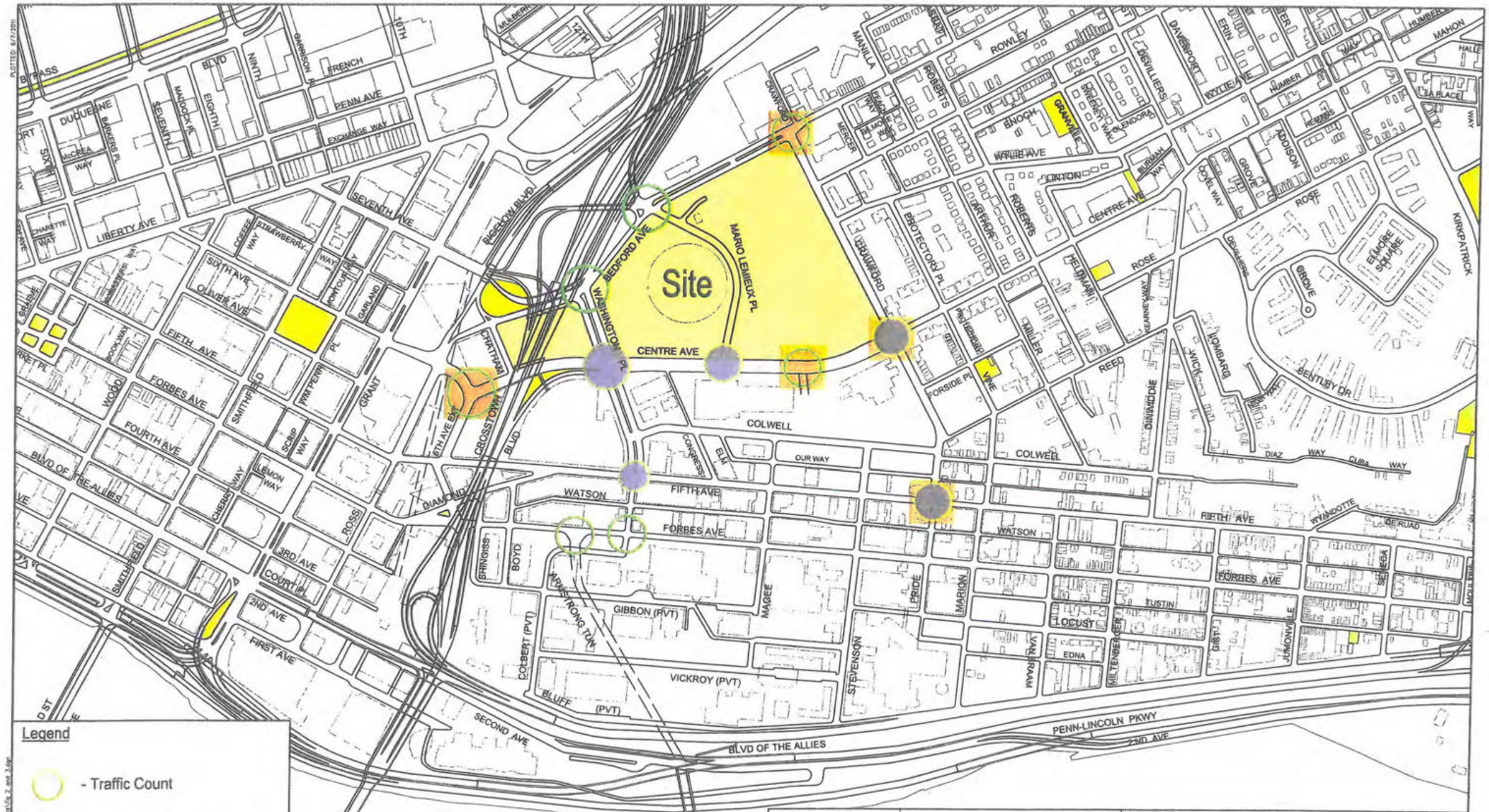
23.0 SCHOOL AND COLLEGE SITE PLAN REVIEW CHECK LIST (Based on study done for the State of Texas) N/A

	Check List	Yes	No	Comment
23.1	Is the building setback a sufficient distance to provide adequate storage on the site?			
23.2	Is the school site located on a high speed roadway? If yes, please comment?			
23.3	Is access provided from more than one direction to the immediate vicinity of the site?			
23.4	Is the school situated where the road alignment provides good visibility?			
23.5	Are the routes provided for buses, cars, pedestrians, and bicycles separated from each other on the site?			
23.6	Are school buses going to be staged single-file right wheel to the curb in the loading zone?			
23.7	Is there adequate driveway stacking length for staging of cars on site?			

23.8	Are students loaded and unloaded on the right side directly to the curb/sidewalk in the bus and parent loading zones?			
23.9	Are the short-term parking spaces located past the student loading area and near the building entrance?			
23.1	Is parent loading occurring only in designated zones? If not, please comment?			
23.11	Are the student safety patrols and loading supervisors well trained and outfitted with reflective safety vests?			
23.12	Are traffic cones or other channelizing devices used within the site to minimize pedestrian/vehicle conflicts?			
23.13	Are safe crosswalks with crossing guards provided on-site and off-site to minimize pedestrian/vehicle conflicts?			
23.14	Are there standard and well-maintained sidewalks leading to the school?			
23.15	Are there wider paved student queuing areas at major crossings/intersections and "stand back lines" to show where to stand while waiting?			
23.16	Are facilities for bicycle access and storage provided at the school campus?			
23.17	Do the school driveways conform to the City and PennDOT design and access management guidelines for number, spacing, location, and layout?			
23.18	Does this school site have existing or planned left or right turn lanes in to the site? Do they meet existing City/PennDOT design guidelines?			
23.19	Do all site and regulatory signs and pavement markings within the site comply with the Manual on Uniform Traffic Control Devices?			

Prepared by:
Sidney B. Kalkal, AICP
Principal Transportation Planner
Department of City Planning
Revised 03/16/07


PENN AVE
EXCHANGE WAY
SEVENTH
MADDOCK PL
EIGHTH
BARKERS PL
LIBERTY AVE
SEVENTH AVE
COFEEE WAY
STRAWBERRY WAY
SIXTH AVE
OLIVER AVE
FIFTH AVE
FORBES AVE
FOURTH AVE
3RD AVE
McMASTERS WAY
BOOK WAY
WOOD
SMITHFIELD
WM PENN PL
GRANT
SCRIP WAY
LEMON WAY
CHERRY WAY
ROSS
MONTOUR WAY
GARLAND
BIGELOW BLVD
CHATHAM
6TH AVE EXT
CROSSTOWN BLVD
DIAMOND
SHINGISS
BOYD
COLBERT (PVT)
ARMSTRONG TUN
BLUFF
GIBBON (PVT)
WATSON
FIFTH AVE
FORBES AVE
CHATHAM CENTER GARAGE
CHURCH
CONSOL ENERGY CENTER
CONSOL GARAGE
HOTEL
CENTRE AVE
BEDFORD AVE
MARIO MIEUX PL
CRAWFORD
MERCER
PEACH WAY
GILMORE WAY
ENOCH
GRANVILLE
SWEENEY WAY
WYLIE AVE
LINTON
ARTHUR
ROBERTS
PROTECTORY PL
HELDMAN
PROTECTORY CT
MILLER
FORSIDE PL
VINE
COLWELL
OUR WAY
MAGEE
STEVENSON
PRIDE
MARION
LOCUST
LEGEND
- SITE
- STUDY AREA
- PROPOSED NEW OR MODIFIED INTERSECTION
- CURRENT PARKING LOT ACCESS POINT TO BE REMOVED
- PROPOSED NEW ROADWAY SEGMENTS
- EXISTING UNSIGNALIZED STUDY INTERSECTION
- EXISTING SIGNALIZED STUDY INTERSECTION
N
SCALE: N.T.S.
Trans Associates
Transportation Solutions for Today and Tomorrow
Twin Towers Suite 400 /4955 Steubenville Pike
Pittsburgh, Pennsylvania 15205 /(412) 490-0630
PROJECT NO. PGHPE00-11109
PROJECT: 28-Acre Redevelopment Site
TITLE: STUDY INTERSECTIONS
Weekday A.M. and P.M. Peak Periods
FIGURE 1
D.B. cds
C.B. caj
REV. cad



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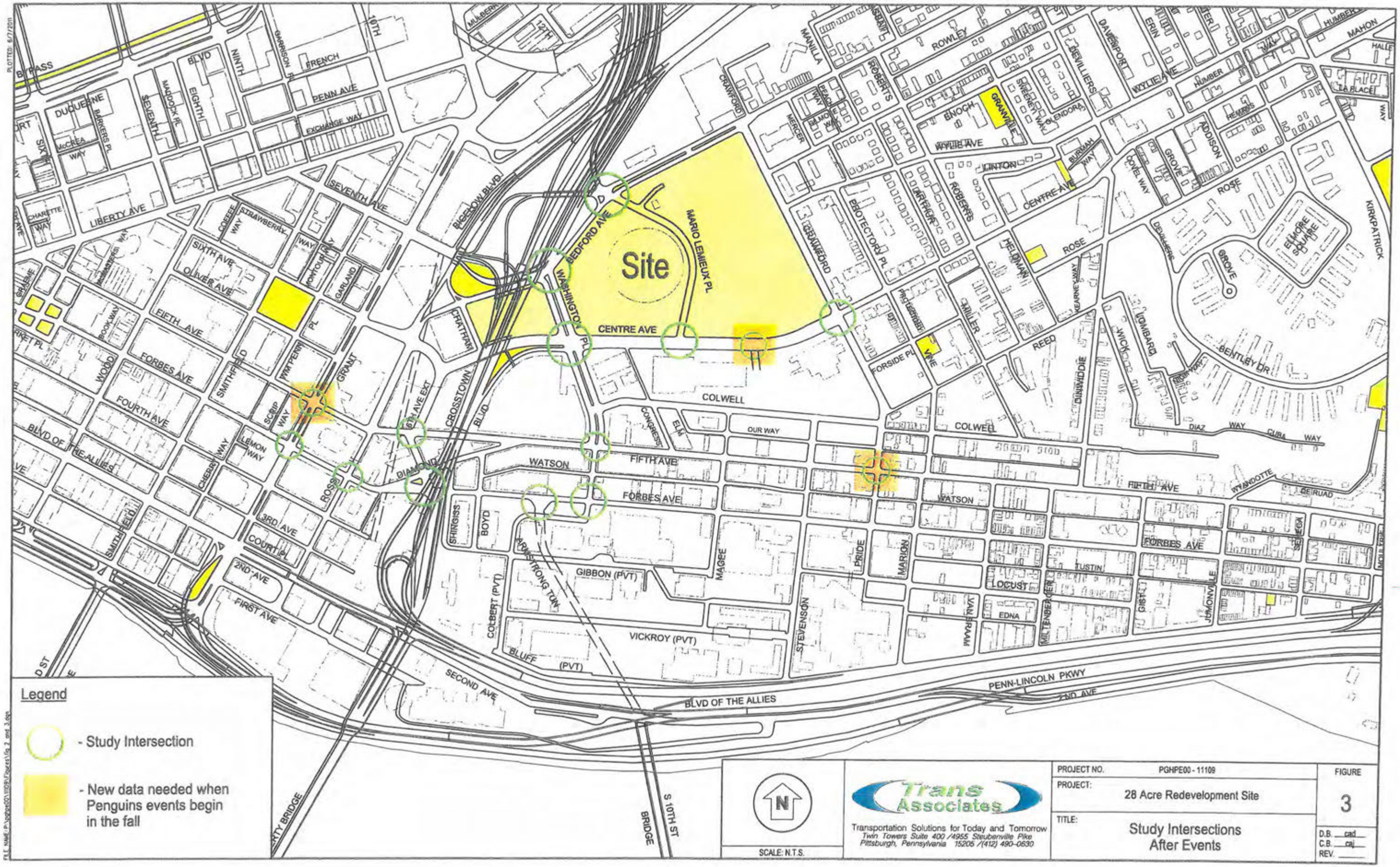
SCALE: N.T.S.

Trans Associates

Transportation Solutions for Today and Tomorrow
Twin Towers Suite 400 /4955 Steubenville Pike
Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acre Redevelopment Site
TITLE:	Study Intersections Before Events
FIGURE	2
D.B.	cad
C.B.	caj
REV.	



Legend

- Study Intersection
- New data needed when Penguins events begin in the fall

N

SCALE: N.T.S.

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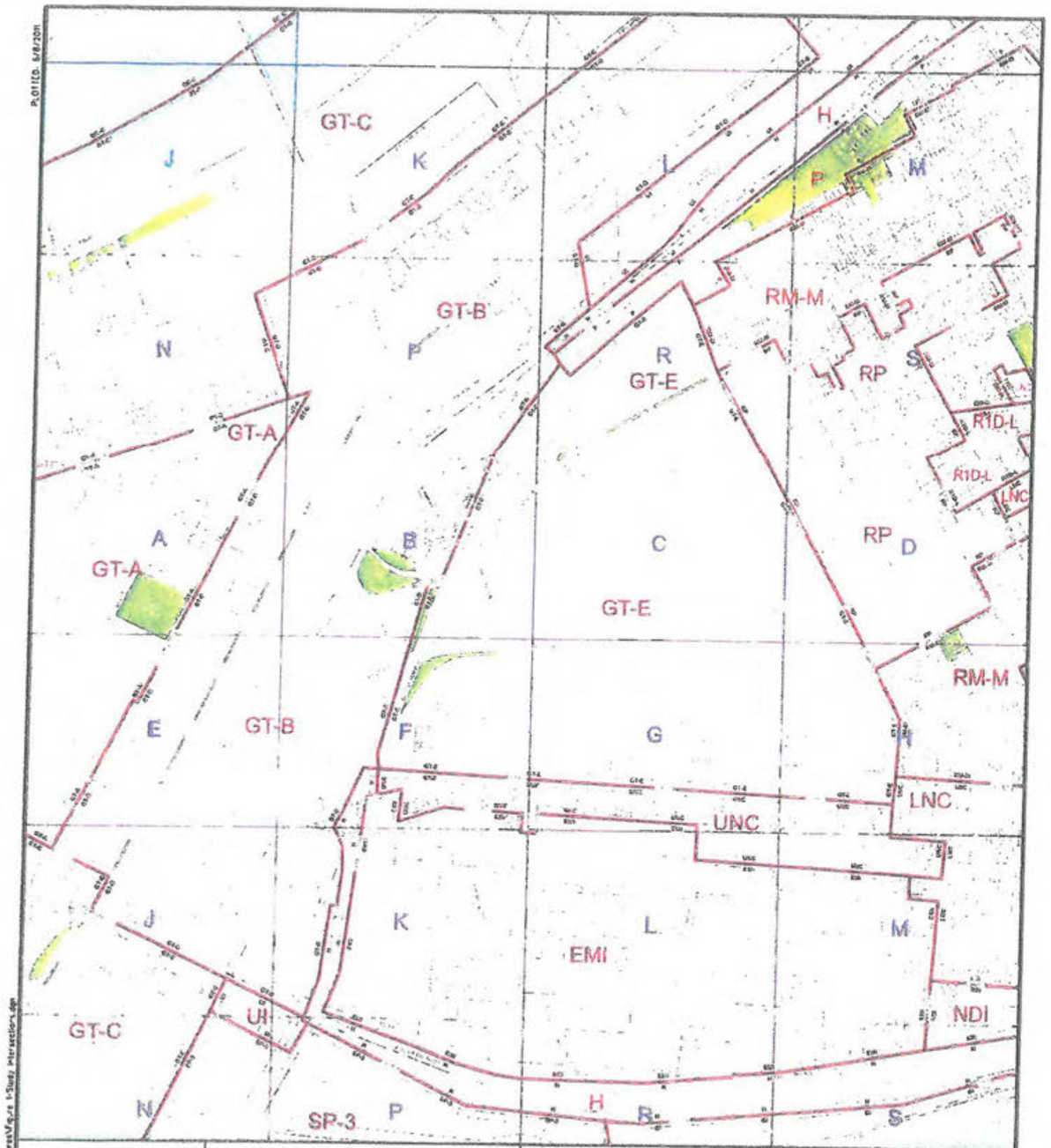
Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acre Redevelopment Site
TITLE:	Study Intersections After Events
FIGURE	3
D.B.	cad
C.B.	caj
REV.	



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SCALE: N.T.S.

Trans Associates

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Twin Towers Suite 400 4955 Steubenville Pike
Pittsburgh, Pennsylvania 15205 (412) 490-0630

PROJECT NO. PGHPE00-11109

PROJECT: 28-Acre Redevelopment Site

TITLE: Zoning Map

FIGURE 4

D.B. csd
C.B. caj
REV.

URBAN DESIGN ASSOCIATES

14 FEBRUARY 2011

N

Illustrative Master Plan

Pittsburgh Arena District | Pittsburgh, Pennsylvania

FIGURE

5

URBAN DESIGN ASSOCIATES

14 FEBRUARY 2011

N

Parking Diagram

Pittsburgh Arena District | Pittsburgh, Pennsylvania

FIGURE

6

FILE NAME: P:\projects\00\11035\Figures\scans.dgn

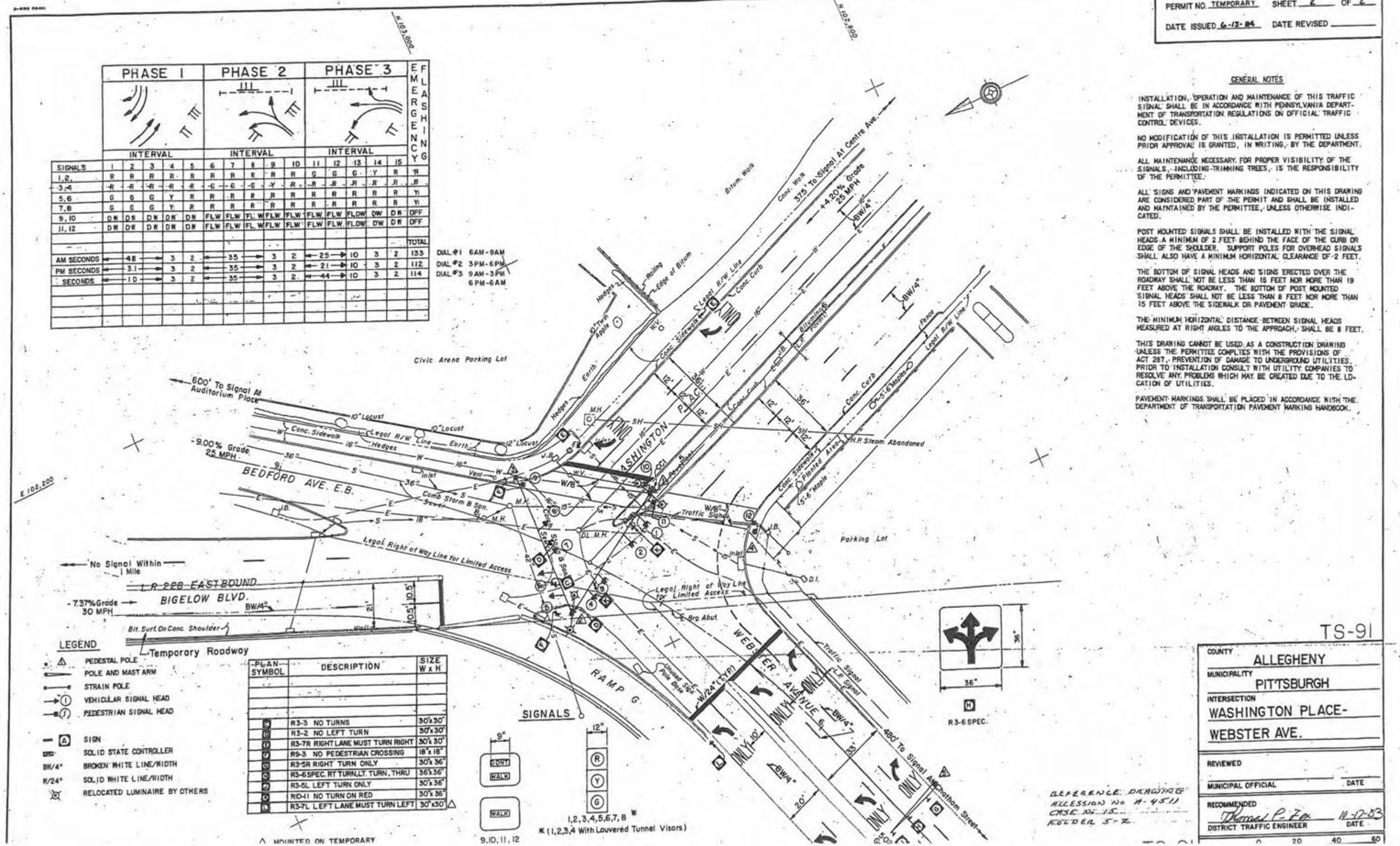
APPENDIX B

PERMIT NO. TEMPORARY SHEET 2 OF 2

DATE ISSUED 6-13-84 DATE REVISED

	PHASE 1					PHASE 2					PHASE 3					EMERGENCY	FLASHING
	INTERVAL					INTERVAL					INTERVAL						
SIGNALS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
1,2,	R	R	R	R	R	R	R	R	R	R	G	G	G	Y	R		R
3,4	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	R		R
5,6	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	R		Y
7,8	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	R		Y
9,10	DW	DW	DW	DW	DW	FLW	FLW	FLW	FLW	FLW	FLW	FLW	FLDW	DW	DW		OFF
11,12	DW	DW	DW	DW	DW	FLW	FLW	FLW	FLW	FLW	FLW	FLW	FLDW	DW	DW		OFF
																	TOTAL
AM SECONDS	48		3	2		35		3	2		25		10	3	2		133
PM SECONDS	31		3	2		35		3	2		21		10	3	2		112
SECONDS	10		3	2		35		3	2		44		10	3	2		114

DIAL #1 6AM-9AM
DIAL #2 3PM-6PM
DIAL #3 9AM-3PM
6PM-6AM



GENERAL NOTES

INSTALLATION, OPERATION AND MAINTENANCE OF THIS TRAFFIC SIGNAL SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS ON OFFICIAL TRAFFIC CONTROL DEVICES.

NO MODIFICATION OF THIS INSTALLATION IS PERMITTED UNLESS PRIOR APPROVAL IS GRANTED, IN WRITING, BY THE DEPARTMENT.

ALL MAINTENANCE NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS, INCLUDING TRIMMING TREES, IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED BY THE PERMITTEE, UNLESS OTHERWISE INDICATED.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM HORIZONTAL CLEARANCE OF 2 FEET.

THE BOTTOM OF SIGNAL HEADS AND SIGNS ERECTED OVER THE ROADWAY SHALL NOT BE LESS THAN 15 FEET NOR MORE THAN 19 FEET ABOVE THE ROADWAY. THE BOTTOM OF POST MOUNTED SIGNAL HEADS SHALL NOT BE LESS THAN 8 FEET NOR MORE THAN 15 FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNAL HEADS MEASURED AT RIGHT ANGLES TO THE APPROACH, SHALL BE 8 FEET.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES. PRIOR TO INSTALLATION CONSULT WITH UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

PAVEMENT MARKINGS SHALL BE PLACED IN ACCORDANCE WITH THE DEPARTMENT OF TRANSPORTATION PAVEMENT MARKING HANDBOOK.

LEGEND

- PEDESTAL POLE
- POLE AND MAST ARM
- STRAIN POLE
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- SOLID STATE CONTROLLER
- BW/4" BROKEN WHITE LINE/WIDTH
- W/24" SOLID WHITE LINE/WIDTH
- RELOCATED LUMINAIRE BY OTHERS

PLAN SYMBOL	DESCRIPTION	SIZE W x H
B	R3-3 NO TURNS	30"x30"
C	R3-2 NO LEFT TURN	30"x30"
D	R3-7R RIGHT LANE MUST TURN RIGHT	30"x30"
F	R9-3 NO PEDESTRIAN CROSSING	18"x18"
G	R3-5R RIGHT TURN ONLY	30"x36"
H	R3-6 SPEC. RT TURN, LT. TURN, THRU	36"x36"
J	R3-5L LEFT TURN ONLY	30"x36"
K	R10-11 NO TURN ON RED	30"x36"
L	R3-7L LEFT LANE MUST TURN LEFT	30"x30" △

△ MOUNTED ON TEMPORARY

SIGNALS

9" DON'T WALK / WALK

9,10,11,12

12" R Y G

1,2,3,4,5,6,7,8 *

* (1,2,3,4 With Louvered Tunnel Visors)

R3-6 SPEC.

REFERENCE DRAWING ACCESSION NO A-4511 CASE NO. 15 FOLDER 5-2

TS-91

COUNTY ALLEGHENY

MUNICIPALITY PITTSBURGH

INTERSECTION WASHINGTON PLACE-WEBSTER AVE.

REVIEWED

MUNICIPAL OFFICIAL DATE

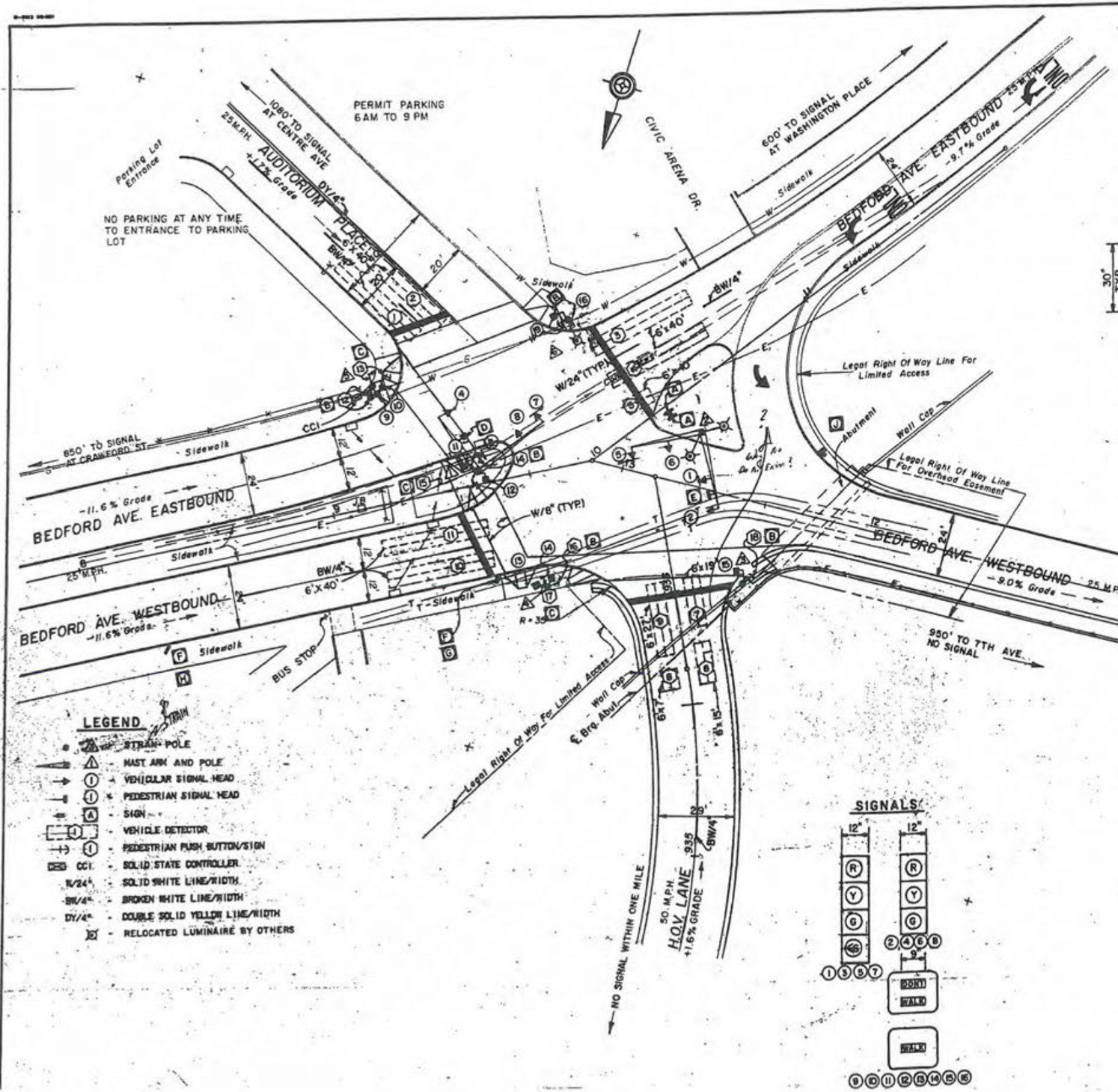
RECOMMENDED Thomas P. Fox 11-12-83

DISTRICT TRAFFIC ENGINEER DATE

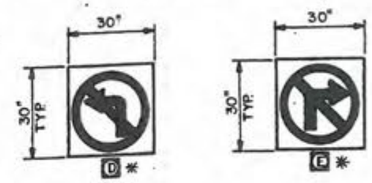
0 20 40 60

PERMIT NO. 1-092-24 SHEET 1 OF 2

DATE ISSUED 2-3-89 DATE REVISED



INTERNALLY ILLUMINATED SIGNS



* BLANK OUT MESSAGE SIGN TO BE OPERATED WITH THE H.O.V. LANE. SIGNS WILL BE ON WHEN H.O.V. IS CLOSED OR OPEN INBOUND, AND OFF WHEN THE H.O.V. IS OPEN OUTBOUND. H.O.V. HOURS WILL BE DETERMINED BY OTHERS. SIGNS WILL BE OFF UNTIL THE H.O.V. LANE IS OPENED.

SIGNALS

GENERAL NOTES

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PAVEMENT MARKINGS SHALL BE PLACED IN ACCORDANCE WITH THE DEPARTMENT OF TRANSPORTATION PAVEMENT MARKING HANDBOOK.

1-092-088

COUNTY: ALLEGHENY

MUNICIPALITY: PITTSBURGH

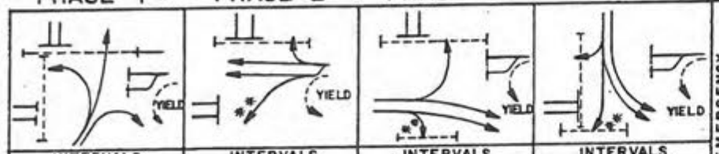
INTERSECTION: BEDFORD AVE., AUDITORIUM PLACE AND H.O.V. LANE

REVIEWED: MUNICIPAL OFFICIAL — DATE 10-31-88

RECOMMENDED: DISTRICT TRAFFIC ENGINEER — DATE 10-12-83

PERMIT NO. 1-092-24 SHEET 2 OF 2

DATE ISSUED 2-3-89 DATE REVISED



	PHASE 1*					PHASE 2					PHASE 3					PHASE 4					EMERGENCY FLASHING
	INTERVALS					INTERVALS					INTERVALS					INTERVALS					
SIGNALS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1	R	R	R	R	R	R	R	R	R	R	G/G	G/G	G/G	Y	R	R	R	R	R	R	Y
2	R	R	R	R	R	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	Y
3	R	R	R	R	R	G/G	G/G	G/G	Y	R	R	R	R	R	R	R	R	R	R	R	Y
4	R	R	R	R	R	G	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	Y
5	G/G	G/G	G/G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
6	G	G	G	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
7	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G/G	G/G	G/G	Y	R	R
8	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	G	G	Y	R	R
9,11	FLW	FLW	FLDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FLW	FLW	FLDW	DW	DW	OFF
12,13	FLW	FLW	FLDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FLW	FLW	FLDW	DW	DW	OFF
14,15	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	FLW	FLW	FLDW	DW	DW	DW	DW	DW	DW	DW	
10,16	DW	DW	DW	DW	DW	FLW	FLW	FLDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
FIXED				3	2				3	2				3	2				3	2	
MINIMUM	2					2					2					2					
PASSAGE	4					4					4					4					
MAXIMUM	←	29	→			←	29	→			←	29	→			←	29	→			
PEDESTRIAN	←	7 →	25			←	7 →	25			←	7 →	25			←	7 →	25			

* PHASE 1, SIGNAL HEAD 3 GREEN ARROW, ~~1G~~ AND BLANK OUT MESSAGE SIGNS C & E WILL BE CONTROLLED BY THE OPERATION OF THE H.O.V. LANE. WHEN THE H.O.V. IS CLOSED OR OPERATING INBOUND, SIGNS C & E ARE ON, SIGNAL HEAD ~~3G~~ IS OFF AND PHASE 1 IS FUNCTIONING. PHASE 1 IS OFF, C & E ARE OFF WHEN THE H.O.V. IS OPERATING OUTBOUND, SIGNAL ~~3G~~ OPERATES WITH PHASE 2. THE HOURS OF THE OPERATION OF THE H.O.V. ARE TO BE DETERMINED IN THE FUTURE BY OTHERS.

* * OCCURS WHEN H.O.V. IS OPEN OUTBOUND.

PLAN SYMBOL	DESCRIPTION	SIZE W x H
A	R9-3 NO PEDESTRIAN CROSSING	18" x 18"
B	R10-4R PUSH BUTTON FOR WALK SIGNAL	9" x 12"
C	R10-4L PUSH BUTTON FOR WALK SIGNAL	9" x 12"
D	R3-2 NO LEFT TURN *	30" x 30"
E	R3-1 NO RIGHT TURN *	30" x 30"
F	R7-7L NO PARKING ARROW	12" x 12"
G	R7-7R NO PARKING ARROW	12" x 6"
H	R7-7L NO PARKING ARROW	12" x 6"
J	R1-2 YIELD	36" x 36"
Acc	?	

* BLANK OUT MESSAGE SIGN

1-092-038

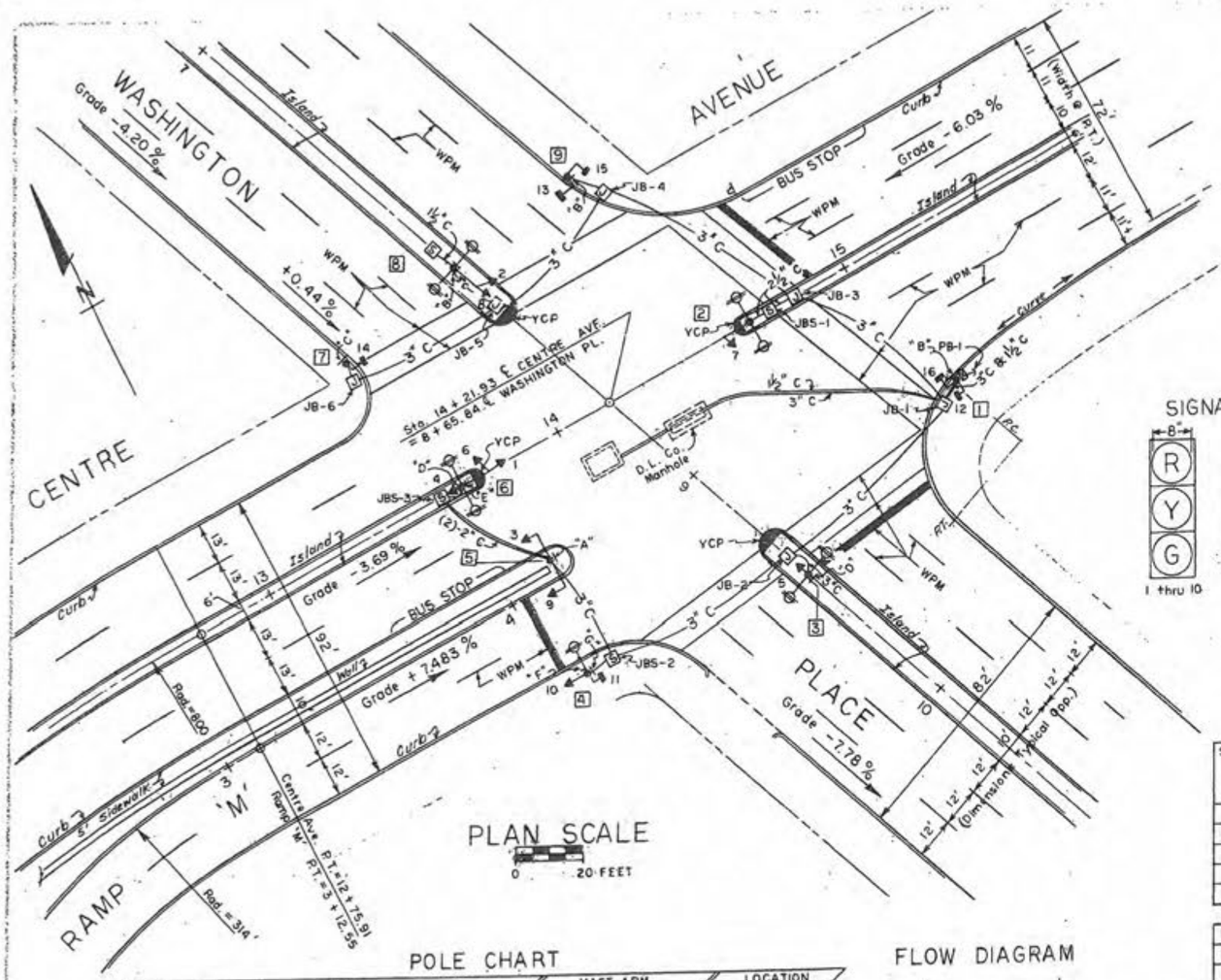
COUNTY: ALLEGHENY

MUNICIPALITY: PITTSBURGH

INTERSECTION: BEDFORD AVE., AUDITORIUM PLACE AND H.O.V. LANE

REVIEWED: [signature] 12-21-88
MUNICIPAL OFFICIAL — DATE

RECOMMENDED: Thomas P. Fox 12-7-88
DISTRICT TRAFFIC ENGINEER — DATE



- LEGEND -

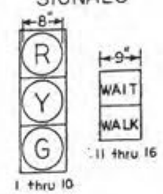
- CONTROLLER
- SIGNAL
- MAST ARM/SIG.
- CONDUIT
- POLE NUMBER
- LOOP DETECTOR
- WOOD POLE
- STEEL POLE
- SPLICE BOX
- JUNCTION BOX
- PEDESTRIAN PUSH BUTTON
- WPM — WHITE PAV'T. MKNG.
- YCP — YELLOW CURB PAINT

CABLE CHART

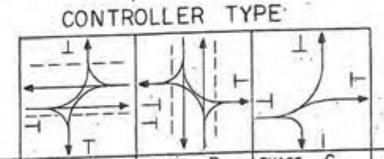
RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

MATERIALS LIST

SIGNALS



CONTROLLER TYPE



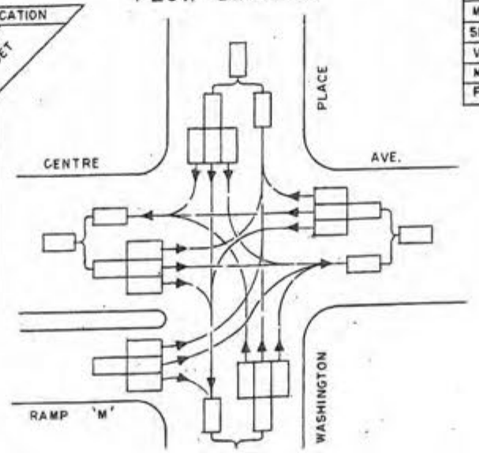
SIGNALS	PHASE A				PHASE B				PHASE C				EMERG. FLASH
	INTERVAL												
	1	2	3	4	5	6	7	8	9	10	11	12	
1-2-3-4	G	GY	Y	R	R	R	R	R	R	R	R	R	
5-6-7-8	R	R	R	R	G	GY	Y	R	R	R	R	R	
9-10	R	R	R	R	R	R	R	R	G	GY	Y	R	
11-12-13-14	WK	WK	WAIT										
15-16	WAIT				WK	WK			WAIT				

FIXED												
MIN. INITIAL												
MAX. INITIAL												
SEC./ACCTUATION												
VEHICLE												
MAXIMUM												
PED. TIME												

POLE CHART

POLE NO.	POLE: TYPE	HEIGHT	WALL THK.	O.D.	ANCHOR BOLTS: DIA.	LG.	SIGNAL BRACKETS ON POLE: DIM. "K"	DIM. "J"	MAST ARM: ARM DESIGNATION	DIM. "L"	DIM. "M"	DIM. "N"	DIM. "O"	LOCATION: STATION	OFFSET
1		26'							—	—	—	—	—		
2									S	8'	—	—	—	14 + 72	
3									—	—	—	—	—	9 + 47	℄ Washington Place
4									—	—	—	—	—	4 + 15	Ramp 'M'
5		26'							S	8'					
									S	8'					
6									S	8'				13 + 72	℄ Centre Ave.
7		26'							—	—	—	—	—		
8									A	8'				8 + 02	
9		26'							—	—	—	—	—		

FLOW DIAGRAM



SIGNS

"A"	R5-1	'DO NOT ENTER'	36" x	36"
"B"	2C	'NO PKNG. ANYTIME' ↔	12" x	12"
"C"	R14-1	'TRUCK ROUTE'	30" x	36"
"D"	R10-11A	'NO TURN ON RED'	30" x	36"
"E"	# 70	'NO PKNG IN THIS ST.'		
"F"	R6-1L	ONE WAY ARROW	12" x	36"
"G"		'STOP-ONE WAY-DO NOT ENTER'	16" x	24"

NOTE

REFERENCE DWGS. * Dsgn. Engr. File # A-4452, A-4464
A-4470, Case 15, Fol. 5-3
* # A-4525 Case 15, Fol. 5-2

TRAFFIC SIGNAL PLAN

REV.-2

— INTERSECTION OF —

CENTRE AVE. — WASHINGTON PL.

9-3-82

* # [redacted]

PERMIT NO._____ SHEET 1 OF 2

DATE ISSUED_____ DATE REVISED_____

TYPE 170 CONTROLLER W/MANUAL CORD

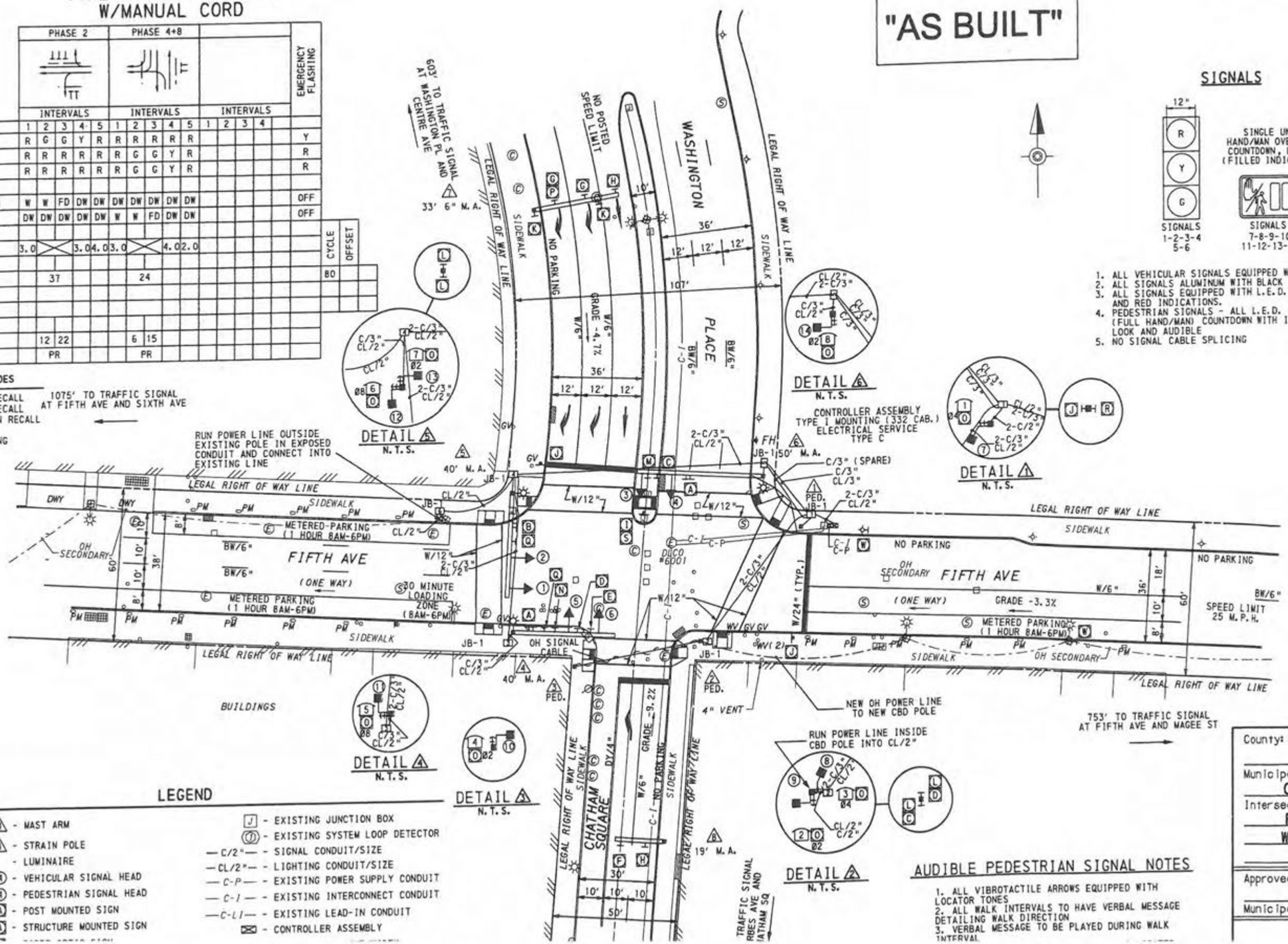
	PHASE 2					PHASE 4+8										EMERGENCY FLASHING
	INTERVALS					INTERVALS					INTERVALS					
SIGNALS	1	2	3	4	5	1	2	3	4	5	1	2	3	4		
1-2	R	G	G	Y	R	R	R	R	R	R						Y
3-4	R	R	R	R	R	R	G	G	Y	R						R
5-6	R	R	R	R	R	R	G	G	Y	R						R
9-10-13-14	W	W	FD	DW	DW	DW	DW	DW	DW	DW						OFF
7-8-11-12	DW	DW	DW	DW	DW	W	W	FD	DW	DW						OFF
FIXED	3.0			3.0	4.0	3.0			4.0	2.0						
CYCLE 1		37					24									
CYCLE 2																
CYCLE 3																
PEDESTRIAN		12	22				6	15								
MEMORY		PR					PR									

CYCLE	OFFSET
80	

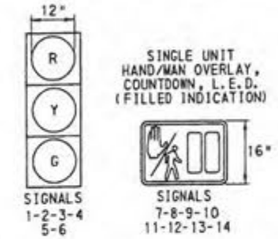
MEMORY INCLUDES

MN - MINIMUM RECALL
MX - MAXIMUM RECALL
PR - PEDESTRIAN RECALL
L - LOCKING
NL - NON LOCKING

"AS BUILT"



SIGNALS



1. ALL VEHICULAR SIGNALS EQUIPPED WITH TUNNEL VISORS
2. ALL SIGNALS ALUMINUM WITH BLACK HOUSING UNITS
3. ALL SIGNALS EQUIPPED WITH L.E.D., GREEN, YELLOW AND RED INDICATIONS.
4. PEDESTRIAN SIGNALS - ALL L.E.D. INDICATIONS (FULL HAND/MAN) COUNTDOWN WITH INCANDESCENT LOOK AND AUDIBLE
5. NO SIGNAL CABLE SPLICING

LEGEND

- MAST ARM
- STRAIN POLE
- LUMINAIRE
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- POST MOUNTED SIGN
- STRUCTURE MOUNTED SIGN
- EXISTING JUNCTION BOX
- EXISTING SYSTEM LOOP DETECTOR
- C/2" - SIGNAL CONDUIT/SIZE
- CL/2" - LIGHTING CONDUIT/SIZE
- C-P - EXISTING POWER SUPPLY CONDUIT
- C-I - EXISTING INTERCONNECT CONDUIT
- C-LI - EXISTING LEAD-IN CONDUIT
- CONTROLLER ASSEMBLY

AUDIBLE PEDESTRIAN SIGNAL NOTES

1. ALL VIBROTACTILE ARROWS EQUIPPED WITH LOCATOR TONES
2. ALL WALK INTERVALS TO HAVE VERBAL MESSAGE DETAILING WALK DIRECTION
3. VERBAL MESSAGE TO BE PLAYED DURING WALK INTERVAL

County: ALLEGHENY COUNTY

Municipality: CITY OF PITTSBURGH

Intersection: FIFTH AVENUE AND WASHINGTON PLACE/ CHATHAM SQUARE

Approved and Accepted:

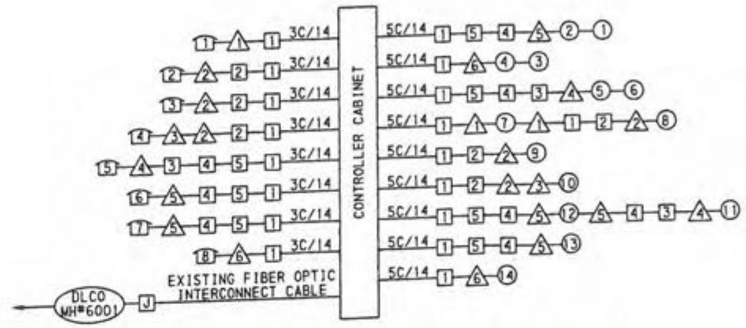
Municipal Representative _____ Date _____

PERMIT NO._____ SHEET 2 OF 2

DATE ISSUED_____ DATE REVISED_____

SIGNS

PLAN SYMBOL	SERIES DESIGNATION	SIZE W x H	DESCRIPTION	QUANTITY
A	SPECIAL	60"X18"	Fifth Avenue	2
B	SPECIAL	144"X24"	Washington Place → ← Chatham Square	1
C	R3-1	30"X30"	NO RIGHT TURN	2
D	R3-2	30"X30"	NO LEFT TURN	1
E	R3-4	36"X36"	NO U TURN	1
F	R3-5L	30"X36"	LEFT TURN ONLY	1
G	R3-5R	30"X36"	RIGHT TURN ONLY	2
H	R3-5S	30"X36"	STRAIGHT THROUGH	2
I	R4-7	24"X30"	KEEP RIGHT	1
J	R5-1	30"X30"	DO NOT ENTER	3
K	R5-1A	36"X24"	WRONG WAY	2
L	R6-1	36"X12"	ONE WAY (TWO SIDED, CITY STANDARD)	4
M	R6-2L	30"X36"	VERTICAL LEFT ONE WAY	1
N	R6-2R	30"X36"	VERTICAL RIGHT ONE WAY	1
O	R10-3E	9"X12"	EDUCATIONAL PUSH BUTTON FOR WALK SIGNAL WITH COUNTDOWN TIMER (MOD.)	8
P	R5-3-4	30"X24"	NO TRUCKS OR BUSES	1
Q	R10-11	30"X36"	NO TURN ON RED 7AM-10PM	2
R	R14-1	30"X36"	TRUCK ROUTE	1
S	OM1-3	18"X18"	HAZARD MARKER	1
W	SPECIAL	VARIES	PITTSBURGH WAYFINDER SIGN	



WIRING DIAGRAM

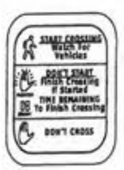
5C/14 - CABLE(NO. OF CONDUCTORS/SIZE AWG.)

△ SIGNAL SUPPORT □ JUNCTION BOX

○ SIGNAL HEAD ⬡ VIDEO DETECTOR

PEDESTRIAN PUSH BUTTON

"AS BUILT"



R10-3E
(MODIFIED)
9"X12"
O

POLE CHART

POLE NO.	TYPE	HEIGHT	WALL THK.	O.D.	BOLT CIRCLE DIAMETER	FOUNDATION W x L	FOUNDATION DEPTH	ANCHOR BOLTS Dia.	ANCHOR BOLTS Lg.	SIGNAL BRACKETS ON POLE DIM. "K"	SIGNAL BRACKETS ON POLE DIM. "J"	ARM DESIGNATION	DIM. "L"	DIM. "M"	DIM. "N"	DIM. "O"	DIM. "R"	DIM. "S"	DIM. "T"	DIM. "U"	DIM. "Q"	STATION	OFFSET
1	I	20'-6"	1/4"	13 3/4"	14 1/2"	24"x24"	6'6"	1"	48"	9'7"	3'0"												
2	I	20'-6"	1/4"	13 3/4"	14 1/2"	24"x24"	6'6"	1"	48"	9'7"	3'0"												
3	I	20'-6"	1/4"	13 3/4"	14 1/2"	24"x24"	6'6"	1"	48"	9'7"	3'0"												
4	I	30'-0"	5/8"	24"	22 5/8"	36"x36"	9'	2"	78"	9'7"	3'0"	ST4	40'	33'	21'		30'	25'	16'	11'	6'		
5	I	30'-0"	5/8"	24"	22 5/8"	36"x36"	9'	2"	78"	9'7"	3'0"	ST4	40'	33'	21'		14'						
6	I	30'-0"	5/8"	24"	22 5/8"	36"x36"	9'	2"	78"	9'7"	3'0"	ST4	50'	48'	36'		46'	42'			30'		
7	I	20'-6"	5/8"	24"	22 5/8"	36"x36"	9'	2"	78"			ST3	33'6"					17'	7'				
8	I	20'-6"	1/2"	24"	22 5/8"	36"x36"	9'	2"	78"			ST2B	19'				32'	20'	8'				

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER MARK C. SZEWCOW 050343-E

County: ALLEGHENY COUNTY

Municipality: CITY OF PITTSBURGH

Intersection: FIFTH AVENUE AND WASHINGTON PLACE/ CHATHAM SQUARE

Approved and Accepted:

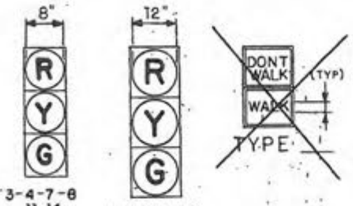
Municipal Representative _____ Date _____

PERMIT NO. _____ SHEET 1 OF 2

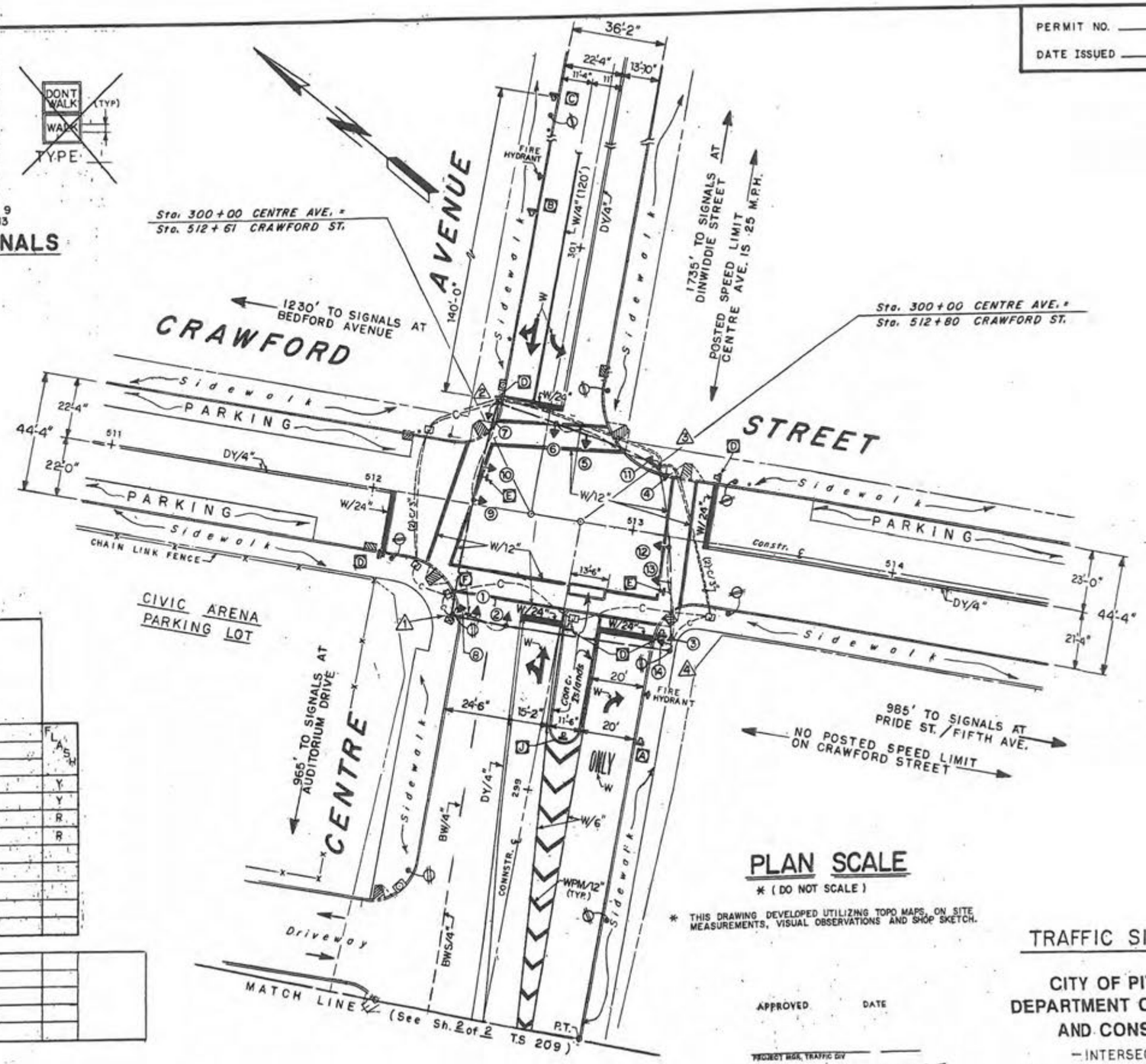
DATE ISSUED _____

LEGEND

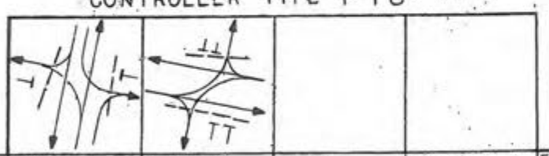
- SIGNAL POLE W/MAST ARM
- SPAN WIRE
- PEDESTAL
- WOOD POLE
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN (POLE MOUNTED)
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN PUSH BUTTON/SIGN
- INLET OR CATCH BASIN
- JUNCTION BOX
- SPLICE BOX
- CONTROLLER ASSEMBLY
- C/2" — CONDUIT/SIZE
- LUMINAIRE
- W/4" — WHITE (Solid Line)/WIDTH
- BW/4" — BROKEN WHITE (Line)/WIDTH
- W — WHITE DIRECTIONAL ARROW(S) LETTERING & MARKINGS
- BWS/4" — BROKEN WHITE SKIP (Lines)/WIDTH, 2 Ft. Line-4 Ft. Spc'ng.
- DY/4" — DOUBLE YELLOW (Solid lines)/WIDTH
- Y/4" — YELLOW (Solid Line)/WIDTH
- WPM/12" — WHITE PAVEMENT MARKING/WIDTH
- HANDICAP RAMP
- SIGN (CHANNEL MOUNTED)



SIGNALS



CONTROLLER TYPE PTS



SIGNALS	PHASE 1			PHASE 2			PHASE	PHASE	FLASH
	INTERVALS								
	1	2	3	4	5	6			
1-2-3-4-5	G	Y	R	R	R	R			Y
6-7	G	Y	R	R	R	R			Y
8-9-10-11	R	R	R	G	Y	R			R
12-13-14	R	R	R	G	Y	R			R

PLAN SCALE

* (DO NOT SCALE)

* THIS DRAWING DEVELOPED UTILIZING TOPO MAPS, ON SITE MEASUREMENTS, VISUAL OBSERVATIONS AND SHOP SKETCH.

APPROVED	DATE
PROJECT MGR. TRAFFIC DIV.	
G.H. DESIGNER	11-30-95
CITY ENGINEER	
ASST. DIRECTOR ENG.	

* SCALE: 1" = 20 FT.

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF ENGINEERING AND CONSTRUCTION

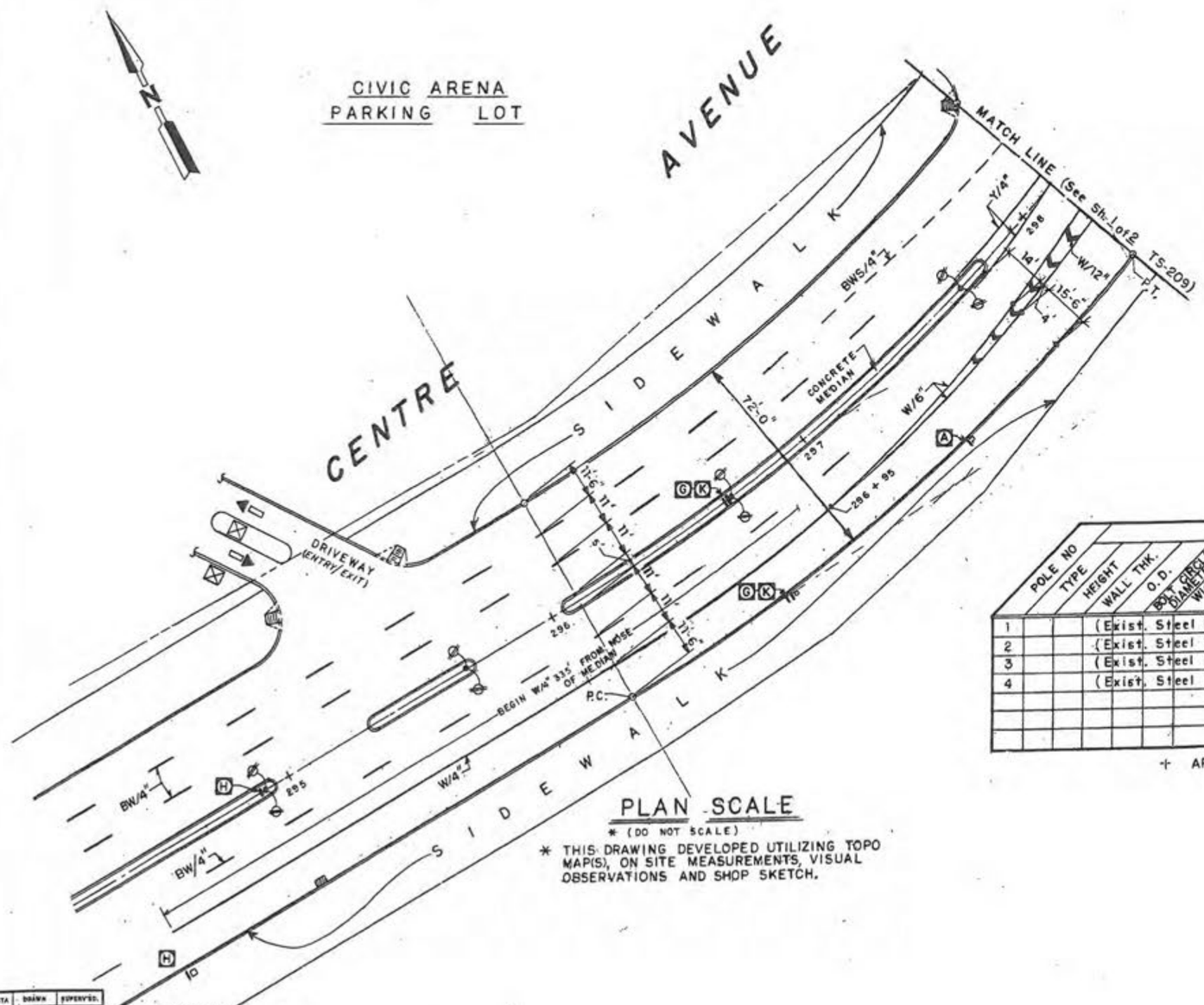
— INTERSECTION OF —

CENTRE AVE. – CRAWFORD ST.

FIELD DATA	DRAWN	SUPERV'SD.
BY	C. TAYLOR	
VOL.		

REVISIONS

CHARACTER	DATE



PLAN SCALE

* (DO NOT SCALE)

* THIS DRAWING DEVELOPED UTILIZING TOPO MAP(S), ON SITE MEASUREMENTS, VISUAL OBSERVATIONS AND SHOP SKETCH.

CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
1	# 14-12 Cond.	C.C.	S.H. 8										
	# 14-5 Cond.	S.H. 8	S.H. 1	1	S.H. 2								
2	# 14-12 Cond.	C.C.	SH 3/14										
	# 14-5 Cond.	~~SH3/14~~	~~SH13~~	13	S.H. 12								
3	# 14-12 Cond.	C.C.	S.H. 7										
	# 14-5 Cond.	S.H. 7	S.H. 10	10	S.H. 9								
4	# 14-12 Cond.	C.C.	S.H. 11										
	# 14-5 Cond.	S.H. 11	S.H. 5	5	S.H. 6								
	# 14-5 Cond.	S.H. 11	S.H. 4										
NO INTERCONNECT CABLE													

SIGNS

PLAN SYMBOL	DESCRIPTION	SIZE W x H	QUANTITY
A	(R3-7R) RIGHT LANE MUST TURN RIGHT	30" x 30"	2
B	(R3-7L) LEFT LANE MUST TURN LEFT	30" x 30"	1
C	(R3-8LSR) OPTIONAL LEFT TURN-STRAIGHT/RIGHT	30" x 30"	1
D	(R10-6L) STOP HERE ON RED	24" x 30"	5
E	(R10-11) NO TURN ON RED	30" x 36"	2
F	(R10-11) NO TURN ON RED, 7:A.M.-6:P.M.	30" x 36"	1
G	(W4-2R) TRANSITION- RIGHT LANE ENDS	36" x 36"	2
H	(W4-10R mod.) CENTER LANE ENDS	30" x 30"	2
J	(W12-1) DOUBLE ARROW SIGN	30" x 30"	1
K	(SPEC. PLAQUE) CENTER LANE	24" x 24	2

(M) = MODIFIED PENN DOT SIGN

POLE CHART

POLE NO	POLE: TYPE	HEIGHT	WALL THK.	O.D.	BOLT CIRCLE DIAMETER	FOUNDATION: Width x Length	Depth	ANCHOR BOLTS: Dia.	Lg.	SIGNAL BRACKETS ON POLE: Dim. "K"	Dim. "J"	MAST ARM: ARM DESIGNATION	Dim. "L"	Dim. "M"	Dim. "N"	Dim. "O"	LOCATION: STATION	OFFSET
1			(Exist. Steel Pole)														298+59†	Lt. 41'†
2			(Exist. Steel Pole)														300+38†	Lt. 20'†
3			(Exist. Steel Pole)														300+24†	Rt. 44'†
4			(Exist. Steel Pole)														298+59†	Rt. 42'†

† APPROXIMATE POLE LOCATION(S) – SEE SH. 1 of 2

FIELD DATA	DRAWN	SUPERVSD.
BY	C. TAYLOR	
VOL.		
CHECKED	INSPECT'D	CEO.-CONST.

REVISIONS

CHARACTER	DATE
	11-29-95

APPROVED DATE

PROJECT MGR. TRAFFIC DIV. —

DESIGNER GH 11-30-95

CITY ENGINEER —

ASST. DIRECTOR ENG. Fred Rispinella 12-1-95

DATE

SIGNAL TABULATION

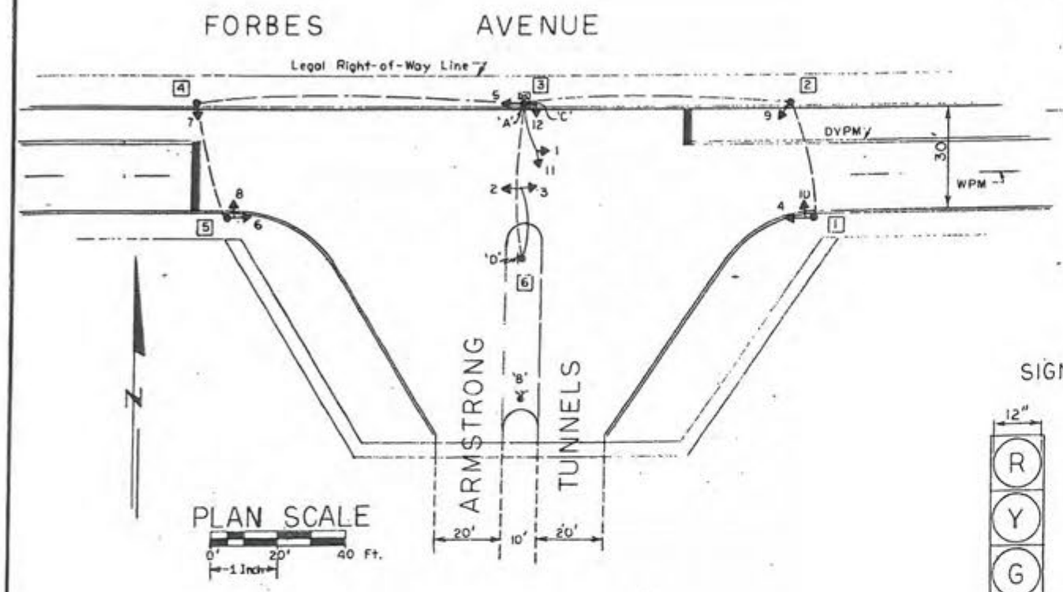
CITY OF PITTSBURGH
DEPARTMENT OF ENGINEERING
AND CONSTRUCTION

— INTERSECTION OF —

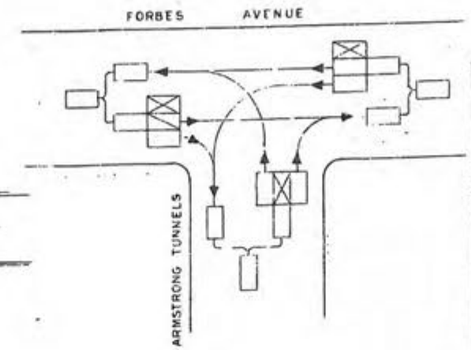
CENTRE AVE. – CRAWFORD ST.

* SCALE: AS NOTED

TS-209



FLOW DIAGRAM

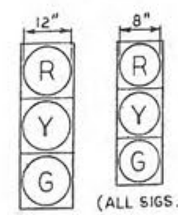


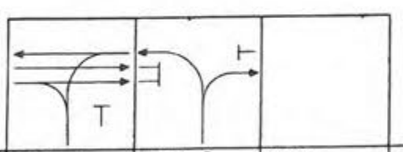
CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS		FROM	TO	FROM	TO	FROM	TO
1	7C # 14	CC	SH 5	SH 5	SH 1			
2	7C # 14	CC	SH 2	SH 2	SH 3			
3	7C # 14	CC	Pole #2	Pole #2	SH 4			
4	7C # 14	CC	Pole #6	Pole #4	SH 6			
5	7C # 14	CC	SH 12	SH 12	SH 11			
6	7C # 14	CC	SH 9	SH 9	SH 10			
7	7C # 14	CC	SH 7	SH 7	SH 8			
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

MATERIALS LIST

SIGNALS





SIGNALS	PHASE A			PHASE B			PHASE			EMERG. FLASH
	INTERVAL									
	1	2	3	4	5	6	7	8	9	
1-2-3-4-5-6	G	GA	A	R	R	R				Y
7-8-9-10-11	R	R	R	G	GA	A				R
12	R	R	R	G	GA	A				R

FIXED									
MIN. INITIAL									
MAX. INITIAL									
SECONDS PER ACTUATION									
VEHICLE									
MAXIMUM									
PED. TIME									

POLE CHART

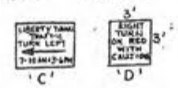
POLE NO.	POLE: TYPE	HEIGHT	WALL THK.	O.D.	BOLT CIRCLE DIAMETER	FOUNDATION DEPTH	ANCHOR BOLTS: Dia.	Lg.	SIGNAL BRACKETS ON POLE: DIM. "K"	DIM. "J"	MAST ARM: ARM DESIGNATION	DIM. "L"	DIM. "M"	DIM. "N"	DIM. "O"	LOCATION: STATION	OFFSET
1											—	—	—	—	—		
2											—	—	—	—	—		
3												14'		—	—		
4											—	—	—	—	—		
5											—	—	—	—	—		
6												20'		—	—		

— LEGEND —

- CONTROLLER
- SIGNAL
- MAST ARM & SIGNAL
- CONDUIT
- POLE NUMBER
- LOOP DETECTOR
- WOOD POLE
- STEEL POLE
- SPLICE BOX
- JUNCTION BOX
- DYPM — DOUBLE YELLOW PAINT MARKING
- WPM — WHITE PAINT MARKING.
- OVERHEAD MESSENGER

SIGNS

'A' R10-11 'NO TURN ON RED' 7 A.M.-10 P.M. 24"x30"
'B' W34 'SLOW'



APPROVED	DATE
TRAFFIC ENGR.	
DESIGNER	
CITY ENGR. B.R.W.	
DIRECTOR	

FIELD DATA	DRAWN	SUPERV'SD.
BY	C. TAYLOR	
FOL.		
CHECKED	INSPECT'D	CKD.-CONST.

REVISIONS

CHARACTER	DATE
REMARKS TO CONFORM WITH CITY STANDARDS	4-11-83

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

— INTERSECTION OF —

FORBES AVENUE
&
ARMSTRONG TUNNELS

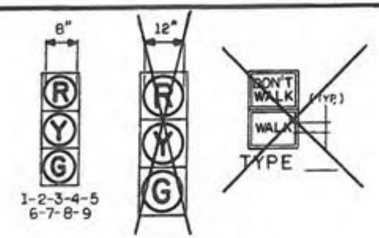
SCALES: AS NOTED
DATE 4-11-83
SHEET NO. 1 OF 1
ACCESSION NO.
CASE NO.

PERMIT NO. _____ SHEET 1 OF 1

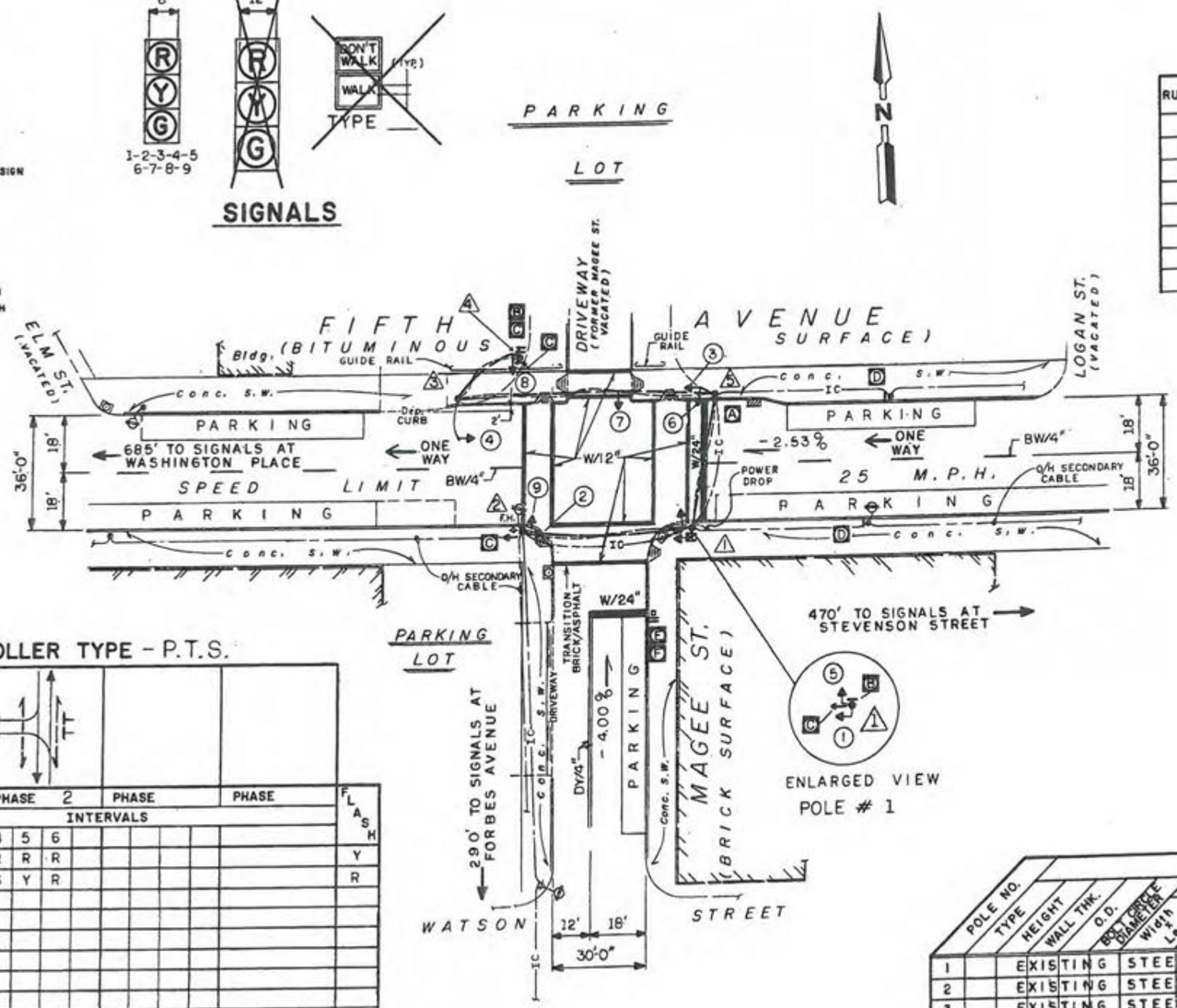
DATE ISSUED _____

LEGEND

- SIGNAL POLE W/MAST ARM
- SIGNAL STRAIN POLE
- PEDESTAL
- WOOD POLE
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN PUSH BUTTON/SIGN
- VEHICLE DETECTOR
- JUNCTION BOX
- SPLICE BOX
- CONTROLLER ASSEMBLY
- C/2" - CONDUIT/SIZE
- W/4" - WHITE (Solid Line)/WIDTH
- BW/4" - BROKEN WHITE (Line)/WIDTH
- DY/4" - DOUBLE YELLOW (Lines)/WIDTH
- F.H. - FIRE HYDRANT
- CATCH BASIN/INLET
- SPAN WIRE & CABLE
- HANDICAP RAMP



SIGNALS



CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO

SIGNS

PLAN SYMBOL	DESCRIPTION	SIZE W x H	QUANTITY
A	R3-1, NO RIGHT TURN	30"x 30"	1
B	R3-2, NO LEFT TURN	30"x 30"	2
C	R6-1, ONE WAY ARROW	36"x 12"	4
D	R5-1A, WRONG WAY	36"x 24"	2
E	R3-1, NO RIGHT TURN	24"x 24"	1
F	R10-6L, STOP HERE ON RED	24"x 30"	1

CONTROLLER TYPE - P.T.S.

SIGNALS	PHASE 1				PHASE 2			PHASE				PHASE				FLASH
	INTERVALS															
	1	2	3		4	5	6									
1-2-3-4	G	Y	R		R	R	R									Y
5-6-7-8-9	R	R	R		G	Y	R									R

POLE CHART

POLE NO.	POLE: TYPE	HEIGHT	WALL THK.	O.D. BOT. CIRCLE DIAMETER	FOUNDATION: Width	Length	Depth	ANCHOR BOLTS: Dia.	Lg.	SIGNAL BRACKETS ON POLE: Dim. "K"	Dim. "J"	MAST ARM: ARM DESIGNATION	DIM. "L"	DIM. "M"	DIM. "N"	DIM. "O"	LOCATION: STATION	OFFSET
1		EXISTING		STEEL			POLE											
2		EXISTING		STEEL			POLE											
3		EXISTING		STEEL			POLE											
4		EXISTING		STEEL			POLE											
5		EXISTING		STEEL			POLE											

FIELD DATA	DRAWN	SUPERV'SD.
BY	C. TAYLOR	
VOL.		
CHECKED	INSPECT'S.	DIG-CONST.

REVISIONS

CHARACTER	DATE

APPROVED DATE

PROJECT MGR. TRAFFIC DIV. _____

DESIGNER _____

CITY ENGINEER _____

ASST. DIRECTOR ENGR. _____

DIRECTOR _____

CITY OF PITTSBURGH
DEPARTMENT OF ENGINEERING AND CONSTRUCTION

— INTERSECTION OF —

FIFTH AVE.-MAGEE STREET

SCALE: 1" = 20 FT.

DATE

TS-303

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
11	ALLEGHENY	764	19	5 of 13

CITY OF PITTSBURGH

REVISION NUMBER	REVISIONS	DATE	BY
1	8" Signals for side street, timing		
	Remove two-way traffic on Forbes Ave.		
	3 Lanes on Chatham Sq.		

PERMIT No. 1-092-11 SHEET 2 OF 2

DATE ISSUED 8-13-84 DATE REVISED

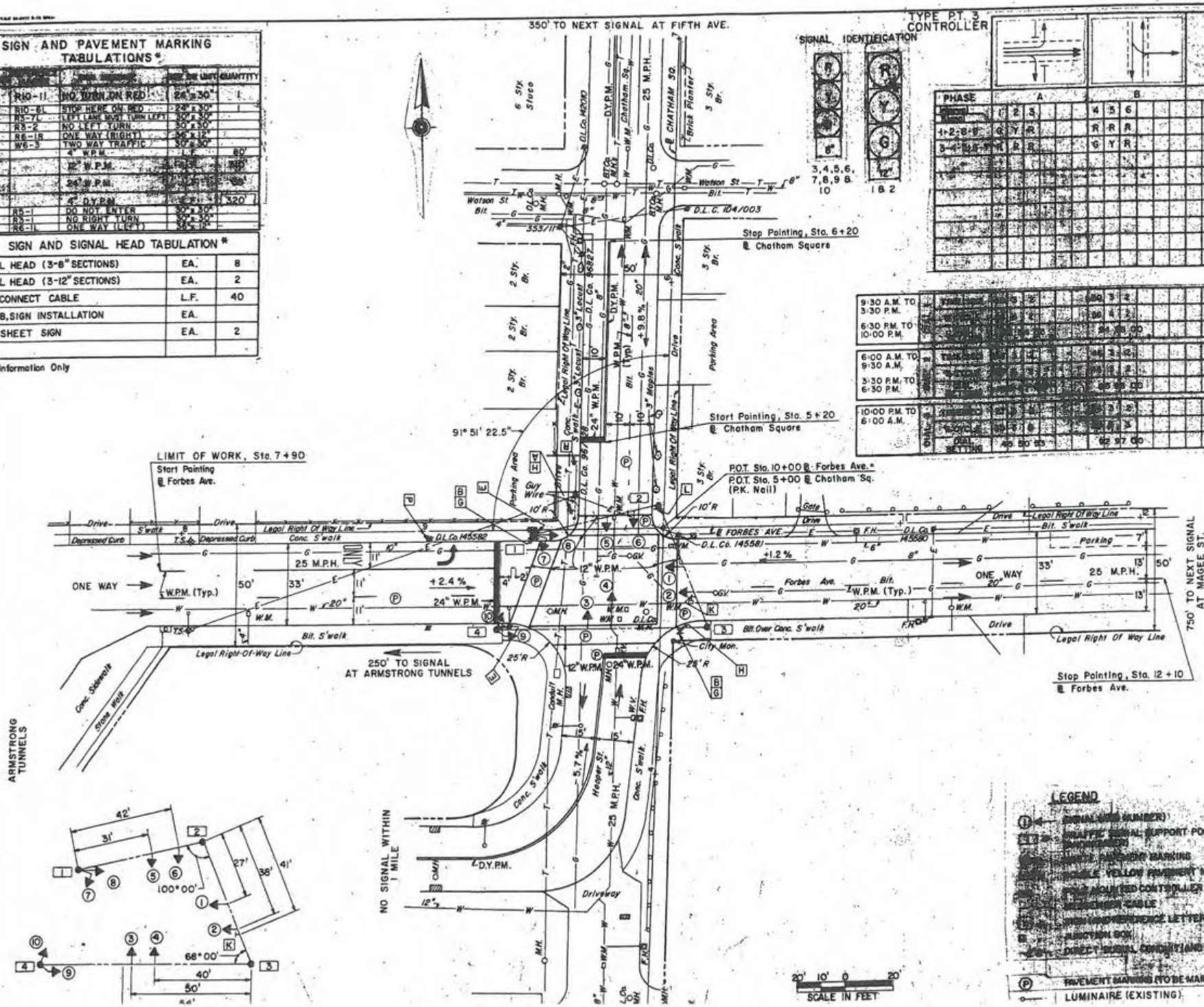
SIGN AND PAVEMENT MARKING TABULATIONS *

			SIZE PER UNIT	QUANTITY
	R10-11	NO TURN ON RED	24"x30"	1
R	R10-6L	STOP HERE ON RED	24"x30"	1
P	R5-7L	LEFT LANE MUST TURN LEFT	30"x30"	
B	R3-2	NO LEFT TURN	30"x30"	
G	R6-1R	ONE WAY (RIGHT)	36"x12"	
L	W6-3	TWO WAY TRAFFIC	30"x30"	
		4" W.P.M.	L.F.	80'
		12" W.P.M.	L.F.	300'
		24" W.P.M.	L.F.	90'
		4" D.Y.P.M.	L.F.	320'
E	R5-1	DO NOT ENTER	30"x30"	
A	R3-1	NO RIGHT TURN	30"x30"	
H	R6-1L	ONE WAY (LEFT)	36"x12"	

SIGN AND SIGNAL HEAD TABULATION *

SIGNAL HEAD (3-8" SECTIONS)	EA.	8
SIGNAL HEAD (3-12" SECTIONS)	EA.	2
INTERCONNECT CABLE	L.F.	40
TYPE B, SIGN INSTALLATION	EA.	
FLAT SHEET SIGN	EA.	2

* For Information Only



TYPE P.T. 3 CONTROLLER

PHASE	A			B			EMERGENCY FLASH
	1	2	3	4	5	6	
1-2-8-9	G	Y	R	R	R	R	Y
3-4-5-6-10	R	R	R	G	Y	R	R

																																			TOTALS
9:30 A.M. TO 3:30 P.M.																																				80
																																				100%
6:30 P.M. TO 10:00 P.M.																																				
6:00 A.M. TO 9:30 A.M.																																				100
																																				100%
3:30 P.M. TO 6:30 P.M.																																				
10:00 P.M. TO 6:00 A.M.																																				60
																																				100%
ONE CYCLE																																				
TOTAL SECTION																																				

NOTES

INSTALLATION, OPERATION AND MAINTENANCE OF THESE SIGNALS SHALL BE IN ACCORDANCE WITH PENNSYLVANIA DEPARTMENT OF TRANSPORTATION REGULATIONS GOVERNING THE DESIGN, LOCATION, AND OPERATION OF SIGNS, SIGNALS, AND MARKINGS.

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED, IN WRITING, BY THE SECRETARY OF TRANSPORTATION.

ALL MAINTENANCE WORK, INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS, IS THE RESPONSIBILITY OF THE PERMITTEE.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF TWO (2) FEET BEHIND THE FACE OF THE CURB OR EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM HORIZONTAL CLEARANCE OF TWO (2) FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM CLEARANCE OF SIXTEEN (16) FEET ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF EIGHT (8) FEET ABOVE THE SIDEWALK OR PAVEMENT GRADE.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS, MEASURED AT RIGHT ANGLES TO THE APPROACH, SHALL BE EIGHT (8) FEET.

PRIOR TO INSTALLATION, THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITY LINES.

IN ADDITION TO THIS SIGNAL PERMIT, THE PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED ACCORDINGLY.

ALL WORK SHALL BE COMPLETED WITHIN THE PROVISIONS OF SECTION 950 TO 957 OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATION 408, DATED 1976. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PAVEMENT MARKINGS WITH THE EXCEPTION OF CENTERLINES, PAVEMENT EDGE LINES, AND LANE LINES ON LEGISLATIVE ROUTES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE APRIL 10, 1975.

THIS CONTROLLER SHALL BE INTERCONNECTED AND COORDINATED WITH THE OTHER FORBES AVENUE INTERSECTIONS INDICATED ON THE INCLUDED TIME-SPACE DIAGRAM.

THE MASTER COORDINATING UNIT IS TO BE LOCATED AT THE INTERSECTION OF FORBES AVENUE AND MAGEE STREET. 1-092-11

LEGEND

- (I) SIGNAL (HEAD NUMBER)
- TRAFFIC SIGNAL SUPPORT POLE
- PAVEMENT MARKING
- YELLOW PAVEMENT MARKING
- POLE MOUNTED CONTROLLER
- INTERCONNECT CABLE
- SIGN AND REFERENCE LETTER (TYPE B)
- JUNCTION BOX
- DIRECT BURIAL CONDUIT (AND SIZE)
- (P) PAVEMENT MARKING (TO BE MAINTAINED BY PERMITTEE)
- LUMINAIRE (EXISTING)

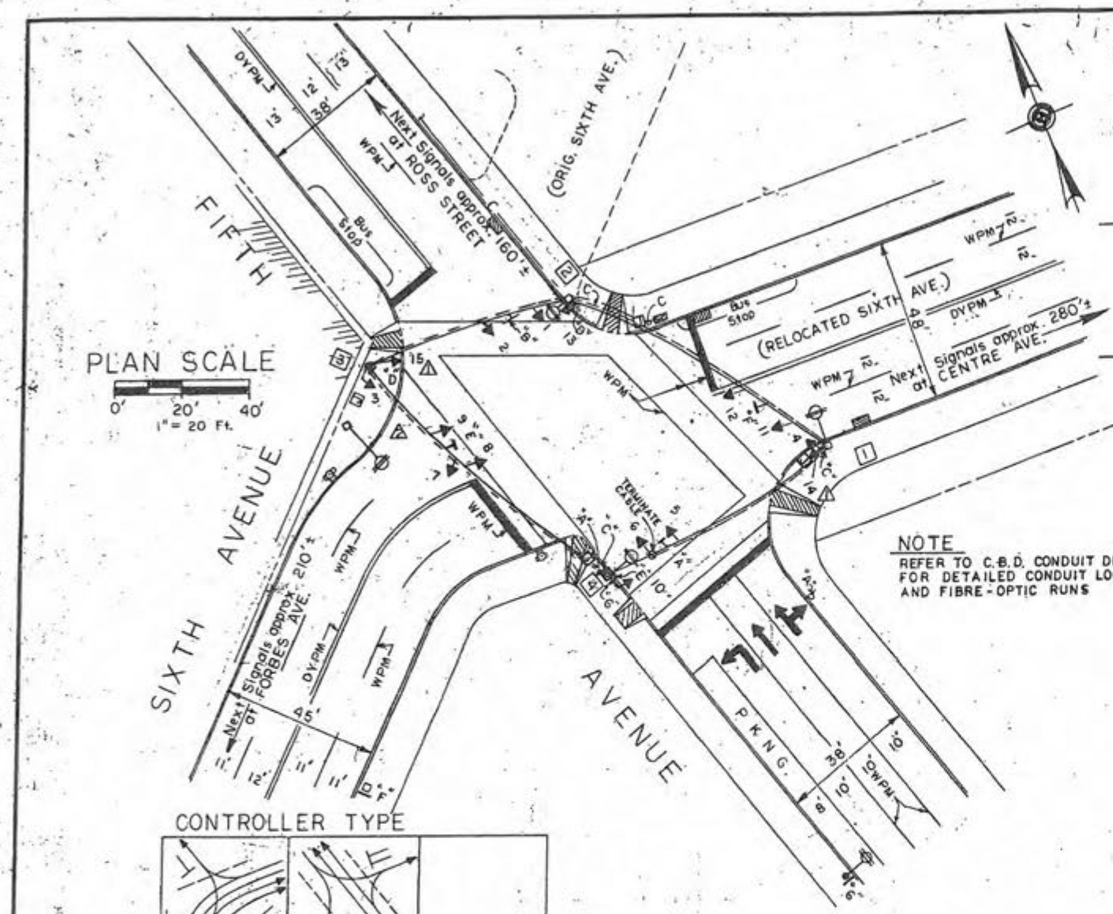
TRAFFIC SIGNAL PLAN

INTERSECTION OF FORBES AVE., CHATHAM SQ. AND HOOPER ST.

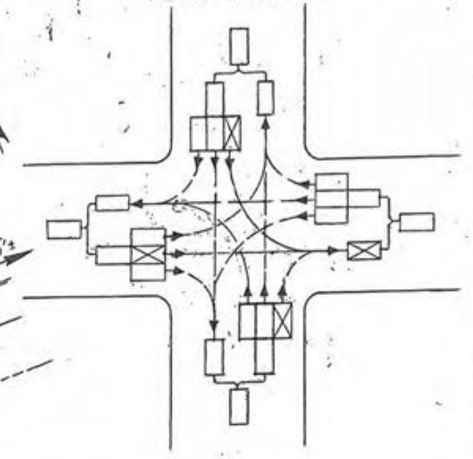
COUNTY ALLEGHENY | CITY OF PITTSBURGH

APPROVED [signature] MUNICIPAL REPRESENTATIVE DATE 8-3-84

[signature] DATE 8-13-84



FLOW DIAGRAM

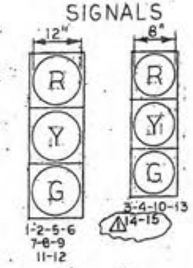


CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

MATERIALS LIST

SIGNALS



SIGNS

"A" ~ R5-1 ~ 'DO NOT ENTER' ~ 30" x 30"
"B" ~ W6-3 ~ TWO WAY ARROWS ~ 30" x 30"
"C" ~ R6-1 ~ ONE WAY ARROW ~ 36" x 12"
"D" ~ R6-11 ~ 'END ONE WAY' ~ 24" x 30"
"E" ~ R3-2 ~ NO LT. TURN ~ 30" x 30"
"F" ~ R3-1 ~ NO RT. TURN ~ 30" x 30"
"G" ~ R3-7L ~ LEFT LANE MUST TURN LEFT ~ 30" x 30"

CONTROLLER TYPE

SIGNALS	PHASE A			PHASE B			PHASE			FLASH
	INTERVAL									
	1	2	3	4	5	6	7	8	9	
7-8-9-10	G	Y	R	R	R	R				Y
11-12-13-14 ⚠	G	Y	R	R	R	R				Y
1-2-3-4	R	R	R	G	Y	R				R
5 6	R	R	R	G	Y	R				R

-LEGEND-

- CONTROLLER
- SIGNAL
- MAST ARM
- —C— CONDUIT
- POLE NUMBER
- LOOP DETECTOR
- WOOD POLE
- STEEL POLE
- SPLICE BOX
- JUNCTION BOX
- DYPM — DOUBLE YELLOW PAINT MARKING
- WPM — WHITE PAINT MARKING
- MESSENGER/CABLE
- HYDRANT
- LUMINAIRE
- HANDICAP RAMP
- INLET

POLE CHART

POLE NO.	POLE: TYPE	HEIGHT	WALL THK.	O.D.	ANCHOR BOLTS: Dia.	Lg.	SIGNAL BRACKETS ON POLE: DIM. "K"	DIM. "J"	MAST ARM: ARM DESIGNATION	DIM. "L"	DIM. "M"	DIM. "N"	DIM. "O"	LOCATION: STATION	OFFSET

FIELD DATA	DRAWN	SUPERVISD.
BY	C. TAYLOR	
VOL.		
CHECKED	INSPECTD	CKD.-CONST.

REVISIONS

CHARACTER	DATE	
⚠ [illegible]	3-22-01	[illegible]
[illegible]	3-22-01	[illegible]

APPROVED DATE

ENGR.

DIVISION

CITY ENGR. D. P. W.

DIRECTOR

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

— INTERSECTION OF —

FIFTH AVENUE &
SIXTH AVENUE (RELOCATED)

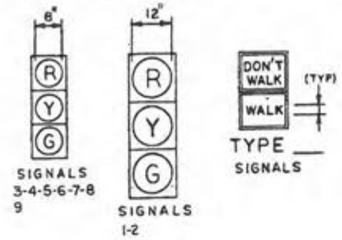
SCALES AS NOTED
DATE 9-7-84
SHEET NO. ___ OF ___
ACCESSION NO. ___
CASE NO. ___

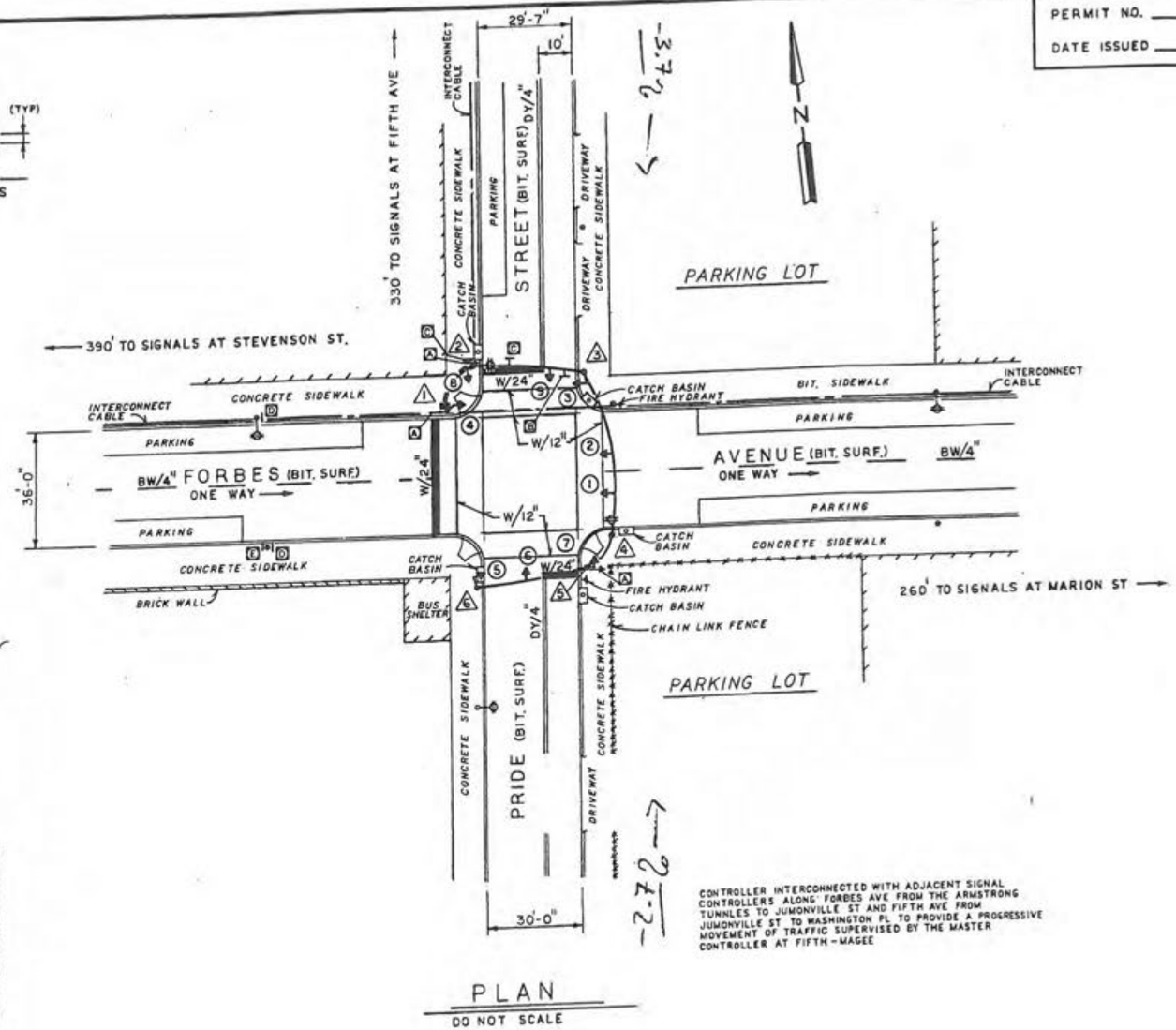
PERMIT NO. _____ SHEET 1 OF 2

DATE ISSUED _____

LEGEND

- SIGNAL POLE W/MAST ARM
- SIGNAL · STRAIN POLE
- PEDESTAL
- WOOD POLE
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN PUSH BUTTON/SIGN
- VEHICLE DETECTOR
- JUNCTION BOX
- SPLICE BOX
- CONTROLLER ASSEMBLY
- C/2" — CONDUIT/SIZE
- LUMINAIRE
- W/4" — SOLID WHITE LINE/WIDTH
- BW/4" — BROKEN WHITE LINE/WIDTH
- Y/4" — SOLID YELLOW LINE/WIDTH
- BY/4" — BROKEN YELLOW LINE/WIDTH
- DY/4" — DOUBLE SOLID YELLOW LINE/WIDTH



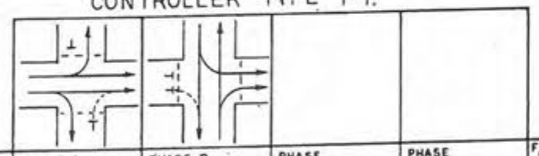


CONTROLLER INTERCONNECTED WITH ADJACENT SIGNAL CONTROLLERS ALONG FORBES AVE FROM THE ARMSTRONG TUNNLES TO JUMONVILLE ST AND FIFTH AVE FROM JUMONVILLE ST TO WASHINGTON PL. TO PROVIDE A PROGRESSIVE MOVEMENT OF TRAFFIC SUPERVISED BY THE MASTER CONTROLLER AT FIFTH – MAGEE

PLAN

DO NOT SCALE

CONTROLLER TYPE PT.



SIGNALS	PHASE A			PHASE B			PHASE	PHASE	FLASH
	INTERVAL								
	1	2	3	4	5	6			
1-2-3-4-5	G	Y	R	R	R	R			Y
6-7-8-9	R	R	R	G	Y	R			R

FIELD DATA	DRAWN	SUPERV'SD.
BY		
VOL.		
CHECKED	INSPECT'D	CKD.-CORST.

REVISIONS

CHARACTER	DATE

GRADE

APPROVED DATE

TRAFFIC ENGINEER

G.H. DESIGNER 7-8-91

ASS'T. DIRECTOR - B.P.W.

DIRECTOR

SCALES AS NOTED

DATE

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

— INTERSECTION OF —

FORBES AVENUE – PRIDE STREET

TS-334

FLOW DIAGRAM

CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
1	#14-9	CC	SH 4	SH 4	SH 8	SH 8	SH 9	SH 9	SH 3	SH 3	SH 2	SH 2	SH 1
				SH 1	SH 7	SH 7	SH 6	SH 6	SH 5				
2	#12-12	INTECONNECT FED FROM FIFTH - PRIDE											

SIGNS

PLAN SYMBOL	DESCRIPTION	SIZE W x H
A	(R6-1) ONE WAY ARROW	36"x12"
B	(R3-2) NO LEFT TURN	30"x30"
C	(R3-1) NO RIGHT TURN	30"x30"
D	(R5-1) DO NOT ENTER	30"x30"
E	(R14-1) TRUCK ROUTE W/STRAIGHT ARROW	24"x30"

POLE CHART

POLE NO.	POLE: TYPE	HEIGHT	WALL THK.	O.D.	BOLT CIRCLE DIAMETER	FOUNDATION W x L	FOUNDATION DEPTH	ANCHOR BOLTS: Dia.	Lg.	SIGNAL BRACKETS ON POLE: DIM. "K"	DIM. "J"	MAST ARM: ARM DESIGNATION	DIM. "L"	DIM. "M"	DIM. "N"	DIM. "O"	LOCATION: STATION	OFFSET
1	EXISTING 30'-0" STEEL POLE																	
2	EXISTING WOOD POLE																	
3	EXISTING 30'-0" STEEL POLE																	
4	EXISTING STEEL POLE																	
5	EXISTING WOOD POLE																	
6	EXISTING 30'-0" STEEL POLE																	

APPROVED DATE

TRAFFIC ENGINEER

GK 7-8-91
DESIGNER

ASS'T. Director S.P.W.

DIRECTOR

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF PUBLIC WORKS
BUREAU OF ENGINEERING

— INTERSECTION OF —
FORBES AVENUE – PRIDE STREET

SCALES AS NOTED
DATE

FIELD DATA	DRAWN	SUPERV'SD
BY		
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

REVISIONS

CHARACTER	DATE

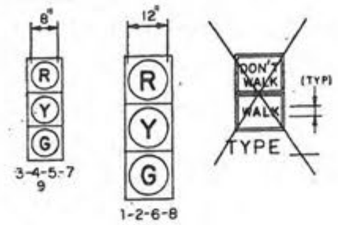
TS-334

PERMIT NO. _____ SHEET 1 OF 2

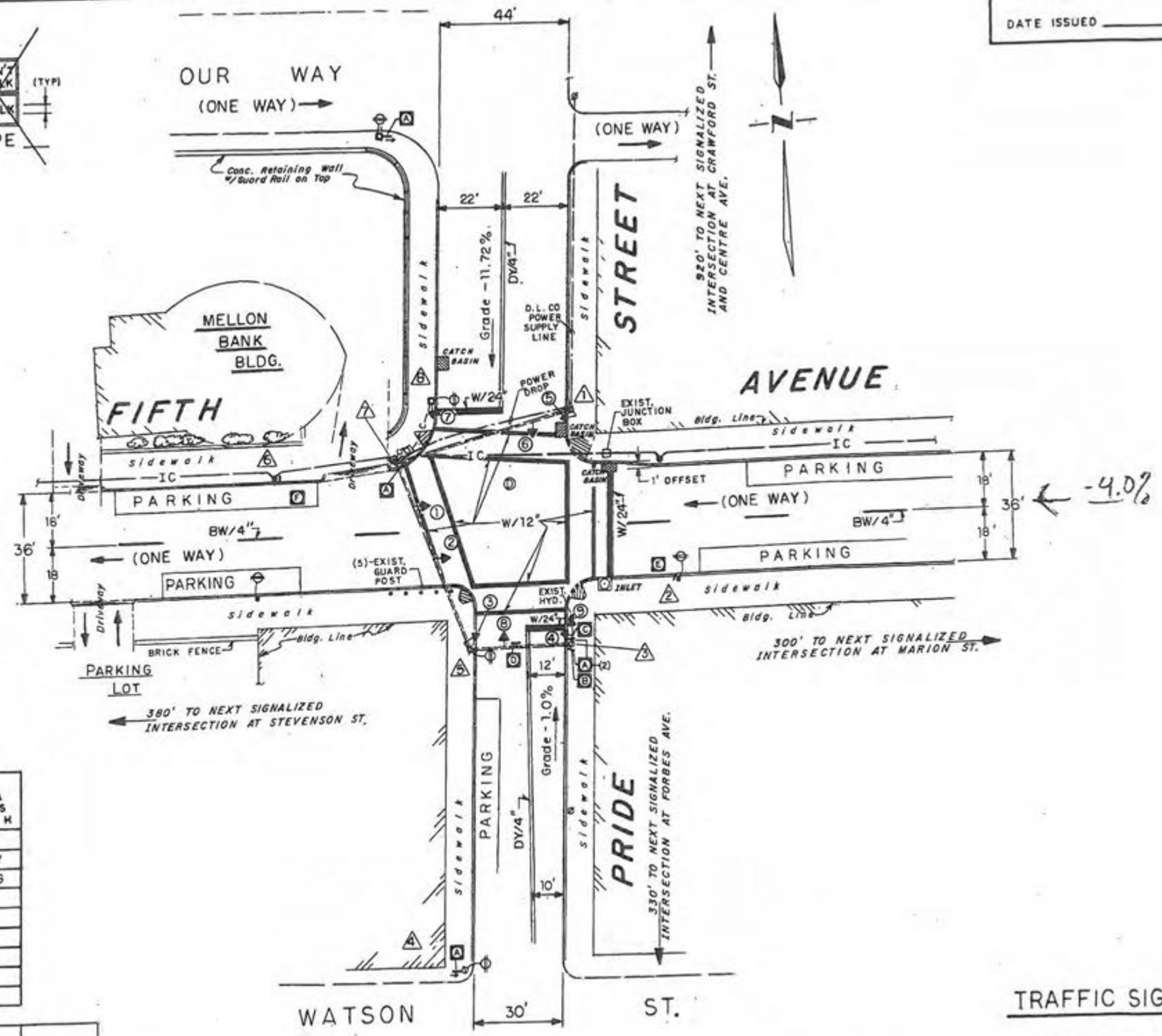
DATE ISSUED _____

LEGEND

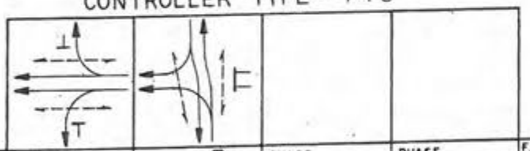
- PEDESTAL
- WOOD POLE
- VEHICULAR SIGNAL HEAD
- SPAN WIRE
- SIGN
- JUNCTION BOX
- SPLICE BOX
- CONTROLLER ASSEMBLY
- C/2" — CONDUIT/SIZE
- LUMINAIRE
- W/4" — SOLID WHITE LINE/WIDTH
- BW/4" — BROKEN WHITE LINE/WIDTH
- Y/4" — SOLID YELLOW LINE/WIDTH
- BY/4" — BROKEN YELLOW LINE/WIDTH
- DY/4" — DOUBLE SOLID YELLOW LINE/WIDTH



SIGNALS



CONTROLLER TYPE - PTS



SIGNALS	PHASE A			PHASE B			PHASE	PHASE	FLASH
	INTERVALS								
	1	2	3	4	5	6			
1-2-3-4-5	G	Y	R	R	R	R			Y
6-7-8-9	R	R	R	G	Y	R			G

GRADE

APPROVED	DATE
DIRECTOR, MUNI. TRAFFIC DIV.	8-6-93
DESIGNER	7-14-93
CITY ENGINEER	
ASST. DIRECTOR ENGR.	
DIRECTOR	

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF ENGINEERING AND CONSTRUCTION

— INTERSECTION OF —

FIFTH AVE.— PRIDE ST

SCALE 1" = 20 FT.
DATE July 14, 1993

FIELD DATA	DRAWN	SUPERV'SD.
BY	C. TAYLOR	
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

REVISIONS

CHARACTER	DATE

THIS DWG. REPLACES PRINT # 393

TS-311

FLOW DIAGRAM

CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
1	#14-5 Cond.	CC	JB	JB	S.H. 7								
2	#14-10 Cond.	CC	S.H. 6	—									
	#14-5 Cond.	S.H. 6	S.H. 6										
3	#14-10 Cond.	CC	S.H. 1	S.H. 1	S.H. 2	2	S.H. 3	3	S.H. 8	S.H. 8	S.H. 4		
#12-12 Conductor INTERCONNECT CABLE													

SIGNS

PLAN SYMBOL	DESCRIPTION	SIZE W x H
A	(R6-1) Horizontal One Way Arrow	36" x 12"
B	(R3-1) No Right Turn	24" x 24"
C	(R3-2) No Left Turn	24" x 24"
D	(R3-2) No Left Turn	30" x 30"
E	(R5-1) Do Not Enter	30" x 30"
F	(R14-1) Truck Route	24" x 30"

POLE CHART

POLE NO.	TYPE	POLE: HEIGHT	WALL THK.	O.D.	BOLT CIRCLE DIAMETER	FOUNDATION W x L	FOUNDATION DEPTH	ANCHOR BOLTS: Dia.	Lg.	SIGNAL BRACKETS ON POLE: DIM. "K"	DIM. "J"	MAST ARM: ARM DESIGNATION	DIM. "L"	DIM. "M"	DIM. "N"	DIM. "O"	LOCATION: STATION	OFFSET
1	EXIST. WOOD POLE																	
2	EXIST. STEEL POLE																	
3	EXIST. WOOD POLE																	
4	EXIST. WOOD POLE																	
5	EXIST. WOOD POLE																	
6	EXIST. STEEL POLE																	
7	EXIST. STEEL POLE																	
8	EXIST. STEEL POLE																	

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF ENGINEERING AND CONSTRUCTION

— INTERSECTION OF —

FIFTH AVE. — PRIDE ST.

APPROVED	DATE
WORKS ENG. TRAFFIC DIV	8-6-93
DESIGNER	7-14-93
CITY ENGINEER	
ASST. DIRECTOR ENG.	
DIRECTOR	

SCALE 1" = 20 FT.
DATE July 14, 1993

FIELD DATA	DRAWN	SUPERV'SD.
BY	C. TAYLOR	
VOL.		
CHECKED	INSPECT'D	EXD.-CONST.

REVISIONS

CHARACTER	DATE

THIS DWG. REPLACES PRINT # 393

TS-311

PERMIT NO. _____ SHEET 1 OF 1

DATE ISSUED _____

LEGEND

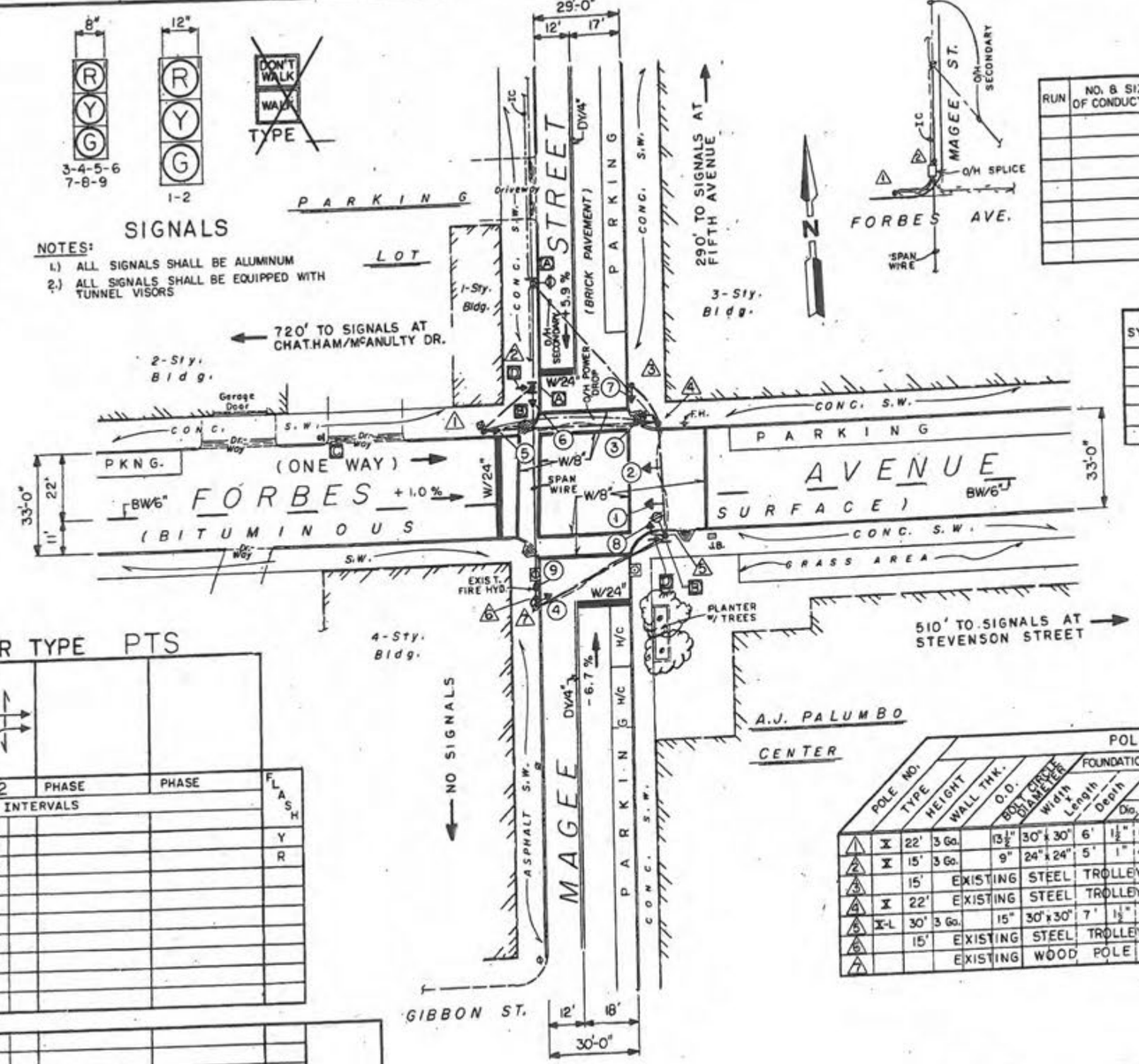
- SIGNAL POLE W/MAST ARM
- SIGNAL STRAIN POLE
- PEDESTAL
- WOOD POLE
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN PUSH BUTTON/SIGN
- VEHICLE DETECTOR
- JUNCTION BOX
- SPLICE BOX
- CONTROLLER ASSEMBLY
- C/2" - CONDUIT/SIZE
- W/4" - WHITE (Solid Line)/WIDTH
- BW/4" - BROKEN WHITE (Line)/WIDTH
- DY/4" - DOUBLE YELLOW (Solid Lines)/WIDTH
- CATCH BASIN/INLET
- SPAN WIRE & CABLE
- LUMINAIRE
- F.H. - FIRE HYDRANT
- HANDICAP RAMP

SIGNALS

NOTES:

1.) ALL SIGNALS SHALL BE ALUMINUM

2.) ALL SIGNALS SHALL BE EQUIPPED WITH TUNNEL VISORS



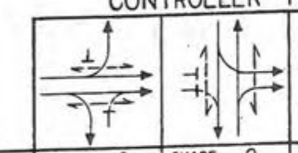
CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO

SIGNS

PLAN SYMBOL	DESCRIPTION	SIZE W x H	QUANTITY
A	R3-1, NO RIGHT TURN	30"x30"	2
B	R3-2, NO LEFT TURN	30"x30"	2
C	R5-1, DO NOT ENTER	30"x30"	1
D	R6-1, HORIZONTAL ONE WAY ARROW	36"x12"	2

CONTROLLER TYPE PTS



SIGNALS	PHASE 1			PHASE 2			PHASE	PHASE	FLASH
	INTERVALS								
	1	2	3	4	5	6			
1-2-3-4-5	G	Y	R	R	R	R			Y
6-7-8-9	R	R	R	G	Y	R			R

POLE CHART

POLE NO.	TYPE	HEIGHT	WALL THK.	O.D.	BOLT CIRCLE DIAMETER	FOUNDATION Width x Length	FOUNDATION Depth	ANCHOR BOLTS Dia.	ANCHOR BOLTS Lg.	SIGNAL BRACKETS ON POLE Dim. "K"	SIGNAL BRACKETS ON POLE Dim. "J"	MAST ARM ARM DESIGNATION	MAST ARM DIM. "L"	MAST ARM DIM. "M"	MAST ARM DIM. "N"	MAST ARM DIM. "O"	LOCATION STATION	LOCATION OFFSET
1	X	22'	3 Ga.		13½"	30"x30"	6'	1½"	60"	(Existing)								
2	X	15'	3 Ga.		9"	24"x24"	5'	1"	48"	(Existing)								
3		15'	EXISTING		STEEL	TROLLEY POLE												
4	X	22'	EXISTING		STEEL	TROLLEY POLE												
5	X-L	30'	3 Ga.		15"	30"x30"	7'	1½"	60"	(Existing)								
6		15'	EXISTING		STEEL	TROLLEY POLE												
7			EXISTING		WOOD	POLE												

FIELD DATA	DRAWN	SUPERV'SD.
BY	C TAYLOR	
VOL.		
CHECKED	INSPECT'D	CKD.-CONST.

REVISIONS

CHARACTER	DATE

APPROVED DATE

PROJECT MGR. TRAFFIC DIV. _____

DESIGNER _____

CITY ENGINEER _____

ASST. DIRECTOR ENG. _____

DIRECTOR _____

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF ENGINEERING AND CONSTRUCTION

— INTERSECTION OF —

FORBES AVE.- MAGEE ST.

SCALE: 1"= 20 Ft.

DATE

TS-327

PERMIT NO. _____ SHEET 1 OF 1

DATE ISSUED _____

LEGEND

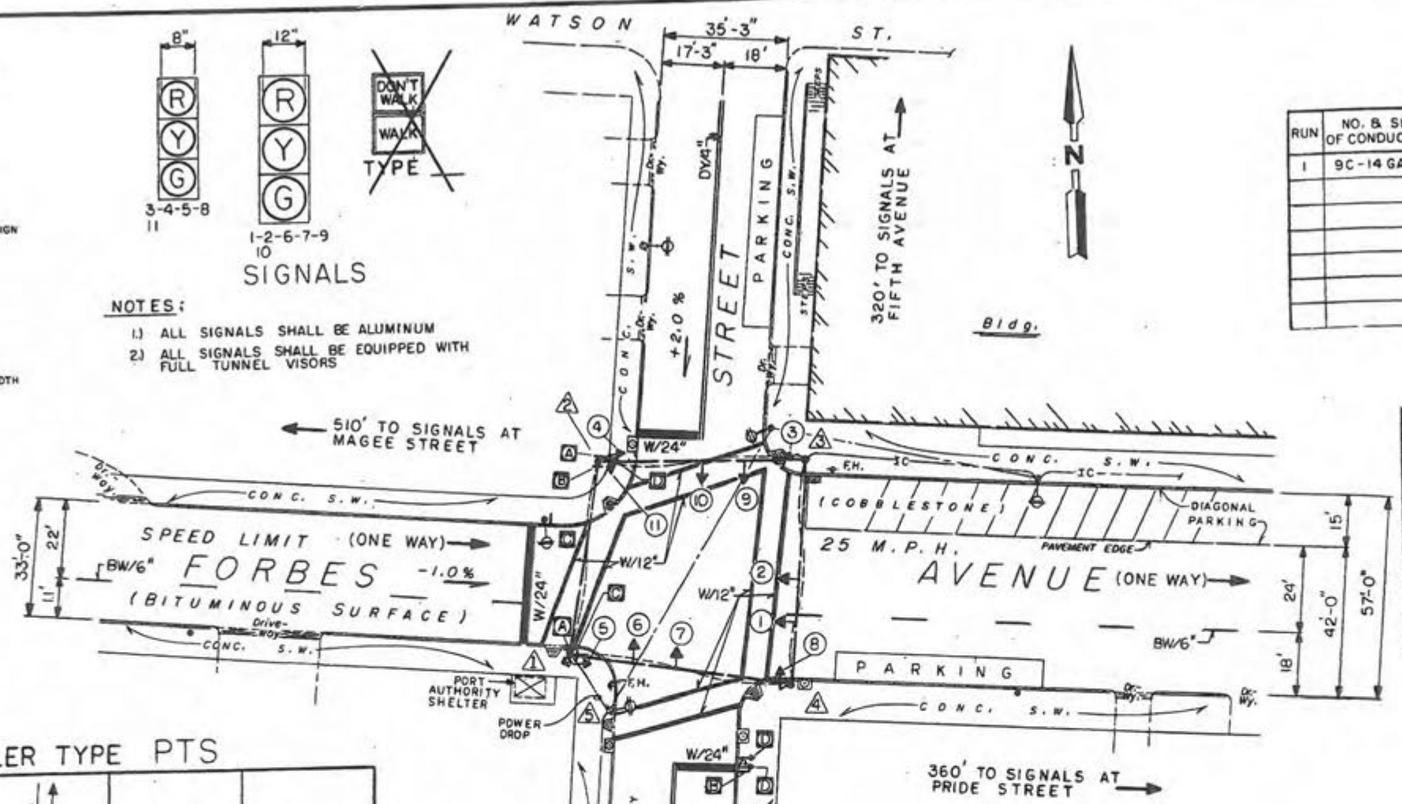
- SIGNAL POLE W/MAST ARM
- SIGNAL STRAIN POLE
- PEDESTAL
- WOOD POLE
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN PUSH BUTTON/SIGN
- VEHICLE DETECTOR
- JUNCTION BOX
- SPLICE BOX
- CONTROLLER ASSEMBLY
- C/2" - CONDUIT/SIZE
- W/4" - WHITE (Solid Line)/WIDTH
- BW/4" - BROKEN WHITE (Line)/WIDTH
- DY/4" - DOUBLE YELLOW (Solid Lines)/WIDTH
- CATCH BASIN/INLET
- SPAN WIRE & CABLE
- LUMINAIRE
- F.H. - FIRE HYDRANT
- HANDICAP RAMP

SIGNALS

NOTES:

1.) ALL SIGNALS SHALL BE ALUMINUM

2.) ALL SIGNALS SHALL BE EQUIPPED WITH FULL TUNNEL VISORS



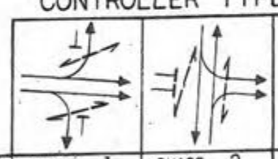
CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
1	9C-14 GA.	C.C.	SH 5	5	SH 6	6	SH 7						
		7	SH 8	8	SH 1	1	SH 2						
		2	SH 3	3	SH 9	9	SH 10						
		10	SH 4 & 11										

SIGNS

PLAN SYMBOL	DESCRIPTION	SIZE W x H	QUANTITY
A	R3-1, NO RIGHT TURN	30" x 30"	2
B	R3-2, NO LEFT TURN	30" x 30"	2
C	R5-1, DO NOT ENTER	30" x 30"	2
D	R6-1, HORIZONTAL ONE WAY ARROW	36" x 12"	3

CONTROLLER TYPE PTS



SIGNALS	PHASE 1			PHASE 2			PHASE	PHASE	FLASH
	INTERVALS								
	1	2	3	4	5	6			
1-2-3-4-5	G	Y	R	R	R	R			Y
6-7-8-9-10 11	R	R	R	G	Y	R			R

POLE CHART

POLE NO.	TYPE	HEIGHT	WALL THK.	O.D.	BOLT CIRCLE DIAMETER	FOUNDATION Width x Length	FOUNDATION Depth	ANCHOR BOLTS Dia.	ANCHOR BOLTS Lg.	SIGNAL BRACKETS ON POLE Dim. "K"	SIGNAL BRACKETS ON POLE Dim. "J"	MAST ARM ARM DESIGNATION	MAST ARM DIM. "L"	MAST ARM DIM. "M"	MAST ARM DIM. "N"	MAST ARM DIM. "O"	LOCATION STATION	LOCATION OFFSET
1		EXISTING	STEEL	POLE														
2		EXISTING	STEEL	POLE														
3		EXISTING	STEEL	POLE														
4		EXISTING	STEEL	POLE														
5		EXISTING	WOOD	POLE														

FIELD DATA	DRAWN	SUPERV'SD.
BY	C. TAYLOR	
VOL.		
CHECKED	INSPECT'D.	CKD-CONST.

REVISIONS

CHARACTER	DATE

APPROVED DATE

PROJECT MGR. TRAFFIC DIV. _____

DESIGNER _____

CITY ENGINEER _____

ASST. DIRECTOR ENGR. _____

DIRECTOR _____

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF ENGINEERING AND CONSTRUCTION

– INTERSECTION OF –

FORBES AVE.- STEVENSON ST.

SCALE: 1" = 20 Ft.

DATE

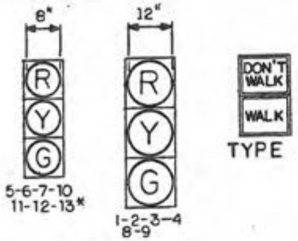
TS-340

PERMIT NO. _____ SHEET 1 OF 1

DATE ISSUED _____

LEGEND

- SIGNAL POLE W/MAST ARM
- SIGNAL STRAIN POLE
- PEDESTAL
- WOOD POLE
- VEHICULAR SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- SIGN
- PEDESTRIAN PUSH BUTTON
- PEDESTRIAN PUSH BUTTON/SIGN
- VEHICLE DETECTOR
- JUNCTION BOX
- SPLICE BOX
- CONTROLLER ASSEMBLY
- C/2" - CONDUIT/SIZE
- W/6" - WHITE (Solid Line)/WIDTH
- BW/4" - BROKEN WHITE (Line)/WIDTH
- DY/4" - DOUBLE YELLOW (Solid Lines)/WIDTH
- LUMINAIRE (Standard)
- LUMINAIRE (Sq. type)
- F.H. - FIRE HYDRANT
- CATCH BASIN/INLET
- SPAN WIRE & CABLE
- HANDICAP RAMP



SIGNALS

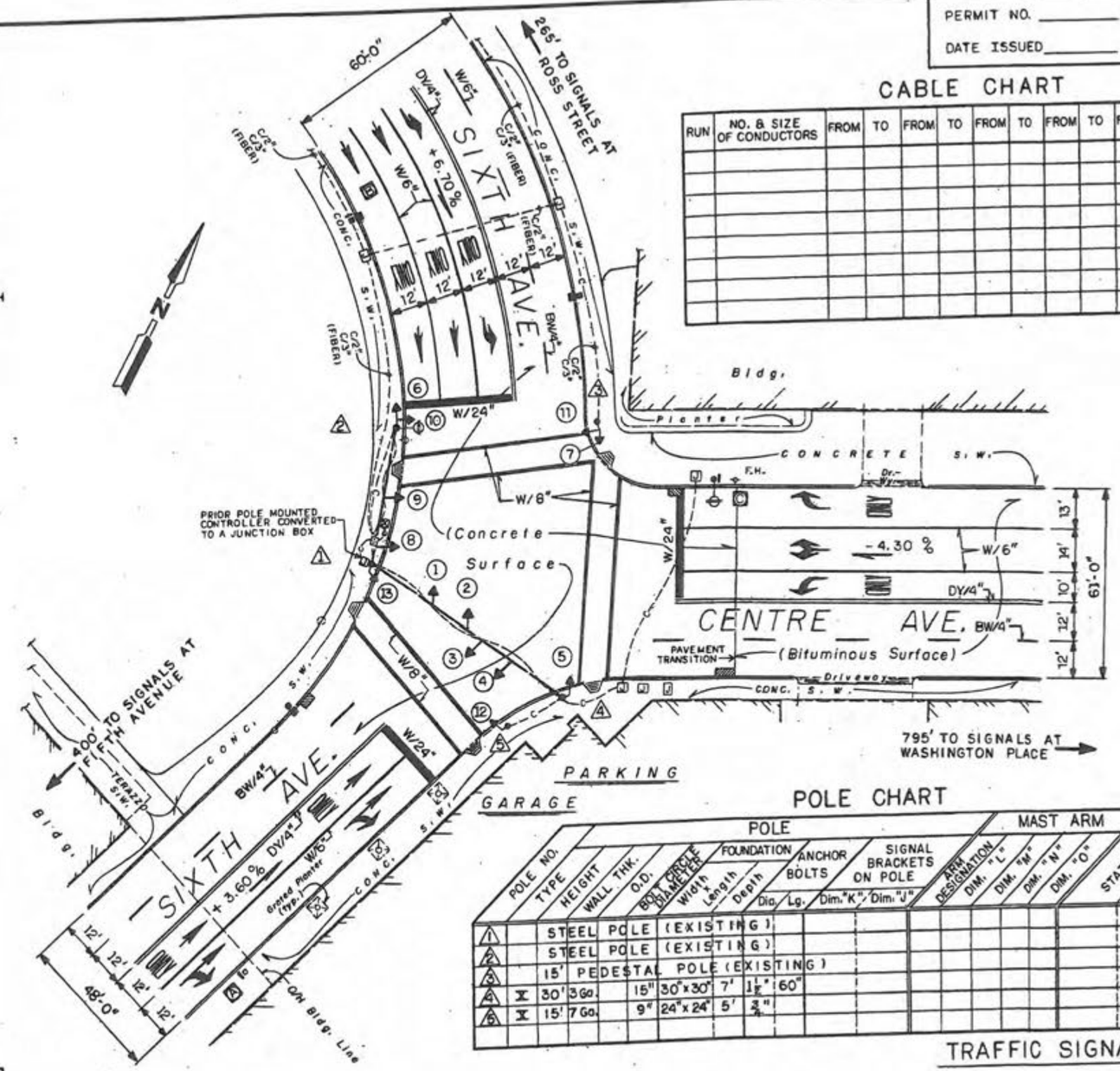
ALL SIGNALS SHALL BE EQUIPPED WITH TUNNEL VISORS

ALL VEHICULAR SIGNALS SHALL BE ALUMINUM

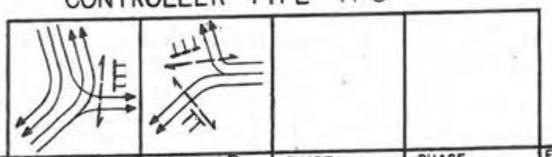
* ADD 8" POST MOUNTED SIGNAL # 13

CABLE CHART

RUN	NO. & SIZE OF CONDUCTORS	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO



CONTROLLER TYPE 170



SIGNALS	PHASE 1			PHASE 2			PHASE			PHASE			FLASH
	INTERVALS												
	1	2	3	1	2	3							
1-2-3-4-5	G	Y	R	R	R	R							Y
6-7	G	Y	R	R	R	R							Y
8-9-10-11	R	R	R	G	Y	R							R
12-13	R	R	R	G	Y	R							R

POLE CHART

POLE NO.	TYPE	HEIGHT	WALL THK.	O.D.	BOLT CIRCLE DIAMETER	FOUNDATION Width x Length	FOUNDATION Depth	ANCHOR BOLTS Dia.	ANCHOR BOLTS Lg.	SIGNAL BRACKETS ON POLE Dim. "K"	SIGNAL BRACKETS ON POLE Dim. "J"	ARM DESIGNATION	MAST ARM DIM. "L"	MAST ARM DIM. "M"	MAST ARM DIM. "N"	MAST ARM DIM. "O"	LOCATION STATION	LOCATION OFFSET
1	STEEL POLE (EXISTING)																	
2	STEEL POLE (EXISTING)																	
3	15' PEDESTAL POLE (EXISTING)																	
4	X	30'	3Ga.	15"	30"x30"	7'	1½"	60"										
5	X	15'	7Ga.	9"	24"x24"	5'	¾"											

SIGNS

PLAN SYMBOL	DESCRIPTION	SIZE W x H	QUANTITY
A	R3-8A, (S-SR) LANE USE CONTROL	30"x30"	1
B	R3-8B, (L-S-S) LANE USE CONTROL	48"x30"	1
C	(Special) LANE USE CONTROL	48"x30"	1

FIELD DATA	DRAWN	SUPERV'SD.
BY	C. TAYLOR	
VOL.		

REVISIONS

CHARACTER	DATE

APPROVED DATE

PROJECT MGR. TRAFFIC DIV. _____

DESIGNER _____

CITY ENGINEER _____

ASST. DIRECTOR ENGR. _____

DIRECTOR _____

TRAFFIC SIGNAL PLAN

CITY OF PITTSBURGH
DEPARTMENT OF ENGINEERING AND CONSTRUCTION

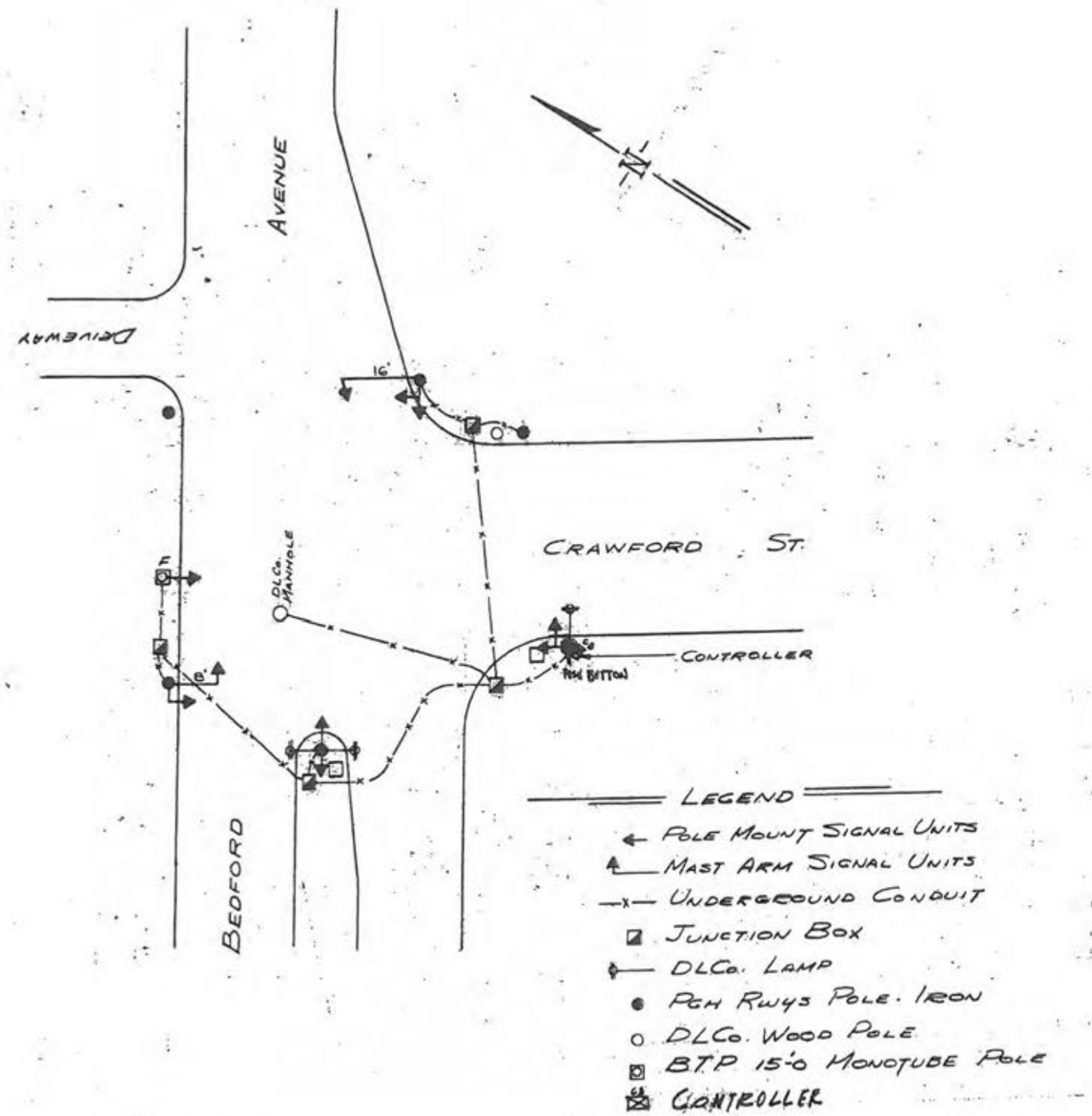
— INTERSECTION OF —

CENTRE AVE.- SIXTH AVE.

SCALE: 1" = 20 FT.

DATE

TS-582



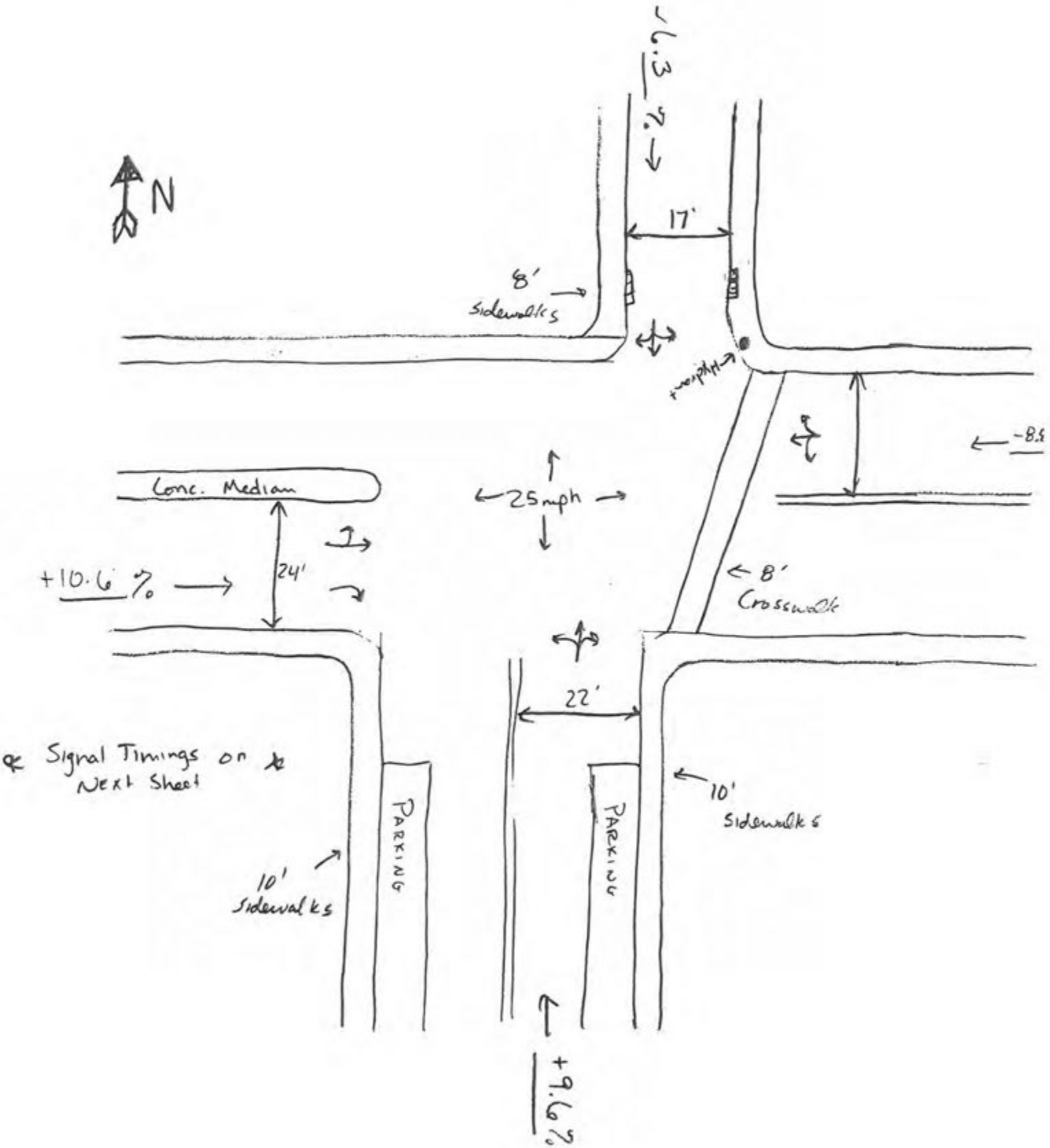
9R — TS89

DWN Menahan 6-30-61 CHKD	CITY OF PITTSBURGH BUREAU of TRAFFIC PLANN
APPROVED Anthony Musmanno 6-30-61	BEDFORD AVE & CRAWFORD STREET
APPROVED	
APPROVED J. F. Rankin 6/30/61	SCALE 1" = 20'-0 205

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

PROJECT pghpe88 - 11109
SUBJECT Bedford + Crawford

Made By _____ Date
Checked By _____ Date
Sheet No. _____ of _____

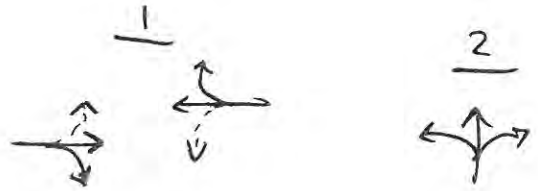


TRANS ASSOCIATES
4955 Steubenville Pike • Suite 400
Pittsburgh, PA 15205
(412) 490-0630 • Fax (412) 490-0631

PROJECT _____ Made By _____ Date
SUBJECT _____ Checked By _____ Date
_____ Sheet No. _____ of _____

pgh pe ØØ - 11109

Bedford Ave + Crawford St.



Cycle Length	1	2
1. 50s	G: 25s	G: 15s
2. 49.9s	Y: 3s	Y: 3s
3. 50 s	R: 2s	R: 2s
4. 49.8s		
5. 50.2 s		

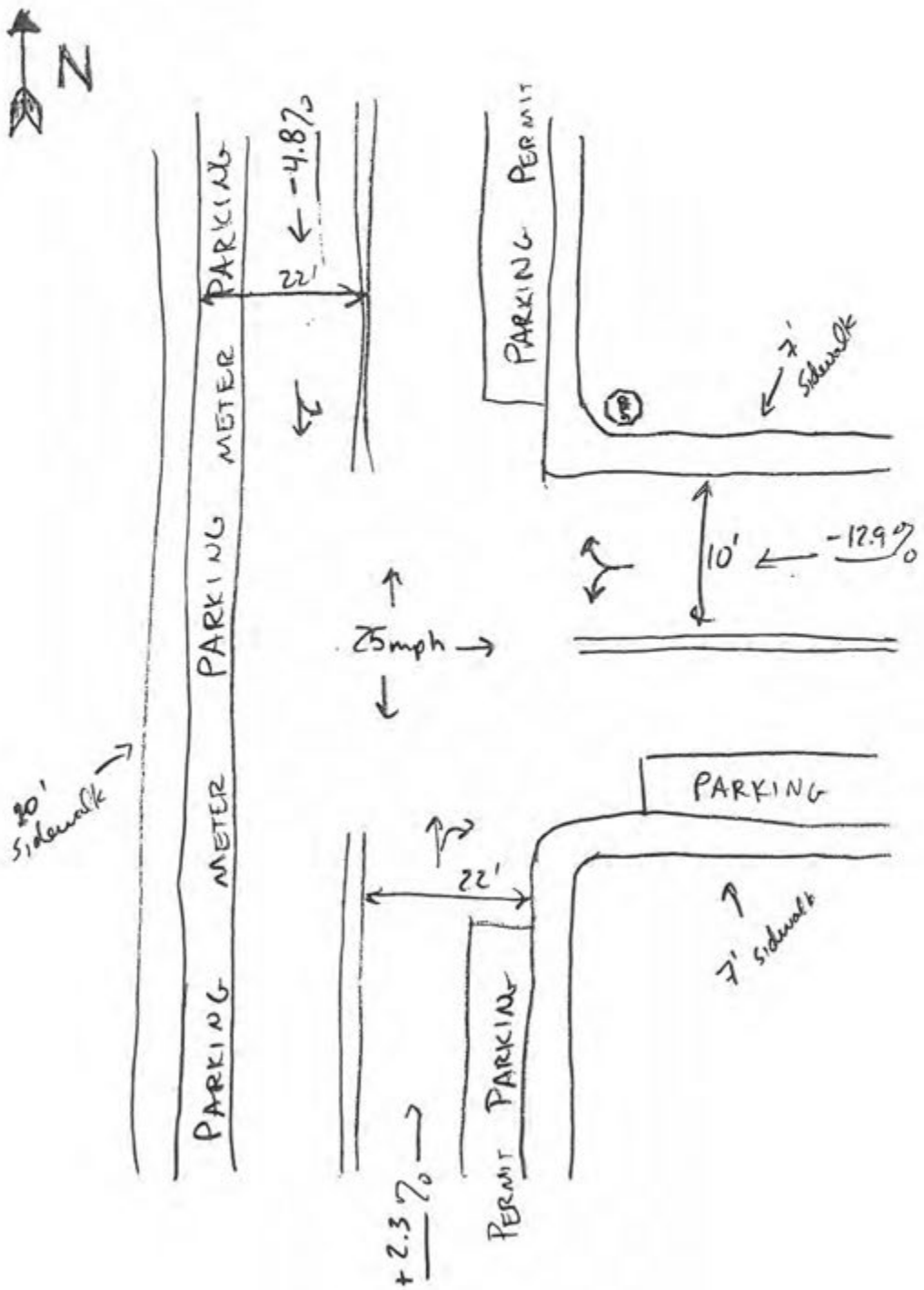
Avg: 50.0s

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

PROJECT pghpe Ø0 - 11109 Made By _____ Date

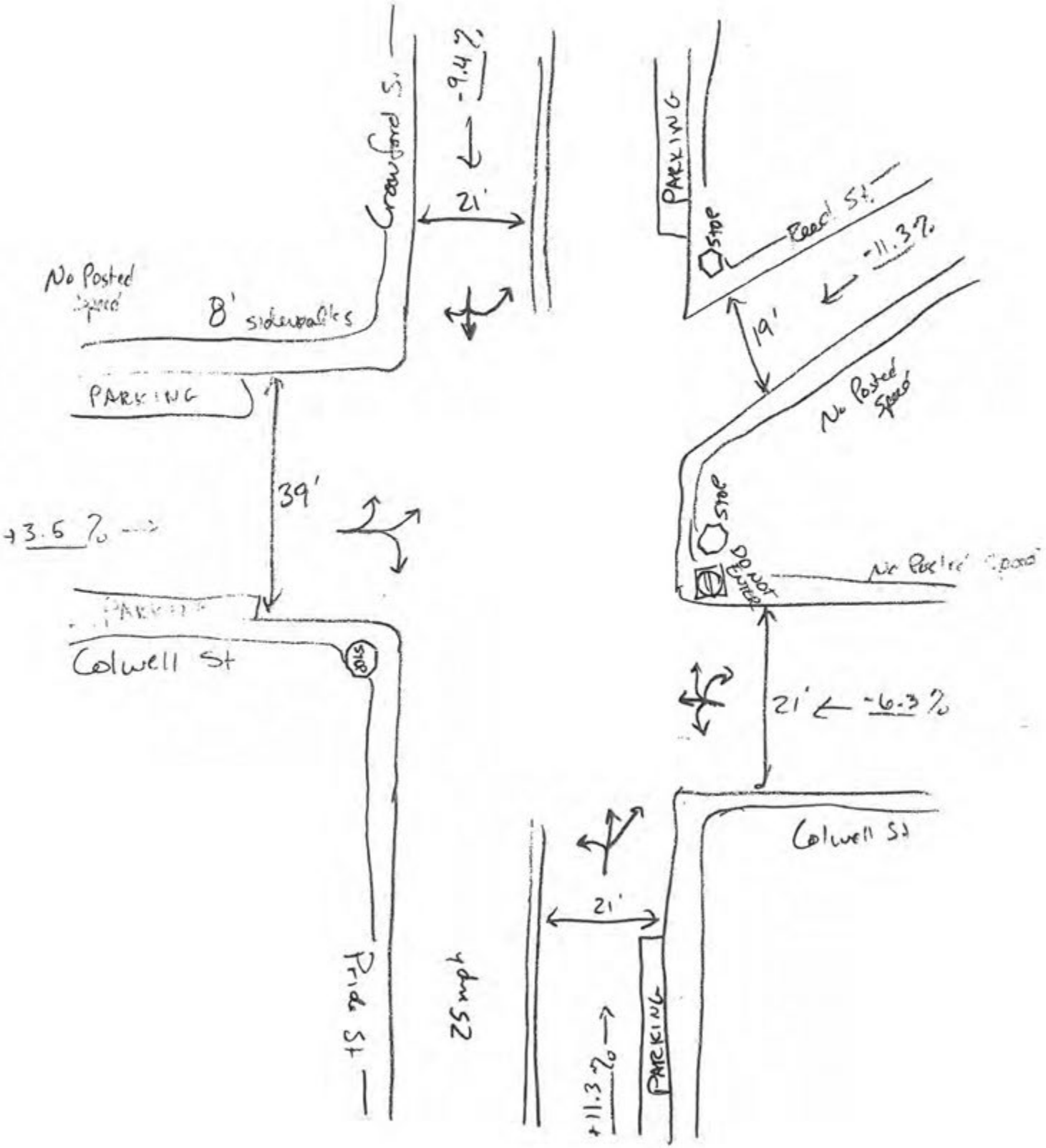
SUBJECT _____ Checked By _____ Date

Crawford St. & White Ave Sheet No. _____ of _____



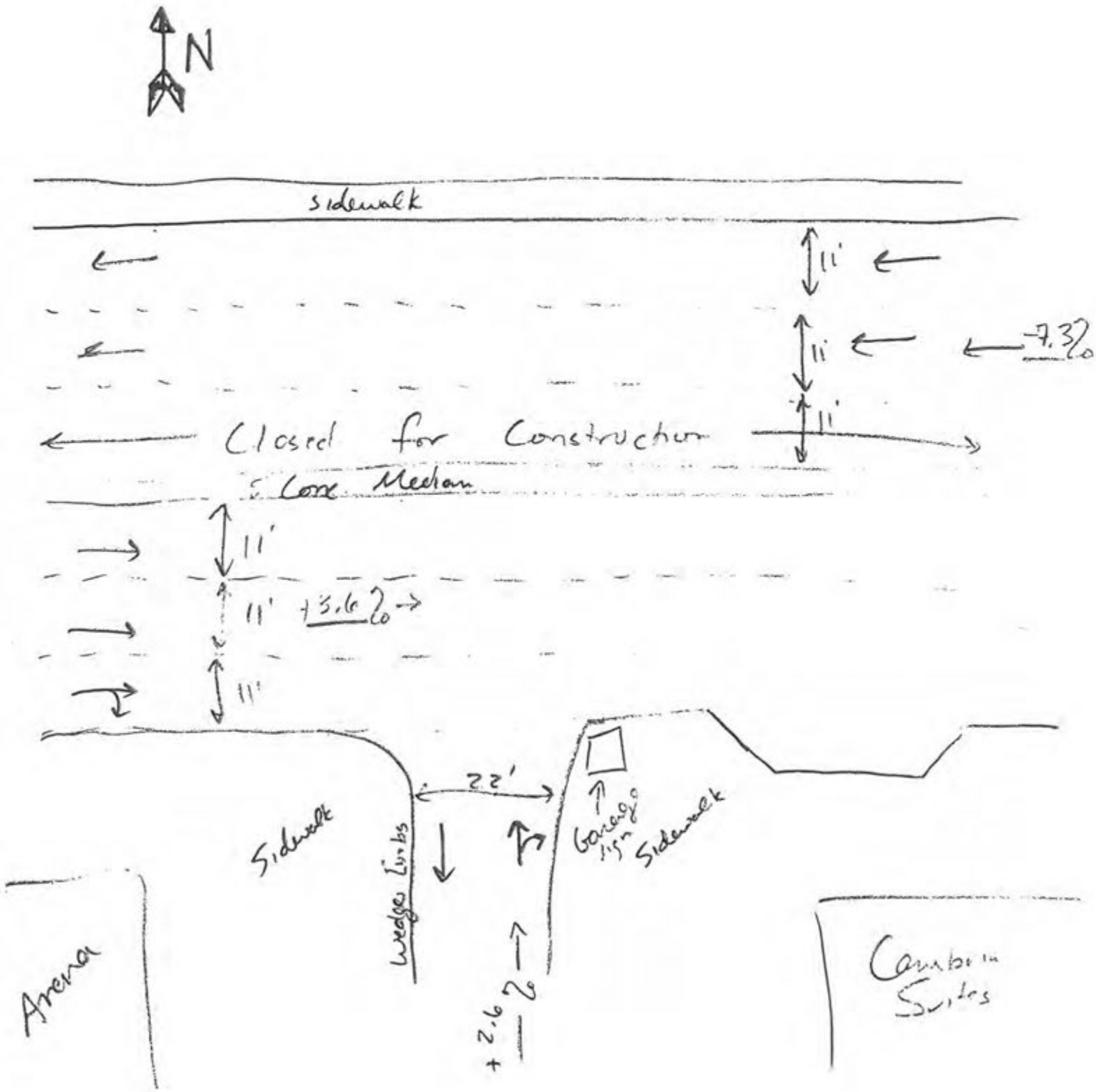
TRANS ASSOCIATES
4955 Steubenville Pike • Suite 400
Pittsburgh, PA 15205
(412) 490-0630 • Fax (412) 490-0631

PROJECT pghpe00 - 1160 Made By _____ Date
SUBJECT _____ Checked By _____ Date
Colwell St + Pride St Sheet No. _____ of _____



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

PROJECT [illegible] Made By _____ Date
SUBJECT Center Ave & Consol Garage Checked By _____ Date
Sheet No. _____ of _____



INTERSECTION : BEDFORD WASHINGTON WEBSTER
FLASH YELLOW : WASHINGTON
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 04/17/10
LAST P.M.LOW : 08/08/06
LAST P.M.HIGH : 04/27/05

SERVICE 1: 09/22/10 400,
SERVICE 2: 09/10/10 308,
SERVICE 3: 08/13/10 400,
SERVICE 4: 04/17/10 288,
SERVICE 5: 03/11/10 284,

TOTAL UNITS: 10
POLE UNITS: 4
MAST UNITS: 0
SPAN UNITS: 6

	LEDS		LAMP		PAR	
	8	12	8	12	LED	LAMP
RED :	0	6	0	0	0	0
YEL :	0	6	0	0	0	0
GRN :	0	6	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	4	0	0	0	CD/WD	
WK :	4	0	0	0	0	

TS: 91 DATE:05/17/11
POLICE BUTTON: F
SITE CODE : CRB
TRACT # : 305
IN CDBG AREA : Y
SYSTEM # : 0
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 8693
COMP. DATE :03/03/97
PAGES USED : 0
MODEM : **
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 24 HR STOP & GO
REVISION DATE : 08/16/95 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1220
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	80	30	0	0	0
B	90	21	0	0	0
C	90	27	0	0	0

NOTE

STEP#	TIME	DAY	FUNCTION
1.	06:30 - 09:30	MON - FRI	B OFF 1
2.	09:30 - 15:00	MON - FRI	A OFF 1
3.	15:00 - 18:00	MON - FRI	C OFF 1
4.	18:00 - 06:30	MON - FRI	A OFF 1
4.	ALL DAY	SAT & SUN	A OFF 1

(0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6 8	0 MAX I	0	26	0	18	0	26	0	21
PED. RECALL	8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	0	0	0	0	0	0	11
YELLOW LOCK	2 4 6 8	3 FLASH DW	0	0	0	0	0	0	0	10
PERMIT	2 4 6 8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	8	5 MIN GREEN	0	10	0	10	0	10	0	10
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
OVERLAP D	0	D RED CLEAR	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
EXCLUSIVE	4 8	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

PAGE ID : 0 TABLE * 1* (1 of 3)

(D+C+0 + key) key (D+C+phase + key)

FUNCTION	PHASES 12345678	FUNCTION	1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6 8	0 MAX I	0	21	0	18	0	21	0	36
PED. RECALL	8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	0	0	0	0	0	0	26
YELLOW LOCK	2 4 6 8	3 FLASH DW	0	0	0	0	0	0	0	10
PERMIT	2 4 6 8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	8	5 MIN GREEN	0	10	0	10	0	10	0	10
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
OVERLAP D	0	D RED CLEAR	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
EXCLUSIVE	4 8	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

PAGE ID : 1
C:\TV\CBD\INT92
TS # 91 : BEDFORD WASHINGTON WEBSTER

TABLE * 1* (2 of 3)

(D+D+0 + key) key (D+D+phase + key)

FUNCTION	PHASES 12345678	FUNCTION	1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6 8	0 MAX I	0	29	0	20	0	29	0	26
PED. RECALL	8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	0	0	0	0	0	0	16
YELLOW LOCK	2 4 6 8	3 FLASH DW	0	0	0	0	0	0	0	10
PERMIT	2 4 6 8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	8	5 MIN GREEN	0	10	0	10	0	10	0	10
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
OVERLAP D	0	D RED CLEAR	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
EXCLUSIVE	4 8	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

PAGE ID : 2
C:\TV\CBD\INT92
TS # 91 : BEDFORD WASHINGTON WEBSTER

TABLE * 1* (3 of 3)

WEEKLY PROGRAM

TOD/DOW (A + xy)

Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func	Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func
1	80	23456	81	6	82	30	83	4	17	C0	0	C1	0	C2	0	C3	0
2	84	1234567	85	9	86	30	87	1	18	C4	0	C5	0	C6	0	C7	0
3	88	23456	89	15	8A	0	8B	7	19	C8	0	C9	0	CA	0	CB	0
4	8C	1234567	8D	18	8E	0	8F	1	20	CC	0	CD	0	CE	0	CF	0
5	90	23456	91	6	93	30	93	101	21	D0	0	D1	0	D2	0	D3	0
6	94	1234567	95	9	96	30	97	100	22	D4	0	D5	0	D6	0	D7	0
7	98	23456	99	15	9A	0	9B	102	23	D8	0	D9	0	DA	0	DB	0
8	9C	1234567	9D	18	9E	0	9F	100	24	DC	0	DD	0	DE	0	DF	0
9	A0	0	A1	0	A2	0	A3	0	25	E0	0	E1	0	E2	0	E3	0
10	A4	0	A6	0	A6	0	A7	0	26	E4	0	E5	0	E6	0	E7	0
11	A8	0	A9	0	AA	0	AB	0	27	E8	0	E9	0	EA	0	EB	0
12	AC	0	AD	0	AE	0	AF	0	28	EC	0	ED	0	EE	0	EF	0
13	B0	0	B1	0	B2	0	B3	0	29	F0	0	F1	0	F2	0	F3	0
14	B4	0	B5	0	B6	0	B7	0	30	F4	0	F5	0	F6	0	F7	0
15	B8	0	B9	0	BA	0	BB	0	31	F8	0	F9	0	FA	0	FB	0
16	BC	0	BD	0	BE	0	BF	0	32	FC	0	FD	0	FE	0	FF	0

C:\TV\CBD\INT92
TS # 91 : BEDFORD WASHINGTON WEBSTER

TABLE * 5* (1 of 2)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	80	0	0	90	0	0	90	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	23	0	0	23	0	0	25	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	49	0	0	64	0	0	56	0	0
Offset	9	30	0	0	25	0	0	30	0	0
Perm. Length	A	10	0	0	10	0	0	10	0	0
Max Dwell	B	20	0	0	20	0	0	20	0	0

1 Lead Ph.s	C	1 3 5 7	3 Lead Ph.s	C 0
1 Coord Ph.s	D	2 6	3 Coord Ph.s	D 0
1 Perm.2 Ph.s	E	0	3 Perm.2 Ph.s	E 0
1 Min Recall	F	2 4 6 8	3 Min Recall	F 0
2 Lead Ph.s	C	0	4 Lead Ph.s	C 1 3 5 7
2 Coord Ph.s	D	0	4 Coord Ph.s	D 2 6
2 Perm.2 Ph.s	E	0	4 Perm.2 Ph.s	E 0
2 Min Recall	F	0	4 Min Recall	F 2 4 6 8

FUNCTION	Key	12345678
Plan		
9 Lead Ph.s	C	0
9 Coord Ph.s	D	0
9 Perm.2 Ph.s	E	0
9 Min Recall	F	0
8 Lead Ph.s	C	0
8 Coord Ph.s	D	0
8 Perm.2 Ph.s	E	0
8 Min Recall	F	0
7 Lead Ph.s	C	1 3 5 7
7 Coord Ph.s	D	2 6
7 Perm.2 Ph.s	E	0
7 Min Recall	F	2 4 6 8
6 Lead Ph.s	C	0
6 Coord Ph.s	D	0
6 Perm.2 Ph.s	E	0
6 Min Recall	F	0
5 Lead Ph.s	C	0
5 Coord Ph.s	D	0
5 Perm.2 Ph.s	E	0
5 Min Recall	F	0

C:\TV\CBD\INT92
TS # 91 : BEDFORD WASHINGTON WEBSTER

TABLE * 7* (1 of 2)

```
INTERSECTION   : AUDITORIUM  BEDFORD  MARIO_LEMIEUX        TS: 55   DATE:05/17/11
FLASH YELLOW   : BEDFORD (UPHILL ONLY)                    POLICE BUTTON:       T
MS. LOCATION   : CTRTCS                                   SITE CODE    :     CRB
                                                          TRACT #      :     305
TYPE OPERATE   : FULL ACTUATED          TOTAL UNITS:  16  IN CDBG AREA :       N
MAN. NAME & #  : SAFETRAN 170E           POLE UNITS:   8  SYSTEM #     :       0
SOFTWARE PROG.: 170 WAPITI 4IKS          MAST UNITS:   8  SYSTEM TYPE  :     FOS
                                         SPAN UNITS:   0  NUMBER SPLITS:       0
LAST P.M.C.    : 05/04/10            LEDS   LAMP    PAR  WORK ORDER # :    9980
LAST P.M.LOW   : 08/22/06            8 12   8 12  LED LAMP COMP. DATE   :07/21/05
LAST P.M.HIGH  : 06/23/04      RED :0  8    0  0    0   0  PAGES USED      :    0
                               YEL :0  8    0  0    0   0  MODEM           :   MM
SERVICE 1: 12/01/10 400,       GRN :0  8    0  0    0   0  # CAMERAS       :    2
SERVICE 2: 11/18/10 308,       YEL>:0  0    0  0    0   0  # DETECTOR LOOPS:   10
SERVICE 3: 10/21/10 263,264    GRN>:0  4    0  0    0   0  # PED BUTTONS   :    8
SERVICE 4: 10/20/10 302,265    DW  :8  0    0  0   CD/WD  # AUDIBLE PEDS  :    0
SERVICE 5: 10/19/10 134,       WK  :8  0    0  0     0    # FIB.OPTIC SIGN:    5

FLASH TIME     : 24 HR STOP & GO                          TERRITORY     : 1328
REVISION DATE  : 08/03/00  ORIGINAL INSTALLATION :  /  /  LED TYPE      :
REMARKS        : ITERIS CAMERAS INSTALLED FOR PH.6 & PH.8 ON 10-20-10
               : MAX 2 ON WHEN HOV RUNS OUTBOUND (NO PHASE 2 ON MAX 2)
                                                   OFFSETS
        CYCLE      LENGTH                          1.    2.    3.    4.
          A           0                            0     0     0     0
          B           0                            0     0     0     0
          C           0                            0     0     0     0
 ( 0 + key)           key                            (phase + key)
FUNCTION        PHASES    FUNCTION          1     2     3     4     5     6     7     8
                12345678
VEH. RECALL     0         0 MAX I           0    30     0    30     0    30     0    30
PED. RECALL     0         1 MAX II/HFDW     0     0     0     0     0     0     0     0
RED LOCK        0         2 WALK            0     0     0     7     0     7     0     7
YELLOW LOCK      2 4 6 8  3 FLASH DW        0     0     0    13     0    13     0    25
PERMIT           2 4 6 8  4 MAX INITIAL     0     0     0     0     0     0     0     0
PED PHASES         4 6 8  5 MIN GREEN       0     4     0     4     0     4     0     4
LEAD PHASES     1 3 5 7   6 T B R           0     0     0     0     0     0     0     0
DOUBLE ENTRY    0         7 T T R           0     0     0     0     0     0     0     0
SEQ. TIMING      2        8 OBSERVE GAP
START UP GRN        6     9 PASSAGE       0.0   4.0   0.0   4.0   0.0   4.0   0.0   4.0
OVERLAP A       0         A MIN GAP       0.0   3.0   0.0   3.0   0.0   3.0   0.0   3.0
OVERLAP B       0         B ADDED/ACT     0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
OVERLAP C       0         C YELLOW        0.0   3.5   0.0   3.5   0.0   3.5   0.0   3.5
OVERLAP D       0         D RED CLEAR     0.0   2.5   0.0   2.5   0.0   2.5   0.0   2.5
EXCLUSIVE        2 4 6 8  E RED REVERT    0.0   0.0   0.0   0.0   0.0   0.0   0.0   0.0
SIM. GAP        0         F WALK II         0     0     0     0     0     0     0     0

PAGE ID : 0                    TABLE * 1* (1 of 3)


 ( D+C+0 + key)         key                      (D+C+phase + key)
FUNCTION        PHASES    FUNCTION          1     2     3     4     5     6     7     8
                12345678
VEH. RECALL     0         0 MAX I           0     0     0    30     0    30     0    30
PED. RECALL     0         1 MAX II/HFDW     0     0     0     0     0     0     0     0
RED LOCK        0         2 WALK            0     0     0     7     0     7     0     7
YELLOW LOCK        4 6 8  3 FLASH DW        0     0     0    13     0    13     0    25
PERMIT             4 6 8  4 MAX INITIAL     0     0     0     0     0     0     0     0
PED PHASES         4 6 8  5 MIN GREEN       0     0     0     4     0     4     0     4
```

LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	6	9 PASSAGE	0.0	0.0	0.0	4.0	0.0	4.0	0.0	4.0
OVERLAP A	6	A MIN GAP	0.0	0.0	0.0	3.0	0.0	3.0	0.0	3.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	0.0	0.0	3.5	0.0	3.5	0.0	3.5
OVERLAP D	0	D RED CLEAR	0.0	0.0	0.0	2.5	0.0	2.5	0.0	2.5
EXCLUSIVE	4 6 8	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

PAGE ID : 1
C:\TV\CBD\INT91
TS # 55 : AUDITORIUM BEDFORD MARIO_LEMIEUX

TABLE * 1* (2 of 3)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	0	0	0	0	0	0	0	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	0	0	0	0	0	0	0	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	0	0	0	0	0	0	0	0	0
Offset	9	0	0	0	0	0	0	0	0	0
Perm. Length	A	0	0	0	0	0	0	0	0	0
Max Dwell	B	0	0	0	0	0	0	0	0	0
1 Lead Ph.s	C	1 3 5 7								
1 Coord Ph.s	D	2 6								
1 Perm.2 Ph.s	E	0								
1 Min Recall	F	2 4 6 8								
2 Lead Ph.s	C	0								
2 Coord Ph.s	D	0								
2 Perm.2 Ph.s	E	0								
2 Min Recall	F	0								

FUNCTION	Key	12345678
3 Lead Ph.s	C	0
3 Coord Ph.s	D	0
3 Perm.2 Ph.s	E	0
3 Min Recall	F	0
4 Lead Ph.s	C	0
4 Coord Ph.s	D	0
4 Perm.2 Ph.s	E	0
4 Min Recall	F	0

Plan FUNCTION	Key	12345678
9 Lead Ph.s	C	0
9 Coord Ph.s	D	0
9 Perm.2 Ph.s	E	0
9 Min Recall	F	0
8 Lead Ph.s	C	0
8 Coord Ph.s	D	0
8 Perm.2 Ph.s	E	0
8 Min Recall	F	0
7 Lead Ph.s	C	0
7 Coord Ph.s	D	0
7 Perm.2 Ph.s	E	0
7 Min Recall	F	0
6 Lead Ph.s	C	0
6 Coord Ph.s	D	0
6 Perm.2 Ph.s	E	0
6 Min Recall	F	0
5 Lead Ph.s	C	0
5 Coord Ph.s	D	0
5 Perm.2 Ph.s	E	0
5 Min Recall	F	0

C:\TV\CBD\INT91
TS # 55 : AUDITORIUM BEDFORD MARIO_LEMIEUX

TABLE * 7* (1 of 2)

INTERSECTION : BEDFORD CRAWFORD
FLASH YELLOW : BEDFORD
MS. LOCATION : NONE

TYPE OPERATE : FIXED
MAN. NAME & # : KENT KMT-4000
SOFTWARE PROG.:

LAST P.M.C. : 04/06/11
LAST P.M.LOW : 08/18/06
LAST P.M.HIGH : 04/02/04

SERVICE 1: 06/21/11 303,
SERVICE 2: 04/06/11 288,
SERVICE 3: 03/10/11 200,
SERVICE 4: 12/04/10 285,
SERVICE 5: 12/03/10 265,

TOTAL UNITS: 10
POLE UNITS: 8
MAST UNITS: 2
SPAN UNITS: 0

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED	10	0	0	0	0	0
YEL	10	0	0	0	0	0
GRN	10	0	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS: 89 DATE:07/29/11
POLICE BUTTON: T
SITE CODE : CRB
TRACT # : 305
IN CDBG AREA : Y
SYSTEM # : 0
SYSTEM TYPE : TOD
NUMBER SPLITS: 1
WORK ORDER # : 7827
COMP. DATE :06/03/92
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 00:00 - 7:00
REVISION DATE : 06/03/92 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1327
LED TYPE :

TS: 89

CYCLE		A	B	C	D		A	B	C	D	
	1.	25.0	0.0	0.0	0.0	13.	0.0	0.0	0.0	0.0	
	2.	3.0	0.0	0.0	0.0	14.	0.0	0.0	0.0	0.0	
I	3.	2.0	0.0	0.0	0.0	15.	0.0	0.0	0.0	0.0	I
N	4.	15.0	0.0	0.0	0.0	16.	0.0	0.0	0.0	0.0	N
T	5.	3.0	0.0	0.0	0.0	17.	0.0	0.0	0.0	0.0	T
E	6.	2.0	0.0	0.0	0.0	18.	0.0	0.0	0.0	0.0	E
R	7.	0.0	0.0	0.0	0.0	19.	0.0	0.0	0.0	0.0	R
V	8.	0.0	0.0	0.0	0.0	20.	0.0	0.0	0.0	0.0	V
A	9.	0.0	0.0	0.0	0.0	21.	0.0	0.0	0.0	0.0	A
L	10.	0.0	0.0	0.0	0.0	22.	0.0	0.0	0.0	0.0	L
	11.	0.0	0.0	0.0	0.0	23.	0.0	0.0	0.0	0.0	
	12.	0.0	0.0	0.0	0.0	24.	0.0	0.0	0.0	0.0	

CYCLE	LENGTH
A	50
B	0
C	0
D	0

OFFSETS 1.	2.	3.	4.
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

INTERSECTION : CENTRE SIXTH
FLASH YELLOW : SIXTH
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 03/04/11
LAST P.M.LOW : 08/08/06
LAST P.M.HIGH : 04/12/06

SERVICE 1: 03/21/11 308,
SERVICE 2: 03/04/11 288,
SERVICE 3: 03/02/11 265,
SERVICE 4: 01/04/11 308,
SERVICE 5: 08/16/10 287,296

TOTAL UNITS: 13
POLE UNITS: 7
MAST UNITS: 0
SPAN UNITS: 6

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	7	6	0	0	0	0
YEL :	7	6	0	0	0	0
GRN :	7	6	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS:582 DATE:07/29/11
POLICE BUTTON: F
SITE CODE : CBD
TRACT # : 201
IN CDBG AREA : N
SYSTEM # : 30
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 9142
COMP. DATE :12/20/00
PAGES USED : 0
MODEM : MM
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 24 HR STOP & GO
REVISION DATE : 12/20/00 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1222
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	70	67	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0

SYSTEM LOCATION: CENTRAL BUSINESS DISTRICT SYS: 30

STEP #	TIME	DAY	FUNCTION
1.	ALL DAY		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 70
CYCLE B = 0
CYCLE C = 0

(0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6	0 MAX I	0	35	0	23	0	35	0	0
PED. RECALL	2 4 6	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	25	0	13	0	25	0	0
YELLOW LOCK	2 4 6	3 FLASH DW	0	10	0	10	0	10	0	0
PERMIT	2 4 6	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 4 6	5 MIN GREEN	0	25	0	13	0	25	0	0
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.5	0.0	3.5	0.0	3.5	0.0	0.0
OVERLAP D	0	D RED CLEAR	0.0	2.5	0.0	2.5	0.0	2.5	0.0	0.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

WEEKLY PROGRAM

TOD/DOW (A + xy)

Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func	Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func
1	80	1234567	81	6	82	0	83	1	17	C0	0	C1	0	C2	0	C3	0
2	84	0	85	0	86	0	87	0	18	C4	0	C5	0	C6	0	C7	0
3	88	0	89	0	8A	0	8B	0	19	C8	0	C9	0	CA	0	CB	0
4	8C	0	8D	0	8E	0	8F	0	20	CC	0	CD	0	CE	0	CF	0
5	90	0	91	0	93	0	93	0	21	D0	0	D1	0	D2	0	D3	0
6	94	0	95	0	96	0	97	0	22	D4	0	D5	0	D6	0	D7	0
7	98	0	99	0	9A	0	9B	0	23	D8	0	D9	0	DA	0	DB	0
8	9C	0	9D	0	9E	0	9F	0	24	DC	0	DD	0	DE	0	DF	0
9	A0	0	A1	0	A2	0	A3	0	25	E0	0	E1	0	E2	0	E3	0
10	A4	0	A6	0	A6	0	A7	0	26	E4	0	E5	0	E6	0	E7	0
11	A8	0	A9	0	AA	0	AB	0	27	E8	0	E9	0	EA	0	EB	0
12	AC	0	AD	0	AE	0	AF	0	28	EC	0	ED	0	EE	0	EF	0
13	B0	0	B1	0	B2	0	B3	0	29	F0	0	F1	0	F2	0	F3	0
14	B4	0	B5	0	B6	0	B7	0	30	F4	0	F5	0	F6	0	F7	0
15	B8	0	B9	0	BA	0	BB	0	31	F8	0	F9	0	FA	0	FB	0
16	BC	0	BD	0	BE	0	BF	0	32	FC	0	FD	0	FE	0	FF	0

C:\TV\CBD\INT87
TS # 582 : CENTRE SIXTH

TABLE * 5* (1 of 2)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	70	0	0	0	0	0	0	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	39	0	0	0	0	0	0	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	0	0	0	0	0	0	0	0	0
Offset	9	62	0	0	0	0	0	0	0	0
Perm. Length	A	11	0	0	0	0	0	0	0	0
Max Dwell	B	20	0	0	0	0	0	0	0	0

FUNCTION	Key
1 Lead Ph.s	C 1 3 5 7
1 Coord Ph.s	D 2 6
1 Perm.2 Ph.s	E 0
1 Min Recall	F 2 4
2 Lead Ph.s	C 1 3 5 7
2 Coord Ph.s	D 2 6
2 Perm.2 Ph.s	E 0
2 Min Recall	F 2 4
3 Lead Ph.s	C 1 3 5 7
3 Coord Ph.s	D 2 6
3 Perm.2 Ph.s	E 0
3 Min Recall	F 2 4
4 Lead Ph.s	C 1 3 5 7
4 Coord Ph.s	D 2 6
4 Perm.2 Ph.s	E 0
4 Min Recall	F 2 4

FUNCTION	Key 12345678
Plan	
9 Lead Ph.s	C 0
9 Coord Ph.s	D 0
9 Perm.2 Ph.s	E 0
9 Min Recall	F 0
8 Lead Ph.s	C 0
8 Coord Ph.s	D 0
8 Perm.2 Ph.s	E 0
8 Min Recall	F 0
7 Lead Ph.s	C 1 3 5 7
7 Coord Ph.s	D 2 6
7 Perm.2 Ph.s	E 0
7 Min Recall	F 2 4
6 Lead Ph.s	C 0
6 Coord Ph.s	D 0
6 Perm.2 Ph.s	E 0
6 Min Recall	F 0
5 Lead Ph.s	C 0
5 Coord Ph.s	D 0
5 Perm.2 Ph.s	E 0
5 Min Recall	F 0

C:\TV\CBD\INT87
TS # 582 : CENTRE SIXTH

TABLE * 7* (1 of 2)

INTERSECTION : CENTRE WASHINGTON
FLASH YELLOW : WASHINGTON
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 04/18/10
LAST P.M.LOW : 08/08/06
LAST P.M.HIGH : 08/15/05

SERVICE 1: 12/27/10 308,
SERVICE 2: 12/06/10 303,
SERVICE 3: 10/21/10 303,
SERVICE 4: 10/15/10 284,
SERVICE 5: 10/14/10 284,

TOTAL UNITS: 16
POLE UNITS: 9
MAST UNITS: 7
SPAN UNITS: 0

	LEDS		LAMP		PAR	
	8	12	8	12	LED	LAMP
RED :	6	4	0	0	0	0
YEL :	6	4	0	0	0	0
GRN :	6	4	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	1	0	0	0	0
DW :	6	0	0	0	CD/WD	
WK :	6	0	0	0	0	

TS:220 DATE:05/17/11
POLICE BUTTON: F
SITE CODE : CBD
TRACT # : 201
IN CDBG AREA : N
SYSTEM # : 0
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 8568
COMP. DATE :04/03/96
PAGES USED : 0
MODEM : **
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 24 HR STOP & GO
REVISION DATE : 08/14/95 ORIGINAL INSTALLATION : / /
REMARKS : (IN SYNC WITH BEDFORD WASHINGTON PL)

TERRITORY : 1221
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	80	7	0	0	0
B	90	-7	0	0	0
C	90	7	0	0	0

NOTE

STEP#	TIME	DAY	FUNCTION
1.	06:30 - 09:30	MON - FRI	B OFF 1
2.	09:30 - 15:00	MON - FRI	A OFF 1
3.	15:00 - 18:00	MON - FRI	B OFF 1
4.	ALL OTHER TIMES	ALL WEEK	A OFF 1

(0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6 8	0 MAX I	0	23	0	17	0	23	0	22
PED. RECALL	2 4 6 8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	13	0	0	0	13	0	12
YELLOW LOCK	2 4 6 8	3 FLASH DW	0	10	0	0	0	10	0	10
PERMIT	2 4 6 8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 4 6 8	5 MIN GREEN	0	10	0	10	0	10	0	10
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.5	0.0	3.5	0.0	3.5	0.0	3.5
OVERLAP D	0	D RED CLEAR	0.0	2.5	0.0	2.5	0.0	2.5	0.0	2.5
EXCLUSIVE	4 8	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

PAGE ID : 0 TABLE * 1* (1 of 3)

23 29 29

(D+C+0 + key) FUNCTION	PHASES	key FUNCTION	(D+C+phase + key) 1	2	3	4	5	6	7	8

	12345678								
VEH. RECALL	2 4 6 8	0 MAX I	0	27	0	20	0	27	0	25
PED. RECALL	2 4 6 8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	17	0	0	0	17	0	15
YELLOW LOCK	2 4 6 8	3 FLASH DW	0	10	0	0	0	10	0	10
PERMIT	2 4 6 8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 4 6 8	5 MIN GREEN	0	10	0	10	0	10	0	10
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.5	0.0	3.5	0.0	3.5	0.0	3.5
OVERLAP D	0	D RED CLEAR	0.0	2.5	0.0	2.5	0.0	2.5	0.0	2.5
EXCLUSIVE	4 8	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

25 20 35

PAGE ID : 1
C:\TV\CBD\INT93
TS # 220 : CENTRE WASHINGTON

TABLE * 1* (2 of 3)

(D+D+0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(D+D+phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6 8	0 MAX I	0	29	0	16	0	29	0	27
PED. RECALL	2 4 6 8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	19	0	0	0	19	0	17
YELLOW LOCK	2 4 6 8	3 FLASH DW	0	10	0	0	0	10	0	10
PERMIT	2 4 6 8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 4 6 8	5 MIN GREEN	0	10	0	10	0	10	0	10
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.5	0.0	3.5	0.0	3.5	0.0	3.5
OVERLAP D	0	D RED CLEAR	0.0	2.5	0.0	2.5	0.0	2.5	0.0	2.5
EXCLUSIVE	4 8	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

25 22 35

PAGE ID : 2
C:\TV\CBD\INT93
TS # 220 : CENTRE WASHINGTON

TABLE * 1* (3 of 3)

WEEKLY PROGRAM

TOD/DOW (A + xy)

Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func	Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func
1	80	23456	81	6	82	30	83	4	17	C0	0	C1	0	C2	0	C3	0
2	84	1234567	85	9	86	30	87	1	18	C4	0	C5	0	C6	0	C7	0
3	88	23456	89	15	8A	0	8B	7	19	C8	0	C9	0	CA	0	CB	0
4	8C	1234567	8D	18	8E	0	8F	1	20	CC	0	CD	0	CE	0	CF	0
5	90	23456	91	6	93	30	93	101	21	D0	0	D1	0	D2	0	D3	0
6	94	1234567	95	9	96	30	97	100	22	D4	0	D5	0	D6	0	D7	0
7	98	23456	99	15	9A	0	9B	102	23	D8	0	D9	0	DA	0	DB	0
8	9C	1234567	9D	18	9E	0	9F	100	24	DC	0	DD	0	DE	0	DF	0
9	A0	0	A1	0	A2	0	A3	0	25	E0	0	E1	0	E2	0	E3	0
10	A4	0	A6	0	A6	0	A7	0	26	E4	0	E5	0	E6	0	E7	0
11	A8	0	A9	0	AA	0	AB	0	27	E8	0	E9	0	EA	0	EB	0
12	AC	0	AD	0	AE	0	AF	0	28	EC	0	ED	0	EE	0	EF	0
13	B0	0	B1	0	B2	0	B3	0	29	F0	0	F1	0	F2	0	F3	0
14	B4	0	B5	0	B6	0	B7	0	30	F4	0	F5	0	F6	0	F7	0
15	B8	0	B9	0	BA	0	BB	0	31	F8	0	F9	0	FA	0	FB	0
16	BC	0	BD	0	BE	0	BF	0	32	FC	0	FD	0	FE	0	FF	0

C:\TV\CBD\INT93
TS # 220 : CENTRE WASHINGTON

TABLE * 5* (1 of 2)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	80	0	0	90	0	0	90	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	33	0	0	36	0	0	32	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	61	0	0	67	0	0	65	0	0
Offset	9	10	0	0	10	0	0	10	0	0
Perm. Length	A	11	0	0	11	0	0	11	0	0
Max Dwell	B	20	0	0	20	0	0	20	0	0

FUNCTION	Key
1 Lead Ph.s	C 1 3 5 7
1 Coord Ph.s	D 2 6
1 Perm.2 Ph.s	E 0
1 Min Recall	F 2 4 6 8
2 Lead Ph.s	C 0
2 Coord Ph.s	D 0
2 Perm.2 Ph.s	E 0
2 Min Recall	F 0
3 Lead Ph.s	C 0
3 Coord Ph.s	D 0
3 Perm.2 Ph.s	E 0
3 Min Recall	F 0
4 Lead Ph.s	C 1 3 5 7
4 Coord Ph.s	D 2 6
4 Perm.2 Ph.s	E 0
4 Min Recall	F 2 4 6 8

FUNCTION Plan	Key 12345678
9 Lead Ph.s	C 0
9 Coord Ph.s	D 0
9 Perm.2 Ph.s	E 0
9 Min Recall	F 0
8 Lead Ph.s	C 0
8 Coord Ph.s	D 0
8 Perm.2 Ph.s	E 0
8 Min Recall	F 0
7 Lead Ph.s	C 1 3 5 7
7 Coord Ph.s	D 2 6
7 Perm.2 Ph.s	E 0
7 Min Recall	F 2 4 6 8
6 Lead Ph.s	C 0
6 Coord Ph.s	D 0
6 Perm.2 Ph.s	E 0
6 Min Recall	F 0
5 Lead Ph.s	C 0
5 Coord Ph.s	D 0
5 Perm.2 Ph.s	E 0
5 Min Recall	F 0

C:\TV\CBD\INT93
TS # 220 : CENTRE WASHINGTON

TABLE * 7* (1 of 2)

INTERSECTION : AUDITORIUM CENTRE MARIO_LEMIEUX
FLASH YELLOW : CENTRE
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 10/17/10
LAST P.M.LOW : 01/06/06
LAST P.M.HIGH : 03/29/04

SERVICE 1: 10/26/10 303,
SERVICE 2: 10/17/10 288,
SERVICE 3: 09/26/10 400,
SERVICE 4: 09/25/10 308,
SERVICE 5: 09/22/10 400,

TS: 56 DATE:05/17/11
POLICE BUTTON: F
SITE CODE : CBD
TRACT # : 201
IN CDBG AREA : N
SYSTEM # : 0
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 8407
COMP. DATE :08/14/95
PAGES USED : 0
MODEM : **
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

	TOTAL UNITS:	9
	POLE UNITS:	6
	MAST UNITS:	3
	SPAN UNITS:	0

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	9	0	0	0	0	0
YEL :	9	0	0	0	0	0
GRN :	9	0	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

FLASH TIME : 24 HR STOP & GO
REVISION DATE : 08/14/95 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1319
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	70	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0

(0 + key) key (phase + key)

FUNCTION	PHASES 12345678	FUNCTION	1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6	0 MAX I	0	38	0	21	0	38	0	0
PED. RECALL	2 4 6	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	28	0	11	0	28	0	0
YELLOW LOCK	2 4 6	3 FLASH DW	0	10	0	10	0	10	0	0
PERMIT	2 4 6	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 4 6	5 MIN GREEN	8	28	8	18	8	28	8	8
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
OVERLAP D	0	D RED CLEAR	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

PAGE ID : 0 TABLE * 1* (1 of 3)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	80	80	80	90	0	0	90	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	26	26	26	26	0	0	26	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0

FUNCTION	Key	Plan	12345678
Lead Ph.s	C	9	0
Coord Ph.s	D	9	0
Perm.2 Ph.s	E	9	0
Min Recall	F	9	0
Lead Ph.s	C	8	0
Coord Ph.s	D	8	0
Perm.2 Ph.s	E	8	0
Min Recall	F	8	0

Forceiff 8	8	0	0	0	0	0	0	0	0	0	7	Lead Ph.s	C	1	3 5 7
Offset	9	1	1	1	1	0	0	1	0	0	7	Coord Ph.s	D	2	6
Perm. Length	A	11	11	11	11	0	0	11	0	0	7	Perm.2 Ph.s	E	0	
Max Dwell	B	20	20	20	20	0	0	20	0	0	7	Min Recall	F	2 4	
1 Lead Ph.s	C	1	3 5 7				3	Lead Ph.s	C	1	3 5 7	6	Lead Ph.s	C	0
1 Coord Ph.s	D	2	6				3	Coord Ph.s	D	2	6	6	Coord Ph.s	D	0
1 Perm.2 Ph.s	E	0					3	Perm.2 Ph.s	E	0		6	Perm.2 Ph.s	E	0
1 Min Recall	F	2 4					3	Min Recall	F	2 4		6	Min Recall	F	0
2 Lead Ph.s	C	1	3 5 7				4	Lead Ph.s	C	1	3 5 7	5	Lead Ph.s	C	0
2 Coord Ph.s	D	2	6				4	Coord Ph.s	D	2	6	5	Coord Ph.s	D	0
2 Perm.2 Ph.s	E	0					4	Perm.2 Ph.s	E	0		5	Perm.2 Ph.s	E	0
2 Min Recall	F	2 4					4	Min Recall	F	2 4		5	Min Recall	F	0

C:\TV\CBD\INT94
TS # 56 : AUDITORIUM CENTRE MARIO_LEMIEUX

TABLE * 7* (1 of 2)

INTERSECTION : CENTRE CRAWFORD
FLASH YELLOW : CENTRE
MS. LOCATION : NONE

TYPE OPERATE : FIXED
MAN. NAME & # : KENT KMT-4000
SOFTWARE PROG.:

LAST P.M.C. : 05/03/10
LAST P.M.LOW : 08/17/06
LAST P.M.HIGH : 08/15/05

SERVICE 1: 09/22/10 400,
SERVICE 2: 07/06/10 303,
SERVICE 3: 06/25/10 303,
SERVICE 4: 06/24/10 303,
SERVICE 5: 06/04/10 303,

TOTAL UNITS: 14
POLE UNITS: 6
MAST UNITS: 0
SPAN UNITS: 8

	LEDS		LAMP		PAR	
	8	12	8	12	LED	LAMP
RED :	6	8	0	0	0	0
YEL :	6	8	0	0	0	0
GRN :	6	8	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS:209 DATE:05/17/11
POLICE BUTTON: T
SITE CODE : CRB
TRACT # : 305
IN CDBG AREA : Y
SYSTEM # : 0
SYSTEM TYPE : ---
NUMBER SPLITS: 1
WORK ORDER # : 8475
COMP. DATE :11/01/95
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 24 HR STOP & GO
REVISION DATE : 11/01/95 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1320
LED TYPE :

TS: 209

CYCLE		A	B	C	D		A	B	C	D	
	1.	30.0	0.0	0.0	0.0	13.	0.0	0.0	0.0	0.0	
	2.	3.0	0.0	0.0	0.0	14.	0.0	0.0	0.0	0.0	
I	3.	2.0	0.0	0.0	0.0	15.	0.0	0.0	0.0	0.0	I
N	4.	30.0	0.0	0.0	0.0	16.	0.0	0.0	0.0	0.0	N
T	5.	3.0	0.0	0.0	0.0	17.	0.0	0.0	0.0	0.0	T
E	6.	2.0	0.0	0.0	0.0	18.	0.0	0.0	0.0	0.0	E
R	7.	0.0	0.0	0.0	0.0	19.	0.0	0.0	0.0	0.0	R
V	8.	0.0	0.0	0.0	0.0	20.	0.0	0.0	0.0	0.0	V
A	9.	0.0	0.0	0.0	0.0	21.	0.0	0.0	0.0	0.0	A
L	10.	0.0	0.0	0.0	0.0	22.	0.0	0.0	0.0	0.0	L
	11.	0.0	0.0	0.0	0.0	23.	0.0	0.0	0.0	0.0	
	12.	0.0	0.0	0.0	0.0	24.	0.0	0.0	0.0	0.0	

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	70	0	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0
D	0	0	0	0	0

INTERSECTION : FIFTH SIXTH
FLASH YELLOW : SIXTH
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 04/10/10
LAST P.M.LOW : 08/08/06
LAST P.M.HIGH : 08/18/05

SERVICE 1: 12/23/10 287,
SERVICE 2: 12/06/10 303,
SERVICE 3: 12/02/10 303,
SERVICE 4: 11/09/10 303,
SERVICE 5: 07/22/10 303,

TOTAL UNITS: 15
POLE UNITS: 6
MAST UNITS: 0
SPAN UNITS: 9

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	6	9	0	0	0	0
YEL :	6	9	0	0	0	0
GRN :	6	9	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS:313 DATE:05/17/11
POLICE BUTTON: F
SITE CODE : CBD
TRACT # : 201
IN CDBG AREA : N
SYSTEM # : 30
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 9158
COMP. DATE :03/28/01
PAGES USED : 0
MODEM : **
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 24 HR STOP & GO
REVISION DATE : 03/28/01 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1223
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	70	69	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0

SYSTEM LOCATION: CENTRAL BUSINESS DISTRICT SYS: 30

STEP #	TIME	DAY	FUNCTION
1.	ALL DAY		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 70
CYCLE B = 0
CYCLE C = 0

(0 + key) key (phase + key)

FUNCTION	PHASES 12345678	FUNCTION	1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6	0 MAX I	0	35	0	23	0	0	0	0
PED. RECALL	2 4 6	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	25	0	13	0	0	0	0
YELLOW LOCK	2 4 6	3 FLASH DW	0	10	0	10	0	0	0	0
PERMIT	2 4 6	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 4 6	5 MIN GREEN	0	25	0	13	0	0	0	0
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.5	0.0	3.5	0.0	0.0	0.0	0.0
OVERLAP D	0	D RED CLEAR	0.0	2.5	0.0	2.5	0.0	0.0	0.0	0.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

WEEKLY PROGRAM

TOD/DOW (A + xy)

Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func	Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func
1	80	1234567	81	6	82	0	83	1	17	C0	0	C1	0	C2	0	C3	0
2	84	23456	85	15	86	0	87	2	18	C4	0	C5	0	C6	0	C7	0
3	88	1234567	89	19	8A	0	8B	1	19	C8	0	C9	0	CA	0	CB	0
4	8C	0	8D	0	8E	0	8F	0	20	CC	0	CD	0	CE	0	CF	0
5	90	0	91	0	93	0	93	0	21	D0	0	D1	0	D2	0	D3	0
6	94	0	95	0	96	0	97	0	22	D4	0	D5	0	D6	0	D7	0
7	98	0	99	0	9A	0	9B	0	23	D8	0	D9	0	DA	0	DB	0
8	9C	0	9D	0	9E	0	9F	0	24	DC	0	DD	0	DE	0	DF	0
9	A0	0	A1	0	A2	0	A3	0	25	E0	0	E1	0	E2	0	E3	0
10	A4	0	A6	0	A6	0	A7	0	26	E4	0	E5	0	E6	0	E7	0
11	A8	0	A9	0	AA	0	AB	0	27	E8	0	E9	0	EA	0	EB	0
12	AC	0	AD	0	AE	0	AF	0	28	EC	0	ED	0	EE	0	EF	0
13	B0	0	B1	0	B2	0	B3	0	29	F0	0	F1	0	F2	0	F3	0
14	B4	0	B5	0	B6	0	B7	0	30	F4	0	F5	0	F6	0	F7	0
15	B8	0	B9	0	BA	0	BB	0	31	F8	0	F9	0	FA	0	FB	0
16	BC	0	BD	0	BE	0	BF	0	32	FC	0	FD	0	FE	0	FF	0

C:\TV\CBD\INT88
TS # 313 : FIFTH SIXTH

TABLE * 5* (1 of 2)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	70	70	0	0	0	0	0	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	39	39	0	0	0	0	0	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	0	0	0	0	0	0	0	0	0
Offset	9	55	69	0	0	0	0	0	0	0
Perm. Length	A	11	11	0	0	0	0	0	0	0
Max Dwell	B	20	20	0	0	0	0	0	0	0

FUNCTION	Key	PLAN
1 Lead Ph.s	C	1 3 5 7
1 Coord Ph.s	D	2 6
1 Perm.2 Ph.s	E	0
1 Min Recall	F	2 4 6
2 Lead Ph.s	C	1 3 5 7
2 Coord Ph.s	D	2 6
2 Perm.2 Ph.s	E	0
2 Min Recall	F	2 4 6
3 Lead Ph.s	C	1 3 5 7
3 Coord Ph.s	D	2 6
3 Perm.2 Ph.s	E	0
3 Min Recall	F	2 4 6
4 Lead Ph.s	C	1 3 5 7
4 Coord Ph.s	D	2 6
4 Perm.2 Ph.s	E	0
4 Min Recall	F	2 4 6

FUNCTION	Key	12345678
Plan		
9 Lead Ph.s	C	0
9 Coord Ph.s	D	0
9 Perm.2 Ph.s	E	0
9 Min Recall	F	0
8 Lead Ph.s	C	0
8 Coord Ph.s	D	0
8 Perm.2 Ph.s	E	0
8 Min Recall	F	0
7 Lead Ph.s	C	1 3 5 7
7 Coord Ph.s	D	2 6
7 Perm.2 Ph.s	E	0
7 Min Recall	F	2 4 6
6 Lead Ph.s	C	0
6 Coord Ph.s	D	0
6 Perm.2 Ph.s	E	0
6 Min Recall	F	0
5 Lead Ph.s	C	0
5 Coord Ph.s	D	0
5 Perm.2 Ph.s	E	0
5 Min Recall	F	0

C:\TV\CBD\INT88
TS # 313 : FIFTH SIXTH

TABLE * 7* (1 of 2)

INTERSECTION : CHATHAM FIFTH WASHINGTON
FLASH YELLOW : FIFTH
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 10/17/10
LAST P.M.LOW : 08/17/06
LAST P.M.HIGH : 01/10/06

SERVICE 1: 10/17/10 288,
SERVICE 2: 10/08/10 265,
SERVICE 3: 09/30/10 303,
SERVICE 4: 09/24/10 303,
SERVICE 5: 09/22/10 400,

TOTAL UNITS: 14
POLE UNITS: 11
MAST UNITS: 0
SPAN UNITS: 3

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED	14	0	0	0	0	0
YEL	14	0	0	0	0	0
GRN	14	0	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS:300 DATE:05/17/11
POLICE BUTTON: F
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 53
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 10127
COMP. DATE :08/10/95
PAGES USED : 0
MODEM : **
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 24 HR STOP & GO
REVISION DATE : 10/29/08 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1318
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	80	39	41	0	0
B	80	23	0	0	0
C	60	23	0	0	0

SYSTEM LOCATION: UPTOWN (CTRTCS)

SYS: 53

STEP #	TIME	DAY	FUNCTION	
1.	23:00 - 06:00	SUN - SAT	PLAN 7 PG.2	SYS FLASH
2.	06:00 - 09:00	MON - SAT	PLAN 1 PG.0	CYC A
3.	09:00 - 19:00	MON - SAT	PLAN 2 PG.0	CYC A
4.	19:00 - 22:00	MON - SAT	PLAN 4 PG.1	CYC B
5.	22:00 - 23:00	MON - SAT	PLAN 7 PG.2	CYC C
6.	06:00 - 23:00	SUNDAY	PLAN 7 PG.2	CYC C
7.				
8.				
9.				
10.				

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 80
CYCLE C = 60

(0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 4 8	0 MAX I	0	37	0	24	0	0	0	24
PED. RECALL	2 4 8	1 MAX II/HFDW	0	37	0	24	0	0	0	24
RED LOCK	0	2 WALK	0	15	0	9	0	0	0	9
YELLOW LOCK	0	3 FLASH DW	0	22	0	15	0	0	0	15
PERMIT	2 4 8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 4 8	5 MIN GREEN	0	37	0	10	0	0	0	10
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.0	0.0	4.0	0.0	0.0	0.0	4.0
OVERLAP D	0	D RED CLEAR	0.0	4.0	0.0	2.0	0.0	0.0	0.0	2.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	3	0	3	0	0	0	3

WEEKLY PROGRAM

TOD/DOW (A + xy)

Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func	Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func
1	80	1234567	81	6	82	0	83	1	17	C0	0	C1	0	C2	0	C3	0
2	84	0	85	0	86	0	87	0	18	C4	0	C5	0	C6	0	C7	0
3	88	0	89	0	8A	0	8B	0	19	C8	0	C9	0	CA	0	CB	0
4	8C	0	8D	0	8E	0	8F	0	20	CC	0	CD	0	CE	0	CF	0
5	90	0	91	0	93	0	93	0	21	D0	0	D1	0	D2	0	D3	0
6	94	0	95	0	96	0	97	0	22	D4	0	D5	0	D6	0	D7	0
7	98	0	99	0	9A	0	9B	0	23	D8	0	D9	0	DA	0	DB	0
8	9C	0	9D	0	9E	0	9F	0	24	DC	0	DD	0	DE	0	DF	0
9	A0	0	A1	0	A2	0	A3	0	25	E0	0	E1	0	E2	0	E3	0
10	A4	0	A6	0	A6	0	A7	0	26	E4	0	E5	0	E6	0	E7	0
11	A8	0	A9	0	AA	0	AB	0	27	E8	0	E9	0	EA	0	EB	0
12	AC	0	AD	0	AE	0	AF	0	28	EC	0	ED	0	EE	0	EF	0
13	B0	0	B1	0	B2	0	B3	0	29	F0	0	F1	0	F2	0	F3	0
14	B4	0	B5	0	B6	0	B7	0	30	F4	0	F5	0	F6	0	F7	0
15	B8	0	B9	0	BA	0	BB	0	31	F8	0	F9	0	FA	0	FB	0
16	BC	0	BD	0	BE	0	BF	0	32	FC	0	FD	0	FE	0	FF	0

C:\TV\CBD\INT99
TS # 300 : CHATHAM FIFTH WASHINGTON

TABLE * 5* (1 of 2)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	80	80	80	0	0	0	0	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	56	56	56	0	0	0	0	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	56	56	56	0	0	0	0	0	0
Offset	9	0	0	0	0	0	0	0	0	0
Perm. Length	A	23	23	23	0	0	0	0	0	0
Max Dwell	B	20	20	20	0	0	0	0	0	0

1 Lead Ph.s	C	1 3 5 7
1 Coord Ph.s	D	2
1 Perm.2 Ph.s	E	0
1 Min Recall	F	2
2 Lead Ph.s	C	1 3 5 7
2 Coord Ph.s	D	2
2 Perm.2 Ph.s	E	0
2 Min Recall	F	2
3 Lead Ph.s	C	1 3 5 7
3 Coord Ph.s	D	2
3 Perm.2 Ph.s	E	0
3 Min Recall	F	2
4 Lead Ph.s	C	0
4 Coord Ph.s	D	0
4 Perm.2 Ph.s	E	0
4 Min Recall	F	0

FUNCTION Plan	Key 12345678	
9 Lead Ph.s	C	0
9 Coord Ph.s	D	0
9 Perm.2 Ph.s	E	0
9 Min Recall	F	0
8 Lead Ph.s	C	0
8 Coord Ph.s	D	0
8 Perm.2 Ph.s	E	0
8 Min Recall	F	0
7 Lead Ph.s	C	0
7 Coord Ph.s	D	0
7 Perm.2 Ph.s	E	0
7 Min Recall	F	0
6 Lead Ph.s	C	0
6 Coord Ph.s	D	0
6 Perm.2 Ph.s	E	0
6 Min Recall	F	0
5 Lead Ph.s	C	0
5 Coord Ph.s	D	0
5 Perm.2 Ph.s	E	0
5 Min Recall	F	0

C:\TV\CBD\INT99
TS # 300 : CHATHAM FIFTH WASHINGTON

TABLE * 7* (1 of 2)

INTERSECTION : FIFTH MAGEE (OSM)
FLASH YELLOW : FIFTH
MS. LOCATION : FIFTH MAGEE

TYPE OPERATE : FIXED
MAN. NAME & # : KENT KMT-4000
SOFTWARE PROG.:

LAST P.M.C. : 04/27/10
LAST P.M.LOW : 08/16/06
LAST P.M.HIGH : 03/31/04

SERVICE 1: 11/04/10 200,
SERVICE 2: 10/27/10 308,
SERVICE 3: 10/25/10 400,
SERVICE 4: 09/22/10 400,
SERVICE 5: 08/18/10 135,316

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	9	0	0	0	0	0
YEL :	9	0	0	0	0	0
GRN :	9	0	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TOTAL UNITS: 9
POLE UNITS: 7
MAST UNITS: 1
SPAN UNITS: 1

TS:303 DATE:05/17/11
POLICE BUTTON: T
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 16
SYSTEM TYPE : H\W
NUMBER SPLITS: 1
WORK ORDER # : 7561
COMP. DATE :09/25/90
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 23:00 - 6:00
REVISION DATE : 09/25/90 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1315
LED TYPE :

TS: 303

CYCLE INTERVAL	A	B	C	D		A	B	C	D
1.	49.0	33.0	0.0	0.0	13.	0.0	0.0	0.0	0.0
2.	3.0	3.0	0.0	0.0	14.	0.0	0.0	0.0	0.0
3.	2.0	2.0	0.0	0.0	15.	0.0	0.0	0.0	0.0
4.	21.0	17.0	0.0	0.0	16.	0.0	0.0	0.0	0.0
5.	3.0	3.0	0.0	0.0	17.	0.0	0.0	0.0	0.0
6.	2.0	2.0	0.0	0.0	18.	0.0	0.0	0.0	0.0
7.	0.0	0.0	0.0	0.0	19.	0.0	0.0	0.0	0.0
8.	0.0	0.0	0.0	0.0	20.	0.0	0.0	0.0	0.0
9.	0.0	0.0	0.0	0.0	21.	0.0	0.0	0.0	0.0
10.	0.0	0.0	0.0	0.0	22.	0.0	0.0	0.0	0.0
11.	0.0	0.0	0.0	0.0	23.	0.0	0.0	0.0	0.0
12.	0.0	0.0	0.0	0.0	24.	0.0	0.0	0.0	0.0

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	80	35	37	0	0
B	60	11	0	0	0
C	0	0	0	0	0
D	0	0	0	0	0

SYSTEM LOCATION: FIFTH FORBES (UPTOWN) SYS: 16

STEP #	TIME	DAY	FUNCTION
1.	23:00-06:00	SUN - SAT	B - OFF 1, FLASH
2.	06:00-09:00	MON - FRI	A - OFF 2
3.	09:00-22:00	MON - FRI	A - OFF 1
4.	22:00-23:00	MON - FRI	B - OFF 1
5.	06:00-22:00	SATURDAY	A - OFF 2
6.	22:00-23:00	SATURDAY	B - OFF 1
7.	06:00-23:00	SUNDAY	B - OFF 1
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 60
CYCLE C = 0

INTERSECTION : FIFTH STEVENSON
FLASH YELLOW : FIFTH
MS. LOCATION : FIFTH MAGEE

TYPE OPERATE : FIXED
MAN. NAME & # : KENT KMT-4000
SOFTWARE PROG.:

LAST P.M.C. : 05/03/10
LAST P.M.LOW : 08/15/06
LAST P.M.HIGH : 03/31/04

SERVICE 1: 08/19/10 135,
SERVICE 2: 08/18/10 135,316
SERVICE 3: 08/18/10 400,
SERVICE 4: 08/17/10 207,
SERVICE 5: 05/03/10 288,

TOTAL UNITS: 11
POLE UNITS: 5
MAST UNITS: 0
SPAN UNITS: 6

	LEDS		LAMP		PAR	
	8	12	8	12	LED	LAMP
RED :	5	6	0	0	0	0
YEL :	5	6	0	0	0	0
GRN :	5	6	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS:611 DATE:05/17/11
POLICE BUTTON: T
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 16
SYSTEM TYPE : H/W
NUMBER SPLITS: 1
WORK ORDER # : 7856
COMP. DATE :07/07/92
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 23:00 - 6:00
REVISION DATE : 07/07/92 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1316
LED TYPE :

TS: 611

CYCLE		A	B	C	D		A	B	C	D	
	1.	50.0	33.0	0.0	0.0	13.	0.0	0.0	0.0	0.0	
	2.	3.0	3.0	0.0	0.0	14.	0.0	0.0	0.0	0.0	
I	3.	2.0	2.0	0.0	0.0	15.	0.0	0.0	0.0	0.0	I
N	4.	20.0	17.0	0.0	0.0	16.	0.0	0.0	0.0	0.0	N
T	5.	3.0	3.0	0.0	0.0	17.	0.0	0.0	0.0	0.0	T
E	6.	2.0	2.0	0.0	0.0	18.	0.0	0.0	0.0	0.0	E
R	7.	0.0	0.0	0.0	0.0	19.	0.0	0.0	0.0	0.0	R
V	8.	0.0	0.0	0.0	0.0	20.	0.0	0.0	0.0	0.0	V
A	9.	0.0	0.0	0.0	0.0	21.	0.0	0.0	0.0	0.0	A
L	10.	0.0	0.0	0.0	0.0	22.	0.0	0.0	0.0	0.0	L
	11.	0.0	0.0	0.0	0.0	23.	0.0	0.0	0.0	0.0	
	12.	0.0	0.0	0.0	0.0	24.	0.0	0.0	0.0	0.0	

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	80	20	22	0	0
B	60	58	0	0	0
C	0	0	0	0	0
D	0	0	0	0	0

SYSTEM LOCATION: FIFTH FORBES (UPTOWN) SYS: 16

STEP #	TIME	DAY	FUNCTION
1.	23:00-06:00	SUN - SAT	B - OFF 1, FLASH
2.	06:00-09:00	MON - FRI	A - OFF 2
3.	09:00-22:00	MON - FRI	A - OFF 1
4.	22:00-23:00	MON - FRI	B - OFF 1
5.	06:00-22:00	SATURDAY	A - OFF 2
6.	22:00-23:00	SATURDAY	B - OFF 1
7.	06:00-23:00	SUNDAY	B - OFF 1
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 60
CYCLE C = 0

INTERSECTION : FIFTH PRIDE
FLASH YELLOW : FIFTH
MS. LOCATION : FIFTH MAGEE

TYPE OPERATE : FIXED
MAN. NAME & # : KENT KMT-4000
SOFTWARE PROG.:

LAST P.M.C. : 04/04/11
LAST P.M.LOW : 08/15/06
LAST P.M.HIGH : 03/31/04

SERVICE 1: 07/20/11 308,133
SERVICE 2: 07/11/11 308,287
SERVICE 3: 06/28/11 303,
SERVICE 4: 06/22/11 400,
SERVICE 5: 04/04/11 288,

TOTAL UNITS: 9
POLE UNITS: 5
MAST UNITS: 0
SPAN UNITS: 4

	LEDS		LAMP		PAR	
	8	12	8	12	LED	LAMP
RED :	7	2	0	0	0	0
YEL :	7	2	0	0	0	0
GRN :	7	2	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS:311 DATE:07/29/11
POLICE BUTTON: T
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 16
SYSTEM TYPE : H/W
NUMBER SPLITS: 1
WORK ORDER # : 10242
COMP. DATE :09/20/06
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 23:00 - 6:00
REVISION DATE : 09/19/06 ORIGINAL INSTALLATION : / /
REMARKS : RELOCATE POLE ON 9-20-06

TERRITORY : 1317
LED TYPE :

TS: 311

CYCLE		A	B	C	D		A	B	C	D	
	1.	45.0	33.0	0.0	0.0	13.	0.0	0.0	0.0	0.0	
	2.	3.0	3.0	0.0	0.0	14.	0.0	0.0	0.0	0.0	
I	3.	2.0	2.0	0.0	0.0	15.	0.0	0.0	0.0	0.0	I
N	4.	25.0	17.0	0.0	0.0	16.	0.0	0.0	0.0	0.0	N
T	5.	3.0	3.0	0.0	0.0	17.	0.0	0.0	0.0	0.0	T
E	6.	2.0	2.0	0.0	0.0	18.	0.0	0.0	0.0	0.0	E
R	7.	0.0	0.0	0.0	0.0	19.	0.0	0.0	0.0	0.0	R
V	8.	0.0	0.0	0.0	0.0	20.	0.0	0.0	0.0	0.0	V
A	9.	0.0	0.0	0.0	0.0	21.	0.0	0.0	0.0	0.0	A
L	10.	0.0	0.0	0.0	0.0	22.	0.0	0.0	0.0	0.0	L
	11.	0.0	0.0	0.0	0.0	23.	0.0	0.0	0.0	0.0	
	12.	0.0	0.0	0.0	0.0	24.	0.0	0.0	0.0	0.0	

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	80	11	13	0	0
B	60	47	0	0	0
C	0	0	0	0	0
D	0	0	0	0	0

SYSTEM LOCATION: FIFTH FORBES (UPTOWN) SYS: 16

STEP #	TIME	DAY	FUNCTION
1.	23:00-06:00	SUN - SAT	B - OFF 1, FLASH
2.	06:00-09:00	MON - FRI	A - OFF 2
3.	09:00-22:00	MON - FRI	A - OFF 1
4.	22:00-23:00	MON - FRI	B - OFF 1
5.	06:00-22:00	SATURDAY	A - OFF 2
6.	22:00-23:00	SATURDAY	B - OFF 1
7.	06:00-23:00	SUNDAY	B - OFF 1
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 60
CYCLE C = 0

INTERSECTION : DIAMOND FORBES SIXTH
FLASH YELLOW : SIXTH
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 04/10/10
LAST P.M.LOW : 08/08/06
LAST P.M.HIGH : 04/28/04

SERVICE 1: 12/04/10 284,
SERVICE 2: 12/01/10 303,
SERVICE 3: 11/26/10 135,308
SERVICE 4: 11/16/10 287,
SERVICE 5: 07/29/10 303,

TOTAL UNITS: 23
POLE UNITS: 18
MAST UNITS: 2
SPAN UNITS: 3

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED	20	3	0	0	0	0
YEL	20	3	0	0	0	0
GRN	20	3	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	1	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS:338 DATE:05/17/11
POLICE BUTTON: F
SITE CODE : CBD
TRACT # : 201
IN CDBG AREA : N
SYSTEM # : 30
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 8403
COMP. DATE :08/24/95
PAGES USED : 0
MODEM : **
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 1

FLASH TIME : 24 HR STOP & GO
REVISION DATE : 08/24/95 ORIGINAL INSTALLATION : / /
REMARKS : MATRIX SIGN WITH 6 EPT LAMPS & 4 FLOURESCENT LAMPS

TERRITORY : 1224
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	70	55	0	0	0
B	0	0	0	0	0
C	0	0	0	0	0

SYSTEM LOCATION: CENTRAL BUSINESS DISTRICT SYS: 30

STEP #	TIME	DAY	FUNCTION
1.	ALL DAY		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 70
CYCLE B = 0
CYCLE C = 0

(0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	12 4 6	0 MAX I	8	25	0	22	0	25	0	0
PED. RECALL	2 4 6	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	15	0	12	0	15	0	0
YELLOW LOCK	12 4 6	3 FLASH DW	0	10	0	10	0	10	0	0
PERMIT	12 4 6	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 4 6	5 MIN GREEN	8	15	0	12	0	15	0	0
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	3.0	3.5	0.0	3.5	0.0	3.5	0.0	0.0
OVERLAP D	0	D RED CLEAR	0.0	2.5	0.0	2.5	0.0	2.5	0.0	0.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

WEEKLY PROGRAM

TOD/DOW (A + xy)

Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func	Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func
1	80	1234567	81	6	82	0	83	1	17	C0	0	C1	0	C2	0	C3	0
2	84	23456	85	15	86	0	87	2	18	C4	0	C5	0	C6	0	C7	0
3	88	1234567	89	19	8A	0	8B	1	19	C8	0	C9	0	CA	0	CB	0
4	8C	0	8D	0	8E	0	8F	0	20	CC	0	CD	0	CE	0	CF	0
5	90	0	91	0	93	0	93	0	21	D0	0	D1	0	D2	0	D3	0
6	94	0	95	0	96	0	97	0	22	D4	0	D5	0	D6	0	D7	0
7	98	0	99	0	9A	0	9B	0	23	D8	0	D9	0	DA	0	DB	0
8	9C	0	9D	0	9E	0	9F	0	24	DC	0	DD	0	DE	0	DF	0
9	A0	0	A1	0	A2	0	A3	0	25	E0	0	E1	0	E2	0	E3	0
10	A4	0	A6	0	A6	0	A7	0	26	E4	0	E5	0	E6	0	E7	0
11	A8	0	A9	0	AA	0	AB	0	27	E8	0	E9	0	EA	0	EB	0
12	AC	0	AD	0	AE	0	AF	0	28	EC	0	ED	0	EE	0	EF	0
13	B0	0	B1	0	B2	0	B3	0	29	F0	0	F1	0	F2	0	F3	0
14	B4	0	B5	0	B6	0	B7	0	30	F4	0	F5	0	F6	0	F7	0
15	B8	0	B9	0	BA	0	BB	0	31	F8	0	F9	0	FA	0	FB	0
16	BC	0	BD	0	BE	0	BF	0	32	FC	0	FD	0	FE	0	FF	0

C:\TV\CBD\INT89
TS # 338 : DIAMOND FORBES SIXTH

TABLE * 5* (1 of 2)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	70	70	0	0	0	0	0	0	0
Forceoff 1	1	52	52	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	38	38	0	0	0	0	0	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	0	0	0	0	0	0	0	0	0
Offset	9	55	69	0	0	0	0	0	0	0
Perm. Length	A	11	11	0	0	0	0	0	0	0
Max Dwell	B	20	20	0	0	0	0	0	0	0

1 Lead Ph.s	C	1 3 5 7	3 Lead Ph.s	C 1 3 5 7
1 Coord Ph.s	D	2 6	3 Coord Ph.s	D 2 6
1 Perm.2 Ph.s	E	0	3 Perm.2 Ph.s	E 0
1 Min Recall	F	2 4	3 Min Recall	F 2 4
2 Lead Ph.s	C	1 3 5 7	4 Lead Ph.s	C 1 3 5 7
2 Coord Ph.s	D	2 6	4 Coord Ph.s	D 2 6
2 Perm.2 Ph.s	E	0	4 Perm.2 Ph.s	E 0
2 Min Recall	F	2 4	4 Min Recall	F 2 4

FUNCTION Plan	Key 12345678
9 Lead Ph.s	C 0
9 Coord Ph.s	D 0
9 Perm.2 Ph.s	E 0
9 Min Recall	F 0
8 Lead Ph.s	C 0
8 Coord Ph.s	D 0
8 Perm.2 Ph.s	E 0
8 Min Recall	F 0
7 Lead Ph.s	C 1 3 5 7
7 Coord Ph.s	D 2 6
7 Perm.2 Ph.s	E 0
7 Min Recall	F 2 4
6 Lead Ph.s	C 0
6 Coord Ph.s	D 0
6 Perm.2 Ph.s	E 0
6 Min Recall	F 0
5 Lead Ph.s	C 0
5 Coord Ph.s	D 0
5 Perm.2 Ph.s	E 0
5 Min Recall	F 0

:\TV\CBD\INT89
'S # 338 : DIAMOND FORBES SIXTH

TABLE * 7* (1 of 2)

INTERSECTION : ARMSTRONG FORBES
FLASH YELLOW : FORBES
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 04/19/10
LAST P.M.LOW : 08/10/06
LAST P.M.HIGH : 04/03/06

SERVICE 1: 08/18/10 400,316
SERVICE 2: 08/17/10 400,316
SERVICE 3: 04/19/10 288,
SERVICE 4: 07/02/09 270,
SERVICE 5: 07/01/09 400,

TOTAL UNITS: 10
POLE UNITS: 8
MAST UNITS: 1
SPAN UNITS: 0

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	8	2	0	0	0	0
YEL :	8	2	0	0	0	0
GRN :	8	2	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS: 47 DATE:05/17/11
POLICE BUTTON: F
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 53
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 8923
COMP. DATE :02/08/99
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 23:00 - 6:00
REVISION DATE : 02/08/99 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1304
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	80	22	72	0	0
B	80	72	0	0	0
C	60	59	0	0	0

SYSTEM LOCATION: UPTOWN (CTRTCS) SYS: 53

STEP #	TIME	DAY	FUNCTION	
1.	23:00 - 06:00	SUN - SAT	PLAN 7 PG.2	SYS FLASH
2.	06:00 - 09:00	MON - SAT	PLAN 1 PG.0	CYC A
3.	09:00 - 19:00	MON - SAT	PLAN 2 PG.0	CYC A
4.	19:00 - 22:00	MON - SAT	PLAN 4 PG.1	CYC B
5.	22:00 - 23:00	MON - SAT	PLAN 7 PG.2	CYC C
6.	06:00 - 23:00	SUNDAY	PLAN 7 PG.2	CYC C
7.				
8.				
9.				
10.				

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 80
CYCLE C = 60

(0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6	0 MAX I	0	40	0	30	0	40	0	0
PED. RECALL	0	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	0	0	0	0	0	0	0
YELLOW LOCK	2 4 6	3 FLASH DW	0	0	0	0	0	0	0	0
PERMIT	2 4 6	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	0	5 MIN GREEN	0	20	0	20	0	20	0	0
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.0	0.0	3.0	0.0	3.0	0.0	0.0
OVERLAP D	0	D RED CLEAR	0.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

(D+C+0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(D+C+phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6	0 MAX I	0	45	0	25	0	45	0	0
PED. RECALL	0	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	0	0	0	0	0	0	0
YELLOW LOCK	2 4 6	3 FLASH DW	0	0	0	0	0	0	0	0
PERMIT	2 4 6	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	0	5 MIN GREEN	0	20	0	20	0	20	0	0
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.0	0.0	3.0	0.0	3.0	0.0	0.0
OVERLAP D	0	D RED CLEAR	0.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

PAGE ID : 1
C:\TV\CBD\INT97
TS # 47 : ARMSTRONG FORBES

TABLE * 1* (2 of 3)

(D+D+0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(D+D+phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 4 6	0 MAX I	0	30	0	20	0	30	0	0
PED. RECALL	0	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	0	0	0	0	0	0	0
YELLOW LOCK	2 4 6	3 FLASH DW	0	0	0	0	0	0	0	0
PERMIT	2 4 6	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	0	5 MIN GREEN	0	20	0	20	0	20	0	0
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2 6	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.0	0.0	3.0	0.0	3.0	0.0	0.0
OVERLAP D	0	D RED CLEAR	0.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	0	0	0	0	0	0	0

PAGE ID : 2
C:\TV\CBD\INT97
TS # 47 : ARMSTRONG FORBES

TABLE * 1* (3 of 3)

WEEKLY PROGRAM

TOD/DOW (A + xy)

Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func	Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func
1	80	1234567	81	23	82	0	83	33	17	C0	0	C1	0	C2	0	C3	0
2	84	1234567	85	6	86	0	87	32	18	C4	0	C5	0	C6	0	C7	0
3	88	234567	89	6	8A	0	8B	1	19	C8	0	C9	0	CA	0	CB	0
4	8C	234567	8D	6	8E	0	8F	100	20	CC	0	CD	0	CE	0	CF	0
5	90	234567	91	9	93	0	93	2	21	D0	0	D1	0	D2	0	D3	0
6	94	234567	95	9	96	0	97	100	22	D4	0	D5	0	D6	0	D7	0
7	98	234567	99	19	9A	0	9B	4	23	D8	0	D9	0	DA	0	DB	0
8	9C	234567	9D	19	9E	0	9F	101	24	DC	0	DD	0	DE	0	DF	0
9	A0	234567	A1	22	A2	0	A3	7	25	E0	0	E1	0	E2	0	E3	0
10	A4	234567	A6	22	A6	0	A7	102	26	E4	0	E5	0	E6	0	E7	0
11	A8	1	A9	6	AA	0	AB	7	27	E8	0	E9	0	EA	0	EB	0
12	AC	1	AD	6	AE	0	AF	102	28	EC	0	ED	0	EE	0	EF	0
13	B0	0	B1	0	B2	0	B3	0	29	F0	0	F1	0	F2	0	F3	0
14	B4	0	B5	0	B6	0	B7	0	30	F4	0	F5	0	F6	0	F7	0
15	B8	0	B9	0	BA	0	BB	0	31	F8	0	F9	0	FA	0	FB	0
16	BC	0	BD	0	BE	0	BF	0	32	FC	0	FD	0	FE	0	FF	0

C:\TV\CBD\INT97
TS # 47 : ARMSTRONG FORBES

TABLE * 5* (1 of 2)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	80	80	0	80	0	0	60	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	35	30	0	30	0	0	25	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	0	0	0	0	0	0	0	0	0
Offset	9	22	72	0	72	0	0	59	0	0
Perm. Length	A	10	10	0	10	0	0	10	0	0
Max Dwell	B	20	20	0	20	0	0	20	0	0

1 Lead Ph.s	C 1 3 5 7	3 Lead Ph.s	C 0
1 Coord Ph.s	D 2 6	3 Coord Ph.s	D 0
1 Perm.2 Ph.s	E 0	3 Perm.2 Ph.s	E 0
1 Min Recall	F 2 4	3 Min Recall	F 0
2 Lead Ph.s	C 1 3 5 7	4 Lead Ph.s	C 1 3 5 7
2 Coord Ph.s	D 2 6	4 Coord Ph.s	D 2 6
2 Perm.2 Ph.s	E 0	4 Perm.2 Ph.s	E 0
2 Min Recall	F 2 4	4 Min Recall	F 2 4

FUNCTION Plan	Key 12345678
9 Lead Ph.s	C 0
9 Coord Ph.s	D 0
9 Perm.2 Ph.s	E 0
9 Min Recall	F 0
8 Lead Ph.s	C 0
8 Coord Ph.s	D 0
8 Perm.2 Ph.s	E 0
8 Min Recall	F 0
7 Lead Ph.s	C 1 3 5 7
7 Coord Ph.s	D 2 6
7 Perm.2 Ph.s	E 0
7 Min Recall	F 2 4
6 Lead Ph.s	C 0
6 Coord Ph.s	D 0
6 Perm.2 Ph.s	E 0
6 Min Recall	F 0
5 Lead Ph.s	C 0
5 Coord Ph.s	D 0
5 Perm.2 Ph.s	E 0
5 Min Recall	F 0

C:\TV\CBD\INT97
TS # 47 : ARMSTRONG FORBES

TABLE * 7* (1 of 2)

INTERSECTION : CHATHAM FORBES MCANULTY
FLASH YELLOW : FORBES
MS. LOCATION : CTRTCS

TYPE OPERATE : FIXED
MAN. NAME & # : SAFETRAN 170E
SOFTWARE PROG.: 170 WAPITI 4IKS

LAST P.M.C. : 04/19/10
LAST P.M.LOW : 06/16/04
LAST P.M.HIGH : 05/12/04

SERVICE 1: 12/08/10 400,
SERVICE 2: 09/06/10 284,
SERVICE 3: 08/18/10 400,316
SERVICE 4: 08/17/10 316,
SERVICE 5: 04/19/10 288,

TOTAL UNITS: 14
POLE UNITS: 8
MAST UNITS: 0
SPAN UNITS: 6

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	4	2	0	0	0	0
YEL :	4	2	0	0	0	0
GRN :	4	2	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	8	

TS:588 DATE:05/17/11
POLICE BUTTON: F
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 53
SYSTEM TYPE : FOS
NUMBER SPLITS: 1
WORK ORDER # : 9887
COMP. DATE :04/04/96
PAGES USED : 0
MODEM : **
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 23:00 - 6:00
REVISION DATE : 03/31/08 ORIGINAL INSTALLATION : / /
REMARKS : ADDED COUNTDOWN PEDS 3-31-08 + INSTALLED ALL LEDS

TERRITORY : 1305
LED TYPE :

CYCLE	LENGTH	OFFSETS 1.	2.	3.	4.
A	80	41	8	0	0
B	80	76	0	0	0
C	60	8	0	0	0

SYSTEM LOCATION: UPTOWN (CTRTCS) SYS: 53

STEP #	TIME	DAY	FUNCTION	
1.	23:00 - 06:00	SUN - SAT	PLAN 7 PG.2	SYS FLASH
2.	06:00 - 09:00	MON - SAT	PLAN 1 PG.0	CYC A
3.	09:00 - 19:00	MON - SAT	PLAN 2 PG.0	CYC A
4.	19:00 - 22:00	MON - SAT	PLAN 4 PG.1	CYC B
5.	22:00 - 23:00	MON - SAT	PLAN 7 PG.2	CYC C
6.	06:00 - 23:00	SUNDAY	PLAN 7 PG.2	CYC C
7.				
8.				
9.				
10.				

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 80
CYCLE C = 60

(0 + key) FUNCTION	PHASES 12345678	key FUNCTION	(phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2 8	0 MAX I	0	46	0	0	0	0	0	18
PED. RECALL	2 8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0	2 WALK	0	31	0	0	0	0	0	8
YELLOW LOCK	0	3 FLASH DW	0	15	0	0	0	0	0	10
PERMIT	2 8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2 8	5 MIN GREEN	0	20	0	0	0	0	0	10
LEAD PHASES	1 3 5 7	6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0	7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0	8 OBSERVE GAP								
START UP GRN	2	9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0	A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0	B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0	C YELLOW	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0
OVERLAP D	0	D RED CLEAR	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0
EXCLUSIVE	0	E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0	F WALK II	0	3	0	0	0	0	0	3

(D+C+0 + key) FUNCTION	PHASES 12345678	key	FUNCTION	(D+C+phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2	8	0 MAX I	0	37	0	0	0	0	0	27
PED. RECALL	2	8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0		2 WALK	0	22	0	0	0	0	0	17
YELLOW LOCK	0		3 FLASH DW	0	15	0	0	0	0	0	10
PERMIT	2	8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2	8	5 MIN GREEN	0	20	0	0	0	0	0	10
LEAD PHASES	1 3 5 7		6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0		7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0		8 OBSERVE GAP								
START UP GRN	2		9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0		A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0		B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0		C YELLOW	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0
OVERLAP D	0		D RED CLEAR	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0
EXCLUSIVE	0		E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0		F WALK II	0	3	0	0	0	0	0	3

PAGE ID : 1
C:\TV\CBD\INT98
TS # 588 : CHATHAM FORBES MCANULTY

TABLE * 1* (2 of 3)

(D+D+0 + key) FUNCTION	PHASES 12345678	key	FUNCTION	(D+D+phase + key) 1	2	3	4	5	6	7	8
VEH. RECALL	2	8	0 MAX I	0	30	0	0	0	0	0	14
PED. RECALL	2	8	1 MAX II/HFDW	0	0	0	0	0	0	0	0
RED LOCK	0		2 WALK	0	15	0	0	0	0	0	4
YELLOW LOCK	0		3 FLASH DW	0	15	0	0	0	0	0	10
PERMIT	2	8	4 MAX INITIAL	0	0	0	0	0	0	0	0
PED PHASES	2	8	5 MIN GREEN	0	20	0	0	0	0	0	10
LEAD PHASES	1 3 5 7		6 T B R	0	0	0	0	0	0	0	0
DOUBLE ENTRY	0		7 T T R	0	0	0	0	0	0	0	0
SEQ. TIMING	0		8 OBSERVE GAP								
START UP GRN	2		9 PASSAGE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP A	0		A MIN GAP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP B	0		B ADDED/ACT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERLAP C	0		C YELLOW	0.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0
OVERLAP D	0		D RED CLEAR	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0
EXCLUSIVE	0		E RED REVERT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SIM. GAP	0		F WALK II	0	3	0	0	0	0	0	3

PAGE ID : 2
C:\TV\CBD\INT98
TS # 588 : CHATHAM FORBES MCANULTY

TABLE * 1* (3 of 3)

WEEKLY PROGRAM

TOD/DOW (A + xy)

Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func	Event No.	xy	SMTWTFS 1234567	xy	hr	xy	min	xy	func
1	80	1234567	81	23	82	0	83	33	17	C0	0	C1	0	C2	0	C3	0
2	84	1234567	85	6	86	0	87	32	18	C4	0	C5	0	C6	0	C7	0
3	88	234567	89	6	8A	0	8B	1	19	C8	0	C9	0	CA	0	CB	0
4	8C	234567	8D	6	8E	0	8F	100	20	CC	0	CD	0	CE	0	CF	0
5	90	234567	91	9	93	0	93	2	21	D0	0	D1	0	D2	0	D3	0
6	94	234567	95	9	96	0	97	100	22	D4	0	D5	0	D6	0	D7	0
7	98	234567	99	19	9A	0	9B	4	23	D8	0	D9	0	DA	0	DB	0
8	9C	234567	9D	19	9E	0	9F	101	24	DC	0	DD	0	DE	0	DF	0
9	A0	234567	A1	22	A2	0	A3	7	25	E0	0	E1	0	E2	0	E3	0
10	A4	234567	A6	22	A6	0	A7	102	26	E4	0	E5	0	E6	0	E7	0
11	A8	1	A9	6	AA	0	AB	7	27	E8	0	E9	0	EA	0	EB	0
12	AC	1	AD	6	AE	0	AF	102	28	EC	0	ED	0	EE	0	EF	0
13	B0	0	B1	0	B2	0	B3	0	29	F0	0	F1	0	F2	0	F3	0
14	B4	0	B5	0	B6	0	B7	0	30	F4	0	F5	0	F6	0	F7	0
15	B8	0	B9	0	BA	0	BB	0	31	F8	0	F9	0	FA	0	FB	0
16	BC	0	BD	0	BE	0	BF	0	32	FC	0	FD	0	FE	0	FF	0

C:\TV\CBD\INT98
TS # 588 : CHATHAM FORBES MCANULTY

TABLE * 5* (1 of 2)

(B + Plan + Key)

FUNCTION	Key	PLAN 1	2	3	4	5	6	7	8	9
Cycle Length	0	80	80	0	80	0	0	60	0	0
Forceoff 1	1	0	0	0	0	0	0	0	0	0
Forceoff 2	2	0	0	0	0	0	0	0	0	0
Focceoff 3	3	0	0	0	0	0	0	0	0	0
Forceiff 4	4	0	0	0	0	0	0	0	0	0
Forceoff 5	5	0	0	0	0	0	0	0	0	0
Forceoff 6	6	0	0	0	0	0	0	0	0	0
Focceoff 7	7	0	0	0	0	0	0	0	0	0
Forceiff 8	8	41	41	0	50	0	0	37	0	0
Offset	9	41	8	0	76	0	0	8	0	0
Perm. Length	A	16	16	0	16	0	0	16	0	0
Max Dwell	B	20	20	0	20	0	0	20	0	0

FUNCTION	Key	
1 Lead Ph.s	C	1 3 5 7
1 Coord Ph.s	D	2
1 Perm.2 Ph.s	E	0
1 Min Recall	F	2 8
2 Lead Ph.s	C	1 3 5 7
2 Coord Ph.s	D	2
2 Perm.2 Ph.s	E	0
2 Min Recall	F	2 8
3 Lead Ph.s	C	0
3 Coord Ph.s	D	0
3 Perm.2 Ph.s	E	0
3 Min Recall	F	0
4 Lead Ph.s	C	1 3 5 7
4 Coord Ph.s	D	2
4 Perm.2 Ph.s	E	0
4 Min Recall	F	2 8

FUNCTION Plan	Key 12345678
9 Lead Ph.s	C 0
9 Coord Ph.s	D 0
9 Perm.2 Ph.s	E 0
9 Min Recall	F 0
8 Lead Ph.s	C 0
8 Coord Ph.s	D 0
8 Perm.2 Ph.s	E 0
8 Min Recall	F 0
7 Lead Ph.s	C 1 3 5 7
7 Coord Ph.s	D 2
7 Perm.2 Ph.s	E 0
7 Min Recall	F 2 8
6 Lead Ph.s	C 0
6 Coord Ph.s	D 0
6 Perm.2 Ph.s	E 0
6 Min Recall	F 0
5 Lead Ph.s	C 0
5 Coord Ph.s	D 0
5 Perm.2 Ph.s	E 0
5 Min Recall	F 0

C:\TV\CBD\INT98
TS # 588 : CHATHAM FORBES MCANULTY

TABLE * 7* (1 of 2)

INTERSECTION : FORBES MAGEE
FLASH YELLOW : FORBES
MS. LOCATION : FIFTH MAGEE

TYPE OPERATE : FIXED
MAN. NAME & # : KENT KMT-4000
SOFTWARE PROG.:

LAST P.M.C. : 03/08/11
LAST P.M.LOW : 08/10/06
LAST P.M.HIGH : 09/08/05

SERVICE 1: 03/08/11 288,
SERVICE 2: 02/15/11 308,
SERVICE 3: 10/28/10 135,
SERVICE 4: 08/20/10 135,
SERVICE 5: 08/19/10 135,

TOTAL UNITS: 14
POLE UNITS: 8
MAST UNITS: 0
SPAN UNITS: 6

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	4	2	0	0	0	0
YEL :	4	2	0	0	0	0
GRN :	4	2	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	8	

TS:327 DATE:07/29/11
POLICE BUTTON: T
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 16
SYSTEM TYPE : H/W
NUMBER SPLITS: 1
WORK ORDER # : 10251
COMP. DATE :01/16/91
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 23:00 - 6:00
REVISION DATE : 11/06/08 ORIGINAL INSTALLATION : / /
REMARKS : ADVANCE WALK 3 SEC

TERRITORY : 1306
LED TYPE :

TS: 327

CYCLE INTERVAL	A	B	C	D		A	B	C	D
1.	33.0	14.0	0.0	0.0	13.	0.0	0.0	0.0	0.0
2.	15.0	15.0	0.0	0.0	14.	0.0	0.0	0.0	0.0
3.	3.0	3.0	0.0	0.0	15.	0.0	0.0	0.0	0.0
4.	2.0	2.0	0.0	0.0	16.	0.0	0.0	0.0	0.0
5.	3.0	3.0	0.0	0.0	17.	0.0	0.0	0.0	0.0
6.	6.0	5.0	0.0	0.0	18.	0.0	0.0	0.0	0.0
7.	10.0	10.0	0.0	0.0	19.	0.0	0.0	0.0	0.0
8.	3.0	3.0	0.0	0.0	20.	0.0	0.0	0.0	0.0
9.	2.0	2.0	0.0	0.0	21.	0.0	0.0	0.0	0.0
10.	3.0	3.0	0.0	0.0	22.	0.0	0.0	0.0	0.0
11.	0.0	0.0	0.0	0.0	23.	0.0	0.0	0.0	0.0
12.	0.0	0.0	0.0	0.0	24.	0.0	0.0	0.0	0.0

CYCLE	LENGTH
A	80
B	60
C	0
D	0

OFFSETS 1.	2.	3.	4.
54	53	0	0
27	0	0	0
0	0	0	0
0	0	0	0

SYSTEM LOCATION: FIFTH FORBES (UPTOWN) SYS: 16

STEP #	TIME	DAY	FUNCTION
1.	23:00-06:00	SUN - SAT	B - OFF 1, FLASH
2.	06:00-09:00	MON - FRI	A - OFF 2
3.	09:00-22:00	MON - FRI	A - OFF 1
4.	22:00-23:00	MON - FRI	B - OFF 1
5.	06:00-22:00	SATURDAY	A - OFF 2
6.	22:00-23:00	SATURDAY	B - OFF 1
7.	06:00-23:00	SUNDAY	B - OFF 1
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 60
CYCLE C = 0

INTERSECTION : FORBES STEVENSON
FLASH YELLOW : FORBES
MS. LOCATION : FIFTH MAGEE

TYPE OPERATE : FIXED
MAN. NAME & # : KENT KMT-4000
SOFTWARE PROG.:

LAST P.M.C. : 03/08/11
LAST P.M.LOW : 08/10/06
LAST P.M.HIGH : 09/08/05

SERVICE 1: 03/08/11 288,
SERVICE 2: 12/09/10 135,
SERVICE 3: 08/20/10 135,
SERVICE 4: 08/19/10 135,
SERVICE 5: 08/17/10 316,

TOTAL UNITS: 14
POLE UNITS: 8
MAST UNITS: 0
SPAN UNITS: 6

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	0	6	0	0	0	0
YEL :	0	6	0	0	0	0
GRN :	0	6	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	8	

TS:340 DATE:07/29/11
POLICE BUTTON: T
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 16
SYSTEM TYPE : H/W
NUMBER SPLITS: 1
WORK ORDER # : 10250
COMP. DATE :01/16/91
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 23:00 - 6:00
REVISION DATE : 11/18/08 ORIGINAL INSTALLATION : / /
REMARKS : ADVANCE WALK 3 SEC

TERRITORY : 1307
LED TYPE :

TS: 340

INTERVAL

CYCLE	A	B	C	D
1.	28.0	10.0	0.0	0.0
2.	15.0	15.0	0.0	0.0
3.	3.0	3.0	0.0	0.0
4.	2.0	2.0	0.0	0.0
5.	3.0	3.0	0.0	0.0
6.	6.0	4.0	0.0	0.0
7.	15.0	15.0	0.0	0.0
8.	3.0	3.0	0.0	0.0
9.	2.0	2.0	0.0	0.0
10.	3.0	3.0	0.0	0.0
11.	0.0	0.0	0.0	0.0
12.	0.0	0.0	0.0	0.0
13.	0.0	0.0	0.0	0.0
14.	0.0	0.0	0.0	0.0
15.	0.0	0.0	0.0	0.0
16.	0.0	0.0	0.0	0.0
17.	0.0	0.0	0.0	0.0
18.	0.0	0.0	0.0	0.0
19.	0.0	0.0	0.0	0.0
20.	0.0	0.0	0.0	0.0
21.	0.0	0.0	0.0	0.0
22.	0.0	0.0	0.0	0.0
23.	0.0	0.0	0.0	0.0
24.	0.0	0.0	0.0	0.0

CYCLE	LENGTH
A	80
B	60
C	0
D	0

OFFSETS

1.	2.	3.	4.
72	70	0	0
41	0	0	0
0	0	0	0
0	0	0	0

SYSTEM LOCATION: FIFTH FORBES (UPTOWN) SYS: 16

STEP #	TIME	DAY	FUNCTION
1.	23:00-06:00	SUN - SAT	B - OFF 1, FLASH
2.	06:00-09:00	MON - FRI	A - OFF 2
3.	09:00-22:00	MON - FRI	A - OFF 1
4.	22:00-23:00	MON - FRI	B - OFF 1
5.	06:00-22:00	SATURDAY	A - OFF 2
6.	22:00-23:00	SATURDAY	B - OFF 1
7.	06:00-23:00	SUNDAY	B - OFF 1
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 60
CYCLE C = 0

INTERSECTION : FORBES PRIDE
FLASH YELLOW : FORBES
MS. LOCATION : FIFTH MAGEE

TYPE OPERATE : FIXED
MAN. NAME & # : KENT KMT-4000
SOFTWARE PROG.:

LAST P.M.C. : 03/24/11
LAST P.M.LOW : 08/10/06
LAST P.M.HIGH : 08/15/05

SERVICE 1: 06/22/11 287,
SERVICE 2: 05/05/11 303,
SERVICE 3: 03/24/11 288,
SERVICE 4: 12/22/10 303,
SERVICE 5: 12/12/10 135,

TOTAL UNITS: 9
POLE UNITS: 5
MAST UNITS: 0
SPAN UNITS: 4

	LEDS 8	LEDS 12	LAMP 8	LAMP 12	PAR LED	PAR LAMP
RED :	7	2	0	0	0	0
YEL :	7	2	0	0	0	0
GRN :	7	2	0	0	0	0
YEL>:	0	0	0	0	0	0
GRN>:	0	0	0	0	0	0
DW :	0	0	0	0	CD/WD	
WK :	0	0	0	0	0	

TS:334 DATE:07/29/11
POLICE BUTTON: T
SITE CODE : BLF
TRACT # : 103
IN CDBG AREA : Y
SYSTEM # : 16
SYSTEM TYPE : H/W
NUMBER SPLITS: 1
WORK ORDER # : 10249
COMP. DATE :07/01/91
PAGES USED : 0
MODEM : 0
CAMERAS : 0
DETECTOR LOOPS: 0
PED BUTTONS : 0
AUDIBLE PEDS : 0
FIB.OPTIC SIGN: 0

FLASH TIME : 23:00 - 6:00
REVISION DATE : 07/01/91 ORIGINAL INSTALLATION : / /
REMARKS :

TERRITORY : 1308
LED TYPE :

TS: 334

CYCLE INTERVAL	A	B	C	D
1.	46.0	33.0	0.0	0.0
2.	3.0	3.0	0.0	0.0
3.	2.0	2.0	0.0	0.0
4.	24.0	17.0	0.0	0.0
5.	3.0	3.0	0.0	0.0
6.	2.0	2.0	0.0	0.0
7.	0.0	0.0	0.0	0.0
8.	0.0	0.0	0.0	0.0
9.	0.0	0.0	0.0	0.0
10.	0.0	0.0	0.0	0.0
11.	0.0	0.0	0.0	0.0
12.	0.0	0.0	0.0	0.0
13.	0.0	0.0	0.0	0.0
14.	0.0	0.0	0.0	0.0
15.	0.0	0.0	0.0	0.0
16.	0.0	0.0	0.0	0.0
17.	0.0	0.0	0.0	0.0
18.	0.0	0.0	0.0	0.0
19.	0.0	0.0	0.0	0.0
20.	0.0	0.0	0.0	0.0
21.	0.0	0.0	0.0	0.0
22.	0.0	0.0	0.0	0.0
23.	0.0	0.0	0.0	0.0
24.	0.0	0.0	0.0	0.0

CYCLE	LENGTH
A	80
B	60
C	0
D	0

OFFSETS

1.	2.	3.	4.
7	6	0	0
47	0	0	0
0	0	0	0
0	0	0	0

SYSTEM LOCATION: FIFTH FORBES (UPTOWN) SYS: 16

STEP #	TIME	DAY	FUNCTION
1.	23:00-06:00	SUN - SAT	B - OFF 1, FLASH
2.	06:00-09:00	MON - FRI	A - OFF 2
3.	09:00-22:00	MON - FRI	A - OFF 1
4.	22:00-23:00	MON - FRI	B - OFF 1
5.	06:00-22:00	SATURDAY	A - OFF 2
6.	22:00-23:00	SATURDAY	B - OFF 1
7.	06:00-23:00	SUNDAY	B - OFF 1
8.			
9.			
10.			

CYCLE LENGTH
CYCLE A = 80
CYCLE B = 60
CYCLE C = 0

APPENDIX C

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 1 AM
Site Code : 53800010
Start Date : 11/15/2005
Page No : 1

Groups Printed- All Vehicles (Board

Start Time	Southbound Left	Southbound Thru	Southbound Right	Southbound T/B	Southbound App. Total	Westbound Left	Westbound Thru	Westbound Right	Westbound T/B	Westbound App. Total	Washington Pl Northbound Left	Washington Pl Northbound Thru	Washington Pl Northbound Right	Washington Pl Northbound T/B	Washington Pl Northbound App. Total	Eastbound Hard Left	Eastbound Left	Eastbound Thru	Eastbound Right	Eastbound App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	0	0	0	0	0	56	31	20	8	115	73	66	34	112	285	400
07:15 AM	0	0	0	0	0	0	0	0	0	0	66	52	11	0	129	61	76	42	122	301	430
07:30 AM	0	0	1	0	1	0	0	0	0	0	64	50	20	0	134	48	82	47	158	335	470
07:45 AM	0	0	0	0	0	1	0	0	0	1	83	43	12	0	138	51	84	49	155	339	478
Total	0	0	1	0	1	1	0	0	0	1	269	176	63	8	516	233	308	172	547	1260	1778
08:00 AM	0	0	0	0	0	0	0	0	0	0	60	40	14	0	114	35	76	57	159	327	441
08:15 AM	0	0	0	0	0	0	0	0	0	0	57	45	17	0	119	40	79	43	157	319	438
08:30 AM	0	0	0	0	0	0	0	0	0	0	47	34	15	0	96	32	88	36	158	314	410
08:45 AM	0	0	0	0	0	0	0	0	0	0	47	31	16	0	94	37	100	31	144	312	406
Total	0	0	0	0	0	0	0	0	0	0	211	150	62	0	423	144	343	167	618	1272	1695
Grand Total	0	0	1	0	1	1	0	0	0	1	480	326	125	8	939	377	651	339	1165	2532	3473
Apprch %	0	0	100	0		100	0	0	0		51.1	34.7	13.3	0.9		14.9	25.7	13.4	46		
Total %	0	0	0	0	0	0	0	0	0	0	13.8	9.4	3.6	0.2	27	10.9	18.7	9.8	33.5	72.9	

Start Time	Southbound Left	Southbound Thru	Southbound Right	Southbound T/B	Southbound App. Total	Westbound Left	Westbound Thru	Westbound Right	Westbound T/B	Westbound App. Total	Washington Pl Northbound Left	Washington Pl Northbound Thru	Washington Pl Northbound Right	Washington Pl Northbound T/B	Washington Pl Northbound App. Total	Eastbound Hard Left	Eastbound Left	Eastbound Thru	Eastbound Right	Eastbound App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	1	0	1	0	0	0	0	0	64	50	20	0	134	48	82	47	158	335	470
07:45 AM	0	0	0	0	0	1	0	0	0	1	83	43	12	0	138	51	84	49	155	339	478
08:00 AM	0	0	0	0	0	0	0	0	0	0	60	40	14	0	114	35	76	57	159	327	441
08:15 AM	0	0	0	0	0	0	0	0	0	0	57	45	17	0	119	40	79	43	157	319	438
Total Volume	0	0	1	0	1	1	0	0	0	1	264	178	63	0	505	174	321	196	629	1320	1827
% App. Total	0	0	100	0		100	0	0	0		52.3	35.2	12.5	0		13.2	24.3	14.8	47.7		
PHF	.000	.000	.250	.000	.250	.250	.000	.000	.000	.250	.795	.890	.788	.000	.915	.853	.955	.860	.989	.973	.956

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 1 AM
Site Code : 53800010
Start Date : 11/15/2005
Page No : 1

Groups Printed- All Vehicles

Start Time	Southbound Left	Southbound Thru	Southbound Right	Southbound T/B	Southbound App. Total	Westbound Left	Westbound Thru	Westbound Right	Westbound T/B	Westbound App. Total	Washington Pl Northbound Left	Washington Pl Northbound Thru	Washington Pl Northbound Right	Washington Pl Northbound T/B	Washington Pl Northbound App. Total	Eastbound Hard Left	Eastbound Left	Eastbound Thru	Eastbound Right	Eastbound App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	16	16	19	68	68
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	12	19	26	72	72
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	20	25	32	98	98
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	15	30	36	101	101
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	63	90	113	339	339
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	24	32	37	113	113
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	20	27	35	95	95
08:30 AM	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	13	14	26	40	93	98
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	18	20	35	93	93
Total	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	66	76	105	147	394	399
Grand Total	0	0	0	0	0	0	0	0	0	0	4	1	0	0	5	139	139	195	260	733	738
Apprch %	0	0	0	0		0	0	0	0		80	20	0	0		19	19	26.6	35.5		
Total %	0	0	0	0	0	0	0	0	0	0	0.5	0.1	0	0	0.7	18.8	18.8	26.4	35.2	99.3	

Start Time	Southbound Left	Southbound Thru	Southbound Right	Southbound T/B	Southbound App. Total	Westbound Left	Westbound Thru	Westbound Right	Westbound T/B	Westbound App. Total	Washington Pl Northbound Left	Washington Pl Northbound Thru	Washington Pl Northbound Right	Washington Pl Northbound T/B	Washington Pl Northbound App. Total	Eastbound Hard Left	Eastbound Left	Eastbound Thru	Eastbound Right	Eastbound App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	20	25	32	98	98
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	15	30	36	101	101
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	24	32	37	113	113
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	20	27	35	95	95
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	74	79	114	140	407	407
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		18.2	19.4	28	34.4		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.881	.823	.891	.946	.900	.900

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 2 AM
Site Code : 05380011
Start Date : 11/15/2005
Page No : 1

Groups Printed- All Vehicles (Board

Start Time	HOV Ramp Southbound					Bedford Av. Westbound					Mario Lemieux Pl. Northbound					Bedford Av. Eastbound							
	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
07:00 AM	14	47	25	3	86	1	8	0	0	9	3	0	0	0	3	4	32	10	1	46	4	144	148
07:15 AM	16	63	65	3	144	0	21	0	0	21	3	0	0	0	3	6	40	11	0	57	3	225	228
07:30 AM	25	77	68	2	170	2	25	0	0	27	1	0	1	0	2	13	45	23	0	81	2	280	282
07:45 AM	31	84	96	5	211	4	28	0	2	32	0	0	0	0	0	7	46	22	2	75	9	318	327
Total	86	271	254	13	611	7	82	0	2	89	7	0	1	0	8	30	163	66	3	259	18	967	985
08:00 AM	26	57	71	4	154	3	21	0	0	24	1	0	1	0	2	7	61	21	2	89	6	269	275
08:15 AM	22	54	72	2	148	3	16	0	1	19	0	0	1	0	1	9	52	19	2	80	5	248	253
08:30 AM	13	32	34	1	79	2	25	0	0	27	0	0	1	0	1	16	39	17	0	72	1	179	180
08:45 AM	16	17	33	0	66	7	18	0	2	25	1	0	1	0	2	17	33	10	3	60	5	153	158
Total	77	160	210	7	447	15	80	0	3	95	2	0	4	0	6	49	185	67	7	301	17	849	866
Grand Total	163	431	464	20	1058	22	162	0	5	184	9	0	5	0	14	79	348	133	10	560	35	1816	1851
Apprch %	15.4	40.7	43.9			12	88	0			64.3	0	35.7			14.1	62.1	23.8					
Total %	9	23.7	25.6		58.3	1.2	8.9	0		10.1	0.5	0	0.3		0.8	4.4	19.2	7.3		30.8	1.9	98.1	

Start Time	HOV Ramp Southbound				Bedford Av. Westbound				Mario Lemieux Pl. Northbound				Bedford Av. Eastbound				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
eak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	25	77	68	170	2	25	0	27	1	0	1	2	13	45	23	81	280
07:45 AM	31	84	96	211	4	28	0	32	0	0	0	0	7	46	22	75	318
08:00 AM	26	57	71	154	3	21	0	24	1	0	1	2	7	61	21	89	269
08:15 AM	22	54	72	148	3	16	0	19	0	0	1	1	9	52	19	80	248
Total Volume	104	272	307	683	12	90	0	102	2	0	3	5	36	204	85	325	1115
% App. Total	15.2	39.8	44.9		11.8	88.2	0		40	0	60		11.1	62.8	26.2		
PHF	.839	.810	.799	.809	.750	.804	.000	.797	.500	.000	.750	.625	.692	.836	.924	.913	.877

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Bedford Ave. & Crawford St.

PGHPE00#11109
Board#4435 JCD

File Name : 3 AM
Site Code : 11109001
Start Date : 7/19/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	1	3	14	5	23	5	14	1	0	20	8	0	2	2	12	1	0	0	0	1	56
07:15 AM	0	1	14	12	27	3	9	1	0	13	9	2	1	0	12	1	1	0	0	2	54
07:30 AM	0	1	21	15	37	6	17	0	0	23	13	1	4	4	22	0	0	0	0	0	82
07:45 AM	0	9	24	16	49	7	9	0	0	16	16	0	2	4	22	1	0	0	0	1	88
Total	1	14	73	48	136	21	49	2	0	72	46	3	9	10	68	3	1	0	0	4	280
08:00 AM	1	7	16	12	36	6	10	0	0	16	15	2	8	7	32	1	0	1	0	2	86
08:15 AM	0	8	17	14	39	6	14	1	0	21	15	0	3	5	23	0	0	0	0	0	83
08:30 AM	0	5	25	14	44	7	11	0	0	18	19	0	4	3	26	0	0	0	0	0	88
08:45 AM	2	5	20	6	33	3	10	0	0	13	12	0	2	2	16	0	0	0	1	1	63
Total	3	25	78	46	152	22	45	1	0	68	61	2	17	17	97	1	0	1	1	3	320
Grand Total	4	39	151	94	288	43	94	3	0	140	107	5	26	27	165	4	1	1	1	7	600
Apprch %	1.4	13.5	52.4	32.6		30.7	67.1	2.1	0		64.8	3	15.8	16.4		57.1	14.3	14.3	14.3		
Total %	0.7	6.5	25.2	15.7	48	7.2	15.7	0.5	0	23.3	17.8	0.8	4.3	4.5	27.5	0.7	0.2	0.2	0.2	1.2	
Typical Vehicles	4	39	148	93	284	39	92	3	0	134	104	5	22	26	157	3	1	1	1	6	581
% Typical Vehicles	100	100	98	98.9	98.6	90.7	97.9	100	0	95.7	97.2	100	84.6	96.3	95.2	75	100	100	100	85.7	96.8
Heavy Duty Vehicles	0	0	2	1.1	1.4	9.3	2.1	0	0	4.3	2.8	0	15.4	3.7	4.8	25	0	0	0	14.3	3.2
% Heavy Duty Vehicles																					

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	1	21	15	37	6	17	0	0	23	13	1	4	4	22	0	0	0	0	0	82
07:45 AM	0	9	24	16	49	7	9	0	0	16	16	0	2	4	22	1	0	0	0	1	88
08:00 AM	1	7	16	12	36	6	10	0	0	16	15	2	8	7	32	1	0	1	0	2	86
08:15 AM	0	8	17	14	39	6	14	1	0	21	15	0	3	5	23	0	0	0	0	0	83
Total Volume	1	25	78	57	161	25	50	1	0	76	59	3	17	20	99	2	0	1	0	3	339
% App. Total	0.6	15.5	48.4	35.4		32.9	65.8	1.3	0		59.6	3	17.2	20.2		66.7	0	33.3	0		
PHF	.250	.694	.813	.891	.821	.893	.735	.250	.000	.826	.922	.375	.531	.714	.773	.500	.000	.250	.000	.375	.963
Typical Vehicles	1	25	77	57	160	23	49	1	0	73	57	3	15	19	94	2	0	1	0	3	330
% Typical Vehicles	100	100	98.7	100	99.4	92.0	98.0	100	0	96.1	96.6	100	88.2	95.0	94.9	100	0	100	0	100	97.3
Heavy Duty Vehicles	0	0	1.3	0	0.6	8.0	2.0	0	0	3.9	3.4	0	11.8	5.0	5.1	0	0	0	0	0	2.7
% Heavy Duty Vehicles																					

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Wylie Ave. & Crawford St.

PGHPE00#11109
Board#5038 AM

File Name : 4 AM
Site Code : 11109002
Start Date : 7/19/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

Start Time	Eastbound Left	Eastbound Thru	Eastbound Right	Eastbound Right on Red	Eastbound App. Total	Wylie Ave. Westbound Left	Wylie Ave. Westbound Thru	Wylie Ave. Westbound Right	Wylie Ave. Westbound Right on Red	Wylie Ave. Westbound App. Total	Crawford St. Northbound Left	Crawford St. Northbound Thru	Crawford St. Northbound Right	Crawford St. Northbound Right on Red	Crawford St. Northbound App. Total	Crawford St. Southbound Left	Crawford St. Southbound Thru	Crawford St. Southbound Right	Crawford St. Southbound Right on Red	Crawford St. Southbound App. Total	Int. Total
07:00 AM	0	0	0	0	0	5	0	3	0	8	0	17	4	0	21	1	27	0	0	28	57
07:15 AM	0	0	0	0	0	4	0	2	0	6	0	9	3	0	12	2	37	0	0	39	57
07:30 AM	0	0	0	0	0	10	0	4	0	14	0	19	2	0	21	3	53	0	0	56	91
07:45 AM	0	0	0	0	0	3	0	3	0	6	0	17	0	0	17	1	65	0	0	66	89
Total	0	0	0	0	0	22	0	12	0	34	0	62	9	0	71	7	182	0	0	189	294
08:00 AM	0	0	0	0	0	4	0	7	0	11	0	24	8	0	32	1	49	0	0	50	93
08:15 AM	0	0	0	0	0	16	0	2	0	18	0	18	3	0	21	3	47	0	0	50	89
08:30 AM	0	0	0	0	0	11	0	4	0	15	0	22	5	0	27	3	54	0	0	57	99
08:45 AM	0	0	0	0	0	7	0	1	0	8	0	17	3	0	20	1	35	0	0	36	64
Total	0	0	0	0	0	38	0	14	0	52	0	81	19	0	100	8	185	0	0	193	345
Grand Total	0	0	0	0	0	60	0	26	0	86	0	143	28	0	171	15	367	0	0	382	639
Apprch %	0	0	0	0		69.8	0	30.2	0		0	83.6	16.4	0		3.9	96.1	0	0		
Total %	0	0	0	0	0	9.4	0	4.1	0	13.5	0	22.4	4.4	0	26.8	2.3	57.4	0	0	59.8	
Typical Vehicles	0	0	0	0	0	58	0	26	0	84	0	136	28	0	164	15	363	0	0	378	626
% Typical Vehicles	0	0	0	0	0	96.7	0	100	0	97.7	0	95.1	100	0	95.9	100	98.9	0	0	99	98
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	3.3	0	0	0	2.3	0	4.9	0	0	4.1	0	1.1	0	0	1	2

Start Time	Eastbound Left	Eastbound Thru	Eastbound Right	Eastbound Right on Red	Eastbound App. Total	Wylie Ave. Westbound Left	Wylie Ave. Westbound Thru	Wylie Ave. Westbound Right	Wylie Ave. Westbound Right on Red	Wylie Ave. Westbound App. Total	Crawford St. Northbound Left	Crawford St. Northbound Thru	Crawford St. Northbound Right	Crawford St. Northbound Right on Red	Crawford St. Northbound App. Total	Crawford St. Southbound Left	Crawford St. Southbound Thru	Crawford St. Southbound Right	Crawford St. Southbound Right on Red	Crawford St. Southbound App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	10	0	4	0	14	0	19	2	0	21	3	53	0	0	56	91
07:45 AM	0	0	0	0	0	3	0	3	0	6	0	17	0	0	17	1	65	0	0	66	89
08:00 AM	0	0	0	0	0	4	0	7	0	11	0	24	8	0	32	1	49	0	0	50	93
08:15 AM	0	0	0	0	0	16	0	2	0	18	0	18	3	0	21	3	47	0	0	50	89
Total Volume	0	0	0	0	0	33	0	16	0	49	0	78	13	0	91	8	214	0	0	222	362
% App. Total	0	0	0	0		67.3	0	32.7	0		0	85.7	14.3	0		3.6	96.4	0	0		
PHF	.000	.000	.000	.000	.000	.516	.000	.571	.000	.681	.000	.813	.406	.000	.711	.667	.823	.000	.000	.841	.973
Typical Vehicles	0	0	0	0	0	32	0	16	0	48	0	74	13	0	87	8	212	0	0	220	355
% Typical Vehicles	0	0	0	0	0	97.0	0	100	0	98.0	0	94.9	100	0	95.6	100	99.1	0	0	99.1	98.1
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	3.0	0	0	0	2.0	0	5.1	0	0	4.4	0	0.9	0	0	0.9	1.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Centre Ave. & Sixth Ave.

File Name : 5 AM
Site Code : 11109018
Start Date : 8/4/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Eastbound					Centre Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	0	0	0	0	2	0	0	2	4	0	69	51	0	120	96	55	0	0	151	275
07:15 AM	0	0	0	0	0	0	0	8	0	8	0	74	30	0	104	105	63	0	0	168	280
07:30 AM	0	0	0	0	0	0	0	6	0	6	0	83	21	0	104	92	48	0	0	140	250
07:45 AM	0	0	0	0	0	2	0	8	0	10	0	106	29	0	135	100	63	0	0	163	308
Total	0	0	0	0	0	4	0	22	2	28	0	332	131	0	463	393	229	0	0	622	1113
08:00 AM	0	0	0	0	0	3	0	5	0	8	0	88	34	0	122	105	65	0	0	170	300
08:15 AM	0	0	0	0	0	6	0	6	0	12	0	94	31	0	125	92	64	0	0	156	293
08:30 AM	0	0	0	0	0	10	0	4	0	14	0	83	19	0	102	96	72	0	0	168	284
08:45 AM	0	0	0	0	0	4	0	4	1	9	0	70	19	0	89	76	53	0	0	129	227
Total	0	0	0	0	0	23	0	19	1	43	0	335	103	0	438	369	254	0	0	623	1104
Grand Total	0	0	0	0	0	27	0	41	3	71	0	667	234	0	901	762	483	0	0	1245	2217
Apprch %	0	0	0	0		38	0	57.7	4.2		0	74	26	0		61.2	38.8	0	0		
Total %	0	0	0	0	0	1.2	0	1.8	0.1	3.2	0	30.1	10.6	0	40.6	34.4	21.8	0	0	56.2	
Typical Vehicles	0	0	0	0	0	27	0	40	3	70	0	600	231	0	831	744	459	0	0	1203	2104
% Typical Vehicles	0	0	0	0	0	100	0	97.6	100	98.6	0	90	98.7	0	92.2	97.6	95	0	0	96.6	94.9
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	0	0	2.4	0	1.4	0	10	1.3	0	7.8	2.4	5	0	0	3.4	5.1

	Eastbound					Centre Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	6	0	6	0	83	21	0	104	92	48	0	0	140	250
07:45 AM	0	0	0	0	0	2	0	8	0	10	0	106	29	0	135	100	63	0	0	163	308
08:00 AM	0	0	0	0	0	3	0	5	0	8	0	88	34	0	122	105	65	0	0	170	300
08:15 AM	0	0	0	0	0	6	0	6	0	12	0	94	31	0	125	92	64	0	0	156	293
Total Volume	0	0	0	0	0	11	0	25	0	36	0	371	115	0	486	389	240	0	0	629	1151
% App. Total	0	0	0	0		30.6	0	69.4	0		0	76.3	23.7	0		61.8	38.2	0	0		
PHF	.000	.000	.000	.000	.000	.458	.000	.781	.000	.750	.000	.875	.846	.000	.900	.926	.923	.000	.000	.925	.934
Typical Vehicles	0	0	0	0	0	11	0	24	0	35	0	336	114	0	450	380	226	0	0	606	1091
% Typical Vehicles	0	0	0	0	0	100	0	96.0	0	97.2	0	90.6	99.1	0	92.6	97.7	94.2	0	0	96.3	94.8
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	0	0	4.0	0	2.8	0	9.4	0.9	0	7.4	2.3	5.8	0	0	3.7	5.2

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 6 AM
Site Code : 05380013
Start Date : 11/15/2005
Page No : 1

Groups Printed- All Vehicles (Board

	Washington Pl Southbound					Centre Ave Westbound					Washington Pl Northbound					Centre Ave Eastbound							
Start Time	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
07:00 AM	24	85	1	2	110	11	26	10	9	47	5	57	6	8	68	10	53	50	6	119	19	344	363
07:15 AM	25	93	0	7	118	7	45	28	5	80	9	59	7	2	75	11	53	63	4	131	14	404	418
07:30 AM	26	125	1	2	152	7	63	29	4	99	9	80	6	8	95	7	62	62	2	133	14	479	493
07:45 AM	31	124	0	5	155	15	73	19	5	107	10	81	21	6	112	8	52	80	1	141	16	515	531
Total	106	427	2	16	535	40	207	86	23	333	33	277	40	24	350	36	220	255	13	524	63	1742	1805
08:00 AM	36	136	2	7	174	13	74	7	8	94	8	76	19	4	103	3	61	55	3	122	19	493	512
08:15 AM	34	137	2	4	173	15	67	15	6	97	11	73	16	4	100	4	58	58	2	122	14	492	506
08:30 AM	23	151	0	6	174	10	47	7	5	64	11	68	21	15	100	6	46	53	1	106	26	444	470
08:45 AM	22	138	1	9	161	6	42	7	7	55	7	64	8	18	79	3	50	48	3	104	34	399	433
Total	115	562	5	26	682	44	230	36	26	310	37	281	64	41	382	16	215	214	9	454	93	1828	1921
Grand Total	221	989	7	42	1217	84	437	122	49	643	70	558	104	65	732	52	435	469	22	978	156	3570	3726
Apprch %	18.2	81.3	0.6			13.1	68	19			9.6	76.2	14.2			5.3	44.5	48	2.2				
Total %	6.2	27.7	0.2		34.1	2.4	12.2	3.4		18	2	15.6	2.9		20.5	1.5	12.2	13.1	0.6	27.4	4.2	95.8	

	Washington Pl Southbound				Centre Ave Westbound				Washington Pl Northbound				Centre Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
ak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
ak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	26	125	1	152	7	63	29	99	9	80	6	95	7	62	62	131	477
07:45 AM	31	124	0	155	15	73	19	107	10	81	21	112	8	52	80	140	514
08:00 AM	36	136	2	174	13	74	7	94	8	76	19	103	3	61	55	119	490
08:15 AM	34	137	2	173	15	67	15	97	11	73	16	100	4	58	58	120	490
Total Volume	127	522	5	654	50	277	70	397	38	310	62	410	22	233	255	510	1971
% App. Total	19.4	79.8	0.8		12.6	69.8	17.6		9.3	75.6	15.1		4.3	45.7	50		
PHF	.882	.953	.625	.940	.833	.936	.603	.928	.864	.957	.738	.915	.688	.940	.797	.911	.959

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 6 AM
Site Code : 05380013
Start Date : 11/15/2005
Page No : 1

Groups Printed- Crosstown Blvd NB Of

	Washington Pl Southbound					Centre Ave Westbound					Washington Pl Northbound					Centre Ave Eastbound							
Start Time	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	26	18	0	47	0	47	47
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	26	19	1	50	0	50	50
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	18	19	0	48	0	48	48
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	29	35	1	79	0	79	79
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	99	91	2	224	0	224	224
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	12	26	0	51	0	51	51
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	26	30	0	71	0	71	71
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	17	23	1	50	0	50	50
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	12	29	0	44	0	44	44
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	67	108	1	216	0	216	216
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	72	166	199	3	440	0	440	440
Apprch %	0	0	0			0	0	0			0	0	0			16.4	37.7	45.2	0.7				
Total %	0	0	0		0	0	0	0		0	0	0	0		0	16.4	37.7	45.2	0.7	100	0	100	

	Washington Pl Southbound				Centre Ave Westbound				Washington Pl Northbound				Centre Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
eak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	11	18	19	48	48
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	14	29	35	78	78
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	13	12	26	51	51
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	15	26	30	71	71
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	53	85	110	248	248
% App. Total	0	0	0		0	0	0		0	0	0		21.4	34.3	44.4		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.883	.733	.786	.795	.795

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 7 AM
Site Code : 53800015
Start Date : 11/15/2005
Page No : 1

Groups Printed- All Vehicles (Board

	Mario Lemieux Pl Southbound					Centre Ave Westbound					Northbound					Centre Ave Eastbound					
Start Time	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	9	1	26	1	37	0	26	1	7	34	0	0	0	0	0	1	97	4	3	105	176
07:15 AM	13	1	50	1	65	0	45	3	1	49	0	0	0	0	0	2	110	7	3	122	236
07:30 AM	14	5	57	0	76	0	63	1	3	67	0	0	0	0	0	3	94	3	3	103	246
07:45 AM	7	1	32	0	40	0	44	2	3	49	0	0	0	0	0	1	85	4	1	91	180
Total	43	8	165	2	218	0	178	7	14	199	0	0	0	0	0	7	386	18	10	421	838
08:00 AM	2	0	21	1	24	0	51	2	3	56	0	0	0	0	0	3	71	2	2	78	158
08:15 AM	7	0	41	1	49	0	61	2	3	66	0	0	0	0	0	3	109	5	4	121	236
08:30 AM	8	0	24	0	32	1	41	1	7	50	0	0	0	0	0	3	72	9	7	91	173
08:45 AM	3	0	18	0	21	0	47	2	4	53	0	0	0	0	0	4	77	2	3	86	160
Total	20	0	104	2	126	1	200	7	17	225	0	0	0	0	0	13	329	18	16	376	727
Grand Total	63	8	269	4	344	1	378	14	31	424	0	0	0	0	0	20	715	36	26	797	1565
Apprch %	18.3	2.3	78.2	1.2		0.2	89.2	3.3	7.3		0	0	0	0		2.5	89.7	4.5	3.3		
Total %	4	0.5	17.2	0.3	22	0.1	24.2	0.9	2	27.1	0	0	0	0.	0	1.3	45.7	2.3	1.7	50.9	

	Mario Lemieux Pl Southbound				Centre Ave Westbound				Northbound				Centre Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
eak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**14**	**5**	**57**	**76**	0	**63**	1	**64**	0	0	0	0	**3**	94	3	100	**240**
07:45 AM	7	1	32	40	0	44	**2**	46	0	0	0	0	1	85	4	90	176
08:00 AM	2	0	21	23	0	51	2	53	0	0	0	0	3	71	2	76	152
08:15 AM	7	0	41	48	0	61	2	63	0	0	0	0	3	**109**	**5**	**117**	228
Total Volume	30	6	151	187	0	219	7	226	0	0	0	0	10	359	14	383	796
% App. Total	16	3.2	80.7		0	96.9	3.1		0	0	0		2.6	93.7	3.7		
PHF	.536	.300	.662	.615	.000	.869	.875	.883	.000	.000	.000	.000	.833	.823	.700	.818	.829

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 9 AM
Site Code : 53800017
Start Date : 11/15/2005
Page No : 1

Groups Printed- All Vehicles (Board

Start Time	Crawford Ave Southbound					Centre Ave Westbound					Crawford Ave Northbound					Centre Ave Eastbound					Int. Total
	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	5	20	17	8	50	4	13	1	6	24	43	5	1	5	54	7	31	24	3	65	193
07:15 AM	5	27	16	8	56	2	24	2	1	29	49	7	7	5	68	4	29	31	5	69	222
07:30 AM	6	36	27	9	78	8	27	5	2	42	52	13	8	3	76	6	27	27	4	64	260
07:45 AM	14	32	26	7	79	5	23	5	4	37	55	15	4	4	78	7	37	32	6	82	276
Total	30	115	86	32	263	19	87	13	13	132	199	40	20	17	276	24	124	114	18	280	951
08:00 AM	7	37	22	8	74	9	31	4	2	46	45	15	9	4	73	7	37	33	5	82	275
08:15 AM	8	42	36	8	94	9	21	3	3	36	40	11	9	5	65	6	31	23	4	64	259
08:30 AM	8	20	19	5	52	9	27	6	3	45	34	14	6	3	57	4	46	22	8	80	234
08:45 AM	5	25	18	4	52	5	30	3	4	42	20	18	6	7	51	7	28	22	3	60	205
Total	28	124	95	25	272	32	109	16	12	169	139	58	30	19	246	24	142	100	20	286	973
Grand Total	58	239	181	57	535	51	196	29	25	301	338	98	50	36	522	48	266	214	38	566	1924
Apprch %	10.8	44.7	33.8	10.7		16.9	65.1	9.6	8.3		64.8	18.8	9.6	6.9		8.5	47	37.8	6.7		
Total %	3	12.4	9.4	3	27.8	2.7	10.2	1.5	1.3	15.6	17.6	5.1	2.6	1.9	27.1	2.5	13.8	11.1	2	29.4	

Start Time	Crawford Ave Southbound				Centre Ave Westbound				Crawford Ave Northbound				Centre Ave Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
eak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	6	36	27	69	8	27	5	40	52	13	8	73	6	27	27	60	242
07:45 AM	14	32	26	72	5	23	5	33	55	15	4	74	7	37	32	76	255
08:00 AM	7	37	22	66	9	31	4	44	45	15	9	69	7	37	33	77	256
08:15 AM	8	42	36	86	9	21	3	33	40	11	9	60	6	31	23	60	239
Total Volume	35	147	111	293	31	102	17	150	192	54	30	276	26	132	115	273	992
% App. Total	11.9	50.2	37.9		20.7	68	11.3		69.6	19.6	10.9		9.5	48.4	42.1		
PHF	.625	.875	.771	.852	.861	.823	.850	.852	.873	.900	.833	.932	.929	.892	.871	.886	.969

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205.
412-490-0630

Colwell St. at Pride St./Crawford St.

PGHPE00#07188 Board#T-3213 AK

File Name : 10 AM
Site Code : 71880002
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Crawford Street Southbound				Colwell Street Westbound				Pride Street Northbound				Colwell Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	39	6	45	0	0	1	1	6	71	0	77	10	0	6	16	139
07:15 AM	0	43	4	47	1	0	1	2	7	83	0	90	12	0	6	18	157
07:30 AM	0	55	9	64	0	1	1	2	13	80	0	93	12	0	8	20	179
07:45 AM	0	46	10	56	0	2	1	3	21	65	0	86	11	0	7	18	163
Total	0	183	29	212	1	3	4	8	47	299	0	346	45	0	27	72	638
08:00 AM	0	47	9	56	0	1	0	1	9	61	0	70	12	1	6	19	146
08:15 AM	0	41	6	47	3	2	0	5	11	47	0	58	13	0	9	22	132
08:30 AM	0	36	12	48	0	2	0	2	11	50	1	62	9	0	11	20	132
08:45 AM	0	35	10	45	0	1	1	2	10	41	0	51	8	0	12	20	118
Total	0	159	37	196	3	6	1	10	41	199	1	241	42	1	38	81	528
Grand Total	0	342	66	408	4	9	5	18	88	498	1	587	87	1	65	153	1166
Apprch %	0	83.8	16.2		22.2	50	27.8		15	84.8	0.2		56.9	0.7	42.5		
Total %	0	29.3	5.7	35	0.3	0.8	0.4	1.5	7.5	42.7	0.1	50.3	7.5	0.1	5.6	13.1	
Vehicles	0	307	66	373	4	9	4	17	88	440	1	529	71	0	64	135	1054
% Vehicles	0	89.8	100	91.4	100	100	80	94.4	100	88.4	100	90.1	81.6	0	98.5	88.2	90.4
Heavy Duty Vehicles	0	35	0	35	0	0	1	1	0	58	0	58	16	1	1	18	112
% Heavy Duty Vehicles	0	10.2	0	8.6	0	0	20	5.6	0	11.6	0	9.9	18.4	100	1.5	11.8	9.6

	Crawford Street Southbound				Colwell Street Westbound				Pride Street Northbound				Colwell Street Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	55	9	64	0	1	1	2	13	80	0	93	12	0	8	20	179
07:45 AM	0	46	10	56	0	2	1	3	21	65	0	86	11	0	7	18	163
08:00 AM	0	47	9	56	0	1	0	1	9	61	0	70	12	1	6	19	146
08:15 AM	0	41	6	47	3	2	0	5	11	47	0	58	13	0	9	22	132
Total Volume	0	189	34	223	3	6	2	11	54	253	0	307	48	1	30	79	620
% App. Total	0	84.8	15.2		27.3	54.5	18.2		17.6	82.4	0		60.8	1.3	38		
PHF	.000	.859	.850	.871	.250	.750	.500	.550	.643	.791	.000	.825	.923	.250	.833	.898	.866
Vehicles	0	172	34	206	3	6	2	11	54	223	0	277	41	0	30	71	565
% Vehicles	0	91.0	100	92.4	100	100	100	100	100	88.1	0	90.2	85.4	0	100	89.9	91.1
Heavy Duty Vehicles	0	17	0	17	0	0	0	0	0	30	0	30	7	1	0	8	55
% Heavy Duty Vehicles	0	9.0	0	7.6	0	0	0	0	0	11.9	0	9.8	14.6	100	0	10.1	8.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ifth Ave. & Sixth Ave.

File Name : 11 AM
Site Code : 11109019
Start Date : 8/4/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	22	2	18	0	42	5	62	31	0	98	11	59	0	0	70	0	74	5	0	79	289
07:15 AM	18	0	23	0	41	12	64	36	0	112	15	66	0	0	81	0	56	4	0	60	294
07:30 AM	12	0	28	0	40	8	75	35	0	118	19	65	0	0	84	0	63	3	0	66	308
07:45 AM	8	0	21	0	29	6	80	40	0	126	21	69	0	0	90	0	55	5	0	60	305
Total	60	2	90	0	152	31	281	142	0	454	66	259	0	0	325	0	248	17	0	265	1196
08:00 AM	11	0	19	0	30	4	96	40	0	140	18	67	0	0	85	0	61	6	0	67	322
08:15 AM	6	0	24	0	30	9	64	40	0	113	23	63	0	0	86	0	70	4	0	74	303
08:30 AM	7	0	25	0	32	9	80	37	0	126	21	67	0	0	88	0	55	3	0	58	304
08:45 AM	9	1	19	0	29	4	74	39	0	117	18	61	0	0	79	0	68	21	0	89	314
Total	33	1	87	0	121	26	314	156	0	496	80	258	0	0	338	0	254	34	0	288	1243
Grand Total	93	3	177	0	273	57	595	298	0	950	146	517	0	0	663	0	502	51	0	553	2439
Apprch %	34.1	1.1	64.8	0		6	62.6	31.4	0		22	78	0	0		0	90.8	9.2	0		
Total %	3.8	0.1	7.3	0	11.2	2.3	24.4	12.2	0	39	6	21.2	0	0	27.2	0	20.6	2.1	0	22.7	
ypical Vehicles	89	3	123	0	215	56	560	229	0	845	145	514	0	0	659	0	468	44	0	512	2231
% Typical Vehicles	95.7	100	69.5	0	78.8	98.2	94.1	76.8	0	88.9	99.3	99.4	0	0	99.4	0	93.2	86.3	0	92.6	91.5
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	4.3	0	30.5	0	21.2	1.8	5.9	23.2	0	11.1	0.7	0.6	0	0	0.6	0	6.8	13.7	0	7.4	8.5

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	12	0	28	0	40	8	75	35	0	118	19	65	0	0	84	0	63	3	0	66	308
07:45 AM	8	0	21	0	29	6	80	40	0	126	21	69	0	0	90	0	55	5	0	60	305
08:00 AM	11	0	19	0	30	4	96	40	0	140	18	67	0	0	85	0	61	6	0	67	322
08:15 AM	6	0	24	0	30	9	64	40	0	113	23	63	0	0	86	0	70	4	0	74	303
Total Volume	37	0	92	0	129	27	315	155	0	497	81	264	0	0	345	0	249	18	0	267	1238
% App. Total	28.7	0	71.3	0		5.4	63.4	31.2	0		23.5	76.5	0	0		0	93.3	6.7	0		
PHF	.771	.000	.821	.000	.806	.750	.820	.969	.000	.888	.880	.957	.000	.000	.958	.000	.889	.750	.000	.902	.961
ypical Vehicles	36	0	66	0	102	27	300	125	0	452	81	262	0	0	343	0	228	15	0	243	1140
% Typical Vehicles	97.3	0	71.7	0	79.1	100	95.2	80.6	0	90.9	100	99.2	0	0	99.4	0	91.6	83.3	0	91.0	92.1
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	2.7	0	28.3	0	20.9	0	4.8	19.4	0	9.1	0	0.8	0	0	0.6	0	8.4	16.7	0	9.0	7.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ifth Ave. & Diamond St.

'GHPE00#11109
loard#5040 SE

File Name : 12 AM
Site Code : 11109020
Start Date : 7/28/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Diamond St. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	0	0	0	0	67	119	30	0	216	0	0	0	0	0	0	0	0	1	1	217
07:15 AM	0	0	0	0	0	64	130	42	0	236	0	0	0	0	0	0	0	0	0	0	236
07:30 AM	0	0	0	0	0	77	136	57	0	270	0	0	0	0	0	0	0	0	0	0	270
07:45 AM	0	0	0	0	0	91	131	46	0	268	0	0	0	0	0	0	0	0	0	0	268
Total	0	0	0	0	0	299	516	175	0	990	0	0	0	0	0	0	0	0	1	1	991
08:00 AM	0	0	0	0	0	114	139	37	0	290	0	0	0	0	0	2	0	0	1	3	293
08:15 AM	0	0	0	0	0	118	120	39	0	277	0	0	0	0	0	0	0	0	0	0	277
08:30 AM	0	0	0	0	0	79	125	74	0	278	0	0	0	0	0	0	0	0	0	0	278
08:45 AM	0	0	0	0	0	109	127	113	0	349	0	0	0	0	0	0	0	0	0	0	349
Total	0	0	0	0	0	420	511	263	0	1194	0	0	0	0	0	2	0	0	1	3	1197
Grand Total	0	0	0	0	0	719	1027	438	0	2184	0	0	0	0	0	2	0	0	2	4	2188
Apprch %	0	0	0	0		32.9	47	20.1	0		0	0	0	0		50	0	0	50		
Total %	0	0	0	0	0	32.9	46.9	20	0	99.8	0	0	0	0	0	0.1	0	0	0.1	0.2	
ypical Vehicles	0	0	0	0	0	704	910	438	0	2052	0	0	0	0	0	0	0	0	0	0	2052
Typical Vehicles	0	0	0	0	0	97.9	88.6	100	0	94	0	0	0	0	0	0	0	0	0	0	93.8
Heavy Duty Vehicles																					
& Heavy Duty Vehicles	0	0	0	0	0	2.1	11.4	0	0	6	0	0	0	0	0	100	0	0	100	100	6.2

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Diamond St. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
ak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	77	136	57	0	270	0	0	0	0	0	0	0	0	0	0	270
07:45 AM	0	0	0	0	0	91	131	46	0	268	0	0	0	0	0	0	0	0	0	0	268
08:00 AM	0	0	0	0	0	114	139	37	0	290	0	0	0	0	0	2	0	0	1	3	293
08:15 AM	0	0	0	0	0	118	120	39	0	277	0	0	0	0	0	0	0	0	0	0	277
Total Volume	0	0	0	0	0	400	526	179	0	1105	0	0	0	0	0	2	0	0	1	3	1108
% App. Total	0	0	0	0		36.2	47.6	16.2	0		0	0	0	0		66.7	0	0	33.3		
PHF	.000	.000	.000	.000	.000	.847	.946	.785	.000	.953	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250	.945
ypical Vehicles	0	0	0	0	0	391	475	179	0	1045	0	0	0	0	0	0	0	0	0	0	1045
Typical Vehicles	0	0	0	0	0	97.8	90.3	100	0	94.6	0	0	0	0	0	0	0	0	0	0	94.3
eavy Duty Vehicles																					
Heavy Duty Vehicles	0	0	0	0	0	2.3	9.7	0	0	5.4	0	0	0	0	0	100	0	0	100	100	5.7

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 13 AM
Site Code : 00000201
Start Date : 11/15/2005
Page No : 1

Groups Printed- All Vehicles (Board

	Washington Ave Southbound					Fifth Ave Westbound					Washington Ave Northbound					Fifth Ave Eastbound					
Start Time	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	27	49	0	76	1	102	24	13	140	20	73	0	4	97	0	0	0	0	0	313
07:15 AM	0	35	48	2	85	6	121	28	9	164	27	71	0	2	100	0	0	0	0	0	349
07:30 AM	0	51	51	0	102	7	147	37	19	210	23	65	0	1	89	0	0	0	0	0	401
07:45 AM	0	40	63	1	104	13	144	34	6	197	36	90	0	3	129	0	0	0	0	0	430
Total	0	153	211	3	367	27	514	123	47	711	106	299	0	10	415	0	0	0	0	0	1493
08:00 AM	0	69	64	1	134	10	183	35	17	245	42	96	0	1	139	0	0	0	0	0	518
08:15 AM	0	46	57	0	103	14	170	39	15	238	42	64	0	0	106	0	0	0	0	0	447
08:30 AM	0	56	57	1	114	13	142	52	10	217	34	66	0	4	104	0	0	0	0	0	435
08:45 AM	0	59	34	3	96	9	133	34	15	191	22	59	0	5	86	0	0	0	0	0	373
Total	0	230	212	5	447	46	628	160	57	891	140	285	0	10	435	0	0	0	0	0	1773
Grand Total	0	383	423	8	814	73	1142	283	104	1602	246	584	0	20	850	0	0	0	0	0	3266
Apprch %	0	47.1	52	1		4.6	71.3	17.7	6.5		28.9	68.7	0	2.4		0	0	0	0		
Total %	0	11.7	13	0.2	24.9	2.2	35	8.7	3.2	49.1	7.5	17.9	0	0.6	26	0	0	0	0	0	

	Washington Ave Southbound				Fifth Ave Westbound				Washington Ave Northbound				Fifth Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
k Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
k Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	51	51	102	7	147	37	191	23	65	0	88	0	0	0	0	381
07:45 AM	0	40	63	103	13	144	34	191	36	90	0	126	0	0	0	0	420
08:00 AM	0	**69**	**64**	**133**	10	**183**	35	**228**	**42**	**96**	0	**138**	0	0	0	0	**499**
08:15 AM	0	46	57	103	**14**	170	**39**	223	42	64	0	106	0	0	0	0	432
Total Volume	0	206	235	441	44	644	145	833	143	315	0	458	0	0	0	0	1732
% App. Total	0	46.7	53.3		5.3	77.3	17.4		31.2	68.8	0		0	0	0		
PHF	.000	.746	.918	.829	.786	.880	.929	.913	.851	.820	.000	.830	.000	.000	.000	.000	.868

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ifth Ave. at Magee St./Parking Lot

GHPE00#07188 Board#D4-3473 PS

File Name : 14 AM
Site Code : 71880004
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Parking Lot (Magee Street) Southbound				Fifth Avenue Westbound					Magee Street Northbound			
Start Time	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	0	0	0	0	2	133	1	0	136	20	3	23	159
07:15 AM	0	0	0	0	6	140	2	0	148	22	3	25	173
07:30 AM	0	0	0	0	5	173	2	0	180	34	2	36	216
07:45 AM	0	1	0	1	3	181	5	0	189	28	6	34	224
Total	0	1	0	1	16	627	10	0	653	104	14	118	772
08:00 AM	0	0	0	0	8	181	8	0	197	33	5	38	235
08:15 AM	0	0	0	0	5	185	5	0	195	43	6	49	244
08:30 AM	0	0	0	0	8	169	4	0	181	32	6	38	219
08:45 AM	0	0	0	0	4	169	5	0	178	27	7	34	212
Total	0	0	0	0	25	704	22	0	751	135	24	159	910
Grand Total	0	1	0	1	41	1331	32	0	1404	239	38	277	1682
Apprch %	0	100	0		2.9	94.8	2.3	0		86.3	13.7		
Total %	0	0.1	0	0.1	2.4	79.1	1.9	0	83.5	14.2	2.3	16.5	
Vehicles	0	1	0	1	40	1202	32	0	1274	235	38	273	1548
% Vehicles	0	100	0	100	97.6	90.3	100	0	90.7	98.3	100	98.6	92
Heavy Duty Vehicles	0	0	0	0	1	129	0	0	130	4	0	4	134
% Heavy Duty Vehicles	0	0	0	0	2.4	9.7	0	0	9.3	1.7	0	1.4	8

	Parking Lot (Magee Street) Southbound				Fifth Avenue Westbound					Magee Street Northbound			
Start Time	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1													
eak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	0	0	0	0	5	173	2	0	180	34	2	36	216
07:45 AM	0	1	0	1	3	181	5	0	189	28	6	34	224
08:00 AM	0	0	0	0	8	181	8	0	197	33	5	38	235
08:15 AM	0	0	0	0	5	185	5	0	195	43	6	49	244
Total Volume	0	1	0	1	21	720	20	0	761	138	19	157	919
% App. Total	0	100	0		2.8	94.6	2.6	0		87.9	12.1		
PHF	.000	.250	.000	.250	.656	.973	.625	.000	.966	.802	.792	.801	.942
Vehicles	0	1	0	1	21	658	20	0	699	136	19	155	855
% Vehicles	0	100	0	100	100	91.4	100	0	91.9	98.6	100	98.7	93.0
Heavy Duty Vehicles	0	0	0	0	0	62	0	0	62	2	0	2	64
% Heavy Duty Vehicles	0	0	0	0	0	8.6	0	0	8.1	1.4	0	1.3	7.0

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

)efault Comments
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File Name : 15 AM
Site Code : 71880005
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Stevenson Street Southbound					Fifth Avenue Westbound					Stevenson Street Northbound					Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	8	4	8	20	4	115	5	1	125	21	16	0	0	37	0	0	0	0	0	182
07:15 AM	0	9	7	2	18	7	138	4	0	149	25	17	0	0	42	0	0	0	0	0	209
07:30 AM	0	10	4	5	19	5	141	4	0	150	37	21	0	0	58	0	0	0	0	0	227
07:45 AM	0	11	5	5	21	4	154	2	0	160	38	14	0	0	52	0	0	0	0	0	233
Total	0	38	20	20	78	20	548	15	1	584	121	68	0	0	189	0	0	0	0	0	851
08:00 AM	0	11	4	5	20	5	147	6	0	158	45	18	0	0	63	0	0	0	0	0	241
08:15 AM	0	4	6	3	13	10	157	7	0	174	43	18	0	0	61	0	0	0	0	0	248
08:30 AM	0	12	9	5	26	9	142	3	0	154	29	16	0	0	45	0	0	0	0	0	225
08:45 AM	0	10	6	8	24	19	130	5	0	154	37	13	0	0	50	0	0	0	0	0	228
Total	0	37	25	21	83	43	576	21	0	640	154	65	0	0	219	0	0	0	0	0	942
Grand Total	0	75	45	41	161	63	1124	36	1	1224	275	133	0	0	408	0	0	0	0	0	1793
Apprch %	0	46.6	28	25.5		5.1	91.8	2.9	0.1		67.4	32.6	0	0		0	0	0	0		
Total %	0	4.2	2.5	2.3	9	3.5	62.7	2	0.1	68.3	15.3	7.4	0	0	22.8	0	0	0	0	0	1632
Vehicles	0	72	45	41	158	60	989	35	1	1085	258	131	0	0	389	0	0	0	0	0	91
% Vehicles	0	96	100	100	98.1	95.2	88	97.2	100	88.6	93.8	98.5	0	0	95.3	0	0	0	0	0	161
Heavy Duty Vehicles	0	3	0	0	3	3	135	1	0	139	17	2	0	0	19	0	0	0	0	0	9
% Heavy Duty Vehicles	0	4	0	0	1.9	4.8	12	2.8	0	11.4	6.2	1.5	0	0	4.7	0	0	0	0	0	

	Stevenson Street Southbound					Fifth Avenue Westbound					Stevenson Street Northbound					Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	10	4	5	19	5	141	4	0	150	37	21	0	0	58	0	0	0	0	0	227
07:45 AM	0	11	5	5	21	4	154	2	0	160	38	14	0	0	52	0	0	0	0	0	233
08:00 AM	0	11	4	5	20	5	147	6	0	158	45	18	0	0	63	0	0	0	0	0	241
08:15 AM	0	4	6	3	13	10	157	7	0	174	43	18	0	0	61	0	0	0	0	0	248
Total Volume	0	36	19	18	73	24	599	19	0	642	163	71	0	0	234	0	0	0	0	0	949
% App. Total	0	49.3	26	24.7		3.7	93.3	3	0		69.7	30.3	0	0		0	0	0	0		
PHF	.000	.818	.792	.900	.869	.600	.954	.679	.000	.922	.906	.845	.000	.000	.929	.000	.000	.000	.000	.000	.957
Vehicles	0	35	19	18	72	24	530	18	0	572	153	71	0	0	224	0	0	0	0	0	868
% Vehicles	0	97.2	100	100	98.6	100	88.5	94.7	0	89.1	93.9	100	0	0	95.7	0	0	0	0	0	91.5
Heavy Duty Vehicles	0	1	0	0	1	0	69	1	0	70	10	0	0	0	10	0	0	0	0	0	81
% Heavy Duty Vehicles	0	2.8	0	0	1.4	0	11.5	5.3	0	10.9	6.1	0	0	0	4.3	0	0	0	0	0	8.5

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File Name : 16 AM
Site Code : 71880006
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Pride St Southbound					5th Ave Westbound					Pride St Northbound					Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	35	10	0	45	16	122	36	0	174	4	41	0	0	45	0	0	0	0	0	264
07:15 AM	0	35	16	0	51	9	117	45	0	171	9	45	0	0	54	0	0	0	0	0	276
07:30 AM	0	49	14	0	63	5	130	42	0	177	9	45	0	0	54	0	0	0	0	0	294
07:45 AM	0	36	19	0	55	5	140	42	0	187	9	46	0	0	55	0	0	0	0	0	297
Total	0	155	59	0	214	35	509	165	0	709	31	177	0	0	208	0	0	0	0	0	1131
08:00 AM	0	33	15	0	48	11	144	43	0	198	13	31	0	0	44	0	0	0	0	0	290
08:15 AM	0	36	19	0	55	10	150	36	0	196	17	24	0	0	41	0	0	0	0	0	292
08:30 AM	0	38	12	0	50	15	142	31	0	188	16	27	0	0	43	0	0	0	0	0	281
08:45 AM	0	30	14	0	44	12	131	32	0	175	12	21	0	0	33	0	0	0	0	0	252
Total	0	137	60	0	197	48	567	142	0	757	58	103	0	0	161	0	0	0	0	0	1115
Grand Total	0	292	119	0	411	83	1076	307	0	1466	89	280	0	0	369	0	0	0	0	0	2246
Apprch %	0	71	29	0		5.7	73.4	20.9	0		24.1	75.9	0	0		0	0	0	0		
Total %	0	13	5.3	0	18.3	3.7	47.9	13.7	0	65.3	4	12.5	0	0	16.4	0	0	0	0	0	
Vehicles	0	247	119	0	366	83	884	307	0	1274	89	257	0	0	346	0	0	0	0	0	1986
% Vehicles	0	84.6	100	0	89.1	100	82.2	100	0	86.9	100	91.8	0	0	93.8	0	0	0	0	0	88.4
Heavy Duty Vehicles	0	45	0	0	45	0	192	0	0	192	0	23	0	0	23	0	0	0	0	0	260
% Heavy Duty Vehicles	0	15.4	0	0	10.9	0	17.8	0	0	13.1	0	8.2	0	0	6.2	0	0	0	0	0	11.6

	Pride St Southbound					5th Ave Westbound					Pride St Northbound					Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	49	14	0	63	5	130	42	0	177	9	45	0	0	54	0	0	0	0	0	294
07:45 AM	0	36	19	0	55	5	140	42	0	187	9	46	0	0	55	0	0	0	0	0	297
08:00 AM	0	33	15	0	48	11	144	43	0	198	13	31	0	0	44	0	0	0	0	0	290
08:15 AM	0	36	19	0	55	10	150	36	0	196	17	24	0	0	41	0	0	0	0	0	292
Total Volume	0	154	67	0	221	31	564	163	0	758	48	146	0	0	194	0	0	0	0	0	1173
% App. Total	0	69.7	30.3	0		4.1	74.4	21.5	0		24.7	75.3	0	0		0	0	0	0		
PHF	.000	.786	.882	.000	.877	.705	.940	.948	.000	.957	.706	.793	.000	.000	.882	.000	.000	.000	.000	.000	.987
Vehicles	0	129	67	0	196	31	462	163	0	656	48	137	0	0	185	0	0	0	0	0	1037
% Vehicles	0	83.8	100	0	88.7	100	81.9	100	0	86.5	100	93.8	0	0	95.4	0	0	0	0	0	88.4
Heavy Duty Vehicles	0	25	0	0	25	0	102	0	0	102	0	9	0	0	9	0	0	0	0	0	136
% Heavy Duty Vehicles	0	16.2	0	0	11.3	0	18.1	0	0	13.5	0	6.2	0	0	4.6	0	0	0	0	0	11.6

Trans Associates
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412-490-0630

ixth Ave. & Diamond St

File Name : 17 AM
Site Code : 11109021
Start Date : 8/4/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Diamond St. Eastbound					Diamond St. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	0	0	0	0	17	30	0	0	47	0	65	0	0	65	0	103	1	0	104	216
07:15 AM	0	0	0	0	0	26	38	0	0	64	1	86	0	0	87	0	81	3	1	85	236
07:30 AM	0	0	0	0	0	31	35	2	0	68	1	82	0	0	83	0	97	3	0	100	251
07:45 AM	0	0	0	0	0	35	66	6	0	107	0	86	0	0	86	0	88	3	0	91	284
Total	0	0	0	0	0	109	169	8	0	286	2	319	0	0	321	0	369	10	1	380	987
08:00 AM	0	0	0	0	0	39	55	7	0	101	0	78	0	0	78	0	89	5	0	94	273
08:15 AM	0	0	0	0	0	31	74	8	2	115	5	83	0	0	88	0	102	5	0	107	310
08:30 AM	0	0	0	0	0	16	57	7	5	85	0	76	0	0	76	0	89	4	0	93	254
08:45 AM	0	0	0	0	0	32	61	6	0	99	2	65	0	0	67	0	98	5	0	103	269
Total	0	0	0	0	0	118	247	28	7	400	7	302	0	0	309	0	378	19	0	397	1106
Grand Total	0	0	0	0	0	227	416	36	7	686	9	621	0	0	630	0	747	29	1	777	2093
Apprch %	0	0	0	0		33.1	60.6	5.2	1		1.4	98.6	0	0		0	96.1	3.7	0.1		
Total %	0	0	0	0	0	10.8	19.9	1.7	0.3	32.8	0.4	29.7	0	0	30.1	0	35.7	1.4	0	37.1	
ypical Vehicles	0	0	0	0	0	218	408	36	7	669	8	617	0	0	625	0	665	29	1	695	1989
Typical Vehicles	0	0	0	0	0	96	98.1	100	100	97.5	88.9	99.4	0	0	99.2	0	89	100	100	89.4	95
Heavy Duty Vehicles	0	0	0	0	0	4	1.9	0	0	2.5	11.1	0.6	0	0	0.8	0	11	0	0	10.6	5

	Diamond St. Eastbound					Diamond St. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
ak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	31	35	2	0	68	1	82	0	0	83	0	97	3	0	100	251
07:45 AM	0	0	0	0	0	35	66	6	0	107	0	86	0	0	86	0	88	3	0	91	284
08:00 AM	0	0	0	0	0	39	55	7	0	101	0	78	0	0	78	0	89	5	0	94	273
08:15 AM	0	0	0	0	0	31	74	8	2	115	5	83	0	0	88	0	102	5	0	107	310
Total Volume	0	0	0	0	0	136	230	23	2	391	6	329	0	0	335	0	376	16	0	392	1118
% App. Total	0	0	0	0		34.8	58.8	5.9	0.5		1.8	98.2	0	0		0	95.9	4.1	0		
PHF	.000	.000	.000	.000	.000	.872	.777	.719	.250	.850	.300	.956	.000	.000	.952	.000	.922	.800	.000	.916	.902
ypical Vehicles	0	0	0	0	0	130	227	23	2	382	6	327	0	0	333	0	335	16	0	351	1066
Typical Vehicles	0	0	0	0	0	95.6	98.7	100	100	97.7	100	99.4	0	0	99.4	0	89.1	100	0	89.5	95.3
eavy Duty Vehicles																					
Heavy Duty Vehicles	0	0	0	0	0	4.4	1.3	0	0	2.3	0	0.6	0	0	0.6	0	10.9	0	0	10.5	4.7

Trans Associates
4955 Steubenville Pike Suite 400
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412-490-0630

'orbes Ave. & Sixth Ave.

File Name : 18 AM
Site Code : 11109022
Start Date : 8/4/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Liberty Bridge Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	3	83	7	0	93	0	0	0	0	0	22	64	55	9	150	95	28	0	0	123	366
07:15 AM	4	107	6	0	117	0	0	0	0	0	42	78	45	7	172	64	35	6	0	105	394
07:30 AM	3	95	8	1	107	0	2	0	0	2	44	79	60	11	194	82	38	5	0	125	428
07:45 AM	4	89	8	1	102	3	1	0	0	4	44	79	56	12	191	80	34	8	1	123	420
Total	14	374	29	2	419	3	3	0	0	6	152	300	216	39	707	321	135	19	1	476	1608
08:00 AM	10	91	10	0	111	0	1	0	0	1	55	67	56	10	188	75	44	9	2	130	430
08:15 AM	7	88	3	1	99	0	2	0	0	2	48	82	46	10	186	85	33	14	1	133	420
08:30 AM	4	91	2	1	98	0	0	0	0	0	35	70	47	13	165	75	21	7	1	104	367
08:45 AM	5	98	8	0	111	0	1	1	0	2	41	64	53	18	176	90	32	11	0	133	422
Total	26	368	23	2	419	0	4	1	0	5	179	283	202	51	715	325	130	41	4	500	1639
Grand Total	40	742	52	4	838	3	7	1	0	11	331	583	418	90	1422	646	265	60	5	976	3247
Apprch %	4.8	88.5	6.2	0.5		27.3	63.6	9.1	0		23.3	41	29.4	6.3		66.2	27.2	6.1	0.5		
Total %	1.2	22.9	1.6	0.1	25.8	0.1	0.2	0	0	0.3	10.2	18	12.9	2.8	43.8	19.9	8.2	1.8	0.2	30.1	
ypical Vehicles	39	735	50	4	828	3	7	1	0	11	330	580	402	84	1396	565	264	60	5	894	3129
% Typical Vehicles	97.5	99.1	96.2	100	98.8	100	100	100	0	100	99.7	99.5	96.2	93.3	98.2	87.5	99.6	100	100	91.6	96.4
Heavy Duty Vehicles	2.5	0.9	3.8	0	1.2	0	0	0	0	0	0.3	0.5	3.8	6.7	1.8	12.5	0.4	0	0	8.4	3.6
% Heavy Duty Vehicles																					

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Liberty Bridge Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
ak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	3	95	8	1	107	0	2	0	0	2	44	79	60	11	194	82	38	5	0	125	428
07:45 AM	4	89	8	1	102	3	1	0	0	4	44	79	56	12	191	80	34	8	1	123	420
08:00 AM	10	91	10	0	111	0	1	0	0	1	55	67	56	10	188	75	44	9	2	130	430
08:15 AM	7	88	3	1	99	0	2	0	0	2	48	82	46	10	186	85	33	14	1	133	420
Total Volume	24	363	29	3	419	3	6	0	0	9	191	307	218	43	759	322	149	36	4	511	1698
% App. Total	5.7	86.6	6.9	0.7		33.3	66.7	0	0		25.2	40.4	28.7	5.7		63	29.2	7	0.8		
PHF	.600	.955	.725	.750	.944	.250	.750	.000	.000	.563	.868	.936	.908	.896	.978	.947	.847	.643	.500	.961	.987
ypical Vehicles	23	360	29	3	415	3	6	0	0	9	191	306	211	39	747	283	148	36	4	471	1642
Typical Vehicles	95.8	99.2	100	100	99.0	100	100	0	0	100	100	99.7	96.8	90.7	98.4	87.9	99.3	100	100	92.2	96.7
eavy Duty Vehicles	4.2	0.8	0	0	1.0	0	0	0	0	0	0	0.3	3.2	9.3	1.6	12.1	0.7	0	0	7.8	3.3
Heavy Duty Vehicles																					

Trans Associates
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Pittsburgh, PA 15205
412-490-0630

File Name : 19 AM
Site Code : 00000022
Start Date : 11/15/2005
Page No : 1

Groups Printed- Unshifted

	Southbound					Westbound					Arnstrong Tunnel Northbound					Forbes Ave Eastbound					
Start Time	left	Thru	right	HV	App. Total	left	Thru	right	HV	App. Total	left	Thru	right	HV	App. Total	left	Thru	right	HV	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	0	0	0	0	0	0	0	0	0	0	23	0	97	7	127	0	131	67	16	214	341
07:15 AM	0	0	0	0	0	0	0	0	0	0	43	0	113	5	161	0	141	61	12	214	375
07:30 AM	0	0	0	0	0	0	0	0	0	0	46	0	145	5	196	0	172	69	15	256	452
07:45 AM	0	0	0	0	0	0	0	0	0	0	54	0	167	7	228	0	169	75	15	259	487
Total	0	0	0	0	0	0	0	0	0	0	166	0	522	24	712	0	613	272	58	943	1655
08:00 AM	0	0	0	0	0	0	0	0	0	0	40	0	120	5	165	0	192	92	15	299	464
08:15 AM	0	0	0	0	0	0	0	0	0	0	46	0	145	5	196	0	196	84	19	299	495
08:30 AM	0	0	0	0	0	0	0	0	0	0	40	0	133	7	180	0	171	66	22	259	439
08:45 AM	0	0	0	0	0	0	0	0	0	0	41	0	110	5	156	0	164	64	11	239	395
Total	0	0	0	0	0	0	0	0	0	0	167	0	508	22	697	0	723	306	67	1096	1793
Grand Total	0	0	0	0	0	0	0	0	0	0	333	0	1030	46	1409	0	1336	578	125	2039	3448
Apprch %	0	0	0	0		0	0	0	0		23.6	0	73.1	3.3		0	65.5	28.3	6.1		
Total %	0	0	0	0	0	0	0	0	0	0	9.7	0	29.9	1.3	40.9	0	38.7	16.8	3.6	59.1	

	Southbound					Westbound					Arnstrong Tunnel Northbound					Forbes Ave Eastbound					
Start Time	left	Thru	right	HV	App. Total	left	Thru	right	HV	App. Total	left	Thru	right	HV	App. Total	left	Thru	right	HV	App. Total	Int. Total
eak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	46	0	145	5	196	0	172	69	15	256	452
07:45 AM	0	0	0	0	0	0	0	0	0	0	54	0	167	7	228	0	169	75	15	259	487
08:00 AM	0	0	0	0	0	0	0	0	0	0	40	0	120	5	165	0	192	92	15	299	464
08:15 AM	0	0	0	0	0	0	0	0	0	0	46	0	145	5	196	0	196	84	19	299	495
Total Volume	0	0	0	0	0	0	0	0	0	0	186	0	577	22	785	0	729	320	64	1113	1898
% App. Total	0	0	0	0		0	0	0	0		23.7	0	73.5	2.8		0	65.5	28.8	5.8		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.861	.000	.864	.786	.861	.000	.930	.870	.842	.931	.959

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File Name : 20 AM
Site Code : 23111501
Start Date : 11/15/2005
Page No : 1

Groups Printed- All Vehicles (Board

	Washington Pl Southbound					Forbes Ave Westbound					Washington Pl Northbound					Forbes Ave Eastbound					
Start Time	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Left	Thru	Right	T/B	App. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		
07:00 AM	8	5	0	0	13	0	0	0	0	0	0	1	1	0	2	35	48	2	5	90	105
07:15 AM	32	10	0	0	42	0	0	0	0	0	0	3	9	1	13	114	135	16	12	277	332
07:30 AM	31	9	0	0	40	0	0	0	0	0	0	1	2	0	3	56	112	13	9	190	233
07:45 AM	38	25	0	0	63	0	0	0	0	0	0	4	20	1	25	129	169	39	11	348	436
Total	109	49	0	0	158	0	0	0	0	0	0	9	32	2	43	334	464	70	37	905	1106
08:00 AM	53	25	0	1	79	0	0	0	0	0	0	9	14	1	24	120	184	16	10	330	433
08:15 AM	49	23	0	1	73	0	0	0	0	0	0	6	18	0	24	120	182	32	16	350	447
08:30 AM	52	18	0	1	71	0	2	0	0	2	0	6	12	0	18	114	193	19	25	351	442
08:45 AM	47	23	0	3	73	0	0	0	0	0	0	4	13	2	19	70	163	22	13	268	360
Total	201	89	0	6	296	0	2	0	0	2	0	25	57	3	85	424	722	89	64	1299	1682
Grand Total	310	138	0	6	454	0	2	0	0	2	0	34	89	5	128	758	1186	159	101	2204	2788
Apprch %	68.3	30.4	0	1.3		0	100	0	0		0	26.6	69.5	3.9		34.4	53.8	7.2	4.6		
Total %	11.1	4.9	0	0.2	16.3	0	0.1	0	0	0.1	0	1.2	3.2	0.2	4.6	27.2	42.5	5.7	3.6	79.1	

	Washington Pl Southbound				Forbes Ave Westbound				Washington Pl Northbound				Forbes Ave Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
ak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																	
ak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	31	9	0	40	0	0	0	0	0	1	2	3	56	112	13	181	224
07:45 AM	38	25	0	63	0	0	0	0	0	4	20	24	129	169	39	337	424
08:00 AM	53	25	0	78	0	0	0	0	0	9	14	23	120	184	16	320	421
08:15 AM	49	23	0	72	0	0	0	0	0	6	18	24	120	182	32	334	430
Total Volume	171	82	0	253	0	0	0	0	0	20	54	74	425	647	100	1172	1499
% App. Total	67.6	32.4	0		0	0	0		0	27	73		36.3	55.2	8.5		
PHF	.807	.820	.000	.811	.000	.000	.000	.000	.000	.556	.675	.771	.824	.879	.641	.869	.872

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File Name : 21 AM
Site Code : 71880007
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Magee Street Southbound					Westbound					Magee Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	3	0	0	0	3	0	0	0	0	0	0	2	2	0	4	7	135	2	0	144	151
07:15 AM	2	0	0	0	2	0	0	0	0	0	0	2	4	0	6	8	146	4	0	158	166
07:30 AM	5	0	0	0	5	0	0	0	0	0	0	6	4	0	10	14	158	4	0	176	191
07:45 AM	3	0	0	0	3	0	0	0	0	0	0	3	5	0	8	12	168	3	0	183	194
Total	13	0	0	0	13	0	0	0	0	0	0	13	15	0	28	41	607	13	0	661	702
08:00 AM	12	3	0	0	15	0	0	0	0	0	0	2	3	0	5	20	181	8	1	210	230
08:15 AM	6	1	0	0	7	0	0	0	0	0	0	4	4	0	8	24	172	11	0	207	222
08:30 AM	6	4	0	0	10	0	0	0	0	0	0	5	3	0	8	17	134	2	0	153	171
08:45 AM	4	1	0	0	5	0	0	0	0	0	0	7	6	0	13	26	177	7	0	210	228
Total	28	9	0	0	37	0	0	0	0	0	0	18	16	0	34	87	664	28	1	780	851
Grand Total	41	9	0	0	50	0	0	0	0	0	0	31	31	0	62	128	1271	41	1	1441	1553
Apprch %	82	18	0	0		0	0	0	0		0	50	50	0		8.9	88.2	2.8	0.1		
Total %	2.6	0.6	0	0	3.2	0	0	0	0	0	0	2	2	0	4	8.2	81.8	2.6	0.1	92.8	
Vehicles	37	9	0	0	46	0	0	0	0	0	0	30	24	0	54	124	1157	41	1	1323	1423
% Vehicles	90.2	100	0	0	92	0	0	0	0	0	0	96.8	77.4	0	87.1	96.9	91	100	100	91.8	91.6
Heavy Duty Vehicles	4	0	0	0	4	0	0	0	0	0	0	1	7	0	8	4	114	0	0	118	130
% Heavy Duty Vehicles	9.8	0	0	0	8	0	0	0	0	0	0	3.2	22.6	0	12.9	3.1	9	0	0	8.2	8.4

	Magee Street Southbound					Westbound					Magee Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	5	0	0	0	5	0	0	0	0	0	0	6	4	0	10	14	158	4	0	176	191
07:45 AM	3	0	0	0	3	0	0	0	0	0	0	3	5	0	8	12	168	3	0	183	194
08:00 AM	12	3	0	0	15	0	0	0	0	0	0	2	3	0	5	20	181	8	1	210	230
08:15 AM	6	1	0	0	7	0	0	0	0	0	0	4	4	0	8	24	172	11	0	207	222
Total Volume	26	4	0	0	30	0	0	0	0	0	0	15	16	0	31	70	679	26	1	776	837
% App. Total	86.7	13.3	0	0		0	0	0	0		0	48.4	51.6	0		9	87.5	3.4	0.1		
PHF	.542	.333	.000	.000	.500	.000	.000	.000	.000	.000	.000	.625	.800	.000	.775	.729	.938	.591	.250	.924	.910
Vehicles	25	4	0	0	29	0	0	0	0	0	0	15	12	0	27	67	634	26	1	728	784
% Vehicles	96.2	100	0	0	96.7	0	0	0	0	0	0	100	75.0	0	87.1	95.7	93.4	100	100	93.8	93.7
Heavy Duty Vehicles	1	0	0	0	1	0	0	0	0	0	0	0	4	0	4	3	45	0	0	48	53
% Heavy Duty Vehicles	3.8	0	0	0	3.3	0	0	0	0	0	0	0	25.0	0	12.9	4.3	6.6	0	0	6.2	6.3

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File Name : 22 AM
Site Code : 71880008
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Stevenson Street Southbound					Westbound					Stevenson Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	5	2	0	0	7	0	0	0	0	0	0	44	5	3	52	6	106	14	0	126	185
07:15 AM	8	5	0	0	13	0	0	0	0	0	0	39	1	3	43	21	123	24	0	168	224
07:30 AM	5	5	0	0	10	0	0	0	0	0	0	74	7	0	81	17	125	26	0	168	259
07:45 AM	5	2	0	0	7	0	0	0	0	0	0	55	3	2	60	12	132	28	0	172	239
Total	23	14	0	0	37	0	0	0	0	0	0	212	16	8	236	56	486	92	0	634	907
08:00 AM	9	2	1	0	12	0	0	0	0	0	0	68	9	0	77	18	143	38	1	200	289
08:15 AM	6	3	0	0	9	0	0	0	0	0	0	65	3	1	69	32	134	16	1	183	261
08:30 AM	12	7	0	0	19	0	0	0	0	0	0	49	4	4	57	16	103	19	0	138	214
08:45 AM	18	4	0	0	22	0	0	0	0	0	0	49	5	1	55	18	119	28	1	166	243
Total	45	16	1	0	62	0	0	0	0	0	0	231	21	6	258	84	499	101	3	687	1007
Grand Total	68	30	1	0	99	0	0	0	0	0	0	443	37	14	494	140	985	193	3	1321	1914
Apprch %	68.7	30.3	1	0		0	0	0	0		0	89.7	7.5	2.8		10.6	74.6	14.6	0.2		
Total %	3.6	1.6	0.1	0	5.2	0	0	0	0	0	0	23.1	1.9	0.7	25.8	7.3	51.5	10.1	0.2	69	
Vehicles	66	28	1	0	95	0	0	0	0	0	0	426	34	11	471	134	885	173	3	1195	1761
% Vehicles	97.1	93.3	100	0	96	0	0	0	0	0	0	96.2	91.9	78.6	95.3	95.7	89.8	89.6	100	90.5	92
Heavy Duty Vehicles	2	2	0	0	4	0	0	0	0	0	0	17	3	3	23	6	100	20	0	126	153
% Heavy Duty Vehicles	2.9	6.7	0	0	4	0	0	0	0	0	0	3.8	8.1	21.4	4.7	4.3	10.2	10.4	0	9.5	8

	Stevenson Street Southbound					Westbound					Stevenson Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
;ak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
;ak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	5	5	0	0	10	0	0	0	0	0	0	74	7	0	81	17	125	26	0	168	259
07:45 AM	5	2	0	0	7	0	0	0	0	0	0	55	3	2	60	12	132	28	0	172	239
08:00 AM	9	2	1	0	12	0	0	0	0	0	0	68	9	0	77	18	143	38	1	200	289
08:15 AM	6	3	0	0	9	0	0	0	0	0	0	65	3	1	69	32	134	16	1	183	261
Total Volume	25	12	1	0	38	0	0	0	0	0	0	262	22	3	287	79	534	108	2	723	1048
% App. Total	65.8	31.6	2.6	0		0	0	0	0		0	91.3	7.7	1		10.9	73.9	14.9	0.3		
PHF	.694	.600	.250	.000	.792	.000	.000	.000	.000	.000	.000	.885	.611	.375	.886	.617	.934	.711	.500	.904	.907
Vehicles	25	11	1	0	37	0	0	0	0	0	0	252	21	3	276	78	488	102	2	670	983
% Vehicles	100	91.7	100	0	97.4	0	0	0	0	0	0	96.2	95.5	100	96.2	98.7	91.4	94.4	100	92.7	93.8
Heavy Duty Vehicles	0	1	0	0	1	0	0	0	0	0	0	10	1	0	11	1	46	6	0	53	65
Heavy Duty Vehicles	0	8.3	0	0	2.6	0	0	0	0	0	0	3.8	4.5	0	3.8	1.3	8.6	5.6	0	7.3	6.2

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File Name : 23 AM
Site Code : 71880009
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Pride Street Southbound					Westbound					Pride Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	16	28	0	0	44	0	0	0	0	0	0	31	4	0	35	14	84	7	0	105	184
07:15 AM	22	18	0	0	40	0	0	0	0	0	0	42	1	0	43	15	94	4	0	113	196
07:30 AM	34	11	0	0	45	0	0	0	0	0	0	39	6	0	45	28	89	12	0	129	219
07:45 AM	22	14	0	0	36	0	0	0	0	0	0	35	5	0	40	12	112	10	0	134	210
Total	94	71	0	0	165	0	0	0	0	0	0	147	16	0	163	69	379	33	0	481	809
08:00 AM	25	11	0	0	36	0	0	0	0	0	0	24	4	0	28	24	110	5	0	139	203
08:15 AM	23	17	0	0	40	0	0	0	0	0	0	22	9	0	31	24	110	3	0	137	208
08:30 AM	28	15	0	0	43	0	0	0	0	0	0	23	3	0	26	19	96	10	0	125	194
08:45 AM	22	13	0	0	35	0	0	0	0	0	0	17	4	0	21	17	104	9	0	130	186
Total	98	56	0	0	154	0	0	0	0	0	0	86	20	0	106	84	420	27	0	531	791
Grand Total	192	127	0	0	319	0	0	0	0	0	0	233	36	0	269	153	799	60	0	1012	1600
Apprch %	60.2	39.8	0	0		0	0	0	0		0	86.6	13.4	0		15.1	79	5.9	0		
Total %	12	7.9	0	0	19.9	0	0	0	0	0	0	14.6	2.2	0	16.8	9.6	49.9	3.8	0	63.2	
Vehicles	176	104	0	0	280	0	0	0	0	0	0	208	34	0	242	149	690	59	0	898	1420
% Vehicles	91.7	81.9	0	0	87.8	0	0	0	0	0	0	89.3	94.4	0	90	97.4	86.4	98.3	0	88.7	88.8
Heavy Duty Vehicles	16	23	0	0	39	0	0	0	0	0	0	25	2	0	27	4	109	1	0	114	180
% Heavy Duty Vehicles	8.3	18.1	0	0	12.2	0	0	0	0	0	0	10.7	5.6	0	10	2.6	13.6	1.7	0	11.3	11.2

	Pride Street Southbound					Westbound					Pride Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	34	11	0	0	45	0	0	0	0	0	0	39	6	0	45	28	89	12	0	129	219
07:45 AM	22	14	0	0	36	0	0	0	0	0	0	35	5	0	40	12	112	10	0	134	210
08:00 AM	25	11	0	0	36	0	0	0	0	0	0	24	4	0	28	24	110	5	0	139	203
08:15 AM	23	17	0	0	40	0	0	0	0	0	0	22	9	0	31	24	110	3	0	137	208
Total Volume	104	53	0	0	157	0	0	0	0	0	0	120	24	0	144	88	421	30	0	539	840
% App. Total	66.2	33.8	0	0		0	0	0	0		0	83.3	16.7	0		16.3	78.1	5.6	0		
PHF	.765	.779	.000	.000	.872	.000	.000	.000	.000	.000	.000	.769	.667	.000	.800	.786	.940	.625	.000	.969	.959
Vehicles	97	40	0	0	137	0	0	0	0	0	0	109	24	0	133	87	374	30	0	491	761
% Vehicles	93.3	75.5	0	0	87.3	0	0	0	0	0	0	90.8	100	0	92.4	98.9	88.8	100	0	91.1	90.6
Heavy Duty Vehicles	7	13	0	0	20	0	0	0	0	0	0	11	0	0	11	1	47	0	0	48	79
% Heavy Duty Vehicles	6.7	24.5	0	0	12.7	0	0	0	0	0	0	9.2	0	0	7.6	1.1	11.2	0	0	8.9	9.4

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File Name : 1a PM
Site Code : 00000011
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Washington Place Southbound					Westbound					Washington Place Northbound					Crosstown Blvd Off Ramp Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	32	57	12	0	101	0	0	0	0	0	8	177	29	0	214	10	35	8	0	53	368
05:15 PM	30	51	26	0	107	0	0	0	0	0	10	183	29	0	222	16	26	8	0	50	379
05:30 PM	27	48	11	0	86	0	0	0	0	0	1	121	41	0	163	5	34	16	0	55	304
05:45 PM	48	60	11	0	119	0	0	0	0	0	2	110	41	0	153	10	32	15	0	57	329
Total	137	216	60	0	413	0	0	0	0	0	21	591	140	0	752	41	127	47	0	215	1380
Grand Total	137	216	60	0	413	0	0	0	0	0	21	591	140	0	752	41	127	47	0	215	1380
Apprch %	33.2	52.3	14.5	0		0	0	0	0		2.8	78.6	18.6	0		19.1	59.1	21.9	0		
Total %	9.9	15.7	4.3	0	29.9	0	0	0	0	0	1.5	42.8	10.1	0	54.5	3	9.2	3.4	0	15.6	
Vehicles	129	214	57	0	400	0	0	0	0	0	21	587	140	0	748	39	122	47	0	208	1356
% Vehicles	94.2	99.1	95	0	96.9	0	0	0	0	0	100	99.3	100	0	99.5	95.1	96.1	100	0	96.7	98.3
Heavy Duty Vehicles	8	2	3	0	13	0	0	0	0	0	0	4	0	0	4	2	5	0	0	7	24
% Heavy Duty Vehicles	5.8	0.9	5	0	3.1	0	0	0	0	0	0	0.7	0	0	0.5	4.9	3.9	0	0	3.3	1.7

	Washington Place Southbound					Westbound					Washington Place Northbound					Crosstown Blvd Off Ramp Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
eak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	32	57	12	0	101	0	0	0	0	0	8	177	29	0	214	10	35	8	0	53	368
05:15 PM	30	51	26	0	107	0	0	0	0	0	10	183	29	0	222	16	26	8	0	50	379
05:30 PM	27	48	11	0	86	0	0	0	0	0	1	121	41	0	163	5	34	16	0	55	304
05:45 PM	48	60	11	0	119	0	0	0	0	0	2	110	41	0	153	10	32	15	0	57	329
Total Volume	137	216	60	0	413	0	0	0	0	0	21	591	140	0	752	41	127	47	0	215	1380
% App. Total	33.2	52.3	14.5	0		0	0	0	0		2.8	78.6	18.6	0		19.1	59.1	21.9	0		
PHF	.714	.900	.577	.000	.868	.000	.000	.000	.000	.000	.525	.807	.854	.000	.847	.641	.907	.734	.000	.943	.910
Vehicles	129	214	57	0	400	0	0	0	0	0	21	587	140	0	748	39	122	47	0	208	1356
% Vehicles	94.2	99.1	95.0	0	96.9	0	0	0	0	0	100	99.3	100	0	99.5	95.1	96.1	100	0	96.7	98.3
Heavy Duty Vehicles	8	2	3	0	13	0	0	0	0	0	0	4	0	0	4	2	5	0	0	7	24
% Heavy Duty Vehicles	5.8	0.9	5.0	0	3.1	0	0	0	0	0	0	0.7	0	0	0.5	4.9	3.9	0	0	3.3	1.7

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 1b PM
Site Code : 00000004
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Ramp G Southbound					Washington Westbound					Washington Northbound					Webster (Left Lanes) Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	60	0	0	0	60	0	0	0	0	0	0	197	82	0	279	5	53	32	0	90	429
05:15 PM	64	0	0	0	64	0	0	0	0	0	0	241	70	0	311	15	55	33	0	103	478
05:30 PM	69	0	0	0	69	0	0	0	0	0	0	193	37	0	230	8	43	39	0	90	389
05:45 PM	49	0	0	0	49	0	0	0	0	0	0	139	42	0	181	7	54	43	0	104	334
Total	242	0	0	0	242	0	0	0	0	0	0	770	231	0	1001	35	205	147	0	387	1630
Grand Total	242	0	0	0	242	0	0	0	0	0	0	770	231	0	1001	35	205	147	0	387	1630
Apprch %	100	0	0	0		0	0	0	0		0	76.9	23.1	0		9	53	38	0		
Total %	14.8	0	0	0	14.8	0	0	0	0	0	0	47.2	14.2	0	61.4	2.1	12.6	9	0	23.7	
Vehicles	241	0	0	0	241	0	0	0	0	0	0	764	230	0	994	32	197	139	0	368	1603
% Vehicles	99.6	0	0	0	99.6	0	0	0	0	0	0	99.2	99.6	0	99.3	91.4	96.1	94.6	0	95.1	98.3
Heavy Duty Vehicles	1	0	0	0	1	0	0	0	0	0	0	6	1	0	7	3	8	8	0	19	27
% Heavy Duty Vehicles	0.4	0	0	0	0.4	0	0	0	0	0	0	0.8	0.4	0	0.7	8.6	3.9	5.4	0	4.9	1.7

	Ramp G Southbound					Washington Westbound					Washington Northbound					Webster (Left Lanes) Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
ak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	60	0	0	0	60	0	0	0	0	0	0	197	82	0	279	5	53	32	0	90	429
05:15 PM	64	0	0	0	64	0	0	0	0	0	0	241	70	0	311	15	55	33	0	103	478
05:30 PM	69	0	0	0	69	0	0	0	0	0	0	193	37	0	230	8	43	39	0	90	389
05:45 PM	49	0	0	0	49	0	0	0	0	0	0	139	42	0	181	7	54	43	0	104	334
Total Volume	242	0	0	0	242	0	0	0	0	0	0	770	231	0	1001	35	205	147	0	387	1630
% App. Total	100	0	0	0		0	0	0	0		0	76.9	23.1	0		9	53	38	0		
PHF	.877	.000	.000	.000	.877	.000	.000	.000	.000	.000	.000	.799	.704	.000	.805	.583	.932	.855	.000	.930	.853
Vehicles	241	0	0	0	241	0	0	0	0	0	0	764	230	0	994	32	197	139	0	368	1603
% Vehicles	99.6	0	0	0	99.6	0	0	0	0	0	0	99.2	99.6	0	99.3	91.4	96.1	94.6	0	95.1	98.3
eavy Duty Vehicles	1	0	0	0	1	0	0	0	0	0	0	6	1	0	7	3	8	8	0	19	27
Heavy Duty Vehicles	0.4	0	0	0	0.4	0	0	0	0	0	0	0.8	0.4	0	0.7	8.6	3.9	5.4	0	4.9	1.7

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 2 PM
Site Code : 00000051
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

Start Time	Bedford Avenue Eastbound						Bedford Avenue Westbound					Mario Lemieux Place Northbound					Southbound				
	Hard Left to Ramp	Left to HOV Ramp	Thru to Bedford	Right to Lemieux	RTOR	App. Total	Left to Lemieux	Thru to Ramp	Right to HOV Ramp	RTOR	App. Total	Left to Ramp	Thru to HOV Ramp	Right to Bedford	RTOR	App. Total	Left	Thru	Right	App. Total	Int. Total
05:00 PM	24	51	34	1	0	110	2	43	43	0	88	9	4	1	0	14	0	0	0	0	212
05:15 PM	46	97	63	3	0	209	2	37	71	0	110	18	14	5	0	37	0	0	0	0	356
05:30 PM	27	55	50	9	0	141	0	38	64	0	102	5	6	4	0	15	0	0	0	0	258
05:45 PM	21	53	57	23	0	154	3	49	43	0	95	5	0	7	0	12	0	0	0	0	261
Total	118	256	204	36	0	614	7	167	221	0	395	37	24	17	0	78	0	0	0	0	1087
Grand Total	118	256	204	36	0	614	7	167	221	0	395	37	24	17	0	78	0	0	0	0	1087
Apprch %	19.2	41.7	33.2	5.9	0		1.8	42.3	55.9	0		47.4	30.8	21.8	0		0	0	0		
Total %	10.9	23.6	18.8	3.3	0	56.5	0.6	15.4	20.3	0	36.3	3.4	2.2	1.6	0	7.2	0	0	0	0	
Vehicles	118	253	200	35	0	606	7	163	220	0	390	36	24	17	0	77	0	0	0	0	1073
% Vehicles	100	98.8	98	97.2	0	98.7	100	97.6	99.5	0	98.7	97.3	100	100	0	98.7	0	0	0	0	98.7
Heavy Duty Vehicles	0	3	4	1	0	8	0	4	1	0	5	1	0	0	0	1	0	0	0	0	14
% Heavy Duty Vehicles	0	1.2	2	2.8	0	1.3	0	2.4	0.5	0	1.3	2.7	0	0	0	1.3	0	0	0	0	1.3

Start Time	Bedford Avenue Eastbound						Bedford Avenue Westbound					Mario Lemieux Place Northbound					Southbound				
	Hard Left to Ramp	Left to HOV Ramp	Thru to Bedford	Right to Lemieux	RTOR	App. Total	Left to Lemieux	Thru to Ramp	Right to HOV Ramp	RTOR	App. Total	Left to Ramp	Thru to HOV Ramp	Right to Bedford	RTOR	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	24	51	34	1	0	110	2	43	43	0	88	9	4	1	0	14	0	0	0	0	212
05:15 PM	46	97	63	3	0	209	2	37	71	0	110	18	14	5	0	37	0	0	0	0	356
05:30 PM	27	55	50	9	0	141	0	38	64	0	102	5	6	4	0	15	0	0	0	0	258
05:45 PM	21	53	57	23	0	154	3	49	43	0	95	5	0	7	0	12	0	0	0	0	261
Total Volume	118	256	204	36	0	614	7	167	221	0	395	37	24	17	0	78	0	0	0	0	1087
% App. Total	19.2	41.7	33.2	5.9	0		1.8	42.3	55.9	0		47.4	30.8	21.8	0		0	0	0		
PHF	.641	.660	.810	.391	.000	.734	.583	.852	.778	.000	.898	.514	.429	.607	.000	.527	.000	.000	.000	.000	.763
Vehicles	118	253	200	35	0	606	7	163	220	0	390	36	24	17	0	77	0	0	0	0	1073
% Vehicles	100	98.8	98.0	97.2	0	98.7	100	97.6	99.5	0	98.7	97.3	100	100	0	98.7	0	0	0	0	98.7
Heavy Duty Vehicles	0	3	4	1	0	8	0	4	1	0	5	1	0	0	0	1	0	0	0	0	14
% Heavy Duty Vehicles	0	1.2	2.0	2.8	0	1.3	0	2.4	0.5	0	1.3	2.7	0	0	0	1.3	0	0	0	0	1.3

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

edford Ave. & Crawford St.

GHPE00#11109
oard#4435 JCD

File Name : 3 PM
Site Code : 11109001
Start Date : 7/19/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	7	11	5	23	2	29	0	0	31	47	0	3	2	52	0	3	1	0	4	110
04:15 PM	0	10	8	8	26	4	21	0	0	25	83	0	11	2	96	1	0	0	0	1	148
04:30 PM	0	19	6	6	31	3	33	0	0	36	84	1	9	5	99	0	1	0	0	1	167
04:45 PM	0	17	9	6	32	2	29	0	0	31	92	0	8	5	105	0	0	0	0	0	168
Total	0	53	34	25	112	11	112	0	0	123	306	1	31	14	352	1	4	1	0	6	593
05:00 PM	0	15	13	5	33	3	30	0	0	33	97	0	4	6	107	1	0	0	0	1	174
05:15 PM	0	16	10	5	31	4	43	0	0	47	104	0	8	1	113	1	0	0	0	1	192
05:30 PM	3	3	9	2	17	3	36	0	0	39	75	1	9	4	89	1	0	1	2	4	149
05:45 PM	3	4	6	4	17	3	11	0	0	14	69	1	5	7	82	0	0	0	3	3	116
Total	6	38	38	16	98	13	120	0	0	133	345	2	26	18	391	3	0	1	5	9	631
Grand Total	6	91	72	41	210	24	232	0	0	256	651	3	57	32	743	4	4	2	5	15	1224
Apprch %	2.9	43.3	34.3	19.5		9.4	90.6	0	0		87.6	0.4	7.7	4.3		26.7	26.7	13.3	33.3		
Total %	0.5	7.4	5.9	3.3	17.2	2	19	0	0	20.9	53.2	0.2	4.7	2.6	60.7	0.3	0.3	0.2	0.4	1.2	
ypical Vehicles	6	91	72	40	209	21	230	0	0	251	650	3	53	30	736	4	3	2	5	14	1210
Typical Vehicles	100	100	100	97.6	99.5	87.5	99.1	0	0	98	99.8	100	93	93.8	99.1	100	75	100	100	93.3	98.9
Heavy Duty Vehicles	0	0	0	2.4	0.5	12.5	0.9	0	0	2	0.2	0	7	6.2	0.9	0	25	0	0	6.7	1.1

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
ak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	10	8	8	26	4	21	0	0	25	83	0	11	2	96	1	0	0	0	1	148
04:30 PM	0	19	6	6	31	3	33	0	0	36	84	1	9	5	99	0	1	0	0	1	167
04:45 PM	0	17	9	6	32	2	29	0	0	31	92	0	8	5	105	0	0	0	0	0	168
05:00 PM	0	15	13	5	33	3	30	0	0	33	97	0	4	6	107	1	0	0	0	1	174
Total Volume	0	61	36	25	122	12	113	0	0	125	356	1	32	18	407	2	1	0	0	3	657
% App. Total	0	50	29.5	20.5		9.6	90.4	0	0		87.5	0.2	7.9	4.4		66.7	33.3	0	0		
PHF	.000	.803	.692	.781	.924	.750	.856	.000	.000	.868	.918	.250	.727	.750	.951	.500	.250	.000	.000	.750	.944
pical Vehicles	0	61	36	24	121	10	112	0	0	122	356	1	30	17	404	2	0	0	0	2	649
Typical Vehicles	0	100	100	96.0	99.2	83.3	99.1	0	0	97.6	100	100	93.8	94.4	99.3	100	0	0	0	66.7	98.8
avy Duty Vehicles																					
Heavy Duty Vehicles	0	0	0	4.0	0.8	16.7	0.9	0	0	2.4	0	0	6.3	5.6	0.7	0	100	0	0	33.3	1.2

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Vylie Ave. & Crawford St.

'GHPE00#11109
Board#5038 AM

File Name : 4 PM
Site Code : 11109002
Start Date : 7/19/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Eastbound					Wylie Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	0	0	0	0	2	0	6	0	8	0	47	9	0	56	2	23	0	0	25	89
04:15 PM	0	0	0	0	0	7	0	5	0	12	0	94	10	0	104	0	26	0	0	26	142
04:30 PM	0	0	0	0	0	6	0	7	0	13	0	95	5	0	100	0	18	0	0	18	131
04:45 PM	0	0	0	0	0	7	0	7	0	14	0	96	5	0	101	0	21	0	0	21	136
Total	0	0	0	0	0	22	0	25	0	47	0	332	29	0	361	2	88	0	0	90	498
05:00 PM	0	0	0	0	0	2	0	9	0	11	0	108	6	0	114	0	27	0	0	27	152
05:15 PM	0	0	0	0	0	2	0	7	0	9	1	110	3	0	114	0	22	0	0	22	145
05:30 PM	0	0	0	0	0	3	0	4	0	7	0	87	2	0	89	1	22	0	0	23	119
05:45 PM	0	0	0	0	0	6	0	7	0	13	0	73	8	0	81	0	14	0	0	14	108
Total	0	0	0	0	0	13	0	27	0	40	1	378	19	0	398	1	85	0	0	86	524
Grand Total	0	0	0	0	0	35	0	52	0	87	1	710	48	0	759	3	173	0	0	176	1022
Apprch %	0	0	0	0		40.2	0	59.8	0		0.1	93.5	6.3	0		1.7	98.3	0	0		
Total %	0	0	0	0	0	3.4	0	5.1	0	8.5	0.1	69.5	4.7	0	74.3	0.3	16.9	0	0	17.2	
Typical Vehicles	0	0	0	0	0	35	0	52	0	87	1	705	48	0	754	3	169	0	0	172	1013
% Typical Vehicles	0	0	0	0	0	100	0	100	0	100	100	99.3	100	0	99.3	100	97.7	0	0	97.7	99.1
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0.7	0	0	0.7	0	2.3	0	0	2.3	0.9

	Eastbound					Wylie Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	7	0	5	0	12	0	94	10	0	104	0	26	0	0	26	142
04:30 PM	0	0	0	0	0	6	0	7	0	13	0	95	5	0	100	0	18	0	0	18	131
04:45 PM	0	0	0	0	0	7	0	7	0	14	0	96	5	0	101	0	21	0	0	21	136
05:00 PM	0	0	0	0	0	2	0	9	0	11	0	108	6	0	114	0	27	0	0	27	152
Total Volume	0	0	0	0	0	22	0	28	0	50	0	393	26	0	419	0	92	0	0	92	561
% App. Total	0	0	0	0		44	0	56	0		0	93.8	6.2	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.786	.000	.778	.000	.893	.000	.910	.650	.000	.919	.000	.852	.000	.000	.852	.923
Typical Vehicles	0	0	0	0	0	22	0	28	0	50	0	391	26	0	417	0	89	0	0	89	556
% Typical Vehicles	0	0	0	0	0	100	0	100	0	100	0	99.5	100	0	99.5	0	96.7	0	0	96.7	99.1
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0.5	0	3.3	0	0	3.3	0.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Centre Ave. & Sixth Ave.

File Name : 5 PM
Site Code : 11109018
Start Date : 8/4/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Eastbound					Centre Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	0	0	0	0	7	0	9	0	16	0	44	46	0	90	29	103	0	0	132	238
04:15 PM	0	0	0	0	0	20	0	7	0	27	0	52	51	0	103	54	110	0	0	164	294
04:30 PM	0	0	0	0	0	23	0	9	0	32	0	39	48	0	87	45	121	0	0	166	285
04:45 PM	0	0	0	0	0	33	0	7	0	40	0	47	52	0	99	53	109	0	0	162	301
Total	0	0	0	0	0	83	0	32	0	115	0	182	197	0	379	181	443	0	0	624	1118
05:00 PM	0	0	0	0	0	29	0	8	0	37	0	41	53	0	94	47	91	0	0	138	269
05:15 PM	0	0	0	0	0	15	0	8	0	23	0	30	47	0	77	55	123	0	0	178	278
05:30 PM	0	0	0	0	0	20	0	7	0	27	0	49	47	0	96	32	100	0	0	132	255
05:45 PM	0	0	0	0	0	1	0	3	0	4	0	53	37	0	90	51	90	0	0	141	235
Total	0	0	0	0	0	65	0	26	0	91	0	173	184	0	357	185	404	0	0	589	1037
Grand Total	0	0	0	0	0	148	0	58	0	206	0	355	381	0	736	366	847	0	0	1213	2155
Apprch %	0	0	0	0		71.8	0	28.2	0		0	48.2	51.8	0		30.2	69.8	0	0		
Total %	0	0	0	0	0	6.9	0	2.7	0	9.6	0	16.5	17.7	0	34.2	17	39.3	0	0	56.3	
Typical Vehicles	0	0	0	0	0	148	0	58	0	206	0	305	377	0	682	350	826	0	0	1176	2064
% Typical Vehicles	0	0	0	0	0	100	0	100	0	100	0	85.9	99	0	92.7	95.6	97.5	0	0	96.9	95.8
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	14.1	1	0	7.3	4.4	2.5	0	0	3.1	4.2

	Eastbound					Centre Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	20	0	7	0	27	0	52	51	0	103	54	110	0	0	164	294
04:30 PM	0	0	0	0	0	23	0	9	0	32	0	39	48	0	87	45	121	0	0	166	285
04:45 PM	0	0	0	0	0	33	0	7	0	40	0	47	52	0	99	53	109	0	0	162	301
05:00 PM	0	0	0	0	0	29	0	8	0	37	0	41	53	0	94	47	91	0	0	138	269
Total Volume	0	0	0	0	0	105	0	31	0	136	0	179	204	0	383	199	431	0	0	630	1149
% App. Total	0	0	0	0		77.2	0	22.8	0		0	46.7	53.3	0		31.6	68.4	0	0		
PHF	.000	.000	.000	.000	.000	.795	.000	.861	.000	.850	.000	.861	.962	.000	.930	.921	.890	.000	.000	.949	.954
Typical Vehicles	0	0	0	0	0	105	0	31	0	136	0	154	202	0	356	193	417	0	0	610	1102
% Typical Vehicles	0	0	0	0	0	100	0	100	0	100	0	86.0	99.0	0	93.0	97.0	96.8	0	0	96.8	95.9
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	14.0	1.0	0	7.0	3.0	3.2	0	0	3.2	4.1

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 6-a PM
Site Code : 00000012
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Northbound					Centre Avenue Eastbound					Southbound					Centre Avenue Westbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	0	0	0	0	0	24	30	17	0	71	0	0	0	0	0	41	85	102	3	231	302
05:15 PM	0	0	0	0	0	52	46	15	0	113	0	0	0	0	0	37	104	96	0	237	350
05:30 PM	0	0	0	0	0	28	48	36	0	112	0	0	0	0	0	14	47	81	0	142	254
05:45 PM	0	0	0	0	0	18	45	29	0	92	0	0	0	0	0	17	36	40	0	93	185
Total	0	0	0	0	0	122	169	97	0	388	0	0	0	0	0	109	272	319	3	703	1091
Grand Total	0	0	0	0	0	122	169	97	0	388	0	0	0	0	0	109	272	319	3	703	1091
Apprch %	0	0	0	0		31.4	43.6	25	0		0	0	0	0		15.5	38.7	45.4	0.4		
Total %	0	0	0	0	0	11.2	15.5	8.9	0	35.6	0	0	0	0	0	10	24.9	29.2	0.3	64.4	
Vehicles	0	0	0	0	0	122	169	97	0	388	0	0	0	0	0	109	272	318	3	702	1090
% Vehicles	0	0	0	0	0	100	100	100	0	100	0	0	0	0	0	100	100	99.7	100	99.9	99.9
Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0.1	0.1

	Northbound					Centre Avenue Eastbound					Southbound					Centre Avenue Westbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	24	30	17	0	71	0	0	0	0	0	**41**	85	**102**	**3**	231	302
05:15 PM	0	0	0	0	0	**52**	46	15	0	**113**	0	0	0	0	0	37	**104**	96	0	**237**	**350**
05:30 PM	0	0	0	0	0	28	**48**	**36**	0	112	0	0	0	0	0	14	47	81	0	142	254
05:45 PM	0	0	0	0	0	18	45	29	0	92	0	0	0	0	0	17	36	40	0	93	185
Total Volume	0	0	0	0	0	122	169	97	0	388	0	0	0	0	0	109	272	319	3	703	1091
% App. Total	0	0	0	0		31.4	43.6	25	0		0	0	0	0		15.5	38.7	45.4	0.4		
PHF	.000	.000	.000	.000	.000	.587	.880	.674	.000	.858	.000	.000	.000	.000	.000	.665	.654	.782	.250	.742	.779
Vehicles	0	0	0	0	0	122	169	97	0	388	0	0	0	0	0	109	272	318	3	702	1090
% Vehicles	0	0	0	0	0	100	100	100	0	100	0	0	0	0	0	100	100	99.7	100	99.9	99.9
Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0.1	0.1

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 6-b PM
Site Code : 00000011
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Washington Place Southbound					Westbound					Washington Place Northbound					Crosstown Blvd Off Ramp Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	32	57	12	0	101	0	0	0	0	0	8	177	29	0	214	10	6	8	0	24	339
05:15 PM	30	51	26	0	107	0	0	0	0	0	10	183	29	0	222	16	10	8	0	34	363
05:30 PM	27	48	11	0	86	0	0	0	0	0	1	121	41	0	163	5	9	16	0	30	279
05:45 PM	48	60	11	0	119	0	0	0	0	0	2	110	41	0	153	10	7	15	0	32	304
Total	137	216	60	0	413	0	0	0	0	0	21	591	140	0	752	41	32	47	0	120	1285
Grand Total	137	216	60	0	413	0	0	0	0	0	21	591	140	0	752	41	32	47	0	120	1285
Apprch %	33.2	52.3	14.5	0		0	0	0	0		2.8	78.6	18.6	0		34.2	26.7	39.2	0		
Total %	10.7	16.8	4.7	0	32.1	0	0	0	0	0	1.6	46	10.9	0	58.5	3.2	2.5	3.7	0	9.3	
Vehicles	129	214	57	0	400	0	0	0	0	0	21	587	140	0	748	39	27	47	0	113	1261
% Vehicles	94.2	99.1	95	0	96.9	0	0	0	0	0	100	99.3	100	0	99.5	95.1	84.4	100	0	94.2	98.1
Heavy Duty Vehicles	8	2	3	0	13	0	0	0	0	0	0	4	0	0	4	2	5	0	0	7	24
% Heavy Duty Vehicles	5.8	0.9	5	0	3.1	0	0	0	0	0	0	0.7	0	0	0.5	4.9	15.6	0	0	5.8	1.9

	Washington Place Southbound					Westbound					Washington Place Northbound					Crosstown Blvd Off Ramp Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
eak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	32	57	12	0	101	0	0	0	0	0	8	177	29	0	214	10	6	8	0	24	339
05:15 PM	30	51	**26**	0	107	0	0	0	0	0	**10**	**183**	29	0	**222**	**16**	**10**	8	0	**34**	**363**
05:30 PM	27	48	11	0	86	0	0	0	0	0	1	121	**41**	0	163	5	9	**16**	0	30	279
05:45 PM	**48**	**60**	11	0	**119**	0	0	0	0	0	2	110	41	0	153	10	7	15	0	32	304
Total Volume	137	216	60	0	413	0	0	0	0	0	21	591	140	0	752	41	32	47	0	120	1285
% App. Total	33.2	52.3	14.5	0		0	0	0	0		2.8	78.6	18.6	0		34.2	26.7	39.2	0		
PHF	.714	.900	.577	.000	.868	.000	.000	.000	.000	.000	.525	.807	.854	.000	.847	.641	.800	.734	.000	.882	.885
Vehicles	129	214	57	0	400	0	0	0	0	0	21	587	140	0	748	39	27	47	0	113	1261
% Vehicles	94.2	99.1	95.0	0	96.9	0	0	0	0	0	100	99.3	100	0	99.5	95.1	84.4	100	0	94.2	98.1
Heavy Duty Vehicles	8	2	3	0	13	0	0	0	0	0	0	4	0	0	4	2	5	0	0	7	24
% Heavy Duty Vehicles	5.8	0.9	5.0	0	3.1	0	0	0	0	0	0	0.7	0	0	0.5	4.9	15.6	0	0	5.8	1.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Centre Ave. & Mario Lemieux Pl.

Board#4435 JCD

File Name : 7 PM
Site Code :
Start Date : 7/27/2007
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Mario Lemieux Pl. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
05:00 PM	10	101	0	0	111	0	151	14	3	168	0	0	0	0	0	1	0	12	5	18	297
05:15 PM	12	107	0	0	119	0	167	15	5	187	0	0	0	0	0	1	0	10	5	16	322
05:30 PM	11	114	0	0	125	1	152	24	0	177	0	0	0	0	0	5	0	9	4	18	320
05:45 PM	13	109	0	1	123	0	162	27	0	189	0	0	0	0	0	2	0	17	2	21	333
Total	46	431	0	1	478	1	632	80	8	721	0	0	0	0	0	9	0	48	16	73	1272
Grand Total	46	431	0	1	478	1	632	80	8	721	0	0	0	0	0	9	0	48	16	73	1272
Apprch %	9.6	90.2	0	0.2		0.1	87.7	11.1	1.1		0	0	0	0		12.3	0	65.8	21.9		
Total %	3.6	33.9	0	0.1	37.6	0.1	49.7	6.3	0.6	56.7	0	0	0	0	0	0.7	0	3.8	1.3	5.7	
Typical Vehicles	46	422	0	0	468	0	627	80	8	715	0	0	0	0	0	9	0	48	15	72	1255
% Typical Vehicles	100	97.9	0	0	97.9	0	99.2	100	100	99.2	0	0	0	0	0	100	0	100	93.8	98.6	98.7
Heavy Duty Vehicles	0	2.1	0	100	2.1	100	0.8	0	0	0.8	0	0	0	0	0	0	0	0	6.2	1.4	1.3
% Heavy Duty Vehicles																					

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Mario Lemieux Pl. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	10	101	0	0	111	0	151	14	3	168	0	0	0	0	0	1	0	12	5	18	297
05:15 PM	12	107	0	0	119	0	167	15	5	187	0	0	0	0	0	1	0	10	5	16	322
05:30 PM	11	114	0	0	125	1	152	24	0	177	0	0	0	0	0	5	0	9	4	18	320
05:45 PM	13	109	0	1	123	0	162	27	0	189	0	0	0	0	0	2	0	17	2	21	333
Total Volume	46	431	0	1	478	1	632	80	8	721	0	0	0	0	0	9	0	48	16	73	1272
% App. Total	9.6	90.2	0	0.2		0.1	87.7	11.1	1.1		0	0	0	0		12.3	0	65.8	21.9		
PHF	.885	.945	.000	.250	.956	.250	.946	.741	.400	.954	.000	.000	.000	.000	.000	.450	.000	.706	.800	.869	.955

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 9 pm
Site Code : 00000061
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Crawford Southbound					Centre Ave Westbound					Crawford Northbound					Centre Ave Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	7	35	35	16	93	5	50	9	0	64	38	66	16	2	122	56	36	46	9	147	426
05:15 PM	6	50	40	6	102	12	60	4	0	76	49	36	14	0	99	54	46	38	8	146	423
05:30 PM	7	33	29	8	77	11	37	11	3	62	40	48	12	2	102	42	38	38	11	129	370
05:45 PM	5	22	15	3	45	4	22	7	1	34	28	31	11	1	71	31	30	34	3	98	248
Total	25	140	119	33	317	32	169	31	4	236	155	181	53	5	394	183	150	156	31	520	1467
Grand Total	25	140	119	33	317	32	169	31	4	236	155	181	53	5	394	183	150	156	31	520	1467
Apprch %	7.9	44.2	37.5	10.4		13.6	71.6	13.1	1.7		39.3	45.9	13.5	1.3		35.2	28.8	30	6		
Total %	1.7	9.5	8.1	2.2	21.6	2.2	11.5	2.1	0.3	16.1	10.6	12.3	3.6	0.3	26.9	12.5	10.2	10.6	2.1	35.4	
Vehicles	25	132	117	31	305	31	165	31	4	231	149	179	52	5	385	177	145	156	31	509	1430
% Vehicles	100	94.3	98.3	93.9	96.2	96.9	97.6	100	100	97.9	96.1	98.9	98.1	100	97.7	96.7	96.7	100	100	97.9	97.5
Heavy Duty Vehicles	0	8	2	2	12	1	4	0	0	5	6	2	1	0	9	6	5	0	0	11	37
% Heavy Duty Vehicles	0	5.7	1.7	6.1	3.8	3.1	2.4	0	0	2.1	3.9	1.1	1.9	0	2.3	3.3	3.3	0	0	2.1	2.5

	Crawford Southbound					Centre Ave Westbound					Crawford Northbound					Centre Ave Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
eak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	7	35	35	16	93	5	50	9	0	64	38	66	16	2	122	56	36	46	9	147	426
05:15 PM	6	50	40	6	102	12	60	4	0	76	49	36	14	0	99	54	46	38	8	146	423
05:30 PM	7	33	29	8	77	11	37	11	3	62	40	48	12	2	102	42	38	38	11	129	370
05:45 PM	5	22	15	3	45	4	22	7	1	34	28	31	11	1	71	31	30	34	3	98	248
Total Volume	25	140	119	33	317	32	169	31	4	236	155	181	53	5	394	183	150	156	31	520	1467
% App. Total	7.9	44.2	37.5	10.4		13.6	71.6	13.1	1.7		39.3	45.9	13.5	1.3		35.2	28.8	30	6		
PHF	.893	.700	.744	.516	.777	.667	.704	.705	.333	.776	.791	.686	.828	.625	.807	.817	.815	.848	.705	.884	.861
Vehicles	25	132	117	31	305	31	165	31	4	231	149	179	52	5	385	177	145	156	31	509	1430
% Vehicles	100	94.3	98.3	93.9	96.2	96.9	97.6	100	100	97.9	96.1	98.9	98.1	100	97.7	96.7	96.7	100	100	97.9	97.5
Heavy Duty Vehicles	0	8	2	2	12	1	4	0	0	5	6	2	1	0	9	6	5	0	0	11	37
% Heavy Duty Vehicles	0	5.7	1.7	6.1	3.8	3.1	2.4	0	0	2.1	3.9	1.1	1.9	0	2.3	3.3	3.3	0	0	2.1	2.5

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Colwell St. & Pride St.

PGHPE00#111009
Board#5039 FS

File Name : 10 PM
Site Code : 11109004
Start Date : 7/19/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Colwell St. Eastbound					Colwell St. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	12	0	2	0	14	1	0	5	0	6	0	74	0	0	74	0	82	4	0	86	180
04:15 PM	19	0	5	0	24	1	1	6	0	8	0	86	0	0	86	0	78	4	0	82	200
04:30 PM	20	0	0	0	20	4	1	14	0	19	0	73	0	0	73	0	90	10	0	100	212
04:45 PM	20	2	4	0	26	0	1	23	0	24	0	50	0	0	50	0	77	8	0	85	185
Total	71	2	11	0	84	6	3	48	0	57	0	283	0	0	283	0	327	26	0	353	777
05:00 PM	22	0	4	0	26	1	2	21	0	24	1	63	0	0	64	0	98	10	0	108	222
05:15 PM	25	0	4	1	30	5	4	17	0	26	1	64	1	0	66	0	113	11	0	124	246
05:30 PM	16	0	1	0	17	1	4	10	0	15	2	52	0	0	54	0	67	12	0	79	165
05:45 PM	27	0	2	0	29	1	2	13	2	18	1	37	0	0	38	0	59	3	0	62	147
Total	90	0	11	1	102	8	12	61	2	83	5	216	1	0	222	0	337	36	0	373	780
Grand Total	161	2	22	1	186	14	15	109	2	140	5	499	1	0	505	0	664	62	0	726	1557
Apprch %	86.6	1.1	11.8	0.5		10	10.7	77.9	1.4		1	98.8	0.2	0		0	91.5	8.5	0		
Total %	10.3	0.1	1.4	0.1	11.9	0.9	1	7	0.1	9	0.3	32	0.1	0	32.4	0	42.6	4	0	46.6	
Typical Vehicles	161	2	22	1	186	14	15	109	2	140	5	497	1	0	503	0	664	62	0	726	1555
% Typical Vehicles	100	100	100	100	100	100	100	100	100	100	100	99.6	100	0	99.6	0	100	100	0	100	99.9
Heavy Duty Vehicles																					
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0.1

	Colwell St. Eastbound					Colwell St. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
eak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	19	0	5	0	24	1	1	6	0	8	0	86	0	0	86	0	78	4	0	82	200
04:30 PM	20	0	0	0	20	4	1	14	0	19	0	73	0	0	73	0	90	10	0	100	212
04:45 PM	20	2	4	0	26	0	1	23	0	24	0	50	0	0	50	0	77	8	0	85	185
05:00 PM	22	0	4	0	26	1	2	21	0	24	1	63	0	0	64	0	98	10	0	108	222
Total Volume	81	2	13	0	96	6	5	64	0	75	1	272	0	0	273	0	343	32	0	375	819
% App. Total	84.4	2.1	13.5	0		8	6.7	85.3	0		0.4	99.6	0	0		0	91.5	8.5	0		
PHF	.920	.250	.650	.000	.923	.375	.625	.696	.000	.781	.250	.791	.000	.000	.794	.000	.875	.800	.000	.868	.922
ypical Vehicles	81	2	13	0	96	6	5	64	0	75	1	271	0	0	272	0	343	32	0	375	818
Typical Vehicles	100	100	100	0	100	100	100	100	0	100	100	99.6	0	0	99.6	0	100	100	0	100	99.9
eavy Duty Vehicles																					
Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0.1

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ifth Ave. & Sixth Ave.

File Name : 11 PM
Site Code : 11109019
Start Date : 8/4/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	15	0	36	0	51	90	116	58	0	264	7	25	0	0	32	0	120	3	0	123	470
04:15 PM	14	0	42	0	56	83	111	64	0	258	10	17	0	0	27	0	117	9	0	126	467
04:30 PM	11	0	41	0	52	78	105	58	0	241	12	22	0	0	34	0	141	6	0	147	474
04:45 PM	10	0	54	0	64	74	111	54	0	239	6	30	0	0	36	0	132	13	0	145	484
Total	50	0	173	0	223	325	443	234	0	1002	35	94	0	0	129	0	510	31	0	541	1895
05:00 PM	10	0	42	0	52	59	88	65	0	212	8	21	0	0	29	0	111	14	0	125	418
05:15 PM	4	0	34	0	38	70	85	48	0	203	5	25	0	0	30	0	133	12	0	145	416
05:30 PM	11	0	28	0	39	26	95	51	0	172	9	28	0	0	37	0	117	8	0	125	373
05:45 PM	13	0	38	0	51	41	107	52	0	200	10	28	0	0	38	0	84	4	0	88	377
Total	38	0	142	0	180	196	375	216	0	787	32	102	0	0	134	0	445	38	0	483	1584
Grand Total	88	0	315	0	403	521	818	450	0	1789	67	196	0	0	263	0	955	69	0	1024	3479
Apprch %	21.8	0	78.2	0		29.1	45.7	25.2	0		25.5	74.5	0	0		0	93.3	6.7	0		
Total %	2.5	0	9.1	0	11.6	15	23.5	12.9	0	51.4	1.9	5.6	0	0	7.6	0	27.5	2	0	29.4	
ypical Vehicles	84	0	267	0	351	520	788	394	0	1702	67	194	0	0	261	0	944	53	0	997	3311
Typical Vehicles	95.5	0	84.8	0	87.1	99.8	96.3	87.6	0	95.1	100	99	0	0	99.2	0	98.8	76.8	0	97.4	95.2
Heavy Duty Vehicles	4.5	0	15.2	0	12.9	0.2	3.7	12.4	0	4.9	0	1	0	0	0.8	0	1.2	23.2	0	2.6	4.8

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
ak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	14	0	42	0	56	83	111	64	0	258	10	17	0	0	27	0	117	9	0	126	467
04:30 PM	11	0	41	0	52	78	105	58	0	241	12	22	0	0	34	0	141	6	0	147	474
04:45 PM	10	0	54	0	64	74	111	54	0	239	6	30	0	0	36	0	132	13	0	145	484
05:00 PM	10	0	42	0	52	59	88	65	0	212	8	21	0	0	29	0	111	14	0	125	418
Total Volume	45	0	179	0	224	294	415	241	0	950	36	90	0	0	126	0	501	42	0	543	1843
% App. Total	20.1	0	79.9	0		30.9	43.7	25.4	0		28.6	71.4	0	0		0	92.3	7.7	0		
PHF	.804	.000	.829	.000	.875	.886	.935	.927	.000	.921	.750	.750	.000	.000	.875	.000	.888	.750	.000	.923	.952
pical Vehicles	42	0	147	0	189	293	402	213	0	908	36	89	0	0	125	0	490	34	0	524	1746
Typical Vehicles	93.3	0	82.1	0	84.4	99.7	96.9	88.4	0	95.6	100	98.9	0	0	99.2	0	97.8	81.0	0	96.5	94.7
avy Duty Vehicles																					
Heavy Duty Vehicles	6.7	0	17.9	0	15.6	0.3	3.1	11.6	0	4.4	0	1.1	0	0	0.8	0	2.2	19.0	0	3.5	5.3

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ifth Ave. & Diamond St.

'GHPE00#11109
oard#5040 SE

File Name : 12 PM
Site Code : 11109020
Start Date : 7/28/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Diamond St. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	0	0	0	0	134	161	0	0	295	0	0	0	0	0	0	0	0	6	6	301
04:15 PM	0	0	0	0	0	148	135	0	0	283	0	0	0	0	0	0	0	0	0	0	283
04:30 PM	0	0	0	0	0	155	152	0	0	307	0	0	0	0	0	0	0	0	0	0	307
04:45 PM	0	0	0	0	0	129	140	0	0	269	0	0	0	0	0	0	0	0	0	0	269
Total	0	0	0	0	0	566	588	0	0	1154	0	0	0	0	0	0	0	0	6	6	1160
05:00 PM	0	0	0	0	0	118	135	0	0	253	0	0	0	0	0	0	0	0	0	0	253
05:15 PM	0	0	0	0	0	94	111	0	0	205	0	0	0	0	0	0	0	0	0	0	205
05:30 PM	0	0	0	0	0	116	145	0	0	261	0	0	0	0	0	0	0	0	1	1	262
05:45 PM	0	0	0	0	0	123	149	0	0	272	0	0	0	0	0	0	0	0	0	0	272
Total	0	0	0	0	0	451	540	0	0	991	0	0	0	0	0	0	0	0	1	1	992
Grand Total	0	0	0	0	0	1017	1128	0	0	2145	0	0	0	0	0	0	0	0	7	7	2152
Apprch %	0	0	0	0		47.4	52.6	0	0		0	0	0	0		0	0	0	100		
Total %	0	0	0	0	0	47.3	52.4	0	0	99.7	0	0	0	0	0	0	0	0	0.3	0.3	
ypical Vehicles	0	0	0	0	0	1005	1017	0	0	2022	0	0	0	0	0	0	0	0	1	1	2023
Typical Vehicles	0	0	0	0	0	98.8	90.2	0	0	94.3	0	0	0	0	0	0	0	0	14.3	14.3	94
Heavy Duty Vehicles																					
Heavy Duty Vehicles	0	0	0	0	0	1.2	9.8	0	0	5.7	0	0	0	0	0	0	0	0	85.7	85.7	6

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Diamond St. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
ak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	148	135	0	0	283	0	0	0	0	0	0	0	0	0	0	283
04:30 PM	0	0	0	0	0	**155**	**152**	0	0	**307**	0	0	0	0	0	0	0	0	0	0	**307**
04:45 PM	0	0	0	0	0	129	140	0	0	269	0	0	0	0	0	0	0	0	0	0	269
05:00 PM	0	0	0	0	0	118	135	0	0	253	0	0	0	0	0	0	0	0	0	0	253
Total Volume	0	0	0	0	0	550	562	0	0	1112	0	0	0	0	0	0	0	0	0	0	1112
% App. Total	0	0	0	0		49.5	50.5	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.887	.924	.000	.000	.906	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.906
ypical Vehicles	0	0	0	0	0	543	514	0	0	1057	0	0	0	0	0	0	0	0	0	0	1057
Typical Vehicles	0	0	0	0	0	98.7	91.5	0	0	95.1	0	0	0	0	0	0	0	0	0	0	95.1
eavy Duty Vehicles																					
Heavy Duty Vehicles	0	0	0	0	0	1.3	8.5	0	0	4.9	0	0	0	0	0	0	0	0	0	0	4.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 13 PM
Site Code : 00000002
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Washington Pl Southbound					Fifth Ave Westbound					Washington Pl Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	0	33	70	3	106	26	197	75	0	298	31	90	0	0	121	0	0	0	0	0	525
05:15 PM	0	55	63	1	119	27	205	81	0	313	26	94	0	0	120	0	0	0	0	0	552
05:30 PM	0	55	60	0	115	30	191	81	0	302	33	90	0	0	123	0	1	0	0	1	541
05:45 PM	0	51	39	0	90	29	191	64	0	284	34	79	0	0	113	0	0	0	0	0	487
Total	0	194	232	4	430	112	784	301	0	1197	124	353	0	0	477	0	1	0	0	1	2105
Grand Total	0	194	232	4	430	112	784	301	0	1197	124	353	0	0	477	0	1	0	0	1	2105
Apprch %	0	45.1	54	0.9		9.4	65.5	25.1	0		26	74	0	0		0	100	0	0		
Total %	0	9.2	11	0.2	20.4	5.3	37.2	14.3	0	56.9	5.9	16.8	0	0	22.7	0	0	0	0	0	
Vehicles	0	193	231	4	428	111	749	299	0	1159	123	353	0	0	476	0	1	0	0	1	2064
% Vehicles	0	99.5	99.6	100	99.5	99.1	95.5	99.3	0	96.8	99.2	100	0	0	99.8	0	100	0	0	100	98.1
Heavy Duty Vehicles	0	1	1	0	2	1	35	2	0	38	1	0	0	0	1	0	0	0	0	0	41
% Heavy Duty Vehicles	0	0.5	0.4	0	0.5	0.9	4.5	0.7	0	3.2	0.8	0	0	0	0.2	0	0	0	0	0	1.9

	Washington Pl Southbound					Fifth Ave Westbound					Washington Pl Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	33	70	3	106	26	197	75	0	298	31	90	0	0	121	0	0	0	0	0	525
05:15 PM	0	55	63	1	119	27	205	81	0	313	26	94	0	0	120	0	0	0	0	0	552
05:30 PM	0	55	60	0	115	30	191	81	0	302	33	90	0	0	123	0	1	0	0	1	541
05:45 PM	0	51	39	0	90	29	191	64	0	284	34	79	0	0	113	0	0	0	0	0	487
Total Volume	0	194	232	4	430	112	784	301	0	1197	124	353	0	0	477	0	1	0	0	1	2105
% App. Total	0	45.1	54	0.9		9.4	65.5	25.1	0		26	74	0	0		0	100	0	0		
PHF	.000	.882	.829	.333	.903	.933	.956	.929	.000	.956	.912	.939	.000	.000	.970	.000	.250	.000	.000	.250	.953
Vehicles	0	193	231	4	428	111	749	299	0	1159	123	353	0	0	476	0	1	0	0	1	2064
% Vehicles	0	99.5	99.6	100	99.5	99.1	95.5	99.3	0	96.8	99.2	100	0	0	99.8	0	100	0	0	100	98.1
Heavy Duty Vehicles	0	1	1	0	2	1	35	2	0	38	1	0	0	0	1	0	0	0	0	0	41
% Heavy Duty Vehicles	0	0.5	0.4	0	0.5	0.9	4.5	0.7	0	3.2	0.8	0	0	0	0.2	0	0	0	0	0	1.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 14 PM
Site Code : 00000081
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Magee Southbound					5th Ave Westbound					Magee Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	0	0	3	0	3	19	131	1	0	151	50	3	0	0	53	0	0	0	0	0	207
05:15 PM	0	1	3	0	4	3	149	1	0	153	55	0	0	0	55	0	0	0	0	0	212
05:30 PM	0	0	0	0	0	14	101	0	0	115	71	7	0	0	78	0	0	0	0	0	193
05:45 PM	0	0	2	0	2	15	137	2	0	154	64	3	0	0	67	0	0	0	0	0	223
Total	0	1	8	0	9	51	518	4	0	573	240	13	0	0	253	0	0	0	0	0	835
Grand Total	0	1	8	0	9	51	518	4	0	573	240	13	0	0	253	0	0	0	0	0	835
Apprch %	0	11.1	88.9	0		8.9	90.4	0.7	0		94.9	5.1	0	0		0	0	0	0		
Total %	0	0.1	1	0	1.1	6.1	62	0.5	0	68.6	28.7	1.6	0	0	30.3	0	0	0	0	0	
Vehicles	0	1	8	0	9	50	517	4	0	571	236	13	0	0	249	0	0	0	0	0	829
% Vehicles	0	100	100	0	100	98	99.8	100	0	99.7	98.3	100	0	0	98.4	0	0	0	0	0	99.3
Heavy Duty Vehicles	0	0	0	0	0	1	1	0	0	2	4	0	0	0	4	0	0	0	0	0	6
% Heavy Duty Vehicles	0	0	0	0	0	2	0.2	0	0	0.3	1.7	0	0	0	1.6	0	0	0	0	0	0.7

	Magee Southbound					5th Ave Westbound					Magee Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	3	0	3	19	131	1	0	151	50	3	0	0	53	0	0	0	0	0	207
05:15 PM	0	1	3	0	4	3	149	1	0	153	55	0	0	0	55	0	0	0	0	0	212
05:30 PM	0	0	0	0	0	14	101	0	0	115	71	7	0	0	78	0	0	0	0	0	193
05:45 PM	0	0	2	0	2	15	137	2	0	154	64	3	0	0	67	0	0	0	0	0	223
Total Volume	0	1	8	0	9	51	518	4	0	573	240	13	0	0	253	0	0	0	0	0	835
% App. Total	0	11.1	88.9	0		8.9	90.4	0.7	0		94.9	5.1	0	0		0	0	0	0		
PHF	.000	.250	.667	.000	.563	.671	.869	.500	.000	.930	.845	.464	.000	.000	.811	.000	.000	.000	.000	.000	.936

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 15 PM
Site Code : 00000007
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Stevenson Southbound					Fifth Ave Westbound					Stevenson Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	0	5	13	0	18	18	183	3	0	204	50	10	0	0	60	0	0	0	0	0	282
05:15 PM	0	4	17	0	21	21	190	5	0	216	39	11	0	0	50	0	0	0	0	0	287
05:30 PM	0	3	5	0	8	14	184	5	0	203	37	19	0	0	56	0	0	0	0	0	267
05:45 PM	0	5	7	0	12	28	189	18	0	235	55	15	0	0	70	0	0	0	0	0	317
Total	0	17	42	0	59	81	746	31	0	858	181	55	0	0	236	0	0	0	0	0	1153
Grand Total	0	17	42	0	59	81	746	31	0	858	181	55	0	0	236	0	0	0	0	0	1153
Apprch %	0	28.8	71.2	0		9.4	86.9	3.6	0		76.7	23.3	0	0		0	0	0	0		
Total %	0	1.5	3.6	0	5.1	7	64.7	2.7	0	74.4	15.7	4.8	0	0	20.5	0	0	0	0	0	
Vehicles	0	16	40	0	56	80	707	30	0	817	177	53	0	0	230	0	0	0	0	0	1103
% Vehicles	0	94.1	95.2	0	94.9	98.8	94.8	96.8	0	95.2	97.8	96.4	0	0	97.5	0	0	0	0	0	95.7
Heavy Duty Vehicles	0	1	2	0	3	1	39	1	0	41	4	2	0	0	6	0	0	0	0	0	50
% Heavy Duty Vehicles	0	5.9	4.8	0	5.1	1.2	5.2	3.2	0	4.8	2.2	3.6	0	0	2.5	0	0	0	0	0	4.3

	Stevenson Southbound					Fifth Ave Westbound					Stevenson Northbound					Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	5	13	0	18	18	183	3	0	204	50	10	0	0	60	0	0	0	0	0	282
05:15 PM	0	4	17	0	21	21	190	5	0	216	39	11	0	0	50	0	0	0	0	0	287
05:30 PM	0	3	5	0	8	14	184	5	0	203	37	19	0	0	56	0	0	0	0	0	267
05:45 PM	0	5	7	0	12	28	189	18	0	235	55	15	0	0	70	0	0	0	0	0	317
Total Volume	0	17	42	0	59	81	746	31	0	858	181	55	0	0	236	0	0	0	0	0	1153
% App. Total	0	28.8	71.2	0		9.4	86.9	3.6	0		76.7	23.3	0	0		0	0	0	0		
PHF	.000	.850	.618	.000	.702	.723	.982	.431	.000	.913	.823	.724	.000	.000	.843	.000	.000	.000	.000	.000	.909
Vehicles	0	16	40	0	56	80	707	30	0	817	177	53	0	0	230	0	0	0	0	0	1103
% Vehicles	0	94.1	95.2	0	94.9	98.8	94.8	96.8	0	95.2	97.8	96.4	0	0	97.5	0	0	0	0	0	95.7
Heavy Duty Vehicles	0	1	2	0	3	1	39	1	0	41	4	2	0	0	6	0	0	0	0	0	50
% Heavy Duty Vehicles	0	5.9	4.8	0	5.1	1.2	5.2	3.2	0	4.8	2.2	3.6	0	0	2.5	0	0	0	0	0	4.3

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Default Comments
Change These in The Preferences Window
Select File/Preference in the Main Scree
Then Click the Comments Tab

File Name : 16 PM
Site Code : 07188006
Start Date : 5/17/2007
Page No : 2

	Pride Street Southbound					Fifth Avenue Westbound					Pride Street Northbound					Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	76	10	3	89	19	145	33	0	197	6	32	0	0	38	0	0	0	0	0	324
04:45 PM	0	74	7	6	87	9	139	52	1	201	8	27	0	0	35	0	0	0	0	0	323
05:00 PM	0	79	14	3	96	9	130	31	1	171	3	30	0	0	33	0	0	0	0	0	300
05:15 PM	0	71	15	4	90	4	148	50	2	204	5	25	0	0	30	0	0	0	0	0	324
Total Volume	0	300	46	16	362	41	562	166	4	773	22	114	0	0	136	0	0	0	0	0	1271
% App. Total	0	82.9	12.7	4.4		5.3	72.7	21.5	0.5		16.2	83.8	0	0		0	0	0	0		
PHF	.000	.949	.767	.667	.943	.539	.949	.798	.500	.947	.688	.891	.000	.000	.895	.000	.000	.000	.000	.000	.981
Vehicles	0	285	45	16	346	40	514	152	3	709	21	105	0	0	126	0	0	0	0	0	1181
% Vehicles	0	95.0	97.8	100	95.6	97.6	91.5	91.6	75.0	91.7	95.5	92.1	0	0	92.6	0	0	0	0	0	92.9
Heavy Duty Vehicles	0	15	1	0	16	1	48	14	1	64	1	9	0	0	10	0	0	0	0	0	90
% Heavy Duty Vehicles	0	5.0	2.2	0	4.4	2.4	8.5	8.4	25.0	8.3	4.5	7.9	0	0	7.4	0	0	0	0	0	7.1

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ixth Ave. & Diamond St

File Name : 17 PM
Site Code : 11109021
Start Date : 8/4/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Diamond St. Eastbound					Diamond St. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	0	0	0	0	64	51	1	2	118	5	26	0	0	31	0	244	7	0	251	400
04:15 PM	0	0	0	0	0	65	53	1	0	119	0	23	0	0	23	0	256	6	0	262	404
04:30 PM	0	0	0	0	0	62	78	2	1	143	0	32	0	0	32	0	262	5	0	267	442
04:45 PM	0	0	0	0	0	56	65	2	0	123	1	34	0	0	35	0	262	10	0	272	430
Total	0	0	0	0	0	247	247	6	3	503	6	115	0	0	121	0	1024	28	0	1052	1676
05:00 PM	0	0	0	0	0	63	72	3	1	139	0	22	0	0	22	0	239	6	0	245	406
05:15 PM	0	0	0	0	0	62	79	4	1	146	0	28	0	0	28	0	231	8	0	239	413
05:30 PM	0	0	0	0	0	27	67	1	5	100	0	31	0	0	31	0	187	9	0	196	327
05:45 PM	0	0	0	0	0	49	79	2	1	131	0	35	0	0	35	0	195	2	1	198	364
Total	0	0	0	0	0	201	297	10	8	516	0	116	0	0	116	0	852	25	1	878	1510
Grand Total	0	0	0	0	0	448	544	16	11	1019	6	231	0	0	237	0	1876	53	1	1930	3186
Apprch %	0	0	0	0		44	53.4	1.6	1.1		2.5	97.5	0	0		0	97.2	2.7	0.1		
Total %	0	0	0	0	0	14.1	17.1	0.5	0.3	32	0.2	7.3	0	0	7.4	0	58.9	1.7	0	60.6	
ypical Vehicles	0	0	0	0	0	442	539	16	11	1008	6	229	0	0	235	0	1818	53	1	1872	3115
Typical Vehicles	0	0	0	0	0	98.7	99.1	100	100	98.9	100	99.1	0	0	99.2	0	96.9	100	100	97	97.8
Heavy Duty Vehicles																					
Heavy Duty Vehicles	0	0	0	0	0	1.3	0.9	0	0	1.1	0	0.9	0	0	0.8	0	3.1	0	0	3	2.2

	Diamond St. Eastbound					Diamond St. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
ak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	65	53	1	0	119	0	23	0	0	23	0	256	6	0	262	404
04:30 PM	0	0	0	0	0	62	78	2	1	143	0	32	0	0	32	0	262	5	0	267	442
04:45 PM	0	0	0	0	0	56	65	2	0	123	1	34	0	0	35	0	262	10	0	272	430
05:00 PM	0	0	0	0	0	63	72	3	1	139	0	22	0	0	22	0	239	6	0	245	406
Total Volume	0	0	0	0	0	246	268	8	2	524	1	111	0	0	112	0	1019	27	0	1046	1682
% App. Total	0	0	0	0		46.9	51.1	1.5	0.4		0.9	99.1	0	0		0	97.4	2.6	0		
PHF	.000	.000	.000	.000	.000	.946	.859	.667	.500	.916	.250	.816	.000	.000	.800	.000	.972	.675	.000	.961	.951
pical Vehicles	0	0	0	0	0	242	267	8	2	519	1	110	0	0	111	0	976	27	0	1003	1633
Typical Vehicles	0	0	0	0	0	98.4	99.6	100	100	99.0	100	99.1	0	0	99.1	0	95.8	100	0	95.9	97.1
avy Duty Vehicles																					
Heavy Duty Vehicles	0	0	0	0	0	1.6	0.4	0	0	1.0	0	0.9	0	0	0.9	0	4.2	0	0	4.1	2.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

orbes Ave. & Sixth Ave.

File Name : 18 PM
Site Code : 11109022
Start Date : 8/4/2011
Page No : 1

Groups Printed- Typical Vehicles - Heavy Duty Vehicles

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Liberty Bridge Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	3	62	41	1	107	1	2	0	0	3	4	25	5	6	40	83	226	1	0	310	460
04:15 PM	6	93	26	0	125	0	0	0	0	0	8	21	5	3	37	94	219	1	0	314	476
04:30 PM	7	107	48	0	162	1	6	0	0	7	7	23	7	7	44	102	222	1	0	325	538
04:45 PM	9	74	44	1	128	2	1	0	0	3	10	24	9	5	48	107	220	0	0	327	506
Total	25	336	159	2	522	4	9	0	0	13	29	93	26	21	169	386	887	3	0	1276	1980
05:00 PM	8	85	62	1	156	1	5	1	0	7	12	16	5	6	39	91	208	1	0	300	502
05:15 PM	8	72	49	0	129	0	2	1	0	3	6	17	8	3	34	101	190	0	0	291	457
05:30 PM	7	62	35	2	106	3	5	0	0	8	6	22	11	3	42	77	135	0	0	212	368
05:45 PM	2	89	47	1	139	0	3	0	0	3	15	34	10	2	61	90	145	0	0	235	438
Total	25	308	193	4	530	4	15	2	0	21	39	89	34	14	176	359	678	1	0	1038	1765
Grand Total	50	644	352	6	1052	8	24	2	0	34	68	182	60	35	345	745	1565	4	0	2314	3745
Apprch %	4.8	61.2	33.5	0.6		23.5	70.6	5.9	0		19.7	52.8	17.4	10.1		32.2	67.6	0.2	0		
Total %	1.3	17.2	9.4	0.2	28.1	0.2	0.6	0.1	0	0.9	1.8	4.9	1.6	0.9	9.2	19.9	41.8	0.1	0	61.8	
ypical Vehicles	50	640	352	6	1048	8	24	2	0	34	65	180	58	32	335	693	1565	4	0	2262	3679
Typical Vehicles	100	99.4	100	100	99.6	100	100	100	0	100	95.6	98.9	96.7	91.4	97.1	93	100	100	0	97.8	98.2
Heavy Duty Vehicles	0	0.6	0	0	0.4	0	0	0	0	0	4.4	1.1	3.3	8.6	2.9	7	0	0	0	2.2	1.8
% Heavy Duty Vehicles																					

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Liberty Bridge Northbound					Sixth Ave. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
ak Hour Analysis From 04:15 PM to 05:00 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	6	93	26	0	125	0	0	0	0	0	8	21	5	3	37	94	219	1	0	314	476
04:30 PM	7	107	48	0	162	1	6	0	0	7	7	23	7	7	44	102	222	1	0	325	538
04:45 PM	9	74	44	1	128	2	1	0	0	3	10	24	9	5	48	107	220	0	0	327	506
05:00 PM	8	85	62	1	156	1	5	1	0	7	12	16	5	6	39	91	208	1	0	300	502
Total Volume	30	359	180	2	571	4	12	1	0	17	37	84	26	21	168	394	869	3	0	1266	2022
% App. Total	5.3	62.9	31.5	0.4		23.5	70.6	5.9	0		22	50	15.5	12.5		31.1	68.6	0.2	0		
PHF	.833	.839	.726	.500	.881	.500	.500	.250	.000	.607	.771	.875	.722	.750	.875	.921	.979	.750	.000	.968	.940
ypical Vehicles	30	357	180	2	569	4	12	1	0	17	34	82	26	18	160	356	869	3	0	1228	1974
Typical Vehicles	100	99.4	100	100	99.6	100	100	100	0	100	91.9	97.6	100	85.7	95.2	90.4	100	100	0	97.0	97.6
leavy Duty Vehicles	0	0.6	0	0	0.4	0	0	0	0	0	8.1	2.4	0	14.3	4.8	9.6	0	0	0	3.0	2.4
Heavy Duty Vehicles																					

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 19 PM
Site Code : 00000010
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Southbound					Westbound					Armstrong Tunnel Northbound					Forbes Ave Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	0	0	0	0	0	0	0	0	0	0	18	0	122	6	146	0	186	95	5	286	432
05:15 PM	0	0	0	0	0	0	0	0	0	0	17	0	113	4	134	1	179	88	7	275	409
05:30 PM	0	0	0	0	0	0	0	0	0	0	20	0	143	18	181	1	213	112	9	335	516
05:45 PM	0	0	0	0	0	0	0	0	0	0	23	0	114	11	148	0	199	86	14	299	447
Total	0	0	0	0	0	0	0	0	0	0	78	0	492	39	609	2	777	381	35	1195	1804
Grand Total	0	0	0	0	0	0	0	0	0	0	78	0	492	39	609	2	777	381	35	1195	1804
Apprch %	0	0	0	0		0	0	0	0		12.8	0	80.8	6.4		0.2	65	31.9	2.9		
Total %	0	0	0	0	0	0	0	0	0	0	4.3	0	27.3	2.2	33.8	0.1	43.1	21.1	1.9	66.2	
Vehicles	0	0	0	0	0	0	0	0	0	0	76	0	488	39	603	2	756	378	35	1171	1774
% Vehicles	0	0	0	0	0	0	0	0	0	0	97.4	0	99.2	100	99	100	97.3	99.2	100	98	98.3
Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	2	0	4	0	6	0	21	3	0	24	30
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	2.6	0	0.8	0	1	0	2.7	0.8	0	2	1.7

	Southbound					Westbound					Armstrong Tunnel Northbound					Forbes Ave Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	0	0	0	0	18	0	122	6	146	0	186	95	5	286	432
05:15 PM	0	0	0	0	0	0	0	0	0	0	17	0	113	4	134	1	179	88	7	275	409
05:30 PM	0	0	0	0	0	0	0	0	0	0	20	0	143	18	181	1	213	112	9	335	516
05:45 PM	0	0	0	0	0	0	0	0	0	0	23	0	114	11	148	0	199	86	14	299	447
Total Volume	0	0	0	0	0	0	0	0	0	0	78	0	492	39	609	2	777	381	35	1195	1804
% App. Total	0	0	0	0		0	0	0	0		12.8	0	80.8	6.4		0.2	65	31.9	2.9		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.848	.000	.860	.542	.841	.500	.912	.850	.625	.892	.874
Vehicles	0	0	0	0	0	0	0	0	0	0	76	0	488	39	603	2	756	378	35	1171	1774
% Vehicles	0	0	0	0	0	0	0	0	0	0	97.4	0	99.2	100	99.0	100	97.3	99.2	100	98.0	98.3
Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	2	0	4	0	6	0	21	3	0	24	30
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	2.6	0	0.8	0	1.0	0	2.7	0.8	0	2.0	1.7

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 20 PM
Site Code : 00000009
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Washington Pl Southbound					Westbound					McAnulty Northbound					Forbes Ave Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
05:00 PM	38	5	0	0	43	0	0	0	0	0	0	40	26	0	66	89	193	10	0	292	401
05:15 PM	63	19	0	0	82	0	0	0	0	0	0	35	33	0	68	90	169	22	0	281	431
05:30 PM	75	9	0	0	84	0	0	0	0	0	0	25	14	0	39	91	211	20	0	322	445
05:45 PM	75	9	0	0	84	0	0	0	0	0	0	26	31	0	57	79	206	21	0	306	447
Total	251	42	0	0	293	0	0	0	0	0	0	126	104	0	230	349	779	73	0	1201	1724
Grand Total	251	42	0	0	293	0	0	0	0	0	0	126	104	0	230	349	779	73	0	1201	1724
Apprch %	85.7	14.3	0	0		0	0	0	0		0	54.8	45.2	0		29.1	64.9	6.1	0		
Total %	14.6	2.4	0	0	17	0	0	0	0	0	0	7.3	6	0	13.3	20.2	45.2	4.2	0	69.7	
Vehicles	249	42	0	0	291	0	0	0	0	0	0	126	104	0	230	348	754	73	0	1175	1696
% Vehicles	99.2	100	0	0	99.3	0	0	0	0	0	0	100	100	0	100	99.7	96.8	100	0	97.8	98.4
Heavy Duty Vehicles	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	25	0	0	26	28
% Heavy Duty Vehicles	0.8	0	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0.3	3.2	0	0	2.2	1.6

	Washington Pl Southbound					Westbound					McAnulty Northbound					Forbes Ave Eastbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
eak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	38	5	0	0	43	0	0	0	0	0	0	40	26	0	66	89	193	10	0	292	401
05:15 PM	63	19	0	0	82	0	0	0	0	0	0	35	33	0	68	90	169	22	0	281	431
05:30 PM	75	9	0	0	84	0	0	0	0	0	0	25	14	0	39	91	211	20	0	322	445
05:45 PM	75	9	0	0	84	0	0	0	0	0	0	26	31	0	57	79	206	21	0	306	447
Total Volume	251	42	0	0	293	0	0	0	0	0	0	126	104	0	230	349	779	73	0	1201	1724
% App. Total	85.7	14.3	0	0		0	0	0	0		0	54.8	45.2	0		29.1	64.9	6.1	0		
PHF	.837	.553	.000	.000	.872	.000	.000	.000	.000	.000	.000	.788	.788	.000	.846	.959	.923	.830	.000	.932	.964
Vehicles	249	42	0	0	291	0	0	0	0	0	0	126	104	0	230	348	754	73	0	1175	1696
% Vehicles	99.2	100	0	0	99.3	0	0	0	0	0	0	100	100	0	100	99.7	96.8	100	0	97.8	98.4
Heavy Duty Vehicles	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	25	0	0	26	28
% Heavy Duty Vehicles	0.8	0	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0.3	3.2	0	0	2.2	1.6

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 21 PM
Site Code : 71880007
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Magee Street Southbound					Westbound					Magee Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	6	0	0	0	6	0	0	0	0	0	0	11	12	2	25	8	140	0	0	148	179
04:15 PM	6	0	0	0	6	0	0	0	0	0	0	15	6	2	23	8	168	2	0	178	207
04:30 PM	8	0	0	0	8	0	0	0	0	0	0	10	5	2	17	9	175	4	0	188	213
04:45 PM	5	0	0	0	5	0	0	0	0	0	0	6	8	4	18	14	165	1	0	180	203
Total	25	0	0	0	25	0	0	0	0	0	0	42	31	10	83	39	648	7	0	694	802
05:00 PM	7	2	0	0	9	0	0	0	0	0	0	5	3	3	11	4	172	4	0	180	200
05:15 PM	2	5	0	0	7	0	0	0	0	0	0	8	12	0	20	9	205	3	0	217	244
05:30 PM	8	1	0	0	9	0	0	0	0	0	0	6	5	0	11	14	160	4	0	178	198
05:45 PM	2	1	0	0	3	0	0	0	0	0	0	3	5	5	13	8	147	1	0	156	172
Total	19	9	0	0	28	0	0	0	0	0	0	22	25	8	55	35	684	12	0	731	814
Grand Total	44	9	0	0	53	0	0	0	0	0	0	64	56	18	138	74	1332	19	0	1425	1616
Apprch %	83	17	0	0		0	0	0	0		0	46.4	40.6	13		5.2	93.5	1.3	0		
Total %	2.7	0.6	0	0	3.3	0	0	0	0	0	0	4	3.5	1.1	8.5	4.6	82.4	1.2	0	88.2	
Vehicles	41	9	0	0	50	0	0	0	0	0	0	64	56	18	138	73	1251	19	0	1343	1531
% Vehicles	93.2	100	0	0	94.3	0	0	0	0	0	0	100	100	100	100	98.6	93.9	100	0	94.2	94.7
Heavy Duty Vehicles	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	81	0	0	82	85
% Heavy Duty Vehicles	6.8	0	0	0	5.7	0	0	0	0	0	0	0	0	0	0	1.4	6.1	0	0	5.8	5.3

	Magee Street Southbound					Westbound					Magee Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	8	0	0	0	8	0	0	0	0	0	0	10	5	2	17	9	175	4	0	188	213
04:45 PM	5	0	0	0	5	0	0	0	0	0	0	6	8	4	18	14	165	1	0	180	203
05:00 PM	7	2	0	0	9	0	0	0	0	0	0	5	3	3	11	4	172	4	0	180	200
05:15 PM	2	5	0	0	7	0	0	0	0	0	0	8	12	0	20	9	205	3	0	217	244
Total Volume	22	7	0	0	29	0	0	0	0	0	0	29	28	9	66	36	717	12	0	765	860
% App. Total	75.9	24.1	0	0		0	0	0	0		0	43.9	42.4	13.6		4.7	93.7	1.6	0		
PHF	.688	.350	.000	.000	.806	.000	.000	.000	.000	.000	.000	.725	.583	.563	.825	.643	.874	.750	.000	.881	.881
Vehicles	22	7	0	0	29	0	0	0	0	0	0	29	28	9	66	36	672	12	0	720	815
% Vehicles	100	100	0	0	100	0	0	0	0	0	0	100	100	100	100	100	93.7	100	0	94.1	94.8
Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0	0	45	45
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6.3	0	0	5.9	5.2

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 22 PM
Site Code : 71880008
Start Date : 5/24/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Stevenson St. Southbound				Forbes Ave. Westbound				Stevenson St. Northbound					Forbes Ave. Eastbound					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	14	5	0	19	0	0	0	0	0	19	9	6	34	10	140	19	3	172	225
04:15 PM	12	6	0	18	0	0	0	0	0	21	6	5	32	6	151	12	1	170	220
04:30 PM	18	8	0	26	0	0	0	0	0	36	8	7	51	11	181	13	2	207	284
04:45 PM	18	5	0	23	0	0	0	0	0	36	7	3	46	5	180	16	2	203	272
Total	62	24	0	86	0	0	0	0	0	112	30	21	163	32	652	60	8	752	1001
05:00 PM	17	3	0	20	0	0	0	0	0	27	4	2	33	4	180	11	1	196	249
05:15 PM	14	8	0	22	0	0	0	0	0	22	7	2	31	11	164	14	0	189	242
05:30 PM	15	2	0	17	0	0	0	0	0	14	3	3	20	8	159	11	0	178	215
05:45 PM	6	3	0	9	0	0	0	0	0	17	5	3	25	5	130	12	1	148	182
Total	52	16	0	68	0	0	0	0	0	80	19	10	109	28	633	48	2	711	888
Grand Total	114	40	0	154	0	0	0	0	0	192	49	31	272	60	1285	108	10	1463	1889
Apprch %	74	26	0		0	0	0		0	70.6	18	11.4		4.1	87.8	7.4	0.7		
Total %	6	2.1	0	8.2	0	0	0	0	0	10.2	2.6	1.6	14.4	3.2	68	5.7	0.5	77.4	
Vehicles	113	39	0	152	0	0	0	0	0	178	49	31	258	59	1194	108	10	1371	1781
% Vehicles	99.1	97.5	0	98.7	0	0	0	0	0	92.7	100	100	94.9	98.3	92.9	100	100	93.7	94.3
Heavy Duty Vehicles	1	1	0	2	0	0	0	0	0	14	0	0	14	1	91	0	0	92	108
% Heavy Duty Vehicles	0.9	2.5	0	1.3	0	0	0	0	0	7.3	0	0	5.1	1.7	7.1	0	0	6.3	5.7

	Stevenson St. Southbound				Forbes Ave. Westbound				Stevenson St. Northbound					Forbes Ave. Eastbound					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
eak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																			
eak Hour for Entire Intersection Begins at 04:30 PM																			
04:30 PM	18	8	0	26	0	0	0	0	0	36	8	7	51	11	181	13	2	207	284
04:45 PM	18	5	0	23	0	0	0	0	0	36	7	3	46	5	180	16	2	203	272
05:00 PM	17	3	0	20	0	0	0	0	0	27	4	2	33	4	180	11	1	196	249
05:15 PM	14	8	0	22	0	0	0	0	0	22	7	2	31	11	164	14	0	189	242
Total Volume	67	24	0	91	0	0	0	0	0	121	26	14	161	31	705	54	5	795	1047
% App. Total	73.6	26.4	0		0	0	0		0	75.2	16.1	8.7		3.9	88.7	6.8	0.6		
PHF	.931	.750	.000	.875	.000	.000	.000	.000	.000	.840	.813	.500	.789	.705	.974	.844	.625	.960	.922
Vehicles	66	24	0	90	0	0	0	0	0	112	26	14	152	31	660	54	5	750	992
% Vehicles	98.5	100	0	98.9	0	0	0	0	0	92.6	100	100	94.4	100	93.6	100	100	94.3	94.7
leavy Duty Vehicles	1	0	0	1	0	0	0	0	0	9	0	0	9	0	45	0	0	45	55
% Heavy Duty Vehicles	1.5	0	0	1.1	0	0	0	0	0	7.4	0	0	5.6	0	6.4	0	0	5.7	5.3

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

File Name : 23 PM
Site Code : 71880009
Start Date : 5/17/2007
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Pride Street Southbound					Westbound					Pride Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	59	13	0	0	72	0	0	0	0	0	0	21	4	3	28	16	160	4	0	180	280
04:15 PM	65	13	0	0	78	0	0	0	0	0	0	20	4	1	25	13	158	3	0	174	277
04:30 PM	73	15	0	0	88	0	0	0	0	0	0	13	5	3	21	24	166	7	0	197	306
04:45 PM	60	9	0	0	69	0	0	0	0	0	0	11	7	0	18	18	166	6	0	190	277
Total	257	50	0	0	307	0	0	0	0	0	0	65	20	7	92	71	650	20	0	741	1140
05:00 PM	61	7	0	0	68	0	0	0	0	0	0	11	4	0	15	19	170	5	0	194	277
05:15 PM	74	9	0	0	83	0	0	0	0	0	0	16	3	0	19	11	182	5	0	198	300
05:30 PM	61	6	0	0	67	0	0	0	0	0	0	6	3	1	10	13	170	6	0	189	266
05:45 PM	54	7	0	0	61	0	0	0	0	0	0	6	3	2	11	17	148	5	0	170	242
Total	250	29	0	0	279	0	0	0	0	0	0	39	13	3	55	60	670	21	0	751	1085
Grand Total	507	79	0	0	586	0	0	0	0	0	0	104	33	10	147	131	1320	41	0	1492	2225
Apprch %	86.5	13.5	0	0		0	0	0	0		0	70.7	22.4	6.8		8.8	88.5	2.7	0		
Total %	22.8	3.6	0	0	26.3	0	0	0	0	0	0	4.7	1.5	0.4	6.6	5.9	59.3	1.8	0	67.1	
Vehicles	493	63	0	0	556	0	0	0	0	0	0	86	32	10	128	130	1236	38	0	1404	2088
% Vehicles	97.2	79.7	0	0	94.9	0	0	0	0	0	0	82.7	97	100	87.1	99.2	93.6	92.7	0	94.1	93.8
Heavy Duty Vehicles	14	16	0	0	30	0	0	0	0	0	0	18	1	0	19	1	84	3	0	88	137
% Heavy Duty Vehicles	2.8	20.3	0	0	5.1	0	0	0	0	0	0	17.3	3	0	12.9	0.8	6.4	7.3	0	5.9	6.2

	Pride Street Southbound					Westbound					Pride Street Northbound					Forbes Avenue Eastbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
eak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	73	15	0	0	88	0	0	0	0	0	0	13	5	3	21	24	166	7	0	197	306
04:45 PM	60	9	0	0	69	0	0	0	0	0	0	11	7	0	18	18	166	6	0	190	277
05:00 PM	61	7	0	0	68	0	0	0	0	0	0	11	4	0	15	19	170	5	0	194	277
05:15 PM	74	9	0	0	83	0	0	0	0	0	0	16	3	0	19	11	182	5	0	198	300
Total Volume	268	40	0	0	308	0	0	0	0	0	0	51	19	3	73	72	684	23	0	779	1160
% App. Total	87	13	0	0		0	0	0	0		0	69.9	26	4.1		9.2	87.8	3	0		
PHF	.905	.667	.000	.000	.875	.000	.000	.000	.000	.000	.000	.797	.679	.250	.869	.750	.940	.821	.000	.984	.948
Vehicles	261	32	0	0	293	0	0	0	0	0	0	41	18	3	62	71	644	22	0	737	1092
% Vehicles	97.4	80.0	0	0	95.1	0	0	0	0	0	0	80.4	94.7	100	84.9	98.6	94.2	95.7	0	94.6	94.1
Heavy Duty Vehicles	7	8	0	0	15	0	0	0	0	0	0	10	1	0	11	1	40	1	0	42	68
% Heavy Duty Vehicles	2.6	20.0	0	0	4.9	0	0	0	0	0	0	19.6	5.3	0	15.1	1.4	5.8	4.3	0	5.4	5.9

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Vashington Pl. & Bedford Ave.
'edestrians
'GHPE00#11109
;oard#4435 JCD

File Name : PGHPE00_11109_AM_#[redacted]ds
Site Code : 11109p17
Start Date : 7/28/2011
Page No : 1

Groups Printed- Pedestrians

	Bigelow Blvd. Eastbound					Bedford Ave. Westbound					Washington Pl. Northbound					Bigelow Blvd./Veterans Bridge Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	3	4	0	0	0	0	0	4
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	8	9	0	0	0	0	0	9
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	0	0	0	0	0	7
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	4
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	4
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17	0	0	0	0	0	17
Grand Total	0	0	0	0	0	0	0	0	0	0	1	0	0	25	26	0	0	0	0	0	26
Apprch %	0	0	0	0		0	0	0	0		3.8	0	0	96.2		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	3.8	0	0	96.2	100	0	0	0	0	0	

	Bigelow Blvd. Eastbound					Bedford Ave. Westbound					Washington Pl. Northbound					Bigelow Blvd./Veterans Bridge Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	3	4	0	0	0	0	0	4
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	0	0	0	0	0	7
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	4
Total Volume	0	0	0	0	0	0	0	0	0	0	1	0	0	16	17	0	0	0	0	0	17
% App. Total	0	0	0	0		0	0	0	0		5.9	0	0	94.1		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.571	.607	.000	.000	.000	.000	.000	.607

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

2

Bedford Ave. & Mario Lemieux Pl.
Pedestrians
PGHPE00#11109
Board#5039 FS

File Name : PGHPE00_11109_AM_#[redacted]ds
Site Code : 11109p16
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Ramps Northbound					Mario Lemieux Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	0	0	0	1	1	3	0	0	0	3	0	0	0	1	1	3	0	0	0	3	8
07:15 AM	0	0	0	9	9	9	0	0	0	9	0	0	0	2	2	19	0	0	0	19	39
07:30 AM	1	0	0	6	7	3	0	0	0	3	0	0	0	2	2	13	0	0	1	14	26
07:45 AM	0	0	0	7	7	4	0	0	0	4	1	0	0	7	8	13	0	0	0	13	32
Total	1	0	0	23	24	19	0	0	0	19	1	0	0	12	13	48	0	0	1	49	105
08:00 AM	0	0	0	1	1	7	0	0	1	8	1	0	0	9	10	6	0	0	0	6	25
08:15 AM	0	0	0	6	6	5	0	0	0	5	0	0	0	8	8	8	0	0	1	9	28
08:30 AM	0	0	0	3	3	1	0	0	0	1	0	0	0	7	7	8	0	0	0	8	19
08:45 AM	0	0	0	9	9	7	0	0	0	7	1	0	0	8	9	16	0	0	1	17	42
Total	0	0	0	19	19	20	0	0	1	21	2	0	0	32	34	38	0	0	2	40	114
Grand Total	1	0	0	42	43	39	0	0	1	40	3	0	0	44	47	86	0	0	3	89	219
Apprch %	2.3	0	0	97.7		97.5	0	0	2.5		6.4	0	0	93.6		96.6	0	0	3.4		
Total %	0.5	0	0	19.2	19.6	17.8	0	0	0.5	18.3	1.4	0	0	20.1	21.5	39.3	0	0	1.4	40.6	

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Ramps Northbound					Mario Lemieux Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	9	9	9	0	0	0	9	0	0	0	2	2	19	0	0	0	19	39
07:30 AM	1	0	0	6	7	3	0	0	0	3	0	0	0	2	2	13	0	0	1	14	26
07:45 AM	0	0	0	7	7	4	0	0	0	4	1	0	0	7	8	13	0	0	0	13	32
08:00 AM	0	0	0	1	1	7	0	0	1	8	1	0	0	9	10	6	0	0	0	6	25
Total Volume	1	0	0	23	24	23	0	0	1	24	2	0	0	20	22	51	0	0	1	52	122
% App. Total	4.2	0	0	95.8		95.8	0	0	4.2		9.1	0	0	90.9		98.1	0	0	1.9		
PHF	.250	.000	.000	.639	.667	.639	.000	.000	.250	.667	.500	.000	.000	.556	.550	.671	.000	.000	.250	.684	.782

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Bedford Ave. & Crawford St.
(Pedestrians)
PGHPE00#11109
Board#4435 JCD

3

File Name : PGHPE00_11109_AM_#[redacted]ds
Site Code : 11109p1
Start Date : 7/19/2011
Page No : 1

Groups Printed- Pedestrians -

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	0	0	0	0	0	3	0	0	0	3	1	0	0	3	4	9	0	0	0	9	16
07:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	3	3	5	0	0	0	5	9
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	0	0	0	4	5
07:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	1	1	6	0	0	0	6	9
Total	0	0	0	0	0	6	0	0	0	6	1	0	0	8	9	24	0	0	0	24	39
08:00 AM	1	0	0	0	1	4	0	0	1	5	1	0	0	2	3	3	0	0	0	3	12
08:15 AM	0	0	0	0	0	2	0	0	4	6	0	0	0	4	4	3	0	0	0	3	13
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3	0	0	0	3	5
08:45 AM	0	0	0	1	1	1	0	0	0	1	0	0	0	2	2	4	0	0	0	4	8
Total	1	0	0	1	2	7	0	0	5	12	1	0	0	10	11	13	0	0	0	13	38
Grand Total	1	0	0	1	2	13	0	0	5	18	2	0	0	18	20	37	0	0	0	37	77
Apprch %	50	0	0	50		72.2	0	0	27.8		10	0	0	90		100	0	0	0		
Total %	1.3	0	0	1.3	2.6	16.9	0	0	6.5	23.4	2.6	0	0	23.4	26	48.1	0	0	0	48.1	
Pedestrians	1	0	0	1	2	13	0	0	5	18	2	0	0	18	20	37	0	0	0	37	77
% Pedestrians	100	0	0	100	100	100	0	0	100	100	100	0	0	100	100	100	0	0	0	100	100
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	0	0	0	0	3	0	0	0	3	1	0	0	3	4	9	0	0	0	9	16
07:15 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	3	3	5	0	0	0	5	9
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	0	0	0	4	5
07:45 AM	0	0	0	0	0	2	0	0	0	2	0	0	0	1	1	6	0	0	0	6	9
Total Volume	0	0	0	0	0	6	0	0	0	6	1	0	0	8	9	24	0	0	0	24	39
% App. Total	0	0	0	0		100	0	0	0		11.1	0	0	88.9		100	0	0	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.000	.000	.500	.250	.000	.000	.667	.563	.667	.000	.000	.000	.667	.609
Pedestrians	0	0	0	0	0	6	0	0	0	6	1	0	0	8	9	24	0	0	0	24	39
% Pedestrians	0	0	0	0	0	100	0	0	0	100	100	0	0	100	100	100	0	0	0	100	100
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

4

Vylie Ave. & Crawford St.
Pedestrians)
'GHPE00#11109
Board#5038 AM

File Name : pghpe00_11109_a[redacted]
Site Code : 11109p2
Start Date : 7/19/2011
Page No : 1

Groups Printed- Pedestrians

	Eastbound					Wylie Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time					App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	3	0	0	1	4	0	0	0	1	1	0	0	0	0	0	5
07:45 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0	3
Total	0	0	0	0	0	3	0	0	4	7	0	0	0	2	2	0	0	0	0	0	9
08:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	3
08:15 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	0	0	0	3	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	3	0	0	2	5	8
Grand Total	0	0	0	0	0	3	0	0	6	9	0	0	0	3	3	3	0	0	2	5	17
Apprch %	0	0	0	0		33.3	0	0	66.7		0	0	0	100		60	0	0	40		
Total %	0	0	0	0	0	17.6	0	0	35.3	52.9	0	0	0	17.6	17.6	17.6	0	0	11.8	29.4	

	Eastbound					Wylie Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time					App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	3	0	0	1	4	0	0	0	1	1	0	0	0	0	0	5
07:45 AM	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0	3
08:00 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	3
08:15 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3	0	0	0	3	4
Total Volume	0	0	0	0	0	3	0	0	5	8	0	0	0	3	3	3	0	0	1	4	15
% App. Total	0	0	0	0		37.5	0	0	62.5		0	0	0	100		75	0	0	25		
PHF	.000	.000	.000	.000	.000	.250	.000	.000	.625	.500	.000	.000	.000	.750	.750	.250	.000	.000	.250	.333	.750

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Centre Ave. & Sixth Ave.
Pedestrians
PGHPE00#11109
Board#4916 AM

File Name : PGHPE00_11109_AM_#[redacted]ds
Site Code : 11109p18
Start Date : 8/4/2011
Page No : 1

Groups Printed- Pedestrians

	Eastbound					Centre Ave Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	0	0	0	0	0	8	0	0	2	10	2	0	0	28	30	58	0	0	2	60	100
07:15 AM	0	0	0	0	0	9	0	0	5	14	1	0	0	37	38	72	0	0	3	75	127
07:30 AM	0	0	0	0	0	8	0	0	2	10	9	0	0	39	48	97	0	0	5	102	160
07:45 AM	0	0	0	0	0	10	0	0	3	13	0	0	0	23	23	76	0	0	5	81	117
Total	0	0	0	0	0	35	0	0	12	47	12	0	0	127	139	303	0	0	15	318	504
08:00 AM	0	0	0	0	0	7	0	0	2	9	6	0	0	39	45	87	0	0	1	88	142
08:15 AM	0	0	0	0	0	1	0	0	4	5	1	0	0	28	29	99	0	0	5	104	138
08:30 AM	0	0	0	0	0	7	0	0	2	9	2	0	0	19	21	47	0	0	3	50	80
08:45 AM	0	0	0	0	0	5	0	0	3	8	0	0	0	14	14	42	0	0	5	47	69
Total	0	0	0	0	0	20	0	0	11	31	9	0	0	100	109	275	0	0	14	289	429
Grand Total	0	0	0	0	0	55	0	0	23	78	21	0	0	227	248	578	0	0	29	607	933
Apprch %	0	0	0	0		70.5	0	0	29.5		8.5	0	0	91.5		95.2	0	0	4.8		
Total %	0	0	0	0	0	5.9	0	0	2.5	8.4	2.3	0	0	24.3	26.6	62	0	0	3.1	65.1	

	Eastbound					Centre Ave Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	8	0	0	2	10	9	0	0	39	48	97	0	0	5	102	160
07:45 AM	0	0	0	0	0	10	0	0	3	13	0	0	0	23	23	76	0	0	5	81	117
08:00 AM	0	0	0	0	0	7	0	0	2	9	6	0	0	39	45	87	0	0	1	88	142
08:15 AM	0	0	0	0	0	1	0	0	4	5	1	0	0	28	29	99	0	0	5	104	138
Total Volume	0	0	0	0	0	26	0	0	11	37	16	0	0	129	145	359	0	0	16	375	557
% App. Total	0	0	0	0		70.3	0	0	29.7		11	0	0	89		95.7	0	0	4.3		
PHF	.000	.000	.000	.000	.000	.650	.000	.000	.688	.712	.444	.000	.000	.827	.755	.907	.000	.000	.800	.901	.870

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Centre Ave.& Washington Pl.
Pedestrians
PGHPE00#11109
Board#5039 FS

6

File Name : PGHPE00_11109_AM_[redacted]s
Site Code : 11109p14
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Centre Ave. Eastbound					Centre Ave. Westbound					Washington Pl. Northbound					Washington Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	18	0	0	19	37	1	0	0	1	2	1	0	0	17	18	110	0	0	1	111	168
07:15 AM	19	0	0	37	56	1	0	0	3	4	0	0	0	40	40	129	0	0	7	136	236
07:30 AM	31	0	0	37	68	1	0	0	3	4	0	0	0	26	26	114	0	0	2	116	214
07:45 AM	23	0	0	48	71	3	0	0	2	5	1	0	0	42	43	143	0	0	0	143	262
Total	91	0	0	141	232	6	0	0	9	15	2	0	0	125	127	496	0	0	10	506	880
08:00 AM	21	0	0	39	60	2	0	0	2	4	1	0	0	25	26	130	0	0	5	135	225
08:15 AM	29	0	0	38	67	2	0	0	3	5	2	0	0	44	46	153	0	0	5	158	276
08:30 AM	22	0	0	44	66	3	0	0	5	8	0	0	0	35	35	79	0	0	6	85	194
08:45 AM	12	0	0	42	54	3	0	0	1	4	3	0	0	44	47	66	0	0	5	71	176
Total	84	0	0	163	247	10	0	0	11	21	6	0	0	148	154	428	0	0	21	449	871
Grand Total	175	0	0	304	479	16	0	0	20	36	8	0	0	273	281	924	0	0	31	955	1751
Apprch %	36.5	0	0	63.5		44.4	0	0	55.6		2.8	0	0	97.2		96.8	0	0	3.2		
Total %	10	0	0	17.4	27.4	0.9	0	0	1.1	2.1	0.5	0	0	15.6	16	52.8	0	0	1.8	54.5	

	Centre Ave. Eastbound					Centre Ave. Westbound					Washington Pl. Northbound					Washington Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
'eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
'eak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	31	0	0	37	68	1	0	0	3	4	0	0	0	26	26	114	0	0	2	116	214
07:45 AM	23	0	0	48	71	3	0	0	2	5	1	0	0	42	43	143	0	0	0	143	262
08:00 AM	21	0	0	39	60	2	0	0	2	4	1	0	0	25	26	130	0	0	5	135	225
08:15 AM	29	0	0	38	67	2	0	0	3	5	2	0	0	44	46	153	0	0	5	158	276
Total Volume	104	0	0	162	266	8	0	0	10	18	4	0	0	137	141	540	0	0	12	552	977
% App. Total	39.1	0	0	60.9		44.4	0	0	55.6		2.8	0	0	97.2		97.8	0	0	2.2		
PHF	.839	.000	.000	.844	.937	.667	.000	.000	.833	.900	.500	.000	.000	.778	.766	.882	.000	.000	.600	.873	.885

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Centre Ave. & Mario Lemieux Pl.
Pedestrians
PGHPE00#11109
Board#4435 JCD

7

File Name : PGHPE00_11109_AM_[redacted]
Site Code : 11109p15
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Mario Lemieux Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	1	0	0	8	9	2	0	0	2	4	0	0	0	0	0	41	0	0	1	42	55
07:15 AM	2	0	0	4	6	6	0	0	0	6	0	0	0	0	0	88	0	0	1	89	101
07:30 AM	6	0	0	8	14	3	0	0	3	6	0	0	0	0	0	80	0	0	2	82	102
07:45 AM	2	0	0	10	12	2	0	0	3	5	0	0	0	0	0	69	0	0	2	71	88
Total	11	0	0	30	41	13	0	0	8	21	0	0	0	0	0	278	0	0	6	284	346
08:00 AM	0	0	0	8	8	4	0	0	2	6	0	0	0	0	0	64	0	0	3	67	81
08:15 AM	4	0	0	15	19	3	0	0	2	5	0	0	0	0	0	40	0	0	4	44	68
08:30 AM	5	0	0	5	10	9	0	0	5	14	0	0	0	0	0	28	0	0	0	28	52
08:45 AM	4	0	0	3	7	3	0	0	4	7	0	0	0	0	0	21	0	0	0	21	35
Total	13	0	0	31	44	19	0	0	13	32	0	0	0	0	0	153	0	0	7	160	236
Grand Total	24	0	0	61	85	32	0	0	21	53	0	0	0	0	0	431	0	0	13	444	582
Apprch %	28.2	0	0	71.8		60.4	0	0	39.6		0	0	0	0		97.1	0	0	2.9		
Total %	4.1	0	0	10.5	14.6	5.5	0	0	3.6	9.1	0	0	0	0	0	74.1	0	0	2.2	76.3	

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Mario Lemieux Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	0	0	4	6	6	0	0	0	6	0	0	0	0	0	88	0	0	1	89	101
07:30 AM	6	0	0	8	14	3	0	0	3	6	0	0	0	0	0	80	0	0	2	82	102
07:45 AM	2	0	0	10	12	2	0	0	3	5	0	0	0	0	0	69	0	0	2	71	88
08:00 AM	0	0	0	8	8	4	0	0	2	6	0	0	0	0	0	64	0	0	3	67	81
Total Volume	10	0	0	30	40	15	0	0	8	23	0	0	0	0	0	301	0	0	8	309	372
% App. Total	25	0	0	75		65.2	0	0	34.8		0	0	0	0		97.4	0	0	2.6		
PHF	.417	.000	.000	.750	.714	.625	.000	.000	.667	.958	.000	.000	.000	.000	.000	.855	.000	.000	.667	.868	.912

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

9

Centre Ave. & Crawford St.
Pedestrians
PGHPE00#11109
Board#4916 MS

File Name : PGHPE00_11109_AM_[redacted]ds
Site Code : 11109p3
Start Date : 7/20/2011
Page No : 1

Groups Printed- Pedestrians

	Centre Ave. Eastbound					Centre Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	1	0	0	4	5	1	0	0	1	2	0	0	0	5	5	3	0	0	1	4	16
07:15 AM	4	0	0	3	7	2	0	0	2	4	1	0	0	4	5	7	0	0	0	7	23
07:30 AM	6	0	0	2	8	1	0	0	2	3	1	0	0	5	6	19	0	0	1	20	37
07:45 AM	3	0	0	0	3	2	2	0	4	8	3	0	0	4	7	7	0	0	1	8	26
Total	14	0	0	9	23	6	2	0	9	17	5	0	0	18	23	36	0	0	3	39	102
08:00 AM	2	0	0	1	3	1	0	0	1	2	1	0	0	1	2	23	0	0	0	23	30
08:15 AM	3	0	0	4	7	0	0	0	2	2	3	0	0	6	9	12	0	0	1	13	31
08:30 AM	2	0	0	2	4	0	0	0	1	1	0	0	0	7	7	11	0	0	0	11	23
08:45 AM	6	0	0	2	8	0	0	0	0	0	2	0	0	4	6	6	0	0	2	8	22
Total	13	0	0	9	22	1	0	0	4	5	6	0	0	18	24	52	0	0	3	55	106
Grand Total	27	0	0	18	45	7	2	0	13	22	11	0	0	36	47	88	0	0	6	94	208
Apprch %	60	0	0	40		31.8	9.1	0	59.1		23.4	0	0	76.6		93.6	0	0	6.4		
Total %	13	0	0	8.7	21.6	3.4	1	0	6.2	10.6	5.3	0	0	17.3	22.6	42.3	0	0	2.9	45.2	

	Centre Ave. Eastbound					Centre Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	6	0	0	2	8	1	0	0	2	3	1	0	0	5	6	19	0	0	1	20	37
07:45 AM	3	0	0	0	3	2	2	0	4	8	3	0	0	4	7	7	0	0	1	8	26
08:00 AM	2	0	0	1	3	1	0	0	1	2	1	0	0	1	2	23	0	0	0	23	30
08:15 AM	3	0	0	4	7	0	0	0	2	2	3	0	0	6	9	12	0	0	1	13	31
Total Volume	14	0	0	7	21	4	2	0	9	15	8	0	0	16	24	61	0	0	3	64	124
% App. Total	66.7	0	0	33.3		26.7	13.3	0	60		33.3	0	0	66.7		95.3	0	0	4.7		
PHF	.583	.000	.000	.438	.656	.500	.250	.000	.563	.469	.667	.000	.000	.667	.667	.663	.000	.000	.750	.696	.838

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Colwell St. & Pride St.
Pedestrians
PGHPE00#11109
Board#5039 FS

File Name : PGHPE00_11109_AM_[redacted] 10
Site Code : 11109p4
Start Date : 7/19/2011
Page No : 1

Groups Printed- Pedestrians

	Colwell St. Eastbound					Colwell St. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	8	0	0	0	8	0	0	0	3	3	0	0	0	3	3	0	0	0	1	1	15
07:15 AM	11	0	0	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
07:30 AM	10	0	0	0	10	3	0	0	1	4	0	0	0	1	1	0	0	0	0	0	15
07:45 AM	9	0	0	0	9	3	0	0	1	4	0	0	0	2	2	3	0	0	0	3	18
Total	38	0	0	1	39	6	0	0	5	11	0	0	0	6	6	3	0	0	1	4	60
08:00 AM	14	0	0	0	14	0	0	1	6	7	2	0	0	2	4	10	0	0	0	10	35
08:15 AM	13	0	0	0	13	0	0	0	3	3	0	0	0	9	9	3	0	0	0	3	28
08:30 AM	10	0	0	1	11	0	0	0	1	1	0	0	0	2	2	1	0	0	0	1	15
08:45 AM	11	1	0	2	14	0	0	0	5	5	1	0	0	4	5	3	0	0	2	5	29
Total	48	1	0	3	52	0	0	1	15	16	3	0	0	17	20	17	0	0	2	19	107
Grand Total	86	1	0	4	91	6	0	1	20	27	3	0	0	23	26	20	0	0	3	23	167
Apprch %	94.5	1.1	0	4.4		22.2	0	3.7	74.1		11.5	0	0	88.5		87	0	0	13		
Total %	51.5	0.6	0	2.4	54.5	3.6	0	0.6	12	16.2	1.8	0	0	13.8	15.6	12	0	0	1.8	13.8	

	Colwell St. Eastbound					Colwell St. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	14	0	0	0	14	0	0	1	6	7	2	0	0	2	4	10	0	0	0	10	35
08:15 AM	13	0	0	0	13	0	0	0	3	3	0	0	0	9	9	3	0	0	0	3	28
08:30 AM	10	0	0	1	11	0	0	0	1	1	0	0	0	2	2	1	0	0	0	1	15
08:45 AM	11	1	0	2	14	0	0	0	5	5	1	0	0	4	5	3	0	0	2	5	29
Total Volume	48	1	0	3	52	0	0	1	15	16	3	0	0	17	20	17	0	0	2	19	107
% App. Total	92.3	1.9	0	5.8		0	0	6.2	93.8		15	0	0	85		89.5	0	0	10.5		
PHF	.857	.250	.000	.375	.929	.000	.000	.250	.625	.571	.375	.000	.000	.472	.556	.425	.000	.000	.250	.475	.764

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ifth Ave. & Sixth Ave.
edestrians

11

File Name : PGHPE00_11109_AM_#[redacted]
Site Code : 11109p19
Start Date : 8/4/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	3	0	0	0	3	7	0	0	7	14	2	0	0	7	9	97	0	0	19	116	142
07:15 AM	7	0	0	1	8	7	0	0	18	25	2	0	0	28	30	158	0	0	14	172	235
07:30 AM	8	0	0	1	9	6	0	0	7	13	3	0	0	9	12	148	0	0	19	167	201
07:45 AM	12	0	0	1	13	12	0	0	24	36	7	0	0	12	19	195	0	0	25	220	288
Total	30	0	0	3	33	32	0	0	56	88	14	0	0	56	70	598	0	0	77	675	866
08:00 AM	16	0	0	1	17	10	0	0	15	25	5	0	0	26	31	185	0	0	14	199	272
08:15 AM	10	0	0	0	10	8	0	0	32	40	7	0	0	34	41	217	0	0	36	253	344
08:30 AM	9	0	0	0	9	9	0	0	20	29	8	0	0	39	47	192	0	0	16	208	293
08:45 AM	15	0	0	3	18	4	0	0	28	32	9	0	0	29	38	159	0	0	30	189	277
Total	50	0	0	4	54	31	0	0	95	126	29	0	0	128	157	753	0	0	96	849	1186
Grand Total	80	0	0	7	87	63	0	0	151	214	43	0	0	184	227	1351	0	0	173	1524	2052
Apprch %	92	0	0	8		29.4	0	0	70.6		18.9	0	0	81.1		88.6	0	0	11.4		
Total %	3.9	0	0	0.3	4.2	3.1	0	0	7.4	10.4	2.1	0	0	9	11.1	65.8	0	0	8.4	74.3	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	12	0	0	1	13	12	0	0	24	36	7	0	0	12	19	195	0	0	25	220	288
08:00 AM	16	0	0	1	17	10	0	0	15	25	5	0	0	26	31	185	0	0	14	199	272
08:15 AM	10	0	0	0	10	8	0	0	32	40	7	0	0	34	41	217	0	0	36	253	344
08:30 AM	9	0	0	0	9	9	0	0	20	29	8	0	0	39	47	192	0	0	16	208	293
Total Volume	47	0	0	2	49	39	0	0	91	130	27	0	0	111	138	789	0	0	91	880	1197
% App. Total	95.9	0	0	4.1		30	0	0	70		19.6	0	0	80.4		89.7	0	0	10.3		
PHF	.734	.000	.000	.500	.721	.813	.000	.000	.711	.813	.844	.000	.000	.712	.734	.909	.000	.000	.632	.870	.870

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

12

:ifth Ave. & Diamond St.
'edestrians
'GHPE00#11109
3oard#5040 SE

File Name : PGHPE00_11109_AM_[redacted]s
Site Code : 11109p20
Start Date : 7/28/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Diamond St. Northbound					Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	4	0	0	0	4	0	0	0	0	0	5	0	0	3	8	0	0	0	0	0	12
07:15 AM	2	0	0	1	3	0	0	0	0	0	3	0	0	2	5	0	0	0	0	0	8
07:30 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	5
07:45 AM	0	0	0	0	0	0	0	0	1	1	2	0	0	3	5	0	0	0	0	0	6
Total	6	0	0	2	8	0	0	0	1	1	10	0	0	12	22	0	0	0	0	0	31
08:00 AM	3	0	0	1	4	1	0	0	1	2	4	0	0	3	7	0	0	0	0	0	13
08:15 AM	2	0	0	5	7	0	0	0	0	0	3	0	0	13	16	0	0	0	0	0	23
08:30 AM	0	0	0	2	2	1	0	0	6	7	6	0	0	9	15	0	0	0	0	0	24
08:45 AM	1	0	0	1	2	2	0	0	3	5	5	0	0	1	6	0	0	0	0	0	13
Total	6	0	0	9	15	4	0	0	10	14	18	0	0	26	44	0	0	0	0	0	73
Grand Total	12	0	0	11	23	4	0	0	11	15	28	0	0	38	66	0	0	0	0	0	104
Apprch %	52.2	0	0	47.8		26.7	0	0	73.3		42.4	0	0	57.6		0	0	0	0		
Total %	11.5	0	0	10.6	22.1	3.8	0	0	10.6	14.4	26.9	0	0	36.5	63.5	0	0	0	0	0	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Diamond St. Northbound					Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	3	0	0	1	4	1	0	0	1	2	4	0	0	3	7	0	0	0	0	0	13
08:15 AM	2	0	0	5	7	0	0	0	0	0	3	0	0	13	16	0	0	0	0	0	23
08:30 AM	0	0	0	2	2	1	0	0	6	7	6	0	0	9	15	0	0	0	0	0	24
08:45 AM	1	0	0	1	2	2	0	0	3	5	5	0	0	1	6	0	0	0	0	0	13
Total Volume	6	0	0	9	15	4	0	0	10	14	18	0	0	26	44	0	0	0	0	0	73
% App. Total	40	0	0	60		28.6	0	0	71.4		40.9	0	0	59.1		0	0	0	0		
PHF	.500	.000	.000	.450	.536	.500	.000	.000	.417	.500	.750	.000	.000	.500	.688	.000	.000	.000	.000	.000	.760

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

13

ifth Ave. & Washington
'l./ Chatham Sq. (Peds)
'GHPE00#11109
oard#5038 AM

File Name : PGHPE00_11109_AM_[redacted]s
Site Code : 11109p13
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Chatham Sq. Northbound					Washington Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	1	0	0	0	1	0	0	0	8	8	4	0	0	7	11	16	0	0	4	20	40
07:15 AM	2	0	0	2	4	0	0	0	4	4	9	0	0	8	17	21	0	0	2	23	48
07:30 AM	6	0	0	4	10	4	0	0	2	6	8	0	0	7	15	28	0	0	2	30	61
07:45 AM	6	0	0	4	10	1	0	0	3	4	13	0	0	15	28	39	0	0	8	47	89
Total	15	0	0	10	25	5	0	0	17	22	34	0	0	37	71	104	0	0	16	120	238
08:00 AM	5	0	0	2	7	0	0	0	8	8	9	0	0	15	24	38	0	0	4	42	81
08:15 AM	3	0	0	2	5	1	0	0	12	13	8	0	0	27	35	40	0	0	3	43	96
08:30 AM	3	0	0	4	7	4	0	0	12	16	8	0	0	10	18	35	0	0	6	41	82
08:45 AM	1	0	0	3	4	0	0	0	7	7	13	0	0	18	31	29	0	0	1	30	72
Total	12	0	0	11	23	5	0	0	39	44	38	0	0	70	108	142	0	0	14	156	331
Grand Total	27	0	0	21	48	10	0	0	56	66	72	0	0	107	179	246	0	0	30	276	569
Apprch %	56.2	0	0	43.8		15.2	0	0	84.8		40.2	0	0	59.8		89.1	0	0	10.9		
Total %	4.7	0	0	3.7	8.4	1.8	0	0	9.8	11.6	12.7	0	0	18.8	31.5	43.2	0	0	5.3	48.5	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Chatham Sq. Northbound					Washington Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	6	0	0	4	10	1	0	0	3	4	13	0	0	15	28	39	0	0	8	47	89
08:00 AM	5	0	0	2	7	0	0	0	8	8	9	0	0	15	24	38	0	0	4	42	81
08:15 AM	3	0	0	2	5	1	0	0	12	13	8	0	0	27	35	40	0	0	3	43	96
08:30 AM	3	0	0	4	7	4	0	0	12	16	8	0	0	10	18	35	0	0	6	41	82
Total Volume	17	0	0	12	29	6	0	0	35	41	38	0	0	67	105	152	0	0	21	173	348
% App. Total	58.6	0	0	41.4		14.6	0	0	85.4		36.2	0	0	63.8		87.9	0	0	12.1		
PHF	.708	.000	.000	.750	.725	.375	.000	.000	.729	.641	.731	.000	.000	.620	.750	.950	.000	.000	.656	.920	.906

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

14

ifth Ave. & Magee St.
edestrians
GHPE00#11109
oard#4437 JR

File Name : PGHPE00_11109_AM_[redacted]s
Site Code : 111090p9
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Magee St. Northbound					Magee St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	3	4	16	0	0	2	18	24
07:15 AM	2	0	0	0	2	1	0	0	3	4	1	0	0	7	8	27	0	0	2	29	43
07:30 AM	0	0	0	0	0	0	0	0	2	2	1	0	0	4	5	17	0	0	4	21	28
07:45 AM	0	0	0	0	0	0	0	0	3	3	2	0	0	6	8	20	0	0	1	21	32
Total	2	0	0	0	2	1	2	0	8	11	5	0	0	20	25	80	0	0	9	89	127
08:00 AM	0	0	0	0	0	1	0	0	1	2	1	0	0	6	7	27	0	0	0	27	36
08:15 AM	5	0	0	0	5	0	0	0	2	2	4	0	0	9	13	31	0	0	3	34	54
08:30 AM	5	0	0	1	6	1	0	0	0	1	2	0	0	15	17	28	0	0	1	29	53
08:45 AM	3	0	0	1	4	1	0	0	2	3	0	0	0	9	9	14	0	0	4	18	34
Total	13	0	0	2	15	3	0	0	5	8	7	0	0	39	46	100	0	0	8	108	177
Grand Total	15	0	0	2	17	4	2	0	13	19	12	0	0	59	71	180	0	0	17	197	304
Apprch %	88.2	0	0	11.8		21.1	10.5	0	68.4		16.9	0	0	83.1		91.4	0	0	8.6		
Total %	4.9	0	0	0.7	5.6	1.3	0.7	0	4.3	6.2	3.9	0	0	19.4	23.4	59.2	0	0	5.6	64.8	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Magee St. Northbound					Magee St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	1	0	0	1	2	1	0	0	6	7	27	0	0	0	27	36
08:15 AM	5	0	0	0	5	0	0	0	2	2	4	0	0	9	13	31	0	0	3	34	54
08:30 AM	5	0	0	1	6	1	0	0	0	1	2	0	0	15	17	28	0	0	1	29	53
08:45 AM	3	0	0	1	4	1	0	0	2	3	0	0	0	9	9	14	0	0	4	18	34
Total Volume	13	0	0	2	15	3	0	0	5	8	7	0	0	39	46	100	0	0	8	108	177
% App. Total	86.7	0	0	13.3		37.5	0	0	62.5		15.2	0	0	84.8		92.6	0	0	7.4		
PHF	.650	.000	.000	.500	.625	.750	.000	.000	.625	.667	.438	.000	.000	.650	.676	.806	.000	.000	.500	.794	.819

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Fifth Ave. & Stevenson St.
Pedestrians
PGHPE00#11109
Board#4050 SE

File Name : PGHPE00_11109_AM_[redacted]ds
Site Code : 111090p8
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Stevenson St. Northbound					Stevenson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	3	0	0	1	4	0	0	0	1	1	0	0	0	3	3	8	0	0	1	9	17
07:15 AM	1	0	0	1	2	0	0	0	5	5	0	0	0	8	8	17	0	0	0	17	32
07:30 AM	2	0	0	0	2	0	0	0	1	1	0	0	0	2	2	5	0	0	0	5	10
07:45 AM	1	0	0	0	1	2	0	0	2	4	0	0	0	3	3	13	0	0	0	13	21
Total	7	0	0	2	9	2	0	0	9	11	0	0	0	16	16	43	0	0	1	44	80
08:00 AM	1	0	0	1	2	0	0	0	2	2	0	0	0	3	3	7	0	0	0	7	14
08:15 AM	1	0	0	0	1	1	0	0	0	1	1	0	0	4	5	19	0	0	0	19	26
08:30 AM	2	0	0	0	2	0	0	0	2	2	0	0	0	4	4	7	0	0	1	8	16
08:45 AM	1	0	0	0	1	0	0	0	1	1	0	0	0	3	3	12	0	0	0	12	17
Total	5	0	0	1	6	1	0	0	5	6	1	0	0	14	15	45	0	0	1	46	73
Grand Total	12	0	0	3	15	3	0	0	14	17	1	0	0	30	31	88	0	0	2	90	153
Apprch %	80	0	0	20		17.6	0	0	82.4		3.2	0	0	96.8		97.8	0	0	2.2		
Total %	7.8	0	0	2	9.8	2	0	0	9.2	11.1	0.7	0	0	19.6	20.3	57.5	0	0	1.3	58.8	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Stevenson St. Northbound					Stevenson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	3	0	0	1	4	0	0	0	1	1	0	0	0	3	3	8	0	0	1	9	17
07:15 AM	1	0	0	1	2	0	0	0	5	5	0	0	0	8	8	17	0	0	0	17	32
07:30 AM	2	0	0	0	2	0	0	0	1	1	0	0	0	2	2	5	0	0	0	5	10
07:45 AM	1	0	0	0	1	2	0	0	2	4	0	0	0	3	3	13	0	0	0	13	21
Total Volume	7	0	0	2	9	2	0	0	9	11	0	0	0	16	16	43	0	0	1	44	80
% App. Total	77.8	0	0	22.2		18.2	0	0	81.8		0	0	0	100		97.7	0	0	2.3		
PHF	.583	.000	.000	.500	.563	.250	.000	.000	.450	.550	.000	.000	.000	.500	.500	.632	.000	.000	.250	.647	.625

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Fifth Ave. & Pride St.
Pedestrians
PGHPE00#11109
Board#5040 SE

File Name : PGHPE00_11109_AM_[redacted]s 16
Site Code : 11109p5
Start Date : 7/19/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	6	0	0	0	6	0	0	0	6	6	4	0	0	3	7	4	0	0	0	4	23
07:15 AM	8	0	0	0	8	0	0	0	5	5	1	0	0	2	3	12	0	0	0	12	28
07:30 AM	7	0	0	0	7	2	0	0	9	11	3	0	0	4	7	11	0	0	0	11	36
07:45 AM	7	0	0	0	7	0	0	0	6	6	0	0	0	9	9	11	0	0	2	13	35
Total	28	0	0	0	28	2	0	0	26	28	8	0	0	18	26	38	0	0	2	40	122
08:00 AM	0	0	0	0	0	1	0	0	17	18	0	0	0	6	6	8	0	0	1	9	33
08:15 AM	11	0	0	0	11	0	0	0	6	6	2	0	0	0	2	7	0	0	0	7	26
08:30 AM	10	0	0	0	10	0	0	0	3	3	3	0	0	3	6	5	0	0	0	5	24
08:45 AM	6	0	0	0	6	0	0	0	9	9	0	0	0	3	3	4	0	0	2	6	24
Total	27	0	0	0	27	1	0	0	35	36	5	0	0	12	17	24	0	0	3	27	107
Grand Total	55	0	0	0	55	3	0	0	61	64	13	0	0	30	43	62	0	0	5	67	229
Apprch %	100	0	0	0		4.7	0	0	95.3		30.2	0	0	69.8		92.5	0	0	7.5		
Total %	24	0	0	0	24	1.3	0	0	26.6	27.9	5.7	0	0	13.1	18.8	27.1	0	0	2.2	29.3	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	8	0	0	0	8	0	0	0	5	5	1	0	0	2	3	12	0	0	0	12	28
07:30 AM	7	0	0	0	7	2	0	0	9	11	3	0	0	4	7	11	0	0	0	11	36
07:45 AM	7	0	0	0	7	0	0	0	6	6	0	0	0	9	9	11	0	0	2	13	35
08:00 AM	0	0	0	0	0	1	0	0	17	18	0	0	0	6	6	8	0	0	1	9	33
Total Volume	22	0	0	0	22	3	0	0	37	40	4	0	0	21	25	42	0	0	3	45	132
% App. Total	100	0	0	0		7.5	0	0	92.5		16	0	0	84		93.3	0	0	6.7		
PHF	.688	.000	.000	.000	.688	.375	.000	.000	.544	.556	.333	.000	.000	.583	.694	.875	.000	.000	.375	.865	.917

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

17

ixth St.. & Diamond St.
'edestrians
'GHPE00#11109
oard#4435 JCD

File Name : PGHPE00_11109_AM_[redacted]ds
Site Code : 11109p21
Start Date : 8/4/2011
Page No : 1

Groups Printed- Pedestrians

	Diamond St. Eastbound					Diamond St. Westbound					Sixth St. Northbound					Sixth St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	1	0	0	0	1	3	0	0	0	3	1	0	0	1	2	1	0	0	5	6	12
07:15 AM	0	0	0	0	0	2	0	0	2	4	1	0	0	0	1	1	0	0	3	4	9
07:30 AM	0	0	0	0	0	2	0	0	1	3	0	0	0	0	0	3	0	0	1	4	7
07:45 AM	0	0	0	2	2	1	0	0	5	6	0	0	0	0	0	8	0	0	4	12	20
Total	1	0	0	2	3	8	0	0	8	16	2	0	0	1	3	13	0	0	13	26	48
08:00 AM	3	0	0	4	7	0	0	0	4	4	2	0	0	2	4	5	0	0	4	9	24
08:15 AM	2	0	0	3	5	2	0	0	2	4	1	0	0	4	5	6	0	0	4	10	24
08:30 AM	2	0	0	5	7	1	0	0	6	7	1	0	0	3	4	7	0	0	2	9	27
08:45 AM	0	0	0	3	3	1	0	0	6	7	0	0	0	1	1	3	0	0	2	5	16
Total	7	0	0	15	22	4	0	0	18	22	4	0	0	10	14	21	0	0	12	33	91
Grand Total	8	0	0	17	25	12	0	0	26	38	6	0	0	11	17	34	0	0	25	59	139
Apprch %	32	0	0	68		31.6	0	0	68.4		35.3	0	0	64.7		57.6	0	0	42.4		
Total %	5.8	0	0	12.2	18	8.6	0	0	18.7	27.3	4.3	0	0	7.9	12.2	24.5	0	0	18	42.4	

	Diamond St. Eastbound					Diamond St. Westbound					Sixth St. Northbound					Sixth St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	2	2	1	0	0	5	6	0	0	0	0	0	8	0	0	4	12	20
08:00 AM	3	0	0	4	7	0	0	0	4	4	2	0	0	2	4	5	0	0	4	9	24
08:15 AM	2	0	0	3	5	2	0	0	2	4	1	0	0	4	5	6	0	0	4	10	24
08:30 AM	2	0	0	5	7	1	0	0	6	7	1	0	0	3	4	7	0	0	2	9	27
Total Volume	7	0	0	14	21	4	0	0	17	21	4	0	0	9	13	26	0	0	14	40	95
% App. Total	33.3	0	0	66.7		19	0	0	81		30.8	0	0	69.2		65	0	0	35		
PHF	.583	.000	.000	.700	.750	.500	.000	.000	.708	.750	.500	.000	.000	.563	.650	.813	.000	.000	.875	.833	.880

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Forbes Ave. & Sixth St.
Pedestrians

18

File Name : PGHPE00_11109_AM_#[redacted]ds
Site Code : 11109p22
Start Date : 8/4/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Liberty Bridge Northbound					Sixth St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	1	0	0	0	1	1	0	0	0	1	5	0	0	8	13	0	0	0	0	0	15
07:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	6	10	1	0	0	1	2	12
07:30 AM	0	0	0	0	0	0	0	0	1	1	12	0	0	10	22	0	0	0	0	0	23
07:45 AM	0	0	0	2	2	2	0	0	2	4	6	0	0	19	25	0	0	0	0	0	31
Total	1	0	0	2	3	3	0	0	3	6	27	0	0	43	70	1	0	0	1	2	81
08:00 AM	1	0	0	3	4	0	0	0	1	1	7	0	0	16	23	1	0	0	1	2	30
08:15 AM	3	0	0	6	9	1	0	0	0	1	13	0	0	21	34	0	0	0	0	0	44
08:30 AM	1	0	0	3	4	3	0	0	5	8	11	0	0	15	26	0	0	0	1	1	39
08:45 AM	0	0	0	2	2	2	0	0	6	8	8	0	0	16	24	2	0	0	3	5	39
Total	5	0	0	14	19	6	0	0	12	18	39	0	0	68	107	3	0	0	5	8	152
Grand Total	6	0	0	16	22	9	0	0	15	24	66	0	0	111	177	4	0	0	6	10	233
Apprch %	27.3	0	0	72.7		37.5	0	0	62.5		37.3	0	0	62.7		40	0	0	60		
Total %	2.6	0	0	6.9	9.4	3.9	0	0	6.4	10.3	28.3	0	0	47.6	76	1.7	0	0	2.6	4.3	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Liberty Bridge Northbound					Sixth St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
'eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
'eak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	0	0	3	4	0	0	0	1	1	7	0	0	16	23	1	0	0	1	2	30
08:15 AM	3	0	0	6	9	1	0	0	0	1	13	0	0	21	34	0	0	0	0	0	44
08:30 AM	1	0	0	3	4	3	0	0	5	8	11	0	0	15	26	0	0	0	1	1	39
08:45 AM	0	0	0	2	2	2	0	0	6	8	8	0	0	16	24	2	0	0	3	5	39
Total Volume	5	0	0	14	19	6	0	0	12	18	39	0	0	68	107	3	0	0	5	8	152
% App. Total	26.3	0	0	73.7		33.3	0	0	66.7		36.4	0	0	63.6		37.5	0	0	62.5		
PHF	.417	.000	.000	.583	.528	.500	.000	.000	.500	.563	.750	.000	.000	.810	.787	.375	.000	.000	.417	.400	.864

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

orbes Ave. & Armstrong Tunnel
'edestrians
'GHPE00#11109
oard#5040 SE

19

File Name : PGHPE00_11109_AM_[redacted]s
Site Code : 11109p12
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Armstrong Tunnel Northbound					Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	4	5	0	0	0	0	0	5
07:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	5	9	0	0	0	0	0	9
07:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	12	15	0	0	0	0	0	15
07:45 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	20	26	0	0	0	0	0	26
Total	0	0	0	0	0	0	0	0	0	0	14	0	0	41	55	0	0	0	0	0	55
08:00 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	8	16	0	0	0	0	0	16
08:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	13	19	0	0	0	0	0	19
08:30 AM	0	0	0	0	0	0	0	0	0	0	13	0	0	11	24	0	0	0	0	0	24
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	27	0	0	32	59	0	0	0	0	0	59
Grand Total	0	0	0	0	0	0	0	0	0	0	41	0	0	73	114	0	0	0	0	0	114
Apprch %	0	0	0	0		0	0	0	0		36	0	0	64		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	36	0	0	64	100	0	0	0	0	0	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Armstrong Tunnel Northbound					Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	20	26	0	0	0	0	0	26
08:00 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	8	16	0	0	0	0	0	16
08:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	13	19	0	0	0	0	0	19
08:30 AM	0	0	0	0	0	0	0	0	0	0	13	0	0	11	24	0	0	0	0	0	24
Total Volume	0	0	0	0	0	0	0	0	0	0	33	0	0	52	85	0	0	0	0	0	85
% App. Total	0	0	0	0		0	0	0	0		38.8	0	0	61.2		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.635	.000	.000	.650	.817	.000	.000	.000	.000	.000	.817

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Forbes Ave. & Chatham Sq./McAnulty Dr.
Pedestrians
PGHPE00#11109
Board#5039 JR

File Name : PGHPE00_11109_AM_#[redacted]ds 20
Site Code : 11109p11
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					McAnulty Dr. Northbound					Chatham Sq. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	1	0	0	2	3	1	0	0	3	4	3	0	0	5	8	2	0	0	2	4	19
07:15 AM	0	0	0	4	4	3	0	0	1	4	6	0	0	7	13	2	0	0	0	2	23
07:30 AM	5	0	0	3	8	3	0	0	0	3	7	0	0	8	15	3	0	0	0	3	29
07:45 AM	2	0	0	4	6	11	0	0	7	18	4	0	0	15	19	12	0	0	0	12	55
Total	8	0	0	13	21	18	0	0	11	29	20	0	0	35	55	19	0	0	2	21	126
08:00 AM	3	0	0	4	7	4	0	0	5	9	8	0	0	9	17	4	0	0	3	7	40
08:15 AM	4	0	0	4	8	5	0	0	1	6	5	0	0	12	17	14	0	0	5	19	50
08:30 AM	2	0	0	4	6	7	0	0	11	18	13	0	0	13	26	7	0	0	0	7	57
08:45 AM	2	0	0	6	8	5	1	0	6	12	9	0	0	13	22	2	0	0	3	5	47
Total	11	0	0	18	29	21	1	0	23	45	35	0	0	47	82	27	0	0	11	38	194
Grand Total	19	0	0	31	50	39	1	0	34	74	55	0	0	82	137	46	0	0	13	59	320
Apprch %	38	0	0	62		52.7	1.4	0	45.9		40.1	0	0	59.9		78	0	0	22		
Total %	5.9	0	0	9.7	15.6	12.2	0.3	0	10.6	23.1	17.2	0	0	25.6	42.8	14.4	0	0	4.1	18.4	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					McAnulty Dr. Northbound					Chatham Sq. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	2	0	0	4	6	11	0	0	7	18	4	0	0	15	19	12	0	0	0	12	55
08:00 AM	3	0	0	4	7	4	0	0	5	9	8	0	0	9	17	4	0	0	3	7	40
08:15 AM	4	0	0	4	8	5	0	0	1	6	5	0	0	12	17	14	0	0	5	19	50
08:30 AM	2	0	0	4	6	7	0	0	11	18	13	0	0	13	26	7	0	0	0	7	57
Total Volume	11	0	0	16	27	27	0	0	24	51	30	0	0	49	79	37	0	0	8	45	202
% App. Total	40.7	0	0	59.3		52.9	0	0	47.1		38	0	0	62		82.2	0	0	17.8		
PHF	.688	.000	.000	1.00	.844	.614	.000	.000	.545	.708	.577	.000	.000	.817	.760	.661	.000	.000	.400	.592	.886

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

21

'orbes Ave. & Magee St.
'edestrians
'GHPE00#11109
'oard#5038 AM

File Name : PGHPE00_11109_AM_#[redacted]ds
Site Code : 11109p10
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Magee St. Northbound					Magee St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	0	0	0	0	0	5	0	0	4	9	0	0	0	5	5	1	0	0	0	1	15
07:15 AM	1	0	0	0	1	1	0	0	2	3	3	0	0	6	9	2	0	0	2	4	17
07:30 AM	0	0	0	0	0	0	0	0	2	2	2	0	0	5	7	4	0	0	5	9	18
07:45 AM	1	0	0	5	6	0	0	0	4	4	7	0	0	3	10	2	0	0	0	2	22
Total	2	0	0	5	7	6	0	0	12	18	12	0	0	19	31	9	0	0	7	16	72
08:00 AM	1	0	0	1	2	0	0	0	3	3	4	0	1	1	6	2	0	0	4	6	17
08:15 AM	1	0	0	1	2	2	0	0	1	3	7	0	2	6	15	9	0	0	3	12	32
08:30 AM	3	0	0	4	7	1	0	0	0	1	2	0	0	5	7	9	0	0	2	11	26
08:45 AM	4	0	0	4	8	2	0	0	5	7	8	0	0	6	14	5	0	0	7	12	41
Total	9	0	0	10	19	5	0	0	9	14	21	0	3	18	42	25	0	0	16	41	116
Grand Total	11	0	0	15	26	11	0	0	21	32	33	0	3	37	73	34	0	0	23	57	188
Apprch %	42.3	0	0	57.7		34.4	0	0	65.6		45.2	0	4.1	50.7		59.6	0	0	40.4		
Total %	5.9	0	0	8	13.8	5.9	0	0	11.2	17	17.6	0	1.6	19.7	38.8	18.1	0	0	12.2	30.3	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Magee St. Northbound					Magee St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	0	0	1	2	0	0	0	3	3	4	0	1	1	6	2	0	0	4	6	17
08:15 AM	1	0	0	1	2	2	0	0	1	3	7	0	2	6	15	9	0	0	3	12	32
08:30 AM	3	0	0	4	7	1	0	0	0	1	2	0	0	5	7	9	0	0	2	11	26
08:45 AM	4	0	0	4	8	2	0	0	5	7	8	0	0	6	14	5	0	0	7	12	41
Total Volume	9	0	0	10	19	5	0	0	9	14	21	0	3	18	42	25	0	0	16	41	116
% App. Total	47.4	0	0	52.6		35.7	0	0	64.3		50	0	7.1	42.9		61	0	0	39		
PHF	.563	.000	.000	.625	.594	.625	.000	.000	.450	.500	.656	.000	.375	.750	.700	.694	.000	.000	.571	.854	.707

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

22

'orbes Ave. & Stevenson St.
'edestrians
'GHPE00#11109
'oard#4916 MS

File Name : PGHPE00_11109_AM_[redacted]s
Site Code : 111090p7
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Stevenson St. Northbound					Stevenson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	2	0	0	2	4	2	0	0	0	2	1	0	0	4	5	1	0	0	0	1	12
07:15 AM	1	0	0	0	1	2	0	0	2	4	5	0	0	1	6	3	0	0	0	3	14
07:30 AM	0	0	0	2	2	0	0	0	0	0	2	0	0	3	5	2	0	0	2	4	11
07:45 AM	1	0	0	3	4	1	0	0	4	5	1	0	0	0	1	5	0	0	3	8	18
Total	4	0	0	7	11	5	0	0	6	11	9	0	0	8	17	11	0	0	5	16	55
08:00 AM	0	0	0	4	4	4	0	0	0	4	2	0	0	4	6	3	0	0	0	3	17
08:15 AM	1	0	0	8	9	5	0	0	0	5	4	0	0	3	7	4	0	0	8	12	33
08:30 AM	2	0	0	2	4	2	0	0	0	2	2	0	0	3	5	6	0	0	1	7	18
08:45 AM	1	0	0	4	5	1	0	0	1	2	5	0	0	5	10	4	0	0	2	6	23
Total	4	0	0	18	22	12	0	0	1	13	13	0	0	15	28	17	0	0	11	28	91
Grand Total	8	0	0	25	33	17	0	0	7	24	22	0	0	23	45	28	0	0	16	44	146
Apprch %	24.2	0	0	75.8		70.8	0	0	29.2		48.9	0	0	51.1		63.6	0	0	36.4		
Total %	5.5	0	0	17.1	22.6	11.6	0	0	4.8	16.4	15.1	0	0	15.8	30.8	19.2	0	0	11	30.1	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Stevenson St. Northbound					Stevenson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
'eak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
'eak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	4	4	4	0	0	0	4	2	0	0	4	6	3	0	0	0	3	17
08:15 AM	1	0	0	8	9	5	0	0	0	5	4	0	0	3	7	4	0	0	8	12	33
08:30 AM	2	0	0	2	4	2	0	0	0	2	2	0	0	3	5	6	0	0	1	7	18
08:45 AM	1	0	0	4	5	1	0	0	1	2	5	0	0	5	10	4	0	0	2	6	23
Total Volume	4	0	0	18	22	12	0	0	1	13	13	0	0	15	28	17	0	0	11	28	91
% App. Total	18.2	0	0	81.8		92.3	0	0	7.7		46.4	0	0	53.6		60.7	0	0	39.3		
PHF	.500	.000	.000	.563	.611	.600	.000	.000	.250	.650	.650	.000	.000	.750	.700	.708	.000	.000	.344	.583	.689

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

23

Forbes Ave. & Pride St.
Pedestrians
PGHPE00#11109
Board#4437 JR

File Name : PGHPE00_11109_AM_[redacted]ds
Site Code : 11109006
Start Date : 7/20/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
07:00 AM	18	1	0	2	21	0	0	0	2	2	1	0	0	5	6	9	0	0	0	9	38
07:15 AM	11	0	0	1	12	1	0	0	0	1	2	0	0	1	3	5	0	0	0	5	21
07:30 AM	15	0	0	7	22	1	0	0	0	1	2	0	0	1	3	7	0	0	1	8	34
07:45 AM	20	0	0	4	24	0	0	0	2	2	0	0	0	7	7	5	0	0	4	9	42
Total	64	1	0	14	79	2	0	0	4	6	5	0	0	14	19	26	0	0	5	31	135
08:00 AM	12	0	0	1	13	1	0	0	0	1	3	0	0	3	6	14	0	0	2	16	36
08:15 AM	12	0	0	1	13	0	0	0	0	0	1	0	0	2	3	11	0	0	0	11	27
08:30 AM	12	0	0	0	12	0	0	0	0	0	1	0	0	1	2	11	0	0	1	12	26
08:45 AM	12	0	0	6	18	0	0	0	1	1	3	0	0	4	7	8	0	0	4	12	38
Total	48	0	0	8	56	1	0	0	1	2	8	0	0	10	18	44	0	0	7	51	127
Grand Total	112	1	0	22	135	3	0	0	5	8	13	0	0	24	37	70	0	0	12	82	262
Apprch %	83	0.7	0	16.3		37.5	0	0	62.5		35.1	0	0	64.9		85.4	0	0	14.6		
Total %	42.7	0.4	0	8.4	51.5	1.1	0	0	1.9	3.1	5	0	0	9.2	14.1	26.7	0	0	4.6	31.3	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	15	0	0	7	22	1	0	0	0	1	2	0	0	1	3	7	0	0	1	8	34
07:45 AM	20	0	0	4	24	0	0	0	2	2	0	0	0	7	7	5	0	0	4	9	42
08:00 AM	12	0	0	1	13	1	0	0	0	1	3	0	0	3	6	14	0	0	2	16	36
08:15 AM	12	0	0	1	13	0	0	0	0	0	1	0	0	2	3	11	0	0	0	11	27
Total Volume	59	0	0	13	72	2	0	0	2	4	6	0	0	13	19	37	0	0	7	44	139
% App. Total	81.9	0	0	18.1		50	0	0	50		31.6	0	0	68.4		84.1	0	0	15.9		
PHF	.738	.000	.000	.464	.750	.500	.000	.000	.250	.500	.500	.000	.000	.464	.679	.661	.000	.000	.438	.688	.827

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Washington Pl. & Bedford Ave.
Pedestrians
PGHPE00#11109
Board#4435 JCD

File Name : PGHPE00_11109_PM_~~#17 peds~~
Site Code : 11109p17
Start Date : 7/28/2011
Page No : 1

Groups Printed- Pedestrians

	Bigelow Blvd. Eastbound					Bedford Ave. Westbound					Washington Pl. Northbound					Bigelow Blvd./Veterans Bridge Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	0	0	0	0	0	13
04:30 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	7
04:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
Total	0	0	0	0	0	0	0	0	0	0	25	0	0	0	25	0	0	0	0	0	25
05:00 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	7
05:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	14
Grand Total	0	0	0	0	0	0	0	0	0	0	39	0	0	0	39	0	0	0	0	0	39
Apprch %	0	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	0	0	0	100	0	0	0	0	0	

	Bigelow Blvd. Eastbound					Bedford Ave. Westbound					Washington Pl. Northbound					Bigelow Blvd./Veterans Bridge Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	0	0	0	0	0	13
04:30 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	7
04:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	7
Total Volume	0	0	0	0	0	0	0	0	0	0	31	0	0	0	31	0	0	0	0	0	31
% App. Total	0	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.596	.000	.000	.000	.596	.000	.000	.000	.000	.000	.596

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Bedford Ave. & Mario Lemieux Pl./Ramps
Pedestrians
PGHPE00#11109
Board#4436 FS

File Name : PGHPE00_11109_PM_~~#16 peds~~ 2
Site Code : 11109p16
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Mario Lemieux Pl. Northbound					HOV Ramp Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	3	0	0	0	3	1	0	0	2	3	2	0	0	2	4	0	0	0	10	10	20
04:15 PM	5	0	0	0	5	0	0	0	4	4	1	0	0	1	2	0	0	0	11	11	22
04:30 PM	7	0	0	0	7	0	0	0	6	6	2	0	0	0	2	3	0	0	11	14	29
04:45 PM	3	0	0	0	3	1	0	0	4	5	4	0	0	0	4	1	0	0	8	9	21
Total	18	0	0	0	18	2	0	0	16	18	9	0	0	3	12	4	0	0	40	44	92
05:00 PM	6	0	0	0	6	2	0	0	6	8	8	0	0	1	9	0	0	0	10	10	33
05:15 PM	7	0	0	0	7	2	0	0	5	7	8	0	0	0	8	3	0	0	9	12	34
05:30 PM	4	0	0	0	4	0	0	0	3	3	36	0	0	1	37	0	0	0	5	5	49
05:45 PM	2	0	0	0	2	1	0	0	1	2	2	0	0	0	2	2	0	0	6	8	14
Total	19	0	0	0	19	5	0	0	15	20	54	0	0	2	56	5	0	0	30	35	130
Grand Total	37	0	0	0	37	7	0	0	31	38	63	0	0	5	68	9	0	0	70	79	222
Apprch %	100	0	0	0		18.4	0	0	81.6		92.6	0	0	7.4		11.4	0	0	88.6		
Total %	16.7	0	0	0	16.7	3.2	0	0	14	17.1	28.4	0	0	2.3	30.6	4.1	0	0	31.5	35.6	

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Mario Lemieux Pl. Northbound					HOV Ramp Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	3	0	0	0	3	1	0	0	4	5	4	0	0	0	4	1	0	0	8	9	21
05:00 PM	6	0	0	0	6	2	0	0	6	8	8	0	0	1	9	0	0	0	10	10	33
05:15 PM	7	0	0	0	7	2	0	0	5	7	8	0	0	0	8	3	0	0	9	12	34
05:30 PM	4	0	0	0	4	0	0	0	3	3	36	0	0	1	37	0	0	0	5	5	49
Total Volume	20	0	0	0	20	5	0	0	18	23	56	0	0	2	58	4	0	0	32	36	137
% App. Total	100	0	0	0		21.7	0	0	78.3		96.6	0	0	3.4		11.1	0	0	88.9		
PHF	.714	.000	.000	.000	.714	.625	.000	.000	.750	.719	.389	.000	.000	.500	.392	.333	.000	.000	.800	.750	.699

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

3

edford Ave. & Crawford St.
edestrians
GHPE00#11109
oard#4435 JCD

File Name : PGHPE00_11109_PM_~~#1 pede~~
Site Code : 11109p1
Start Date : 7/19/2011
Page No : 1

Groups Printed- Pedestrians

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	1	1	1	0	0	2	3	0	0	0	1	1	5
04:45 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	4	4	6
Total	1	0	0	0	1	1	0	0	1	2	4	0	0	2	6	0	0	0	5	5	14
05:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	4	4	6
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3	1	0	7	11	13
05:30 PM	0	0	0	0	0	2	0	0	2	4	2	0	0	0	2	3	0	0	6	9	15
05:45 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	1	2	0	0	0	0	0	3
Total	0	0	0	0	0	3	0	0	3	6	5	0	0	2	7	6	1	0	17	24	37
Grand Total	1	0	0	0	1	4	0	0	4	8	9	0	0	4	13	6	1	0	22	29	51
Apprch %	100	0	0	0		50	0	0	50		69.2	0	0	30.8		20.7	3.4	0	75.9		
Total %	2	0	0	0	2	7.8	0	0	7.8	15.7	17.6	0	0	7.8	25.5	11.8	2	0	43.1	56.9	

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	4	4	6
05:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	4	4	6
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3	1	0	7	11	13
05:30 PM	0	0	0	0	0	2	0	0	2	4	2	0	0	0	2	3	0	0	6	9	15
Total Volume	0	0	0	0	0	3	0	0	3	6	5	0	0	1	6	6	1	0	21	28	40
% App. Total	0	0	0	0		50	0	0	50		83.3	0	0	16.7		21.4	3.6	0	75		
PHF	.000	.000	.000	.000	.000	.375	.000	.000	.375	.375	.625	.000	.000	.250	.750	.500	.250	.000	.750	.636	.667

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Vylie Ave. & Crawford St.
'edestrians
'GHPE00#11109
ioard#5038 AM

4

File Name : PGHPE00_11109_PM_~~#2 pede~~
Site Code : 11109p2
Start Date : 7/19/2011
Page No : 1

Groups Printed- Pedestrians

Start Time	Eastbound				App. Total	Wylie Ave. Westbound NB			SB	App. Total	Crawford St. Northbound EB			WB	App. Total	Crawford St. Southbound WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	2
05:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Total	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	1	1	10
Grand Total	0	0	0	0	0	9	0	0	2	11	0	0	0	0	0	0	0	0	1	1	12
Apprch %	0	0	0	0		81.8	0	0	18.2		0	0	0	0		0	0	0	100		
Total %	0	0	0	0	0	75	0	0	16.7	91.7	0	0	0	0	0	0	0	0	8.3	8.3	

Start Time	Eastbound				App. Total	Wylie Ave. Westbound NB			SB	App. Total	Crawford St. Northbound EB			WB	App. Total	Crawford St. Southbound WB			EB	App. Total	Int. Total
ak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	2
05:15 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	6
Total Volume	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	1	1	10
% App. Total	0	0	0	0		100	0	0	0		0	0	0	0		0	0	0	100		
PHF	.000	.000	.000	.000	.000	.375	.000	.000	.000	.375	.000	.000	.000	.000	.000	.000	.000	.000	.250	.250	.417

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

:entre Ave. & Sixth Ave.
'edestrians

5

File Name : PGHPE00_11109_PM_~~#18 peds~~
Site Code : 11109p18
Start Date : 8/4/2011
Page No : 1

Groups Printed- Pedestrians

	Eastbound					Centre Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	10	0	0	12	22	30	0	0	9	39	10	0	0	77	87	148
04:15 PM	0	0	0	0	0	5	0	0	9	14	12	0	0	8	20	4	0	0	29	33	67
04:30 PM	0	0	0	0	0	5	0	0	11	16	20	0	0	2	22	17	0	0	60	77	115
04:45 PM	0	0	0	0	0	3	0	0	4	7	11	0	0	6	17	13	0	0	45	58	82
Total	0	0	0	0	0	23	0	0	36	59	73	0	0	25	98	44	0	0	211	255	412
05:00 PM	0	0	0	0	0	15	0	0	18	33	29	0	0	2	31	13	0	0	98	111	175
05:15 PM	0	0	0	0	0	11	0	0	10	21	23	0	0	4	27	8	0	0	50	58	106
05:30 PM	0	0	0	0	0	10	0	0	9	19	11	0	0	4	15	15	0	0	29	44	78
05:45 PM	0	0	0	0	0	7	0	0	3	10	12	0	0	4	16	3	0	0	21	24	50
Total	0	0	0	0	0	43	0	0	40	83	75	0	0	14	89	39	0	0	198	237	409
Grand Total	0	0	0	0	0	66	0	0	76	142	148	0	0	39	187	83	0	0	409	492	821
Apprch %	0	0	0	0		46.5	0	0	53.5		79.1	0	0	20.9		16.9	0	0	83.1		
Total %	0	0	0	0	0	8	0	0	9.3	17.3	18	0	0	4.8	22.8	10.1	0	0	49.8	59.9	

	Eastbound					Centre Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	5	0	0	11	16	20	0	0	2	22	17	0	0	60	77	115
04:45 PM	0	0	0	0	0	3	0	0	4	7	11	0	0	6	17	13	0	0	45	58	82
05:00 PM	0	0	0	0	0	15	0	0	18	33	29	0	0	2	31	13	0	0	98	111	175
05:15 PM	0	0	0	0	0	11	0	0	10	21	23	0	0	4	27	8	0	0	50	58	106
Total Volume	0	0	0	0	0	34	0	0	43	77	83	0	0	14	97	51	0	0	253	304	478
% App. Total	0	0	0	0		44.2	0	0	55.8		85.6	0	0	14.4		16.8	0	0	83.2		
PHF	.000	.000	.000	.000	.000	.567	.000	.000	.597	.583	.716	.000	.000	.583	.782	.750	.000	.000	.645	.685	.683

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

6

File Name : ~~int 1~~ Washington-Centre 1of2
Site Code : 00000101
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

Start Time	Southbound				App. Total	Westbound				App. Total	Washington Pl Northbound EB			WB	App. Total	Centre Ave Eastbound SB			NB	App. Total	Int. Total
05:00 PM	0	0	0	0	0	0	0	0	0	0	43	0	0	13	56	24	0	0	8	32	88
05:15 PM	0	0	0	0	0	0	0	0	0	0	39	0	0	24	63	23	0	0	6	29	92
05:30 PM	0	0	0	0	0	0	0	0	0	0	43	0	0	15	58	36	0	0	1	37	95
05:45 PM	0	0	0	0	0	0	0	0	0	0	42	0	0	28	70	19	0	0	9	28	98
Total	0	0	0	0	0	0	0	0	0	0	167	0	0	80	247	102	0	0	24	126	373
Grand Total	0	0	0	0	0	0	0	0	0	0	167	0	0	80	247	102	0	0	24	126	373
Apprch %	0	0	0	0		0	0	0	0		67.6	0	0	32.4		81	0	0	19		
Total %	0	0	0	0	0	0	0	0	0	0	44.8	0	0	21.4	66.2	27.3	0	0	6.4	33.8	
Vehicles	0	0	0	0	0	0	0	0	0	0	167	0	0	80	247	102	0	0	24	126	373
% Vehicles	0	0	0	0	0	0	0	0	0	0	100	0	0	100	100	100	0	0	100	100	100
Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Start Time	Southbound				App. Total	Westbound				App. Total	Washington Pl Northbound EB			WB	App. Total	Centre Ave Eastbound SB			NB	App. Total	Int. Total
ak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	0	0	0	0	43	0	0	13	56	24	0	0	8	32	88
05:15 PM	0	0	0	0	0	0	0	0	0	0	39	0	0	24	63	23	0	0	6	29	92
05:30 PM	0	0	0	0	0	0	0	0	0	0	43	0	0	15	58	36	0	0	1	37	95
05:45 PM	0	0	0	0	0	0	0	0	0	0	42	0	0	28	70	19	0	0	9	28	98
Total Volume	0	0	0	0	0	0	0	0	0	0	167	0	0	80	247	102	0	0	24	126	373
% App. Total	0	0	0	0		0	0	0	0		67.6	0	0	32.4		81	0	0	19		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.971	.000	.000	.714	.882	.708	.000	.000	.667	.851	.952

Trans Associates
4955 Steubenville Pike Suite 400
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412-490-0630

File Name : ~~int 1~~ Washington-Centre 2of2
Site Code : 00000102
Start Date : 2/23/2011
Page No : 1

Groups Printed- Vehicles - Heavy Duty Vehicles

	Washington Pl Southbound					Centre Ave Westbound					Northbound					Washington Pl Eastbound					
Start Time	WB			EB	App. Total	NB			SB	App. Total					App. Total					App. Total	Int. Total
05:00 PM	15	0	0	209	224	6	0	0	36	42	0	0	0	0	0	0	0	0	0	0	266
05:15 PM	12	0	0	138	150	6	0	0	23	29	0	0	0	0	0	0	0	0	0	0	179
05:30 PM	9	0	0	84	93	1	0	0	17	18	0	0	0	0	0	0	0	0	0	0	111
05:45 PM	5	0	0	101	106	0	0	0	81	81	0	0	0	0	0	0	0	0	0	0	187
Total	41	0	0	532	573	13	0	0	157	170	0	0	0	0	0	0	0	0	0	0	743
Grand Total	41	0	0	532	573	13	0	0	157	170	0	0	0	0	0	0	0	0	0	0	743
Apprch %	7.2	0	0	92.8		7.6	0	0	92.4		0	0	0	0		0	0	0	0		
Total %	5.5	0	0	71.6	77.1	1.7	0	0	21.1	22.9	0	0	0	0	0	0	0	0	0	0	
Vehicles	41	0	0	532	573	13	0	0	157	170	0	0	0	0	0	0	0	0	0	0	743
% Vehicles	100	0	0	100	100	100	0	0	100	100	0	0	0	0	0	0	0	0	0	0	100
Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Duty Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 05:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 05:00 PM

	Washington Pl Southbound					Centre Ave Westbound					Northbound					Washington Pl Eastbound					
Start Time	WB			EB	App. Total	NB			SB	App. Total					App. Total					App. Total	Int. Total
05:00 PM	15	0	0	209	224	6	0	0	36	42	0	0	0	0	0	0	0	0	0	0	266
05:15 PM	12	0	0	138	150	6	0	0	23	29	0	0	0	0	0	0	0	0	0	0	179
05:30 PM	9	0	0	84	93	1	0	0	17	18	0	0	0	0	0	0	0	0	0	0	111
05:45 PM	5	0	0	101	106	0	0	0	81	81	0	0	0	0	0	0	0	0	0	0	187
Total Volume	41	0	0	532	573	13	0	0	157	170	0	0	0	0	0	0	0	0	0	0	743
% App. Total	7.2	0	0	92.8		7.6	0	0	92.4		0	0	0	0		0	0	0	0		
PHF	.683	.000	.000	.636	.640	.542	.000	.000	.485	.525	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.698

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

7

Centre Ave. & Mario Lemieux Pl.
Pedestrians
PGHPE00#11109
board#4435 JCD

File Name : PGHPE00_11109_PM_~~#15 peds~~
Site Code : 11109p15
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Mario Lemieux Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	6	0	0	4	10	2	0	0	0	2	0	0	0	0	0	0	0	0	51	51	63
04:15 PM	10	0	0	2	12	2	0	0	2	4	0	0	0	0	0	3	0	0	44	47	63
04:30 PM	15	0	0	22	37	6	0	0	3	9	0	0	0	0	0	11	0	0	58	69	115
04:45 PM	18	0	0	5	23	2	0	0	0	2	0	0	0	0	0	5	0	0	85	90	115
Total	49	0	0	33	82	12	0	0	5	17	0	0	0	0	0	19	0	0	238	257	356
05:00 PM	20	0	0	12	32	1	0	0	2	3	0	0	0	0	0	0	0	0	130	130	165
05:15 PM	22	0	0	4	26	0	0	0	4	4	0	0	0	0	0	8	0	0	129	137	167
05:30 PM	17	0	0	9	26	0	0	0	4	4	0	0	0	0	0	17	0	0	40	57	87
05:45 PM	8	0	0	3	11	1	0	0	1	2	0	0	0	0	0	12	0	0	42	54	67
Total	67	0	0	28	95	2	0	0	11	13	0	0	0	0	0	37	0	0	341	378	486
Grand Total	116	0	0	61	177	14	0	0	16	30	0	0	0	0	0	56	0	0	579	635	842
Apprch %	65.5	0	0	34.5		46.7	0	0	53.3		0	0	0	0		8.8	0	0	91.2		
Total %	13.8	0	0	7.2	21	1.7	0	0	1.9	3.6	0	0	0	0	0	6.7	0	0	68.8	75.4	

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Mario Lemieux Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	15	0	0	22	37	6	0	0	3	9	0	0	0	0	0	11	0	0	58	69	115
04:45 PM	18	0	0	5	23	2	0	0	0	2	0	0	0	0	0	5	0	0	85	90	115
05:00 PM	20	0	0	12	32	1	0	0	2	3	0	0	0	0	0	0	0	0	130	130	165
05:15 PM	22	0	0	4	26	0	0	0	4	4	0	0	0	0	0	8	0	0	129	137	167
Total Volume	75	0	0	43	118	9	0	0	9	18	0	0	0	0	0	24	0	0	402	426	562
% App. Total	63.6	0	0	36.4		50	0	0	50		0	0	0	0		5.6	0	0	94.4		
PHF	.852	.000	.000	.489	.797	.375	.000	.000	.563	.500	.000	.000	.000	.000	.000	.545	.000	.000	.773	.777	.841

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

9

Centre Ave. & Crawford St.
Pedestrians
PGHPE00#11109
Board#4916 MS

File Name : PGHPE00_11109_PM_~~#3 peds~~
Site Code : 11109p3
Start Date : 7/20/2011
Page No : 1

Groups Printed- Pedestrians

	Centre Ave. Eastbound					Centre Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	6	0	0	4	10	0	0	0	0	0	2	0	0	0	2	6	0	0	7	13	25
04:15 PM	2	0	0	9	11	1	0	0	2	3	4	0	0	4	8	0	0	0	5	5	27
04:30 PM	4	0	0	4	8	0	0	0	2	2	9	0	0	1	10	7	0	0	10	17	37
04:45 PM	1	0	0	3	4	0	0	0	0	0	2	0	0	6	8	3	0	0	2	5	17
Total	13	0	0	20	33	1	0	0	4	5	17	0	0	11	28	16	0	0	24	40	106
05:00 PM	3	0	0	2	5	1	0	0	0	1	5	0	0	1	6	1	0	0	10	11	23
05:15 PM	7	0	0	5	12	0	0	0	2	2	2	0	0	0	2	2	0	0	17	19	35
05:30 PM	0	0	0	5	5	0	0	0	1	1	2	0	0	1	3	3	0	0	9	12	21
05:45 PM	6	0	0	2	8	2	0	0	0	2	2	0	0	0	2	5	0	0	12	17	29
Total	16	0	0	14	30	3	0	0	3	6	11	0	0	2	13	11	0	0	48	59	108
Grand Total	29	0	0	34	63	4	0	0	7	11	28	0	0	13	41	27	0	0	72	99	214
Apprch %	46	0	0	54		36.4	0	0	63.6		68.3	0	0	31.7		27.3	0	0	72.7		
Total %	13.6	0	0	15.9	29.4	1.9	0	0	3.3	5.1	13.1	0	0	6.1	19.2	12.6	0	0	33.6	46.3	

	Centre Ave. Eastbound					Centre Ave. Westbound					Crawford St. Northbound					Crawford St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	4	0	0	4	8	0	0	0	2	2	9	0	0	1	10	7	0	0	10	17	37
04:45 PM	1	0	0	3	4	0	0	0	0	0	2	0	0	6	8	3	0	0	2	5	17
05:00 PM	3	0	0	2	5	1	0	0	0	1	5	0	0	1	6	1	0	0	10	11	23
05:15 PM	7	0	0	5	12	0	0	0	2	2	2	0	0	0	2	2	0	0	17	19	35
Total Volume	15	0	0	14	29	1	0	0	4	5	18	0	0	8	26	13	0	0	39	52	112
% App. Total	51.7	0	0	48.3		20	0	0	80		69.2	0	0	30.8		25	0	0	75		
PHF	.536	.000	.000	.700	.604	.250	.000	.000	.500	.625	.500	.000	.000	.333	.650	.464	.000	.000	.574	.684	.757

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Colwell St. & Pride St.
Pedestrians
PGHPE00#111009
Board#5039 FS

10

File Name : PGHPE00_11109_PM_~~#4 peds~~
Site Code : 11109p4
Start Date : 7/19/2011
Page No : 1

Groups Printed- Pedestrians

	Colwell St. Eastbound					Colwell St. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	9	0	0	6	15	5	0	0	3	8	2	0	0	1	3	1	0	0	1	2	28
04:15 PM	1	0	0	9	10	3	0	0	0	3	0	0	0	0	0	0	0	0	1	1	14
04:30 PM	1	0	0	9	10	5	0	0	1	6	0	0	0	0	0	1	0	0	3	4	20
04:45 PM	4	0	0	3	7	1	0	0	1	2	0	0	0	1	1	0	0	0	1	1	11
Total	15	0	0	27	42	14	0	0	5	19	2	0	0	2	4	2	0	0	6	8	73
05:00 PM	2	0	0	6	8	3	0	0	1	4	0	1	0	0	1	0	0	0	6	6	19
05:15 PM	4	0	0	3	7	3	0	1	0	4	7	0	0	0	7	0	0	0	2	2	20
05:30 PM	3	0	0	6	9	1	0	0	3	4	3	0	0	0	3	3	0	0	0	3	19
05:45 PM	2	0	0	2	4	1	0	0	2	3	1	0	0	2	3	1	0	0	0	1	11
Total	11	0	0	17	28	8	0	1	6	15	11	1	0	2	14	4	0	0	8	12	69
Grand Total	26	0	0	44	70	22	0	1	11	34	13	1	0	4	18	6	0	0	14	20	142
Apprch %	37.1	0	0	62.9		64.7	0	2.9	32.4		72.2	5.6	0	22.2		30	0	0	70		
Total %	18.3	0	0	31	49.3	15.5	0	0.7	7.7	23.9	9.2	0.7	0	2.8	12.7	4.2	0	0	9.9	14.1	

	Colwell St. Eastbound					Colwell St. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	9	0	0	6	15	5	0	0	3	8	2	0	0	1	3	1	0	0	1	2	28
04:15 PM	1	0	0	9	10	3	0	0	0	3	0	0	0	0	0	0	0	0	1	1	14
04:30 PM	1	0	0	9	10	5	0	0	1	6	0	0	0	0	0	1	0	0	3	4	20
04:45 PM	4	0	0	3	7	1	0	0	1	2	0	0	0	1	1	0	0	0	1	1	11
Total Volume	15	0	0	27	42	14	0	0	5	19	2	0	0	2	4	2	0	0	6	8	73
% App. Total	35.7	0	0	64.3		73.7	0	0	26.3		50	0	0	50		25	0	0	75		
PHF	.417	.000	.000	.750	.700	.700	.000	.000	.417	.594	.250	.000	.000	.500	.333	.500	.000	.000	.500	.500	.652

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Fifth Ave. & Sixth Ave.
Pedestrians

11

File Name : PGHPE00_11109_PM_~~#19 peds~~
Site Code : 11109p19
Start Date : 8/4/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	1	0	0	17	18	13	0	0	7	20	20	0	0	7	27	45	0	0	132	177	242
04:15 PM	2	0	0	3	5	10	0	0	6	16	11	0	0	5	16	26	0	0	83	109	146
04:30 PM	0	0	0	9	9	17	0	0	5	22	17	0	0	7	24	55	0	0	126	181	236
04:45 PM	1	0	0	2	3	7	0	0	8	15	11	0	0	12	23	43	0	0	115	158	199
Total	4	0	0	31	35	47	0	0	26	73	59	0	0	31	90	169	0	0	456	625	823
05:00 PM	0	0	0	2	2	2	0	0	14	16	15	0	0	24	39	63	0	0	215	278	335
05:15 PM	0	0	0	0	0	3	0	0	9	12	6	0	0	7	13	72	0	0	170	242	267
05:30 PM	1	0	0	3	4	1	0	0	7	8	6	0	0	6	12	77	0	0	118	195	219
05:45 PM	2	0	0	4	6	9	0	0	5	14	8	0	0	11	19	62	0	0	88	150	189
Total	3	0	0	9	12	15	0	0	35	50	35	0	0	48	83	274	0	0	591	865	1010
Grand Total	7	0	0	40	47	62	0	0	61	123	94	0	0	79	173	443	0	0	1047	1490	1833
Apprch %	14.9	0	0	85.1		50.4	0	0	49.6		54.3	0	0	45.7		29.7	0	0	70.3		
Total %	0.4	0	0	2.2	2.6	3.4	0	0	3.3	6.7	5.1	0	0	4.3	9.4	24.2	0	0	57.1	81.3	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	9	9	17	0	0	5	22	17	0	0	7	24	55	0	0	126	181	236
04:45 PM	1	0	0	2	3	7	0	0	8	15	11	0	0	12	23	43	0	0	115	158	199
05:00 PM	0	0	0	2	2	2	0	0	14	16	15	0	0	24	39	63	0	0	215	278	335
05:15 PM	0	0	0	0	0	3	0	0	9	12	6	0	0	7	13	72	0	0	170	242	267
Total Volume	1	0	0	13	14	29	0	0	36	65	49	0	0	50	99	233	0	0	626	859	1037
% App. Total	7.1	0	0	92.9		44.6	0	0	55.4		49.5	0	0	50.5		27.1	0	0	72.9		
PHF	.250	.000	.000	.361	.389	.426	.000	.000	.643	.739	.721	.000	.000	.521	.635	.809	.000	.000	.728	.772	.774

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ifth Ave. & Diamond St.
edestrians
GHPE00#11109
oard#5040 SE

12

File Name : PGHPE00_11109_PM_~~#20 peds~~
Site Code : 11109p20
Start Date : 7/28/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Diamond St. Northbound					Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	0	0	1	2	3	0	0	0	3	0	0	0	0	0	5
04:15 PM	0	0	0	1	1	3	0	0	2	5	4	0	0	1	5	0	0	0	0	0	11
04:30 PM	0	0	0	0	0	4	0	0	2	6	1	0	0	6	7	0	0	0	0	0	13
04:45 PM	0	0	0	0	0	8	0	0	1	9	1	0	0	4	5	0	0	0	0	0	14
Total	0	0	0	1	1	16	0	0	6	22	9	0	0	11	20	0	0	0	0	0	43
05:00 PM	0	0	0	0	0	3	0	0	5	8	0	0	0	4	4	0	0	0	0	0	12
05:15 PM	1	0	0	3	4	6	0	0	4	10	1	0	0	1	2	0	0	0	0	0	16
05:30 PM	0	0	0	0	0	5	0	0	0	5	2	0	0	3	5	0	0	0	0	0	10
05:45 PM	0	0	0	2	2	1	0	0	0	1	4	0	0	1	5	0	0	0	0	0	8
Total	1	0	0	5	6	15	0	0	9	24	7	0	0	9	16	0	0	0	0	0	46
Grand Total	1	0	0	6	7	31	0	0	15	46	16	0	0	20	36	0	0	0	0	0	89
Apprch %	14.3	0	0	85.7		67.4	0	0	32.6		44.4	0	0	55.6		0	0	0	0		
Total %	1.1	0	0	6.7	7.9	34.8	0	0	16.9	51.7	18	0	0	22.5	40.4	0	0	0	0	0	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Diamond St. Northbound					Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	4	0	0	2	6	1	0	0	6	7	0	0	0	0	0	13
04:45 PM	0	0	0	0	0	8	0	0	1	9	1	0	0	4	5	0	0	0	0	0	14
05:00 PM	0	0	0	0	0	3	0	0	5	8	0	0	0	4	4	0	0	0	0	0	12
05:15 PM	1	0	0	3	4	6	0	0	4	10	1	0	0	1	2	0	0	0	0	0	16
Total Volume	1	0	0	3	4	21	0	0	12	33	3	0	0	15	18	0	0	0	0	0	55
% App. Total	25	0	0	75		63.6	0	0	36.4		16.7	0	0	83.3		0	0	0	0		
PHF	.250	.000	.000	.250	.250	.656	.000	.000	.600	.825	.750	.000	.000	.625	.643	.000	.000	.000	.000	.000	.859

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Fifth Ave. & Washington
Pl./ Chatham Sq. (Peds)
PGHPE00#11109
Board#5038 AM

File Name : pghpe00_11109_pm_~~#13 peds~~ 13
Site Code : 11109p13
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Chatham Sq. Northbound					Washington Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	4	0	0	7	11	8	0	0	5	13	15	0	0	14	29	8	0	0	25	33	86
04:15 PM	4	0	0	7	11	7	0	0	6	13	5	0	0	11	16	10	0	0	26	36	76
04:30 PM	6	0	0	2	8	12	0	0	7	19	26	0	0	18	44	7	0	0	29	36	107
04:45 PM	10	0	0	2	12	8	0	0	10	18	30	0	0	19	49	12	0	0	36	48	127
Total	24	0	0	18	42	35	0	0	28	63	76	0	0	62	138	37	0	0	116	153	396
05:00 PM	1	0	0	3	4	5	0	0	5	10	13	0	0	17	30	25	0	0	45	70	114
05:15 PM	1	0	0	0	1	5	0	0	7	12	10	0	0	6	16	21	0	0	27	48	77
05:30 PM	2	0	0	1	3	7	0	0	2	9	6	0	0	11	17	22	0	0	15	37	66
05:45 PM	1	0	0	2	3	6	0	0	6	12	6	0	0	7	13	5	0	0	10	15	43
Total	5	0	0	6	11	23	0	0	20	43	35	0	0	41	76	73	0	0	97	170	300
Grand Total	29	0	0	24	53	58	0	0	48	106	111	0	0	103	214	110	0	0	213	323	696
Apprch %	54.7	0	0	45.3		54.7	0	0	45.3		51.9	0	0	48.1		34.1	0	0	65.9		
Total %	4.2	0	0	3.4	7.6	8.3	0	0	6.9	15.2	15.9	0	0	14.8	30.7	15.8	0	0	30.6	46.4	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Chatham Sq. Northbound					Washington Pl. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	6	0	0	2	8	12	0	0	7	19	26	0	0	18	44	7	0	0	29	36	107
04:45 PM	10	0	0	2	12	8	0	0	10	18	30	0	0	19	49	12	0	0	36	48	127
05:00 PM	1	0	0	3	4	5	0	0	5	10	13	0	0	17	30	25	0	0	45	70	114
05:15 PM	1	0	0	0	1	5	0	0	7	12	10	0	0	6	16	21	0	0	27	48	77
Total Volume	18	0	0	7	25	30	0	0	29	59	79	0	0	60	139	65	0	0	137	202	425
% App. Total	72	0	0	28		50.8	0	0	49.2		56.8	0	0	43.2		32.2	0	0	67.8		
PHF	.450	.000	.000	.583	.521	.625	.000	.000	.725	.776	.658	.000	.000	.789	.709	.650	.000	.000	.761	.721	.837

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Fifth Ave. & Magee St.
Pedestrians
PGHPE00#11109
Board#4437 JR

File Name : PGHPE00_11109_PM_~~#9 peds~~ 14
Site Code : 111090p9
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Magee St. Northbound					Parking Lot Dwy. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	2	2	2	0	0	0	2	10	0	0	8	18	13	0	0	8	21	43
04:45 PM	0	0	0	3	3	1	0	0	1	2	9	0	0	5	14	26	0	0	11	37	56
Total	0	0	0	5	5	3	0	0	1	4	19	0	0	13	32	39	0	0	19	58	99
05:00 PM	0	0	0	3	3	1	1	0	3	5	27	0	0	13	40	39	0	0	21	60	108
05:15 PM	0	0	0	0	0	2	0	0	0	2	14	0	0	3	17	50	0	0	22	72	91
05:30 PM	2	0	0	0	2	3	0	0	1	4	8	0	0	8	16	36	0	0	9	45	67
05:45 PM	1	0	0	0	1	2	0	0	3	5	7	0	0	5	12	25	0	0	10	35	53
Total	3	0	0	3	6	8	1	0	7	16	56	0	0	29	85	150	0	0	62	212	319
Grand Total	3	0	0	8	11	11	1	0	8	20	75	0	0	42	117	189	0	0	81	270	418
Apprch %	27.3	0	0	72.7		55	5	0	40		64.1	0	0	35.9		70	0	0	30		
Total %	0.7	0	0	1.9	2.6	2.6	0.2	0	1.9	4.8	17.9	0	0	10	28	45.2	0	0	19.4	64.6	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Magee St. Northbound					Parking Lot Dwy. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	3	3	1	0	0	1	2	9	0	0	5	14	26	0	0	11	37	56
05:00 PM	0	0	0	3	3	1	1	0	3	5	27	0	0	13	40	39	0	0	21	60	108
05:15 PM	0	0	0	0	0	2	0	0	0	2	14	0	0	3	17	50	0	0	22	72	91
05:30 PM	2	0	0	0	2	3	0	0	1	4	8	0	0	8	16	36	0	0	9	45	67
Total Volume	2	0	0	6	8	7	1	0	5	13	58	0	0	29	87	151	0	0	63	214	322
% App. Total	25	0	0	75		53.8	7.7	0	38.5		66.7	0	0	33.3		70.6	0	0	29.4		
PHF	.250	.000	.000	.500	.667	.583	.250	.000	.417	.650	.537	.000	.000	.558	.544	.755	.000	.000	.716	.743	.745

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

ifth Ave. & Stevenson St.
edestrians
GHPE00#11109
oard#5040 SE

15

File Name : PGHPE00_11109_PM_~~#8 peds~~
Site Code : 111090p8
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Stevenson St. Northbound					Stevenson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3	1	0	0	2	3	6
04:30 PM	0	0	0	1	1	0	0	0	0	0	3	0	0	3	6	1	0	0	2	3	10
04:45 PM	0	0	0	0	0	1	0	0	0	1	2	0	0	0	2	12	0	0	1	13	16
Total	0	0	0	1	1	1	0	0	0	1	7	0	0	4	11	14	0	0	5	19	32
05:00 PM	0	0	0	1	1	2	0	0	1	3	1	0	0	5	6	14	0	0	5	19	29
05:15 PM	0	0	0	0	0	0	0	0	2	2	1	0	0	0	1	18	0	0	6	24	27
05:30 PM	0	0	0	2	2	3	0	0	0	3	1	0	0	5	6	28	0	0	0	28	39
05:45 PM	0	0	0	2	2	0	0	0	2	2	4	0	0	2	6	14	0	0	3	17	27
Total	0	0	0	5	5	5	0	0	5	10	7	0	0	12	19	74	0	0	14	88	122
Grand Total	0	0	0	6	6	6	0	0	5	11	14	0	0	16	30	88	0	0	19	107	154
Apprch %	0	0	0	100		54.5	0	0	45.5		46.7	0	0	53.3		82.2	0	0	17.8		
Total %	0	0	0	3.9	3.9	3.9	0	0	3.2	7.1	9.1	0	0	10.4	19.5	57.1	0	0	12.3	69.5	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Stevenson St. Northbound					Stevenson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 04:00 PM to 05:30 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	1	0	0	0	1	2	0	0	0	2	12	0	0	1	13	16
05:00 PM	0	0	0	1	1	2	0	0	1	3	1	0	0	5	6	14	0	0	5	19	29
05:15 PM	0	0	0	0	0	0	0	0	2	2	1	0	0	0	1	18	0	0	6	24	27
05:30 PM	0	0	0	2	2	3	0	0	0	3	1	0	0	5	6	28	0	0	0	28	39
Total Volume	0	0	0	3	3	6	0	0	3	9	5	0	0	10	15	72	0	0	12	84	111
% App. Total	0	0	0	100		66.7	0	0	33.3		33.3	0	0	66.7		85.7	0	0	14.3		
PHF	.000	.000	.000	.375	.375	.500	.000	.000	.375	.750	.625	.000	.000	.500	.625	.643	.000	.000	.500	.750	.712

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Fifth Ave. & Pride St.
Pedestrians
PGHPE00#11109
Board#5040 SE

File Name : PGHPE00_11109_PM_~~#5 peds~~ 16
Site Code : 11109p5
Start Date : 7/19/2011
Page No : 1

Groups Printed- Pedestrians

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	8	0	0	3	11	3	0	0	2	5	7	0	0	4	11	1	0	0	11	12	39
04:15 PM	0	0	0	5	5	2	0	0	0	2	6	0	0	0	6	3	0	0	2	5	18
04:30 PM	1	0	0	5	6	4	0	0	2	6	13	0	0	3	16	1	0	0	6	7	35
04:45 PM	2	0	0	1	3	2	0	0	1	3	5	0	0	1	6	5	0	0	7	12	24
Total	11	0	0	14	25	11	0	0	5	16	31	0	0	8	39	10	0	0	26	36	116
05:00 PM	1	0	0	4	5	3	0	0	1	4	9	0	0	2	11	2	0	0	3	5	25
05:15 PM	1	0	0	3	4	0	0	0	1	1	3	0	0	1	4	6	0	0	2	8	17
05:30 PM	2	0	0	3	5	0	0	0	5	5	9	0	0	5	14	21	0	0	3	24	48
05:45 PM	2	0	0	1	3	5	0	0	3	8	9	0	0	5	14	14	0	2	13	29	54
Total	6	0	0	11	17	8	0	0	10	18	30	0	0	13	43	43	0	2	21	66	144
Grand Total	17	0	0	25	42	19	0	0	15	34	61	0	0	21	82	53	0	2	47	102	260
Apprch %	40.5	0	0	59.5		55.9	0	0	44.1		74.4	0	0	25.6		52	0	2	46.1		
Total %	6.5	0	0	9.6	16.2	7.3	0	0	5.8	13.1	23.5	0	0	8.1	31.5	20.4	0	0.8	18.1	39.2	

	Fifth Ave. Eastbound					Fifth Ave. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	0	0	4	5	3	0	0	1	4	9	0	0	2	11	2	0	0	3	5	25
05:15 PM	1	0	0	3	4	0	0	0	1	1	3	0	0	1	4	6	0	0	2	8	17
05:30 PM	2	0	0	3	5	0	0	0	5	5	9	0	0	5	14	21	0	0	3	24	48
05:45 PM	2	0	0	1	3	5	0	0	3	8	9	0	0	5	14	14	0	2	13	29	54
Total Volume	6	0	0	11	17	8	0	0	10	18	30	0	0	13	43	43	0	2	21	66	144
% App. Total	35.3	0	0	64.7		44.4	0	0	55.6		69.8	0	0	30.2		65.2	0	3	31.8		
PHF	.750	.000	.000	.688	.850	.400	.000	.000	.500	.563	.833	.000	.000	.650	.768	.512	.000	.250	.404	.569	.667

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Sixth Ave. & Diamond St.
Pedestrians

File Name : PGHPE00_11109_PM_~~#21 peds~~ 17
Site Code : 11109p21
Start Date : 8/4/2011
Page No : 1

Groups Printed- Pedestrians

	Diamond St. Eastbound					Diamond St. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	2	2	3	0	0	2	5	0	0	0	0	0	6	0	0	13	19	26
04:15 PM	0	0	0	2	2	1	0	0	2	3	0	0	0	0	0	3	0	0	8	11	16
04:30 PM	2	0	0	0	2	4	0	0	1	5	0	0	0	0	0	3	0	0	19	22	29
04:45 PM	0	0	0	1	1	1	0	0	1	2	0	0	0	0	0	8	0	0	9	17	20
Total	2	0	0	5	7	9	0	0	6	15	0	0	0	0	0	20	0	0	49	69	91
05:00 PM	2	0	0	2	4	2	0	0	5	7	0	0	0	0	0	4	0	0	3	7	18
05:15 PM	0	0	0	1	1	1	0	0	11	12	0	0	0	1	1	3	0	0	5	8	22
05:30 PM	3	0	0	0	3	1	0	0	3	4	2	0	0	0	2	5	0	0	8	13	22
05:45 PM	1	0	0	4	5	2	0	0	4	6	0	0	0	0	0	1	0	0	2	3	14
Total	6	0	0	7	13	6	0	0	23	29	2	0	0	1	3	13	0	0	18	31	76
Grand Total	8	0	0	12	20	15	0	0	29	44	2	0	0	1	3	33	0	0	67	100	167
Apprch %	40	0	0	60		34.1	0	0	65.9		66.7	0	0	33.3		33	0	0	67		
Total %	4.8	0	0	7.2	12	9	0	0	17.4	26.3	1.2	0	0	0.6	1.8	19.8	0	0	40.1	59.9	

	Diamond St. Eastbound					Diamond St. Westbound					Sixth Ave. Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	2	2	3	0	0	2	5	0	0	0	0	0	6	0	0	13	19	26
04:15 PM	0	0	0	2	2	1	0	0	2	3	0	0	0	0	0	3	0	0	8	11	16
04:30 PM	2	0	0	0	2	4	0	0	1	5	0	0	0	0	0	3	0	0	19	22	29
04:45 PM	0	0	0	1	1	1	0	0	1	2	0	0	0	0	0	8	0	0	9	17	20
Total Volume	2	0	0	5	7	9	0	0	6	15	0	0	0	0	0	20	0	0	49	69	91
% App. Total	28.6	0	0	71.4		60	0	0	40		0	0	0	0		29	0	0	71		
PHF	.250	.000	.000	.625	.875	.563	.000	.000	.750	.750	.000	.000	.000	.000	.000	.625	.000	.000	.645	.784	.784

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Forbes Ave. & Sixth Ave.
Pedestrians

18

File Name : PGHPE00_11109_PM_~~#22 peds~~
Site Code : 11109p22
Start Date : 8/4/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Liberty Bridge Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	1	0	0	4	5	2	0	0	0	2	20	0	0	13	33	0	0	0	1	1	41
04:15 PM	1	0	0	1	2	1	0	0	0	1	14	0	0	13	27	0	0	0	2	2	32
04:30 PM	1	0	0	0	1	5	0	0	0	5	19	0	0	13	32	0	0	0	0	0	38
04:45 PM	1	0	0	1	2	1	0	0	2	3	25	0	0	11	36	0	0	0	1	1	42
Total	4	0	0	6	10	9	0	0	2	11	78	0	0	50	128	0	0	0	4	4	153
05:00 PM	0	0	0	2	2	3	0	0	4	7	25	0	0	15	40	0	0	0	1	1	50
05:15 PM	1	0	0	0	1	1	0	0	6	7	25	0	0	14	39	0	0	0	0	0	47
05:30 PM	1	0	0	0	1	0	0	0	2	2	19	0	0	15	34	0	0	0	0	0	37
05:45 PM	1	0	0	4	5	2	0	0	4	6	16	0	0	8	24	0	0	0	0	0	35
Total	3	0	0	6	9	6	0	0	16	22	85	0	0	52	137	0	0	0	1	1	169
Grand Total	7	0	0	12	19	15	0	0	18	33	163	0	0	102	265	0	0	0	5	5	322
Apprch %	36.8	0	0	63.2		45.5	0	0	54.5		61.5	0	0	38.5		0	0	0	100		
Total %	2.2	0	0	3.7	5.9	4.7	0	0	5.6	10.2	50.6	0	0	31.7	82.3	0	0	0	1.6	1.6	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Liberty Bridge Northbound					Sixth Ave. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	0	0	0	1	5	0	0	0	5	19	0	0	13	32	0	0	0	0	0	38
04:45 PM	1	0	0	1	2	1	0	0	2	3	25	0	0	11	36	0	0	0	1	1	42
05:00 PM	0	0	0	2	2	3	0	0	4	7	25	0	0	15	40	0	0	0	1	1	50
05:15 PM	1	0	0	0	1	1	0	0	6	7	25	0	0	14	39	0	0	0	0	0	47
Total Volume	3	0	0	3	6	10	0	0	12	22	94	0	0	53	147	0	0	0	2	2	177
% App. Total	50	0	0	50		45.5	0	0	54.5		63.9	0	0	36.1		0	0	0	100		
PHF	.750	.000	.000	.375	.750	.500	.000	.000	.500	.786	.940	.000	.000	.883	.919	.000	.000	.000	.500	.500	.885

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412-490-0630

Forbes Ave. & Armstrong Tunnel
Pedestrians
PGHPE00#11109
Board#5040 SE

19

File Name : PGHPE00_11109_PM_~~#12 peds~~
Site Code : 11109p12
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Armstrong Tunnel Northbound					Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	16	0	0	3	19	0	0	0	0	0	19
04:15 PM	0	0	0	0	0	0	0	0	0	0	15	0	0	10	25	0	0	0	0	0	25
04:30 PM	0	0	0	0	0	0	0	0	0	0	13	0	0	5	18	0	0	0	0	0	18
04:45 PM	0	0	0	0	0	0	0	0	0	0	14	0	0	3	17	0	0	0	0	0	17
Total	0	0	0	0	0	0	0	0	0	0	58	0	0	21	79	0	0	0	0	0	79
05:00 PM	0	0	0	0	0	0	0	0	0	0	10	0	0	8	18	0	0	0	0	0	18
05:15 PM	0	0	0	0	0	0	0	0	0	0	12	0	0	3	15	0	0	0	0	0	15
05:30 PM	0	0	0	0	0	0	0	0	0	0	10	0	0	11	21	0	0	0	0	0	21
05:45 PM	0	0	0	0	0	0	0	0	0	0	11	0	0	3	14	0	0	0	0	0	14
Total	0	0	0	0	0	0	0	0	0	0	43	0	0	25	68	0	0	0	0	0	68
Grand Total	0	0	0	0	0	0	0	0	0	0	101	0	0	46	147	0	0	0	0	0	147
Apprch %	0	0	0	0		0	0	0	0		68.7	0	0	31.3		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	68.7	0	0	31.3	100	0	0	0	0	0	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Armstrong Tunnel Northbound					Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	16	0	0	3	19	0	0	0	0	0	19
04:15 PM	0	0	0	0	0	0	0	0	0	0	15	0	0	10	25	0	0	0	0	0	25
04:30 PM	0	0	0	0	0	0	0	0	0	0	13	0	0	5	18	0	0	0	0	0	18
04:45 PM	0	0	0	0	0	0	0	0	0	0	14	0	0	3	17	0	0	0	0	0	17
Total Volume	0	0	0	0	0	0	0	0	0	0	58	0	0	21	79	0	0	0	0	0	79
% App. Total	0	0	0	0		0	0	0	0		73.4	0	0	26.6		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.906	.000	.000	.525	.790	.000	.000	.000	.000	.000	.790

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

'orbes Ave. & Chatham Sq./McAnulty Dr.
'edestrians
'GHPE00#11109
loard#5039 JR

20

File Name : PGHPE00_11109_PM ~~#11 peds~~
Site Code : 11109p11
Start Date : 7/27/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					McAnulty Dr. Northbound					Chatham Sq. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	5	0	0	5	10	5	0	0	12	17	19	0	0	10	29	8	0	0	6	14	70
04:15 PM	4	0	0	2	6	6	0	0	13	19	20	0	0	7	27	2	0	0	11	13	65
04:30 PM	8	0	0	2	10	11	0	0	9	20	15	0	0	8	23	5	0	0	14	19	72
04:45 PM	3	0	0	0	3	8	0	0	5	13	15	0	0	1	16	1	0	0	7	8	40
Total	20	0	0	9	29	30	0	0	39	69	69	0	0	26	95	16	0	0	38	54	247
05:00 PM	8	0	0	0	8	5	0	0	8	13	14	0	0	5	19	3	0	0	9	12	52
05:15 PM	3	0	0	0	3	5	0	0	5	10	15	0	0	8	23	0	0	0	4	4	40
05:30 PM	6	0	0	1	7	5	0	0	6	11	8	0	0	9	17	3	0	0	4	7	42
05:45 PM	1	0	0	1	2	3	0	0	6	9	12	0	0	10	22	0	0	0	0	0	33
Total	18	0	0	2	20	18	0	0	25	43	49	0	0	32	81	6	0	0	17	23	167
Grand Total	38	0	0	11	49	48	0	0	64	112	118	0	0	58	176	22	0	0	55	77	414
Apprch %	77.6	0	0	22.4		42.9	0	0	57.1		67	0	0	33		28.6	0	0	71.4		
Total %	9.2	0	0	2.7	11.8	11.6	0	0	15.5	27.1	28.5	0	0	14	42.5	5.3	0	0	13.3	18.6	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					McAnulty Dr. Northbound					Chatham Sq. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
ak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
ak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	5	0	0	5	10	5	0	0	12	17	19	0	0	10	29	8	0	0	6	14	70
04:15 PM	4	0	0	2	6	6	0	0	13	19	20	0	0	7	27	2	0	0	11	13	65
04:30 PM	8	0	0	2	10	11	0	0	9	20	15	0	0	8	23	5	0	0	14	19	72
04:45 PM	3	0	0	0	3	8	0	0	5	13	15	0	0	1	16	1	0	0	7	8	40
Total Volume	20	0	0	9	29	30	0	0	39	69	69	0	0	26	95	16	0	0	38	54	247
% App. Total	69	0	0	31		43.5	0	0	56.5		72.6	0	0	27.4		29.6	0	0	70.4		
PHF	.625	.000	.000	.450	.725	.682	.000	.000	.750	.863	.863	.000	.000	.650	.819	.500	.000	.000	.679	.711	.858

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Forbes Ave. & Magee St.
Pedestrians
PGHPE00#11109
Board#5038 AM

21

File Name : PGHPE00_11109_PM_~~#10 peds~~
Site Code : 11109p10
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Magee St. Northbound					Magee St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	3	3	2	0	0	1	3	4	0	0	3	7	2	0	0	4	6	19
04:30 PM	0	0	0	2	2	2	0	0	0	2	8	0	0	2	10	0	0	0	3	3	17
04:45 PM	0	0	0	1	1	1	0	0	2	3	5	0	0	2	7	1	0	0	2	3	14
Total	0	0	0	6	6	5	0	0	3	8	17	0	0	7	24	3	0	0	9	12	50
05:00 PM	0	0	0	11	11	5	0	0	0	5	4	0	0	3	7	1	0	0	3	4	27
05:15 PM	1	0	0	4	5	1	0	0	0	1	8	0	0	1	9	3	0	0	1	4	19
05:30 PM	3	0	0	2	5	0	0	0	8	8	3	0	0	7	10	2	0	0	1	3	26
05:45 PM	1	0	0	1	2	0	0	0	8	8	4	0	0	4	8	1	0	0	2	3	21
Total	5	0	0	18	23	6	0	0	16	22	19	0	0	15	34	7	0	0	7	14	93
Grand Total	5	0	0	24	29	11	0	0	19	30	36	0	0	22	58	10	0	0	16	26	143
Apprch %	17.2	0	0	82.8		36.7	0	0	63.3		62.1	0	0	37.9		38.5	0	0	61.5		
Total %	3.5	0	0	16.8	20.3	7.7	0	0	13.3	21	25.2	0	0	15.4	40.6	7	0	0	11.2	18.2	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Magee St. Northbound					Magee St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	11	11	5	0	0	0	5	4	0	0	3	7	1	0	0	3	4	27
05:15 PM	1	0	0	4	5	1	0	0	0	1	8	0	0	1	9	3	0	0	1	4	19
05:30 PM	3	0	0	2	5	0	0	0	8	8	3	0	0	7	10	2	0	0	1	3	26
05:45 PM	1	0	0	1	2	0	0	0	8	8	4	0	0	4	8	1	0	0	2	3	21
Total Volume	5	0	0	18	23	6	0	0	16	22	19	0	0	15	34	7	0	0	7	14	93
% App. Total	21.7	0	0	78.3		27.3	0	0	72.7		55.9	0	0	44.1		50	0	0	50		
PHF	.417	.000	.000	.409	.523	.300	.000	.000	.500	.688	.594	.000	.000	.536	.850	.583	.000	.000	.583	.875	.861

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Forbes Ave. & Stevenson St.
Pedestrians
PGHPE00#11109
Board#5039 FS

22

File Name : PGHPE00_11109_PM_~~#7 peds~~
Site Code : 111090p7
Start Date : 7/21/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Stevenson St. Northbound					Stevenson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	1	0	0	4	5	0	0	0	0	0	3	0	0	2	5	2	0	0	3	5	15
04:30 PM	3	0	0	5	8	10	0	0	0	10	1	0	0	9	10	2	0	0	4	6	34
04:45 PM	2	0	0	3	5	4	0	0	1	5	3	0	0	3	6	2	0	0	1	3	19
Total	6	0	0	12	18	14	0	0	1	15	7	0	0	14	21	6	0	0	8	14	68
05:00 PM	1	0	0	4	5	1	0	0	0	1	2	0	0	3	5	3	0	0	5	8	19
05:15 PM	1	0	0	2	3	0	0	0	0	0	4	0	0	1	5	1	0	0	1	2	10
05:30 PM	3	0	0	2	5	0	0	0	0	0	5	0	0	4	9	1	0	0	0	1	15
05:45 PM	3	0	0	5	8	1	0	0	2	3	5	0	0	5	10	3	0	0	2	5	26
Total	8	0	0	13	21	2	0	0	2	4	16	0	0	13	29	8	0	0	8	16	70
Grand Total	14	0	0	25	39	16	0	0	3	19	23	0	0	27	50	14	0	0	16	30	138
Apprch %	35.9	0	0	64.1		84.2	0	0	15.8		46	0	0	54		46.7	0	0	53.3		
Total %	10.1	0	0	18.1	28.3	11.6	0	0	2.2	13.8	16.7	0	0	19.6	36.2	10.1	0	0	11.6	21.7	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Stevenson St. Northbound					Stevenson St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	1	0	0	4	5	0	0	0	0	0	3	0	0	2	5	2	0	0	3	5	15
04:30 PM	3	0	0	5	8	10	0	0	0	10	1	0	0	9	10	2	0	0	4	6	34
04:45 PM	2	0	0	3	5	4	0	0	1	5	3	0	0	3	6	2	0	0	1	3	19
05:00 PM	1	0	0	4	5	1	0	0	0	1	2	0	0	3	5	3	0	0	5	8	19
Total Volume	7	0	0	16	23	15	0	0	1	16	9	0	0	17	26	9	0	0	13	22	87
% App. Total	30.4	0	0	69.6		93.8	0	0	6.2		34.6	0	0	65.4		40.9	0	0	59.1		
PHF	.583	.000	.000	.800	.719	.375	.000	.000	.250	.400	.750	.000	.000	.472	.650	.750	.000	.000	.650	.688	.640

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Forbes Ave. & Pride St.
Pedestrians
PGHPE00#11109
Board#4437 JR

23

File Name : PGHPE00_11109_PM_~~#6 peds~~
Site Code : 11109006
Start Date : 7/20/2011
Page No : 1

Groups Printed- Pedestrians

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
04:00 PM	2	0	0	13	15	1	0	0	2	3	2	0	0	4	6	0	0	0	10	10	34
04:15 PM	8	0	0	14	22	1	0	0	0	1	8	0	0	1	9	1	0	0	7	8	40
04:30 PM	2	1	0	19	22	1	0	0	1	2	1	0	0	1	2	1	0	0	14	15	41
04:45 PM	4	0	0	5	9	3	0	0	0	3	5	0	0	6	11	1	0	0	12	13	36
Total	16	1	0	51	68	6	0	0	3	9	16	0	0	12	28	3	0	0	43	46	151
05:00 PM	5	0	0	9	14	2	0	0	1	3	5	0	0	3	8	2	0	0	10	12	37
05:15 PM	4	0	0	5	9	0	0	0	0	0	4	0	0	2	6	0	0	0	2	2	17
05:30 PM	8	0	0	7	15	3	0	0	0	3	4	0	0	4	8	2	0	0	4	6	32
05:45 PM	6	0	0	5	11	3	0	0	1	4	6	0	0	2	8	1	0	0	1	2	25
Total	23	0	0	26	49	8	0	0	2	10	19	0	0	11	30	5	0	0	17	22	111
Grand Total	39	1	0	77	117	14	0	0	5	19	35	0	0	23	58	8	0	0	60	68	262
Apprch %	33.3	0.9	0	65.8		73.7	0	0	26.3		60.3	0	0	39.7		11.8	0	0	88.2		
Total %	14.9	0.4	0	29.4	44.7	5.3	0	0	1.9	7.3	13.4	0	0	8.8	22.1	3.1	0	0	22.9	26	

	Forbes Ave. Eastbound					Forbes Ave. Westbound					Pride St. Northbound					Pride St. Southbound					
Start Time	SB			NB	App. Total	NB			SB	App. Total	EB			WB	App. Total	WB			EB	App. Total	Int. Total
eak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
eak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	8	0	0	14	22	1	0	0	0	1	8	0	0	1	9	1	0	0	7	8	40
04:30 PM	2	1	0	19	22	1	0	0	1	2	1	0	0	1	2	1	0	0	14	15	41
04:45 PM	4	0	0	5	9	3	0	0	0	3	5	0	0	6	11	1	0	0	12	13	36
05:00 PM	5	0	0	9	14	2	0	0	1	3	5	0	0	3	8	2	0	0	10	12	37
Total Volume	19	1	0	47	67	7	0	0	2	9	19	0	0	11	30	5	0	0	43	48	154
% App. Total	28.4	1.5	0	70.1		77.8	0	0	22.2		63.3	0	0	36.7		10.4	0	0	89.6		
PHF	.594	.250	.000	.618	.761	.583	.000	.000	.500	.750	.594	.000	.000	.458	.682	.625	.000	.000	.768	.800	.939

APPENDIX D

LEVEL OF SERVICE

Intersection levels of service (LOS) were determined through implementation of the methodology presented in the 2000 Edition of the *Highway Capacity Manual*, published by the Transportation Research Board.

Signalized Intersections

An explanation of level of service at signalized intersections is as follows:

"Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions. Specifically, level-of-service (LOS) criteria are stated in terms of the average control delay per vehicle, typically for a 15-min analysis period. Delay is a complex measure and dependents upon a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group.

LOS A describes operations with very low control delay, up to 10 seconds per vehicle. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.

LOS B describes operations with control delay greater than 10 and up to 20 seconds per vehicle. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.

LOS C describes operations with control delay greater than 20 and up to 35 seconds per vehicle. These higher delays may result from only fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.

LOS D describes operations with control delay greater than 35 and up to 55 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.

LOS E describes operations with control delay greater than 55 and up to 80 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.

LOS F describes operations with control delay in excess of 80 seconds per vehicle. This level, considered to be unacceptable to most drivers, often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also be major contribute significantly to high delay levels."

LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

(Adapted from figure 16-2, HCS 2000)

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Unsignalized Intersections

Level of service for unsignalized intersections is determined by the computed or measured average control delay, and is defined for each minor movement. Level of service is not defined for the intersection as a whole. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during conditions with ideal geometrics and in the absence of incidents, control and traffic.

The LOS criteria for unsignalized intersections are somewhat different from the criteria used for signalized intersections primarily because different transportation facilities create different driver perceptions. The expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay than an unsignalized intersection.

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

(Adapted from figures 17-2 & 17-22, HCS 2000)

LEVEL OF SERVICE	CONTROL DELAY PER VEHICLE (SEC)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

APPENDIX E

Movement	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	161	151	143	447	65	515	312	642
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1486	1330	3122	1396	1578	1661	1412
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1486	1330	3122	1396	1578	1661	1412
Peak-hour factor, PHF	0.87	0.89	0.95	0.88	0.79	0.92	0.86	0.99
Adj. Flow (vph)	185	170	151	508	82	560	363	648
RTOR Reduction (vph)	0	0	0	0	63	0	0	0
Lane Group Flow (vph)	0	355	151	508	19	560	363	648
Confl. Peds. (#/hr)			17		17			17
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Actuated Green, G (s)		18.0	18.0	21.0	21.0	36.0	36.0	36.0
Effective Green, g (s)		18.0	18.0	21.0	21.0	36.0	36.0	36.0
Actuated g/C Ratio		0.20	0.20	0.23	0.23	0.40	0.40	0.40
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)		297	266	728	325	631	664	564
v/s Ratio Prot		c0.24	0.11	c0.16	0.01	0.35	0.22	c0.46
v/s Ratio Perm								
v/c Ratio		1.20	0.57	0.70	0.06	0.89	0.55	1.15
Uniform Delay, d1		36.0	32.5	31.6	26.8	25.1	20.7	27.0
Progression Factor		1.00	1.00	1.51	3.20	1.00	1.00	1.00
Incremental Delay, d2		116.0	8.5	4.3	0.3	16.9	3.2	86.2
Delay (s)		152.0	41.0	51.9	86.1	42.0	24.0	113.2
Level of Service		F	D	D	F	D	C	F
Approach Delay (s)		118.9		56.7			67.2	
Approach LOS		F		E			E	

Intersection Summary

HCM 2000 Control Delay	74.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBT	WBR2	SBL2	SBL	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Lane Configurations											
Volume (vph)	2	3	131	278	0	319	37	353	89	12	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	16	13	12	12	12
Grade (%)	2%			2%				10%			-12%
Total Lost time (s)	6.0			6.0	6.0		6.0	6.0			6.0
Lane Util. Factor	1.00			1.00	1.00		1.00	0.95			0.95
Frpb, ped/bikes	0.98			1.00	1.00		1.00	0.98			1.00
Flpb, ped/bikes	1.00			1.00	1.00		1.00	1.00			1.00
Frt	0.90			1.00	0.85		1.00	0.97			1.00
Flt Protected	1.00			0.95	1.00		0.95	1.00			1.00
Satd. Flow (prot)	1328			1577	1411		1749	2961			3368
Flt Permitted	1.00			0.95	1.00		0.95	1.00			1.00
Satd. Flow (perm)	1328			1577	1411		1749	2961			3368
Peak-hour factor, PHF	0.50	0.25	0.84	0.81	0.80	0.80	0.69	0.84	0.92	0.75	0.80
Adj. Flow (vph)	4	12	156	343	0	399	54	420	97	16	188
RTOR Reduction (vph)	0	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	16	0	0	499	399	0	54	502	0	0	204
Confl. Peds. (#/hr)		24					22		52	52	
Heavy Vehicles (%)	3%	0%	2%	2%	2%	2%	0%	2%	3%	0%	2%
Parking (#/hr)	0	0									
Turn Type	NA		Split	NA	Perm		Split	NA		Split	NA
Protected Phases	9		10	10			2	2		4	4
Permitted Phases					10						
Actuated Green, G (s)	1.6			28.3	28.3		20.2	20.2			10.4
Effective Green, g (s)	1.6			28.3	28.3		20.2	20.2			10.4
Actuated g/C Ratio	0.02			0.33	0.33		0.24	0.24			0.12
Clearance Time (s)	6.0			6.0	6.0		6.0	6.0			6.0
Vehicle Extension (s)	4.0			3.0	3.0		4.0	4.0			3.0
Lane Grp Cap (vph)	25			528	472		418	707			414
v/s Ratio Prot	c0.01			c0.32			0.03	c0.17			c0.06
v/s Ratio Perm					0.28						
v/c Ratio	0.64			0.95	0.85		0.13	0.71			0.49
Uniform Delay, d1	41.2			27.3	26.1		25.2	29.5			34.6
Progression Factor	1.00			1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	48.8			25.9	13.1		0.2	3.5			0.9
Delay (s)	90.0			53.2	39.1		25.4	33.0			35.5
Level of Service	F			D	D		C	C			D
Approach Delay (s)	90.0			47.0				32.3			35.5
Approach LOS	F			D				C			D

Intersection Summary

HCM 2000 Control Delay	41.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	76	430	29	43	126	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.96	
Flt Protected	1.00	1.00		0.98	0.97	
Satd. Flow (prot)	1900	1530		1783	1667	
Flt Permitted	1.00	1.00		0.90	0.97	
Satd. Flow (perm)	1900	1530		1635	1667	
Peak-hour factor, PHF	0.72	0.84	0.89	0.74	0.92	0.59
Adj. Flow (vph)	106	512	33	58	137	68
RTOR Reduction (vph)	0	256	0	0	36	0
Lane Group Flow (vph)	106	256	0	91	169	0
Confl. Peds. (#/hr)		9	9			
Heavy Vehicles (%)	0%	2%	8%	2%	4%	8%
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	25.0	25.0		25.0	15.0	
Effective Green, g (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	950	765		817	500	
v/s Ratio Prot	0.06				c0.10	
v/s Ratio Perm		c0.17		0.06		
v/c Ratio	0.11	0.33		0.11	0.34	
Uniform Delay, d1	6.6	7.5		6.6	13.6	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.2		0.3	1.8	
Delay (s)	6.9	8.7		6.9	15.5	
Level of Service	A	A		A	B	
Approach Delay (s)	8.4			6.9	15.5	
Approach LOS	A			A	B	

Intersection Summary

HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	33	16	158	13	8	414
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.52	0.57	0.81	0.41	0.67	0.82
Hourly flow rate (vph)	63	28	195	32	12	505
Pedestrians	8		3			4
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			705			559
pX, platoon unblocked						
vC, conflicting volume	751	223			235	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	751	223			235	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	97			99	
cM capacity (veh/h)	370	813			1335	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	92	227	517
Volume Left	63	0	12
Volume Right	28	32	0
cSH	445	1700	1335
Volume to Capacity	0.21	0.13	0.01
Queue Length 95th (ft)	19	0	1
Control Delay (s)	15.2	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	15.2	0.0	0.3
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	78	158	371	115	389	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frpb, ped/bikes	0.71	0.66	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.98	1.00
Frt	0.92	0.85	0.96		1.00	1.00
Flt Protected	0.98	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2368	997	3298		1730	3539
Flt Permitted	0.98	1.00	1.00		0.44	1.00
Satd. Flow (perm)	2368	997	3298		808	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	87	176	412	128	432	267
RTOR Reduction (vph)	59	59	42	0	0	0
Lane Group Flow (vph)	116	29	498	0	432	267
Confl. Peds. (#/hr)	145	375		37	37	
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	23.0	23.0	35.0		35.0	35.0
Effective Green, g (s)	23.0	23.0	35.0		35.0	35.0
Actuated g/C Ratio	0.33	0.33	0.50		0.50	0.50
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Lane Grp Cap (vph)	778	327	1649		404	1769
v/s Ratio Prot	c0.05		0.15			0.08
v/s Ratio Perm		0.03			c0.53	
v/c Ratio	0.15	0.09	0.30		1.07	0.15
Uniform Delay, d1	16.6	16.3	10.3		17.5	9.5
Progression Factor	1.00	1.00	0.67		1.00	1.00
Incremental Delay, d2	0.4	0.5	0.3		64.5	0.2
Delay (s)	17.0	16.8	7.3		82.0	9.6
Level of Service	B	B	A		F	A
Approach Delay (s)	16.9		7.3			54.3
Approach LOS	B		A			D

Intersection Summary

HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	22	355	205	52	264	63	35	377	69	260	418	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Total Lost time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lane Util. Factor		0.95		1.00	0.95			0.91			0.95	1.00
Frpb, ped/bikes		0.88		1.00	0.86			0.96			1.00	0.69
Flpb, ped/bikes		0.99		0.92	1.00			1.00			0.97	1.00
Frt		0.94		1.00	0.96			0.97			1.00	0.85
Flt Protected		1.00		0.95	1.00			1.00			0.98	1.00
Satd. Flow (prot)		2751		1332	2461			3834			3046	993
Flt Permitted		0.92		0.25	1.00			0.76			0.63	1.00
Satd. Flow (perm)		2528		344	2461			2934			1949	993
Peak-hour factor, PHF	0.69	0.94	0.80	0.83	0.94	0.60	0.86	0.96	0.74	0.88	0.95	0.63
Adj. Flow (vph)	32	378	256	63	281	105	41	393	93	295	440	8
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	666	0	63	386	0	0	527	0	0	735	8
Confl. Peds. (#/hr)	573		247	247		573	126		170	170		126
Confl. Bikes (#/hr)			141			552			18			266
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	9%	9%	9%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)		27.0		27.0	27.0			25.0			25.0	25.0
Effective Green, g (s)		28.5		27.0	27.0			25.0			25.0	25.0
Actuated g/C Ratio		0.32		0.30	0.30			0.28			0.28	0.28
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	6.0
Lane Grp Cap (vph)		800		103	738			815			541	275
v/s Ratio Prot					0.16							
v/s Ratio Perm		c0.26		0.18				0.18			c0.38	0.01
v/c Ratio		0.83		0.61	0.52			0.65			1.57dl	0.03
Uniform Delay, d1		28.5		27.0	26.2			28.6			32.5	23.7
Progression Factor		1.00		1.00	1.00			1.00			1.31	1.34
Incremental Delay, d2		9.9		24.2	2.6			3.9			162.5	0.0
Delay (s)		38.4		51.2	28.8			32.6			205.2	31.6
Level of Service		D		D	C			C			F	C
Approach Delay (s)		38.4			31.9			32.6			203.3	
Approach LOS		D			C			C			F	

Intersection Summary

HCM 2000 Control Delay	87.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	122.7%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	NEL	NER	NER2
Lane Configurations			
Volume (vph)	56	136	88
Ideal Flow (vphpl)	1900	1900	1900
Lane Width	12	12	12
Grade (%)	7%		
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	1.00	0.95	
Frpb, ped/bikes	0.90	0.55	
Flpb, ped/bikes	1.00	1.00	
Frt	0.90	0.85	
Flt Protected	0.98	1.00	
Satd. Flow (prot)	1305	725	
Flt Permitted	0.98	1.00	
Satd. Flow (perm)	1305	725	
Peak-hour factor, PHF	0.88	0.73	0.79
Adj. Flow (vph)	64	186	111
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	183	178	0
Confl. Peds. (#/hr)	573		247
Confl. Bikes (#/hr)		141	141
Heavy Vehicles (%)	1%	1%	1%
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Actuated Green, G (s)	20.0	20.0	
Effective Green, g (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
Clearance Time (s)	6.0	6.0	
Lane Grp Cap (vph)	290	161	
v/s Ratio Prot	0.14		
v/s Ratio Perm		c0.25	
v/c Ratio	0.63	1.11	
Uniform Delay, d1	31.7	35.0	
Progression Factor	1.00	1.00	
Incremental Delay, d2	10.0	102.0	
Delay (s)	41.7	137.0	
Level of Service	D	F	
Approach Delay (s)	88.7		
Approach LOS	F		

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	680	192	9	31	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.91		1.00	
Frpb, ped/bikes		1.00	0.99		0.96	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	0.99		0.89	
Flt Protected		1.00	1.00		0.99	
Satd. Flow (prot)		2953	4136		1289	
Flt Permitted		0.95	1.00		0.99	
Satd. Flow (perm)		2801	4136		1289	
Peak-hour factor, PHF	0.83	0.82	0.87	0.88	0.54	0.66
Adj. Flow (vph)	17	829	221	10	57	238
RTOR Reduction (vph)	0	0	4	0	0	0
Lane Group Flow (vph)	0	846	227	0	295	0
Confl. Peds. (#/hr)	309			309	23	40
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	Perm	NA	NA		NA	
Protected Phases		2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		38.0	38.0		21.0	
Effective Green, g (s)		39.5	39.5		22.5	
Actuated g/C Ratio		0.56	0.56		0.32	
Clearance Time (s)		5.5	5.5		5.5	
Lane Grp Cap (vph)		1580	2333		414	
v/s Ratio Prot			0.05		c0.23	
v/s Ratio Perm		c0.30				
v/c Ratio		0.54	0.10		0.71	
Uniform Delay, d1		9.5	7.0		20.9	
Progression Factor		1.00	0.35		1.00	
Incremental Delay, d2		1.3	0.1		10.0	
Delay (s)		10.8	2.5		30.9	
Level of Service		B	A		C	
Approach Delay (s)		10.8	2.5		30.9	
Approach LOS		B	A		C	

Intersection Summary

HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	601	110	0	201	0	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	653	120	0	218	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	332			622		
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			773		822	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			494		550	59
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			947		414	883

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	436	337	109	109	1
Volume Left	0	0	0	0	0
Volume Right	0	120	0	0	1
cSH	1700	1700	1700	1700	883
Volume to Capacity	0.26	0.20	0.06	0.06	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.1
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.1
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	153	119	46	106	17	165	51	27	36	322	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	16	11	11	12	12	15	12	12	14	12
Total Lost time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes		1.00	0.93	1.00	0.98			0.99			0.99	
Flpb, ped/bikes		0.96	1.00	0.97	1.00			0.99			1.00	
Frt		1.00	0.85	1.00	0.98			0.98			0.96	
Flt Protected		0.98	1.00	0.95	1.00			0.97			1.00	
Satd. Flow (prot)		1781	1588	1561	1631			1654			1587	
Flt Permitted		0.83	1.00	0.55	1.00			0.41			0.94	
Satd. Flow (perm)		1514	1588	902	1631			707			1500	
Peak-hour factor, PHF	0.93	0.89	0.87	0.86	0.82	0.85	0.87	0.90	0.83	0.63	0.88	0.77
Adj. Flow (vph)	101	172	137	53	129	20	190	57	33	57	366	149
RTOR Reduction (vph)	0	0	78	0	8	0	0	7	0	0	18	0
Lane Group Flow (vph)	0	273	59	53	141	0	0	273	0	0	554	0
Confl. Peds. (#/hr)	64		24	24		64	21		15	15		21
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	9%	9%	9%
Parking (#/hr)								0			0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)		30.0	30.0	30.0	30.0			30.0			30.0	
Effective Green, g (s)		30.0	30.0	30.0	30.0			30.0			30.0	
Actuated g/C Ratio		0.43	0.43	0.43	0.43			0.43			0.43	
Clearance Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Grp Cap (vph)		648	680	386	699			303			642	
v/s Ratio Prot					0.09							
v/s Ratio Perm		c0.18	0.04	0.06				c0.39			0.37	
v/c Ratio		0.42	0.09	0.14	0.20			0.90			0.86	
Uniform Delay, d1		13.9	11.9	12.1	12.5			18.6			18.1	
Progression Factor		1.03	1.81	1.00	1.00			1.00			1.00	
Incremental Delay, d2		1.7	0.2	0.7	0.6			31.7			14.3	
Delay (s)		16.0	21.7	12.9	13.2			50.3			32.4	
Level of Service		B	C	B	B			D			C	
Approach Delay (s)		17.9			13.1			50.3			32.4	
Approach LOS		B			B			D			C	

Intersection Summary

HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	15	3	6	2	65	269	0	0	224	193
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Hourly flow rate (vph)	0	0	18	12	8	4	102	341	0	0	260	227
Pedestrians		52			16			20			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			1			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	997	986	446	972	1099	376	540			357		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	958	946	446	931	1068	288	540			268		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	94	95	99	90			100		
cM capacity (veh/h)	166	206	580	192	176	681	994			1197		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	24	442	488
Volume Left	0	12	102	0
Volume Right	18	4	0	227
cSH	580	211	994	1197
Volume to Capacity	0.03	0.11	0.10	0.00
Queue Length 95th (ft)	2	9	9	0
Control Delay (s)	11.4	24.3	3.0	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.4	24.3	3.0	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	0	92	19	349	171	81	264	0	0	316	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	12	12	11	12	12	12	12
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes		0.91		1.00	0.88			1.00			1.00	
Flpb, ped/bikes		0.97		0.90	1.00			0.99			1.00	
Frt		0.91		1.00	0.96			1.00			0.99	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1146		1232	1233			3056			2951	
Flt Permitted		0.34		0.69	1.00			0.77			1.00	
Satd. Flow (perm)		393		898	1233			2382			2951	
Peak-hour factor, PHF	0.77	0.92	0.82	0.75	0.82	0.97	0.88	0.96	0.92	0.92	0.89	0.75
Adj. Flow (vph)	48	0	112	25	426	176	92	275	0	0	355	24
RTOR Reduction (vph)	0	75	0	0	21	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	85	0	25	581	0	0	367	0	0	379	0
Confl. Peds. (#/hr)	880		138	138		880	49		130	130		49
Heavy Vehicles (%)	3%	2%	28%	0%	5%	19%	0%	1%	2%	2%	8%	17%
Parking (#/hr)				0								
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.0		23.0	23.0			35.0			35.0	
Effective Green, g (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)		129		295	405			1191			1475	
v/s Ratio Prot					c0.47						0.13	
v/s Ratio Perm		0.22		0.03				c0.15				
v/c Ratio		0.66		0.08	1.43			0.31			0.26	
Uniform Delay, d1		20.1		16.2	23.5			10.3			10.0	
Progression Factor		1.00		1.00	1.00			0.35			0.66	
Incremental Delay, d2		23.3		0.6	208.7			0.7			0.4	
Delay (s)		43.4		16.8	232.2			4.2			7.1	
Level of Service		D		B	F			A			A	
Approach Delay (s)		43.4			223.7			4.2			7.1	
Approach LOS		D			F			A			A	

Intersection Summary

HCM 2000 Control Delay	98.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	400	526	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	471	554	0	0
Pedestrians					44	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			44		1262	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		1262	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			70		100	100
cM capacity (veh/h)			1563		113	1017

Direction, Lane #	WB 1	WB 2
Volume Total	655	369
Volume Left	471	0
Volume Right	0	0
cSH	1563	1700
Volume to Capacity	0.30	0.22
Queue Length 95th (ft)	32	0
Control Delay (s)	6.7	0.0
Lane LOS	A	
Approach Delay (s)	4.3	
Approach LOS		

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	136	744	185	161	356	0	0	358	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Total Lost time (s)					7.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			1.00	0.88
Frpb, ped/bikes					0.98		1.00	1.00			1.00	0.93
Flpb, ped/bikes					0.98		0.99	1.00			1.00	1.00
Frt					0.98		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					2576		1537	1635			1735	2421
Flt Permitted					0.99		0.20	1.00			1.00	1.00
Satd. Flow (perm)					2576		324	1635			1735	2421
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.88	0.93	0.85	0.82	0.92	0.92	0.75	0.92
Adj. Flow (vph)	0	0	0	172	845	199	189	434	0	0	477	261
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1196	0	189	434	0	0	477	261
Confl. Peds. (#/hr)				105		173	29					29
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					43.0		24.0	24.0			24.0	24.0
Effective Green, g (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
Clearance Time (s)					7.0		6.0	6.0			6.0	6.0
Lane Grp Cap (vph)					1384		97	490			520	726
v/s Ratio Prot								0.27			0.27	
v/s Ratio Perm					0.46		c0.58					0.11
v/c Ratio					0.86		1.95	0.89			0.92	0.36
Uniform Delay, d1					16.0		28.0	26.7			27.0	22.0
Progression Factor					0.47		1.28	1.28			1.00	1.00
Incremental Delay, d2					6.2		457.4	18.1			23.5	1.4
Delay (s)					13.6		493.2	52.2			50.6	23.4
Level of Service					B		F	D			D	C
Approach Delay (s)		0.0			13.6			186.0			40.9	
Approach LOS		A			B			F			D	

Intersection Summary

HCM 2000 Control Delay	63.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	161	849	0	203	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Total Lost time (s)					5.0			5.0				
Lane Util. Factor					0.95			1.00				
Frpb, ped/bikes					1.00			1.00				
Flpb, ped/bikes					0.97			0.98				
Frt					1.00			1.00				
Flt Protected					0.99			0.95				
Satd. Flow (prot)					3081			1663				
Flt Permitted					0.99			0.76				
Satd. Flow (perm)					3081			1326				
Peak-hour factor, PHF	0.92	0.92	0.92	0.66	0.97	0.50	0.80	0.90	0.92	0.92	0.25	0.25
Adj. Flow (vph)	0	0	0	244	875	0	254	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1119	0	0	254	0	0	0	0
Confl. Peds. (#/hr)				46		108	15		8	8		15
Heavy Vehicles (%)	2%	2%	2%	0%	9%	0%	1%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA				
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					49.0			21.0				
Effective Green, g (s)					49.0			21.0				
Actuated g/C Ratio					0.61			0.26				
Clearance Time (s)					5.0			5.0				
Lane Grp Cap (vph)					1887			348				
v/s Ratio Prot												
v/s Ratio Perm					0.36			c0.19				
v/c Ratio					0.59			0.73				
Uniform Delay, d1					9.4			26.9				
Progression Factor					0.79			1.00				
Incremental Delay, d2					1.1			12.1				
Delay (s)					8.6			39.0				
Level of Service					A			D				
Approach Delay (s)		0.0			8.6			39.0			0.0	
Approach LOS		A			A			D			A	

Intersection Summary

HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	13	800	64	161	157	0	0	33	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.99			1.00			0.98	
Flpb, ped/bikes					1.00			0.99			1.00	
Frt					0.99			1.00			0.90	
Flt Protected					1.00			0.98			1.00	
Satd. Flow (prot)					2946			1792			1665	
Flt Permitted					1.00			0.74			1.00	
Satd. Flow (perm)					2946			1366			1665	
Peak-hour factor, PHF	0.92	0.92	0.92	0.60	0.95	0.68	0.91	0.85	0.92	0.92	0.82	0.79
Adj. Flow (vph)	0	0	0	22	842	94	177	185	0	0	40	114
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	86	0
Lane Group Flow (vph)	0	0	0	0	948	0	0	362	0	0	69	0
Confl. Peds. (#/hr)				16		44	9					9
Heavy Vehicles (%)	2%	2%	2%	0%	12%	5%	6%	0%	2%	2%	3%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					50.0			20.0			20.0	
Effective Green, g (s)					50.0			20.0			20.0	
Actuated g/C Ratio					0.62			0.25			0.25	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1841			341			416	
v/s Ratio Prot											0.04	
v/s Ratio Perm					0.32			c0.26				
v/c Ratio					0.51			1.06			0.16	
Uniform Delay, d1					8.3			30.0			23.5	
Progression Factor					0.48			0.88			1.00	
Incremental Delay, d2					0.8			62.1			0.9	
Delay (s)					4.8			88.4			24.3	
Level of Service					A			F			C	
Approach Delay (s)		0.0			4.8			88.4			24.3	
Approach LOS		A			A			F			C	

Intersection Summary

HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	32	757	177	63	155	0	0	145	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.98			1.00			0.98	
Flpb, ped/bikes					1.00			0.99			1.00	
Frt					0.97			1.00			0.95	
Flt Protected					1.00			0.98			1.00	
Satd. Flow (prot)					2895			1795			1938	
Flt Permitted					1.00			0.68			1.00	
Satd. Flow (perm)					2895			1233			1938	
Peak-hour factor, PHF	0.92	0.92	0.92	0.71	0.94	0.95	0.71	0.79	0.92	0.79	0.79	0.88
Adj. Flow (vph)	0	0	0	45	805	186	89	196	0	0	184	108
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	26	0
Lane Group Flow (vph)	0	0	0	0	1013	0	0	285	0	0	266	0
Confl. Peds. (#/hr)				25		45	22		40	40		22
Heavy Vehicles (%)	2%	2%	2%	0%	18%	0%	0%	6%	2%	2%	16%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					45.0			25.0			25.0	
Effective Green, g (s)					45.0			25.0			25.0	
Actuated g/C Ratio					0.56			0.31			0.31	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1628			385			605	
v/s Ratio Prot											0.14	
v/s Ratio Perm					0.35			c0.23				
v/c Ratio					0.62			0.74			0.44	
Uniform Delay, d1					11.8			24.6			21.9	
Progression Factor					1.00			0.85			1.00	
Incremental Delay, d2					1.8			11.4			2.3	
Delay (s)					13.6			32.3			24.2	
Level of Service					B			C			C	
Approach Delay (s)		0.0			13.6			32.3			24.2	
Approach LOS		A			B			C			C	

Intersection Summary

HCM 2000 Control Delay	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	93	230	25	6	329	0	0	435	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)				5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes				1.00	1.00	0.95		1.00			1.00	
Flpb, ped/bikes				0.99	1.00	1.00		1.00			1.00	
Frt				1.00	1.00	0.85		1.00			0.99	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1440	1580	1290		3207			2915	
Flt Permitted				0.95	1.00	1.00		0.95			1.00	
Satd. Flow (perm)				1440	1580	1290		3071			2915	
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.78	0.63	0.30	0.96	0.25	0.92	0.92	0.80
Adj. Flow (vph)	0	0	0	107	295	40	20	343	0	0	473	20
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	107	295	40	0	363	0	0	493	0
Confl. Peds. (#/hr)				13		40	21					21
Heavy Vehicles (%)	2%	2%	2%	4%	1%	0%	0%	1%	2%	2%	11%	0%
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Actuated Green, G (s)				22.5	22.5	22.5		33.5			36.5	
Effective Green, g (s)				22.5	22.5	22.5		33.5			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.48			0.52	
Clearance Time (s)				5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Lane Grp Cap (vph)				462	507	414		1519			1519	
v/s Ratio Prot					c0.19			0.09			c0.17	
v/s Ratio Perm				0.07		0.03		0.03				
v/c Ratio				0.23	0.58	0.10		0.24			0.32	
Uniform Delay, d1				17.4	19.8	16.6		10.7			9.6	
Progression Factor				1.00	1.00	1.00		0.57			0.71	
Incremental Delay, d2				0.1	1.1	0.0		0.0			0.5	
Delay (s)				17.5	20.9	16.7		6.2			7.4	
Level of Service				B	C	B		A			A	
Approach Delay (s)		0.0			19.7			6.2			7.4	
Approach LOS		A			B			A			A	

Intersection Summary

HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	463	32	53	133	7	191	307	261	322	165	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	11	12	12	11	12	12	12	12
Total Lost time (s)		5.5	5.5		5.5			5.5			5.5	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.89		1.00			0.99			1.00	
Flpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	
Frt		1.00	0.85		0.99			0.95			0.98	
Flt Protected		1.00	1.00		0.99			0.99			0.97	
Satd. Flow (prot)		1626	1248		1575			2855			2885	
Flt Permitted		0.96	1.00		0.43			0.68			0.57	
Satd. Flow (perm)		1567	1248		680			1976			1697	
Peak-hour factor, PHF	0.60	0.96	0.80	0.90	0.90	0.90	0.87	0.94	0.92	0.95	0.85	0.67
Adj. Flow (vph)	40	482	40	59	148	8	220	327	284	339	194	60
RTOR Reduction (vph)	0	0	0	0	2	0	0	78	0	0	0	0
Lane Group Flow (vph)	0	522	40	0	213	0	0	753	0	0	593	0
Confl. Peds. (#/hr)	8		107	107		8	19		18	18		19
Heavy Vehicles (%)	4%	1%	0%	2%	2%	2%	0%	1%	4%	12%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)		22.5	22.5		22.5			25.5			36.5	
Effective Green, g (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
Clearance Time (s)		5.5	5.5		5.5			5.5			5.5	
Vehicle Extension (s)		0.2	0.2		0.2			0.2			0.2	
Lane Grp Cap (vph)		503	401		218			719			1020	
v/s Ratio Prot											c0.07	
v/s Ratio Perm		c0.33	0.03		0.31			c0.38			0.24	
v/c Ratio		1.04	0.10		0.98			1.05			1.37dl	
Uniform Delay, d1		23.8	16.6		23.5			22.2			11.5	
Progression Factor		1.00	1.00		1.00			1.00			1.03	
Incremental Delay, d2		50.3	0.0		53.6			46.8			0.5	
Delay (s)		74.0	16.7		77.1			69.0			12.4	
Level of Service		E	B		E			E			B	
Approach Delay (s)		69.9			77.1			69.0			12.4	
Approach LOS		E			E			E			B	

Intersection Summary

HCM 2000 Control Delay	54.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1078	332	0	0	194	738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	10	10
Total Lost time (s)	5.0				5.0	5.0
Lane Util. Factor	0.95				1.00	0.88
Frpb, ped/bikes	0.95				1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00
Frt	0.96				1.00	0.85
Flt Protected	1.00				0.95	1.00
Satd. Flow (prot)	2700				1472	2318
Flt Permitted	1.00				0.95	1.00
Satd. Flow (perm)	2700				1472	2318
Peak-hour factor, PHF	0.93	0.87	0.92	0.92	0.86	0.86
Adj. Flow (vph)	1159	382	0	0	226	858
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1541	0	0	0	226	858
Confl. Peds. (#/hr)		85				
Heavy Vehicles (%)	6%	6%	2%	2%	3%	3%
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Actuated Green, G (s)	40.0				30.0	30.0
Effective Green, g (s)	40.0				30.0	30.0
Actuated g/C Ratio	0.50				0.38	0.38
Clearance Time (s)	5.0				5.0	5.0
Lane Grp Cap (vph)	1350				552	869
v/s Ratio Prot	c0.57				0.15	
v/s Ratio Perm						c0.37
v/c Ratio	1.14				0.41	0.99
Uniform Delay, d1	20.0				18.5	24.8
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	73.0				2.2	27.6
Delay (s)	93.0				20.7	52.4
Level of Service	F				C	D
Approach Delay (s)	93.0			0.0	45.8	
Approach LOS	F			A	D	

Intersection Summary

HCM 2000 Control Delay	73.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	444	1268	104	0	0	0	0	46	56	401	78	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Total Lost time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95						1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99						1.00	0.92		1.00	
Flpb, ped/bikes	0.98	1.00						1.00	1.00		0.95	
Frt	1.00	0.98						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		0.96	
Satd. Flow (prot)	1446	2891						1637	1282		1367	
Flt Permitted	0.95	1.00						1.00	1.00		0.70	
Satd. Flow (perm)	1446	2891						1637	1282		1003	
Peak-hour factor, PHF	0.82	0.88	0.64	0.92	0.92	0.92	0.92	0.56	0.68	0.81	0.82	0.92
Adj. Flow (vph)	541	1441	162	0	0	0	0	82	82	495	95	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	31	0	0	0
Lane Group Flow (vph)	541	1603	0	0	0	0	0	82	51	0	590	0
Confl. Peds. (#/hr)	45		79						51	51		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	4%	4%	1%	1%	2%
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	52.0	52.0						18.0	18.0		18.0	
Effective Green, g (s)	52.0	52.0						18.0	18.0		18.0	
Actuated g/C Ratio	0.65	0.65						0.22	0.22		0.22	
Clearance Time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)	939	1879						368	288		225	
v/s Ratio Prot		c0.55						0.05				
v/s Ratio Perm	0.37								0.04		c0.59	
v/c Ratio	0.58	0.85						0.22	0.18		2.62	
Uniform Delay, d1	7.8	11.0						25.3	25.0		31.0	
Progression Factor	1.07	1.08						1.00	1.00		1.00	
Incremental Delay, d2	0.2	0.5						1.4	1.3		735.2	
Delay (s)	8.6	12.4						26.7	26.4		766.2	
Level of Service	A	B						C	C		F	
Approach Delay (s)		11.5			0.0			26.5			766.2	
Approach LOS		B			A			C			F	

Intersection Summary

HCM 2000 Control Delay	166.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	805	124	0	0	0	0	35	31	27	143	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.98						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.97						0.94			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3086						1607			1822	
Flt Permitted		0.99						1.00			0.96	
Satd. Flow (perm)		3086						1607			1751	
Peak-hour factor, PHF	0.73	0.94	0.59	0.92	0.92	0.92	0.92	0.63	0.80	0.54	0.33	0.92
Adj. Flow (vph)	127	856	210	0	0	0	0	56	39	50	433	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	30	0	0	0	0
Lane Group Flow (vph)	0	1171	0	0	0	0	0	65	0	0	483	0
Confl. Peds. (#/hr)	41		42						14	14		
Heavy Vehicles (%)	4%	7%	0%	2%	2%	2%	2%	0%	25%	4%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		51.0						19.0			19.0	
Effective Green, g (s)		51.0						19.0			19.0	
Actuated g/C Ratio		0.64						0.24			0.24	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1967						381			415	
v/s Ratio Prot								0.04				
v/s Ratio Perm		0.38									c0.28	
v/c Ratio		0.60						0.17			1.16	
Uniform Delay, d1		8.5						24.2			30.5	
Progression Factor		0.70						1.00			1.39	
Incremental Delay, d2		0.1						1.0			96.5	
Delay (s)		6.1						25.2			138.9	
Level of Service		A						C			F	
Approach Delay (s)		6.1			0.0			25.2			138.9	
Approach LOS		A			A			C			F	

Intersection Summary

HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	575	119	0	0	0	0	259	24	26	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						1.00			1.00	
Flpb, ped/bikes		0.98						1.00			0.99	
Frt		0.98						0.99			1.00	
Flt Protected		0.99						1.00			0.95	
Satd. Flow (prot)		3074						2078			2005	
Flt Permitted		0.99						1.00			0.40	
Satd. Flow (perm)		3074						2078			851	
Peak-hour factor, PHF	0.62	0.93	0.71	0.92	0.92	0.92	0.89	0.89	0.93	0.69	0.60	0.92
Adj. Flow (vph)	274	618	168	0	0	0	0	291	26	38	0	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1040	0	0	0	0	0	313	0	0	38	0
Confl. Peds. (#/hr)	28		28						13	13		
Heavy Vehicles (%)	1%	9%	6%	2%	2%	2%	4%	5%	2%	0%	8%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		46.0						24.0			24.0	
Effective Green, g (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1767						623			255	
v/s Ratio Prot								c0.15				
v/s Ratio Perm		0.34									0.04	
v/c Ratio		0.59						0.50			0.15	
Uniform Delay, d1		10.9						23.1			20.5	
Progression Factor		0.66						1.00			1.04	
Incremental Delay, d2		1.2						2.9			1.2	
Delay (s)		8.5						26.0			22.6	
Level of Service		A						C			C	
Approach Delay (s)		8.5			0.0			26.0			22.6	
Approach LOS		A			A			C			C	

Intersection Summary

HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	450	32	0	0	0	0	136	24	91	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						1.00			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			0.97	
Satd. Flow (prot)		3181						1722			1615	
Flt Permitted		0.99						1.00			0.62	
Satd. Flow (perm)		3181						1722			1028	
Peak-hour factor, PHF	0.79	0.94	0.63	0.92	0.92	0.92	0.92	0.77	0.67	0.77	0.78	0.92
Adj. Flow (vph)	122	479	51	0	0	0	0	177	36	118	71	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	644	0	0	0	0	0	204	0	0	189	0
Confl. Peds. (#/hr)	44		19						4	4		
Heavy Vehicles (%)	1%	11%	0%	2%	2%	2%	2%	9%	0%	7%	25%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		46.0						24.0			24.0	
Effective Green, g (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1829						516			308	
v/s Ratio Prot								0.12				
v/s Ratio Perm		0.20									c0.18	
v/c Ratio		0.35						0.40			0.61	
Uniform Delay, d1		9.1						22.2			24.0	
Progression Factor		0.46						1.00			0.84	
Incremental Delay, d2		0.4						2.3			7.8	
Delay (s)		4.6						24.5			28.0	
Level of Service		A						C			C	
Approach Delay (s)		4.6			0.0			24.5			28.0	
Approach LOS		A			A			C			C	

Intersection Summary

HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	35	205	147	770	231	606	277	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1443	1292	3152	1424	1594	1678	1398
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1443	1292	3152	1424	1594	1678	1398
Peak-hour factor, PHF	0.58	0.93	0.86	0.80	0.70	0.89	0.96	0.80
Adj. Flow (vph)	60	220	171	962	330	681	289	361
RTOR Reduction (vph)	0	0	0	0	146	0	0	0
Lane Group Flow (vph)	0	280	171	962	184	681	289	361
Confl. Peds. (#/hr)			31					31
Heavy Vehicles (%)	9%	4%	5%	1%	0%	1%	1%	3%
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Actuated Green, G (s)		20.0	20.0	29.0	29.0	26.0	26.0	26.0
Effective Green, g (s)		20.0	20.0	29.0	29.0	26.0	26.0	26.0
Actuated g/C Ratio		0.22	0.22	0.32	0.32	0.29	0.29	0.29
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)		320	287	1015	458	460	484	403
v/s Ratio Prot		c0.19	0.13	c0.31	0.13	c0.43	0.17	0.26
v/s Ratio Perm								
v/c Ratio		0.88	0.60	0.95	0.40	1.48	0.60	0.90
Uniform Delay, d1		33.8	31.4	29.8	23.7	32.0	27.5	30.7
Progression Factor		1.00	1.00	1.12	1.40	1.00	1.00	1.00
Incremental Delay, d2		26.7	8.8	7.4	0.8	227.6	5.4	25.0
Delay (s)		60.5	40.2	40.9	34.1	259.6	32.9	55.7
Level of Service		E	D	D	C	F	C	E
Approach Delay (s)		52.8		39.2			155.1	
Approach LOS		D		D			F	

Intersection Summary

HCM 2000 Control Delay	91.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBT	WBR	WBR2	NEL2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	106	69	33	118	256	204	36	7	167	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	12	13	12	12	12	12
Grade (%)	2%					10%			-12%	
Total Lost time (s)	6.0			6.0		6.0			6.0	
Lane Util. Factor	1.00			1.00		0.95			0.95	
Frpb, ped/bikes	0.97			1.00		0.99			1.00	
Flpb, ped/bikes	1.00			1.00		1.00			1.00	
Frt	0.93			1.00		0.98			0.91	
Flt Protected	1.00			0.95		0.97			1.00	
Satd. Flow (prot)	1354			1749		2975			3082	
Flt Permitted	1.00			0.95		0.97			1.00	
Satd. Flow (perm)	1354			1749		2975			3082	
Peak-hour factor, PHF	0.54	0.43	0.61	0.64	0.66	0.81	0.39	0.58	0.85	0.78
Adj. Flow (vph)	196	160	54	184	388	252	92	12	196	283
RTOR Reduction (vph)	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	410	0	0	184	0	720	0	0	491	0
Confl. Peds. (#/hr)		58		20			23	58		
Heavy Vehicles (%)	3%	0%	0%	0%	1%	2%	3%	0%	2%	2%
Parking (#/hr)	0	0	0							0
Turn Type	NA			Split	Split	NA		Split	NA	
Protected Phases	9			2	2	2		4	4	
Permitted Phases						2				
Actuated Green, G (s)	29.4			23.5		23.5			15.7	
Effective Green, g (s)	29.4			23.5		23.5			15.7	
Actuated g/C Ratio	0.34			0.27		0.27			0.18	
Clearance Time (s)	6.0			6.0		6.0			6.0	
Vehicle Extension (s)	4.0			4.0		4.0			3.0	
Lane Grp Cap (vph)	459			474		807			558	
v/s Ratio Prot	c0.30			0.11		c0.24			c0.16	
v/s Ratio Perm										
v/c Ratio	0.89			0.39		0.89			1.02dr	
Uniform Delay, d1	27.1			25.7		30.3			34.5	
Progression Factor	1.00			1.00		1.00			1.00	
Incremental Delay, d2	19.7			0.7		12.4			14.7	
Delay (s)	46.8			26.4		42.7			49.2	
Level of Service	D			C		D			D	
Approach Delay (s)	46.8					39.4			49.2	
Approach LOS	D					D			D	

Intersection Summary

HCM 2000 Control Delay	43.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	86.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	48	215	36	62	434	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.98	
Flt Protected	1.00	1.00		0.98	0.96	
Satd. Flow (prot)	1900	1537		1728	1766	
Flt Permitted	1.00	1.00		0.89	0.96	
Satd. Flow (perm)	1900	1537		1573	1766	
Peak-hour factor, PHF	0.80	0.85	0.75	0.86	0.92	0.85
Adj. Flow (vph)	60	253	48	72	472	75
RTOR Reduction (vph)	0	127	0	0	11	0
Lane Group Flow (vph)	60	127	0	120	536	0
Confl. Peds. (#/hr)		6	6			6
Heavy Vehicles (%)	0%	2%	17%	1%	0%	6%
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	25.0	25.0		25.0	15.0	
Effective Green, g (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	950	768		786	529	
v/s Ratio Prot	0.03				c0.30	
v/s Ratio Perm		c0.08		0.08		
v/c Ratio	0.06	0.16		0.15	1.01	
Uniform Delay, d1	6.5	6.8		6.8	17.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.5		0.4	42.4	
Delay (s)	6.6	7.3		7.2	59.9	
Level of Service	A	A		A	E	
Approach Delay (s)	7.1			7.2	59.9	
Approach LOS	A			A	E	

Intersection Summary

HCM 2000 Control Delay	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	22	28	393	26	0	292
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.91	0.65	0.92	0.85
Hourly flow rate (vph)	28	35	432	40	0	344
Pedestrians	9					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	1					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			705			559
pX, platoon unblocked						
vC, conflicting volume	804	462			481	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	804	462			481	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	94			100	
cM capacity (veh/h)	352	599			1084	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	63	472	344
Volume Left	28	0	0
Volume Right	35	40	0
cSH	458	1700	1084
Volume to Capacity	0.14	0.28	0.00
Queue Length 95th (ft)	12	0	0
Control Delay (s)	14.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.1	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	285	151	179	204	185	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frpb, ped/bikes	0.97	0.69	0.94		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.94	1.00
Frt	0.99	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3393	1044	3002		1671	3539
Flt Permitted	0.95	1.00	1.00		0.50	1.00
Satd. Flow (perm)	3393	1044	3002		886	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	317	168	199	227	206	479
RTOR Reduction (vph)	6	101	114	0	0	0
Lane Group Flow (vph)	329	49	313	0	206	479
Confl. Peds. (#/hr)	97	253		77	77	
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	23.0	23.0	35.0		35.0	35.0
Effective Green, g (s)	23.0	23.0	35.0		35.0	35.0
Actuated g/C Ratio	0.33	0.33	0.50		0.50	0.50
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Lane Grp Cap (vph)	1114	343	1501		443	1769
v/s Ratio Prot	c0.10		0.10			0.14
v/s Ratio Perm		0.05			c0.23	
v/c Ratio	0.30	0.14	0.21		0.47	0.27
Uniform Delay, d1	17.5	16.6	9.8		11.4	10.1
Progression Factor	1.00	1.00	0.57		1.00	1.00
Incremental Delay, d2	0.7	0.9	0.0		3.5	0.4
Delay (s)	18.1	17.4	5.6		14.9	10.5
Level of Service	B	B	A		B	B
Approach Delay (s)	17.9		5.6			11.8
Approach LOS	B		A			B

Intersection Summary

HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	122	164	97	109	272	322	21	591	140	137	216	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Total Lost time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lane Util. Factor		0.95		1.00	0.95			0.91			0.95	1.00
Frpb, ped/bikes		0.93		1.00	0.82			0.97			1.00	0.85
Flpb, ped/bikes		0.97		0.90	1.00			1.00			0.98	1.00
Frt		0.96		1.00	0.93			0.97			1.00	0.85
Flt Protected		0.98		0.95	1.00			1.00			0.98	1.00
Satd. Flow (prot)		2908		1403	2447			4161			3083	1207
Flt Permitted		0.55		0.33	1.00			0.90			0.57	1.00
Satd. Flow (perm)		1626		494	2447			3733			1785	1207
Peak-hour factor, PHF	0.59	0.88	0.67	0.67	0.65	0.78	0.53	0.81	0.85	0.71	0.90	0.58
Adj. Flow (vph)	207	186	145	163	418	413	40	730	165	193	240	103
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	538	0	163	831	0	0	935	0	0	433	103
Confl. Peds. (#/hr)	573		247	247		573	126		170	170		126
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	6%	1%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)		27.0		27.0	27.0			25.0			25.0	25.0
Effective Green, g (s)		28.5		27.0	27.0			25.0			25.0	25.0
Actuated g/C Ratio		0.32		0.30	0.30			0.28			0.28	0.28
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	6.0
Lane Grp Cap (vph)		514		148	734			1036			495	335
v/s Ratio Prot					c0.34							
v/s Ratio Perm		0.33		0.33				c0.25			0.24	0.09
v/c Ratio		2.38dl		1.10	1.17dr			0.90			2.33dl	0.31
Uniform Delay, d1		30.8		31.5	31.5			31.3			31.0	25.7
Progression Factor		1.00		1.00	1.00			1.00			1.42	1.43
Incremental Delay, d2		52.5		103.7	75.9			12.5			12.2	1.4
Delay (s)		83.2		135.2	107.4			43.8			56.3	38.0
Level of Service		F		F	F			D			E	D
Approach Delay (s)		83.2			112.0			43.8			52.8	
Approach LOS		F			F			D			D	

Intersection Summary

HCM 2000 Control Delay	72.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	119.2%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	NEL	NER	NER2
Lane Configurations			
Volume (vph)	41	27	47
Ideal Flow (vphpl)	1900	1900	1900
Lane Width	12	12	12
Grade (%)	7%		
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	1.00	0.95	
Frpb, ped/bikes	1.00	0.69	
Flpb, ped/bikes	1.00	1.00	
Frt	0.96	0.85	
Flt Protected	0.96	1.00	
Satd. Flow (prot)	1463	909	
Flt Permitted	0.96	1.00	
Satd. Flow (perm)	1463	909	
Peak-hour factor, PHF	0.64	0.80	0.73
Adj. Flow (vph)	64	34	64
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	84	78	0
Confl. Peds. (#/hr)	573		247
Heavy Vehicles (%)	5%	4%	0%
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Actuated Green, G (s)	20.0	20.0	
Effective Green, g (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
Clearance Time (s)	6.0	6.0	
Lane Grp Cap (vph)	325	202	
v/s Ratio Prot	0.06		
v/s Ratio Perm		c0.09	
v/c Ratio	0.26	0.39	
Uniform Delay, d1	28.9	29.8	
Progression Factor	1.00	1.00	
Incremental Delay, d2	1.9	5.5	
Delay (s)	30.8	35.3	
Level of Service	C	D	
Approach Delay (s)	33.0		
Approach LOS	C		

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	46	422	627	88	9	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.91		1.00	
Frpb, ped/bikes		1.00	0.94		0.90	
Flpb, ped/bikes		0.99	1.00		1.00	
Frt		1.00	0.98		0.89	
Flt Protected		0.99	1.00		0.99	
Satd. Flow (prot)		2974	4128		1168	
Flt Permitted		0.82	1.00		0.99	
Satd. Flow (perm)		2449	4128		1168	
Peak-hour factor, PHF	0.86	0.95	0.95	0.81	0.45	0.84
Adj. Flow (vph)	53	444	660	109	20	75
RTOR Reduction (vph)	0	0	32	0	0	0
Lane Group Flow (vph)	0	497	737	0	95	0
Confl. Peds. (#/hr)	426			426	18	118
Heavy Vehicles (%)	0%	2%	1%	0%	0%	6%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	Perm	NA	NA		NA	
Protected Phases		2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		38.0	38.0		21.0	
Effective Green, g (s)		39.5	39.5		22.5	
Actuated g/C Ratio		0.56	0.56		0.32	
Clearance Time (s)		5.5	5.5		5.5	
Lane Grp Cap (vph)		1381	2329		375	
v/s Ratio Prot			0.18		c0.08	
v/s Ratio Perm		c0.20				
v/c Ratio		0.36	0.32		0.25	
Uniform Delay, d1		8.3	8.1		17.5	
Progression Factor		1.00	0.70		1.00	
Incremental Delay, d2		0.7	0.3		1.6	
Delay (s)		9.1	5.9		19.2	
Level of Service		A	A		B	
Approach Delay (s)		9.1	5.9		19.2	
Approach LOS		A	A		B	

Intersection Summary

HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	427	4	0	715	0	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	464	4	0	777	0	92
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	332			622		
pX, platoon unblocked			0.98		0.98	0.98
vC, conflicting volume			468		855	234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			405		801	165
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	89
cM capacity (veh/h)			1122		314	829

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	309	159	389	389	92
Volume Left	0	0	0	0	0
Volume Right	0	4	0	0	92
cSH	1700	1700	1700	1700	829
Volume to Capacity	0.18	0.09	0.23	0.23	0.11
Queue Length 95th (ft)	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	9.9
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	160	188	32	169	35	155	181	58	25	140	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	16	11	11	12	12	15	12	12	14	12
Total Lost time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes		1.00	0.92	1.00	0.98			1.00			0.98	
Flpb, ped/bikes		0.96	1.00	0.98	1.00			0.99			1.00	
Frt		1.00	0.85	1.00	0.97			0.98			0.94	
Flt Protected		0.97	1.00	0.95	1.00			0.98			1.00	
Satd. Flow (prot)		1829	1692	1652	1713			1756			1588	
Flt Permitted		0.62	1.00	0.40	1.00			0.64			0.95	
Satd. Flow (perm)		1156	1692	687	1713			1139			1514	
Peak-hour factor, PHF	0.82	0.82	0.85	0.67	0.70	0.63	0.79	0.69	0.81	0.89	0.70	0.75
Adj. Flow (vph)	223	195	221	48	241	56	196	262	72	28	200	203
RTOR Reduction (vph)	0	0	126	0	12	0	0	8	0	0	46	0
Lane Group Flow (vph)	0	418	95	48	285	0	0	522	0	0	385	0
Confl. Peds. (#/hr)	52		26	26		52	29		5	5		29
Heavy Vehicles (%)	4%	4%	0%	3%	2%	0%	4%	1%	2%	0%	6%	4%
Parking (#/hr)								0			0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)		30.0	30.0	30.0	30.0			30.0			30.0	
Effective Green, g (s)		30.0	30.0	30.0	30.0			30.0			30.0	
Actuated g/C Ratio		0.43	0.43	0.43	0.43			0.43			0.43	
Clearance Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Grp Cap (vph)		495	725	294	734			488			648	
v/s Ratio Prot					0.17							
v/s Ratio Perm		c0.36	0.06	0.07				c0.46			0.25	
v/c Ratio		0.84	0.13	0.16	0.39			1.07			0.59	
Uniform Delay, d1		17.9	12.1	12.3	13.7			20.0			15.3	
Progression Factor		0.87	0.72	1.00	1.00			1.00			1.00	
Incremental Delay, d2		15.8	0.4	1.2	1.5			60.6			4.0	
Delay (s)		31.4	9.1	13.5	15.3			80.6			19.3	
Level of Service		C	A	B	B			F			B	
Approach Delay (s)		23.7			15.0			80.6			19.3	
Approach LOS		C			B			F			B	

Intersection Summary

HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	61	6	11	13	14	299	0	0	309	51
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	68	7	12	14	16	332	0	0	343	57
Pedestrians		42			19			4			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			2			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	806	796	418	826	824	359	442			351		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	784	774	418	805	804	324	442			316		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	89	97	96	98	99			100		
cM capacity (veh/h)	260	299	611	242	288	680	1079			1188		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	68	33	348	400
Volume Left	0	7	16	0
Volume Right	68	14	0	57
cSH	611	365	1079	1188
Volume to Capacity	0.11	0.09	0.01	0.00
Queue Length 95th (ft)	9	7	1	0
Control Delay (s)	11.6	15.8	0.5	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.6	15.8	0.5	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	0	179	202	510	296	36	90	0	0	676	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	12	12	11	12	12	12	12
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes		0.92		1.00	0.85			1.00			1.00	
Flpb, ped/bikes		0.99		0.95	1.00			1.00			1.00	
Frt		0.89		1.00	0.94			1.00			0.99	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1226		1290	1208			3071			3110	
Flt Permitted		0.14		0.55	1.00			0.72			1.00	
Satd. Flow (perm)		177		753	1208			2248			3110	
Peak-hour factor, PHF	0.80	0.92	0.83	0.89	0.94	0.93	0.75	0.75	0.92	0.92	0.89	0.75
Adj. Flow (vph)	56	0	216	227	543	318	48	120	0	0	760	56
RTOR Reduction (vph)	0	92	0	0	30	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	180	0	227	831	0	0	168	0	0	816	0
Confl. Peds. (#/hr)	859		99	99		859	14		65	65		14
Heavy Vehicles (%)	7%	2%	18%	0%	3%	12%	0%	1%	2%	2%	2%	19%
Parking (#/hr)				0								
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.0		23.0	23.0			35.0			35.0	
Effective Green, g (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		0.2		0.2	0.2			0.2			0.2	
Lane Grp Cap (vph)		58		247	396			1124			1555	
v/s Ratio Prot					0.69						c0.26	
v/s Ratio Perm		c1.02		0.30				0.07				
v/c Ratio		3.10		0.92	2.10			0.15			0.52	
Uniform Delay, d1		23.5		22.6	23.5			9.5			11.9	
Progression Factor		1.00		1.00	1.00			0.55			0.92	
Incremental Delay, d2		990.4		35.2	502.6			0.3			1.2	
Delay (s)		1013.9		57.8	526.1			5.5			12.2	
Level of Service		F		E	F			A			B	
Approach Delay (s)		1013.9			428.4			5.5			12.2	
Approach LOS		F			F			A			B	

Intersection Summary

HCM 2000 Control Delay	321.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	109.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	550	562	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	550	611	0	0
Pedestrians					18	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			18		1423	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		1423	18
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			66		100	100
cM capacity (veh/h)			1605		83	1056

Direction, Lane #	WB 1	WB 2
Volume Total	754	407
Volume Left	550	0
Volume Right	0	0
cSH	1605	1700
Volume to Capacity	0.34	0.24
Queue Length 95th (ft)	39	0
Control Delay (s)	7.0	0.0
Lane LOS	A	
Approach Delay (s)	4.6	
Approach LOS		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	112	801	301	124	353	0	0	194	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Total Lost time (s)					7.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			1.00	0.88
Frpb, ped/bikes					0.96		1.00	1.00			1.00	0.94
Flpb, ped/bikes					0.99		0.98	1.00			1.00	1.00
Frt					0.96		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					2569		1541	1668			1735	2438
Flt Permitted					1.00		0.57	1.00			1.00	1.00
Satd. Flow (perm)					2569		931	1668			1735	2438
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.96	0.93	0.91	0.94	0.92	0.92	0.88	0.83
Adj. Flow (vph)	0	0	0	120	834	324	136	376	0	0	220	284
RTOR Reduction (vph)	0	0	0	0	42	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1236	0	136	376	0	0	220	284
Confl. Peds. (#/hr)				139		202	25					25
Heavy Vehicles (%)	2%	2%	2%	1%	5%	1%	1%	0%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					43.0		24.0	24.0			24.0	24.0
Effective Green, g (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
Clearance Time (s)					7.0		6.0	6.0			6.0	6.0
Lane Grp Cap (vph)					1380		279	500			520	731
v/s Ratio Prot								c0.23			0.13	
v/s Ratio Perm					0.48		0.15					0.12
v/c Ratio					0.90		0.49	0.75			0.42	0.39
Uniform Delay, d1					16.5		23.0	25.3			22.4	22.2
Progression Factor					0.49		0.81	0.83			1.00	1.00
Incremental Delay, d2					7.2		5.6	9.5			2.5	1.6
Delay (s)					15.3		24.3	30.4			25.0	23.7
Level of Service					B		C	C			C	C
Approach Delay (s)		0.0			15.3			28.8			24.3	
Approach LOS		A			B			C			C	

Intersection Summary

HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	51	914	4	270	13	0	0	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					1.00			1.00			0.98	
Flpb, ped/bikes					0.99			0.99			1.00	
Frt					1.00			1.00			0.90	
Flt Protected					1.00			0.96			1.00	
Satd. Flow (prot)					3339			1665			1565	
Flt Permitted					1.00			0.73			1.00	
Satd. Flow (perm)					3339			1274			1565	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.87	0.50	0.85	0.46	0.92	0.92	0.25	0.67
Adj. Flow (vph)	0	0	0	76	1051	8	318	28	0	0	4	12
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	0	0	0	1134	0	0	346	0	0	7	0
Confl. Peds. (#/hr)				87		214	8					8
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					49.0			21.0			21.0	
Effective Green, g (s)					49.0			21.0			21.0	
Actuated g/C Ratio					0.61			0.26			0.26	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					2045			334			410	
v/s Ratio Prot											0.00	
v/s Ratio Perm					0.34			c0.27				
v/c Ratio					0.55			1.04			0.02	
Uniform Delay, d1					9.1			29.5			21.9	
Progression Factor					0.83			0.91			1.00	
Incremental Delay, d2					1.0			49.7			0.1	
Delay (s)					8.5			76.6			21.9	
Level of Service					A			E			C	
Approach Delay (s)		0.0			8.5			76.6			21.9	
Approach LOS		A			A			E			C	

Intersection Summary

HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	81	746	31	181	55	0	0	17	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.98			1.00			0.99	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.99			1.00			0.90	
Flt Protected					0.99			0.96			1.00	
Satd. Flow (prot)					3104			1782			1597	
Flt Permitted					0.99			0.72			1.00	
Satd. Flow (perm)					3104			1339			1597	
Peak-hour factor, PHF	0.92	0.92	0.92	0.72	0.98	0.43	0.82	0.72	0.92	0.92	0.85	0.62
Adj. Flow (vph)	0	0	0	112	761	72	221	76	0	0	20	68
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	51	0
Lane Group Flow (vph)	0	0	0	0	938	0	0	297	0	0	37	0
Confl. Peds. (#/hr)				15		84	3					3
Heavy Vehicles (%)	2%	2%	2%	1%	5%	3%	2%	4%	2%	2%	6%	5%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					50.0			20.0			20.0	
Effective Green, g (s)					50.0			20.0			20.0	
Actuated g/C Ratio					0.62			0.25			0.25	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1940			334			399	
v/s Ratio Prot											0.02	
v/s Ratio Perm					0.30			c0.22				
v/c Ratio					0.48			0.89			0.09	
Uniform Delay, d1					8.1			28.9			23.0	
Progression Factor					0.39			1.03			1.00	
Incremental Delay, d2					0.6			26.8			0.5	
Delay (s)					3.8			56.5			23.5	
Level of Service					A			E			C	
Approach Delay (s)		0.0			3.8			56.5			23.5	
Approach LOS		A			A			E			C	

Intersection Summary

HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	42	793	179	26	133	0	0	302	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.96			1.00			0.99	
Flpb, ped/bikes					0.99			1.00			1.00	
Frt					0.97			1.00			0.97	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					2982			1757			2101	
Flt Permitted					1.00			0.70			1.00	
Satd. Flow (perm)					2982			1247			2101	
Peak-hour factor, PHF	0.92	0.92	0.92	0.54	0.95	0.80	0.69	0.89	0.92	0.92	0.95	0.77
Adj. Flow (vph)	0	0	0	78	835	224	38	149	0	0	318	97
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	1110	0	0	187	0	0	401	0
Confl. Peds. (#/hr)				43		66	17					17
Heavy Vehicles (%)	2%	2%	2%	2%	9%	8%	5%	8%	2%	2%	5%	2%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					45.0			25.0			25.0	
Effective Green, g (s)					45.0			25.0			25.0	
Actuated g/C Ratio					0.56			0.31			0.31	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1677			389			656	
v/s Ratio Prot											c0.19	
v/s Ratio Perm					0.37			0.15				
v/c Ratio					0.66			0.48			0.61	
Uniform Delay, d1					12.2			22.2			23.4	
Progression Factor					1.00			1.16			1.00	
Incremental Delay, d2					2.1			3.9			4.2	
Delay (s)					14.3			29.8			27.6	
Level of Service					B			C			C	
Approach Delay (s)		0.0			14.3			29.8			27.6	
Approach LOS		A			B			C			C	

Intersection Summary

HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	169	268	10	1	111	0	0	1102	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)				5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	
Flpb, ped/bikes				1.00	1.00	1.00		1.00			1.00	
Frt				1.00	1.00	0.85		1.00			0.99	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1486	1580	1253		3213			3109	
Flt Permitted				0.95	1.00	1.00		0.95			1.00	
Satd. Flow (perm)				1486	1580	1253		3073			3109	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.86	0.67	0.25	0.82	0.25	0.92	0.97	0.68
Adj. Flow (vph)	0	0	0	178	312	15	4	135	0	0	1136	40
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	178	312	15	0	139	0	0	1176	0
Confl. Peds. (#/hr)						69	7					7
Heavy Vehicles (%)	2%	2%	2%	2%	1%	0%	0%	1%	0%	2%	4%	0%
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Actuated Green, G (s)				22.5	22.5	22.5		33.5			36.5	
Effective Green, g (s)				22.5	22.5	22.5		33.5			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.48			0.52	
Clearance Time (s)				5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Lane Grp Cap (vph)				477	507	402		1521			1621	
v/s Ratio Prot					c0.20			0.03			c0.38	
v/s Ratio Perm				0.12		0.01		0.01				
v/c Ratio				0.37	0.62	0.04		0.09			0.73	
Uniform Delay, d1				18.3	20.1	16.3		10.0			12.9	
Progression Factor				1.00	1.00	1.00		0.84			0.63	
Incremental Delay, d2				0.2	1.6	0.0		0.0			1.5	
Delay (s)				18.5	21.7	16.3		8.3			9.6	
Level of Service				B	C	B		A			A	
Approach Delay (s)		0.0			20.4			8.3			9.6	
Approach LOS		A			C			A			A	

Intersection Summary

HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	459	182	20	55	3	37	84	47	394	875	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	11	12	12	11	12	12	12	12
Total Lost time (s)		5.5	5.5		5.5			5.5			5.5	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.85		1.00			0.99			1.00	
Flpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	
Frt		1.00	0.85		0.99			0.96			1.00	
Flt Protected		1.00	1.00		0.99			0.99			0.98	
Satd. Flow (prot)		1632	1195		1600			2810			3087	
Flt Permitted		0.97	1.00		0.41			0.66			0.74	
Satd. Flow (perm)		1592	1195		660			1875			2317	
Peak-hour factor, PHF	0.83	0.84	0.73	0.50	0.50	0.25	0.77	0.88	0.84	0.92	0.98	0.75
Adj. Flow (vph)	36	546	249	40	110	12	48	95	56	428	893	1
RTOR Reduction (vph)	0	0	0	0	4	0	0	36	0	0	0	0
Lane Group Flow (vph)	0	582	249	0	158	0	0	163	0	0	1322	0
Confl. Peds. (#/hr)	2		147	147		2	6		22	22		6
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	8%	2%	7%	10%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)		22.5	22.5		22.5			25.5			36.5	
Effective Green, g (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
Clearance Time (s)		5.5	5.5		5.5			5.5			5.5	
Vehicle Extension (s)		0.2	0.2		0.2			0.2			0.2	
Lane Grp Cap (vph)		511	384		212			683			1296	
v/s Ratio Prot											c0.12	
v/s Ratio Perm		c0.37	0.21		0.24			0.09			c0.42	
v/c Ratio		1.14	0.65		0.74			0.24			1.02	
Uniform Delay, d1		23.8	20.4		21.2			15.5			16.8	
Progression Factor		1.00	1.00		1.00			1.00			0.64	
Incremental Delay, d2		84.0	2.8		11.7			0.8			26.6	
Delay (s)		107.8	23.2		32.9			16.3			37.4	
Level of Service		F	C		C			B			D	
Approach Delay (s)		82.4			32.9			16.3			37.4	
Approach LOS		F			C			B			D	

Intersection Summary

HCM 2000 Control Delay	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	779	416	0	0	78	531
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	10	10
Total Lost time (s)	5.0				5.0	5.0
Lane Util. Factor	0.95				1.00	0.88
Frpb, ped/bikes	0.93				1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00
Frt	0.95				1.00	0.85
Flt Protected	1.00				0.95	1.00
Satd. Flow (prot)	2692				1472	2364
Flt Permitted	1.00				0.95	1.00
Satd. Flow (perm)	2692				1472	2364
Peak-hour factor, PHF	0.91	0.86	0.92	0.92	0.85	0.82
Adj. Flow (vph)	856	484	0	0	92	648
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1340	0	0	0	92	648
Confl. Peds. (#/hr)		79				
Heavy Vehicles (%)	3%	1%	2%	2%	3%	1%
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Actuated Green, G (s)	40.0				30.0	30.0
Effective Green, g (s)	40.0				30.0	30.0
Actuated g/C Ratio	0.50				0.38	0.38
Clearance Time (s)	5.0				5.0	5.0
Lane Grp Cap (vph)	1346				552	886
v/s Ratio Prot	c0.50				0.06	
v/s Ratio Perm						c0.27
v/c Ratio	1.00				0.17	0.73
Uniform Delay, d1	19.9				16.7	21.5
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	23.5				0.7	5.3
Delay (s)	43.4				17.3	26.8
Level of Service	D				B	C
Approach Delay (s)	43.4			0.0	25.6	
Approach LOS	D			A	C	

Intersection Summary

HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	349	888	73	0	0	0	0	126	104	251	42	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Total Lost time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95						1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99						1.00	0.90		1.00	
Flpb, ped/bikes	0.97	1.00						1.00	1.00		0.94	
Frt	1.00	0.99						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		0.96	
Satd. Flow (prot)	1511	2963						1703	1299		1364	
Flt Permitted	0.95	1.00						1.00	1.00		0.63	
Satd. Flow (perm)	1511	2963						1703	1299		892	
Peak-hour factor, PHF	0.96	0.92	0.83	0.92	0.92	0.92	0.92	0.79	0.79	0.84	0.55	0.92
Adj. Flow (vph)	364	965	88	0	0	0	0	159	132	299	76	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	81	0	0	0
Lane Group Flow (vph)	364	1053	0	0	0	0	0	159	51	0	375	0
Confl. Peds. (#/hr)	54		95						69	69		
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	0%	0%	1%	0%	2%
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	52.0	52.0						18.0	18.0		18.0	
Effective Green, g (s)	52.0	52.0						18.0	18.0		18.0	
Actuated g/C Ratio	0.65	0.65						0.22	0.22		0.22	
Clearance Time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)	982	1925						383	292		200	
v/s Ratio Prot		c0.36						0.09				
v/s Ratio Perm	0.24								0.04		c0.42	
v/c Ratio	0.37	0.55						0.42	0.18		1.88	
Uniform Delay, d1	6.5	7.6						26.5	25.0		31.0	
Progression Factor	1.22	1.19						1.00	1.00		1.10	
Incremental Delay, d2	0.5	0.5						3.3	1.3		409.6	
Delay (s)	8.4	9.5						29.8	26.3		443.6	
Level of Service	A	A						C	C		F	
Approach Delay (s)		9.2			0.0			28.2			443.6	
Approach LOS		A			A			C			F	

Intersection Summary

HCM 2000 Control Delay	90.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

21: Magee Street/Magee St. & Forbes Ave./Forbes Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	253	932	97	0	0	0	0	105	102	20	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						0.98			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.94			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		3202						1741			1831	
Flt Permitted		0.99						1.00			0.89	
Satd. Flow (perm)		3202						1741			1638	
Peak-hour factor, PHF	0.64	0.87	0.75	0.92	0.92	0.92	0.92	0.73	0.77	0.69	0.35	0.92
Adj. Flow (vph)	395	1071	129	0	0	0	0	144	132	29	283	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	41	0	0	0	0
Lane Group Flow (vph)	0	1587	0	0	0	0	0	235	0	0	312	0
Confl. Peds. (#/hr)	14		34						22	22		
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		51.0						19.0			19.0	
Effective Green, g (s)		51.0						19.0			19.0	
Actuated g/C Ratio		0.64						0.24			0.24	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2041						413			389	
v/s Ratio Prot								0.13				
v/s Ratio Perm		0.50									c0.19	
v/c Ratio		0.78						0.57			0.80	
Uniform Delay, d1		10.4						26.9			28.7	
Progression Factor		1.42						1.00			1.17	
Incremental Delay, d2		2.1						5.6			15.9	
Delay (s)		16.9						32.5			49.4	
Level of Service		B						C			D	
Approach Delay (s)		16.9			0.0			32.5			49.4	
Approach LOS		B			A			C			D	

Intersection Summary

HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	935	12	0	0	0	0	90	40	24	50	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			0.99	
Frt		1.00						0.95			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3283						1984			2080	
Flt Permitted		0.99						1.00			0.90	
Satd. Flow (perm)		3283						1984			1896	
Peak-hour factor, PHF	0.71	0.97	0.84	0.92	0.92	0.92	0.92	0.84	0.67	0.93	0.75	0.92
Adj. Flow (vph)	130	964	14	0	0	0	0	107	60	26	67	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	1107	0	0	0	0	0	142	0	0	93	0
Confl. Peds. (#/hr)	22		26						16	16		
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	7%	0%	2%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		46.0						24.0			24.0	
Effective Green, g (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1887						595			568	
v/s Ratio Prot								c0.07				
v/s Ratio Perm		0.34									0.05	
v/c Ratio		0.59						0.24			0.16	
Uniform Delay, d1		10.9						21.1			20.6	
Progression Factor		0.73						1.00			0.61	
Incremental Delay, d2		0.8						0.9			0.6	
Delay (s)		8.8						22.1			13.1	
Level of Service		A						C			B	
Approach Delay (s)		8.8			0.0			22.1			13.1	
Approach LOS		A			A			C			B	

Intersection Summary

HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	883	27	0	0	0	0	57	22	264	41	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			0.99	
Frt		1.00						0.97			1.00	
Flt Protected		0.99						1.00			0.96	
Satd. Flow (prot)		3338						1569			1705	
Flt Permitted		0.99						1.00			0.70	
Satd. Flow (perm)		3338						1569			1241	
Peak-hour factor, PHF	0.75	0.94	0.82	0.92	0.92	0.92	0.92	0.80	0.92	0.91	0.67	0.92
Adj. Flow (vph)	117	939	33	0	0	0	0	71	24	290	61	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	1086	0	0	0	0	0	80	0	0	351	0
Confl. Peds. (#/hr)	48		30						9	9		
Heavy Vehicles (%)	1%	6%	4%	2%	2%	2%	2%	20%	5%	3%	20%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		46.0						24.0			24.0	
Effective Green, g (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1919						470			372	
v/s Ratio Prot								0.05				
v/s Ratio Perm		0.33									c0.28	
v/c Ratio		0.57						0.17			0.94	
Uniform Delay, d1		10.7						20.6			27.3	
Progression Factor		0.52						1.00			0.79	
Incremental Delay, d2		1.0						0.8			29.2	
Delay (s)		6.6						21.4			50.9	
Level of Service		A						C			D	
Approach Delay (s)		6.6			0.0			21.4			50.9	
Approach LOS		A			A			C			D	

Intersection Summary

HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX F

4. For unlisted uses and uses requiring Parking Demand Analysis (Section 914.02.B), bicycle parking shall be integrated into a comprehensive, multimodal transportation plan approach. The extent of required parking and incentive reductions for any mode of travel will reflect the planned, apparent or potential system connectivity opportunities of that area in relation to the City transportation network.

(Ord. No. 7-2010, § 3, eff. 4-1-10)

914.06. Parking for Persons with Disabilities.

A portion of the total number of required parking spaces shall be specifically designated, located and reserved for use by persons with disabilities.

914.06.A Number of Spaces

Parking spaces reserved for persons with disabilities shall be counted toward fulfilling overall off-street parking standards. The minimum number of spaces to be reserved for persons with disabilities shall be as follows:

Residential Uses	
	Minimum Reserved Spaces Required
Less than 4 Dwelling Units	0
4 to 25 Dwelling Units	1
Non-Residential Uses and Parking Spaces Provided for Dwelling Units in Excess of 25	
Parking Spaces Required	**Minimum Reserved Spaces Required**
1—25	1
26—50	2
51—75	3
76—100	4
101—150	5
151—200	6
201—300	7
301—400	8
401—500	9
501—1,000	2% of total spaces
Over 1,000	20, plus 1 for each 100 spaces over 1,000

One (1) in every eight (8) accessible spaces, but not less than one (1), shall be served by an access aisle eight (8) feet wide minimum and shall be designated "van accessible" as required by Americans with Disabilities Act of 1990. The vertical clearance at such spaces shall comply with Americans with Disabilities Act of 1990. All such spaces may be grouped on one (1) level of a parking structure.

914.06.B Minimum Dimensions

All parking spaces reserved for people with disabilities shall be at least nineteen (19) feet in length and at least eight (8) feet wide and shall provide minimum vertical clearance of eight (8) feet two (2) inches at the parking space and along at least one (1) vehicle access route to such spaces from site entrance(s) and exit(s). Parking access aisles shall be part of an accessible route to the building or facility entrance and shall be five (5) feet wide, except parking spaces reserved for vans, which shall be eight (8) feet wide in accordance with Sec. 914.06.A. Two (2) accessible parking spaces may share a common access aisle. Parked vehicle overhangs shall not reduce the clear width of an accessible route. Parking spaces and access aisles shall be level with surface slopes not exceeding 1:50 (two (2) percent) in all directions.

Off-Street Loading Schedule of Sec. 914.10, result in a requirement for more parking or loading spaces than the existing or more recent use. Additional parking or loading spaces shall be required only in proportion to the extent of the change, not for the entire building or use.

914.01.C No Reduction Below Minimums and No Increase Above Maximums

Existing parking and loading spaces shall not be reduced below the minimums required in this chapter, nor shall spaces be provided in excess of stated maximums. Any change in use that increases applicable offstreet parking or loading requirements shall be a violation of this code unless parking and loading spaces are provided in accordance with the provisions of this chapter.

914.01.D Nonconforming Status

A use that was legally established prior to the adoption of this ordinance shall not be deemed nonconforming solely as a result of providing fewer than the minimum number or more than the maximum number of off-street parking or loading spaces established in Sec. 914.02.A or Sec. 914.02.B.

914.01.E Compliance with Zoning District Regulations

Unless otherwise specifically stated, off-street parking, loading and circulation areas shall comply with the property development standards of the zoning district in which they are located.

914.02. Off-Street Parking Schedules.

914.02.A Schedule A

Off-street parking spaces shall be provided in accordance with the minimum and maximum standards included in Parking Schedule A. In lieu of complying with the standards of Parking Schedule A, an applicant may request approval of an Alternative Access and Parking Plan, pursuant to Sec. 914.07. The Zoning Administrator may require an Alternative Access and Parking Plan to be submitted for uses allowed in residential district. The parking schedule in this section shall not apply to the Bicycle Parking Requirement of Section 914.05.D.

Use Type	Minimum Off-Street Automobile Spaces Required	Maximum Off-Street Automobile Spaces Allowed
Residential Uses		
Single-Unit, Detached	1 per unit	4 per unit
Single-Unit Attached	1 per unit	4 per unit
Two-Unit	1 per unit	2 per unit
Three-Unit	1 per unit	2 per unit
Multi-Unit	1 per unit	2 per unit
Group Residential	1 per 4 residents	No maximum
Housing for the Elderly	Parking Demand Analysis Required, see Sec. 914.02.B	
Non-Residential Uses		
Adult Entertainment	1 per 500 s.f. above first 2,400 s.f.	1 per 150 s.f.
Amusement Arcade	1 per 500 s.f. above first 2,400 s.f.	1 per 150 s.f.
Animal Care	1 per 400 s.f. above first 2,400 s.f.	
Art or Music Studio	1 per 800 s.f.	1 per 300 s.f.
Assembly, Public	Parking Demand Analysis Required, See Sec. 914.02.B	

Use Type	Minimum Off-Street Automobile Spaces Required	Maximum Off-Street Automobile Spaces Allowed
Bank or Financial Institution	1 per 500 s.f. above first 2,400 s.f.	1 per 300 s.f.
Bed and Breakfast	See Bed and Breakfast Regulations, Sec. 911.04.A.7-9	
Basic Industry	Parking Demand Analysis Required, see Sec. 914.02.B	
Car Wash	4 queuing spaces per bay for automatic wash; 2 queuing spaces per bay for self-service	
Cemetery	Parking Demand Analysis Required, see Sec. 914.02.B	
Check Cashing	1 per 500 s.f. above first 2,400 s.f.	1 per 175 s.f.
Child Care	1 per 800 s.f.	1 per 400 s.f.
Club	One (stall) per 125 square feet above the first 2,400 square feet	
Community Center	1 per 500 s.f.	1 per 200 s.f.
Correctional Facility	Parking Demand Analysis Required, see Sec. 914.02.B	
Cultural Services	1 per 800 s.f.	1 per 300 s.f.
Educational Institution not otherwise listed	1 per 800 s.f.	1 per 300 s.f.
Freight Terminal	Parking Demand Analysis Required, see Sec. 914.02.B	
Funeral Home	4 per viewing room	
Gaming Enterprise	Parking Demand Analysis required, see 914.02.B	
Golf Course	2 spaces per hole, plus 1 space per 800 s.f. in clubhouse	4 per unit
Grocery Store, up to 10,000 s.f.	1 per 500 s.f. above first 2,400 s.f.	1 per 200 s.f.
Grocery Store, over 10,000 s.f.	1 per 150 s.f.	1 per 100 s.f.
Hazardous Operations	Parking Demand Analysis Required, see Sec. 914.02.B	
Heliport, Helistop, Helipad	1 per 1,000 s.f. of operational area	
Hospital	Parking Demand Analysis Required, see Sec. 914.02.B	
Incinerator, Solid Waste	Parking Demand Analysis Required, see Sec. 914.02.B	
Institutional Facility not otherwise listed	1 per 800 s.f.	1 per 300 s.f.
Laboratory/Research Service	1 per 500 s.f. above first 2,400 s.f.	1 per 200 s.f.
Laundry Service	Parking Demand Analysis Required, see Sec. 914.02.B	
Library	1 per 600 s.f.	1 per 200 s.f.
Manufacturing and Assembly	Parking Demand Analysis Required, see Sec. 914.02.B	
Medical Office	1 per 400 s.f. above first 2,400 s.f.	
Office	1 per 500 s.f. above first 2,400 s.f.	
Parks and Recreation	Parking Demand Analysis Required, see Sec. 914.02.B	
Pawn Shop	1 per 500 s.f. above first 2,400 s.f.	1 per 175 s.f.
Post Office	Parking Demand Analysis Required, see Sec. 914.02.B	
Recreation/Entertainment, Outdoor	Parking Demand Analysis Required, see Sec. 914.02.B	
Recreation/Entertainment, Indoor	1 per 500 s.f. above first 2,400 s.f. or 1 per 5 seats, whichever is greater	
Recycling Processing Center	Parking Demand Analysis Required, see Sec. 914.02.B	
Religious Assembly	1 per 5 seats	
Restaurant, Fast Food	1 per 75 s.f. of customer service/dining area or 1 per 200 s.f. if no customer service area, plus 6 queuing spaces per service window	
Restaurant	1 per 125 s.f. above first 2,400 s.f.	1 per 75 s.f.

Use Type	Minimum Off-Street Automobile Spaces Required	Maximum Off-Street Automobile Spaces Allowed
Retail Sales and Services	1 per 500 s.f. above first 2,400 s.f.	1 per 175 s.f.
Safety Service	Parking Demand Analysis Required, see Sec. 914.02.B	
Salvage Yard	1 per 1,000 s.f. above first 2,400 s.f., plus 1 per 10,000 s.f. of lot	
School, Elementary or Secondary	Parking Demand Analysis Required, see Sec. 914.02.B	
Service Station	2 per service bay	
Transit Facility	Parking Demand Analysis Required, see Sec. 914.02.B	
Utility, Public	Parking Demand Analysis Required, see Sec. 914.02.B	
Vehicle/Equipment Repair	2 per service bay	
Vehicle/Equipment Sales	Parking Demand Analysis Required, see Sec. 914.02.B	
Vocational or Trade School	1 per 500 s.f.	
Warehouse	Parking Demand Analysis Required, see Sec. 914.02.B	
Warehouse, Residential Storage	1 space, plus 1 per service bay	
Welding or Machine Shop	Parking Demand Analysis Required, see Sec. 914.02.B	

914.02.B Uses Requiring Parking Demand Analysis

Uses requiring parking demand analysis have widely varying parking demands, making it difficult to specify a single requirement. The off-street parking requirement for such uses shall be established by the Zoning Administrator based on estimates of parking demand, which may include recommendations of the Institute of Traffic Engineers (ITE), data collected from uses that are the same or comparable to the proposed use, or other relevant information. The Zoning Administrator may require that an applicant submit a parking study that provides analysis and justification for the proposed number of spaces to be provided. Parking studies shall document the source of data used to develop the recommendations. The Zoning Administrator will review the submitted study along with any other traffic engineering and planning data that are appropriate and establish the minimum and maximum off-street parking requirement (including bicycle parking) for the use proposed.

914.02.C Structured Parking Required

All principal and accessory off-street parking uses in the GT, DR, EMI and SP Districts, where more than one hundred fifty (150) number of spaces are provided, shall comply with the following requirements:

(a) Surface parking shall be permitted for no more than one hundred fifty (150) spaces;

(b) All parking in excess of one hundred fifty (150) spaces shall be structured;

(c) In no case shall an accessory parking area or structure occupy more than half the lot area of the lot containing the principal use that the parking area or structure serves.

(Ord. 23-2004, § 1D, eff. 12-20-04; Ord. 42-2005, §§ 25, 26, eff. 12-30-05; Ord. No. 7-2010, § 1, eff. 4-1-10)

914.03. Rules for Computing Requirements.

The following rules shall apply when computing the number of spaces required pursuant to Parking Schedule A (Sec. 914.02.A).

914.03.A Fractions

When calculation of the number of required offstreet parking spaces results in a fractional number, a fraction of less than one-half (½) shall be disregarded and a fraction of one-half (½) or more shall be rounded to the next highest whole number.

914.03.B Multiple Uses or Activities

When two (2) or more uses, activities, or separate establishments are located within the same development, off-street parking shall be provided for each use or separate establishment according to the Parking Schedule A (Sec. 914.02.A), unless a shared parking plan is approved pursuant to Sec. 914.07.G.1. In the event that one (1) or more uses within a multi-use development are of a size that would otherwise exempt them from compliance with off-street parking requirements, only one (1) such exemption shall be permitted to be taken for the entire development.

914.03.C Calculation of Floor Area

Unless otherwise stated, all square footage-based off-street parking standards shall be computed on the basis of gross floor area used or intended to be used for service to customers, patrons, clients or patients, or as tenants, including areas occupied by fixtures and equipment used for display or sale of merchandise. It need not include floors or parts of floors used principally for nonpublic purposes, such as the storage, incidental repair, processing or packaging of merchandise, for show windows, or for offices incidental to the management or maintenance of stores or buildings when these areas are in separate rooms from the principal use of the building. Floors or parts of floors used principally for rest rooms or for utilities or for fitting rooms, dressing rooms and alteration rooms shall also be excluded from the definition of "floor area" for the purpose of computing off-street parking requirements. These provisions notwithstanding, the "floor area" used as the basis for computing off-street parking requirements shall never be less than eighty (80) percent of the total gross floor area.

914.03.D Bench Seating

When seating consists of benches, pews or other similar seating facilities, each twenty (20) linear inches of seating space shall be counted as one (1) seat.

914.03.E Employees, Students and Occupants

For the purpose of computing parking requirements based on the number of employees, students, residents or occupants, calculations shall be based on the largest number of persons working on any single shift, the maximum enrollment or the maximum fire-rated capacity, whichever is applicable.

914.03.F New and Unlisted Uses

Upon receiving a development application for a use not specifically listed in the Parking Schedule A (Sec. 914.02.A), the Zoning Administrator shall apply the off-street parking standards of the listed use that is deemed most similar to the use proposed or require that a parking study be submitted pursuant to Sec. 914.02.B.

914.04. Off-Street Parking Exemption/Reduction Areas.

The minimum off-street parking requirements of Sec. 914.02.A shall be decreased as shown in the following table for uses located in districts designated on the Official Zoning Map as "Parking Exempt Areas." Uses located in Parking Exempt Areas shall provide no more than the otherwise required minimum parking ratio established in Sec. 914.02.A.

Area	Use Type	Percent Decrease
SP Districts & PUD's	Any use	Parking Demand Analysis Required, see Sec. 914.02.B
Downtown	Any use	100
East Liberty	Any use except residential	50
North Shore	Any use except residential	25
North Side	Any use except residential	25
Oakland	Any use except residential	50

The parking reductions of this section shall not be applicable to the minimum Bicycle Parking requirements of Section 914.05.
(Ord. No. 7-2010, § 2, eff. 4-1-10)

914.05. Bicycle Parking

To further the intent of this Chapter to allow flexibility and equity in addressing vehicle parking issues and to present a menu of parking allocation strategies, this section requires and incentivizes bicycle parking. This section seeks to facilitate the lessening of car-related congestion in the City by promoting bicycle commuting by requiring the provision of adequate and safe facilities for the storage of bicycles. Further, this section allows a reduction in required automobile parking spaces when bicycle parking is accommodated, creating a benefit for meeting the requirements of this Chapter.

914.05.A Special Definitions

1. Bicycle Parking Space means a four (4) feet by six (6) feet space provided for locking up to two (2) bicycles to a City approved Bicycle Rack or a bicycle locker that can store up to two (2) bicycles per unit.

2. Bicycle Rack means a stationary device with a base that can wedge anchors for surface mounting, provides steel tubing one (1) inch to four (4) inches thick, containing locking points between one (1) feet and three (3) feet off the ground and a gap near the bottom for pedal clearance, enabling one to lock a bicycle frame and one (1) of the wheels with a standard U-Lock. Such a rack must be able to accommodate at least two (2) bicycles upright by rack frame.

3. Protected Bicycle Parking Spaces are secure facilities which protect the entire bicycle, its components and accessories against theft and against inclement weather, including wind-driven rain. This type of facility includes, but is not limited to bicycle lockers, check-in facilities, monitored bicycle parking, restricted access parking, and personal storage.

4. Unprotected Bicycle Parking Spaces are Bicycle Racks which permit the locking of the bicycle frame and one (1) wheel to the rack and which support the bicycle in a stable position without damage to wheels, frame or components.

5. Low Occupancy Facility means a building or use with limited customer or non-employee contact and less than one (1) employee per every ten thousand (10,000) square feet of gross floor area.

914.05.B Locations and Facilities

1. Bicycle parking shall be provided in a well-lighted area.

2. Bicycle parking shall be at least as conveniently located as the most convenient automobile spaces, other than those spaces for persons with disabilities. Safe and convenient means of ingress and egress to bicycle parking facilities shall be provided. Safe and convenient shall include, but is not limited to stairways, elevators and escalators.

3. Bicycle Parking facilities shall not interfere with accessible paths of travel or accessible parking as required by the Americans with Disabilities Act of 1990.

4. Protected and Unprotected Bicycle Racks shall be located in highly visible areas to minimize theft and vandalism.

5. In cases of structured automobile parking, Protected Bicycle Parking Spaces shall be used.

6. Alternative Locations and facilities. In the event that compliance with Section 914.05.B or 914.05.C may not be feasible or ideal because of demonstrable hardship or due to a creative design alternative, the Zoning Administrator may approve an alternative storage location. The Zoning Administrator shall be guided by the following criteria:

   a. Such alternative facilities shall be well-lighted and secure.

   b. All Bicycle Parking Spaces outside of a building shall be located within a one hundred (100) foot diameter of the primary building entrance.

   c. Bicycle Racks may be placed in the public right-of-way provided that the building owner attains an encroachment permit for the installation of racks in the public right-of-way from the Department of Public Works.

914.05.C Layout of Spaces

Bicycle Parking Spaces or alternative spaces approved by the Zoning Administrator shall be laid out according to the following:

1. All bicycle parking areas shall afford a four (4) foot wide access aisle to ensure safe access to spaces.

2. Bicycle parking and automobile parking shall be located so as to protect bicycles from damage.

3. In cases where Bicycle Parking Spaces are not visible from the primary street, signage shall be used to direct cyclists safely to bicycle parking areas.

4. All Bicycle Racks and lockers shall be securely anchored to the ground or building structure.

5. Bicycle Parking Spaces shall not interfere with pedestrian circulation and shall adhere to ADA requirements.

6. Bicycle parking shall be an integral part of the overall site layout and designed to minimize visual clutter.

914.05.D Bicycle Parking Requirement

Bicycle Parking Spaces shall be provided in accordance with the following tables:

1. For all Non-Residential uses except, Hotel/Motel, Commercial Parking, Parking Structure, and Low Occupancy Facilities (as defined in Section 914.05.A.5):

Gross Floor Area	Required Minimum Number of Bicycle Parking Spaces
0—6,000 s.f.	0
6,001—20,000 s.f.	1

Gross Floor Area	Required Minimum Number of Bicycle Parking Spaces
Over 20,000 s.f.	1 per every 10,000 s.f. or fraction thereof

2. For Multi-Unit Residential:

Number of Dwelling Units	Required Minimum Number of Bicycle Parking Spaces
Less than 12	0
12 or more	1 per every 3 dwelling units or a fraction thereof

(a) At least sixty (60) percent of all bicycle parking spaces provided must be Protected Bicycle Parking Spaces.

3. For Commercial Parking and Parking Structure uses:

Number of Automobile Spaces	Required Minimum Number of Bicycle Parking Spaces
0—4	0
4—20	1
21—40	2
Over 40	1 per every 10 spaces or a fraction thereof

4. For Low Occupancy Facilities and Hotel/Motel uses:

Number of Employees	Required Minimum Number of Bicycle Parking Spaces
0—5	0
6—20	1
21—80	2
Over 80	1 per every 20 employees or a fraction thereof

(a) To certify a building or use as a Low Occupancy Facility, the building owner or applicant shall attach to any zoning permit application, an affidavit attesting to the number of employees required for the use.

When calculating the minimum number of Protected and/or Unprotected parking spaces required results in a fractional number, a fraction of less than one-half (½) shall be disregarded and a fraction of one-half (½) or more shall be rounded to the next highest whole number.

914.05.E Street Parking Reduction for Bicycle Parking

1. A reduction in the number of off-street parking spaces required by Section 914.02.A (excluding parking spaces for persons with disabilities) shall be permitted for the provision of bicycle parking provided that:

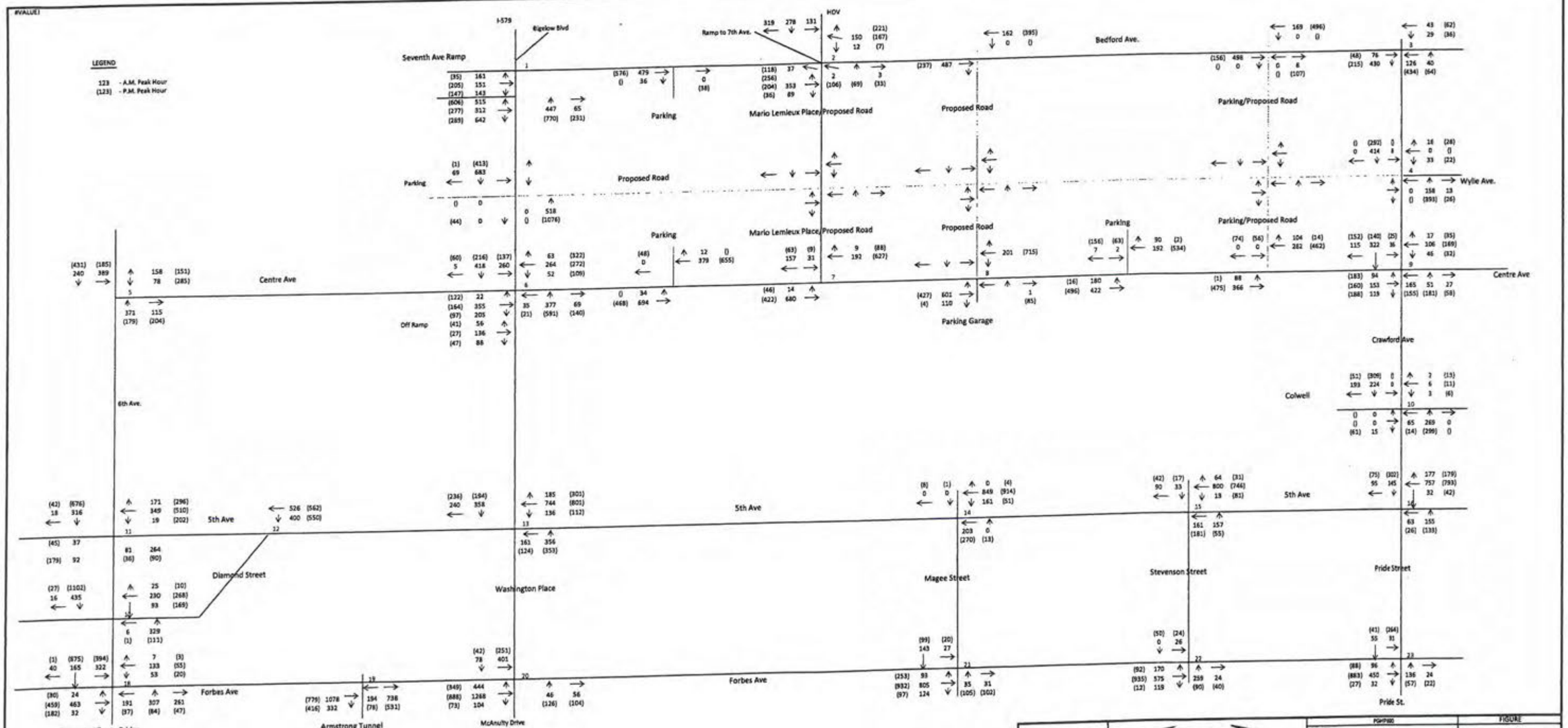
   (a) No fee is required for using the bicycle parking made available;

   (b) When calculation of the maximum number of reduced parking spaces results in a fraction, the resulting number shall be rounded to the next highest integer.

2. The reduction in the number of automobile parking spaces shall be reduced by no more than one (1) space for each Bicycle Parking Space, but by no more than thirty (30) percent of the total required spaces.

3. This provision can not be applied to Single-Unit Residential, Two-Unit Residential, Three-Unit Residential, Animal Care, Car Wash, Salvage Yard, Service Station, and Vehicle/Equipment Repair uses.

APPENDIX G



SCALE: N.T.S.

Trans Associates
Transportation Solutions for Today and Tomorrow
4955 Steubenville Pike / Suite 400
Pittsburgh, Pennsylvania / 412 - 490 - 0630

PGH900

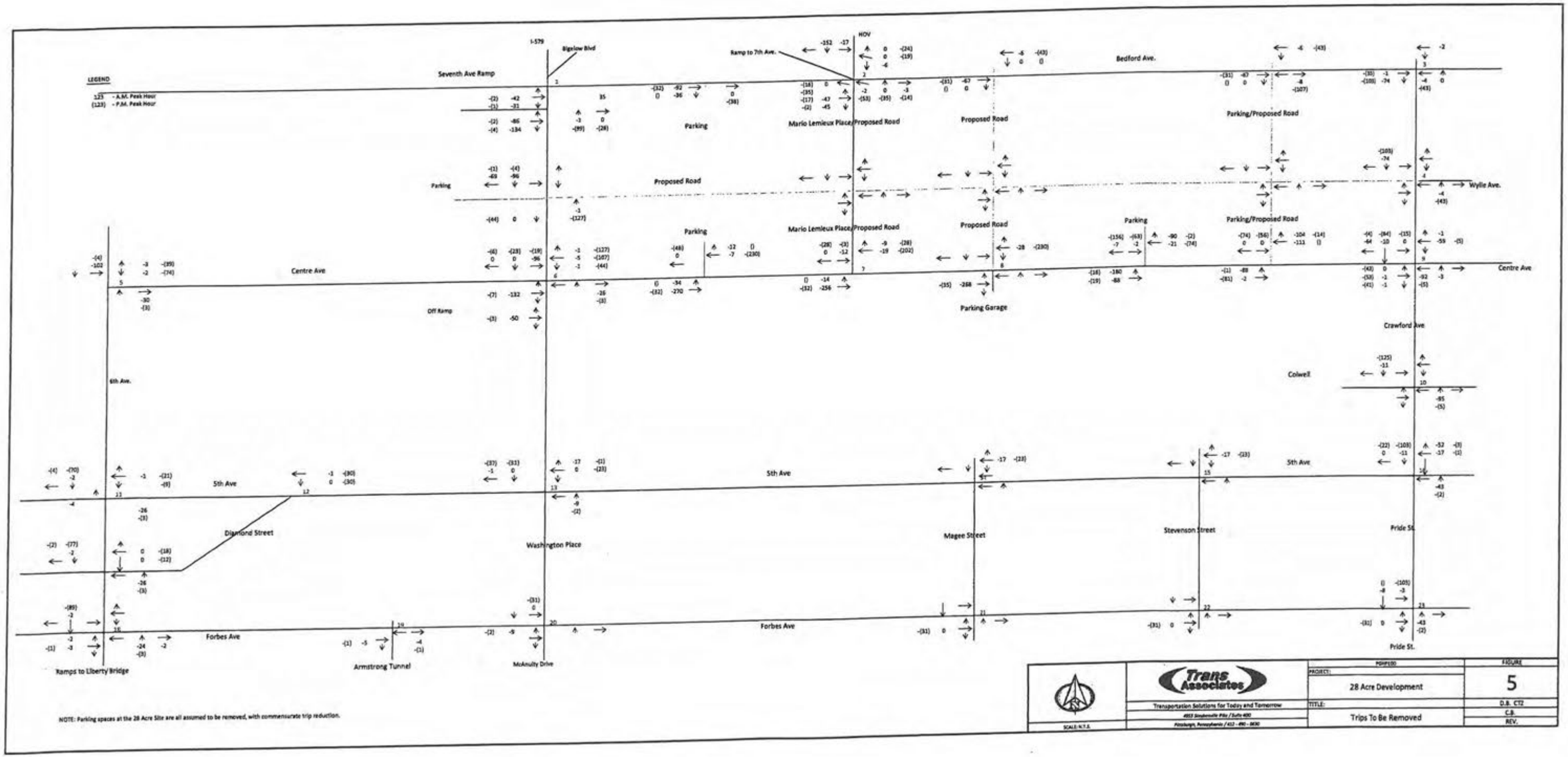
PROJECT: 28 Acre Development

TITLE: 2011 Existing Traffic Volumes

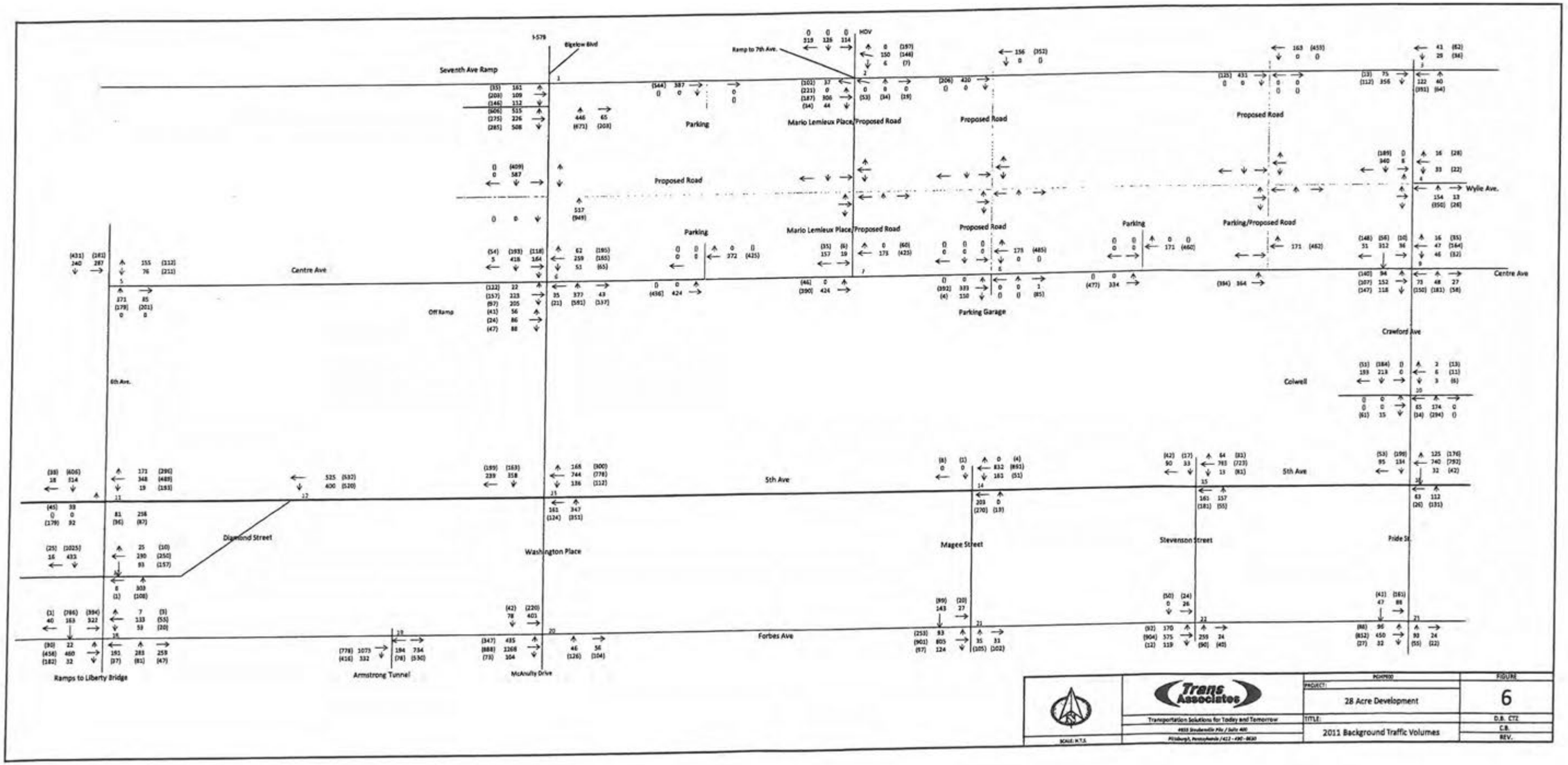
FIGURE 4

D.B. CTZ
C.B.
REV.

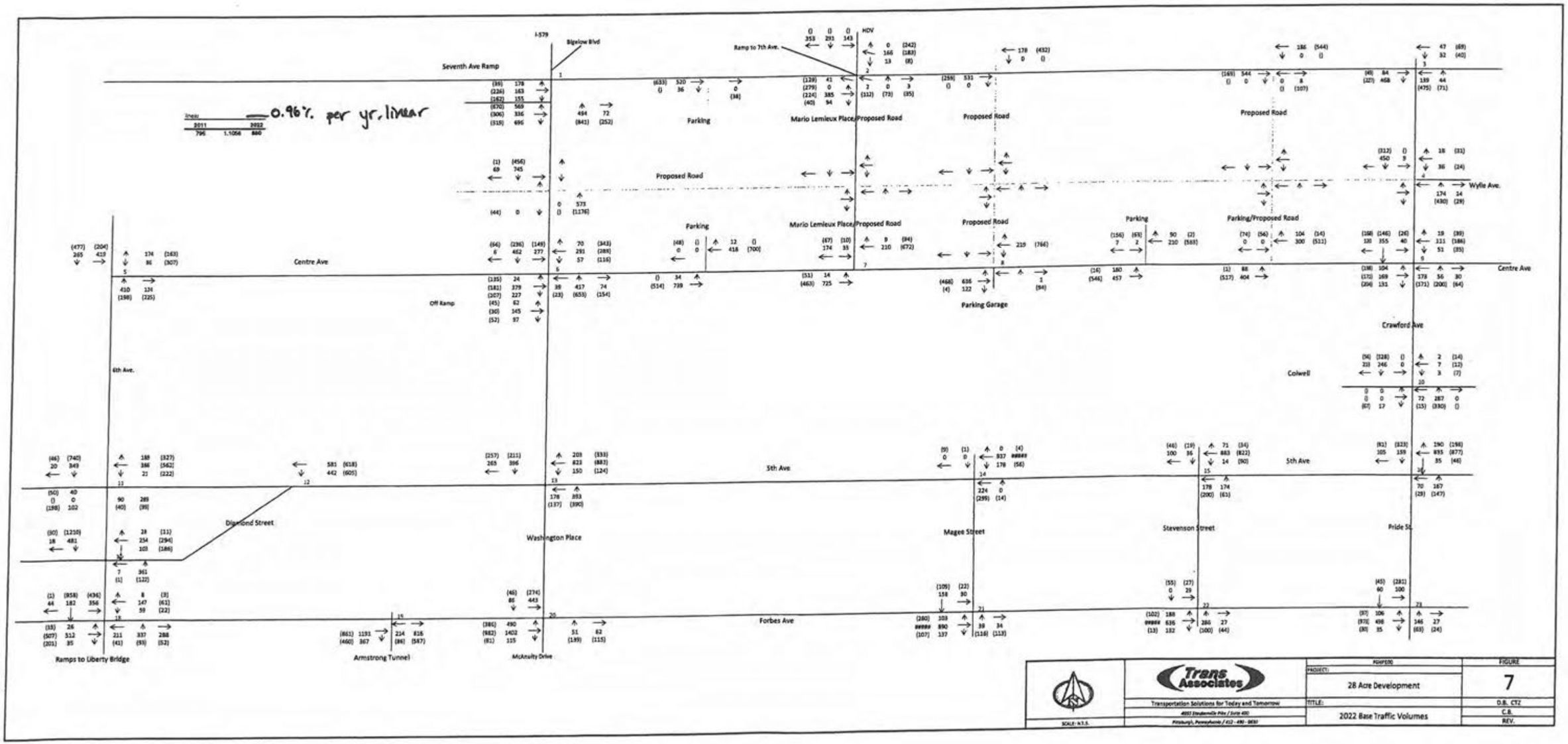
(A) - 2011 Existing Peak Hour Traffic Volumes



(B) Existing Civic Arena Trips to be Removed (See Arena Counts following


I-579
Bigelow Blvd
Seventh Ave Ramp
Ramp to 7th Ave.
HOV
Parking
Mario Lemieux Place
Proposed Road
Wylie Ave.
Centre Ave
Off Ramp
Parking Garage
Crawford Ave
Colwell
6th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride St
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
Trans Associates
Transportation Solutions for Today and Tomorrow
28 Acre Development
2011 Background Traffic Volumes
6
SCALE: N.T.S.

C = A − B



D = (C * growth rate) + B

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

PROJECT _____ Made By _____ Date

SUBJECT _____ Checked By _____ Date

_____ Sheet No. _____ of _____

Arena
Counts

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena North Lot Dwy.
at Bedford Ave.
PGHPE00#11109
Board#4435 JCD

File Name : 101 AM
Site Code : 11109026
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Arena North Lot Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	0	13	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
07:15 AM	0	0	12	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
07:30 AM	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
07:45 AM	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
Total	0	0	42	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42
08:00 AM	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
08:15 AM	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
08:30 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	20	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
Grand Total	0	0	62	0	62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62
Apprch %	0	0	100	0		0	0	0	0		0	0	0	0		0	0	0	0		
Total %	0	0	100	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Arena North Lot Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	12	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
07:30 AM	0	0	9	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
07:45 AM	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
08:00 AM	0	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Total Volume	0	0	36	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
% App. Total	0	0	100	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.750

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena East Lot (upper)
at Bedford Ave.
PGHPE00#11109
Board# SE

File Name : 102 AM
Site Code : 11109032
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles -

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Melody Tent Lot (North) Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	8
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	0	0	0	0	0	6
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	0	0	0	0	0	14
Apprch %	0	0	0	0		0	0	0	0		0	0	100	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	
Typical Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	0	0	0	0	0	14
% Typical Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	100
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Melody Tent Lot (North) Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	3
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	8
% App. Total	0	0	0	0		0	0	0	0		0	0	100	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.667	.000	.667	.000	.000	.000	.000	.000	.667
Typical Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	8
% Typical Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	100
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena Lot (west) Dwy.
off Washington Pl.
PGHPE00#11109
Board#4916 MS

File Name : 103 AM
Site Code : 11109L25
Start Date : 7/20/2011
Page No : 1

Groups Printed- Typical Vehicles

	West Lot Eastbound					Westbound					Washington Pl. Northbound					Washington Pl. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	9
07:15 AM	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	14
07:30 AM	0	0	0	0	0	0	0	0	0	0	25	0	0	0	25	0	0	0	0	0	25
07:45 AM	0	0	0	0	0	0	0	0	0	0	20	0	0	0	20	0	0	0	0	0	20
Total	0	0	0	0	0	0	0	0	0	0	68	0	0	0	68	0	0	0	0	0	68
08:00 AM	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	10
08:15 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	7
08:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
08:45 AM	1	0	1	0	2	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	4
Total	1	0	1	0	2	0	0	0	0	0	20	0	0	0	20	0	0	0	0	0	22
Grand Total	1	0	1	0	2	0	0	0	0	0	88	0	0	0	88	0	0	0	0	0	90
Apprch %	50	0	50	0		0	0	0	0		100	0	0	0		0	0	0	0		
Total %	1.1	0	1.1	0	2.2	0	0	0	0	0	97.8	0	0	0	97.8	0	0	0	0	0	

	West Lot Eastbound					Westbound					Washington Pl. Northbound					Washington Pl. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	14
07:30 AM	0	0	0	0	0	0	0	0	0	0	25	0	0	0	25	0	0	0	0	0	25
07:45 AM	0	0	0	0	0	0	0	0	0	0	20	0	0	0	20	0	0	0	0	0	20
08:00 AM	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	10
Total Volume	0	0	0	0	0	0	0	0	0	0	69	0	0	0	69	0	0	0	0	0	69
% App. Total	0	0	0	0		0	0	0	0		100	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.690	.000	.000	.000	.690	.000	.000	.000	.000	.000	.690

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena South Lot Dwy.
at Centre Ave.
PGHPE00#11109
Board#4436 FS

File Name : 104 AM
Site Code : 11109027
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Arena South Lot Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	24	0	0	0	24	0	0	8	0	8	0	0	0	0	0	0	0	0	0	0	32
07:15 AM	14	0	0	0	14	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	18
07:30 AM	12	0	0	0	12	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	16
07:45 AM	7	0	0	0	7	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	10
Total	57	0	0	0	57	0	0	19	0	19	0	0	0	0	0	0	0	0	0	0	76
08:00 AM	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
Grand Total	58	0	0	0	58	0	0	20	0	20	0	0	0	0	0	0	0	0	0	0	78
Apprch %	100	0	0	0		0	0	100	0		0	0	0	0		0	0	0	0		
Total %	74.4	0	0	0	74.4	0	0	25.6	0	25.6	0	0	0	0	0	0	0	0	0	0	

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Arena South Lot Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	14	0	0	0	14	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	18
07:30 AM	12	0	0	0	12	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	16
07:45 AM	7	0	0	0	7	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	10
08:00 AM	1	0	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
Total Volume	34	0	0	0	34	0	0	12	0	12	0	0	0	0	0	0	0	0	0	0	46
% App. Total	100	0	0	0		0	0	100	0		0	0	0	0		0	0	0	0		
PHF	.607	.000	.000	.000	.607	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.639

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Pens Garage at Centre Ave.
PGHPE00#11109
Board#5040 MS

File Name : 105 AM
Site Code : 11109033
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles Pens Garage -

	Centre Ave. Eastbound					Centre Ave. Westbound					Pens Garage Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
07:15 AM	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
07:30 AM	0	0	29	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
07:45 AM	0	0	28	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
Total	0	0	105	0	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	105
08:00 AM	0	0	29	0	29	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	30
08:15 AM	0	0	30	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
08:30 AM	0	0	23	0	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
08:45 AM	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
Total	0	0	106	0	106	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	107
Grand Total	0	0	211	0	211	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	212
Apprch %	0	0	100	0		0	0	0	0		0	0	100	0		0	0	0	0		
Total %	0	0	99.5	0	99.5	0	0	0	0	0	0	0	0.5	0	0.5	0	0	0	0	0	
Typical Vehicles Pens Garage	0	0	211	0	211	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	212
% Typical Vehicles Pens Garage	0	0	100	0	100	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	100
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:15 AM

	Centre Ave. Eastbound					Centre Ave. Westbound					Pens Garage Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:15 AM	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
07:30 AM	0	0	29	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
07:45 AM	0	0	28	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
08:00 AM	0	0	29	0	29	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	30
Total Volume	0	0	110	0	110	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	111
% App. Total	0	0	100	0		0	0	0	0		0	0	100	0		0	0	0	0		
PHF	.000	.000	.948	.000	.948	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.925
Typical Vehicles Pens Garage	0	0	110	0	110	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	111
% Typical Vehicles Pens Garage	0	0	100	0	100	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	100
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena East Lot (middle)
at Centre Ave.
PGHPE00#11109
Board#4437 JR

File Name : 106 AM
Site Code : 11109030
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					East Lot Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	36	0	0	0	36	0	0	7	0	7	0	0	0	0	0	1	0	1	0	2	45
07:15 AM	53	0	0	0	53	0	0	14	0	14	0	0	0	0	0	1	0	1	0	2	69
07:30 AM	53	0	0	0	53	0	0	23	0	23	0	0	0	0	0	0	0	3	0	3	79
07:45 AM	37	0	0	0	37	0	0	27	0	27	0	0	0	0	0	1	0	1	0	2	66
Total	179	0	0	0	179	0	0	71	0	71	0	0	0	0	0	3	0	6	0	9	259
08:00 AM	37	0	0	0	37	0	0	26	0	26	0	0	0	0	0	0	0	2	0	2	65
08:15 AM	39	0	0	0	39	0	0	28	0	28	0	0	0	0	0	1	0	3	0	4	71
08:30 AM	35	0	0	0	35	0	0	18	0	18	0	0	0	0	0	1	0	1	0	2	55
08:45 AM	24	0	0	0	24	0	0	7	0	7	0	0	0	0	0	0	0	2	0	2	33
Total	135	0	0	0	135	0	0	79	0	79	0	0	0	0	0	2	0	8	0	10	224
Grand Total	314	0	0	0	314	0	0	150	0	150	0	0	0	0	0	5	0	14	0	19	483
Apprch %	100	0	0	0		0	0	100	0		0	0	0	0		26.3	0	73.7	0		
Total %	65	0	0	0	65	0	0	31.1	0	31.1	0	0	0	0	0	1	0	2.9	0	3.9	

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					East Lot Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	53	0	0	0	53	0	0	14	0	14	0	0	0	0	0	1	0	1	0	2	69
07:30 AM	53	0	0	0	53	0	0	23	0	23	0	0	0	0	0	0	0	3	0	3	79
07:45 AM	37	0	0	0	37	0	0	27	0	27	0	0	0	0	0	1	0	1	0	2	66
08:00 AM	37	0	0	0	37	0	0	26	0	26	0	0	0	0	0	0	0	2	0	2	65
Total Volume	180	0	0	0	180	0	0	90	0	90	0	0	0	0	0	2	0	7	0	9	279
% App. Total	100	0	0	0		0	0	100	0		0	0	0	0		22.2	0	77.8	0		
PHF	.849	.000	.000	.000	.849	.000	.000	.833	.000	.833	.000	.000	.000	.000	.000	.500	.000	.583	.000	.750	.883

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena East Lot (upper)
at Centre Ave.
PGHPE00#11109
Board# SE

File Name : 107 AM
Site Code : 11109031
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Melody Tent Lot (South) Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
07:00 AM	19	0	0	0	19	0	0	33	0	33	0	0	0	0	0	0	0	0	0	0	52
07:15 AM	25	0	0	0	25	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	49
07:30 AM	18	0	0	0	18	0	0	34	0	34	0	0	0	0	0	0	0	0	0	0	52
07:45 AM	25	0	0	0	25	0	0	22	0	22	0	0	0	0	0	0	0	0	0	0	47
Total	87	0	0	0	87	0	0	113	0	113	0	0	0	0	0	0	0	0	0	0	200
08:00 AM	20	0	0	0	20	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	44
08:15 AM	19	0	0	0	19	0	0	14	0	14	0	0	0	0	0	0	0	0	0	0	33
08:30 AM	27	0	0	0	27	0	0	26	0	26	0	0	0	0	0	0	0	0	0	0	53
08:45 AM	25	0	0	0	25	0	0	20	0	20	0	0	0	0	0	0	0	0	0	0	45
Total	91	0	0	0	91	0	0	84	0	84	0	0	0	0	0	0	0	0	0	0	175
Grand Total	178	0	0	0	178	0	0	197	0	197	0	0	0	0	0	0	0	0	0	0	375
Apprch %	100	0	0	0		0	0	100	0		0	0	0	0		0	0	0	0		
Total %	47.5	0	0	0	47.5	0	0	52.5	0	52.5	0	0	0	0	0	0	0	0	0	0	

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Melody Tent Lot (South) Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 07:15 AM to 08:00 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	25	0	0	0	25	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	49
07:30 AM	18	0	0	0	18	0	0	34	0	34	0	0	0	0	0	0	0	0	0	0	52
07:45 AM	25	0	0	0	25	0	0	22	0	22	0	0	0	0	0	0	0	0	0	0	47
08:00 AM	20	0	0	0	20	0	0	24	0	24	0	0	0	0	0	0	0	0	0	0	44
Total Volume	88	0	0	0	88	0	0	104	0	104	0	0	0	0	0	0	0	0	0	0	192
% App. Total	100	0	0	0		0	0	100	0		0	0	0	0		0	0	0	0		
PHF	.880	.000	.000	.000	.880	.000	.000	.765	.000	.765	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.923

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena North Lot Dwy.
at Bedford Ave.
PGHPE00#11109
Board#4435 JCD

File Name : 101 PM
Site Code : 11109026
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Arena North Lot Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	13	0	13	0	0	0	0	0	13
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	8
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	0	0	0	0	0	12
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	8
Total	0	0	0	0	0	0	0	0	0	0	0	0	41	0	41	0	0	0	0	0	41
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0	0	0	0	0	7
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	0	0	0	0	0	11
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0	0	0	0	0	7
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	27	0	27	0	0	0	0	0	27
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	68	0	68	0	0	0	0	0	68
Apprch %	0	0	0	0		0	0	0	0		0	0	100	0		0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Arena North Lot Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	0	0	0	0	0	12
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	0	0	0	0	0	8
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0	0	0	0	0	7
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	0	0	0	0	0	11
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	38	0	38	0	0	0	0	0	38
% App. Total	0	0	0	0		0	0	0	0		0	0	100	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.792	.000	.792	.000	.000	.000	.000	.000	.792

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena East Lot (upper)
at Bedford Ave.
PGHPE00#11109
Board#4436 FS

File Name : 102 PM
Site Code : 11109032
Start Date : 8/23/2011
Page No : 1

Groups Printed- Typical Vehicles

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Arena Lot Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	0	0	0	0	0	39
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	22	0	22	0	0	0	0	0	22
Total	0	0	0	0	0	0	0	0	0	0	0	0	61	0	61	0	0	0	0	0	61
05:00 PM	0	0	1	0	1	0	0	0	0	0	2	0	16	0	18	0	0	0	0	0	19
05:15 PM	0	0	1	0	1	0	0	0	0	0	1	0	30	0	31	0	0	0	0	0	32
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	0	2	0	0	0	0	0	3	0	46	0	49	0	0	0	0	0	51
Grand Total	0	0	2	0	2	0	0	0	0	0	3	0	107	0	110	0	0	0	0	0	112
Apprch %	0	0	100	0		0	0	0	0		2.7	0	97.3	0		0	0	0	0		
Total %	0	0	1.8	0	1.8	0	0	0	0	0	2.7	0	95.5	0	98.2	0	0	0	0	0	

	Bedford Ave. Eastbound					Bedford Ave. Westbound					Arena Lot Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	39	0	39	0	0	0	0	0	39
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	22	0	22	0	0	0	0	0	22
05:00 PM	0	0	1	0	1	0	0	0	0	0	2	0	16	0	18	0	0	0	0	0	19
05:15 PM	0	0	1	0	1	0	0	0	0	0	1	0	30	0	31	0	0	0	0	0	32
Total Volume	0	0	2	0	2	0	0	0	0	0	3	0	107	0	110	0	0	0	0	0	112
% App. Total	0	0	100	0		0	0	0	0		2.7	0	97.3	0		0	0	0	0		
PHF	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.375	.000	.686	.000	.705	.000	.000	.000	.000	.000	.718

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena Lot (west) Dwy.
off Washington Pl.
PGHPE00#11109
Board#4916 MS

File Name : 103 PM
Site Code : 11109L25
Start Date : 7/20/2011
Page No : 1

Groups Printed- Typical Vehicles

	West Lot Eastbound					Westbound					Washington Pl. Northbound					Washington Pl. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	10	0	4	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
04:15 PM	2	0	6	0	8	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	9
04:30 PM	8	0	7	0	15	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	16
04:45 PM	6	0	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Total	26	0	20	0	46	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	48
05:00 PM	5	0	4	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
05:15 PM	5	0	6	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
05:30 PM	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
05:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	15	0	11	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Grand Total	41	0	31	0	72	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	74
Apprch %	56.9	0	43.1	0		0	0	0	0		100	0	0	0		0	0	0	0		
Total %	55.4	0	41.9	0	97.3	0	0	0	0	0	2.7	0	0	0	2.7	0	0	0	0	0	

	West Lot Eastbound					Westbound					Washington Pl. Northbound					Washington Pl. Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	8	0	7	0	15	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	16
04:45 PM	6	0	3	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
05:00 PM	5	0	4	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
05:15 PM	5	0	6	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Total Volume	24	0	20	0	44	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	45
% App. Total	54.5	0	45.5	0		0	0	0	0		100	0	0	0		0	0	0	0		
PHF	.750	.000	.714	.000	.733	.000	.000	.000	.000	.000	.250	.000	.000	.000	.250	.000	.000	.000	.000	.000	.703

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena South Lot Dwy.
at Centre Ave.
PGHPE00#11109
Board#4436 FS

File Name : 104 PM
Site Code : 11109027
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Arena South Lot Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	0	23	23
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	15	0	16	16
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	9
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	11
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	58	0	59	59
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	14
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	14
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	12
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	12	12
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	0	52	52
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	110	0	111	111
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0.9	0	99.1	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0	99.1	0	100	

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Arena South Lot Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	9	9
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	11
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	14
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	14	14
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0	48	48
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.857	.000	.857	.857

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Pens Garage at Centre Ave.
PGHPE00#11109
Board#5040 MS

File Name : 105 PM
Site Code : 11109033
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles Pens Garage -

	Centre Ave. Eastbound					Centre Ave. Westbound					Pens Garage Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	19	0	19	0	0	0	0	0	20
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	15	0	15	0	0	0	0	0	15
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	18	0	18	0	0	0	0	0	18
04:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	11	0	11	0	0	0	0	0	13
Total	0	0	3	0	3	0	0	0	0	0	0	0	63	0	63	0	0	0	0	0	66
05:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	25	0	25	0	0	0	0	0	26
05:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	31	0	31	0	0	0	0	0	32
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	18	0	18	0	0	0	0	0	18
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	11	0	11	0	0	0	0	0	11
Total	0	0	2	0	2	0	0	0	0	0	0	0	85	0	85	0	0	0	0	0	87
Grand Total	0	0	5	0	5	0	0	0	0	0	0	0	148	0	148	0	0	0	0	0	153
Apprch %	0	0	100	0		0	0	0	0		0	0	100	0		0	0	0	0		
Total %	0	0	3.3	0	3.3	0	0	0	0	0	0	0	96.7	0	96.7	0	0	0	0	0	
Typical Vehicles Pens Garage	0	0	5	0	5	0	0	0	0	0	0	0	148	0	148	0	0	0	0	0	153
% Typical Vehicles Pens Garage	0	0	100	0	100	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	100
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 04:30 PM

	Centre Ave. Eastbound					Centre Ave. Westbound					Pens Garage Dwy. Northbound					Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	18	0	18	0	0	0	0	0	18
04:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	11	0	11	0	0	0	0	0	13
05:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	25	0	25	0	0	0	0	0	26
05:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	31	0	31	0	0	0	0	0	32
Total Volume	0	0	4	0	4	0	0	0	0	0	0	0	85	0	85	0	0	0	0	0	89
% App. Total	0	0	100	0		0	0	0	0		0	0	100	0		0	0	0	0		
PHF	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.685	.000	.685	.000	.000	.000	.000	.000	.695
Typical Vehicles Pens Garage	0	0	4	0	4	0	0	0	0	0	0	0	85	0	85	0	0	0	0	0	89
% Typical Vehicles Pens Garage	0	0	100	0	100	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	100
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena East Lot (middle)
at Centre Ave.
PGHPE00#11109
Board#4437 JR

File Name : 106 PM
Site Code : 11109030
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					East Lot Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	0	32	0	38	42
04:15 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	7	0	29	0	36	39
04:30 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	13	0	39	0	52	56
04:45 PM	4	0	0	0	4	0	0	1	0	1	0	0	0	0	0	9	0	38	0	47	52
Total	15	0	0	0	15	0	0	1	0	1	0	0	0	0	0	35	0	138	0	173	189
05:00 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	18	0	47	0	65	69
05:15 PM	4	0	0	0	4	0	0	1	0	1	0	0	0	0	0	23	0	32	0	55	60
05:30 PM	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	10	0	29	0	39	42
05:45 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	0	20	0	24	28
Total	15	0	0	0	15	0	0	1	0	1	0	0	0	0	0	55	0	128	0	183	199
Grand Total	30	0	0	0	30	0	0	2	0	2	0	0	0	0	0	90	0	266	0	356	388
Apprch %	100	0	0	0		0	0	100	0		0	0	0	0		25.3	0	74.7	0		
Total %	7.7	0	0	0	7.7	0	0	0.5	0	0.5	0	0	0	0	0	23.2	0	68.6	0	91.8	

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					East Lot Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	13	0	39	0	52	56
04:45 PM	4	0	0	0	4	0	0	1	0	1	0	0	0	0	0	9	0	38	0	47	52
05:00 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	18	0	47	0	65	69
05:15 PM	4	0	0	0	4	0	0	1	0	1	0	0	0	0	0	23	0	32	0	55	60
Total Volume	16	0	0	0	16	0	0	2	0	2	0	0	0	0	0	63	0	156	0	219	237
% App. Total	100	0	0	0		0	0	100	0		0	0	0	0		28.8	0	71.2	0		
PHF	1.00	.000	.000	.000	1.00	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.685	.000	.830	.000	.842	.859

Trans Associates
4955 Steubenville Pike Suite 400
Pittsburgh, PA 15205
412-490-0630

Arena East Lot (upper)
at Centre Ave.
PGHPE00#11109
Board# SE

File Name : 107 PM
Site Code : 11109031
Start Date : 8/2/2011
Page No : 1

Groups Printed- Typical Vehicles

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Melody Tent Lot (South) Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
04:00 PM	1	0	0	0	1	0	0	4	0	4	0	0	0	0	0	16	0	21	0	37	42
04:15 PM	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	7	0	22	0	29	32
04:30 PM	1	0	0	0	1	0	0	3	0	3	0	0	0	0	0	9	0	21	0	30	34
04:45 PM	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	6	0	13	0	19	23
Total	2	0	0	0	2	0	0	14	0	14	0	0	0	0	0	38	0	77	0	115	131
05:00 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	20	0	18	0	38	40
05:15 PM	0	0	0	0	0	0	0	5	0	5	0	0	0	0	0	21	0	22	0	43	48
05:30 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	13	0	21	0	34	36
05:45 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	13	0	19	0	32	34
Total	0	0	0	0	0	0	0	11	0	11	0	0	0	0	0	67	0	80	0	147	158
Grand Total	2	0	0	0	2	0	0	25	0	25	0	0	0	0	0	105	0	157	0	262	289
Apprch %	100	0	0	0		0	0	100	0		0	0	0	0		40.1	0	59.9	0		
Total %	0.7	0	0	0	0.7	0	0	8.7	0	8.7	0	0	0	0	0	36.3	0	54.3	0	90.7	

	Centre Ave. Eastbound					Centre Ave. Westbound					Northbound					Melody Tent Lot (South) Southbound					
Start Time	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Left	Thru	Right	Right on Red	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	1	0	0	0	1	0	0	3	0	3	0	0	0	0	0	9	0	21	0	30	34
04:45 PM	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	6	0	13	0	19	23
05:00 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	20	0	18	0	38	40
05:15 PM	0	0	0	0	0	0	0	5	0	5	0	0	0	0	0	21	0	22	0	43	48
Total Volume	1	0	0	0	1	0	0	14	0	14	0	0	0	0	0	56	0	74	0	130	145
% App. Total	100	0	0	0		0	0	100	0		0	0	0	0		43.1	0	56.9	0		
PHF	.250	.000	.000	.000	.250	.000	.000	.700	.000	.700	.000	.000	.000	.000	.000	.667	.000	.841	.000	.756	.755

APPENDIX H

Movement	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	178	163	155	494	72	569	336	696
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1486	1330	3122	1396	1578	1661	1412
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1486	1330	3122	1396	1578	1661	1412
Peak-hour factor, PHF	0.87	0.89	0.95	0.88	0.79	0.92	0.86	0.99
Adj. Flow (vph)	205	183	163	561	91	618	391	703
RTOR Reduction (vph)	0	0	0	0	75	0	0	0
Lane Group Flow (vph)	0	388	163	561	16	618	391	703
Confl. Peds. (#/hr)			17		17			17
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Actuated Green, G (s)		20.0	20.0	16.0	16.0	39.0	39.0	39.0
Effective Green, g (s)		20.0	20.0	16.0	16.0	39.0	39.0	39.0
Actuated g/C Ratio		0.22	0.22	0.18	0.18	0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)		330	295	555	248	683	719	611
v/s Ratio Prot		c0.26	0.12	c0.18	0.01	0.39	0.24	c0.50
v/s Ratio Perm								
v/c Ratio		1.18	0.55	1.01	0.07	0.90	0.54	1.15
Uniform Delay, d1		35.0	31.0	37.0	30.8	23.8	18.9	25.5
Progression Factor		1.00	1.00	0.57	0.24	1.00	1.00	1.00
Incremental Delay, d2		106.3	7.3	34.3	0.3	17.7	2.9	85.6
Delay (s)		141.3	38.3	55.3	7.8	41.5	21.8	111.1
Level of Service		F	D	E	A	D	C	F
Approach Delay (s)		110.8		48.7			65.6	
Approach LOS		F		D			E	

Intersection Summary			
HCM 2000 Control Delay	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBT	WBR2	SBL2	SBL	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Lane Configurations											
Volume (vph)	2	3	143	291	0	353	41	385	94	13	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	16	13	12	12	12
Grade (%)	2%			2%				10%			-12%
Total Lost time (s)	6.0			6.0	6.0		6.0	6.0			6.0
Lane Util. Factor	1.00			1.00	1.00		1.00	0.95			0.95
Frpb, ped/bikes	0.98			1.00	1.00		1.00	0.98			1.00
Flpb, ped/bikes	1.00			1.00	1.00		1.00	1.00			1.00
Frt	0.90			1.00	0.85		1.00	0.97			1.00
Flt Protected	1.00			0.95	1.00		0.95	1.00			1.00
Satd. Flow (prot)	1328			1577	1411		1749	2965			3369
Flt Permitted	1.00			0.95	1.00		0.95	1.00			1.00
Satd. Flow (perm)	1328			1577	1411		1749	2965			3369
Peak-hour factor, PHF	0.50	0.25	0.84	0.81	0.80	0.80	0.69	0.84	0.92	0.75	0.80
Adj. Flow (vph)	4	12	170	359	0	441	59	458	102	17	208
RTOR Reduction (vph)	0	0	0	0	0	0	0	14	0	0	0
Lane Group Flow (vph)	16	0	0	529	441	0	59	546	0	0	225
Confl. Peds. (#/hr)		24					22		52	52	
Heavy Vehicles (%)	3%	0%	2%	2%	2%	2%	0%	2%	3%	0%	2%
Parking (#/hr)	0	0									
Turn Type	NA		Split	NA	Perm		Split	NA		Split	NA
Protected Phases	9		10	10			2	2		4	4
Permitted Phases					10						
Actuated Green, G (s)	1.6			28.3	28.3		20.2	20.2			10.9
Effective Green, g (s)	1.6			28.3	28.3		20.2	20.2			10.9
Actuated g/C Ratio	0.02			0.33	0.33		0.24	0.24			0.13
Clearance Time (s)	6.0			6.0	6.0		6.0	6.0			6.0
Vehicle Extension (s)	4.0			3.0	3.0		4.0	4.0			3.0
Lane Grp Cap (vph)	24			525	469		415	704			432
v/s Ratio Prot	c0.01			c0.34			0.03	c0.18			c0.07
v/s Ratio Perm					0.31						
v/c Ratio	0.67			1.01	0.94		0.14	0.77			0.52
Uniform Delay, d1	41.4			28.3	27.5		25.6	30.3			34.6
Progression Factor	1.00			1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	57.0			41.2	27.2		0.2	5.7			1.1
Delay (s)	98.4			69.5	54.7		25.8	35.9			35.7
Level of Service	F			E	D		C	D			D
Approach Delay (s)	98.4			62.8				35.0			35.7
Approach LOS	F			E				C			D

Intersection Summary

HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	84	468	32	47	139	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.96	
Flt Protected	1.00	1.00		0.98	0.97	
Satd. Flow (prot)	1900	1530		1784	1667	
Flt Permitted	1.00	1.00		0.90	0.97	
Satd. Flow (perm)	1900	1530		1626	1667	
Peak-hour factor, PHF	0.72	0.84	0.89	0.74	0.92	0.59
Adj. Flow (vph)	117	557	36	64	151	75
RTOR Reduction (vph)	0	279	0	0	36	0
Lane Group Flow (vph)	117	279	0	100	190	0
Confl. Peds. (#/hr)		9	9			
Heavy Vehicles (%)	0%	2%	8%	2%	4%	8%
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	25.0	25.0		25.0	15.0	
Effective Green, g (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	950	765		813	500	
v/s Ratio Prot	0.06				c0.11	
v/s Ratio Perm		c0.18		0.06		
v/c Ratio	0.12	0.36		0.12	0.38	
Uniform Delay, d1	6.7	7.6		6.7	13.8	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.3		0.3	2.2	
Delay (s)	6.9	9.0		7.0	16.0	
Level of Service	A	A		A	B	
Approach Delay (s)	8.6			7.0	16.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	36	18	174	14	9	450
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.52	0.57	0.81	0.41	0.67	0.82
Hourly flow rate (vph)	69	32	215	34	13	549
Pedestrians	8		3			4
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			705			559
pX, platoon unblocked						
vC, conflicting volume	819	244			257	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	819	244			257	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	96			99	
cM capacity (veh/h)	337	792			1311	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	101	249	562
Volume Left	69	0	13
Volume Right	32	34	0
cSH	411	1700	1311
Volume to Capacity	0.25	0.15	0.01
Queue Length 95th (ft)	24	0	1
Control Delay (s)	16.6	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	16.6	0.0	0.3
Approach LOS	C		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	86	174	410	124	419	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frpb, ped/bikes	0.71	0.66	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.98	1.00
Frt	0.92	0.85	0.97		1.00	1.00
Flt Protected	0.98	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2368	997	3301		1732	3539
Flt Permitted	0.98	1.00	1.00		0.43	1.00
Satd. Flow (perm)	2368	997	3301		780	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	96	193	456	138	466	294
RTOR Reduction (vph)	75	74	40	0	0	0
Lane Group Flow (vph)	118	22	554	0	466	294
Confl. Peds. (#/hr)	145	375		37	37	
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	16.0	16.0	42.0		42.0	42.0
Effective Green, g (s)	16.0	16.0	42.0		42.0	42.0
Actuated g/C Ratio	0.23	0.23	0.60		0.60	0.60
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Lane Grp Cap (vph)	541	227	1980		468	2123
v/s Ratio Prot	c0.05		0.17			0.08
v/s Ratio Perm		0.02			c0.60	
v/c Ratio	0.22	0.10	0.28		1.00	0.14
Uniform Delay, d1	21.9	21.3	6.7		13.9	6.1
Progression Factor	1.00	1.00	0.52		1.00	1.00
Incremental Delay, d2	0.9	0.8	0.2		40.6	0.1
Delay (s)	22.9	22.1	3.7		54.5	6.2
Level of Service	C	C	A		D	A
Approach Delay (s)	22.6		3.7			35.8
Approach LOS	C		A			D

Intersection Summary

HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	24	379	227	57	291	70	39	417	74	277	462	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Total Lost time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lane Util. Factor		0.95		1.00	0.95			0.91			0.95	1.00
Frpb, ped/bikes		0.88		1.00	0.86			0.97			1.00	0.69
Flpb, ped/bikes		0.99		0.93	1.00			1.00			0.97	1.00
Frt		0.94		1.00	0.96			0.97			1.00	0.85
Flt Protected		1.00		0.95	1.00			1.00			0.98	1.00
Satd. Flow (prot)		2740		1344	2458			3841			3059	993
Flt Permitted		0.91		0.21	1.00			0.73			0.61	1.00
Satd. Flow (perm)		2504		297	2458			2818			1900	993
Peak-hour factor, PHF	0.69	0.94	0.80	0.83	0.94	0.60	0.86	0.96	0.74	0.88	0.95	0.63
Adj. Flow (vph)	35	403	284	69	310	117	45	434	100	315	486	10
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	722	0	69	427	0	0	579	0	0	801	10
Confl. Peds. (#/hr)	573		247	247		573	126		170	170		126
Confl. Bikes (#/hr)			141			552			18			266
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	9%	9%	9%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)		27.0		27.0	27.0			25.0			25.0	25.0
Effective Green, g (s)		28.5		27.0	27.0			25.0			25.0	25.0
Actuated g/C Ratio		0.32		0.30	0.30			0.28			0.28	0.28
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	6.0
Lane Grp Cap (vph)		792		89	737			782			527	275
v/s Ratio Prot					0.17							
v/s Ratio Perm		c0.29		0.23				0.21			c0.42	0.01
v/c Ratio		0.91		0.78	0.58			0.74			1.83dl	0.04
Uniform Delay, d1		29.5		28.7	26.7			29.5			32.5	23.7
Progression Factor		1.00		1.00	1.00			1.00			0.46	0.35
Incremental Delay, d2		16.6		47.5	3.3			6.2			234.9	0.0
Delay (s)		46.1		76.2	30.0			35.8			249.9	8.3
Level of Service		D		E	C			D			F	A
Approach Delay (s)		46.1			36.4			35.8			246.9	
Approach LOS		D			D			D			F	

Intersection Summary

HCM 2000 Control Delay	104.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	126.9%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	NEL	NER	NER2
Lane Configurations			
Volume (vph)	62	145	97
Ideal Flow (vphpl)	1900	1900	1900
Lane Width	12	12	12
Grade (%)	7%		
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	1.00	0.95	
Frpb, ped/bikes	0.90	0.55	
Flpb, ped/bikes	1.00	1.00	
Frt	0.90	0.85	
Flt Protected	0.98	1.00	
Satd. Flow (prot)	1306	725	
Flt Permitted	0.98	1.00	
Satd. Flow (perm)	1306	725	
Peak-hour factor, PHF	0.88	0.73	0.79
Adj. Flow (vph)	70	199	123
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	199	193	0
Confl. Peds. (#/hr)	573		247
Confl. Bikes (#/hr)		141	141
Heavy Vehicles (%)	1%	1%	1%
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Actuated Green, G (s)	20.0	20.0	
Effective Green, g (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
Clearance Time (s)	6.0	6.0	
Lane Grp Cap (vph)	290	161	
v/s Ratio Prot	0.15		
v/s Ratio Perm		c0.27	
v/c Ratio	0.69	1.20	
Uniform Delay, d1	32.1	35.0	
Progression Factor	1.00	1.00	
Incremental Delay, d2	12.5	134.3	
Delay (s)	44.6	169.3	
Level of Service	D	F	
Approach Delay (s)	106.0		
Approach LOS	F		

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	725	210	9	33	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.91		1.00	
Frpb, ped/bikes		1.00	0.99		0.96	
Flpb, ped/bikes		1.00	1.00		1.00	
Frt		1.00	0.99		0.89	
Flt Protected		1.00	1.00		0.99	
Satd. Flow (prot)		2954	4142		1288	
Flt Permitted		0.95	1.00		0.99	
Satd. Flow (perm)		2802	4142		1288	
Peak-hour factor, PHF	0.83	0.82	0.87	0.88	0.54	0.66
Adj. Flow (vph)	17	884	241	10	61	264
RTOR Reduction (vph)	0	0	4	0	0	0
Lane Group Flow (vph)	0	901	247	0	325	0
Confl. Peds. (#/hr)	309			309	23	40
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	Perm	NA	NA		NA	
Protected Phases		2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		38.0	38.0		21.0	
Effective Green, g (s)		39.5	39.5		22.5	
Actuated g/C Ratio		0.56	0.56		0.32	
Clearance Time (s)		5.5	5.5		5.5	
Lane Grp Cap (vph)		1581	2337		414	
v/s Ratio Prot			0.06		c0.25	
v/s Ratio Perm		c0.32				
v/c Ratio		0.57	0.11		0.79	
Uniform Delay, d1		9.8	7.1		21.6	
Progression Factor		1.00	0.90		1.00	
Incremental Delay, d2		1.5	0.1		13.9	
Delay (s)		11.3	6.5		35.4	
Level of Service		B	A		D	
Approach Delay (s)		11.3	6.5		35.4	
Approach LOS		B	A		D	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	636	122	0	219	0	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	691	133	0	238	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	332			622		
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			824		877	412
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			502		563	29
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			922		398	905

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	461	363	119	119	1
Volume Left	0	0	0	0	0
Volume Right	0	133	0	0	1
cSH	1700	1700	1700	1700	905
Volume to Capacity	0.27	0.21	0.07	0.07	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	169	131	51	111	19	173	56	30	40	355	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	16	11	11	12	12	15	12	12	14	12
Total Lost time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes		1.00	0.93	1.00	0.98			0.99			0.99	
Flpb, ped/bikes		0.96	1.00	0.97	1.00			0.99			1.00	
Frt		1.00	0.85	1.00	0.98			0.98			0.97	
Flt Protected		0.98	1.00	0.95	1.00			0.97			0.99	
Satd. Flow (prot)		1782	1588	1568	1628			1653			1590	
Flt Permitted		0.82	1.00	0.45	1.00			0.45			0.94	
Satd. Flow (perm)		1480	1588	749	1628			769			1499	
Peak-hour factor, PHF	0.93	0.89	0.87	0.86	0.82	0.85	0.87	0.90	0.83	0.63	0.88	0.77
Adj. Flow (vph)	112	190	151	59	135	22	199	62	36	63	403	156
RTOR Reduction (vph)	0	0	104	0	8	0	0	7	0	0	17	0
Lane Group Flow (vph)	0	302	47	59	149	0	0	290	0	0	605	0
Confl. Peds. (#/hr)	64		24	24		64	21		15	15		21
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	9%	9%	9%
Parking (#/hr)								0			0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)		22.0	22.0	22.0	22.0			38.0			38.0	
Effective Green, g (s)		22.0	22.0	22.0	22.0			38.0			38.0	
Actuated g/C Ratio		0.31	0.31	0.31	0.31			0.54			0.54	
Clearance Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Grp Cap (vph)		465	499	235	511			417			813	
v/s Ratio Prot					0.09							
v/s Ratio Perm		c0.20	0.03	0.08				0.38			c0.40	
v/c Ratio		0.65	0.10	0.25	0.29			0.69			0.74	
Uniform Delay, d1		20.7	17.0	17.9	18.1			11.7			12.3	
Progression Factor		0.58	0.17	1.00	1.00			1.00			1.00	
Incremental Delay, d2		5.7	0.3	2.5	1.4			9.2			6.1	
Delay (s)		17.6	3.3	20.4	19.6			20.9			18.4	
Level of Service		B	A	C	B			C			B	
Approach Delay (s)		12.8			19.8			20.9			18.4	
Approach LOS		B			B			C			B	

Intersection Summary

HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	17	3	7	2	72	287	0	0	246	213
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Hourly flow rate (vph)	0	0	20	12	9	4	112	363	0	0	286	251
Pedestrians		52			16			20			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			1			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	1079	1068	483	1056	1193	398	589			379		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1048	1035	483	1023	1170	315	589			295		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	93	94	99	88			100		
cM capacity (veh/h)	141	179	553	164	151	659	953			1173		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	25	476	537
Volume Left	0	12	112	0
Volume Right	20	4	0	251
cSH	553	179	953	1173
Volume to Capacity	0.04	0.14	0.12	0.00
Queue Length 95th (ft)	3	12	10	0
Control Delay (s)	11.8	28.4	3.3	0.0
Lane LOS	B	D	A	
Approach Delay (s)	11.8	28.4	3.3	0.0
Approach LOS	B	D		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	0	102	21	386	189	90	289	0	0	349	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	12	12	11	12	12	12	12
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes		0.90		1.00	0.88			1.00			1.00	
Flpb, ped/bikes		0.98		0.91	1.00			0.99			1.00	
Frt		0.90		1.00	0.96			1.00			0.99	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1152		1237	1233			3057			2950	
Flt Permitted		0.20		0.67	1.00			0.75			1.00	
Satd. Flow (perm)		234		874	1233			2325			2950	
Peak-hour factor, PHF	0.77	0.92	0.82	0.75	0.82	0.97	0.88	0.96	0.92	0.92	0.89	0.75
Adj. Flow (vph)	52	0	124	28	471	195	102	301	0	0	392	27
RTOR Reduction (vph)	0	83	0	0	21	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	93	0	28	645	0	0	403	0	0	419	0
Confl. Peds. (#/hr)	880		138	138		880	49		130	130		49
Heavy Vehicles (%)	3%	2%	28%	0%	5%	19%	0%	1%	2%	2%	8%	17%
Parking (#/hr)				0								
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.0		23.0	23.0			35.0			35.0	
Effective Green, g (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)		76		287	405			1162			1475	
v/s Ratio Prot					c0.52						0.14	
v/s Ratio Perm		0.40		0.03				c0.17				
v/c Ratio		1.22		0.10	1.59			0.35			0.28	
Uniform Delay, d1		23.5		16.3	23.5			10.6			10.2	
Progression Factor		1.00		1.00	1.00			1.69			0.78	
Incremental Delay, d2		173.9		0.7	277.6			0.8			0.5	
Delay (s)		197.4		17.0	301.1			18.7			8.4	
Level of Service		F		B	F			B			A	
Approach Delay (s)		197.4			289.6			18.7			8.4	
Approach LOS		F			F			B			A	

Intersection Summary

HCM 2000 Control Delay	145.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	128.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	442	581	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	520	612	0	0
Pedestrians					44	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			44		1390	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		1390	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			67		100	100
cM capacity (veh/h)			1563		89	1017

Direction, Lane #	WB 1	WB 2
Volume Total	724	408
Volume Left	520	0
Volume Right	0	0
cSH	1563	1700
Volume to Capacity	0.33	0.24
Queue Length 95th (ft)	37	0
Control Delay (s)	7.0	0.0
Lane LOS	A	
Approach Delay (s)	4.5	
Approach LOS		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	823	203	178	393	0	0	396	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Total Lost time (s)					7.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			1.00	0.88
Frpb, ped/bikes					0.98		1.00	1.00			1.00	0.93
Flpb, ped/bikes					0.98		0.99	1.00			1.00	1.00
Frt					0.98		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					2577		1538	1635			1735	2421
Flt Permitted					0.99		0.24	1.00			1.00	1.00
Satd. Flow (perm)					2577		385	1635			1735	2421
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.88	0.93	0.85	0.82	0.92	0.92	0.75	0.92
Adj. Flow (vph)	0	0	0	190	935	218	209	479	0	0	528	288
RTOR Reduction (vph)	0	0	0	0	20	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1323	0	209	479	0	0	528	288
Confl. Peds. (#/hr)				105		173	29					29
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					37.0		30.0	30.0			30.0	30.0
Effective Green, g (s)					37.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio					0.46		0.38	0.38			0.38	0.38
Clearance Time (s)					7.0		6.0	6.0			6.0	6.0
Lane Grp Cap (vph)					1191		144	613			650	907
v/s Ratio Prot								0.29			0.30	
v/s Ratio Perm					0.51		c0.54					0.12
v/c Ratio					1.11		1.45	0.78			0.81	0.32
Uniform Delay, d1					21.5		25.0	22.1			22.5	17.7
Progression Factor					0.69		0.74	0.72			1.00	1.00
Incremental Delay, d2					59.3		230.0	7.4			10.6	0.9
Delay (s)					74.1		248.5	23.3			33.1	18.7
Level of Service					E		F	C			C	B
Approach Delay (s)		0.0			74.1			91.7			28.0	
Approach LOS		A			E			F			C	

Intersection Summary

HCM 2000 Control Delay	65.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	937	0	224	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Total Lost time (s)					5.0			5.0				
Lane Util. Factor					0.95			1.00				
Frpb, ped/bikes					1.00			1.00				
Flpb, ped/bikes					0.97			0.98				
Frt					1.00			1.00				
Flt Protected					0.99			0.95				
Satd. Flow (prot)					3081			1663				
Flt Permitted					0.99			0.76				
Satd. Flow (perm)					3081			1326				
Peak-hour factor, PHF	0.92	0.92	0.92	0.66	0.97	0.50	0.80	0.90	0.92	0.92	0.25	0.25
Adj. Flow (vph)	0	0	0	270	966	0	280	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1236	0	0	280	0	0	0	0
Confl. Peds. (#/hr)				46		108	15		8	8		15
Heavy Vehicles (%)	2%	2%	2%	0%	9%	0%	1%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA				
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					43.0			27.0				
Effective Green, g (s)					43.0			27.0				
Actuated g/C Ratio					0.54			0.34				
Clearance Time (s)					5.0			5.0				
Lane Grp Cap (vph)					1656			447				
v/s Ratio Prot												
v/s Ratio Perm					0.40			c0.21				
v/c Ratio					0.75			0.63				
Uniform Delay, d1					14.3			22.3				
Progression Factor					0.44			0.76				
Incremental Delay, d2					2.2			5.9				
Delay (s)					8.5			22.9				
Level of Service					A			C				
Approach Delay (s)		0.0			8.5			22.9			0.0	
Approach LOS		A			A			C			A	

Intersection Summary

HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	883	71	178	174	0	0	36	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.99			1.00			0.98	
Flpb, ped/bikes					1.00			0.99			1.00	
Frt					0.99			1.00			0.90	
Flt Protected					1.00			0.98			1.00	
Satd. Flow (prot)					2946			1792			1665	
Flt Permitted					1.00			0.76			1.00	
Satd. Flow (perm)					2946			1393			1665	
Peak-hour factor, PHF	0.92	0.92	0.92	0.60	0.95	0.68	0.91	0.85	0.92	0.92	0.82	0.79
Adj. Flow (vph)	0	0	0	23	929	104	196	205	0	0	44	127
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	37	0
Lane Group Flow (vph)	0	0	0	0	1046	0	0	401	0	0	134	0
Confl. Peds. (#/hr)				16		44	9					9
Heavy Vehicles (%)	2%	2%	2%	0%	12%	5%	6%	0%	2%	2%	3%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					38.0			32.0			32.0	
Effective Green, g (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1399			557			666	
v/s Ratio Prot											0.08	
v/s Ratio Perm					0.35			c0.29				
v/c Ratio					0.75			0.72			0.20	
Uniform Delay, d1					17.1			20.2			15.7	
Progression Factor					0.50			0.95			1.00	
Incremental Delay, d2					2.5			6.3			0.7	
Delay (s)					11.1			25.6			16.3	
Level of Service					B			C			B	
Approach Delay (s)		0.0			11.1			25.6			16.3	
Approach LOS		A			B			C			B	

Intersection Summary

HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	35	835	190	70	167	0	0	159	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.98			1.00			0.98	
Flpb, ped/bikes					1.00			0.99			1.00	
Frt					0.97			1.00			0.95	
Flt Protected					1.00			0.98			1.00	
Satd. Flow (prot)					2896			1796			1937	
Flt Permitted					1.00			0.70			1.00	
Satd. Flow (perm)					2896			1277			1937	
Peak-hour factor, PHF	0.92	0.92	0.92	0.71	0.94	0.95	0.71	0.79	0.92	0.79	0.79	0.88
Adj. Flow (vph)	0	0	0	49	888	200	99	211	0	0	201	119
RTOR Reduction (vph)	0	0	0	0	23	0	0	0	0	0	27	0
Lane Group Flow (vph)	0	0	0	0	1115	0	0	310	0	0	293	0
Confl. Peds. (#/hr)				25		45	22		40	40		22
Heavy Vehicles (%)	2%	2%	2%	0%	18%	0%	0%	6%	2%	2%	16%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					40.0			30.0			30.0	
Effective Green, g (s)					40.0			30.0			30.0	
Actuated g/C Ratio					0.50			0.38			0.38	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1448			478			726	
v/s Ratio Prot											0.15	
v/s Ratio Perm					0.38			c0.24				
v/c Ratio					0.77			0.65			0.40	
Uniform Delay, d1					16.3			20.6			18.4	
Progression Factor					1.00			1.01			1.00	
Incremental Delay, d2					4.0			6.3			1.7	
Delay (s)					20.3			27.1			20.1	
Level of Service					C			C			C	
Approach Delay (s)		0.0			20.3			27.1			20.1	
Approach LOS		A			C			C			C	

Intersection Summary

HCM 2000 Control Delay	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	103	254	28	7	361	0	0	481	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)				5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes				1.00	1.00	0.95		1.00			1.00	
Flpb, ped/bikes				0.99	1.00	1.00		1.00			1.00	
Frt				1.00	1.00	0.85		1.00			0.99	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1440	1580	1290		3207			2915	
Flt Permitted				0.95	1.00	1.00		0.95			1.00	
Satd. Flow (perm)				1440	1580	1290		3072			2915	
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.78	0.63	0.30	0.96	0.25	0.92	0.92	0.80
Adj. Flow (vph)	0	0	0	118	326	44	23	376	0	0	523	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	118	326	44	0	399	0	0	545	0
Confl. Peds. (#/hr)				13		40	21					21
Heavy Vehicles (%)	2%	2%	2%	4%	1%	0%	0%	1%	2%	2%	11%	0%
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Actuated Green, G (s)				22.5	22.5	22.5		33.5			36.5	
Effective Green, g (s)				22.5	22.5	22.5		33.5			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.48			0.52	
Clearance Time (s)				5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Lane Grp Cap (vph)				462	507	414		1519			1519	
v/s Ratio Prot					c0.21			0.10			c0.19	
v/s Ratio Perm				0.08		0.03		0.03				
v/c Ratio				0.26	0.64	0.11		0.26			0.36	
Uniform Delay, d1				17.6	20.3	16.7		10.9			9.9	
Progression Factor				1.00	1.00	1.00		0.57			0.89	
Incremental Delay, d2				0.1	2.1	0.0		0.0			0.6	
Delay (s)				17.7	22.4	16.7		6.2			9.4	
Level of Service				B	C	B		A			A	
Approach Delay (s)		0.0			20.8			6.2			9.4	
Approach LOS		A			C			A			A	

Intersection Summary

HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	512	35	59	147	8	211	337	288	356	182	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	11	12	12	11	12	12	12	12
Total Lost time (s)		5.5	5.5		5.5			5.5			5.5	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.89		1.00			0.99			1.00	
Flpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	
Frt		1.00	0.85		0.99			0.95			0.98	
Flt Protected		1.00	1.00		0.99			0.99			0.97	
Satd. Flow (prot)		1626	1248		1577			2855			2886	
Flt Permitted		0.96	1.00		0.30			0.67			0.58	
Satd. Flow (perm)		1564	1248		478			1929			1718	
Peak-hour factor, PHF	0.60	0.96	0.80	0.90	0.90	0.90	0.87	0.94	0.92	0.95	0.85	0.67
Adj. Flow (vph)	43	533	44	66	163	9	243	359	313	375	214	66
RTOR Reduction (vph)	0	0	0	0	2	0	0	66	0	0	0	0
Lane Group Flow (vph)	0	576	44	0	236	0	0	849	0	0	655	0
Confl. Peds. (#/hr)	8		107	107		8	19		18	18		19
Heavy Vehicles (%)	4%	1%	0%	2%	2%	2%	0%	1%	4%	12%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)		22.5	22.5		22.5			25.5			36.5	
Effective Green, g (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
Clearance Time (s)		5.5	5.5		5.5			5.5			5.5	
Vehicle Extension (s)		0.2	0.2		0.2			0.2			0.2	
Lane Grp Cap (vph)		502	401		153			702			1029	
v/s Ratio Prot											c0.07	
v/s Ratio Perm		0.37	0.04		c0.49			c0.44			0.26	
v/c Ratio		1.15	0.11		1.54			1.21			1.70dl	
Uniform Delay, d1		23.8	16.7		23.8			22.2			12.0	
Progression Factor		1.00	1.00		1.00			1.00			0.59	
Incremental Delay, d2		87.5	0.0		273.8			107.2			0.9	
Delay (s)		111.2	16.7		297.6			129.4			8.0	
Level of Service		F	B		F			F			A	
Approach Delay (s)		104.5			297.6			129.4			8.0	
Approach LOS		F			F			F			A	

Intersection Summary

HCM 2000 Control Delay	106.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	118.1%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1191	367	0	0	214	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	10	10
Total Lost time (s)	5.0				5.0	5.0
Lane Util. Factor	0.95				1.00	0.88
Frpb, ped/bikes	0.95				1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00
Frt	0.96				1.00	0.85
Flt Protected	1.00				0.95	1.00
Satd. Flow (prot)	2700				1472	2318
Flt Permitted	1.00				0.95	1.00
Satd. Flow (perm)	2700				1472	2318
Peak-hour factor, PHF	0.93	0.87	0.92	0.92	0.86	0.86
Adj. Flow (vph)	1281	422	0	0	249	949
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1703	0	0	0	249	949
Confl. Peds. (#/hr)		85				
Heavy Vehicles (%)	6%	6%	2%	2%	3%	3%
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Actuated Green, G (s)	43.0				27.0	27.0
Effective Green, g (s)	43.0				27.0	27.0
Actuated g/C Ratio	0.54				0.34	0.34
Clearance Time (s)	5.0				5.0	5.0
Lane Grp Cap (vph)	1451				496	782
v/s Ratio Prot	c0.63				0.17	
v/s Ratio Perm						c0.41
v/c Ratio	1.17				0.50	1.21
Uniform Delay, d1	18.5				21.1	26.5
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	85.8				3.6	107.8
Delay (s)	104.3				24.7	134.3
Level of Service	F				C	F
Approach Delay (s)	104.3			0.0	111.5	
Approach LOS	F			A	F	

Intersection Summary

HCM 2000 Control Delay	107.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	490	1402	115	0	0	0	0	51	62	443	86	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Total Lost time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95						1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99						1.00	0.92		1.00	
Flpb, ped/bikes	0.98	1.00						1.00	1.00		0.95	
Frt	1.00	0.98						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		0.96	
Satd. Flow (prot)	1446	2890						1637	1282		1368	
Flt Permitted	0.95	1.00						1.00	1.00		0.70	
Satd. Flow (perm)	1446	2890						1637	1282		995	
Peak-hour factor, PHF	0.82	0.88	0.64	0.92	0.92	0.92	0.92	0.56	0.68	0.81	0.82	0.92
Adj. Flow (vph)	598	1593	180	0	0	0	0	91	91	547	105	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	598	1773	0	0	0	0	0	91	72	0	652	0
Confl. Peds. (#/hr)	45		79						51	51		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	4%	4%	1%	1%	2%
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	46.0	46.0						24.0	24.0		24.0	
Effective Green, g (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
Clearance Time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)	831	1661						491	384		298	
v/s Ratio Prot		c0.61						0.06				
v/s Ratio Perm	0.41								0.06		c0.66	
v/c Ratio	0.72	1.07						0.19	0.19		2.19	
Uniform Delay, d1	12.3	17.0						20.8	20.8		28.0	
Progression Factor	0.81	0.81						1.00	1.00		1.03	
Incremental Delay, d2	0.5	31.8						0.8	1.1		539.3	
Delay (s)	10.5	45.6						21.6	21.9		568.3	
Level of Service	B	D						C	C		F	
Approach Delay (s)		36.8			0.0			21.7			568.3	
Approach LOS		D			A			C			F	

Intersection Summary

HCM 2000 Control Delay	144.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	107.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	890	137	0	0	0	0	39	34	30	158	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.98						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.97						0.95			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3086						1611			1822	
Flt Permitted		0.99						1.00			0.96	
Satd. Flow (perm)		3086						1611			1755	
Peak-hour factor, PHF	0.73	0.94	0.59	0.92	0.92	0.92	0.92	0.63	0.80	0.54	0.33	0.92
Adj. Flow (vph)	141	947	232	0	0	0	0	62	42	56	479	0
RTOR Reduction (vph)	0	23	0	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	1297	0	0	0	0	0	78	0	0	535	0
Confl. Peds. (#/hr)	41		42						14	14		
Heavy Vehicles (%)	4%	7%	0%	2%	2%	2%	2%	0%	25%	4%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		39.0						31.0			31.0	
Effective Green, g (s)		39.0						31.0			31.0	
Actuated g/C Ratio		0.49						0.39			0.39	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1504						624			680	
v/s Ratio Prot								0.05				
v/s Ratio Perm		0.42									c0.30	
v/c Ratio		0.86						0.13			0.79	
Uniform Delay, d1		18.1						15.8			21.6	
Progression Factor		1.06						1.00			1.13	
Incremental Delay, d2		0.7						0.4			8.5	
Delay (s)		19.8						16.2			32.8	
Level of Service		B						B			C	
Approach Delay (s)		19.8			0.0			16.2			32.8	
Approach LOS		B			A			B			C	

Intersection Summary

HCM 2000 Control Delay	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	636	132	0	0	0	0	286	27	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						1.00			1.00	
Flpb, ped/bikes		0.98						1.00			0.99	
Frt		0.98						0.99			1.00	
Flt Protected		0.99						1.00			0.95	
Satd. Flow (prot)		3074						2078			2007	
Flt Permitted		0.99						1.00			0.36	
Satd. Flow (perm)		3074						2078			751	
Peak-hour factor, PHF	0.62	0.93	0.71	0.92	0.92	0.92	0.89	0.89	0.93	0.69	0.60	0.92
Adj. Flow (vph)	303	684	186	0	0	0	0	321	29	42	0	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1153	0	0	0	0	0	346	0	0	42	0
Confl. Peds. (#/hr)	28		28						13	13		
Heavy Vehicles (%)	1%	9%	6%	2%	2%	2%	4%	5%	2%	0%	8%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		46.0						24.0			24.0	
Effective Green, g (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1767						623			225	
v/s Ratio Prot								c0.17				
v/s Ratio Perm		0.38									0.06	
v/c Ratio		0.65						0.56			0.19	
Uniform Delay, d1		11.6						23.5			20.8	
Progression Factor		0.23						1.00			1.15	
Incremental Delay, d2		1.2						3.5			1.7	
Delay (s)		3.9						27.1			25.5	
Level of Service		A						C			C	
Approach Delay (s)		3.9			0.0			27.1			25.5	
Approach LOS		A			A			C			C	

Intersection Summary

HCM 2000 Control Delay	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	498	35	0	0	0	0	146	27	100	60	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						1.00			1.00	
Flpb, ped/bikes		0.98						1.00			1.00	
Frt		0.99						0.98			1.00	
Flt Protected		0.99						1.00			0.97	
Satd. Flow (prot)		3181						1722			1616	
Flt Permitted		0.99						1.00			0.69	
Satd. Flow (perm)		3181						1722			1155	
Peak-hour factor, PHF	0.79	0.94	0.63	0.92	0.92	0.92	0.92	0.77	0.67	0.77	0.78	0.92
Adj. Flow (vph)	134	530	56	0	0	0	0	190	40	130	77	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	10	0	0	0	0
Lane Group Flow (vph)	0	712	0	0	0	0	0	220	0	0	207	0
Confl. Peds. (#/hr)	44		19						4	4		
Heavy Vehicles (%)	1%	11%	0%	2%	2%	2%	2%	9%	0%	7%	25%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		35.0						35.0			35.0	
Effective Green, g (s)		35.0						35.0			35.0	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1391						753			505	
v/s Ratio Prot								0.13				
v/s Ratio Perm		0.22									c0.18	
v/c Ratio		0.51						0.29			0.41	
Uniform Delay, d1		16.3						14.5			15.4	
Progression Factor		0.35						1.00			0.63	
Incremental Delay, d2		1.1						1.0			2.2	
Delay (s)		6.7						15.5			11.9	
Level of Service		A						B			B	
Approach Delay (s)		6.7			0.0			15.5			11.9	
Approach LOS		A			A			B			B	

Intersection Summary

HCM 2000 Control Delay	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	39	226	162	841	252	670	306	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1443	1292	3152	1424	1594	1678	1398
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1443	1292	3152	1424	1594	1678	1398
Peak-hour factor, PHF	0.58	0.93	0.86	0.80	0.70	0.89	0.96	0.80
Adj. Flow (vph)	67	243	188	1051	360	753	319	399
RTOR Reduction (vph)	0	0	0	0	172	0	0	0
Lane Group Flow (vph)	0	310	188	1051	188	753	319	399
Confl. Peds. (#/hr)			31					31
Heavy Vehicles (%)	9%	4%	5%	1%	0%	1%	1%	3%
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Actuated Green, G (s)		18.0	18.0	24.0	24.0	33.0	33.0	33.0
Effective Green, g (s)		18.0	18.0	24.0	24.0	33.0	33.0	33.0
Actuated g/C Ratio		0.20	0.20	0.27	0.27	0.37	0.37	0.37
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)		288	258	840	379	584	615	512
v/s Ratio Prot		c0.21	0.15	c0.33	0.13	c0.47	0.19	0.29
v/s Ratio Perm								
v/c Ratio		1.08	0.73	1.25	0.50	1.29	0.52	0.78
Uniform Delay, d1		36.0	33.7	33.0	27.9	28.5	22.3	25.3
Progression Factor		1.00	1.00	1.21	1.57	1.00	1.00	1.00
Incremental Delay, d2		74.8	16.5	117.1	1.8	142.8	3.1	11.2
Delay (s)		110.8	50.2	156.9	45.7	171.3	25.4	36.4
Level of Service		F	D	F	D	F	C	D
Approach Delay (s)		87.9		128.6			103.1	
Approach LOS		F		F			F	

Intersection Summary			
HCM 2000 Control Delay	111.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBT	WBR	WBR2	NEL2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	112	73	35	129	279	224	40	8	183	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	16	12	13	12	12	12	12
Grade (%)	2%					10%			-12%	
Total Lost time (s)	6.0			6.0		6.0			6.0	
Lane Util. Factor	1.00			1.00		0.95			0.95	
Frpb, ped/bikes	0.97			1.00		0.99			1.00	
Flpb, ped/bikes	1.00			1.00		1.00			1.00	
Frt	0.93			1.00		0.98			0.91	
Flt Protected	1.00			0.95		0.97			1.00	
Satd. Flow (prot)	1353			1749		2973			3083	
Flt Permitted	1.00			0.95		0.97			1.00	
Satd. Flow (perm)	1353			1749		2973			3083	
Peak-hour factor, PHF	0.54	0.43	0.61	0.64	0.66	0.81	0.39	0.58	0.85	0.78
Adj. Flow (vph)	207	170	57	202	423	277	103	14	215	310
RTOR Reduction (vph)	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	434	0	0	202	0	790	0	0	539	0
Confl. Peds. (#/hr)		58		20			23	58		
Heavy Vehicles (%)	3%	0%	0%	0%	1%	2%	3%	0%	2%	2%
Parking (#/hr)	0	0	0							0
Turn Type	NA			Split	Split	NA		Split	NA	
Protected Phases	9			2	2	2		4	4	
Permitted Phases						2				
Actuated Green, G (s)	30.6			24.0		24.0			16.0	
Effective Green, g (s)	30.6			24.0		24.0			16.0	
Actuated g/C Ratio	0.35			0.27		0.27			0.18	
Clearance Time (s)	6.0			6.0		6.0			6.0	
Vehicle Extension (s)	4.0			4.0		4.0			3.0	
Lane Grp Cap (vph)	467			473		805			556	
v/s Ratio Prot	c0.32			0.12		c0.27			c0.17	
v/s Ratio Perm										
v/c Ratio	0.93			0.43		0.98			1.12dr	
Uniform Delay, d1	28.0			26.6		32.1			36.1	
Progression Factor	1.00			1.00		1.00			1.00	
Incremental Delay, d2	25.1			0.8		27.0			30.1	
Delay (s)	53.1			27.5		59.1			66.2	
Level of Service	D			C		E			E	
Approach Delay (s)	53.1					52.8			66.2	
Approach LOS	D					D			E	

Intersection Summary			
HCM 2000 Control Delay	56.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	88.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	49	227	40	69	475	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.98	
Flt Protected	1.00	1.00		0.98	0.96	
Satd. Flow (prot)	1900	1537		1729	1765	
Flt Permitted	1.00	1.00		0.89	0.96	
Satd. Flow (perm)	1900	1537		1567	1765	
Peak-hour factor, PHF	0.80	0.85	0.75	0.86	0.92	0.85
Adj. Flow (vph)	61	267	53	80	516	84
RTOR Reduction (vph)	0	134	0	0	12	0
Lane Group Flow (vph)	61	134	0	133	588	0
Confl. Peds. (#/hr)		6	6			6
Heavy Vehicles (%)	0%	2%	17%	1%	0%	6%
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	25.0	25.0		25.0	15.0	
Effective Green, g (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	950	768		783	529	
v/s Ratio Prot	0.03				c0.33	
v/s Ratio Perm		c0.09		0.08		
v/c Ratio	0.06	0.17		0.17	1.11	
Uniform Delay, d1	6.5	6.8		6.8	17.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.5		0.5	73.4	
Delay (s)	6.6	7.3		7.3	90.9	
Level of Service	A	A		A	F	
Approach Delay (s)	7.2			7.3	90.9	
Approach LOS	A			A	F	

Intersection Summary			
HCM 2000 Control Delay	54.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	24	31	430	29	0	312
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.91	0.65	0.92	0.85
Hourly flow rate (vph)	30	39	473	45	0	367
Pedestrians	9					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	1					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			705			559
pX, platoon unblocked						
vC, conflicting volume	871	505			526	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	871	505			526	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	93			100	
cM capacity (veh/h)	322	566			1043	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	70	517	367
Volume Left	30	0	0
Volume Right	39	45	0
cSH	425	1700	1043
Volume to Capacity	0.16	0.30	0.00
Queue Length 95th (ft)	14	0	0
Control Delay (s)	15.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	15.1	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	307	163	198	225	204	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frpb, ped/bikes	0.97	0.69	0.94		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.95	1.00
Frt	0.99	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3390	1044	3003		1677	3539
Flt Permitted	0.95	1.00	1.00		0.48	1.00
Satd. Flow (perm)	3390	1044	3003		851	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	341	181	220	250	227	530
RTOR Reduction (vph)	6	120	107	0	0	0
Lane Group Flow (vph)	355	41	363	0	227	530
Confl. Peds. (#/hr)	97	253		77	77	
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	18.0	18.0	40.0		40.0	40.0
Effective Green, g (s)	18.0	18.0	40.0		40.0	40.0
Actuated g/C Ratio	0.26	0.26	0.57		0.57	0.57
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Lane Grp Cap (vph)	871	268	1716		486	2022
v/s Ratio Prot	c0.10		0.12			0.15
v/s Ratio Perm		0.04			c0.27	
v/c Ratio	0.41	0.15	0.21		0.47	0.26
Uniform Delay, d1	21.6	20.1	7.3		8.8	7.6
Progression Factor	1.00	1.00	0.33		1.00	1.00
Incremental Delay, d2	1.4	1.2	0.0		3.2	0.3
Delay (s)	23.0	21.3	2.4		12.0	7.9
Level of Service	C	C	A		B	A
Approach Delay (s)	22.5		2.4			9.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	135	181	107	116	289	343	23	653	154	149	236	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Total Lost time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lane Util. Factor		0.95		1.00	0.95			0.91			0.95	1.00
Frpb, ped/bikes		0.93		1.00	0.82			0.97			1.00	0.85
Flpb, ped/bikes		0.97		0.90	1.00			1.00			0.98	1.00
Frt		0.96		1.00	0.93			0.97			1.00	0.85
Flt Protected		0.98		0.95	1.00			1.00			0.98	1.00
Satd. Flow (prot)		2912		1413	2446			4164			3093	1207
Flt Permitted		0.52		0.35	1.00			0.89			0.57	1.00
Satd. Flow (perm)		1555		526	2446			3720			1795	1207
Peak-hour factor, PHF	0.59	0.88	0.67	0.67	0.65	0.78	0.53	0.81	0.85	0.71	0.90	0.58
Adj. Flow (vph)	229	206	160	173	445	440	43	806	181	210	262	114
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	595	0	173	885	0	0	1030	0	0	472	114
Confl. Peds. (#/hr)	573		247	247		573	126		170	170		126
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	6%	1%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)		37.0		37.0	37.0			26.0			26.0	26.0
Effective Green, g (s)		38.5		37.0	37.0			26.0			26.0	26.0
Actuated g/C Ratio		0.43		0.41	0.41			0.29			0.29	0.29
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	6.0
Lane Grp Cap (vph)		665		216	1005			1074			518	348
v/s Ratio Prot					0.36							
v/s Ratio Perm		c0.38		0.33				c0.28			0.26	0.09
v/c Ratio		1.52dl		0.80	0.91dr			0.96			2.92dl	0.33
Uniform Delay, d1		23.9		23.3	24.5			31.5			30.9	25.1
Progression Factor		1.00		1.00	1.00			1.00			1.46	1.46
Incremental Delay, d2		16.9		26.0	11.0			19.2			15.9	1.6
Delay (s)		40.8		49.3	35.4			50.7			60.9	38.3
Level of Service		D		D	D			D			E	D
Approach Delay (s)		40.8			37.7			50.7			56.5	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	49.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	120.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	NEL	NER	NER2
Lane Configurations			
Volume (vph)	45	30	52
Ideal Flow (vphpl)	1900	1900	1900
Lane Width	12	12	12
Grade (%)	7%		
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	1.00	0.95	
Frpb, ped/bikes	1.00	0.61	
Flpb, ped/bikes	1.00	1.00	
Frt	0.96	0.85	
Flt Protected	0.96	1.00	
Satd. Flow (prot)	1462	804	
Flt Permitted	0.96	1.00	
Satd. Flow (perm)	1462	804	
Peak-hour factor, PHF	0.64	0.80	0.73
Adj. Flow (vph)	70	38	71
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	93	86	0
Confl. Peds. (#/hr)	573		247
Heavy Vehicles (%)	5%	4%	0%
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Actuated Green, G (s)	9.0	9.0	
Effective Green, g (s)	9.0	9.0	
Actuated g/C Ratio	0.10	0.10	
Clearance Time (s)	6.0	6.0	
Lane Grp Cap (vph)	146	80	
v/s Ratio Prot	0.06		
v/s Ratio Perm		c0.11	
v/c Ratio	0.64	1.07	
Uniform Delay, d1	38.9	40.5	
Progression Factor	1.00	1.00	
Incremental Delay, d2	19.3	122.6	
Delay (s)	58.3	163.1	
Level of Service	E	F	
Approach Delay (s)	108.6		
Approach LOS	F		

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	51	463	672	94	10	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	
Lane Util. Factor		0.95	0.91		1.00	
Frpb, ped/bikes		1.00	0.94		0.90	
Flpb, ped/bikes		0.99	1.00		1.00	
Frt		1.00	0.98		0.89	
Flt Protected		0.99	1.00		0.99	
Satd. Flow (prot)		2977	4130		1170	
Flt Permitted		0.80	1.00		0.99	
Satd. Flow (perm)		2402	4130		1170	
Peak-hour factor, PHF	0.86	0.95	0.95	0.81	0.45	0.84
Adj. Flow (vph)	59	487	707	116	22	80
RTOR Reduction (vph)	0	0	32	0	0	0
Lane Group Flow (vph)	0	546	791	0	102	0
Confl. Peds. (#/hr)	426			426	18	118
Heavy Vehicles (%)	0%	2%	1%	0%	0%	6%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	Perm	NA	NA		NA	
Protected Phases		2	6		4	
Permitted Phases	2					
Actuated Green, G (s)		38.0	38.0		21.0	
Effective Green, g (s)		39.5	39.5		22.5	
Actuated g/C Ratio		0.56	0.56		0.32	
Clearance Time (s)		5.5	5.5		5.5	
Lane Grp Cap (vph)		1355	2330		376	
v/s Ratio Prot			0.19		c0.09	
v/s Ratio Perm		c0.23				
v/c Ratio		0.40	0.34		0.27	
Uniform Delay, d1		8.6	8.2		17.7	
Progression Factor		1.00	0.90		1.00	
Incremental Delay, d2		0.9	0.3		1.8	
Delay (s)		9.5	7.7		19.4	
Level of Service		A	A		B	
Approach Delay (s)		9.5	7.7		19.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	468	4	0	766	0	94
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	509	4	0	833	0	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	332			622		
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			513		927	257
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			417		847	151
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	88
cM capacity (veh/h)			1096		290	836

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	339	174	416	416	102
Volume Left	0	0	0	0	0
Volume Right	0	4	0	0	102
cSH	1700	1700	1700	1700	836
Volume to Capacity	0.20	0.10	0.24	0.24	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	9.9
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	198	171	204	35	186	39	171	200	64	26	146	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	14	16	11	11	12	12	15	12	12	14	12
Total Lost time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes		1.00	0.92	1.00	0.98			1.00			0.98	
Flpb, ped/bikes		0.97	1.00	0.98	1.00			0.99			1.00	
Frt		1.00	0.85	1.00	0.97			0.98			0.93	
Flt Protected		0.97	1.00	0.95	1.00			0.98			1.00	
Satd. Flow (prot)		1835	1692	1657	1712			1757			1585	
Flt Permitted		0.56	1.00	0.34	1.00			0.63			0.95	
Satd. Flow (perm)		1059	1692	595	1712			1132			1506	
Peak-hour factor, PHF	0.82	0.82	0.85	0.67	0.70	0.63	0.79	0.69	0.81	0.89	0.70	0.75
Adj. Flow (vph)	241	209	240	52	266	62	216	290	79	29	209	224
RTOR Reduction (vph)	0	0	144	0	12	0	0	8	0	0	48	0
Lane Group Flow (vph)	0	450	96	52	316	0	0	577	0	0	414	0
Confl. Peds. (#/hr)	52		26	26		52	29		5	5		29
Heavy Vehicles (%)	4%	4%	0%	3%	2%	0%	4%	1%	2%	0%	6%	4%
Parking (#/hr)								0			0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)		28.0	28.0	28.0	28.0			32.0			32.0	
Effective Green, g (s)		28.0	28.0	28.0	28.0			32.0			32.0	
Actuated g/C Ratio		0.40	0.40	0.40	0.40			0.46			0.46	
Clearance Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Grp Cap (vph)		423	676	238	684			517			688	
v/s Ratio Prot					0.18							
v/s Ratio Perm		c0.42	0.06	0.09				c0.51			0.27	
v/c Ratio		1.06	0.14	0.22	0.46			1.12			0.60	
Uniform Delay, d1		21.0	13.4	13.8	15.5			19.0			14.2	
Progression Factor		0.83	0.90	1.00	1.00			1.00			1.00	
Incremental Delay, d2		61.1	0.4	2.1	2.2			75.3			3.9	
Delay (s)		78.5	12.5	15.9	17.7			94.3			18.1	
Level of Service		E	B	B	B			F			B	
Approach Delay (s)		55.6			17.5			94.3			18.1	
Approach LOS		E			B			F			B	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	67	7	12	14	15	330	0	0	328	56
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	74	8	13	16	17	367	0	0	364	62
Pedestrians		42			19			4			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			2			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.96	0.96		0.96	0.96	0.96				0.96		
vC, conflicting volume	868	857	442	893	888	394	469			386		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	842	831	442	868	863	349	469			341		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	87	96	95	98	98			100		
cM capacity (veh/h)	233	274	592	213	263	652	1055			1153		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	37	383	427
Volume Left	0	8	17	0
Volume Right	74	16	0	62
cSH	592	330	1055	1153
Volume to Capacity	0.13	0.11	0.02	0.00
Queue Length 95th (ft)	11	9	1	0
Control Delay (s)	11.9	17.3	0.5	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.9	17.3	0.5	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	0	198	222	562	327	40	99	0	0	740	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	12	12	11	12	12	12	12
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes		0.92		1.00	0.85			1.00			1.00	
Flpb, ped/bikes		0.99		0.95	1.00			1.00			1.00	
Frt		0.89		1.00	0.94			1.00			0.99	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1228		1295	1207			3071			3110	
Flt Permitted		0.12		0.52	1.00			0.70			1.00	
Satd. Flow (perm)		148		715	1207			2183			3110	
Peak-hour factor, PHF	0.80	0.92	0.83	0.89	0.94	0.93	0.75	0.75	0.92	0.92	0.89	0.75
Adj. Flow (vph)	62	0	239	249	598	352	53	132	0	0	831	61
RTOR Reduction (vph)	0	75	0	0	30	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	226	0	249	920	0	0	185	0	0	892	0
Confl. Peds. (#/hr)	859		99	99		859	14		65	65		14
Heavy Vehicles (%)	7%	2%	18%	0%	3%	12%	0%	1%	2%	2%	2%	19%
Parking (#/hr)				0								
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.0		23.0	23.0			35.0			35.0	
Effective Green, g (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		0.2		0.2	0.2			0.2			0.2	
Lane Grp Cap (vph)		48		234	396			1091			1555	
v/s Ratio Prot					0.76						c0.29	
v/s Ratio Perm		c1.53		0.35				0.08				
v/c Ratio		4.70		1.06	2.32			0.17			0.57	
Uniform Delay, d1		23.5		23.5	23.5			9.6			12.3	
Progression Factor		1.00		1.00	1.00			0.54			1.07	
Incremental Delay, d2		1713.2		76.8	603.1			0.3			1.5	
Delay (s)		1736.7		100.3	626.6			5.5			14.6	
Level of Service		F		F	F			A			B	
Approach Delay (s)		1736.7			517.3			5.5			14.6	
Approach LOS		F			F			A			B	

Intersection Summary			
HCM 2000 Control Delay	449.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.19		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	119.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	605	618	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	605	672	0	0
Pedestrians					18	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			18		1564	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		1564	18
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			62		100	100
cM capacity (veh/h)			1605		64	1056

Direction, Lane #	WB 1	WB 2
Volume Total	829	448
Volume Left	605	0
Volume Right	0	0
cSH	1605	1700
Volume to Capacity	0.38	0.26
Queue Length 95th (ft)	45	0
Control Delay (s)	7.3	0.0
Lane LOS	A	
Approach Delay (s)	4.7	
Approach LOS		

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	124	883	333	137	390	0	0	211	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Total Lost time (s)					7.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			1.00	0.88
Frpb, ped/bikes					0.96		1.00	1.00			1.00	0.94
Flpb, ped/bikes					0.99		0.98	1.00			1.00	1.00
Frt					0.96		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					2569		1542	1668			1735	2438
Flt Permitted					1.00		0.54	1.00			1.00	1.00
Satd. Flow (perm)					2569		882	1668			1735	2438
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.96	0.93	0.91	0.94	0.92	0.92	0.88	0.83
Adj. Flow (vph)	0	0	0	133	920	358	151	415	0	0	240	310
RTOR Reduction (vph)	0	0	0	0	42	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1369	0	151	415	0	0	240	310
Confl. Peds. (#/hr)				139		202	25					25
Heavy Vehicles (%)	2%	2%	2%	1%	5%	1%	1%	0%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					43.0		24.0	24.0			24.0	24.0
Effective Green, g (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
Clearance Time (s)					7.0		6.0	6.0			6.0	6.0
Lane Grp Cap (vph)					1380		264	500			520	731
v/s Ratio Prot								c0.25			0.14	
v/s Ratio Perm					0.53		0.17					0.13
v/c Ratio					0.99		0.57	0.83			0.46	0.42
Uniform Delay, d1					18.3		23.7	26.1			22.8	22.5
Progression Factor					0.87		0.72	0.70			1.00	1.00
Incremental Delay, d2					17.0		8.1	13.7			2.9	1.8
Delay (s)					32.9		25.0	32.1			25.7	24.3
Level of Service					C		C	C			C	C
Approach Delay (s)		0.0			32.9			30.2			24.9	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	56	1008	4	299	14	0	0	1	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					1.00			1.00			0.98	
Flpb, ped/bikes					0.99			0.99			1.00	
Frt					1.00			1.00			0.90	
Flt Protected					1.00			0.96			1.00	
Satd. Flow (prot)					3340			1664			1561	
Flt Permitted					1.00			0.73			1.00	
Satd. Flow (perm)					3340			1272			1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.87	0.50	0.85	0.46	0.92	0.92	0.25	0.67
Adj. Flow (vph)	0	0	0	84	1159	8	352	30	0	0	4	13
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	0	1250	0	0	382	0	0	11	0
Confl. Peds. (#/hr)				87		214	8					8
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					37.0			33.0			33.0	
Effective Green, g (s)					37.0			33.0			33.0	
Actuated g/C Ratio					0.46			0.41			0.41	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1544			524			643	
v/s Ratio Prot											0.01	
v/s Ratio Perm					0.37			c0.30				
v/c Ratio					0.81			0.73			0.02	
Uniform Delay, d1					18.5			19.7			13.9	
Progression Factor					0.73			0.92			1.00	
Incremental Delay, d2					3.8			4.8			0.0	
Delay (s)					17.4			23.0			14.0	
Level of Service					B			C			B	
Approach Delay (s)		0.0			17.4			23.0			14.0	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	90	822	34	200	61	0	0	19	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.98			1.00			0.99	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.99			1.00			0.90	
Flt Protected					0.99			0.96			1.00	
Satd. Flow (prot)					3104			1782			1597	
Flt Permitted					0.99			0.72			1.00	
Satd. Flow (perm)					3104			1331			1597	
Peak-hour factor, PHF	0.92	0.92	0.92	0.72	0.98	0.43	0.82	0.72	0.92	0.92	0.85	0.62
Adj. Flow (vph)	0	0	0	125	839	79	244	85	0	0	22	74
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	38	0
Lane Group Flow (vph)	0	0	0	0	1036	0	0	329	0	0	58	0
Confl. Peds. (#/hr)				15		84	3					3
Heavy Vehicles (%)	2%	2%	2%	1%	5%	3%	2%	4%	2%	2%	6%	5%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					38.0			32.0			32.0	
Effective Green, g (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1474			532			638	
v/s Ratio Prot											0.04	
v/s Ratio Perm					0.33			c0.25				
v/c Ratio					0.70			0.62			0.09	
Uniform Delay, d1					16.5			19.1			14.9	
Progression Factor					0.48			0.90			1.00	
Incremental Delay, d2					1.9			5.0			0.3	
Delay (s)					9.8			22.1			15.2	
Level of Service					A			C			B	
Approach Delay (s)		0.0			9.8			22.1			15.2	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	877	198	29	147	0	0	323	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.96			1.00			0.99	
Flpb, ped/bikes					0.99			1.00			1.00	
Frt					0.97			1.00			0.97	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					2982			1757			2100	
Flt Permitted					1.00			0.66			1.00	
Satd. Flow (perm)					2982			1169			2100	
Peak-hour factor, PHF	0.92	0.92	0.92	0.54	0.95	0.80	0.69	0.89	0.92	0.92	0.95	0.77
Adj. Flow (vph)	0	0	0	85	923	248	42	165	0	0	340	105
RTOR Reduction (vph)	0	0	0	0	27	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	0	0	0	1229	0	0	207	0	0	431	0
Confl. Peds. (#/hr)				43		66	17					17
Heavy Vehicles (%)	2%	2%	2%	2%	9%	8%	5%	8%	2%	2%	5%	2%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					44.0			26.0			26.0	
Effective Green, g (s)					44.0			26.0			26.0	
Actuated g/C Ratio					0.55			0.32			0.32	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1640			379			682	
v/s Ratio Prot											c0.21	
v/s Ratio Perm					0.41			0.18				
v/c Ratio					0.75			0.55			0.63	
Uniform Delay, d1					13.8			22.2			22.9	
Progression Factor					1.00			0.99			1.00	
Incremental Delay, d2					3.2			4.7			4.4	
Delay (s)					17.0			26.7			27.3	
Level of Service					B			C			C	
Approach Delay (s)		0.0			17.0			26.7			27.3	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	20.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	186	294	11	1	122	0	0	1210	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)				5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	
Flpb, ped/bikes				1.00	1.00	1.00		1.00			1.00	
Frt				1.00	1.00	0.85		1.00			0.99	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1486	1580	1253		3213			3109	
Flt Permitted				0.95	1.00	1.00		0.95			1.00	
Satd. Flow (perm)				1486	1580	1253		3073			3109	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.86	0.67	0.25	0.82	0.25	0.92	0.97	0.68
Adj. Flow (vph)	0	0	0	196	342	16	4	149	0	0	1247	44
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	196	342	16	0	153	0	0	1291	0
Confl. Peds. (#/hr)						69	7					7
Heavy Vehicles (%)	2%	2%	2%	2%	1%	0%	0%	1%	0%	2%	4%	0%
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Actuated Green, G (s)				22.5	22.5	22.5		33.5			36.5	
Effective Green, g (s)				22.5	22.5	22.5		33.5			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.48			0.52	
Clearance Time (s)				5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Lane Grp Cap (vph)				477	507	402		1521			1621	
v/s Ratio Prot					c0.22			0.04			c0.42	
v/s Ratio Perm				0.13		0.01		0.01				
v/c Ratio				0.41	0.67	0.04		0.10			0.80	
Uniform Delay, d1				18.6	20.6	16.3		10.0			13.7	
Progression Factor				1.00	1.00	1.00		0.81			0.68	
Incremental Delay, d2				0.2	2.8	0.0		0.0			0.4	
Delay (s)				18.8	23.4	16.3		8.2			9.7	
Level of Service				B	C	B		A			A	
Approach Delay (s)		0.0			21.5			8.2			9.7	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	507	201	22	61	3	41	93	52	436	958	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	11	12	12	11	12	12	12	12
Total Lost time (s)		5.5	5.5		5.5			5.5			5.5	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.85		1.00			0.99			1.00	
Flpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	
Frt		1.00	0.85		0.99			0.96			1.00	
Flt Protected		1.00	1.00		0.99			0.99			0.98	
Satd. Flow (prot)		1632	1195		1604			2811			3086	
Flt Permitted		0.97	1.00		0.26			0.62			0.73	
Satd. Flow (perm)		1588	1195		427			1762			2292	
Peak-hour factor, PHF	0.83	0.84	0.73	0.50	0.50	0.25	0.77	0.88	0.84	0.92	0.98	0.75
Adj. Flow (vph)	40	604	275	44	122	12	53	106	62	474	978	1
RTOR Reduction (vph)	0	0	0	0	3	0	0	39	0	0	0	0
Lane Group Flow (vph)	0	644	275	0	175	0	0	182	0	0	1453	0
Confl. Peds. (#/hr)	2		147	147		2	6		22	22		6
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	8%	2%	7%	10%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)		22.5	22.5		22.5			25.5			36.5	
Effective Green, g (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
Clearance Time (s)		5.5	5.5		5.5			5.5			5.5	
Vehicle Extension (s)		0.2	0.2		0.2			0.2			0.2	
Lane Grp Cap (vph)		510	384		137			641			1285	
v/s Ratio Prot											c0.13	
v/s Ratio Perm		0.41	0.23		c0.41			0.10			c0.46	
v/c Ratio		1.26	0.72		1.27			0.28			1.13	
Uniform Delay, d1		23.8	20.9		23.8			15.8			16.8	
Progression Factor		1.00	1.00		1.00			1.00			0.61	
Incremental Delay, d2		133.3	5.2		168.3			1.1			65.9	
Delay (s)		157.0	26.2		192.1			16.9			76.2	
Level of Service		F	C		F			B			E	
Approach Delay (s)		117.9			192.1			16.9			76.2	
Approach LOS		F			F			B			E	

Intersection Summary			
HCM 2000 Control Delay	92.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	861	460	0	0	86	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	10	10
Total Lost time (s)	5.0				5.0	5.0
Lane Util. Factor	0.95				1.00	0.88
Frpb, ped/bikes	0.93				1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00
Frt	0.95				1.00	0.85
Flt Protected	1.00				0.95	1.00
Satd. Flow (prot)	2692				1472	2364
Flt Permitted	1.00				0.95	1.00
Satd. Flow (perm)	2692				1472	2364
Peak-hour factor, PHF	0.91	0.86	0.92	0.92	0.85	0.82
Adj. Flow (vph)	946	535	0	0	101	716
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1481	0	0	0	101	716
Confl. Peds. (#/hr)		79				
Heavy Vehicles (%)	3%	1%	2%	2%	3%	1%
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Actuated Green, G (s)	45.0				25.0	25.0
Effective Green, g (s)	45.0				25.0	25.0
Actuated g/C Ratio	0.56				0.31	0.31
Clearance Time (s)	5.0				5.0	5.0
Lane Grp Cap (vph)	1514				460	738
v/s Ratio Prot	c0.55				0.07	
v/s Ratio Perm						c0.30
v/c Ratio	0.98				0.22	0.97
Uniform Delay, d1	17.0				20.3	27.1
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	18.5				1.1	26.6
Delay (s)	35.5				21.4	53.7
Level of Service	D				C	D
Approach Delay (s)	35.5			0.0	49.7	
Approach LOS	D			A	D	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	386	982	81	0	0	0	0	139	115	274	46	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Total Lost time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95						1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99						1.00	0.90		1.00	
Flpb, ped/bikes	0.97	1.00						1.00	1.00		0.94	
Frt	1.00	0.99						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		0.96	
Satd. Flow (prot)	1511	2963						1703	1299		1366	
Flt Permitted	0.95	1.00						1.00	1.00		0.63	
Satd. Flow (perm)	1511	2963						1703	1299		892	
Peak-hour factor, PHF	0.96	0.92	0.83	0.92	0.92	0.92	0.92	0.79	0.79	0.84	0.55	0.92
Adj. Flow (vph)	402	1067	98	0	0	0	0	176	146	326	84	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	41	0	0	0
Lane Group Flow (vph)	402	1165	0	0	0	0	0	176	105	0	410	0
Confl. Peds. (#/hr)	54		95						69	69		
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	0%	0%	1%	0%	2%
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	46.0	46.0						24.0	24.0		24.0	
Effective Green, g (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
Clearance Time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)	868	1703						510	389		267	
v/s Ratio Prot		c0.39						0.10				
v/s Ratio Perm	0.27								0.08		c0.46	
v/c Ratio	0.46	0.68						0.35	0.27		1.54	
Uniform Delay, d1	9.8	11.9						21.9	21.3		28.0	
Progression Factor	1.27	1.28						1.00	1.00		1.24	
Incremental Delay, d2	0.5	0.6						1.8	1.7		255.8	
Delay (s)	13.0	15.9						23.7	23.0		290.6	
Level of Service	B	B						C	C		F	
Approach Delay (s)		15.1			0.0			23.4			290.6	
Approach LOS		B			A			C			F	

Intersection Summary			
HCM 2000 Control Delay	65.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1027	107	0	0	0	0	116	113	22	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						0.98			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.94			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		3201						1740			1832	
Flt Permitted		0.99						1.00			0.87	
Satd. Flow (perm)		3201						1740			1607	
Peak-hour factor, PHF	0.64	0.87	0.75	0.92	0.92	0.92	0.92	0.73	0.77	0.69	0.35	0.92
Adj. Flow (vph)	438	1180	143	0	0	0	0	159	147	32	311	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	41	0	0	0	0
Lane Group Flow (vph)	0	1753	0	0	0	0	0	265	0	0	343	0
Confl. Peds. (#/hr)	14		34						22	22		
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		49.0						21.0			21.0	
Effective Green, g (s)		49.0						21.0			21.0	
Actuated g/C Ratio		0.61						0.26			0.26	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1960						456			421	
v/s Ratio Prot								0.15				
v/s Ratio Perm		0.55									c0.21	
v/c Ratio		0.89						0.58			0.81	
Uniform Delay, d1		13.3						25.7			27.7	
Progression Factor		1.26						1.00			1.14	
Incremental Delay, d2		4.7						5.3			15.7	
Delay (s)		21.5						31.0			47.2	
Level of Service		C						C			D	
Approach Delay (s)		21.5			0.0			31.0			47.2	
Approach LOS		C			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	1030	13	0	0	0	0	100	44	27	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		1.00						0.95			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3283						1985			2080	
Flt Permitted		0.99						1.00			0.88	
Satd. Flow (perm)		3283						1985			1862	
Peak-hour factor, PHF	0.71	0.97	0.84	0.92	0.92	0.92	0.92	0.84	0.67	0.93	0.75	0.92
Adj. Flow (vph)	144	1062	15	0	0	0	0	119	66	29	73	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	25	0	0	0	0
Lane Group Flow (vph)	0	1220	0	0	0	0	0	160	0	0	102	0
Confl. Peds. (#/hr)	22		26						16	16		
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	7%	0%	2%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.0						20.0			20.0	
Effective Green, g (s)		50.0						20.0			20.0	
Actuated g/C Ratio		0.62						0.25			0.25	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2051						496			465	
v/s Ratio Prot								c0.08				
v/s Ratio Perm		0.37									0.05	
v/c Ratio		0.59						0.32			0.22	
Uniform Delay, d1		9.0						24.5			23.8	
Progression Factor		0.48						1.00			0.55	
Incremental Delay, d2		0.6						1.7			0.9	
Delay (s)		4.9						26.2			14.0	
Level of Service		A						C			B	
Approach Delay (s)		4.9			0.0			26.2			14.0	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	973	30	0	0	0	0	63	24	281	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			0.99	
Frt		1.00						0.97			1.00	
Flt Protected		0.99						1.00			0.96	
Satd. Flow (prot)		3338						1569			1705	
Flt Permitted		0.99						1.00			0.69	
Satd. Flow (perm)		3338						1569			1231	
Peak-hour factor, PHF	0.75	0.94	0.82	0.92	0.92	0.92	0.92	0.80	0.92	0.91	0.67	0.92
Adj. Flow (vph)	129	1035	37	0	0	0	0	79	26	309	67	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	0	1198	0	0	0	0	0	90	0	0	376	0
Confl. Peds. (#/hr)	48		30						9	9		
Heavy Vehicles (%)	1%	6%	4%	2%	2%	2%	2%	20%	5%	3%	20%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		36.0						34.0			34.0	
Effective Green, g (s)		36.0						34.0			34.0	
Actuated g/C Ratio		0.45						0.42			0.42	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1502						666			523	
v/s Ratio Prot								0.06				
v/s Ratio Perm		0.36									c0.31	
v/c Ratio		0.80						0.14			0.72	
Uniform Delay, d1		18.9						14.0			19.0	
Progression Factor		0.91						1.00			0.47	
Incremental Delay, d2		3.8						0.4			6.2	
Delay (s)		20.9						14.5			15.2	
Level of Service		C						B			B	
Approach Delay (s)		20.9			0.0			14.5			15.2	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

APPENDIX I

TABLE 3
TRIP GENERATION SUMMARY
Lower Hill Site Redevelopment Master Plan Transportation Study
City of Pittsburgh, Allegheny County, Pennsylvania

Development Component	Size	ITE Code	Number of Vehicle Trips (1)						
			Average Daily Trips	A.M. Peak Hour			P.M. Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
Master Plan Development Components									
Retail	200,101 s.f.	820	5,330	116	45	161	248	259	507
Hotel (2)	174	310	1,226	59	38	97	54	49	103
Office	631,962 s.f.	710	2,759	361	49	410	67	327	394
Cineplex	2,310	444	810	0	0	0	45	36	81
Apartments	1,148 units	220	3,540	57	227	284	211	114	325
Townhomes	44 units	230	158	3	11	14	11	5	16
Master Plan Development Components Subtotal			*13,823*	*596*	*370*	*966*	*636*	*790*	*1,426*
Master Plan Development Unassigned Parking									
Unassigned Parking (3)	355 spaces	--	710 (4)	122	5	127	9	104	113
TOTAL MASTER PLAN DEVELOPMENT SITE GENERATED TRAFFIC VOLUMES			**14,533**	**718**	**375**	**1,093**	**645**	**894**	**1,539**

(1) Number of vehicle trips generated determined through the use of the methodologies presented in *Trip Generation, 8th Edition* published by the Institute of Transportation Engineers (ITE), reduced by 50% to account for trips to and from development that would use Buses, the "T", Walk, and Bike. Percentage derived from the *Employee Transportation Needs Assessment* Presentation, by Pittsburgh Downtown Partnership, September 2010.

(2) Reduction in site generated trips for the Hotel development component was not assumed, in order to be conservative.

(3) Unassigned spaces were conservatively assumed to function as commuter spaces. Commuter trips based on existing peak hour commuter trip rates calculated for the existing Mellon Arena surface lots. Commuter trip rate calculations are provided in the Appendix to the Lower Hill Site Redevelopment Master Plan Transportation Study.

(4) Commuter parking average daily trips assumed to be two (2) times the total available commuter parking (355 spaces) (355 * 2 = 710).

Source: Analysis by Trans Associates.

Existing Commuter Trip Summary

Lot	Access	Existing Commuter Trips						Total Number of Existing Parking Spaces
		A.M. Peak Hour			P.M. Peak Hour			
		Enter	Exit	Total	Enter	Exit	Total	
West Lot	Washington Place	69	0	69	1	44	45	2440
South Lot	Centre Avenue	46	0	46	0	48	48	
North Lot	Bedford Avenue	36	0	36	0	38	38	
East Lot	Centre Avenue via Mario Lemieux Place	23	12	35	28	31	59	
	Centre Avenue	270	9	279	18	219	237	
	Bedford Avenue via Mario Lemieux Place	203	5	208	2	101	103	
Melody Tent Lot	Centre Avenue	192	0	192	15	130	145	
	Bedford Avenue	0	8	8	0	107	107	
TOTAL		839	34	873	64	718	782	

Commuter Trip Rate Calculation

	Existing Commuter Trip Rate					
	A.M. Peak Hour			P.M. Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
Trip Generation Rates : Total Site	0.344	0.014	0.358	0.026	0.294	0.320

commuter trip rate = (existing commuter trip)/(total number of existing parking spaces)

Future Commuter Trip Calculation

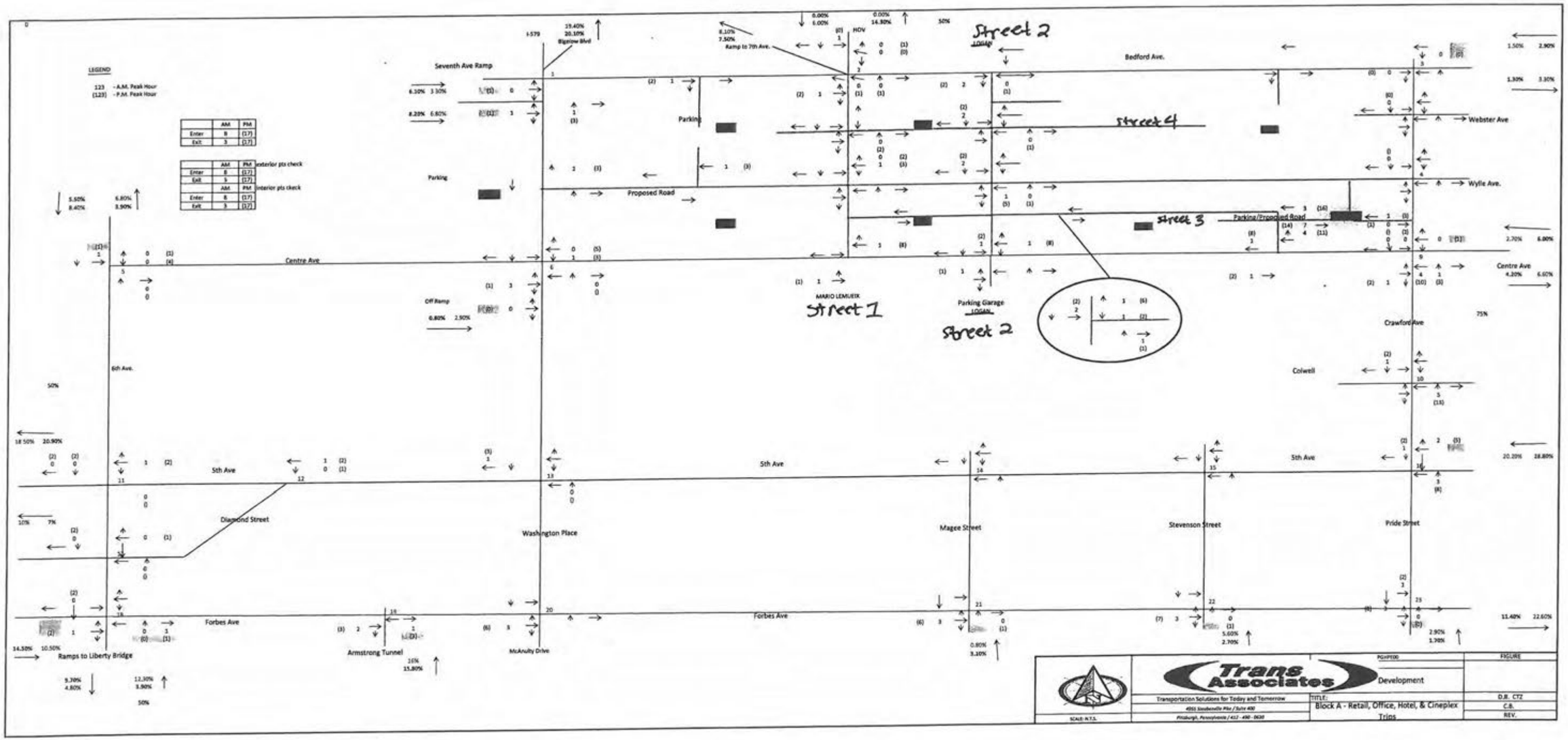
Total Number of Proposed Commuter Parking Spaces Available = 355 Spaces

Trip calcuation = 656 spaces x Existing Commuter Trip Rate

Development Component	Trip Generation					
	A.M. Peak Hour			P.M. Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
355 Spaces	122	5	127	9	104	114

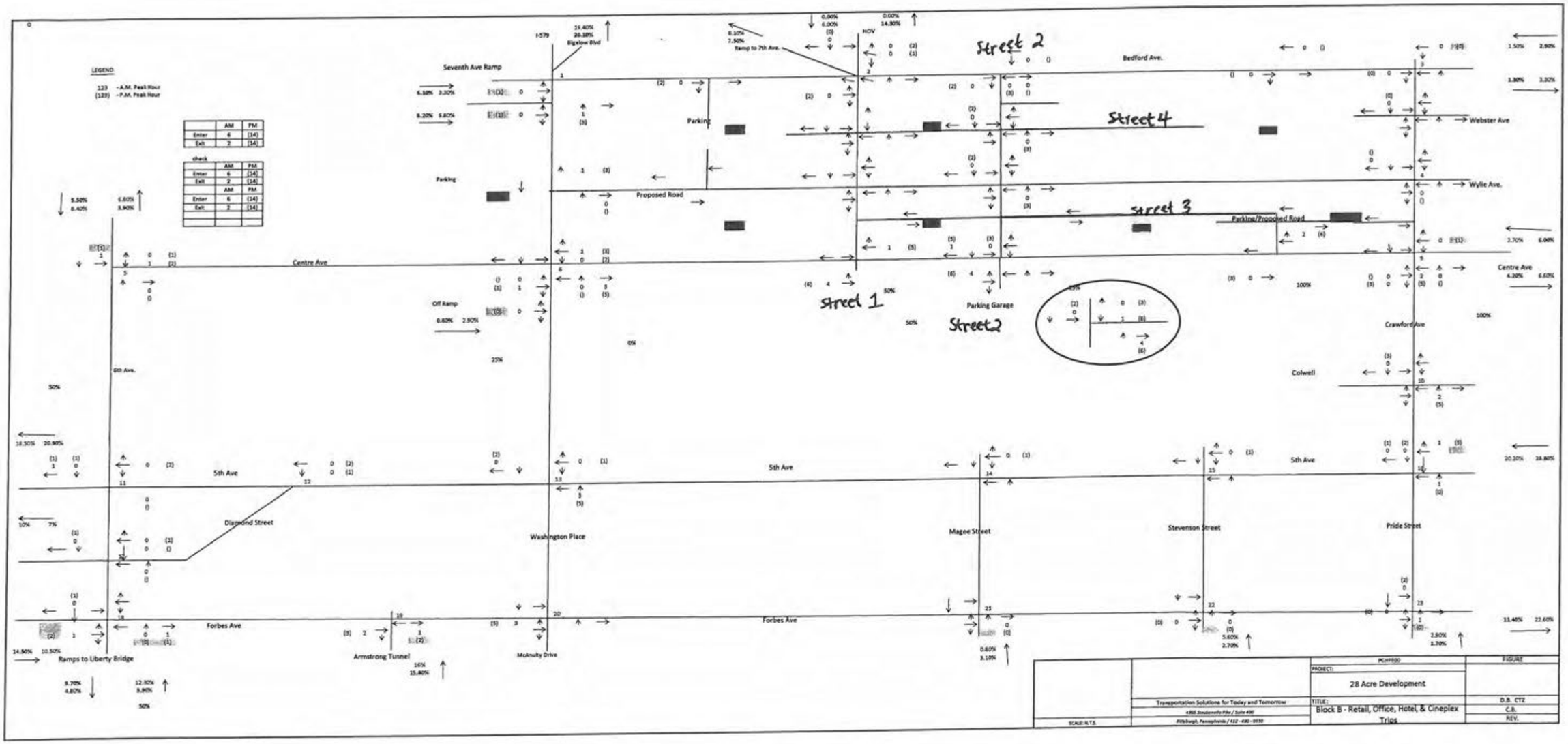
Trips Per Block, based on the number of available commuter spaces per block

Block ID	Number of Available Commuter Spaces	Percent of Available Spaces	Trip Generation Per Block					
			A.M. Peak Hour			P.M. Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
A	0	0.00%	0	0	0	0	0	0
B	79	23.24%	28	1	~~30~~ 29	2	24	26
C	0	0.00%	0	0	0	0	0	0
D	66	19.41%	24	1	25	2	20	22
E	195	57.35%	70	3	73	5	60	65
F	0	0.00%	0	0	0	0	0	0
G	0	0.00%	0	0	0	0	0	0
H	0	0.00%	0	0	0	0	0	0
I	0	0.00%	0	0	0	0	0	0
J	0	0.00%	0	0	0	0	0	0
TOTAL	340	100.00%	122	5	127	9	104	113



RETAIL 1

Note: Retail Trips include - Retail, Office, Hotel + Cineplex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(123) - P.M. Peak Hour
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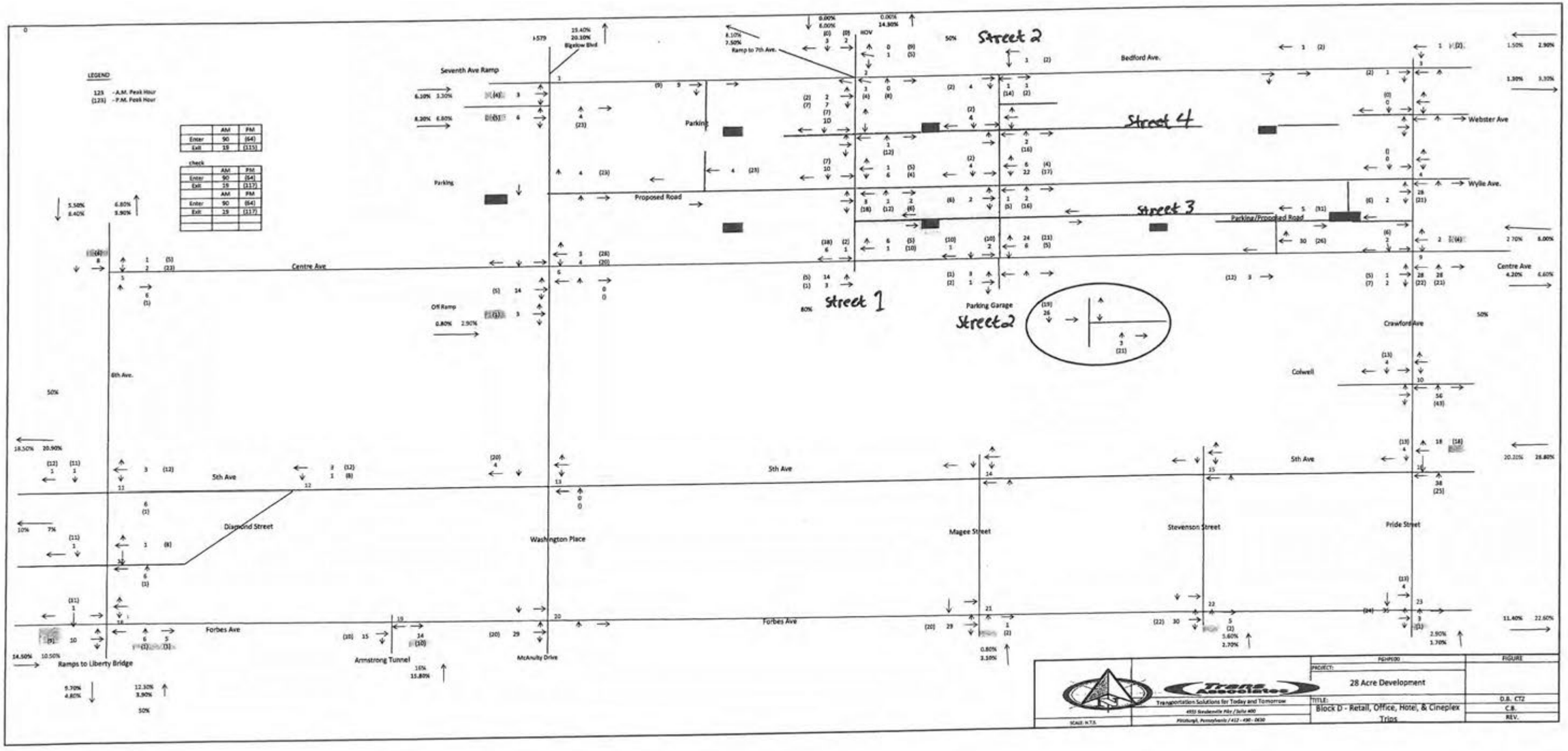
Enter 6 (14)
Exit 2 (14)
check
AM PM
Enter 6 (14)
Exit 2 (14)
AM PM
Enter 6 (14)
Exit 2 (14)
I-579
Bigelow Blvd
Seventh Ave Ramp
Ramp to 7th Ave.
HOV
Street 2
Bedford Ave.
Street 4
Webster Ave
Parking
Parking
Proposed Road
Wylie Ave.
Street 3
Parking/Proposed Road
Centre Ave
Centre Ave
Street 1
Parking Garage
Street2
Off Ramp
Crawford Ave
Colwell
6th Ave.
5th Ave
5th Ave
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
PGH/FEDO
PROJECT:
28 Acre Development
FIGURE
Transportation Solutions for Today and Tomorrow
4301 Smallmanville Pike / Suite 490
Pittsburgh, Pennsylvania / 412-490-0930
TITLE:
Block B - Retail, Office, Hotel, & Cineplex Trips
D.B. CTZ
C.B.
REV.
SCALE: N.T.S.

RETAIL 2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(123) - P.M. Peak Hour
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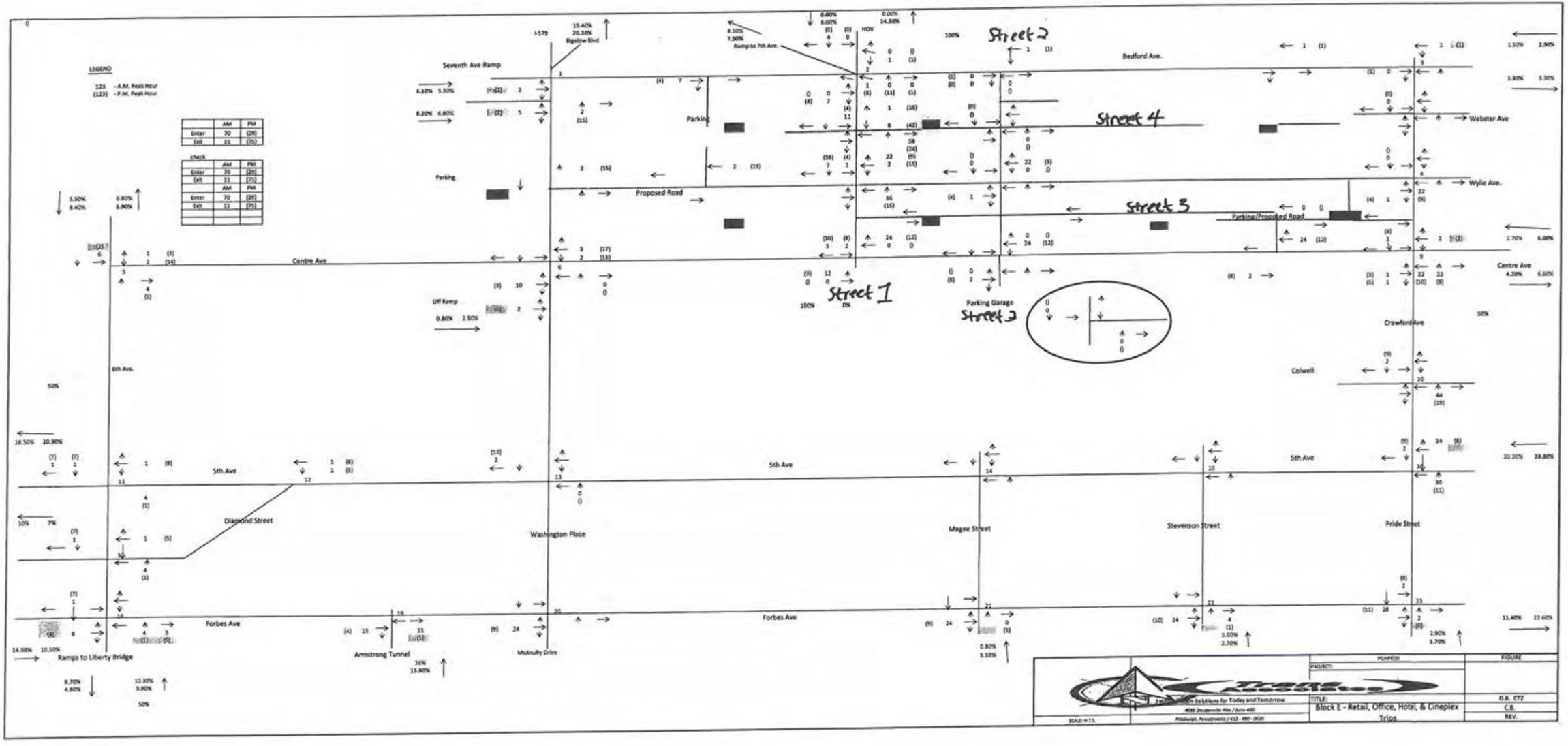
Exit 19 (115)
check
AM PM
Enter 90 (64)
Exit 19 (117)
AM PM
Enter 90 (64)
Exit 19 (117)
Seventh Ave Ramp
Ramp to 7th Ave.
Bedford Ave.
Webster Ave
Wylie Ave.
Centre Ave
Crawford Ave
Colwell
Parking
Proposed Road
Parking/Proposed Road
Parking Garage
Off Ramp
8th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
Street 1
Street 2
Street 3
Street 4
Street2
HOV
Transportation Solutions for Today and Tomorrow
SCALE: N.T.S.
PROJECT:
28 Acre Development
TITLE:
Block D - Retail, Office, Hotel, & Cineplex Trips
FIGURE
D.B. CTZ
C.B.
REV.

RETAIL 3

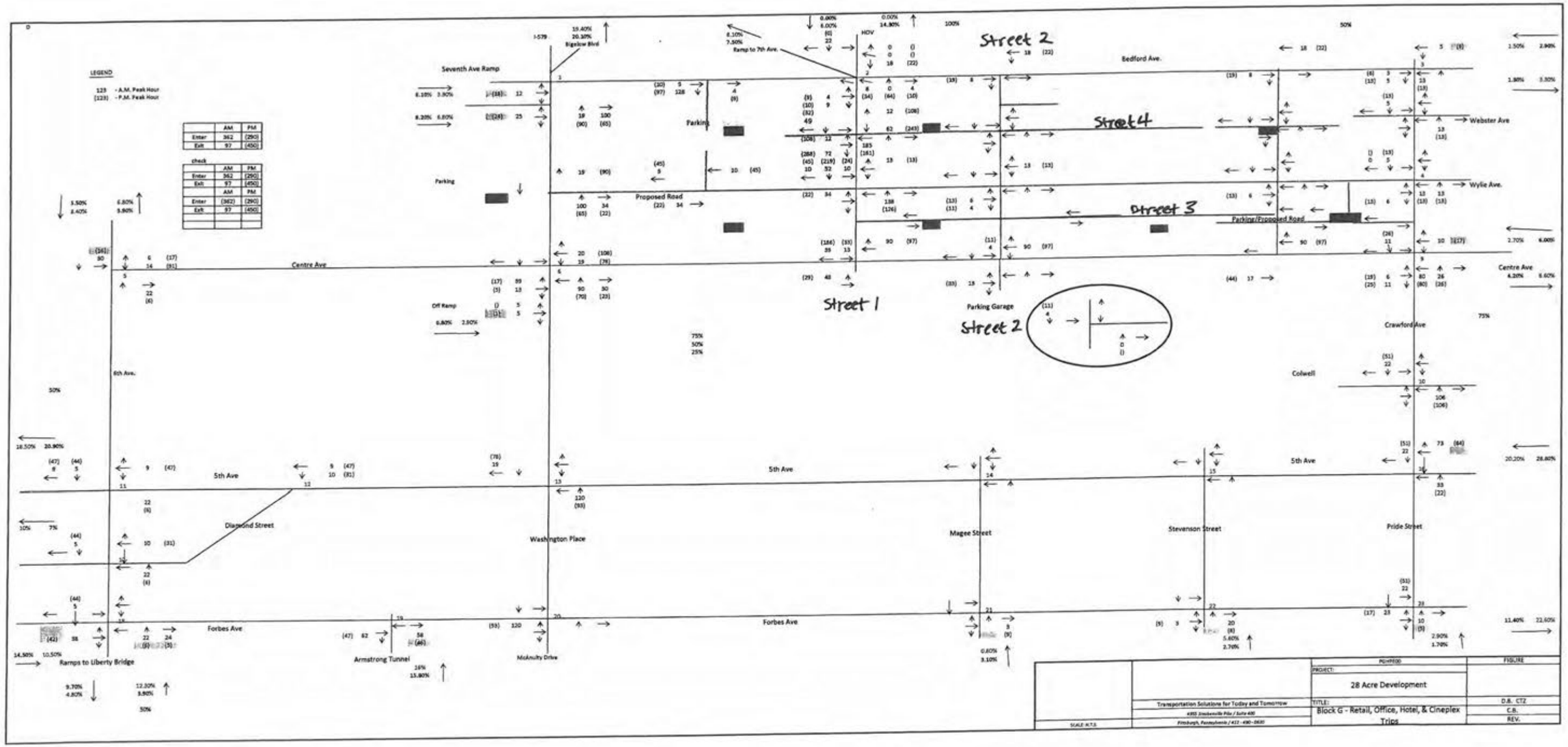


	AM	PM
Enter	70	(29)
Exit	11	(75)

check

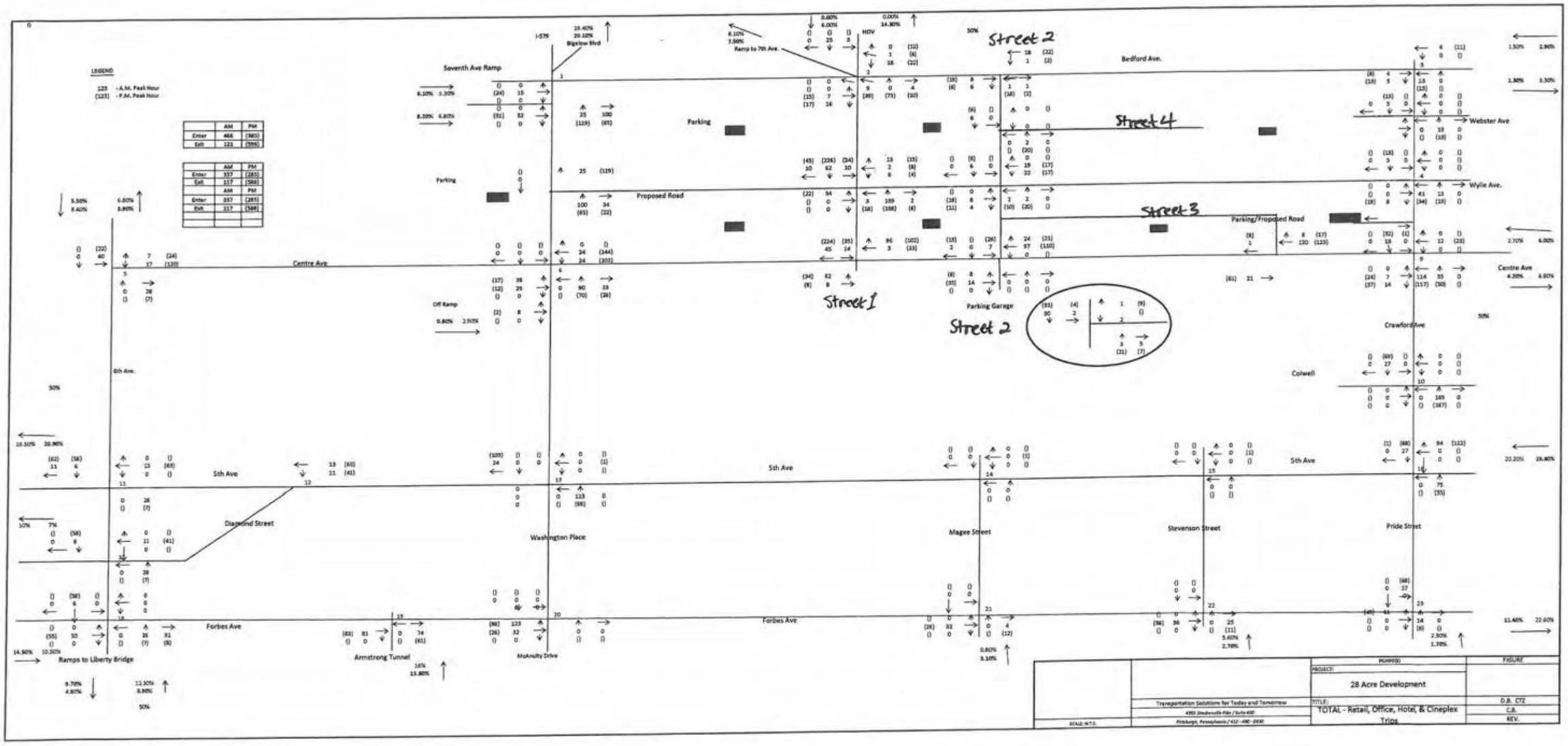
	AM	PM
Enter	70	(29)
Exit	11	(75)
	AM	PM
Enter	70	(29)
Exit	11	(75)

RETAIL 4

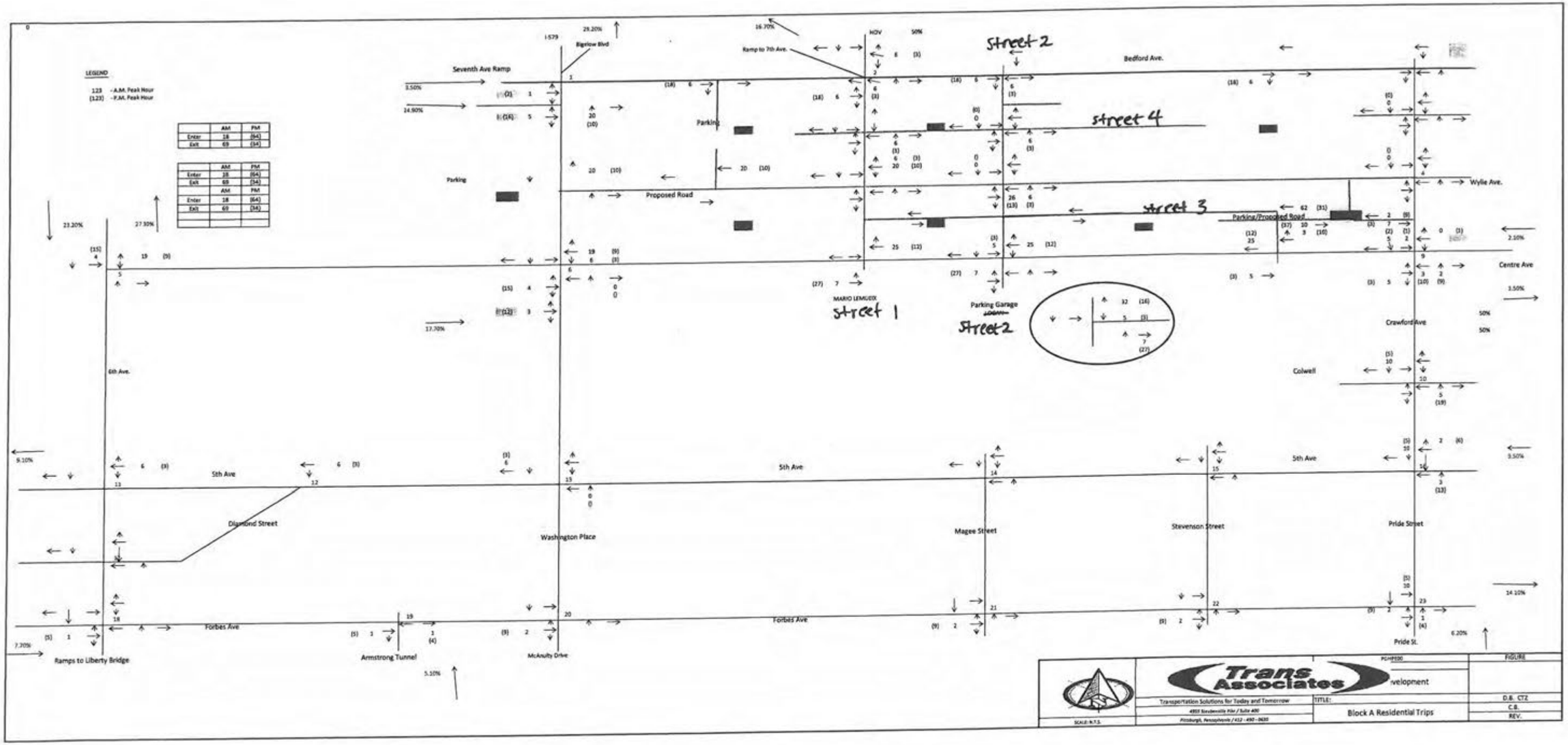


		PREPARED	FIGURE
		PROJECT: 28 Acre Development	
	Transportation Solutions for Today and Tomorrow	TITLE: Block G - Retail, Office, Hotel, & Cineplex Trips	D.B. CTZ
	4955 Steubenville Pike / Suite 400		C.B.
SCALE: N.T.S.	Pittsburgh, Pennsylvania / 412-490-0630		REV.

RETAIL 5



RETAIL 1+2+3+4+5 = RETAIL TOTAL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(123) - P.M. Peak Hour
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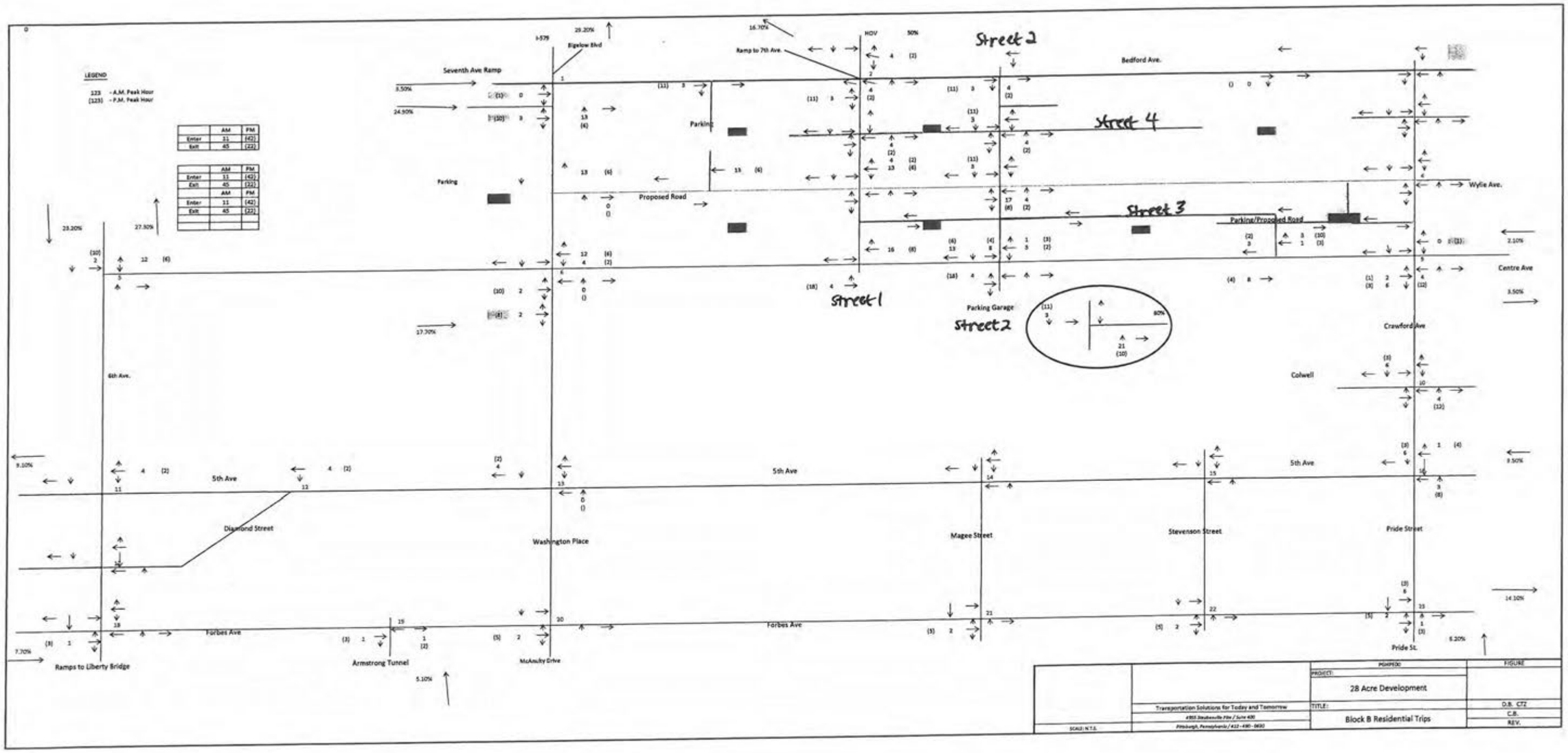
Exit 69 (34)
AM PM
Enter 18 (64)
Exit 69 (34)
AM PM
Enter 18 (64)
Exit 69 (34)
Seventh Ave Ramp
I-579
Bigelow Blvd
Ramp to 7th Ave.
HOV
Street 2
Bedford Ave.
Street 4
Parking
Proposed Road
Street 3
Parking/Proposed Road
Wylie Ave.
Centre Ave
Crawford Ave
Colwell
MARIO LEMUEIX
Street 1
Parking Garage
Street 2
6th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
Pride St.
Trans Associates
Transportation Solutions for Today and Tomorrow
Block A Residential Trips
FIGURE
D.B. CTZ
C.B.
REV.
SCALE: N.T.S.

RES. 1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(123) - P.M. Peak Hour
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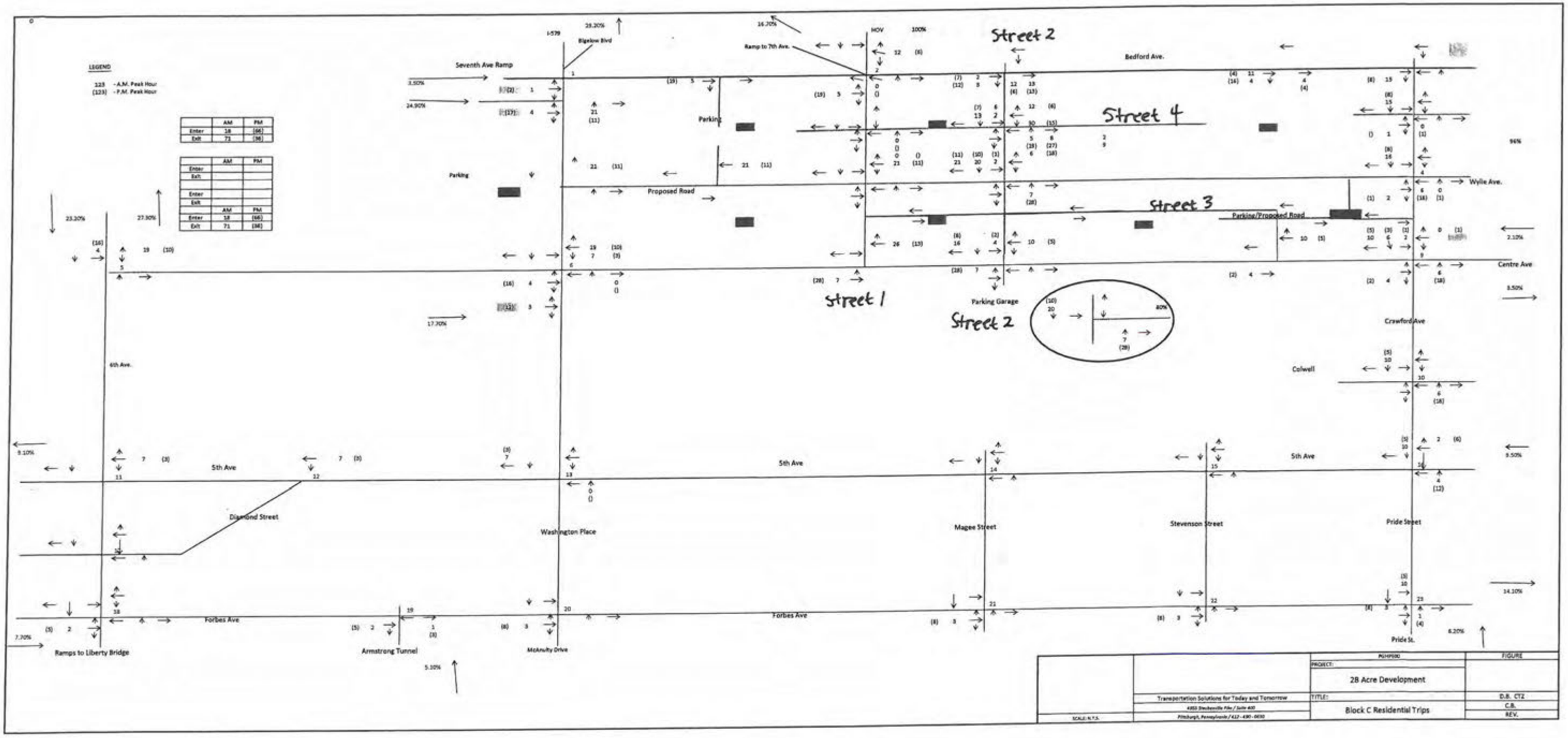
Exit 45 (22)
AM PM
Enter 11 (42)
Exit 45 (22)
AM PM
Enter 11 (42)
Exit 45 (22)
Seventh Ave Ramp
I-579
Bigelow Blvd
Ramp to 7th Ave.
HOV
Street 2
Bedford Ave.
Street 4
Parking
Proposed Road
Street 3
Parking/Proposed Road
Wylie Ave.
Centre Ave
Street 1
Parking Garage
Street 2
Crawford Ave
Colwell
6th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAuley Drive
Pride St.
PGHPED:
PROJECT:
28 Acre Development
TITLE:
Block B Residential Trips
Transportation Solutions for Today and Tomorrow
SCALE: N.T.S.
FIGURE
D.B. CTZ
C.B.
REV.

RES 2



		PROJECT: 2B Acre Development	FIGURE
	Transportation Solutions for Today and Tomorrow	TITLE: Block C Residential Trips	D.B. CTZ
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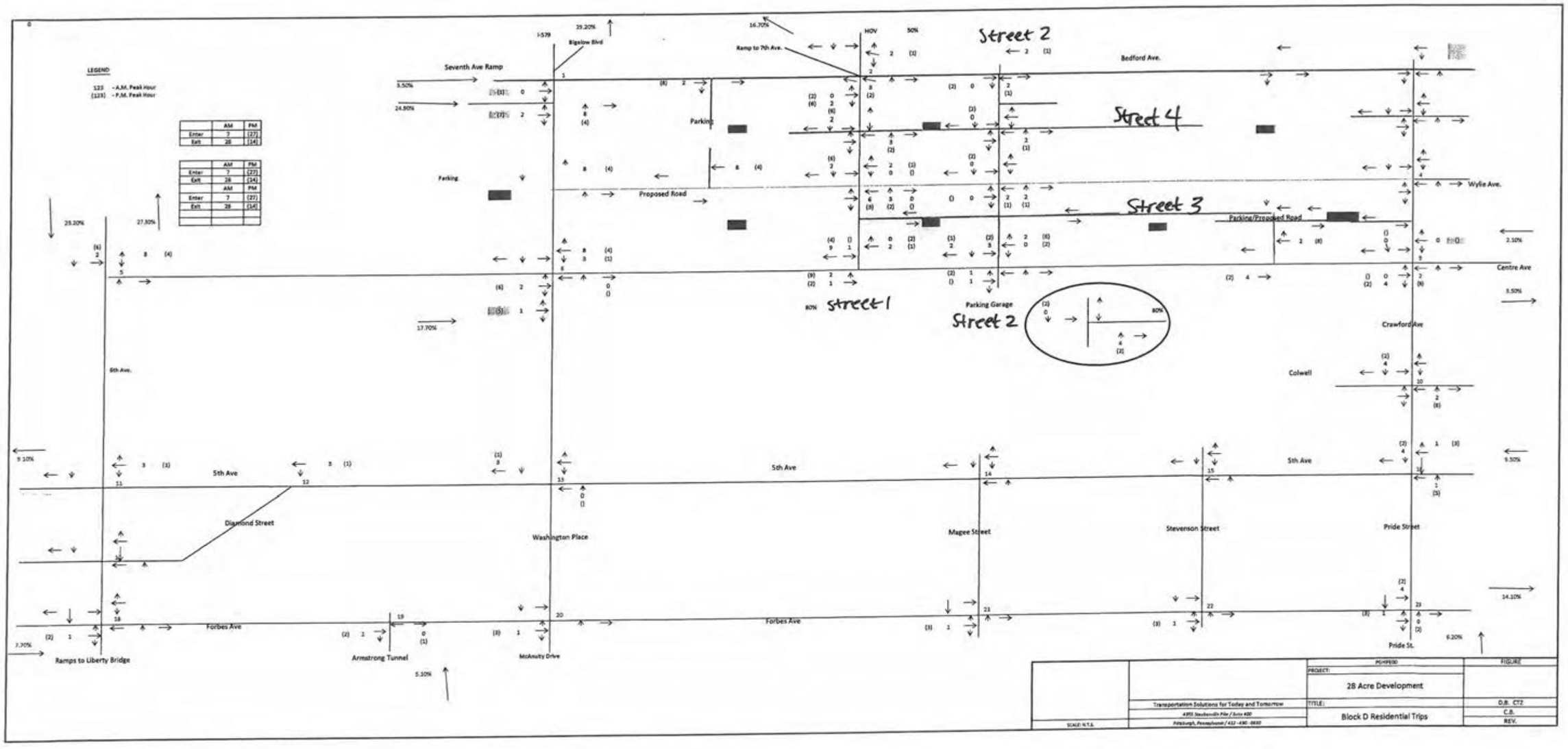
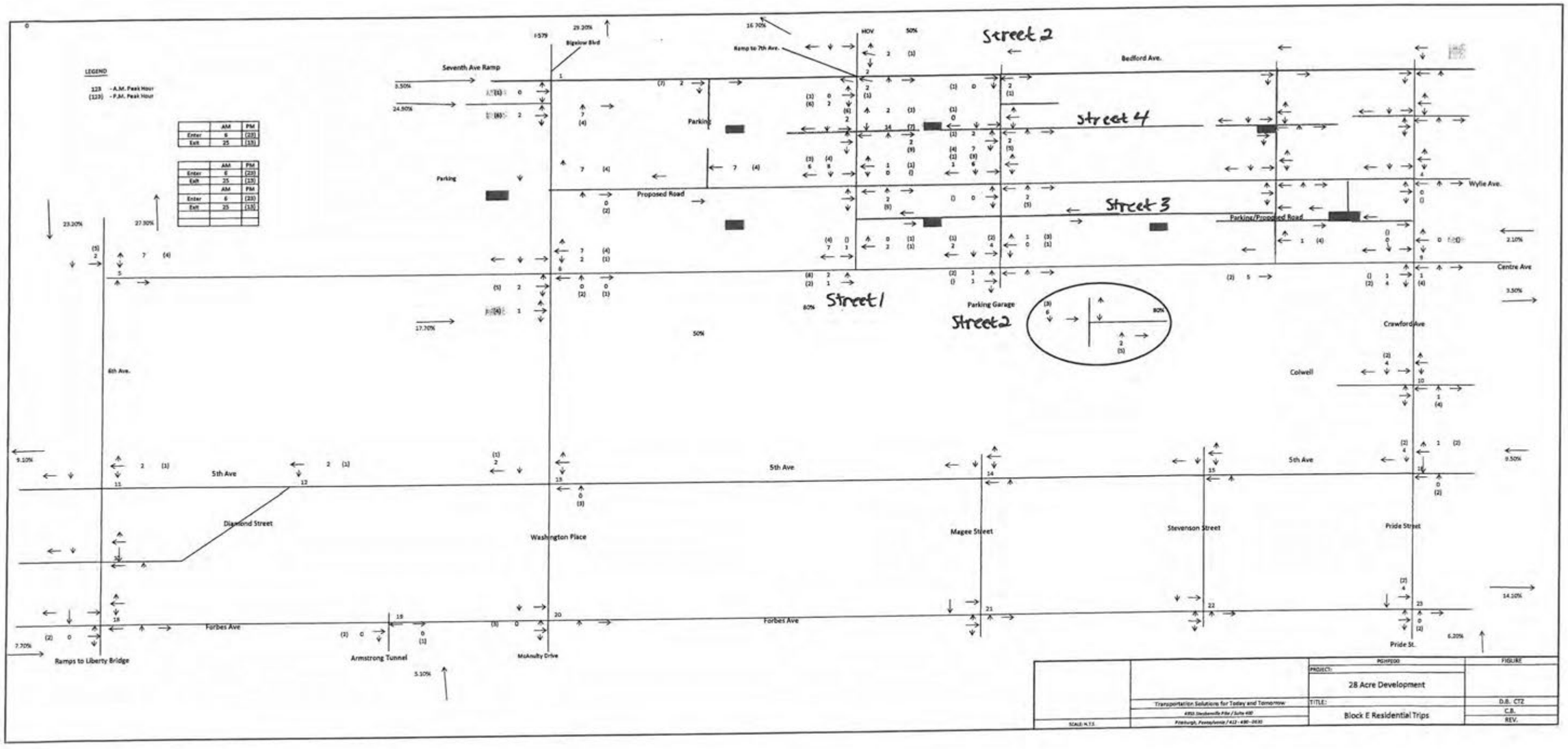
SCALE: N.T.S.	Pittsburgh, Pennsylvania / 412-490-0090		REV.

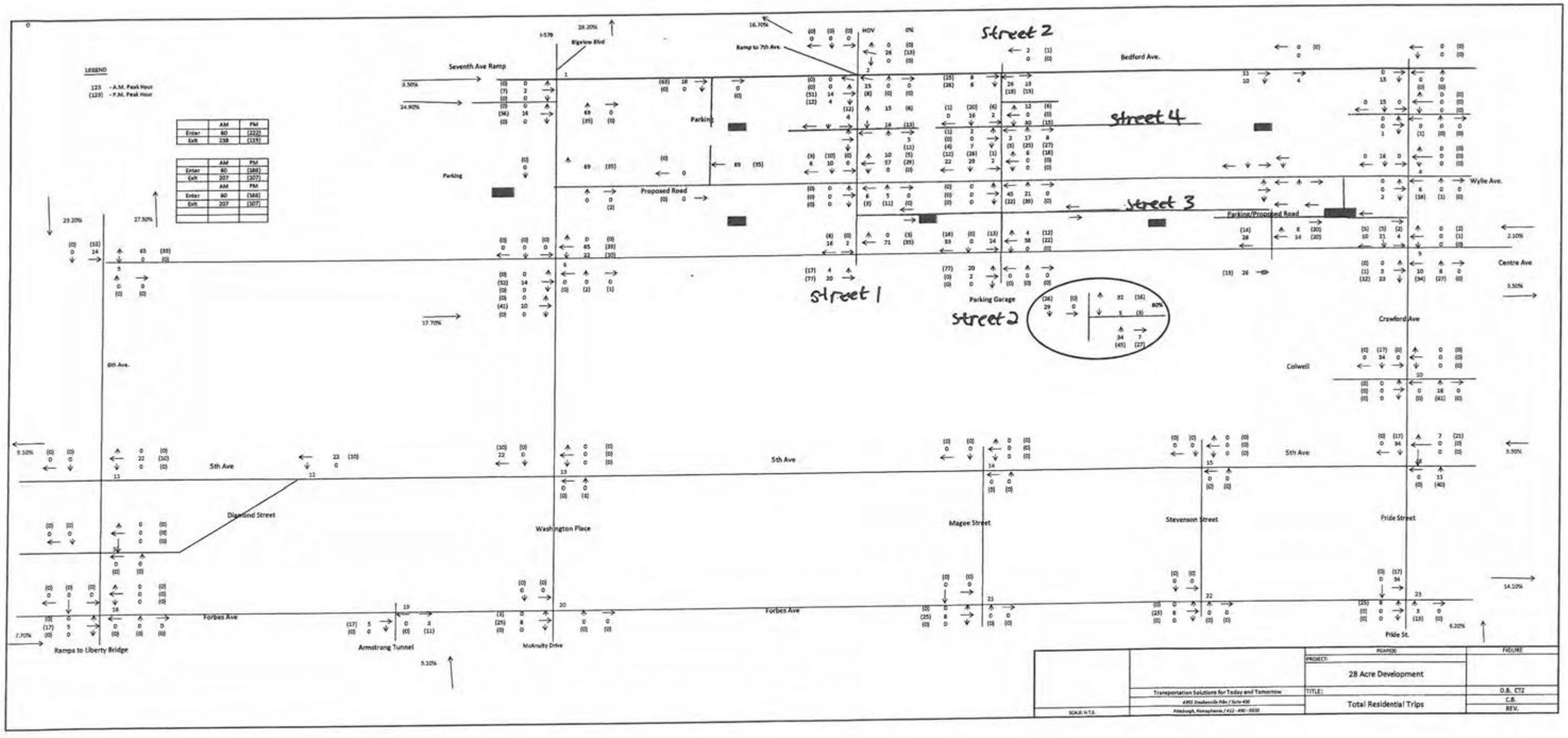
RES 3


LEGEND
123 - A.M. Peak Hour
(123) - P.M. Peak Hour
Street 2
Street 4
Street 3
street 1
Street 2
Seventh Ave Ramp
Bigelow Blvd
I-579
Ramp to 7th Ave.
HOV
Bedford Ave.
Parking
Proposed Road
Parking/Proposed Road
Wylie Ave.
Centre Ave
Crawford Ave
Colwell
Parking Garage
6th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
Pride St.
PROJECT:
28 Acre Development
TITLE:
Block D Residential Trips
Transportation Solutions for Today and Tomorrow
SCALE: N.T.S.
FIGURE
D.B. CTZ
C.B.
REV.

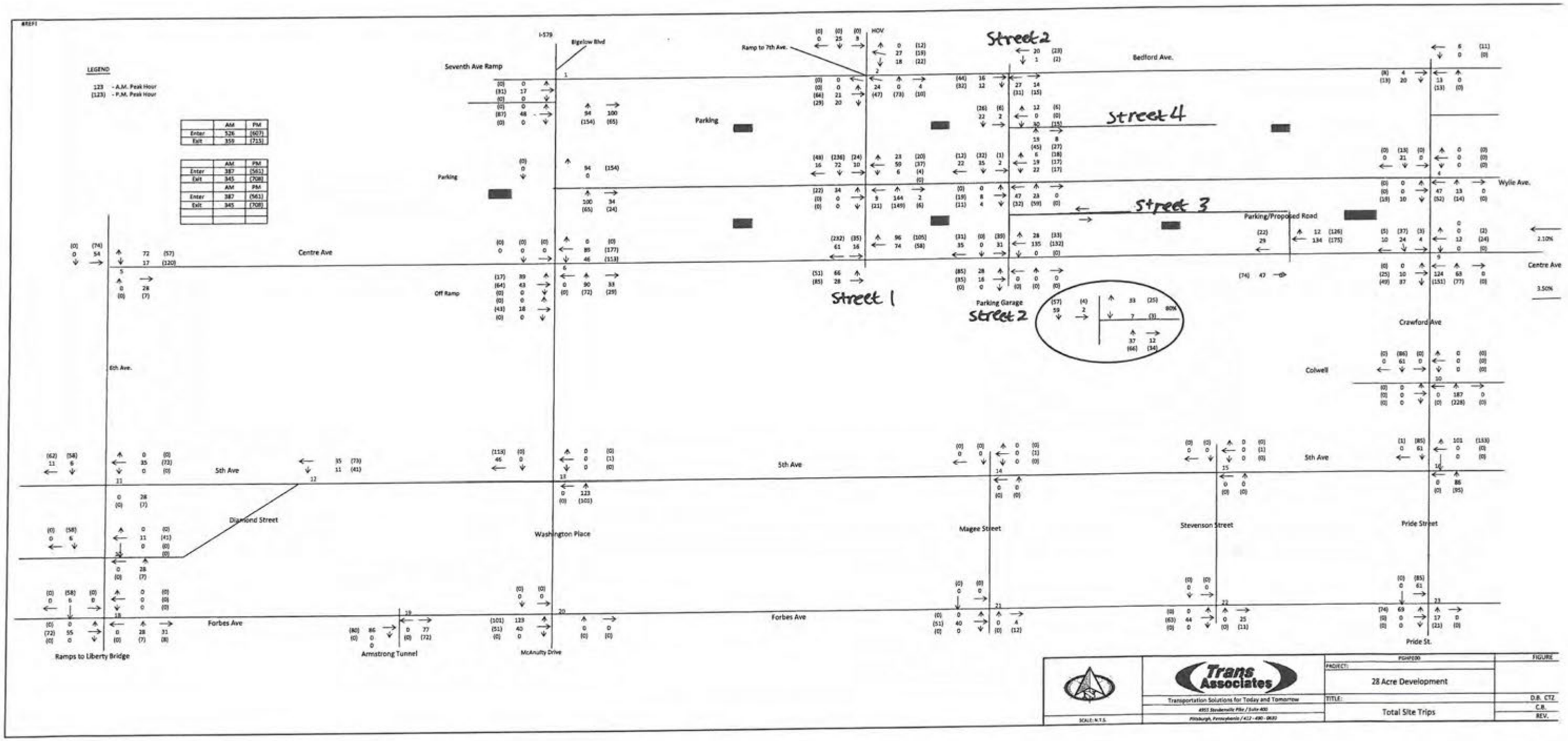
Res 4


LEGEND
123 - A.M. Peak Hour
(123) - P.M. Peak Hour
Street 2
Street 4
Street 3
Street 1
Street 2
Seventh Ave Ramp
Bigelow Blvd
Ramp to 7th Ave.
Bedford Ave.
Parking
Proposed Road
Parking/Proposed Road
Wylie Ave.
Centre Ave
Crawford Ave
Colwell
Parking Garage
6th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
Pride St.
PGH2000
PROJECT:
28 Acre Development
TITLE:
Block E Residential Trips
FIGURE
D.B. CTZ
C.B.
REV.
SCALE: N.T.S.
Transportation Solutions for Today and Tomorrow

Res 5

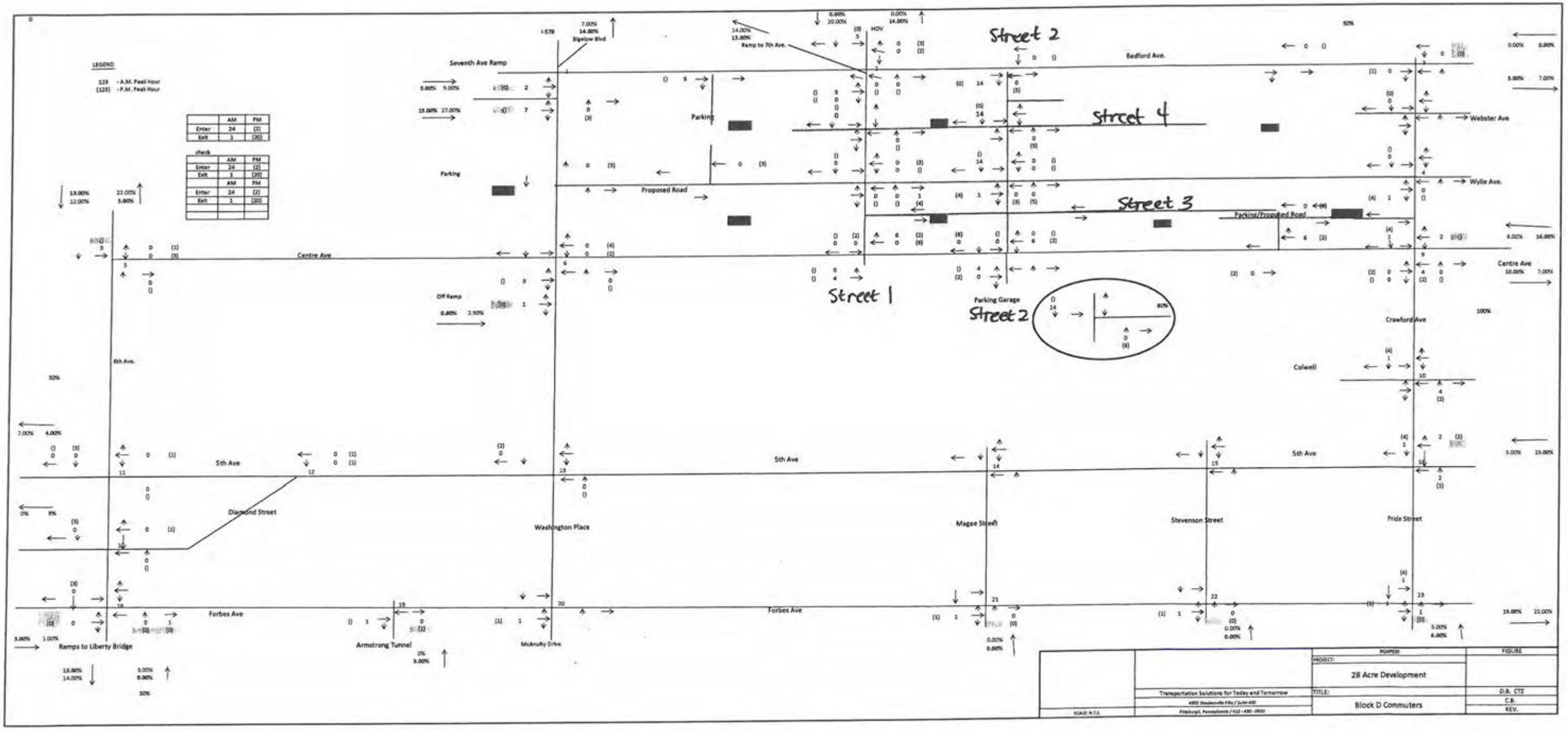


Res 1 + 2 + 3 + 4 + 5 = Total Residential Trips

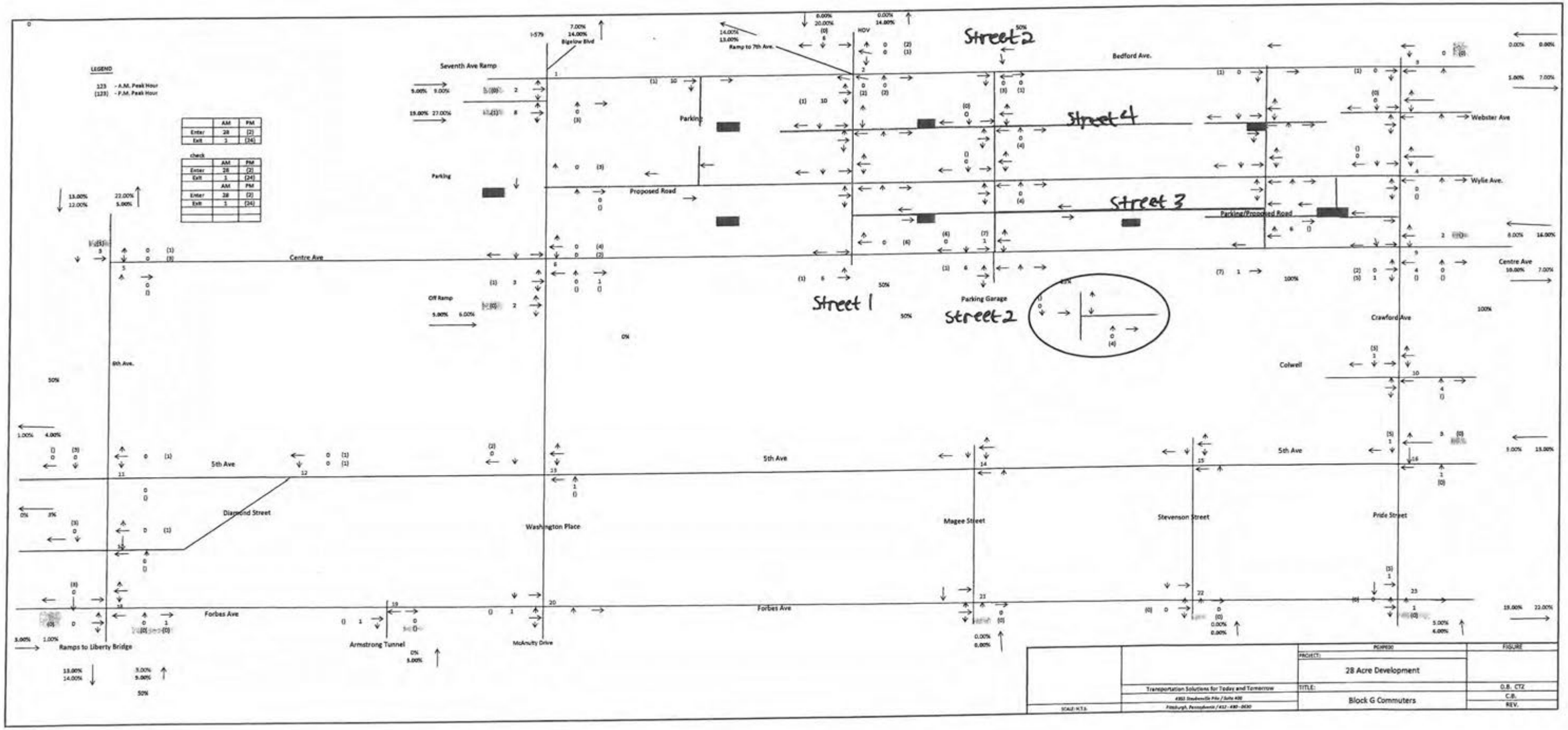


TOTAL RETAIL TRIPS + TOTAL RESIDENTIAL TRIPS = TOTAL SITE TRIPS

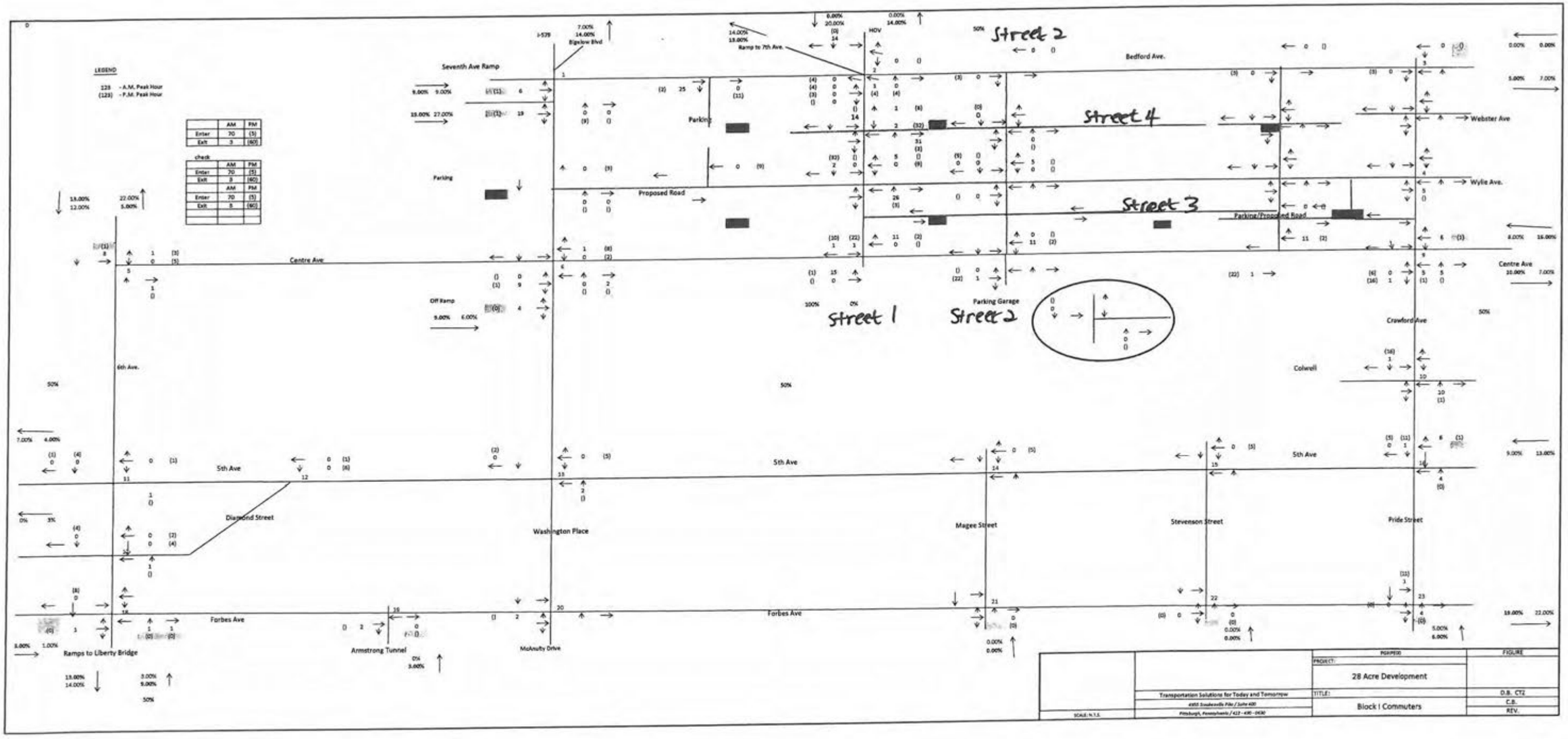
(See Figures [redacted] + [redacted] 19 in Report)


LEGEND
123 - A.M. Peak Hour
(123) - P.M. Peak Hour
AM PM
Enter 24 (2)
Exit 1 (20)
check
AM PM
Enter 24 (2)
Exit 1 (20)
AM PM
Enter 24 (2)
Exit 1 (20)
I-579
Bigelow Blvd
Seventh Ave Ramp
Ramp to 7th Ave.
HOV
Street 2
Bedford Ave.
Street 4
Parking
Proposed Road
Street 3
Parking/Proposed Road
Webster Ave
Wylie Ave.
Centre Ave
Off Ramp
Street 1
Parking Garage
Street 2
Crawford Ave
Colwell
6th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
PGH200
FIGURE
PROJECT:
28 Acre Development
Transportation Solutions for Today and Tomorrow
TITLE:
Block D Commuters
D.B. CTZ
C.B.
REV.
SCALE: N.T.S.

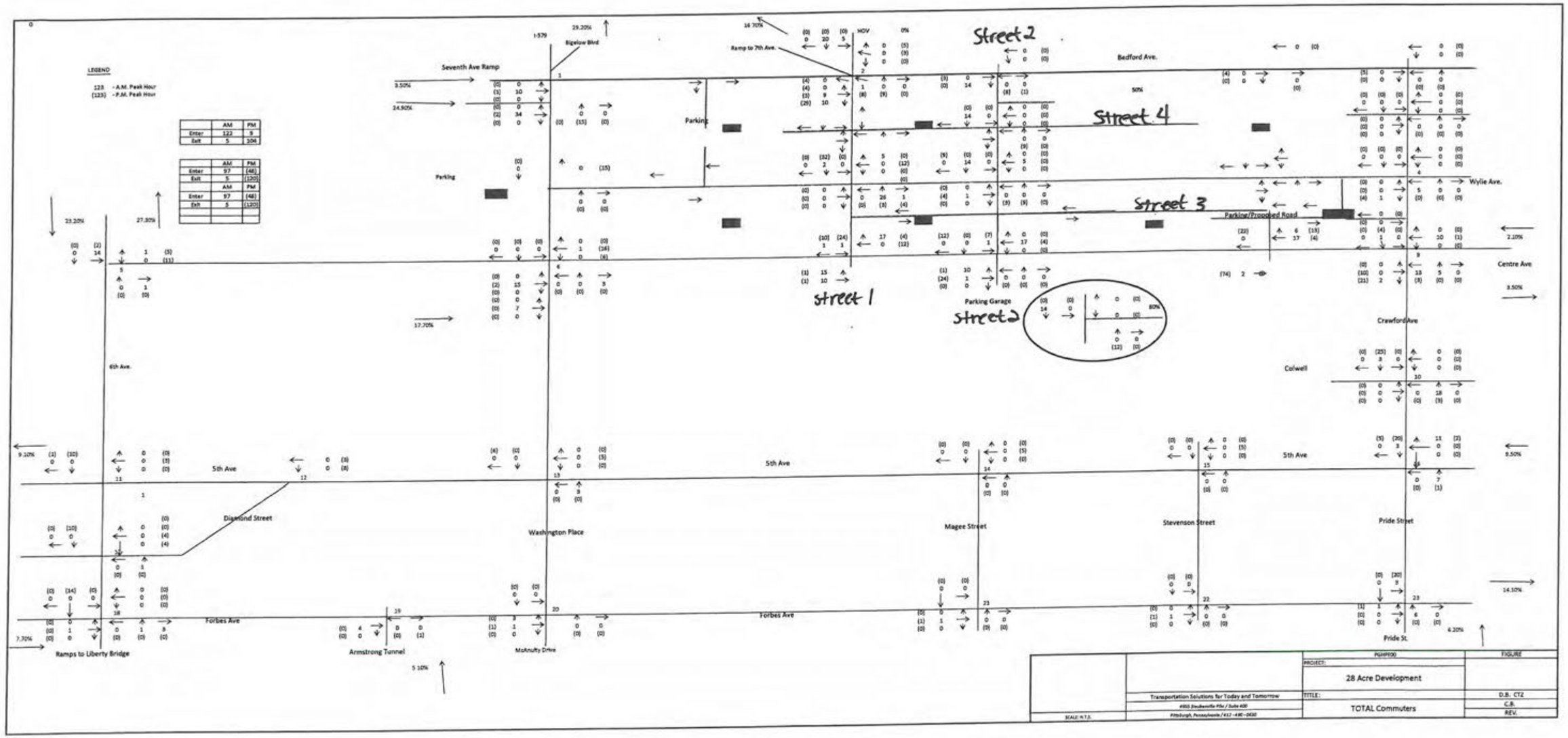
Com 1


LEGEND
123 - A.M. Peak Hour
(123) - P.M. Peak Hour
AM PM
Enter 28 (2)
Exit 3 (24)
check
AM PM
Enter 28 (2)
Exit 1 (24)
AM PM
Enter 28 (2)
Exit 1 (24)
Seventh Ave Ramp
I-579
Bigelow Blvd
Ramp to 7th Ave.
HOV
Street 2
Bedford Ave.
Parking
Street 4
Webster Ave
Wylie Ave.
Proposed Road
Street 3
Parking/Proposed Road
Centre Ave
Off Ramp
Street 1
Parking Garage
Street 2
Crawford Ave
Colwell
9th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
PROJECT:
28 Acre Development
TITLE:
Block G Commuters
Transportation Solutions for Today and Tomorrow
SCALE: N.T.S.
PURPOSE
FIGURE
D.B. CTZ
C.B.
REV.

COM 2


LEGEND
123 - A.M. Peak Hour
(123) - P.M. Peak Hour
AM PM
Enter 70 (5)
Exit 3 (60)
check
AM PM
Enter 70 (5)
Exit 3 (60)
AM PM
Enter 70 (5)
Exit 3 (60)
Street 1
Street 2
Street 3
Street 4
Parking Garage
Seventh Ave Ramp
Bigelow Blvd
Ramp to 7th Ave.
Bedford Ave.
Webster Ave
Wylie Ave.
Parking
Proposed Road
Parking/Proposed Road
Centre Ave
Off Ramp
Crawford Ave
Colwell
6th Ave.
5th Ave
Diamond Street
Washington Place
Magee Street
Stevenson Street
Pride Street
Forbes Ave
Ramps to Liberty Bridge
Armstrong Tunnel
McAnulty Drive
Transportation Solutions for Today and Tomorrow
Pittsburgh, Pennsylvania / 412-490-0630
SCALE: N.T.S.
PREPARED
PROJECT:
28 Acre Development
TITLE:
Block I Commuters
FIGURE
D.B. CT2
C.B.
REV.

Com 3



COM 1 + 2 + 3 = TOTAL COMMUTER TRIPS

(See Figures 20 + 21 in Report)

APPENDIX J

(A)

LEGEND

	Enter	Exit	Total
AM	45	155	200
PM	173	94	267

- Bus Stop
- T Station
- 61A - Bus Route

81

81, 82, 83, 19L

81, 82, 83

81, 82, 83

82, 83

81, 82, 83, 19L

81, 82, 83

30% to buses

	IN	OUT	TOTAL
AM	14	47	61
PM	52	28	80

10%

	IN	OUT	TOTAL
AM	4	16	20
PM	17	9	23

50% (67)

12 (106)

	IN	OUT	TOTAL
AM	4	16	20
PM	17	9	23

10%

61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D

61A, 61B, 61C, 61D
71A, 71B, 71C, 71D

CONSOL

BIGELOW BLVD

AVE

CHATHAM

6TH AVE EXT

CROSSTOWN BLVD

DIAMOND

WATSON

FIFTH AVE

FORBES AVE

CRAWFORD

PEDERSON

PROTECTORY

MILLER

FORSIDE PL

VINE

CER

RY PL

R WAY

N

Trans Associates

Transportation Solutions for Today and Tomorrow
Twin Towers Suite 400 /4955 Steubenville Pike

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	dz
C.B.	rdl

(B)

LEGEND

- Bus Stop
- T Station
61A - Bus Route

IN OUT TOT
AM 22 90 112
PM 73 39 112

81

81, 82, 83, 19L

82, 83

81, 82, 83

81, 82, 83

81, 82, 83, 19L

81, 82, 83

30% transit

50%

IN OUT TOT
AM 11 45 56
PM 37 19 56

IN OUT TOT
AM 7 27 34
PM 22 12 34

10%

IN OUT TOT
AM 2 9 11
PM 7 4 11

IN OUT TOT
AM 2 9 11
PM 11

CONSOL

61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D

61A, 61B, 61C, 61D
71A, 71B, 71C, 71D

BIGELOW BLVD
AVE
CHATHAM
6TH AVE EXT
CROSSTOWN BLVD
WATSON
DIAMOND
FIFTH AVE
FORBES AVE
CRAWFORD
PROTECTORY
MILLER
FORSIDE PL
VINE
COLWE
R WAY

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	ctz
C.B.	cmj
REV	

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Twin Towers Suite 400 /4955 Steubenville Pike

(C)

LEGEND

- Bus Stop
- T Station
61A - Bus Route

IN OUT TOT
AM 17 70 87
PM 57 30 87

81

81, 82, 83, 19L

82, 83

81, 82

81, 82, 83

81, 82, 83, 19L

81, 82, 83

30% DT. 44

30% TRANSIT TOT
AM 26
PM 26

IN OUT TOT
10% AM 9
PM 9

CONSOL

61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D

IN OUT TOTAL
10% PM 9

61A, 61B, 61C, 61D
71A, 71B, 71C, 71D

BIGELOW BLVD
AVE
CHATHAM
6TH AVE EXT
CROSSTOWN BLVD
WATSON
FIFTH AVE
FORBES
CRAWFORD
PROTECTORY
MILLER
VINE
FORSIDE
COLWELL

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	ctz
C.B.	cal
REV.	

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(D)

IN OUT TOT
A 58 202 260
P 215 118 333

LEGEND
- Bus Stop
- T Station
61A - Bus Route

81
81, 82, 83, 19L
82, 83
81, 82, 83
81, 82, 83, 19L
81, 82, 83
CONSOL
61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D
61A, 61B, 61C, 61D
71A, 71B, 71C, 71D
BIGELOW BLVD
AVE
CHATHAM
CROSSTOWN
BLVD
6TH AVE EXT
WATSON
FIFTH AVE
CRAWFORD
PROTECTOR
MILLER
FORSIDE PL
VINE
COLWE
WAY
CENTRE
(34) 13
(19) 39
(33)
65(65)
30 TRANSIT
A=78
P=100
10' A=26
P=33
50' D.T.
A=130
P=166
10' A=26
P=43

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Trans Tower Suite 400 / 4955 Steubenville Pike

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	ctr
C.B.	cnj

E

LEGEND

- Bus Stop
- T Station
61A - Bus Route

TOT
AM 222
PM (222)

81

81, 82, 83, 19L

82, 83

81, 82, 83

81, 82, 83, 19L

81, 82, 83

61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D

61A, 61B, 61C, 61D
71A, 71B, 71C, 71D

BIGELOW BLVD
AVE
CHATHAM
CROSSTOWN BLVD
6TH AVE EXT
CENTRAL AVE
BEDFORD
CRAWFORD
PROTECTOR
MILLER
VINE
FORSIDE
CONSOL
COLWE
WATSON
FIFTH AVE
DIAMOND
EMBRES AVE

93 (93) 16 (16) 16 (16) 16 (16) (22)
55 (55)

30% A = 66
PE 66

D: A = 44
P: 111

D: A = 32
P = 22

D: A = 22
P = 22

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	dz
C.B.	mj

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Twin Towers Suite 400 / 4955 Steubenville Pike

(F)

AM 347
PM 723

LEGEND

- Bus Stop
- T Station
61A - Bus Route

81

82, 83

81, 82, 83, 19L

81, 82, 83

81, 82, 83

81, 82, 83, 19L

81, 82, 83

61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D

61A, 61B, 61C, 61D
71A, 71B, 71C, 71D

BIGELOW BLVD
AVE
CHATHAM
BEDFORD
CRAWFORD
PROTECTION
MILLER
VINE
FORSIDE
CONSOL
COLWE
WATSON
FIFTH AVE
DIAMOND
BLVD
R WAY

TRANSIT 30: A=103 P=217

10: A=35 P=72

10: A=35 P=72

50: A=174 P=1036 362

N

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Transportation Solutions for Today and Tomorrow
Twin Towers Suite 400 /4955 Steubenville Pike
Pittsburgh, PA 15205 Phone: (412) 490-0530

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	ctz
C.B.	cal
REV.	

(G)

LEGEND

A = 270
P = 386

- Bus Stop
- T Station
61A - Bus Route

81

81, 82, 83, 19L

82, 83

81, 82, 83

81, 82, 83, 19L

81, 82, 83

61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D

61A, 61B, 61C, 61D
71A, 71B, 71C, 71D

BIGELOW BLVD
AVE
CHATHAM
CROSSTOWN BLVD
6TH AVE EXT
CONSOL
WATSON
DIAMOND
CRAWFORD
PROTECTORY
MILLER
FORSIDE PL
VINE
COLWE
R WAY
FTH AVE

9%
A = 135
P = 195

30%
A = 81
P = 115

10%
A = 27
P = 39

10%
A = 27
P = 39

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	rlz
C.B.	rsl

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(H)

TRANSIT

A = 41
P = 44

LEGEND

- Bus Stop
- T Station
61A - Bus Route

81

81, 82, 83, 19L

82, 83

81, 82, 83

81, 82, 83

81, 82, 83, 19L

81, 82, 83

61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D

61A, 61B, 61C, 61D
71A, 71B, 71C, 71D

BIGELOW BLVD
AVE
BEDFORD
CRAWFORD
CENTRE AVE
CHATHAM
PROTECTORY
MILLER
FORSIDE PL
VINE
COLWE
CONSOL
6TH AVE EXT
CROSSTOWN BLVD
WATSON
FIFTH AVE
DIAMOND

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	dz
C.B.	pal

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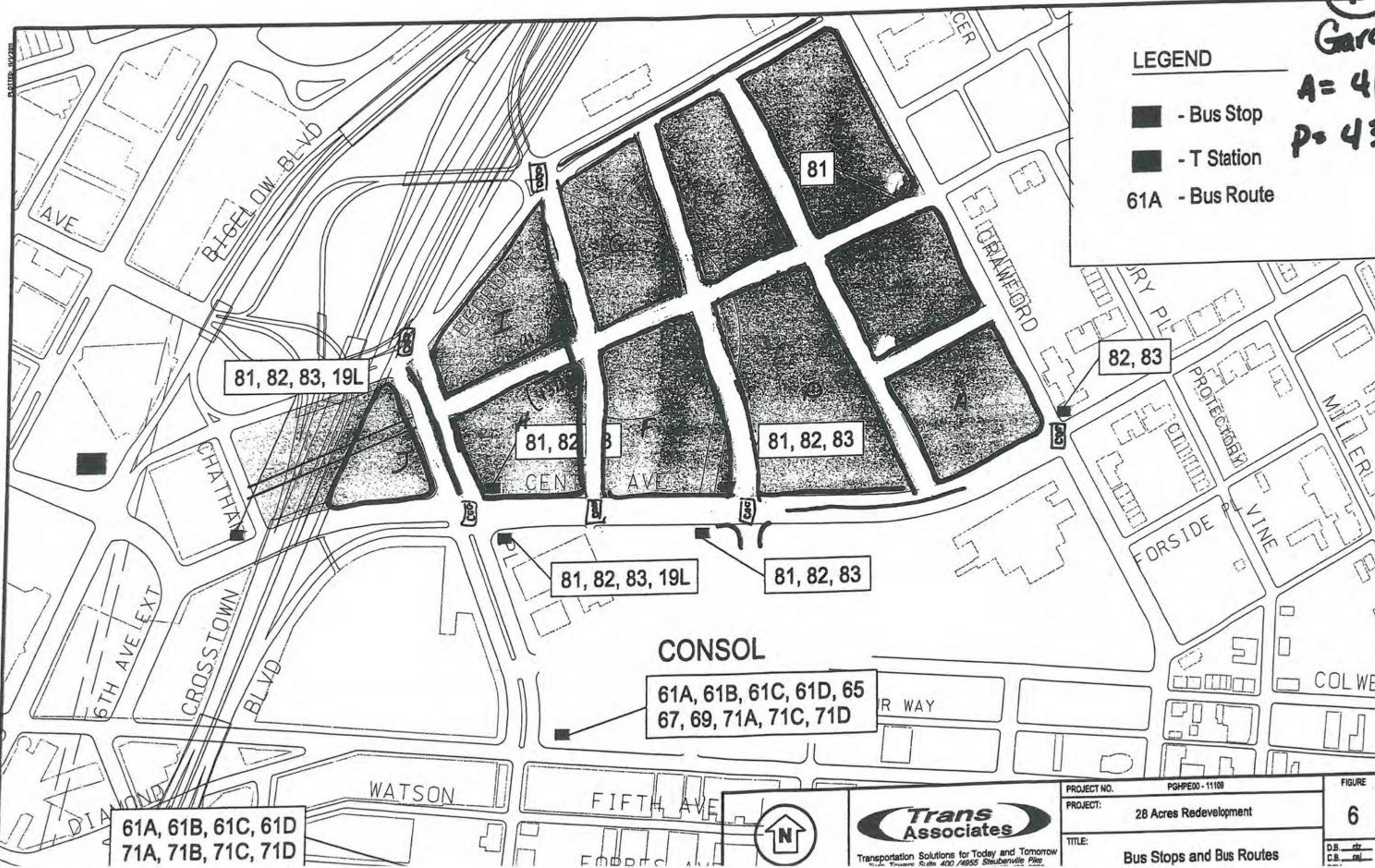
Twin Towers Suite 400 /4955 Steubenville Pike

(H)
Garage
A= 41
P= 437



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PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	rdz
C.B.	rdj

(J)

Garage to/from J

A=9

P=52

LEGEND

- Bus Stop
- T Station
61A - Bus Route

81

81, 82, 83, 19L

81, 82, 83

82, 83

81, 82, 83, 19L

81, 82, 83

61A, 61B, 61C, 61D, 65
67, 69, 71A, 71C, 71D

61A, 61B, 61C, 61D
71A, 71B, 71C, 71D

BIGELOW BLVD
AVE
BEDFORD
CENTRE AVE
CRAWFORD
CHATHAM
CROSSTOWN BLVD
6TH AVE EXT
CONSOL
WATSON
FIFTH AVE
PROTECTORY
MILLER
FORSIDE PL
VINE
COLWE
WAY

PROJECT NO.	PGHPE00 - 11109
PROJECT:	28 Acres Redevelopment
TITLE:	Bus Stops and Bus Routes
FIGURE	6
D.B.	ctz
C.B.	nsj

Trans Associates

Transportation Solutions for Today and Tomorrow

			A	B	C	D	E	F	G	H-T	H-G	J	total	Assume 25 internal peds	rounded to next 25
Centre/Wash	AM	SB	50	28	22	65	56	87	68	0	0	9	385	0	400
		WB	82	45	41	104	93	158	121	10	0	0	654	0	675
		NB	50	28	22	65	55	87	67	0	0	0	374	0	375
	PM	SB	67	28	22	65	56	181	97	0	0	52	568	0	575
		WB	106	45	41	147	93	325	173	44	0	0	974	0	975
		NB	67	28	22	65	55	181	96	0	0	0	514	0	525

			A	B	C	D	E	F	G	H-T	H-G	J	total	Assume 25 internal peds	rounded to next 25
Centre/ML	AM	EB	12	7	5	13	16	35	27	11	0	0	126	0	150
		SB	144	80	57	182	76	277	34	20	0	0	870	0	875
		WB	12	7	5	13	16	35	27	10	0	0	125	0	125
	PM	EB	16	7	5	19	16	72	38	44	0	0	217	0	225
		SB	196	80	57	231	76	651	49	88	0	0	1428	0	1450
		WB	16	7	5	19	16	72	38	44	0	0	217	0	225

			A	B	C	D	E	F	G	H-T	H-G	J	total	Assume 25 internal peds	rounded to next 25
Centre/Consol Dwy	AM	EB	12	7	5	39	16	25	14	10	0	0	128	0	150
		SB	168	94	57	234	36	10	6	0	0	0	605	0	625
		WB	12	7	5	26	22	10	13	0	0	0	95	0	100
		NB	12	7	5	0	0	25	14	0	0	0	63	0	75
	PM	EB	16	7	5	50	16	53	19	44	0	0	210	0	225
		SB	228	94	57	300	39	20	10	0	0	0	748	0	750
		WB	16	7	6	33	22	20	20	0	0	0	124	0	125
		NB	16	7	6	0	0	52	19	0	0	0	100	0	100

			A	B	C	D	E	F	G	H-T	H-G	J	total	Assume 25 internal peds	rounded to next 25
Centre/R-in R-out Dwy	AM	EB	0	0	0	0	0	0	0	0	0	0	0	0	0
		SB	180	101	19	0	0	0	0	0	0	0	300	0	300
		WB	0	0	0	0	0	0	0	0	0	0	0	0	0
	PM	EB	0	0	0	0	0	0	0	0	0	0	0	0	0
		SB	244	101	19	0	0	0	0	0	0	0	364	0	375
		WB	0	0	0	0	0	0	0	0	0	0	0	0	0

			A	B	C	D	E	F	G	H-T	H-G	J	total	Assume 25 internal peds	rounded to next 25
Internal/IGFH Block	AM	EB	0	0	5	0	28	0	121	0	41	0	195	25	225
		SB	0	0	5	0	28	0	121	0	0	0	154	25	200
		WB	0	0	5	0	28	0	122	0	0	0	155	25	200
		NB	0	0	5	0	14	0	61	0	0	0	80	25	125
	PM	EB	0	0	5	0	28	0	173	0	437	0	643	25	675
		SB	0	0	5	0	28	0	173	0	0	0	206	25	250
		WB	0	0	5	0	28	0	174	0	0	0	207	25	250
		N	0	0	5	0	14	0	87	0	0	0	106	25	150

			A	B	C	D	E	F	G	H-T	H-G	J	total	Assume 25 internal peds	rounded to next 25
Internal/GEDF Block	AM	EB	0	0	5	0	55	0	20	0	0	0	80	25	125
		SB	0	0	15	0	111	0	7	0	0	0	133	25	175
		WB	0	0	5	0	111	0	7	0	0	0	123	25	150
		NB	0	0	5	0	50	0	0	0	0	0	55	25	100
	PM	EB	0	0	5	0	55	0	29	0	0	0	89	25	125
		SB	0	0	15	0	111	0	10	0	0	0	136	25	175
		WB	0	0	5	0	111	0	10	0	0	0	126	25	175
		N	0	0	5	0	50	0	0	0	0	0	55	25	100

			A	B	C	D	E	F	G	H-T	H-G	J	total	Assume 25 internal peds	rounded to next 25
Internal/ECBD Block	AM	EB	0	0	19	0	0	0	0	0	0	0	19	25	50
		SB	0	0	39	0	0	0	0	0	0	0	39	25	75
		WB	0	0	39	0	0	0	0	0	0	0	39	25	75
		NB	0	0	20	0	0	0	0	0	0	0	20	25	50
	PM	EB	0	0	19	0	0	0	0	0	0	0	19	25	50
		SB	0	0	39	0	0	0	0	0	0	0	39	25	75
		WB	0	0	39	0	0	0	0	0	0	0	39	25	75
		N	0	0	20	0	0	0	0	0	0	0	20	25	50

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

PROJECT _____ Made By _____ Date
SUBJECT _____ Checked By _____ Date
_____ Sheet No. _____ of _____

APARTMENT:

PEDESTRIANS:

- ASSUME 2 peds per unit

  1,216 units * 2 = 2,432 pedestrians

- ASSUME half of the peds. utilize private vehicle

  2,432 peds / 2 = 1,216 peds.

- Breakdown of ped trips by block

	No. Units	%age	Peds
A	187	15.4%	187
B	112	9.2%	112
C	87	7.2%	87
D	245	20.1%	245
E	222	18.3%	222
F	116	9.5%	116
G	247	20.3%	247
	1,216	100.0%	1216

TE) ⇒ AM PEAK % (20% IN / 80% OUT)

	Enter	Exit
A	37	150
B	22	90
C	17	70
D	49	196
E	44	178
F	23	93
G	49	198

PM PEAK % (65% IN / 35%)

	Enter	Exit
A	122	65
B	73	39
C	57	30
D	159	86
E	144	78
F	75	41
G	161	86

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_____ Sheet No. _____ of _____

CINEPLEX:

· Assume an auto occupancy rate of 2.5 persons/vehicle

AM PEAK 0 trips.

PM PEAK

Enter = 90 × 2.5 = 225 peds

Exit = 72 × 2.5 = 180 peds

assume 50% drive & 50% transit

A

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SUBJECT _____ Checked By _____ Date
Sheet No. _____ of _____

OFFICE

- Assume an auto occupancy rate of 1.95 persons/vehicle
- Apply rate to trip gen. before reduction due to bicycle/public transit

AM PEAK HOUR

703 enter * 1.95 = 1,371 peds
96 exit * 1.95 = 187 peds
799 — 1,558

peds external to site (50%) due to transit/bicycle
686
94

- Breakdown Per Block

	sq. ft	%	Enter from garage	Enter from external	Exit garage	Exit ext.
F	119,400	19.5%	134	134	18	18
I	492,225	80.5%	551	552	75	76
	611,625	100%	685	686	93	94

PM PEAK HOUR

130 enter * 1.95 = 254 peds
634 exit * 1.95 = 1236 peds

peds. external to site (50%) due to transit/bicycle
127
618

- Breakdown Per Block

	sq. ft	%	Enter garage	Enter external	Exit garage	Exit external
F	119,400	19.5%	25	25	120	120
I	492,225	80.5%	102	102	498	498
	611,625	100%	127	127	618	618

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Sheet No. _____ of _____

RETAIL

- Assume an auto occupancy rate of 2.5 persons/vehicle.
- Apply rate to trip gen to/f reduction due to bicycle/transit.

AM PEAK

106 Enter * 2.5 = 265
68 exit * 2.5 = 170
174 — 435

PM PEAK

357 in * 2.5 = 1,643
371 out * 2.5 = 928
728 — 2,571

PEDS EXTERNAL TO SITE (50%)

AM
in = 133
out = 85
218

PM
in = 822
out = 464
1286

	SF	%	AM Enter Veh	AM Enter Transit	AM Exit Veh	AM Exit Transit
A	7,600	6.2%	8	8	5	5
D	8,360	6.8%	9	9	6	6
F	43,900	35.9%	47	48	31	31
G	13,200	10.8%	14	14	9	9
H	23,099	18.9%	25	25	16	16
I	21,147	17.3%	23	23	15	15
J	5,000	4.1%	6	6	3	3
	122,306	100%	132	133	85	85

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_____ Sheet No. _____ of _____

RETAIL (CONT'D)

	%	PM Enter Veh	PM Enter Transit	PM Exit Veh	PM Exit Transit
A	6.2%	51	51	29	29
D	6.8%	56	56	32	32
F	35.9%	294	295	167	167
G	10.8%	89	89	50	50
H	18.9%	155	155	88	88
I	17.3%	142	142	80	80
J	4.1%	34	34	18	18
		821	822	464	464

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_____ Sheet No. _____ of _____

Block	Div.	AM PEAK Enter	AM PEAK Exit	PM PEAK Enter	PM PEAK Exit
A	Res.	37	150	122	65
	Ret.	8	5	51	29
		45	155	173	94
B	Res.	22	90	73	39
C	Res	17	70	57	30
D	Res.	49	196	159	86
	Ret.	9	6	56	32
		58	202	215	118
E	Res.	44	178	144	78
F	Res.	23	93	75	41
	Ret.	48	31	295	167
	Offi.	134	18	25	120
		205	142	395	328
G	Res.	49	198	161	86
	Ret.	14	9	89	50
		63	207	250	136
H Transit	Ret.	25	16	113 155	88
	Movie	0	0		90

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PROJECT _____ Made By _____ Date

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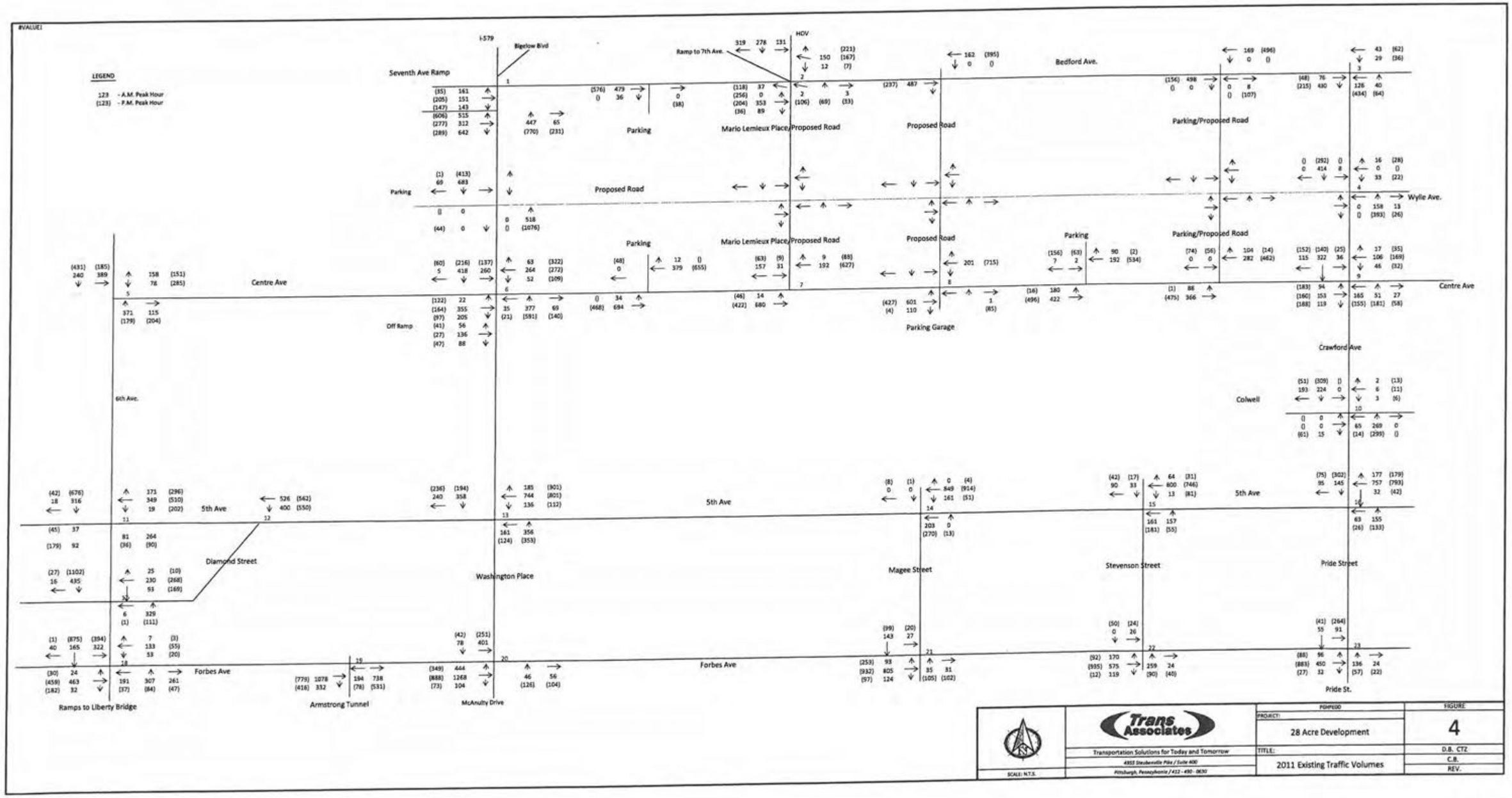
AM

Sheet No. AM

		Enter	Exit	Enter	Exit
# garage	Ret.	25	16	155	88
	Mvic	0	0	112	90
		25	16	267	170

I	off.	All will park & walk w/in Block			
	Ret.				
J	ret.	6	3	34	18

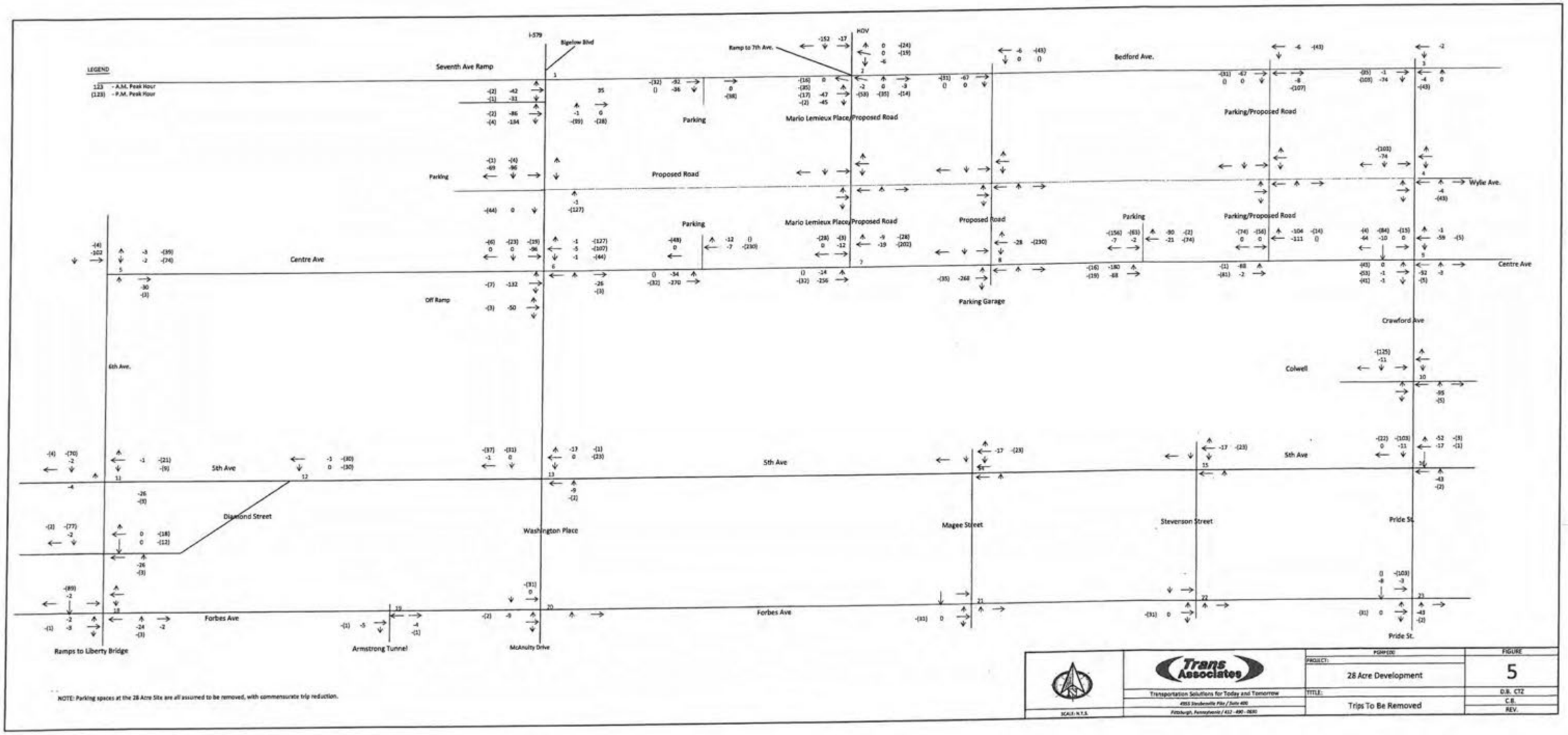
APPENDIX K



SCALE: N.T.S.	Trans Associates Transportation Solutions for Today and Tomorrow 4955 Steubenville Pike / Suite 400 Pittsburgh, Pennsylvania / 412 - 490 - 0630	PGHPEDD PROJECT: 28 Acre Development	FIGURE 4
		TITLE: 2011 Existing Traffic Volumes	D.B. CTZ C.B. REV.

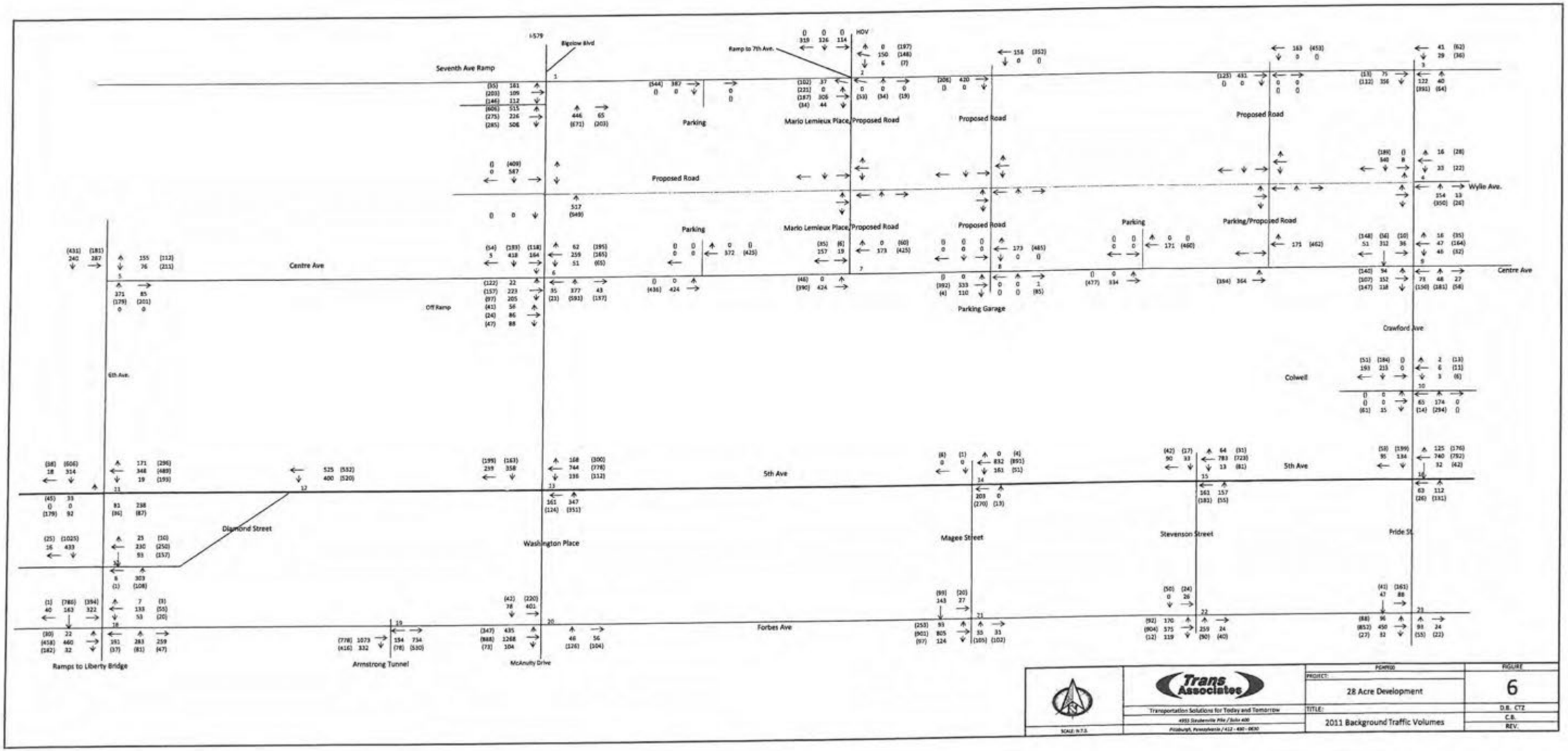
2011 EXISTING
PH.T.V.

A

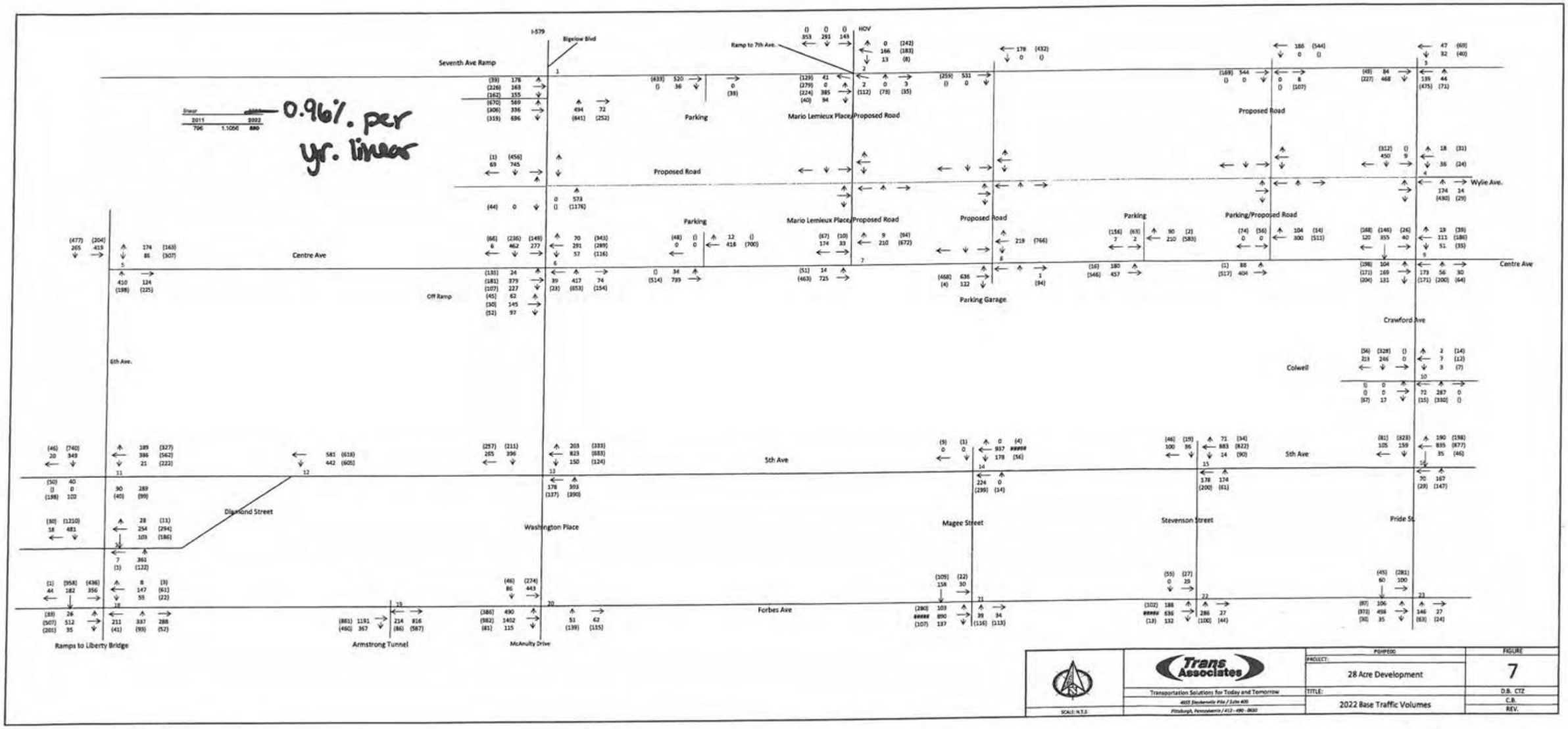


Existing Civic Arena Commuter Parking Trips (to be removed)

(B)



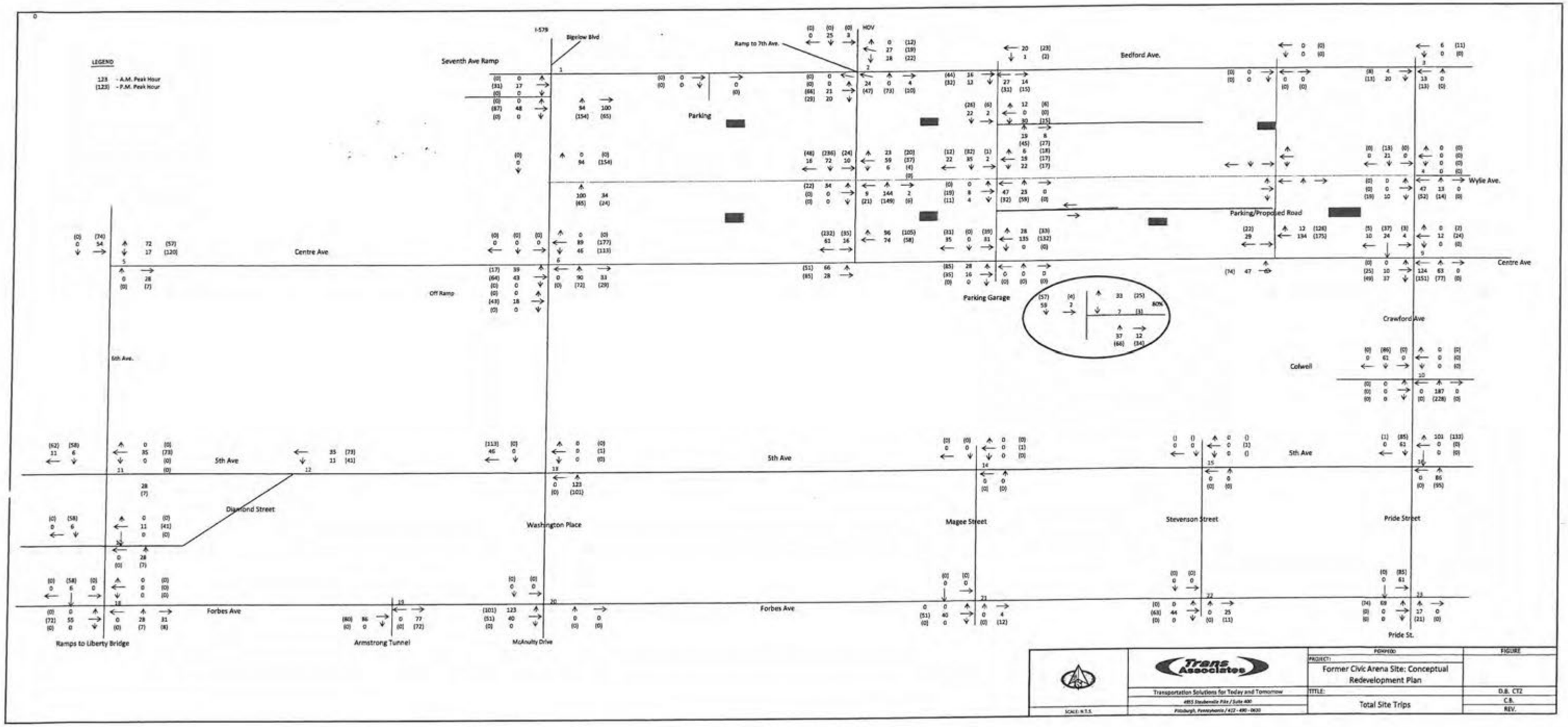
(A) + (B) = 2011 Background Traffic Volumes (C)



SCALE: N.T.S.	Trans Associates Transportation Solutions for Today and Tomorrow 4955 Steubenville Pike / Suite 400 Pittsburgh, Pennsylvania / 412 - 490 - 0630	PGHPE00 PROJECT: 28 Acre Development	FIGURE 7
		TITLE: 2022 Base Traffic Volumes	D.B. CTZ C.B. REV.

(C * Growth Rate (0.96% per) + B = 2022 BASE P.H.T.V. D

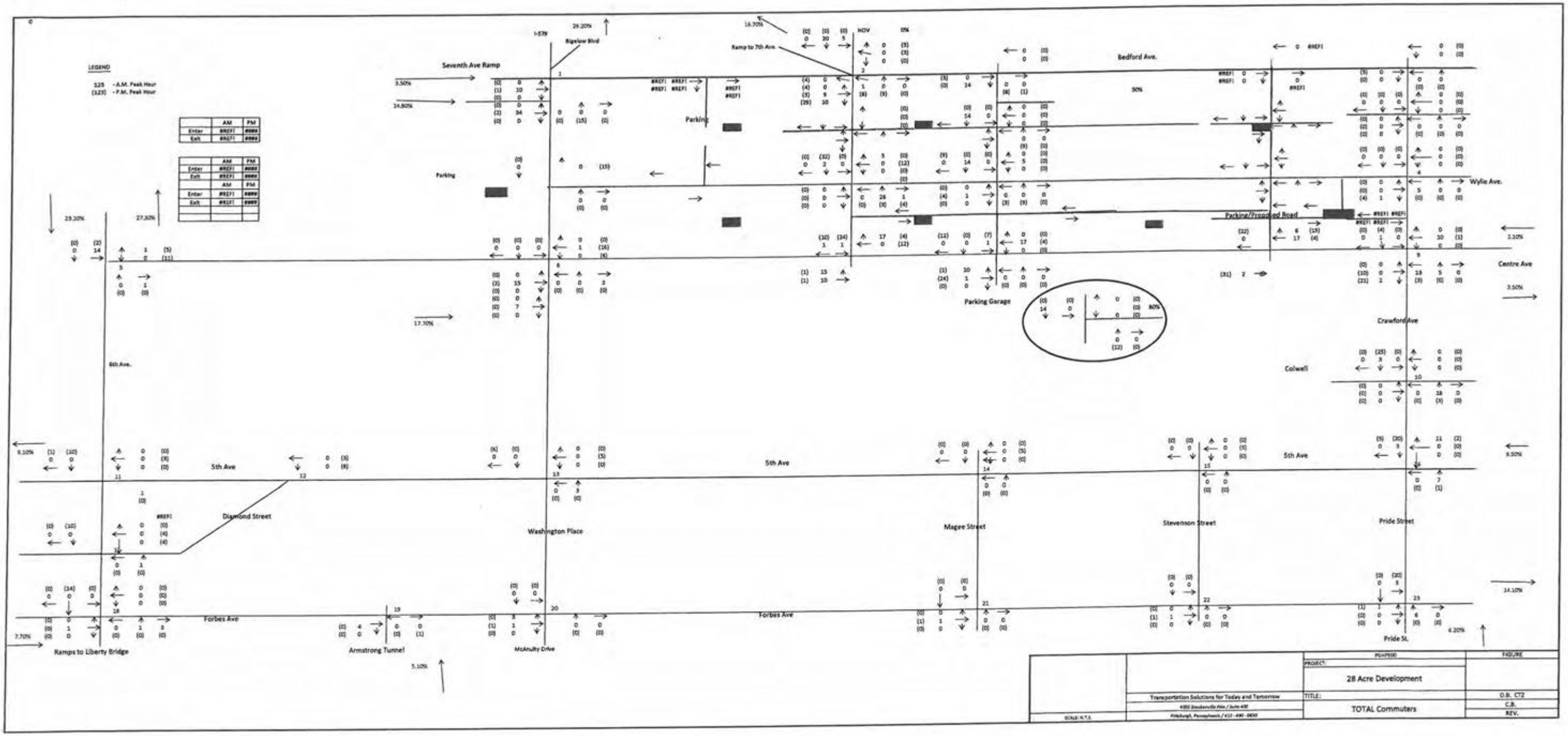
(2011 Background (Existing Civic Arena Commuter



Total Site Trips

(See Appendix I for Details)

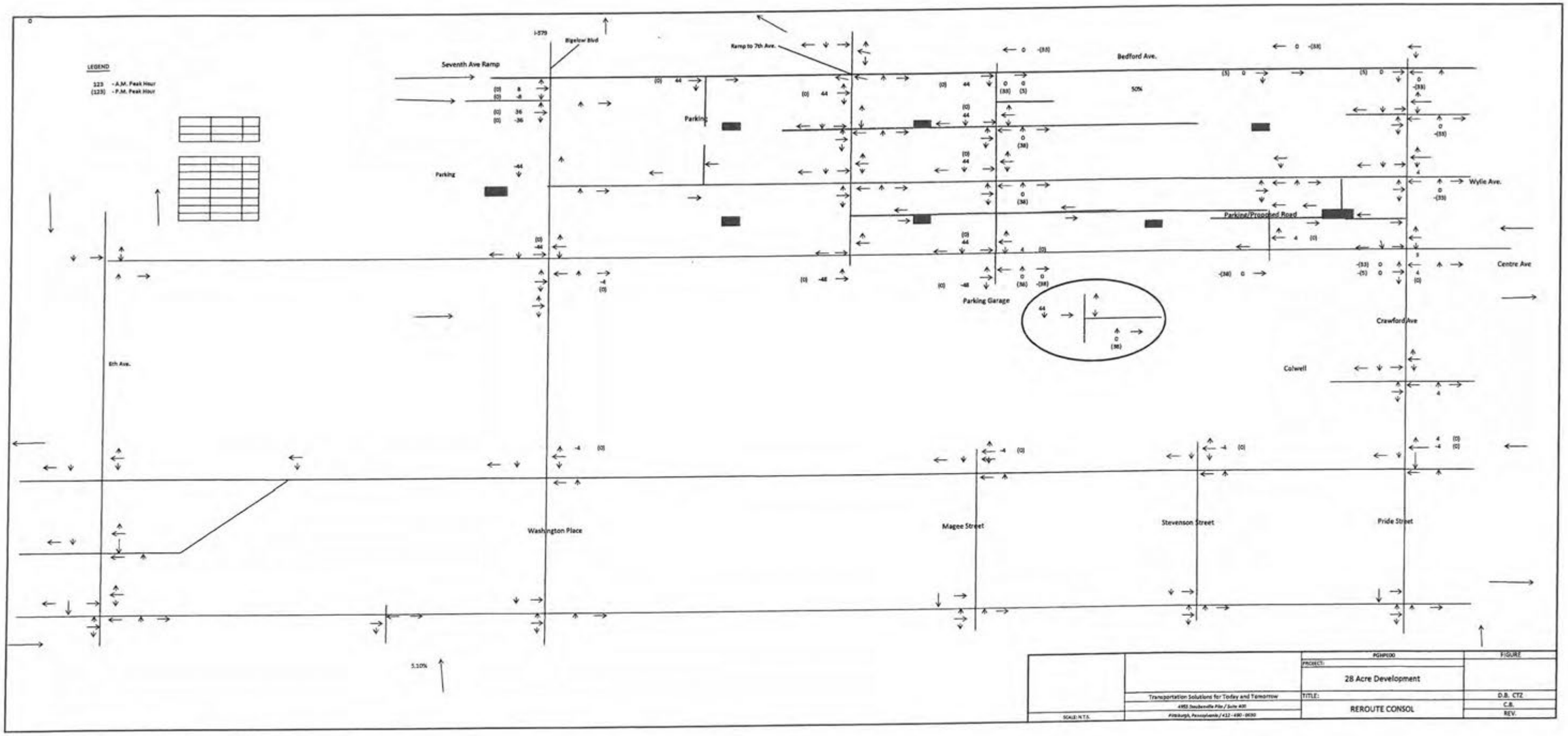
E



Total
Unassigned
Parking Trip
(commuter)

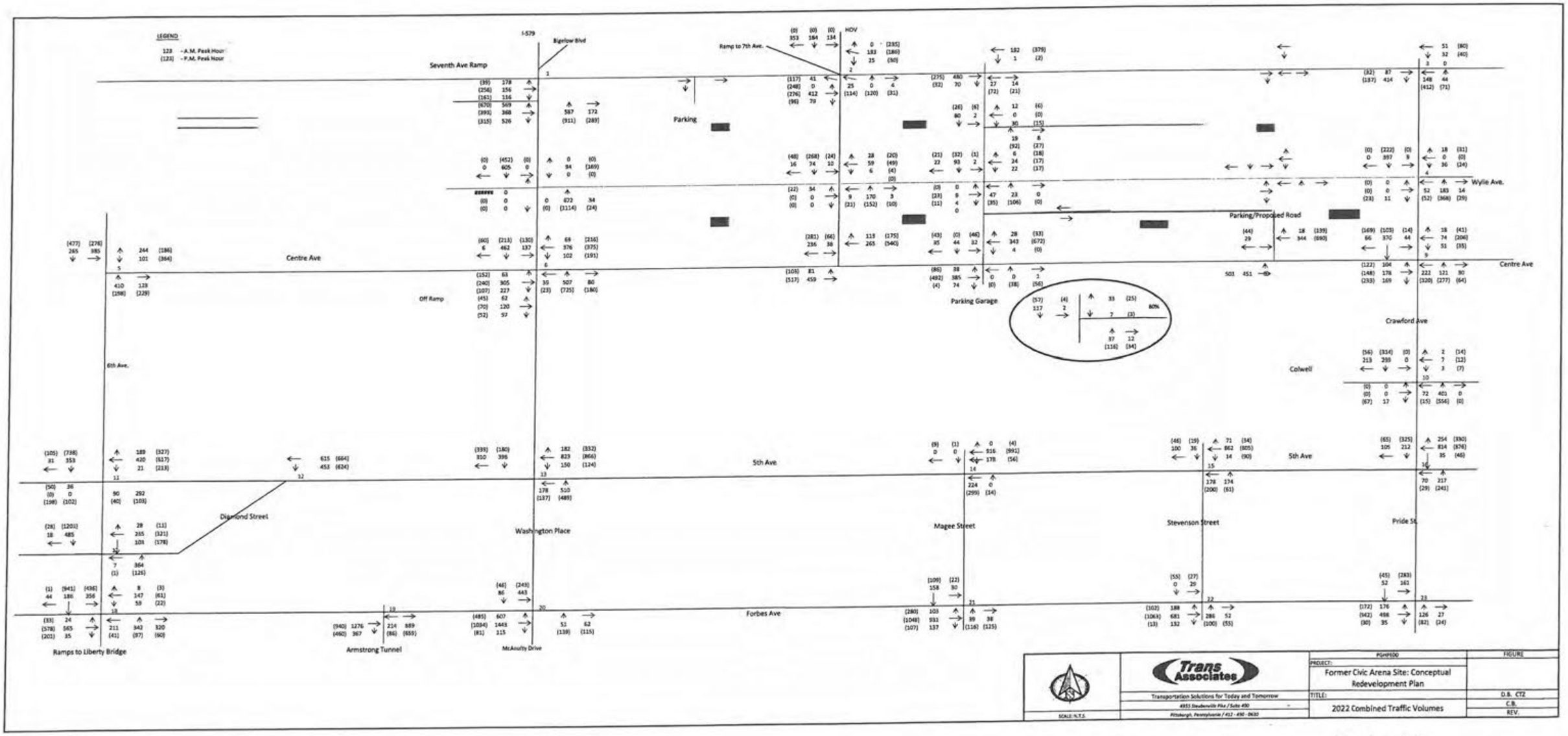
(F)

(see Appendix I for Details)



Rerouted
Existing Consol
Garage Trips

G



(D) + (B) + (E) + (F) + (G) = 2022 Combined P.H.T.V. (H)

APPENDIX L

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Lane Configurations												
Volume (vph)	25	0	4	134	184	0	353	41	412	79	25	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	16	13	12	12	12
Grade (%)		2%			2%				10%			-12%
Total Lost time (s)		6.0			6.0	6.0		6.0	6.0			6.0
Lane Util. Factor		1.00			1.00	1.00		1.00	0.95			0.95
Frpb, ped/bikes		0.99			1.00	1.00		1.00	0.98			1.00
Flpb, ped/bikes		1.00			1.00	1.00		1.00	1.00			1.00
Frt		0.97			1.00	0.85		1.00	0.98			1.00
Flt Protected		0.96			0.98	1.00		0.95	1.00			0.99
Satd. Flow (prot)		1331			1626	1411		1749	2988			3364
Flt Permitted		0.96			0.98	1.00		0.95	1.00			0.99
Satd. Flow (perm)		1331			1626	1411		1749	2988			3364
Peak-hour factor, PHF	0.50	0.43	0.25	0.84	0.81	0.80	0.80	0.69	0.84	0.92	0.75	0.80
Adj. Flow (vph)	50	0	16	160	227	0	441	59	490	86	33	241
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	11	0	0	0
Lane Group Flow (vph)	0	66	0	0	387	441	0	59	565	0	0	274
Confl. Peds. (#/hr)			24					22		52	52	
Heavy Vehicles (%)	3%	0%	0%	2%	2%	2%	2%	0%	2%	3%	0%	2%
Parking (#/hr)	0	0	0									
Turn Type	Split	NA		Split	NA	Perm		Split	NA		Split	NA
Protected Phases	9	9		10	10			2	2		4	4
Permitted Phases						10						
Actuated Green, G (s)		9.3			28.4	28.4		20.3	20.3			12.7
Effective Green, g (s)		9.3			28.4	28.4		20.3	20.3			12.7
Actuated g/C Ratio		0.10			0.30	0.30		0.21	0.21			0.13
Clearance Time (s)		6.0			6.0	6.0		6.0	6.0			6.0
Vehicle Extension (s)		4.0			3.0	3.0		4.0	4.0			3.0
Lane Grp Cap (vph)		130			487	423		374	640			451
v/s Ratio Prot		c0.05			0.24			0.03	c0.19			c0.08
v/s Ratio Perm						c0.31						
v/c Ratio		0.51			0.79	1.04		0.16	0.88			0.61
Uniform Delay, d1		40.5			30.5	33.2		30.2	36.0			38.7
Progression Factor		1.00			1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2		4.2			8.7	55.3		0.3	13.9			2.3
Delay (s)		44.7			39.2	88.4		30.5	50.0			41.0
Level of Service		D			D	F		C	D			D
Approach Delay (s)		44.7			65.4				48.2			41.0
Approach LOS		D			E				D			D

Intersection Summary

HCM 2000 Control Delay	54.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	24.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	87	414	32	51	148	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.96	
Flt Protected	1.00	1.00		0.98	0.97	
Satd. Flow (prot)	1900	1530		1788	1670	
Flt Permitted	1.00	1.00		0.90	0.97	
Satd. Flow (perm)	1900	1530		1634	1670	
Peak-hour factor, PHF	0.72	0.84	0.89	0.74	0.92	0.59
Adj. Flow (vph)	121	493	36	69	161	75
RTOR Reduction (vph)	0	247	0	0	34	0
Lane Group Flow (vph)	121	247	0	105	202	0
Confl. Peds. (#/hr)		9	9			
Heavy Vehicles (%)	0%	2%	8%	2%	4%	8%
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	25.0	25.0		25.0	15.0	
Effective Green, g (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	950	765		817	501	
v/s Ratio Prot	0.06				c0.12	
v/s Ratio Perm		c0.16		0.06		
v/c Ratio	0.13	0.32		0.13	0.40	
Uniform Delay, d1	6.7	7.5		6.7	13.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.1		0.3	2.4	
Delay (s)	7.0	8.6		7.0	16.4	
Level of Service	A	A		A	B	
Approach Delay (s)	8.2			7.0	16.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	11	36	0	18	52	183	14	9	397	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.52	0.90	0.57	0.90	0.81	0.41	0.67	0.82	0.90
Hourly flow rate (vph)	0	0	12	69	0	32	58	226	34	13	484	0
Pedestrians					8			3			4	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								705			559	
pX, platoon unblocked												
vC, conflicting volume	905	895	487	893	878	255	484			268		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	905	895	487	893	878	255	484			268		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	71	100	96	95			99		
cM capacity (veh/h)	233	261	579	240	267	781	1079			1299		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	101	318	498
Volume Left	0	69	58	13
Volume Right	12	32	34	0
cSH	579	306	1079	1299
Volume to Capacity	0.02	0.33	0.05	0.01
Queue Length 95th (ft)	2	35	4	1
Control Delay (s)	11.4	22.4	2.0	0.3
Lane LOS	B	C	A	A
Approach Delay (s)	11.4	22.4	2.0	0.3
Approach LOS	B	C		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	101	244	410	123	385	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frpb, ped/bikes	0.69	0.66	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.98	1.00
Frt	0.92	0.85	0.97		1.00	1.00
Flt Protected	0.98	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2269	997	3302		1732	3539
Flt Permitted	0.98	1.00	1.00		0.43	1.00
Satd. Flow (perm)	2269	997	3302		780	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	112	271	456	137	428	294
RTOR Reduction (vph)	105	104	40	0	0	0
Lane Group Flow (vph)	143	31	553	0	428	294
Confl. Peds. (#/hr)	145	375		37	37	
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	16.0	16.0	42.0		42.0	42.0
Effective Green, g (s)	16.0	16.0	42.0		42.0	42.0
Actuated g/C Ratio	0.23	0.23	0.60		0.60	0.60
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Lane Grp Cap (vph)	518	227	1981		468	2123
v/s Ratio Prot	c0.06		0.17			0.08
v/s Ratio Perm		0.03			c0.55	
v/c Ratio	0.28	0.14	0.28		0.91	0.14
Uniform Delay, d1	22.2	21.5	6.7		12.4	6.1
Progression Factor	1.00	1.00	0.44		1.00	1.00
Incremental Delay, d2	1.3	1.2	0.2		25.0	0.1
Delay (s)	23.6	22.7	3.2		37.4	6.2
Level of Service	C	C	A		D	A
Approach Delay (s)	23.3		3.2			24.7
Approach LOS	C		A			C

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	63	305	227	102	376	69	39	507	80	137	462	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Total Lost time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lane Util. Factor		0.95		1.00	0.95			0.91			0.95	1.00
Frpb, ped/bikes		0.85		1.00	0.88			0.94			1.00	0.69
Flpb, ped/bikes		0.98		0.91	1.00			1.00			0.97	1.00
Frt		0.94		1.00	0.97			0.98			1.00	0.85
Flt Protected		0.99		0.95	1.00			1.00			0.99	1.00
Satd. Flow (prot)		2615		1310	2561			3738			3073	993
Flt Permitted		0.74		0.22	1.00			0.79			0.62	1.00
Satd. Flow (perm)		1949		309	2561			2975			1924	993
Peak-hour factor, PHF	0.69	0.94	0.80	0.83	0.94	0.60	0.86	0.96	0.74	0.88	0.95	0.63
Adj. Flow (vph)	91	324	284	123	400	115	45	528	108	156	486	10
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	699	0	123	515	0	0	681	0	0	642	10
Confl. Peds. (#/hr)	400		375	375		400	126		675	675		126
Confl. Bikes (#/hr)			141			552			18			266
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	9%	9%	9%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)		27.0		27.0	27.0			25.0			25.0	25.0
Effective Green, g (s)		28.5		27.0	27.0			25.0			25.0	25.0
Actuated g/C Ratio		0.32		0.30	0.30			0.28			0.28	0.28
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	6.0
Lane Grp Cap (vph)		617		92	768			826			534	275
v/s Ratio Prot					0.20							
v/s Ratio Perm		0.36		c0.40				0.23			c0.33	0.01
v/c Ratio		1.13		1.34	0.67			0.82			1.20	0.04
Uniform Delay, d1		30.8		31.5	27.6			30.4			32.5	23.7
Progression Factor		1.00		1.00	1.00			1.00			0.52	0.40
Incremental Delay, d2		78.7		208.2	4.6			9.2			102.2	0.2
Delay (s)		109.5		239.7	32.2			39.6			119.0	9.7
Level of Service		F		F	C			D			F	A
Approach Delay (s)		109.5			72.2			39.6			117.3	
Approach LOS		F			E			D			F	

Intersection Summary

HCM 2000 Control Delay	85.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	123.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NEL	NER	NER2
Lane Configurations			
Volume (vph)	62	120	97
Ideal Flow (vphpl)	1900	1900	1900
Lane Width	12	12	12
Grade (%)	7%		
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	1.00	0.95	
Frpb, ped/bikes	0.91	0.53	
Flpb, ped/bikes	1.00	1.00	
Frt	0.91	0.85	
Flt Protected	0.98	1.00	
Satd. Flow (prot)	1318	702	
Flt Permitted	0.98	1.00	
Satd. Flow (perm)	1318	702	
Peak-hour factor, PHF	0.88	0.73	0.79
Adj. Flow (vph)	70	164	123
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	182	175	0
Confl. Peds. (#/hr)	400		375
Confl. Bikes (#/hr)		141	141
Heavy Vehicles (%)	1%	1%	1%
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Actuated Green, G (s)	20.0	20.0	
Effective Green, g (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
Clearance Time (s)	6.0	6.0	
Lane Grp Cap (vph)	292	156	
v/s Ratio Prot	0.14		
v/s Ratio Perm		c0.25	
v/c Ratio	0.62	1.12	
Uniform Delay, d1	31.6	35.0	
Progression Factor	1.00	1.00	
Incremental Delay, d2	9.6	108.5	
Delay (s)	41.2	143.5	
Level of Service	D	F	
Approach Delay (s)	91.4		
Approach LOS	F		

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	81	459	265	113	38	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)		4.0	4.0		4.0	5.5
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.79		1.00	0.81
Flpb, ped/bikes		0.94	1.00		1.00	1.00
Frt		1.00	0.96		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		2689	2115		1399	1010
Flt Permitted		0.82	1.00		0.95	1.00
Satd. Flow (perm)		2218	2115		1399	1010
Peak-hour factor, PHF	0.83	0.82	0.87	0.88	0.54	0.66
Adj. Flow (vph)	98	560	305	128	70	358
RTOR Reduction (vph)	0	0	56	0	0	0
Lane Group Flow (vph)	0	658	377	0	70	358
Confl. Peds. (#/hr)	875			875	125	150
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	Perm	NA	NA		NA	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		38.0	38.0		21.0	21.0
Effective Green, g (s)		39.5	39.5		22.5	21.0
Actuated g/C Ratio		0.56	0.56		0.32	0.30
Clearance Time (s)		5.5	5.5		5.5	5.5
Lane Grp Cap (vph)		1251	1193		449	303
v/s Ratio Prot			0.18		0.05	
v/s Ratio Perm		c0.30				c0.35
v/c Ratio		0.53	0.32		0.16	1.18
Uniform Delay, d1		9.4	8.1		17.0	24.5
Progression Factor		1.00	0.37		1.00	1.00
Incremental Delay, d2		1.6	0.6		0.7	110.3
Delay (s)		11.0	3.6		17.7	134.8
Level of Service		B	A		B	F
Approach Delay (s)		11.0	3.6		115.7	
Approach LOS		B	A		F	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	385	74	4	343	28	0	0	1	32	44	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	42	428	82	4	381	31	0	0	1	36	49	39
Pedestrians		150			100			75			625	
Lane Width (ft)		11.0			11.0			12.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		11			8			6			48	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		427			622							
pX, platoon unblocked												
vC, conflicting volume	1037			585			1041	1674	430	1430	1700	981
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1037			585			1041	1674	430	1430	1700	981
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			0	100	100	0	0	66
cM capacity (veh/h)	348			924			0	40	496	25	39	115

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	256	296	195	222	1	123
Volume Left	42	0	4	0	0	36
Volume Right	0	82	0	31	1	39
cSH	348	1700	924	1700	496	41
Volume to Capacity	0.12	0.17	0.00	0.13	0.00	3.01
Queue Length 95th (ft)	10	0	0	0	0	Err
Control Delay (s)	4.7	0.0	0.3	0.0	12.3	Err
Lane LOS	A		A		B	F
Approach Delay (s)	2.2		0.1		12.3	Err
Approach LOS					B	F

Intersection Summary			
Average Delay	1129.1		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	178	169	51	74	18	222	121	30	44	370	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	12	12	15	12	12	14	12
Total Lost time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes		1.00	0.93	1.00	0.97			1.00			0.99	
Flpb, ped/bikes		0.96	1.00	0.97	1.00			0.99			1.00	
Frt		1.00	0.85	1.00	0.97			0.99			0.98	
Flt Protected		0.98	1.00	0.95	1.00			0.97			0.99	
Satd. Flow (prot)		1614	1355	1569	1603			1671			1617	
Flt Permitted		0.84	1.00	0.44	1.00			0.50			0.91	
Satd. Flow (perm)		1378	1355	726	1603			861			1474	
Peak-hour factor, PHF	0.93	0.89	0.87	0.86	0.82	0.85	0.87	0.90	0.83	0.63	0.88	0.77
Adj. Flow (vph)	112	200	194	59	90	21	255	134	36	70	420	86
RTOR Reduction (vph)	0	0	133	0	12	0	0	5	0	0	9	0
Lane Group Flow (vph)	0	312	61	59	99	0	0	420	0	0	567	0
Confl. Peds. (#/hr)	64		24	24		64	21		15	15		21
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	9%	9%	9%
Parking (#/hr)								0			0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)		22.0	22.0	22.0	22.0			38.0			38.0	
Effective Green, g (s)		22.0	22.0	22.0	22.0			38.0			38.0	
Actuated g/C Ratio		0.31	0.31	0.31	0.31			0.54			0.54	
Clearance Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Grp Cap (vph)		433	425	228	503			467			800	
v/s Ratio Prot					0.06							
v/s Ratio Perm		c0.23	0.05	0.08				c0.49			0.38	
v/c Ratio		0.72	0.14	0.26	0.20			0.90			0.71	
Uniform Delay, d1		21.3	17.2	17.9	17.5			14.3			11.9	
Progression Factor		1.54	3.92	1.00	1.00			1.00			1.00	
Incremental Delay, d2		9.3	0.7	2.7	0.9			23.0			5.3	
Delay (s)		42.1	68.1	20.6	18.4			37.3			17.1	
Level of Service		D	E	C	B			D			B	
Approach Delay (s)		52.1			19.2			37.3			17.1	
Approach LOS		D			B			D			B	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	17	3	7	2	72	401	0	0	299	213
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Hourly flow rate (vph)	0	0	20	12	9	4	112	508	0	0	348	251
Pedestrians		52			16			20			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			1			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.88	0.88		0.88	0.88	0.88				0.88		
vC, conflicting volume	1285	1274	545	1262	1399	543	650			524		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1256	1242	545	1229	1385	411	650			389		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	89	91	99	88			100		
cM capacity (veh/h)	93	127	510	111	105	551	905			1024		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	25	620	598
Volume Left	0	12	112	0
Volume Right	20	4	0	251
cSH	510	124	905	1024
Volume to Capacity	0.04	0.20	0.12	0.00
Queue Length 95th (ft)	3	18	11	0
Control Delay (s)	12.4	41.4	3.1	0.0
Lane LOS	B	E	A	
Approach Delay (s)	12.4	41.4	3.1	0.0
Approach LOS	B	E		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	0	102	21	420	189	90	292	0	0	353	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	12	12	11	12	12	12	12
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes		0.90		1.00	0.89			1.00			0.99	
Flpb, ped/bikes		0.98		0.91	1.00			0.99			1.00	
Frt		0.90		1.00	0.96			1.00			0.99	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1146		1235	1249			3058			2924	
Flt Permitted		0.18		0.68	1.00			0.75			1.00	
Satd. Flow (perm)		212		881	1249			2312			2924	
Peak-hour factor, PHF	0.77	0.92	0.82	0.75	0.82	0.97	0.88	0.96	0.92	0.92	0.89	0.75
Adj. Flow (vph)	47	0	124	28	512	195	102	304	0	0	397	41
RTOR Reduction (vph)	0	83	0	0	19	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	88	0	28	688	0	0	406	0	0	438	0
Confl. Peds. (#/hr)	880		138	138		880	49		130	130		49
Heavy Vehicles (%)	3%	2%	28%	0%	5%	19%	0%	1%	2%	2%	8%	17%
Parking (#/hr)				0								
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.0		23.0	23.0			35.0			35.0	
Effective Green, g (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)		69		289	410			1156			1462	
v/s Ratio Prot					c0.55						0.15	
v/s Ratio Perm		0.41		0.03				c0.18				
v/c Ratio		1.27		0.10	1.68			0.35			0.30	
Uniform Delay, d1		23.5		16.3	23.5			10.6			10.3	
Progression Factor		1.00		1.00	1.00			1.71			0.80	
Incremental Delay, d2		197.7		0.7	315.1			0.8			0.5	
Delay (s)		221.2		17.0	338.6			19.0			8.8	
Level of Service		F		B	F			B			A	
Approach Delay (s)		221.2			326.4			19.0			8.8	
Approach LOS		F			F			B			A	

Intersection Summary

HCM 2000 Control Delay	165.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	124.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	453	615	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	533	647	0	0
Pedestrians					44	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			44		1434	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		1434	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			66		100	100
cM capacity (veh/h)			1563		82	1017

Direction, Lane #	WB 1	WB 2
Volume Total	749	432
Volume Left	533	0
Volume Right	0	0
cSH	1563	1700
Volume to Capacity	0.34	0.25
Queue Length 95th (ft)	38	0
Control Delay (s)	7.0	0.0
Lane LOS	A	
Approach Delay (s)	4.4	
Approach LOS		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	823	182	178	510	0	0	396	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Total Lost time (s)					7.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			1.00	0.88
Frpb, ped/bikes					0.98		1.00	1.00			1.00	0.93
Flpb, ped/bikes					0.98		0.99	1.00			1.00	1.00
Frt					0.98		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					2586		1538	1635			1735	2421
Flt Permitted					0.99		0.24	1.00			1.00	1.00
Satd. Flow (perm)					2586		385	1635			1735	2421
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.88	0.93	0.85	0.82	0.92	0.92	0.75	0.92
Adj. Flow (vph)	0	0	0	190	935	196	209	622	0	0	528	337
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1303	0	209	622	0	0	528	337
Confl. Peds. (#/hr)				105		173	29					29
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					37.0		30.0	30.0			30.0	30.0
Effective Green, g (s)					37.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio					0.46		0.38	0.38			0.38	0.38
Clearance Time (s)					7.0		6.0	6.0			6.0	6.0
Lane Grp Cap (vph)					1196		144	613			650	907
v/s Ratio Prot								0.38			0.30	
v/s Ratio Perm					0.50		c0.54					0.14
v/c Ratio					1.09		1.45	1.01			0.81	0.37
Uniform Delay, d1					21.5		25.0	25.0			22.5	18.2
Progression Factor					0.69		0.73	0.72			1.00	1.00
Incremental Delay, d2					51.2		223.4	30.7			10.6	1.2
Delay (s)					66.0		241.5	48.8			33.1	19.3
Level of Service					E		F	D			C	B
Approach Delay (s)		0.0			66.0			97.3			27.7	
Approach LOS		A			E			F			C	

Intersection Summary

HCM 2000 Control Delay	63.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	916	0	224	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Total Lost time (s)					5.0			5.0				
Lane Util. Factor					0.95			1.00				
Frpb, ped/bikes					1.00			1.00				
Flpb, ped/bikes					0.97			0.98				
Frt					1.00			1.00				
Flt Protected					0.99			0.95				
Satd. Flow (prot)					3080			1663				
Flt Permitted					0.99			0.76				
Satd. Flow (perm)					3080			1326				
Peak-hour factor, PHF	0.92	0.92	0.92	0.66	0.97	0.50	0.80	0.90	0.92	0.92	0.25	0.25
Adj. Flow (vph)	0	0	0	270	944	0	280	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1214	0	0	280	0	0	0	0
Confl. Peds. (#/hr)				46		108	15		8	8		15
Heavy Vehicles (%)	2%	2%	2%	0%	9%	0%	1%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA				
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					43.0			27.0				
Effective Green, g (s)					43.0			27.0				
Actuated g/C Ratio					0.54			0.34				
Clearance Time (s)					5.0			5.0				
Lane Grp Cap (vph)					1655			447				
v/s Ratio Prot												
v/s Ratio Perm					0.39			c0.21				
v/c Ratio					0.73			0.63				
Uniform Delay, d1					14.1			22.3				
Progression Factor					0.46			0.75				
Incremental Delay, d2					2.1			5.8				
Delay (s)					8.7			22.5				
Level of Service					A			C				
Approach Delay (s)		0.0			8.7			22.5			0.0	
Approach LOS		A			A			C			A	

Intersection Summary

HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	862	71	178	174	0	0	36	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.99			1.00			0.98	
Flpb, ped/bikes					1.00			0.99			1.00	
Frt					0.98			1.00			0.90	
Flt Protected					1.00			0.98			1.00	
Satd. Flow (prot)					2945			1792			1665	
Flt Permitted					1.00			0.76			1.00	
Satd. Flow (perm)					2945			1393			1665	
Peak-hour factor, PHF	0.92	0.92	0.92	0.60	0.95	0.68	0.91	0.85	0.92	0.92	0.82	0.79
Adj. Flow (vph)	0	0	0	23	907	104	196	205	0	0	44	127
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	40	0
Lane Group Flow (vph)	0	0	0	0	1024	0	0	401	0	0	131	0
Confl. Peds. (#/hr)				16		44	9					9
Heavy Vehicles (%)	2%	2%	2%	0%	12%	5%	6%	0%	2%	2%	3%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					38.0			32.0			32.0	
Effective Green, g (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1398			557			666	
v/s Ratio Prot											0.08	
v/s Ratio Perm					0.35			c0.29				
v/c Ratio					0.73			0.72			0.20	
Uniform Delay, d1					16.9			20.2			15.6	
Progression Factor					0.50			0.96			1.00	
Incremental Delay, d2					2.1			6.1			0.7	
Delay (s)					10.5			25.4			16.3	
Level of Service					B			C			B	
Approach Delay (s)		0.0			10.5			25.4			16.3	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	35	814	254	70	217	0	0	212	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.97			1.00			0.99	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.97			1.00			0.96	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					2878			1798			1943	
Flt Permitted					1.00			0.63			1.00	
Satd. Flow (perm)					2878			1152			1943	
Peak-hour factor, PHF	0.92	0.92	0.92	0.71	0.94	0.95	0.71	0.79	0.92	0.79	0.79	0.88
Adj. Flow (vph)	0	0	0	49	866	267	99	275	0	0	268	119
RTOR Reduction (vph)	0	0	0	0	34	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	0	1148	0	0	374	0	0	367	0
Confl. Peds. (#/hr)				25		45	22		40	40		22
Heavy Vehicles (%)	2%	2%	2%	0%	18%	0%	0%	6%	2%	2%	16%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					40.0			30.0			30.0	
Effective Green, g (s)					40.0			30.0			30.0	
Actuated g/C Ratio					0.50			0.38			0.38	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1439			432			728	
v/s Ratio Prot											0.19	
v/s Ratio Perm					0.40			c0.32				
v/c Ratio					0.80			0.87			0.50	
Uniform Delay, d1					16.6			23.1			19.3	
Progression Factor					1.00			1.27			1.00	
Incremental Delay, d2					4.7			18.7			2.5	
Delay (s)					21.3			48.1			21.8	
Level of Service					C			D			C	
Approach Delay (s)		0.0			21.3			48.1			21.8	
Approach LOS		A			C			D			C	

Intersection Summary

HCM 2000 Control Delay	26.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	103	265	28	7	364	0	0	485	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)				5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes				1.00	1.00	0.95		1.00			1.00	
Flpb, ped/bikes				0.99	1.00	1.00		1.00			1.00	
Frt				1.00	1.00	0.85		1.00			0.99	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1440	1580	1290		3207			2915	
Flt Permitted				0.95	1.00	1.00		0.95			1.00	
Satd. Flow (perm)				1440	1580	1290		3072			2915	
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.78	0.63	0.30	0.96	0.25	0.92	0.92	0.80
Adj. Flow (vph)	0	0	0	118	340	44	23	379	0	0	527	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	118	340	44	0	402	0	0	549	0
Confl. Peds. (#/hr)				13		40	21					21
Heavy Vehicles (%)	2%	2%	2%	4%	1%	0%	0%	1%	2%	2%	11%	0%
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Actuated Green, G (s)				22.5	22.5	22.5		33.5			36.5	
Effective Green, g (s)				22.5	22.5	22.5		33.5			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.48			0.52	
Clearance Time (s)				5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Lane Grp Cap (vph)				462	507	414		1519			1519	
v/s Ratio Prot					c0.22			0.10			c0.19	
v/s Ratio Perm				0.08		0.03		0.03				
v/c Ratio				0.26	0.67	0.11		0.26			0.36	
Uniform Delay, d1				17.6	20.5	16.7		10.9			9.9	
Progression Factor				1.00	1.00	1.00		0.55			0.88	
Incremental Delay, d2				0.1	2.7	0.0		0.0			0.6	
Delay (s)				17.7	23.3	16.7		6.0			9.2	
Level of Service				B	C	B		A			A	
Approach Delay (s)		0.0			21.4			6.0			9.2	
Approach LOS		A			C			A			A	

Intersection Summary

HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	565	35	59	147	8	211	342	320	356	186	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	11	12	12	11	12	12	12	12
Total Lost time (s)		5.5	5.5		5.5			5.5			5.5	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.89		1.00			0.99			1.00	
Flpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	
Frt		1.00	0.85		0.99			0.95			0.98	
Flt Protected		1.00	1.00		0.99			0.99			0.97	
Satd. Flow (prot)		1628	1248		1579			2843			2888	
Flt Permitted		0.96	1.00		0.20			0.67			0.58	
Satd. Flow (perm)		1575	1248		316			1931			1728	
Peak-hour factor, PHF	0.60	0.96	0.80	0.90	0.90	0.90	0.87	0.94	0.92	0.95	0.85	0.67
Adj. Flow (vph)	40	589	44	66	163	9	243	364	348	375	219	66
RTOR Reduction (vph)	0	0	0	0	2	0	0	61	0	0	0	0
Lane Group Flow (vph)	0	629	44	0	236	0	0	894	0	0	660	0
Confl. Peds. (#/hr)	8		107	107		8	19		18	18		19
Heavy Vehicles (%)	4%	1%	0%	2%	2%	2%	0%	1%	4%	12%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)		22.5	22.5		22.5			25.5			36.5	
Effective Green, g (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
Clearance Time (s)		5.5	5.5		5.5			5.5			5.5	
Vehicle Extension (s)		0.2	0.2		0.2			0.2			0.2	
Lane Grp Cap (vph)		506	401		101			703			1033	
v/s Ratio Prot											c0.07	
v/s Ratio Perm		0.40	0.04		c0.75			c0.46			0.26	
v/c Ratio		1.24	0.11		2.34			1.27			1.79dl	
Uniform Delay, d1		23.8	16.7		23.8			22.2			12.0	
Progression Factor		1.00	1.00		1.00			1.00			0.58	
Incremental Delay, d2		125.3	0.0		631.0			133.2			0.9	
Delay (s)		149.0	16.7		654.8			155.5			7.9	
Level of Service		F	B		F			F			A	
Approach Delay (s)		140.4			654.8			155.5			7.9	
Approach LOS		F			F			F			A	

Intersection Summary

HCM 2000 Control Delay	159.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	122.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1276	367	0	0	214	889
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	10	10
Total Lost time (s)	5.0				5.0	5.0
Lane Util. Factor	0.95				1.00	0.88
Frpb, ped/bikes	0.95				1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00
Frt	0.96				1.00	0.85
Flt Protected	1.00				0.95	1.00
Satd. Flow (prot)	2713				1472	2318
Flt Permitted	1.00				0.95	1.00
Satd. Flow (perm)	2713				1472	2318
Peak-hour factor, PHF	0.93	0.87	0.92	0.92	0.86	0.86
Adj. Flow (vph)	1372	422	0	0	249	1034
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1794	0	0	0	249	1034
Confl. Peds. (#/hr)		85				
Heavy Vehicles (%)	6%	6%	2%	2%	3%	3%
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Actuated Green, G (s)	43.0				27.0	27.0
Effective Green, g (s)	43.0				27.0	27.0
Actuated g/C Ratio	0.54				0.34	0.34
Clearance Time (s)	5.0				5.0	5.0
Lane Grp Cap (vph)	1458				496	782
v/s Ratio Prot	c0.66				0.17	
v/s Ratio Perm						c0.45
v/c Ratio	1.23				0.50	1.32
Uniform Delay, d1	18.5				21.1	26.5
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	109.9				3.6	153.9
Delay (s)	128.4				24.7	180.4
Level of Service	F				C	F
Approach Delay (s)	128.4			0.0	150.2	
Approach LOS	F			A	F	

Intersection Summary

HCM 2000 Control Delay	137.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	607	1443	115	0	0	0	0	51	62	443	86	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Total Lost time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95						1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99						1.00	0.92		1.00	
Flpb, ped/bikes	0.98	1.00						1.00	1.00		0.95	
Frt	1.00	0.99						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		0.96	
Satd. Flow (prot)	1446	2892						1637	1282		1368	
Flt Permitted	0.95	1.00						1.00	1.00		0.70	
Satd. Flow (perm)	1446	2892						1637	1282		995	
Peak-hour factor, PHF	0.82	0.88	0.64	0.92	0.92	0.92	0.92	0.56	0.68	0.81	0.82	0.92
Adj. Flow (vph)	740	1640	180	0	0	0	0	91	91	547	105	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	740	1820	0	0	0	0	0	91	72	0	652	0
Confl. Peds. (#/hr)	45		79						51	51		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	4%	4%	1%	1%	2%
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	46.0	46.0						24.0	24.0		24.0	
Effective Green, g (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
Clearance Time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)	831	1662						491	384		298	
v/s Ratio Prot		c0.63						0.06				
v/s Ratio Perm	0.51								0.06		c0.66	
v/c Ratio	0.89	1.10						0.19	0.19		2.19	
Uniform Delay, d1	14.8	17.0						20.8	20.8		28.0	
Progression Factor	0.80	0.80						1.00	1.00		1.03	
Incremental Delay, d2	1.5	43.9						0.8	1.1		539.4	
Delay (s)	13.3	57.4						21.6	21.9		568.3	
Level of Service	B	E						C	C		F	
Approach Delay (s)		44.7			0.0			21.7			568.3	
Approach LOS		D			A			C			F	

Intersection Summary

HCM 2000 Control Delay	144.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	931	137	0	0	0	0	39	38	30	158	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.98						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.97						0.94			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3091						1590			1822	
Flt Permitted		0.99						1.00			0.96	
Satd. Flow (perm)		3091						1590			1754	
Peak-hour factor, PHF	0.73	0.94	0.59	0.92	0.92	0.92	0.92	0.63	0.80	0.54	0.33	0.92
Adj. Flow (vph)	141	990	232	0	0	0	0	62	48	56	479	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	0	1341	0	0	0	0	0	81	0	0	535	0
Confl. Peds. (#/hr)	41		42						14	14		
Heavy Vehicles (%)	4%	7%	0%	2%	2%	2%	2%	0%	25%	4%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		39.0						31.0			31.0	
Effective Green, g (s)		39.0						31.0			31.0	
Actuated g/C Ratio		0.49						0.39			0.39	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1506						616			679	
v/s Ratio Prot								0.05				
v/s Ratio Perm		0.43									c0.31	
v/c Ratio		0.89						0.13			0.79	
Uniform Delay, d1		18.6						15.8			21.6	
Progression Factor		1.06						1.00			1.13	
Incremental Delay, d2		0.9						0.4			8.6	
Delay (s)		20.5						16.2			32.9	
Level of Service		C						B			C	
Approach Delay (s)		20.5			0.0			16.2			32.9	
Approach LOS		C			A			B			C	

Intersection Summary

HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	681	132	0	0	0	0	286	52	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						1.00			1.00	
Flpb, ped/bikes		0.98						1.00			0.99	
Frt		0.98						0.98			1.00	
Flt Protected		0.99						1.00			0.95	
Satd. Flow (prot)		3079						2059			2009	
Flt Permitted		0.99						1.00			0.32	
Satd. Flow (perm)		3079						2059			671	
Peak-hour factor, PHF	0.62	0.93	0.71	0.92	0.92	0.92	0.89	0.89	0.93	0.69	0.60	0.92
Adj. Flow (vph)	303	732	186	0	0	0	0	321	56	42	0	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	1203	0	0	0	0	0	369	0	0	42	0
Confl. Peds. (#/hr)	28		28						13	13		
Heavy Vehicles (%)	1%	9%	6%	2%	2%	2%	4%	5%	2%	0%	8%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		46.0						24.0			24.0	
Effective Green, g (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1770						617			201	
v/s Ratio Prot								c0.18				
v/s Ratio Perm		0.39									0.06	
v/c Ratio		0.68						0.60			0.21	
Uniform Delay, d1		11.9						23.9			20.9	
Progression Factor		0.22						1.00			1.13	
Incremental Delay, d2		1.3						4.2			2.2	
Delay (s)		4.0						28.1			25.8	
Level of Service		A						C			C	
Approach Delay (s)		4.0			0.0			28.1			25.8	
Approach LOS		A			A			C			C	

Intersection Summary

HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	498	35	0	0	0	0	126	27	161	52	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						1.00			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.96	
Satd. Flow (prot)		3165						1719			1638	
Flt Permitted		0.99						1.00			0.64	
Satd. Flow (perm)		3165						1719			1085	
Peak-hour factor, PHF	0.79	0.94	0.63	0.92	0.92	0.92	0.92	0.77	0.67	0.77	0.78	0.92
Adj. Flow (vph)	223	530	56	0	0	0	0	164	40	209	67	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	802	0	0	0	0	0	193	0	0	276	0
Confl. Peds. (#/hr)	44		19						4	4		
Heavy Vehicles (%)	1%	11%	0%	2%	2%	2%	2%	9%	0%	7%	25%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		35.0						35.0			35.0	
Effective Green, g (s)		35.0						35.0			35.0	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1384						752			474	
v/s Ratio Prot								0.11				
v/s Ratio Perm		0.25									c0.25	
v/c Ratio		0.58						0.26			0.58	
Uniform Delay, d1		17.0						14.3			17.0	
Progression Factor		0.39						1.00			0.81	
Incremental Delay, d2		1.3						0.8			4.3	
Delay (s)		8.0						15.1			18.0	
Level of Service		A						B			B	
Approach Delay (s)		8.0			0.0			15.1			18.0	
Approach LOS		A			A			B			B	

Intersection Summary

HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

24: Street 1 & Wylie Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	34	1	1	6	59	28	9	170	3	10	74	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	1	1	7	66	31	10	189	3	11	82	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	40	103	202	111
Volume Left (vph)	38	7	10	11
Volume Right (vph)	1	31	3	18
Hadj (s)	0.21	-0.13	0.03	-0.04
Departure Headway (s)	5.0	4.5	4.4	4.4
Degree Utilization, x	0.06	0.13	0.25	0.14
Capacity (veh/h)	666	733	785	768
Control Delay (s)	8.3	8.2	8.9	8.1
Approach Delay (s)	8.3	8.2	8.9	8.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	9	4	22	24	6	47	23	1	2	93	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	10	4	24	27	7	52	26	1	2	103	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	16	58	79	130
Volume Left (vph)	1	24	52	2
Volume Right (vph)	4	7	1	24
Hadj (s)	-0.12	0.05	0.16	-0.08
Departure Headway (s)	4.3	4.4	4.4	4.1
Degree Utilization, x	0.02	0.07	0.10	0.15
Capacity (veh/h)	790	764	800	862
Control Delay (s)	7.4	7.8	7.8	7.8
Approach Delay (s)	7.4	7.8	7.8	7.8
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	33	37	12	2	117
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	37	41	13	2	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	182	48			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	182	48			54	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	96			100	
cM capacity (veh/h)	806	1021			1551	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	44	54	132
Volume Left	8	0	2
Volume Right	37	13	0
cSH	976	1700	1551
Volume to Capacity	0.05	0.03	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	8.9	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	30	12	19	8	2	80
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	13	21	9	2	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	119	26			30	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119	26			30	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	876	1050			1583	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	47	30	91
Volume Left	33	0	2
Volume Right	13	9	0
cSH	919	1700	1583
Volume to Capacity	0.05	0.02	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.1	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	480	70	1	192	27	14
Sign Control	Free			Free	Stop	
Grade	0%			-12%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	533	78	1	213	30	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	362			548		
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			611		681	306
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			295		374	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		94	98
cM capacity (veh/h)			1116		529	958

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	356	256	72	142	46
Volume Left	0	0	1	0	30
Volume Right	0	78	0	0	16
cSH	1700	1700	1116	1700	625
Volume to Capacity	0.21	0.15	0.00	0.08	0.07
Queue Length 95th (ft)	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.1	0.0	11.2
Lane LOS			A		B
Approach Delay (s)	0.0		0.0		11.2
Approach LOS					B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	94	672	34	0	605
Sign Control	Stop		Free			Free
Grade	0%		4%			-4%
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90
Hourly flow rate (vph)	0	104	747	38	0	672
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			133			306
pX, platoon unblocked						
vC, conflicting volume	990	268			784	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	990	268			784	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	86			100	
cM capacity (veh/h)	243	730			830	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	104	299	299	187	224	224	224
Volume Left	0	0	0	0	0	0	0
Volume Right	104	0	0	38	0	0	0
cSH	730	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.14	0.18	0.18	0.11	0.13	0.13	0.13
Queue Length 95th (ft)	12	0	0	0	0	0	0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.8	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	451	344	18	0	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	501	382	20	0	32
Pedestrians					300	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					23	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		801	248			
pX, platoon unblocked						
vC, conflicting volume	702				943	501
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	702				943	501
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	92
cM capacity (veh/h)	687				201	397

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	251	251	255	147	32
Volume Left	0	0	0	0	0
Volume Right	0	0	0	20	32
cSH	1700	1700	1700	1700	397
Volume to Capacity	0.15	0.15	0.15	0.09	0.08
Queue Length 95th (ft)	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	14.9
Lane LOS					B
Approach Delay (s)	0.0		0.0		14.9
Approach LOS					B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	178	156	116	587	172	569	368	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1486	1330	3122	1396	1578	1661	1412
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1486	1330	3122	1396	1578	1661	1412
Peak-hour factor, PHF	0.87	0.89	0.95	0.88	0.79	0.92	0.86	0.99
Adj. Flow (vph)	205	175	122	667	218	618	428	531
RTOR Reduction (vph)	0	0	0	0	170	0	0	0
Lane Group Flow (vph)	0	380	122	667	48	618	428	531
Confl. Peds. (#/hr)			17		17			17
Turn Type	Perm	NA	custom	NA	custom	custom	NA	custom
Protected Phases		2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Actuated Green, G (s)		21.0	21.0	20.0	20.0	34.0	34.0	34.0
Effective Green, g (s)		21.0	21.0	20.0	20.0	34.0	34.0	34.0
Actuated g/C Ratio		0.23	0.23	0.22	0.22	0.38	0.38	0.38
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)		346	310	693	310	596	627	533
v/s Ratio Prot			0.09	c0.21	0.03	c0.39	0.26	0.38
v/s Ratio Perm		0.26						
v/c Ratio		1.10	0.39	0.96	0.16	1.04	0.68	1.00
Uniform Delay, d1		34.5	29.1	34.6	28.2	28.0	23.5	27.9
Progression Factor		1.00	1.00	0.60	0.17	1.00	1.00	1.00
Incremental Delay, d2		77.4	3.7	21.2	0.8	46.8	5.9	38.1
Delay (s)		111.9	32.8	41.8	5.4	74.8	29.4	66.0
Level of Service		F	C	D	A	E	C	E
Approach Delay (s)		92.7		32.9			59.5	
Approach LOS		F		C			E	

Intersection Summary

HCM 2000 Control Delay	57.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Lane Configurations												
Volume (vph)	25	0	4	134	184	0	353	41	412	79	25	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	16	13	12	12	12
Grade (%)		2%			2%				10%			-12%
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0	6.0			6.0
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00	0.95			0.95
Frpb, ped/bikes	1.00	0.95			1.00	1.00		1.00	0.98			1.00
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00			1.00
Frt	1.00	0.85			1.00	0.85		1.00	0.98			1.00
Flt Protected	0.95	1.00			0.98	1.00		0.95	1.00			0.99
Satd. Flow (prot)	1358	1195			1626	1411		1749	2988			3364
Flt Permitted	0.95	1.00			0.98	1.00		0.95	1.00			0.99
Satd. Flow (perm)	1358	1195			1626	1411		1749	2988			3364
Peak-hour factor, PHF	0.50	0.43	0.25	0.84	0.81	0.80	0.80	0.69	0.84	0.92	0.75	0.80
Adj. Flow (vph)	50	0	16	160	227	0	441	59	490	86	33	241
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	50	16	0	0	387	441	0	59	563	0	0	274
Confl. Peds. (#/hr)			24					22		52	52	
Heavy Vehicles (%)	3%	0%	0%	2%	2%	2%	2%	0%	2%	3%	0%	2%
Parking (#/hr)	0	0	0									
Turn Type	Split	NA		Split	NA	Perm		Split	NA		Split	NA
Protected Phases	9	9		10	10			2	2		4	4
Permitted Phases						10						
Actuated Green, G (s)	8.3	8.3			30.3	30.3		20.2	20.2			12.7
Effective Green, g (s)	8.3	8.3			30.3	30.3		20.2	20.2			12.7
Actuated g/C Ratio	0.09	0.09			0.32	0.32		0.21	0.21			0.13
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			6.0
Vehicle Extension (s)	4.0	4.0			3.0	3.0		4.0	4.0			3.0
Lane Grp Cap (vph)	118	103			515	447		369	632			447
v/s Ratio Prot	c0.04	0.01			0.24			0.03	c0.19			c0.08
v/s Ratio Perm						c0.31						
v/c Ratio	0.42	0.16			0.75	0.99		0.16	0.89			0.61
Uniform Delay, d1	41.3	40.4			29.2	32.4		30.7	36.6			39.1
Progression Factor	1.00	1.00			1.00	1.00		1.00	1.00			1.00
Incremental Delay, d2	3.3	1.0			6.1	38.7		0.3	15.1			2.5
Delay (s)	44.7	41.3			35.3	71.1		31.0	51.7			41.6
Level of Service	D	D			D	E		C	D			D
Approach Delay (s)		43.8			54.4				49.8			41.6
Approach LOS		D			D				D			D

Intersection Summary

HCM 2000 Control Delay	50.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	24.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	87	414	32	51	148	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	0.97			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.89			1.00	0.96	
Flt Protected	1.00			0.98	0.97	
Satd. Flow (prot)	1622			1792	1670	
Flt Permitted	1.00			0.78	0.97	
Satd. Flow (perm)	1622			1423	1670	
Peak-hour factor, PHF	0.72	0.84	0.89	0.74	0.92	0.59
Adj. Flow (vph)	121	493	36	69	161	75
RTOR Reduction (vph)	247	0	0	0	34	0
Lane Group Flow (vph)	368	0	0	105	202	0
Confl. Peds. (#/hr)		9	9			
Heavy Vehicles (%)	0%	2%	8%	2%	4%	8%
Turn Type	NA		Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases			6			
Actuated Green, G (s)	25.0			25.0	15.0	
Effective Green, g (s)	25.0			25.0	15.0	
Actuated g/C Ratio	0.50			0.50	0.30	
Clearance Time (s)	5.0			5.0	5.0	
Lane Grp Cap (vph)	811			711	501	
v/s Ratio Prot	c0.23				c0.12	
v/s Ratio Perm				0.07		
v/c Ratio	0.45			0.15	0.40	
Uniform Delay, d1	8.1			6.7	13.9	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	1.8			0.4	2.4	
Delay (s)	9.9			7.2	16.4	
Level of Service	A			A	B	
Approach Delay (s)	9.9			7.2	16.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	11	36	0	18	52	183	14	9	397	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.52	0.90	0.57	0.90	0.81	0.41	0.67	0.82	0.90
Hourly flow rate (vph)	0	0	12	69	0	32	58	226	34	13	484	0
Pedestrians					8			3			4	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								705			559	
pX, platoon unblocked												
vC, conflicting volume	905	895	487	893	878	255	484			268		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	905	895	487	893	878	255	484			268		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	71	100	96	95			99		
cM capacity (veh/h)	233	261	579	240	267	781	1079			1299		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	101	318	498
Volume Left	0	69	58	13
Volume Right	12	32	34	0
cSH	579	306	1079	1299
Volume to Capacity	0.02	0.33	0.05	0.01
Queue Length 95th (ft)	2	35	4	1
Control Delay (s)	11.4	22.4	2.0	0.3
Lane LOS	B	C	A	A
Approach Delay (s)	11.4	22.4	2.0	0.3
Approach LOS	B	C		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	101	244	410	123	385	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frpb, ped/bikes	0.69	0.66	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.98	1.00
Frt	0.92	0.85	0.97		1.00	1.00
Flt Protected	0.98	1.00	1.00		0.95	1.00
Satd. Flow (prot)	2269	997	3302		1732	3539
Flt Permitted	0.98	1.00	1.00		0.43	1.00
Satd. Flow (perm)	2269	997	3302		780	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	112	271	456	137	428	294
RTOR Reduction (vph)	105	104	40	0	0	0
Lane Group Flow (vph)	143	31	553	0	428	294
Confl. Peds. (#/hr)	145	375		37	37	
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	16.0	16.0	42.0		42.0	42.0
Effective Green, g (s)	16.0	16.0	42.0		42.0	42.0
Actuated g/C Ratio	0.23	0.23	0.60		0.60	0.60
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Lane Grp Cap (vph)	518	227	1981		468	2123
v/s Ratio Prot	c0.06		0.17			0.08
v/s Ratio Perm		0.03			c0.55	
v/c Ratio	0.28	0.14	0.28		0.91	0.14
Uniform Delay, d1	22.2	21.5	6.7		12.4	6.1
Progression Factor	1.00	1.00	0.69		1.00	1.00
Incremental Delay, d2	1.3	1.2	0.2		25.0	0.1
Delay (s)	23.6	22.7	4.9		37.4	6.2
Level of Service	C	C	A		D	A
Approach Delay (s)	23.3		4.9			24.7
Approach LOS	C		A			C

Intersection Summary

HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	63	305	227	102	376	69	39	507	80	137	462	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Total Lost time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lane Util. Factor		0.95		1.00	0.95			0.91			0.95	1.00
Frpb, ped/bikes		0.85		1.00	0.89			0.94			1.00	0.69
Flpb, ped/bikes		0.98		0.91	1.00			1.00			0.97	1.00
Frt		0.94		1.00	0.97			0.98			1.00	0.85
Flt Protected		0.99		0.95	1.00			1.00			0.99	1.00
Satd. Flow (prot)		2617		1309	2566			3738			3073	993
Flt Permitted		0.75		0.23	1.00			0.79			0.62	1.00
Satd. Flow (perm)		1970		322	2566			2975			1924	993
Peak-hour factor, PHF	0.69	0.94	0.80	0.83	0.94	0.60	0.86	0.96	0.74	0.88	0.95	0.63
Adj. Flow (vph)	91	324	284	123	400	115	45	528	108	156	486	10
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	699	0	123	515	0	0	681	0	0	642	10
Confl. Peds. (#/hr)	400		375	375		400	126		675	675		126
Confl. Bikes (#/hr)			141			552			18			266
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	9%	9%	9%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)		28.0		28.0	28.0			25.0			25.0	25.0
Effective Green, g (s)		29.5		28.0	28.0			25.0			25.0	25.0
Actuated g/C Ratio		0.33		0.31	0.31			0.28			0.28	0.28
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	6.0
Lane Grp Cap (vph)		645		100	798			826			534	275
v/s Ratio Prot					0.20							
v/s Ratio Perm		0.35		c0.38				0.23			c0.33	0.01
v/c Ratio		1.08		1.23	0.65			0.82			1.20	0.04
Uniform Delay, d1		30.2		31.0	26.7			30.4			32.5	23.7
Progression Factor		1.00		0.77	0.73			1.00			0.53	0.38
Incremental Delay, d2		60.3		152.8	3.0			9.2			99.8	0.1
Delay (s)		90.5		176.5	22.6			39.6			116.9	9.1
Level of Service		F		F	C			D			F	A
Approach Delay (s)		90.5			52.3			39.6			115.3	
Approach LOS		F			D			D			F	

Intersection Summary

HCM 2000 Control Delay	78.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	123.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	NEL	NER	NER2
Lane Configurations			
Volume (vph)	62	120	97
Ideal Flow (vphpl)	1900	1900	1900
Lane Width	12	12	12
Grade (%)	7%		
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	1.00	0.95	
Frpb, ped/bikes	0.90	0.52	
Flpb, ped/bikes	1.00	1.00	
Frt	0.91	0.85	
Flt Protected	0.98	1.00	
Satd. Flow (prot)	1311	690	
Flt Permitted	0.98	1.00	
Satd. Flow (perm)	1311	690	
Peak-hour factor, PHF	0.88	0.73	0.79
Adj. Flow (vph)	70	164	123
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	182	175	0
Confl. Peds. (#/hr)	400		375
Confl. Bikes (#/hr)		141	141
Heavy Vehicles (%)	1%	1%	1%
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Actuated Green, G (s)	19.0	19.0	
Effective Green, g (s)	19.0	19.0	
Actuated g/C Ratio	0.21	0.21	
Clearance Time (s)	6.0	6.0	
Lane Grp Cap (vph)	276	145	
v/s Ratio Prot	0.14		
v/s Ratio Perm		c0.25	
v/c Ratio	0.66	1.21	
Uniform Delay, d1	32.5	35.5	
Progression Factor	1.00	1.00	
Incremental Delay, d2	11.7	140.9	
Delay (s)	44.3	176.4	
Level of Service	D	F	
Approach Delay (s)	109.1		
Approach LOS	F		

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	81	459	265	113	38	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)		4.0	4.0		4.0	3.5
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.77		1.00	0.87
Flpb, ped/bikes		0.95	1.00		1.00	1.00
Frt		1.00	0.96		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		2717	2051		1399	1089
Flt Permitted		0.82	1.00		0.95	1.00
Satd. Flow (perm)		2253	2051		1399	1089
Peak-hour factor, PHF	0.83	0.82	0.87	0.88	0.54	0.66
Adj. Flow (vph)	98	560	305	128	70	358
RTOR Reduction (vph)	0	0	51	0	0	0
Lane Group Flow (vph)	0	658	382	0	70	358
Confl. Peds. (#/hr)	875			875	125	150
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	pm+pt	NA	NA		NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases	2					4
Actuated Green, G (s)		61.5	42.5		17.5	33.0
Effective Green, g (s)		63.0	44.0		19.0	33.0
Actuated g/C Ratio		0.70	0.49		0.21	0.37
Clearance Time (s)		5.5	5.5		5.5	3.5
Lane Grp Cap (vph)		1664	1002		295	399
v/s Ratio Prot		0.07	c0.19		0.05	c0.15
v/s Ratio Perm		0.20				0.17
v/c Ratio		0.40	0.38		0.24	0.90
Uniform Delay, d1		5.6	14.4		29.5	26.9
Progression Factor		1.05	0.21		1.00	1.00
Incremental Delay, d2		0.1	1.1		1.9	25.4
Delay (s)		6.0	4.2		31.4	52.3
Level of Service		A	A		C	D
Approach Delay (s)		6.0	4.2		48.9	
Approach LOS		A	A		D	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	385	74	4	343	28	0	0	1	32	44	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	12	12	12	11	11	11
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		0.97			0.94			0.82			0.92	
Flpb, ped/bikes		0.97			1.00			1.00			0.95	
Frt		0.98			0.99			0.86			0.96	
Flt Protected		1.00			1.00			1.00			0.99	
Satd. Flow (prot)		3117			3188			1325			1484	
Flt Permitted		0.89			0.95			1.00			0.91	
Satd. Flow (perm)		2795			3034			1325			1368	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	428	82	4	381	31	0	0	1	36	49	39
RTOR Reduction (vph)	0	16	0	0	7	0	0	1	0	0	18	0
Lane Group Flow (vph)	0	536	0	0	409	0	0	0	0	0	106	0
Confl. Peds. (#/hr)	625		75	75		625	150		100	100		150
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		62.0			62.0			16.0			16.0	
Effective Green, g (s)		62.0			62.0			16.0			16.0	
Actuated g/C Ratio		0.69			0.69			0.18			0.18	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		1925			2090			235			243	
v/s Ratio Prot								0.00				
v/s Ratio Perm		c0.19			0.13						c0.08	
v/c Ratio		0.28			0.20			0.00			0.44	
Uniform Delay, d1		5.4			5.0			30.4			33.0	
Progression Factor		0.68			1.43			1.00			1.00	
Incremental Delay, d2		0.3			0.2			0.0			5.6	
Delay (s)		4.0			7.4			30.4			38.6	
Level of Service		A			A			C			D	
Approach Delay (s)		4.0			7.4			30.4			38.6	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	178	169	51	74	18	222	121	30	44	370	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	11	11	12	12	15	12	12	14	12
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.96		1.00	0.96		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.85	1.00		0.98	1.00		1.00	1.00		0.97	1.00	
Frt	1.00	0.93		1.00	0.97		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1332	1470		1576	1591		1687	1680		1601	1609	
Flt Permitted	0.69	1.00		0.32	1.00		0.25	1.00		0.65	1.00	
Satd. Flow (perm)	961	1470		532	1591		447	1680		1095	1609	
Peak-hour factor, PHF	0.93	0.89	0.87	0.86	0.82	0.85	0.87	0.90	0.83	0.63	0.88	0.77
Adj. Flow (vph)	112	200	194	59	90	21	255	134	36	70	420	86
RTOR Reduction (vph)	0	39	0	0	9	0	0	11	0	0	8	0
Lane Group Flow (vph)	112	355	0	59	102	0	255	159	0	70	498	0
Confl. Peds. (#/hr)	64		24	24		64	21		15	15		21
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	9%	9%	9%
Parking (#/hr)								0			0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	30.0	30.0		30.0	30.0		50.0	50.0		38.0	38.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0		50.0	50.0		38.0	38.0	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.56	0.56		0.42	0.42	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	320	490		177	530		344	933		462	679	
v/s Ratio Prot		c0.24			0.06		c0.06	0.09			0.31	
v/s Ratio Perm	0.12			0.11			c0.35			0.06		
v/c Ratio	0.35	0.73		0.33	0.19		0.74	0.17		0.15	0.73	
Uniform Delay, d1	22.6	26.4		22.5	21.4		14.0	9.8		16.0	21.8	
Progression Factor	0.67	0.66		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	8.8		5.0	0.8		13.4	0.4		0.7	6.9	
Delay (s)	18.1	26.3		27.5	22.2		27.4	10.2		16.7	28.7	
Level of Service	B	C		C	C		C	B		B	C	
Approach Delay (s)		24.5			24.0			20.5			27.2	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	17	3	7	2	72	401	0	0	299	213
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Hourly flow rate (vph)	0	0	20	12	9	4	112	508	0	0	348	251
Pedestrians		52			16			20			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			1			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.91	0.91	0.85	0.91	0.91	0.88	0.85			0.88		
vC, conflicting volume	1285	1274	545	1262	1399	543	650			524		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	964	951	373	938	1089	411	498			389		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	93	94	99	87			100		
cM capacity (veh/h)	156	194	540	180	162	551	873			1024		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	25	620	598
Volume Left	0	12	112	0
Volume Right	20	4	0	251
cSH	540	193	873	1024
Volume to Capacity	0.04	0.13	0.13	0.00
Queue Length 95th (ft)	3	11	11	0
Control Delay (s)	11.9	26.5	3.2	0.0
Lane LOS	B	D	A	
Approach Delay (s)	11.9	26.5	3.2	0.0
Approach LOS	B	D		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	0	102	21	420	189	90	292	0	0	353	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	12	12	11	12	12	12	12
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes		0.90		1.00	0.89			1.00			0.99	
Flpb, ped/bikes		0.98		0.90	1.00			0.99			1.00	
Frt		0.90		1.00	0.96			1.00			0.99	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1138		1225	1246			3051			2920	
Flt Permitted		0.47		0.69	1.00			0.74			1.00	
Satd. Flow (perm)		541		893	1246			2280			2920	
Peak-hour factor, PHF	0.77	0.92	0.82	0.75	0.82	0.97	0.88	0.96	0.92	0.92	0.89	0.75
Adj. Flow (vph)	47	0	124	28	512	195	102	304	0	0	397	41
RTOR Reduction (vph)	0	71	0	0	19	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	100	0	28	688	0	0	406	0	0	437	0
Confl. Peds. (#/hr)	880		138	138		880	49		130	130		49
Heavy Vehicles (%)	3%	2%	28%	0%	5%	19%	0%	1%	2%	2%	8%	17%
Parking (#/hr)				0								
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		30.0		30.0	30.0			28.0			28.0	
Effective Green, g (s)		30.0		30.0	30.0			28.0			28.0	
Actuated g/C Ratio		0.43		0.43	0.43			0.40			0.40	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Grp Cap (vph)		231		382	534			912			1168	
v/s Ratio Prot					c0.55						0.15	
v/s Ratio Perm		0.19		0.03				c0.18				
v/c Ratio		0.43		0.07	1.29			0.45			0.37	
Uniform Delay, d1		14.0		11.8	20.0			15.3			14.8	
Progression Factor		1.00		1.00	1.00			1.19			0.77	
Incremental Delay, d2		5.8		0.4	143.1			1.5			0.9	
Delay (s)		19.9		12.2	163.1			19.8			12.3	
Level of Service		B		B	F			B			B	
Approach Delay (s)		19.9			157.3			19.8			12.3	
Approach LOS		B			F			B			B	

Intersection Summary

HCM 2000 Control Delay	75.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	453	615	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	533	647	0	0
Pedestrians					44	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			44		1434	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		1434	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			66		100	100
cM capacity (veh/h)			1563		82	1017

Direction, Lane #	WB 1	WB 2
Volume Total	749	432
Volume Left	533	0
Volume Right	0	0
cSH	1563	1700
Volume to Capacity	0.34	0.25
Queue Length 95th (ft)	38	0
Control Delay (s)	7.0	0.0
Lane LOS	A	
Approach Delay (s)	4.4	
Approach LOS		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	823	182	178	510	0	0	396	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Total Lost time (s)					7.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			1.00	0.88
Frpb, ped/bikes					0.98		1.00	1.00			1.00	0.93
Flpb, ped/bikes					0.98		0.99	1.00			1.00	1.00
Frt					0.98		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					2586		1538	1635			1735	2421
Flt Permitted					0.99		0.24	1.00			1.00	1.00
Satd. Flow (perm)					2586		385	1635			1735	2421
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.88	0.93	0.85	0.82	0.92	0.92	0.75	0.92
Adj. Flow (vph)	0	0	0	190	935	196	209	622	0	0	528	337
RTOR Reduction (vph)	0	0	0	0	18	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1303	0	209	622	0	0	528	337
Confl. Peds. (#/hr)				105		173	29					29
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					37.0		30.0	30.0			30.0	30.0
Effective Green, g (s)					37.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio					0.46		0.38	0.38			0.38	0.38
Clearance Time (s)					7.0		6.0	6.0			6.0	6.0
Lane Grp Cap (vph)					1196		144	613			650	907
v/s Ratio Prot								0.38			0.30	
v/s Ratio Perm					0.50		c0.54					0.14
v/c Ratio					1.09		1.45	1.01			0.81	0.37
Uniform Delay, d1					21.5		25.0	25.0			22.5	18.2
Progression Factor					1.07		0.73	0.72			1.00	1.00
Incremental Delay, d2					51.2		223.4	30.7			10.6	1.2
Delay (s)					74.1		241.5	48.8			33.1	19.3
Level of Service					E		F	D			C	B
Approach Delay (s)		0.0			74.1			97.3			27.7	
Approach LOS		A			E			F			C	

Intersection Summary

HCM 2000 Control Delay	67.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	916	0	224	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Total Lost time (s)					5.0			5.0				
Lane Util. Factor					0.95			1.00				
Frpb, ped/bikes					1.00			1.00				
Flpb, ped/bikes					0.97			0.98				
Frt					1.00			1.00				
Flt Protected					0.99			0.95				
Satd. Flow (prot)					3080			1663				
Flt Permitted					0.99			0.76				
Satd. Flow (perm)					3080			1326				
Peak-hour factor, PHF	0.92	0.92	0.92	0.66	0.97	0.50	0.80	0.90	0.92	0.92	0.25	0.25
Adj. Flow (vph)	0	0	0	270	944	0	280	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1214	0	0	280	0	0	0	0
Confl. Peds. (#/hr)				46		108	15		8	8		15
Heavy Vehicles (%)	2%	2%	2%	0%	9%	0%	1%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA				
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					43.0			27.0				
Effective Green, g (s)					43.0			27.0				
Actuated g/C Ratio					0.54			0.34				
Clearance Time (s)					5.0			5.0				
Lane Grp Cap (vph)					1655			447				
v/s Ratio Prot												
v/s Ratio Perm					0.39			c0.21				
v/c Ratio					0.73			0.63				
Uniform Delay, d1					14.1			22.3				
Progression Factor					0.57			1.13				
Incremental Delay, d2					2.1			5.8				
Delay (s)					10.2			30.9				
Level of Service					B			C				
Approach Delay (s)		0.0			10.2			30.9			0.0	
Approach LOS		A			B			C			A	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	862	71	178	174	0	0	36	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.99			1.00			0.98	
Flpb, ped/bikes					1.00			0.99			1.00	
Frt					0.98			1.00			0.90	
Flt Protected					1.00			0.98			1.00	
Satd. Flow (prot)					2945			1792			1665	
Flt Permitted					1.00			0.76			1.00	
Satd. Flow (perm)					2945			1393			1665	
Peak-hour factor, PHF	0.92	0.92	0.92	0.60	0.95	0.68	0.91	0.85	0.92	0.92	0.82	0.79
Adj. Flow (vph)	0	0	0	23	907	104	196	205	0	0	44	127
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	0	0	40	0
Lane Group Flow (vph)	0	0	0	0	1024	0	0	401	0	0	131	0
Confl. Peds. (#/hr)				16		44	9					9
Heavy Vehicles (%)	2%	2%	2%	0%	12%	5%	6%	0%	2%	2%	3%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					38.0			32.0			32.0	
Effective Green, g (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1398			557			666	
v/s Ratio Prot											0.08	
v/s Ratio Perm					0.35			c0.29				
v/c Ratio					0.73			0.72			0.20	
Uniform Delay, d1					16.9			20.2			15.6	
Progression Factor					0.62			0.72			1.00	
Incremental Delay, d2					2.1			6.1			0.7	
Delay (s)					12.5			20.7			16.3	
Level of Service					B			C			B	
Approach Delay (s)		0.0			12.5			20.7			16.3	
Approach LOS		A			B			C			B	

Intersection Summary

HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	35	814	254	70	217	0	0	212	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.97			1.00			0.99	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.97			1.00			0.96	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					2878			1798			1943	
Flt Permitted					1.00			0.63			1.00	
Satd. Flow (perm)					2878			1152			1943	
Peak-hour factor, PHF	0.92	0.92	0.92	0.71	0.94	0.95	0.71	0.79	0.92	0.79	0.79	0.88
Adj. Flow (vph)	0	0	0	49	866	267	99	275	0	0	268	119
RTOR Reduction (vph)	0	0	0	0	34	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	0	0	0	1148	0	0	374	0	0	367	0
Confl. Peds. (#/hr)				25		45	22		40	40		22
Heavy Vehicles (%)	2%	2%	2%	0%	18%	0%	0%	6%	2%	2%	16%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					40.0			30.0			30.0	
Effective Green, g (s)					40.0			30.0			30.0	
Actuated g/C Ratio					0.50			0.38			0.38	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1439			432			728	
v/s Ratio Prot											0.19	
v/s Ratio Perm					0.40			c0.32				
v/c Ratio					0.80			0.87			0.50	
Uniform Delay, d1					16.6			23.1			19.3	
Progression Factor					1.00			0.77			1.00	
Incremental Delay, d2					4.7			18.7			2.5	
Delay (s)					21.3			36.6			21.8	
Level of Service					C			D			C	
Approach Delay (s)		0.0			21.3			36.6			21.8	
Approach LOS		A			C			D			C	

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	103	265	28	7	364	0	0	485	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)				5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes				1.00	1.00	0.95		1.00			1.00	
Flpb, ped/bikes				0.99	1.00	1.00		1.00			1.00	
Frt				1.00	1.00	0.85		1.00			0.99	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1440	1580	1290		3207			2915	
Flt Permitted				0.95	1.00	1.00		0.95			1.00	
Satd. Flow (perm)				1440	1580	1290		3072			2915	
Peak-hour factor, PHF	0.92	0.92	0.92	0.87	0.78	0.63	0.30	0.96	0.25	0.92	0.92	0.80
Adj. Flow (vph)	0	0	0	118	340	44	23	379	0	0	527	22
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	118	340	44	0	402	0	0	549	0
Confl. Peds. (#/hr)				13		40	21					21
Heavy Vehicles (%)	2%	2%	2%	4%	1%	0%	0%	1%	2%	2%	11%	0%
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Actuated Green, G (s)				22.5	22.5	22.5		33.5			36.5	
Effective Green, g (s)				22.5	22.5	22.5		33.5			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.48			0.52	
Clearance Time (s)				5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Lane Grp Cap (vph)				462	507	414		1519			1519	
v/s Ratio Prot					c0.22			0.10			c0.19	
v/s Ratio Perm				0.08		0.03		0.03				
v/c Ratio				0.26	0.67	0.11		0.26			0.36	
Uniform Delay, d1				17.6	20.5	16.7		10.9			9.9	
Progression Factor				1.00	1.00	1.00		0.55			0.38	
Incremental Delay, d2				0.1	2.7	0.0		0.0			0.6	
Delay (s)				17.7	23.3	16.7		6.0			4.4	
Level of Service				B	C	B		A			A	
Approach Delay (s)		0.0			21.4			6.0			4.4	
Approach LOS		A			C			A			A	

Intersection Summary

HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	565	35	59	147	8	211	342	320	356	186	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	11	12	12	11	12	12	12	12
Total Lost time (s)		5.5	5.5		5.5			5.5			5.5	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.89		1.00			0.99			1.00	
Flpb, ped/bikes		1.00	1.00		0.99			1.00			1.00	
Frt		1.00	0.85		0.99			0.95			0.98	
Flt Protected		1.00	1.00		0.99			0.99			0.97	
Satd. Flow (prot)		1628	1248		1579			2843			2888	
Flt Permitted		0.96	1.00		0.20			0.67			0.58	
Satd. Flow (perm)		1575	1248		316			1931			1728	
Peak-hour factor, PHF	0.60	0.96	0.80	0.90	0.90	0.90	0.87	0.94	0.92	0.95	0.85	0.67
Adj. Flow (vph)	40	589	44	66	163	9	243	364	348	375	219	66
RTOR Reduction (vph)	0	0	0	0	2	0	0	61	0	0	0	0
Lane Group Flow (vph)	0	629	44	0	236	0	0	894	0	0	660	0
Confl. Peds. (#/hr)	8		107	107		8	19		18	18		19
Heavy Vehicles (%)	4%	1%	0%	2%	2%	2%	0%	1%	4%	12%	1%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)		22.5	22.5		22.5			25.5			36.5	
Effective Green, g (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
Clearance Time (s)		5.5	5.5		5.5			5.5			5.5	
Vehicle Extension (s)		0.2	0.2		0.2			0.2			0.2	
Lane Grp Cap (vph)		506	401		101			703			1033	
v/s Ratio Prot											c0.07	
v/s Ratio Perm		0.40	0.04		c0.75			c0.46			0.26	
v/c Ratio		1.24	0.11		2.34			1.27			1.79dl	
Uniform Delay, d1		23.8	16.7		23.8			22.2			12.0	
Progression Factor		1.00	1.00		1.00			1.00			0.51	
Incremental Delay, d2		125.3	0.0		631.0			133.2			0.9	
Delay (s)		149.0	16.7		654.8			155.5			7.1	
Level of Service		F	B		F			F			A	
Approach Delay (s)		140.4			654.8			155.5			7.1	
Approach LOS		F			F			F			A	

Intersection Summary

HCM 2000 Control Delay	159.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.64		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	122.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1276	367	0	0	214	889
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	10	10
Total Lost time (s)	5.0				5.0	5.0
Lane Util. Factor	0.95				1.00	0.88
Frpb, ped/bikes	0.95				1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00
Frt	0.96				1.00	0.85
Flt Protected	1.00				0.95	1.00
Satd. Flow (prot)	2713				1472	2318
Flt Permitted	1.00				0.95	1.00
Satd. Flow (perm)	2713				1472	2318
Peak-hour factor, PHF	0.93	0.87	0.92	0.92	0.86	0.86
Adj. Flow (vph)	1372	422	0	0	249	1034
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1794	0	0	0	249	1034
Confl. Peds. (#/hr)		85				
Heavy Vehicles (%)	6%	6%	2%	2%	3%	3%
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Actuated Green, G (s)	43.0				27.0	27.0
Effective Green, g (s)	43.0				27.0	27.0
Actuated g/C Ratio	0.54				0.34	0.34
Clearance Time (s)	5.0				5.0	5.0
Lane Grp Cap (vph)	1458				496	782
v/s Ratio Prot	c0.66				0.17	
v/s Ratio Perm						c0.45
v/c Ratio	1.23				0.50	1.32
Uniform Delay, d1	18.5				21.1	26.5
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	109.9				3.6	153.9
Delay (s)	128.4				24.7	180.4
Level of Service	F				C	F
Approach Delay (s)	128.4			0.0	150.2	
Approach LOS	F			A	F	

Intersection Summary			
HCM 2000 Control Delay	137.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	607	1443	115	0	0	0	0	51	62	443	86	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Total Lost time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95						1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99						1.00	0.92		1.00	
Flpb, ped/bikes	0.98	1.00						1.00	1.00		0.95	
Frt	1.00	0.99						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		0.96	
Satd. Flow (prot)	1446	2892						1637	1282		1368	
Flt Permitted	0.95	1.00						1.00	1.00		0.70	
Satd. Flow (perm)	1446	2892						1637	1282		995	
Peak-hour factor, PHF	0.82	0.88	0.64	0.92	0.92	0.92	0.92	0.56	0.68	0.81	0.82	0.92
Adj. Flow (vph)	740	1640	180	0	0	0	0	91	91	547	105	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	19	0	0	0
Lane Group Flow (vph)	740	1820	0	0	0	0	0	91	72	0	652	0
Confl. Peds. (#/hr)	45		79						51	51		
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	4%	4%	1%	1%	2%
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	46.0	46.0						24.0	24.0		24.0	
Effective Green, g (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
Clearance Time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)	831	1662						491	384		298	
v/s Ratio Prot		c0.63						0.06				
v/s Ratio Perm	0.51								0.06		c0.66	
v/c Ratio	0.89	1.10						0.19	0.19		2.19	
Uniform Delay, d1	14.8	17.0						20.8	20.8		28.0	
Progression Factor	0.80	0.80						1.00	1.00		1.03	
Incremental Delay, d2	1.5	43.9						0.8	1.1		539.4	
Delay (s)	13.3	57.4						21.6	21.9		568.3	
Level of Service	B	E						C	C		F	
Approach Delay (s)		44.7			0.0			21.7			568.3	
Approach LOS		D			A			C			F	

Intersection Summary

HCM 2000 Control Delay	144.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	108.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	931	137	0	0	0	0	39	38	30	158	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.98						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.97						0.94			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3091						1590			1822	
Flt Permitted		0.99						1.00			0.96	
Satd. Flow (perm)		3091						1590			1754	
Peak-hour factor, PHF	0.73	0.94	0.59	0.92	0.92	0.92	0.92	0.63	0.80	0.54	0.33	0.92
Adj. Flow (vph)	141	990	232	0	0	0	0	62	48	56	479	0
RTOR Reduction (vph)	0	22	0	0	0	0	0	29	0	0	0	0
Lane Group Flow (vph)	0	1341	0	0	0	0	0	81	0	0	535	0
Confl. Peds. (#/hr)	41		42						14	14		
Heavy Vehicles (%)	4%	7%	0%	2%	2%	2%	2%	0%	25%	4%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		39.0						31.0			31.0	
Effective Green, g (s)		39.0						31.0			31.0	
Actuated g/C Ratio		0.49						0.39			0.39	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1506						616			679	
v/s Ratio Prot								0.05				
v/s Ratio Perm		0.43									c0.31	
v/c Ratio		0.89						0.13			0.79	
Uniform Delay, d1		18.6						15.8			21.6	
Progression Factor		1.07						1.00			0.62	
Incremental Delay, d2		0.9						0.4			8.6	
Delay (s)		20.8						16.2			21.9	
Level of Service		C						B			C	
Approach Delay (s)		20.8			0.0			16.2			21.9	
Approach LOS		C			A			B			C	

Intersection Summary

HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	681	132	0	0	0	0	286	52	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						1.00			1.00	
Flpb, ped/bikes		0.98						1.00			0.99	
Frt		0.98						0.98			1.00	
Flt Protected		0.99						1.00			0.95	
Satd. Flow (prot)		3079						2059			2009	
Flt Permitted		0.99						1.00			0.32	
Satd. Flow (perm)		3079						2059			671	
Peak-hour factor, PHF	0.62	0.93	0.71	0.92	0.92	0.92	0.89	0.89	0.93	0.69	0.60	0.92
Adj. Flow (vph)	303	732	186	0	0	0	0	321	56	42	0	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	1203	0	0	0	0	0	369	0	0	42	0
Confl. Peds. (#/hr)	28		28						13	13		
Heavy Vehicles (%)	1%	9%	6%	2%	2%	2%	4%	5%	2%	0%	8%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		46.0						24.0			24.0	
Effective Green, g (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1770						617			201	
v/s Ratio Prot								c0.18				
v/s Ratio Perm		0.39									0.06	
v/c Ratio		0.68						0.60			0.21	
Uniform Delay, d1		11.9						23.9			20.9	
Progression Factor		0.20						1.00			0.72	
Incremental Delay, d2		1.3						4.2			2.2	
Delay (s)		3.7						28.1			17.3	
Level of Service		A						C			B	
Approach Delay (s)		3.7			0.0			28.1			17.3	
Approach LOS		A			A			C			B	

Intersection Summary

HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	498	35	0	0	0	0	126	27	161	52	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						1.00			1.00	
Flpb, ped/bikes		0.97						1.00			1.00	
Frt		0.99						0.97			1.00	
Flt Protected		0.99						1.00			0.96	
Satd. Flow (prot)		3165						1719			1638	
Flt Permitted		0.99						1.00			0.64	
Satd. Flow (perm)		3165						1719			1085	
Peak-hour factor, PHF	0.79	0.94	0.63	0.92	0.92	0.92	0.92	0.77	0.67	0.77	0.78	0.92
Adj. Flow (vph)	223	530	56	0	0	0	0	164	40	209	67	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	11	0	0	0	0
Lane Group Flow (vph)	0	802	0	0	0	0	0	193	0	0	276	0
Confl. Peds. (#/hr)	44		19						4	4		
Heavy Vehicles (%)	1%	11%	0%	2%	2%	2%	2%	9%	0%	7%	25%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		35.0						35.0			35.0	
Effective Green, g (s)		35.0						35.0			35.0	
Actuated g/C Ratio		0.44						0.44			0.44	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1384						752			474	
v/s Ratio Prot								0.11				
v/s Ratio Perm		0.25									c0.25	
v/c Ratio		0.58						0.26			0.58	
Uniform Delay, d1		17.0						14.3			17.0	
Progression Factor		0.39						1.00			0.46	
Incremental Delay, d2		1.3						0.8			4.3	
Delay (s)		8.0						15.1			12.2	
Level of Service		A						B			B	
Approach Delay (s)		8.0			0.0			15.1			12.2	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	34	1	1	6	59	28	9	170	3	10	74	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	1	1	7	66	31	10	189	3	11	82	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	40	103	202	111
Volume Left (vph)	38	7	10	11
Volume Right (vph)	1	31	3	18
Hadj (s)	0.21	-0.13	0.03	-0.04
Departure Headway (s)	5.0	4.5	4.4	4.4
Degree Utilization, x	0.06	0.13	0.25	0.14
Capacity (veh/h)	666	733	785	768
Control Delay (s)	8.3	8.2	8.9	8.1
Approach Delay (s)	8.3	8.2	8.9	8.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	9	4	22	24	6	47	23	1	2	93	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	10	4	24	27	7	52	26	1	2	103	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	16	58	79	130
Volume Left (vph)	1	24	52	2
Volume Right (vph)	4	7	1	24
Hadj (s)	-0.12	0.05	0.16	-0.08
Departure Headway (s)	4.3	4.4	4.4	4.1
Degree Utilization, x	0.02	0.07	0.10	0.15
Capacity (veh/h)	790	764	800	862
Control Delay (s)	7.4	7.8	7.8	7.8
Approach Delay (s)	7.4	7.8	7.8	7.8
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	33	37	12	2	117
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	37	41	13	2	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			297			
pX, platoon unblocked						
vC, conflicting volume	182	48			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	182	48			54	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	96			100	
cM capacity (veh/h)	806	1021			1551	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	44	54	132
Volume Left	8	0	2
Volume Right	37	13	0
cSH	976	1700	1551
Volume to Capacity	0.05	0.03	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	8.9	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	30	12	19	8	2	80
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	13	21	9	2	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	119	26			30	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119	26			30	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	876	1050			1583	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	47	30	91
Volume Left	33	0	2
Volume Right	13	9	0
cSH	919	1700	1583
Volume to Capacity	0.05	0.02	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.1	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	480	70	1	192	27	14
Sign Control	Free			Free	Stop	
Grade	0%			-12%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	533	78	1	213	30	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	362			548		
pX, platoon unblocked			0.80		0.80	0.80
vC, conflicting volume			611		749	533
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			396		567	299
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	97
cM capacity (veh/h)			936		390	596

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	533	78	214	46
Volume Left	0	0	1	30
Volume Right	0	78	0	16
cSH	1700	1700	936	442
Volume to Capacity	0.31	0.05	0.00	0.10
Queue Length 95th (ft)	0	0	0	9
Control Delay (s)	0.0	0.0	0.1	14.1
Lane LOS			A	B
Approach Delay (s)	0.0		0.1	14.1
Approach LOS				B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	94	672	34	0	605
Sign Control	Stop		Free			Free
Grade	0%		4%			-4%
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90
Hourly flow rate (vph)	0	104	747	38	0	672
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			133			306
pX, platoon unblocked						
vC, conflicting volume	990	268			784	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	990	268			784	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	86			100	
cM capacity (veh/h)	243	730			830	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	104	299	299	187	224	224	224
Volume Left	0	0	0	0	0	0	0
Volume Right	104	0	0	38	0	0	0
cSH	730	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.14	0.18	0.18	0.11	0.13	0.13	0.13
Queue Length 95th (ft)	12	0	0	0	0	0	0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.8	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↳			↱
Volume (veh/h)	0	451	344	18	0	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	501	382	20	0	32
Pedestrians					300	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					23	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		374	248			
pX, platoon unblocked						
vC, conflicting volume	702				943	501
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	702				943	501
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	92
cM capacity (veh/h)	687				201	397

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	251	251	255	147	32
Volume Left	0	0	0	0	0
Volume Right	0	0	0	20	32
cSH	1700	1700	1700	1700	397
Volume to Capacity	0.15	0.15	0.15	0.09	0.08
Queue Length 95th (ft)	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	14.9
Lane LOS					B
Approach Delay (s)	0.0		0.0		14.9
Approach LOS					B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	39	256	161	911	289	670	393	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1444	1292	3152	1424	1594	1678	1398
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1444	1292	3152	1424	1594	1678	1398
Peak-hour factor, PHF	0.58	0.93	0.86	0.80	0.70	0.89	0.96	0.80
Adj. Flow (vph)	67	275	187	1139	413	753	409	394
RTOR Reduction (vph)	0	0	0	0	127	0	0	0
Lane Group Flow (vph)	0	342	187	1139	286	753	409	394
Confl. Peds. (#/hr)			31					31
Heavy Vehicles (%)	9%	4%	5%	1%	0%	1%	1%	3%
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Actuated Green, G (s)		18.0	18.0	24.0	24.0	33.0	33.0	33.0
Effective Green, g (s)		18.0	18.0	24.0	24.0	33.0	33.0	33.0
Actuated g/C Ratio		0.20	0.20	0.27	0.27	0.37	0.37	0.37
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)		288	258	840	379	584	615	512
v/s Ratio Prot		c0.24	0.14	c0.36	0.20	c0.47	0.24	0.28
v/s Ratio Perm								
v/c Ratio		1.19	0.72	1.36	0.75	1.29	0.67	0.77
Uniform Delay, d1		36.0	33.7	33.0	30.3	28.5	23.9	25.1
Progression Factor		1.00	1.00	0.66	0.45	1.00	1.00	1.00
Incremental Delay, d2		113.7	16.2	164.7	7.8	142.8	5.6	10.6
Delay (s)		149.7	49.9	186.5	21.5	171.3	29.5	35.8
Level of Service		F	D	F	C	F	C	D
Approach Delay (s)		114.5		142.6			99.7	
Approach LOS		F		F			F	

Intersection Summary			
HCM 2000 Control Delay	120.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	NEL2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	114	120	31	117	248	276	96	30	186	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	16	12	13	12	12	12	12
Grade (%)		2%				10%			-12%	
Total Lost time (s)		6.0		6.0		6.0			6.0	
Lane Util. Factor		1.00		1.00		0.95			0.95	
Frpb, ped/bikes		1.00		1.00		0.98			1.00	
Flpb, ped/bikes		1.00		1.00		1.00			1.00	
Frt		0.99		1.00		0.96			0.92	
Flt Protected		0.98		0.95		0.98			1.00	
Satd. Flow (prot)		1410		1749		2900			3101	
Flt Permitted		0.98		0.95		0.98			1.00	
Satd. Flow (perm)		1410		1749		2900			3101	
Peak-hour factor, PHF	0.54	0.43	0.61	0.64	0.66	0.81	0.39	0.58	0.85	0.78
Adj. Flow (vph)	211	279	51	183	376	341	246	52	219	301
RTOR Reduction (vph)	0	0	0	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	541	0	183	0	926	0	0	572	0
Confl. Peds. (#/hr)				20			23	58		
Heavy Vehicles (%)	3%	0%	0%	0%	1%	2%	3%	0%	2%	2%
Parking (#/hr)	0	0	0							0
Turn Type	Split	NA		Split	Split	NA		Split	NA	
Protected Phases	9	9		2	2	2		4	4	
Permitted Phases						2				
Actuated Green, G (s)		32.0		24.0		24.0			16.0	
Effective Green, g (s)		32.0		24.0		24.0			16.0	
Actuated g/C Ratio		0.36		0.27		0.27			0.18	
Clearance Time (s)		6.0		6.0		6.0			6.0	
Vehicle Extension (s)		4.0		4.0		4.0			3.0	
Lane Grp Cap (vph)		501		466		773			551	
v/s Ratio Prot		c0.38		0.10		c0.32			c0.18	
v/s Ratio Perm										
v/c Ratio		1.08		0.39		1.20			1.10dr	
Uniform Delay, d1		29.0		27.0		33.0			37.0	
Progression Factor		1.00		1.00		1.00			1.00	
Incremental Delay, d2		63.4		0.7		101.2			48.6	
Delay (s)		92.4		27.8		134.2			85.6	
Level of Service		F		C		F			F	
Approach Delay (s)		92.4				117.2			85.6	
Approach LOS		F				F			F	

Intersection Summary			
HCM 2000 Control Delay	103.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	32	137	40	80	412	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.97		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.98	
Flt Protected	1.00	1.00		0.98	0.96	
Satd. Flow (prot)	1900	1537		1742	1759	
Flt Permitted	1.00	1.00		0.90	0.96	
Satd. Flow (perm)	1900	1537		1602	1759	
Peak-hour factor, PHF	0.80	0.85	0.75	0.86	0.92	0.85
Adj. Flow (vph)	40	161	53	93	448	84
RTOR Reduction (vph)	0	81	0	0	13	0
Lane Group Flow (vph)	40	81	0	146	519	0
Confl. Peds. (#/hr)		6	6			6
Heavy Vehicles (%)	0%	2%	17%	1%	0%	6%
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Actuated Green, G (s)	25.0	25.0		25.0	15.0	
Effective Green, g (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
Clearance Time (s)	5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	950	768		801	527	
v/s Ratio Prot	0.02				c0.29	
v/s Ratio Perm		0.05		c0.09		
v/c Ratio	0.04	0.10		0.18	0.98	
Uniform Delay, d1	6.4	6.6		6.9	17.4	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.3		0.5	35.5	
Delay (s)	6.5	6.9		7.4	52.9	
Level of Service	A	A		A	D	
Approach Delay (s)	6.8			7.4	52.9	
Approach LOS	A			A	D	

Intersection Summary

HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	23	24	0	31	52	368	29	0	222	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.79	0.90	0.79	0.90	0.91	0.65	0.92	0.85	0.90
Hourly flow rate (vph)	0	0	26	30	0	39	58	404	45	0	261	0
Pedestrians					9						1	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								705			559	
pX, platoon unblocked												
vC, conflicting volume	844	835	261	838	812	437	261			458		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	844	835	261	838	812	437	261			458		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	89	100	94	96			100		
cM capacity (veh/h)	255	288	777	266	297	619	1303			1105		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	70	507	261
Volume Left	0	30	58	0
Volume Right	26	39	45	0
cSH	777	392	1303	1105
Volume to Capacity	0.03	0.18	0.04	0.00
Queue Length 95th (ft)	3	16	3	0
Control Delay (s)	9.8	16.2	1.3	0.0
Lane LOS	A	C	A	
Approach Delay (s)	9.8	16.2	1.3	0.0
Approach LOS	A	C		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	364	186	198	229	276	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frpb, ped/bikes	0.97	0.69	0.94		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.95	1.00
Frt	0.99	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3403	1044	3000		1677	3539
Flt Permitted	0.95	1.00	1.00		0.48	1.00
Satd. Flow (perm)	3403	1044	3000		848	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	404	207	220	254	307	530
RTOR Reduction (vph)	5	138	109	0	0	0
Lane Group Flow (vph)	420	48	365	0	307	530
Confl. Peds. (#/hr)	97	253		77	77	
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	18.0	18.0	40.0		40.0	40.0
Effective Green, g (s)	18.0	18.0	40.0		40.0	40.0
Actuated g/C Ratio	0.26	0.26	0.57		0.57	0.57
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Lane Grp Cap (vph)	875	268	1714		484	2022
v/s Ratio Prot	c0.12		0.12			0.15
v/s Ratio Perm		0.05			c0.36	
v/c Ratio	0.48	0.18	0.21		0.63	0.26
Uniform Delay, d1	22.0	20.2	7.3		10.1	7.6
Progression Factor	1.00	1.00	0.33		1.00	1.00
Incremental Delay, d2	1.9	1.5	0.0		6.2	0.3
Delay (s)	23.9	21.7	2.4		16.3	7.9
Level of Service	C	C	A		B	A
Approach Delay (s)	23.2		2.4			11.0
Approach LOS	C		A			B

Intersection Summary

HCM 2000 Control Delay	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	152	240	107	191	375	216	23	725	180	130	213	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Total Lost time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lane Util. Factor		0.95		1.00	0.95			0.91			0.95	1.00
Frpb, ped/bikes		0.92		1.00	0.88			0.92			1.00	0.85
Flpb, ped/bikes		0.97		0.89	1.00			1.00			0.97	1.00
Frt		0.97		1.00	0.95			0.97			1.00	0.85
Flt Protected		0.98		0.95	1.00			1.00			0.98	1.00
Satd. Flow (prot)		2887		1388	2709			3944			3052	1207
Flt Permitted		0.53		0.30	1.00			0.90			0.57	1.00
Satd. Flow (perm)		1556		437	2709			3557			1790	1207
Peak-hour factor, PHF	0.59	0.88	0.67	0.67	0.65	0.78	0.53	0.81	0.85	0.71	0.90	0.58
Adj. Flow (vph)	258	273	160	285	577	277	43	895	212	183	237	103
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	691	0	285	854	0	0	1150	0	0	420	103
Confl. Peds. (#/hr)	575		525	525		575	126		975	975		126
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	6%	1%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)		37.0		37.0	37.0			26.0			26.0	26.0
Effective Green, g (s)		38.5		37.0	37.0			26.0			26.0	26.0
Actuated g/C Ratio		0.43		0.41	0.41			0.29			0.29	0.29
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	6.0
Lane Grp Cap (vph)		665		179	1113			1027			517	348
v/s Ratio Prot					0.32							
v/s Ratio Perm		0.44		c0.65				c0.32			0.23	0.09
v/c Ratio		1.63dl		1.59	0.77			1.12			2.58dl	0.30
Uniform Delay, d1		25.8		26.5	22.8			32.0			29.7	24.9
Progression Factor		1.00		1.00	1.00			1.00			0.65	0.54
Incremental Delay, d2		45.4		291.2	5.1			67.1			9.4	1.5
Delay (s)		71.2		317.7	27.9			99.1			28.6	14.9
Level of Service		E		F	C			F			C	B
Approach Delay (s)		71.2			100.4			99.1			25.9	
Approach LOS		E			F			F			C	

Intersection Summary

HCM 2000 Control Delay	94.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	122.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	NEL	NER	NER2
Lane Configurations			
Volume (vph)	45	70	52
Ideal Flow (vphpl)	1900	1900	1900
Lane Width	12	12	12
Grade (%)	7%		
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	1.00	0.95	
Frpb, ped/bikes	1.00	0.46	
Flpb, ped/bikes	1.00	1.00	
Frt	0.94	0.85	
Flt Protected	0.97	1.00	
Satd. Flow (prot)	1439	603	
Flt Permitted	0.97	1.00	
Satd. Flow (perm)	1439	603	
Peak-hour factor, PHF	0.64	0.80	0.73
Adj. Flow (vph)	70	88	71
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	118	111	0
Confl. Peds. (#/hr)	575		525
Heavy Vehicles (%)	5%	4%	0%
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Actuated Green, G (s)	9.0	9.0	
Effective Green, g (s)	9.0	9.0	
Actuated g/C Ratio	0.10	0.10	
Clearance Time (s)	6.0	6.0	
Lane Grp Cap (vph)	143	60	
v/s Ratio Prot	0.08		
v/s Ratio Perm		c0.18	
v/c Ratio	0.83	1.85	
Uniform Delay, d1	39.7	40.5	
Progression Factor	1.00	1.00	
Incremental Delay, d2	39.5	439.3	
Delay (s)	79.3	479.8	
Level of Service	E	F	
Approach Delay (s)	273.4		
Approach LOS	F		

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	103	517	540	175	66	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)		4.0	4.0		4.0	5.5
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.75		1.00	0.69
Flpb, ped/bikes		0.95	1.00		1.00	1.00
Frt		1.00	0.96		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		2774	2134		1413	824
Flt Permitted		0.70	1.00		0.95	1.00
Satd. Flow (perm)		1949	2134		1413	824
Peak-hour factor, PHF	0.86	0.95	0.95	0.81	0.45	0.84
Adj. Flow (vph)	120	544	568	216	147	335
RTOR Reduction (vph)	0	0	56	0	0	0
Lane Group Flow (vph)	0	664	728	0	147	335
Confl. Peds. (#/hr)	1450			1450	225	225
Heavy Vehicles (%)	0%	2%	1%	0%	0%	6%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	Perm	NA	NA		NA	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Actuated Green, G (s)		38.0	38.0		21.0	21.0
Effective Green, g (s)		39.5	39.5		22.5	21.0
Actuated g/C Ratio		0.56	0.56		0.32	0.30
Clearance Time (s)		5.5	5.5		5.5	5.5
Lane Grp Cap (vph)		1099	1204		454	247
v/s Ratio Prot			c0.34		0.10	
v/s Ratio Perm		0.34				c0.41
v/c Ratio		0.60	0.60		0.32	1.36
Uniform Delay, d1		10.1	10.1		18.0	24.5
Progression Factor		1.00	0.95		1.00	1.00
Incremental Delay, d2		2.5	0.9		1.9	184.4
Delay (s)		12.5	10.5		19.9	208.9
Level of Service		B	B		B	F
Approach Delay (s)		12.5	10.5		151.3	
Approach LOS		B	B		F	

Intersection Summary			
HCM 2000 Control Delay	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	86	492	4	0	672	33	0	38	56	46	0	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	96	547	4	0	747	37	0	42	62	51	0	48
Pedestrians		225			125			100			750	
Lane Width (ft)		11.0			11.0			12.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		17			10			8			57	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		443			622							
pX, platoon unblocked												
vC, conflicting volume	1533			651			1486	2373	501	2188	2357	1367
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1533			651			1486	2373	501	2188	2357	1367
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	48			100			100	0	85	0	100	1
cM capacity (veh/h)	184			854			0	6	428	0	7	48

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	369	278	373	410	104	99
Volume Left	96	0	0	0	0	51
Volume Right	0	4	0	37	62	48
cSH	184	1700	854	1700	16	0
Volume to Capacity	0.52	0.16	0.00	0.24	6.71	Err
Queue Length 95th (ft)	66	0	0	0	Err	Err
Control Delay (s)	31.7	0.0	0.0	0.0	Err	Err
Lane LOS	D				F	F
Approach Delay (s)	18.1		0.0		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	148	233	35	206	41	320	277	64	14	103	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	11	11	11	12	12	15	12	12	14	12
Total Lost time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Util. Factor		1.00	1.00	1.00	1.00			1.00			1.00	
Frpb, ped/bikes		1.00	0.92	1.00	0.98			1.00			0.97	
Flpb, ped/bikes		0.97	1.00	0.97	1.00			0.99			1.00	
Frt		1.00	0.85	1.00	0.97			0.99			0.92	
Flt Protected		0.98	1.00	0.95	1.00			0.98			1.00	
Satd. Flow (prot)		1682	1443	1641	1716			1754			1558	
Flt Permitted		0.56	1.00	0.47	1.00			0.63			0.96	
Satd. Flow (perm)		967	1443	819	1716			1134			1500	
Peak-hour factor, PHF	0.82	0.82	0.85	0.67	0.70	0.63	0.79	0.69	0.81	0.89	0.70	0.75
Adj. Flow (vph)	149	180	274	52	294	65	405	401	79	16	147	225
RTOR Reduction (vph)	0	0	164	0	11	0	0	5	0	0	71	0
Lane Group Flow (vph)	0	329	110	52	348	0	0	880	0	0	317	0
Confl. Peds. (#/hr)	52		26	26		52	29		5	5		29
Heavy Vehicles (%)	4%	4%	0%	3%	2%	0%	4%	1%	2%	0%	6%	4%
Parking (#/hr)								0			0	
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Actuated Green, G (s)		28.0	28.0	28.0	28.0			32.0			32.0	
Effective Green, g (s)		28.0	28.0	28.0	28.0			32.0			32.0	
Actuated g/C Ratio		0.40	0.40	0.40	0.40			0.46			0.46	
Clearance Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lane Grp Cap (vph)		386	577	327	686			518			685	
v/s Ratio Prot					0.20							
v/s Ratio Perm		c0.34	0.08	0.06				c0.78			0.21	
v/c Ratio		0.85	0.19	0.16	0.51			1.70			0.46	
Uniform Delay, d1		19.1	13.6	13.5	15.8			19.0			13.1	
Progression Factor		1.10	2.30	1.00	1.00			1.00			1.00	
Incremental Delay, d2		19.0	0.7	1.0	2.7			322.8			2.2	
Delay (s)		39.9	32.0	14.5	18.5			341.8			15.3	
Level of Service		D	C	B	B			F			B	
Approach Delay (s)		36.3			18.0			341.8			15.3	
Approach LOS		D			B			F			B	

Intersection Summary

HCM 2000 Control Delay	147.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	67	7	12	14	15	556	0	0	314	56
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	74	8	13	16	17	618	0	0	349	62
Pedestrians		42			19			4			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			2			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1103	1092	426	1129	1123	645	453			637		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1053	1040	426	1081	1075	535	453			526		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	88	95	93	97	98			100		
cM capacity (veh/h)	151	191	604	142	182	472	1069			908		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	37	634	411
Volume Left	0	8	17	0
Volume Right	74	16	0	62
cSH	604	228	1069	908
Volume to Capacity	0.12	0.16	0.02	0.00
Queue Length 95th (ft)	10	14	1	0
Control Delay (s)	11.8	23.8	0.4	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.8	23.8	0.4	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	0	198	213	617	327	40	103	0	0	738	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	12	12	11	12	12	12	12
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes		0.92		1.00	0.86			1.00			1.00	
Flpb, ped/bikes		0.99		0.95	1.00			1.00			1.00	
Frt		0.89		1.00	0.95			1.00			0.98	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1229		1295	1225			3073			3028	
Flt Permitted		0.12		0.52	1.00			0.69			1.00	
Satd. Flow (perm)		148		715	1225			2157			3028	
Peak-hour factor, PHF	0.80	0.92	0.83	0.89	0.94	0.93	0.75	0.75	0.92	0.92	0.89	0.75
Adj. Flow (vph)	62	0	239	239	656	352	53	137	0	0	829	140
RTOR Reduction (vph)	0	76	0	0	28	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	225	0	239	980	0	0	190	0	0	969	0
Confl. Peds. (#/hr)	859		99	99		859	14		65	65		14
Heavy Vehicles (%)	7%	2%	18%	0%	3%	12%	0%	1%	2%	2%	2%	19%
Parking (#/hr)				0								
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		23.0		23.0	23.0			35.0			35.0	
Effective Green, g (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		0.2		0.2	0.2			0.2			0.2	
Lane Grp Cap (vph)		48		234	402			1078			1514	
v/s Ratio Prot					0.80						c0.32	
v/s Ratio Perm		c1.52		0.33				0.09				
v/c Ratio		4.69		1.02	2.44			0.18			0.64	
Uniform Delay, d1		23.5		23.5	23.5			9.6			12.9	
Progression Factor		1.00		1.00	1.00			0.54			1.14	
Incremental Delay, d2		1706.9		64.5	655.0			0.4			2.0	
Delay (s)		1730.4		88.0	678.5			5.5			16.6	
Level of Service		F		F	F			A			B	
Approach Delay (s)		1730.4			565.4			5.5			16.6	
Approach LOS		F			F			A			B	

Intersection Summary

HCM 2000 Control Delay	459.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.22		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	119.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	624	664	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	624	722	0	0
Pedestrians					18	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			18		1627	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		1627	18
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			61		100	100
cM capacity (veh/h)			1605		57	1056

Direction, Lane #	WB 1	WB 2
Volume Total	865	481
Volume Left	624	0
Volume Right	0	0
cSH	1605	1700
Volume to Capacity	0.39	0.28
Queue Length 95th (ft)	47	0
Control Delay (s)	7.3	0.0
Lane LOS	A	
Approach Delay (s)	4.7	
Approach LOS		

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	124	866	332	137	489	0	0	180	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Total Lost time (s)					7.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			1.00	0.88
Frpb, ped/bikes					0.96		1.00	1.00			1.00	0.94
Flpb, ped/bikes					0.99		0.98	1.00			1.00	1.00
Frt					0.96		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					2566		1540	1668			1735	2438
Flt Permitted					1.00		0.60	1.00			1.00	1.00
Satd. Flow (perm)					2566		969	1668			1735	2438
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.96	0.93	0.91	0.94	0.92	0.92	0.88	0.83
Adj. Flow (vph)	0	0	0	133	902	357	151	520	0	0	205	408
RTOR Reduction (vph)	0	0	0	0	43	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1349	0	151	520	0	0	205	408
Confl. Peds. (#/hr)				139		202	25					25
Heavy Vehicles (%)	2%	2%	2%	1%	5%	1%	1%	0%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					43.0		24.0	24.0			24.0	24.0
Effective Green, g (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
Clearance Time (s)					7.0		6.0	6.0			6.0	6.0
Lane Grp Cap (vph)					1379		290	500			520	731
v/s Ratio Prot								c0.31			0.12	
v/s Ratio Perm					0.53		0.16					0.17
v/c Ratio					0.98		0.52	1.04			0.39	0.56
Uniform Delay, d1					18.1		23.2	28.0			22.2	23.5
Progression Factor					0.86		0.81	0.75			1.00	1.00
Incremental Delay, d2					14.5		5.7	48.2			2.2	3.1
Delay (s)					29.9		24.6	69.2			24.5	26.6
Level of Service					C		C	E			C	C
Approach Delay (s)		0.0			29.9			59.2			25.9	
Approach LOS		A			C			E			C	

Intersection Summary

HCM 2000 Control Delay	36.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	56	991	4	299	14	0	0	1	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					1.00			1.00			0.98	
Flpb, ped/bikes					0.99			0.99			1.00	
Frt					1.00			1.00			0.90	
Flt Protected					1.00			0.96			1.00	
Satd. Flow (prot)					3339			1664			1561	
Flt Permitted					1.00			0.73			1.00	
Satd. Flow (perm)					3339			1272			1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.87	0.50	0.85	0.46	0.92	0.92	0.25	0.67
Adj. Flow (vph)	0	0	0	84	1139	8	352	30	0	0	4	13
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	0	1230	0	0	382	0	0	11	0
Confl. Peds. (#/hr)				87		214	8					8
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					37.0			33.0			33.0	
Effective Green, g (s)					37.0			33.0			33.0	
Actuated g/C Ratio					0.46			0.41			0.41	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1544			524			643	
v/s Ratio Prot											0.01	
v/s Ratio Perm					0.37			c0.30				
v/c Ratio					0.80			0.73			0.02	
Uniform Delay, d1					18.3			19.7			13.9	
Progression Factor					0.73			0.93			1.00	
Incremental Delay, d2					3.6			4.6			0.0	
Delay (s)					16.9			22.9			14.0	
Level of Service					B			C			B	
Approach Delay (s)		0.0			16.9			22.9			14.0	
Approach LOS		A			B			C			B	

Intersection Summary

HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	90	805	34	200	61	0	0	19	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.98			1.00			0.99	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.99			1.00			0.90	
Flt Protected					0.99			0.96			1.00	
Satd. Flow (prot)					3103			1782			1597	
Flt Permitted					0.99			0.72			1.00	
Satd. Flow (perm)					3103			1331			1597	
Peak-hour factor, PHF	0.92	0.92	0.92	0.72	0.98	0.43	0.82	0.72	0.92	0.92	0.85	0.62
Adj. Flow (vph)	0	0	0	125	821	79	244	85	0	0	22	74
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	41	0
Lane Group Flow (vph)	0	0	0	0	1017	0	0	329	0	0	55	0
Confl. Peds. (#/hr)				15		84	3					3
Heavy Vehicles (%)	2%	2%	2%	1%	5%	3%	2%	4%	2%	2%	6%	5%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					38.0			32.0			32.0	
Effective Green, g (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1473			532			638	
v/s Ratio Prot											0.03	
v/s Ratio Perm					0.33			c0.25				
v/c Ratio					0.69			0.62			0.09	
Uniform Delay, d1					16.4			19.1			14.9	
Progression Factor					0.44			0.89			1.00	
Incremental Delay, d2					1.4			5.0			0.3	
Delay (s)					8.6			22.0			15.2	
Level of Service					A			C			B	
Approach Delay (s)		0.0			8.6			22.0			15.2	
Approach LOS		A			A			C			B	

Intersection Summary

HCM 2000 Control Delay	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	876	330	29	241	0	0	325	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.95			1.00			0.99	
Flpb, ped/bikes					0.99			1.00			1.00	
Frt					0.96			1.00			0.97	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					2892			1761			2112	
Flt Permitted					1.00			0.72			1.00	
Satd. Flow (perm)					2892			1281			2112	
Peak-hour factor, PHF	0.92	0.92	0.92	0.54	0.95	0.80	0.69	0.89	0.92	0.92	0.95	0.77
Adj. Flow (vph)	0	0	0	85	922	412	42	271	0	0	342	84
RTOR Reduction (vph)	0	0	0	0	55	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	1364	0	0	313	0	0	415	0
Confl. Peds. (#/hr)				43		66	17					17
Heavy Vehicles (%)	2%	2%	2%	2%	9%	8%	5%	8%	2%	2%	5%	2%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					44.0			26.0			26.0	
Effective Green, g (s)					44.0			26.0			26.0	
Actuated g/C Ratio					0.55			0.32			0.32	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1590			416			686	
v/s Ratio Prot											0.20	
v/s Ratio Perm					0.47			c0.24				
v/c Ratio					0.86			0.75			0.61	
Uniform Delay, d1					15.3			24.1			22.7	
Progression Factor					1.00			1.03			1.00	
Incremental Delay, d2					6.2			9.2			3.9	
Delay (s)					21.5			34.0			26.6	
Level of Service					C			C			C	
Approach Delay (s)		0.0			21.5			34.0			26.6	
Approach LOS		A			C			C			C	

Intersection Summary

HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	321	11	1	126	0	0	1201	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)				5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	
Flpb, ped/bikes				1.00	1.00	1.00		1.00			1.00	
Frt				1.00	1.00	0.85		1.00			1.00	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1486	1580	1253		3213			3110	
Flt Permitted				0.95	1.00	1.00		0.95			1.00	
Satd. Flow (perm)				1486	1580	1253		3073			3110	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.86	0.67	0.25	0.82	0.25	0.92	0.97	0.68
Adj. Flow (vph)	0	0	0	187	373	16	4	154	0	0	1238	41
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	187	373	16	0	158	0	0	1279	0
Confl. Peds. (#/hr)						69	7					7
Heavy Vehicles (%)	2%	2%	2%	2%	1%	0%	0%	1%	0%	2%	4%	0%
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Actuated Green, G (s)				22.5	22.5	22.5		33.5			36.5	
Effective Green, g (s)				22.5	22.5	22.5		33.5			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.48			0.52	
Clearance Time (s)				5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Lane Grp Cap (vph)				477	507	402		1521			1621	
v/s Ratio Prot					c0.24			0.04			c0.41	
v/s Ratio Perm				0.13		0.01		0.01				
v/c Ratio				0.39	0.74	0.04		0.10			0.79	
Uniform Delay, d1				18.4	21.1	16.3		10.0			13.6	
Progression Factor				1.00	1.00	1.00		0.81			0.79	
Incremental Delay, d2				0.2	4.8	0.0		0.0			0.4	
Delay (s)				18.6	25.9	16.3		8.1			11.2	
Level of Service				B	C	B		A			B	
Approach Delay (s)		0.0			23.2			8.1			11.2	
Approach LOS		A			C			A			B	

Intersection Summary

HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	578	201	22	61	3	41	97	60	436	941	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	11	12	12	11	12	12	12	12
Total Lost time (s)		5.5	5.5		5.5			5.5			5.5	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.85		1.00			0.99			1.00	
Flpb, ped/bikes		1.00	1.00		1.00			1.00			1.00	
Frt		1.00	0.85		0.99			0.95			1.00	
Flt Protected		1.00	1.00		0.99			0.99			0.98	
Satd. Flow (prot)		1633	1195		1616			2800			3085	
Flt Permitted		0.97	1.00		0.21			0.63			0.73	
Satd. Flow (perm)		1594	1195		350			1774			2275	
Peak-hour factor, PHF	0.83	0.84	0.73	0.50	0.50	0.25	0.77	0.88	0.84	0.92	0.98	0.75
Adj. Flow (vph)	40	688	275	44	122	12	53	110	71	474	960	1
RTOR Reduction (vph)	0	0	0	0	3	0	0	45	0	0	0	0
Lane Group Flow (vph)	0	728	275	0	175	0	0	189	0	0	1435	0
Confl. Peds. (#/hr)	2		147	147		2	6		22	22		6
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	8%	2%	7%	10%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)		22.5	22.5		22.5			25.5			36.5	
Effective Green, g (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
Clearance Time (s)		5.5	5.5		5.5			5.5			5.5	
Vehicle Extension (s)		0.2	0.2		0.2			0.2			0.2	
Lane Grp Cap (vph)		512	384		112			646			1278	
v/s Ratio Prot											c0.13	
v/s Ratio Perm		0.46	0.23		c0.50			0.11			c0.46	
v/c Ratio		1.42	0.72		1.56			0.29			1.12	
Uniform Delay, d1		23.8	20.9		23.8			15.8			16.8	
Progression Factor		1.00	1.00		1.00			1.00			0.55	
Incremental Delay, d2		201.0	5.2		290.4			1.1			62.8	
Delay (s)		224.8	26.2		314.1			17.0			72.1	
Level of Service		F	C		F			B			E	
Approach Delay (s)		170.3			314.1			17.0			72.1	
Approach LOS		F			F			B			E	

Intersection Summary

HCM 2000 Control Delay	117.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	940	460	0	0	86	659
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	10	10
Total Lost time (s)	5.0				5.0	5.0
Lane Util. Factor	0.95				1.00	0.88
Frpb, ped/bikes	0.93				1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00
Frt	0.95				1.00	0.85
Flt Protected	1.00				0.95	1.00
Satd. Flow (prot)	2712				1472	2364
Flt Permitted	1.00				0.95	1.00
Satd. Flow (perm)	2712				1472	2364
Peak-hour factor, PHF	0.91	0.86	0.92	0.92	0.85	0.82
Adj. Flow (vph)	1033	535	0	0	101	804
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1568	0	0	0	101	804
Confl. Peds. (#/hr)		79				
Heavy Vehicles (%)	3%	1%	2%	2%	3%	1%
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Actuated Green, G (s)	45.0				25.0	25.0
Effective Green, g (s)	45.0				25.0	25.0
Actuated g/C Ratio	0.56				0.31	0.31
Clearance Time (s)	5.0				5.0	5.0
Lane Grp Cap (vph)	1525				460	738
v/s Ratio Prot	c0.58				0.07	
v/s Ratio Perm						c0.34
v/c Ratio	1.03				0.22	1.09
Uniform Delay, d1	17.5				20.3	27.5
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	30.6				1.1	60.1
Delay (s)	48.1				21.4	87.6
Level of Service	D				C	F
Approach Delay (s)	48.1			0.0	80.2	
Approach LOS	D			A	F	

Intersection Summary

HCM 2000 Control Delay	59.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	485	1034	81	0	0	0	0	139	115	243	46	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Total Lost time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95						1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99						1.00	0.90		1.00	
Flpb, ped/bikes	0.97	1.00						1.00	1.00		0.95	
Frt	1.00	0.99						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		0.96	
Satd. Flow (prot)	1511	2965						1703	1299		1370	
Flt Permitted	0.95	1.00						1.00	1.00		0.63	
Satd. Flow (perm)	1511	2965						1703	1299		901	
Peak-hour factor, PHF	0.96	0.92	0.83	0.92	0.92	0.92	0.92	0.79	0.79	0.84	0.55	0.92
Adj. Flow (vph)	505	1124	98	0	0	0	0	176	146	289	84	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	36	0	0	0
Lane Group Flow (vph)	505	1222	0	0	0	0	0	176	110	0	373	0
Confl. Peds. (#/hr)	54		95						69	69		
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	0%	0%	1%	0%	2%
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	46.0	46.0						24.0	24.0		24.0	
Effective Green, g (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
Clearance Time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)	868	1704						510	389		270	
v/s Ratio Prot		c0.41						0.10				
v/s Ratio Perm	0.33								0.08		c0.41	
v/c Ratio	0.58	0.72						0.35	0.28		1.38	
Uniform Delay, d1	10.9	12.3						21.9	21.4		28.0	
Progression Factor	1.28	1.29						1.00	1.00		1.23	
Incremental Delay, d2	0.3	0.2						1.8	1.8		189.8	
Delay (s)	14.2	16.0						23.7	23.2		224.2	
Level of Service	B	B						C	C		F	
Approach Delay (s)		15.5			0.0			23.5			224.2	
Approach LOS		B			A			C			F	

Intersection Summary

HCM 2000 Control Delay	48.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1048	107	0	0	0	0	116	125	22	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						0.98			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.93			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		3202						1732			1832	
Flt Permitted		0.99						1.00			0.84	
Satd. Flow (perm)		3202						1732			1546	
Peak-hour factor, PHF	0.64	0.87	0.75	0.92	0.92	0.92	0.92	0.73	0.77	0.69	0.35	0.92
Adj. Flow (vph)	438	1205	143	0	0	0	0	159	162	32	311	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	46	0	0	0	0
Lane Group Flow (vph)	0	1778	0	0	0	0	0	275	0	0	343	0
Confl. Peds. (#/hr)	14		34						22	22		
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		49.0						21.0			21.0	
Effective Green, g (s)		49.0						21.0			21.0	
Actuated g/C Ratio		0.61						0.26			0.26	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1961						454			405	
v/s Ratio Prot								0.16				
v/s Ratio Perm		0.56									c0.22	
v/c Ratio		0.91						0.61			0.85	
Uniform Delay, d1		13.5						25.9			28.0	
Progression Factor		1.28						1.00			1.14	
Incremental Delay, d2		5.5						5.9			19.1	
Delay (s)		22.8						31.8			50.9	
Level of Service		C						C			D	
Approach Delay (s)		22.8			0.0			31.8			50.9	
Approach LOS		C			A			C			D	

Intersection Summary

HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	1063	13	0	0	0	0	100	55	27	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		1.00						0.94			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3283						1974			2080	
Flt Permitted		0.99						1.00			0.88	
Satd. Flow (perm)		3283						1974			1854	
Peak-hour factor, PHF	0.71	0.97	0.84	0.92	0.92	0.92	0.92	0.84	0.67	0.93	0.75	0.92
Adj. Flow (vph)	144	1096	15	0	0	0	0	119	82	29	73	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	31	0	0	0	0
Lane Group Flow (vph)	0	1254	0	0	0	0	0	170	0	0	102	0
Confl. Peds. (#/hr)	22		26						16	16		
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	7%	0%	2%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.0						20.0			20.0	
Effective Green, g (s)		50.0						20.0			20.0	
Actuated g/C Ratio		0.62						0.25			0.25	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2051						493			463	
v/s Ratio Prot								c0.09				
v/s Ratio Perm		0.38									0.06	
v/c Ratio		0.61						0.35			0.22	
Uniform Delay, d1		9.1						24.6			23.8	
Progression Factor		0.50						1.00			0.61	
Incremental Delay, d2		0.6						1.9			0.9	
Delay (s)		5.2						26.5			15.3	
Level of Service		A						C			B	
Approach Delay (s)		5.2			0.0			26.5			15.3	
Approach LOS		A			A			C			B	

Intersection Summary

HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	942	30	0	0	0	0	82	24	283	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		0.98						1.00			0.99	
Frt		1.00						0.97			1.00	
Flt Protected		0.99						1.00			0.96	
Satd. Flow (prot)		3309						1572			1705	
Flt Permitted		0.99						1.00			0.68	
Satd. Flow (perm)		3309						1572			1205	
Peak-hour factor, PHF	0.75	0.94	0.82	0.92	0.92	0.92	0.92	0.80	0.92	0.91	0.67	0.92
Adj. Flow (vph)	229	1002	37	0	0	0	0	102	26	311	67	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	1265	0	0	0	0	0	117	0	0	378	0
Confl. Peds. (#/hr)	48		30						9	9		
Heavy Vehicles (%)	1%	6%	4%	2%	2%	2%	2%	20%	5%	3%	20%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		36.0						34.0			34.0	
Effective Green, g (s)		36.0						34.0			34.0	
Actuated g/C Ratio		0.45						0.42			0.42	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1489						668			512	
v/s Ratio Prot								0.07				
v/s Ratio Perm		0.38									c0.31	
v/c Ratio		0.85						0.17			0.74	
Uniform Delay, d1		19.6						14.3			19.3	
Progression Factor		0.92						1.00			0.49	
Incremental Delay, d2		5.3						0.6			7.0	
Delay (s)		23.4						14.9			16.3	
Level of Service		C						B			B	
Approach Delay (s)		23.4			0.0			14.9			16.3	
Approach LOS		C			A			B			B	

Intersection Summary

HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

24: Street 1 & Wylie Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	1	1	4	49	20	21	152	10	24	268	48
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	1	1	4	54	22	23	169	11	27	298	53

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	27	81	203	378
Volume Left (vph)	24	4	23	27
Volume Right (vph)	1	22	11	53
Hadj (s)	0.19	-0.12	0.02	-0.04
Departure Headway (s)	5.6	5.1	4.6	4.4
Degree Utilization, x	0.04	0.12	0.26	0.46
Capacity (veh/h)	571	623	745	793
Control Delay (s)	8.8	8.8	9.3	11.1
Approach Delay (s)	8.8	8.8	9.3	11.1
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	23	11	17	17	18	35	106	1	1	32	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	26	12	19	19	20	39	118	1	1	36	23

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	39	58	158	60
Volume Left (vph)	1	19	39	1
Volume Right (vph)	12	20	1	23
Hadj (s)	-0.15	-0.11	0.08	-0.20
Departure Headway (s)	4.3	4.3	4.3	4.1
Degree Utilization, x	0.05	0.07	0.19	0.07
Capacity (veh/h)	790	780	819	850
Control Delay (s)	7.5	7.6	8.2	7.4
Approach Delay (s)	7.5	7.6	8.2	7.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	25	76	34	4	57
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	28	84	38	4	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	103			122	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176	103			122	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	812	951			1465	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	31	122	68
Volume Left	3	0	4
Volume Right	28	38	0
cSH	934	1700	1465
Volume to Capacity	0.03	0.07	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.0	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	6	92	27	6	26
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	7	102	30	7	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	159	117			132	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	159	117			132	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	828	935			1453	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	23	132	36
Volume Left	17	0	7
Volume Right	7	30	0
cSH	856	1700	1453
Volume to Capacity	0.03	0.08	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.0	1.4
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	1.4
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	275	32	2	379	72	21
Sign Control	Free			Free	Stop	
Grade	0%			-12%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	306	36	2	421	80	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	413			498		
pX, platoon unblocked						
vC, conflicting volume			341		538	171
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			341		538	171
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		83	97
cM capacity (veh/h)			1215		472	843

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	204	137	143	281	103
Volume Left	0	0	2	0	80
Volume Right	0	36	0	0	23
cSH	1700	1700	1215	1700	524
Volume to Capacity	0.12	0.08	0.00	0.17	0.20
Queue Length 95th (ft)	0	0	0	0	18
Control Delay (s)	0.0	0.0	0.1	0.0	13.5
Lane LOS			A		B
Approach Delay (s)	0.0		0.0		13.5
Approach LOS					B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	169	1114	24	0	452
Sign Control	Stop		Free			Free
Grade	0%		4%			-4%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	184	1211	26	0	491
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			162			277
pX, platoon unblocked						
vC, conflicting volume	1388	417			1237	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1388	417			1237	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	69			100	
cM capacity (veh/h)	134	585			559	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	184	484	484	268	164	164	164
Volume Left	0	0	0	0	0	0	0
Volume Right	184	0	0	26	0	0	0
cSH	585	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.31	0.28	0.28	0.16	0.10	0.10	0.10
Queue Length 95th (ft)	33	0	0	0	0	0	0
Control Delay (s)	13.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	13.9	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Volume (veh/h)	0	546	690	139	0	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	607	767	154	0	49
Pedestrians					375	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					29	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		817	248			
pX, platoon unblocked						
vC, conflicting volume	1296				1522	836
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1296				1522	836
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	78
cM capacity (veh/h)	379				78	222

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	303	303	511	410	49
Volume Left	0	0	0	0	0
Volume Right	0	0	0	154	49
cSH	1700	1700	1700	1700	222
Volume to Capacity	0.18	0.18	0.30	0.24	0.22
Queue Length 95th (ft)	0	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	0.0	25.8
Lane LOS					D
Approach Delay (s)	0.0		0.0		25.8
Approach LOS					D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	39	256	161	911	289	670	393	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1444	1292	3152	1424	1594	1678	1398
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1444	1292	3152	1424	1594	1678	1398
Peak-hour factor, PHF	0.58	0.93	0.86	0.80	0.70	0.89	0.96	0.80
Adj. Flow (vph)	67	275	187	1139	413	753	409	394
RTOR Reduction (vph)	0	0	0	0	119	0	0	0
Lane Group Flow (vph)	0	342	187	1139	294	753	409	394
Confl. Peds. (#/hr)			31					31
Heavy Vehicles (%)	9%	4%	5%	1%	0%	1%	1%	3%
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Actuated Green, G (s)		20.0	20.0	29.0	29.0	36.0	36.0	36.0
Effective Green, g (s)		20.0	20.0	29.0	29.0	36.0	36.0	36.0
Actuated g/C Ratio		0.20	0.20	0.29	0.29	0.36	0.36	0.36
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)		288	258	914	412	573	604	503
v/s Ratio Prot		c0.24	0.14	c0.36	0.21	c0.47	0.24	0.28
v/s Ratio Perm								
v/c Ratio		1.19	0.72	1.25	0.71	1.31	0.68	0.78
Uniform Delay, d1		40.0	37.4	35.5	31.8	32.0	27.1	28.5
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		113.7	16.2	120.0	10.1	153.5	6.0	11.6
Delay (s)		153.7	53.7	155.5	41.8	185.5	33.1	40.1
Level of Service		F	D	F	D	F	C	D
Approach Delay (s)		118.4		125.2			108.6	
Approach LOS		F		F			F	

Intersection Summary			
HCM 2000 Control Delay	117.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	NEL2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	114	120	31	117	248	276	96	30	186	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	16	12	13	12	12	12	12
Grade (%)		2%				10%			-12%	
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0			6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00			0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.97			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00			1.00	
Frt	1.00	0.98		1.00	1.00	0.94			0.92	
Flt Protected	0.95	1.00		0.95	0.95	1.00			1.00	
Satd. Flow (prot)	1358	1439		1749	1528	1487			3101	
Flt Permitted	0.95	1.00		0.95	0.95	1.00			1.00	
Satd. Flow (perm)	1358	1439		1749	1528	1487			3101	
Peak-hour factor, PHF	0.54	0.43	0.61	0.64	0.66	0.81	0.39	0.58	0.85	0.78
Adj. Flow (vph)	211	279	51	183	376	341	246	52	219	301
RTOR Reduction (vph)	0	0	0	0	0	26	0	0	0	0
Lane Group Flow (vph)	211	330	0	183	376	561	0	0	572	0
Confl. Peds. (#/hr)				20			23	58		
Heavy Vehicles (%)	3%	0%	0%	0%	1%	2%	3%	0%	2%	2%
Parking (#/hr)	0	0	0							0
Turn Type	Split	NA		Split	Split	NA		Split	NA	
Protected Phases	9	9		2	2	2		4	4	
Permitted Phases						2				
Actuated Green, G (s)	32.0	32.0		32.0	32.0	32.0			18.0	
Effective Green, g (s)	32.0	32.0		32.0	32.0	32.0			18.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32	0.32			0.18	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0			6.0	
Lane Grp Cap (vph)	434	460		559	488	475			558	
v/s Ratio Prot	0.16	c0.23		0.10	0.25	c0.38			c0.18	
v/s Ratio Perm										
v/c Ratio	0.49	0.72		0.33	0.77	1.18			1.09dr	
Uniform Delay, d1	27.4	30.0		25.8	30.7	34.0			41.0	
Progression Factor	1.00	1.00		0.81	0.81	0.79			1.00	
Incremental Delay, d2	3.9	9.3		0.9	6.6	93.8			44.6	
Delay (s)	31.2	39.3		21.8	31.3	120.7			85.6	
Level of Service	C	D		C	C	F			F	
Approach Delay (s)		36.1				75.6			85.6	
Approach LOS		D				E			F	

Intersection Summary

HCM 2000 Control Delay	68.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	32	137	40	80	412	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	0.98			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	0.89			1.00	0.98	
Flt Protected	1.00			0.98	0.96	
Satd. Flow (prot)	1629			1743	1759	
Flt Permitted	1.00			0.84	0.96	
Satd. Flow (perm)	1629			1484	1759	
Peak-hour factor, PHF	0.80	0.85	0.75	0.86	0.92	0.85
Adj. Flow (vph)	40	161	53	93	448	84
RTOR Reduction (vph)	107	0	0	0	13	0
Lane Group Flow (vph)	94	0	0	146	519	0
Confl. Peds. (#/hr)		6	6			6
Heavy Vehicles (%)	0%	2%	17%	1%	0%	6%
Turn Type	NA		Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases			6			
Actuated Green, G (s)	17.0			17.0	24.0	
Effective Green, g (s)	17.0			17.0	24.0	
Actuated g/C Ratio	0.33			0.33	0.47	
Clearance Time (s)	5.0			5.0	5.0	
Lane Grp Cap (vph)	543			494	827	
v/s Ratio Prot	0.06				c0.29	
v/s Ratio Perm				c0.10		
v/c Ratio	0.17			0.30	0.63	
Uniform Delay, d1	12.0			12.6	10.1	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.7			1.5	3.6	
Delay (s)	12.7			14.1	13.7	
Level of Service	B			B	B	
Approach Delay (s)	12.7			14.1	13.7	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

4: Crawford St. & Wylie Avenue/Wylie Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	23	24	0	31	52	368	29	0	222	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.79	0.90	0.79	0.90	0.91	0.65	0.92	0.85	0.90
Hourly flow rate (vph)	0	0	26	30	0	39	58	404	45	0	261	0
Pedestrians					9						1	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								705			559	
pX, platoon unblocked												
vC, conflicting volume	844	835	261	838	812	437	261			458		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	844	835	261	838	812	437	261			458		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	89	100	94	96			100		
cM capacity (veh/h)	255	288	777	266	297	619	1303			1105		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	70	507	261
Volume Left	0	30	58	0
Volume Right	26	39	45	0
cSH	777	392	1303	1105
Volume to Capacity	0.03	0.18	0.04	0.00
Queue Length 95th (ft)	3	16	3	0
Control Delay (s)	9.8	16.2	1.3	0.0
Lane LOS	A	C	A	
Approach Delay (s)	9.8	16.2	1.3	0.0
Approach LOS	A	C		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	364	186	198	229	276	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Total Lost time (s)	6.0	6.0	6.0		6.0	6.0
Lane Util. Factor	0.97	0.91	0.95		1.00	0.95
Frpb, ped/bikes	0.97	0.69	0.94		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		0.95	1.00
Frt	0.99	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	3403	1044	3000		1677	3539
Flt Permitted	0.95	1.00	1.00		0.48	1.00
Satd. Flow (perm)	3403	1044	3000		848	3539
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	404	207	220	254	307	530
RTOR Reduction (vph)	5	138	109	0	0	0
Lane Group Flow (vph)	420	48	365	0	307	530
Confl. Peds. (#/hr)	97	253		77	77	
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Actuated Green, G (s)	18.0	18.0	40.0		40.0	40.0
Effective Green, g (s)	18.0	18.0	40.0		40.0	40.0
Actuated g/C Ratio	0.26	0.26	0.57		0.57	0.57
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0
Lane Grp Cap (vph)	875	268	1714		484	2022
v/s Ratio Prot	c0.12		0.12			0.15
v/s Ratio Perm		0.05			c0.36	
v/c Ratio	0.48	0.18	0.21		0.63	0.26
Uniform Delay, d1	22.0	20.2	7.3		10.1	7.6
Progression Factor	1.00	1.00	2.45		1.00	1.00
Incremental Delay, d2	1.9	1.5	0.0		6.2	0.3
Delay (s)	23.9	21.7	18.0		16.3	7.9
Level of Service	C	C	B		B	A
Approach Delay (s)	23.2		18.0			11.0
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	152	240	107	191	375	216	23	725	180	130	213	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Total Lost time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lane Util. Factor		0.95		1.00	0.95			0.91			0.95	1.00
Frpb, ped/bikes		0.92		1.00	0.88			0.92			1.00	0.85
Flpb, ped/bikes		0.97		0.89	1.00			1.00			0.97	1.00
Frt		0.97		1.00	0.95			0.97			1.00	0.85
Flt Protected		0.98		0.95	1.00			1.00			0.98	1.00
Satd. Flow (prot)		2885		1385	2709			3944			3053	1207
Flt Permitted		0.53		0.31	1.00			0.90			0.58	1.00
Satd. Flow (perm)		1571		457	2709			3556			1806	1207
Peak-hour factor, PHF	0.59	0.88	0.67	0.67	0.65	0.78	0.53	0.81	0.85	0.71	0.90	0.58
Adj. Flow (vph)	258	273	160	285	577	277	43	895	212	183	237	103
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	691	0	285	854	0	0	1150	0	0	420	103
Confl. Peds. (#/hr)	575		525	525		575	126		975	975		126
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	6%	1%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Actuated Green, G (s)		40.0		40.0	40.0			25.0			25.0	25.0
Effective Green, g (s)		41.5		40.0	40.0			25.0			25.0	25.0
Actuated g/C Ratio		0.46		0.44	0.44			0.28			0.28	0.28
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	6.0
Lane Grp Cap (vph)		724		203	1204			987			501	335
v/s Ratio Prot					0.32							
v/s Ratio Perm		0.44		c0.62				c0.32			0.23	0.09
v/c Ratio		1.43dl		1.40	0.71			1.17			2.58dl	0.31
Uniform Delay, d1		23.3		25.0	20.3			32.5			30.6	25.7
Progression Factor		1.00		0.81	0.79			1.00			1.00	1.00
Incremental Delay, d2		24.0		203.3	2.8			85.5			15.4	2.4
Delay (s)		47.3		223.6	18.7			118.0			46.0	28.0
Level of Service		D		F	B			F			D	C
Approach Delay (s)		47.3			70.0			118.0			42.4	
Approach LOS		D			E			F			D	

Intersection Summary

HCM 2000 Control Delay	81.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	122.5%	ICU Level of Service	H
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Movement	NEL	NER	NER2
Lane Configurations			
Volume (vph)	45	70	52
Ideal Flow (vphpl)	1900	1900	1900
Lane Width	12	12	12
Grade (%)	7%		
Total Lost time (s)	6.0	6.0	
Lane Util. Factor	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	0.94	0.85	
Flt Protected	0.97	1.00	
Satd. Flow (prot)	1439	1314	
Flt Permitted	0.97	1.00	
Satd. Flow (perm)	1439	1314	
Peak-hour factor, PHF	0.64	0.80	0.73
Adj. Flow (vph)	70	88	71
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	118	111	0
Confl. Peds. (#/hr)	575		525
Heavy Vehicles (%)	5%	4%	0%
Turn Type	NA	custom	
Protected Phases	10	10	
Permitted Phases	10	10	
Actuated Green, G (s)	7.0	7.0	
Effective Green, g (s)	7.0	7.0	
Actuated g/C Ratio	0.08	0.08	
Clearance Time (s)	6.0	6.0	
Lane Grp Cap (vph)	111	102	
v/s Ratio Prot	0.08	c0.08	
v/s Ratio Perm			
v/c Ratio	1.06	1.09	
Uniform Delay, d1	41.5	41.5	
Progression Factor	1.00	1.00	
Incremental Delay, d2	103.4	114.9	
Delay (s)	144.9	156.4	
Level of Service	F	F	
Approach Delay (s)	150.5		
Approach LOS	F		

Intersection Summary

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	103	517	540	175	66	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11
Total Lost time (s)		4.0	4.0		4.0	3.5
Lane Util. Factor		0.95	0.95		1.00	1.00
Frpb, ped/bikes		1.00	0.75		1.00	0.85
Flpb, ped/bikes		0.98	1.00		1.00	1.00
Frt		1.00	0.96		1.00	0.85
Flt Protected		0.99	1.00		0.95	1.00
Satd. Flow (prot)		2846	2134		1413	1019
Flt Permitted		0.66	1.00		0.95	1.00
Satd. Flow (perm)		1904	2134		1413	1019
Peak-hour factor, PHF	0.86	0.95	0.95	0.81	0.45	0.84
Adj. Flow (vph)	120	544	568	216	147	335
RTOR Reduction (vph)	0	0	44	0	0	0
Lane Group Flow (vph)	0	664	740	0	147	335
Confl. Peds. (#/hr)	1450			1450	225	225
Heavy Vehicles (%)	0%	2%	1%	0%	0%	6%
Parking (#/hr)	0	0	0	0	0	0
Turn Type	pm+pt	NA	NA		NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases	2					4
Actuated Green, G (s)		61.5	37.5		17.5	38.0
Effective Green, g (s)		63.0	39.0		19.0	38.0
Actuated g/C Ratio		0.70	0.43		0.21	0.42
Clearance Time (s)		5.5	5.5		5.5	3.5
Lane Grp Cap (vph)		1563	924		298	430
v/s Ratio Prot		0.10	c0.35		0.10	c0.18
v/s Ratio Perm		0.19				0.15
v/c Ratio		0.42	0.80		0.49	0.78
Uniform Delay, d1		5.8	22.1		31.3	22.4
Progression Factor		0.69	0.53		1.00	1.00
Incremental Delay, d2		0.2	7.0		5.7	13.0
Delay (s)		4.2	18.7		37.0	35.4
Level of Service		A	B		D	D
Approach Delay (s)		4.2	18.7		35.9	
Approach LOS		A	B		D	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.5
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	492	4	0	672	33	0	38	56	46	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			0.96			0.87			0.84	
Flpb, ped/bikes		0.96			1.00			1.00			0.91	
Frt		1.00			0.99			0.92			0.93	
Flt Protected		0.99			1.00			1.00			0.97	
Satd. Flow (prot)		3258			3377			1489			1254	
Flt Permitted		0.73			1.00			1.00			0.78	
Satd. Flow (perm)		2380			3377			1489			1008	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	96	547	4	0	747	37	0	42	62	51	0	48
RTOR Reduction (vph)	0	1	0	0	4	0	0	51	0	0	30	0
Lane Group Flow (vph)	0	646	0	0	780	0	0	53	0	0	69	0
Confl. Peds. (#/hr)	750		100	100		750	225		125	125		225
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)		62.0			62.0			16.0			16.0	
Effective Green, g (s)		62.0			62.0			16.0			16.0	
Actuated g/C Ratio		0.69			0.69			0.18			0.18	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Lane Grp Cap (vph)		1639			2326			264			179	
v/s Ratio Prot					0.23			0.04				
v/s Ratio Perm		c0.27									c0.07	
v/c Ratio		0.39			0.34			0.20			0.39	
Uniform Delay, d1		6.0			5.7			31.5			32.7	
Progression Factor		0.85			1.44			1.00			1.00	
Incremental Delay, d2		0.7			0.3			1.7			6.2	
Delay (s)		5.8			8.4			33.3			38.9	
Level of Service		A			A			C			D	
Approach Delay (s)		5.8			8.4			33.3			38.9	
Approach LOS		A			A			C			D	

Intersection Summary

HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	148	233	35	206	41	320	277	64	14	103	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	11	11	11	11	12	10	10	10	10	10	10
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.94		1.00	0.97		1.00	0.99		1.00	0.94	
Flpb, ped/bikes	0.94	1.00		0.98	1.00		1.00	1.00		0.99	1.00	
Frt	1.00	0.91		1.00	0.97		1.00	0.98		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1521	1553		1659	1706		1620	1530		1673	1301	
Flt Permitted	0.37	1.00		0.25	1.00		0.25	1.00		0.49	1.00	
Satd. Flow (perm)	585	1553		431	1706		426	1530		861	1301	
Peak-hour factor, PHF	0.82	0.82	0.85	0.67	0.70	0.63	0.79	0.69	0.81	0.89	0.70	0.75
Adj. Flow (vph)	149	180	274	52	294	65	405	401	79	16	147	225
RTOR Reduction (vph)	0	61	0	0	9	0	0	8	0	0	61	0
Lane Group Flow (vph)	149	393	0	52	350	0	405	472	0	16	311	0
Confl. Peds. (#/hr)	52		26	26		52	29		5	5		29
Heavy Vehicles (%)	4%	4%	0%	3%	2%	0%	4%	1%	2%	0%	6%	4%
Parking (#/hr)								0			0	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	30.0	30.0		30.0	30.0		50.0	50.0		26.0	26.0	
Effective Green, g (s)	30.0	30.0		30.0	30.0		50.0	50.0		26.0	26.0	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.56	0.56		0.29	0.29	
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	195	517		143	568		488	850		248	375	
v/s Ratio Prot		0.25			0.21		c0.17	0.31			0.24	
v/s Ratio Perm	c0.25			0.12			c0.29			0.02		
v/c Ratio	0.76	0.76		0.36	0.62		0.83	0.56		0.06	0.83	
Uniform Delay, d1	26.8	26.8		22.8	25.2		14.6	12.9		23.2	29.9	
Progression Factor	0.54	0.42		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.0	9.5		7.0	5.0		15.0	2.6		0.5	18.7	
Delay (s)	37.5	20.9		29.8	30.1		29.7	15.5		23.7	48.6	
Level of Service	D	C		C	C		C	B		C	D	
Approach Delay (s)		25.0			30.1			22.0			47.6	
Approach LOS		C			C			C			D	

Intersection Summary

HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	67	7	12	14	15	556	0	0	314	56
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	74	8	13	16	17	618	0	0	349	62
Pedestrians		42			19			4			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			2			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1103	1092	426	1129	1123	645	453			637		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1053	1040	426	1081	1075	535	453			526		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	88	95	93	97	98			100		
cM capacity (veh/h)	151	191	604	142	182	472	1069			908		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	37	634	411
Volume Left	0	8	17	0
Volume Right	74	16	0	62
cSH	604	228	1069	908
Volume to Capacity	0.12	0.16	0.02	0.00
Queue Length 95th (ft)	10	14	1	0
Control Delay (s)	11.8	23.8	0.4	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.8	23.8	0.4	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	0	198	213	617	327	40	103	0	0	738	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	10	10	12	12	11	12	12	12	12
Total Lost time (s)		6.0		6.0	6.0			6.0			6.0	
Lane Util. Factor		1.00		1.00	1.00			0.95			0.95	
Frpb, ped/bikes		0.92		1.00	0.86			1.00			0.99	
Flpb, ped/bikes		1.00		0.94	1.00			1.00			1.00	
Frt		0.89		1.00	0.95			1.00			0.98	
Flt Protected		0.99		0.95	1.00			0.99			1.00	
Satd. Flow (prot)		1237		1288	1222			3072			3026	
Flt Permitted		0.18		0.57	1.00			0.64			1.00	
Satd. Flow (perm)		225		768	1222			2007			3026	
Peak-hour factor, PHF	0.80	0.92	0.83	0.89	0.94	0.93	0.75	0.75	0.92	0.92	0.89	0.75
Adj. Flow (vph)	62	0	239	239	656	352	53	137	0	0	829	140
RTOR Reduction (vph)	0	35	0	0	27	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	266	0	239	981	0	0	190	0	0	969	0
Confl. Peds. (#/hr)	859		99	99		859	14		65	65		14
Heavy Vehicles (%)	7%	2%	18%	0%	3%	12%	0%	1%	2%	2%	2%	19%
Parking (#/hr)				0								
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Actuated Green, G (s)		30.0		30.0	30.0			28.0			28.0	
Effective Green, g (s)		30.0		30.0	30.0			28.0			28.0	
Actuated g/C Ratio		0.43		0.43	0.43			0.40			0.40	
Clearance Time (s)		6.0		6.0	6.0			6.0			6.0	
Vehicle Extension (s)		0.2		0.2	0.2			0.2			0.2	
Lane Grp Cap (vph)		96		329	523			802			1210	
v/s Ratio Prot					0.80						c0.32	
v/s Ratio Perm		c1.18		0.31				0.09				
v/c Ratio		2.77		0.73	1.87			0.24			0.80	
Uniform Delay, d1		20.0		16.6	20.0			13.9			18.5	
Progression Factor		1.00		1.00	1.00			0.56			0.70	
Incremental Delay, d2		823.2		6.6	400.9			0.7			5.4	
Delay (s)		843.2		23.2	420.9			8.5			18.3	
Level of Service		F		C	F			A			B	
Approach Delay (s)		843.2			344.7			8.5			18.3	
Approach LOS		F			F			A			B	

Intersection Summary

HCM 2000 Control Delay	259.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.81		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	119.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	624	664	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	624	722	0	0
Pedestrians					18	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			18		1627	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		1627	18
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			61		100	100
cM capacity (veh/h)			1605		57	1056

Direction, Lane #	WB 1	WB 2
Volume Total	865	481
Volume Left	624	0
Volume Right	0	0
cSH	1605	1700
Volume to Capacity	0.39	0.28
Queue Length 95th (ft)	47	0
Control Delay (s)	7.3	0.0
Lane LOS	A	
Approach Delay (s)	4.7	
Approach LOS		

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	124	866	332	137	489	0	0	180	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Total Lost time (s)					7.0		6.0	6.0			6.0	6.0
Lane Util. Factor					0.95		1.00	1.00			1.00	0.88
Frpb, ped/bikes					0.96		1.00	1.00			1.00	0.94
Flpb, ped/bikes					0.99		0.98	1.00			1.00	1.00
Frt					0.96		1.00	1.00			1.00	0.85
Flt Protected					1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)					2566		1540	1668			1735	2438
Flt Permitted					1.00		0.60	1.00			1.00	1.00
Satd. Flow (perm)					2566		969	1668			1735	2438
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.96	0.93	0.91	0.94	0.92	0.92	0.88	0.83
Adj. Flow (vph)	0	0	0	133	902	357	151	520	0	0	205	408
RTOR Reduction (vph)	0	0	0	0	43	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1349	0	151	520	0	0	205	408
Confl. Peds. (#/hr)				139		202	25					25
Heavy Vehicles (%)	2%	2%	2%	1%	5%	1%	1%	0%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Actuated Green, G (s)					43.0		24.0	24.0			24.0	24.0
Effective Green, g (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
Clearance Time (s)					7.0		6.0	6.0			6.0	6.0
Lane Grp Cap (vph)					1379		290	500			520	731
v/s Ratio Prot								c0.31			0.12	
v/s Ratio Perm					0.53		0.16					0.17
v/c Ratio					0.98		0.52	1.04			0.39	0.56
Uniform Delay, d1					18.1		23.2	28.0			22.2	23.5
Progression Factor					0.85		0.95	0.95			1.00	1.00
Incremental Delay, d2					14.5		5.6	47.9			2.2	3.1
Delay (s)					29.8		27.8	74.5			24.5	26.6
Level of Service					C		C	E			C	C
Approach Delay (s)		0.0			29.8			64.0			25.9	
Approach LOS		A			C			E			C	

Intersection Summary

HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	56	991	4	299	14	0	0	1	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					1.00			1.00			0.98	
Flpb, ped/bikes					0.99			0.99			1.00	
Frt					1.00			1.00			0.90	
Flt Protected					1.00			0.96			1.00	
Satd. Flow (prot)					3339			1664			1561	
Flt Permitted					1.00			0.73			1.00	
Satd. Flow (perm)					3339			1272			1561	
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.87	0.50	0.85	0.46	0.92	0.92	0.25	0.67
Adj. Flow (vph)	0	0	0	84	1139	8	352	30	0	0	4	13
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	0	0	0	1230	0	0	382	0	0	11	0
Confl. Peds. (#/hr)				87		214	8					8
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					37.0			33.0			33.0	
Effective Green, g (s)					37.0			33.0			33.0	
Actuated g/C Ratio					0.46			0.41			0.41	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1544			524			643	
v/s Ratio Prot											0.01	
v/s Ratio Perm					0.37			c0.30				
v/c Ratio					0.80			0.73			0.02	
Uniform Delay, d1					18.3			19.7			13.9	
Progression Factor					0.69			0.93			1.00	
Incremental Delay, d2					3.6			4.6			0.0	
Delay (s)					16.3			22.9			14.0	
Level of Service					B			C			B	
Approach Delay (s)		0.0			16.3			22.9			14.0	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	90	805	34	200	61	0	0	19	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.98			1.00			0.99	
Flpb, ped/bikes					1.00			1.00			1.00	
Frt					0.99			1.00			0.90	
Flt Protected					0.99			0.96			1.00	
Satd. Flow (prot)					3103			1782			1597	
Flt Permitted					0.99			0.72			1.00	
Satd. Flow (perm)					3103			1331			1597	
Peak-hour factor, PHF	0.92	0.92	0.92	0.72	0.98	0.43	0.82	0.72	0.92	0.92	0.85	0.62
Adj. Flow (vph)	0	0	0	125	821	79	244	85	0	0	22	74
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	0	0	41	0
Lane Group Flow (vph)	0	0	0	0	1017	0	0	329	0	0	55	0
Confl. Peds. (#/hr)				15		84	3					3
Heavy Vehicles (%)	2%	2%	2%	1%	5%	3%	2%	4%	2%	2%	6%	5%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					38.0			32.0			32.0	
Effective Green, g (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1473			532			638	
v/s Ratio Prot											0.03	
v/s Ratio Perm					0.33			c0.25				
v/c Ratio					0.69			0.62			0.09	
Uniform Delay, d1					16.4			19.1			14.9	
Progression Factor					0.59			0.89			1.00	
Incremental Delay, d2					1.4			5.0			0.3	
Delay (s)					11.1			22.0			15.2	
Level of Service					B			C			B	
Approach Delay (s)		0.0			11.1			22.0			15.2	
Approach LOS		A			B			C			B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	876	330	29	241	0	0	325	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Total Lost time (s)					5.0			5.0			5.0	
Lane Util. Factor					0.95			1.00			1.00	
Frpb, ped/bikes					0.95			1.00			0.99	
Flpb, ped/bikes					0.99			1.00			1.00	
Frt					0.96			1.00			0.97	
Flt Protected					1.00			0.99			1.00	
Satd. Flow (prot)					2892			1761			2112	
Flt Permitted					1.00			0.72			1.00	
Satd. Flow (perm)					2892			1281			2112	
Peak-hour factor, PHF	0.92	0.92	0.92	0.54	0.95	0.80	0.69	0.89	0.92	0.92	0.95	0.77
Adj. Flow (vph)	0	0	0	85	922	412	42	271	0	0	342	84
RTOR Reduction (vph)	0	0	0	0	55	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	0	0	0	1364	0	0	313	0	0	415	0
Confl. Peds. (#/hr)				43		66	17					17
Heavy Vehicles (%)	2%	2%	2%	2%	9%	8%	5%	8%	2%	2%	5%	2%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Actuated Green, G (s)					44.0			26.0			26.0	
Effective Green, g (s)					44.0			26.0			26.0	
Actuated g/C Ratio					0.55			0.32			0.32	
Clearance Time (s)					5.0			5.0			5.0	
Lane Grp Cap (vph)					1590			416			686	
v/s Ratio Prot											0.20	
v/s Ratio Perm					0.47			c0.24				
v/c Ratio					0.86			0.75			0.61	
Uniform Delay, d1					15.3			24.1			22.7	
Progression Factor					1.00			1.28			1.00	
Incremental Delay, d2					6.2			9.2			3.9	
Delay (s)					21.5			40.0			26.6	
Level of Service					C			D			C	
Approach Delay (s)		0.0			21.5			40.0			26.6	
Approach LOS		A			C			D			C	

Intersection Summary

HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	321	11	1	126	0	0	1201	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	10	10	10	12	12	12	12	12	12
Total Lost time (s)				5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor				1.00	1.00	1.00		0.95			0.95	
Frpb, ped/bikes				1.00	1.00	0.92		1.00			1.00	
Flpb, ped/bikes				1.00	1.00	1.00		1.00			1.00	
Frt				1.00	1.00	0.85		1.00			1.00	
Flt Protected				0.95	1.00	1.00		1.00			1.00	
Satd. Flow (prot)				1486	1580	1253		3213			3110	
Flt Permitted				0.95	1.00	1.00		0.95			1.00	
Satd. Flow (perm)				1486	1580	1253		3073			3110	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.86	0.67	0.25	0.82	0.25	0.92	0.97	0.68
Adj. Flow (vph)	0	0	0	187	373	16	4	154	0	0	1238	41
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	187	373	16	0	158	0	0	1279	0
Confl. Peds. (#/hr)						69	7					7
Heavy Vehicles (%)	2%	2%	2%	2%	1%	0%	0%	1%	0%	2%	4%	0%
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	2	1				
Actuated Green, G (s)				22.5	22.5	22.5		33.5			36.5	
Effective Green, g (s)				22.5	22.5	22.5		33.5			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.48			0.52	
Clearance Time (s)				5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Lane Grp Cap (vph)				477	507	402		1521			1621	
v/s Ratio Prot					c0.24			0.04			c0.41	
v/s Ratio Perm				0.13		0.01		0.01				
v/c Ratio				0.39	0.74	0.04		0.10			0.79	
Uniform Delay, d1				18.4	21.1	16.3		10.0			13.6	
Progression Factor				1.00	1.00	1.00		0.81			0.54	
Incremental Delay, d2				0.2	4.8	0.0		0.0			0.4	
Delay (s)				18.6	25.9	16.3		8.1			7.8	
Level of Service				B	C	B		A			A	
Approach Delay (s)		0.0			23.2			8.1			7.8	
Approach LOS		A			C			A			A	

Intersection Summary

HCM 2000 Control Delay	12.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	578	201	22	61	3	41	97	60	436	941	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	12	11	12	12	11	12	12	12	12
Total Lost time (s)		5.5	5.5		5.5			5.5			5.5	
Lane Util. Factor		1.00	1.00		1.00			0.95			0.95	
Frpb, ped/bikes		1.00	0.85		1.00			0.99			1.00	
Flpb, ped/bikes		1.00	1.00		1.00			1.00			1.00	
Frt		1.00	0.85		0.99			0.95			1.00	
Flt Protected		1.00	1.00		0.99			0.99			0.98	
Satd. Flow (prot)		1633	1195		1616			2800			3085	
Flt Permitted		0.97	1.00		0.21			0.63			0.73	
Satd. Flow (perm)		1594	1195		350			1774			2275	
Peak-hour factor, PHF	0.83	0.84	0.73	0.50	0.50	0.25	0.77	0.88	0.84	0.92	0.98	0.75
Adj. Flow (vph)	40	688	275	44	122	12	53	110	71	474	960	1
RTOR Reduction (vph)	0	0	0	0	3	0	0	45	0	0	0	0
Lane Group Flow (vph)	0	728	275	0	175	0	0	189	0	0	1435	0
Confl. Peds. (#/hr)	2		147	147		2	6		22	22		6
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	8%	2%	7%	10%	0%	0%
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Actuated Green, G (s)		22.5	22.5		22.5			25.5			36.5	
Effective Green, g (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
Clearance Time (s)		5.5	5.5		5.5			5.5			5.5	
Vehicle Extension (s)		0.2	0.2		0.2			0.2			0.2	
Lane Grp Cap (vph)		512	384		112			646			1278	
v/s Ratio Prot											c0.13	
v/s Ratio Perm		0.46	0.23		c0.50			0.11			c0.46	
v/c Ratio		1.42	0.72		1.56			0.29			1.12	
Uniform Delay, d1		23.8	20.9		23.8			15.8			16.8	
Progression Factor		1.00	1.00		1.00			1.00			0.34	
Incremental Delay, d2		201.0	5.2		290.4			1.1			62.8	
Delay (s)		224.8	26.2		314.1			17.0			68.6	
Level of Service		F	C		F			B			E	
Approach Delay (s)		170.3			314.1			17.0			68.6	
Approach LOS		F			F			B			E	

Intersection Summary

HCM 2000 Control Delay	115.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	940	460	0	0	86	659
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	12	12	12	10	10
Total Lost time (s)	5.0				5.0	5.0
Lane Util. Factor	0.95				1.00	0.88
Frpb, ped/bikes	0.97				1.00	1.00
Flpb, ped/bikes	1.00				1.00	1.00
Frt	0.95				1.00	0.85
Flt Protected	1.00				0.95	1.00
Satd. Flow (prot)	2827				1472	2364
Flt Permitted	1.00				0.95	1.00
Satd. Flow (perm)	2827				1472	2364
Peak-hour factor, PHF	0.91	0.86	0.92	0.92	0.85	0.82
Adj. Flow (vph)	1033	535	0	0	101	804
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1568	0	0	0	101	804
Confl. Peds. (#/hr)		79				
Heavy Vehicles (%)	3%	1%	2%	2%	3%	1%
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Actuated Green, G (s)	47.0				23.0	23.0
Effective Green, g (s)	47.0				23.0	23.0
Actuated g/C Ratio	0.59				0.29	0.29
Clearance Time (s)	5.0				5.0	5.0
Lane Grp Cap (vph)	1660				423	679
v/s Ratio Prot	c0.55				0.07	
v/s Ratio Perm						c0.34
v/c Ratio	0.94				0.24	1.18
Uniform Delay, d1	15.3				21.8	28.5
Progression Factor	1.00				1.00	1.00
Incremental Delay, d2	12.4				1.3	97.4
Delay (s)	27.7				23.1	125.9
Level of Service	C				C	F
Approach Delay (s)	27.7			0.0	114.4	
Approach LOS	C			A	F	

Intersection Summary

HCM 2000 Control Delay	59.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	485	1034	81	0	0	0	0	139	115	243	46	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Total Lost time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Util. Factor	1.00	0.95						1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.98						1.00	0.91		1.00	
Flpb, ped/bikes	0.93	1.00						1.00	1.00		0.95	
Frt	1.00	0.99						1.00	0.85		1.00	
Flt Protected	0.95	1.00						1.00	1.00		0.96	
Satd. Flow (prot)	1443	2935						1703	1312		1378	
Flt Permitted	0.95	1.00						1.00	1.00		0.63	
Satd. Flow (perm)	1443	2935						1703	1312		906	
Peak-hour factor, PHF	0.96	0.92	0.83	0.92	0.92	0.92	0.92	0.79	0.79	0.84	0.55	0.92
Adj. Flow (vph)	505	1124	98	0	0	0	0	176	146	289	84	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	36	0	0	0
Lane Group Flow (vph)	505	1222	0	0	0	0	0	176	110	0	373	0
Confl. Peds. (#/hr)	54		95						69	69		
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	0%	0%	1%	0%	2%
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Actuated Green, G (s)	46.0	46.0						24.0	24.0		24.0	
Effective Green, g (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
Clearance Time (s)	5.0	5.0						5.0	5.0		5.0	
Lane Grp Cap (vph)	829	1687						510	393		271	
v/s Ratio Prot		c0.42						0.10				
v/s Ratio Perm	0.35								0.08		c0.41	
v/c Ratio	0.61	0.72						0.35	0.28		1.38	
Uniform Delay, d1	11.1	12.4						21.9	21.4		28.0	
Progression Factor	0.91	0.91						1.00	1.00		1.23	
Incremental Delay, d2	0.3	0.3						1.8	1.8		187.6	
Delay (s)	10.4	11.5						23.7	23.2		222.0	
Level of Service	B	B						C	C		F	
Approach Delay (s)		11.2			0.0			23.5			222.0	
Approach LOS		B			A			C			F	

Intersection Summary

HCM 2000 Control Delay	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1048	107	0	0	0	0	116	125	22	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		0.99						0.98			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		0.99						0.93			1.00	
Flt Protected		0.99						1.00			1.00	
Satd. Flow (prot)		3202						1732			1832	
Flt Permitted		0.99						1.00			0.84	
Satd. Flow (perm)		3202						1732			1546	
Peak-hour factor, PHF	0.64	0.87	0.75	0.92	0.92	0.92	0.92	0.73	0.77	0.69	0.35	0.92
Adj. Flow (vph)	438	1205	143	0	0	0	0	159	162	32	311	0
RTOR Reduction (vph)	0	8	0	0	0	0	0	46	0	0	0	0
Lane Group Flow (vph)	0	1778	0	0	0	0	0	275	0	0	343	0
Confl. Peds. (#/hr)	14		34						22	22		
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		49.0						21.0			21.0	
Effective Green, g (s)		49.0						21.0			21.0	
Actuated g/C Ratio		0.61						0.26			0.26	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1961						454			405	
v/s Ratio Prot								0.16				
v/s Ratio Perm		0.56									c0.22	
v/c Ratio		0.91						0.61			0.85	
Uniform Delay, d1		13.5						25.9			28.0	
Progression Factor		1.23						1.00			1.14	
Incremental Delay, d2		5.5						5.9			19.1	
Delay (s)		22.1						31.8			50.9	
Level of Service		C						C			D	
Approach Delay (s)		22.1			0.0			31.8			50.9	
Approach LOS		C			A			C			D	

Intersection Summary

HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	1063	13	0	0	0	0	100	55	27	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		0.99						1.00			1.00	
Frt		1.00						0.94			1.00	
Flt Protected		0.99						1.00			0.99	
Satd. Flow (prot)		3283						1974			2080	
Flt Permitted		0.99						1.00			0.88	
Satd. Flow (perm)		3283						1974			1854	
Peak-hour factor, PHF	0.71	0.97	0.84	0.92	0.92	0.92	0.92	0.84	0.67	0.93	0.75	0.92
Adj. Flow (vph)	144	1096	15	0	0	0	0	119	82	29	73	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	31	0	0	0	0
Lane Group Flow (vph)	0	1254	0	0	0	0	0	170	0	0	102	0
Confl. Peds. (#/hr)	22		26						16	16		
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	7%	0%	2%	0%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		50.0						20.0			20.0	
Effective Green, g (s)		50.0						20.0			20.0	
Actuated g/C Ratio		0.62						0.25			0.25	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		2051						493			463	
v/s Ratio Prot								c0.09				
v/s Ratio Perm		0.38									0.06	
v/c Ratio		0.61						0.35			0.22	
Uniform Delay, d1		9.1						24.6			23.8	
Progression Factor		0.50						1.00			0.68	
Incremental Delay, d2		0.6						1.9			0.9	
Delay (s)		5.2						26.5			17.1	
Level of Service		A						C			B	
Approach Delay (s)		5.2			0.0			26.5			17.1	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	942	30	0	0	0	0	82	24	283	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0						5.0			5.0	
Lane Util. Factor		0.95						1.00			1.00	
Frpb, ped/bikes		1.00						0.99			1.00	
Flpb, ped/bikes		0.98						1.00			0.99	
Frt		1.00						0.97			1.00	
Flt Protected		0.99						1.00			0.96	
Satd. Flow (prot)		3309						1572			1705	
Flt Permitted		0.99						1.00			0.68	
Satd. Flow (perm)		3309						1572			1205	
Peak-hour factor, PHF	0.75	0.94	0.82	0.92	0.92	0.92	0.92	0.80	0.92	0.91	0.67	0.92
Adj. Flow (vph)	229	1002	37	0	0	0	0	102	26	311	67	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	1265	0	0	0	0	0	117	0	0	378	0
Confl. Peds. (#/hr)	48		30						9	9		
Heavy Vehicles (%)	1%	6%	4%	2%	2%	2%	2%	20%	5%	3%	20%	2%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Actuated Green, G (s)		36.0						34.0			34.0	
Effective Green, g (s)		36.0						34.0			34.0	
Actuated g/C Ratio		0.45						0.42			0.42	
Clearance Time (s)		5.0						5.0			5.0	
Lane Grp Cap (vph)		1489						668			512	
v/s Ratio Prot								0.07				
v/s Ratio Perm		0.38									c0.31	
v/c Ratio		0.85						0.17			0.74	
Uniform Delay, d1		19.6						14.3			19.3	
Progression Factor		0.92						1.00			0.98	
Incremental Delay, d2		5.3						0.6			7.0	
Delay (s)		23.4						14.9			25.8	
Level of Service		C						B			C	
Approach Delay (s)		23.4			0.0			14.9			25.8	
Approach LOS		C			A			B			C	

Intersection Summary

HCM 2000 Control Delay	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	1	1	4	49	20	21	152	10	24	268	48
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	1	1	4	54	22	23	169	11	27	298	53

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	27	81	203	378
Volume Left (vph)	24	4	23	27
Volume Right (vph)	1	22	11	53
Hadj (s)	0.19	-0.12	0.02	-0.04
Departure Headway (s)	5.6	5.1	4.6	4.4
Degree Utilization, x	0.04	0.12	0.26	0.46
Capacity (veh/h)	571	623	745	793
Control Delay (s)	8.8	8.8	9.3	11.1
Approach Delay (s)	8.8	8.8	9.3	11.1
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	23	11	17	17	18	35	106	1	1	32	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	26	12	19	19	20	39	118	1	1	36	23

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	39	58	158	60
Volume Left (vph)	1	19	39	1
Volume Right (vph)	12	20	1	23
Hadj (s)	-0.15	-0.11	0.08	-0.20
Departure Headway (s)	4.3	4.3	4.3	4.1
Degree Utilization, x	0.05	0.07	0.19	0.07
Capacity (veh/h)	790	780	819	850
Control Delay (s)	7.5	7.6	8.2	7.4
Approach Delay (s)	7.5	7.6	8.2	7.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	25	78	34	4	57
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	28	87	38	4	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			297			
pX, platoon unblocked						
vC, conflicting volume	178	106			124	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	178	106			124	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	809	949			1462	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	31	124	68
Volume Left	3	0	4
Volume Right	28	38	0
cSH	932	1700	1462
Volume to Capacity	0.03	0.07	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.0	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	6	90	27	6	26
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	7	100	30	7	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	157	115			130	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157	115			130	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	830	937			1455	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	23	130	36
Volume Left	17	0	7
Volume Right	7	30	0
cSH	858	1700	1455
Volume to Capacity	0.03	0.08	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.0	1.4
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	1.4
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	275	32	2	379	72	21
Sign Control	Free			Free	Stop	
Grade	0%			-12%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	306	36	2	421	80	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	362			548		
pX, platoon unblocked						
vC, conflicting volume			341		749	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			341		749	323
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		79	97
cM capacity (veh/h)			1218		379	718

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	341	423	103
Volume Left	0	2	80
Volume Right	36	0	23
cSH	1700	1218	424
Volume to Capacity	0.20	0.00	0.24
Queue Length 95th (ft)	0	0	24
Control Delay (s)	0.0	0.1	16.2
Lane LOS		A	C
Approach Delay (s)	0.0	0.1	16.2
Approach LOS			C

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	169	1114	24	0	452
Sign Control	Stop		Free			Free
Grade	0%		4%			-4%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	184	1211	26	0	491
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			162			277
pX, platoon unblocked						
vC, conflicting volume	1388	417			1237	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1388	417			1237	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	69			100	
cM capacity (veh/h)	134	585			559	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	184	484	484	268	164	164	164
Volume Left	0	0	0	0	0	0	0
Volume Right	184	0	0	26	0	0	0
cSH	585	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.31	0.28	0.28	0.16	0.10	0.10	0.10
Queue Length 95th (ft)	33	0	0	0	0	0	0
Control Delay (s)	13.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	13.9	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	546	690	139	0	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	607	767	154	0	49
Pedestrians					375	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					29	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		374	248			
pX, platoon unblocked					0.98	
vC, conflicting volume	1296				1522	836
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1296				1498	836
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	78
cM capacity (veh/h)	379				79	222

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	303	303	511	410	49
Volume Left	0	0	0	0	0
Volume Right	0	0	0	154	49
cSH	1700	1700	1700	1700	222
Volume to Capacity	0.18	0.18	0.30	0.24	0.22
Queue Length 95th (ft)	0	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	0.0	25.8
Lane LOS					D
Approach Delay (s)	0.0		0.0		25.8
Approach LOS					D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

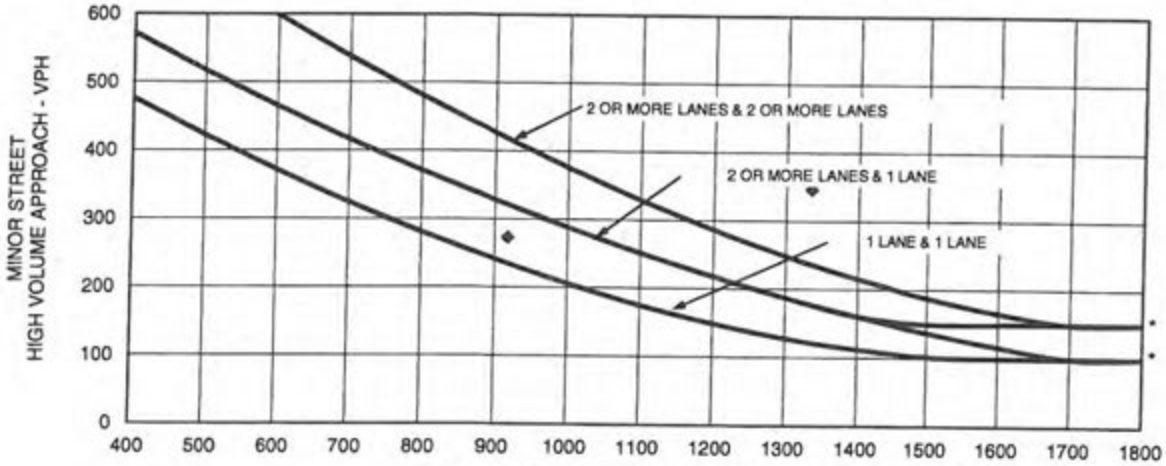
APPENDIX M

Project:		pghpe00-11109	Calculations:	mds
Major Street	Name:	Centre Avenue	Date:	11/4/11
	Speed Limit (mph):	25	Checked by:	
	Approach Lanes:	2	Date:	
Minor Street	Name:	Street 1		
	Speed Limit (mph):	25		
	Approach Lanes:	2		
Population < 10000?		No		

Warrant 3 - Peak Hour **2022 Combined (Build) Condition**

Signal Warrant Satisfied? [X] Yes [ ] No

Warrant 3, Peak Hour



MAJOR STREET - TOTAL OF BOTH APPROACHES– VEHICLES PER HOUR (VPH)

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies at the lower threshold volume for a minor-street approach with one lane.

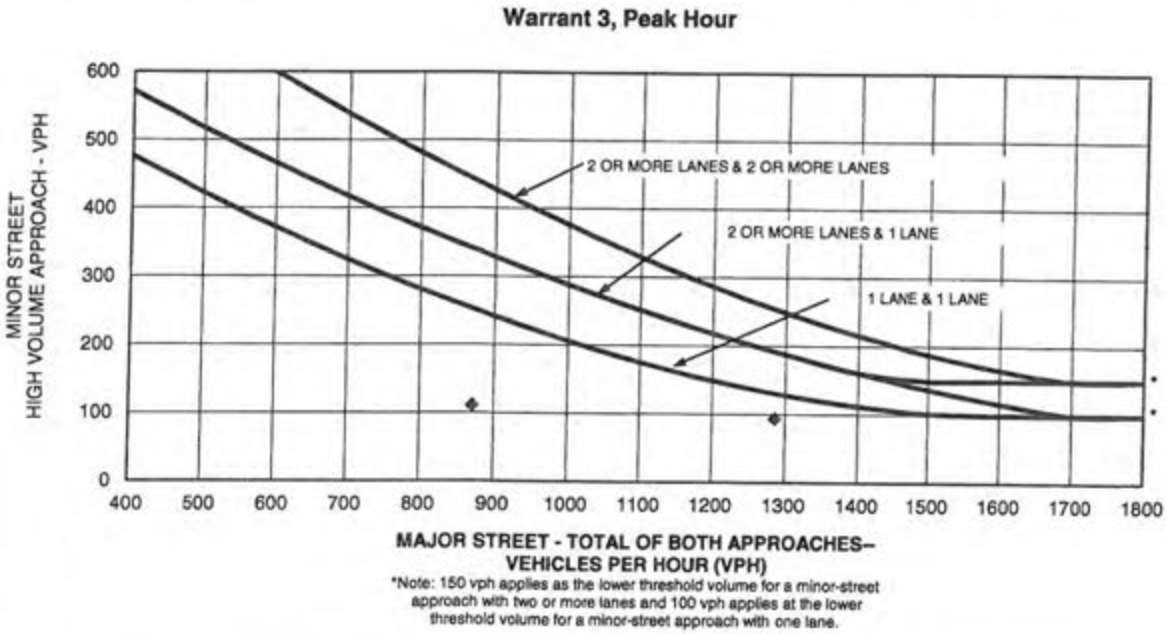
Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2022 Combined, AM Peak	918	274	417	NO
2022 Combined, PM Peak	1335	347	237	YES

Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

Project:		pghpe00-11109	Calculations:	mds
Major Street	Name:	Centre Avenue	Date:	11/4/11
	Speed Limit (mph):	25	Checked by:	
	Approach Lanes:	2	Date:	
Minor Street	Name:	Street 2		
	Speed Limit (mph):	25		
	Approach Lanes:	1		
Population < 10000?		No		

Warrant 3 - Peak Hour **2022 Combined (Build) Condition**

Signal Warrant Satisfied? [ ] Yes [X] No



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies at the lower threshold volume for a minor-street approach with one lane.

Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2022 Combined, AM Peak	872	111	442	NO
2022 Combined, PM Peak	1287	94	192	NO

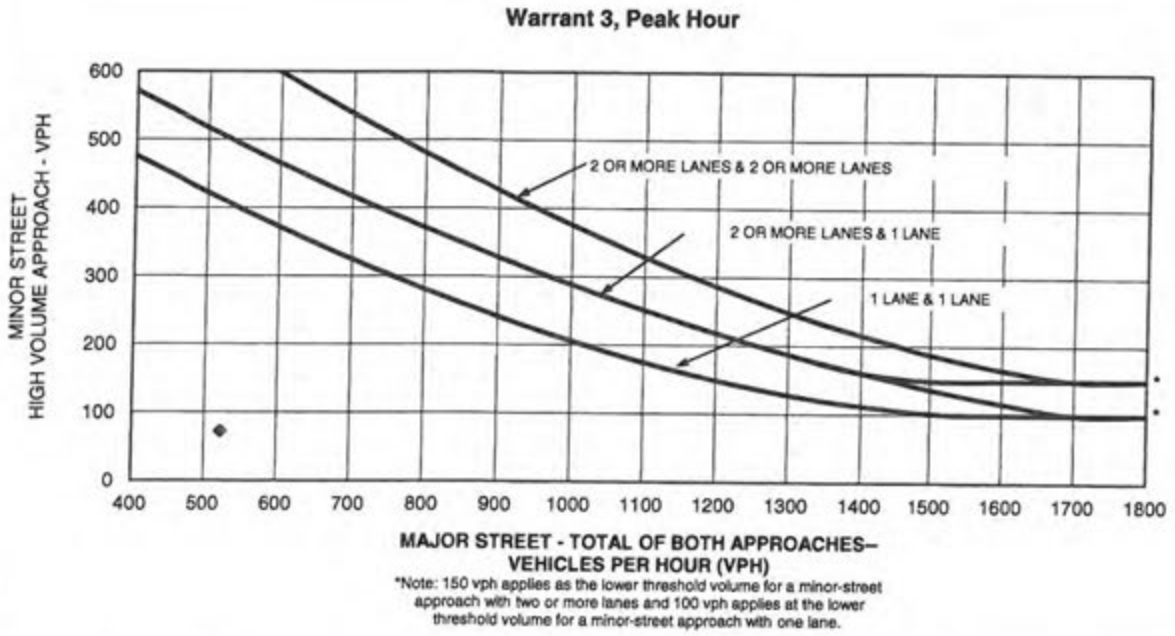
Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

Project:		pghpe00-11109	Calculations:	mds
Major Street	Name:	Street 1	Date:	11/4/11
	Speed Limit (mph):	25	Checked by:	
	Approach Lanes:	1	Date:	
Minor Street	Name:	Wylie Avenue		
	Speed Limit (mph):	25		
	Approach Lanes:	1		
Population < 10000?		No		

Trans Associates

Warrant 3 - Peak Hour **2022 Combined (Build) Condition**

Signal Warrant Satisfied? [ ] Yes [X] No



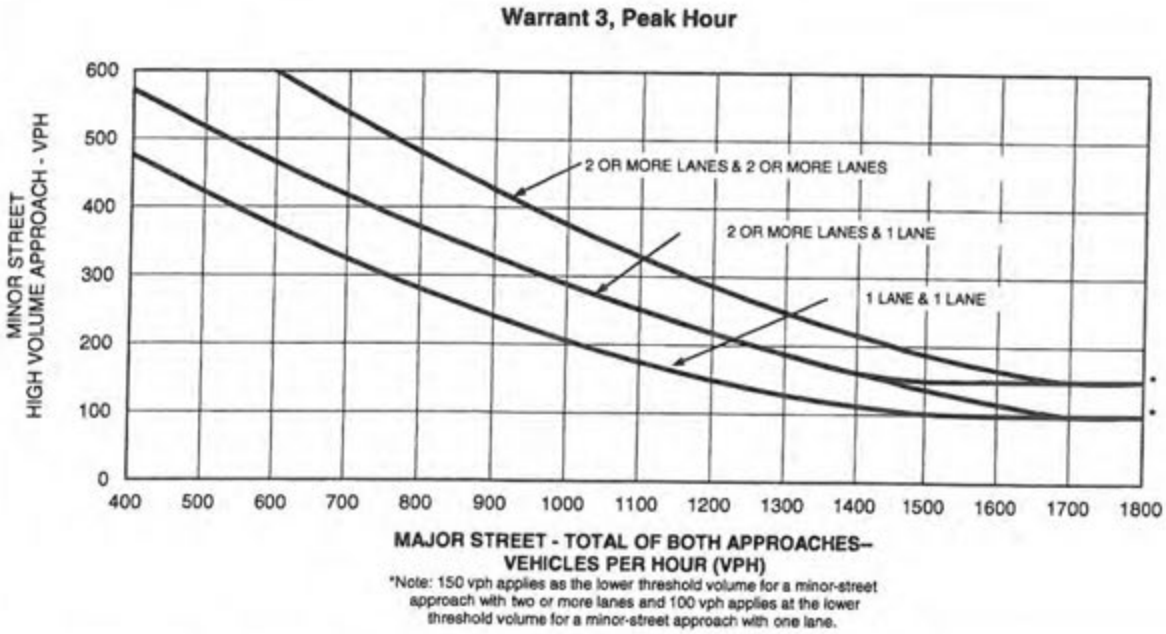
Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2022 Combined, AM Peak	282	93	807	NO
2022 Combined, PM Peak	523	73	505	NO

Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

Project:		pghpe00-11109	Calculations:	mds
Major Street	Name:	Wylie Avenue	Date:	11/4/11
	Speed Limit (mph):	25	Checked by:	
	Approach Lanes:	1	Date:	
Minor Street	Name:	Street 2		
	Speed Limit (mph):	25		
	Approach Lanes:	1		
Population < 10000?		No		

Warrant 3 - Peak Hour **2022 Combined (Build) Condition**

Signal Warrant Satisfied? [ ] Yes [X] No



Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2022 Combined, AM Peak	187	51	873	NO
2022 Combined, PM Peak	195	52	692	NO

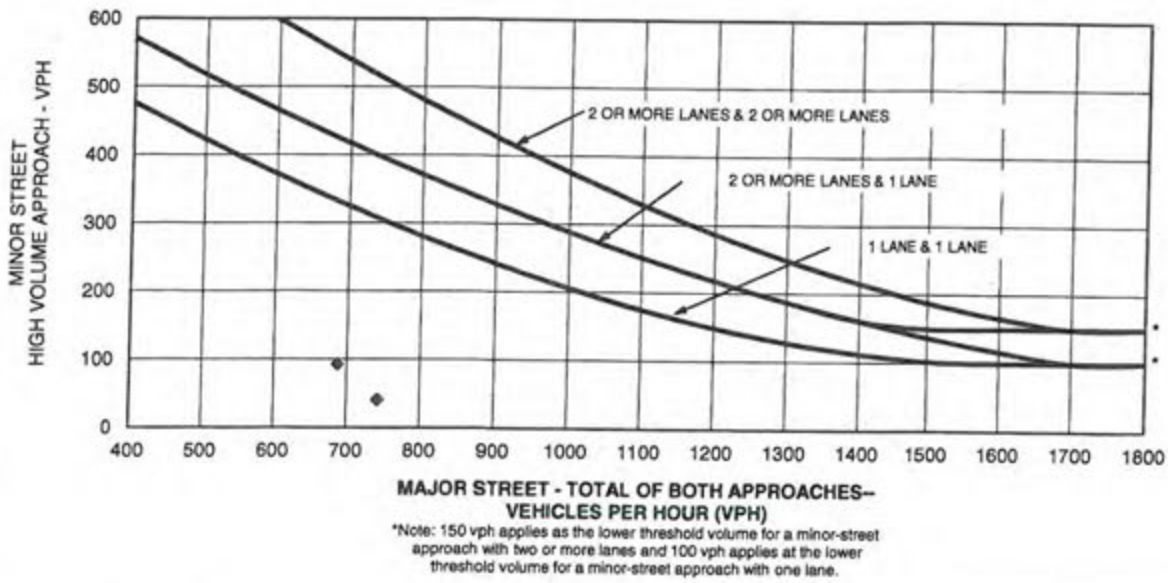
Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

Project:		pghpe00-11109	Calculations:	mds
Major Street	Name:	Bedford Avenue	Date:	1/23/13
	Speed Limit (mph):	25	Checked by:	
	Approach Lanes:	1	Date:	
Minor Street	Name:	Street Z		
	Speed Limit (mph):	25		
	Approach Lanes:	1		
Population < 10000?		No		

Warrant 3 - Peak Hour **2022 Combined (Build) Condition**

Signal Warrant Satisfied? [ ] Yes [X] No

Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies at the lower threshold volume for a minor-street approach with one lane.

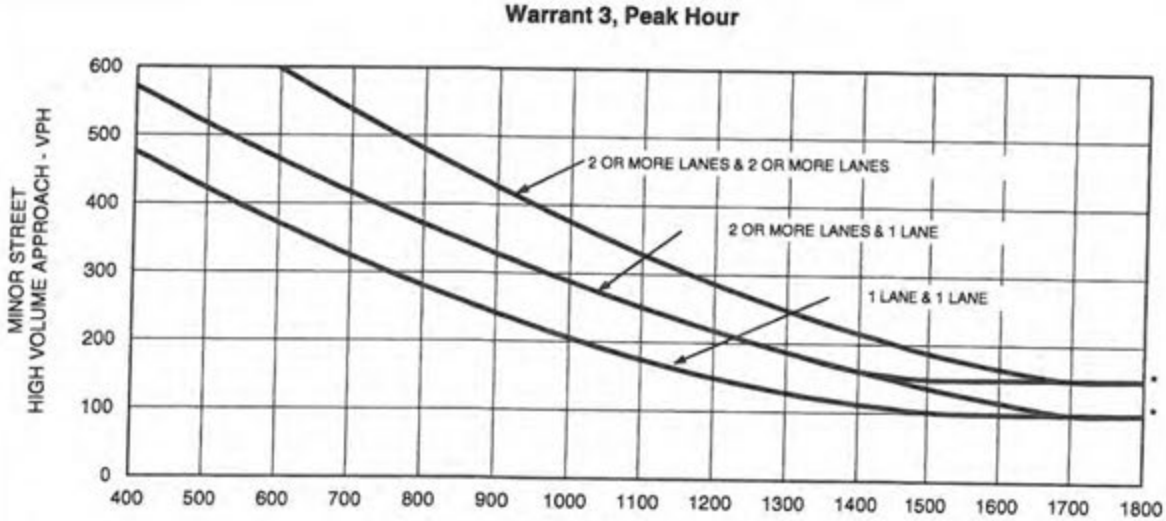
Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2022 Combined, AM Peak	743	41	513	NO
2022 Combined, PM Peak	688	93	423	NO

Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

Project:		pghpe00-11109	Calculations:	mds
Major Street	Name:	Street 2	Date:	5/25/12
	Speed Limit (mph):	25	Checked by:	
	Approach Lanes:	1	Date:	
Minor Street	Name:	Street 4		
	Speed Limit (mph):	25		
	Approach Lanes:	1		
Population < 10000?		No		

Warrant 3 - Peak Hour **2022 Combined (Build) Condition**

Signal Warrant Satisfied? [ ] Yes [X] No



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies at the lower threshold volume for a minor-street approach with one lane.

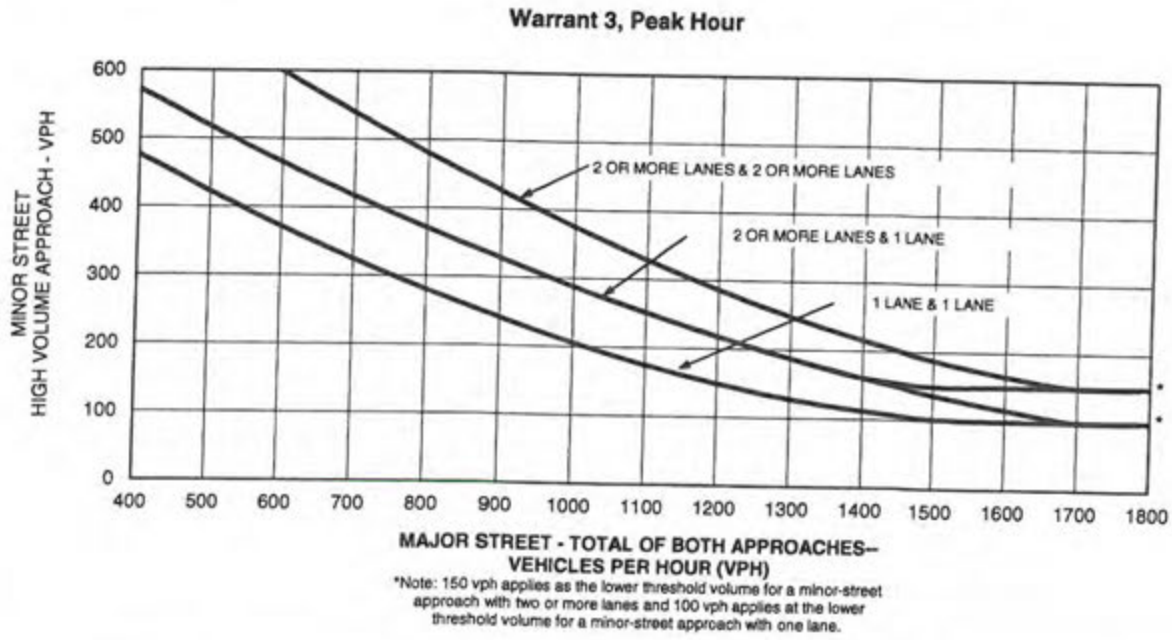
Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2022 Combined, AM Peak	109	42	928	NO
2022 Combined, PM Peak	151	21	719	NO

Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

Project:		pghpe00-11109	Calculations:	mds
Major Street	Name:	Street 2	Date:	5/25/12
	Speed Limit (mph):	25	Checked by:	
	Approach Lanes:	1	Date:	
Minor Street	Name:	Street 3		
	Speed Limit (mph):	25		
	Approach Lanes:	1		
Population < 10000?		No		

Warrant 3 - Peak Hour **2022 Combined (Build) Condition**

Signal Warrant Satisfied? [ ] Yes [X] No



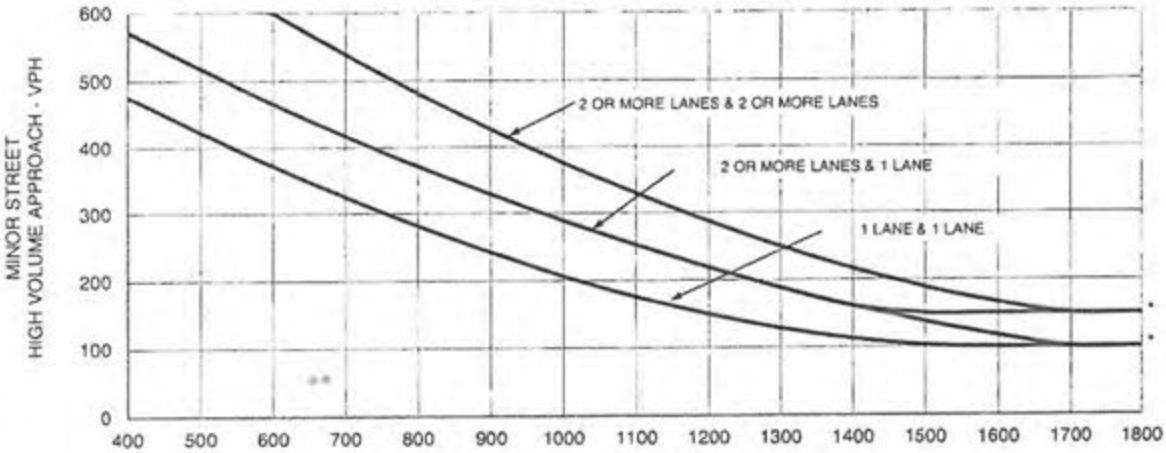
Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2022 Combined, AM Peak	168	40	886	NO
2022 Combined, PM Peak	209	28	683	NO

Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

Project:		pghpe00-11109	Calculations:	mds
Major Street	Name:	Crawford Street	Date:	5/25/12
	Speed Limit (mph):	25	Checked by:	
	Approach Lanes:	1	Date:	
Minor Street	Name:	Wylie Avenue		
	Speed Limit (mph):	25		
	Approach Lanes:	1		
Population < 10000?		No		

Warrant 3 - Peak Hour **2022 Combined (Build) Condition**

Signal Warrant Satisfied? [ ] Yes [X] No



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies at the lower threshold volume for a minor-street approach with one lane.

Scenario	Major Street (vph)	Minor Street (vph)	Warrant Volume Minor Street	Warrant Satisfied?
2022 Combined, AM Peak	655	54	565	NO
2022 Combined, PM Peak	672	55	431	NO

Signal warrant satisfied if hourly threshold satisfied for any 1 hour of an average day.

Multi-way Stop Sign Warrants - PROPOSED CRAWFORD STREET & WYLIE AVENUE

Based on criteria on the Manual on Uniform Traffic Control Devices, 2009 Edition.

Section 2B.07 **Multi-Way Stop Applications**

Support:

01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concern associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

03 *The decision to install multi-way stop control should be based on an engineering study.*

04 *The following criteria should be considered in the engineering study for multi-way STOP sign installation:*

A. *Where traffic control signals are justified, the multiway stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*

This intersection does not warrant a traffic signal

B. *A crash problem, as indicated by 5 or more reported crashes in a 12-month period that are susceptible to correction by a multiway stop installation. Such crashes include right- and left-turn collisions as well as right-angle collisions.*

Accidents have not been verified with the Police Department

C. *Minimum traffic volume:*

1. *The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day, and*

Four (4) hours met (based on turning movement counts); however, incomplete data.

2. *The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour*

Incomplete data.

3. *If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the above values.*

n/a, speeds were not obtained

D. *Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:

05 Other criteria that may be considered in an engineering study include:

A. The need to control left turn conflicts;
B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;
C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and
D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.

Hourly Volume Development

	2011 Existing Volumes		2022 Base Volumes		Total Site Traffic		2022 Combined Volumes	
	Major Roadway	Minor Roadway	Major Roadway	Minor Roadway	Major Roadway	Minor Roadway	Major Roadway	Minor Roadway
	Crawford Street	Wylie Street	Crawford Street	Wylie Street	Crawford Street	Wylie Street	Crawford Street	Wylie Street
7:00 AM	260	34	287	38	86	11	373	49
8:00 AM	293	52	324	57	86	11	410	68
4:00 PM	451	47	499	52	79	23	578	75
5:00 PM	484	40	535	44	79	23	614	67

growth rate	0.96%
no. yrs. Grown	11
growth factor	1.1056

APPENDIX N

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Lane Group	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	161	151	143	447	65	515	312	642
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Right Turn on Red	No				Yes			No
Link Speed (mph)		25		25			25	
Link Distance (ft)		325		247			334	
Travel Time (s)		8.9		6.7			9.1	
Confl. Peds. (#/hr)			17		17			17
Peak Hour Factor	0.87	0.89	0.95	0.88	0.79	0.92	0.86	0.99
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	355	151	508	82	560	363	648
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	41.0	41.0	41.0
Total Split (s)	23.0	23.0	23.0	26.0	26.0	41.0	41.0	41.0
Total Split (%)	25.6%	25.6%	25.6%	28.9%	28.9%	45.6%	45.6%	45.6%
Maximum Green (s)	18.0	18.0	18.0	21.0	21.0	36.0	36.0	36.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?								
Walk Time (s)						11.0	11.0	11.0
Flash Dont Walk (s)						10.0	10.0	10.0
Pedestrian Calls (#/hr)						0	0	0
Act Effct Green (s)		18.0	18.0	21.0	21.0	36.0	36.0	36.0
Actuated g/C Ratio		0.20	0.20	0.23	0.23	0.40	0.40	0.40
v/c Ratio		1.20	0.57	0.70	0.21	0.89	0.55	1.15
Control Delay		150.2	42.0	52.6	21.9	43.6	24.6	114.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		150.2	42.0	52.6	21.9	43.6	24.6	114.1
LOS		F	D	D	C	D	C	F
Approach Delay		117.9		48.3			68.3	
Approach LOS		F		D			E	
Queue Length 50th (ft)		~247	78	161	15	290	155	~437
Queue Length 95th (ft)		#408	142	m208	m38	#489	226	#645
Internal Link Dist (ft)		245		167			254	
Turn Bay Length (ft)								
Base Capacity (vph)		297	266	728	391	631	664	564
Starvation Cap Reductn		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0
Reduced v/c Ratio		1.20	0.57	0.70	0.21	0.89	0.55	1.15

Intersection Summary

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

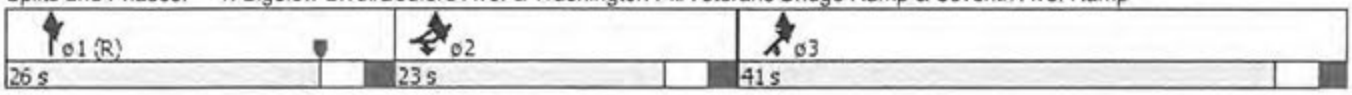
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 21 (23%), Referenced to phase 1:NBT, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 73.3 Intersection LOS: E
Intersection Capacity Utilization 78.4% ICU Level of Service D
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp



Lane Group	WBT	WBR2	SBL2	SBL	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Lane Configurations											
Volume (vph)	2	3	131	278	0	319	37	353	89	12	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	13	12	12	12
Grade (%)	2%			2%				10%			-12%
Storage Length (ft)				0	0				60	0	
Storage Lanes				1	1				1	0	
Taper Length (ft)				25						25	
Right Turn on Red		No				No			Yes		
Link Speed (mph)	25			50				25			25
Link Distance (ft)	257			281				549			413
Travel Time (s)	7.0			3.8				15.0			11.3
Confl. Peds. (#/hr)		24					22		52	52	
Peak Hour Factor	0.50	0.25	0.84	0.81	0.80	0.80	0.69	0.84	0.92	0.75	0.80
Heavy Vehicles (%)	3%	0%	2%	2%	2%	2%	0%	2%	3%	0%	2%
Parking (#/hr)	0	0									
Shared Lane Traffic (%)											
Lane Group Flow (vph)	16	0	0	499	399	0	54	517	0	0	204
Turn Type	NA		Split	NA	Perm		Split	NA		Split	NA
Protected Phases	9		10	10			2	2		4	4
Permitted Phases					10						
Detector Phase	9		10	10	10		2	2		4	4
Switch Phase											
Minimum Initial (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	38.0		22.0	22.0	22.0		26.0	26.0		22.0	22.0
Total Split (s)	38.0		34.0	34.0	34.0		26.0	26.0		22.0	22.0
Total Split (%)	31.7%		28.3%	28.3%	28.3%		21.7%	21.7%		18.3%	18.3%
Maximum Green (s)	32.0		28.0	28.0	28.0		20.0	20.0		16.0	16.0
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5	3.5		3.5	3.5
All-Red Time (s)	2.5		2.5	2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0			0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	6.0			6.0	6.0		6.0	6.0			6.0
Lead/Lag	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?											
Vehicle Extension (s)	4.0		3.0	3.0	3.0		4.0	4.0		3.0	3.0
Recall Mode	None		None	None	None		None	None		None	None
Walk Time (s)	7.0		5.0	5.0	5.0		7.0	7.0		5.0	5.0
Flash Dont Walk (s)	25.0		11.0	11.0	11.0		13.0	13.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0		0	0		0	0
Act Effct Green (s)	7.7			28.3	28.3		20.2	20.2			10.4
Actuated g/C Ratio	0.10			0.36	0.36		0.25	0.25			0.13
v/c Ratio	0.13			0.89	0.80		0.12	0.68			0.47
Control Delay	38.0			46.5	38.8		26.4	32.6			36.5
Queue Delay	0.0			0.0	0.0		0.0	0.0			0.0
Total Delay	38.0			46.5	38.8		26.4	32.6			36.5
LOS	D			D	D		C	C			D
Approach Delay	38.0			43.1				32.0			36.5
Approach LOS	D			D				C			D
Queue Length 50th (ft)	7			212	162		19	109			47

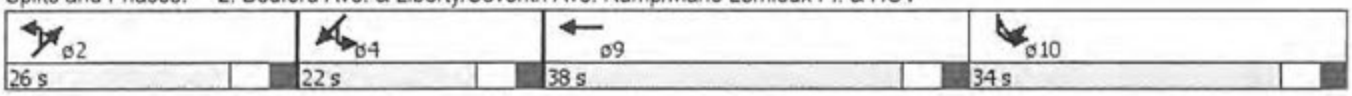
2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV

Lane Group	WBT	WBR2	SBL2	SBL	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Queue Length 95th (ft)	16			#452	#348		45	195			83
Internal Link Dist (ft)	177			201				469			333
Turn Bay Length (ft)											
Base Capacity (vph)	535			559	501		443	759			683
Starvation Cap Reductn	0			0	0		0	0			0
Spillback Cap Reductn	0			0	0		0	0			0
Storage Cap Reductn	0			0	0		0	0			0
Reduced v/c Ratio	0.03			0.89	0.80		0.12	0.68			0.30

Intersection Summary

Area Type: CBD
Cycle Length: 120
Actuated Cycle Length: 79.6
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 38.5 Intersection LOS: D
Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	76	430	29	43	126	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	250			264	559	
Travel Time (s)	6.8			7.2	15.2	
Confl. Peds. (#/hr)		9	9			
Peak Hour Factor	0.72	0.84	0.89	0.74	0.92	0.59
Heavy Vehicles (%)	0%	2%	8%	2%	4%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	106	512	0	91	205	0
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Minimum Split (s)	21.0	21.0	21.0	21.0	20.0	
Total Split (s)	30.0	30.0	30.0	30.0	20.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	15.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
v/c Ratio	0.11	0.50		0.11	0.38	
Control Delay	7.1	2.8		7.1	12.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	7.1	2.8		7.1	12.8	
LOS	A	A		A	B	
Approach Delay	3.5			7.1	12.8	
Approach LOS	A			A	B	
Queue Length 50th (ft)	15	0		13	34	
Queue Length 95th (ft)	26	28		24	79	
Internal Link Dist (ft)	170			184	479	
Turn Bay Length (ft)						
Base Capacity (vph)	950	1021		817	536	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.11	0.50		0.11	0.38	

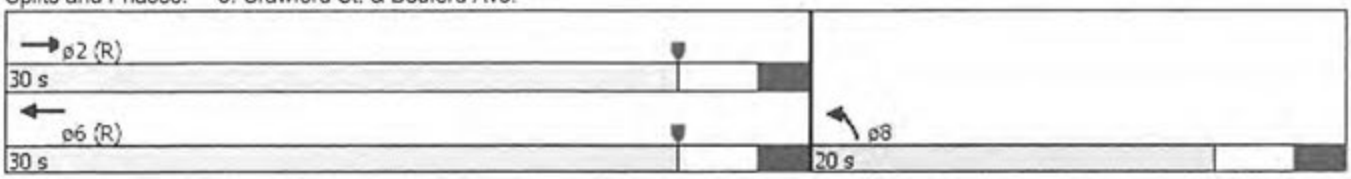
Intersection Summary

Area Type: Other

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 32 (64%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.50
Intersection Signal Delay: 6.0
Intersection Capacity Utilization 39.8%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 3: Crawford St. & Bedford Ave.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	33	16	158	13	8	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			25
Link Distance (ft)	332		705			559
Travel Time (s)	7.5		16.0			15.2
Confl. Peds. (#/hr)	3	4		8	8	
Peak Hour Factor	0.52	0.57	0.81	0.41	0.67	0.82
Heavy Vehicles (%)	3%	0%	5%	0%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	227	0	0	517
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 39.4% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	33	16	158	13	8	414
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.52	0.57	0.81	0.41	0.67	0.82
Hourly flow rate (vph)	63	28	195	32	12	505
Pedestrians	8		3			4
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			705			559
pX, platoon unblocked						
vC, conflicting volume	751	223			235	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	751	223			235	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	83	97			99	
cM capacity (veh/h)	370	813			1335	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	92	227	517
Volume Left	63	0	12
Volume Right	28	32	0
cSH	445	1700	1335
Volume to Capacity	0.21	0.13	0.01
Queue Length 95th (ft)	19	0	1
Control Delay (s)	15.2	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	15.2	0.0	0.3
Approach LOS	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	78	158	371	115	389	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			25
Link Distance (ft)	792		414			230
Travel Time (s)	21.6		11.3			6.3
Confl. Peds. (#/hr)	145	375		37	37	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	175	88	540	0	432	267
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	29.0	29.0	41.0		41.0	41.0
Total Split (%)	41.4%	41.4%	58.6%		58.6%	58.6%
Maximum Green (s)	23.0	23.0	35.0		35.0	35.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	23.0	23.0	35.0		35.0	35.0
Actuated g/C Ratio	0.33	0.33	0.50		0.50	0.50
v/c Ratio	0.21	0.23	0.32		1.07	0.15
Control Delay	9.6	6.1	6.3		86.5	9.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	9.6	6.1	6.3		86.5	9.8
LOS	A	A	A		F	A
Approach Delay	8.5		6.3			57.2
Approach LOS	A		A			E
Queue Length 50th (ft)	13	0	44		~211	30
Queue Length 95th (ft)	34	31	m49		#373	49
Internal Link Dist (ft)	712		334			150
Turn Bay Length (ft)						
Base Capacity (vph)	837	386	1690		404	1769
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.21	0.23	0.32		1.07	0.15

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 67 (96%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 30.3 Intersection LOS: C
Intersection Capacity Utilization 64.6% ICU Level of Service C
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Sixth Ave./Sixth Ave & Centre Ave.

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	22	355	205	52	264	63	35	377	69	260	418	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Right Turn on Red						No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		792			633			646			192	
Travel Time (s)		21.6			17.3			17.6			5.2	
Confl. Peds. (#/hr)	573		247	247		573	126		170	170		126
Confl. Bikes (#/hr)			141			552			18			266
Peak Hour Factor	0.69	0.94	0.80	0.83	0.94	0.60	0.86	0.96	0.74	0.88	0.95	0.63
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	9%	9%	9%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	666	0	63	386	0	0	527	0	0	735	8
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		34.4%	34.4%		34.4%	34.4%	34.4%
Maximum Green (s)	27.0	27.0		27.0	27.0		25.0	25.0		25.0	25.0	25.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)		-1.5		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	15.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		28.5		27.0	27.0			25.0			25.0	25.0
Actuated g/C Ratio		0.32		0.30	0.30			0.28			0.28	0.28
v/c Ratio		0.83		0.62	0.52			0.65			1.57dl	0.03
Control Delay		39.3		56.4	29.2			33.0			197.3	32.2
Queue Delay		0.0		0.0	0.0			0.0			0.0	0.0
Total Delay		39.3		56.4	29.2			33.0			197.3	32.2
LOS		D		E	C			C			F	C
Approach Delay		39.3			33.1			33.0			195.5	
Approach LOS		D			C			C			F	
Queue Length 50th (ft)		183		31	95			96			~301	5
Queue Length 95th (ft)		#277		#83	141			135			m#275	m5
Internal Link Dist (ft)		712			553			566			112	
Turn Bay Length (ft)												
Base Capacity (vph)		800		102	738			815			541	275
Starvation Cap Reductn		0		0	0			0			0	0
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		0.83		0.62	0.52			0.65			1.36	0.03

Lane Group	NEL	NER	NER2
Lane Configurations			
Volume (vph)	56	136	88
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)	7%		
Right Turn on Red			No
Link Speed (mph)	25		
Link Distance (ft)	334		
Travel Time (s)	9.1		
Confl. Peds. (#/hr)	573		247
Confl. Bikes (#/hr)		141	141
Peak Hour Factor	0.88	0.73	0.79
Heavy Vehicles (%)	1%	1%	1%
Shared Lane Traffic (%)		64%	
Lane Group Flow (vph)	183	178	0
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Minimum Split (s)	13.0	13.0	
Total Split (s)	26.0	26.0	
Total Split (%)	28.9%	28.9%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	0.63	1.11	
Control Delay	42.7	138.3	
Queue Delay	0.0	0.0	
Total Delay	42.7	138.3	
LOS	D	F	
Approach Delay	89.8		
Approach LOS	F		
Queue Length 50th (ft)	95	~123	
Queue Length 95th (ft)	162	#189	
Internal Link Dist (ft)	254		
Turn Bay Length (ft)			
Base Capacity (vph)	290	161	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.63	1.11	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 7 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 120
Control Type: Pretimed
Maximum v/c Ratio: 1.36
Intersection Signal Delay: 86.0 Intersection LOS: F
Intersection Capacity Utilization 122.7% ICU Level of Service H
Analysis Period (min) 15

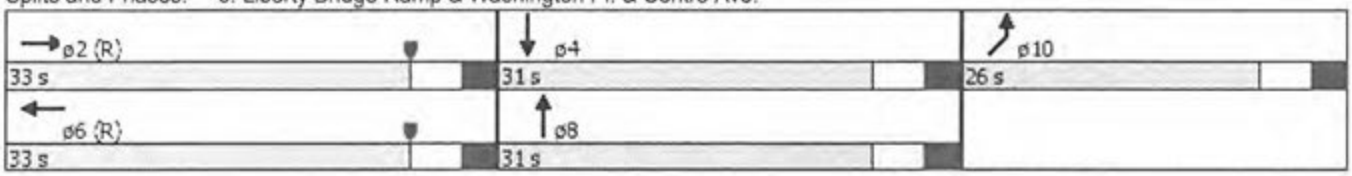
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.

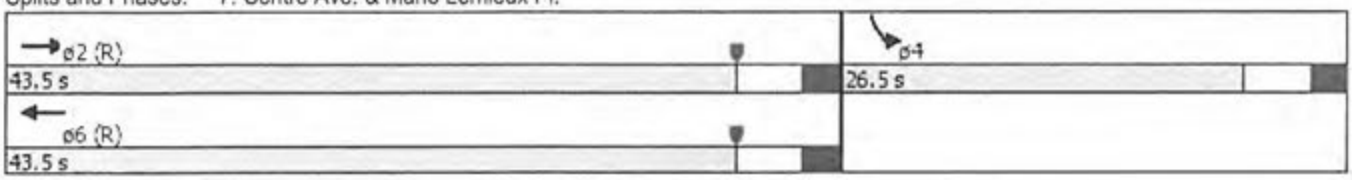


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	680	192	9	31	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red				Yes		No
Link Speed (mph)		25	25		25	
Link Distance (ft)		633	332		934	
Travel Time (s)		17.3	9.1		25.5	
Confl. Peds. (#/hr)	309			309	23	40
Peak Hour Factor	0.83	0.82	0.87	0.88	0.54	0.66
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	846	231	0	295	0
Turn Type	Perm	NA	NA		NA	
Protected Phases		2	6		4	
Permitted Phases	2					
Minimum Split (s)	43.5	43.5	43.5		26.5	
Total Split (s)	43.5	43.5	43.5		26.5	
Total Split (%)	62.1%	62.1%	62.1%		37.9%	
Maximum Green (s)	38.0	38.0	38.0		21.0	
Yellow Time (s)	3.5	3.5	3.5		3.5	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-1.5	-1.5		-1.5	
Total Lost Time (s)		4.0	4.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	28.0	28.0	28.0		11.0	
Flash Dont Walk (s)	10.0	10.0	10.0		10.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)		39.5	39.5		22.5	
Actuated g/C Ratio		0.56	0.56		0.32	
v/c Ratio		0.54	0.10		0.71	
Control Delay		11.1	2.5		32.6	
Queue Delay		0.0	0.0		0.0	
Total Delay		11.1	2.5		32.6	
LOS		B	A		C	
Approach Delay		11.1	2.5		32.6	
Approach LOS		B	A		C	
Queue Length 50th (ft)		108	4		110	
Queue Length 95th (ft)		134	m7		98	
Internal Link Dist (ft)		553	252		854	
Turn Bay Length (ft)						
Base Capacity (vph)		1581	2339		414	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.54	0.10		0.71	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 14.3 Intersection LOS: B
Intersection Capacity Utilization 56.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Centre Ave. & Mario Lemieux Pl.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	601	110	0	201	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	332			374	129	
Travel Time (s)	9.1			10.2	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	773	0	0	218	0	1
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 30.1% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	601	110	0	201	0	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	653	120	0	218	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	332			622		
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			773		822	386
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			494		550	59
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			947		414	883

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	436	337	109	109	1
Volume Left	0	0	0	0	0
Volume Right	0	120	0	0	1
cSH	1700	1700	1700	1700	883
Volume to Capacity	0.26	0.20	0.06	0.06	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.1
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.1
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	94	153	119	46	106	17	165	51	27	36	322	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	16	11	11	12	12	15	12	12	14	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		248			357			640			705	
Travel Time (s)		6.8			9.7			17.5			19.2	
Confl. Peds. (#/hr)	64		24	24		64	21		15	15		21
Peak Hour Factor	0.93	0.89	0.87	0.86	0.82	0.85	0.87	0.90	0.83	0.63	0.88	0.77
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	9%	9%	9%
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	273	137	53	149	0	0	280	0	0	572	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		30.0	30.0	30.0	30.0			30.0			30.0	
Actuated g/C Ratio		0.43	0.43	0.43	0.43			0.43			0.43	
v/c Ratio		0.42	0.18	0.14	0.21			0.91			0.87	
Control Delay		16.6	5.3	13.4	12.3			54.3			33.4	
Queue Delay		0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay		16.6	5.3	13.4	12.3			54.3			33.4	
LOS		B	A	B	B			D			C	
Approach Delay		12.8			12.6			54.3			33.4	
Approach LOS		B			B			D			C	
Queue Length 50th (ft)		58	0	13	35			104			204	
Queue Length 95th (ft)		m116	m33	33	62			#252			#380	
Internal Link Dist (ft)		168			277			560			625	
Turn Bay Length (ft)												
Base Capacity (vph)		649	758	386	707			309			661	
Starvation Cap Reductn		0	0	0	0			0			0	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.42	0.18	0.14	0.21			0.91			0.87	

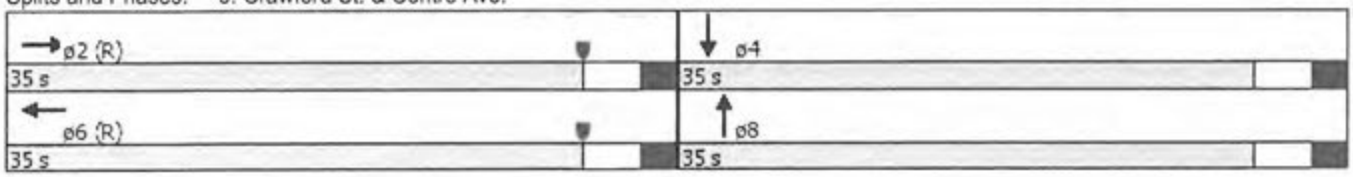
Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 28.8 Intersection LOS: C
Intersection Capacity Utilization 83.4% ICU Level of Service E
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Crawford St. & Centre Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	15	3	6	2	65	269	0	0	224	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			231			283			70	
Travel Time (s)		8.6			6.3			7.7			1.9	
Confl. Peds. (#/hr)	19		20	20		19	52		16	16		52
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Heavy Vehicles (%)	15%	2%	0%	0%	0%	0%	0%	12%	0%	0%	9%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	0	0	24	0	0	443	0	0	487	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 61.4% ICU Level of Service B
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	15	3	6	2	65	269	0	0	224	193
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Hourly flow rate (vph)	0	0	18	12	8	4	102	341	0	0	260	227
Pedestrians		52			16			20			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			1			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	997	986	446	972	1099	376	540			357		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	958	946	446	931	1068	288	540			268		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	94	95	99	90			100		
cM capacity (veh/h)	166	206	580	192	176	681	994			1197		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	18	24	442	488
Volume Left	0	12	102	0
Volume Right	18	4	0	227
cSH	580	211	994	1197
Volume to Capacity	0.03	0.11	0.10	0.00
Queue Length 95th (ft)	2	9	9	0
Control Delay (s)	11.4	24.3	3.0	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.4	24.3	3.0	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	0	92	19	349	171	81	264	0	0	316	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	10	12	12	11	12	12	12	12
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		130			635			238			414	
Travel Time (s)		3.5			17.3			6.5			11.3	
Confl. Peds. (#/hr)	880		138	138		880	49		130	130		49
Peak Hour Factor	0.77	0.92	0.82	0.75	0.82	0.97	0.88	0.96	0.92	0.92	0.89	0.75
Heavy Vehicles (%)	3%	2%	28%	0%	5%	19%	0%	1%	2%	2%	8%	17%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	0	25	602	0	0	367	0	0	379	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Minimum Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%			58.6%	
Maximum Green (s)	23.0	23.0		23.0	23.0		35.0	35.0			35.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	13.0	13.0		13.0	13.0		25.0	25.0			25.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
v/c Ratio		0.78		0.09	1.41			0.31			0.26	
Control Delay		37.7		17.3	223.0			4.3			7.2	
Queue Delay		0.0		0.0	0.0			0.3			0.0	
Total Delay		37.7		17.3	223.0			4.7			7.2	
LOS		D		B	F			A			A	
Approach Delay		37.7			214.8			4.7			7.2	
Approach LOS		D			F			A			A	
Queue Length 50th (ft)		16		7	~351			27			26	
Queue Length 95th (ft)		#127		19	#473			43			42	
Internal Link Dist (ft)		50			555			158			334	
Turn Bay Length (ft)												
Base Capacity (vph)		204		294	426			1191			1476	
Starvation Cap Reductn		0		0	0			369			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.78		0.09	1.41			0.45			0.26	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 69 (99%), Referenced to phase 2:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.41
Intersection Signal Delay: 94.7 Intersection LOS: F
Intersection Capacity Utilization 124.7% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 11: Sixth Ave. & Fifth Ave.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	400	526	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	635			437	582	
Travel Time (s)	14.4			9.9	13.2	
Confl. Peds. (#/hr)			44			
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	10%	2%	2%
Parking (#/hr)			0	0		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1025	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 32.4% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	400	526	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	471	554	0	0
Pedestrians					44	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			44		1262	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		1262	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			70		100	100
cM capacity (veh/h)			1563		113	1017

Direction, Lane #	WB 1	WB 2
Volume Total	655	369
Volume Left	471	0
Volume Right	0	0
cSH	1563	1700
Volume to Capacity	0.30	0.22
Queue Length 95th (ft)	32	0
Control Delay (s)	6.7	0.0
Lane LOS	A	
Approach Delay (s)	4.3	
Approach LOS		

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	136	744	185	161	356	0	0	358	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Right Turn on Red			No			Yes			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		437			753			310			646	
Travel Time (s)		11.9			20.5			8.5			17.6	
Confl. Peds. (#/hr)				105		173	29					29
Peak Hour Factor	0.92	0.92	0.92	0.79	0.88	0.93	0.85	0.82	0.92	0.92	0.75	0.92
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1216	0	189	434	0	0	477	261
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Minimum Split (s)				44.0	44.0		30.0	30.0			30.0	30.0
Total Split (s)				50.0	50.0		30.0	30.0			30.0	30.0
Total Split (%)				62.5%	62.5%		37.5%	37.5%			37.5%	37.5%
Maximum Green (s)				43.0	43.0		24.0	24.0			24.0	24.0
Yellow Time (s)				3.0	3.0		4.0	4.0			4.0	4.0
All-Red Time (s)				4.0	4.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)					7.0		6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				15.0	15.0		9.0	9.0			9.0	9.0
Flash Dont Walk (s)				22.0	22.0		15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0			0	0
Act Effct Green (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
v/c Ratio					0.87		1.95	0.89			0.92	0.36
Control Delay					14.4		482.0	53.8			52.7	23.7
Queue Delay					0.0		0.0	19.2			0.0	0.0
Total Delay					14.4		482.0	73.0			52.7	23.7
LOS					B		F	E			D	C
Approach Delay					14.4			197.1			42.5	
Approach LOS					B			F			D	
Queue Length 50th (ft)					120		~156	238			229	57
Queue Length 95th (ft)					#148		#268	#331			#294	93
Internal Link Dist (ft)		357			673			230			566	
Turn Bay Length (ft)												
Base Capacity (vph)					1404		97	490			520	726
Starvation Cap Reductn					0		0	61			0	0
Spillback Cap Reductn					0		0	0			0	0
Storage Cap Reductn					0		0	0			0	0
Reduced v/c Ratio					0.87		1.95	1.01			0.92	0.36

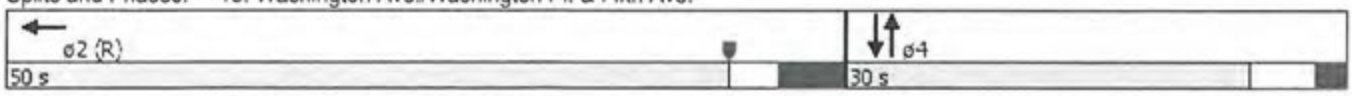
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 39 (49%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 1.95
Intersection Signal Delay: 66.6 Intersection LOS: E
Intersection Capacity Utilization 81.8% ICU Level of Service D
Analysis Period (min) 15

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

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

Splits and Phases: 13: Washington Ave./Washington Pl. & Fifth Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	161	849	0	203	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		753			499			335			119	
Travel Time (s)		20.5			13.6			9.1			3.2	
Confl. Peds. (#/hr)				46		108	15		8	8		15
Peak Hour Factor	0.92	0.92	0.92	0.66	0.97	0.50	0.80	0.90	0.92	0.92	0.25	0.25
Heavy Vehicles (%)	2%	2%	2%	0%	9%	0%	1%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1119	0	0	254	0	0	0	0
Turn Type				Perm	NA		Perm	NA				
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				54.0	54.0		26.0	26.0			26.0	
Total Split (%)				67.5%	67.5%		32.5%	32.5%			32.5%	
Maximum Green (s)				49.0	49.0		21.0	21.0			21.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					49.0			21.0				
Actuated g/C Ratio					0.61			0.26				
v/c Ratio					0.59			0.73				
Control Delay					8.8			40.9				
Queue Delay					0.1			0.0				
Total Delay					8.9			40.9				
LOS					A			D				
Approach Delay					8.9			40.9				
Approach LOS					A			D				
Queue Length 50th (ft)					135			121				
Queue Length 95th (ft)					m195			#229				
Internal Link Dist (ft)		673			419			255			39	
Turn Bay Length (ft)												
Base Capacity (vph)					1887			347				
Starvation Cap Reductn					115			0				
Spillback Cap Reductn					126			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.64			0.73				

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 37 (46%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 14.8 Intersection LOS: B
Intersection Capacity Utilization 54.4% ICU Level of Service A
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Magee St. & Fifth Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	13	800	64	161	157	0	0	33	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		499			406			324			114	
Travel Time (s)		13.6			11.1			8.8			3.1	
Confl. Peds. (#/hr)				16		44	9					9
Peak Hour Factor	0.92	0.92	0.92	0.60	0.95	0.68	0.91	0.85	0.92	0.92	0.82	0.79
Heavy Vehicles (%)	2%	2%	2%	0%	12%	5%	6%	0%	2%	2%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	958	0	0	362	0	0	154	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				55.0	55.0		25.0	25.0			25.0	
Total Split (%)				68.8%	68.8%		31.3%	31.3%			31.3%	
Maximum Green (s)				50.0	50.0		20.0	20.0			20.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					50.0			20.0			20.0	
Actuated g/C Ratio					0.62			0.25			0.25	
v/c Ratio					0.52			1.06			0.31	
Control Delay					4.8			91.5			10.1	
Queue Delay					0.1			0.0			0.0	
Total Delay					4.9			91.5			10.1	
LOS					A			F			B	
Approach Delay					4.9			91.5			10.1	
Approach LOS					A			F			B	
Queue Length 50th (ft)					57			~199			15	
Queue Length 95th (ft)					71			#335			51	
Internal Link Dist (ft)		419			326			244			34	
Turn Bay Length (ft)												
Base Capacity (vph)					1851			341			501	
Starvation Cap Reductn					176			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.57			1.06			0.31	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 22 (28%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 1.06
Intersection Signal Delay: 26.7 Intersection LOS: C
Intersection Capacity Utilization 67.8% ICU Level of Service C
Analysis Period (min) 15

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

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

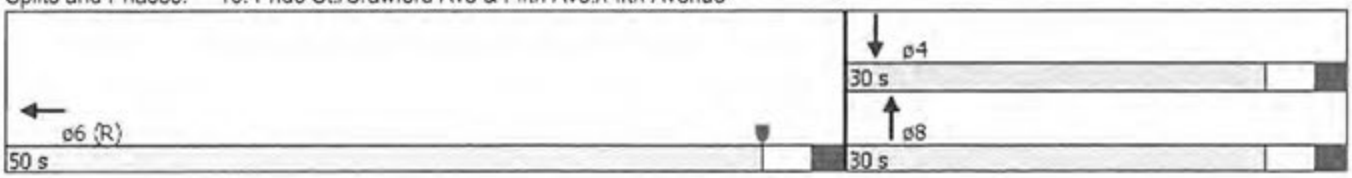
Splits and Phases: 15: Stevenson Rd. & Fifth Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	32	757	177	63	155	0	0	145	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		406			265			320			283	
Travel Time (s)		11.1			7.2			8.7			7.7	
Confl. Peds. (#/hr)				25		45	22		40	40		22
Peak Hour Factor	0.92	0.92	0.92	0.71	0.94	0.95	0.71	0.79	0.92	0.79	0.79	0.88
Heavy Vehicles (%)	2%	2%	2%	0%	18%	0%	0%	6%	2%	2%	16%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1036	0	0	285	0	0	292	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				50.0	50.0		30.0	30.0			30.0	
Total Split (%)				62.5%	62.5%		37.5%	37.5%			37.5%	
Maximum Green (s)				45.0	45.0		25.0	25.0			25.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					45.0			25.0			25.0	
Actuated g/C Ratio					0.56			0.31			0.31	
v/c Ratio					0.63			0.74			0.46	
Control Delay					13.3			34.1			21.9	
Queue Delay					0.0			0.0			0.0	
Total Delay					13.3			34.1			21.9	
LOS					B			C			C	
Approach Delay					13.3			34.1			21.9	
Approach LOS					B			C			C	
Queue Length 50th (ft)					160			141			100	
Queue Length 95th (ft)					221			194			143	
Internal Link Dist (ft)		326			185			240			203	
Turn Bay Length (ft)												
Base Capacity (vph)					1651			385			631	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.63			0.74			0.46	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 13 (16%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 18.5 Intersection LOS: B
Intersection Capacity Utilization 68.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	93	230	25	6	329	0	0	435	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		142			582			105			238	
Travel Time (s)		3.9			15.9			2.9			6.5	
Confl. Peds. (#/hr)				13		40	21					21
Peak Hour Factor	0.92	0.92	0.92	0.87	0.78	0.63	0.30	0.96	0.25	0.92	0.92	0.80
Heavy Vehicles (%)	2%	2%	2%	4%	1%	0%	0%	1%	2%	2%	11%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	107	295	40	0	363	0	0	493	0
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Detector Phase				4	4	4	1 2	2			6	
Switch Phase												
Minimum Initial (s)				8.0	8.0	8.0		18.0			25.0	
Minimum Split (s)				27.5	27.5	27.5		30.5			30.5	
Total Split (s)				28.0	28.0	28.0		31.0			42.0	
Total Split (%)				40.0%	40.0%	40.0%		44.3%			60.0%	
Maximum Green (s)				22.5	22.5	22.5		25.5			36.5	
Yellow Time (s)				3.5	3.5	3.5		3.5			3.5	
All-Red Time (s)				2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.5	5.5	5.5		5.5			5.5	
Lead/Lag								Lag				
Lead-Lag Optimize?												
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Recall Mode				Ped	Ped	Ped		C-Max			C-Max	
Walk Time (s)				12.0	12.0	12.0		15.0			15.0	
Flash Dont Walk (s)				10.0	10.0	10.0		10.0			10.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effct Green (s)				22.5	22.5	22.5		31.0			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.44			0.52	
v/c Ratio				0.23	0.58	0.10		0.26			0.32	
Control Delay				19.1	25.4	17.5		5.6			7.5	
Queue Delay				234.4	0.0	0.0		4.2			0.5	
Total Delay				253.5	25.4	17.5		9.8			8.0	
LOS				F	C	B		A			A	
Approach Delay					79.9			9.8			8.0	
Approach LOS					E			A			A	
Queue Length 50th (ft)				33	105	12		24			41	
Queue Length 95th (ft)				67	148	22		m23			m54	
Internal Link Dist (ft)		62			502			25			158	
Turn Bay Length (ft)												
Base Capacity (vph)				462	507	414		1410			1519	
Starvation Cap Reductn				0	0	0		952			585	

Lane Group	ø1
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	16%
Maximum Green (s)	8.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				456	0	0		0			12	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				17.83	0.58	0.10		0.79			0.53	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 55 (79%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 33.0 Intersection LOS: C
Intersection Capacity Utilization 48.3% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Sixth Ave. & Diamond St.

Lane Group	ø1
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	463	32	53	133	7	191	307	261	322	165	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	12	12	11	12	12	12	12
Right Turn on Red			No			Yes			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			634			330			105	
Travel Time (s)		8.9			17.3			9.0			2.9	
Confl. Peds. (#/hr)	8		107	107		8	19		18	18		19
Peak Hour Factor	0.60	0.96	0.80	0.90	0.90	0.90	0.87	0.94	0.92	0.95	0.85	0.67
Heavy Vehicles (%)	4%	1%	0%	2%	2%	2%	0%	1%	4%	12%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	522	40	0	215	0	0	831	0	0	593	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		8.0	25.0	
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5		30.5	30.5		11.0	30.5	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		31.0	31.0		11.0	42.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		44.3%	44.3%		15.7%	60.0%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		25.5	25.5		8.0	36.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5			5.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	Ped	Ped	Ped	Ped	Ped		C-Max	C-Max		Min	C-Max	
Walk Time (s)	12.0	12.0	12.0	12.0	12.0		15.0	15.0			15.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effct Green (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
v/c Ratio		1.04	0.10		0.98			1.04			1.37dl	
Control Delay		77.2	17.6		83.7			65.3			14.0	
Queue Delay		23.7	0.0		38.4			3.8			0.2	
Total Delay		100.9	17.6		122.1			69.1			14.2	
LOS		F	B		F			E			B	
Approach Delay		95.0			122.1			69.1			14.2	
Approach LOS		F			F			E			B	
Queue Length 50th (ft)		~248	12		89			~189			52	
Queue Length 95th (ft)		#423	29		#222			#300			67	
Internal Link Dist (ft)		245			554			250			25	
Turn Bay Length (ft)												
Base Capacity (vph)		503	401		220			797			978	
Starvation Cap Reductn		0	0		0			0			55	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		76	0		33			8			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		1.22	0.10		1.15			1.05			0.64	

Intersection Summary

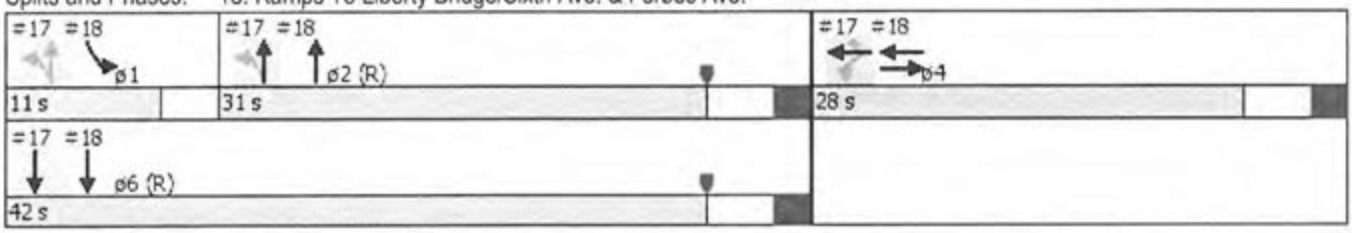
Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 55 (79%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 66.1 Intersection LOS: E
Intersection Capacity Utilization 111.5% ICU Level of Service H
Analysis Period (min) 15

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1078	332	0	0	194	738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	10	10
Storage Length (ft)		0	0		0	60
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Right Turn on Red		No				No
Link Speed (mph)	25			25	25	
Link Distance (ft)	634			303	752	
Travel Time (s)	17.3			8.3	20.5	
Confl. Peds. (#/hr)		85				
Peak Hour Factor	0.93	0.87	0.92	0.92	0.86	0.86
Heavy Vehicles (%)	6%	6%	2%	2%	3%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1541	0	0	0	226	858
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Minimum Split (s)	35.0				22.0	22.0
Total Split (s)	45.0				35.0	35.0
Total Split (%)	56.3%				43.8%	43.8%
Maximum Green (s)	40.0				30.0	30.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	2.0				2.0	2.0
Lost Time Adjust (s)	0.0				0.0	0.0
Total Lost Time (s)	5.0				5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	10.0				10.0	10.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	40.0				30.0	30.0
Actuated g/C Ratio	0.50				0.38	0.38
v/c Ratio	1.14				0.41	0.99
Control Delay	95.3				21.3	54.4
Queue Delay	1.0				0.0	0.0
Total Delay	96.3				21.3	54.4
LOS	F				C	D
Approach Delay	96.3				47.5	
Approach LOS	F				D	
Queue Length 50th (ft)	~481				82	236
Queue Length 95th (ft)	#612				134	#348
Internal Link Dist (ft)	554			223	672	
Turn Bay Length (ft)						60
Base Capacity (vph)	1350				552	869
Starvation Cap Reductn	0				0	0
Spillback Cap Reductn	296				0	0
Storage Cap Reductn	0				0	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Reduced v/c Ratio	1.46				0.41	0.99

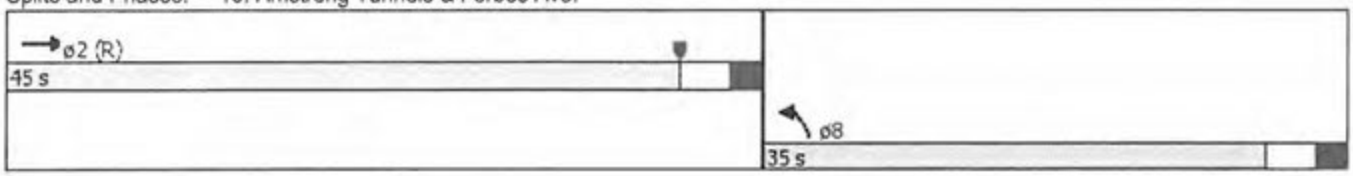
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 22 (28%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 76.2 Intersection LOS: E
Intersection Capacity Utilization 83.2% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 19: Amstrong Tunnels & Forbes Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	444	1268	104	0	0	0	0	46	56	401	78	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		303			745			205			310	
Travel Time (s)		8.3			20.3			5.6			8.5	
Confl. Peds. (#/hr)	45		79						51	51		
Peak Hour Factor	0.82	0.88	0.64	0.92	0.92	0.92	0.92	0.56	0.68	0.81	0.82	0.92
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	4%	4%	1%	1%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	541	1603	0	0	0	0	0	82	82	0	590	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Minimum Split (s)	51.0	51.0						23.0	23.0	23.0	23.0	
Total Split (s)	57.0	57.0						23.0	23.0	23.0	23.0	
Total Split (%)	71.3%	71.3%						28.8%	28.8%	28.8%	28.8%	
Maximum Green (s)	52.0	52.0						18.0	18.0	18.0	18.0	
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	31.0	31.0						8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0						10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0	0	0	0	
Act Effct Green (s)	52.0	52.0						18.0	18.0		18.0	
Actuated g/C Ratio	0.65	0.65						0.22	0.22		0.22	
v/c Ratio	0.58	0.85						0.22	0.26		2.62	
Control Delay	9.1	13.3						27.3	17.5		753.9	
Queue Delay	14.0	47.6						0.5	0.0		0.0	
Total Delay	23.2	60.9						27.7	17.5		753.9	
LOS	C	E						C	B		F	
Approach Delay		51.4						22.6			753.9	
Approach LOS		D						C			F	
Queue Length 50th (ft)	127	308						34	17		~488	
Queue Length 95th (ft)	m116	m267						42	35		m#558	
Internal Link Dist (ft)		223			665			125			230	
Turn Bay Length (ft)												
Base Capacity (vph)	939	1879						368	319		225	
Starvation Cap Reductn	381	593						0	0		0	
Spillback Cap Reductn	63	0						102	0		0	
Storage Cap Reductn	0	0						0	0		0	
Reduced v/c Ratio	0.97	1.25						0.31	0.26		2.62	

Intersection Summary

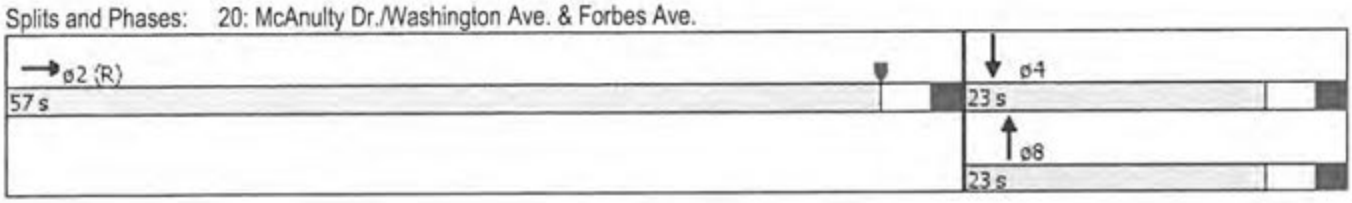
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 41 (51%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 2.62
Intersection Signal Delay: 192.8 Intersection LOS: F
Intersection Capacity Utilization 99.8% ICU Level of Service F
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: McAnulty Dr./Washington Ave. & Forbes Ave.



21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	805	124	0	0	0	0	35	31	27	143	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		745			503			182			335	
Travel Time (s)		20.3			13.7			5.0			9.1	
Confl. Peds. (#/hr)	41		42						14	14		
Peak Hour Factor	0.73	0.94	0.59	0.92	0.92	0.92	0.92	0.63	0.80	0.54	0.33	0.92
Heavy Vehicles (%)	4%	7%	0%	2%	2%	2%	2%	0%	25%	4%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1193	0	0	0	0	0	95	0	0	483	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	56.0	56.0						24.0		24.0	24.0	
Total Split (%)	70.0%	70.0%						30.0%		30.0%	30.0%	
Maximum Green (s)	51.0	51.0						19.0		19.0	19.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		51.0						19.0			19.0	
Actuated g/C Ratio		0.64						0.24			0.24	
v/c Ratio		0.60						0.23			1.16	
Control Delay		5.9						17.4			135.4	
Queue Delay		0.0						0.0			0.0	
Total Delay		5.9						17.4			135.4	
LOS		A						B			F	
Approach Delay		5.9						17.4			135.4	
Approach LOS		A						B			F	
Queue Length 50th (ft)		110						22			~299	
Queue Length 95th (ft)		m128						36			121	
Internal Link Dist (ft)		665			423			102			255	
Turn Bay Length (ft)												
Base Capacity (vph)		1991						411			415	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.60						0.23			1.16	

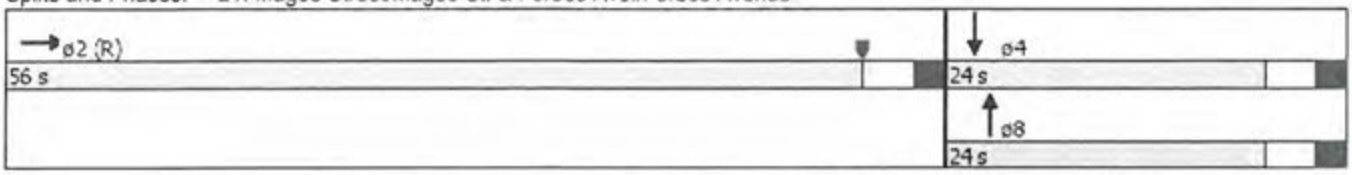
Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 53 (66%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 41.8 Intersection LOS: D
Intersection Capacity Utilization 53.4% ICU Level of Service A
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

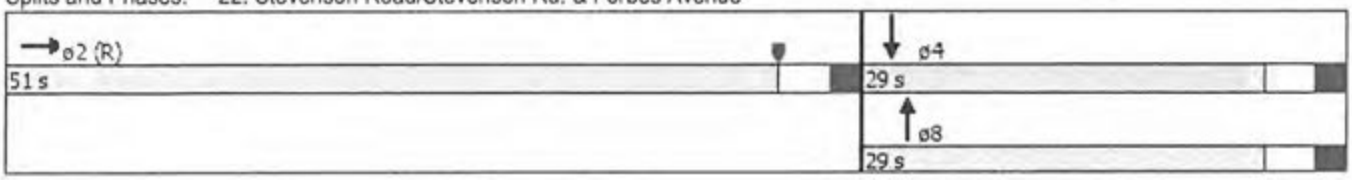


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	170	575	119	0	0	0	0	259	24	26	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		503			408			159			324	
Travel Time (s)		13.7			11.1			4.3			8.8	
Confl. Peds. (#/hr)	28		28						13	13		
Peak Hour Factor	0.62	0.93	0.71	0.92	0.92	0.92	0.89	0.89	0.93	0.69	0.60	0.92
Heavy Vehicles (%)	1%	9%	6%	2%	2%	2%	4%	5%	2%	0%	8%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1060	0	0	0	0	0	317	0	0	38	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	51.0	51.0						29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%		36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
v/c Ratio		0.59						0.51			0.15	
Control Delay		8.3						26.0			23.3	
Queue Delay		0.0						0.0			0.0	
Total Delay		8.3						26.0			23.3	
LOS		A						C			C	
Approach Delay		8.3						26.0			23.3	
Approach LOS		A						C			C	
Queue Length 50th (ft)		155						127			13	
Queue Length 95th (ft)		m224						200			26	
Internal Link Dist (ft)		423			328			79			244	
Turn Bay Length (ft)												
Base Capacity (vph)		1785						627			255	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.59						0.51			0.15	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 70 (88%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 12.7 Intersection LOS: B
Intersection Capacity Utilization 54.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Stevenson Road/Stevenson Rd. & Forbes Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	450	32	0	0	0	0	136	24	91	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		408			281			148			320	
Travel Time (s)		11.1			7.7			4.0			8.7	
Confl. Peds. (#/hr)	44		19						4	4		
Peak Hour Factor	0.79	0.94	0.63	0.92	0.92	0.92	0.92	0.77	0.67	0.77	0.78	0.92
Heavy Vehicles (%)	1%	11%	0%	2%	2%	2%	2%	9%	0%	7%	25%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	652	0	0	0	0	0	213	0	0	189	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	51.0	51.0						29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%		36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
v/c Ratio		0.36						0.41			0.61	
Control Delay		4.6						23.7			29.0	
Queue Delay		0.0						0.3			0.0	
Total Delay		4.6						24.0			29.0	
LOS		A						C			C	
Approach Delay		4.6						24.0			29.0	
Approach LOS		A						C			C	
Queue Length 50th (ft)		0						79			41	
Queue Length 95th (ft)		0						114			91	
Internal Link Dist (ft)		328			201			68			240	
Turn Bay Length (ft)												
Base Capacity (vph)		1836						525			308	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						63			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.36						0.46			0.61	

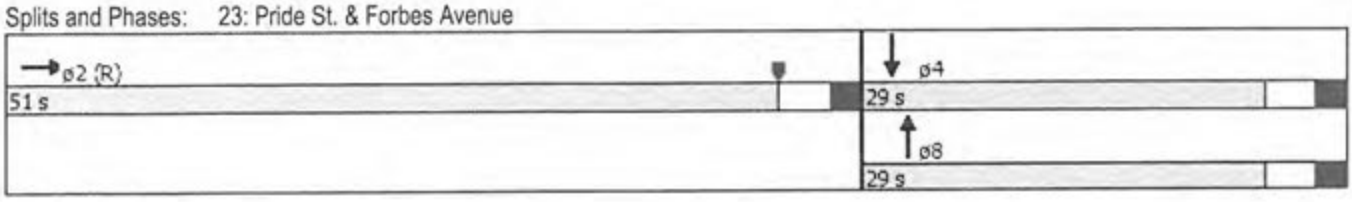
Intersection Summary

Area Type: Other

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 6 (8%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 12.9
Intersection Capacity Utilization 50.1%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service A

Splits and Phases: 23: Pride St. & Forbes Avenue



1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Lane Group	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	35	205	147	770	231	606	277	289
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Right Turn on Red	No				Yes			No
Link Speed (mph)		25		25			25	
Link Distance (ft)		325		247			334	
Travel Time (s)		8.9		6.7			9.1	
Confl. Peds. (#/hr)			31					31
Peak Hour Factor	0.58	0.93	0.86	0.80	0.70	0.89	0.96	0.80
Heavy Vehicles (%)	9%	4%	5%	1%	0%	1%	1%	3%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	280	171	962	330	681	289	361
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	31.0	31.0	31.0
Total Split (s)	25.0	25.0	25.0	34.0	34.0	31.0	31.0	31.0
Total Split (%)	27.8%	27.8%	27.8%	37.8%	37.8%	34.4%	34.4%	34.4%
Maximum Green (s)	20.0	20.0	20.0	29.0	29.0	26.0	26.0	26.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?								
Walk Time (s)						11.0	11.0	11.0
Flash Dont Walk (s)						10.0	10.0	10.0
Pedestrian Calls (#/hr)						0	0	0
Act Effct Green (s)		20.0	20.0	29.0	29.0	26.0	26.0	26.0
Actuated g/C Ratio		0.22	0.22	0.32	0.32	0.29	0.29	0.29
v/c Ratio		0.88	0.60	0.95	0.55	1.48	0.60	0.90
Control Delay		62.5	41.2	41.8	13.7	255.4	33.6	57.7
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		62.5	41.2	41.8	13.7	255.4	33.6	57.7
LOS		E	D	D	B	F	C	E
Approach Delay		54.4		34.6			153.6	
Approach LOS		D		C			F	
Queue Length 50th (ft)		155	88	287	61	~539	141	196
Queue Length 95th (ft)		#297	148	m290	m62	#737	225	#293
Internal Link Dist (ft)		245		167			254	
Turn Bay Length (ft)								
Base Capacity (vph)		320	287	1015	605	460	484	403
Starvation Cap Reductn		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0
Reduced v/c Ratio		0.88	0.60	0.95	0.55	1.48	0.60	0.90

Intersection Summary

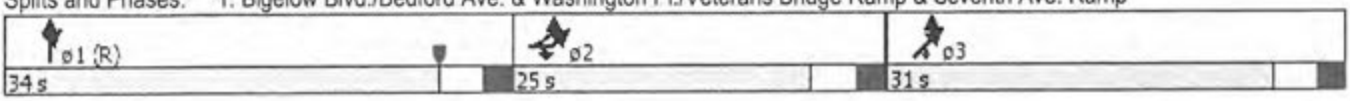
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 27 (30%), Referenced to phase 1:NBT, Start of Yellow
Natural Cycle: 130
Control Type: Pretimed
Maximum v/c Ratio: 1.48
Intersection Signal Delay: 89.0 Intersection LOS: F
Intersection Capacity Utilization 88.5% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp



2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV

Lane Group	WBT	WBR	WBR2	NEL2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	106	69	33	118	256	204	36	7	167	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	16	12	13	12	12	12	12
Grade (%)	2%					10%			-12%	
Storage Length (ft)		1			0		60	0		0
Storage Lanes		0			1		1	0		0
Taper Length (ft)					25			25		
Right Turn on Red			No				Yes			
Link Speed (mph)	25					25			25	
Link Distance (ft)	257					549			413	
Travel Time (s)	7.0					15.0			11.3	
Confl. Peds. (#/hr)		58		20			23	58		
Peak Hour Factor	0.54	0.43	0.61	0.64	0.66	0.81	0.39	0.58	0.85	0.78
Heavy Vehicles (%)	3%	0%	0%	0%	1%	2%	3%	0%	2%	2%
Parking (#/hr)	0	0	0							0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	410	0	0	184	0	732	0	0	491	0
Turn Type	NA			Split	Split	NA		Split	NA	
Protected Phases	9			2	2	2		4	4	
Permitted Phases						2				
Detector Phase	9			2	2	2		4	4	
Switch Phase										
Minimum Initial (s)	4.0			4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	38.0			26.0	26.0	26.0		22.0	22.0	
Total Split (s)	38.0			30.0	30.0	30.0		22.0	22.0	
Total Split (%)	42.2%			33.3%	33.3%	33.3%		24.4%	24.4%	
Maximum Green (s)	32.0			24.0	24.0	24.0		16.0	16.0	
Yellow Time (s)	3.5			3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5			2.5	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0			0.0		0.0			0.0	
Total Lost Time (s)	6.0			6.0		6.0			6.0	
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	4.0			4.0	4.0	4.0		3.0	3.0	
Recall Mode	None			None	None	None		None	None	
Walk Time (s)	7.0			7.0	7.0	7.0		5.0	5.0	
Flash Dont Walk (s)	25.0			13.0	13.0	13.0		11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	0		0	0	
Act Effct Green (s)	29.4			23.5		23.5			15.7	
Actuated g/C Ratio	0.34			0.27		0.27			0.18	
v/c Ratio	0.89			0.39		0.90			1.02dr	
Control Delay	51.2			29.5		45.8			54.1	
Queue Delay	0.0			0.0		0.0			0.0	
Total Delay	51.2			29.5		45.8			54.1	
LOS	D			C		D			D	
Approach Delay	51.2					42.5			54.1	
Approach LOS	D					D			D	
Queue Length 50th (ft)	213			86		207			145	

Lane Group	WBT	WBR	WBR2	NEL2	NEL	NET	NER	SWL	SWT	SWR
Queue Length 95th (ft)	161			98		#250			#213	
Internal Link Dist (ft)	177					469			333	
Turn Bay Length (ft)										
Base Capacity (vph)	502			486		839			572	
Starvation Cap Reductn	0			0		0			0	
Spillback Cap Reductn	0			0		0			0	
Storage Cap Reductn	0			0		0			0	
Reduced v/c Ratio	0.82			0.38		0.87			0.86	

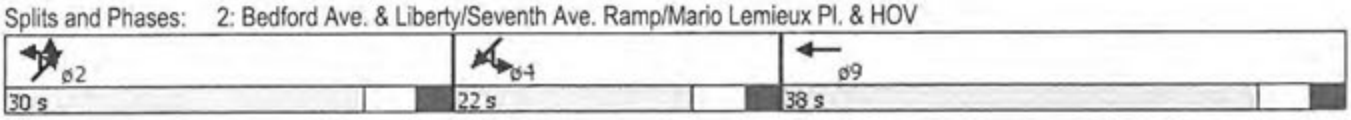
Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 86.6
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 47.6 Intersection LOS: D
Intersection Capacity Utilization 69.6% ICU Level of Service C
Analysis Period (min) 15

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	48	215	36	62	434	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	250			264	559	
Travel Time (s)	6.8			7.2	15.2	
Confl. Peds. (#/hr)		6	6			6
Peak Hour Factor	0.80	0.85	0.75	0.86	0.92	0.85
Heavy Vehicles (%)	0%	2%	17%	1%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	60	253	0	120	547	0
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	20.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	15.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
v/c Ratio	0.06	0.28		0.15	1.01	
Control Delay	6.7	2.1		7.4	63.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	6.7	2.1		7.4	63.6	
LOS	A	A		A	E	
Approach Delay	3.0			7.4	63.6	
Approach LOS	A			A	E	
Queue Length 50th (ft)	8	0		17	~157	
Queue Length 95th (ft)	19	22		36	#333	
Internal Link Dist (ft)	170			184	479	
Turn Bay Length (ft)						
Base Capacity (vph)	950	895		786	541	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.06	0.28		0.15	1.01	

Intersection Summary

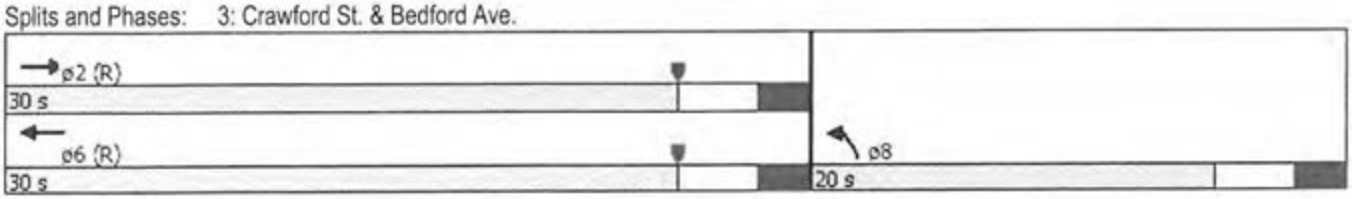
Area Type: Other

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 37.4 Intersection LOS: D
Intersection Capacity Utilization 49.7% ICU Level of Service A
Analysis Period (min) 15

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

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

Splits and Phases: 3: Crawford St. & Bedford Ave.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	22	28	393	26	0	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			25
Link Distance (ft)	332		705			559
Travel Time (s)	7.5		16.0			15.2
Confl. Peds. (#/hr)		1		9	9	
Peak Hour Factor	0.79	0.79	0.91	0.65	0.92	0.85
Heavy Vehicles (%)	0%	0%	1%	0%	0%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	472	0	0	344
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 32.6% ICU Level of Service A
Analysis Period (min) 15

4: Crawford St. & Wylie Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	22	28	393	26	0	292
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.91	0.65	0.92	0.85
Hourly flow rate (vph)	28	35	432	40	0	344
Pedestrians	9					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	1					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			705			559
pX, platoon unblocked						
vC, conflicting volume	804	462			481	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	804	462			481	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	94			100	
cM capacity (veh/h)	352	599			1084	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	63	472	344
Volume Left	28	0	0
Volume Right	35	40	0
cSH	458	1700	1084
Volume to Capacity	0.14	0.28	0.00
Queue Length 95th (ft)	12	0	0
Control Delay (s)	14.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.1	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	285	151	179	204	185	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			25
Link Distance (ft)	792		414			230
Travel Time (s)	21.6		11.3			6.3
Confl. Peds. (#/hr)	97	253		77	77	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		11%				
Lane Group Flow (vph)	335	150	426	0	206	479
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	29.0	29.0	41.0		41.0	41.0
Total Split (%)	41.4%	41.4%	58.6%		58.6%	58.6%
Maximum Green (s)	23.0	23.0	35.0		35.0	35.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	23.0	23.0	35.0		35.0	35.0
Actuated g/C Ratio	0.33	0.33	0.50		0.50	0.50
v/c Ratio	0.30	0.34	0.26		0.47	0.27
Control Delay	17.9	5.8	2.7		15.8	10.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	17.9	5.8	2.7		15.8	10.6
LOS	B	A	A		B	B
Approach Delay	14.2		2.7			12.2
Approach LOS	B		A			B
Queue Length 50th (ft)	53	0	21		54	58
Queue Length 95th (ft)	83	40	m12		110	86
Internal Link Dist (ft)	712		334			150
Turn Bay Length (ft)						
Base Capacity (vph)	1121	443	1614		443	1769
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.30	0.34	0.26		0.47	0.27

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 10.2 Intersection LOS: B
Intersection Capacity Utilization 52.9% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Sixth Ave./Sixth Ave & Centre Ave.

6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	122	164	97	109	272	322	21	591	140	137	216	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Right Turn on Red						No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		792			633			646			192	
Travel Time (s)		21.6			17.3			17.6			5.2	
Confl. Peds. (#/hr)	573		247	247		573	126		170	170		126
Peak Hour Factor	0.59	0.88	0.67	0.67	0.65	0.78	0.53	0.81	0.85	0.71	0.90	0.58
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	6%	1%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	538	0	163	831	0	0	935	0	0	433	103
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		34.4%	34.4%		34.4%	34.4%	34.4%
Maximum Green (s)	27.0	27.0		27.0	27.0		25.0	25.0		25.0	25.0	25.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)		-1.5		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	15.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		28.5		27.0	27.0			25.0			25.0	25.0
Actuated g/C Ratio		0.32		0.30	0.30			0.28			0.28	0.28
v/c Ratio		2.38dl		1.10	1.17dr			0.90			2.33dl	0.31
Control Delay		84.0		137.6	107.8			44.6			57.1	39.1
Queue Delay		0.0		0.0	0.0			0.0			0.0	0.0
Total Delay		84.0		137.6	107.8			44.6			57.1	39.1
LOS		F		F	F			D			E	D
Approach Delay		84.0			112.7			44.6			53.6	
Approach LOS		F			F			D			D	
Queue Length 50th (ft)		~176		~106	~292			187			142	64
Queue Length 95th (ft)		#269		#148	#219			209			m#177	m74
Internal Link Dist (ft)		712			553			566			112	
Turn Bay Length (ft)												
Base Capacity (vph)		515		148	733			1037			495	335
Starvation Cap Reductn		0		0	0			0			0	0
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		1.04		1.10	1.13			0.90			0.87	0.31

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 7 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 73.6 Intersection LOS: E
Intersection Capacity Utilization 119.2% ICU Level of Service H
Analysis Period (min) 15

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

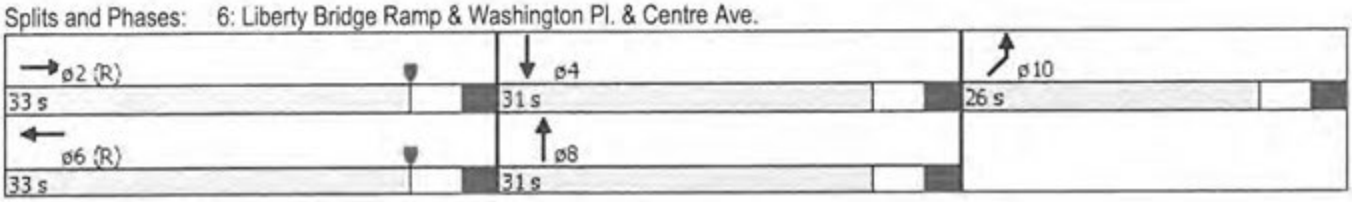
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.



Lane Group	NEL	NER	NER2
Lane Configurations			
Volume (vph)	41	27	47
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)	7%		
Right Turn on Red			No
Link Speed (mph)	25		
Link Distance (ft)	334		
Travel Time (s)	9.1		
Confl. Peds. (#/hr)	573		247
Peak Hour Factor	0.64	0.80	0.73
Heavy Vehicles (%)	5%	4%	0%
Shared Lane Traffic (%)		60%	
Lane Group Flow (vph)	84	78	0
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Minimum Split (s)	13.0	13.0	
Total Split (s)	26.0	26.0	
Total Split (%)	28.9%	28.9%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	0.26	0.39	
Control Delay	31.5	36.5	
Queue Delay	0.0	0.0	
Total Delay	31.5	36.5	
LOS	C	D	
Approach Delay	33.9		
Approach LOS	C		
Queue Length 50th (ft)	40	40	
Queue Length 95th (ft)	55	74	
Internal Link Dist (ft)	254		
Turn Bay Length (ft)			
Base Capacity (vph)	324	202	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.26	0.39	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	46	422	627	88	9	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red				Yes		No
Link Speed (mph)		25	25		25	
Link Distance (ft)		633	332		934	
Travel Time (s)		17.3	9.1		25.5	
Confl. Peds. (#/hr)	426			426	18	118
Peak Hour Factor	0.86	0.95	0.95	0.81	0.45	0.84
Heavy Vehicles (%)	0%	2%	1%	0%	0%	6%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	497	769	0	95	0
Turn Type	Perm	NA	NA		NA	
Protected Phases		2	6		4	
Permitted Phases	2					
Minimum Split (s)	43.5	43.5	43.5		26.5	
Total Split (s)	43.5	43.5	43.5		26.5	
Total Split (%)	62.1%	62.1%	62.1%		37.9%	
Maximum Green (s)	38.0	38.0	38.0		21.0	
Yellow Time (s)	3.5	3.5	3.5		3.5	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-1.5	-1.5		-1.5	
Total Lost Time (s)		4.0	4.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	28.0	28.0	28.0		11.0	
Flash Dont Walk (s)	10.0	10.0	10.0		10.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)		39.5	39.5		22.5	
Actuated g/C Ratio		0.56	0.56		0.32	
v/c Ratio		0.36	0.33		0.25	
Control Delay		9.3	5.4		19.9	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.3	5.4		19.9	
LOS		A	A		B	
Approach Delay		9.3	5.4		19.9	
Approach LOS		A	A		B	
Queue Length 50th (ft)		55	28		30	
Queue Length 95th (ft)		85	m43		30	
Internal Link Dist (ft)		553	252		854	
Turn Bay Length (ft)						
Base Capacity (vph)		1381	2362		375	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.36	0.33		0.25	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 7.8 Intersection LOS: A
Intersection Capacity Utilization 73.6% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Centre Ave. & Mario Lemieux Pl.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	427	4	0	715	0	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	332			374	129	
Travel Time (s)	9.1			10.2	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	468	0	0	777	0	92
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.9% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	427	4	0	715	0	85
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	464	4	0	777	0	92
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	332			622		
pX, platoon unblocked			0.98		0.98	0.98
vC, conflicting volume			468		855	234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			405		801	165
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	89
cM capacity (veh/h)			1122		314	829

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	309	159	389	389	92
Volume Left	0	0	0	0	0
Volume Right	0	4	0	0	92
cSH	1700	1700	1700	1700	829
Volume to Capacity	0.18	0.09	0.23	0.23	0.11
Queue Length 95th (ft)	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	9.9
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	183	160	188	32	169	35	155	181	58	25	140	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	16	11	11	12	12	15	12	12	14	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		248			357			640			705	
Travel Time (s)		6.8			9.7			17.5			19.2	
Confl. Peds. (#/hr)	52		26	26		52	29		5	5		29
Peak Hour Factor	0.82	0.82	0.85	0.67	0.70	0.63	0.79	0.69	0.81	0.89	0.70	0.75
Heavy Vehicles (%)	4%	4%	0%	3%	2%	0%	4%	1%	2%	0%	6%	4%
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	418	221	48	297	0	0	530	0	0	431	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.0	30.0	30.0	30.0	30.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		30.0	30.0	30.0	30.0			30.0			30.0	
Actuated g/C Ratio		0.43	0.43	0.43	0.43			0.43			0.43	
v/c Ratio		0.84	0.26	0.16	0.40			1.07			0.62	
Control Delay		34.0	2.3	14.2	14.7			83.1			17.2	
Queue Delay		0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay		34.0	2.3	14.2	14.7			83.1			17.2	
LOS		C	A	B	B			F			B	
Approach Delay		23.1			14.6			83.1			17.2	
Approach LOS		C			B			F			B	
Queue Length 50th (ft)		99	0	12	78			~255			111	
Queue Length 95th (ft)		#244	18	24	97			#277			130	
Internal Link Dist (ft)		168			277			560			625	
Turn Bay Length (ft)												
Base Capacity (vph)		495	851	294	746			496			694	
Starvation Cap Reductn		0	0	0	0			0			0	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.84	0.26	0.16	0.40			1.07			0.62	

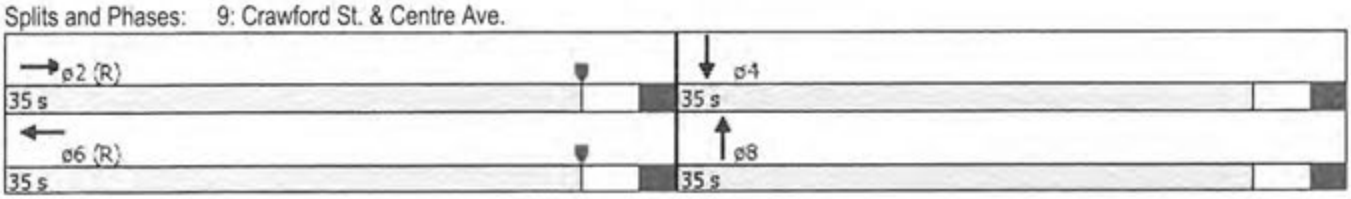
Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 36.6 Intersection LOS: D
Intersection Capacity Utilization 89.6% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 9: Crawford St. & Centre Ave.



10: Crawford Ave/Crawford Avenue & Colwell St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	61	6	11	13	14	299	0	0	309	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			231			283			70	
Travel Time (s)		8.6			6.3			7.7			1.9	
Confl. Peds. (#/hr)	8		4	4		8	42		19	19		42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	33	0	0	348	0	0	400	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 42.5% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	61	6	11	13	14	299	0	0	309	51
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	68	7	12	14	16	332	0	0	343	57
Pedestrians		42			19			4			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			2			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	806	796	418	826	824	359	442			351		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	784	774	418	805	804	324	442			316		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	89	97	96	98	99			100		
cM capacity (veh/h)	260	299	611	242	288	680	1079			1188		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	68	33	348	400
Volume Left	0	7	16	0
Volume Right	68	14	0	57
cSH	611	365	1079	1188
Volume to Capacity	0.11	0.09	0.01	0.00
Queue Length 95th (ft)	9	7	1	0
Control Delay (s)	11.6	15.8	0.5	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.6	15.8	0.5	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	0	179	202	510	296	36	90	0	0	676	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	10	12	12	11	12	12	12	12
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		130			635			238			414	
Travel Time (s)		3.5			17.3			6.5			11.3	
Confl. Peds. (#/hr)	859		99	99		859	14		65	65		14
Peak Hour Factor	0.80	0.92	0.83	0.89	0.94	0.93	0.75	0.75	0.92	0.92	0.89	0.75
Heavy Vehicles (%)	7%	2%	18%	0%	3%	12%	0%	1%	2%	2%	2%	19%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	272	0	227	861	0	0	168	0	0	816	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		28.0	28.0			28.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%			58.6%	
Maximum Green (s)	23.0	23.0		23.0	23.0		35.0	35.0			35.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2			0.2	
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max			Max	
Walk Time (s)	13.0	13.0		13.0	13.0		25.0	25.0			25.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
v/c Ratio		1.81		0.92	2.02			0.15			0.52	
Control Delay		407.1		67.0	485.8			5.6			12.4	
Queue Delay		1.3		48.3	0.0			0.0			0.0	
Total Delay		408.4		115.3	485.8			5.6			12.4	
LOS		F		F	F			A			B	
Approach Delay		408.4			408.5			5.6			12.4	
Approach LOS		F			F			A			B	
Queue Length 50th (ft)		~116		93	~591			19			95	
Queue Length 95th (ft)		#256		#217	#804			25			121	
Internal Link Dist (ft)		50			555			158			334	
Turn Bay Length (ft)												
Base Capacity (vph)		150		247	427			1124			1555	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		10		44	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		1.94		1.12	2.02			0.15			0.52	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 69 (99%), Referenced to phase 2:NBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.02
Intersection Signal Delay: 241.7 Intersection LOS: F
Intersection Capacity Utilization 109.4% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 11: Sixth Ave. & Fifth Ave.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	550	562	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	635			437	582	
Travel Time (s)	14.4			9.9	13.2	
Confl. Peds. (#/hr)			18			
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	1%	9%	2%	2%
Parking (#/hr)			0	0		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1161	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 38.4% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	550	562	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	550	611	0	0
Pedestrians					18	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			18		1423	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		1423	18
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			66		100	100
cM capacity (veh/h)			1605		83	1056

Direction, Lane #	WB 1	WB 2
Volume Total	754	407
Volume Left	550	0
Volume Right	0	0
cSH	1605	1700
Volume to Capacity	0.34	0.24
Queue Length 95th (ft)	39	0
Control Delay (s)	7.0	0.0
Lane LOS	A	
Approach Delay (s)	4.6	
Approach LOS		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	38.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	112	801	301	124	353	0	0	194	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Right Turn on Red			No			Yes			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		437			753			310			646	
Travel Time (s)		11.9			20.5			8.5			17.6	
Confl. Peds. (#/hr)				139		202	25					25
Peak Hour Factor	0.92	0.92	0.92	0.93	0.96	0.93	0.91	0.94	0.92	0.92	0.88	0.83
Heavy Vehicles (%)	2%	2%	2%	1%	5%	1%	1%	0%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1278	0	136	376	0	0	220	284
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Minimum Split (s)				44.0	44.0		30.0	30.0			30.0	30.0
Total Split (s)				50.0	50.0		30.0	30.0			30.0	30.0
Total Split (%)				62.5%	62.5%		37.5%	37.5%			37.5%	37.5%
Maximum Green (s)				43.0	43.0		24.0	24.0			24.0	24.0
Yellow Time (s)				3.0	3.0		4.0	4.0			4.0	4.0
All-Red Time (s)				4.0	4.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)					7.0		6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				15.0	15.0		9.0	9.0			9.0	9.0
Flash Dont Walk (s)				22.0	22.0		15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0			0	0
Act Effct Green (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
v/c Ratio					0.90		0.49	0.75			0.42	0.39
Control Delay					16.1		25.2	31.7			25.5	24.1
Queue Delay					0.0		0.0	2.4			0.0	0.0
Total Delay					16.1		25.2	34.1			25.5	24.1
LOS					B		C	C			C	C
Approach Delay					16.1			31.7			24.7	
Approach LOS					B			C			C	
Queue Length 50th (ft)					114		48	179			88	63
Queue Length 95th (ft)					m#143		111	#301			146	91
Internal Link Dist (ft)		357			673			230			566	
Turn Bay Length (ft)												
Base Capacity (vph)					1421		279	500			520	731
Starvation Cap Reductn					0		0	49			0	0
Spillback Cap Reductn					0		0	0			0	0
Storage Cap Reductn					0		0	0			0	0
Reduced v/c Ratio					0.90		0.49	0.83			0.42	0.39

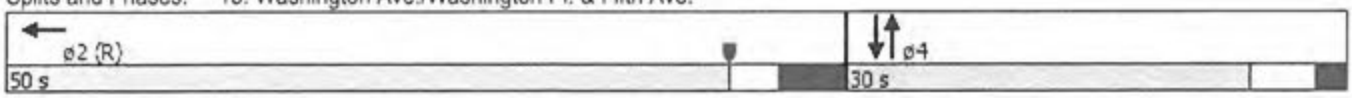
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 39 (49%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 75
Control Type: Pretimed
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 21.5 Intersection LOS: C
Intersection Capacity Utilization 84.3% ICU Level of Service E
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Washington Ave./Washington Pl. & Fifth Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	51	914	4	270	13	0	0	1	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		753			499			335			119	
Travel Time (s)		20.5			13.6			9.1			3.2	
Confl. Peds. (#/hr)				87		214	8					8
Peak Hour Factor	0.92	0.92	0.92	0.67	0.87	0.50	0.85	0.46	0.92	0.92	0.25	0.67
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1135	0	0	346	0	0	16	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				54.0	54.0		26.0	26.0			26.0	
Total Split (%)				67.5%	67.5%		32.5%	32.5%			32.5%	
Maximum Green (s)				49.0	49.0		21.0	21.0			21.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					49.0			21.0			21.0	
Actuated g/C Ratio					0.61			0.26			0.26	
v/c Ratio					0.55			1.04			0.04	
Control Delay					8.7			79.9			13.8	
Queue Delay					0.1			0.0			0.0	
Total Delay					8.8			79.9			13.8	
LOS					A			E			B	
Approach Delay					8.8			79.9			13.8	
Approach LOS					A			E			B	
Queue Length 50th (ft)					126			~192			2	
Queue Length 95th (ft)					m170			113			1	
Internal Link Dist (ft)		673			419			255			39	
Turn Bay Length (ft)												
Base Capacity (vph)					2046			334			419	
Starvation Cap Reductn					190			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.61			1.04			0.04	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 35 (44%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 25.3 Intersection LOS: C
Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Magee St. & Fifth Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	81	746	31	181	55	0	0	17	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		499			406			324			114	
Travel Time (s)		13.6			11.1			8.8			3.1	
Confl. Peds. (#/hr)				15		84	3					3
Peak Hour Factor	0.92	0.92	0.92	0.72	0.98	0.43	0.82	0.72	0.92	0.92	0.85	0.62
Heavy Vehicles (%)	2%	2%	2%	1%	5%	3%	2%	4%	2%	2%	6%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	945	0	0	297	0	0	88	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				55.0	55.0		25.0	25.0			25.0	
Total Split (%)				68.8%	68.8%		31.3%	31.3%			31.3%	
Maximum Green (s)				50.0	50.0		20.0	20.0			20.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					50.0			20.0			20.0	
Actuated g/C Ratio					0.62			0.25			0.25	
v/c Ratio					0.49			0.89			0.20	
Control Delay					3.8			58.6			10.3	
Queue Delay					0.1			0.0			0.0	
Total Delay					3.9			58.6			10.3	
LOS					A			E			B	
Approach Delay					3.9			58.6			10.3	
Approach LOS					A			E			B	
Queue Length 50th (ft)					44			131			8	
Queue Length 95th (ft)					54			#192			38	
Internal Link Dist (ft)		419			326			244			34	
Turn Bay Length (ft)												
Base Capacity (vph)					1948			335			450	
Starvation Cap Reductn					236			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.55			0.89			0.20	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 16.5 Intersection LOS: B
Intersection Capacity Utilization 52.1% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

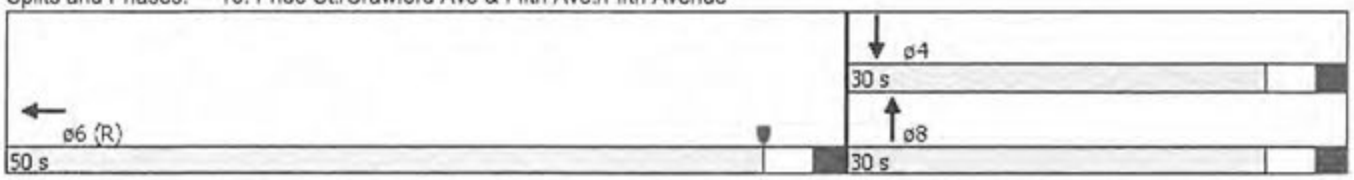
Splits and Phases: 15: Stevenson Rd. & Fifth Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	42	793	179	26	133	0	0	302	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		406			265			320			283	
Travel Time (s)		11.1			7.2			8.7			7.7	
Confl. Peds. (#/hr)				43		66	17					17
Peak Hour Factor	0.92	0.92	0.92	0.54	0.95	0.80	0.69	0.89	0.92	0.92	0.95	0.77
Heavy Vehicles (%)	2%	2%	2%	2%	9%	8%	5%	8%	2%	2%	5%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1137	0	0	187	0	0	415	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				50.0	50.0		30.0	30.0			30.0	
Total Split (%)				62.5%	62.5%		37.5%	37.5%			37.5%	
Maximum Green (s)				45.0	45.0		25.0	25.0			25.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					45.0			25.0			25.0	
Actuated g/C Ratio					0.56			0.31			0.31	
v/c Ratio					0.67			0.48			0.62	
Control Delay					13.9			30.7			27.1	
Queue Delay					0.0			0.0			0.7	
Total Delay					13.9			30.7			27.7	
LOS					B			C			C	
Approach Delay					13.9			30.7			27.7	
Approach LOS					B			C			C	
Queue Length 50th (ft)					182			73			167	
Queue Length 95th (ft)					250			157			260	
Internal Link Dist (ft)		326			185			240			203	
Turn Bay Length (ft)												
Base Capacity (vph)					1704			390			670	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					1			0			68	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.67			0.48			0.69	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 11 (14%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 19.0 Intersection LOS: B
Intersection Capacity Utilization 67.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	169	268	10	1	111	0	0	1102	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		142			582			105			238	
Travel Time (s)		3.9			15.9			2.9			6.5	
Confl. Peds. (#/hr)						69	7					7
Peak Hour Factor	0.92	0.92	0.92	0.95	0.86	0.67	0.25	0.82	0.25	0.92	0.97	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	1%	0%	0%	1%	0%	2%	4%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	178	312	15	0	139	0	0	1176	0
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Detector Phase				4	4	4	1 2	2			6	
Switch Phase												
Minimum Initial (s)				8.0	8.0	8.0		18.0			25.0	
Minimum Split (s)				27.5	27.5	27.5		30.5			30.5	
Total Split (s)				28.0	28.0	28.0		31.0			42.0	
Total Split (%)				40.0%	40.0%	40.0%		44.3%			60.0%	
Maximum Green (s)				22.5	22.5	22.5		25.5			36.5	
Yellow Time (s)				3.5	3.5	3.5		3.5			3.5	
All-Red Time (s)				2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.5	5.5	5.5		5.5			5.5	
Lead/Lag								Lag				
Lead-Lag Optimize?												
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Recall Mode				Ped	Ped	Ped		C-Max			C-Max	
Walk Time (s)				12.0	12.0	12.0		15.0			15.0	
Flash Dont Walk (s)				10.0	10.0	10.0		10.0			10.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effct Green (s)				22.5	22.5	22.5		31.0			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.44			0.52	
v/c Ratio				0.37	0.62	0.04		0.10			0.73	
Control Delay				21.2	26.4	16.8		7.4			9.9	
Queue Delay				674.3	0.0	0.0		0.9			4.8	
Total Delay				695.5	26.4	16.8		8.3			14.7	
LOS				F	C	B		A			B	
Approach Delay					261.9			8.3			14.7	
Approach LOS					F			A			B	
Queue Length 50th (ft)				58	112	4		14			91	
Queue Length 95th (ft)				109	180	12		m19			m155	
Internal Link Dist (ft)		62			502			25			158	
Turn Bay Length (ft)												
Base Capacity (vph)				477	507	402		1412			1621	
Starvation Cap Reductn				0	0	0		1050			371	

Lane Group	ø1
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	16%
Maximum Green (s)	8.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				477	0	0		0			91	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				178.00	0.62	0.04		0.38			0.94	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 55 (79%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 82.8 Intersection LOS: F
Intersection Capacity Utilization 62.3% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Sixth Ave. & Diamond St.

Lane Group	ø1
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	459	182	20	55	3	37	84	47	394	875	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	12	12	11	12	12	12	12
Right Turn on Red			No			Yes			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			634			330			105	
Travel Time (s)		8.9			17.3			9.0			2.9	
Confl. Peds. (#/hr)	2		147	147		2	6		22	22		6
Peak Hour Factor	0.83	0.84	0.73	0.50	0.50	0.25	0.77	0.88	0.84	0.92	0.98	0.75
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	8%	2%	7%	10%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	582	249	0	162	0	0	199	0	0	1322	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		8.0	25.0	
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5		30.5	30.5		11.0	30.5	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		31.0	31.0		11.0	42.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		44.3%	44.3%		15.7%	60.0%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		25.5	25.5		8.0	36.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5			5.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	Ped	Ped	Ped	Ped	Ped		C-Max	C-Max		Min	C-Max	
Walk Time (s)	12.0	12.0	12.0	12.0	12.0		15.0	15.0			15.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effct Green (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
v/c Ratio		1.14	0.65		0.75			0.28			1.04	
Control Delay		110.2	29.8		45.2			12.4			47.7	
Queue Delay		0.0	0.0		0.0			0.0			9.6	
Total Delay		110.2	29.8		45.2			12.4			57.3	
LOS		F	C		D			B			E	
Approach Delay		86.1			45.2			12.4			57.3	
Approach LOS		F			D			B			E	
Queue Length 50th (ft)		~299	91		59			21			~91	
Queue Length 95th (ft)		#433	125		56			43			#443	
Internal Link Dist (ft)		245			554			250			25	
Turn Bay Length (ft)												
Base Capacity (vph)		511	384		216			718			1268	
Starvation Cap Reductn		0	0		0			0			30	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		1.14	0.65		0.75			0.28			1.07	

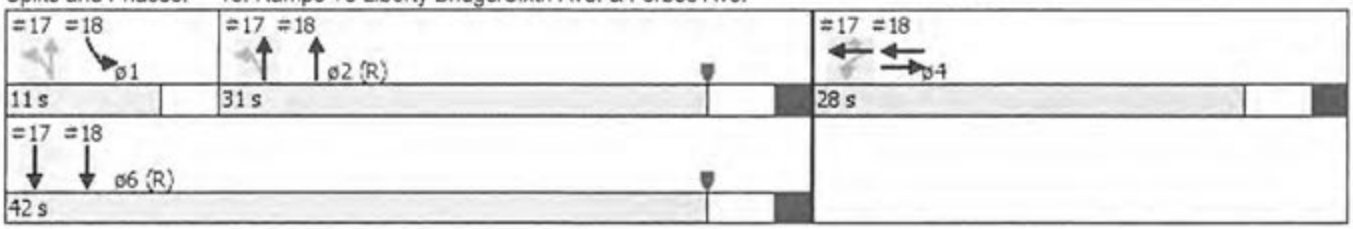
Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 55 (79%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 62.5 Intersection LOS: E
Intersection Capacity Utilization 104.4% ICU Level of Service G
Analysis Period (min) 15

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

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

Splits and Phases: 18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.



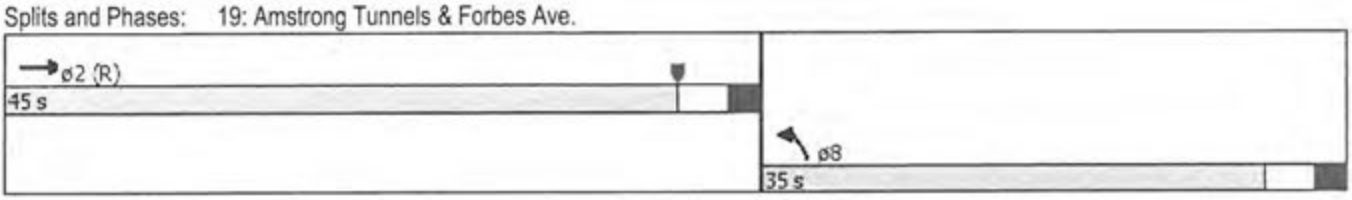
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	779	416	0	0	78	531
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	10	10
Storage Length (ft)		0	0		0	60
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Right Turn on Red		No				No
Link Speed (mph)	25			25	25	
Link Distance (ft)	634			303	752	
Travel Time (s)	17.3			8.3	20.5	
Confl. Peds. (#/hr)		79				
Peak Hour Factor	0.91	0.86	0.92	0.92	0.85	0.82
Heavy Vehicles (%)	3%	1%	2%	2%	3%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1340	0	0	0	92	648
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Minimum Split (s)	35.0				22.0	22.0
Total Split (s)	45.0				35.0	35.0
Total Split (%)	56.3%				43.8%	43.8%
Maximum Green (s)	40.0				30.0	30.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	2.0				2.0	2.0
Lost Time Adjust (s)	0.0				0.0	0.0
Total Lost Time (s)	5.0				5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	10.0				10.0	10.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	40.0				30.0	30.0
Actuated g/C Ratio	0.50				0.38	0.38
v/c Ratio	1.00				0.17	0.73
Control Delay	45.1				17.7	27.4
Queue Delay	6.9				0.0	0.0
Total Delay	52.0				17.7	27.4
LOS	D				B	C
Approach Delay	52.0				26.2	
Approach LOS	D				C	
Queue Length 50th (ft)	332				30	155
Queue Length 95th (ft)	#498				58	195
Internal Link Dist (ft)	554			223	672	
Turn Bay Length (ft)						60
Base Capacity (vph)	1346				552	886
Starvation Cap Reductn	0				0	0
Spillback Cap Reductn	34				0	0
Storage Cap Reductn	0				0	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Reduced v/c Ratio	1.02				0.17	0.73

Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 72 (90%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 42.9 Intersection LOS: D
Intersection Capacity Utilization 69.5% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Amstrong Tunnels & Forbes Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	349	888	73	0	0	0	0	126	104	251	42	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		303			745			205			310	
Travel Time (s)		8.3			20.3			5.6			8.5	
Confl. Peds. (#/hr)	54		95						69	69		
Peak Hour Factor	0.96	0.92	0.83	0.92	0.92	0.92	0.92	0.79	0.79	0.84	0.55	0.92
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	0%	0%	1%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	364	1053	0	0	0	0	0	159	132	0	375	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Minimum Split (s)	51.0	51.0						23.0	23.0	23.0	23.0	
Total Split (s)	57.0	57.0						23.0	23.0	23.0	23.0	
Total Split (%)	71.3%	71.3%						28.8%	28.8%	28.8%	28.8%	
Maximum Green (s)	52.0	52.0						18.0	18.0	18.0	18.0	
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	31.0	31.0						8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0						10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0	0	0	0	
Act Effct Green (s)	52.0	52.0						18.0	18.0		18.0	
Actuated g/C Ratio	0.65	0.65						0.22	0.22		0.22	
v/c Ratio	0.37	0.55						0.42	0.35		1.88	
Control Delay	8.7	9.8						30.4	11.5		434.2	
Queue Delay	2.1	4.2						0.0	0.0		0.0	
Total Delay	10.7	14.0						30.4	11.5		434.2	
LOS	B	B						C	B		F	
Approach Delay		13.2						21.8			434.2	
Approach LOS		B						C			F	
Queue Length 50th (ft)	76	120						68	11		~298	
Queue Length 95th (ft)	m92	m147						106	43		#242	
Internal Link Dist (ft)		223			665			125			230	
Turn Bay Length (ft)												
Base Capacity (vph)	982	1925						383	372		200	
Starvation Cap Reductn	463	775						0	0		0	
Spillback Cap Reductn	37	0						0	0		0	
Storage Cap Reductn	0	0						0	0		0	
Reduced v/c Ratio	0.70	0.92						0.42	0.35		1.88	

Intersection Summary

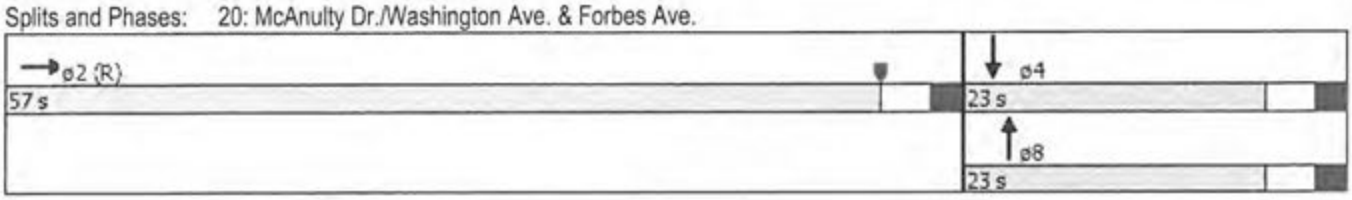
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 8 (10%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.88
Intersection Signal Delay: 90.2 Intersection LOS: F
Intersection Capacity Utilization 83.7% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: McAnulty Dr./Washington Ave. & Forbes Ave.

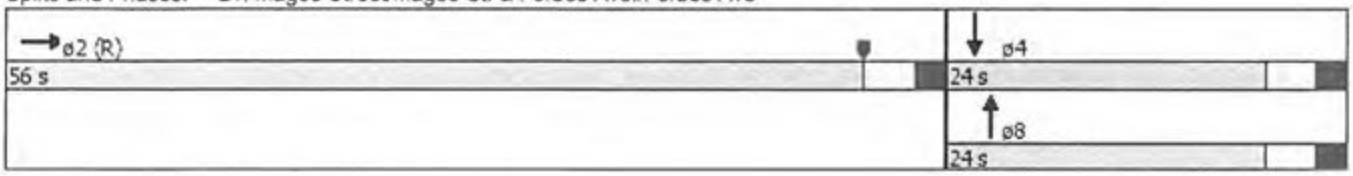


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	253	932	97	0	0	0	0	105	102	20	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		745			503			182			335	
Travel Time (s)		20.3			13.7			5.0			9.1	
Confl. Peds. (#/hr)	14		34						22	22		
Peak Hour Factor	0.64	0.87	0.75	0.92	0.92	0.92	0.92	0.73	0.77	0.69	0.35	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1595	0	0	0	0	0	276	0	0	312	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	56.0	56.0						24.0		24.0	24.0	
Total Split (%)	70.0%	70.0%						30.0%		30.0%	30.0%	
Maximum Green (s)	51.0	51.0						19.0		19.0	19.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		51.0						19.0			19.0	
Actuated g/C Ratio		0.64						0.24			0.24	
v/c Ratio		0.78						0.61			0.80	
Control Delay		17.3						28.2			51.1	
Queue Delay		0.0						0.0			0.0	
Total Delay		17.3						28.2			51.1	
LOS		B						C			D	
Approach Delay		17.3						28.2			51.1	
Approach LOS		B						C			D	
Queue Length 50th (ft)		321						98			151	
Queue Length 95th (ft)		m316						130			81	
Internal Link Dist (ft)		665			423			102			255	
Turn Bay Length (ft)												
Base Capacity (vph)		2050						454			388	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.78						0.61			0.80	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 53 (66%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 23.5 Intersection LOS: C
Intersection Capacity Utilization 67.1% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Magee Street/Magee St. & Forbes Ave./Forbes Ave

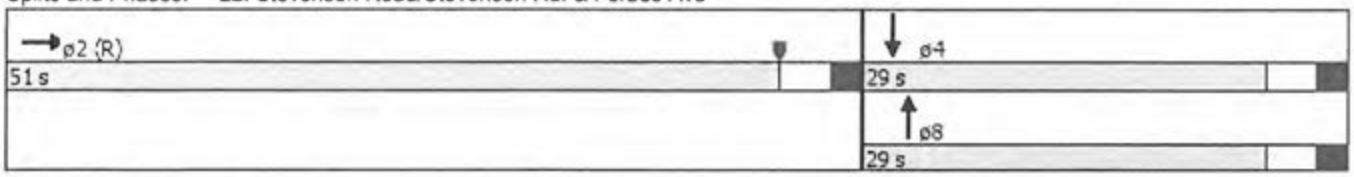


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	935	12	0	0	0	0	90	40	24	50	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		503			408			159			324	
Travel Time (s)		13.7			11.1			4.3			8.8	
Confl. Peds. (#/hr)	22		26						16	16		
Peak Hour Factor	0.71	0.97	0.84	0.92	0.92	0.92	0.92	0.84	0.67	0.93	0.75	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	7%	0%	2%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1108	0	0	0	0	0	167	0	0	93	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	51.0	51.0						29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%		36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
v/c Ratio		0.59						0.27			0.16	
Control Delay		9.0						18.0			13.4	
Queue Delay		0.4						0.0			0.0	
Total Delay		9.3						18.0			13.4	
LOS		A						B			B	
Approach Delay		9.3						18.0			13.4	
Approach LOS		A						B			B	
Queue Length 50th (ft)		169						49			26	
Queue Length 95th (ft)		187						88			42	
Internal Link Dist (ft)		423			328			79			244	
Turn Bay Length (ft)												
Base Capacity (vph)		1888						620			568	
Starvation Cap Reductn		303						0			0	
Spillback Cap Reductn		30						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.70						0.27			0.16	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 72 (90%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 10.7 Intersection LOS: B
Intersection Capacity Utilization 58.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 22: Stevenson Road/Stevenson Rd. & Forbes Ave



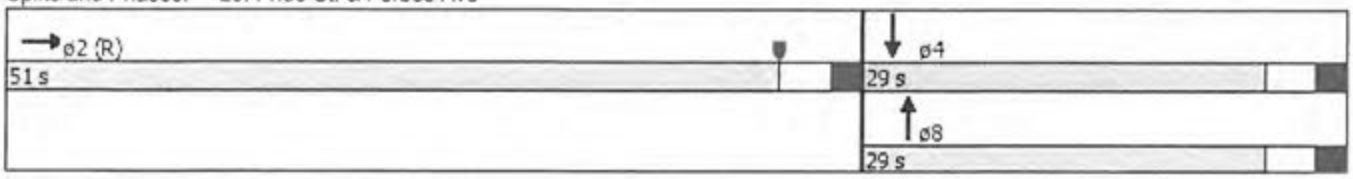
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	88	883	27	0	0	0	0	57	22	264	41	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		408			281			148			320	
Travel Time (s)		11.1			7.7			4.0			8.7	
Confl. Peds. (#/hr)	48		30						9	9		
Peak Hour Factor	0.75	0.94	0.82	0.92	0.92	0.92	0.92	0.80	0.92	0.91	0.67	0.92
Heavy Vehicles (%)	1%	6%	4%	2%	2%	2%	2%	20%	5%	3%	20%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1089	0	0	0	0	0	95	0	0	351	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	51.0	51.0						29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%		36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
v/c Ratio		0.57						0.20			0.94	
Control Delay		6.7						17.6			54.5	
Queue Delay		0.2						0.0			0.0	
Total Delay		7.0						17.6			54.5	
LOS		A						B			D	
Approach Delay		7.0						17.6			54.5	
Approach LOS		A						B			D	
Queue Length 50th (ft)		38						27			96	
Queue Length 95th (ft)		75						53			#124	
Internal Link Dist (ft)		328			201			68			240	
Turn Bay Length (ft)												
Base Capacity (vph)		1921						486			372	
Starvation Cap Reductn		236						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.65						0.20			0.94	

Intersection Summary

Area Type: Other

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 7 (9%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 18.5 Intersection LOS: B
Intersection Capacity Utilization 59.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Pride St. & Forbes Ave



1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Lane Group	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	178	163	155	494	72	569	336	696
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Right Turn on Red	No				Yes			No
Link Speed (mph)		25		25			25	
Link Distance (ft)		325		247			334	
Travel Time (s)		8.9		6.7			9.1	
Confl. Peds. (#/hr)			17		17			17
Peak Hour Factor	0.87	0.89	0.95	0.88	0.79	0.92	0.86	0.99
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	388	163	561	91	618	391	703
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0	26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	21.0	21.0	44.0	44.0	44.0
Total Split (%)	27.8%	27.8%	27.8%	23.3%	23.3%	48.9%	48.9%	48.9%
Maximum Green (s)	20.0	20.0	20.0	16.0	16.0	39.0	39.0	39.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?								
Walk Time (s)						11.0	11.0	11.0
Flash Dont Walk (s)						10.0	10.0	10.0
Pedestrian Calls (#/hr)						0	0	0
Act Effct Green (s)		20.0	20.0	16.0	16.0	39.0	39.0	39.0
Actuated g/C Ratio		0.22	0.22	0.18	0.18	0.43	0.43	0.43
v/c Ratio		1.18	0.55	1.01	0.28	0.90	0.54	1.15
Control Delay		140.1	39.2	58.8	3.4	43.2	22.4	112.3
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		140.1	39.2	58.8	3.4	43.2	22.4	112.3
LOS		F	D	E	A	D	C	F
Approach Delay		110.2		51.1			66.8	
Approach LOS		F		D			E	
Queue Length 50th (ft)		~266	83	~178	3	318	160	~475
Queue Length 95th (ft)		#434	148	m#257	m3	#534	232	#687
Internal Link Dist (ft)		245		167			254	
Turn Bay Length (ft)								
Base Capacity (vph)		330	295	555	323	683	719	611
Starvation Cap Reductn		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0
Reduced v/c Ratio		1.18	0.55	1.01	0.28	0.90	0.54	1.15

Intersection Summary

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

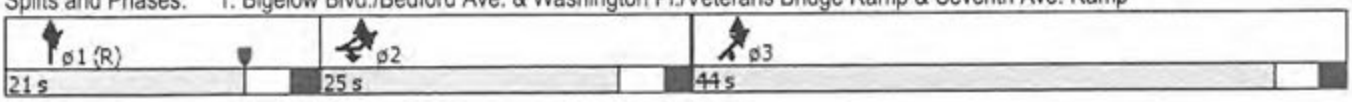
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 49 (54%), Referenced to phase 1:NBT, Start of Yellow
Natural Cycle: 130
Control Type: Pretimed
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 71.5 Intersection LOS: E
Intersection Capacity Utilization 83.7% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp



2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV

Lane Group	WBT	WBR2	SBL2	SBL	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Lane Configurations											
Volume (vph)	2	3	143	291	0	353	41	385	94	13	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	16	13	12	12	12
Grade (%)	2%			2%				10%			-12%
Storage Length (ft)				0	0				60	0	
Storage Lanes				1	1				1	0	
Taper Length (ft)				25						25	
Right Turn on Red		No				No			Yes		
Link Speed (mph)	25			50				25			25
Link Distance (ft)	257			281				549			413
Travel Time (s)	7.0			3.8				15.0			11.3
Confl. Peds. (#/hr)		24					22		52	52	
Peak Hour Factor	0.50	0.25	0.84	0.81	0.80	0.80	0.69	0.84	0.92	0.75	0.80
Heavy Vehicles (%)	3%	0%	2%	2%	2%	2%	0%	2%	3%	0%	2%
Parking (#/hr)	0	0									
Shared Lane Traffic (%)											
Lane Group Flow (vph)	16	0	0	529	441	0	59	560	0	0	225
Turn Type	NA		Split	NA	Perm		Split	NA		Split	NA
Protected Phases	9		10	10			2	2		4	4
Permitted Phases					10						
Detector Phase	9		10	10	10		2	2		4	4
Switch Phase											
Minimum Initial (s)	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	38.0		22.0	22.0	22.0		26.0	26.0		22.0	22.0
Total Split (s)	38.0		34.0	34.0	34.0		26.0	26.0		22.0	22.0
Total Split (%)	31.7%		28.3%	28.3%	28.3%		21.7%	21.7%		18.3%	18.3%
Maximum Green (s)	32.0		28.0	28.0	28.0		20.0	20.0		16.0	16.0
Yellow Time (s)	3.5		3.5	3.5	3.5		3.5	3.5		3.5	3.5
All-Red Time (s)	2.5		2.5	2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0			0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	6.0			6.0	6.0		6.0	6.0			6.0
Lead/Lag	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?											
Vehicle Extension (s)	4.0		3.0	3.0	3.0		4.0	4.0		3.0	3.0
Recall Mode	None		None	None	None		None	None		None	None
Walk Time (s)	7.0		5.0	5.0	5.0		7.0	7.0		5.0	5.0
Flash Dont Walk (s)	25.0		11.0	11.0	11.0		13.0	13.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0	0	0		0	0		0	0
Act Effct Green (s)	7.7			28.3	28.3		20.2	20.2			10.9
Actuated g/C Ratio	0.10			0.35	0.35		0.25	0.25			0.14
v/c Ratio	0.13			0.95	0.89		0.13	0.74			0.49
Control Delay	38.2			56.7	48.2		26.9	35.3			36.6
Queue Delay	0.0			0.0	0.0		0.0	0.0			0.0
Total Delay	38.2			56.7	48.2		26.9	35.3			36.6
LOS	D			E	D		C	D			D
Approach Delay	38.2			52.8				34.5			36.6
Approach LOS	D			D				C			D
Queue Length 50th (ft)	7			235	189		21	122			53

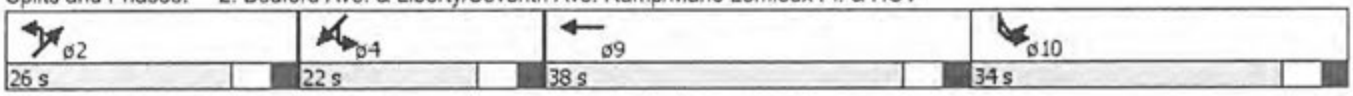
2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV

Lane Group	WBT	WBR2	SBL2	SBL	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Queue Length 95th (ft)	16			#495	#406		49	#235			91
Internal Link Dist (ft)	177			201				469			333
Turn Bay Length (ft)											
Base Capacity (vph)	532			556	497		440	755			678
Starvation Cap Reductn	0			0	0		0	0			0
Spillback Cap Reductn	0			0	0		0	0			0
Storage Cap Reductn	0			0	0		0	0			0
Reduced v/c Ratio	0.03			0.95	0.89		0.13	0.74			0.33

Intersection Summary

Area Type: CBD
Cycle Length: 120
Actuated Cycle Length: 80.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 44.5 Intersection LOS: D
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV



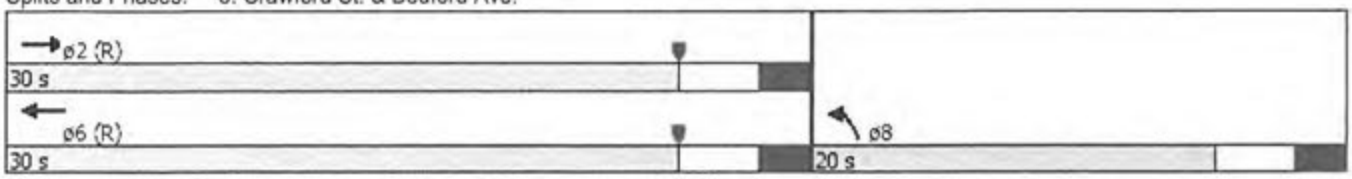
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	84	468	32	47	139	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	250			264	559	
Travel Time (s)	6.8			7.2	15.2	
Confl. Peds. (#/hr)		9	9			
Peak Hour Factor	0.72	0.84	0.89	0.74	0.92	0.59
Heavy Vehicles (%)	0%	2%	8%	2%	4%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	557	0	100	226	0
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Minimum Split (s)	21.0	21.0	21.0	21.0	20.0	
Total Split (s)	30.0	30.0	30.0	30.0	20.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	15.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
v/c Ratio	0.12	0.53		0.12	0.42	
Control Delay	7.1	3.0		7.2	13.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	7.1	3.0		7.2	13.6	
LOS	A	A		A	B	
Approach Delay	3.7			7.2	13.6	
Approach LOS	A			A	B	
Queue Length 50th (ft)	16	0		14	39	
Queue Length 95th (ft)	28	28		26	87	
Internal Link Dist (ft)	170			184	479	
Turn Bay Length (ft)						
Base Capacity (vph)	950	1043		813	536	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.12	0.53		0.12	0.42	

Intersection Summary

Area Type: Other

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 6.3 Intersection LOS: A
Intersection Capacity Utilization 42.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Crawford St. & Bedford Ave.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	36	18	174	14	9	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	332		705			559
Travel Time (s)	9.1		19.2			15.2
Confl. Peds. (#/hr)	3	4		8	8	
Peak Hour Factor	0.52	0.57	0.81	0.41	0.67	0.82
Heavy Vehicles (%)	3%	0%	5%	0%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	101	0	249	0	0	562
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 42.1% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	36	18	174	14	9	450
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.52	0.57	0.81	0.41	0.67	0.82
Hourly flow rate (vph)	69	32	215	34	13	549
Pedestrians	8		3			4
Lane Width (ft)	12.0		12.0			12.0
Walking Speed (ft/s)	4.0		4.0			4.0
Percent Blockage	1		0			0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			705			559
pX, platoon unblocked						
vC, conflicting volume	819	244			257	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	819	244			257	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	96			99	
cM capacity (veh/h)	337	792			1311	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	101	249	562
Volume Left	69	0	13
Volume Right	32	34	0
cSH	411	1700	1311
Volume to Capacity	0.25	0.15	0.01
Queue Length 95th (ft)	24	0	1
Control Delay (s)	16.6	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	16.6	0.0	0.3
Approach LOS	C		

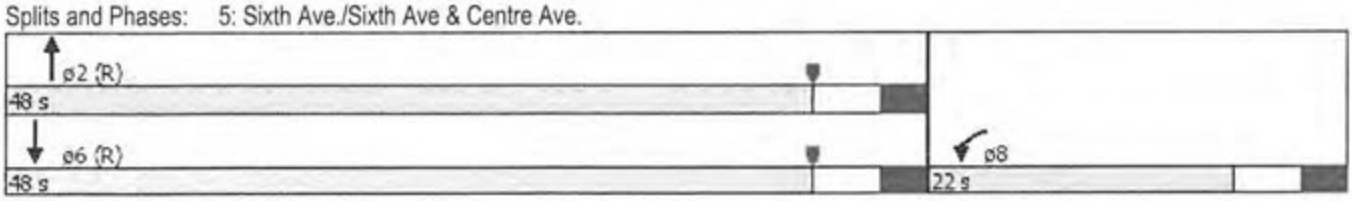
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	86	174	410	124	419	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Right Turn on Red		Yes		Yes		
Link Speed (mph)	30		30			30
Link Distance (ft)	792		414			230
Travel Time (s)	18.0		9.4			5.2
Confl. Peds. (#/hr)	145	375		37	37	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	193	96	594	0	466	294
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	22.0	22.0	48.0		48.0	48.0
Total Split (%)	31.4%	31.4%	68.6%		68.6%	68.6%
Maximum Green (s)	16.0	16.0	42.0		42.0	42.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	16.0	16.0	42.0		42.0	42.0
Actuated g/C Ratio	0.23	0.23	0.60		0.60	0.60
v/c Ratio	0.31	0.32	0.29		1.00	0.14
Control Delay	13.2	8.8	3.1		58.9	6.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	13.2	8.8	3.1		58.9	6.3
LOS	B	A	A		E	A
Approach Delay	11.8		3.1			38.5
Approach LOS	B		A			D
Queue Length 50th (ft)	17	0	18		177	25
Queue Length 95th (ft)	42	38	m21		#381	41
Internal Link Dist (ft)	712		334			150
Turn Bay Length (ft)						
Base Capacity (vph)	616	301	2021		468	2123
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.31	0.32	0.29		1.00	0.14

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 33 (47%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 21.0 Intersection LOS: C
Intersection Capacity Utilization 67.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Sixth Ave./Sixth Ave & Centre Ave.



6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	24	379	227	57	291	70	39	417	74	277	462	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Right Turn on Red						No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		792			633			646			192	
Travel Time (s)		21.6			17.3			17.6			5.2	
Confl. Peds. (#/hr)	573		247	247		573	126		170	170		126
Confl. Bikes (#/hr)			141			552			18			266
Peak Hour Factor	0.69	0.94	0.80	0.83	0.94	0.60	0.86	0.96	0.74	0.88	0.95	0.63
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	9%	9%	9%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	722	0	69	427	0	0	579	0	0	801	10
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		34.4%	34.4%		34.4%	34.4%	34.4%
Maximum Green (s)	27.0	27.0		27.0	27.0		25.0	25.0		25.0	25.0	25.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)		-1.5		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	15.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		28.5		27.0	27.0			25.0			25.0	25.0
Actuated g/C Ratio		0.32		0.30	0.30			0.28			0.28	0.28
v/c Ratio		0.91		0.78	0.58			0.74			1.83dl	0.04
Control Delay		47.1		82.2	30.5			36.3			254.9	8.3
Queue Delay		0.0		0.0	0.0			0.0			0.0	0.0
Total Delay		47.1		82.2	30.5			36.3			254.9	8.3
LOS		D		F	C			D			F	A
Approach Delay		47.1			37.7			36.3			251.8	
Approach LOS		D			D			D			F	
Queue Length 50th (ft)		205		36	107			109			~334	2
Queue Length 95th (ft)		#317		#101	157			152			m#302	m2
Internal Link Dist (ft)		712			553			566			112	
Turn Bay Length (ft)												
Base Capacity (vph)		793		89	737			782			527	275
Starvation Cap Reductn		0		0	0			0			0	0
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		0.91		0.78	0.58			0.74			1.52	0.04

Lane Group	NEL	NER	NER2
Lane Configurations			
Volume (vph)	62	145	97
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)	7%		
Right Turn on Red			No
Link Speed (mph)	25		
Link Distance (ft)	334		
Travel Time (s)	9.1		
Confl. Peds. (#/hr)	573		247
Confl. Bikes (#/hr)		141	141
Peak Hour Factor	0.88	0.73	0.79
Heavy Vehicles (%)	1%	1%	1%
Shared Lane Traffic (%)		65%	
Lane Group Flow (vph)	199	193	0
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Minimum Split (s)	13.0	13.0	
Total Split (s)	26.0	26.0	
Total Split (%)	28.9%	28.9%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	0.69	1.20	
Control Delay	45.9	168.6	
Queue Delay	0.0	0.0	
Total Delay	45.9	168.6	
LOS	D	F	
Approach Delay	106.3		
Approach LOS	F		
Queue Length 50th (ft)	104	~141	
Queue Length 95th (ft)	#190	#209	
Internal Link Dist (ft)	254		
Turn Bay Length (ft)			
Base Capacity (vph)	290	161	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.69	1.20	

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.52
Intersection Signal Delay: 106.5 Intersection LOS: F
Intersection Capacity Utilization 126.9% ICU Level of Service H
Analysis Period (min) 15

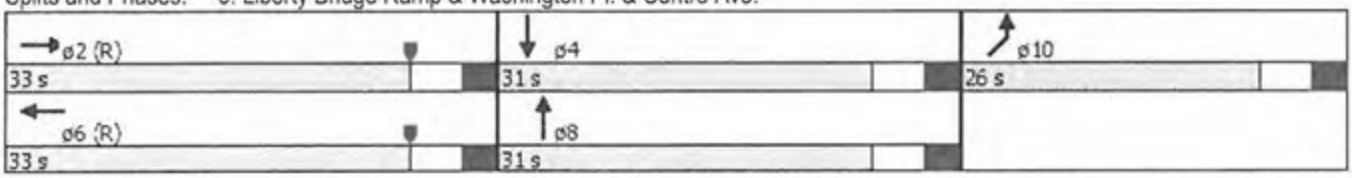
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	14	725	210	9	33	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red				Yes		No
Link Speed (mph)		25	25		25	
Link Distance (ft)		633	332		934	
Travel Time (s)		17.3	9.1		25.5	
Confl. Peds. (#/hr)	309			309	23	40
Peak Hour Factor	0.83	0.82	0.87	0.88	0.54	0.66
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	901	251	0	325	0
Turn Type	Perm	NA	NA		NA	
Protected Phases		2	6		4	
Permitted Phases	2					
Minimum Split (s)	43.5	43.5	43.5		26.5	
Total Split (s)	43.5	43.5	43.5		26.5	
Total Split (%)	62.1%	62.1%	62.1%		37.9%	
Maximum Green (s)	38.0	38.0	38.0		21.0	
Yellow Time (s)	3.5	3.5	3.5		3.5	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-1.5	-1.5		-1.5	
Total Lost Time (s)		4.0	4.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	28.0	28.0	28.0		11.0	
Flash Dont Walk (s)	10.0	10.0	10.0		10.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)		39.5	39.5		22.5	
Actuated g/C Ratio		0.56	0.56		0.32	
v/c Ratio		0.57	0.11		0.79	
Control Delay		11.6	6.3		37.7	
Queue Delay		0.0	0.0		0.0	
Total Delay		11.6	6.3		37.7	
LOS		B	A		D	
Approach Delay		11.6	6.3		37.7	
Approach LOS		B	A		D	
Queue Length 50th (ft)		118	13		125	
Queue Length 95th (ft)		145	m24		108	
Internal Link Dist (ft)		553	252		854	
Turn Bay Length (ft)						
Base Capacity (vph)		1581	2341		414	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.57	0.11		0.79	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 48 (69%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 16.4 Intersection LOS: B
Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Centre Ave. & Mario Lemieux Pl.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	636	122	0	219	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	332			374	129	
Travel Time (s)	9.1			10.2	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	824	0	0	238	0	1
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 31.5% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	636	122	0	219	0	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	691	133	0	238	0	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	332			622		
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			824		877	412
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			502		563	29
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			922		398	905

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	461	363	119	119	1
Volume Left	0	0	0	0	0
Volume Right	0	133	0	0	1
cSH	1700	1700	1700	1700	905
Volume to Capacity	0.27	0.21	0.07	0.07	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	9.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	169	131	51	111	19	173	56	30	40	355	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	16	11	11	12	12	15	12	12	14	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		248			357			640			705	
Travel Time (s)		6.8			9.7			17.5			19.2	
Confl. Peds. (#/hr)	64		24	24		64	21		15	15		21
Peak Hour Factor	0.93	0.89	0.87	0.86	0.82	0.85	0.87	0.90	0.83	0.63	0.88	0.77
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	9%	9%	9%
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	302	151	59	157	0	0	297	0	0	622	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0		43.0	43.0		43.0	43.0	
Total Split (%)	38.6%	38.6%	38.6%	38.6%	38.6%		61.4%	61.4%		61.4%	61.4%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		22.0	22.0	22.0	22.0			38.0			38.0	
Actuated g/C Ratio		0.31	0.31	0.31	0.31			0.54			0.54	
v/c Ratio		0.65	0.25	0.25	0.30			0.70			0.75	
Control Delay		18.1	1.5	21.4	18.7			22.5			18.7	
Queue Delay		0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay		18.1	1.5	21.4	18.7			22.5			18.7	
LOS		B	A	C	B			C			B	
Approach Delay		12.5			19.5			22.5			18.7	
Approach LOS		B			B			C			B	
Queue Length 50th (ft)		44	0	19	47			82			178	
Queue Length 95th (ft)		m74	m8	45	81			#215			297	
Internal Link Dist (ft)		168			277			560			625	
Turn Bay Length (ft)												
Base Capacity (vph)		465	602	235	519			424			830	
Starvation Cap Reductn		0	0	0	0			0			0	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.65	0.25	0.25	0.30			0.70			0.75	

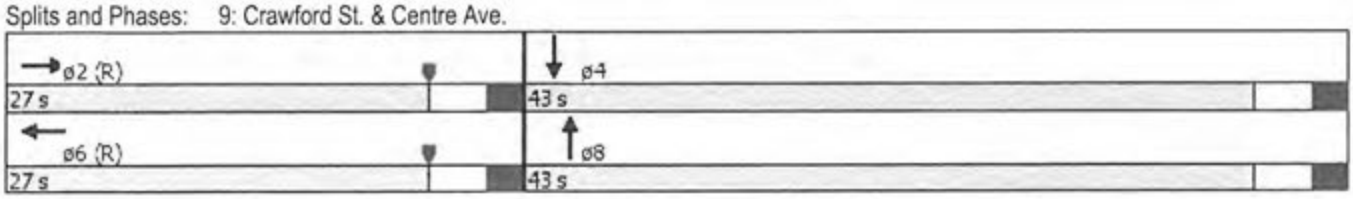
Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 58 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 17.8 Intersection LOS: B
Intersection Capacity Utilization 87.8% ICU Level of Service E
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Crawford St. & Centre Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	17	3	7	2	72	287	0	0	246	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			231			283			70	
Travel Time (s)		8.6			6.3			7.7			1.9	
Confl. Peds. (#/hr)	19		20	20		19	52		16	16		52
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Heavy Vehicles (%)	15%	2%	0%	0%	0%	0%	0%	12%	0%	0%	9%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	25	0	0	475	0	0	537	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 65.1% ICU Level of Service C
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	17	3	7	2	72	287	0	0	246	213
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Hourly flow rate (vph)	0	0	20	12	9	4	112	363	0	0	286	251
Pedestrians		52			16			20			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			1			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	1079	1068	483	1056	1193	398	589			379		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1048	1035	483	1023	1170	315	589			295		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	93	94	99	88			100		
cM capacity (veh/h)	141	179	553	164	151	659	953			1173		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	25	476	537
Volume Left	0	12	112	0
Volume Right	20	4	0	251
cSH	553	179	953	1173
Volume to Capacity	0.04	0.14	0.12	0.00
Queue Length 95th (ft)	3	12	10	0
Control Delay (s)	11.8	28.4	3.3	0.0
Lane LOS	B	D	A	
Approach Delay (s)	11.8	28.4	3.3	0.0
Approach LOS	B	D		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	65.1%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	0	102	21	386	189	90	289	0	0	349	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	10	12	12	11	12	12	12	12
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		130			635			238			414	
Travel Time (s)		3.5			17.3			6.5			11.3	
Confl. Peds. (#/hr)	880		138	138		880	49		130	130		49
Peak Hour Factor	0.77	0.92	0.82	0.75	0.82	0.97	0.88	0.96	0.92	0.92	0.89	0.75
Heavy Vehicles (%)	3%	2%	28%	0%	5%	19%	0%	1%	2%	2%	8%	17%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	176	0	28	666	0	0	403	0	0	419	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Minimum Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%			58.6%	
Maximum Green (s)	23.0	23.0		23.0	23.0		35.0	35.0			35.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	13.0	13.0		13.0	13.0		25.0	25.0			25.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
v/c Ratio		1.10		0.10	1.56			0.35			0.28	
Control Delay		116.7		17.5	287.5			19.1			8.6	
Queue Delay		0.0		0.0	0.0			0.5			0.0	
Total Delay		116.7		17.5	287.5			19.6			8.6	
LOS		F		B	F			B			A	
Approach Delay		116.7			276.6			19.6			8.6	
Approach LOS		F			F			B			A	
Queue Length 50th (ft)		~48		8	~411			75			58	
Queue Length 95th (ft)		#134		21	#533			107			91	
Internal Link Dist (ft)		50			555			158			334	
Turn Bay Length (ft)												
Base Capacity (vph)		160		286	426			1162			1474	
Starvation Cap Reductn		0		0	0			398			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		1.10		0.10	1.56			0.53			0.28	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 42 (60%), Referenced to phase 2:NBTL, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.56
Intersection Signal Delay: 132.4 Intersection LOS: F
Intersection Capacity Utilization 128.7% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 11: Sixth Ave. & Fifth Ave.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	442	581	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	635			437	582	
Travel Time (s)	17.3			11.9	15.9	
Confl. Peds. (#/hr)			44			
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	10%	2%	2%
Parking (#/hr)			0	0		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1132	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 35.4% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	442	581	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	520	612	0	0
Pedestrians					44	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			44		1390	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		1390	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			67		100	100
cM capacity (veh/h)			1563		89	1017

Direction, Lane #	WB 1	WB 2
Volume Total	724	408
Volume Left	520	0
Volume Right	0	0
cSH	1563	1700
Volume to Capacity	0.33	0.24
Queue Length 95th (ft)	37	0
Control Delay (s)	7.0	0.0
Lane LOS	A	
Approach Delay (s)	4.5	
Approach LOS		

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	35.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	823	203	178	393	0	0	396	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Right Turn on Red			No			Yes			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		437			753			310			646	
Travel Time (s)		11.9			20.5			8.5			17.6	
Confl. Peds. (#/hr)				105		173	29					29
Peak Hour Factor	0.92	0.92	0.92	0.79	0.88	0.93	0.85	0.82	0.92	0.92	0.75	0.92
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1343	0	209	479	0	0	528	288
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Minimum Split (s)				44.0	44.0		30.0	30.0			30.0	30.0
Total Split (s)				44.0	44.0		36.0	36.0			36.0	36.0
Total Split (%)				55.0%	55.0%		45.0%	45.0%			45.0%	45.0%
Maximum Green (s)				37.0	37.0		30.0	30.0			30.0	30.0
Yellow Time (s)				3.0	3.0		4.0	4.0			4.0	4.0
All-Red Time (s)				4.0	4.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)					7.0		6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				15.0	15.0		9.0	9.0			9.0	9.0
Flash Dont Walk (s)				22.0	22.0		15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0			0	0
Act Effct Green (s)					37.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio					0.46		0.38	0.38			0.38	0.38
v/c Ratio					1.11		1.45	0.78			0.81	0.32
Control Delay					75.8		253.0	24.7			34.5	19.0
Queue Delay					0.0		0.0	4.4			0.0	0.0
Total Delay					75.8		253.0	29.1			34.5	19.0
LOS					E		F	C			C	B
Approach Delay					75.8			97.1			29.0	
Approach LOS					E			F			C	
Queue Length 50th (ft)					~415		~107	172			232	56
Queue Length 95th (ft)					#511		m#164	227			271	90
Internal Link Dist (ft)		357			673			230			566	
Turn Bay Length (ft)												
Base Capacity (vph)					1212		144	613			650	907
Starvation Cap Reductn					0		0	78			0	0
Spillback Cap Reductn					0		0	0			0	0
Storage Cap Reductn					0		0	0			0	0
Reduced v/c Ratio					1.11		1.45	0.90			0.81	0.32

Intersection Summary

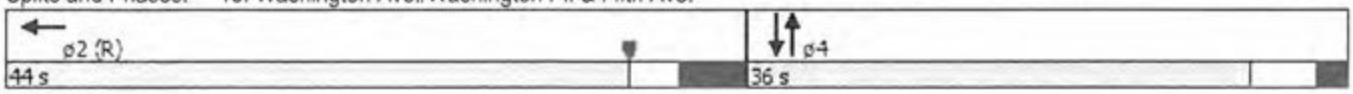
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.45
Intersection Signal Delay: 67.6 Intersection LOS: E
Intersection Capacity Utilization 88.5% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Washington Ave./Washington Pl. & Fifth Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	937	0	224	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		753			499			335			119	
Travel Time (s)		20.5			13.6			9.1			3.2	
Confl. Peds. (#/hr)				46		108	15		8	8		15
Peak Hour Factor	0.92	0.92	0.92	0.66	0.97	0.50	0.80	0.90	0.92	0.92	0.25	0.25
Heavy Vehicles (%)	2%	2%	2%	0%	9%	0%	1%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1236	0	0	280	0	0	0	0
Turn Type				Perm	NA		Perm	NA				
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				48.0	48.0		32.0	32.0			32.0	
Total Split (%)				60.0%	60.0%		40.0%	40.0%			40.0%	
Maximum Green (s)				43.0	43.0		27.0	27.0			27.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					43.0			27.0				
Actuated g/C Ratio					0.54			0.34				
v/c Ratio					0.75			0.63				
Control Delay					8.7			23.6				
Queue Delay					0.1			0.0				
Total Delay					8.8			23.6				
LOS					A			C				
Approach Delay					8.8			23.6				
Approach LOS					A			C				
Queue Length 50th (ft)					96			103				
Queue Length 95th (ft)					117			m147				
Internal Link Dist (ft)		673			419			255			39	
Turn Bay Length (ft)												
Base Capacity (vph)					1656			447				
Starvation Cap Reductn					36			0				
Spillback Cap Reductn					15			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.76			0.63				

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 63 (79%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 58.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

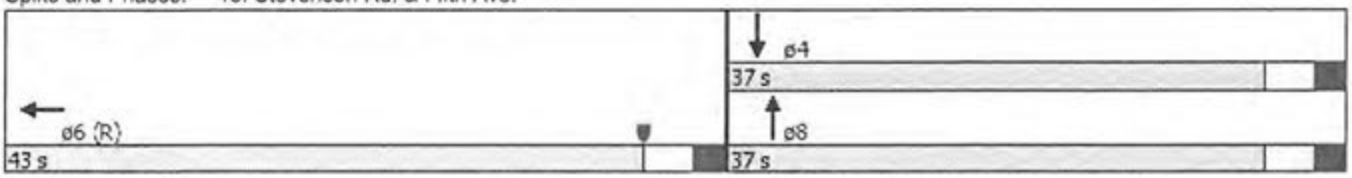
Splits and Phases: 14: Magee St. & Fifth Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	883	71	178	174	0	0	36	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		499			406			324			114	
Travel Time (s)		13.6			11.1			8.8			3.1	
Confl. Peds. (#/hr)				16		44	9					9
Peak Hour Factor	0.92	0.92	0.92	0.60	0.95	0.68	0.91	0.85	0.92	0.92	0.82	0.79
Heavy Vehicles (%)	2%	2%	2%	0%	12%	5%	6%	0%	2%	2%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1056	0	0	401	0	0	171	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				43.0	43.0		37.0	37.0			37.0	
Total Split (%)				53.8%	53.8%		46.3%	46.3%			46.3%	
Maximum Green (s)				38.0	38.0		32.0	32.0			32.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
v/c Ratio					0.75			0.72			0.24	
Control Delay					11.2			26.7			11.1	
Queue Delay					0.3			4.3			0.0	
Total Delay					11.5			31.0			11.1	
LOS					B			C			B	
Approach Delay					11.5			31.0			11.1	
Approach LOS					B			C			B	
Queue Length 50th (ft)					110			158			34	
Queue Length 95th (ft)					147			253			65	
Internal Link Dist (ft)		419			326			244			34	
Turn Bay Length (ft)												
Base Capacity (vph)					1409			557			703	
Starvation Cap Reductn					59			94			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.78			0.87			0.24	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 52 (65%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 16.3 Intersection LOS: B
Intersection Capacity Utilization 72.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 15: Stevenson Rd. & Fifth Ave.

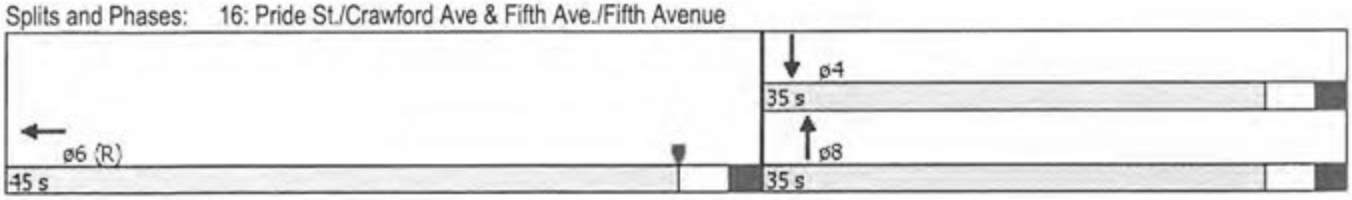


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	35	835	190	70	167	0	0	159	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		406			265			320			283	
Travel Time (s)		11.1			7.2			8.7			7.7	
Confl. Peds. (#/hr)				25		45	22		40	40		22
Peak Hour Factor	0.92	0.92	0.92	0.71	0.94	0.95	0.71	0.79	0.92	0.79	0.79	0.88
Heavy Vehicles (%)	2%	2%	2%	0%	18%	0%	0%	6%	2%	2%	16%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1137	0	0	310	0	0	320	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				45.0	45.0		35.0	35.0			35.0	
Total Split (%)				56.3%	56.3%		43.8%	43.8%			43.8%	
Maximum Green (s)				40.0	40.0		30.0	30.0			30.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					40.0			30.0			30.0	
Actuated g/C Ratio					0.50			0.38			0.38	
v/c Ratio					0.77			0.65			0.42	
Control Delay					20.1			28.1			18.0	
Queue Delay					0.0			0.5			0.0	
Total Delay					20.1			28.6			18.0	
LOS					C			C			B	
Approach Delay					20.1			28.6			18.0	
Approach LOS					C			C			B	
Queue Length 50th (ft)					222			147			99	
Queue Length 95th (ft)					305			199			139	
Internal Link Dist (ft)		326			185			240			203	
Turn Bay Length (ft)												
Base Capacity (vph)					1471			478			753	
Starvation Cap Reductn					0			26			0	
Spillback Cap Reductn					8			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.78			0.69			0.42	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 41 (51%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 21.2 Intersection LOS: C
Intersection Capacity Utilization 72.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	103	254	28	7	361	0	0	481	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		142			582			105			238	
Travel Time (s)		3.9			15.9			2.9			6.5	
Confl. Peds. (#/hr)				13		40	21					21
Peak Hour Factor	0.92	0.92	0.92	0.87	0.78	0.63	0.30	0.96	0.25	0.92	0.92	0.80
Heavy Vehicles (%)	2%	2%	2%	4%	1%	0%	0%	1%	2%	2%	11%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	118	326	44	0	399	0	0	545	0
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Detector Phase				4	4	4	1 2	2			6	
Switch Phase												
Minimum Initial (s)				8.0	8.0	8.0		18.0			25.0	
Minimum Split (s)				27.5	27.5	27.5		30.5			30.5	
Total Split (s)				28.0	28.0	28.0		31.0			42.0	
Total Split (%)				40.0%	40.0%	40.0%		44.3%			60.0%	
Maximum Green (s)				22.5	22.5	22.5		25.5			36.5	
Yellow Time (s)				3.5	3.5	3.5		3.5			3.5	
All-Red Time (s)				2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.5	5.5	5.5		5.5			5.5	
Lead/Lag								Lag				
Lead-Lag Optimize?												
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Recall Mode				Ped	Ped	Ped		C-Max			C-Max	
Walk Time (s)				12.0	12.0	12.0		15.0			15.0	
Flash Dont Walk (s)				10.0	10.0	10.0		10.0			10.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effct Green (s)				22.5	22.5	22.5		31.0			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.44			0.52	
v/c Ratio				0.26	0.64	0.11		0.28			0.36	
Control Delay				19.4	27.3	17.6		5.7			9.5	
Queue Delay				28.7	0.0	0.0		7.8			0.8	
Total Delay				48.2	27.3	17.6		13.5			10.3	
LOS				D	C	B		B			B	
Approach Delay					31.4			13.5			10.3	
Approach LOS					C			B			B	
Queue Length 50th (ft)				37	119	13		25			92	
Queue Length 95th (ft)				72	165	24		m21			m122	
Internal Link Dist (ft)		62			502			25			158	
Turn Bay Length (ft)												
Base Capacity (vph)				462	507	414		1410			1519	
Starvation Cap Reductn				0	0	0		959			635	

Lane Group	ø1
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	16%
Maximum Green (s)	8.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				335	0	0		0			0	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				0.93	0.64	0.11		0.88			0.62	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 60 (86%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.54
Intersection Signal Delay: 18.4 Intersection LOS: B
Intersection Capacity Utilization 48.3% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Sixth Ave. & Diamond St.

Lane Group	ø1
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	512	35	59	147	8	211	337	288	356	182	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	12	12	11	12	12	12	12
Right Turn on Red			No			Yes			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			634			330			105	
Travel Time (s)		8.9			17.3			9.0			2.9	
Confl. Peds. (#/hr)	8		107	107		8	19		18	18		19
Peak Hour Factor	0.60	0.96	0.80	0.90	0.90	0.90	0.87	0.94	0.92	0.95	0.85	0.67
Heavy Vehicles (%)	4%	1%	0%	2%	2%	2%	0%	1%	4%	12%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	576	44	0	238	0	0	915	0	0	655	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		8.0	25.0	
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5		30.5	30.5		11.0	30.5	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		31.0	31.0		11.0	42.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		44.3%	44.3%		15.7%	60.0%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		25.5	25.5		8.0	36.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5			5.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	Ped	Ped	Ped	Ped	Ped		C-Max	C-Max		Min	C-Max	
Walk Time (s)	12.0	12.0	12.0	12.0	12.0		15.0	15.0			15.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effct Green (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
v/c Ratio		1.15	0.11		1.54			1.19			1.70dl	
Control Delay		113.7	17.7		295.1			120.5			10.1	
Queue Delay		1.9	0.0		4.0			0.1			0.2	
Total Delay		115.6	17.7		299.1			120.6			10.4	
LOS		F	B		F			F			B	
Approach Delay		108.6			299.1			120.6			10.4	
Approach LOS		F			F			F			B	
Queue Length 50th (ft)		~298	13		~148			~241			33	
Queue Length 95th (ft)		#479	31		#280			#355			44	
Internal Link Dist (ft)		245			554			250			25	
Turn Bay Length (ft)												
Base Capacity (vph)		502	401		155			769			987	
Starvation Cap Reductn		0	0		0			0			49	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		97	0		29			13			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		1.42	0.11		1.89			1.21			0.70	

Intersection Summary

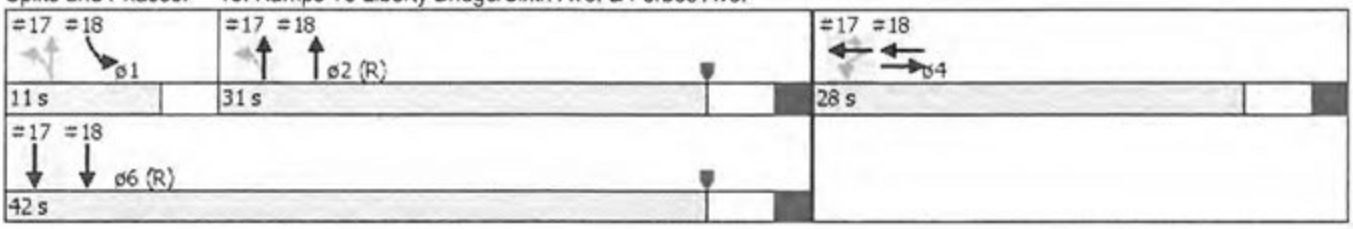
Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 60 (86%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.54
Intersection Signal Delay: 105.3 Intersection LOS: F
Intersection Capacity Utilization 118.1% ICU Level of Service H
Analysis Period (min) 15

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1191	367	0	0	214	816
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	10	10
Storage Length (ft)		0	0		0	60
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Right Turn on Red		No				No
Link Speed (mph)	25			25	25	
Link Distance (ft)	634			303	752	
Travel Time (s)	17.3			8.3	20.5	
Confl. Peds. (#/hr)		85				
Peak Hour Factor	0.93	0.87	0.92	0.92	0.86	0.86
Heavy Vehicles (%)	6%	6%	2%	2%	3%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1703	0	0	0	249	949
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Minimum Split (s)	35.0				22.0	22.0
Total Split (s)	48.0				32.0	32.0
Total Split (%)	60.0%				40.0%	40.0%
Maximum Green (s)	43.0				27.0	27.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	2.0				2.0	2.0
Lost Time Adjust (s)	0.0				0.0	0.0
Total Lost Time (s)	5.0				5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	10.0				10.0	10.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	43.0				27.0	27.0
Actuated g/C Ratio	0.54				0.34	0.34
v/c Ratio	1.17				0.50	1.21
Control Delay	107.0				25.4	134.8
Queue Delay	1.0				0.0	0.1
Total Delay	108.0				25.4	134.9
LOS	F				C	F
Approach Delay	108.0				112.1	
Approach LOS	F				F	
Queue Length 50th (ft)	~543				98	~334
Queue Length 95th (ft)	#676				158	#430
Internal Link Dist (ft)	554			223	672	
Turn Bay Length (ft)						60
Base Capacity (vph)	1451				496	782
Starvation Cap Reductn	0				0	0
Spillback Cap Reductn	331				0	11
Storage Cap Reductn	0				0	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Reduced v/c Ratio	1.52				0.50	1.23

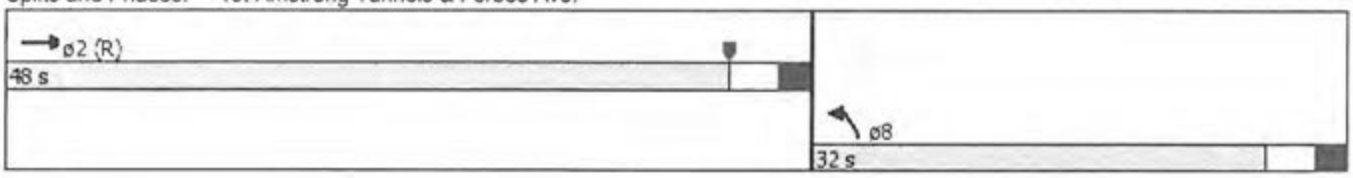
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 109.7 Intersection LOS: F
Intersection Capacity Utilization 91.0% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 19: Amstrong Tunnels & Forbes Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	490	1402	115	0	0	0	0	51	62	443	86	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		303			745			205			310	
Travel Time (s)		8.3			20.3			5.6			8.5	
Confl. Peds. (#/hr)	45		79						51	51		
Peak Hour Factor	0.82	0.88	0.64	0.92	0.92	0.92	0.92	0.56	0.68	0.81	0.82	0.92
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	4%	4%	1%	1%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	598	1773	0	0	0	0	0	91	91	0	652	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Minimum Split (s)	51.0	51.0						23.0	23.0	23.0	23.0	
Total Split (s)	51.0	51.0						29.0	29.0	29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%	36.3%	36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0	24.0	24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	31.0	31.0						8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0						10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0	0	0	0	
Act Effct Green (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
v/c Ratio	0.72	1.07						0.19	0.23		2.19	
Control Delay	11.2	48.2						22.1	17.2		560.3	
Queue Delay	35.2	14.6						0.0	0.0		0.0	
Total Delay	46.4	62.7						22.1	17.2		560.3	
LOS	D	E						C	B		F	
Approach Delay		58.6						19.6			560.3	
Approach LOS		E						B			F	
Queue Length 50th (ft)	184	~518						34	23		~550	
Queue Length 95th (ft)	m143	m258						41	40		m#623	
Internal Link Dist (ft)		223			665			125			230	
Turn Bay Length (ft)												
Base Capacity (vph)	831	1662						491	403		298	
Starvation Cap Reductn	264	352						0	0		0	
Spillback Cap Reductn	37	0						0	0		0	
Storage Cap Reductn	0	0						0	0		0	
Reduced v/c Ratio	1.05	1.35						0.19	0.23		2.19	

Intersection Summary

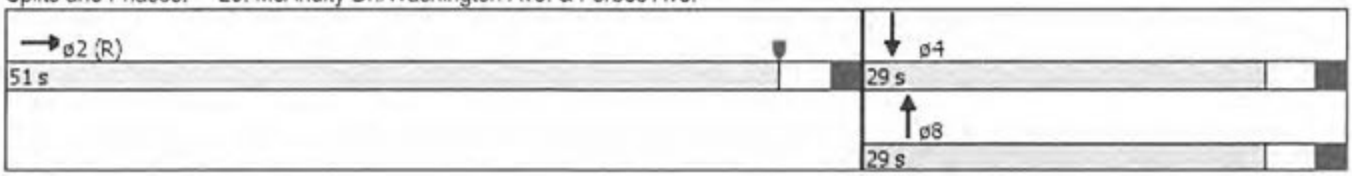
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 40 (50%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 2.19
Intersection Signal Delay: 158.5 Intersection LOS: F
Intersection Capacity Utilization 107.3% ICU Level of Service G
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: McAnulty Dr./Washington Ave. & Forbes Ave.



21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

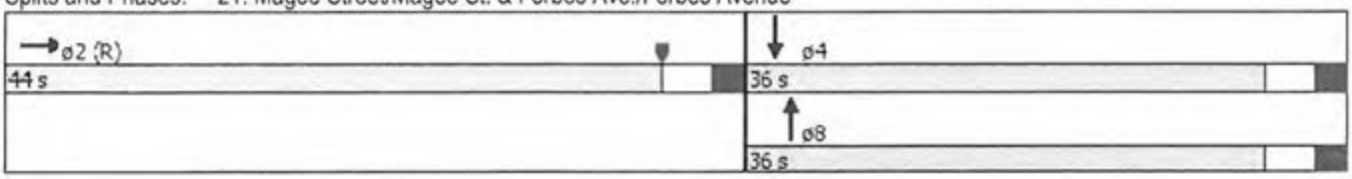
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	890	137	0	0	0	0	39	34	30	158	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		745			503			182			335	
Travel Time (s)		20.3			13.7			5.0			9.1	
Confl. Peds. (#/hr)	41		42						14	14		
Peak Hour Factor	0.73	0.94	0.59	0.92	0.92	0.92	0.92	0.63	0.80	0.54	0.33	0.92
Heavy Vehicles (%)	4%	7%	0%	2%	2%	2%	2%	0%	25%	4%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1320	0	0	0	0	0	104	0	0	535	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	44.0	44.0						36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%						45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0						31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		39.0						31.0			31.0	
Actuated g/C Ratio		0.49						0.39			0.39	
v/c Ratio		0.86						0.16			0.79	
Control Delay		20.0						10.9			34.1	
Queue Delay		0.0						0.0			5.8	
Total Delay		20.0						10.9			39.9	
LOS		C						B			D	
Approach Delay		20.0						10.9			39.9	
Approach LOS		C						B			D	
Queue Length 50th (ft)		303						19			199	
Queue Length 95th (ft)		m234						30			95	
Internal Link Dist (ft)		665			423			102			255	
Turn Bay Length (ft)												
Base Capacity (vph)		1527						649			680	
Starvation Cap Reductn		0						0			99	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.86						0.16			0.92	

21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 6 (8%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 25.0 Intersection LOS: C
Intersection Capacity Utilization 57.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

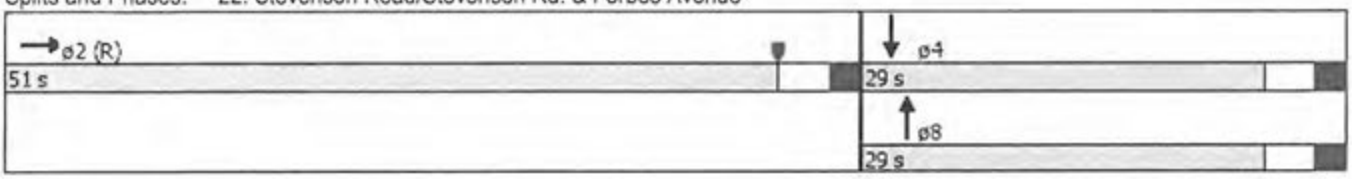


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	636	132	0	0	0	0	286	27	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		503			408			159			324	
Travel Time (s)		13.7			11.1			4.3			8.8	
Confl. Peds. (#/hr)	28		28						13	13		
Peak Hour Factor	0.62	0.93	0.71	0.92	0.92	0.92	0.89	0.89	0.93	0.69	0.60	0.92
Heavy Vehicles (%)	1%	9%	6%	2%	2%	2%	4%	5%	2%	0%	8%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1173	0	0	0	0	0	350	0	0	42	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	51.0	51.0						29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%		36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
v/c Ratio		0.66						0.56			0.19	
Control Delay		3.9						27.2			26.5	
Queue Delay		0.4						0.2			0.0	
Total Delay		4.2						27.4			26.5	
LOS		A						C			C	
Approach Delay		4.2						27.4			26.5	
Approach LOS		A						C			C	
Queue Length 50th (ft)		38						143			15	
Queue Length 95th (ft)		m47						223			m25	
Internal Link Dist (ft)		423			328			79			244	
Turn Bay Length (ft)												
Base Capacity (vph)		1785						627			225	
Starvation Cap Reductn		192						0			0	
Spillback Cap Reductn		86						29			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.74						0.59			0.19	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 10.0 Intersection LOS: B
Intersection Capacity Utilization 60.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Stevenson Road/Stevenson Rd. & Forbes Avenue



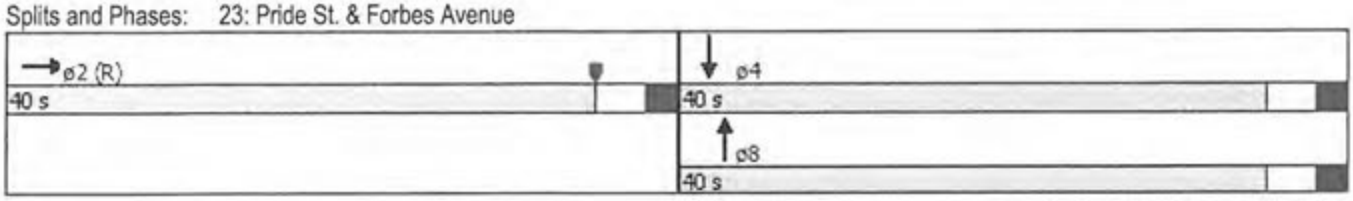
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	106	498	35	0	0	0	0	146	27	100	60	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		408			281			148			320	
Travel Time (s)		11.1			7.7			4.0			8.7	
Confl. Peds. (#/hr)	44		19						4	4		
Peak Hour Factor	0.79	0.94	0.63	0.92	0.92	0.92	0.92	0.77	0.67	0.77	0.78	0.92
Heavy Vehicles (%)	1%	11%	0%	2%	2%	2%	2%	9%	0%	7%	25%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	720	0	0	0	0	0	230	0	0	207	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	40.0	40.0						40.0		40.0	40.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	35.0	35.0						35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		35.0						35.0			35.0	
Actuated g/C Ratio		0.44						0.44			0.44	
v/c Ratio		0.51						0.30			0.41	
Control Delay		6.7						14.8			12.3	
Queue Delay		0.0						0.1			0.0	
Total Delay		6.7						14.9			12.3	
LOS		A						B			B	
Approach Delay		6.7						14.9			12.3	
Approach LOS		A						B			B	
Queue Length 50th (ft)		32						66			40	
Queue Length 95th (ft)		64						94			m57	
Internal Link Dist (ft)		328			201			68			240	
Turn Bay Length (ft)												
Base Capacity (vph)		1399						762			505	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						85			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.51						0.34			0.41	

Intersection Summary

Area Type: Other

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 28 (35%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.51
Intersection Signal Delay: 9.3 Intersection LOS: A
Intersection Capacity Utilization 52.6% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Pride St. & Forbes Avenue



1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Lane Group	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	39	226	162	841	252	670	306	319
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Right Turn on Red	No				Yes			No
Link Speed (mph)		25		25			25	
Link Distance (ft)		325		247			334	
Travel Time (s)		8.9		6.7			9.1	
Confl. Peds. (#/hr)			31					31
Peak Hour Factor	0.58	0.93	0.86	0.80	0.70	0.89	0.96	0.80
Heavy Vehicles (%)	9%	4%	5%	1%	0%	1%	1%	3%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	310	188	1051	360	753	319	399
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	31.0	31.0	31.0
Total Split (s)	23.0	23.0	23.0	29.0	29.0	38.0	38.0	38.0
Total Split (%)	25.6%	25.6%	25.6%	32.2%	32.2%	42.2%	42.2%	42.2%
Maximum Green (s)	18.0	18.0	18.0	24.0	24.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?								
Walk Time (s)						11.0	11.0	11.0
Flash Dont Walk (s)						10.0	10.0	10.0
Pedestrian Calls (#/hr)						0	0	0
Act Effct Green (s)		18.0	18.0	24.0	24.0	33.0	33.0	33.0
Actuated g/C Ratio		0.20	0.20	0.27	0.27	0.37	0.37	0.37
v/c Ratio		1.08	0.73	1.25	0.65	1.29	0.52	0.78
Control Delay		111.6	51.9	152.2	19.3	170.5	26.0	37.8
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		111.6	51.9	152.2	19.3	170.5	26.0	37.8
LOS		F	D	F	B	F	C	D
Approach Delay		89.0		118.3			103.2	
Approach LOS		F		F			F	
Queue Length 50th (ft)		~198	101	~394	76	~551	139	198
Queue Length 95th (ft)		#358	#186	m#429	m82	#755	221	264
Internal Link Dist (ft)		245		167			254	
Turn Bay Length (ft)								
Base Capacity (vph)		288	258	840	551	584	615	512
Starvation Cap Reductn		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0
Reduced v/c Ratio		1.08	0.73	1.25	0.65	1.29	0.52	0.78

Intersection Summary

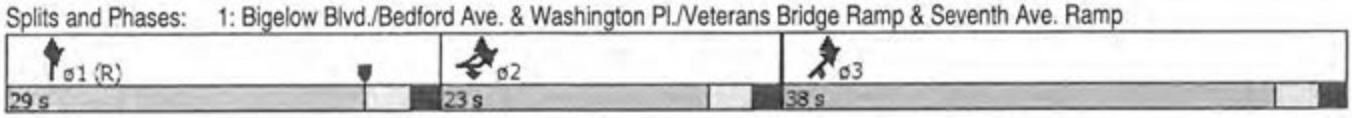
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 27 (30%), Referenced to phase 1:NBT, Start of Yellow
Natural Cycle: 150
Control Type: Pretimed
Maximum v/c Ratio: 1.29
Intersection Signal Delay: 107.4 Intersection LOS: F
Intersection Capacity Utilization 95.9% ICU Level of Service F
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp



2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV

Lane Group	WBT	WBR	WBR2	NEL2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	112	73	35	129	279	224	40	8	183	242
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	16	12	13	12	12	12	12
Grade (%)	2%					10%			-12%	
Storage Length (ft)		1			0		60	0		0
Storage Lanes		0			1		1	0		0
Taper Length (ft)					25			25		
Right Turn on Red			No				Yes			
Link Speed (mph)	25					25			25	
Link Distance (ft)	257					549			413	
Travel Time (s)	7.0					15.0			11.3	
Confl. Peds. (#/hr)		58		20			23	58		
Peak Hour Factor	0.54	0.43	0.61	0.64	0.66	0.81	0.39	0.58	0.85	0.78
Heavy Vehicles (%)	3%	0%	0%	0%	1%	2%	3%	0%	2%	2%
Parking (#/hr)	0	0	0							0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	434	0	0	202	0	803	0	0	539	0
Turn Type	NA			Split	Split	NA		Split	NA	
Protected Phases	9			2	2	2		4	4	
Permitted Phases						2				
Detector Phase	9			2	2	2		4	4	
Switch Phase										
Minimum Initial (s)	4.0			4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	38.0			26.0	26.0	26.0		22.0	22.0	
Total Split (s)	38.0			30.0	30.0	30.0		22.0	22.0	
Total Split (%)	42.2%			33.3%	33.3%	33.3%		24.4%	24.4%	
Maximum Green (s)	32.0			24.0	24.0	24.0		16.0	16.0	
Yellow Time (s)	3.5			3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5			2.5	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0			0.0		0.0			0.0	
Total Lost Time (s)	6.0			6.0		6.0			6.0	
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	4.0			4.0	4.0	4.0		3.0	3.0	
Recall Mode	None			None	None	None		None	None	
Walk Time (s)	7.0			7.0	7.0	7.0		5.0	5.0	
Flash Dont Walk (s)	25.0			13.0	13.0	13.0		11.0	11.0	
Pedestrian Calls (#/hr)	0			0	0	0		0	0	
Act Effct Green (s)	30.6			24.0		24.0			16.0	
Actuated g/C Ratio	0.34			0.27		0.27			0.18	
v/c Ratio	0.93			0.43		0.98			1.12dr	
Control Delay	57.4			30.5		60.5			69.0	
Queue Delay	0.0			0.0		0.0			0.0	
Total Delay	57.4			30.5		60.5			69.0	
LOS	E			C		E			E	
Approach Delay	57.4					54.5			69.0	
Approach LOS	E					D			E	
Queue Length 50th (ft)	231			95		235			162	

2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV

Lane Group	WBT	WBR	WBR2	NEL2	NEL	NET	NER	SWL	SWT	SWR
Queue Length 95th (ft)	172			107		#302			#245	
Internal Link Dist (ft)	177					469			333	
Turn Bay Length (ft)										
Base Capacity (vph)	488			473		818			557	
Starvation Cap Reductn	0			0		0			0	
Spillback Cap Reductn	0			0		0			0	
Storage Cap Reductn	0			0		0			0	
Reduced v/c Ratio	0.89			0.43		0.98			0.97	

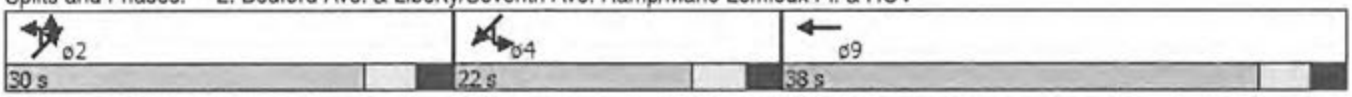
Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 88.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 59.1 Intersection LOS: E
Intersection Capacity Utilization 72.1% ICU Level of Service C
Analysis Period (min) 15

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 2: Bedford Ave. & Liberty/Seventh Ave. Ramp/Mario Lemieux Pl. & HOV



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	49	227	40	69	475	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	250			264	559	
Travel Time (s)	6.8			7.2	15.2	
Confl. Peds. (#/hr)		6	6			6
Peak Hour Factor	0.80	0.85	0.75	0.86	0.92	0.85
Heavy Vehicles (%)	0%	2%	17%	1%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	267	0	133	600	0
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	20.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	15.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
v/c Ratio	0.06	0.30		0.17	1.11	
Control Delay	6.7	2.2		7.6	94.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	6.7	2.2		7.6	94.1	
LOS	A	A		A	F	
Approach Delay	3.0			7.6	94.1	
Approach LOS	A			A	F	
Queue Length 50th (ft)	8	0		19	~208	
Queue Length 95th (ft)	19	23		40	#374	
Internal Link Dist (ft)	170			184	479	
Turn Bay Length (ft)						
Base Capacity (vph)	950	902		784	541	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.06	0.30		0.17	1.11	

Intersection Summary

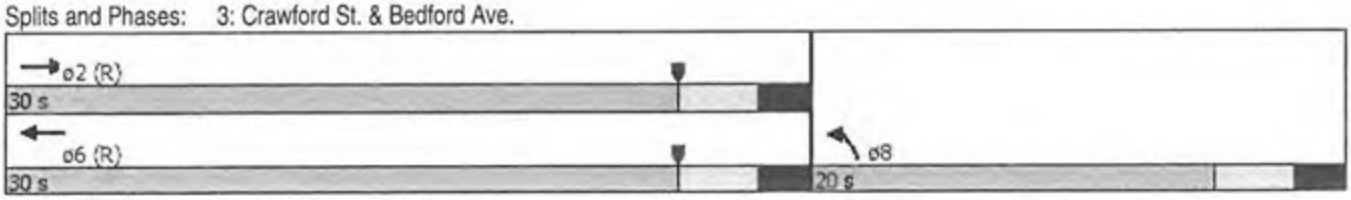
Area Type: Other

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 55.1 Intersection LOS: E
Intersection Capacity Utilization 52.4% ICU Level of Service A
Analysis Period (min) 15

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

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

Splits and Phases: 3: Crawford St. & Bedford Ave.



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	24	31	430	29	0	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	332		705			559
Travel Time (s)	9.1		19.2			15.2
Confl. Peds. (#/hr)		1		9	9	
Peak Hour Factor	0.79	0.79	0.91	0.65	0.92	0.85
Heavy Vehicles (%)	0%	0%	1%	0%	0%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	518	0	0	367
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 34.8% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	24	31	430	29	0	312
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.79	0.79	0.91	0.65	0.92	0.85
Hourly flow rate (vph)	30	39	473	45	0	367
Pedestrians	9					1
Lane Width (ft)	12.0					12.0
Walking Speed (ft/s)	4.0					4.0
Percent Blockage	1					0
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			705			559
pX, platoon unblocked						
vC, conflicting volume	871	505			526	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	871	505			526	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	93			100	
cM capacity (veh/h)	322	566			1043	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	70	517	367
Volume Left	30	0	0
Volume Right	39	45	0
cSH	425	1700	1043
Volume to Capacity	0.16	0.30	0.00
Queue Length 95th (ft)	14	0	0
Control Delay (s)	15.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	15.1	0.0	0.0
Approach LOS	C		

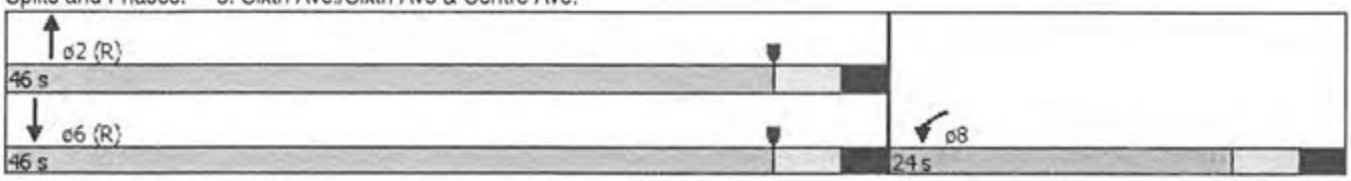
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	307	163	198	225	204	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			25
Link Distance (ft)	792		414			230
Travel Time (s)	21.6		11.3			6.3
Confl. Peds. (#/hr)	97	253		77	77	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		11%				
Lane Group Flow (vph)	361	161	470	0	227	530
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	24.0	24.0	46.0		46.0	46.0
Total Split (%)	34.3%	34.3%	65.7%		65.7%	65.7%
Maximum Green (s)	18.0	18.0	40.0		40.0	40.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	18.0	18.0	40.0		40.0	40.0
Actuated g/C Ratio	0.26	0.26	0.57		0.57	0.57
v/c Ratio	0.41	0.41	0.26		0.47	0.26
Control Delay	22.8	7.7	1.1		12.8	8.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	22.8	7.7	1.1		12.8	8.0
LOS	C	A	A		B	A
Approach Delay	18.2		1.1			9.4
Approach LOS	B		A			A
Queue Length 50th (ft)	64	0	8		52	54
Queue Length 95th (ft)	101	47	m4		106	79
Internal Link Dist (ft)	712		334			150
Turn Bay Length (ft)						
Base Capacity (vph)	877	388	1822		486	2022
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.41	0.41	0.26		0.47	0.26

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 9.8 Intersection LOS: A
Intersection Capacity Utilization 55.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Sixth Ave./Sixth Ave & Centre Ave.



6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	135	181	107	116	289	343	23	653	154	149	236	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Right Turn on Red						No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		792			633			646			192	
Travel Time (s)		21.6			17.3			17.6			5.2	
Confl. Peds. (#/hr)	573		247	247		573	126		170	170		126
Peak Hour Factor	0.59	0.88	0.67	0.67	0.65	0.78	0.53	0.81	0.85	0.71	0.90	0.58
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	6%	1%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	595	0	173	885	0	0	1030	0	0	472	114
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (s)	43.0	43.0		43.0	43.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	47.8%	47.8%		47.8%	47.8%		35.6%	35.6%		35.6%	35.6%	35.6%
Maximum Green (s)	37.0	37.0		37.0	37.0		26.0	26.0		26.0	26.0	26.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)		-1.5		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	15.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		38.5		37.0	37.0			26.0			26.0	26.0
Actuated g/C Ratio		0.43		0.41	0.41			0.29			0.29	0.29
v/c Ratio		1.52dl		0.80	0.91dr			0.96			2.92dl	0.33
Control Delay		42.5		52.8	36.5			51.6			61.5	39.4
Queue Delay		0.0		0.0	0.0			0.0			0.0	0.0
Total Delay		42.5		52.8	36.5			51.6			61.5	39.4
LOS		D		D	D			D			E	D
Approach Delay		42.5			39.1			51.6			57.2	
Approach LOS		D			D			D			E	
Queue Length 50th (ft)		160		84	238			209			155	71
Queue Length 95th (ft)		#260		112	195			#248			m#233	82
Internal Link Dist (ft)		712			553			566			112	
Turn Bay Length (ft)												
Base Capacity (vph)		665		216	1005			1075			518	348
Starvation Cap Reductn		0		0	0			0			0	0
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		0.89		0.80	0.88			0.96			0.91	0.33

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 7 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 50.2 Intersection LOS: D
Intersection Capacity Utilization 120.5% ICU Level of Service H
Analysis Period (min) 15

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

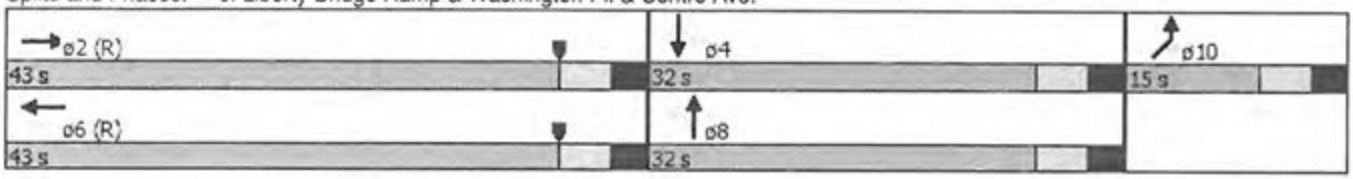
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.



Lane Group	NEL	NER	NER2
Lane Configurations			
Volume (vph)	45	30	52
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)	7%		
Right Turn on Red			No
Link Speed (mph)	25		
Link Distance (ft)	334		
Travel Time (s)	9.1		
Confl. Peds. (#/hr)	573		247
Peak Hour Factor	0.64	0.80	0.73
Heavy Vehicles (%)	5%	4%	0%
Shared Lane Traffic (%)		61%	
Lane Group Flow (vph)	93	86	0
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Minimum Split (s)	13.0	13.0	
Total Split (s)	15.0	15.0	
Total Split (%)	16.7%	16.7%	
Maximum Green (s)	9.0	9.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	9.0	9.0	
Actuated g/C Ratio	0.10	0.10	
v/c Ratio	0.64	1.07	
Control Delay	59.9	165.2	
Queue Delay	0.0	0.0	
Total Delay	59.9	165.2	
LOS	E	F	
Approach Delay	110.5		
Approach LOS	F		
Queue Length 50th (ft)	52	~57	
Queue Length 95th (ft)	71	#132	
Internal Link Dist (ft)	254		
Turn Bay Length (ft)			
Base Capacity (vph)	146	80	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.64	1.07	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	51	463	672	94	10	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red				Yes		No
Link Speed (mph)		25	25		25	
Link Distance (ft)		633	332		934	
Travel Time (s)		17.3	9.1		25.5	
Confl. Peds. (#/hr)	426			426	18	118
Peak Hour Factor	0.86	0.95	0.95	0.81	0.45	0.84
Heavy Vehicles (%)	0%	2%	1%	0%	0%	6%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	546	823	0	102	0
Turn Type	Perm	NA	NA		NA	
Protected Phases		2	6		4	
Permitted Phases	2					
Minimum Split (s)	43.5	43.5	43.5		26.5	
Total Split (s)	43.5	43.5	43.5		26.5	
Total Split (%)	62.1%	62.1%	62.1%		37.9%	
Maximum Green (s)	38.0	38.0	38.0		21.0	
Yellow Time (s)	3.5	3.5	3.5		3.5	
All-Red Time (s)	2.0	2.0	2.0		2.0	
Lost Time Adjust (s)		-1.5	-1.5		-1.5	
Total Lost Time (s)		4.0	4.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	28.0	28.0	28.0		11.0	
Flash Dont Walk (s)	10.0	10.0	10.0		10.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)		39.5	39.5		22.5	
Actuated g/C Ratio		0.56	0.56		0.32	
v/c Ratio		0.40	0.35		0.27	
Control Delay		9.7	7.1		20.2	
Queue Delay		0.0	0.0		0.0	
Total Delay		9.7	7.1		20.2	
LOS		A	A		C	
Approach Delay		9.7	7.1		20.2	
Approach LOS		A	A		C	
Queue Length 50th (ft)		63	40		32	
Queue Length 95th (ft)		95	m53		31	
Internal Link Dist (ft)		553	252		854	
Turn Bay Length (ft)						
Base Capacity (vph)		1355	2363		375	
Starvation Cap Reductn		0	0		0	
Spillback Cap Reductn		0	0		0	
Storage Cap Reductn		0	0		0	
Reduced v/c Ratio		0.40	0.35		0.27	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 9.0 Intersection LOS: A
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Centre Ave. & Mario Lemieux Pl.

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	468	4	0	766	0	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	332			374	129	
Travel Time (s)	9.1			10.2	3.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	513	0	0	833	0	102
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 25.6% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	468	4	0	766	0	94
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	509	4	0	833	0	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	332			622		
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			513		927	257
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			417		847	151
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	88
cM capacity (veh/h)			1096		290	836

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	339	174	416	416	102
Volume Left	0	0	0	0	0
Volume Right	0	4	0	0	102
cSH	1700	1700	1700	1700	836
Volume to Capacity	0.20	0.10	0.24	0.24	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	9.9
Lane LOS					A
Approach Delay (s)	0.0		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	25.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	198	171	204	35	186	39	171	200	64	26	146	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	14	16	11	11	12	12	15	12	12	14	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		248			357			640			705	
Travel Time (s)		6.8			9.7			17.5			19.2	
Confl. Peds. (#/hr)	52		26	26		52	29		5	5		29
Peak Hour Factor	0.82	0.82	0.85	0.67	0.70	0.63	0.79	0.69	0.81	0.89	0.70	0.75
Heavy Vehicles (%)	4%	4%	0%	3%	2%	0%	4%	1%	2%	0%	6%	4%
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	450	240	52	328	0	0	585	0	0	462	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	33.0	33.0	33.0	33.0	33.0		37.0	37.0		37.0	37.0	
Total Split (%)	47.1%	47.1%	47.1%	47.1%	47.1%		52.9%	52.9%		52.9%	52.9%	
Maximum Green (s)	28.0	28.0	28.0	28.0	28.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		28.0	28.0	28.0	28.0			32.0			32.0	
Actuated g/C Ratio		0.40	0.40	0.40	0.40			0.46			0.46	
v/c Ratio		1.06	0.29	0.22	0.47			1.11			0.63	
Control Delay		83.2	2.9	16.9	17.3			95.9			16.0	
Queue Delay		0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay		83.2	2.9	16.9	17.3			95.9			16.0	
LOS		F	A	B	B			F			B	
Approach Delay		55.3			17.2			95.9			16.0	
Approach LOS		E			B			F			B	
Queue Length 50th (ft)		~213	0	14	94			~293			114	
Queue Length 95th (ft)		#313	26	27	114			#307			132	
Internal Link Dist (ft)		168			277			560			625	
Turn Bay Length (ft)												
Base Capacity (vph)		423	820	238	697			526			737	
Starvation Cap Reductn		0	0	0	0			0			0	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		1.06	0.29	0.22	0.47			1.11			0.63	

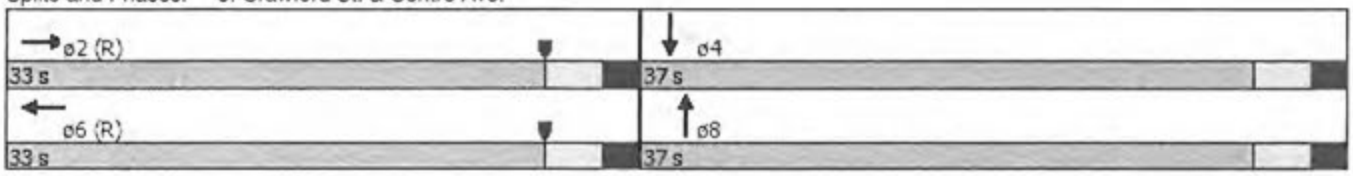
Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 51.1 Intersection LOS: D
Intersection Capacity Utilization 94.6% ICU Level of Service F
Analysis Period (min) 15

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

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

Splits and Phases: 9: Crawford St. & Centre Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	67	7	12	14	15	330	0	0	328	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			231			283			70	
Travel Time (s)		8.6			6.3			7.7			1.9	
Confl. Peds. (#/hr)	8		4	4		8	42		19	19		42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	37	0	0	384	0	0	426	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 45.7% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	67	7	12	14	15	330	0	0	328	56
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	74	8	13	16	17	367	0	0	364	62
Pedestrians		42			19			4			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			2			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.96	0.96		0.96	0.96	0.96				0.96		
vC, conflicting volume	868	857	442	893	888	394	469			386		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	842	831	442	868	863	349	469			341		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	87	96	95	98	98			100		
cM capacity (veh/h)	233	274	592	213	263	652	1055			1153		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	37	383	427
Volume Left	0	8	17	0
Volume Right	74	16	0	62
cSH	592	330	1055	1153
Volume to Capacity	0.13	0.11	0.02	0.00
Queue Length 95th (ft)	11	9	1	0
Control Delay (s)	11.9	17.3	0.5	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.9	17.3	0.5	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	0	198	222	562	327	40	99	0	0	740	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	10	12	12	11	12	12	12	12
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		130			635			238			414	
Travel Time (s)		3.5			17.3			6.5			11.3	
Confl. Peds. (#/hr)	859		99	99		859	14		65	65		14
Peak Hour Factor	0.80	0.92	0.83	0.89	0.94	0.93	0.75	0.75	0.92	0.92	0.89	0.75
Heavy Vehicles (%)	7%	2%	18%	0%	3%	12%	0%	1%	2%	2%	2%	19%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	249	950	0	0	185	0	0	892	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		28.0	28.0			28.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%			58.6%	
Maximum Green (s)	23.0	23.0		23.0	23.0		35.0	35.0			35.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2			0.2	
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max			Max	
Walk Time (s)	13.0	13.0		13.0	13.0		25.0	25.0			25.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
v/c Ratio		2.45		1.06	2.23			0.17			0.57	
Control Delay		689.9		103.6	580.1			5.6			14.9	
Queue Delay		2.2		18.5	0.0			0.0			0.0	
Total Delay		692.2		122.1	580.1			5.6			14.9	
LOS		F		F	F			A			B	
Approach Delay		692.2			485.0			5.6			14.9	
Approach LOS		F			F			A			B	
Queue Length 50th (ft)		~168		~121	~676			21			176	
Queue Length 95th (ft)		#314		#247	#896			27			231	
Internal Link Dist (ft)		50			555			158			334	
Turn Bay Length (ft)												
Base Capacity (vph)		123		235	426			1092			1555	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		12		60	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		2.71		1.42	2.23			0.17			0.57	

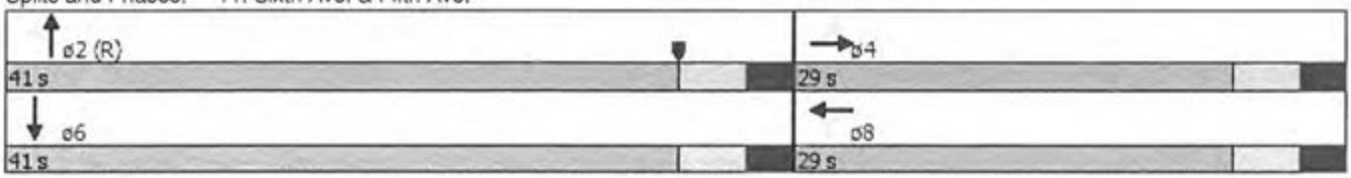
Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 69 (99%), Referenced to phase 2:NBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.45
Intersection Signal Delay: 312.1 — Intersection LOS: F
Intersection Capacity Utilization 119.8% — ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 11: Sixth Ave. & Fifth Ave.



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	605	618	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	635			437	582	
Travel Time (s)	17.3			11.9	15.9	
Confl. Peds. (#/hr)			18			
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	1%	9%	2%	2%
Parking (#/hr)			0	0		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1277	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 41.8% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	605	618	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	605	672	0	0
Pedestrians					18	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			18		1564	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		1564	18
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			62		100	100
cM capacity (veh/h)			1605		64	1056

Direction, Lane #	WB 1	WB 2
Volume Total	829	448
Volume Left	605	0
Volume Right	0	0
cSH	1605	1700
Volume to Capacity	0.38	0.26
Queue Length 95th (ft)	45	0
Control Delay (s)	7.3	0.0
Lane LOS	A	
Approach Delay (s)	4.7	
Approach LOS		

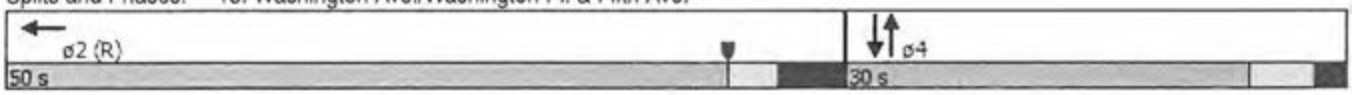
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	124	883	333	137	390	0	0	211	257
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Right Turn on Red			No			Yes			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		437			753			310			646	
Travel Time (s)		11.9			20.5			8.5			17.6	
Confl. Peds. (#/hr)				139		202	25					25
Peak Hour Factor	0.92	0.92	0.92	0.93	0.96	0.93	0.91	0.94	0.92	0.92	0.88	0.83
Heavy Vehicles (%)	2%	2%	2%	1%	5%	1%	1%	0%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1411	0	151	415	0	0	240	310
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Minimum Split (s)				44.0	44.0		30.0	30.0			30.0	30.0
Total Split (s)				50.0	50.0		30.0	30.0			30.0	30.0
Total Split (%)				62.5%	62.5%		37.5%	37.5%			37.5%	37.5%
Maximum Green (s)				43.0	43.0		24.0	24.0			24.0	24.0
Yellow Time (s)				3.0	3.0		4.0	4.0			4.0	4.0
All-Red Time (s)				4.0	4.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)					7.0		6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				15.0	15.0		9.0	9.0			9.0	9.0
Flash Dont Walk (s)				22.0	22.0		15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0			0	0
Act Effct Green (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
v/c Ratio					0.99		0.57	0.83			0.46	0.42
Control Delay					33.7		26.0	34.0			26.3	24.7
Queue Delay					0.0		0.0	3.7			0.0	0.0
Total Delay					33.7		26.0	37.7			26.3	24.7
LOS					C		C	D			C	C
Approach Delay					33.7			34.6			25.4	
Approach LOS					C			C			C	
Queue Length 50th (ft)					204		42	115			97	69
Queue Length 95th (ft)					#293		97	#333			159	99
Internal Link Dist (ft)		357			673			230			566	
Turn Bay Length (ft)												
Base Capacity (vph)					1421		264	500			520	731
Starvation Cap Reductn					0		0	38			0	0
Spillback Cap Reductn					0		0	0			0	0
Storage Cap Reductn					0		0	0			0	0
Reduced v/c Ratio					0.99		0.57	0.90			0.46	0.42

Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 39 (49%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 32.1 Intersection LOS: C
Intersection Capacity Utilization 89.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: Washington Ave./Washington Pl. & Fifth Ave.

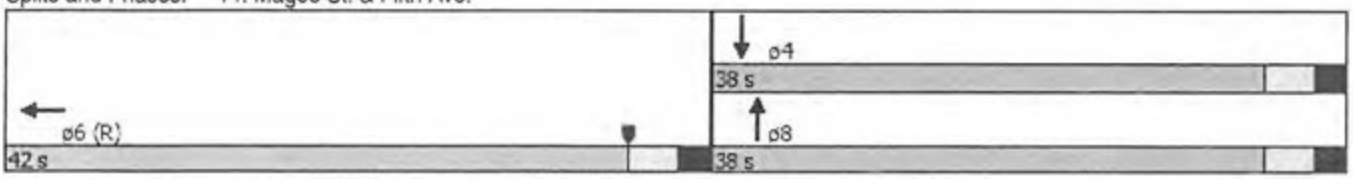


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	56	1008	4	299	14	0	0	1	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		753			499			335			119	
Travel Time (s)		20.5			13.6			9.1			3.2	
Confl. Peds. (#/hr)				87		214	8					8
Peak Hour Factor	0.92	0.92	0.92	0.67	0.87	0.50	0.85	0.46	0.92	0.92	0.25	0.67
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1251	0	0	382	0	0	17	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				42.0	42.0		38.0	38.0			38.0	
Total Split (%)				52.5%	52.5%		47.5%	47.5%			47.5%	
Maximum Green (s)				37.0	37.0		33.0	33.0			33.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					37.0			33.0			33.0	
Actuated g/C Ratio					0.46			0.41			0.41	
v/c Ratio					0.81			0.73			0.03	
Control Delay					17.8			24.3			9.8	
Queue Delay					0.5			1.3			0.0	
Total Delay					18.2			25.6			9.8	
LOS					B			C			A	
Approach Delay					18.2			25.6			9.8	
Approach LOS					B			C			A	
Queue Length 50th (ft)					314			173			2	
Queue Length 95th (ft)					308			102			2	
Internal Link Dist (ft)		673			419			255			39	
Turn Bay Length (ft)												
Base Capacity (vph)					1545			524			650	
Starvation Cap Reductn					66			40			0	
Spillback Cap Reductn					0			0			84	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.85			0.79			0.03	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 35 (44%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 19.9 Intersection LOS: B
Intersection Capacity Utilization 61.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 14: Magee St. & Fifth Ave.

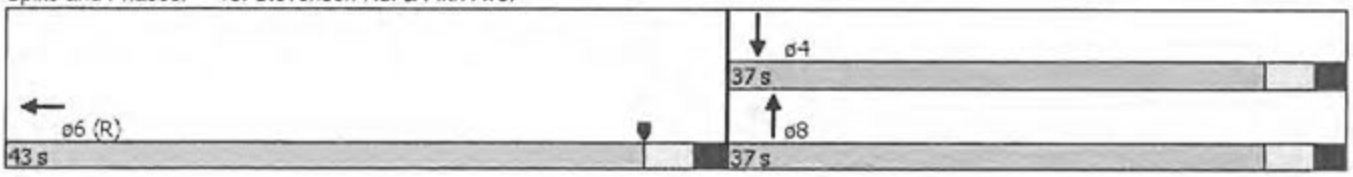


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	90	822	34	200	61	0	0	19	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		499			406			324			114	
Travel Time (s)		13.6			11.1			8.8			3.1	
Confl. Peds. (#/hr)				15		84	3					3
Peak Hour Factor	0.92	0.92	0.92	0.72	0.98	0.43	0.82	0.72	0.92	0.92	0.85	0.62
Heavy Vehicles (%)	2%	2%	2%	1%	5%	3%	2%	4%	2%	2%	6%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1043	0	0	329	0	0	96	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				43.0	43.0		37.0	37.0			37.0	
Total Split (%)				53.8%	53.8%		46.3%	46.3%			46.3%	
Maximum Green (s)				38.0	38.0		32.0	32.0			32.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
v/c Ratio					0.70			0.62			0.14	
Control Delay					9.9			22.9			7.3	
Queue Delay					0.3			1.5			0.0	
Total Delay					10.2			24.4			7.3	
LOS					B			C			A	
Approach Delay					10.2			24.4			7.3	
Approach LOS					B			C			A	
Queue Length 50th (ft)					113			109			10	
Queue Length 95th (ft)					140			146			34	
Internal Link Dist (ft)		419			326			244			34	
Turn Bay Length (ft)												
Base Capacity (vph)					1482			532			677	
Starvation Cap Reductn					93			80			0	
Spillback Cap Reductn					69			0			1	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.75			0.73			0.14	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 13.2 Intersection LOS: B
Intersection Capacity Utilization 55.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 15: Stevenson Rd. & Fifth Ave.

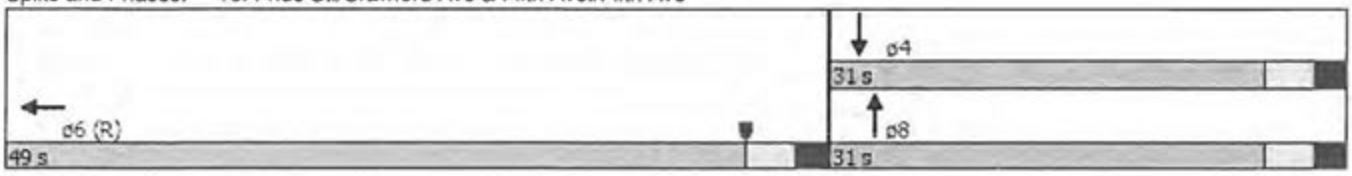


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	877	198	29	147	0	0	323	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		406			265			320			283	
Travel Time (s)		11.1			7.2			8.7			7.7	
Confl. Peds. (#/hr)				43		66	17					17
Peak Hour Factor	0.92	0.92	0.92	0.54	0.95	0.80	0.69	0.89	0.92	0.92	0.95	0.77
Heavy Vehicles (%)	2%	2%	2%	2%	9%	8%	5%	8%	2%	2%	5%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1256	0	0	207	0	0	445	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				49.0	49.0		31.0	31.0			31.0	
Total Split (%)				61.3%	61.3%		38.8%	38.8%			38.8%	
Maximum Green (s)				44.0	44.0		26.0	26.0			26.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					44.0			26.0			26.0	
Actuated g/C Ratio					0.55			0.32			0.32	
v/c Ratio					0.75			0.55			0.64	
Control Delay					16.7			27.7			26.9	
Queue Delay					0.0			0.0			0.0	
Total Delay					16.7			27.7			26.9	
LOS					B			C			C	
Approach Delay					16.7			27.7			26.9	
Approach LOS					B			C			C	
Queue Length 50th (ft)					224			85			178	
Queue Length 95th (ft)					308			m148			276	
Internal Link Dist (ft)		326			185			240			203	
Turn Bay Length (ft)												
Base Capacity (vph)					1667			379			696	
Starvation Cap Reductn					0			0			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.75			0.55			0.64	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 11 (14%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 20.3 Intersection LOS: C
Intersection Capacity Utilization 73.6% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Pride St./Crawford Ave & Fifth Ave./Fifth Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	186	294	11	1	122	0	0	1210	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		142			582			105			238	
Travel Time (s)		3.9			15.9			2.9			6.5	
Confl. Peds. (#/hr)						69	7					7
Peak Hour Factor	0.92	0.92	0.92	0.95	0.86	0.67	0.25	0.82	0.25	0.92	0.97	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	1%	0%	0%	1%	0%	2%	4%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	196	342	16	0	153	0	0	1291	0
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Detector Phase				4	4	4	1 2	2			6	
Switch Phase												
Minimum Initial (s)				8.0	8.0	8.0		18.0			25.0	
Minimum Split (s)				27.5	27.5	27.5		30.5			30.5	
Total Split (s)				28.0	28.0	28.0		31.0			42.0	
Total Split (%)				40.0%	40.0%	40.0%		44.3%			60.0%	
Maximum Green (s)				22.5	22.5	22.5		25.5			36.5	
Yellow Time (s)				3.5	3.5	3.5		3.5			3.5	
All-Red Time (s)				2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.5	5.5	5.5		5.5			5.5	
Lead/Lag								Lag				
Lead-Lag Optimize?												
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Recall Mode				Ped	Ped	Ped		C-Max			C-Max	
Walk Time (s)				12.0	12.0	12.0		15.0			15.0	
Flash Dont Walk (s)				10.0	10.0	10.0		10.0			10.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effct Green (s)				22.5	22.5	22.5		31.0			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.44			0.52	
v/c Ratio				0.41	0.67	0.04		0.11			0.80	
Control Delay				21.8	28.5	16.8		7.3			10.1	
Queue Delay				674.2	0.0	0.0		0.9			23.8	
Total Delay				696.0	28.5	16.8		8.2			33.9	
LOS				F	C	B		A			C	
Approach Delay					264.3			8.2			33.9	
Approach LOS					F			A			C	
Queue Length 50th (ft)				65	126	5		15			123	
Queue Length 95th (ft)				120	200	13		m19			m176	
Internal Link Dist (ft)		62			502			25			158	
Turn Bay Length (ft)												
Base Capacity (vph)				477	507	402		1412			1621	
Starvation Cap Reductn				0	0	0		1033			377	

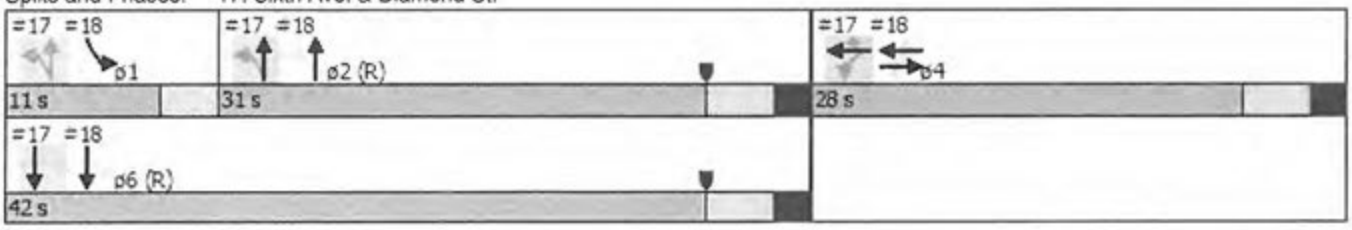
Lane Group	ø1
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	16%
Maximum Green (s)	8.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				477	0	0		0			72	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				196.00	0.67	0.04		0.40			1.04	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 55 (79%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.27
Intersection Signal Delay: 95.8 Intersection LOS: F
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Sixth Ave. & Diamond St.



Lane Group	ø1
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	507	201	22	61	3	41	93	52	436	958	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	12	12	11	12	12	12	12
Right Turn on Red			No			Yes			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			634			330			105	
Travel Time (s)		8.9			17.3			9.0			2.9	
Confl. Peds. (#/hr)	2		147	147		2	6		22	22		6
Peak Hour Factor	0.83	0.84	0.73	0.50	0.50	0.25	0.77	0.88	0.84	0.92	0.98	0.75
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	8%	2%	7%	10%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	644	275	0	178	0	0	221	0	0	1453	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		8.0	25.0	
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5		30.5	30.5		11.0	30.5	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		31.0	31.0		11.0	42.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		44.3%	44.3%		15.7%	60.0%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		25.5	25.5		8.0	36.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5			5.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	Ped	Ped	Ped	Ped	Ped		C-Max	C-Max		Min	C-Max	
Walk Time (s)	12.0	12.0	12.0	12.0	12.0		15.0	15.0			15.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effct Green (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
v/c Ratio		1.26	0.72		1.27			0.33			1.16	
Control Delay		158.7	33.7		193.3			12.9			91.6	
Queue Delay		0.1	0.0		0.3			0.0			0.1	
Total Delay		158.9	33.7		193.6			12.9			91.7	
LOS		F	C		F			B			F	
Approach Delay		121.4			193.6			12.9			91.7	
Approach LOS		F			F			B			F	
Queue Length 50th (ft)		~357	103		~98			24			~293	
Queue Length 95th (ft)		#492	139		#89			48			#514	
Internal Link Dist (ft)		245			554			250			25	
Turn Bay Length (ft)												
Base Capacity (vph)		510	384		140			680			1257	
Starvation Cap Reductn		0	0		0			0			29	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		8	0		2			1			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		1.28	0.72		1.29			0.33			1.18	

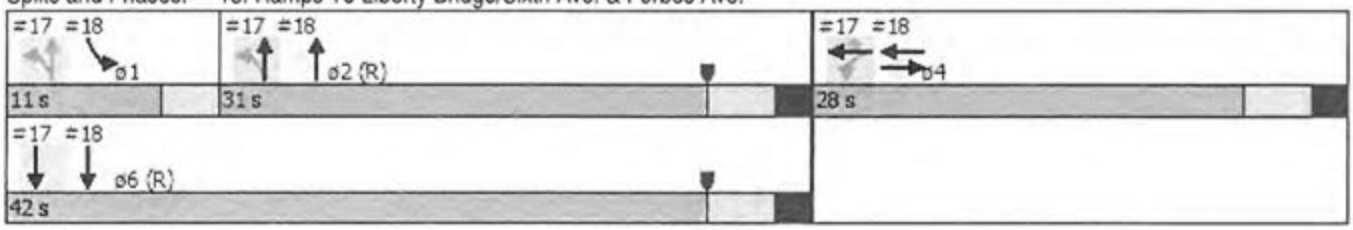
Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 55 (79%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.27
Intersection Signal Delay: 101.8 Intersection LOS: F
Intersection Capacity Utilization 111.5% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.



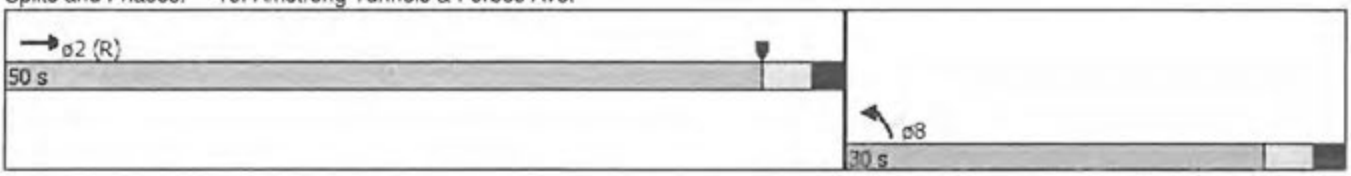
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	861	460	0	0	86	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	10	10
Storage Length (ft)		0	0		0	60
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Right Turn on Red		No				No
Link Speed (mph)	25			25	25	
Link Distance (ft)	634			303	752	
Travel Time (s)	17.3			8.3	20.5	
Confl. Peds. (#/hr)		79				
Peak Hour Factor	0.91	0.86	0.92	0.92	0.85	0.82
Heavy Vehicles (%)	3%	1%	2%	2%	3%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1481	0	0	0	101	716
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Minimum Split (s)	35.0				22.0	22.0
Total Split (s)	50.0				30.0	30.0
Total Split (%)	62.5%				37.5%	37.5%
Maximum Green (s)	45.0				25.0	25.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	2.0				2.0	2.0
Lost Time Adjust (s)	0.0				0.0	0.0
Total Lost Time (s)	5.0				5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	10.0				10.0	10.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	45.0				25.0	25.0
Actuated g/C Ratio	0.56				0.31	0.31
v/c Ratio	0.98				0.22	0.97
Control Delay	37.1				21.9	55.7
Queue Delay	40.7				0.0	0.0
Total Delay	77.9				21.9	55.7
LOS	E				C	E
Approach Delay	77.9				51.5	
Approach LOS	E				D	
Queue Length 50th (ft)	348				37	198
Queue Length 95th (ft)	#532				70	#275
Internal Link Dist (ft)	554			223	672	
Turn Bay Length (ft)						60
Base Capacity (vph)	1514				460	738
Starvation Cap Reductn	0				0	0
Spillback Cap Reductn	248				0	0
Storage Cap Reductn	0				0	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Reduced v/c Ratio	1.17				0.22	0.97

Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 72 (90%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 68.5 Intersection LOS: E
Intersection Capacity Utilization 75.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 19: Amstrong Tunnels & Forbes Ave.



20: McAnulty Dr./Washington Ave. & Forbes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	386	982	81	0	0	0	0	139	115	274	46	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		303			745			205			310	
Travel Time (s)		8.3			20.3			5.6			8.5	
Confl. Peds. (#/hr)	54		95						69	69		
Peak Hour Factor	0.96	0.92	0.83	0.92	0.92	0.92	0.92	0.79	0.79	0.84	0.55	0.92
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	0%	0%	1%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	402	1165	0	0	0	0	0	176	146	0	410	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Minimum Split (s)	51.0	51.0						23.0	23.0	23.0	23.0	
Total Split (s)	51.0	51.0						29.0	29.0	29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%	36.3%	36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0	24.0	24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	31.0	31.0						8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0						10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0	0	0	0	
Act Effct Green (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
v/c Ratio	0.46	0.68						0.35	0.34		1.54	
Control Delay	13.5	16.4						24.2	15.8		284.3	
Queue Delay	4.5	47.7						0.0	0.0		0.0	
Total Delay	18.1	64.0						24.2	15.8		284.3	
LOS	B	E						C	B		F	
Approach Delay		52.2						20.4			284.3	
Approach LOS		D						C			F	
Queue Length 50th (ft)	121	225						68	32		~299	
Queue Length 95th (ft)	m125	m233						104	64		#231	
Internal Link Dist (ft)		223			665			125			230	
Turn Bay Length (ft)												
Base Capacity (vph)	868	1702						510	431		267	
Starvation Cap Reductn	383	639						0	0		0	
Spillback Cap Reductn	28	0						0	0		0	
Storage Cap Reductn	0	0						0	0		0	
Reduced v/c Ratio	0.83	1.10						0.35	0.34		1.54	

Intersection Summary

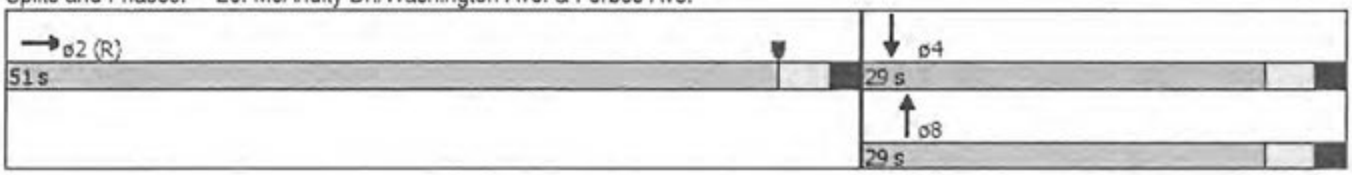
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 8 (10%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.54
Intersection Signal Delay: 89.2 Intersection LOS: F
Intersection Capacity Utilization 85.4% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: McAnulty Dr./Washington Ave. & Forbes Ave.



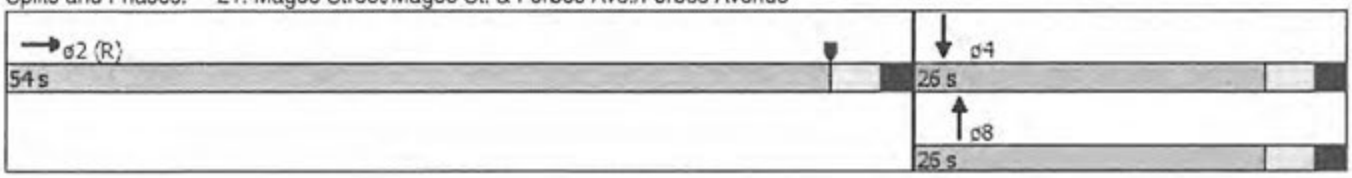
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1027	107	0	0	0	0	116	113	22	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		745			503			182			335	
Travel Time (s)		20.3			13.7			5.0			9.1	
Confl. Peds. (#/hr)	14		34						22	22		
Peak Hour Factor	0.64	0.87	0.75	0.92	0.92	0.92	0.92	0.73	0.77	0.69	0.35	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1761	0	0	0	0	0	306	0	0	343	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	54.0	54.0						26.0		26.0	26.0	
Total Split (%)	67.5%	67.5%						32.5%		32.5%	32.5%	
Maximum Green (s)	49.0	49.0						21.0		21.0	21.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		49.0						21.0			21.0	
Actuated g/C Ratio		0.61						0.26			0.26	
v/c Ratio		0.89						0.61			0.81	
Control Delay		22.2						27.2			48.7	
Queue Delay		0.6						0.1			0.0	
Total Delay		22.8						27.3			48.7	
LOS		C						C			D	
Approach Delay		22.8						27.3			48.7	
Approach LOS		C						C			D	
Queue Length 50th (ft)		387						109			170	
Queue Length 95th (ft)		m389						141			87	
Internal Link Dist (ft)		665			423			102			255	
Turn Bay Length (ft)												
Base Capacity (vph)		1969						498			421	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		44						11			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.91						0.63			0.81	

21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 53 (66%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 27.1 Intersection LOS: C
Intersection Capacity Utilization 73.0% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue



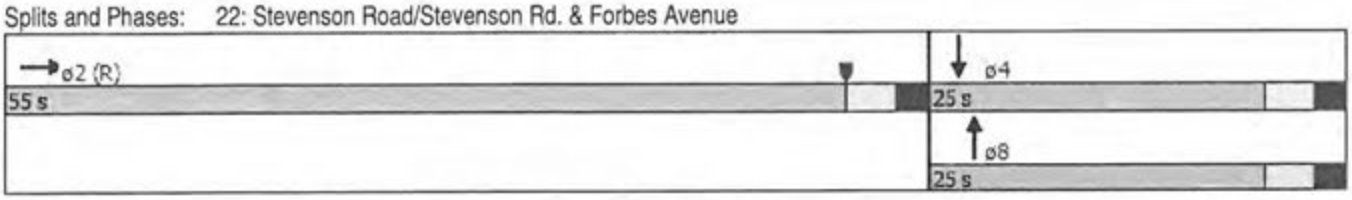
22: Stevenson Road/Stevenson Rd. & Forbes Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	1030	13	0	0	0	0	100	44	27	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		503			408			159			324	
Travel Time (s)		13.7			11.1			4.3			8.8	
Confl. Peds. (#/hr)	22		26						16	16		
Peak Hour Factor	0.71	0.97	0.84	0.92	0.92	0.92	0.92	0.84	0.67	0.93	0.75	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	7%	0%	2%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1221	0	0	0	0	0	185	0	0	102	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	55.0	55.0						25.0		25.0	25.0	
Total Split (%)	68.8%	68.8%						31.3%		31.3%	31.3%	
Maximum Green (s)	50.0	50.0						20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		50.0						20.0			20.0	
Actuated g/C Ratio		0.62						0.25			0.25	
v/c Ratio		0.60						0.36			0.22	
Control Delay		5.0						22.4			14.2	
Queue Delay		0.5						0.0			0.0	
Total Delay		5.5						22.4			14.2	
LOS		A						C			B	
Approach Delay		5.5						22.4			14.2	
Approach LOS		A						C			B	
Queue Length 50th (ft)		75						62			16	
Queue Length 95th (ft)		m93						107			m33	
Internal Link Dist (ft)		423			328			79			244	
Turn Bay Length (ft)												
Base Capacity (vph)		2052						521			465	
Starvation Cap Reductn		369						0			0	
Spillback Cap Reductn		268						2			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.73						0.36			0.22	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 72 (90%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 8.2 Intersection LOS: A
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Stevenson Road/Stevenson Rd. & Forbes Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	97	973	30	0	0	0	0	63	24	281	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		408			281			148			320	
Travel Time (s)		11.1			7.7			4.0			8.7	
Confl. Peds. (#/hr)	48		30						9	9		
Peak Hour Factor	0.75	0.94	0.82	0.92	0.92	0.92	0.92	0.80	0.92	0.91	0.67	0.92
Heavy Vehicles (%)	1%	6%	4%	2%	2%	2%	2%	20%	5%	3%	20%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1201	0	0	0	0	0	105	0	0	376	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	41.0	41.0						39.0		39.0	39.0	
Total Split (%)	51.3%	51.3%						48.8%		48.8%	48.8%	
Maximum Green (s)	36.0	36.0						34.0		34.0	34.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		36.0						34.0			34.0	
Actuated g/C Ratio		0.45						0.42			0.42	
v/c Ratio		0.80						0.15			0.72	
Control Delay		21.3						11.5			16.3	
Queue Delay		2.3						0.0			0.0	
Total Delay		23.6						11.5			16.3	
LOS		C						B			B	
Approach Delay		23.6						11.5			16.3	
Approach LOS		C						B			B	
Queue Length 50th (ft)		329						23			51	
Queue Length 95th (ft)		412						45			57	
Internal Link Dist (ft)		328			201			68			240	
Turn Bay Length (ft)												
Base Capacity (vph)		1504						682			522	
Starvation Cap Reductn		181						0			0	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.91						0.15			0.72	

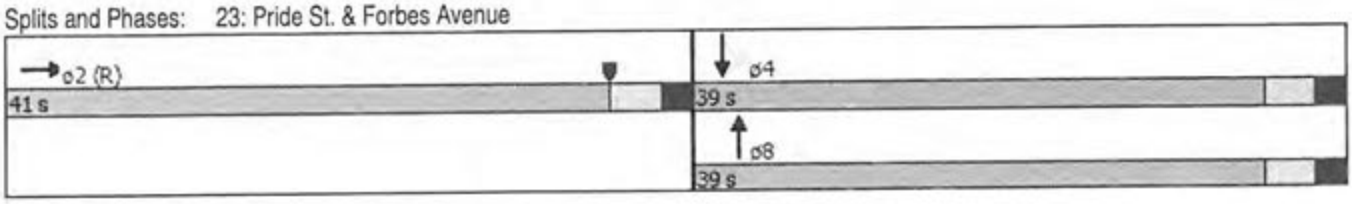
Intersection Summary

Area Type: Other

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 7 (9%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 21.2
Intersection Capacity Utilization 63.7%
Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service B

Splits and Phases: 23: Pride St. & Forbes Avenue



1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Lane Group	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	178	156	116	587	172	569	368	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Right Turn on Red	No				Yes			No
Link Speed (mph)		25		25			25	
Link Distance (ft)		325		306			334	
Travel Time (s)		8.9		8.3			9.1	
Confl. Peds. (#/hr)			17		17			17
Peak Hour Factor	0.87	0.89	0.95	0.88	0.79	0.92	0.86	0.99
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	380	122	667	218	618	428	531
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0	26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	21.0	21.0	44.0	44.0	44.0
Total Split (%)	27.8%	27.8%	27.8%	23.3%	23.3%	48.9%	48.9%	48.9%
Maximum Green (s)	20.0	20.0	20.0	16.0	16.0	39.0	39.0	39.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?								
Walk Time (s)						11.0	11.0	11.0
Flash Dont Walk (s)						10.0	10.0	10.0
Pedestrian Calls (#/hr)						0	0	0
Act Effct Green (s)		20.0	20.0	16.0	16.0	39.0	39.0	39.0
Actuated g/C Ratio		0.22	0.22	0.18	0.18	0.43	0.43	0.43
v/c Ratio		1.15	0.41	1.20	0.51	0.90	0.60	0.87
Control Delay		131.5	35.0	127.9	4.5	43.2	23.7	40.3
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		131.5	35.0	127.9	4.5	43.2	23.7	40.3
LOS		F	D	F	A	D	C	D
Approach Delay		108.1		97.5			36.9	
Approach LOS		F		F			D	
Queue Length 50th (ft)		~257	60	~248	4	318	180	266
Queue Length 95th (ft)		#423	113	m#314	m4	#534	259	#464
Internal Link Dist (ft)		245		226			254	
Turn Bay Length (ft)								
Base Capacity (vph)		330	295	555	427	683	719	611
Starvation Cap Reductn		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0
Reduced v/c Ratio		1.15	0.41	1.20	0.51	0.90	0.60	0.87

Intersection Summary

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

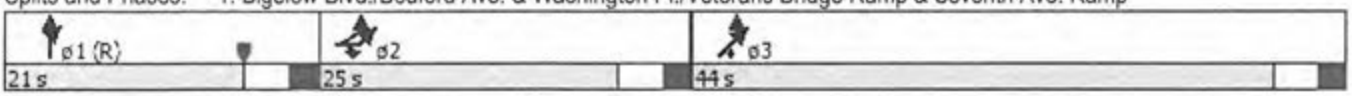
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 49 (54%), Referenced to phase 1:NBT, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 67.1 Intersection LOS: E
Intersection Capacity Utilization 86.1% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp



Movement	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	178	156	116	587	172	569	368	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Total Lost time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor		1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1486	1330	3122	1396	1578	1661	1412
Flt Permitted		0.95	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1486	1330	3122	1396	1578	1661	1412
Peak-hour factor, PHF	0.87	0.89	0.95	0.88	0.79	0.92	0.86	0.99
Adj. Flow (vph)	205	175	122	667	218	618	428	531
RTOR Reduction (vph)	0	0	0	0	179	0	0	0
Lane Group Flow (vph)	0	380	122	667	39	618	428	531
Confl. Peds. (#/hr)			17		17			17
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Actuated Green, G (s)		20.0	20.0	16.0	16.0	39.0	39.0	39.0
Effective Green, g (s)		20.0	20.0	16.0	16.0	39.0	39.0	39.0
Actuated g/C Ratio		0.22	0.22	0.18	0.18	0.43	0.43	0.43
Clearance Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)		330	295	555	248	683	719	611
v/s Ratio Prot		c0.26	0.09	c0.21	0.03	c0.39	0.26	0.38
v/s Ratio Perm								
v/c Ratio		1.15	0.41	1.20	0.16	0.90	0.60	0.87
Uniform Delay, d1		35.0	30.0	37.0	31.3	23.8	19.5	23.2
Progression Factor		1.00	1.00	0.62	0.27	1.00	1.00	1.00
Incremental Delay, d2		97.2	4.2	102.9	1.0	17.7	3.6	15.5
Delay (s)		132.2	34.2	125.7	9.5	41.5	23.1	38.7
Level of Service		F	C	F	A	D	C	D
Approach Delay (s)		108.4		97.1			35.5	
Approach LOS		F		F			D	

Intersection Summary			
HCM 2000 Control Delay	66.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

2: Bedford Ave. & Street 1/HOV & Liberty/Seventh Ave. Ramp

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Lane Configurations												
Volume (vph)	25	0	4	134	184	0	353	41	412	79	25	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	16	13	12	12	12
Grade (%)		2%			2%				10%			-12%
Storage Length (ft)	0		1	0		0				60	0	
Storage Lanes	0		0	0		1				1	0	
Taper Length (ft)	25			25							25	
Right Turn on Red			No				No			Yes		
Link Speed (mph)		25			50				25			25
Link Distance (ft)		296			281				549			362
Travel Time (s)		8.1			3.8				15.0			9.9
Confl. Peds. (#/hr)			24					22		52	52	
Peak Hour Factor	0.50	0.43	0.25	0.84	0.81	0.80	0.80	0.69	0.84	0.92	0.75	0.80
Heavy Vehicles (%)	3%	0%	0%	2%	2%	2%	2%	0%	2%	3%	0%	2%
Parking (#/hr)	0	0	0									
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	0	0	387	441	0	59	576	0	0	274
Turn Type	Split	NA		Split	NA	Perm		Split	NA		Split	NA
Protected Phases	9	9		10	10			2	2		4	4
Permitted Phases						10						
Detector Phase	9	9		10	10	10		2	2		4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	38.0	38.0		22.0	22.0	22.0		26.0	26.0		22.0	22.0
Total Split (s)	38.0	38.0		34.0	34.0	34.0		26.0	26.0		22.0	22.0
Total Split (%)	31.7%	31.7%		28.3%	28.3%	28.3%		21.7%	21.7%		18.3%	18.3%
Maximum Green (s)	32.0	32.0		28.0	28.0	28.0		20.0	20.0		16.0	16.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5		3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)		6.0			6.0	6.0		6.0	6.0			6.0
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	3.0	3.0		4.0	4.0		3.0	3.0
Recall Mode	None	None		None	None	None		None	None		None	None
Walk Time (s)	7.0	7.0		5.0	5.0	5.0		7.0	7.0		5.0	5.0
Flash Dont Walk (s)	25.0	25.0		11.0	11.0	11.0		13.0	13.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0
Act Effct Green (s)		11.0			28.4	28.4		20.3	20.3			12.7
Actuated g/C Ratio		0.12			0.30	0.30		0.22	0.22			0.14
v/c Ratio		0.42			0.78	1.03		0.16	0.88			0.60
Control Delay		48.5			45.0	87.3		34.4	52.6			45.0
Queue Delay		0.0			0.0	0.0		0.0	0.0			0.0
Total Delay		48.5			45.0	87.3		34.4	52.6			45.0
LOS		D			D	F		C	D			D
Approach Delay		48.5			67.5				50.9			45.0
Approach LOS		D			E				D			D
Queue Length 50th (ft)		38			219	~301		30	178			84

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Queue Length 95th (ft)		37			#344	#451		52	#279			115
Internal Link Dist (ft)		216			201				469			282
Turn Bay Length (ft)												
Base Capacity (vph)		461			494	428		379	656			583
Starvation Cap Reductn		0			0	0		0	0			0
Spillback Cap Reductn		0			0	0		0	0			0
Storage Cap Reductn		0			0	0		0	0			0
Reduced v/c Ratio		0.14			0.78	1.03		0.16	0.88			0.47

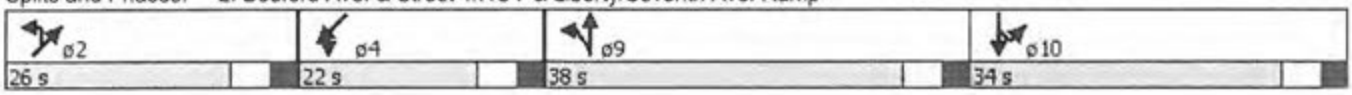
Intersection Summary

Area Type: CBD
Cycle Length: 120
Actuated Cycle Length: 93.4
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 57.6 Intersection LOS: E
Intersection Capacity Utilization 83.8% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 2: Bedford Ave. & Street 1/HOV & Liberty/Seventh Ave. Ramp



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	87	414	32	51	148	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	548			264	559	
Travel Time (s)	12.5			6.0	12.7	
Confl. Peds. (#/hr)		9	9			
Peak Hour Factor	0.72	0.84	0.89	0.74	0.92	0.59
Heavy Vehicles (%)	0%	2%	8%	2%	4%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	493	0	105	236	0
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Minimum Split (s)	21.0	21.0	21.0	21.0	20.0	
Total Split (s)	30.0	30.0	30.0	30.0	20.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	15.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
v/c Ratio	0.13	0.49		0.13	0.44	
Control Delay	7.2	2.8		7.3	14.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	7.2	2.8		7.3	14.3	
LOS	A	A		A	B	
Approach Delay	3.6			7.3	14.3	
Approach LOS	A			A	B	
Queue Length 50th (ft)	17	0		15	43	
Queue Length 95th (ft)	29	27		27	92	
Internal Link Dist (ft)	468			184	479	
Turn Bay Length (ft)						
Base Capacity (vph)	950	1011		816	534	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.13	0.49		0.13	0.44	

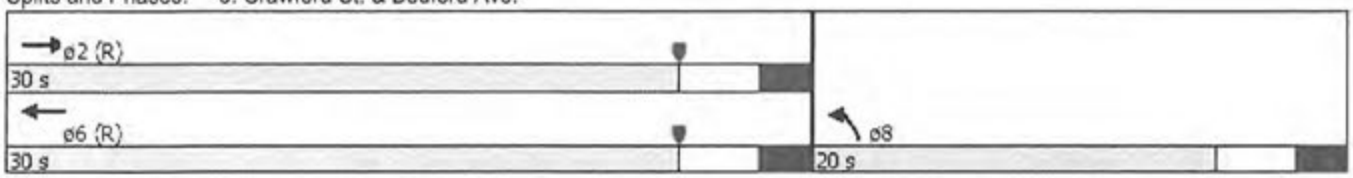
Intersection Summary

Area Type: Other

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.49
Intersection Signal Delay: 6.7
Intersection Capacity Utilization 39.4%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service A

Splits and Phases: 3: Crawford St. & Bedford Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	11	36	0	18	52	183	14	9	397	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	12
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		254			332			705			559	
Travel Time (s)		6.9			9.1			19.2			15.2	
Confl. Peds. (#/hr)				3		4			8	8		
Peak Hour Factor	0.90	0.90	0.90	0.52	0.90	0.57	0.90	0.81	0.41	0.67	0.82	0.90
Heavy Vehicles (%)	2%	2%	2%	3%	2%	0%	2%	5%	0%	0%	1%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	101	0	0	318	0	0	497	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 55.1% ICU Level of Service B
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	11	36	0	18	52	183	14	9	397	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.52	0.90	0.57	0.90	0.81	0.41	0.67	0.82	0.90
Hourly flow rate (vph)	0	0	12	69	0	32	58	226	34	13	484	0
Pedestrians					8			3			4	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								705			559	
pX, platoon unblocked												
vC, conflicting volume	905	895	487	893	878	255	484			268		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	905	895	487	893	878	255	484			268		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	71	100	96	95			99		
cM capacity (veh/h)	233	261	579	240	267	781	1079			1299		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	101	318	498
Volume Left	0	69	58	13
Volume Right	12	32	34	0
cSH	579	306	1079	1299
Volume to Capacity	0.02	0.33	0.05	0.01
Queue Length 95th (ft)	2	35	4	1
Control Delay (s)	11.4	22.4	2.0	0.3
Lane LOS	B	C	A	A
Approach Delay (s)	11.4	22.4	2.0	0.3
Approach LOS	B	C		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	101	244	410	123	385	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			25
Link Distance (ft)	792		414			230
Travel Time (s)	21.6		11.3			6.3
Confl. Peds. (#/hr)	145	375		37	37	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	248	135	593	0	428	294
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	22.0	22.0	48.0		48.0	48.0
Total Split (%)	31.4%	31.4%	68.6%		68.6%	68.6%
Maximum Green (s)	16.0	16.0	42.0		42.0	42.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	16.0	16.0	42.0		42.0	42.0
Actuated g/C Ratio	0.23	0.23	0.60		0.60	0.60
v/c Ratio	0.40	0.41	0.29		0.91	0.14
Control Delay	12.8	8.9	2.7		41.4	6.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	12.8	8.9	2.7		41.4	6.3
LOS	B	A	A		D	A
Approach Delay	11.4		2.7			27.1
Approach LOS	B		A			C
Queue Length 50th (ft)	20	0	0		145	25
Queue Length 95th (ft)	49	45	m21		#340	41
Internal Link Dist (ft)	712		334			150
Turn Bay Length (ft)						
Base Capacity (vph)	623	332	2021		468	2123
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.40	0.41	0.29		0.91	0.14

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 33 (47%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 15.0 Intersection LOS: B
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Sixth Ave./Sixth Ave & Centre Ave.

6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	63	305	227	102	376	69	39	507	80	137	462	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Storage Length (ft)	0		0			0	0		0	0		
Storage Lanes	0		0			1	0		0	0		
Taper Length (ft)	25						25			25		
Right Turn on Red						No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		792			538			646			133	
Travel Time (s)		21.6			14.7			17.6			3.6	
Confl. Peds. (#/hr)	400		375	375		400	126		675	675		126
Confl. Bikes (#/hr)			141			552			18			266
Peak Hour Factor	0.69	0.94	0.80	0.83	0.94	0.60	0.86	0.96	0.74	0.88	0.95	0.63
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	9%	9%	9%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	699	0	123	515	0	0	681	0	0	642	10
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	36.7%	36.7%		36.7%	36.7%		34.4%	34.4%		34.4%	34.4%	34.4%
Maximum Green (s)	27.0	27.0		27.0	27.0		25.0	25.0		25.0	25.0	25.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)		-1.5		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	15.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		28.5		27.0	27.0			25.0			25.0	25.0
Actuated g/C Ratio		0.32		0.30	0.30			0.28			0.28	0.28
v/c Ratio		1.13		1.34	0.67			0.82			1.20	0.04
Control Delay		109.5		239.0	32.7			40.4			122.3	9.8
Queue Delay		0.0		0.0	0.0			0.0			0.0	0.0
Total Delay		109.5		239.0	32.7			40.4			122.3	9.8
LOS		F		F	C			D			F	A
Approach Delay		109.5			72.5			40.4			120.5	
Approach LOS		F			E			D			F	
Queue Length 50th (ft)		~245		~92	134			132			~238	2
Queue Length 95th (ft)		#357		#181	191			#194			m#301	m3
Internal Link Dist (ft)		712			458			566			53	
Turn Bay Length (ft)				250								
Base Capacity (vph)		617		92	768			826			535	275
Starvation Cap Reductn		0		0	0			0			0	0

Lane Group	NEL	NER	NER2
Lane Configurations			
Volume (vph)	62	120	97
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)	7%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Right Turn on Red			No
Link Speed (mph)	25		
Link Distance (ft)	334		
Travel Time (s)	9.1		
Confl. Peds. (#/hr)	400		375
Confl. Bikes (#/hr)		141	141
Peak Hour Factor	0.88	0.73	0.79
Heavy Vehicles (%)	1%	1%	1%
Shared Lane Traffic (%)		68%	
Lane Group Flow (vph)	182	175	0
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Minimum Split (s)	13.0	13.0	
Total Split (s)	26.0	26.0	
Total Split (%)	28.9%	28.9%	
Maximum Green (s)	20.0	20.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	20.0	20.0	
Actuated g/C Ratio	0.22	0.22	
v/c Ratio	0.62	1.12	
Control Delay	42.2	144.4	
Queue Delay	0.0	0.0	
Total Delay	42.2	144.4	
LOS	D	F	
Approach Delay	92.3		
Approach LOS	F		
Queue Length 50th (ft)	94	~122	
Queue Length 95th (ft)	160	#188	
Internal Link Dist (ft)	254		
Turn Bay Length (ft)			
Base Capacity (vph)	292	156	
Starvation Cap Reductn	0	0	

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		1.13		1.34	0.67			0.82			1.20	0.04

Intersection Summary

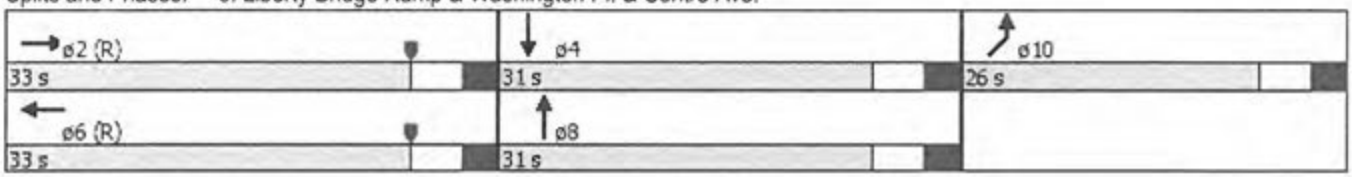
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.34
Intersection Signal Delay: 86.5 Intersection LOS: F
Intersection Capacity Utilization 123.3% ICU Level of Service H
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.



Lane Group	NEL	NER	NER2
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.62	1.12	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	81	459	265	113	38	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	150			0	0	0
Storage Lanes	0			0	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		No
Link Speed (mph)		25	25		25	
Link Distance (ft)		538	427		380	
Travel Time (s)		14.7	11.6		10.4	
Confl. Peds. (#/hr)	875			875	125	150
Peak Hour Factor	0.83	0.82	0.87	0.88	0.54	0.66
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	658	433	0	70	358
Turn Type	Perm	NA	NA		NA	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Minimum Split (s)	26.5	26.5	26.5		22.5	22.5
Total Split (s)	43.5	43.5	43.5		26.5	26.5
Total Split (%)	62.1%	62.1%	62.1%		37.9%	37.9%
Maximum Green (s)	38.0	38.0	38.0		21.0	21.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.5	-1.5		-1.5	0.0
Total Lost Time (s)		4.0	4.0		4.0	5.5
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	11.0	11.0	11.0		7.0	7.0
Flash Dont Walk (s)	10.0	10.0	10.0		10.0	10.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		39.5	39.5		22.5	21.0
Actuated g/C Ratio		0.56	0.56		0.32	0.30
v/c Ratio		0.53	0.35		0.16	1.18
Control Delay		11.4	2.7		18.2	137.6
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		11.4	2.7		18.2	137.6
LOS		B	A		B	F
Approach Delay		11.4	2.7		118.0	
Approach LOS		B	A		F	
Queue Length 50th (ft)		83	13		21	~189
Queue Length 95th (ft)		109	m17		28	#212
Internal Link Dist (ft)		458	347		300	
Turn Bay Length (ft)						
Base Capacity (vph)		1251	1249		449	303
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.53	0.35		0.16	1.18

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 39.0 Intersection LOS: D
Intersection Capacity Utilization 58.4% ICU Level of Service B
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Centre Ave. & Street 1

8: Parking Garage/Street 2 & Centre Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	385	74	4	343	28	0	0	1	32	44	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	11	11	11
Storage Length (ft)	150		0	100		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		427			374			129			297	
Travel Time (s)		11.6			10.2			3.5			8.1	
Confl. Peds. (#/hr)	625		75	75		625	150		100	100		150
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	552	0	0	416	0	0	1	0	0	124	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 53.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	38	385	74	4	343	28	0	0	1	32	44	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	42	428	82	4	381	31	0	0	1	36	49	39
Pedestrians		150			100			75			625	
Lane Width (ft)		11.0			11.0			12.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		11			8			6			48	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		427			622							
pX, platoon unblocked												
vC, conflicting volume	1037			585			1041	1674	430	1430	1700	981
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1037			585			1041	1674	430	1430	1700	981
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			0	100	100	0	0	66
cM capacity (veh/h)	348			924			0	40	496	25	39	115

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	256	296	195	222	1	123
Volume Left	42	0	4	0	0	36
Volume Right	0	82	0	31	1	39
cSH	348	1700	924	1700	496	41
Volume to Capacity	0.12	0.17	0.00	0.13	0.00	3.01
Queue Length 95th (ft)	10	0	0	0	0	Err
Control Delay (s)	4.7	0.0	0.3	0.0	12.3	Err
Lane LOS	A		A		B	F
Approach Delay (s)	2.2		0.1		12.3	Err
Approach LOS					B	F

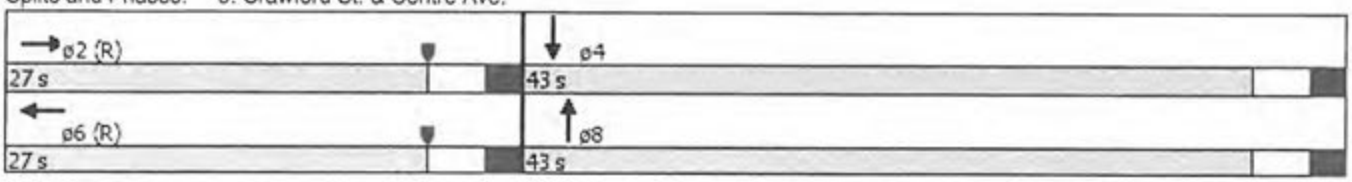
Intersection Summary			
Average Delay	1129.1		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	178	169	51	74	18	222	121	30	44	370	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	12	12	15	12	12	14	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		248			357			640			705	
Travel Time (s)		6.8			9.7			17.5			19.2	
Confl. Peds. (#/hr)	64		24	24		64	21		15	15		21
Peak Hour Factor	0.93	0.89	0.87	0.86	0.82	0.85	0.87	0.90	0.83	0.63	0.88	0.77
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	9%	9%	9%
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	312	194	59	111	0	0	425	0	0	576	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	27.0	27.0	27.0	27.0	27.0		43.0	43.0		43.0	43.0	
Total Split (%)	38.6%	38.6%	38.6%	38.6%	38.6%		61.4%	61.4%		61.4%	61.4%	
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0		38.0	38.0		38.0	38.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		22.0	22.0	22.0	22.0			38.0			38.0	
Actuated g/C Ratio		0.31	0.31	0.31	0.31			0.54			0.54	
v/c Ratio		0.72	0.35	0.26	0.22			0.90			0.71	
Control Delay		43.8	14.7	21.7	16.2			40.8			17.6	
Queue Delay		0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay		43.8	14.7	21.7	16.2			40.8			17.6	
LOS		D	B	C	B			D			B	
Approach Delay		32.7			18.1			40.8			17.6	
Approach LOS		C			B			D			B	
Queue Length 50th (ft)		145	21	19	29			147			164	
Queue Length 95th (ft)		#237	74	46	57			#336			272	
Internal Link Dist (ft)		168			277			560			625	
Turn Bay Length (ft)												
Base Capacity (vph)		433	558	227	516			471			809	
Starvation Cap Reductn		0	0	0	0			0			0	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.72	0.35	0.26	0.22			0.90			0.71	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 58 (83%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 28.1 Intersection LOS: C
Intersection Capacity Utilization 91.9% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Crawford St. & Centre Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	17	3	7	2	72	401	0	0	299	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			231			283			70	
Travel Time (s)		8.6			6.3			7.7			1.9	
Confl. Peds. (#/hr)	19		20	20		19	52		16	16		52
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Heavy Vehicles (%)	15%	2%	0%	0%	0%	0%	0%	12%	0%	0%	9%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	25	0	0	620	0	0	599	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 73.7% ICU Level of Service D
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	17	3	7	2	72	401	0	0	299	213
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Hourly flow rate (vph)	0	0	20	12	9	4	112	508	0	0	348	251
Pedestrians		52			16			20			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			1			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.88	0.88		0.88	0.88	0.88				0.88		
vC, conflicting volume	1285	1274	545	1262	1399	543	650			524		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1256	1242	545	1229	1385	411	650			389		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	89	91	99	88			100		
cM capacity (veh/h)	93	127	510	111	105	551	905			1024		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	25	620	598
Volume Left	0	12	112	0
Volume Right	20	4	0	251
cSH	510	124	905	1024
Volume to Capacity	0.04	0.20	0.12	0.00
Queue Length 95th (ft)	3	18	11	0
Control Delay (s)	12.4	41.4	3.1	0.0
Lane LOS	B	E	A	
Approach Delay (s)	12.4	41.4	3.1	0.0
Approach LOS	B	E		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	0	102	21	420	189	90	292	0	0	353	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	10	12	12	11	12	12	12	12
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		130			635			238			414	
Travel Time (s)		3.5			17.3			6.5			11.3	
Confl. Peds. (#/hr)	880		138	138		880	49		130	130		49
Peak Hour Factor	0.77	0.92	0.82	0.75	0.82	0.97	0.88	0.96	0.92	0.92	0.89	0.75
Heavy Vehicles (%)	3%	2%	28%	0%	5%	19%	0%	1%	2%	2%	8%	17%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	28	707	0	0	406	0	0	438	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Minimum Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%			58.6%	
Maximum Green (s)	23.0	23.0		23.0	23.0		35.0	35.0			35.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	13.0	13.0		13.0	13.0		25.0	25.0			25.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
v/c Ratio		1.12		0.10	1.65			0.35			0.30	
Control Delay		124.0		17.5	324.3			19.4			8.9	
Queue Delay		0.0		0.0	0.0			0.5			0.0	
Total Delay		124.0		17.5	324.3			20.0			8.9	
LOS		F		B	F			B			A	
Approach Delay		124.0			312.6			20.0			8.9	
Approach LOS		F			F			B			A	
Queue Length 50th (ft)		~47		8	~450			77			62	
Queue Length 95th (ft)		#134		21	#572			109			96	
Internal Link Dist (ft)		50			555			158			334	
Turn Bay Length (ft)												
Base Capacity (vph)		153		289	429			1156			1462	
Starvation Cap Reductn		0		0	0			390			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		1.12		0.10	1.65			0.53			0.30	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 42 (60%), Referenced to phase 2:NBTL, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.65
Intersection Signal Delay: 150.3 Intersection LOS: F
Intersection Capacity Utilization 124.5% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 11: Sixth Ave. & Fifth Ave.

Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	453	615	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	635			437	582	
Travel Time (s)	17.3			11.9	15.9	
Confl. Peds. (#/hr)			44			
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	10%	2%	2%
Parking (#/hr)			0	0		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1180	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 36.8% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	453	615	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	533	647	0	0
Pedestrians					44	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			44		1434	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		1434	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			66		100	100
cM capacity (veh/h)			1563		82	1017

Direction, Lane #	WB 1	WB 2
Volume Total	749	432
Volume Left	533	0
Volume Right	0	0
cSH	1563	1700
Volume to Capacity	0.34	0.25
Queue Length 95th (ft)	38	0
Control Delay (s)	7.0	0.0
Lane LOS	A	
Approach Delay (s)	4.4	
Approach LOS		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	823	182	178	510	0	0	396	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Right Turn on Red			No			Yes			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		437			753			310			646	
Travel Time (s)		11.9			20.5			8.5			17.6	
Confl. Peds. (#/hr)				105		173	29					29
Peak Hour Factor	0.92	0.92	0.92	0.79	0.88	0.93	0.85	0.82	0.92	0.92	0.75	0.92
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1321	0	209	622	0	0	528	337
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Minimum Split (s)				44.0	44.0		30.0	30.0			30.0	30.0
Total Split (s)				44.0	44.0		36.0	36.0			36.0	36.0
Total Split (%)				55.0%	55.0%		45.0%	45.0%			45.0%	45.0%
Maximum Green (s)				37.0	37.0		30.0	30.0			30.0	30.0
Yellow Time (s)				3.0	3.0		4.0	4.0			4.0	4.0
All-Red Time (s)				4.0	4.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)					7.0		6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				15.0	15.0		9.0	9.0			9.0	9.0
Flash Dont Walk (s)				22.0	22.0		15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0			0	0
Act Effct Green (s)					37.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio					0.46		0.38	0.38			0.38	0.38
v/c Ratio					1.09		1.45	1.01			0.81	0.37
Control Delay					68.2		246.3	52.3			34.5	19.7
Queue Delay					0.0		0.0	30.5			0.0	0.0
Total Delay					68.2		246.3	82.8			34.5	19.7
LOS					E		F	F			C	B
Approach Delay					68.2			123.9			28.7	
Approach LOS					E			F			C	
Queue Length 50th (ft)					~402		~145	~260			232	68
Queue Length 95th (ft)					#503		m#180	m#412			271	105
Internal Link Dist (ft)		357			673			230			566	
Turn Bay Length (ft)												
Base Capacity (vph)					1214		144	613			650	907
Starvation Cap Reductn					0		0	70			0	0
Spillback Cap Reductn					0		0	0			0	0
Storage Cap Reductn					0		0	0			0	0
Reduced v/c Ratio					1.09		1.45	1.15			0.81	0.37

Intersection Summary

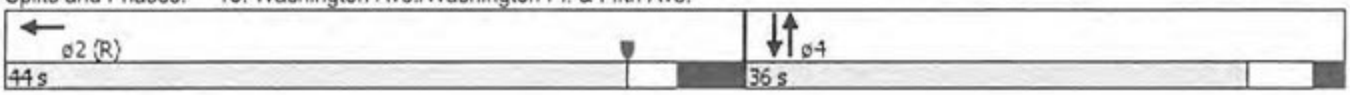
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 130
Control Type: Pretimed
Maximum v/c Ratio: 1.45
Intersection Signal Delay: 72.2 Intersection LOS: E
Intersection Capacity Utilization 87.7% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Washington Ave./Washington Pl. & Fifth Ave.

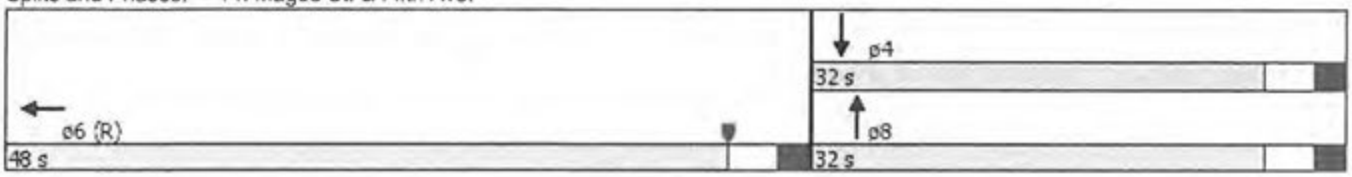


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	916	0	224	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		753			499			335			119	
Travel Time (s)		20.5			13.6			9.1			3.2	
Confl. Peds. (#/hr)				46		108	15		8	8		15
Peak Hour Factor	0.92	0.92	0.92	0.66	0.97	0.50	0.80	0.90	0.92	0.92	0.25	0.25
Heavy Vehicles (%)	2%	2%	2%	0%	9%	0%	1%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1214	0	0	280	0	0	0	0
Turn Type				Perm	NA		Perm	NA				
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				48.0	48.0		32.0	32.0			32.0	
Total Split (%)				60.0%	60.0%		40.0%	40.0%			40.0%	
Maximum Green (s)				43.0	43.0		27.0	27.0			27.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					43.0			27.0				
Actuated g/C Ratio					0.54			0.34				
v/c Ratio					0.73			0.63				
Control Delay					8.9			23.2				
Queue Delay					0.1			0.0				
Total Delay					9.0			23.2				
LOS					A			C				
Approach Delay					9.0			23.2				
Approach LOS					A			C				
Queue Length 50th (ft)					95			100				
Queue Length 95th (ft)					123			m145				
Internal Link Dist (ft)		673			419			255			39	
Turn Bay Length (ft)												
Base Capacity (vph)					1655			447				
Starvation Cap Reductn					36			0				
Spillback Cap Reductn					15			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.75			0.63				

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 63 (79%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 11.6 Intersection LOS: B
Intersection Capacity Utilization 57.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Magee St. & Fifth Ave.

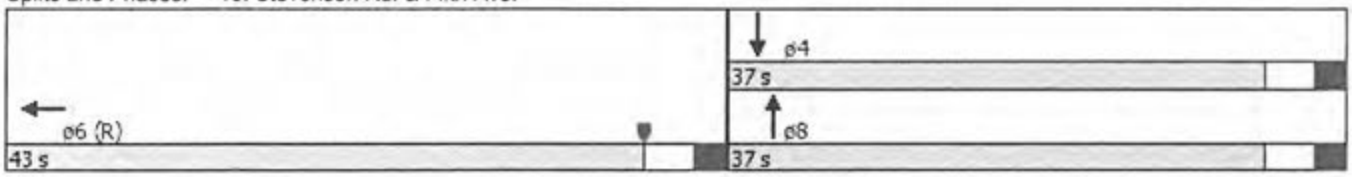


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	862	71	178	174	0	0	36	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		499			406			324			114	
Travel Time (s)		13.6			11.1			8.8			3.1	
Confl. Peds. (#/hr)				16		44	9					9
Peak Hour Factor	0.92	0.92	0.92	0.60	0.95	0.68	0.91	0.85	0.92	0.92	0.82	0.79
Heavy Vehicles (%)	2%	2%	2%	0%	12%	5%	6%	0%	2%	2%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1034	0	0	401	0	0	171	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				43.0	43.0		37.0	37.0			37.0	
Total Split (%)				53.8%	53.8%		46.3%	46.3%			46.3%	
Maximum Green (s)				38.0	38.0		32.0	32.0			32.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
v/c Ratio					0.73			0.72			0.24	
Control Delay					10.6			26.5			10.8	
Queue Delay					0.3			4.5			0.0	
Total Delay					10.9			31.0			10.8	
LOS					B			C			B	
Approach Delay					10.9			31.0			10.8	
Approach LOS					B			C			B	
Queue Length 50th (ft)					108			160			33	
Queue Length 95th (ft)					m141			252			63	
Internal Link Dist (ft)		419			326			244			34	
Turn Bay Length (ft)												
Base Capacity (vph)					1409			557			705	
Starvation Cap Reductn					70			96			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.77			0.87			0.24	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 52 (65%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 15.9 Intersection LOS: B
Intersection Capacity Utilization 71.6% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Stevenson Rd. & Fifth Ave.



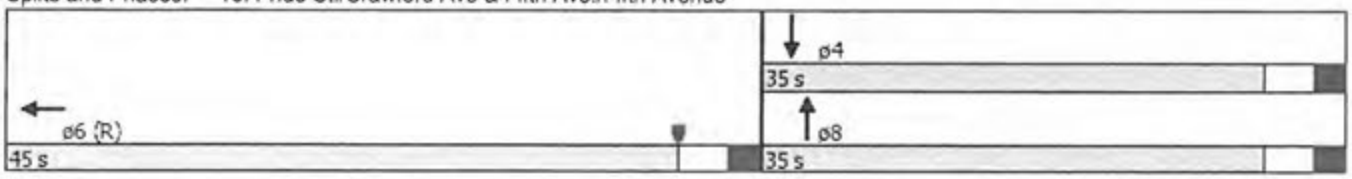
16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	35	814	254	70	217	0	0	212	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		406			265			320			283	
Travel Time (s)		11.1			7.2			8.7			7.7	
Confl. Peds. (#/hr)				25		45	22		40	40		22
Peak Hour Factor	0.92	0.92	0.92	0.71	0.94	0.95	0.71	0.79	0.92	0.79	0.79	0.88
Heavy Vehicles (%)	2%	2%	2%	0%	18%	0%	0%	6%	2%	2%	16%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1182	0	0	374	0	0	387	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				45.0	45.0		35.0	35.0			35.0	
Total Split (%)				56.3%	56.3%		43.8%	43.8%			43.8%	
Maximum Green (s)				40.0	40.0		30.0	30.0			30.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					40.0			30.0			30.0	
Actuated g/C Ratio					0.50			0.38			0.38	
v/c Ratio					0.80			0.87			0.52	
Control Delay					20.9			50.1			20.7	
Queue Delay					0.0			1.3			0.0	
Total Delay					20.9			51.5			20.7	
LOS					C			D			C	
Approach Delay					20.9			51.5			20.7	
Approach LOS					C			D			C	
Queue Length 50th (ft)					232			195			134	
Queue Length 95th (ft)					322			#271			179	
Internal Link Dist (ft)		326			185			240			203	
Turn Bay Length (ft)												
Base Capacity (vph)					1472			432			748	
Starvation Cap Reductn					0			10			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.80			0.89			0.52	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 41 (51%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 26.8 Intersection LOS: C
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	103	265	28	7	364	0	0	485	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		142			582			105			238	
Travel Time (s)		3.9			15.9			2.9			6.5	
Confl. Peds. (#/hr)				13		40	21					21
Peak Hour Factor	0.92	0.92	0.92	0.87	0.78	0.63	0.30	0.96	0.25	0.92	0.92	0.80
Heavy Vehicles (%)	2%	2%	2%	4%	1%	0%	0%	1%	2%	2%	11%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	118	340	44	0	402	0	0	549	0
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Detector Phase				4	4	4	1 2	2			6	
Switch Phase												
Minimum Initial (s)				8.0	8.0	8.0		18.0			25.0	
Minimum Split (s)				27.5	27.5	27.5		30.5			30.5	
Total Split (s)				28.0	28.0	28.0		31.0			42.0	
Total Split (%)				40.0%	40.0%	40.0%		44.3%			60.0%	
Maximum Green (s)				22.5	22.5	22.5		25.5			36.5	
Yellow Time (s)				3.5	3.5	3.5		3.5			3.5	
All-Red Time (s)				2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.5	5.5	5.5		5.5			5.5	
Lead/Lag								Lag				
Lead-Lag Optimize?												
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Recall Mode				Ped	Ped	Ped		C-Max			C-Max	
Walk Time (s)				12.0	12.0	12.0		15.0			15.0	
Flash Dont Walk (s)				10.0	10.0	10.0		10.0			10.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effct Green (s)				22.5	22.5	22.5		31.0			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.44			0.52	
v/c Ratio				0.26	0.67	0.11		0.29			0.36	
Control Delay				19.4	28.3	17.6		5.5			9.4	
Queue Delay				26.1	0.0	0.0		9.2			0.8	
Total Delay				45.6	28.3	17.6		14.7			10.2	
LOS				D	C	B		B			B	
Approach Delay					31.4			14.7			10.2	
Approach LOS					C			B			B	
Queue Length 50th (ft)				37	125	13		25			92	
Queue Length 95th (ft)				72	173	24		m19			m123	
Internal Link Dist (ft)		62			502			25			158	
Turn Bay Length (ft)												
Base Capacity (vph)				462	507	414		1410			1519	
Starvation Cap Reductn				0	0	0		965			632	

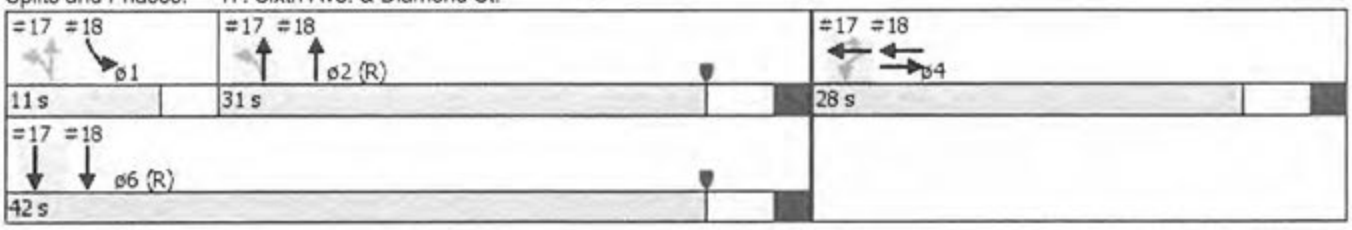
Lane Group	ø1
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	16%
Maximum Green (s)	8.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				333	0	0		0			0	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				0.91	0.67	0.11		0.90			0.62	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 60 (86%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.31
Intersection Signal Delay: 18.8 Intersection LOS: B
Intersection Capacity Utilization 48.3% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Sixth Ave. & Diamond St.



Lane Group	ø1
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	565	35	59	147	8	211	342	320	356	186	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	12	12	11	12	12	12	12
Right Turn on Red			No			Yes			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			634			330			105	
Travel Time (s)		8.9			17.3			9.0			2.9	
Confl. Peds. (#/hr)	8		107	107		8	19		18	18		19
Peak Hour Factor	0.60	0.96	0.80	0.90	0.90	0.90	0.87	0.94	0.92	0.95	0.85	0.67
Heavy Vehicles (%)	4%	1%	0%	2%	2%	2%	0%	1%	4%	12%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	629	44	0	238	0	0	955	0	0	660	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		8.0	25.0	
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5		30.5	30.5		11.0	30.5	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		31.0	31.0		11.0	42.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		44.3%	44.3%		15.7%	60.0%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		25.5	25.5		8.0	36.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5			5.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	Ped	Ped	Ped	Ped	Ped		C-Max	C-Max		Min	C-Max	
Walk Time (s)	12.0	12.0	12.0	12.0	12.0		15.0	15.0			15.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effct Green (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
v/c Ratio		1.25	0.11		2.31			1.25			1.79dl	
Control Delay		151.9	17.7		638.2			145.7			10.1	
Queue Delay		1.6	0.0		4.4			0.1			0.2	
Total Delay		153.5	17.7		642.7			145.8			10.4	
LOS		F	B		F			F			B	
Approach Delay		144.6			642.7			145.8			10.4	
Approach LOS		F			F			F			B	
Queue Length 50th (ft)		~345	13		~173			~263			34	
Queue Length 95th (ft)		#532	31		#265			#379			44	
Internal Link Dist (ft)		245			554			250			25	
Turn Bay Length (ft)												
Base Capacity (vph)		505	401		103			764			991	
Starvation Cap Reductn		0	0		0			0			48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		85	0		17			10			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		1.50	0.11		2.77			1.27			0.70	

Intersection Summary

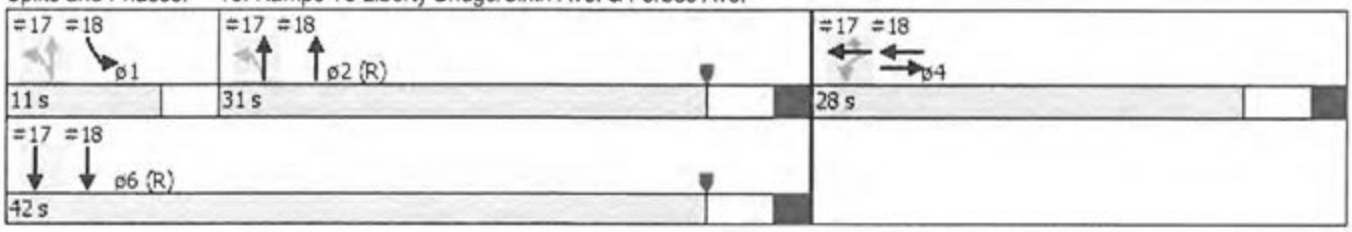
Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 60 (86%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.31
Intersection Signal Delay: 156.9 Intersection LOS: F
Intersection Capacity Utilization 122.5% ICU Level of Service H
Analysis Period (min) 15

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1276	367	0	0	214	889
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	10	10
Storage Length (ft)		0	0		0	60
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Right Turn on Red		No				No
Link Speed (mph)	25			25	25	
Link Distance (ft)	634			303	752	
Travel Time (s)	17.3			8.3	20.5	
Confl. Peds. (#/hr)		85				
Peak Hour Factor	0.93	0.87	0.92	0.92	0.86	0.86
Heavy Vehicles (%)	6%	6%	2%	2%	3%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1794	0	0	0	249	1034
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Minimum Split (s)	35.0				22.0	22.0
Total Split (s)	48.0				32.0	32.0
Total Split (%)	60.0%				40.0%	40.0%
Maximum Green (s)	43.0				27.0	27.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	2.0				2.0	2.0
Lost Time Adjust (s)	0.0				0.0	0.0
Total Lost Time (s)	5.0				5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	10.0				10.0	10.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	43.0				27.0	27.0
Actuated g/C Ratio	0.54				0.34	0.34
v/c Ratio	1.23				0.50	1.32
Control Delay	131.3				25.4	180.2
Queue Delay	1.1				0.0	0.1
Total Delay	132.4				25.4	180.3
LOS	F				C	F
Approach Delay	132.4				150.2	
Approach LOS	F				F	
Queue Length 50th (ft)	~591				98	~385
Queue Length 95th (ft)	#725				158	#482
Internal Link Dist (ft)	554			223	672	
Turn Bay Length (ft)						60
Base Capacity (vph)	1458				496	782
Starvation Cap Reductn	0				0	0
Spillback Cap Reductn	346				0	11
Storage Cap Reductn	0				0	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Reduced v/c Ratio	1.61				0.50	1.34

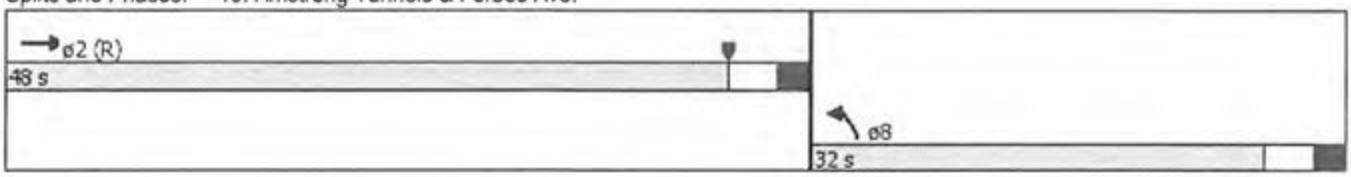
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 120
Control Type: Pretimed
Maximum v/c Ratio: 1.32
Intersection Signal Delay: 139.8 Intersection LOS: F
Intersection Capacity Utilization 96.3% ICU Level of Service F
Analysis Period (min) 15

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

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

Splits and Phases: 19: Amstrong Tunnels & Forbes Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	607	1443	115	0	0	0	0	51	62	443	86	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		303			745			205			310	
Travel Time (s)		8.3			20.3			5.6			8.5	
Confl. Peds. (#/hr)	45		79						51	51		
Peak Hour Factor	0.82	0.88	0.64	0.92	0.92	0.92	0.92	0.56	0.68	0.81	0.82	0.92
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	4%	4%	1%	1%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	740	1820	0	0	0	0	0	91	91	0	652	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Minimum Split (s)	51.0	51.0						23.0	23.0	23.0	23.0	
Total Split (s)	51.0	51.0						29.0	29.0	29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%	36.3%	36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0	24.0	24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	31.0	31.0						8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0						10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0	0	0	0	
Act Effct Green (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
v/c Ratio	0.89	1.10						0.19	0.23		2.19	
Control Delay	15.4	60.6						22.1	17.2		560.3	
Queue Delay	48.6	3.0						0.0	0.0		0.0	
Total Delay	63.9	63.6						22.1	17.2		560.3	
LOS	E	E						C	B		F	
Approach Delay		63.7						19.6			560.3	
Approach LOS		E						B			F	
Queue Length 50th (ft)	238	~545						34	23		~550	
Queue Length 95th (ft)	m183	m248						41	40		m#626	
Internal Link Dist (ft)		223			665			125			230	
Turn Bay Length (ft)												
Base Capacity (vph)	831	1662						491	403		298	
Starvation Cap Reductn	233	377						0	0		0	
Spillback Cap Reductn	90	0						0	0		0	
Storage Cap Reductn	0	0						0	0		0	
Reduced v/c Ratio	1.24	1.42						0.19	0.23		2.19	

Intersection Summary

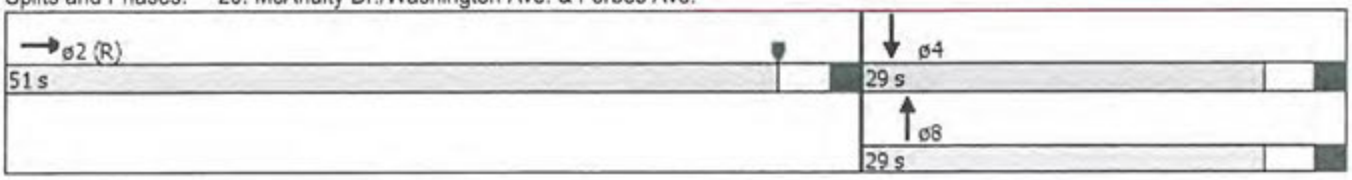
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 40 (50%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 2.19
Intersection Signal Delay: 156.7 Intersection LOS: F
Intersection Capacity Utilization 108.6% ICU Level of Service G
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: McAnulty Dr./Washington Ave. & Forbes Ave.



21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

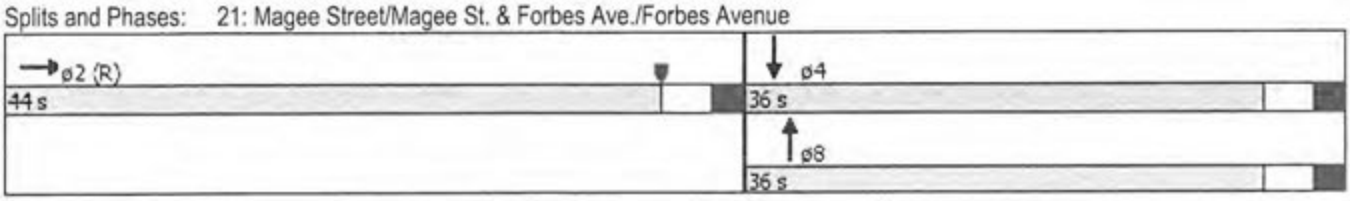
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	931	137	0	0	0	0	39	38	30	158	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		745			503			182			335	
Travel Time (s)		20.3			13.7			5.0			9.1	
Confl. Peds. (#/hr)	41		42						14	14		
Peak Hour Factor	0.73	0.94	0.59	0.92	0.92	0.92	0.92	0.63	0.80	0.54	0.33	0.92
Heavy Vehicles (%)	4%	7%	0%	2%	2%	2%	2%	0%	25%	4%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1363	0	0	0	0	0	110	0	0	535	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	44.0	44.0						36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%						45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0						31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		39.0						31.0			31.0	
Actuated g/C Ratio		0.49						0.39			0.39	
v/c Ratio		0.89						0.17			0.79	
Control Delay		20.9						10.5			34.1	
Queue Delay		0.0						0.0			5.8	
Total Delay		20.9						10.5			39.9	
LOS		C						B			D	
Approach Delay		20.9						10.5			39.9	
Approach LOS		C						B			D	
Queue Length 50th (ft)		324						19			198	
Queue Length 95th (ft)		m240						30			95	
Internal Link Dist (ft)		665			423			102			255	
Turn Bay Length (ft)												
Base Capacity (vph)		1527						645			679	
Starvation Cap Reductn		0						0			98	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.89						0.17			0.92	

21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 6 (8%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 25.4 Intersection LOS: C
Intersection Capacity Utilization 58.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

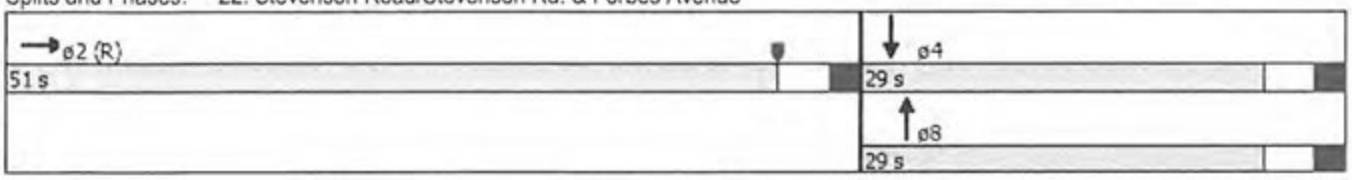


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	681	132	0	0	0	0	286	52	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		503			408			159			324	
Travel Time (s)		13.7			11.1			4.3			8.8	
Confl. Peds. (#/hr)	28		28						13	13		
Peak Hour Factor	0.62	0.93	0.71	0.92	0.92	0.92	0.89	0.89	0.93	0.69	0.60	0.92
Heavy Vehicles (%)	1%	9%	6%	2%	2%	2%	4%	5%	2%	0%	8%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1221	0	0	0	0	0	377	0	0	42	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	51.0	51.0						29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%		36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
v/c Ratio		0.68						0.60			0.21	
Control Delay		4.0						28.0			27.0	
Queue Delay		0.4						0.2			0.0	
Total Delay		4.4						28.3			27.0	
LOS		A						C			C	
Approach Delay		4.4						28.3			27.0	
Approach LOS		A						C			C	
Queue Length 50th (ft)		40						155			15	
Queue Length 95th (ft)		m47						240			m26	
Internal Link Dist (ft)		423			328			79			244	
Turn Bay Length (ft)												
Base Capacity (vph)		1789						625			201	
Starvation Cap Reductn		193						0			0	
Spillback Cap Reductn		86						28			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.77						0.63			0.21	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 10.5 Intersection LOS: B
Intersection Capacity Utilization 61.3% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Stevenson Road/Stevenson Rd. & Forbes Avenue



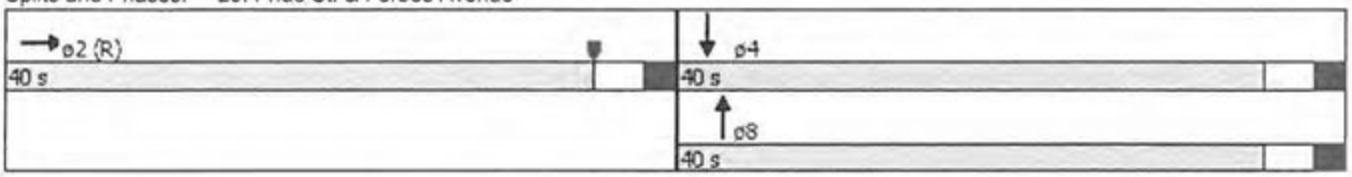
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	498	35	0	0	0	0	126	27	161	52	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		408			281			148			320	
Travel Time (s)		11.1			7.7			4.0			8.7	
Confl. Peds. (#/hr)	44		19						4	4		
Peak Hour Factor	0.79	0.94	0.63	0.92	0.92	0.92	0.92	0.77	0.67	0.77	0.78	0.92
Heavy Vehicles (%)	1%	11%	0%	2%	2%	2%	2%	9%	0%	7%	25%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	809	0	0	0	0	0	204	0	0	276	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	40.0	40.0						40.0		40.0	40.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	35.0	35.0						35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		35.0						35.0			35.0	
Actuated g/C Ratio		0.44						0.44			0.44	
v/c Ratio		0.58						0.27			0.58	
Control Delay		8.1						14.0			18.8	
Queue Delay		0.0						0.3			0.0	
Total Delay		8.1						14.3			18.8	
LOS		A						B			B	
Approach Delay		8.1						14.3			18.8	
Approach LOS		A						B			B	
Queue Length 50th (ft)		53						56			48	
Queue Length 95th (ft)		93						83			m91	
Internal Link Dist (ft)		328			201			68			240	
Turn Bay Length (ft)												
Base Capacity (vph)		1391						763			474	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		0						192			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.58						0.36			0.58	

Intersection Summary

Area Type: Other

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 28 (35%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Pride St. & Forbes Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	1	1	6	59	28	9	170	3	10	74	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	11	11	11	11
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		487			402			380			251	
Travel Time (s)		13.3			11.0			10.4			6.8	
Confl. Peds. (#/hr)	200		125	125		200	225		200	200		225
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	104	0	0	202	0	0	111	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	34	1	1	6	59	28	9	170	3	10	74	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	1	1	7	66	31	10	189	3	11	82	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	40	103	202	111
Volume Left (vph)	38	7	10	11
Volume Right (vph)	1	31	3	18
Hadj (s)	0.21	-0.13	0.03	-0.04
Departure Headway (s)	5.0	4.5	4.4	4.4
Degree Utilization, x	0.06	0.13	0.25	0.14
Capacity (veh/h)	666	733	785	768
Control Delay (s)	8.3	8.2	8.9	8.1
Approach Delay (s)	8.3	8.2	8.9	8.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	9	4	22	24	6	47	23	1	2	93	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	11	11	11	11
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		402			301			296			236	
Travel Time (s)		11.0			8.2			8.1			6.4	
Confl. Peds. (#/hr)	175		100	100		175	125		150	150		125
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	58	0	0	79	0	0	129	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	9	4	22	24	6	47	23	1	2	93	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	10	4	24	27	7	52	26	1	2	103	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	16	58	79	130
Volume Left (vph)	1	24	52	2
Volume Right (vph)	4	7	1	24
Hadj (s)	-0.12	0.05	0.16	-0.08
Departure Headway (s)	4.3	4.4	4.4	4.1
Degree Utilization, x	0.02	0.07	0.10	0.15
Capacity (veh/h)	790	764	800	862
Control Delay (s)	7.4	7.8	7.8	7.8
Approach Delay (s)	7.4	7.8	7.8	7.8
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	7	33	37	12	2	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	310		297			296
Travel Time (s)	8.5		8.1			8.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	54	0	0	132
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 17.8% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	33	37	12	2	117
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	37	41	13	2	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	182	48			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	182	48			54	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	96			100	
cM capacity (veh/h)	806	1021			1551	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	44	54	132
Volume Left	8	0	2
Volume Right	37	13	0
cSH	976	1700	1551
Volume to Capacity	0.05	0.03	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	8.9	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	12	19	8	2	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	293		236			320
Travel Time (s)	8.0		6.4			8.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	30	0	0	91
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 15.8% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	30	12	19	8	2	80
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	13	21	9	2	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	119	26			30	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119	26			30	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	876	1050			1583	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	47	30	91
Volume Left	33	0	2
Volume Right	13	9	0
cSH	919	1700	1583
Volume to Capacity	0.05	0.02	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.1	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	480	70	1	192	27	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11
Grade (%)	0%			-12%	0%	
Link Speed (mph)	25			25	25	
Link Distance (ft)	362			548	320	
Travel Time (s)	9.9			14.9	8.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	611	0	0	214	30	16
Sign Control	Free			Free	Stop	

Intersection Summary

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	480	70	1	192	27	14
Sign Control	Free			Free	Stop	
Grade	0%			-12%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	533	78	1	213	30	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	362			548		
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			611		681	306
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			295		374	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		94	98
cM capacity (veh/h)			1116		529	958

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	356	256	72	142	46
Volume Left	0	0	1	0	30
Volume Right	0	78	0	0	16
cSH	1700	1700	1116	1700	625
Volume to Capacity	0.21	0.15	0.00	0.08	0.07
Queue Length 95th (ft)	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.1	0.0	11.2
Lane LOS			A		B
Approach Delay (s)	0.0		0.0		11.2
Approach LOS					B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	94	672	34	0	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12
Grade (%)	0%		4%			-4%
Link Speed (mph)	25		25			25
Link Distance (ft)	487		133			306
Travel Time (s)	13.3		3.6			8.3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	104	785	0	0	672
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 26.2% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	94	672	34	0	605
Sign Control	Stop		Free			Free
Grade	0%		4%			-4%
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90
Hourly flow rate (vph)	0	104	747	38	0	672
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			133			306
pX, platoon unblocked						
vC, conflicting volume	990	268			784	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	990	268			784	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	86			100	
cM capacity (veh/h)	243	730			830	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	104	299	299	187	224	224	224
Volume Left	0	0	0	0	0	0	0
Volume Right	104	0	0	38	0	0	0
cSH	730	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.14	0.18	0.18	0.11	0.13	0.13	0.13
Queue Length 95th (ft)	12	0	0	0	0	0	0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.8	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Volume (vph)	0	451	344	18	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Link Speed (mph)		25	25		25	
Link Distance (ft)		374	248		376	
Travel Time (s)		10.2	6.8		10.3	
Confl. Peds. (#/hr)	300			300		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	501	402	0	0	32
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	451	344	18	0	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	501	382	20	0	32
Pedestrians					300	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					23	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		801	248			
pX, platoon unblocked						
vC, conflicting volume	702				943	501
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	702				943	501
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	92
cM capacity (veh/h)	687				201	397

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	251	251	255	147	32
Volume Left	0	0	0	0	0
Volume Right	0	0	0	20	32
cSH	1700	1700	1700	1700	397
Volume to Capacity	0.15	0.15	0.15	0.09	0.08
Queue Length 95th (ft)	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	14.9
Lane LOS					B
Approach Delay (s)	0.0		0.0		14.9
Approach LOS					B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Lane Group	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	178	156	116	587	172	569	368	526
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Right Turn on Red	No				Yes			No
Link Speed (mph)		25		25			25	
Link Distance (ft)		325		306			334	
Travel Time (s)		8.9		8.3			9.1	
Confl. Peds. (#/hr)			17		17			17
Peak Hour Factor	0.87	0.89	0.95	0.88	0.79	0.92	0.86	0.99
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	380	122	667	218	618	428	531
Turn Type	Perm	NA	custom	NA	custom	custom	NA	custom
Protected Phases		2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0	26.0	26.0	26.0
Total Split (s)	26.0	26.0	26.0	25.0	25.0	39.0	39.0	39.0
Total Split (%)	28.9%	28.9%	28.9%	27.8%	27.8%	43.3%	43.3%	43.3%
Maximum Green (s)	21.0	21.0	21.0	20.0	20.0	34.0	34.0	34.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?								
Walk Time (s)						11.0	11.0	11.0
Flash Dont Walk (s)						10.0	10.0	10.0
Pedestrian Calls (#/hr)						0	0	0
Act Effct Green (s)		21.0	21.0	20.0	20.0	34.0	34.0	34.0
Actuated g/C Ratio		0.23	0.23	0.22	0.22	0.38	0.38	0.38
v/c Ratio		1.10	0.39	0.96	0.45	1.04	0.68	1.00
Control Delay		112.3	33.6	44.4	3.0	76.4	30.2	68.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		112.3	33.6	44.4	3.0	76.4	30.2	68.1
LOS		F	C	D	A	E	C	E
Approach Delay		93.2		34.2			61.1	
Approach LOS		F		C			E	
Queue Length 50th (ft)		~247	59	154	1	~382	200	296
Queue Length 95th (ft)		#413	111	m#271	m3	#587	288	#511
Internal Link Dist (ft)		245		226			254	
Turn Bay Length (ft)								
Base Capacity (vph)		346	310	693	480	596	627	533
Starvation Cap Reductn		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0
Reduced v/c Ratio		1.10	0.39	0.96	0.45	1.04	0.68	1.00

Intersection Summary

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

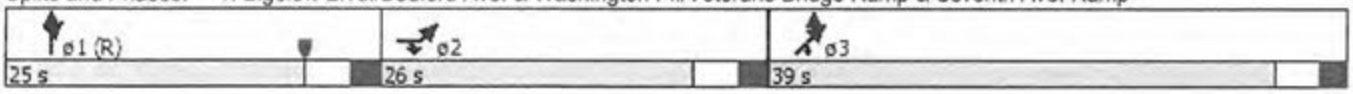
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 48 (53%), Referenced to phase 1:NBT, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 58.5 Intersection LOS: E
Intersection Capacity Utilization 86.1% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Lane Configurations												
Volume (vph)	25	0	4	134	184	0	353	41	412	79	25	193
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	16	13	12	12	12
Grade (%)		2%			2%				10%			-12%
Storage Length (ft)	0		1	0		0				60	0	
Storage Lanes	1		0	0		1				1	0	
Taper Length (ft)	25			25							25	
Right Turn on Red			No				No			Yes		
Link Speed (mph)		25			50				25			25
Link Distance (ft)		296			281				549			362
Travel Time (s)		8.1			3.8				15.0			9.9
Confl. Peds. (#/hr)			24					22		52	52	
Peak Hour Factor	0.50	0.43	0.25	0.84	0.81	0.80	0.80	0.69	0.84	0.92	0.75	0.80
Heavy Vehicles (%)	3%	0%	0%	2%	2%	2%	2%	0%	2%	3%	0%	2%
Parking (#/hr)	0	0	0									
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	16	0	0	387	441	0	59	576	0	0	274
Turn Type	Split	NA		Split	NA	Perm		Split	NA		Split	NA
Protected Phases	9	9		10	10			2	2		4	4
Permitted Phases						10						
Detector Phase	9	9		10	10	10		2	2		4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0		4.0	4.0
Minimum Split (s)	26.0	26.0		22.0	22.0	22.0		26.0	26.0		22.0	22.0
Total Split (s)	26.0	26.0		36.0	36.0	36.0		26.0	26.0		22.0	22.0
Total Split (%)	23.6%	23.6%		32.7%	32.7%	32.7%		23.6%	23.6%		20.0%	20.0%
Maximum Green (s)	20.0	20.0		30.0	30.0	30.0		20.0	20.0		16.0	16.0
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5		3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5		2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0			6.0	6.0		6.0	6.0			6.0
Lead/Lag	Lead	Lead		Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0		3.0	3.0	3.0		4.0	4.0		3.0	3.0
Recall Mode	None	None		None	None	None		None	None		None	None
Walk Time (s)	7.0	7.0		5.0	5.0	5.0		7.0	7.0		5.0	5.0
Flash Dont Walk (s)	13.0	13.0		11.0	11.0	11.0		13.0	13.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0		0	0
Act Effct Green (s)	9.9	9.9			30.3	30.3		20.2	20.2			12.7
Actuated g/C Ratio	0.10	0.10			0.32	0.32		0.21	0.21			0.13
v/c Ratio	0.35	0.13			0.74	0.97		0.16	0.88			0.60
Control Delay	48.1	42.2			40.9	71.4		34.8	53.6			45.5
Queue Delay	0.0	0.0			0.0	0.0		0.0	0.0			0.0
Total Delay	48.1	42.2			40.9	71.4		34.8	53.6			45.5
LOS	D	D			D	E		C	D			D
Approach Delay		46.7			57.1				51.9			45.5
Approach LOS		D			E				D			D
Queue Length 50th (ft)	29	9			215	~276		30	180			84

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SBR2	NEL2	NET	NER	SWL	SWT
Queue Length 95th (ft)	36	14			309	#433		53	#278			115
Internal Link Dist (ft)		216			201				469			282
Turn Bay Length (ft)												
Base Capacity (vph)	291	254			522	453		374	651			576
Starvation Cap Reductn	0	0			0	0		0	0			0
Spillback Cap Reductn	0	0			0	0		0	0			0
Storage Cap Reductn	0	0			0	0		0	0			0
Reduced v/c Ratio	0.17	0.06			0.74	0.97		0.16	0.88			0.48

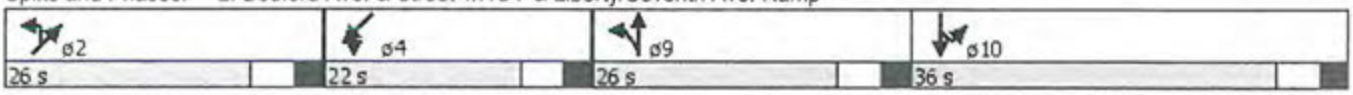
Intersection Summary

Area Type: CBD
Cycle Length: 110
Actuated Cycle Length: 94.4
Natural Cycle: 110
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 53.1 — Intersection LOS: D
Intersection Capacity Utilization 78.3% — ICU Level of Service D
Analysis Period (min) 15

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

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

Splits and Phases: 2: Bedford Ave. & Street 1/HOV & Liberty/Seventh Ave. Ramp



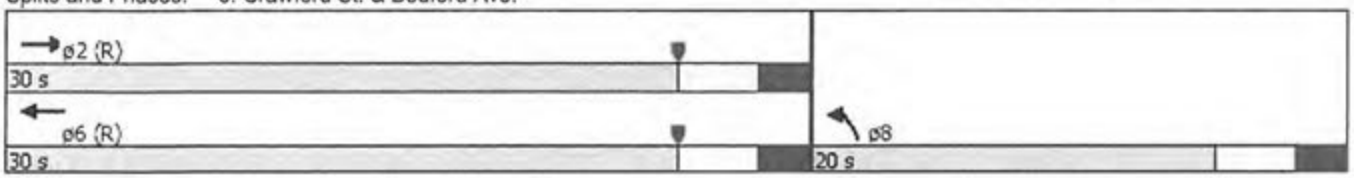
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	87	414	32	51	148	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	548			264	559	
Travel Time (s)	12.5			6.0	12.7	
Confl. Peds. (#/hr)		9	9			
Peak Hour Factor	0.72	0.84	0.89	0.74	0.92	0.59
Heavy Vehicles (%)	0%	2%	8%	2%	4%	8%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	614	0	0	105	236	0
Turn Type	NA		Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases			6			
Minimum Split (s)	21.0		21.0	21.0	20.0	
Total Split (s)	30.0		30.0	30.0	20.0	
Total Split (%)	60.0%		60.0%	60.0%	40.0%	
Maximum Green (s)	25.0		25.0	25.0	15.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0		5.0	5.0		
Flash Dont Walk (s)	11.0		11.0	11.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effct Green (s)	25.0			25.0	15.0	
Actuated g/C Ratio	0.50			0.50	0.30	
v/c Ratio	0.58			0.15	0.44	
Control Delay	4.4			7.5	14.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.4			7.5	14.3	
LOS	A			A	B	
Approach Delay	4.4			7.5	14.3	
Approach LOS	A			A	B	
Queue Length 50th (ft)	17			15	43	
Queue Length 95th (ft)	30			28	92	
Internal Link Dist (ft)	468			184	479	
Turn Bay Length (ft)						
Base Capacity (vph)	1058			712	534	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.58			0.15	0.44	

Intersection Summary

Area Type: Other

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 7.2 — Intersection LOS: A
Intersection Capacity Utilization 50.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Crawford St. & Bedford Ave.



4: Crawford St. & Wylie Avenue/Wylie Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	11	36	0	18	52	183	14	9	397	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	12
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		254			332			705			559	
Travel Time (s)		6.9			9.1			19.2			15.2	
Confl. Peds. (#/hr)				3		4			8	8		
Peak Hour Factor	0.90	0.90	0.90	0.52	0.90	0.57	0.90	0.81	0.41	0.67	0.82	0.90
Heavy Vehicles (%)	2%	2%	2%	3%	2%	0%	2%	5%	0%	0%	1%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	101	0	0	318	0	0	497	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 55.1% ICU Level of Service B
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	11	36	0	18	52	183	14	9	397	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.52	0.90	0.57	0.90	0.81	0.41	0.67	0.82	0.90
Hourly flow rate (vph)	0	0	12	69	0	32	58	226	34	13	484	0
Pedestrians					8			3			4	
Lane Width (ft)					12.0			12.0			12.0	
Walking Speed (ft/s)					4.0			4.0			4.0	
Percent Blockage					1			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								705			559	
pX, platoon unblocked												
vC, conflicting volume	905	895	487	893	878	255	484			268		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	905	895	487	893	878	255	484			268		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	98	71	100	96	95			99		
cM capacity (veh/h)	233	261	579	240	267	781	1079			1299		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	101	318	498
Volume Left	0	69	58	13
Volume Right	12	32	34	0
cSH	579	306	1079	1299
Volume to Capacity	0.02	0.33	0.05	0.01
Queue Length 95th (ft)	2	35	4	1
Control Delay (s)	11.4	22.4	2.0	0.3
Lane LOS	B	C	A	A
Approach Delay (s)	11.4	22.4	2.0	0.3
Approach LOS	B	C		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	101	244	410	123	385	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			25
Link Distance (ft)	792		414			230
Travel Time (s)	21.6		11.3			6.3
Confl. Peds. (#/hr)	145	375		37	37	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		50%				
Lane Group Flow (vph)	248	135	593	0	428	294
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	22.0	22.0	48.0		48.0	48.0
Total Split (%)	31.4%	31.4%	68.6%		68.6%	68.6%
Maximum Green (s)	16.0	16.0	42.0		42.0	42.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	16.0	16.0	42.0		42.0	42.0
Actuated g/C Ratio	0.23	0.23	0.60		0.60	0.60
v/c Ratio	0.40	0.41	0.29		0.91	0.14
Control Delay	12.8	8.9	4.1		41.4	6.3
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	12.8	8.9	4.1		41.4	6.3
LOS	B	A	A		D	A
Approach Delay	11.4		4.1			27.1
Approach LOS	B		A			C
Queue Length 50th (ft)	20	0	33		145	25
Queue Length 95th (ft)	49	45	m40		#340	41
Internal Link Dist (ft)	712		334			150
Turn Bay Length (ft)						
Base Capacity (vph)	623	332	2021		468	2123
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.40	0.41	0.29		0.91	0.14

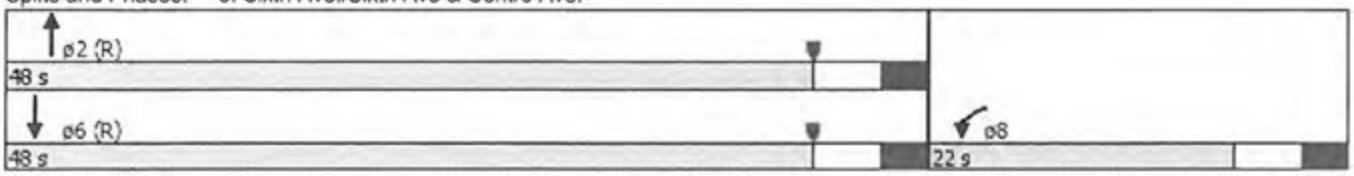
Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 56 (80%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Sixth Ave./Sixth Ave & Centre Ave.



Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	63	305	227	102	376	69	39	507	80	137	462	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Storage Length (ft)	0		0			0	0		0	0		
Storage Lanes	0		0			1	0		0	0		
Taper Length (ft)	25						25			25		
Right Turn on Red						No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		792			538			646			133	
Travel Time (s)		21.6			14.7			17.6			3.6	
Confl. Peds. (#/hr)	400		375	375		400	126		675	675		126
Confl. Bikes (#/hr)			141			552			18			266
Peak Hour Factor	0.69	0.94	0.80	0.83	0.94	0.60	0.86	0.96	0.74	0.88	0.95	0.63
Heavy Vehicles (%)	2%	2%	2%	8%	8%	8%	9%	9%	9%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	699	0	123	515	0	0	681	0	0	642	10
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (s)	34.0	34.0		34.0	34.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	37.8%	37.8%		37.8%	37.8%		34.4%	34.4%		34.4%	34.4%	34.4%
Maximum Green (s)	28.0	28.0		28.0	28.0		25.0	25.0		25.0	25.0	25.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)		-1.5		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	15.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		29.5		28.0	28.0			25.0			25.0	25.0
Actuated g/C Ratio		0.33		0.31	0.31			0.28			0.28	0.28
v/c Ratio		1.08		1.23	0.65			0.82			1.20	0.04
Control Delay		91.3		181.1	23.0			40.4			120.1	9.3
Queue Delay		0.0		0.0	0.0			0.0			0.0	0.0
Total Delay		91.3		181.1	23.0			40.4			120.1	9.3
LOS		F		F	C			D			F	A
Approach Delay		91.3			53.5			40.4			118.4	
Approach LOS		F			D			D			F	
Queue Length 50th (ft)		~236		~90	117			132			~246	2
Queue Length 95th (ft)		#348		m#147	m156			#194			m#271	m3
Internal Link Dist (ft)		712			458			566			53	
Turn Bay Length (ft)				250								
Base Capacity (vph)		645		100	798			826			535	275
Starvation Cap Reductn		0		0	0			0			0	0

Lane Group	NEL	NER	NER2
Lane Configurations			
Volume (vph)	62	120	97
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)	7%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Right Turn on Red			No
Link Speed (mph)	25		
Link Distance (ft)	334		
Travel Time (s)	9.1		
Confl. Peds. (#/hr)	400		375
Confl. Bikes (#/hr)		141	141
Peak Hour Factor	0.88	0.73	0.79
Heavy Vehicles (%)	1%	1%	1%
Shared Lane Traffic (%)		68%	
Lane Group Flow (vph)	182	175	0
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Minimum Split (s)	13.0	13.0	
Total Split (s)	25.0	25.0	
Total Split (%)	27.8%	27.8%	
Maximum Green (s)	19.0	19.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	19.0	19.0	
Actuated g/C Ratio	0.21	0.21	
v/c Ratio	0.66	1.21	
Control Delay	45.5	175.5	
Queue Delay	0.0	0.0	
Total Delay	45.5	175.5	
LOS	D	F	
Approach Delay	109.2		
Approach LOS	F		
Queue Length 50th (ft)	95	~128	
Queue Length 95th (ft)	#168	#194	
Internal Link Dist (ft)	254		
Turn Bay Length (ft)			
Base Capacity (vph)	276	145	
Starvation Cap Reductn	0	0	

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Spillback Cap Reductn		0		0	0			0			0	0
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		1.08		1.23	0.65			0.82			1.20	0.04

Intersection Summary

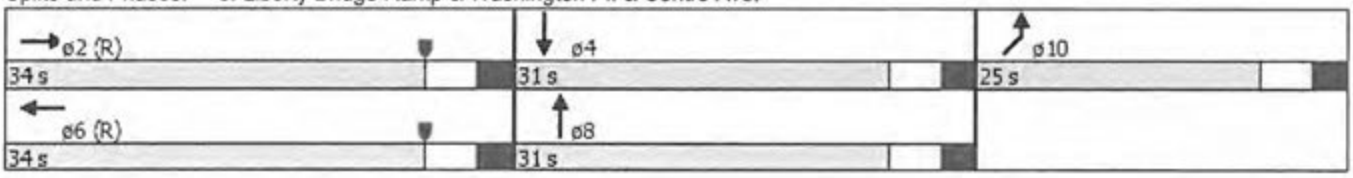
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 79.8 Intersection LOS: E
Intersection Capacity Utilization 123.3% ICU Level of Service H
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.



Lane Group	NEL	NER	NER2
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.66	1.21	

Intersection Summary

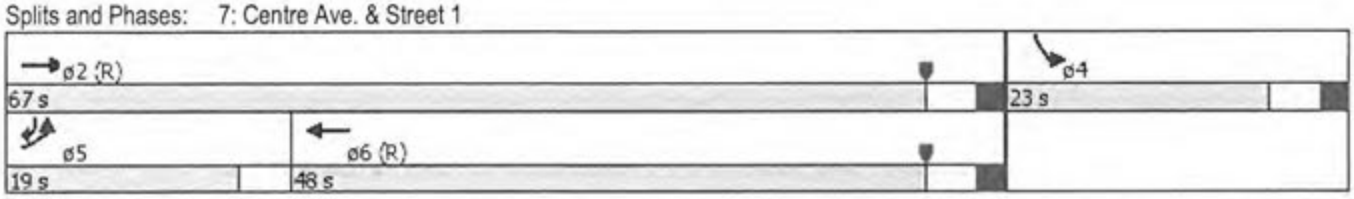
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	81	459	265	113	38	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	150			0	0	0
Storage Lanes	0			0	1	1
Taper Length (ft)	100				25	
Right Turn on Red				Yes		No
Link Speed (mph)		25	25		25	
Link Distance (ft)		538	427		380	
Travel Time (s)		14.7	11.6		10.4	
Confl. Peds. (#/hr)	875			875	125	150
Peak Hour Factor	0.83	0.82	0.87	0.88	0.54	0.66
Heavy Vehicles (%)	4%	4%	7%	7%	1%	1%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	658	433	0	70	358
Turn Type	pm+pt	NA	NA		NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases	2					4
Minimum Split (s)	10.0	26.5	26.5		22.5	10.0
Total Split (s)	19.0	67.0	48.0		23.0	19.0
Total Split (%)	21.1%	74.4%	53.3%		25.6%	21.1%
Maximum Green (s)	15.5	61.5	42.5		17.5	15.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.0	2.0	2.0		2.0	0.0
Lost Time Adjust (s)		-1.5	-1.5		-1.5	0.0
Total Lost Time (s)		4.0	4.0		4.0	3.5
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Walk Time (s)		11.0	11.0		7.0	
Flash Dont Walk (s)		10.0	10.0		10.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)		63.0	44.0		19.0	35.0
Actuated g/C Ratio		0.70	0.49		0.21	0.39
v/c Ratio		0.40	0.41		0.24	0.85
Control Delay		5.7	3.6		32.1	45.6
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		5.7	3.6		32.1	45.6
LOS		A	A		C	D
Approach Delay		5.7	3.6		43.4	
Approach LOS		A	A		D	
Queue Length 50th (ft)		78	3		33	159
Queue Length 95th (ft)		m68	16		41	164
Internal Link Dist (ft)		458	347		300	
Turn Bay Length (ft)						
Base Capacity (vph)		1663	1054		295	420
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.40	0.41		0.24	0.85

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 16 (18%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 58.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Centre Ave. & Street 1

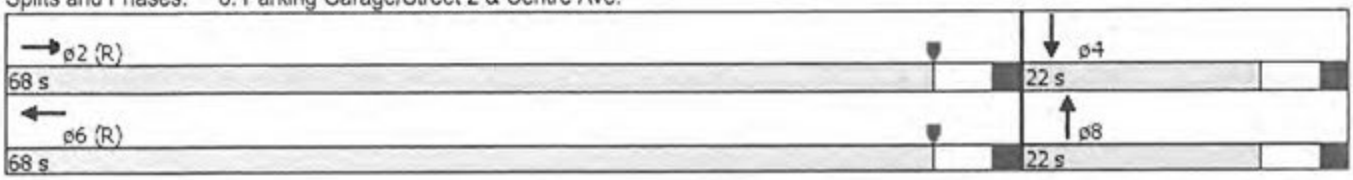


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	38	385	74	4	343	28	0	0	1	32	44	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	11	11	11
Storage Length (ft)	150		0	100		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		427			374			129			297	
Travel Time (s)		11.6			10.2			3.5			8.1	
Confl. Peds. (#/hr)	625		75	75		625	150		100	100		150
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	552	0	0	416	0	0	1	0	0	124	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	68.0	68.0		68.0	68.0		22.0	22.0		22.0	22.0	
Total Split (%)	75.6%	75.6%		75.6%	75.6%		24.4%	24.4%		24.4%	24.4%	
Maximum Green (s)	62.0	62.0		62.0	62.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		62.0			62.0			16.0			16.0	
Actuated g/C Ratio		0.69			0.69			0.18			0.18	
v/c Ratio		0.28			0.20			0.00			0.48	
Control Delay		3.7			7.0			0.0			34.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.7			7.0			0.0			34.0	
LOS		A			A			A			C	
Approach Delay		3.7			7.0			0.0			34.0	
Approach LOS		A			A			A			C	
Queue Length 50th (ft)		26			58			0			52	
Queue Length 95th (ft)		36			m69			0			108	
Internal Link Dist (ft)		347			294			49			217	
Turn Bay Length (ft)												
Base Capacity (vph)		1941			2096			538			261	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.28			0.20			0.00			0.48	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 24 (27%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 58.3% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Parking Garage/Street 2 & Centre Ave.



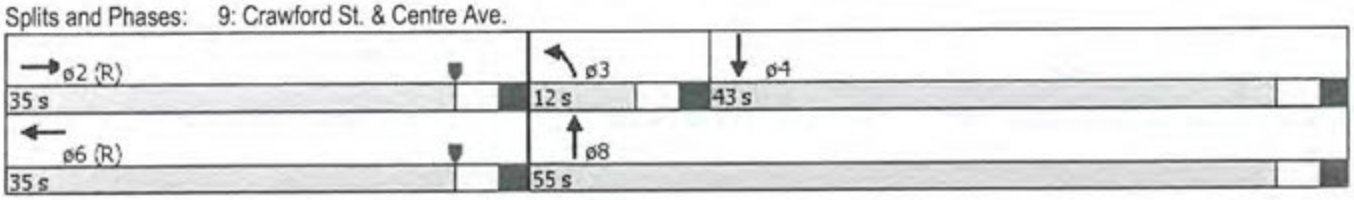
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	104	178	169	51	74	18	222	121	30	44	370	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	11	11	12	12	15	12	12	14	12
Storage Length (ft)	0		0	0		0	185		0	50		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			75			75		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		248			357			640			705	
Travel Time (s)		6.8			9.7			17.5			19.2	
Confl. Peds. (#/hr)	64		24	24		64	21		15	15		21
Peak Hour Factor	0.93	0.89	0.87	0.86	0.82	0.85	0.87	0.90	0.83	0.63	0.88	0.77
Heavy Vehicles (%)	7%	7%	7%	8%	8%	8%	7%	7%	7%	9%	9%	9%
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	394	0	59	111	0	255	170	0	70	506	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	21.0	21.0		21.0	21.0		12.0	21.0		21.0	21.0	
Total Split (s)	35.0	35.0		35.0	35.0		12.0	55.0		43.0	43.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		13.3%	61.1%		47.8%	47.8%	
Maximum Green (s)	30.0	30.0		30.0	30.0		7.0	50.0		38.0	38.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0		50.0	50.0		38.0	38.0	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.56	0.56		0.42	0.42	
v/c Ratio	0.35	0.75		0.33	0.21		0.74	0.18		0.15	0.74	
Control Delay	18.7	25.0		29.1	19.9		26.5	9.0		17.2	28.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.7	25.0		29.1	19.9		26.5	9.0		17.2	28.9	
LOS	B	C		C	B		C	A		B	C	
Approach Delay		23.6			23.1			19.5			27.5	
Approach LOS		C			C			B			C	
Queue Length 50th (ft)	26	150		25	39		71	38		24	228	
Queue Length 95th (ft)	74	#289		58	70		#125	70		35	341	
Internal Link Dist (ft)		168			277			560			625	
Turn Bay Length (ft)							185			50		
Base Capacity (vph)	320	528		177	540		344	944		462	687	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.35	0.75		0.33	0.21		0.74	0.18		0.15	0.74	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 10 (11%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 76.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Crawford St. & Centre Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	17	3	7	2	72	401	0	0	299	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			231			283			70	
Travel Time (s)		8.6			6.3			7.7			1.9	
Confl. Peds. (#/hr)	19		20	20		19	52		16	16		52
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Heavy Vehicles (%)	15%	2%	0%	0%	0%	0%	0%	12%	0%	0%	9%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	0	0	25	0	0	620	0	0	599	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 73.7% ICU Level of Service D
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	17	3	7	2	72	401	0	0	299	213
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.25	0.83	0.25	0.75	0.50	0.64	0.79	0.90	0.90	0.86	0.85
Hourly flow rate (vph)	0	0	20	12	9	4	112	508	0	0	348	251
Pedestrians		52			16			20			19	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			1			2			2	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.91	0.91	0.85	0.91	0.91	0.88	0.85			0.88		
vC, conflicting volume	1285	1274	545	1262	1399	543	650			524		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	964	951	373	938	1089	411	498			389		
tC, single (s)	7.2	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	96	93	94	99	87			100		
cM capacity (veh/h)	156	194	540	180	162	551	873			1024		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	20	25	620	598
Volume Left	0	12	112	0
Volume Right	20	4	0	251
cSH	540	193	873	1024
Volume to Capacity	0.04	0.13	0.13	0.00
Queue Length 95th (ft)	3	11	11	0
Control Delay (s)	11.9	26.5	3.2	0.0
Lane LOS	B	D	A	
Approach Delay (s)	11.9	26.5	3.2	0.0
Approach LOS	B	D		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	0	102	21	420	189	90	292	0	0	353	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	10	12	12	11	12	12	12	12
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		130			635			238			414	
Travel Time (s)		3.5			17.3			6.5			11.3	
Confl. Peds. (#/hr)	880		138	138		880	49		130	130		49
Peak Hour Factor	0.77	0.92	0.82	0.75	0.82	0.97	0.88	0.96	0.92	0.92	0.89	0.75
Heavy Vehicles (%)	3%	2%	28%	0%	5%	19%	0%	1%	2%	2%	8%	17%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	28	707	0	0	406	0	0	438	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Minimum Split (s)	28.0	28.0		28.0	28.0		34.0	34.0			34.0	
Total Split (s)	36.0	36.0		36.0	36.0		34.0	34.0			34.0	
Total Split (%)	51.4%	51.4%		51.4%	51.4%		48.6%	48.6%			48.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		28.0	28.0			28.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		19.0	19.0			19.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		30.0		30.0	30.0			28.0			28.0	
Actuated g/C Ratio		0.43		0.43	0.43			0.40			0.40	
v/c Ratio		0.57		0.07	1.28			0.45			0.38	
Control Delay		13.6		12.6	161.1			20.3			12.5	
Queue Delay		0.0		0.0	0.0			0.1			0.0	
Total Delay		13.6		12.6	161.1			20.4			12.5	
LOS		B		B	F			C			B	
Approach Delay		13.6			155.4			20.4			12.5	
Approach LOS		B			F			C			B	
Queue Length 50th (ft)		12		7	~390			54			47	
Queue Length 95th (ft)		76		17	#512			77			70	
Internal Link Dist (ft)		50			555			158			334	
Turn Bay Length (ft)												
Base Capacity (vph)		302		382	553			912			1168	
Starvation Cap Reductn		0		0	0			81			0	
Spillback Cap Reductn		0		0	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		0.57		0.07	1.28			0.49			0.38	

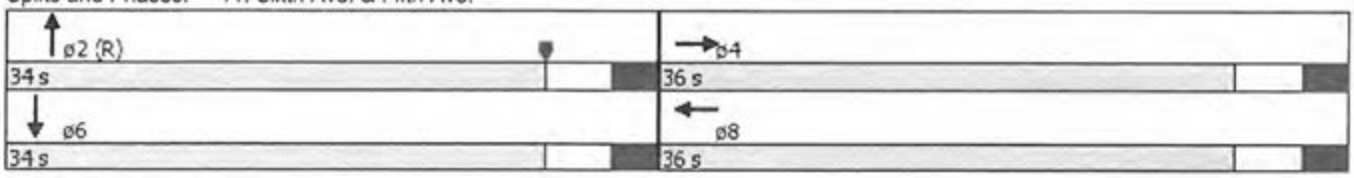
Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 48 (69%), Referenced to phase 2:NBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.28
Intersection Signal Delay: 74.5 Intersection LOS: E
Intersection Capacity Utilization 112.8% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 11: Sixth Ave. & Fifth Ave.



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	453	615	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	635			437	582	
Travel Time (s)	17.3			11.9	15.9	
Confl. Peds. (#/hr)			44			
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	10%	2%	2%
Parking (#/hr)			0	0		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1180	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 36.8% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	453	615	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.85	0.95	0.92	0.92
Hourly flow rate (vph)	0	0	533	647	0	0
Pedestrians					44	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			44		1434	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			44		1434	44
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			66		100	100
cM capacity (veh/h)			1563		82	1017

Direction, Lane #	WB 1	WB 2
Volume Total	749	432
Volume Left	533	0
Volume Right	0	0
cSH	1563	1700
Volume to Capacity	0.34	0.25
Queue Length 95th (ft)	38	0
Control Delay (s)	7.0	0.0
Lane LOS	A	
Approach Delay (s)	4.4	
Approach LOS		

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	150	823	182	178	510	0	0	396	310
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Right Turn on Red			No			Yes			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		437			753			310			646	
Travel Time (s)		11.9			20.5			8.5			17.6	
Confl. Peds. (#/hr)				105		173	29					29
Peak Hour Factor	0.92	0.92	0.92	0.79	0.88	0.93	0.85	0.82	0.92	0.92	0.75	0.92
Heavy Vehicles (%)	2%	2%	2%	6%	6%	6%	2%	2%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1321	0	209	622	0	0	528	337
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Minimum Split (s)				44.0	44.0		30.0	30.0			30.0	30.0
Total Split (s)				44.0	44.0		36.0	36.0			36.0	36.0
Total Split (%)				55.0%	55.0%		45.0%	45.0%			45.0%	45.0%
Maximum Green (s)				37.0	37.0		30.0	30.0			30.0	30.0
Yellow Time (s)				3.0	3.0		4.0	4.0			4.0	4.0
All-Red Time (s)				4.0	4.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)					7.0		6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				15.0	15.0		9.0	9.0			9.0	9.0
Flash Dont Walk (s)				22.0	22.0		15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0			0	0
Act Effct Green (s)					37.0		30.0	30.0			30.0	30.0
Actuated g/C Ratio					0.46		0.38	0.38			0.38	0.38
v/c Ratio					1.09		1.45	1.01			0.81	0.37
Control Delay					74.4		246.3	52.3			34.5	19.7
Queue Delay					0.0		0.0	30.5			0.0	0.0
Total Delay					74.4		246.3	82.8			34.5	19.7
LOS					E		F	F			C	B
Approach Delay					74.4			123.9			28.7	
Approach LOS					E			F			C	
Queue Length 50th (ft)					~400		~145	~260			232	68
Queue Length 95th (ft)					#510		m#180	m#412			271	105
Internal Link Dist (ft)		357			673			230			566	
Turn Bay Length (ft)												
Base Capacity (vph)					1214		144	613			650	907
Starvation Cap Reductn					0		0	70			0	0
Spillback Cap Reductn					0		0	0			0	0
Storage Cap Reductn					0		0	0			0	0
Reduced v/c Ratio					1.09		1.45	1.15			0.81	0.37

Intersection Summary

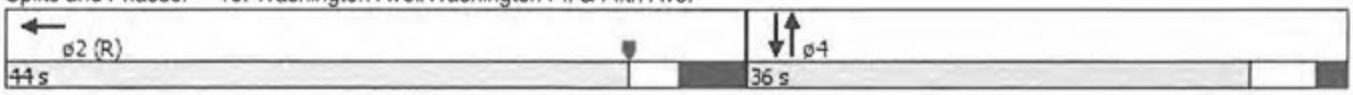
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 130
Control Type: Pretimed
Maximum v/c Ratio: 1.45
Intersection Signal Delay: 75.0 Intersection LOS: E
Intersection Capacity Utilization 87.7% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Washington Ave./Washington Pl. & Fifth Ave.

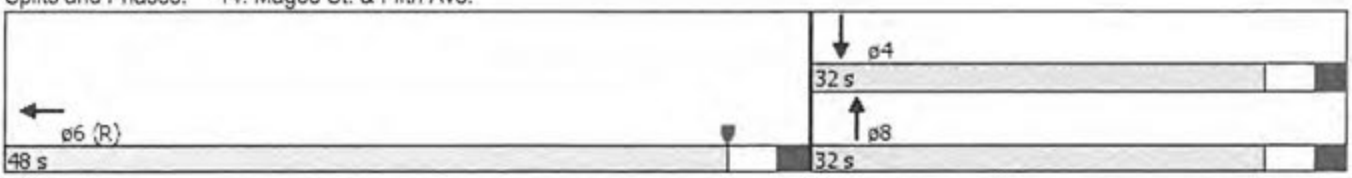


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	916	0	224	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		753			499			335			119	
Travel Time (s)		20.5			13.6			9.1			3.2	
Confl. Peds. (#/hr)				46		108	15		8	8		15
Peak Hour Factor	0.92	0.92	0.92	0.66	0.97	0.50	0.80	0.90	0.92	0.92	0.25	0.25
Heavy Vehicles (%)	2%	2%	2%	0%	9%	0%	1%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1214	0	0	280	0	0	0	0
Turn Type				Perm	NA		Perm	NA				
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				48.0	48.0		32.0	32.0			32.0	
Total Split (%)				60.0%	60.0%		40.0%	40.0%			40.0%	
Maximum Green (s)				43.0	43.0		27.0	27.0			27.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					43.0			27.0				
Actuated g/C Ratio					0.54			0.34				
v/c Ratio					0.73			0.63				
Control Delay					10.4			32.0				
Queue Delay					0.4			0.0				
Total Delay					10.8			32.0				
LOS					B			C				
Approach Delay					10.8			32.0				
Approach LOS					B			C				
Queue Length 50th (ft)					88			108				
Queue Length 95th (ft)					150			m154				
Internal Link Dist (ft)		673			419			255			39	
Turn Bay Length (ft)												
Base Capacity (vph)					1655			447				
Starvation Cap Reductn					111			0				
Spillback Cap Reductn					64			0				
Storage Cap Reductn					0			0				
Reduced v/c Ratio					0.79			0.63				

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 40 (50%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 14.8 Intersection LOS: B
Intersection Capacity Utilization 57.9% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Magee St. & Fifth Ave.

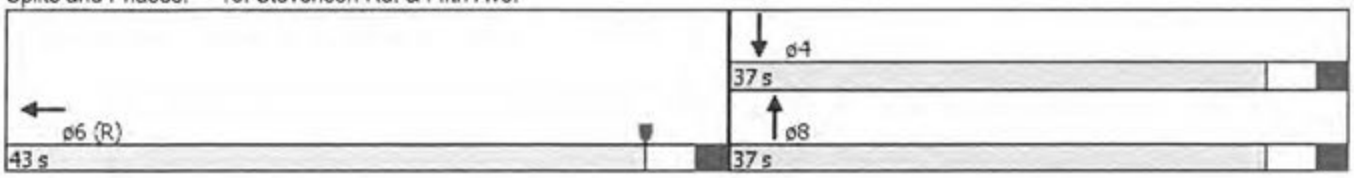


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	14	862	71	178	174	0	0	36	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		499			406			324			114	
Travel Time (s)		13.6			11.1			8.8			3.1	
Confl. Peds. (#/hr)				16		44	9					9
Peak Hour Factor	0.92	0.92	0.92	0.60	0.95	0.68	0.91	0.85	0.92	0.92	0.82	0.79
Heavy Vehicles (%)	2%	2%	2%	0%	12%	5%	6%	0%	2%	2%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1034	0	0	401	0	0	171	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				43.0	43.0		37.0	37.0			37.0	
Total Split (%)				53.8%	53.8%		46.3%	46.3%			46.3%	
Maximum Green (s)				38.0	38.0		32.0	32.0			32.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
v/c Ratio					0.73			0.72			0.24	
Control Delay					12.6			21.6			10.8	
Queue Delay					0.3			0.7			0.0	
Total Delay					12.9			22.3			10.8	
LOS					B			C			B	
Approach Delay					12.9			22.3			10.8	
Approach LOS					B			C			B	
Queue Length 50th (ft)					95			110			33	
Queue Length 95th (ft)					m154			154			63	
Internal Link Dist (ft)		419			326			244			34	
Turn Bay Length (ft)												
Base Capacity (vph)					1409			557			705	
Starvation Cap Reductn					70			29			0	
Spillback Cap Reductn					1			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.77			0.76			0.24	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 15.0 Intersection LOS: B
Intersection Capacity Utilization 71.6% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Stevenson Rd. & Fifth Ave.



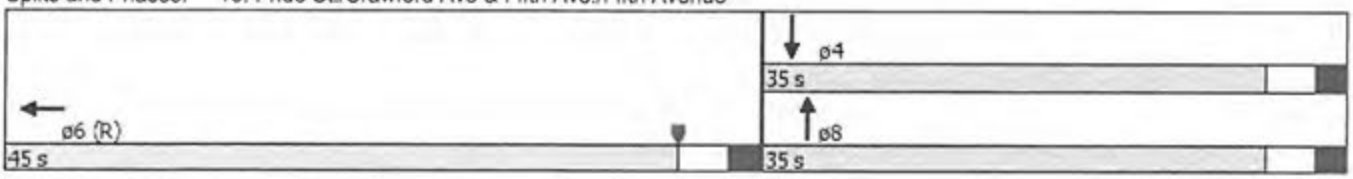
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	35	814	254	70	217	0	0	212	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		406			265			320			283	
Travel Time (s)		11.1			7.2			8.7			7.7	
Confl. Peds. (#/hr)				25		45	22		40	40		22
Peak Hour Factor	0.92	0.92	0.92	0.71	0.94	0.95	0.71	0.79	0.92	0.79	0.79	0.88
Heavy Vehicles (%)	2%	2%	2%	0%	18%	0%	0%	6%	2%	2%	16%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1182	0	0	374	0	0	387	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				45.0	45.0		35.0	35.0			35.0	
Total Split (%)				56.3%	56.3%		43.8%	43.8%			43.8%	
Maximum Green (s)				40.0	40.0		30.0	30.0			30.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					40.0			30.0			30.0	
Actuated g/C Ratio					0.50			0.38			0.38	
v/c Ratio					0.80			0.87			0.52	
Control Delay					20.9			39.3			20.7	
Queue Delay					0.0			1.3			0.1	
Total Delay					20.9			40.7			20.7	
LOS					C			D			C	
Approach Delay					20.9			40.7			20.7	
Approach LOS					C			D			C	
Queue Length 50th (ft)					232			148			134	
Queue Length 95th (ft)					322			#267			179	
Internal Link Dist (ft)		326			185			240			203	
Turn Bay Length (ft)												
Base Capacity (vph)					1472			432			748	
Starvation Cap Reductn					0			10			0	
Spillback Cap Reductn					0			0			16	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.80			0.89			0.53	

16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 24.7 Intersection LOS: C
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	103	265	28	7	364	0	0	485	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		142			582			105			238	
Travel Time (s)		3.9			15.9			2.9			6.5	
Confl. Peds. (#/hr)				13		40	21					21
Peak Hour Factor	0.92	0.92	0.92	0.87	0.78	0.63	0.30	0.96	0.25	0.92	0.92	0.80
Heavy Vehicles (%)	2%	2%	2%	4%	1%	0%	0%	1%	2%	2%	11%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	118	340	44	0	402	0	0	549	0
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Detector Phase				4	4	4	1 2	2			6	
Switch Phase												
Minimum Initial (s)				8.0	8.0	8.0		18.0			25.0	
Minimum Split (s)				27.5	27.5	27.5		30.5			30.5	
Total Split (s)				28.0	28.0	28.0		31.0			42.0	
Total Split (%)				40.0%	40.0%	40.0%		44.3%			60.0%	
Maximum Green (s)				22.5	22.5	22.5		25.5			36.5	
Yellow Time (s)				3.5	3.5	3.5		3.5			3.5	
All-Red Time (s)				2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.5	5.5	5.5		5.5			5.5	
Lead/Lag								Lag				
Lead-Lag Optimize?												
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Recall Mode				Ped	Ped	Ped		C-Max			C-Max	
Walk Time (s)				12.0	12.0	12.0		15.0			15.0	
Flash Dont Walk (s)				10.0	10.0	10.0		10.0			10.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effct Green (s)				22.5	22.5	22.5		31.0			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.44			0.52	
v/c Ratio				0.26	0.67	0.11		0.29			0.36	
Control Delay				19.4	28.3	17.6		5.5			4.5	
Queue Delay				49.8	0.0	0.0		9.2			0.2	
Total Delay				69.2	28.3	17.6		14.7			4.6	
LOS				E	C	B		B			A	
Approach Delay					37.0			14.7			4.6	
Approach LOS					D			B			A	
Queue Length 50th (ft)				37	125	13		25			24	
Queue Length 95th (ft)				72	173	24		m19			41	
Internal Link Dist (ft)		62			502			25			158	
Turn Bay Length (ft)												
Base Capacity (vph)				462	507	414		1410			1519	
Starvation Cap Reductn				0	0	0		965			310	

Lane Group	ø1
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	16%
Maximum Green (s)	8.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				346	0	0		0			70	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				1.02	0.67	0.11		0.90			0.45	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 56 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.31
Intersection Signal Delay: 18.6 — Intersection LOS: B
Intersection Capacity Utilization 48.3% — ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Sixth Ave. & Diamond St.

Lane Group	ø1
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	565	35	59	147	8	211	342	320	356	186	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	12	12	11	12	12	12	12
Right Turn on Red			No			Yes			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			634			330			105	
Travel Time (s)		8.9			17.3			9.0			2.9	
Confl. Peds. (#/hr)	8		107	107		8	19		18	18		19
Peak Hour Factor	0.60	0.96	0.80	0.90	0.90	0.90	0.87	0.94	0.92	0.95	0.85	0.67
Heavy Vehicles (%)	4%	1%	0%	2%	2%	2%	0%	1%	4%	12%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	629	44	0	238	0	0	955	0	0	660	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		8.0	25.0	
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5		30.5	30.5		11.0	30.5	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		31.0	31.0		11.0	42.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		44.3%	44.3%		15.7%	60.0%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		25.5	25.5		8.0	36.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5			5.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	Ped	Ped	Ped	Ped	Ped		C-Max	C-Max		Min	C-Max	
Walk Time (s)	12.0	12.0	12.0	12.0	12.0		15.0	15.0			15.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effct Green (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
v/c Ratio		1.25	0.11		2.31			1.25			1.79dl	
Control Delay		151.9	17.7		638.2			145.7			9.3	
Queue Delay		1.6	0.0		4.4			0.1			0.2	
Total Delay		153.5	17.7		642.7			145.8			9.5	
LOS		F	B		F			F			A	
Approach Delay		144.6			642.7			145.8			9.5	
Approach LOS		F			F			F			A	
Queue Length 50th (ft)		~345	13		~173			~263			34	
Queue Length 95th (ft)		#532	31		#265			#379			42	
Internal Link Dist (ft)		245			554			250			25	
Turn Bay Length (ft)												
Base Capacity (vph)		505	401		103			764			991	
Starvation Cap Reductn		0	0		0			0			48	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		85	0		17			10			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		1.50	0.11		2.77			1.27			0.70	

Intersection Summary

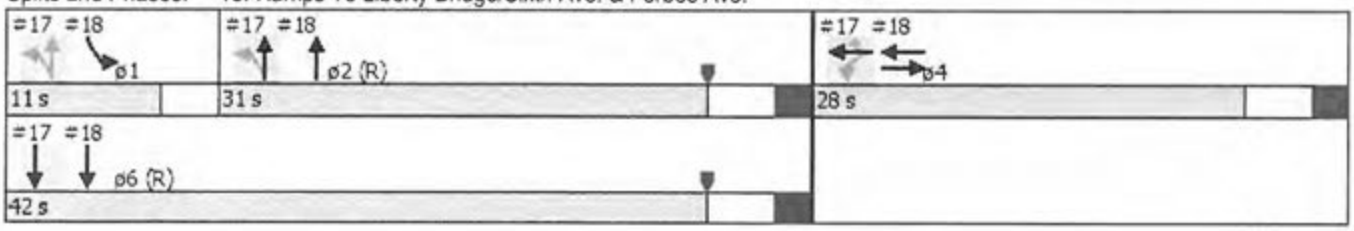
Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 56 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.31
Intersection Signal Delay: 156.7 Intersection LOS: F
Intersection Capacity Utilization 122.5% ICU Level of Service H
Analysis Period (min) 15

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	1276	367	0	0	214	889
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	10	10
Storage Length (ft)		0	0		0	60
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Right Turn on Red		No				No
Link Speed (mph)	25			25	25	
Link Distance (ft)	634			303	752	
Travel Time (s)	17.3			8.3	20.5	
Confl. Peds. (#/hr)		85				
Peak Hour Factor	0.93	0.87	0.92	0.92	0.86	0.86
Heavy Vehicles (%)	6%	6%	2%	2%	3%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1794	0	0	0	249	1034
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Minimum Split (s)	35.0				22.0	22.0
Total Split (s)	48.0				32.0	32.0
Total Split (%)	60.0%				40.0%	40.0%
Maximum Green (s)	43.0				27.0	27.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	2.0				2.0	2.0
Lost Time Adjust (s)	0.0				0.0	0.0
Total Lost Time (s)	5.0				5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	10.0				10.0	10.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	43.0				27.0	27.0
Actuated g/C Ratio	0.54				0.34	0.34
v/c Ratio	1.23				0.50	1.32
Control Delay	131.3				25.4	180.2
Queue Delay	1.1				0.0	0.1
Total Delay	132.4				25.4	180.3
LOS	F				C	F
Approach Delay	132.4				150.2	
Approach LOS	F				F	
Queue Length 50th (ft)	~591				98	~385
Queue Length 95th (ft)	#725				158	#482
Internal Link Dist (ft)	554			223	672	
Turn Bay Length (ft)						60
Base Capacity (vph)	1458				496	782
Starvation Cap Reductn	0				0	0
Spillback Cap Reductn	346				0	11
Storage Cap Reductn	0				0	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Reduced v/c Ratio	1.61				0.50	1.34

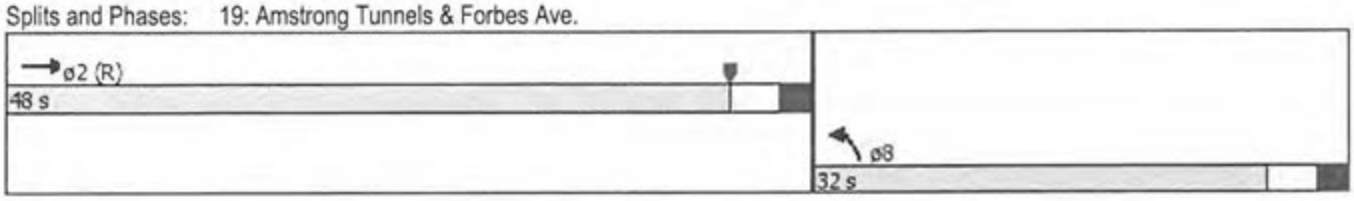
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 0 (0%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 120
Control Type: Pretimed
Maximum v/c Ratio: 1.32
Intersection Signal Delay: 139.8 Intersection LOS: F
Intersection Capacity Utilization 96.3% ICU Level of Service F
Analysis Period (min) 15

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

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

Splits and Phases: 19: Amstrong Tunnels & Forbes Ave.



20: McAnulty Dr./Washington Ave. & Forbes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	607	1443	115	0	0	0	0	51	62	443	86	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		303			745			205			310	
Travel Time (s)		8.3			20.3			5.6			8.5	
Confl. Peds. (#/hr)	45		79						51	51		
Peak Hour Factor	0.82	0.88	0.64	0.92	0.92	0.92	0.92	0.56	0.68	0.81	0.82	0.92
Heavy Vehicles (%)	5%	5%	5%	2%	2%	2%	2%	4%	4%	1%	1%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	740	1820	0	0	0	0	0	91	91	0	652	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Minimum Split (s)	51.0	51.0						23.0	23.0	23.0	23.0	
Total Split (s)	51.0	51.0						29.0	29.0	29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%	36.3%	36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0	24.0	24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	31.0	31.0						8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0						10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0	0	0	0	
Act Effct Green (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
v/c Ratio	0.89	1.10						0.19	0.23		2.19	
Control Delay	15.4	60.6						22.1	17.2		560.3	
Queue Delay	48.6	3.0						0.0	0.0		0.0	
Total Delay	63.9	63.6						22.1	17.2		560.3	
LOS	E	E						C	B		F	
Approach Delay		63.7						19.6			560.3	
Approach LOS		E						B			F	
Queue Length 50th (ft)	238	~545						34	23		~550	
Queue Length 95th (ft)	m183	m248						41	40		m#626	
Internal Link Dist (ft)		223			665			125			230	
Turn Bay Length (ft)												
Base Capacity (vph)	831	1662						491	403		298	
Starvation Cap Reductn	233	377						0	0		0	
Spillback Cap Reductn	90	0						0	0		0	
Storage Cap Reductn	0	0						0	0		0	
Reduced v/c Ratio	1.24	1.42						0.19	0.23		2.19	

Intersection Summary

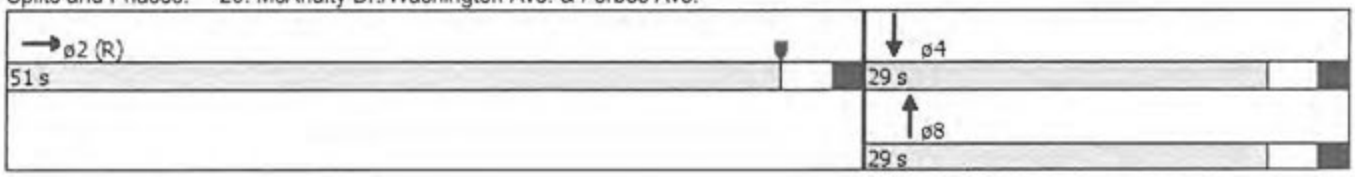
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 40 (50%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 2.19
Intersection Signal Delay: 156.7 Intersection LOS: F
Intersection Capacity Utilization 108.6% ICU Level of Service G
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: McAnulty Dr./Washington Ave. & Forbes Ave.



21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

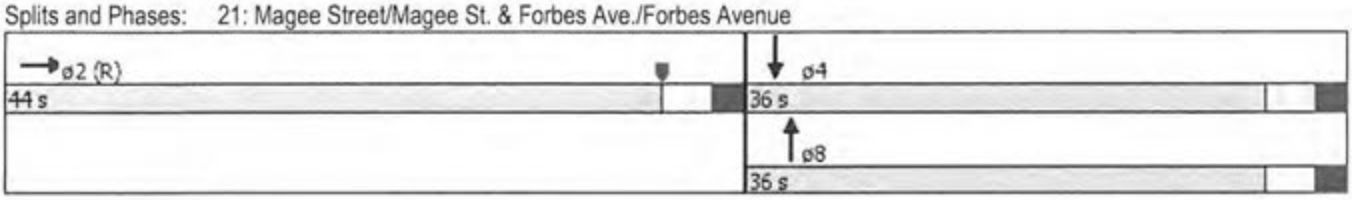
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	103	931	137	0	0	0	0	39	38	30	158	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		745			503			182			335	
Travel Time (s)		20.3			13.7			5.0			9.1	
Confl. Peds. (#/hr)	41		42						14	14		
Peak Hour Factor	0.73	0.94	0.59	0.92	0.92	0.92	0.92	0.63	0.80	0.54	0.33	0.92
Heavy Vehicles (%)	4%	7%	0%	2%	2%	2%	2%	0%	25%	4%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1363	0	0	0	0	0	110	0	0	535	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	44.0	44.0						36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%						45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0						31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		39.0						31.0			31.0	
Actuated g/C Ratio		0.49						0.39			0.39	
v/c Ratio		0.89						0.17			0.79	
Control Delay		21.2						10.5			23.1	
Queue Delay		0.0						0.0			5.8	
Total Delay		21.2						10.5			29.0	
LOS		C						B			C	
Approach Delay		21.2						10.5			29.0	
Approach LOS		C						B			C	
Queue Length 50th (ft)		324						19			190	
Queue Length 95th (ft)		m233						30			56	
Internal Link Dist (ft)		665			423			102			255	
Turn Bay Length (ft)												
Base Capacity (vph)		1527						645			679	
Starvation Cap Reductn		0						0			98	
Spillback Cap Reductn		0						0			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.89						0.17			0.92	

21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 8 (10%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 22.7 Intersection LOS: C
Intersection Capacity Utilization 58.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

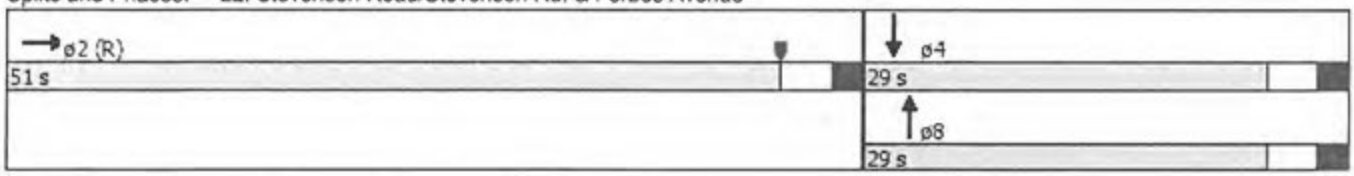


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	188	681	132	0	0	0	0	286	52	29	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		503			408			159			324	
Travel Time (s)		13.7			11.1			4.3			8.8	
Confl. Peds. (#/hr)	28		28						13	13		
Peak Hour Factor	0.62	0.93	0.71	0.92	0.92	0.92	0.89	0.89	0.93	0.69	0.60	0.92
Heavy Vehicles (%)	1%	9%	6%	2%	2%	2%	4%	5%	2%	0%	8%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1221	0	0	0	0	0	377	0	0	42	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	51.0	51.0						29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%		36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0		24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		46.0						24.0			24.0	
Actuated g/C Ratio		0.58						0.30			0.30	
v/c Ratio		0.68						0.60			0.21	
Control Delay		3.7						28.0			18.0	
Queue Delay		0.3						0.4			0.0	
Total Delay		4.0						28.5			18.0	
LOS		A						C			B	
Approach Delay		4.0						28.5			18.0	
Approach LOS		A						C			B	
Queue Length 50th (ft)		38						155			13	
Queue Length 95th (ft)		m46						240			m19	
Internal Link Dist (ft)		423			328			79			244	
Turn Bay Length (ft)												
Base Capacity (vph)		1789						625			201	
Starvation Cap Reductn		137						0			0	
Spillback Cap Reductn		0						48			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.74						0.65			0.21	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 24 (30%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 10.0 Intersection LOS: A
Intersection Capacity Utilization 61.3% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Stevenson Road/Stevenson Rd. & Forbes Avenue



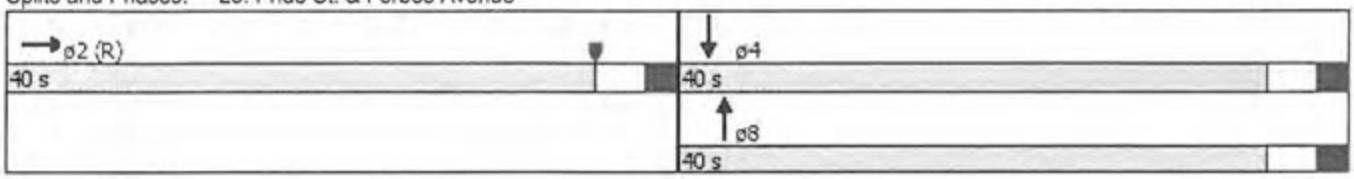
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	176	498	35	0	0	0	0	126	27	161	52	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		408			281			148			320	
Travel Time (s)		11.1			7.7			4.0			8.7	
Confl. Peds. (#/hr)	44		19						4	4		
Peak Hour Factor	0.79	0.94	0.63	0.92	0.92	0.92	0.92	0.77	0.67	0.77	0.78	0.92
Heavy Vehicles (%)	1%	11%	0%	2%	2%	2%	2%	9%	0%	7%	25%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	809	0	0	0	0	0	204	0	0	276	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	40.0	40.0						40.0		40.0	40.0	
Total Split (%)	50.0%	50.0%						50.0%		50.0%	50.0%	
Maximum Green (s)	35.0	35.0						35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		35.0						35.0			35.0	
Actuated g/C Ratio		0.44						0.44			0.44	
v/c Ratio		0.58						0.27			0.58	
Control Delay		8.1						14.0			12.6	
Queue Delay		0.0						0.1			0.9	
Total Delay		8.1						14.1			13.6	
LOS		A						B			B	
Approach Delay		8.1						14.1			13.6	
Approach LOS		A						B			B	
Queue Length 50th (ft)		76						56			29	
Queue Length 95th (ft)		116						83			m35	
Internal Link Dist (ft)		328			201			68			240	
Turn Bay Length (ft)												
Base Capacity (vph)		1391						763			474	
Starvation Cap Reductn		0						0			57	
Spillback Cap Reductn		0						70			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.58						0.29			0.66	

Intersection Summary

Area Type: Other

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 32 (40%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 10.2 Intersection LOS: B
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Pride St. & Forbes Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	1	1	6	59	28	9	170	3	10	74	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	11	11	11	11
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		487			402			380			251	
Travel Time (s)		13.3			11.0			10.4			6.8	
Confl. Peds. (#/hr)	200		125	125		200	225		200	200		225
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	104	0	0	202	0	0	111	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	34	1	1	6	59	28	9	170	3	10	74	16
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	1	1	7	66	31	10	189	3	11	82	18

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	40	103	202	111
Volume Left (vph)	38	7	10	11
Volume Right (vph)	1	31	3	18
Hadj (s)	0.21	-0.13	0.03	-0.04
Departure Headway (s)	5.0	4.5	4.4	4.4
Degree Utilization, x	0.06	0.13	0.25	0.14
Capacity (veh/h)	666	733	785	768
Control Delay (s)	8.3	8.2	8.9	8.1
Approach Delay (s)	8.3	8.2	8.9	8.1
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.5		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	9	4	22	24	6	47	23	1	2	93	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	11	11	11	11
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		402			301			296			236	
Travel Time (s)		11.0			8.2			8.1			6.4	
Confl. Peds. (#/hr)	175		100	100		175	125		150	150		125
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	58	0	0	79	0	0	129	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	9	4	22	24	6	47	23	1	2	93	22
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	10	4	24	27	7	52	26	1	2	103	24

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	16	58	79	130
Volume Left (vph)	1	24	52	2
Volume Right (vph)	4	7	1	24
Hadj (s)	-0.12	0.05	0.16	-0.08
Departure Headway (s)	4.3	4.4	4.4	4.1
Degree Utilization, x	0.02	0.07	0.10	0.15
Capacity (veh/h)	790	764	800	862
Control Delay (s)	7.4	7.8	7.8	7.8
Approach Delay (s)	7.4	7.8	7.8	7.8
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	7	33	37	12	2	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	310		297			296
Travel Time (s)	8.5		8.1			8.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	54	0	0	132
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 17.8% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	33	37	12	2	117
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	37	41	13	2	130
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			297			
pX, platoon unblocked						
vC, conflicting volume	182	48			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	182	48			54	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	96			100	
cM capacity (veh/h)	806	1021			1551	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	44	54	132
Volume Left	8	0	2
Volume Right	37	13	0
cSH	976	1700	1551
Volume to Capacity	0.05	0.03	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	8.9	0.0	0.1
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	0.1
Approach LOS	A		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	30	12	19	8	2	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	293		236			320
Travel Time (s)	8.0		6.4			8.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	30	0	0	91
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 15.8% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	30	12	19	8	2	80
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	13	21	9	2	89
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	119	26			30	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	119	26			30	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	99			100	
cM capacity (veh/h)	876	1050			1583	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	47	30	91
Volume Left	33	0	2
Volume Right	13	9	0
cSH	919	1700	1583
Volume to Capacity	0.05	0.02	0.00
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.1	0.0	0.2
Lane LOS	A		A
Approach Delay (s)	9.1	0.0	0.2
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	480	70	1	192	27	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	11
Grade (%)	0%			-12%	0%	
Link Speed (mph)	25			25	25	
Link Distance (ft)	362			548	320	
Travel Time (s)	9.9			14.9	8.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	533	78	0	214	46	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	480	70	1	192	27	14
Sign Control	Free			Free	Stop	
Grade	0%			-12%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	533	78	1	213	30	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	362			548		
pX, platoon unblocked			0.80		0.80	0.80
vC, conflicting volume			611		749	533
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			396		567	299
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		92	97
cM capacity (veh/h)			936		390	596

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	533	78	214	46
Volume Left	0	0	1	30
Volume Right	0	78	0	16
cSH	1700	1700	936	442
Volume to Capacity	0.31	0.05	0.00	0.10
Queue Length 95th (ft)	0	0	0	9
Control Delay (s)	0.0	0.0	0.1	14.1
Lane LOS			A	B
Approach Delay (s)	0.0		0.1	14.1
Approach LOS				B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	94	672	34	0	605
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12
Grade (%)	0%		4%			-4%
Link Speed (mph)	25		25			25
Link Distance (ft)	487		133			306
Travel Time (s)	13.3		3.6			8.3
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	104	785	0	0	672
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 26.2% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	94	672	34	0	605
Sign Control	Stop		Free			Free
Grade	0%		4%			-4%
Peak Hour Factor	0.92	0.90	0.90	0.90	0.92	0.90
Hourly flow rate (vph)	0	104	747	38	0	672
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			133			306
pX, platoon unblocked						
vC, conflicting volume	990	268			784	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	990	268			784	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	86			100	
cM capacity (veh/h)	243	730			830	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	104	299	299	187	224	224	224
Volume Left	0	0	0	0	0	0	0
Volume Right	104	0	0	38	0	0	0
cSH	730	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.14	0.18	0.18	0.11	0.13	0.13	0.13
Queue Length 95th (ft)	12	0	0	0	0	0	0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	10.8	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	0	451	344	18	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	11
Storage Length (ft)	0			25	0	0
Storage Lanes	0			1	0	1
Taper Length (ft)	25				25	
Link Speed (mph)		25	25		25	
Link Distance (ft)		374	248		376	
Travel Time (s)		10.2	6.8		10.3	
Confl. Peds. (#/hr)	300			300		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	501	402	0	0	32
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	451	344	18	0	29
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	501	382	20	0	32
Pedestrians					300	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					23	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		374	248			
pX, platoon unblocked						
vC, conflicting volume	702				943	501
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	702				943	501
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	92
cM capacity (veh/h)	687				201	397

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	251	251	255	147	32
Volume Left	0	0	0	0	0
Volume Right	0	0	0	20	32
cSH	1700	1700	1700	1700	397
Volume to Capacity	0.15	0.15	0.15	0.09	0.08
Queue Length 95th (ft)	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.0	0.0	14.9
Lane LOS					B
Approach Delay (s)	0.0		0.0		14.9
Approach LOS					B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Lane Group	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	39	256	161	911	289	670	393	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Right Turn on Red	No				Yes			No
Link Speed (mph)		25		25			25	
Link Distance (ft)		325		277			334	
Travel Time (s)		8.9		7.6			9.1	
Confl. Peds. (#/hr)			31					31
Peak Hour Factor	0.58	0.93	0.86	0.80	0.70	0.89	0.96	0.80
Heavy Vehicles (%)	9%	4%	5%	1%	0%	1%	1%	3%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	342	187	1139	413	753	409	394
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	31.0	31.0	31.0
Total Split (s)	23.0	23.0	23.0	29.0	29.0	38.0	38.0	38.0
Total Split (%)	25.6%	25.6%	25.6%	32.2%	32.2%	42.2%	42.2%	42.2%
Maximum Green (s)	18.0	18.0	18.0	24.0	24.0	33.0	33.0	33.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?								
Walk Time (s)						11.0	11.0	11.0
Flash Dont Walk (s)						10.0	10.0	10.0
Pedestrian Calls (#/hr)						0	0	0
Act Effct Green (s)		18.0	18.0	24.0	24.0	33.0	33.0	33.0
Actuated g/C Ratio		0.20	0.20	0.27	0.27	0.37	0.37	0.37
v/c Ratio		1.19	0.72	1.36	0.82	1.29	0.67	0.77
Control Delay		148.1	51.6	188.1	17.9	170.5	30.2	37.1
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		148.1	51.6	188.1	17.9	170.5	30.2	37.1
LOS		F	D	F	B	F	C	D
Approach Delay		114.0		142.8			99.9	
Approach LOS		F		F			F	
Queue Length 50th (ft)		~236	100	~442	51	~551	192	194
Queue Length 95th (ft)		#402	#184	m#416	m47	#755	296	260
Internal Link Dist (ft)		245		197			254	
Turn Bay Length (ft)								
Base Capacity (vph)		288	258	840	506	584	615	512
Starvation Cap Reductn		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0
Reduced v/c Ratio		1.19	0.72	1.36	0.82	1.29	0.67	0.77

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Intersection Summary

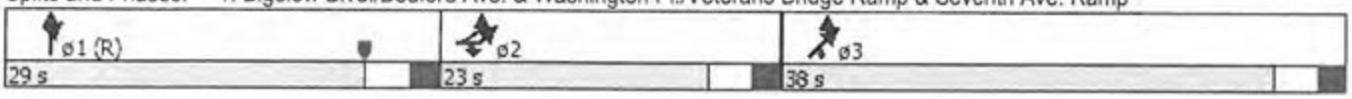
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 27 (30%), Referenced to phase 1:NBT, Start of Yellow
Natural Cycle: 140
Control Type: Pretimed
Maximum v/c Ratio: 1.36
Intersection Signal Delay: 120.3 Intersection LOS: F
Intersection Capacity Utilization 99.9% ICU Level of Service F
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp



2: Bedford Ave. & Street 1/HOV & Liberty/Seventh Ave. Ramp

Lane Group	NBL	NBT	NBR	NEL2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	114	120	31	117	248	276	96	30	186	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	16	12	13	12	12	12	12
Grade (%)		2%				10%			-12%	
Storage Length (ft)	0		1		0		60	0		0
Storage Lanes	0		0		1		1	0		0
Taper Length (ft)	25				25			25		
Right Turn on Red			No				Yes			
Link Speed (mph)		25				25			25	
Link Distance (ft)		232				549			413	
Travel Time (s)		6.3				15.0			11.3	
Confl. Peds. (#/hr)				20			23	58		
Peak Hour Factor	0.54	0.43	0.61	0.64	0.66	0.81	0.39	0.58	0.85	0.78
Heavy Vehicles (%)	3%	0%	0%	0%	1%	2%	3%	0%	2%	2%
Parking (#/hr)	0	0	0							0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	541	0	183	0	963	0	0	572	0
Turn Type	Split	NA		Split	Split	NA		Split	NA	
Protected Phases	9	9		2	2	2		4	4	
Permitted Phases						2				
Detector Phase	9	9		2	2	2		4	4	
Switch Phase										
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	38.0	38.0		26.0	26.0	26.0		22.0	22.0	
Total Split (s)	38.0	38.0		30.0	30.0	30.0		22.0	22.0	
Total Split (%)	42.2%	42.2%		33.3%	33.3%	33.3%		24.4%	24.4%	
Maximum Green (s)	32.0	32.0		24.0	24.0	24.0		16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		0.0		0.0		0.0			0.0	
Total Lost Time (s)		6.0		6.0		6.0			6.0	
Lead/Lag										
Lead-Lag Optimize?										
Vehicle Extension (s)	4.0	4.0		4.0	4.0	4.0		3.0	3.0	
Recall Mode	None	None		None	None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		5.0	5.0	
Flash Dont Walk (s)	25.0	25.0		13.0	13.0	13.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0	
Act Effct Green (s)		32.0		24.0		24.0			16.0	
Actuated g/C Ratio		0.36		0.27		0.27			0.18	
v/c Ratio		1.08		0.39		1.19			1.10dr	
Control Delay		93.7		30.1		126.8			86.3	
Queue Delay		0.0		0.0		0.0			0.0	
Total Delay		93.7		30.1		126.8			86.3	
LOS		F		C		F			F	
Approach Delay		93.7				111.4			86.3	
Approach LOS		F				F			F	
Queue Length 50th (ft)		~347		85		~340			~186	

Lane Group	NBL	NBT	NBR	NEL2	NEL	NET	NER	SWL	SWT	SWR
Queue Length 95th (ft)		160		98		#391			#265	
Internal Link Dist (ft)		152				469			333	
Turn Bay Length (ft)										
Base Capacity (vph)		501		466		811			551	
Starvation Cap Reductn		0		0		0			0	
Spillback Cap Reductn		0		0		0			0	
Storage Cap Reductn		0		0		0			0	
Reduced v/c Ratio		1.08		0.39		1.19			1.04	

Intersection Summary

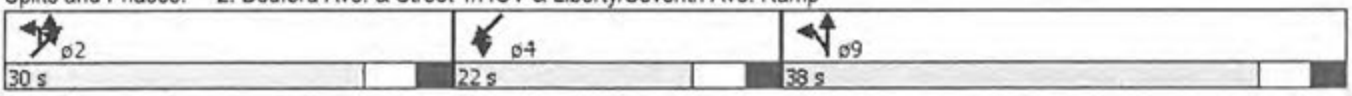
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 100.8 Intersection LOS: F
Intersection Capacity Utilization 66.4% ICU Level of Service C
Analysis Period (min) 15

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

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 2: Bedford Ave. & Street 1/HOV & Liberty/Seventh Ave. Ramp



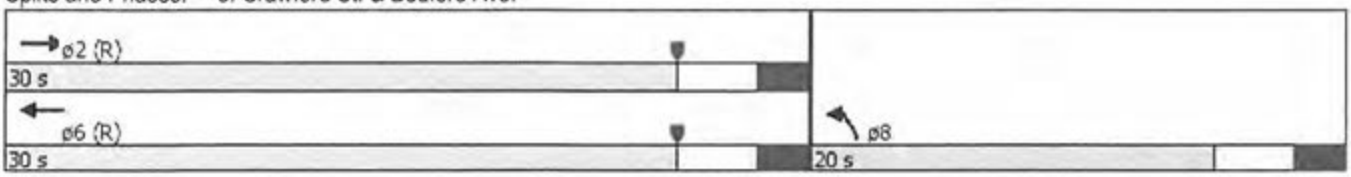
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	32	137	40	80	412	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	498			264	559	
Travel Time (s)	13.6			7.2	15.2	
Confl. Peds. (#/hr)		6	6			6
Peak Hour Factor	0.80	0.85	0.75	0.86	0.92	0.85
Heavy Vehicles (%)	0%	2%	17%	1%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	161	0	146	532	0
Turn Type	NA	Perm	Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases		2	6			
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	
Total Split (s)	30.0	30.0	30.0	30.0	20.0	
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%	
Maximum Green (s)	25.0	25.0	25.0	25.0	15.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0	
Act Effct Green (s)	25.0	25.0		25.0	15.0	
Actuated g/C Ratio	0.50	0.50		0.50	0.30	
v/c Ratio	0.04	0.19		0.18	0.98	
Control Delay	6.6	2.1		7.7	56.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	6.6	2.1		7.7	56.5	
LOS	A	A		A	E	
Approach Delay	3.0			7.7	56.5	
Approach LOS	A			A	E	
Queue Length 50th (ft)	5	0		21	147	
Queue Length 95th (ft)	14	18		43	#320	
Internal Link Dist (ft)	418			184	479	
Turn Bay Length (ft)						
Base Capacity (vph)	950	849		800	541	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.04	0.19		0.18	0.98	

Intersection Summary

Area Type: Other

Cycle Length: 50
Actuated Cycle Length: 50
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 36.1 Intersection LOS: D
Intersection Capacity Utilization 48.9% ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Crawford St. & Bedford Ave.



4: Crawford St. & Wylie Avenue/Wylie Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	23	24	0	31	52	368	29	0	222	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		555			332			705			559	
Travel Time (s)		15.1			9.1			19.2			15.2	
Confl. Peds. (#/hr)						1			9	9		
Peak Hour Factor	0.90	0.90	0.90	0.79	0.90	0.79	0.90	0.91	0.65	0.92	0.85	0.90
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	69	0	0	507	0	0	261	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 55.8% ICU Level of Service B
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	23	24	0	31	52	368	29	0	222	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.79	0.90	0.79	0.90	0.91	0.65	0.92	0.85	0.90
Hourly flow rate (vph)	0	0	26	30	0	39	58	404	45	0	261	0
Pedestrians					9						1	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								705			559	
pX, platoon unblocked												
vC, conflicting volume	844	835	261	838	812	437	261			458		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	844	835	261	838	812	437	261			458		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	89	100	94	96			100		
cM capacity (veh/h)	255	288	777	266	297	619	1303			1105		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	70	507	261
Volume Left	0	30	58	0
Volume Right	26	39	45	0
cSH	777	392	1303	1105
Volume to Capacity	0.03	0.18	0.04	0.00
Queue Length 95th (ft)	3	16	3	0
Control Delay (s)	9.8	16.2	1.3	0.0
Lane LOS	A	C	A	
Approach Delay (s)	9.8	16.2	1.3	0.0
Approach LOS	A	C		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	364	186	198	229	276	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			25
Link Distance (ft)	792		414			230
Travel Time (s)	21.6		11.3			6.3
Confl. Peds. (#/hr)	97	253		77	77	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	425	186	474	0	307	530
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	24.0	24.0	46.0		46.0	46.0
Total Split (%)	34.3%	34.3%	65.7%		65.7%	65.7%
Maximum Green (s)	18.0	18.0	40.0		40.0	40.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	18.0	18.0	40.0		40.0	40.0
Actuated g/C Ratio	0.26	0.26	0.57		0.57	0.57
v/c Ratio	0.48	0.46	0.26		0.63	0.26
Control Delay	23.9	7.9	1.1		17.5	8.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	23.9	7.9	1.1		17.5	8.0
LOS	C	A	A		B	A
Approach Delay	19.0		1.1			11.5
Approach LOS	B		A			B
Queue Length 50th (ft)	78	0	8		80	54
Queue Length 95th (ft)	118	51	m4		170	79
Internal Link Dist (ft)	712		334			150
Turn Bay Length (ft)						
Base Capacity (vph)	881	406	1823		485	2022
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.48	0.46	0.26		0.63	0.26

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 59.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Sixth Ave./Sixth Ave & Centre Ave.

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	152	240	107	191	375	216	23	725	180	130	213	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Storage Length (ft)	0		0			0	0		0	0		
Storage Lanes	0		0			1	0		0	0		
Taper Length (ft)	25						25			25		
Right Turn on Red						No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		792			522			646			162	
Travel Time (s)		21.6			14.2			17.6			4.4	
Confl. Peds. (#/hr)	575		525	525		575	126		975	975		126
Peak Hour Factor	0.59	0.88	0.67	0.67	0.65	0.78	0.53	0.81	0.85	0.71	0.90	0.58
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	6%	1%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	691	0	285	854	0	0	1150	0	0	420	103
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (s)	43.0	43.0		43.0	43.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	47.8%	47.8%		47.8%	47.8%		35.6%	35.6%		35.6%	35.6%	35.6%
Maximum Green (s)	37.0	37.0		37.0	37.0		26.0	26.0		26.0	26.0	26.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)		-1.5		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	15.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		38.5		37.0	37.0			26.0			26.0	26.0
Actuated g/C Ratio		0.43		0.41	0.41			0.29			0.29	0.29
v/c Ratio		1.63dl		1.59	0.77			1.12			2.58dl	0.30
Control Delay		72.9		315.9	28.4			98.7			30.2	15.3
Queue Delay		0.0		0.0	0.0			0.0			0.0	0.0
Total Delay		72.9		315.9	28.4			98.7			30.2	15.3
LOS		E		F	C			F			C	B
Approach Delay		72.9			100.4			98.7			27.2	
Approach LOS		E			F			F			C	
Queue Length 50th (ft)		~225		~233	214			~278			130	40
Queue Length 95th (ft)		#324		#262	179			#308			m#194	42
Internal Link Dist (ft)		712			442			566			82	
Turn Bay Length (ft)				250								
Base Capacity (vph)		665		179	1113			1027			517	348
Starvation Cap Reductn		0		0	0			0			0	0
Spillback Cap Reductn		0		0	0			0			0	0

Lane Group	NEL	NER	NER2
Lane Configurations			
Volume (vph)	45	70	52
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)	7%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Right Turn on Red			No
Link Speed (mph)	25		
Link Distance (ft)	334		
Travel Time (s)	9.1		
Confl. Peds. (#/hr)	575		525
Peak Hour Factor	0.64	0.80	0.73
Heavy Vehicles (%)	5%	4%	0%
Shared Lane Traffic (%)		55%	
Lane Group Flow (vph)	118	111	0
Turn Type	NA	Perm	
Protected Phases	10		
Permitted Phases		10	
Minimum Split (s)	13.0	13.0	
Total Split (s)	15.0	15.0	
Total Split (%)	16.7%	16.7%	
Maximum Green (s)	9.0	9.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	9.0	9.0	
Actuated g/C Ratio	0.10	0.10	
v/c Ratio	0.83	1.85	
Control Delay	81.9	466.7	
Queue Delay	0.0	0.0	
Total Delay	81.9	466.7	
LOS	F	F	
Approach Delay	268.4		
Approach LOS	F		
Queue Length 50th (ft)	67	~102	
Queue Length 95th (ft)	#89	#185	
Internal Link Dist (ft)	254		
Turn Bay Length (ft)			
Base Capacity (vph)	143	60	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		1.04		1.59	0.77			1.12			0.81	0.30

Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 73 (81%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.85
Intersection Signal Delay: 94.8 Intersection LOS: F
Intersection Capacity Utilization 122.5% ICU Level of Service H
Analysis Period (min) 15

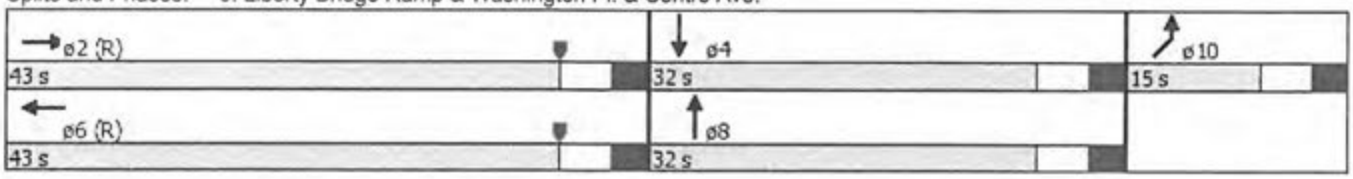
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.



Lane Group	NEL	NER	NER2
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.83	1.85	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	103	517	540	175	66	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	150			0	0	0
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		25	25		25	
Link Distance (ft)		522	443		366	
Travel Time (s)		14.2	12.1		10.0	
Confl. Peds. (#/hr)	1450			1450	225	225
Peak Hour Factor	0.86	0.95	0.95	0.81	0.45	0.84
Heavy Vehicles (%)	0%	2%	1%	0%	0%	6%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	664	784	0	147	335
Turn Type	Perm	NA	NA		NA	Perm
Protected Phases		2	6		4	
Permitted Phases	2					4
Minimum Split (s)	43.5	43.5	43.5		20.5	20.5
Total Split (s)	43.5	43.5	43.5		26.5	26.5
Total Split (%)	62.1%	62.1%	62.1%		37.9%	37.9%
Maximum Green (s)	38.0	38.0	38.0		21.0	21.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)		-1.5	-1.5		-1.5	0.0
Total Lost Time (s)		4.0	4.0		4.0	5.5
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0	7.0	7.0		5.0	5.0
Flash Dont Walk (s)	10.0	10.0	10.0		10.0	10.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)		39.5	39.5		22.5	21.0
Actuated g/C Ratio		0.56	0.56		0.32	0.30
v/c Ratio		0.60	0.62		0.32	1.36
Control Delay		13.0	9.2		20.5	210.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		13.0	9.2		20.5	210.4
LOS		B	A		C	F
Approach Delay		13.0	9.2		152.5	
Approach LOS		B	A		F	
Queue Length 50th (ft)		90	56		47	~194
Queue Length 95th (ft)		141	m56		42	#311
Internal Link Dist (ft)		442	363		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1099	1260		454	247
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.60	0.62		0.32	1.36

Intersection Summary

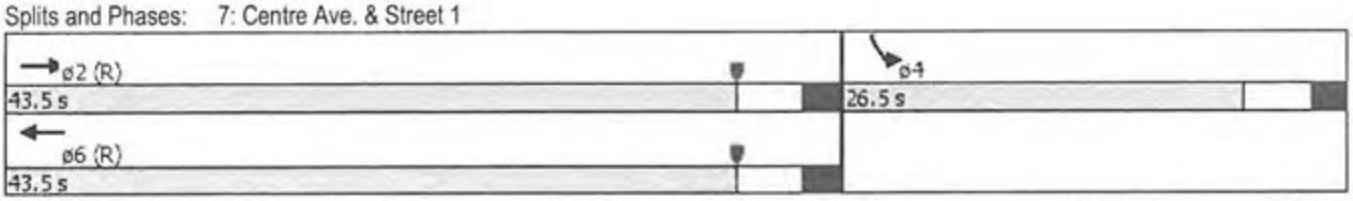
Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Pretimed
Maximum v/c Ratio: 1.36
Intersection Signal Delay: 46.3 Intersection LOS: D
Intersection Capacity Utilization 67.9% ICU Level of Service C
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Centre Ave. & Street 1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	492	4	0	672	33	0	38	56	46	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	11	11	11
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		443			374			129			297	
Travel Time (s)		12.1			10.2			3.5			8.1	
Confl. Peds. (#/hr)	750		100	100		750	225		125	125		225
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	647	0	0	784	0	0	104	0	0	99	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 62.1% ICU Level of Service B
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	86	492	4	0	672	33	0	38	56	46	0	43
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	96	547	4	0	747	37	0	42	62	51	0	48
Pedestrians		225			125			100			750	
Lane Width (ft)		11.0			11.0			12.0			11.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		17			10			8			57	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		443			622							
pX, platoon unblocked												
vC, conflicting volume	1533			651			1486	2373	501	2188	2357	1367
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1533			651			1486	2373	501	2188	2357	1367
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	48			100			100	0	85	0	100	1
cM capacity (veh/h)	184			854			0	6	428	0	7	48

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	369	278	373	410	104	99
Volume Left	96	0	0	0	0	51
Volume Right	0	4	0	37	62	48
cSH	184	1700	854	1700	16	0
Volume to Capacity	0.52	0.16	0.00	0.24	6.71	Err
Queue Length 95th (ft)	66	0	0	0	Err	Err
Control Delay (s)	31.7	0.0	0.0	0.0	Err	Err
Lane LOS	D				F	F
Approach Delay (s)	18.1		0.0		Err	Err
Approach LOS					F	F

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	148	233	35	206	41	320	277	64	14	103	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	11	12	12	15	12	12	14	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		248			357			640			705	
Travel Time (s)		6.8			9.7			17.5			19.2	
Confl. Peds. (#/hr)	52		26	26		52	29		5	5		29
Peak Hour Factor	0.82	0.82	0.85	0.67	0.70	0.63	0.79	0.69	0.81	0.89	0.70	0.75
Heavy Vehicles (%)	4%	4%	0%	3%	2%	0%	4%	1%	2%	0%	6%	4%
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	329	274	52	359	0	0	885	0	0	388	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	33.0	33.0	33.0	33.0	33.0		37.0	37.0		37.0	37.0	
Total Split (%)	47.1%	47.1%	47.1%	47.1%	47.1%		52.9%	52.9%		52.9%	52.9%	
Maximum Green (s)	28.0	28.0	28.0	28.0	28.0		32.0	32.0		32.0	32.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		5.0	5.0	5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	
Act Effct Green (s)		28.0	28.0	28.0	28.0			32.0			32.0	
Actuated g/C Ratio		0.40	0.40	0.40	0.40			0.46			0.46	
v/c Ratio		0.85	0.37	0.16	0.52			1.69			0.51	
Control Delay		43.0	6.4	15.1	18.2			340.7			11.4	
Queue Delay		0.0	0.0	0.0	0.0			0.0			0.0	
Total Delay		43.0	6.4	15.1	18.2			340.7			11.4	
LOS		D	A	B	B			F			B	
Approach Delay		26.4			17.8			340.7			11.4	
Approach LOS		C			B			F			B	
Queue Length 50th (ft)		112	2	14	107			~579			70	
Queue Length 95th (ft)		#225	47	26	126			#549			87	
Internal Link Dist (ft)		168			277			560			625	
Turn Bay Length (ft)												
Base Capacity (vph)		386	741	327	697			523			757	
Starvation Cap Reductn		0	0	0	0			0			0	
Spillback Cap Reductn		0	0	0	0			0			0	
Storage Cap Reductn		0	0	0	0			0			0	
Reduced v/c Ratio		0.85	0.37	0.16	0.52			1.69			0.51	

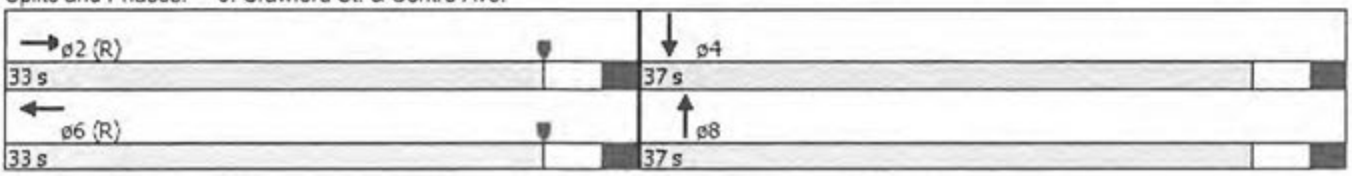
Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.69
Intersection Signal Delay: 143.9 Intersection LOS: F
Intersection Capacity Utilization 99.6% ICU Level of Service F
Analysis Period (min) 15

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

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

Splits and Phases: 9: Crawford St. & Centre Ave.



10: Crawford Ave/Crawford Avenue & Colwell St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	67	7	12	14	15	556	0	0	314	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			231			283			70	
Travel Time (s)		8.6			6.3			7.7			1.9	
Confl. Peds. (#/hr)	8		4	4		8	42		19	19		42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	37	0	0	635	0	0	411	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	67	7	12	14	15	556	0	0	314	56
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	74	8	13	16	17	618	0	0	349	62
Pedestrians		42			19			4			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			2			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1103	1092	426	1129	1123	645	453			637		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1053	1040	426	1081	1075	535	453			526		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	88	95	93	97	98			100		
cM capacity (veh/h)	151	191	604	142	182	472	1069			908		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	37	634	411
Volume Left	0	8	17	0
Volume Right	74	16	0	62
cSH	604	228	1069	908
Volume to Capacity	0.12	0.16	0.02	0.00
Queue Length 95th (ft)	10	14	1	0
Control Delay (s)	11.8	23.8	0.4	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.8	23.8	0.4	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	0	198	213	617	327	40	103	0	0	738	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	10	12	12	11	12	12	12	12
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		130			635			238			414	
Travel Time (s)		3.5			17.3			6.5			11.3	
Confl. Peds. (#/hr)	859		99	99		859	14		65	65		14
Peak Hour Factor	0.80	0.92	0.83	0.89	0.94	0.93	0.75	0.75	0.92	0.92	0.89	0.75
Heavy Vehicles (%)	7%	2%	18%	0%	3%	12%	0%	1%	2%	2%	2%	19%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	239	1008	0	0	190	0	0	969	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		28.0	28.0			28.0	
Minimum Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0			41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%			58.6%	
Maximum Green (s)	23.0	23.0		23.0	23.0		35.0	35.0			35.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2			0.2	
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max			Max	
Walk Time (s)	13.0	13.0		13.0	13.0		25.0	25.0			25.0	
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.0		23.0	23.0			35.0			35.0	
Actuated g/C Ratio		0.33		0.33	0.33			0.50			0.50	
v/c Ratio		2.43		1.02	2.34			0.18			0.64	
Control Delay		681.0		91.8	630.6			5.6			17.0	
Queue Delay		3.4		34.6	0.0			0.0			0.1	
Total Delay		684.5		126.5	630.6			5.6			17.1	
LOS		F		F	F			A			B	
Approach Delay		684.5			534.0			5.6			17.1	
Approach LOS		F			F			A			B	
Queue Length 50th (ft)		~167		~105	~730			22			200	
Queue Length 95th (ft)		#313		#236	#954			27			259	
Internal Link Dist (ft)		50			555			158			334	
Turn Bay Length (ft)												
Base Capacity (vph)		124		235	430			1078			1513	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0		0	0			0			68	
Spillback Cap Reductn		18		91	0			0			0	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		2.84		1.66	2.34			0.18			0.67	

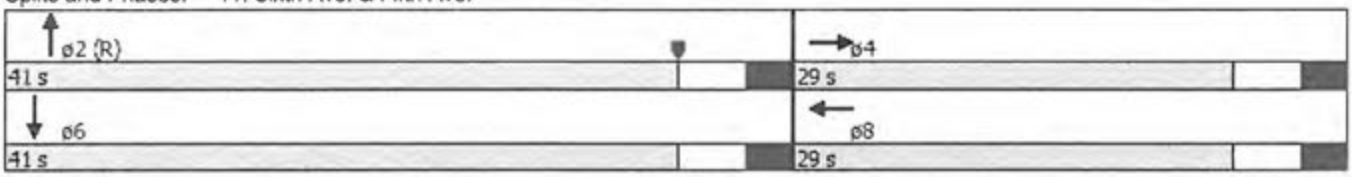
Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 69 (99%), Referenced to phase 2:NBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.43
Intersection Signal Delay: 328.6 — Intersection LOS: F
Intersection Capacity Utilization 119.8% — ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 11: Sixth Ave. & Fifth Ave.



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	624	664	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	635			437	582	
Travel Time (s)	17.3			11.9	15.9	
Confl. Peds. (#/hr)			18			
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	1%	9%	2%	2%
Parking (#/hr)			0	0		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1346	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 43.9% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	624	664	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	624	722	0	0
Pedestrians					18	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			18		1627	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		1627	18
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			61		100	100
cM capacity (veh/h)			1605		57	1056

Direction, Lane #	WB 1	WB 2
Volume Total	865	481
Volume Left	624	0
Volume Right	0	0
cSH	1605	1700
Volume to Capacity	0.39	0.28
Queue Length 95th (ft)	47	0
Control Delay (s)	7.3	0.0
Lane LOS	A	
Approach Delay (s)	4.7	
Approach LOS		

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	124	866	332	137	489	0	0	180	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Right Turn on Red			No			Yes			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		437			753			310			646	
Travel Time (s)		11.9			20.5			8.5			17.6	
Confl. Peds. (#/hr)				139		202	25					25
Peak Hour Factor	0.92	0.92	0.92	0.93	0.96	0.93	0.91	0.94	0.92	0.92	0.88	0.83
Heavy Vehicles (%)	2%	2%	2%	1%	5%	1%	1%	0%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1392	0	151	520	0	0	205	408
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Minimum Split (s)				44.0	44.0		30.0	30.0			30.0	30.0
Total Split (s)				50.0	50.0		30.0	30.0			30.0	30.0
Total Split (%)				62.5%	62.5%		37.5%	37.5%			37.5%	37.5%
Maximum Green (s)				43.0	43.0		24.0	24.0			24.0	24.0
Yellow Time (s)				3.0	3.0		4.0	4.0			4.0	4.0
All-Red Time (s)				4.0	4.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)					7.0		6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				15.0	15.0		9.0	9.0			9.0	9.0
Flash Dont Walk (s)				22.0	22.0		15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0			0	0
Act Effct Green (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
v/c Ratio					0.98		0.52	1.04			0.39	0.56
Control Delay					30.6		25.5	72.8			25.0	27.1
Queue Delay					0.0		0.0	22.1			0.0	0.0
Total Delay					30.6		25.5	94.8			25.0	27.1
LOS					C		C	F			C	C
Approach Delay					30.6			79.2			26.4	
Approach LOS					C			E			C	
Queue Length 50th (ft)					197		39	~206			81	96
Queue Length 95th (ft)					#277		100	#464			136	131
Internal Link Dist (ft)		357			673			230			566	
Turn Bay Length (ft)												
Base Capacity (vph)					1422		290	500			520	731
Starvation Cap Reductn					0		0	29			0	0
Spillback Cap Reductn					0		0	0			0	0
Storage Cap Reductn					0		0	0			0	0
Reduced v/c Ratio					0.98		0.52	1.10			0.39	0.56

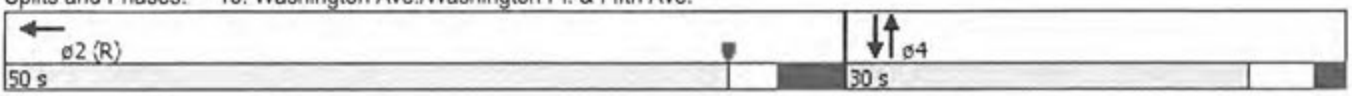
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 39 (49%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 41.8 Intersection LOS: D
Intersection Capacity Utilization 88.6% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 13: Washington Ave./Washington Pl. & Fifth Ave.

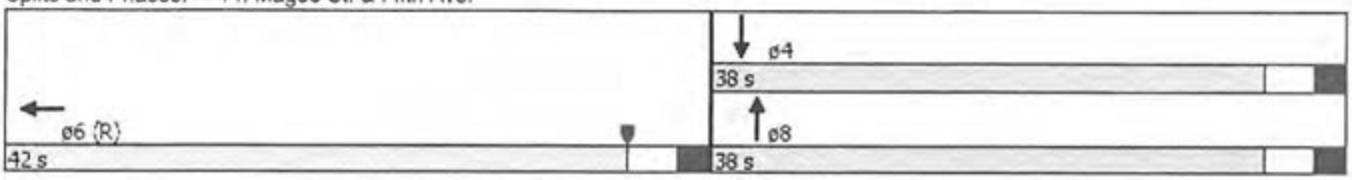


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	56	991	4	299	14	0	0	1	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		753			499			335			119	
Travel Time (s)		20.5			13.6			9.1			3.2	
Confl. Peds. (#/hr)				87		214	8					8
Peak Hour Factor	0.92	0.92	0.92	0.67	0.87	0.50	0.85	0.46	0.92	0.92	0.25	0.67
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1231	0	0	382	0	0	17	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				42.0	42.0		38.0	38.0			38.0	
Total Split (%)				52.5%	52.5%		47.5%	47.5%			47.5%	
Maximum Green (s)				37.0	37.0		33.0	33.0			33.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					37.0			33.0			33.0	
Actuated g/C Ratio					0.46			0.41			0.41	
v/c Ratio					0.80			0.73			0.03	
Control Delay					17.2			24.2			9.8	
Queue Delay					0.4			1.4			0.0	
Total Delay					17.6			25.6			9.8	
LOS					B			C			A	
Approach Delay					17.6			25.6			9.8	
Approach LOS					B			C			A	
Queue Length 50th (ft)					273			175			2	
Queue Length 95th (ft)					304			103			2	
Internal Link Dist (ft)		673			419			255			39	
Turn Bay Length (ft)												
Base Capacity (vph)					1545			524			650	
Starvation Cap Reductn					66			42			0	
Spillback Cap Reductn					0			0			83	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.83			0.79			0.03	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 35 (44%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 61.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 14: Magee St. & Fifth Ave.

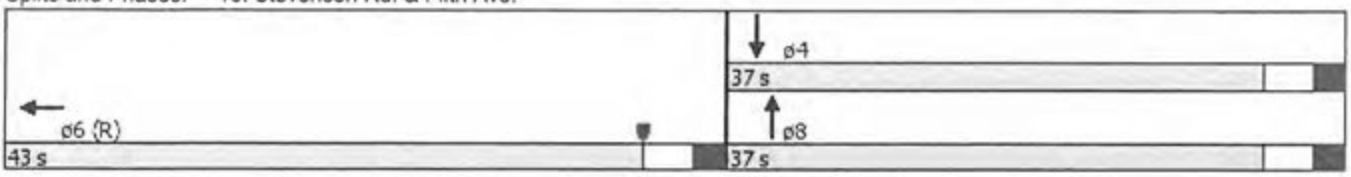


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	90	805	34	200	61	0	0	19	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		499			406			324			114	
Travel Time (s)		13.6			11.1			8.8			3.1	
Confl. Peds. (#/hr)				15		84	3					3
Peak Hour Factor	0.92	0.92	0.92	0.72	0.98	0.43	0.82	0.72	0.92	0.92	0.85	0.62
Heavy Vehicles (%)	2%	2%	2%	1%	5%	3%	2%	4%	2%	2%	6%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1025	0	0	329	0	0	96	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				43.0	43.0		37.0	37.0			37.0	
Total Split (%)				53.8%	53.8%		46.3%	46.3%			46.3%	
Maximum Green (s)				38.0	38.0		32.0	32.0			32.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
v/c Ratio					0.69			0.62			0.14	
Control Delay					8.7			22.8			6.9	
Queue Delay					0.4			1.5			0.0	
Total Delay					9.1			24.4			6.9	
LOS					A			C			A	
Approach Delay					9.1			24.4			6.9	
Approach LOS					A			C			A	
Queue Length 50th (ft)					90			109			8	
Queue Length 95th (ft)					m123			144			33	
Internal Link Dist (ft)		419			326			244			34	
Turn Bay Length (ft)												
Base Capacity (vph)					1480			532			679	
Starvation Cap Reductn					121			81			0	
Spillback Cap Reductn					40			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.75			0.73			0.14	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 12.4 Intersection LOS: B
Intersection Capacity Utilization 55.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Stevenson Rd. & Fifth Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	876	330	29	241	0	0	325	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		406			265			320			283	
Travel Time (s)		11.1			7.2			8.7			7.7	
Confl. Peds. (#/hr)				43		66	17					17
Peak Hour Factor	0.92	0.92	0.92	0.54	0.95	0.80	0.69	0.89	0.92	0.92	0.95	0.77
Heavy Vehicles (%)	2%	2%	2%	2%	9%	8%	5%	8%	2%	2%	5%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1419	0	0	313	0	0	426	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				49.0	49.0		31.0	31.0			31.0	
Total Split (%)				61.3%	61.3%		38.8%	38.8%			38.8%	
Maximum Green (s)				44.0	44.0		26.0	26.0			26.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					44.0			26.0			26.0	
Actuated g/C Ratio					0.55			0.32			0.32	
v/c Ratio					0.86			0.75			0.61	
Control Delay					21.1			35.7			26.3	
Queue Delay					0.0			0.4			0.0	
Total Delay					21.1			36.0			26.3	
LOS					C			D			C	
Approach Delay					21.1			36.0			26.3	
Approach LOS					C			D			C	
Queue Length 50th (ft)					274			165			170	
Queue Length 95th (ft)					#390			m212			264	
Internal Link Dist (ft)		326			185			240			203	
Turn Bay Length (ft)												
Base Capacity (vph)					1645			416			697	
Starvation Cap Reductn					0			8			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.86			0.77			0.61	

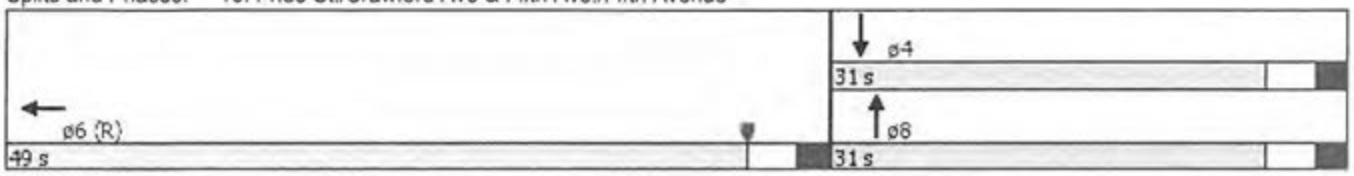
Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 11 (14%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 24.3 Intersection LOS: C
Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	321	11	1	126	0	0	1201	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		142			582			105			238	
Travel Time (s)		3.9			15.9			2.9			6.5	
Confl. Peds. (#/hr)						69	7					7
Peak Hour Factor	0.92	0.92	0.92	0.95	0.86	0.67	0.25	0.82	0.25	0.92	0.97	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	1%	0%	0%	1%	0%	2%	4%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	187	373	16	0	158	0	0	1279	0
Turn Type				Perm	NA	Perm	custom	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	1 2	1				
Detector Phase				4	4	4	1 2	2			6	
Switch Phase												
Minimum Initial (s)				8.0	8.0	8.0		18.0			25.0	
Minimum Split (s)				27.5	27.5	27.5		30.5			30.5	
Total Split (s)				28.0	28.0	28.0		31.0			42.0	
Total Split (%)				40.0%	40.0%	40.0%		44.3%			60.0%	
Maximum Green (s)				22.5	22.5	22.5		25.5			36.5	
Yellow Time (s)				3.5	3.5	3.5		3.5			3.5	
All-Red Time (s)				2.0	2.0	2.0		2.0			2.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.5	5.5	5.5		5.5			5.5	
Lead/Lag								Lag				
Lead-Lag Optimize?												
Vehicle Extension (s)				0.2	0.2	0.2		0.2			0.2	
Recall Mode				Ped	Ped	Ped		C-Max			C-Max	
Walk Time (s)				12.0	12.0	12.0		15.0			15.0	
Flash Dont Walk (s)				10.0	10.0	10.0		10.0			10.0	
Pedestrian Calls (#/hr)				0	0	0		0			0	
Act Effct Green (s)				22.5	22.5	22.5		31.0			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.44			0.52	
v/c Ratio				0.39	0.74	0.04		0.11			0.79	
Control Delay				21.5	31.7	16.8		7.3			11.6	
Queue Delay				674.3	0.0	0.0		0.9			39.9	
Total Delay				695.7	31.7	16.8		8.2			51.4	
LOS				F	C	B		A			D	
Approach Delay					246.9			8.2			51.4	
Approach LOS					F			A			D	
Queue Length 50th (ft)				62	141	5		16			143	
Queue Length 95th (ft)				114	#227	13		m19			m192	
Internal Link Dist (ft)		62			502			25			158	
Turn Bay Length (ft)												
Base Capacity (vph)				477	507	402		1412			1621	
Starvation Cap Reductn				0	0	0		1026			436	

Lane Group	ø1
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	16%
Maximum Green (s)	8.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				477	0	0		0			42	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				187.00	0.74	0.04		0.41			1.08	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 55 (79%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 104.0 Intersection LOS: F
Intersection Capacity Utilization 65.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Sixth Ave. & Diamond St.

Lane Group	ø1
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	578	201	22	61	3	41	97	60	436	941	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	12	12	11	12	12	12	12
Right Turn on Red			No			Yes			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			634			330			105	
Travel Time (s)		8.9			17.3			9.0			2.9	
Confl. Peds. (#/hr)	2		147	147		2	6		22	22		6
Peak Hour Factor	0.83	0.84	0.73	0.50	0.50	0.25	0.77	0.88	0.84	0.92	0.98	0.75
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	8%	2%	7%	10%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	728	275	0	178	0	0	234	0	0	1435	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		8.0	25.0	
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5		30.5	30.5		11.0	30.5	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		31.0	31.0		11.0	42.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		44.3%	44.3%		15.7%	60.0%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		25.5	25.5		8.0	36.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5			5.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	Ped	Ped	Ped	Ped	Ped		C-Max	C-Max		Min	C-Max	
Walk Time (s)	12.0	12.0	12.0	12.0	12.0		15.0	15.0			15.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effct Green (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
v/c Ratio		1.42	0.72		1.55			0.34			1.15	
Control Delay		225.4	33.7		309.4			12.7			88.4	
Queue Delay		0.2	0.0		0.4			0.0			0.1	
Total Delay		225.6	33.7		309.8			12.7			88.5	
LOS		F	C		F			B			F	
Approach Delay		173.0			309.8			12.7			88.5	
Approach LOS		F			F			B			F	
Queue Length 50th (ft)		~433	103		~110			25			~298	
Queue Length 95th (ft)		#572	139		#101			50			#506	
Internal Link Dist (ft)		245			554			250			25	
Turn Bay Length (ft)												
Base Capacity (vph)		512	384		115			690			1248	
Starvation Cap Reductn		0	0		0			0			30	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		11	0		2			2			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		1.45	0.72		1.58			0.34			1.18	

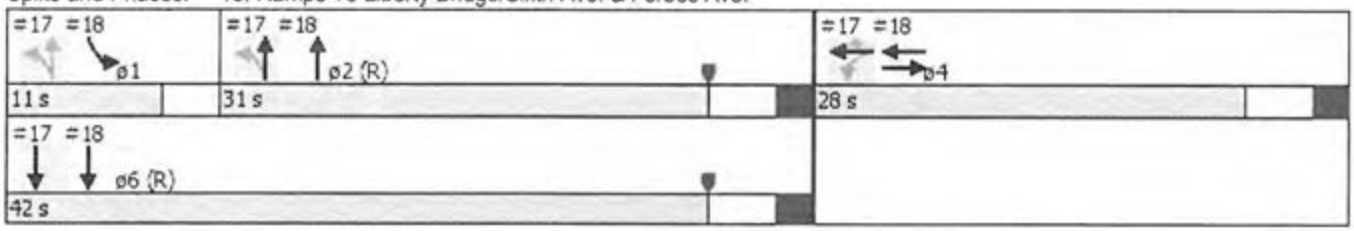
Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 55 (79%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 125.8 Intersection LOS: F
Intersection Capacity Utilization 115.1% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	940	460	0	0	86	659
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	10	10
Storage Length (ft)		0	0		0	60
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Right Turn on Red		No				No
Link Speed (mph)	25			25	25	
Link Distance (ft)	634			303	752	
Travel Time (s)	17.3			8.3	20.5	
Confl. Peds. (#/hr)		79				
Peak Hour Factor	0.91	0.86	0.92	0.92	0.85	0.82
Heavy Vehicles (%)	3%	1%	2%	2%	3%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1568	0	0	0	101	804
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Minimum Split (s)	35.0				22.0	22.0
Total Split (s)	50.0				30.0	30.0
Total Split (%)	62.5%				37.5%	37.5%
Maximum Green (s)	45.0				25.0	25.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	2.0				2.0	2.0
Lost Time Adjust (s)	0.0				0.0	0.0
Total Lost Time (s)	5.0				5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	10.0				10.0	10.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	45.0				25.0	25.0
Actuated g/C Ratio	0.56				0.31	0.31
v/c Ratio	1.03				0.22	1.09
Control Delay	50.0				21.9	88.9
Queue Delay	28.8				0.0	0.0
Total Delay	78.8				21.9	88.9
LOS	E				C	F
Approach Delay	78.8				81.5	
Approach LOS	E				F	
Queue Length 50th (ft)	~447				37	~260
Queue Length 95th (ft)	#579				70	#327
Internal Link Dist (ft)	554			223	672	
Turn Bay Length (ft)						60
Base Capacity (vph)	1525				460	738
Starvation Cap Reductn	0				0	0
Spillback Cap Reductn	300				0	0
Storage Cap Reductn	0				0	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Reduced v/c Ratio	1.28				0.22	1.09

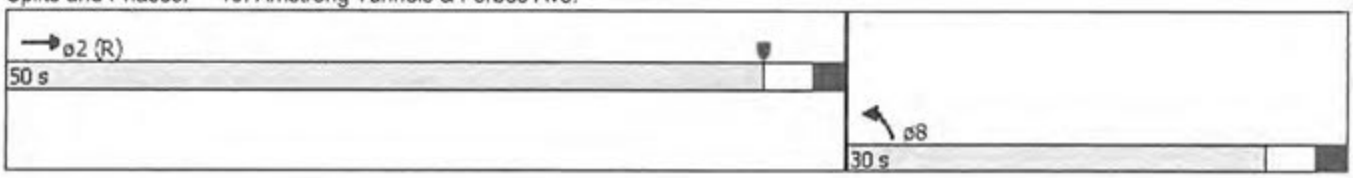
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 72 (90%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 79.8 Intersection LOS: E
Intersection Capacity Utilization 80.9% ICU Level of Service D
Analysis Period (min) 15

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

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

Splits and Phases: 19: Amstrong Tunnels & Forbes Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	485	1034	81	0	0	0	0	139	115	243	46	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		303			745			205			310	
Travel Time (s)		8.3			20.3			5.6			8.5	
Confl. Peds. (#/hr)	54		95						69	69		
Peak Hour Factor	0.96	0.92	0.83	0.92	0.92	0.92	0.92	0.79	0.79	0.84	0.55	0.92
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	0%	0%	1%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	505	1222	0	0	0	0	0	176	146	0	373	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Minimum Split (s)	51.0	51.0						23.0	23.0	23.0	23.0	
Total Split (s)	51.0	51.0						29.0	29.0	29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%	36.3%	36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0	24.0	24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	31.0	31.0						8.0	8.0	8.0	8.0	
Flash Dont Walk (s)	15.0	15.0						10.0	10.0	10.0	10.0	
Pedestrian Calls (#/hr)	0	0						0	0	0	0	
Act Effct Green (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
v/c Ratio	0.58	0.72						0.35	0.34		1.38	
Control Delay	14.9	16.6						24.2	16.9		220.2	
Queue Delay	21.1	49.3						0.2	0.0		0.0	
Total Delay	36.0	65.8						24.4	16.9		220.2	
LOS	D	E						C	B		F	
Approach Delay		57.1						21.0			220.2	
Approach LOS		E						C			F	
Queue Length 50th (ft)	168	243						68	36		~258	
Queue Length 95th (ft)	m156	m223						104	68		#201	
Internal Link Dist (ft)		223			665			125			230	
Turn Bay Length (ft)												
Base Capacity (vph)	868	1704						510	425		270	
Starvation Cap Reductn	363	650						0	0		0	
Spillback Cap Reductn	70	0						45	0		0	
Storage Cap Reductn	0	0						0	0		0	
Reduced v/c Ratio	1.00	1.16						0.38	0.34		1.38	

Intersection Summary

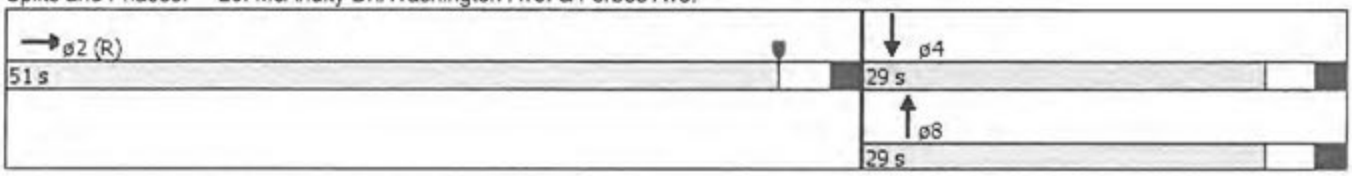
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 8 (10%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.38
Intersection Signal Delay: 77.4 Intersection LOS: E
Intersection Capacity Utilization 83.5% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: McAnulty Dr./Washington Ave. & Forbes Ave.



21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

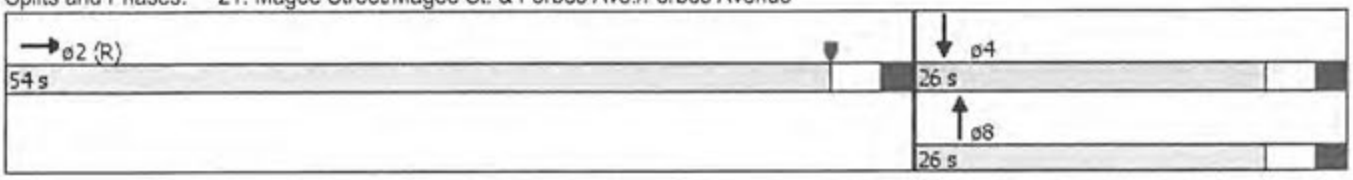
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1048	107	0	0	0	0	116	125	22	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		745			503			182			335	
Travel Time (s)		20.3			13.7			5.0			9.1	
Confl. Peds. (#/hr)	14		34						22	22		
Peak Hour Factor	0.64	0.87	0.75	0.92	0.92	0.92	0.92	0.73	0.77	0.69	0.35	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1786	0	0	0	0	0	321	0	0	343	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	54.0	54.0						26.0		26.0	26.0	
Total Split (%)	67.5%	67.5%						32.5%		32.5%	32.5%	
Maximum Green (s)	49.0	49.0						21.0		21.0	21.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		49.0						21.0			21.0	
Actuated g/C Ratio		0.61						0.26			0.26	
v/c Ratio		0.91						0.64			0.85	
Control Delay		23.6						27.7			52.7	
Queue Delay		0.8						0.2			0.0	
Total Delay		24.3						27.9			52.7	
LOS		C						C			D	
Approach Delay		24.3						27.9			52.7	
Approach LOS		C						C			D	
Queue Length 50th (ft)		403						114			171	
Queue Length 95th (ft)		m416						146			87	
Internal Link Dist (ft)		665			423			102			255	
Turn Bay Length (ft)												
Base Capacity (vph)		1969						500			405	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		46						11			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.93						0.66			0.85	

21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 53 (66%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 28.8 Intersection LOS: C
Intersection Capacity Utilization 73.6% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

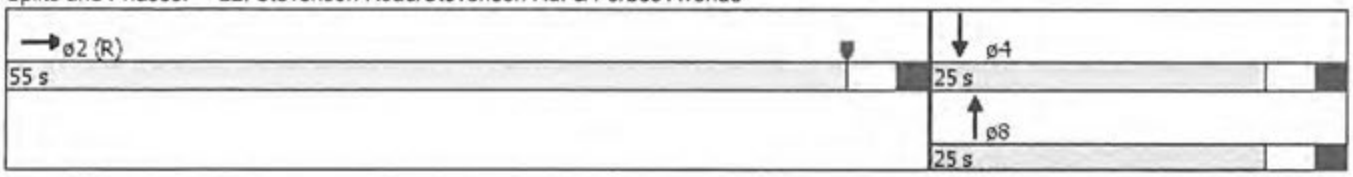


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	1063	13	0	0	0	0	100	55	27	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		503			408			159			324	
Travel Time (s)		13.7			11.1			4.3			8.8	
Confl. Peds. (#/hr)	22		26						16	16		
Peak Hour Factor	0.71	0.97	0.84	0.92	0.92	0.92	0.92	0.84	0.67	0.93	0.75	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	7%	0%	2%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1255	0	0	0	0	0	201	0	0	102	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	55.0	55.0						25.0		25.0	25.0	
Total Split (%)	68.8%	68.8%						31.3%		31.3%	31.3%	
Maximum Green (s)	50.0	50.0						20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		50.0						20.0			20.0	
Actuated g/C Ratio		0.62						0.25			0.25	
v/c Ratio		0.61						0.38			0.22	
Control Delay		5.3						22.2			15.6	
Queue Delay		1.0						0.0			0.0	
Total Delay		6.2						22.2			15.6	
LOS		A						C			B	
Approach Delay		6.2						22.2			15.6	
Approach LOS		A						C			B	
Queue Length 50th (ft)		83						65			17	
Queue Length 95th (ft)		m102						112			m34	
Internal Link Dist (ft)		423			328			79			244	
Turn Bay Length (ft)												
Base Capacity (vph)		2052						524			463	
Starvation Cap Reductn		367						0			0	
Spillback Cap Reductn		487						5			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.80						0.39			0.22	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 72 (90%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 8.9 Intersection LOS: A
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Stevenson Road/Stevenson Rd. & Forbes Avenue



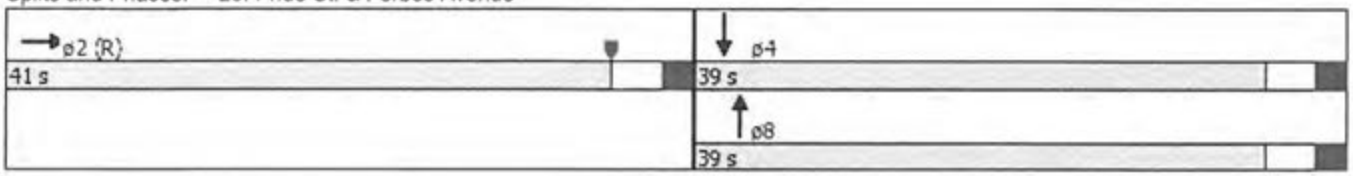
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	942	30	0	0	0	0	82	24	283	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		408			281			148			320	
Travel Time (s)		11.1			7.7			4.0			8.7	
Confl. Peds. (#/hr)	48		30						9	9		
Peak Hour Factor	0.75	0.94	0.82	0.92	0.92	0.92	0.92	0.80	0.92	0.91	0.67	0.92
Heavy Vehicles (%)	1%	6%	4%	2%	2%	2%	2%	20%	5%	3%	20%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1268	0	0	0	0	0	128	0	0	378	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	41.0	41.0						39.0		39.0	39.0	
Total Split (%)	51.3%	51.3%						48.8%		48.8%	48.8%	
Maximum Green (s)	36.0	36.0						34.0		34.0	34.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		36.0						34.0			34.0	
Actuated g/C Ratio		0.45						0.42			0.42	
v/c Ratio		0.85						0.19			0.74	
Control Delay		24.1						13.0			17.6	
Queue Delay		5.3						0.1			0.0	
Total Delay		29.4						13.0			17.6	
LOS		C						B			B	
Approach Delay		29.4						13.0			17.6	
Approach LOS		C						B			B	
Queue Length 50th (ft)		355						32			50	
Queue Length 95th (ft)		#435						57			48	
Internal Link Dist (ft)		328			201			68			240	
Turn Bay Length (ft)												
Base Capacity (vph)		1492						680			512	
Starvation Cap Reductn		174						0			0	
Spillback Cap Reductn		0						107			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.96						0.22			0.74	

Intersection Summary

Area Type: Other

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 7 (9%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 25.7 Intersection LOS: C
Intersection Capacity Utilization 65.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Pride St. & Forbes Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	1	1	4	49	20	21	152	10	24	268	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	11	11	11	11
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		505			392			366			328	
Travel Time (s)		13.8			10.7			10.0			8.9	
Confl. Peds. (#/hr)	250		150	150		250	675		250	250		675
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	80	0	0	203	0	0	378	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 43.4% ICU Level of Service A
Analysis Period (min) 15

24: Street 1 & Wylie Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	1	1	4	49	20	21	152	10	24	268	48
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	1	1	4	54	22	23	169	11	27	298	53

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	27	81	203	378
Volume Left (vph)	24	4	23	27
Volume Right (vph)	1	22	11	53
Hadj (s)	0.19	-0.12	0.02	-0.04
Departure Headway (s)	5.6	5.1	4.6	4.4
Degree Utilization, x	0.04	0.12	0.26	0.46
Capacity (veh/h)	571	623	745	793
Control Delay (s)	8.8	8.8	9.3	11.1
Approach Delay (s)	8.8	8.8	9.3	11.1
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	23	11	17	17	18	35	106	1	1	32	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	11	11	11	11
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		392			555			261			271	
Travel Time (s)		10.7			15.1			7.1			7.4	
Confl. Peds. (#/hr)	175		100	100		175	125		175	175		125
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	58	0	0	158	0	0	60	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 34.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	23	11	17	17	18	35	106	1	1	32	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	26	12	19	19	20	39	118	1	1	36	23

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	39	58	158	60
Volume Left (vph)	1	19	39	1
Volume Right (vph)	12	20	1	23
Hadj (s)	-0.15	-0.11	0.08	-0.20
Departure Headway (s)	4.3	4.3	4.3	4.1
Degree Utilization, x	0.05	0.07	0.19	0.07
Capacity (veh/h)	790	780	819	850
Control Delay (s)	7.5	7.6	8.2	7.4
Approach Delay (s)	7.5	7.6	8.2	7.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	25	76	34	4	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	310		297			261
Travel Time (s)	8.5		8.1			7.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	122	0	0	67
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 16.3% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	25	76	34	4	57
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	28	84	38	4	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	103			122	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176	103			122	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	812	951			1465	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	31	122	68
Volume Left	3	0	4
Volume Right	28	38	0
cSH	934	1700	1465
Volume to Capacity	0.03	0.07	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.0	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	15	6	92	27	6	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	293		271			336
Travel Time (s)	8.0		7.4			9.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	132	0	0	36
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 16.5% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	6	92	27	6	26
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	7	102	30	7	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	159	117			132	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	159	117			132	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	828	935			1453	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	23	132	36
Volume Left	17	0	7
Volume Right	7	30	0
cSH	856	1700	1453
Volume to Capacity	0.03	0.08	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.0	1.4
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	1.4
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	275	32	2	379	72	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-12%	0%	
Link Speed (mph)	25			25	25	
Link Distance (ft)	413			498	336	
Travel Time (s)	11.3			13.6	9.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	342	0	0	423	80	23
Sign Control	Free			Free	Stop	

Intersection Summary

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	275	32	2	379	72	21
Sign Control	Free			Free	Stop	
Grade	0%			-12%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	306	36	2	421	80	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	413			498		
pX, platoon unblocked						
vC, conflicting volume			341		538	171
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			341		538	171
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		83	97
cM capacity (veh/h)			1215		472	843

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	204	137	143	281	103
Volume Left	0	0	2	0	80
Volume Right	0	36	0	0	23
cSH	1700	1700	1215	1700	524
Volume to Capacity	0.12	0.08	0.00	0.17	0.20
Queue Length 95th (ft)	0	0	0	0	18
Control Delay (s)	0.0	0.0	0.1	0.0	13.5
Lane LOS			A		B
Approach Delay (s)	0.0		0.0		13.5
Approach LOS					B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	169	1114	24	0	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		4%			-4%
Link Speed (mph)	25		25			25
Link Distance (ft)	505		162			277
Travel Time (s)	13.8		4.4			7.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	184	1237	0	0	491
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 39.2% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	169	1114	24	0	452
Sign Control	Stop		Free			Free
Grade	0%		4%			-4%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	184	1211	26	0	491
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			162			277
pX, platoon unblocked						
vC, conflicting volume	1388	417			1237	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1388	417			1237	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	69			100	
cM capacity (veh/h)	134	585			559	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	184	484	484	268	164	164	164
Volume Left	0	0	0	0	0	0	0
Volume Right	184	0	0	26	0	0	0
cSH	585	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.31	0.28	0.28	0.16	0.10	0.10	0.10
Queue Length 95th (ft)	33	0	0	0	0	0	0
Control Delay (s)	13.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	13.9	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Volume (vph)	0	546	690	139	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Link Speed (mph)		25	25		25	
Link Distance (ft)		374	248		376	
Travel Time (s)		10.2	6.8		10.3	
Confl. Peds. (#/hr)				375		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	607	921	0	0	49
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.0% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↱			↱
Volume (veh/h)	0	546	690	139	0	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	607	767	154	0	49
Pedestrians					375	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					29	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		817	248			
pX, platoon unblocked						
vC, conflicting volume	1296				1522	836
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1296				1522	836
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	78
cM capacity (veh/h)	379				78	222

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	303	303	511	410	49
Volume Left	0	0	0	0	0
Volume Right	0	0	0	154	49
cSH	1700	1700	1700	1700	222
Volume to Capacity	0.18	0.18	0.30	0.24	0.22
Queue Length 95th (ft)	0	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	0.0	25.8
Lane LOS					D
Approach Delay (s)	0.0		0.0		25.8
Approach LOS					D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp

Lane Group	EBL2	EBL	EBR	NBT	NBR	NEL	NET	NER
Lane Configurations								
Volume (vph)	39	256	161	911	289	670	393	315
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	11	11	11
Grade (%)		0%		4%			-5%	
Right Turn on Red	No				Yes			No
Link Speed (mph)		25		25			25	
Link Distance (ft)		325		277			334	
Travel Time (s)		8.9		7.6			9.1	
Confl. Peds. (#/hr)			31					31
Peak Hour Factor	0.58	0.93	0.86	0.80	0.70	0.89	0.96	0.80
Heavy Vehicles (%)	9%	4%	5%	1%	0%	1%	1%	3%
Shared Lane Traffic (%)								
Lane Group Flow (vph)	0	342	187	1139	413	753	409	394
Turn Type	custom	NA	custom	NA	custom	custom	NA	custom
Protected Phases	2	2	2	1	1	3	3	3
Permitted Phases	2		2		1	3		3
Minimum Split (s)	23.0	23.0	23.0	23.0	23.0	31.0	31.0	31.0
Total Split (s)	25.0	25.0	25.0	34.0	34.0	41.0	41.0	41.0
Total Split (%)	25.0%	25.0%	25.0%	34.0%	34.0%	41.0%	41.0%	41.0%
Maximum Green (s)	20.0	20.0	20.0	29.0	29.0	36.0	36.0	36.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead			
Lead-Lag Optimize?								
Walk Time (s)						11.0	11.0	11.0
Flash Dont Walk (s)						10.0	10.0	10.0
Pedestrian Calls (#/hr)						0	0	0
Act Effct Green (s)		20.0	20.0	29.0	29.0	36.0	36.0	36.0
Actuated g/C Ratio		0.20	0.20	0.29	0.29	0.36	0.36	0.36
v/c Ratio		1.19	0.72	1.25	0.78	1.31	0.68	0.78
Control Delay		150.7	55.0	152.4	30.4	183.0	33.9	41.4
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		150.7	55.0	152.4	30.4	183.0	33.9	41.4
LOS		F	E	F	C	F	C	D
Approach Delay		116.9		119.9			107.9	
Approach LOS		F		F			F	
Queue Length 50th (ft)		~264	112	~478	146	~622	218	221
Queue Length 95th (ft)		#438	#197	#506	160	#833	328	287
Internal Link Dist (ft)		245		197			254	
Turn Bay Length (ft)								
Base Capacity (vph)		288	258	914	532	573	604	503
Starvation Cap Reductn		0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0
Reduced v/c Ratio		1.19	0.72	1.25	0.78	1.31	0.68	0.78

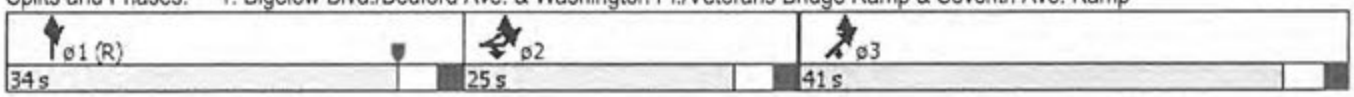
Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 32 (32%), Referenced to phase 1:NBT, Start of Yellow
Natural Cycle: 140
Control Type: Pretimed
Maximum v/c Ratio: 1.31
Intersection Signal Delay: 114.3 Intersection LOS: F
Intersection Capacity Utilization 99.9% ICU Level of Service F
Analysis Period (min) 15

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

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

Splits and Phases: 1: Bigelow Blvd./Bedford Ave. & Washington Pl./Veterans Bridge Ramp & Seventh Ave. Ramp



2: Bedford Ave. & Street 1/HOV & Liberty/Seventh Ave. Ramp

Lane Group	NBL	NBT	NBR	NEL2	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations										
Volume (vph)	114	120	31	117	248	276	96	30	186	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	16	12	13	12	12	12	12
Grade (%)		2%				10%			-12%	
Storage Length (ft)	0		1		0		60	0		0
Storage Lanes	1		0		2		1	0		0
Taper Length (ft)	25				25			25		
Right Turn on Red			No				Yes			
Link Speed (mph)		25				25			25	
Link Distance (ft)		362				549			362	
Travel Time (s)		9.9				15.0			9.9	
Confl. Peds. (#/hr)				20			23	58		
Peak Hour Factor	0.54	0.43	0.61	0.64	0.66	0.81	0.39	0.58	0.85	0.78
Heavy Vehicles (%)	3%	0%	0%	0%	1%	2%	3%	0%	2%	2%
Parking (#/hr)	0	0	0							0
Shared Lane Traffic (%)										
Lane Group Flow (vph)	211	330	0	183	376	587	0	0	572	0
Turn Type	Split	NA		Split	Split	NA		Split	NA	
Protected Phases	9	9		2	2	2		4	4	
Permitted Phases						2				
Minimum Split (s)	38.0	38.0		26.0	26.0	26.0		22.0	22.0	
Total Split (s)	38.0	38.0		38.0	38.0	38.0		24.0	24.0	
Total Split (%)	38.0%	38.0%		38.0%	38.0%	38.0%		24.0%	24.0%	
Maximum Green (s)	32.0	32.0		32.0	32.0	32.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0			0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0			6.0	
Lead/Lag										
Lead-Lag Optimize?										
Walk Time (s)	7.0	7.0		7.0	7.0	7.0		5.0	5.0	
Flash Dont Walk (s)	25.0	25.0		13.0	13.0	13.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0		0	0	
Act Effct Green (s)	32.0	32.0		32.0	32.0	32.0			18.0	
Actuated g/C Ratio	0.32	0.32		0.32	0.32	0.32			0.18	
v/c Ratio	0.49	0.72		0.33	0.77	1.17			1.09dr	
Control Delay	32.0	40.3		22.2	32.4	115.5			86.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0			0.0	
Total Delay	32.0	40.3		22.2	32.4	115.5			86.1	
LOS	C	D		C	C	F			F	
Approach Delay		37.1				73.4			86.1	
Approach LOS		D				E			F	
Queue Length 50th (ft)	108	184		74	176	~434			~205	
Queue Length 95th (ft)	96	111		m90	m188	m#487			#286	
Internal Link Dist (ft)		282				469			282	
Turn Bay Length (ft)										
Base Capacity (vph)	434	460		559	488	501			558	
Starvation Cap Reductn	0	0		0	0	0			0	

2: Bedford Ave. & Street 1/HOV & Liberty/Seventh Ave. Ramp

Lane Group	NBL	NBT	NBR	NEL2	NEL	NET	NER	SWL	SWT	SWR
Spillback Cap Reductn	0	0		0	0	0			0	
Storage Cap Reductn	0	0		0	0	0			0	
Reduced v/c Ratio	0.49	0.72		0.33	0.77	1.17			1.03	

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NETL, Start of Yellow
Natural Cycle: 110
Control Type: Pretimed
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 67.9 Intersection LOS: E
Intersection Capacity Utilization 62.4% ICU Level of Service B
Analysis Period (min) 15

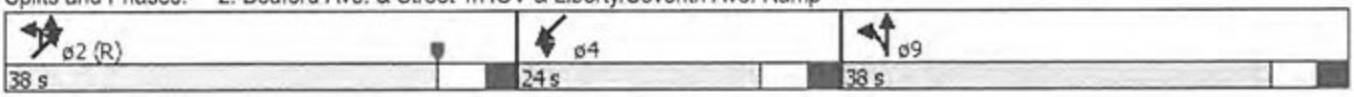
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 2: Bedford Ave. & Street 1/HOV & Liberty/Seventh Ave. Ramp



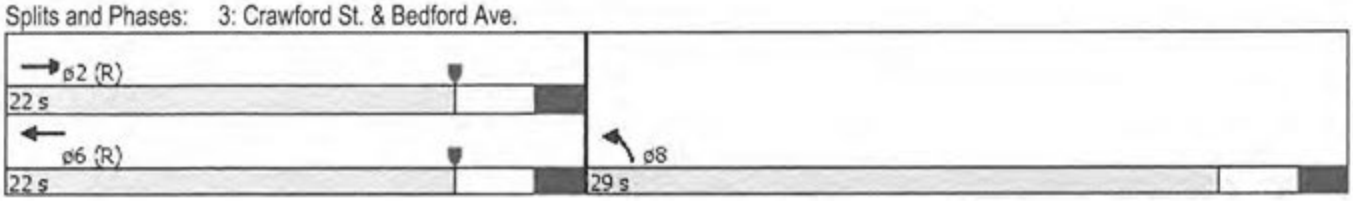
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	32	137	40	80	412	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes
Link Speed (mph)	25			25	25	
Link Distance (ft)	548			264	559	
Travel Time (s)	14.9			7.2	15.2	
Confl. Peds. (#/hr)		6	6			6
Peak Hour Factor	0.80	0.85	0.75	0.86	0.92	0.85
Heavy Vehicles (%)	0%	2%	17%	1%	0%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	0	0	146	532	0
Turn Type	NA		Perm	NA	NA	
Protected Phases	2			6	8	
Permitted Phases			6			
Minimum Split (s)	21.0		21.0	21.0	21.0	
Total Split (s)	22.0		22.0	22.0	29.0	
Total Split (%)	43.1%		43.1%	43.1%	56.9%	
Maximum Green (s)	17.0		17.0	17.0	24.0	
Yellow Time (s)	3.0		3.0	3.0	3.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	17.0			17.0	24.0	
Actuated g/C Ratio	0.33			0.33	0.47	
v/c Ratio	0.31			0.29	0.63	
Control Delay	5.4			14.6	13.9	
Queue Delay	0.0			0.0	0.0	
Total Delay	5.4			14.6	13.9	
LOS	A			B	B	
Approach Delay	5.4			14.6	13.9	
Approach LOS	A			B	B	
Queue Length 50th (ft)	8			32	105	
Queue Length 95th (ft)	34			64	190	
Internal Link Dist (ft)	468			184	479	
Turn Bay Length (ft)						
Base Capacity (vph)	650			495	841	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.31			0.29	0.63	

Intersection Summary

Area Type: Other

Cycle Length: 51
Actuated Cycle Length: 51
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 12.1 Intersection LOS: B
Intersection Capacity Utilization 59.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Crawford St. & Bedford Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	23	24	0	31	52	368	29	0	222	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		555			332			705			559	
Travel Time (s)		15.1			9.1			19.2			15.2	
Confl. Peds. (#/hr)						1			9	9		
Peak Hour Factor	0.90	0.90	0.90	0.79	0.90	0.79	0.90	0.91	0.65	0.92	0.85	0.90
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	3%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	69	0	0	507	0	0	261	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 55.8% ICU Level of Service B
Analysis Period (min) 15

4: Crawford St. & Wylie Avenue/Wylie Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	23	24	0	31	52	368	29	0	222	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.79	0.90	0.79	0.90	0.91	0.65	0.92	0.85	0.90
Hourly flow rate (vph)	0	0	26	30	0	39	58	404	45	0	261	0
Pedestrians					9						1	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								705			559	
pX, platoon unblocked												
vC, conflicting volume	844	835	261	838	812	437	261			458		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	844	835	261	838	812	437	261			458		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	97	89	100	94	96			100		
cM capacity (veh/h)	255	288	777	266	297	619	1303			1105		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	70	507	261
Volume Left	0	30	58	0
Volume Right	26	39	45	0
cSH	777	392	1303	1105
Volume to Capacity	0.03	0.18	0.04	0.00
Queue Length 95th (ft)	3	16	3	0
Control Delay (s)	9.8	16.2	1.3	0.0
Lane LOS	A	C	A	
Approach Delay (s)	9.8	16.2	1.3	0.0
Approach LOS	A	C		

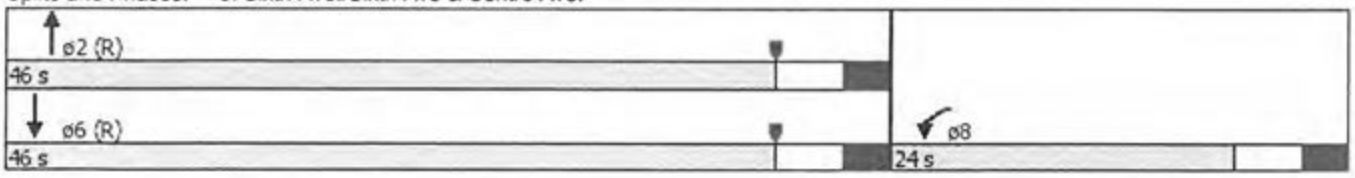
Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	364	186	198	229	276	477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	12	12	12
Grade (%)	-4%		4%			0%
Right Turn on Red		Yes		Yes		
Link Speed (mph)	25		25			25
Link Distance (ft)	792		414			230
Travel Time (s)	21.6		11.3			6.3
Confl. Peds. (#/hr)	97	253		77	77	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)		10%				
Lane Group Flow (vph)	425	186	474	0	307	530
Turn Type	NA	Perm	NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases		8			6	
Minimum Split (s)	22.0	22.0	22.0		22.0	22.0
Total Split (s)	24.0	24.0	46.0		46.0	46.0
Total Split (%)	34.3%	34.3%	65.7%		65.7%	65.7%
Maximum Green (s)	18.0	18.0	40.0		40.0	40.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	2.5	2.5	2.5		2.5	2.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.0	6.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	18.0	18.0	40.0		40.0	40.0
Actuated g/C Ratio	0.26	0.26	0.57		0.57	0.57
v/c Ratio	0.48	0.46	0.26		0.63	0.26
Control Delay	23.9	7.9	8.3		17.5	8.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	23.9	7.9	8.3		17.5	8.0
LOS	C	A	A		B	A
Approach Delay	19.0		8.3			11.5
Approach LOS	B		A			B
Queue Length 50th (ft)	78	0	53		80	54
Queue Length 95th (ft)	118	51	m30		170	79
Internal Link Dist (ft)	712		334			150
Turn Bay Length (ft)						
Base Capacity (vph)	881	406	1823		485	2022
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.48	0.46	0.26		0.63	0.26

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 65 (93%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 59.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Sixth Ave./Sixth Ave & Centre Ave.



6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	152	240	107	191	375	216	23	725	180	130	213	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	11	12	12	12	12	12	12	12
Grade (%)		-4%			-6%			8%			-4%	
Storage Length (ft)	0		0			0	0		0	0		
Storage Lanes	0		0			1	0		0	0		
Taper Length (ft)	25						25			25		
Right Turn on Red						No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		792			522			646			162	
Travel Time (s)		21.6			14.2			17.6			4.4	
Confl. Peds. (#/hr)	575		525	525		575	126		975	975		126
Peak Hour Factor	0.59	0.88	0.67	0.67	0.65	0.78	0.53	0.81	0.85	0.71	0.90	0.58
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	1%	0%	6%	1%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	691	0	285	854	0	0	1150	0	0	420	103
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Minimum Split (s)	33.0	33.0		33.0	33.0		31.0	31.0		31.0	31.0	31.0
Total Split (s)	46.0	46.0		46.0	46.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	51.1%	51.1%		51.1%	51.1%		34.4%	34.4%		34.4%	34.4%	34.4%
Maximum Green (s)	40.0	40.0		40.0	40.0		25.0	25.0		25.0	25.0	25.0
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5		2.5	2.5	2.5
Lost Time Adjust (s)		-1.5		0.0	0.0			0.0			0.0	0.0
Total Lost Time (s)		4.5		6.0	6.0			6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	15.0
Flash Dont Walk (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	10.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		41.5		40.0	40.0			25.0			25.0	25.0
Actuated g/C Ratio		0.46		0.44	0.44			0.28			0.28	0.28
v/c Ratio		1.43dl		1.41	0.71			1.17			2.58dl	0.31
Control Delay		49.2		229.6	19.1			117.0			47.3	28.8
Queue Delay		0.0		0.0	0.0			0.0			0.0	0.0
Total Delay		49.2		229.6	19.1			117.0			47.3	28.8
LOS		D		F	B			F			D	C
Approach Delay		49.2			71.8			117.0			43.7	
Approach LOS		D			E			F			D	
Queue Length 50th (ft)		192		~223	147			~287			117	46
Queue Length 95th (ft)		#305		#249	134			#316			#200	55
Internal Link Dist (ft)		712			442			566			82	
Turn Bay Length (ft)				250								
Base Capacity (vph)		724		202	1203			987			501	335
Starvation Cap Reductn		0		0	0			0			0	0
Spillback Cap Reductn		0		0	0			0			0	0

6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.

Lane Group	NEL	NER	NER2
Lane Configurations			
Volume (vph)	45	70	52
Ideal Flow (vphpl)	1900	1900	1900
Lane Width (ft)	12	12	12
Grade (%)	7%		
Storage Length (ft)	0	0	
Storage Lanes	1	1	
Taper Length (ft)	25		
Right Turn on Red			No
Link Speed (mph)	25		
Link Distance (ft)	334		
Travel Time (s)	9.1		
Confl. Peds. (#/hr)	575		525
Peak Hour Factor	0.64	0.80	0.73
Heavy Vehicles (%)	5%	4%	0%
Shared Lane Traffic (%)		55%	
Lane Group Flow (vph)	118	111	0
Turn Type	NA	custom	
Protected Phases	10	10	
Permitted Phases	10	10	
Minimum Split (s)	13.0	13.0	
Total Split (s)	13.0	13.0	
Total Split (%)	14.4%	14.4%	
Maximum Green (s)	7.0	7.0	
Yellow Time (s)	3.5	3.5	
All-Red Time (s)	2.5	2.5	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Walk Time (s)			
Flash Dont Walk (s)			
Pedestrian Calls (#/hr)			
Act Effct Green (s)	7.0	7.0	
Actuated g/C Ratio	0.08	0.08	
v/c Ratio	1.06	1.09	
Control Delay	146.5	157.3	
Queue Delay	0.0	0.0	
Total Delay	146.5	157.3	
LOS	F	F	
Approach Delay	151.7		
Approach LOS	F		
Queue Length 50th (ft)	~74	~75	
Queue Length 95th (ft)	#110	#157	
Internal Link Dist (ft)	254		
Turn Bay Length (ft)			
Base Capacity (vph)	111	102	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	

Lane Group	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Storage Cap Reductn		0		0	0			0			0	0
Reduced v/c Ratio		0.95		1.41	0.71			1.17			0.84	0.31

Intersection Summary

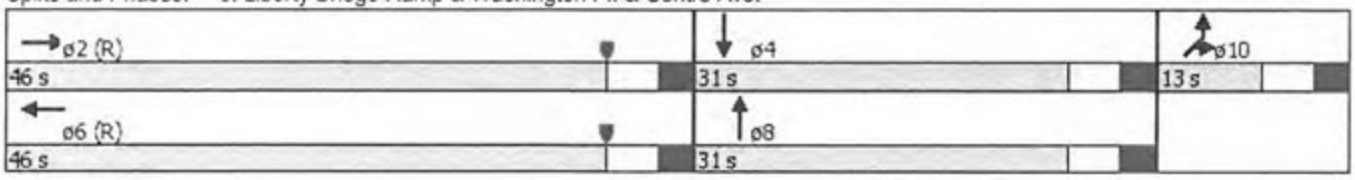
Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 100
Control Type: Pretimed
Maximum v/c Ratio: 1.41
Intersection Signal Delay: 82.5 Intersection LOS: F
Intersection Capacity Utilization 122.5% ICU Level of Service H
Analysis Period (min) 15

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

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

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 6: Liberty Bridge Ramp & Washington Pl. & Centre Ave.



Lane Group	NEL	NER	NER2
Storage Cap Reductn	0	0	
Reduced v/c Ratio	1.06	1.09	

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	103	517	540	175	66	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Storage Length (ft)	150			0	0	0
Storage Lanes	0			1	1	1
Taper Length (ft)	25				25	
Right Turn on Red				Yes		No
Link Speed (mph)		25	25		25	
Link Distance (ft)		522	443		366	
Travel Time (s)		14.2	12.1		10.0	
Confl. Peds. (#/hr)	1450			1450	225	225
Peak Hour Factor	0.86	0.95	0.95	0.81	0.45	0.84
Heavy Vehicles (%)	0%	2%	1%	0%	0%	6%
Parking (#/hr)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	664	784	0	147	335
Turn Type	pm+pt	NA	NA		NA	pm+ov
Protected Phases	5	2	6		4	5
Permitted Phases	2					4
Minimum Split (s)	4.5	22.5	22.5		22.5	4.5
Total Split (s)	24.0	67.0	43.0		23.0	24.0
Total Split (%)	26.7%	74.4%	47.8%		25.6%	26.7%
Maximum Green (s)	20.5	61.5	37.5		17.5	20.5
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.0	2.0	2.0		2.0	0.0
Lost Time Adjust (s)		-1.5	-1.5		-1.5	0.0
Total Lost Time (s)		4.0	4.0		4.0	3.5
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?						
Walk Time (s)		7.0	7.0		7.0	
Flash Dont Walk (s)		10.0	10.0		10.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)		63.0	39.0		19.0	40.0
Actuated g/C Ratio		0.70	0.43		0.21	0.44
v/c Ratio		0.43	0.81		0.49	0.75
Control Delay		3.9	18.3		37.8	33.4
Queue Delay		0.0	0.0		0.0	0.0
Total Delay		3.9	18.3		37.8	33.4
LOS		A	B		D	C
Approach Delay		3.9	18.3		34.7	
Approach LOS		A	B		C	
Queue Length 50th (ft)		40	171		74	131
Queue Length 95th (ft)		m43	#262		61	197
Internal Link Dist (ft)		442	363		286	
Turn Bay Length (ft)						
Base Capacity (vph)		1545	968		298	448
Starvation Cap Reductn		0	0		0	0
Spillback Cap Reductn		0	0		0	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Storage Cap Reductn		0	0		0	0
Reduced v/c Ratio		0.43	0.81		0.49	0.75

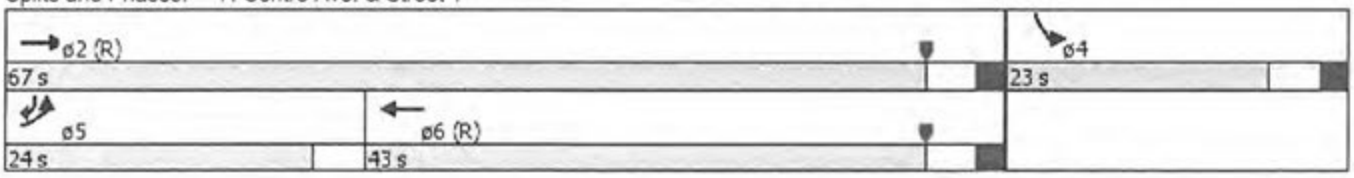
Intersection Summary

Area Type: CBD
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Pretimed
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 17.4 — Intersection LOS: B
Intersection Capacity Utilization 69.6% — ICU Level of Service C
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Centre Ave. & Street 1

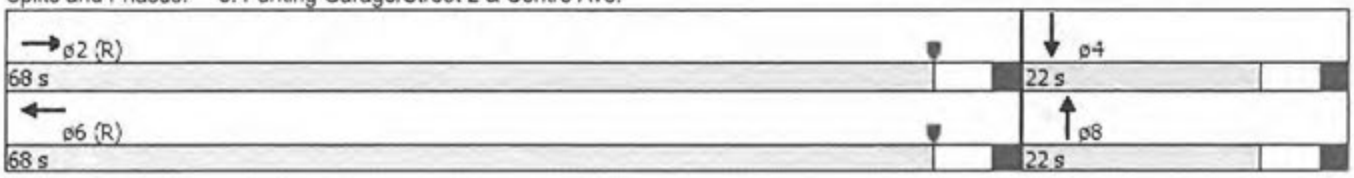


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	492	4	0	672	33	0	38	56	46	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		443			374			129			297	
Travel Time (s)		12.1			10.2			3.5			8.1	
Confl. Peds. (#/hr)	750		100	100		750	225		125	125		225
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	647	0	0	784	0	0	104	0	0	99	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	22.0	22.0		22.0	22.0		22.0	22.0		22.0	22.0	
Total Split (s)	68.0	68.0		68.0	68.0		22.0	22.0		22.0	22.0	
Total Split (%)	75.6%	75.6%		75.6%	75.6%		24.4%	24.4%		24.4%	24.4%	
Maximum Green (s)	62.0	62.0		62.0	62.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.0			6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		62.0			62.0			16.0			16.0	
Actuated g/C Ratio		0.69			0.69			0.18			0.18	
v/c Ratio		0.39			0.34			0.33			0.48	
Control Delay		5.9			8.4			18.5			30.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.9			8.4			18.5			30.6	
LOS		A			A			B			C	
Approach Delay		5.9			8.4			18.5			30.6	
Approach LOS		A			A			B			C	
Queue Length 50th (ft)		53			103			20			32	
Queue Length 95th (ft)		67			m135			66			83	
Internal Link Dist (ft)		363			294			49			217	
Turn Bay Length (ft)												
Base Capacity (vph)		1639			2331			315			208	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.39			0.34			0.33			0.48	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 8 (9%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 9.4 Intersection LOS: A
Intersection Capacity Utilization 67.1% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Parking Garage/Street 2 & Centre Ave.



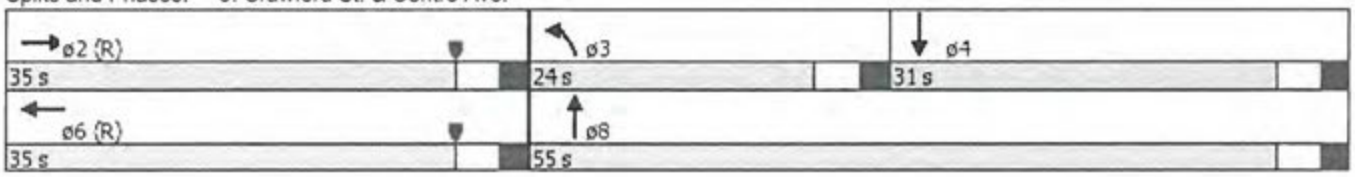
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	122	148	233	35	206	41	320	277	64	14	103	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	11	12	10	10	10	10	10	10
Storage Length (ft)	0		0	0		0	185		0	50		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			75			75		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		248			357			640			705	
Travel Time (s)		6.8			9.7			17.5			19.2	
Confl. Peds. (#/hr)	52		26	26		52	29		5	5		29
Peak Hour Factor	0.82	0.82	0.85	0.67	0.70	0.63	0.79	0.69	0.81	0.89	0.70	0.75
Heavy Vehicles (%)	4%	4%	0%	3%	2%	0%	4%	1%	2%	0%	6%	4%
Parking (#/hr)								0			0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	454	0	52	359	0	405	480	0	16	372	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		2			6		3	8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	21.0	21.0		21.0	21.0		9.0	21.0		21.0	21.0	
Total Split (s)	35.0	35.0		35.0	35.0		24.0	55.0		31.0	31.0	
Total Split (%)	38.9%	38.9%		38.9%	38.9%		26.7%	61.1%		34.4%	34.4%	
Maximum Green (s)	30.0	30.0		30.0	30.0		19.0	50.0		26.0	26.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)	30.0	30.0		30.0	30.0		50.0	50.0		26.0	26.0	
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.56	0.56		0.29	0.29	
v/c Ratio	0.77	0.79		0.36	0.62		0.83	0.56		0.06	0.85	
Control Delay	41.7	20.0		31.7	29.9		30.2	15.5		24.2	43.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	41.7	20.0		31.7	29.9		30.2	15.5		24.2	43.1	
LOS	D	C		C	C		C	B		C	D	
Approach Delay		25.4			30.2			22.2			42.4	
Approach LOS		C			C			C			D	
Queue Length 50th (ft)	33	62		22	164		128	158		7	156	
Queue Length 95th (ft)	#147	95		40	182		182	162		22	178	
Internal Link Dist (ft)		168			277			560			625	
Turn Bay Length (ft)							185			50		
Base Capacity (vph)	194	578		143	577		488	858		248	437	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.77	0.79		0.36	0.62		0.83	0.56		0.06	0.85	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 77 (86%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 27.9 Intersection LOS: C
Intersection Capacity Utilization 78.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 9: Crawford St. & Centre Ave.



10: Crawford Ave/Crawford Avenue & Colwell St

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	67	7	12	14	15	556	0	0	314	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		317			231			283			70	
Travel Time (s)		8.6			6.3			7.7			1.9	
Confl. Peds. (#/hr)	8		4	4		8	42		19	19		42
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	74	0	0	37	0	0	635	0	0	411	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 57.5% ICU Level of Service B
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	67	7	12	14	15	556	0	0	314	56
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	74	8	13	16	17	618	0	0	349	62
Pedestrians		42			19			4			8	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		4			2			0			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								283			710	
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1103	1092	426	1129	1123	645	453			637		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1053	1040	426	1081	1075	535	453			526		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	88	95	93	97	98			100		
cM capacity (veh/h)	151	191	604	142	182	472	1069			908		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	37	634	411
Volume Left	0	8	17	0
Volume Right	74	16	0	62
cSH	604	228	1069	908
Volume to Capacity	0.12	0.16	0.02	0.00
Queue Length 95th (ft)	10	14	1	0
Control Delay (s)	11.8	23.8	0.4	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.8	23.8	0.4	0.0
Approach LOS	B	C		

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	0	198	213	617	327	40	103	0	0	738	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	13	12	10	10	12	12	11	12	12	12	12
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		130			635			238			414	
Travel Time (s)		3.5			17.3			6.5			11.3	
Confl. Peds. (#/hr)	859		99	99		859	14		65	65		14
Peak Hour Factor	0.80	0.92	0.83	0.89	0.94	0.93	0.75	0.75	0.92	0.92	0.89	0.75
Heavy Vehicles (%)	7%	2%	18%	0%	3%	12%	0%	1%	2%	2%	2%	19%
Parking (#/hr)				0								
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	301	0	239	1008	0	0	190	0	0	969	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2					
Detector Phase	4	4		8	8		2	2			6	
Switch Phase												
Minimum Initial (s)	18.0	18.0		18.0	18.0		28.0	28.0			28.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		34.0	34.0			34.0	
Total Split (s)	36.0	36.0		36.0	36.0		34.0	34.0			34.0	
Total Split (%)	51.4%	51.4%		51.4%	51.4%		48.6%	48.6%			48.6%	
Maximum Green (s)	30.0	30.0		30.0	30.0		28.0	28.0			28.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5			3.5	
All-Red Time (s)	2.5	2.5		2.5	2.5		2.5	2.5			2.5	
Lost Time Adjust (s)		0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)		6.0		6.0	6.0			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2		0.2	0.2		0.2	0.2			0.2	
Recall Mode	Ped	Ped		Ped	Ped		C-Max	C-Max			Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Dont Walk (s)	15.0	15.0		15.0	15.0		19.0	19.0			19.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		30.0		30.0	30.0			28.0			28.0	
Actuated g/C Ratio		0.43		0.43	0.43			0.40			0.40	
v/c Ratio		2.30		0.73	1.83			0.24			0.80	
Control Delay		624.1		32.5	400.6			8.7			19.0	
Queue Delay		0.3		0.0	0.0			0.0			1.8	
Total Delay		624.4		32.5	400.6			8.7			20.8	
LOS		F		C	F			A			C	
Approach Delay		624.4			330.1			8.7			20.8	
Approach LOS		F			F			A			C	
Queue Length 50th (ft)		~162		82	~671			12			162	
Queue Length 95th (ft)		#308		#193	#895			20			202	
Internal Link Dist (ft)		50			555			158			334	
Turn Bay Length (ft)												
Base Capacity (vph)		131		329	551			802			1210	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn		0		0	0			0			0	
Spillback Cap Reductn		2		0	0			0			116	
Storage Cap Reductn		0		0	0			0			0	
Reduced v/c Ratio		2.33		0.73	1.83			0.24			0.89	

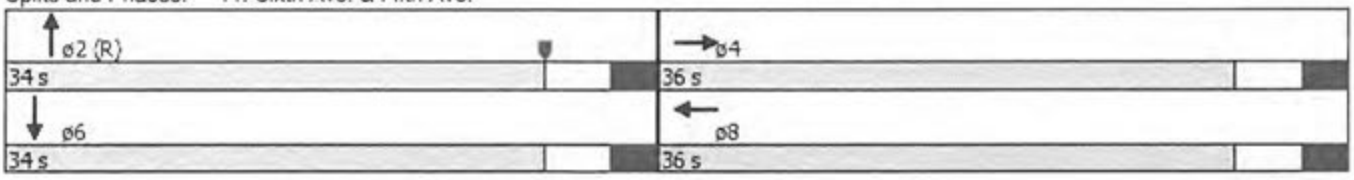
Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 48 (69%), Referenced to phase 2:NBTL, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.30
Intersection Signal Delay: 229.5 Intersection LOS: F
Intersection Capacity Utilization 119.8% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 11: Sixth Ave. & Fifth Ave.



Lane Group	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (vph)	0	0	624	664	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	635			437	582	
Travel Time (s)	17.3			11.9	15.9	
Confl. Peds. (#/hr)			18			
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	1%	9%	2%	2%
Parking (#/hr)			0	0		
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1346	0	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: CBD
Control Type: Unsignalized
Intersection Capacity Utilization 43.9% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	0	0	624	664	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	1.00	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	624	722	0	0
Pedestrians					18	
Lane Width (ft)					0.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	635			437		
pX, platoon unblocked						
vC, conflicting volume			18		1627	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			18		1627	18
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			61		100	100
cM capacity (veh/h)			1605		57	1056

Direction, Lane #	WB 1	WB 2
Volume Total	865	481
Volume Left	624	0
Volume Right	0	0
cSH	1605	1700
Volume to Capacity	0.39	0.28
Queue Length 95th (ft)	47	0
Control Delay (s)	7.3	0.0
Lane LOS	A	
Approach Delay (s)	4.7	
Approach LOS		

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	124	866	332	137	489	0	0	180	339
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	12	12	12
Grade (%)		0%			-3%			-9%			-5%	
Right Turn on Red			No			Yes			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		437			753			310			646	
Travel Time (s)		11.9			20.5			8.5			17.6	
Confl. Peds. (#/hr)				139		202	25					25
Peak Hour Factor	0.92	0.92	0.92	0.93	0.96	0.93	0.91	0.94	0.92	0.92	0.88	0.83
Heavy Vehicles (%)	2%	2%	2%	1%	5%	1%	1%	0%	2%	2%	1%	1%
Parking (#/hr)				0	0	0						
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1392	0	151	520	0	0	205	408
Turn Type				Perm	NA		Perm	NA			NA	Perm
Protected Phases					2			4			4	
Permitted Phases				2			4					4
Minimum Split (s)				44.0	44.0		30.0	30.0			30.0	30.0
Total Split (s)				50.0	50.0		30.0	30.0			30.0	30.0
Total Split (%)				62.5%	62.5%		37.5%	37.5%			37.5%	37.5%
Maximum Green (s)				43.0	43.0		24.0	24.0			24.0	24.0
Yellow Time (s)				3.0	3.0		4.0	4.0			4.0	4.0
All-Red Time (s)				4.0	4.0		2.0	2.0			2.0	2.0
Lost Time Adjust (s)					0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)					7.0		6.0	6.0			6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				15.0	15.0		9.0	9.0			9.0	9.0
Flash Dont Walk (s)				22.0	22.0		15.0	15.0			15.0	15.0
Pedestrian Calls (#/hr)				0	0		0	0			0	0
Act Effct Green (s)					43.0		24.0	24.0			24.0	24.0
Actuated g/C Ratio					0.54		0.30	0.30			0.30	0.30
v/c Ratio					0.98		0.52	1.04			0.39	0.56
Control Delay					30.5		28.9	77.0			25.0	27.1
Queue Delay					0.0		0.0	22.1			0.0	0.0
Total Delay					30.5		28.9	99.1			25.0	27.1
LOS					C		C	F			C	C
Approach Delay					30.5			83.3			26.4	
Approach LOS					C			F			C	
Queue Length 50th (ft)					197		49	~299			81	96
Queue Length 95th (ft)					#277		m99	#466			136	131
Internal Link Dist (ft)		357			673			230			566	
Turn Bay Length (ft)												
Base Capacity (vph)					1422		290	500			520	731
Starvation Cap Reductn					0		0	32			0	0
Spillback Cap Reductn					0		0	0			0	0
Storage Cap Reductn					0		0	0			0	0
Reduced v/c Ratio					0.98		0.52	1.11			0.39	0.56

Intersection Summary

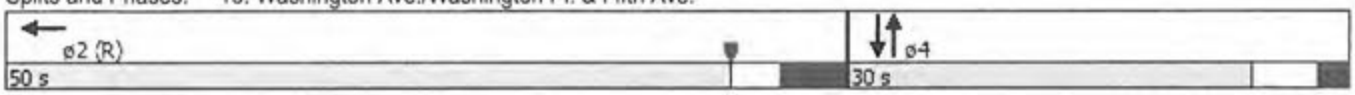
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 39 (49%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 42.8 Intersection LOS: D
Intersection Capacity Utilization 88.6% ICU Level of Service E
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Washington Ave./Washington Pl. & Fifth Ave.

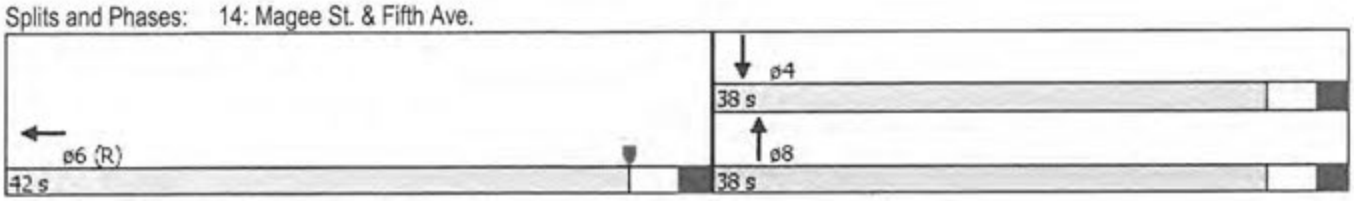


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	56	991	4	299	14	0	0	1	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	10	10	10	10	10	10
Grade (%)		0%			-3%			-4%			0%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		753			499			335			119	
Travel Time (s)		20.5			13.6			9.1			3.2	
Confl. Peds. (#/hr)				87		214	8					8
Peak Hour Factor	0.92	0.92	0.92	0.67	0.87	0.50	0.85	0.46	0.92	0.92	0.25	0.67
Heavy Vehicles (%)	2%	2%	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1231	0	0	382	0	0	17	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				42.0	42.0		38.0	38.0			38.0	
Total Split (%)				52.5%	52.5%		47.5%	47.5%			47.5%	
Maximum Green (s)				37.0	37.0		33.0	33.0			33.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					37.0			33.0			33.0	
Actuated g/C Ratio					0.46			0.41			0.41	
v/c Ratio					0.80			0.73			0.03	
Control Delay					16.6			24.2			9.8	
Queue Delay					0.4			1.4			0.0	
Total Delay					17.0			25.6			9.8	
LOS					B			C			A	
Approach Delay					17.0			25.6			9.8	
Approach LOS					B			C			A	
Queue Length 50th (ft)					226			175			2	
Queue Length 95th (ft)					304			103			2	
Internal Link Dist (ft)		673			419			255			39	
Turn Bay Length (ft)												
Base Capacity (vph)					1545			524			650	
Starvation Cap Reductn					66			42			0	
Spillback Cap Reductn					0			0			83	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.83			0.79			0.03	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 35 (44%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 18.9 Intersection LOS: B
Intersection Capacity Utilization 61.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 14: Magee St. & Fifth Ave.

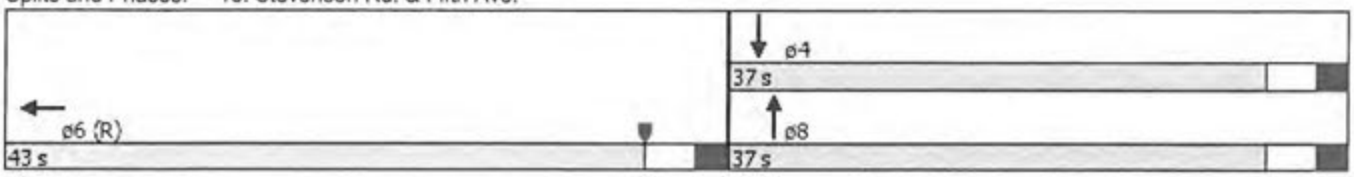


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	90	805	34	200	61	0	0	19	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		499			406			324			114	
Travel Time (s)		13.6			11.1			8.8			3.1	
Confl. Peds. (#/hr)				15		84	3					3
Peak Hour Factor	0.92	0.92	0.92	0.72	0.98	0.43	0.82	0.72	0.92	0.92	0.85	0.62
Heavy Vehicles (%)	2%	2%	2%	1%	5%	3%	2%	4%	2%	2%	6%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1025	0	0	329	0	0	96	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				43.0	43.0		37.0	37.0			37.0	
Total Split (%)				53.8%	53.8%		46.3%	46.3%			46.3%	
Maximum Green (s)				38.0	38.0		32.0	32.0			32.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					38.0			32.0			32.0	
Actuated g/C Ratio					0.48			0.40			0.40	
v/c Ratio					0.69			0.62			0.14	
Control Delay					11.2			22.8			6.9	
Queue Delay					0.4			1.5			0.0	
Total Delay					11.6			24.4			6.9	
LOS					B			C			A	
Approach Delay					11.6			24.4			6.9	
Approach LOS					B			C			A	
Queue Length 50th (ft)					78			109			8	
Queue Length 95th (ft)					m124			144			33	
Internal Link Dist (ft)		419			326			244			34	
Turn Bay Length (ft)												
Base Capacity (vph)					1480			532			679	
Starvation Cap Reductn					121			81			0	
Spillback Cap Reductn					40			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.75			0.73			0.14	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 45
Control Type: Pretimed
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 14.2 Intersection LOS: B
Intersection Capacity Utilization 55.4% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Stevenson Rd. & Fifth Ave.



16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	46	876	330	29	241	0	0	325	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	11	12	12	12	12	12	16	12
Grade (%)		0%			0%			-1%			-12%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		406			265			320			283	
Travel Time (s)		11.1			7.2			8.7			7.7	
Confl. Peds. (#/hr)				43		66	17					17
Peak Hour Factor	0.92	0.92	0.92	0.54	0.95	0.80	0.69	0.89	0.92	0.92	0.95	0.77
Heavy Vehicles (%)	2%	2%	2%	2%	9%	8%	5%	8%	2%	2%	5%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1419	0	0	313	0	0	426	0
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					6			8			4	
Permitted Phases				6			8					
Minimum Split (s)				21.0	21.0		21.0	21.0			21.0	
Total Split (s)				49.0	49.0		31.0	31.0			31.0	
Total Split (%)				61.3%	61.3%		38.8%	38.8%			38.8%	
Maximum Green (s)				44.0	44.0		26.0	26.0			26.0	
Yellow Time (s)				3.0	3.0		3.0	3.0			3.0	
All-Red Time (s)				2.0	2.0		2.0	2.0			2.0	
Lost Time Adjust (s)					0.0			0.0			0.0	
Total Lost Time (s)					5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)				5.0	5.0		5.0	5.0			5.0	
Flash Dont Walk (s)				11.0	11.0		11.0	11.0			11.0	
Pedestrian Calls (#/hr)				0	0		0	0			0	
Act Effct Green (s)					44.0			26.0			26.0	
Actuated g/C Ratio					0.55			0.32			0.32	
v/c Ratio					0.86			0.75			0.61	
Control Delay					21.1			41.7			26.3	
Queue Delay					0.0			0.4			0.0	
Total Delay					21.1			42.0			26.3	
LOS					C			D			C	
Approach Delay					21.1			42.0			26.3	
Approach LOS					C			D			C	
Queue Length 50th (ft)					274			165			170	
Queue Length 95th (ft)					#390			m212			264	
Internal Link Dist (ft)		326			185			240			203	
Turn Bay Length (ft)												
Base Capacity (vph)					1645			416			697	
Starvation Cap Reductn					0			8			0	
Spillback Cap Reductn					0			0			0	
Storage Cap Reductn					0			0			0	
Reduced v/c Ratio					0.86			0.77			0.61	

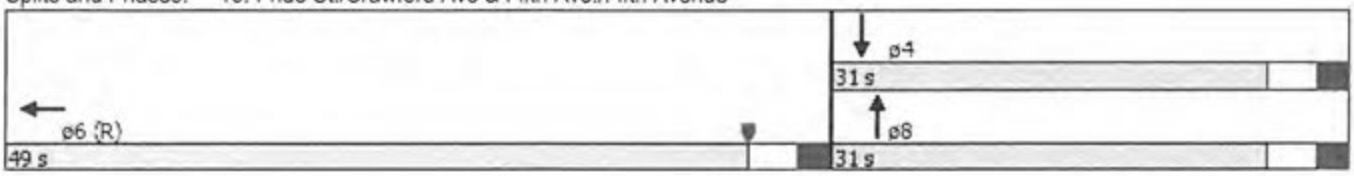
Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 20 (25%), Referenced to phase 6:WBTL, Start of Yellow
Natural Cycle: 55
Control Type: Pretimed
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 25.2 Intersection LOS: C
Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Pride St./Crawford Ave & Fifth Ave./Fifth Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	178	321	11	1	126	0	0	1201	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	10	10	10	12	12	12	12	12	12
Right Turn on Red			No			No			No			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		142			582			105			238	
Travel Time (s)		3.9			15.9			2.9			6.5	
Confl. Peds. (#/hr)						69	7					7
Peak Hour Factor	0.92	0.92	0.92	0.95	0.86	0.67	0.25	0.82	0.25	0.92	0.97	0.68
Heavy Vehicles (%)	2%	2%	2%	2%	1%	0%	0%	1%	0%	2%	4%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	187	373	16	0	158	0	0	1279	0
Turn Type				Perm	NA	Perm	Perm	NA			NA	
Protected Phases					4			2			6	
Permitted Phases				4		4	2	1				
Detector Phase				4	4	4	2	2			6	
Switch Phase												
Minimum Initial (s)				8.0	8.0	8.0	18.0	18.0			25.0	
Minimum Split (s)				27.5	27.5	27.5	30.5	30.5			30.5	
Total Split (s)				28.0	28.0	28.0	31.0	31.0			42.0	
Total Split (%)				40.0%	40.0%	40.0%	44.3%	44.3%			60.0%	
Maximum Green (s)				22.5	22.5	22.5	25.5	25.5			36.5	
Yellow Time (s)				3.5	3.5	3.5	3.5	3.5			3.5	
All-Red Time (s)				2.0	2.0	2.0	2.0	2.0			2.0	
Lost Time Adjust (s)				0.0	0.0	0.0		0.0			0.0	
Total Lost Time (s)				5.5	5.5	5.5		5.5			5.5	
Lead/Lag							Lag	Lag				
Lead-Lag Optimize?												
Vehicle Extension (s)				0.2	0.2	0.2	0.2	0.2			0.2	
Recall Mode				Min	Min	Min	C-Max	C-Max			C-Max	
Walk Time (s)				12.0	12.0	12.0	15.0	15.0			15.0	
Flash Dont Walk (s)				10.0	10.0	10.0	10.0	10.0			10.0	
Pedestrian Calls (#/hr)				0	0	0	0	0			0	
Act Effct Green (s)				22.5	22.5	22.5		31.0			36.5	
Actuated g/C Ratio				0.32	0.32	0.32		0.44			0.52	
v/c Ratio				0.39	0.74	0.04		0.11			0.79	
Control Delay				21.5	31.7	16.8		7.3			8.1	
Queue Delay				93.3	0.0	0.0		0.9			2.8	
Total Delay				114.8	31.7	16.8		8.2			10.9	
LOS				F	C	B		A			B	
Approach Delay					58.3			8.2			10.9	
Approach LOS					E			A			B	
Queue Length 50th (ft)				62	141	5		16			106	
Queue Length 95th (ft)				114	#227	13		m19			m113	
Internal Link Dist (ft)		62			502			25			158	
Turn Bay Length (ft)												
Base Capacity (vph)				477	507	402		1412			1621	
Starvation Cap Reductn				0	0	0		1026			232	

Lane Group	ø1
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Right Turn on Red	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	1
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	8.0
Minimum Split (s)	11.0
Total Split (s)	11.0
Total Split (%)	16%
Maximum Green (s)	8.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	Lead
Lead-Lag Optimize?	
Vehicle Extension (s)	0.2
Recall Mode	Min
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn				419	0	0		0			90	
Storage Cap Reductn				0	0	0		0			0	
Reduced v/c Ratio				3.22	0.74	0.04		0.41			0.92	

Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 56 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 65.8% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Sixth Ave. & Diamond St.

Lane Group	ø1
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	578	201	22	61	3	41	97	60	436	941	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	12	12	11	12	12	12	12
Right Turn on Red			No			Yes			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		325			634			330			105	
Travel Time (s)		8.9			17.3			9.0			2.9	
Confl. Peds. (#/hr)	2		147	147		2	6		22	22		6
Peak Hour Factor	0.83	0.84	0.73	0.50	0.50	0.25	0.77	0.88	0.84	0.92	0.98	0.75
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%	8%	2%	7%	10%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	728	275	0	178	0	0	234	0	0	1435	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			4			2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		18.0	18.0		8.0	25.0	
Minimum Split (s)	27.5	27.5	27.5	27.5	27.5		30.5	30.5		11.0	30.5	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		31.0	31.0		11.0	42.0	
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%		44.3%	44.3%		15.7%	60.0%	
Maximum Green (s)	22.5	22.5	22.5	22.5	22.5		25.5	25.5		8.0	36.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.0	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		0.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5			5.5	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2		0.2	0.2		0.2	0.2	
Recall Mode	Min	Min	Min	Min	Min		C-Max	C-Max		Min	C-Max	
Walk Time (s)	12.0	12.0	12.0	12.0	12.0		15.0	15.0			15.0	
Flash Dont Walk (s)	10.0	10.0	10.0	10.0	10.0		10.0	10.0			10.0	
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0			0	
Act Effct Green (s)		22.5	22.5		22.5			25.5			36.5	
Actuated g/C Ratio		0.32	0.32		0.32			0.36			0.52	
v/c Ratio		1.42	0.72		1.55			0.34			1.15	
Control Delay		225.4	33.7		309.4			12.7			86.0	
Queue Delay		0.2	0.0		0.4			0.0			0.1	
Total Delay		225.6	33.7		309.8			12.7			86.1	
LOS		F	C		F			B			F	
Approach Delay		173.0			309.8			12.7			86.1	
Approach LOS		F			F			B			F	
Queue Length 50th (ft)		~433	103		~110			25			~140	
Queue Length 95th (ft)		#572	139		#101			50			#506	
Internal Link Dist (ft)		245			554			250			25	
Turn Bay Length (ft)												
Base Capacity (vph)		512	384		115			690			1248	
Starvation Cap Reductn		0	0		0			0			30	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Spillback Cap Reductn		11	0		2			2			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		1.45	0.72		1.58			0.34			1.18	

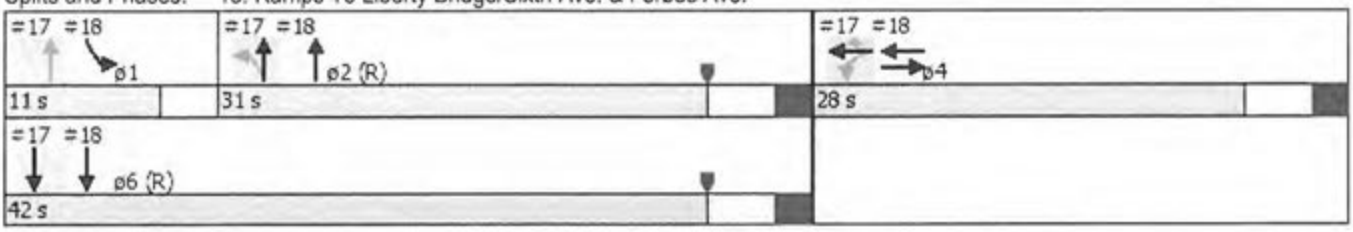
Intersection Summary

Area Type: CBD
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 56 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.55
Intersection Signal Delay: 124.6 Intersection LOS: F
Intersection Capacity Utilization 115.1% ICU Level of Service H
Analysis Period (min) 15

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

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

Splits and Phases: 18: Ramps To Liberty Bridge/Sixth Ave. & Forbes Ave.



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	940	460	0	0	86	659
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	12	12	12	10	10
Storage Length (ft)		0	0		0	60
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Right Turn on Red		No				No
Link Speed (mph)	25			25	25	
Link Distance (ft)	634			303	752	
Travel Time (s)	17.3			8.3	20.5	
Confl. Peds. (#/hr)		79				
Peak Hour Factor	0.91	0.86	0.92	0.92	0.85	0.82
Heavy Vehicles (%)	3%	1%	2%	2%	3%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1568	0	0	0	101	804
Turn Type	NA				NA	Perm
Protected Phases	2				8	
Permitted Phases						8
Minimum Split (s)	52.0				22.0	22.0
Total Split (s)	52.0				28.0	28.0
Total Split (%)	65.0%				35.0%	35.0%
Maximum Green (s)	47.0				23.0	23.0
Yellow Time (s)	3.0				3.0	3.0
All-Red Time (s)	2.0				2.0	2.0
Lost Time Adjust (s)	0.0				0.0	0.0
Total Lost Time (s)	5.0				5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0				7.0	7.0
Flash Dont Walk (s)	40.0				10.0	10.0
Pedestrian Calls (#/hr)	0				0	0
Act Effct Green (s)	47.0				23.0	23.0
Actuated g/C Ratio	0.59				0.29	0.29
v/c Ratio	0.94				0.24	1.18
Control Delay	29.0				23.7	126.1
Queue Delay	3.6				0.0	0.0
Total Delay	32.5				23.7	126.1
LOS	C				C	F
Approach Delay	32.5				114.7	
Approach LOS	C				F	
Queue Length 50th (ft)	348				38	~278
Queue Length 95th (ft)	#541				73	#346
Internal Link Dist (ft)	554			223	672	
Turn Bay Length (ft)						60
Base Capacity (vph)	1661				423	679
Starvation Cap Reductn	0				0	0
Spillback Cap Reductn	58				0	2
Storage Cap Reductn	0				0	0

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Reduced v/c Ratio	0.98				0.24	1.19

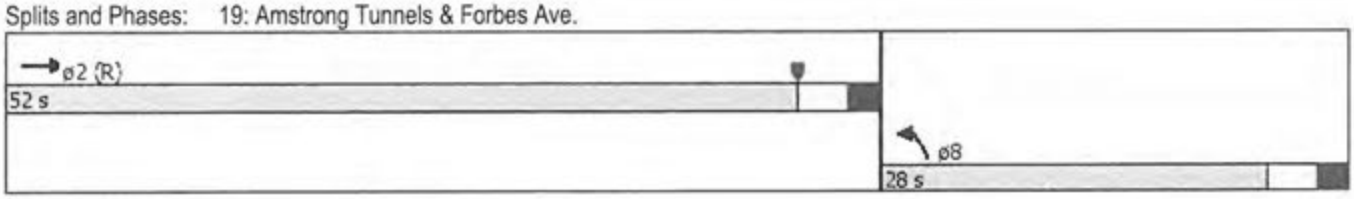
Intersection Summary

Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 48 (60%), Referenced to phase 2:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Pretimed
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 62.6 Intersection LOS: E
Intersection Capacity Utilization 80.9% ICU Level of Service D
Analysis Period (min) 15

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

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

Splits and Phases: 19: Amstrong Tunnels & Forbes Ave.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	485	1034	81	0	0	0	0	139	115	243	46	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	12	12	12	11	11	12	10	12
Grade (%)		2%			1%			-6%			10%	
Right Turn on Red			No			No			Yes			No
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		303			745			205			310	
Travel Time (s)		8.3			20.3			5.6			8.5	
Confl. Peds. (#/hr)	54		95						69	69		
Peak Hour Factor	0.96	0.92	0.83	0.92	0.92	0.92	0.92	0.79	0.79	0.84	0.55	0.92
Heavy Vehicles (%)	0%	3%	0%	2%	2%	2%	2%	0%	0%	1%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	505	1222	0	0	0	0	0	176	146	0	373	0
Turn Type	Perm	NA						NA	Perm	Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2								8	4		
Minimum Split (s)	25.0	25.0						25.0	25.0	25.0	25.0	
Total Split (s)	51.0	51.0						29.0	29.0	29.0	29.0	
Total Split (%)	63.8%	63.8%						36.3%	36.3%	36.3%	36.3%	
Maximum Green (s)	46.0	46.0						24.0	24.0	24.0	24.0	
Yellow Time (s)	3.0	3.0						3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0						0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0						5.0	5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	7.0	7.0						7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	11.0	11.0						13.0	13.0	13.0	13.0	
Pedestrian Calls (#/hr)	0	0						0	0	0	0	
Act Effct Green (s)	46.0	46.0						24.0	24.0		24.0	
Actuated g/C Ratio	0.58	0.58						0.30	0.30		0.30	
v/c Ratio	0.61	0.72						0.35	0.34		1.38	
Control Delay	11.0	11.8						24.2	16.9		218.0	
Queue Delay	8.5	30.6						0.2	0.0		0.0	
Total Delay	19.5	42.5						24.4	16.9		218.0	
LOS	B	D						C	B		F	
Approach Delay		35.8						21.0			218.0	
Approach LOS		D						C			F	
Queue Length 50th (ft)	147	195						68	36		~257	
Queue Length 95th (ft)	m129	m178						104	68		#200	
Internal Link Dist (ft)		223			665			125			230	
Turn Bay Length (ft)												
Base Capacity (vph)	829	1687						510	429		271	
Starvation Cap Reductn	283	528						0	0		0	
Spillback Cap Reductn	89	0						48	0		0	
Storage Cap Reductn	0	0						0	0		0	
Reduced v/c Ratio	0.92	1.05						0.38	0.34		1.38	

Intersection Summary

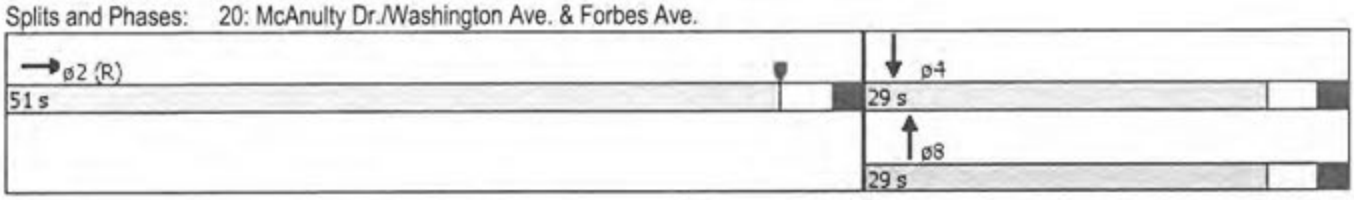
Area Type: CBD
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 8 (10%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
Maximum v/c Ratio: 1.38
Intersection Signal Delay: 61.9 Intersection LOS: E
Intersection Capacity Utilization 81.9% ICU Level of Service D
Analysis Period (min) 15

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

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: McAnulty Dr./Washington Ave. & Forbes Ave.



21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

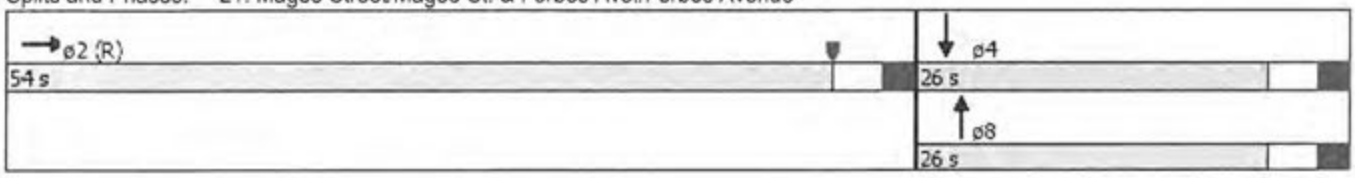
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	280	1048	107	0	0	0	0	116	125	22	109	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	11	12	12	12	12
Grade (%)		1%			0%			-7%			6%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		745			503			182			335	
Travel Time (s)		20.3			13.7			5.0			9.1	
Confl. Peds. (#/hr)	14		34						22	22		
Peak Hour Factor	0.64	0.87	0.75	0.92	0.92	0.92	0.92	0.73	0.77	0.69	0.35	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	0%	0%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1786	0	0	0	0	0	321	0	0	343	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	54.0	54.0						26.0		26.0	26.0	
Total Split (%)	67.5%	67.5%						32.5%		32.5%	32.5%	
Maximum Green (s)	49.0	49.0						21.0		21.0	21.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		49.0						21.0			21.0	
Actuated g/C Ratio		0.61						0.26			0.26	
v/c Ratio		0.91						0.64			0.85	
Control Delay		22.9						27.7			52.6	
Queue Delay		0.8						0.2			0.0	
Total Delay		23.7						27.9			52.6	
LOS		C						C			D	
Approach Delay		23.7						27.9			52.6	
Approach LOS		C						C			D	
Queue Length 50th (ft)		403						114			171	
Queue Length 95th (ft)		m419						146			87	
Internal Link Dist (ft)		665			423			102			255	
Turn Bay Length (ft)												
Base Capacity (vph)		1969						500			405	
Starvation Cap Reductn		0						0			0	
Spillback Cap Reductn		46						11			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.93						0.66			0.85	

21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 53 (66%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 65
Control Type: Pretimed
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 28.3 Intersection LOS: C
Intersection Capacity Utilization 73.6% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Magee Street/Magee St. & Forbes Ave./Forbes Avenue

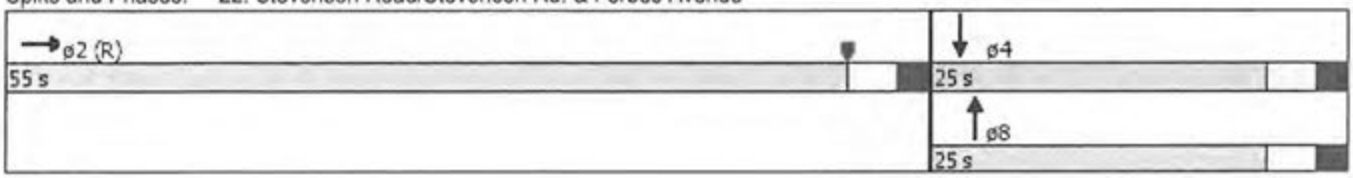


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	102	1063	13	0	0	0	0	100	55	27	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	12	12	12	12	12	16	12	12	16	12
Grade (%)		-1%			0%			-5%			2%	
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		503			408			159			324	
Travel Time (s)		13.7			11.1			4.3			8.8	
Confl. Peds. (#/hr)	22		26						16	16		
Peak Hour Factor	0.71	0.97	0.84	0.92	0.92	0.92	0.92	0.84	0.67	0.93	0.75	0.92
Heavy Vehicles (%)	0%	6%	0%	2%	2%	2%	2%	7%	0%	2%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1255	0	0	0	0	0	201	0	0	102	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	55.0	55.0						25.0		25.0	25.0	
Total Split (%)	68.8%	68.8%						31.3%		31.3%	31.3%	
Maximum Green (s)	50.0	50.0						20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		50.0						20.0			20.0	
Actuated g/C Ratio		0.62						0.25			0.25	
v/c Ratio		0.61						0.38			0.22	
Control Delay		5.3						22.2			17.4	
Queue Delay		1.0						0.0			0.0	
Total Delay		6.2						22.2			17.4	
LOS		A						C			B	
Approach Delay		6.2						22.2			17.4	
Approach LOS		A						C			B	
Queue Length 50th (ft)		83						65			23	
Queue Length 95th (ft)		m102						112			m34	
Internal Link Dist (ft)		423			328			79			244	
Turn Bay Length (ft)												
Base Capacity (vph)		2052						524			463	
Starvation Cap Reductn		367						0			0	
Spillback Cap Reductn		486						5			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.80						0.39			0.22	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 72 (90%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 50
Control Type: Pretimed
Maximum v/c Ratio: 0.61
Intersection Signal Delay: 9.0 Intersection LOS: A
Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Stevenson Road/Stevenson Rd. & Forbes Avenue



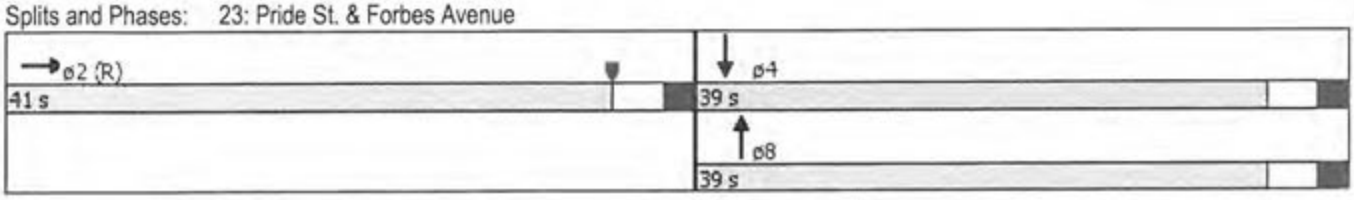
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	172	942	30	0	0	0	0	82	24	283	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		408			281			148			320	
Travel Time (s)		11.1			7.7			4.0			8.7	
Confl. Peds. (#/hr)	48		30						9	9		
Peak Hour Factor	0.75	0.94	0.82	0.92	0.92	0.92	0.92	0.80	0.92	0.91	0.67	0.92
Heavy Vehicles (%)	1%	6%	4%	2%	2%	2%	2%	20%	5%	3%	20%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1268	0	0	0	0	0	128	0	0	378	0
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		2						8			4	
Permitted Phases	2									4		
Minimum Split (s)	21.0	21.0						21.0		21.0	21.0	
Total Split (s)	41.0	41.0						39.0		39.0	39.0	
Total Split (%)	51.3%	51.3%						48.8%		48.8%	48.8%	
Maximum Green (s)	36.0	36.0						34.0		34.0	34.0	
Yellow Time (s)	3.0	3.0						3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0						2.0		2.0	2.0	
Lost Time Adjust (s)		0.0						0.0			0.0	
Total Lost Time (s)		5.0						5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Walk Time (s)	5.0	5.0						5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0						11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0						0		0	0	
Act Effct Green (s)		36.0						34.0			34.0	
Actuated g/C Ratio		0.45						0.42			0.42	
v/c Ratio		0.85						0.19			0.74	
Control Delay		24.1						13.0			27.3	
Queue Delay		5.3						0.2			0.0	
Total Delay		29.4						13.1			27.3	
LOS		C						B			C	
Approach Delay		29.4						13.1			27.3	
Approach LOS		C						B			C	
Queue Length 50th (ft)		356						32			100	
Queue Length 95th (ft)		#435						57			115	
Internal Link Dist (ft)		328			201			68			240	
Turn Bay Length (ft)												
Base Capacity (vph)		1492						680			512	
Starvation Cap Reductn		174						0			0	
Spillback Cap Reductn		0						157			0	
Storage Cap Reductn		0						0			0	
Reduced v/c Ratio		0.96						0.24			0.74	

Intersection Summary

Area Type: Other

Cycle Length: 80
Actuated Cycle Length: 80
Offset: 7 (9%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 60
Control Type: Pretimed
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 27.8 Intersection LOS: C
Intersection Capacity Utilization 65.1% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 23: Pride St. & Forbes Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	22	1	1	4	49	20	21	152	10	24	268	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	11	11	11	11	11	11
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		505			392			366			198	
Travel Time (s)		13.8			10.7			10.0			5.4	
Confl. Peds. (#/hr)	250		150	150		250	675		250	250		675
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	80	0	0	203	0	0	378	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 43.4% ICU Level of Service A
Analysis Period (min) 15

24: Street 1 & Wylie Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	22	1	1	4	49	20	21	152	10	24	268	48
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	24	1	1	4	54	22	23	169	11	27	298	53

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	27	81	203	378
Volume Left (vph)	24	4	23	27
Volume Right (vph)	1	22	11	53
Hadj (s)	0.19	-0.12	0.02	-0.04
Departure Headway (s)	5.6	5.1	4.6	4.4
Degree Utilization, x	0.04	0.12	0.26	0.46
Capacity (veh/h)	571	623	745	793
Control Delay (s)	8.8	8.8	9.3	11.1
Approach Delay (s)	8.8	8.8	9.3	11.1
Approach LOS	A	A	A	B

Intersection Summary			
Delay	10.2		
Level of Service	B		
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	23	11	17	17	18	35	106	1	1	32	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	11	11	11	11	11	11	11	11	11
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		392			555			261			271	
Travel Time (s)		10.7			15.1			7.1			7.4	
Confl. Peds. (#/hr)	175		100	100		175	125		175	175		125
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	58	0	0	158	0	0	60	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 34.3% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	1	23	11	17	17	18	35	106	1	1	32	21
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	26	12	19	19	20	39	118	1	1	36	23

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	39	58	158	60
Volume Left (vph)	1	19	39	1
Volume Right (vph)	12	20	1	23
Hadj (s)	-0.15	-0.11	0.08	-0.20
Departure Headway (s)	4.3	4.3	4.3	4.1
Degree Utilization, x	0.05	0.07	0.19	0.07
Capacity (veh/h)	790	780	819	850
Control Delay (s)	7.5	7.6	8.2	7.4
Approach Delay (s)	7.5	7.6	8.2	7.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	25	78	34	4	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	310		297			261
Travel Time (s)	8.5		8.1			7.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	125	0	0	67
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 16.3% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	25	78	34	4	57
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	28	87	38	4	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			297			
pX, platoon unblocked						
vC, conflicting volume	178	106			124	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	178	106			124	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			100	
cM capacity (veh/h)	809	949			1462	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	31	124	68
Volume Left	3	0	4
Volume Right	28	38	0
cSH	932	1700	1462
Volume to Capacity	0.03	0.07	0.00
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.0	0.0	0.5
Lane LOS	A		A
Approach Delay (s)	9.0	0.0	0.5
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.3%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	15	6	90	27	6	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25		25			25
Link Distance (ft)	293		271			320
Travel Time (s)	8.0		7.4			8.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	24	0	130	0	0	36
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 16.5% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	15	6	90	27	6	26
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	7	100	30	7	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	157	115			130	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157	115			130	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	830	937			1455	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	23	130	36
Volume Left	17	0	7
Volume Right	7	30	0
cSH	858	1700	1455
Volume to Capacity	0.03	0.08	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.0	1.4
Lane LOS	A		A
Approach Delay (s)	9.3	0.0	1.4
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	275	32	2	379	72	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%			-12%	0%	
Link Speed (mph)	25			25	25	
Link Distance (ft)	362			548	320	
Travel Time (s)	9.9			14.9	8.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	342	0	0	423	103	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.5% ICU Level of Service A
Analysis Period (min) 15

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	275	32	2	379	72	21
Sign Control	Free			Free	Stop	
Grade	0%			-12%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	306	36	2	421	80	23
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	362			548		
pX, platoon unblocked						
vC, conflicting volume			341		749	323
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			341		749	323
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		79	97
cM capacity (veh/h)			1218		379	718

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	341	423	103
Volume Left	0	2	80
Volume Right	36	0	23
cSH	1700	1218	424
Volume to Capacity	0.20	0.00	0.24
Queue Length 95th (ft)	0	0	24
Control Delay (s)	0.0	0.1	16.2
Lane LOS		A	C
Approach Delay (s)	0.0	0.1	16.2
Approach LOS			C

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	169	1114	24	0	452
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		4%			-4%
Link Speed (mph)	25		25			25
Link Distance (ft)	505		162			277
Travel Time (s)	13.8		4.4			7.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	184	1237	0	0	491
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 39.2% ICU Level of Service A
Analysis Period (min) 15

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	169	1114	24	0	452
Sign Control	Stop		Free			Free
Grade	0%		4%			-4%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	184	1211	26	0	491
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			162			277
pX, platoon unblocked						
vC, conflicting volume	1388	417			1237	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1388	417			1237	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	69			100	
cM capacity (veh/h)	134	585			559	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	184	484	484	268	164	164	164
Volume Left	0	0	0	0	0	0	0
Volume Right	184	0	0	26	0	0	0
cSH	585	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.31	0.28	0.28	0.16	0.10	0.10	0.10
Queue Length 95th (ft)	33	0	0	0	0	0	0
Control Delay (s)	13.9	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B						
Approach Delay (s)	13.9	0.0			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Volume (vph)	0	546	690	139	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	11	11
Storage Length (ft)	0			25	0	0
Storage Lanes	0			1	0	1
Taper Length (ft)	25				25	
Link Speed (mph)		25	25		25	
Link Distance (ft)		374	248		376	
Travel Time (s)		10.2	6.8		10.3	
Confl. Peds. (#/hr)				375		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	607	921	0	0	49
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.0% ICU Level of Service A
Analysis Period (min) 15

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	546	690	139	0	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	607	767	154	0	49
Pedestrians					375	
Lane Width (ft)					11.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					29	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)		374	248			
pX, platoon unblocked					0.98	
vC, conflicting volume	1296				1522	836
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1296				1498	836
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	78
cM capacity (veh/h)	379				79	222

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	303	303	511	410	49
Volume Left	0	0	0	0	0
Volume Right	0	0	0	154	49
cSH	1700	1700	1700	1700	222
Volume to Capacity	0.18	0.18	0.30	0.24	0.22
Queue Length 95th (ft)	0	0	0	0	20
Control Delay (s)	0.0	0.0	0.0	0.0	25.8
Lane LOS					D
Approach Delay (s)	0.0		0.0		25.8
Approach LOS					D

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX O

PLOTTED: 8/4/2011

NOTES:

1. ALL PARKING METERS IN EVENT "NO PARKING" ZONES ARE TO BE BAGGED WITH RESTRICTED TIMES TO ALERT TO THE MOTORING PUBLIC.

2. RESTRICTED PARKING IS TO BEGIN AT 6:00 PM FOR STANDARD EVENTS AND LAST UNTIL THE PROJECTED END OF THE EVENT. FOR WEEKEND EVENTS RESTRICTED TIMES ARE TO BE COORDINATED WITH THE CITY OF PITTSBURGH DEPARMENT OF PUBLIC SAFETY.

3. IN TOTAL 33 METERED PARKING SPACES ARE TO BE REMOVED.

4. RESTRICTED METERS ARE TO BE PLACED BACK IN NORMAL OPERATION AFTER EVENT IS OVER.

LEGEND

- EVENT NO PARKING ZONE AFTER 4:00 PM

N

N. T. S.

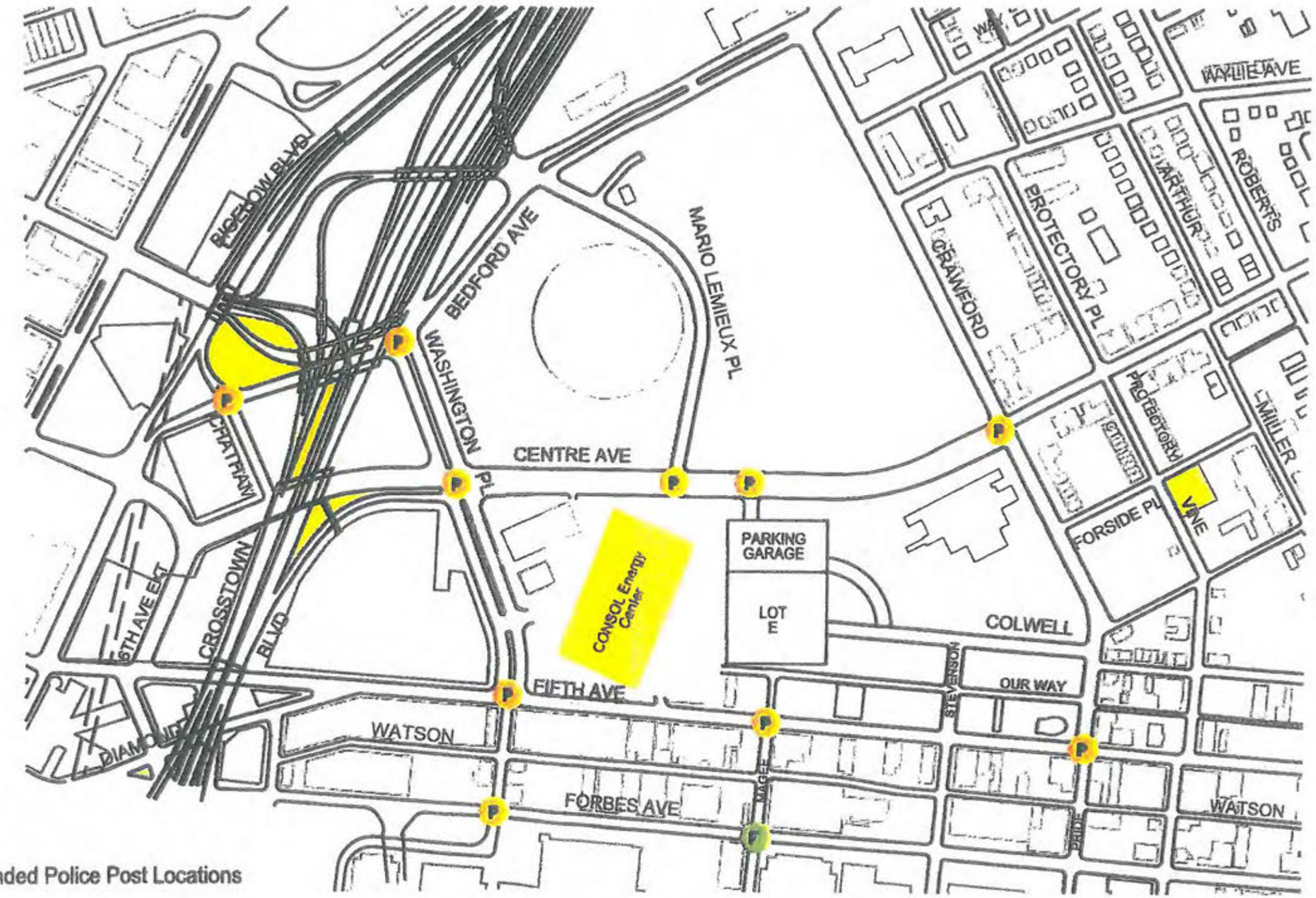
Trans Associates

Transportation Solutions for Today and Tomorrow
Twin Towers Suite 400 /4955 Steubenville Pike
Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO.	PGHPE00-11049
PROJECT:	CONSOL ENERGY CENTER 6 MONTH FOLLOW UP STUDY
TITLE:	BEDFORD AVENUE EVENT PARKING RESTRICTIONS
FIGURE	16B
D.B.	CDF
C.B.	CAJ
REV.	

FILE NAME: P:\pghpe00\11049\Figures\updated TMP Parking Figures.dgn

PLOTTED: 8/4/2011
FILE NAME: P:\pghpe00\11049\Figures\updated TMP Parking Figures.dgn



Legend

P - Recommended Police Post Locations

F - Traffic Signal Placed on Flash

POLICE ASSIGNMENTS	
10	POLICE
1	SUPERVISOR

N

SCALE: N.T.S.

Trans Associates

Transportation Solutions for Today and Tomorrow
Twin Towers Suite 400 / 4955 Steubenville Pike
Pittsburgh, Pennsylvania 15205 / (412) 490-0530

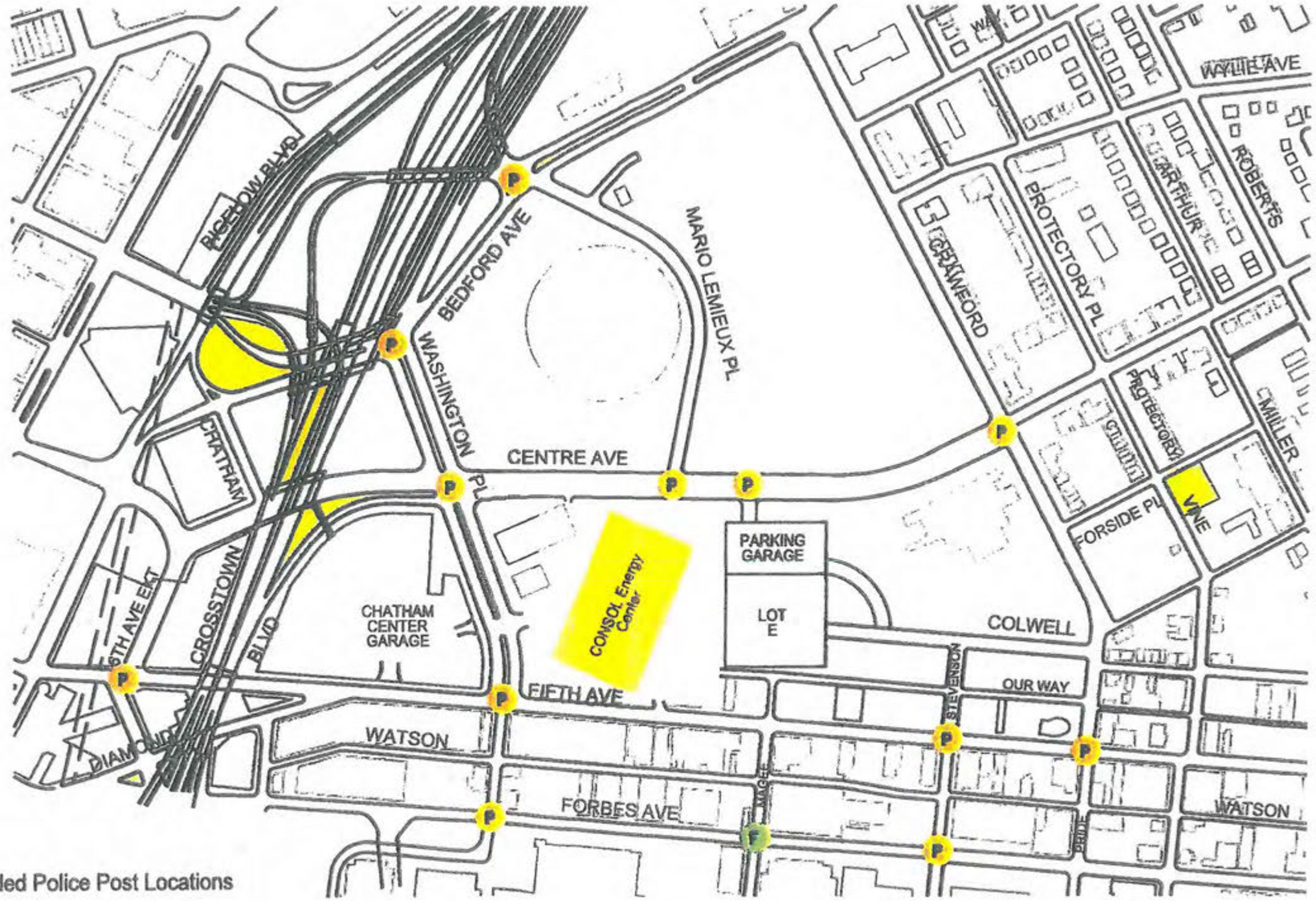
PROJECT NO. PGHPE00-08355

PROJECT: CONSOL Energy Center
6 Month Follow-up Study

TITLE: PRE-GAME
POLICE OFFICER POST LOCATIONS
13,000 - 18,000 ATTENDEES

FIGURE 17

D.B. CDE
C.B. CAJ
REV.



Legend

P - Recommended Police Post Locations

F - Traffic Signal Placed on Flash

POLICE ASSIGNMENTS	
12	POLICE
1	SUPERVISOR

SCALE: N.T.S.

Trans Associates

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Pittsburgh, Pennsylvania 15205 /(412) 490-0630

PROJECT NO. PGHPE00-08355

PROJECT: CONSOL Energy Center
6 Month Follow-up Study

TITLE: POST-GAME
POLICE OFFICER POST LOCATIONS
13,000 - 18,000 ATTENDEES

FIGURE 18

D.B. CDE
C.B. CAI
REV.