

Attachment E

Off-Ramp Queuing

Intersection: 8: Ball Rd & SR-57 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	T	L	R	R
Maximum Queue (ft)	351	343	233	125	110	85	316	200	197
Average Queue (ft)	238	201	106	72	57	25	168	111	47
95th Queue (ft)	322	295	205	110	100	67	269	173	126
Link Distance (ft)	580	580	580	1103	1103	1103	707		
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)								600	600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 9: SR-57 NB Ramps & Ball Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	181	198	216	144	109	35	137	235	196
Average Queue (ft)	102	106	117	75	34	6	77	140	61
95th Queue (ft)	167	180	183	117	78	25	123	218	162
Link Distance (ft)	1103	1103	1103	483	483	483	680	680	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 24: Katella Ave & SR-57 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	398	322	214	105	105	106	226	318	256
Average Queue (ft)	270	204	104	46	33	58	77	195	130
95th Queue (ft)	387	293	191	89	74	92	194	281	241
Link Distance (ft)	376	376	376	639	639	639		854	
Upstream Blk Time (%)	1	0							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (ft)							750		750
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 25: SR-57 NB Ramps & Katella Ave

Movement	EB	EB	EB	B15	B15	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	171	179	159	34	11	257	176	97	344	419	376
Average Queue (ft)	107	96	99	2	0	147	86	35	194	291	229
95th Queue (ft)	153	154	143	16	4	220	150	76	318	393	349
Link Distance (ft)	190	190	190	639	639	305	305	305		743	
Upstream Blk Time (%)	0	0	0			0					
Queuing Penalty (veh)	0	0	0			0					
Storage Bay Dist (ft)									600		600
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 38: SR-55 SB Ramps & Katella Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	R	R	L	L	T	T	T	T	L	L
Maximum Queue (ft)	336	291	240	282	257	285	316	288	341	296	556	739	
Average Queue (ft)	224	180	138	205	167	199	213	230	246	234	132	519	
95th Queue (ft)	305	258	224	273	242	281	301	283	303	285	333	998	
Link Distance (ft)	830	830	830	830	830				478	478	478	698	698
Upstream Blk Time (%)										0		0	35
Queuing Penalty (veh)										0		0	0
Storage Bay Dist (ft)						500	500						
Storage Blk Time (%)													0
Queuing Penalty (veh)													2

Intersection: 38: SR-55 SB Ramps & Katella Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	525
Average Queue (ft)	480
95th Queue (ft)	623
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	43
Queuing Penalty (veh)	62

Intersection: 39: SR-55 NB Ramps & Katella Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	T	T	T	T	T	T	R	L	L	R	LTR
Maximum Queue (ft)	440	422	385	818	801	776	672	558	528	409	51
Average Queue (ft)	326	316	269	780	740	652	348	491	454	316	13
95th Queue (ft)	421	406	356	848	863	874	914	616	618	536	36
Link Distance (ft)	478	478	478	776	776	776	776	518	518		366
Upstream Blk Time (%)	0	0		41	13	12	9	31	18		
Queuing Penalty (veh)	1	0		0	0	0	0	0	0		
Storage Bay Dist (ft)											400
Storage Blk Time (%)									24	2	
Queuing Penalty (veh)									117	9	

Network Summary

Network wide Queuing Penalty: 191

Intersection: 8: Ball Rd & SR-57 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	T	L	R	R
Maximum Queue (ft)	295	275	174	191	191	187	189	311	264
Average Queue (ft)	189	148	54	121	121	103	111	198	146
95th Queue (ft)	265	237	117	171	173	170	173	282	259
Link Distance (ft)	580	580	580	1103	1103	1103	707		
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)								600	600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 9: SR-57 NB Ramps & Ball Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	176	190	183	299	259	173	252	245	214
Average Queue (ft)	90	88	89	196	156	58	152	154	67
95th Queue (ft)	153	157	149	268	246	124	221	230	178
Link Distance (ft)	1103	1103	1103	483	483	483	680	680	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 24: Katella Ave & SR-57 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	351	259	145	226	226	222	260	342	292
Average Queue (ft)	204	148	61	160	156	146	96	209	157
95th Queue (ft)	302	235	120	209	212	203	217	308	270
Link Distance (ft)	376	376	376	639	639	639		854	
Upstream Blk Time (%)	0								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)							750		750
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 25: SR-57 NB Ramps & Katella Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	99	112	86	339	316	202	173	236	183
Average Queue (ft)	64	56	43	272	191	102	29	127	44
95th Queue (ft)	91	92	77	356	289	177	111	208	139
Link Distance (ft)	190	190	190	305	305	305		743	
Upstream Blk Time (%)				5	0				
Queuing Penalty (veh)				0	0				
Storage Bay Dist (ft)							600		600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 38: SR-55 SB Ramps & Katella Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	R	R	L	L	T	T	T	T	L	L
Maximum Queue (ft)	839	859	880	876	827	228	251	180	83	72	204	220	
Average Queue (ft)	631	804	839	809	482	145	154	48	33	27	127	121	
95th Queue (ft)	877	957	926	1044	849	213	221	115	67	62	190	195	
Link Distance (ft)	830	830	830	830	830			478	478	478	698	698	
Upstream Blk Time (%)	1	17	78	56	0								
Queuing Penalty (veh)	0	0	0	0	0								
Storage Bay Dist (ft)						500	500						
Storage Blk Time (%)													
Queuing Penalty (veh)													

Intersection: 38: SR-55 SB Ramps & Katella Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	379
Average Queue (ft)	217
95th Queue (ft)	360
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 39: SR-55 NB Ramps & Katella Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	T	T	T	T	T	T	R	L	L	R	LTR
Maximum Queue (ft)	508	524	503	826	807	816	799	557	572	425	33
Average Queue (ft)	482	487	469	785	762	715	517	505	538	424	8
95th Queue (ft)	541	553	530	844	857	910	1080	609	555	436	25
Link Distance (ft)	478	478	478	776	776	776	776	518	518		366
Upstream Blk Time (%)	11	9	5	67	25	19	13	30	62		
Queuing Penalty (veh)	64	54	28	0	0	0	0	0	0		
Storage Bay Dist (ft)											400
Storage Blk Time (%)									17	58	
Queuing Penalty (veh)									134	294	

Network Summary

Network wide Queuing Penalty: 573

Intersection: 8: Ball Rd & SR-57 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	T	L	R	R
Maximum Queue (ft)	374	353	223	137	127	94	502	406	215
Average Queue (ft)	251	213	111	76	62	28	214	129	55
95th Queue (ft)	349	312	207	120	106	69	400	271	148
Link Distance (ft)	580	580	580	1103	1103	1103	707		
Upstream Blk Time (%)							0		
Queuing Penalty (veh)							0		
Storage Bay Dist (ft)								600	600
Storage Blk Time (%)							0	0	
Queuing Penalty (veh)							2	0	

Intersection: 9: SR-57 NB Ramps & Ball Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	171	181	192	133	74	39	183	259	225
Average Queue (ft)	102	102	118	79	30	7	84	150	82
95th Queue (ft)	159	169	181	122	61	29	143	230	194
Link Distance (ft)	1103	1103	1103	483	483	483	680	680	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 24: Katella Ave & SR-57 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	391	331	230	101	102	96	213	312	290
Average Queue (ft)	278	208	107	45	35	59	73	198	150
95th Queue (ft)	388	296	198	83	75	90	188	281	268
Link Distance (ft)	376	376	376	639	639	639		854	
Upstream Blk Time (%)	2	0							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (ft)							750		750
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 25: SR-57 NB Ramps & Katella Ave

Movement	EB	EB	EB	B15	B15	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	146	159	164	28	5	249	174	91	349	443	401
Average Queue (ft)	100	90	96	1	0	152	93	38	187	285	231
95th Queue (ft)	141	137	143	12	3	218	154	75	304	393	351
Link Distance (ft)	190	190	190	639	639	305	305	305		743	
Upstream Blk Time (%)			0			0					
Queuing Penalty (veh)			0			0					
Storage Bay Dist (ft)									600		600
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 38: SR-55 SB Ramps & Katella Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	R	R	L	L	T	T	T	T	L	L
Maximum Queue (ft)	337	296	276	320	302	320	342	283	295	310	540	540	707
Average Queue (ft)	221	188	144	205	170	211	228	226	244	239	138	138	447
95th Queue (ft)	304	267	233	288	264	294	315	276	288	290	364	364	961
Link Distance (ft)	830	830	830	830	830				478	478	478	698	698
Upstream Blk Time (%)												0	26
Queuing Penalty (veh)												0	0
Storage Bay Dist (ft)						500	500						
Storage Blk Time (%)													0
Queuing Penalty (veh)													1

Intersection: 38: SR-55 SB Ramps & Katella Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	525
Average Queue (ft)	473
95th Queue (ft)	616
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	36
Queuing Penalty (veh)	51

Intersection: 39: SR-55 NB Ramps & Katella Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	T	T	T	T	T	T	R	L	L	R	LTR
Maximum Queue (ft)	469	459	414	824	803	794	664	556	548	425	54
Average Queue (ft)	335	328	276	779	741	638	263	499	470	335	13
95th Queue (ft)	459	444	395	857	863	856	767	620	626	554	36
Link Distance (ft)	478	478	478	776	776	776	776	518	518		366
Upstream Blk Time (%)	2	1	0	42	11	7	4	38	22		
Queuing Penalty (veh)	6	2	0	0	0	0	0	0	0		
Storage Bay Dist (ft)											400
Storage Blk Time (%)									33	1	
Queuing Penalty (veh)									159	5	

Network Summary

Network wide Queuing Penalty: 226

Intersection: 8: Ball Rd & SR-57 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	T	L	R	R
Maximum Queue (ft)	300	277	176	185	189	190	242	334	285
Average Queue (ft)	197	156	60	121	121	105	120	209	163
95th Queue (ft)	273	245	126	171	172	169	198	301	275
Link Distance (ft)	580	580	580	1103	1103	1103	707		
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)								600	600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 9: SR-57 NB Ramps & Ball Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	171	179	170	320	274	180	280	277	236
Average Queue (ft)	90	90	87	212	169	72	153	173	87
95th Queue (ft)	152	157	147	287	244	151	228	255	213
Link Distance (ft)	1103	1103	1103	483	483	483	680	680	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)									600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 24: Katella Ave & SR-57 SB Ramps

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	367	280	161	228	252	216	224	335	285
Average Queue (ft)	212	153	59	160	161	143	102	210	158
95th Queue (ft)	309	238	117	205	222	206	222	296	270
Link Distance (ft)	376	376	376	639	639	639		854	
Upstream Blk Time (%)	0								
Queuing Penalty (veh)	0								
Storage Bay Dist (ft)							750		750
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 25: SR-57 NB Ramps & Katella Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB
Directions Served	T	T	T	T	T	T	L	LR	R
Maximum Queue (ft)	110	107	89	339	308	212	162	226	171
Average Queue (ft)	67	58	43	278	189	98	24	121	33
95th Queue (ft)	101	93	77	359	279	171	98	193	114
Link Distance (ft)	190	190	190	305	305	305		743	
Upstream Blk Time (%)				5	0				
Queuing Penalty (veh)				0	0				
Storage Bay Dist (ft)							600		600
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 38: SR-55 SB Ramps & Katella Ave

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	R	R	L	L	T	T	T	T	L	L
Maximum Queue (ft)	834	852	877	875	830	231	236	130	89	66	207	207	417
Average Queue (ft)	570	788	835	812	467	134	142	49	38	25	120	120	129
95th Queue (ft)	853	1007	944	1022	808	208	209	99	77	63	194	194	272
Link Distance (ft)	830	830	830	830	830				478	478	478	698	698
Upstream Blk Time (%)	2	18	74	51	0								
Queuing Penalty (veh)	0	0	0	0	0								
Storage Bay Dist (ft)						500	500						
Storage Blk Time (%)													
Queuing Penalty (veh)													

Intersection: 38: SR-55 SB Ramps & Katella Ave

Movement	SB
Directions Served	R
Maximum Queue (ft)	469
Average Queue (ft)	261
95th Queue (ft)	443
Link Distance (ft)	
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	500
Storage Blk Time (%)	1
Queuing Penalty (veh)	3

Intersection: 39: SR-55 NB Ramps & Katella Ave

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB
Directions Served	T	T	T	T	T	T	R	L	L	R	LTR
Maximum Queue (ft)	507	530	507	827	810	795	747	550	570	425	38
Average Queue (ft)	475	477	455	792	766	714	454	479	539	425	8
95th Queue (ft)	541	551	543	821	840	879	1045	620	558	431	26
Link Distance (ft)	478	478	478	776	776	776	776	518	518		366
Upstream Blk Time (%)	8	7	4	63	24	22	14	27	64		
Queuing Penalty (veh)	48	39	22	0	0	0	0	0	0		
Storage Bay Dist (ft)											400
Storage Blk Time (%)									16	60	
Queuing Penalty (veh)									124	306	

Network Summary

Network wide Queuing Penalty: 542