Appendix F

Existing (2009) Traffic Simulation Models Measures of Effectiveness (MOE)

Table F-1: Freeway Measures of Effectiveness for the Morning (AM) Peak Hour 2009 Baseline Traffic Operational Analysis without Improvements

		LOCATION		NODE		LENGTH (ft)	VOLUMES			LINK STATISTICS			AGGREGATE STATISTICS			REMARKS
		From	To	From	To		Actual Demand	Model Throughput	Model Throughput vs Actual Demand	Speed (mph)	Density (vpmpl)	LOS	Speed (mph)	Density (vpmpl)	LOS	
I-395 GENERAL PURPOSE (GP) & HIGH OCCUPANCY VEHICLE (HOV) LANES	I-395 NORTHBOUND MAINLINE	NB GP	Begin I-395 GP Lanes South of Seminary Road Interchange	1000	1001	692	6230	6240	10	61	35	D	51	38	E	NB Freeway Mainline
				1001	1002	803	6230	6238	8	57	37	E				NB Freeway Mainline
				1002	1005	1073	6230	6216	-14	39	41	E				NB Freeway Mainline
		NB GP	Seminary Road Exit Ramp	1005	1006	790	5355	5326	-29	60	30	D	60	29	D	NB Freeway Mainline
				1006	1008	1235	5355	5317	-38	61	29	D				NB Freeway Mainline
				1008	1010	860	5355	5322	-33	61	29	D				NB Freeway Mainline
		NB GP	Seminary Road Entrance Ramp	1010	1011	1093	6855	6615	-240	57	26	C	57	27	D	NB Freeway Mainline
				1011	1015	706	6855	6620	-235	57	29	D				NB Freeway Mainline
		NB GP	King Street Exit Ramp	1015	1017	635	5835	5574	-261	60	31	D	60	31	D	NB Freeway Mainline
		NB GP	End I-395 North of Seminary Road Interchange	1017	1019	485	5835	5578	-257	61	31	D				NB Freeway Mainline
		NB HOV	Begin I-395 HOV Lanes South of Seminary Road Interchange	1052	1053	643	3340	3335	-5	67	26	C	66	25	C	NB Freeway Mainline
				1053	1054	534	3340	3338	-2	68	25	C				NB Freeway Mainline
				1054	1056	501	3340	3339	-1	68	25	C				NB Freeway Mainline
				1056	1057	417	3340	3338	-2	67	25	C				NB Freeway Mainline
				1057	1058	513	3340	3343	3	66	25	C				NB Freeway Mainline
				1058	1060	616	3340	3342	2	66	25	C				NB Freeway Mainline
				1060	1062	560	3340	3342	2	66	25	C				NB Freeway Mainline
				1062	1063	525	3340	3339	-1	66	25	C				NB Freeway Mainline
				1063	1064	571	3340	3348	8	66	26	C				NB Freeway Mainline
				1064	1066	675	3340	3350	10	65	26	C				NB Freeway Mainline
		NB HOV	Seminary Road HOV Entrance Ramp	1066	1067	1074	3450	3433	-17	65	20	C	65	26	D	NB Freeway Mainline
		NB HOV	End I-395 HOV Lanes North of Seminary Road Interchange	1067	1068	1010	3450	3423	-27	65	26	D				NB Freeway Mainline
	I-395 SOUTHBOUND MAINLINE	SB GP	Begin I-395 GP Lanes North of Seminary Road Interchange	2001	2002	812	3810	3811	1	64	15	B	64	15	B	SB Freeway Mainline
		SB GP	King Street Entrance Ramp	2002	2004	1209	4160	4164	4	60	14	B	60	14	B	SB Freeway Mainline
		SB GP	Seminary Road Exit Ramp	2004	2005	502	3450	3532	82	63	14	B	63	14	B	SB Freeway Mainline
				2005	2007	920	3450	3530	80	63	14	B				SB Freeway Mainline
				2007	2009	1142	3450	3545	95	63	14	B				SB Freeway Mainline
				2009	2012	1179	3450	3546	96	63	14	B				SB Freeway Mainline
		SB GP	Seminary Road Entrance Ramp	2012	2014	570	4145	4155	10	57	17	B	60	17	B	SB Freeway Mainline
		SB GP	End I-395 South of Seminary Road Interchange	2014	2015	728	4145	4145	0	62	17	B				SB Freeway Mainline
	I-395 NORTHBOUND RAMPS	NB GP	Seminary Road Exit Ramp	1005	1201	299	875	886	11	8	111	F	8	118	F	Diverge Ramp Section
				1201	7002	203	875	876	1	7	128	F				Diverge Ramp Section
		NB GP	Seminary Road Entrance Ramp	7003	1210	221	1500	1296	-204	34	21	C	34	20	C	Merge Ramp Section
				1210	1010	234	1500	1295	-205	34	19	B				Merge Ramp Section
		NB HOV	Seminary Road Entrance Ramp	7005	1070	339	110	84	-26	47	2	A	48	2	A	Merge Ramp Section
				1070	1066	306	110	82	-28	49	2	A				Merge Ramp Section
	I-395 SOUTHBOUND RAMPS	SB GP	Seminary Road Exit Ramp	2004	2201	313	710	633	-77	35	9	A	35	9	A	Diverge Ramp Section
				2201	7004	485	710	632	-78	34	9	A				Diverge Ramp Section
		SB GP	Seminary Road Entrance Ramp	7001	2216	279	695	605	-90	33	10	A	33	14	B	Merge Ramp Section
				2216	2012	427	695	604	-91	34	16	B				Merge Ramp Section

Table F-2: Freeway Measures of Effectiveness for the Evening (PM) Peak Hour 2009 Baseline Traffic Operational Analysis without Improvements

		LOCATION		NODE		LENGTH	VOLUMES			LINK STATISTICS			AGGREGATE STATISTICS			REMARKS
		From	To	From	To	(ft)	Actual Demand	Model Throughput	Model Throughput vs Actual Demand	Speed (mph)	Density (vpmpl)	LOS	Speed (mph)	Density (vpmpl)	LOS	
I-395 GENERAL PURPOSE (GP) & HIGH OCCUPANCY VEHICLE (HOV) LANES	I-395 NORTHBOUND MAINLINE	NB GP	Begin I-395 GP Lanes South of Seminary Road Interchange	1000	1001	692	5450	5454	4	62	30	D	60	27	D	NB Freeway Mainline
				1001	1002	803	5450	5449	-1	61	30	D				NB Freeway Mainline
				1002	1005	1073	5450	5449	-1	58	24	C				NB Freeway Mainline
		NB GP	Seminary Road Exit Ramp	1005	1006	790	4355	4361	6	62	24	C	62	24	C	NB Freeway Mainline
				1006	1008	1235	4355	4356	1	62	24	C				NB Freeway Mainline
				1008	1010	860	4355	4356	1	62	24	C				NB Freeway Mainline
		NB GP	Seminary Road Entrance Ramp	1010	1011	1093	5275	5230	-45	59	19	C	58	21	C	NB Freeway Mainline
				1011	1015	706	5275	5236	-39	56	23	C				NB Freeway Mainline
		NB GP	King Street Exit Ramp	1015	1017	635	4015	3909	-106	62	21	C	62	21	C	NB Freeway Mainline
		NB GP	End I-395 North of Seminary Road Interchange	1017	1019	485	4015	3913	-102	62	21	C				NB Freeway Mainline
	I-395 SOUTHBOUND MAINLINE	SB GP	Begin I-395 GP Lanes North of Seminary Road Interchange	2001	2002	812	5880	5896	16	63	24	C	61	22	C	SB Freeway Mainline
		SB GP	King Street Entrance Ramp	2002	2004	1209	6360	6368	8	60	21	C				SB Freeway Mainline
		SB GP	Seminary Road Exit Ramp	2004	2005	502	5330	5437	107	62	22	C	62	22	C	SB Freeway Mainline
				2005	2007	920	5330	5435	105	62	22	C				SB Freeway Mainline
				2007	2009	1142	5330	5419	89	62	22	C				SB Freeway Mainline
				2009	2012	1179	5330	5417	87	61	22	C				SB Freeway Mainline
		SB GP	Seminary Road Entrance Ramp	2012	2014	570	6625	6546	-79	51	30	D	55	29	D	SB Freeway Mainline
		SB GP	End I-395 South of Seminary Road Interchange	2014	2015	728	6625	6545	-80	59	28	D				SB Freeway Mainline
		SB HOV	Begin I-395 HOV Lanes South of Seminary Road Interchange	1068	1067	1010	3250	3247	-3	67	25	C	67	24	C	SB Freeway Mainline
				1067	1066	1066	3250	3245	-5	67	24	C				SB Freeway Mainline
		SB HOV	Seminary Road Exit Ramp	1066	1064	685	3160	3154	-6	65	24	C	82	27	D	SB Freeway Mainline
				1064	1063	564	3160	3151	-9	66	24	C				SB Freeway Mainline
				1063	1062	582	3160	3144	-16	66	24	C				SB Freeway Mainline
				1062	1060	505	3160	3146	-14	66	24	C				SB Freeway Mainline
				1060	1058	616	3160	3138	-22	66	24	C				SB Freeway Mainline
				1058	1057	513	3160	3139	-21	65	24	C				SB Freeway Mainline
				1057	1056	417	3160	3139	-21	65	24	C				SB Freeway Mainline
				1056	1054	477	3160	3141	-19	65	24	C				SB Freeway Mainline
				1054	1053	456	3160	3139	-21	65	24	C				SB Freeway Mainline
		SB HOV	End I-395 HOV Lanes North of Seminary Road Interchange	1053	1052	654	3160	3135	-25	65	24	C				SB Freeway Mainline
	I-395 NORTHBOUND RAMPS	NB GP	Seminary Road Exit Ramp	1005	1201	299	1095	1082	-13	33	35	E	33	35	E	Diverge Ramp Section
				1201	7002	203	1095	1081	-14	33	35	E				Diverge Ramp Section
		NB GP	Seminary Road Entrance Ramp	7003	1210	221	920	881	-39	34	14	B	34	13	B	Merge Ramp Section
				1210	1010	234	920	882	-38	34	13	B				Merge Ramp Section
	I-395 SOUTHBOUND RAMPS	SB GP	Seminary Road Exit Ramp	2004	2201	313	1030	931	-99	35	13	B	35	13	B	Diverge Ramp Section
				2201	7004	485	1030	932	-98	34	14	B				Diverge Ramp Section
		SB GP	Seminary Road Entrance Ramp	7001	2216	279	1295	1211	-84	33	20	B	33	28	D	Merge Ramp Section
				2216	2012	427	1295	1218	-77	33	33	D				Merge Ramp Section
		SB HOV	Seminary Road Exit Ramp	1066	1070	317	90	103	13	49	2	A	49	2	A	Diverge Ramp Section
				1070	7005	352	90	103	13	49	2	A				Diverge Ramp Section

Table F- 3: Arterial Measures of Effectiveness for the Morning (AM) Peak Hour 2009 Baseline Traffic Operational Analysis without Improvements

		Location	Approach	Link	Actual Demand				Model Throughput				Model Throughput vs Actual Demand				Control Delay By Movement			LOS By Movement			LOS By Approach		LOS By Intersection		*Modeled Storage and Maximum Traffic Queuing (ft)* Through		Left Turn		Right Turn	
					Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Link Length (ft)	Queue (ft)	Storage (ft)	Queue (ft)	Storage (ft)	Queue (ft)
MARK CENTER (BRAC 133) TRAFFIC ANALAYSIS STUDY AREA	LIBRARY LANE	Library Lane / Seminary Road (Node #5003)	WB	5002-5003	20	1345	90	1455	34	1340	85	1459	14	-5	-5	4	14	9	7	B	A	A	9	A	10	A	310	240	50	40	-	-
			NB	6017-5003	50	5	10	65	48	9	8	65	-2	4	-2	0	29	27	3	C	C	A	25	C			264	100	-	-	-	-
			EB	5005-5003	210	790	10	1010	184	813	5	1002	-26	23	-5	-8	22	5	11	C	A	B	8	A			311	140	150	120	-	-
			SB	6018-5003	40	5	15	60	37	3	20	60	-3	-2	5	0	32	39	17	C	D	B	27	C			216	60	-	-	-	-
	I-395 / SEMINARY ROAD ROTARY INTERCHANGE	I-395 NB Off-Ramp/Seminary Road (Node #5015)	NB	1203-5015	0	680	195	875	0	683	193	876	0	3	-2	1	0	70	10	-	E	A	57	E	39	D	618	620	-	-	-	-
			EB	5013-5015	750	355	0	1105	722	341	0	1063	-28	-14	0	-42	25	20	0	C	C	-	24	C			331	300	331	280	-	-
		I-395 NB On-Ramp/Seminary Road (Node #5010)	NB	5015-5010	555	55	820	1430	574	48	785	1407	19	-7	-35	-23	6	14	13	A	B	B	10	B	18	B	276	240	75	80	-	-
			WB	5009-5010	0	325	55	380	0	299	36	335	0	-26	-19	-45	0	44	48	-	D	D	44	D			160	140	-	-	-	-
		I-395 SB Off-Ramp/Seminary Road (Node #5012)	WB	5010-5012	265	615	0	880	286	592	0	878	21	-23	0	-2	7	5	0	A	A	-	6	A	17	B	300	140	300	180	-	-
			SB	2205-5012	0	230	0	230	0	212	0	212	0	-18	0	-18	0	59	0	-	E	A	59	E			281	120	-	-	-	-
		I-395 SB On-Ramp/Seminary Road (Node #5013)	SB	5012-5013	270	225	0	495	286	212	0	498	16	-13	0	3	10	10	0	B	A	-	10	A	21	C	259	120	259	120	-	-
			WB	5019-5013	0	835	0	835	0	805	0	805	0	-30	0	-30	0	27	0	-	C	-	27	C			357	300	-	-	-	-
	MARK CENTER DRIVE	Mark Center Drive / Seminary Road (Node #5022)	WB	5021-5022	410	1530	90	2030	350	1410	74	1834	-60	-120	-16	-196	54	14	12	D	B	B	22	C	22	C	243	240	243	220	-	-
			NB	5060-5022	10	10	130	150	5	6	87	98	-5	-4	-43	-52	70	71	5	E	E	A	13	B			340	40	340	60	340	40
			EB	5023-5022	20	1275	65	1360	18	1278	59	1355	-2	3	-6	-5	51	13	5	D	B	A	13	B			395	120	150	60	395	140
			SB	5045-5022	230	50	50	330	220	57	52	329	-10	7	2	-1	72	56	10	E	E	A	59	E			252	220	252	120	252	40
	N. BEAUREGARD STREET	N. Beauregard Street / Seminary Road (Node #5025)	WB	5023-5025	310	1100	0	1410	304	1009	0	1313	-6	-91	0	-97	66	18	0	E	B	-	29	C	39	D	341	260	341	200	-	-
			NB	6004-5025	450	466	0	916	460	463	0	923	10	-3	0	7	86	34	0	F	C	-	60	E			347	320	175	160	-	-
			EB	5026-5025	60	980	0	1040	68	991	0	1059	8	11	0	19	76	29	0	E	C	-	32	C			323	240	100	100	-	-
			SB	6002-5025	90	155	40	285	83	155	48	286	-7	0	8	1	53	28	19	D	C	B	34	C			250	120	135	120	-	-
		N. Beauregard Street / Mark Center Drive (Node #6005)	WB	5032-6005	15	5	15	35	34	12	31	77	19	7	16	42	54	38	20	D	D	B	37	D	6	A	286	100	-	-	-	-
			NB	6007-6005	50	1175	180	1405	68	1156	177	1401	18	-19	-3	-4	3	3	2	A	A	A	3	A			329	180	150	40	-	-
			EB	5030-6005	10	5	5	20	11	4	4	19	1	-1	-1	-1	69	58	3	E	E	A	53	D			203	60	-	-	-	-
			SB	6004-6005	125	420	80	625	113	414	77	604	-12	-6	-3	-21	18	2	1	B	A	A	5	A			435	100	350	140	-	-

Table F-4: Arterial Measures of Effectiveness for the Evening (PM) Peak Hour 2009 Baseline Traffic Operational Analysis without Improvements

		Location	Approach	Link	Actual Demand				Model Throughput				Model Throughput vs Actual Demand				Control Delay By Movement			LOS By Movement			LOS By Approach		LOS By Intersection		*Modelled Storage and Maximum Traffic Queuing (ft)*					
																											Through		Left Turn		Right Turn	
					Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Left	Thru	Right	Delay	LOS	Delay	LOS	Link Length (ft)	Queue (ft)	Storage (ft)	Queue (ft)	Storage (ft)	Queue (ft)
MARK CENTER (BRAC 133) TRAFFIC ANALAYSIS STUDY AREA	LIBRARY LANE	Library Lane / Seminary Road (Node #5003)	WB	5002-5003	25	800	40	865	20	825	29	874	-5	25	-11	9	35	11	9	D	B	A	12	B	13	B	310	180	50	40	-	-
			NB	6017-5003	35	5	5	45	40	4	0	44	5	-1	-5	-1	47	25	0	D	C	A	45	D			264	80	-	-	-	-
			EB	5005-5003	220	1180	20	1420	223	1235	13	1471	3	55	-7	51	14	9	11	B	A	B	10	A			311	200	150	120	-	-
			SB	6018-5003	85	15	30	130	91	17	22	130	6	2	-8	0	41	39	26	D	D	C	38	D			216	180	-	-	-	-
	I-395 / SEMINARY ROAD ROTARY INTERCHANGE	I-395 NB Off-Ramp/Seminary Road (Node #5015)	NB	1203-5015	0	725	370	1095	0	701	401	1102	0	-24	31	7	0	95	41	A	F	D	75	E	46	D	618	520	-	-	-	-
			EB	5013-5015	475	965	0	1440	424	972	0	1396	-51	7	0	-44	19	23	0	B	C	A	21	C			331	280	331	240	-	-
		I-395 NB On-Ramp/Seminary Road (Node #5010)	NB	5015-5010	560	640	0	1200	565	636	0	1201	5	-4	0	1	7	5	0	A	A	A	6	A	11	B	276	220	75	80	-	-
			WB	5009-5010	0	305	0	305	0	299	0	299	0	-6	0	-6	0	31	0	A	C	A	31	C			160	140	-	-	-	-
		I-395 SB Off-Ramp/Seminary Road (Node #5012)	WB	1211-5012	285	670	0	955	281	679	0	960	-4	9	0	5	10	10	0	A	A	A	10	A	34	C	300	100	-	-	-	-
			SB	2205-5012	0	620	0	620	0	568	0	568	0	-52	0	-52	0	75	0	A	E	A	75	E			281	240	-	-	-	-
		I-395 SB On-Ramp/Seminary Road (Node #5013)	SB	5012-5013	680	225	0	905	639	207	0	846	-41	-18	0	-59	8	7	0	A	A	A	8	A	16	B	259	160	259	220	-	-
			WB	5019-5013	0	760	0	760	0	724	0	724	0	-36	0	-36	0	25	0	A	C	A	25	C			357	200	-	-	-	-
	MARK CENTER DRIVE	Mark Center Drive / Seminary Road (Node #5022)	WB	5021-5022	130	1490	100	1720	130	1475	80	1685	0	-15	-20	-35	64	23	12	E	C	B	26	C	24	C	243	240	243	220	-	-
			NB	5060-5022	80	50	500	630	71	59	390	520	-9	9	-110	-110	53	55	7	D	E	A	19	B			340	80	340	160	340	140
			EB	5023-5022	35	1600	25	1660	49	1609	24	1682	14	9	-1	22	63	20	10	E	B	A	21	C			395	220	150	100	395	20
			SB	5045-5022	185	10	70	265	183	7	74	264	-2	-3	4	-1	49	78	6	D	E	A	38	D			252	140	252	60	252	60
	N BEAUREGARD STREET	N. Beauregard Street / Seminary Road (Node #5025)	WB	5023-5025	425	1020	0	1445	422	998	0	1420	-3	-22	0	-25	66	13	0	E	B	A	29	C	46	D	341	200	341	240	-	-
			NB	6004-5025	360	390	0	750	408	397	0	805	48	7	0	55	132	55	0	F	E	A	94	F			347	280	175	160	-	-
			EB	5026-5025	105	1180	0	1285	96	1214	0	1310	-9	34	0	25	81	28	0	F	C	A	32	C			323	280	100	100	-	-
			SB	6002-5025	145	425	45	615	147	425	39	611	2	0	-6	-4	61	44	34	E	D	C	47	D			250	220	135	140	-	-
		N. Beauregard Street / Mark Center Drive (Node #6005)	WB	5032-6005	115	5	90	210	193	7	137	337	78	2	47	127	46	49	34	D	D	C	41	D	11	B	286	260	-	-	-	-
			NB	6007-6005	5	925	20	950	13	916	20	949	8	-9	0	-1	14	6	6	B	A	A	6	A			329	200	150	20	-	-
			EB	5030-6005	70	20	30	120	77	18	23	118	7	-2	-7	-2	44	39	26	D	D	C	40	D			203	140	-	-	-	-
			SB	6004-6005	20	1335	15	1370	32	1300	18	1350	12	-35	3	-20	12	3	3	B	A	A	3	A			435	160	350	60	-	-

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