

Appendix E: Traffic

E. Traffic Appendix

The following technical report outlines the methodology for trip generation and grade crossing analyses contained in the Northern Branch Corridor DEIS. In addition, traffic volumes for all study intersections and a summary of capacity analysis results for mitigated intersections are provided. Refer to Chapter 9 of the DEIS for traffic intersection screening analysis methodology and LOS definitions for signalized and unsignalized intersections. Detailed summaries of the following are included below:

- Project trip generation by station (Table E-1)
- Traffic volumes (Table E-2)
- Grade crossing LOS results (Table E-3)
- Detailed HCS summaries for mitigated intersections (Table E-4)
- Methodology to calculate average overall delay for nonsignalized intersection (E-5)

E.1 Trip Generation and Distribution

NJ TRANSIT provided the forecast number of AM Peak Hour riders that would drive and park or be dropped off by automobile. This information was generated as part of the estimated access mode to the station from the ridership forecasts of the Build Alternative. This includes consideration of the access by walking, bus, carpool, etc. based on the individual station origins. This information is referred to in this section as “trip generation” for vehicular access, and is categorized as “parkers” and “drop-offs”. Parkers included consideration of existing 2030 No Build bus parkers that shift to the light rail. The “drop-off” trips were assumed to return back to their origins retracing the same route that they adopted to reach the station. Typically the commute to a place of work (in the AM) occurs within a more restricted period of time usually within the peak hour, whereas the commute back from work is spread over the PM peak period. Hence, 85 percent of the AM peak hour vehicular trips, consisting of “parkers” and “pick-ups,” was used as a conservative estimate for the return trips. Table E-1 depicts the trips generated at each station within the study area and Table E-2 depicts the distribution of these trips.

Table E-1: AM Peak Hour Trip Generation at Station Locations

Station	Light Rail to Tenafly (Preferred Alternative)		Light Rail to Englewood Route 4	
	IN	OUT	IN	OUT
North Bergen Junction	0	0	0	0
91st Street	147	120	147	120
Ridgefield	290	141	290	141
Palisades Park	363	189	363	189
Leonia	344	118	344	118
Englewood Route 4	261	65	498	126
Englewood Town Center	115	85	n/a	n/a
Englewood Hospital	22	22	n/a	n/a
Tenafly Town Center	112	96	n/a	n/a
Tenafly North	320	88	n/a	n/a

Source: NJ TRANSIT, 2006

Table E-2: Traffic Volumes

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
North Bergen Junction	Paterson Plank and West Side Avenue Ramp	EB	L	-	-	-	-	-	-
			T	966	1238	1238	1173	1504	1504
			R	1392	1785	1785	734	941	941
		NB	L	672	862	862	716	918	918
			T	-	-	-	-	-	-
			R	127	163	163	254	326	326
		WB	L	180	231	231	131	168	168
			T	1017	1304	1304	825	1058	1058
			R	-	-	-	-	-	-
	Dell and 43rd	EB	L	1	1	1	1	1	1
			T	2	3	3	1	1	1
			R	1	1	1	1	1	1
		NB	L	1	1	1	1	1	1
			T	14	18	18	27	35	35
			R	19	24	24	17	22	22
		WB	L	6	8	8	6	8	8
			T	1	1	1	2	3	3
			R	16	21	21	16	21	21
		SB	L	41	53	53	23	29	29
			T	6	8	8	8	10	10
			R	1	1	1	1	1	1
	Dell and 45th	NB	L	-	-	-	-	-	-
			T	24	31	31	30	38	38
			R	2	3	3	10	13	13
		WB	L	1	1	1	3	4	4
			T	-	-	-	-	-	-
			R	4	5	5	11	14	14
SB		L	11	14	14	5	6	6	
		T	40	51	51	24	31	31	
		R	-	-	-	-	-	-	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
North Bergen Junction	Dell and 49th	EB	L	-	-	-	-	-	-
			T	1	1	1	1	1	1
			R	1	1	1	1	1	1
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	2	3	3	8	10	10
		WB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
	Bergen Tnpk. And Tonnelle	NB1	L	-	-	-	-	-	-
			T	1062	1361	1363	1184	1518	1518
			R	99	127	127	273	350	350
		NB2	L	-	-	-	-	-	-
			T	169	217	219	141	181	181
			R	18	23	23	38	49	49
		SB	L	263	337	337	216	277	277
			T	1053	1350	1351	959	1229	1229
			R	19	24	24	28	36	36
	49th and Tonnelle	EB	L	2	3	3	2	3	3
			T	1	1	1	1	1	1
			R	14	18	18	19	24	24
		NB	L	5	6	6	1	1	1
			T	1170	1500	1504	1269	1627	1627
			R	28	36	36	1	1	1
		WB	L	1	1	1	5	6	6
			T	1	1	1	1	1	1
			R	3	4	4	9	12	12
SB		L	4	5	5	1	1	1	
		T	1396	1790	1791	1260	1615	1615	
		R	1	1	1	1	1	1	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
91st Street	83rd and Tonnelle	EB	L	107	137	16	195	250	5
			T	24	31	4	107	137	5
			R	38	49	5	65	83	15
		NB	L	75	96	33	50	64	35
			T	803	1029	1165	919	1178	1238
			R	12	15	15	39	50	50
		WB	L	18	23	23	13	17	17
			T	90	115	6	45	58	5
			R	17	22	121	16	21	74
		SB	L	10	13	40	8	10	10
			T	915	1173	1219	1027	1317	1425
			R	473	606	31	155	199	142
	Tonnelle and 89th	EB	L	5	6	6	3	4	4
			T	-	-	-	-	-	-
			R	27	35	35	34	44	72
		NB	L	49	63	81	21	27	27
			T	832	1067	1104	1008	1292	1382
			R	6	8	8	15	19	19
		WB	L	6	8	8	3	4	4
			T	-	-	-	-	-	-
			R	5	6	15	6	8	8
		SB	L	8	10	10	1	1	1
			T	1305	1673	1733	1168	1497	1525
			R	7	9	9	2	3	3
	Tonnelle and 91st	EB	L	13	17	47	55	71	99
			T	1	1	61	1	1	47
			R	41	53	83	57	73	101
		NB	L	32	41	87	29	37	67
			T	737	945	945	872	1118	1118
			R	71	91	91	115	147	147
		WB	L	193	247	247	84	108	108
			T	20	26	81	9	12	42
			R	26	33	33	26	33	33
SB		L	39	50	50	151	194	194	
		T	1086	1392	1392	1030	1320	1320	
		R	66	85	113	19	24	54	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
91st Street	Division and Tonnelle	EB	L	4	5	5	11	14	14
			T	-	-	-	-	-	-
			R	6	8	8	6	8	8
		NB	L	10	13	13	5	6	6
			T	766	982	1042	948	1215	1243
			R	-	-	-	-	-	-
		SB	L	-	-	-	-	-	-
			T	1185	1519	1547	1194	1531	1561
			R	8	10	10	6	8	8
	89 th and Tonnelle	EB	L	4	5	5	2	3	3
			T	8	10	10	5	6	6
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			T	22	28	28	6	8	8
			R	34	44	62	17	22	22
		SB	L	24	31	31	32	41	69
			T	-	-	-	-	-	-
			R	8	10	10	4	5	5
	91 st and Tonnelle	EB	L	-	-	-	-	-	-
			T	136	46	166	103	132	233
			R	36	26	26	32	41	69
		NB	L	19	24	42	9	12	12
			T	-	-	-	-	-	-
			R	19	24	24	9	12	12
WB		L	12	15	15	4	5	5	
		T	106	136	265	53	68	158	
		R	-	-	-	-	-	-	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
91st Street	91st and Driveway	EB	L	3	4	4	7	9	9
			T	17	22	22	91	117	117
			R	2	3	3	10	13	13
		NB	L	0	0	0	1	1	1
			T	1	1	1	1	1	1
			R	13	17	17	8	10	10
		WB	L	5	6	6	8	10	10
			T	92	118	118	22	28	28
			R	20	26	26	22	28	28
		SB	L	14	18	18	16	21	21
			T	2	3	3	2	3	3
			R	6	8	8	5	6	6
	West Side and 83rd	NB	L	-	-	-	-	-	-
			T	77	99	348	17	22	52
		WB	L	577	740	5	260	333	333
			T	-	-	-	-	-	-
		SB	L	11	14	5	14	18	18
			T	40	51	821	61	78	96
		R	-	-	-	-	-	-	
		85th and Tonnelle	EB	L	26	33	172	4	5
	T			-	-	-	-	-	-
	R			8	10	81	15	19	219
	NB		L	20	26	216	5	6	118
			T	907	1163	1083	1125	1442	1205
			R	-	-	-	-	-	-
	SB		L	-	-	-	-	-	-
			T	1390	1782	1208	1175	1506	1357
R			16	21	626	8	10	217	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
91st Street	85 th and West Side	NB	L	-	-	-	-	-	-
			T	-	-	69	-	-	7
			R	-	-	256	-	-	491
		WB	L	-	-	780	-	-	335
			T	-	-	-	-	-	-
			R	-	-	25	-	-	4
		SB	L	-	-	7	-	-	9
			T	-	-	26	-	-	39
			R	-	-	-	-	-	-
Ridgefield	Fairview and Broad	EB	L	60	77	77	110	141	141
			T	260	333	346	480	615	628
			R	15	19	19	25	32	32
		NB	L	40	51	51	45	58	58
			T	720	923	923	1030	1320	1320
			R	30	38	44	70	90	116
		WB	L	90	115	141	80	103	109
			T	40	51	51	65	83	83
			R	490	628	641	350	449	449
	SB	L	-	-	-	-	-	-	
		T	1150	1474	1474	910	1167	1167	
		R	-	-	-	-	-	-	
	Fairview and Broad (T-intersection)	EB	L	-	-	-	-	-	-
			T	85	103	103	350	449	449
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			T	80	109	109	110	141	141
			R	-	-	-	-	-	-
SB		L	250	321	334	265	340	353	
		T	-	-	-	-	-	-	
		R	70	90	90	25	32	32	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Ridgefield	Broad and Hendricks	EB	L	195	250	250	244	313	313
			T	-	-	-	-	-	-
			R	526	674	680	354	454	454
		NB	L	324	415	428	405	519	525
			T	834	1068	1184	918	1177	1392
			R	1	1	1	1	1	1
		WB	L	3	4	4	1	1	27
			T	27	35	35	10	13	13
			R	6	8	8	7	9	9
		SB	L	-	-	-	-	-	-
			T	978	1254	1506	1130	1449	1552
			R	423	542	542	232	298	297
	Edgewater and Broad	EB	L	10	13	13	39	50	50
			T	21	27	27	21	27	27
			R1	9	12	12	3	4	4
		NB	R2	23	29	29	29	37	37
			L	38	49	49	10	13	13
			T	864	1108	1147	984	1261	1357
		WB	R	133	171	235	175	224	363
			L1	2	3	173	2	3	67
			L2	253	324	324	137	176	176
		SB	T	9	12	12	5	6	6
			R	51	65	65	46	59	59
			T	967	1240	1322	1125	1442	1481
		R1	147	188	188	66	85	85	
		R2	10	13	13	26	33	33	
	Church and Edgewater	EB	L	4	5	5	3	4	4
			T	64	82	82	8	10	10
			R	-	-	-	-	-	-
		NB	L	29	37	37	29	37	37
			T	15	19	19	13	17	17
			R	86	110	110	16	21	21
		WB	L	-	-	-	-	-	-
			T	79	101	101	135	173	173
			R	1	1	1	1	1	1
SB		L	10	13	13	8	10	10	
		T	-	-	-	-	-	-	
		R	4	5	5	2	4	3	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Ridgefield	Broad and River	NB	L	1	1	1	1	1	1
			T1	508	651	651	560	718	724
			T2	416	533	572	508	651	720
		SB1	T	702	900	906	740	949	949
			R	33	42	42	23	29	29
		SB2	T	424	544	620	478	613	652
			R	14	18	18	8	10	10
Palisades Park	Columbia and Grand	EB	L	275	353	547	290	372	451
			T	90	115	115	160	205	205
			R	760	974	974	680	872	872
		NB	L	-	-	-	-	-	-
			T	1260	1615	1615	990	1269	1269
			R	5	6	6	5	6	6
		WB	L	5	6	6	5	6	6
			T	-	-	-	-	-	-
			R	5	6	6	5	7	6
		SB	L	-	-	-	-	-	-
		T	290	372	372	420	538	538	
		R	-	-	-	-	-	-	
	Rt-46 ramp entrance and Grand	EB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		NB	L	895	1147	1147	635	814	814
			T	645	827	1021	650	833	912
		R	-	-	-	-	-	-	
SB		L	-	-	-	-	-	-	
	T	290	372	372	420	538	538		
	R	325	417	512	270	346	508		

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Palisades Park	Grand and W. Ruby	EB	L	5	6	93	5	6	119
			T	5	6	22	5	6	41
			R	10	13	107	20	26	188
		NB	L	15	19	241	10	13	100
			T	550	705	705	550	705	705
			R	5	6	6	10	13	13
		WB	L	5	6	6	15	19	19
			T	5	6	17	5	6	14
			R	15	19	19	10	13	13
		SB	L	20	26	26	20	26	26
			T	575	737	737	655	840	890
			R	15	19	19	5	6	6
	Fairview and Grand	EB	L	5	6	6	10	13	13
			T	5	6	6	5	6	6
			R	5	6	6	5	6	6
		NB	L	10	13	13	5	6	6
			T	555	712	775	555	712	800
			R	5	6	30	5	6	19
		WB	L	10	13	13	5	6	6
			T	5	6	34	5	6	22
			R	10	13	13	15	19	19
		SB	L	15	19	19	25	32	32
			T	595	763	763	670	859	859
			R	10	13	119	5	6	61
	Central and Grand	EB	L	35	45	45	55	71	71
			T	95	122	122	130	167	167
			R	55	71	71	60	77	77
NB		L	25	32	32	40	51	51	
		T	525	673	697	520	667	695	
		R	40	51	90	50	64	124	
WB		L	95	122	192	65	83	115	
		T	130	167	167	120	154	154	
		R	110	141	141	75	96	96	
SB		L	105	135	135	100	128	128	
		T	440	564	599	480	615	639	
		R	20	26	26	35	45	45	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Leonia	Fort Lee 12 and Bergen/Passaic Expressway	EB	T	586	751	892	695	891	917
		NB	R	389	499	499	400	513	513
	Fort Lee 12 and Bergen/Passaic Expressway	EB	T	586	751	892	795	891	917
			R	232	297	297	300	385	385
	Fort Lee 12 and Bergen/Passaic Expressway	WB	T	742	951	977	995	1275	1395
		SB	R	874	1121	1121	1215	1558	1558
	Fort Lee and Bergen Passaic Expwy Ramp (SB)	WB	T	843	1081	1107	1345	1724	1844
			R1	773	991	991	865	1109	1109
			R2	758	972	972	780	1000	1000
	Fort Lee and Park Entrance	NB	L	5	6	6	10	13	13
			T	5	6	6	5	6	6
			R	5	6	6	30	38	38
		WB	L	5	6	6	10	13	13
			T	717	919	945	950	1218	1338
			R	35	45	45	65	83	83
SB		L	30	38	38	30	38	38	
		T	5	6	6	5	6	6	
		R	20	26	26	35	45	45	
		EB	L	35	45	45	70	90	90
		T	934	1197	1338	1015	1301	1327	
		R	5	6	6	10	13	13	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Leonia	Fort Lee and Willow Tree	NB	L	263	337	337	145	186	186
			T	40	51	51	5	6	6
		WB	R	15	19	19	15	19	19
			L	5	6	6	20	26	26
		SB	T	404	518	518	625	801	801
			R	45	58	258	10	13	87
		EB	L	30	38	130	50	64	233
			T	10	13	13	40	51	51
			R	91	117	143	260	333	453
			L	172	221	362	15	19	19
			T	591	758	758	685	878	878
			R	207	265	265	375	481	507
	Fort Lee and Grand	NB	L	91	117	154	95	122	139
			T	530	679	679	425	545	545
		WB	R	10	13	13	10	13	13
			L	25	32	32	30	38	38
		SB	T	288	369	412	410	526	548
			R	51	65	65	50	64	64
		EB	L	56	72	72	55	71	71
			T	364	467	467	375	481	481
		R	91	117	237	145	186	221	
		L	202	259	303	210	269	370	
		T	404	518	544	510	654	691	
		R	35	45	67	55	71	102	
Englewood Route 4	Van Brunt and Nordhoff	EB	L	5	6	6	5	6	6
			T	-	-	-	-	-	-
		NB	R	5	6	6	5	6	6
			L	-	-	-	-	-	-
		WB	T	136	174	174	345	442	442
			R	30	38	102	20	26	41
		SB	L	51	65	74	55	71	125
			T	-	-	-	-	-	-
			R	167	214	251	200	256	376
			L	182	233	279	145	186	198
			T	167	214	214	145	186	186
			R	-	-	-	-	-	-

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Englewood Route 4	Mackay Highway and Van Brunt	EB	L	-	-	-	-	-	-
			T	3298	4228	4228	2975	3814	3833
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			T	3035	3891	3891	2920	3743	3743
			R	167	214	278	360	462	477
		SB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	217	278	287	205	263	317
	South Dean and West Forest	EB	L	-	-	-	-	-	-
			T	187	240	257	150	192	258
			R	212	272	281	410	526	534
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	25	32	32	50	64	64
			T	197	253	284	260	333	341
			R	-	-	-	-	-	-
SB	L	51	65	65	25	32	32		
	T	1000	1282	1282	970	1244	1244		
	R	126	162	166	150	192	192		
Englewood Town Center	Van Brunt and E. Englewood	EB	L	-	-	-	-	-	-
			T	237	304	306	210	269	280
			R	91	117	121	50	64	73
		NB	L	136	174	178	190	244	253
			T	-	-	-	-	-	-
			R	71	91	100	55	71	138
		WB	L	61	78	78	40	51	51
			T	96	123	145	310	397	397
			R	-	-	-	-	-	-
	SB	L	30	38	94	40	51	84	
		T	172	221	299	135	173	208	
		R	35	45	82	70	90	92	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Englewood Town Center	E. Englewood and North Dean	EB	L	-	-	-	-	-	-
			T	131	168	231	110	141	219
			R	207	265	284	185	237	237
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	76	97	97	85	109	109
			T	116	149	158	225	289	289
			R	-	-	-	-	-	-
	SB	L	61	78	78	65	83	83	
		T	929	1191	1202	790	1013	1013	
		R	40	51	63	115	147	147	
	E. Englewood and Grand	EB	L	192	246	309	200	256	334
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		NB	L	207	265	281	315	404	404
			T	1121	1437	1462	1020	1308	1334
			R	-	-	-	-	-	-
		SB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
	Palisade and North Dean	EB	L	-	-	-	-	-	-
			T	258	331	331	230	295	295
			R	106	136	136	145	186	186
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
WB		L	177	227	239	175	224	224	
		T	278	356	446	395	506	580	
		R	-	-	-	-	-	-	
SB	L	192	246	246	245	314	323		
	T	752	964	971	635	814	814		
	R	45	58	63	185	237	237		

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Englewood Town Center	Palisade and Engle	EB	L	61	78	78	95	122	122
			T	389	499	499	385	494	503
			R	-	-	-	-	-	-
		NB	L	121	155	187	210	269	309
			T	853	1094	1101	730	936	948
			R	318	408	452	280	359	419
		WB	L	-	-	-	-	-	-
			T	343	440	509	355	455	496
			R	283	363	382	320	410	410
		SB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
	Van Brunt and Palisade	EB	L	72	92	92	8	10	10
			T	342	438	438	270	346	346
			R	33	42	42	80	103	114
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	39	50	138	52	67	141
			T	246	315	326	406	520	527
			R	37	47	47	72	92	92
		SB	L	72	92	92	105	135	135
			T	165	212	217	113	145	152
			R	24	31	31	25	32	32
	Nathaniel and Palisade	EB	L	44	56	56	105	135	135
			T	389	499	506	298	382	382
			R	-	-	-	-	-	-
		NB	L	42	54	54	33	42	42
			T	62	79	79	115	147	147
			R	57	73	73	60	77	77
WB		L	-	-	-	-	-	-	
		T	233	299	303	351	450	457	
		R	37	47	47	80	103	103	
SB		L	-	-	-	-	-	-	
		T	-	-	-	-	-	-	
		R	109	140	140	216	277	277	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Englewood Hospital	West and E. Demarest	EB	L	45	58	58	35	45	45
			T	409	524	535	195	250	254
			R	81	104	104	130	167	167
		NB	L	25	32	36	115	147	151
			T	10	13	13	40	51	51
			R	10	13	13	30	38	38
		WB	L	20	26	26	70	90	90
			T	116	149	149	290	372	379
			R	10	13	13	25	32	32
		SB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
	Van Brunt and E. Demarest	EB	L	5	6	6	5	6	6
			T	328	420	427	185	237	237
			R	86	110	114	40	51	55
		NB	L	10	13	13	15	19	19
			T	-	-	-	-	-	-
			R	40	51	51	65	83	83
		WB	L	106	136	136	135	173	173
			T	141	181	181	365	468	475
			R	5	6	6	5	6	6
		SB	L	5	6	6	5	6	6
			T	5	6	6	5	6	6
			R	5	6	6	5	6	6
	E. Demarest and North Dean	EB	L	-	-	-	-	-	-
			T	152	195	195	135	173	180
			R	222	285	285	120	154	163
NB		L	-	-	-	-	-	-	
		T	-	-	-	-	-	-	
		R	-	-	-	-	-	-	
WB		L	56	72	72	65	83	83	
		T	101	129	140	285	365	365	
		R	-	-	-	-	-	-	
SB		L	15	19	19	30	38	38	
		T	919	1178	1189	745	955	966	
		R	136	174	181	215	276	276	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Englewood Hospital	Dean Street North and	EB	L	-	-	-	-	-	-
			T	152	195	199	85	109	113
			R	96	123	125	40	51	51
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	45	58	58	45	58	58
			T	40	51	51	115	147	151
			R	-	-	-	-	-	-
		SB	L	45	58	65	60	77	84
			T	939	1204	1213	745	955	957
			R	35	45	56	55	71	80
	Engle and W. Hamilton	EB	L	111	142	151	65	83	92
			T	96	123	125	85	109	111
			R	-	-	-	-	-	-
		NB	L	56	72	72	80	103	107
			T	773	991	995	970	1244	1248
			R	15	19	19	30	38	38
		WB	L	-	-	-	-	-	-
			T	45	58	58	65	83	83
			R	10	13	15	5	6	8
		SB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
	Hudson and Curry	EB	L	5	6	6	5	6	6
			T	253	324	328	165	212	214
			R	5	6	6	5	6	6
		NB	L	5	6	6	5	6	6
			T	5	6	6	5	6	6
			R	15	19	19	15	19	19
WB		L	5	6	6	5	6	6	
		T	96	123	123	185	237	237	
		R	5	6	6	5	6	6	
SB		L	-	-	-	-	-	-	
		T	-	-	-	-	-	-	
		R	-	-	-	-	-	-	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Englewood Hospital	Hudson and Dean	EB	L	5	6	6	15	19	19
			T	106	136	136	80	103	103
			R	157	201	205	85	109	111
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	146	187	194	175	224	228
			T	101	129	129	175	224	224
			R	5	6	6	5	6	6
		SB	L	30	38	38	5	6	6
			T	732	938	942	500	641	643
			R	5	6	6	20	26	26
	Valley and Hudson	EB1	L	10	13	13	10	13	13
			T	111	142	142	80	103	103
			R	5	6	6	5	6	6
		EB2	L	5	6	6	5	6	6
			T	5	6	6	10	13	13
			R	121	155	155	70	90	90
		NB	L	10	13	13	5	6	6
			T	5	6	6	5	6	6
			R	5	6	6	5	6	6
		WB	L	237	304	308	345	442	446
			T	126	162	162	340	436	436
			R	25	32	32	50	64	64
		SB	L	10	13	13	10	13	13
			T	10	13	13	5	6	6
			R	5	6	6	5	6	6
	Ivy and Curry	EB	L	-	-	-	-	-	-
			T	207	265	269	130	167	169
			R	-	-	-	-	-	-
NB		L	15	19	19	5	6	6	
		T	-	-	-	-	-	-	
		R	10	13	13	10	13	13	
WB		L	-	-	-	-	-	-	
		T	106	136	136	305	391	391	
		R	-	-	-	-	-	-	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>			
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	
Englewood Hospital	Ivy and Dean	EB	L	10	13	13	15	19	19	
			T	121	155	155	85	109	109	
			R	86	110	114	40	51	53	
		NB	L	5	6	6	5	6	6	
			T	10	13	13	20	26	26	
			R	5	6	6	5	6	6	
		WB	L	10	13	13	5	6	6	
			T	96	123	123	285	365	365	
			R	40	51	51	60	77	77	
		SB	L	5	6	6	5	6	6	
			T	672	862	862	480	615	615	
		R	5	6	6	15	19	19		
Tenafly Town Center	E. Clinton and New	EB	L	-	-	-	-	-	-	
			T	410	526	546	215	276	296	
			R	675	865	874	505	647	656	
		NB	L	295	378	389	390	500	508	
			T	-	-	-	-	-	-	
			R	20	26	26	20	26	26	
		WB	L	10	13	13	10	13	13	
			T	150	192	216	405	519	536	
			R	-	-	-	-	-	-	
		SB	L	45	58	58	5	6	6	
			T	35	45	45	15	19	19	
				R	35	45	45	5	6	6
	East Clinton and Valley		EB	L	-	-	-	-	-	-
				T	465	596	616	235	301	321
				R	10	13	13	5	6	6
NB			L	10	13	13	5	6	6	
			T	-	-	-	-	-	-	
			R	5	6	6	5	6	6	
WB			L	5	6	6	5	6	6	
			T	150	192	216	410	526	543	
			R	-	-	-	-	-	-	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Tenafly Town Center	W. Clinton and Franklin	EB	L	40	51	51	75	96	96
			T	460	590	591	320	410	410
			R	30	38	82	25	32	65
		NB	L	10	13	51	35	45	82
			T	20	26	46	20	26	45
			R	10	13	46	25	32	77
		WB	L	5	6	61	10	13	42
			T	100	128	128	295	378	379
			R	35	45	51	50	64	64
		SB	L	90	115	115	55	71	71
			T	35	45	65	20	26	40
			R	35	45	45	65	83	83
	E. Clinton and County	EB	L	84	108	119	80	103	113
			T	6	8	8	1	1	1
			R	470	603	628	320	410	443
		NB	L	122	156	195	310	397	419
			T	352	451	452	490	628	628
			R	6	8	8	1	1	1
		WB	L	0	0	1	1	1	1
			T	1	1	1	1	1	1
			R	1	1	1	1	1	1
		SB1	L	-	-	-	-	-	-
			T	42	54	54	31	40	40
			R	7	9	11	24	31	32
SB2	L	3	4	4	1	1	1		
	T	573	735	735	369	473	473		
	R	10	13	24	26	33	42		

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Tenafly Town Center	Washington and West Railroad	EB	L	10	13	13	13	17	17
			T	64	82	101	29	37	37
			R	48	62	62	36	46	46
		NB	L	24	31	31	26	33	33
			T	28	36	50	56	72	87
			R	23	29	34	33	42	47
		WB	L	26	33	36	17	22	25
			T	56	72	72	98	126	126
			R	28	36	36	20	26	26
		SB	L	33	42	42	18	23	23
			T	104	133	150	106	136	148
			R	31	40	40	46	59	59
	Hillside and Piermont	EB	L	30	38	43	35	45	50
			T	95	122	122	35	45	45
			R	10	13	13	10	13	13
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	10	13	13	5	6	6
			T	75	96	96	90	115	115
R			175	224	224	205	263	263	
SB1		L	20	26	26	15	19	19	
		T	30	38	38	25	32	32	
		R	15	19	19	10	13	13	
SB2	L	20	26	26	15	19	19		
	T	15	19	21	25	32	33		
	R	20	26	30	35	45	47		

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Tenafly Town Center	Riveredge Road and West Railroad	EB	L	5	6	6	12	15	15
			T	483	619	638	368	472	477
			R	67	87	93	98	126	130
		NB	L	28	36	41	32	41	46
			T	15	19	28	24	31	41
			R	23	29	29	24	31	31
		WB	L	24	31	31	21	27	27
			T	282	362	362	406	520	520
			R	19	24	24	38	49	49
		SB	L	14	18	18	33	42	42
			T	61	78	89	51	65	73
			R	45	58	65	57	73	90
	Jay and Piermont	EB	L	225	288	310	205	263	268
			T	250	321	321	180	231	231
			R	45	58	58	40	51	51
		NB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	20	26	26	5	6	6
			T	325	417	417	465	596	596
			R	40	51	51	70	90	90
		SB	L	-	-	-	-	-	-
			T	-	-	-	-	-	-
			R	-	-	-	-	-	-
	Highwood and Jay	EB	L	70	90	90	85	109	109
			T	160	205	205	80	103	103
			R	20	26	26	15	19	19
		NB	L	190	244	244	205	263	263
			T	30	38	43	50	64	69
			R	5	6	6	15	19	19
WB		L	5	6	6	5	6	6	
		T	90	115	115	145	186	186	
		R	10	13	13	35	45	45	
SB		L	10	13	13	15	19	19	
		T	30	38	44	50	64	68	
		R	105	135	135	190	244	244	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Tenafly Town Center	Central and West Railroad	EB	L	1	1	1	1	1	1
			T	118	151	151	92	118	118
			R	7	9	15	8	10	14
		NB	L	4	5	10	1	1	6
			T	1	1	1	1	1	1
			R	38	49	53	62	79	85
		WB	L	125	160	171	117	150	174
			T	118	151	151	280	359	359
			R	3	4	4	3	4	4
		SB	L	8	10	10	3	4	4
			T	1	1	1	1	1	1
			R	4	5	5	1	1	1
	Piermont and Central	EB	L	108	138	142	103	132	138
			T	56	72	72	54	69	69
			R	-	-	-	-	-	-
		NB	L	16	21	21	24	31	31
			T	180	231	253	147	188	193
			R	19	24	24	15	19	19
		WB	L	-	-	-	-	-	-
			T	40	51	51	79	101	101
			R	17	22	22	32	41	41
		SB	L	100	128	128	92	118	118
			T	-	-	-	-	-	-
			R	190	244	255	297	381	405
	Hillside and County	EB	L	10	13	13	5	6	6
			T	106	136	136	53	68	68
			R	19	24	24	7	9	9
NB		L	86	110	110	156	200	200	
		T	324	415	424	399	512	522	
		R	27	35	35	15	19	19	
WB		L	12	15	15	22	28	28	
		T	169	217	217	124	159	159	
		R	63	81	81	95	122	122	
SB		L	167	214	214	86	110	110	
		T	555	712	723	367	470	478	
		R	5	6	6	20	26	26	

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Tenafly North	Prospect and Piermont	NB	L	-	-	-	-	-	-
			T	328	420	564	323	414	452
			R	8	10	10	18	23	23
		WB	L	14	18	18	17	22	22
			T	-	-	-	-	-	-
			R	18	23	23	44	56	56
		SB	L	45	58	62	27	35	37
			T	312	400	445	425	545	667
			R	-	-	-	-	-	-
	Hudson and Piermont	NB	L	-	-	-	-	-	-
			T	316	405	536	340	436	468
			R	30	38	67	27	35	41
		WB	L	27	35	52	25	32	64
			T	-	-	-	-	-	-
			R	36	46	86	50	64	126
		SB	L	54	69	91	23	29	29
			T	328	420	452	427	547	654
			R	-	-	-	-	-	-
	Jersey and Piermont	NB	L	-	-	-	-	-	-
			T	290	372	-	374	479	-
			R	62	79	-	16	21	-
		WB	L	26	33	-	25	32	-
			T	-	-	-	-	-	-
			R	2	3	-	1	1	-
		SB	L	53	68	-	6	8	-
			T	356	456	-	425	545	-
			R	-	-	-	-	-	-
	North Summit and Piermont	NB	L	-	-	-	-	-	-
			T	283	363	387	370	474	493
			R	7	9	242	4	5	75
		WB	L	9	12	84	16	21	163
			T	-	-	-	-	-	-
			R	33	42	46	51	65	116
		SB	L	78	100	234	21	27	58
			T	400	513	486	415	532	522
			R	-	-	-	-	-	-

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Tenaflly North	Madison and Piermont	EB	L	150	192	192	100	128	128
			T	280	359	359	195	250	250
			R	205	263	3038	75	96	136
		NB	L	60	77	87	135	173	206
			T	235	301	315	335	429	465
			R	25	32	32	55	71	71
		WB	L	15	19	19	55	71	71
			T	70	90	90	195	250	250
			R	35	45	45	45	58	58
		SB	L	10	13	12	10	13	12
	T		320	410	418	255	327	311	
	R		10	13	12	5	6	5	
	Union and Piermont	EB	L	20	26	26	40	51	51
			T	245	314	314	115	147	147
			R	20	26	0	20	26	0
		NB	L	65	83	87	135	173	182
			T	250	321	326	285	365	387
			R	105	135	138	60	77	83
		WB	L	20	26	33	15	25	25
			T	200	256	256	315	404	404
			R	25	32	32	20	19	21
		SB	L	25	32	32	35	45	45
	T		300	385	410	240	308	313	
	R		115	147	147	165	212	212	
	County and Prospect	EB	L	4	5	6	2	3	3
			T	1	1	1	4	5	5
			R	40	51	53	41	53	55
NB		L	23	29	29	31	40	40	
		T	256	328	337	386	495	497	
		R	6	8	8	12	15	15	
WB		L	3	4	4	5	6	6	
		T	4	5	5	8	10	10	
		R	1	1	1	5	6	6	
SB		L	2	3	3	1	1	1	
	T	431	553	553	450	577	577		
	R	8	10	10	25	32	32		

<u>Station Area</u>	<u>Intersection</u>	<u>Approach</u>	<u>Movement</u>	<u>AM Traffic Volumes</u>			<u>PM Traffic Volumes</u>		
				<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>	<u>Existing</u>	<u>No Build</u>	<u>Build w/ Mitigation</u>
Tenafly North	County and Hudson	EB	L	6	8	8	6	8	8
			T	48	62	62	18	23	27
			R	12	15	15	14	18	24
		NB	L	5	6	13	13	17	17
			T	243	312	314	380	487	489
			R	12	15	16	4	5	5
		WB	L	12	15	15	13	17	17
			T	27	35	39	45	58	58
			R	131	168	169	163	208	208
		SB	L	172	221	221	122	156	156
	T		416	533	533	449	576	576	
	R		4	5	5	12	15	28	
	North Summit and County	EB	L	14	18	34	17	22	76
			T	6	8	8	13	17	17
			R	69	88	88	54	69	69
		NB	L	32	41	44	56	72	74
			T	336	431	431	483	619	619
			R	12	15	15	8	10	10
		WB	L	16	21	21	9	12	12
			T	3	4	5	15	19	19
R			7	9	9	10	13	13	
SB		L	7	9	9	10	13	13	
	T	508	651	651	520	667	667		
	R	13	17	80	35	45	58		

E.3 Grade Crossing Methodology and Analysis

The 2002 *Guidance on Traffic Control Devices at Highway-Rail Grade Crossings*, a joint publication of USDOT, FHWA and the Highway/Rail Grade Crossing Technical Working Group, citing the *Manual on Uniform Traffic Control Devices* (MUTCD), along with numerous other publications has recommended the use of traffic signal preemption whenever the distance between a grade crossing and adjacent signalized intersection is 200 feet or less. This distance is a function of the potential queue lengths and, for this study, signal preemption is recommended for intersections located at a distance of 500 feet or less from a railroad grade crossing. Approximately 24 intersections within the entire study area (17 signalized and seven unsignalized intersections) lie within 500 feet of a grade crossing and must account for train crossings and signal preemptions in addition to the increased vehicular volume due to the project. Seven unsignalized intersections are assumed to be signalized in order to provide preemption at the intersections (an additional intersection adjacent to one of the grade crossing intersections was signalized to provide proper progression for upstream vehicles). Preemption was based upon determining the minimum green times required for clearing vehicles from the railroad tracks. The signal phasing accounted for the preemption as well as the total blockage times at all of these intersections.

In the event of a train crossing, the performance of these intersections would deteriorate. However, this scenario alone would not be an accurate representation of the actual performance of these intersections, as a train crossing does not occur during each signal cycle. A combination of two scenarios, one accounting for the train crossing and the other without the train crossing, needed to be considered. The analysis performed (using HCS 2000) accounts for both of these scenarios in order to calculate an overall level of service for the intersections, thus depicting a more realistic representation of the performance of the intersections during the peak hour. Table E-3 summarizes the analysis of each analyzed intersection.

NORTHERN BRANCH CORRIDOR DEIS

2030 BUILD SCENARIO - LEONIA STATION AREA - LIGHT RAIL TO TENAFLY (PREFERRED ALTERNATIVE) (Willow Tree Rd. Access)

INTERSECTION	AM PEAK HOUR													PM PEAK HOUR																											
	CONDITION 1 (without pre-emption)						CONDITION 2 (with pre-emption)						WEIGHTED AVERAGES	CONDITION 1 (without pre-emption)						CONDITION 2 (with pre-emption)						WEIGHTED AVERAGES															
	App.	Mvt.	HCS v/c Ratio	HCS Delay (sec)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor		HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor		HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour
Fort Lee & Willow Tree	NB	L	0.94	74.7	240	0.07	167.4	20	168	3360	0.93	1.15	167.4	20	168	3360	0.93	1.14	161.2	F	NB	L	0.89	79.1	240	0.07	53.1	20	168	3360	0.93	0.52	53.1	20	168	3360	0.93	0.54	54.8	D	
	TR	L	0.20	36.0	240	0.07	33.1	20	168	3360	0.93	0.11	33.1	20	168	3360	0.93	0.12	33.4	C	TR	L	0.11	43.5	240	0.07	45.2	20	168	3360	0.93	0.07	45.2	20	168	3360	0.93	0.07	45.1	D	
	SB	L	0.58	44.6	240	0.07	36.2	20	168	3360	0.93	0.31	36.2	20	168	3360	0.93	0.33	36.8	D	SB	L	1.34	232.9	240	0.07	66.3	20	168	3360	0.93	0.77	66.3	20	168	3360	0.93	0.81	77.4	E	
	TR	TR	0.53	42.5	240	0.07	35.7	20	168	3360	0.93	0.28	35.7	20	168	3360	0.93	0.30	36.2	D	TR	TR	1.93	482.9	240	0.07	740.6	20	168	3360	0.93	2.45	740.6	20	168	3360	0.93	2.42	723.4	F	
	EB	DefL	0.78	23.4	240	0.07	196.5	20	168	3360	0.93	1.25	196.5	20	168	3360	0.93	1.22	185.0	F	EB	LTR	0.88	17.9	240	0.07	69.8	20	168	3360	0.93	1.06	69.8	20	168	3360	0.93	1.05	66.3	E	
	TR	TR	0.88	22.9	240	0.07	108.5	20	168	3360	0.93	1.13	108.5	20	168	3360	0.93	1.11	102.8	F	TR	TR	0.88	17.9	240	0.07	69.8	20	168	3360	0.93	1.06	69.8	20	168	3360	0.93	1.05	66.3	E	
	WB	LTR	0.66	27.2	240	0.07	41.0	20	168	3360	0.93	0.68	41.0	20	168	3360	0.93	0.68	40.1	D	WB	LTR	0.85	33.2	240	0.07	86.0	20	168	3360	0.93	1.05	86.0	20	168	3360	0.93	1.04	82.5	F	
	Overall			32.8	240	0.07	99.0	20	168	3360	0.93	99.0	20	168	3360	0.93	94.6		F	Overall			106.8	240	0.07	165.6	20	168	3360	0.93	165.6	20	168	3360	0.93	161.7		F			
	Fort Lee & Park Entrance	NB	LTR	0.16	51.7	240	0.07	48.1	20	168	3360	0.93	0.05	48.1	20	168	3360	0.93	0.06	48.3	D	NB	LTR	0.57	71.8	240	0.07	69.6	20	168	3360	0.93	0.38	69.6	20	168	3360	0.93	0.39	69.7	E
		SB	LTR	0.85	100.7	240	0.07	53.1	20	168	3360	0.93	0.28	53.1	20	168	3360	0.93	0.32	56.3	E	SB	LTR	1.02	154.1	240	0.07	82.0	20	168	3360	0.93	0.60	82.0	20	168	3360	0.93	0.63	86.8	F
		EB	LTR	0.98	46.0	240	0.07	175.6	20	168	3360	0.93	1.29	175.6	20	168	3360	0.93	1.27	167.0	F	EB	LTR	1.44	227.3	240	0.07	187.4	20	168	3360	0.93	1.26	187.4	20	168	3360	0.93	1.27	190.1	F
		WB	LT	0.70	6.3	240	0.07	25.1	20	168	3360	0.93	0.84	25.1	20	168	3360	0.93	0.83	23.8	C	WB	LT	0.98	28.9	240	0.07	47.5	20	168	3360	0.93	1.02	47.5	20	168	3360	0.93	1.02	46.3	D
		R	R	0.04	2.1	240	0.07	9.0	20	168	3360	0.93	0.05	9.0	20	168	3360	0.93	0.05	8.5	A	R	R	0.07	2.0	240	0.07	3.9	20	168	3360	0.93	0.07	3.9	20	168	3360	0.93	0.07	3.8	A
Overall				31.9	240	0.07	110.3	20	168	3360	0.93	110.3	20	168	3360	0.93	105.1		F	Overall			125.4	240	0.07	112.6	20	168	3360	0.93	112.6	20	168	3360	0.93	113.5		F			

NORTHERN BRANCH CORRIDOR DEIS
2030 MITIGATION SCENARIO - LEONIA STATION AREA- LIGHT RAIL TO TENAFLY (PREFERRED ALTERNATIVE) (Willow Tree rd. Access)

INTERSECTION	AM PEAK HOUR										PM PEAK HOUR																								
	CONDITION 1 (without pre-emption)					CONDITION 2 (with pre-emption)					CONDITION 1 (without pre-emption)					CONDITION 2 (with pre-emption)																			
	App.	Mvt.	HCS v/c Ratio	HCS Delay (sec)	No. secs in an hour when condition occurs	Weight Factor	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	LOS										
Fort Lee & Willow Tree	NB	L	0.69	54.4	240	0.07	20	168	3360	0.93	0.76	79.6	20	168	3360	0.93	0.76	77.9	20	168	3360	0.93	0.51	70.7	20	168	3360	0.93	0.52	69.6	E				
		TR	0.30	47.5	240	0.07	20	168	3360	0.93	0.33	68.5	20	168	3360	0.93	0.33	67.1	20	168	3360	0.93	0.14	64.2	20	168	3360	0.93	0.14	63.1	E				
		L	0.73	61.9	240	0.07	20	168	3360	0.93	0.54	66.3	20	168	3360	0.93	0.55	66.0	20	168	3360	0.93	0.92	100.9	20	168	3360	0.93	0.92	98.9	F				
		T	0.07	46.5	240	0.07	20	168	3360	0.93	0.05	58.1	20	168	3360	0.93	0.05	57.3	20	168	3360	0.93	0.20	60.7	20	168	3360	0.93	0.20	59.5	E				
		R	0.29	29.9	240	0.07	20	168	3360	0.93	0.57	66.2	20	168	3360	0.93	0.55	63.8	20	168	3360	0.93	0.65	45.4	20	168	3360	0.93	0.65	44.8	D				
		L	0.83	40.7	240	0.07	20	168	3360	0.93	0.83	50.1	20	168	3360	0.93	0.83	49.5	20	168	3360	0.93	0.05	21.4	20	168	3360	0.93	0.05	21.0	C				
		TR	0.54	14.9	240	0.07	20	168	3360	0.93	0.53	19.8	20	168	3360	0.93	0.53	19.5	20	168	3360	0.93	0.96	46.7	20	168	3360	0.93	0.96	46.9	D				
		L	0.05	27.6	240	0.07	20	168	3360	0.93	0.05	35.9	20	168	3360	0.93	0.05	36.3	20	168	3360	0.93	0.65	102.5	20	168	3360	0.93	0.64	99.2	F				
		TR	0.84	44.8	240	0.07	20	168	3360	0.93	0.77	52.2	20	168	3360	0.93	0.77	51.7	20	168	3360	0.93	0.92	66.9	20	168	3360	0.93	0.92	65.9	E				
		Overall			36.2	240	0.07	20	168	3360	0.93	0.81	45.8	20	168	3360	0.93	0.81	45.1	20	168	3360	0.93	50.4	20	168	3360	0.93	58.2	20	168	3360	0.93	57.7	E
		Fort Lee & Park Entrance	NB	LT	0.06	43.8	240	0.07	20	168	3360	0.93	0.04	50.8	20	168	3360	0.93	0.04	50.3	20	168	3360	0.93	0.08	51.4	20	168	3360	0.93	0.08	50.9	D		
				R	0.03	43.6	240	0.07	20	168	3360	0.93	0.02	50.6	20	168	3360	0.93	0.02	50.1	20	168	3360	0.93	0.17	52.6	20	168	3360	0.93	0.17	52.1	D		
				LT	0.24	45.6	240	0.07	20	168	3360	0.93	0.17	52.6	20	168	3360	0.93	0.17	52.1	20	168	3360	0.93	0.15	52.3	20	168	3360	0.93	0.15	51.8	D		
R	0.08			33.1	240	0.07	20	168	3360	0.93	0.07	41.1	20	168	3360	0.93	0.07	40.6	20	168	3360	0.93	0.15	52.2	20	168	3360	0.93	0.15	51.0	D				
L	0.16			13.9	240	0.07	20	168	3360	0.93	0.18	19.1	20	168	3360	0.93	0.18	18.8	20	168	3360	0.93	0.54	34.7	20	168	3360	0.93	0.54	34.0	C				
TR	0.81			25.3	240	0.07	20	168	3360	0.93	0.78	31.3	20	168	3360	0.93	0.78	30.9	20	168	3360	0.93	0.79	34.8	20	168	3360	0.93	0.79	34.6	C				
L	0.01			17.4	240	0.07	20	168	3360	0.93	0.02	29.1	20	168	3360	0.93	0.02	28.3	20	168	3360	0.93	0.04	31.0	20	168	3360	0.93	0.04	30.2	C				
TR	0.49			11.4	240	0.07	20	168	3360	0.93	0.50	16.9	20	168	3360	0.93	0.50	16.5	20	168	3360	0.93	0.72	23.8	20	168	3360	0.93	0.72	23.2	C				
Overall					20.3	240	0.07	20	168	3360	0.93	0.70	26.1	20	168	3360	0.93	0.70	25.7	20	168	3360	0.93	30.7	20	168	3360	0.93	30.7	20	168	3360	0.93	30.3	C

NORTHERN BRANCH EIS

2030 MITIGATED BUILD SCENARIO - ENGLEWOOD HOSPITAL STATION AREA - LIGHT RAIL TO TENAFLY (PREFERRED ALTERNATIVE)

INTERSECTION	AM PEAK HOUR											PM PEAK HOUR																												
	CONDITION 1 (without pre-emption)					CONDITION 2 (with pre-emption)						CONDITION 1 (without pre-emption)					CONDITION 2 (with pre-emption)																							
	App.	Mvt.	HCS v/c Ratio	HCS Delay (sec)	Weight Factor	No. secs in an hour when condition occurs	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	HCS v/c Ratio	HCS Delay (sec)	Weight Factor	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	HCS v/c Ratio	HCS Delay (sec)	Weight Factor	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	HCS v/c Ratio	HCS Delay (sec)	Weight Factor	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	HCS v/c Ratio	HCS Delay (sec)	Weight Factor	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs							
Demarest & Van Brunt	NB	L	0.08	44.7	0.55	1990	10	161	1610	0.03	33.1	0.45	10	161	1610	0.06	39.5	0.45	10	161	1610	0.11	43.5	0.55	1990	10	161	1610	0.04	29.8	0.55	1990	10	161	1610	0.45	0.08	37.4	D	
		R	0.27	47.7	0.55	1990	10	161	1610	0.30	66.9	0.45	10	161	1610	0.28	56.3	0.45	10	161	1610	0.39	48.4	0.55	1990	10	161	1610	0.42	66.0	0.55	1990	10	161	1610	0.45	0.40	56.3	E	
	SB	LTR	0.23	47.5	0.55	1990	10	161	1610	0.27	66.6	0.45	10	161	1610	0.25	56.0	0.45	10	161	1610	0.12	43.3	0.55	1990	10	161	1610	0.13	59.5	0.55	1990	10	161	1610	0.45	0.12	50.5	D	
		LTR	0.60	36.5	0.55	1990	10	161	1610	0.77	62.3	0.45	10	161	1610	0.68	48.0	0.45	10	161	1610	0.36	33.3	0.55	1990	10	161	1610	0.43	51.1	0.45	1990	10	161	1610	0.45	0.39	41.3	D	
	WB	LTR	0.32	5.1	0.55	1990	10	161	1610	0.48	23.1	0.45	10	161	1610	0.39	13.2	0.45	10	161	1610	0.55	8.0	0.55	1990	10	161	1610	0.83	39.8	0.55	1990	10	161	1610	0.45	0.68	22.2	C	
		Overall		27.6	1990	0.55	1610	10	161	1610	49.6	10	0.45	10	161	1610	37.4	D		20.5	1990	0.55	1610	10	45.7	10	161	1610	0.45	31.8	C									
	Demarest & North Dean	SB	LT	0.96	51.7	0.55	1990	10	161	1610	0.87	48.0	0.45	10	161	1610	0.92	50.0	0.45	10	161	1610	0.87	40.3	0.55	1990	10	161	1610	0.70	33.5	0.55	1990	10	161	1610	0.45	0.79	37.3	D
			R	0.31	25.8	0.55	1990	10	161	1610	0.44	50.7	0.45	10	161	1610	0.37	36.9	0.45	10	161	1610	0.51	29.9	0.55	1990	10	161	1610	0.82	73.7	0.55	1990	10	161	1610	0.45	0.85	49.5	D
		EB	TR	0.51	20.9	0.55	1990	10	161	1610	0.63	41.0	0.45	10	161	1610	0.56	29.9	0.45	10	161	1610	0.39	18.6	0.55	1990	10	161	1610	0.45	32.4	0.55	1990	10	161	1610	0.45	0.42	24.8	C
			L	0.52	44.8	0.55	1990	10	161	1610	0.49	74.7	0.45	10	161	1610	0.51	58.2	0.45	10	161	1610	0.46	41.8	0.55	1990	10	161	1610	0.68	78.5	0.55	1990	10	161	1610	0.45	0.56	58.2	E
WB		L	0.29	32.1	0.55	1990	10	161	1610	0.36	51.4	0.45	10	161	1610	0.32	40.7	0.45	10	161	1610	0.72	45.6	0.55	1990	10	161	1610	0.83	71.8	0.55	1990	10	161	1610	0.45	0.77	57.3	E	
		T	0.29	32.1	0.55	1990	10	161	1610	0.36	51.4	0.45	10	161	1610	0.32	40.7	0.45	10	161	1610	0.72	45.6	0.55	1990	10	161	1610	0.83	71.8	0.55	1990	10	161	1610	0.45	0.77	57.3	E	
Overall			40.9	1990	0.55	1610	10	161	1610	47.9	10	0.45	10	161	1610	44.0	D		36.2	1990	0.55	1610	10	46.7	10	161	1610	0.45	40.9	D										
Hamilton & North Dean		SB	LT	0.54	14.0	0.75	2700	10	90	900	0.51	13.6	0.25	10	90	900	0.53	13.9	0.25	10	90	900	0.42	11.5	0.75	2700	10	90	900	0.39	10.8	0.75	2700	10	90	900	0.25	0.41	11.3	B
			R	0.08	10.1	0.75	2700	10	90	900	0.39	45.2	0.25	10	90	900	0.16	18.9	0.25	10	90	900	0.10	9.3	0.75	2700	10	90	900	0.41	41.8	0.75	2700	10	90	900	0.25	0.18	17.4	B
		EB	TR	0.62	28.1	0.75	2700	10	90	900	0.62	31.3	0.25	10	90	900	0.62	28.9	0.25	10	90	900	0.36	24.4	0.75	2700	10	90	900	0.37	28.0	0.75	2700	10	90	900	0.25	0.36	25.3	B
	L		0.65	36.9	0.75	2700	10	90	900	0.66	40.6	0.25	10	90	900	0.65	37.8	0.25	10	90	900	0.64	32.9	0.75	2700	10	90	900	0.70	40.1	0.75	2700	10	90	900	0.25	0.36	25.3	C	
	WB	L	0.29	32.1	0.55	1990	10	161	1610	0.36	51.4	0.45	10	161	1610	0.32	40.7	0.45	10	161	1610	0.72	45.6	0.55	1990	10	161	1610	0.83	71.8	0.55	1990	10	161	1610	0.45	0.77	57.3	E	
		T	0.29	32.1	0.55	1990	10	161	1610	0.36	51.4	0.45	10	161	1610	0.32	40.7	0.45	10	161	1610	0.72	45.6	0.55	1990	10	161	1610	0.83	71.8	0.55	1990	10	161	1610	0.45	0.77	57.3	E	
	Overall		18.3	2700	0.75	2700	10	90	900	20.0	10	0.25	10	90	900	18.7	B		16.2	2700	0.75	2700	10	18.9	10	90	900	0.75	16.9	B										
	Hudson & Curry	NB	LTR	0.07	55.7	0.55	1990	10	161	1610	0.43	77.0	0.45	10	161	1610	0.23	65.2	0.45	10	161	1610	0.45	57.0	0.55	1990	10	161	1610	0.80	132.9	0.55	1990	10	161	1610	0.45	0.61	90.9	F
			LTR	0.24	40.5	0.55	1990	10	161	1610	0.57	62.5	0.45	10	161	1610	0.39	50.3	0.45	10	161	1610	0.27	36.9	0.55	1990	10	161	1610	0.36	58.6	0.55	1990	10	161	1610	0.45	0.31	46.6	D
		EB	LTR	0.83	2.0	0.55	1990	10	161	1610	0.15	12.6	0.45	10	161	1610	0.53	6.7	0.45	10	161	1610	0.18	2.2	0.55	1990	10	161	1610	0.23	12.4	0.55	1990	10	161	1610	0.45	0.20	6.8	A
L			0.65	36.9	0.75	2700	10	90	900	0.66	40.6	0.25	10	90	900	0.65	37.8	0.25	10	90	900	0.64	32.9	0.75	2700	10	90	900	0.70	40.1	0.75	2700	10	90	900	0.25	0.36	25.3	C	
WB		L	0.29	32.1	0.55	1990	10	161	1610	0.36	51.4	0.45	10	161	1610	0.32	40.7	0.45	10	161	1610	0.72	45.6	0.55	1990	10	161	1610	0.83	71.8	0.55	1990	10	161	1610	0.45	0.77	57.3	E	
		T	0.29	32.1	0.55	1990	10	161	1610	0.36	51.4	0.45	10	161	1610	0.32	40.7	0.45	10	161	1610	0.72	45.6	0.55	1990	10	161	1610	0.83	71.8	0.55	1990	10	161	1610	0.45	0.77	57.3	E	
Overall			30.9	1990	0.55	1610	10	161	1610	49.7	10	0.45	10	161	1610	39.3	D		16.2	2700	0.75	2700	10	18.9	10	90	900	0.75	16.9	B										
Hudson & North Dean		SB	LTR	0.83	40.4	0.55	1990	10	161	1610	0.87	56.7	0.45	10	161	1610	0.85	47.7	0.45	10	161	1610	0.85	43.5	0.55	1990	10	161	1610	0.89	60.9	0.55	1990	10	161	1610	0.45	0.87	51.3	D
			L	0.01	14.5	0.55	1990	10	161	1610	0.29	44.7	0.45	10	161	1610	0.14	28.0	0.45	10	161	1610	0.25	30.9	0.55	1990	10	161	1610	0.30	45.3	0.55	1990	10	161	1610	0.45	0.27	37.3	D
		EB	R	0.43	18.4	0.55	1990	10	161	1610	0.50	50.6	0.45	10	161	1610	0.46	32.8	0.45	10	161	1610	0.26	31.1	0.55	1990	10	161	1610	0.28	44.9	0.55	1990	10	161	1610	0.45	0.27	37.3	D
	L		0.84	65.0	0.55	1990	10	161	1610	0.29	22.3	0.45	10	161	1610	0.59	45.9	0.45	10	161	1610	0.75	47.9	0.55	1990	10	161	1610	0.47	25.4	0.55	1990	10	161	1610	0.45	0.62	37.8	D	
	WB	L	0.26	31.0	0.55	1990	10	161	1610	0.28	44.8	0.45	10	161	1610	0.27	37.2	0.45	10	161	1610	0.65	41.1	0.55	1990	10	161	1610	0.70	59.1	0.55	1990	10	161	1610	0.45	0.67	49.2	D	
		T	0.26	31.0	0.55	1990	10	161	1610	0.28	44.8	0.45	10	161	1610	0.27	37.2	0.45	10	161	1610	0.65	41.1	0.55	1990	10	161	1610	0.70	59.1</										

NORTHERN BRANCH CORRIDOR DEIS
2030 BUILD SCENARIO - ENGLEWOOD ROUTE 4 STATION AREA - LIGHT RAIL TO TENAFLY (PREFERRED ALTERNATIVE)

INTERSECTION	AM PEAK HOUR										PM PEAK HOUR																	
	CONDITION 1 (without pre-emption)					CONDITION 2 (with pre-emption)					CONDITION 1 (without pre-emption)					CONDITION 2 (with pre-emption)												
	HCS v/c Ratio	HCS Delay (sec)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	LOS			
	Mvt.																											
	App.																											
Forest Street & South Dean	SB	LTR	1.04	51.5	2400	0.67	1.38	209.7	10	120	1200	0.33	1.15	104.2	F	1.13	88.5	2400	0.67	1.66	339.5	10	120	1200	0.33	1.31	172.2	F
	EB	TR	0.89	44.5	2400	0.67	1.67	366.1	10	120	1200	0.33	1.15	151.7	F	1.23	140.5	2400	0.67	1.84	433.1	10	120	1200	0.33	1.43	238.0	F
	WB	LT	1.41	123.5	2400	0.67	7.48	3018.0	10	120	1200	0.33	3.43	1088.3	F	4.10	1441.0	3600	1.00							4.10	1441.0	F
	Overall			59.9	2400	0.67		627.9	10	120	1200	0.33		249.2	F		334.4	2400	0.67		340.8	10	120	1200	0.33		336.5	F

NORTHERN BRANCH CORRIDOR DEIS
2030 MITIGATED BUILD SCENARIO - ENGLEWOOD ROUTE 4 STATION AREA - LIGHT RAIL TO TENAFLY (PREFERRED ALTERNATIVE)

INTERSECTION	AM PEAK HOUR												PM PEAK HOUR															
	App.	Mvt.	CONDITION 1 (without pre-emption)						CONDITION 2 (with pre-emption)						CONDITION 1 (without pre-emption)						CONDITION 2 (with pre-emption)							
			HCS v/c Ratio	HCS Delay (sec)	No. secs in an hour when condition occurs	Weight Factor	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	LOS		
Forest Street & South Dean	SB	LT	0.95	32.4	2400	0.67	28.2	10	120	1200	0.33	0.92	31.0	C	SB	LT	1.02	50.5	2400	0.67	50.9	10	120	1200	0.33	1.02	50.6	D
		R	0.29	11.8	2400	0.67	50.4	10	120	1200	0.33	0.40	24.7	C		R	0.37	15.9	2400	0.67	15.9	10	120	1200	0.33	0.37	15.9	B
		TR	0.79	33.1	2400	0.67	44.9	10	120	1200	0.33	0.79	37.0	D		TR	0.88	34.4	2400	0.67	92.8	10	120	1200	0.33	0.96	53.9	D
		L	0.26	23.2	2400	0.67	33.7	10	120	1200	0.33	0.26	26.7	C		L	0.61	39.6	2400	0.67	94.4	10	120	1200	0.33	0.71	57.9	E
		T	0.54	24.4	2400	0.67	34.8	10	120	1200	0.33	0.54	27.9	C		T	0.53	20.6	2400	0.67	22.9	10	120	1200	0.33	0.56	21.4	C
		Overall		30.0		0.67	34.1	10	120	1200	0.33		31.4	C	Overall		58.5	10	120	1200	0.67		45.7	D				

NORTHERN BRANCH CORRIDOR DEIS

2030 BUILD SCENARIO - ENGLEWOOD ROUTE 4 STATION AREA - LIGHT RAIL TO ENGLEWOOD RT 4

INTERSECTION	AM PEAK HOUR											PM PEAK HOUR																				
	App.	Mvt.	CONDITION 1 (without pre-emption)						CONDITION 2 (with pre-emption)					WEIGHTED AVERAGES	App.	Mvt.	CONDITION 1 (without pre-emption)						CONDITION 2 (with pre-emption)					WEIGHTED AVERAGES				
			HCS v/c Ratio	HCS Delay (sec)	No. secs in an hour when condition occurs	Weight Factor	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)				No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio		HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs
Forest Street & South Dean	SB	LTR	1.07	62.4	2400	0.67	1.42	228.1	10	1200	0.33	1.19	117.6	F	SB	LTR	1.15	96.3	2400	0.67	1.68	351.9	10	120	1200	0.33	1.33	181.5	F			
	EB	TR	1.00	65.4	2400	0.67	1.87	456.8	10	1200	0.33	1.29	195.9	F	EB	TR	1.27	157.6	2400	0.67	1.91	460.1	10	120	1200	0.33	1.48	258.4	F			
	WB	LT	0.48	24.7	2400	0.67	1.19	166.0	10	1200	0.33	0.72	71.8	E	WB	LT	0.81	32.4	2400	0.67	1.27	185.7	10	120	1200	0.33	0.96	83.5	F			
	Overall			58.2	2400	0.67	271.3	10	1200	0.33		129.2	F	Overall			104.8	2400	0.67	357.8	10	120	1200	0.33		189.1	F					

NORTHERN BRANCH CORRIDOR DEIS

2030 BUILD SCENARIO - TENALFY NORTH STATION AREA - LIGHT RAIL TO TENALFY (PREFERRED ALTERNATIVE)

INTERSECTION	AM PEAK HOUR										PM PEAK HOUR																		
	CONDITION 1 (without pre-emption)					CONDITION 2 (with pre-emption)					CONDITION 1 (without pre-emption)					CONDITION 2 (with pre-emption)													
	HCS v/c Ratio	HCS Delay (sec)	No. secs in an hour when condition occurs	Weight Factor	Mvt.	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	Mvt.	HCS v/c Ratio	HCS Delay (sec)	No. of incidents per hour	Duration of each incident (secs)	No. secs in an hour when condition occurs	Weight Factor	HCS v/c Ratio	HCS Delay (sec)	LOS			
Piermont & Madison	NB	L	0.33	26.2	1990	0.55	132.5	10	161	1610	0.45	0.60	73.7	E	NB	L	0.73	36.0	1990	0.55	205.2	10	161	1610	0.45	0.97	111.7	F	
	TR	TR	0.48	27.0	1990	0.55	23.0	10	161	1610	0.45	0.44	25.2	C	TR	TR	0.83	38.2	1990	0.55	25.1	10	161	1610	0.45	0.75	32.3	C	
	SB	LTR	0.61	30.0	1990	0.55	84.6	10	161	1610	0.45	0.76	54.4	D	SB	LTR	0.47	24.0	1990	0.55	50.0	10	161	1610	0.45	0.53	35.6	D	
	EB	LTR	1.30	197.8	1990	0.55	301.9	10	161	1610	0.45	1.38	244.4	F	EB	LTR	1.00	86.4	1990	0.55	257.7	10	161	1610	0.45	1.19	163.0	F	
	WB	LTR	0.32	23.0	1990	0.55	37.6	10	161	1610	0.45	0.35	29.5	C	WB	LTR	0.63	33.0	1990	0.55	67.6	10	161	1610	0.45	0.73	48.5	D	
	Overall				1990	0.55	167.5	10	161	1610	0.45		131.8	F	Overall				1990	0.55	118.3	10	161	1610	0.45		76.8	E	
	Piermont & Union	NB	L	0.43	28.2	1990	0.55	54.8	10	161	1610	0.45	0.47	40.1	D	NB	L	0.59	26.8	1990	0.55	255.1	10	161	1610	0.45	0.93	128.9	F
		TR	TR	0.65	28.3	1990	0.55	27.6	10	161	1610	0.45	0.62	28.0	C	TR	TR	0.64	27.0	1990	0.55	23.6	10	161	1610	0.45	0.60	25.5	C
		SB	LT	0.88	52.9	1990	0.55	498.5	10	161	1610	0.45	1.35	252.2	F	SB	LT	0.65	38.2	1990	0.55	174.1	10	161	1610	0.45	0.89	99.0	F
		EB	R	0.34	30.6	1990	0.55	71.9	10	161	1610	0.45	0.47	49.1	D	EB	R	0.42	32.1	1990	0.55	60.2	10	161	1610	0.45	0.50	44.7	D
WB		L	0.64	33.0	1990	0.55	59.8	10	161	1610	0.45	0.72	45.0	D	WB	L	0.59	34.9	1990	0.55	136.2	10	161	1610	0.45	0.80	80.2	F	
Overall					1990	0.55	36.7	10	161	1610	0.45		90.5	F	Overall				1990	0.55	100.0	10	161	1610	0.45		63.1	E	
		R	0.00	21.0	1990	0.55	31.1	10	161	1610	0.45	0.00	25.5	C		R	0.00	21.6	1990	0.55	34.3	10	161	1610	0.45	0.00	27.3	C	
		L	0.22	25.2	1990	0.55	38.5	10	161	1610	0.45	0.25	31.1	C		L	0.08	22.7	1990	0.55	36.2	10	161	1610	0.45	0.09	28.7	C	
		TR	0.70	35.5	1990	0.55	52.0	10	161	1610	0.45	0.73	42.9	D		TR	0.77	39.2	1990	0.55	66.6	10	161	1610	0.45	0.82	51.5	D	

2030 Weekday No Build / Build / Build with Mitigation Comparison - AM

INTERSECTION & APPROACH		AM Peak Hour															
		Existing				No Build				Build				Mitigation			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Grand Avenue & Fairview/Edsall Avenue																	
Fairview / Edsall Avenue	EB	LTR	0.16	27.2	D	LTR	0.32	52.3	F	LTR	4.77	1882.0	F	L	3.94	1558.0	F
	WB	LTR	0.21	25.9	D	LTR	0.44	54.0	F	LTR	1.37	323.2	F	TR	0.73	105.2	F
Grand Avenue	NB	LTR	0.01	9.3	A	LTR	0.02	10.2	B	LTR	0.02	10.6	B	LTR	1.35	315.1	F
	SB	LTR	0.02	8.9	A	LTR	0.03	9.7	A	LTR	0.03	9.6	A	LTR	0.02	10.6	B
	Overall Intersection			20.3	C			36.4	E			1103.2	F			662.6	F
Grand Avenue & Central Boulevard																	
Central Boulevard	EB	LTR	0.33	27.8	C	L	0.34	32.3	C	L	0.34	32.3	C	L	0.44	49.0	D
	WB	LT	0.71	41.4	D	TR	0.55	33.6	C	TR	0.55	33.6	C	TR	0.59	46.0	D
Grand Avenue	NB	R	0.31	28.4	C	L	0.52	35.4	D	L	0.82	54.7	D	L	0.97	97.5	F
	SB	TR	0.79	44.7	D	TR	0.79	44.7	D	TR	0.79	44.7	D	TR	0.85	62.1	E
	NB	L	0.08	9.6	A	L	0.14	12.9	B	L	0.15	13.0	B	L	0.10	21.3	C
	SB	TR	0.95	47.7	D	TR	1.22	136.0	F	TR	1.33	184.9	F	TR	1.09	87.8	F
	SB	L	0.44	14.9	B	L	0.67	33.2	C	L	0.67	27.4	C	L	0.64	53.4	D
	SB	TR	0.70	26.0	C	TR	0.90	40.2	D	TR	0.95	48.5	D	TR	0.78	29.0	C
	Overall Intersection			35.1	D			72.7	E			93.7	F			62.8	E
LEONIA STATION AREA																	
Fort Lee Road & Overpeck Park Road																	
Fort Lee road	EB	LT	0.04	9.5	A	LTR	1.38	200.6	F	LTR	1.27	167.0	F	L	0.18	18.8	B
	WB	LT	0.01	10.6	B	LT	1.29	166.8	F	LT	0.83	23.8	C	TR	0.78	30.9	C
Overpeck Park Road	NB	R	0.07	15.1	B	R	0.07	15.1	B	R	0.05	8.5	A	L	0.02	28.3	C
	SB	LTR	0.06	17.5	C	LTR	0.04	21.0	C	LTR	0.06	48.3	D	TR	0.50	16.5	B
	SB	LT	0.14	18.3	C	LTR	0.21	22.5	C	LT	0.32	56.3	E	LT	0.04	50.3	D
	SB	R	0.04	11.3	B									R	0.02	50.1	D
	Overall Intersection			13.4	B			175.7	F			105.1	F			25.7	C
Fort Lee Road & Willow Tree Road																	
Fort Lee road	EB	LTR	0.80	21.7	C	LTR	1.11	81.3	F	DefL	1.22	185.0	F	L	0.83	49.5	D
	WB	LTR	0.40	18.4	B	LTR	0.51	20+	C	TR	1.11	102.8	F	TR	0.53	19.5	B
Willow Tree Road	NB	L	0.51	25.5	C	L	0.65	31.8	C	LTR	0.68	40.1	D	L	0.05	35.3	D
	SB	TR	0.11	21.5	C	TR	0.14	22.1	C	L	1.14	161.2	F	TR	0.77	51.7	D
	SB	L	0.09	21.4	C	L	0.12	22.1	C	TR	0.12	33.4	C	L	0.76	77.9	E
	SB	TR	0.24	22.7	C	TR	0.31	24.5	C	TR	0.33	36.8	D	TR	0.33	67.1	E
	Overall Intersection			21.4	C			53.0	D			94.6	F			45.1	D
Grand Avenue & Fort Lee Road																	
Fort Lee road	EB	L	0.76	46.8	D	L	0.97	77.3	E	L	1.14	125.0	F	L	1.09	116.6	F
	WB	TR	0.76	39.0	D	TR	0.98	65.3	E	TR	1.07	91.0	F	TR	1.08	95.5	F
Grand Avenue	NB	LTR	0.83	54.9	D	LTR	1.28	185.0	F	LTR	1.49	275.9	F	LTR	0.89	57.3	E
	SB	L	0.38	20.7	C	L	0.65	32.9	C	L	0.86	60.8	E	L	0.97	90.0	F
	SB	TR	0.87	47.2	D	TR	1.11	106.9	F	TR	1.11	106.9	F	TR	1.06	85.4	F
	SB	L	0.32	21.6	C	L	0.48	26.8	C	L	0.48	26.8	C	L	0.55	29.9	C
	SB	TR	0.96	63.8	E	TR	1.23	155.3	F	TR	1.52	281.0	F	TR	1.40	227.9	F
	Overall Intersection			48.7	D			114.0	F			171.2	F			119.0	F
ENGLEWOOD ROUTE 4 STATION AREA																	
Nordhoff Pl & Van Brunt St (Light Rail to Tenafly)																	
Nordhoff Pl	EB	LR	0.03	16.6	C	LR	0.07	24.6	C	LR	0.11	36.0	E	LR	0.03	23.0	C
	WB	L	0.22	21.0	C	LR	0.77	35-	D	LR	1.06	98.1	F	L	0.21	24.5	C
Van Brunt St	NB	R	0.26	11.0	B									R	0.81	41.5	D
	SB	LT	0.17	8.4	A	LT	0.23	8.8	A	LT	0.29	9.5	A	TR	0.34	9.9	A
	Overall Intersection			11.3	B			23.1	C			56.8	F			27.3	C

2030 Weekday No Build / Build / Build with Mitigation Comparison - AM

INTERSECTION & APPROACH		AM Peak Hour															
		Existing				No Build				Build				Mitigation			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Nordhoff Pl & Van Brunt St (Light Rail to Englewood Rt 4)																	
Nordhoff Pl	EB	LR	0.03	16.6	C	LR	0.07	24.6	C	L	0.56	113.2	F	LR	0.24	44.5	D
	WB	L	0.22	21.0	C	LR	0.77	35-	D	R	0.03	9.6	A	L	0.53	36.3	D
		R	0.26	11.0	B					R	1.57	392.1	F	R	0.47	14.1	B
Van Brunt St	NB									R	0.45	14.1	B	TR	0.77	44.6	D
	SB	LT	0.17	8.4	A	LT	0.23	8.8	A	LT	0.41	10.3	B	LT	1.00	49.4	D
Overall Intersection				11.3	B			23.1	C			63.3	F			39.8	D
Forest Avenue & South Dean Street (Light Rail to Tenaflly)																	
Forest Avenue	EB	TR	0.53	22.4	C	TR	0.70	27.1	C	TR	1.15	151.7	F	TR	0.79	37.0	D
	WB	LT	0.22	17.5	B	LT	0.63	26.6	C	LT	3.43	1088.3	F	L	0.26	26.7	C
										T	0.54	27.9	C	T	0.54	27.9	C
South Dean Street	SB	LTR	0.91	28.6	C	LTR	1.17	103.2	F	LTR	1.15	104.2	F	LT	0.92	31.0	C
										R	0.40	24.7	C	R	0.40	24.7	C
Overall Intersection				26.0	C			78.3	E			249.2	F			31.4	C
Forest Avenue & South Dean Street (Light Rail to Englewood Rt 4)																	
Forest Avenue	EB	TR	0.53	22.4	C	TR	0.70	27.1	C	TR	1.29	195.9	F	TR	0.89	45.9	D
	WB	LT	0.22	17.5	B	LT	0.63	26.6	C	LT	0.72	71.8	E	L	0.33	30.7	C
										T	0.52	27.4	C	T	0.52	27.4	C
South Dean Street	SB	LTR	0.91	28.6	C	LTR	1.17	103.2	F	LTR	1.19	117.6	F	LT	0.92	31.0	C
										R	0.50	28.7	C	R	0.50	28.7	C
Overall Intersection				26.0	C			78.3	E			129.2	F			33.4	C
ENGLEWOOD TOWN CENTER STATION AREA																	
Englewood Avenue & Van Brunt St																	
Englewood Avenue	EB	TR	0.36	10.5	B	TR	0.46	11.7	B	TR	1.06	112.7	F	T	0.60	40.1	D
	WB	LT	0.23	9.5	A	LT	0.33	10.7	B	LT	0.46	20.1	C	R	0.32	34.6	C
										DefL	0.39	26.5	C	T	0.21	21.2	0.0
Vab Brunt Street	NB	L	0.58	31.0	C	L	0.88	58.9	E	L	1.61	386.9	F	L	0.80	52.0	D
	R		0.06	0.1	A	R	0.08	0.1	A	R	0.20	18.1	B	R	0.27	31.6	C
	SB	L	0.06	19.4	B	L	0.07	19.6	B	L	0.16	27.8	C	L	0.26	37.0	D
		TR	0.37	23.2	C	TR	0.48	25.1	C	TR	0.65	40.0	D	TR	0.50	26.4	C
Overall Intersection				15.5	B			20.9	C			105.4	F			35.2	D
Englewood Avenue & South Dean Street																	
Englewood Avenue	EB	TR	0.62	28.0	C	TR	0.79	35+	D	TR	0.57	22.4	C	TR	0.60	25.3	C
	WB	LT	0.69	35.4	D	LT	0.89	53.9	D	LT	1.21	177.9	F	L	0.73	65.9	E
										T	0.66	46.7	D	T	0.66	46.7	D
South Dean Street	SB	LTR	0.62	13.4	B	LTR	0.79	17.5	B	LTR	1.14	115.8	F	LT	0.94	47.7	D
										R	0.25	40.6	D	R	0.25	40.6	D
Overall Intersection				19.7	B			26.5	C			100.6	F			42.7	D
Palisade Avenue & North Dean Avenue																	
Palisade avenue	EB	T	0.38	16.8	B	T	0.49	18.6	B	T	0.36	17.0	B	T	0.24	16.5	B
		R	0.23	15.2	B	R	0.29	16.0	B	R	0.21	15.0	B	R	0.28	18.0	B
	WB	L	0.58	23.9	C	L	0.86	47.4	D	L	0.63	29.6	C	L	0.59	26.4	C
		T	0.44	17.7	B	T	0.57	20.1	C	T	1.00	89.8	F	T	0.56	44.6	D
South Dean Avenue	SB	LTR	0.85	27.6	C	LTR	1.09	77.6	E	LTR	1.60	323.2	F	L	0.65	44.0	D
										T	1.01	73.2	E	T	1.01	73.2	E
										R	0.31	44.9	D	R	0.31	44.9	D
Overall Intersection				23.5	C			54.1	D			194.0	F			49.1	D
Palisade Avenue & Van Brunt Street																	
Palisade Avenue	EB	LT	0.64	22.2	C	LT	0.95	64.9	E	LT	2.10	651.9	F	LT	0.89	72.2	E
		R	0.06	12.0	B	R	0.08	12.1	B	R	0.12	35.2	D	R	0.15	37.1	D
	WB	LT	0.42	15.9	B	LT	0.70	24.0	C	LT	1.11	134.7	F	LTR	0.43	32.6	C
		R	0.07	12.0	B	R	0.09	12.2	B		0.07	15.0	B				
Van Brunt Street	SB	L	0.14	18.1	B	L	0.18	18.6	B	L	0.35	53.8	D	L	0.38	55.9	E
		TR	0.38	21.6	C	TR	0.49	23.7	C	TR	0.58	45.9	D	TR	0.46	34.0	C
Overall Intersection				19.4	B			39.6	D			304.2	F			48.2	D

2030 Weekday No Build / Build / Build with Mitigation Comparison - AM

INTERSECTION & APPROACH	AM Peak Hour																
	Existing				No Build				Build				Mitigation				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
ENGLEWOOD HOSPITAL STATION AREA																	
Demarest Avenue & Van Brunt Street																	
Demarest Avenue	EB	LTR	0.00	7.5	A	LTR	0.00	7.6	A	LTR	1.14	140.2	F	LTR	0.68	48.0	D
	WB	LTR	0.11	8.7	A	LTR	0.16	9.4	A	LTR	0.39	11.9	B	LTR	0.39	13.2	B
Van Brunt Street	NB	L	0.05	20.0	C	L	0.11	31.6	D	L	0.06	40.4	D	L	0.06	39.5	D
	R	0.08	11.2	B	R	0.13	12.7	B	R	0.35	61.1	E	R	0.28	56.3	E	
	SB	LTR	0.08	17.0	C	LTR	0.24	30.4	D	LTR	0.28	59.2	E	LTR	0.25	56.0	E
	Overall Intersection			10.4	B			13.1	B			88.7	F			37.4	D
Demarest Avenue & North Dean Street																	
Demarest Avenue	EB	TR	0.33	23.2	C	TR	0.79	36.5	D	TR	0.62	36.0	D	TR	0.56	29.9	C
	WB	LT	0.39	25.5	C	L	0.72	57.6	E	L	1.18	264.0	F	L	0.51	58.2	E
North Dean Street	SB	L	0.02	9.0	A	T	0.22	22.4	C	T	0.31	43.3	D	T	0.32	40.7	D
	TR	0.62	15.0	B	L	0.02	9.0	A	L	0.03	17.6	B	LT	0.92	50.0	D	
	Overall Intersection			17.9	B			24.7	C			107.3	F			44.0	D
Hamilton Avenue & North Dean Street																	
Hamilton Avenue	EB	TR	0.52	27.3	C	TR	0.66	31.2	C	TR	0.66	34.9	C	TR	0.62	28.9	C
	WB	LT	0.43	27.9	C	LT	0.78	52.7	D	LT	0.80	74.7	E	LT	0.65	37.8	D
North Dean Street	SB	L	0.05	8.9	A	L	0.06	9.0	A	L	0.07	9.7	A	LT	0.53	13.9	B
	TR	0.56	13.4	B	TR	0.71	16.2	B	TR	0.95	79.4	E	R	0.16	18.9	B	
	Overall Intersection			17.1	B			21.7	C			68.0	E			18.7	B
Hudson Avenue & Curry Avenue																	
Hudson Avenue	EB	LTR	0.63	30.3	C	LTR	0.80	38.6	D	LTR	0.99	104.5	F	LTR	0.39	50.3	D
	WB	LTR	0.27	23.2	C	LTR	0.35	24.2	C	LTR	0.13	6.7	A	LTR	0.53	6.7	A
Curry Avenue	NB	LTR	0.29	34.9	C	LTR	0.36	35.6	D	LTR	0.39	65.2	E	LTR	0.23	65.2	E
	Overall Intersection			C			34.4	C				75.2	E			39.3	D
Hudson Avenue & North Dean Street																	
Hudson Avenue	EB	LT	0.25	22.9	C	LTR	0.84	43.2	D	LTR	0.58	37.8	D	LT	0.14	28.0	C
	R	0.43	26.2	C	0.00	0.00	0.0	0.0	0.00	0.00	0.0	0.00	R	0.46	32.8	C	
	WB	L	0.50	29.1	C	L	1.01	96.5	F	L	0.59	46.6	D	L	0.59	45.9	D
North Dean Street	SB	TR	0.27	23.3	C	TR	0.34	24.4	C	TR	0.27	37.2	D	TR	0.27	37.2	D
	LTR	0.53	19.7	B	LTR	0.99	44.0	D	LTR	1.67	352.3	F	LTR	0.85	47.7	D	
	Overall Intersection			22.2	C			48.2	D			223.0	F			43.2	D
Ivy Lane & Curry Avenue																	
Ivy Lane	EB	T	0.55	27.8	C	T	0.71	32.7	C	T	0.73	55.9	E	T	0.73	55.9	E
	WB	T	0.24	22.7	C	T	0.31	23.6	C	T	0.12	8.7	A	T	0.12	8.7	A
Curry Avenue	SB	LR	0.24	34.8	C	LR	0.36	36.4	D	LR	0.36	61.1	E	LR	0.36	61.1	E
	Overall Intersection			26.7	C			30.4	C			43.7	D			43.7	D
Ivy Lane & North Dean Street																	
Ivy Lane	EB	LTR	0.56	28.2	C	LTR	0.72	33.7	C	LTR	0.44	27.8	C	LTR	0.40	27.0	C
	WB	LTR	0.50	27.0	C	LTR	0.64	31.1	C	LTR	0.68	55.2	E	LTR	0.56	49.8	D
North Dean Street	NB	LTR	0.09	8.9	A	LTR	0.11	9.1	A	LTR	0.26	35.5	D	LTR	0.16	32.6	C
	SB	LTR	0.70	16.8	B	LTR	0.90	27.6	C	LTR	1.63	340.3	F	LTR	0.90	56.2	E
	Overall Intersection			20.8	C			28.8	C			211.8	F			48.6	D
TENAFLY TOWN CENTER STATION AREA																	
E. Clinton Ave & Dean Dr / New Street																	
E. Clinton Ave	EB	LT		18.7	C	LT		44.0	E	T	0.92	43.8	D	R	1.00	43.4	D
	WB	LTR		9.3	A	LTR		10.3	B	LT	0.27	17.6	B	L	0.74	24.8	C
Dean Dr / New Street	NB	LTR		8.8	A	LTR		9.6	A	L	0.05	13.3	B	L	0.05	13.3	B
	SB	LTR		9.9	A	LTR		10.9	B	LTR	0.27	31.5	C	L	0.27	31.5	C
	Overall Intersection			14.9	B			30.0	D			36.4	D				

2030 Weekday No Build / Build / Build with Mitigation Comparison - AM

INTERSECTION & APPROACH	AM Peak Hour																
	Existing				No Build				Build				Mitigation				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
W Clinton Ave & Franklin Ave/W. Railroad Ave																	
West Clinton Avenue EB	LT	0.03	7.7	A	LT	0.04	7.9	A	LTR	2.14	590.5	F	L	0.42	72.4	E	
													TR	1.85	460.8	F	
	WB	LTR	0.01	8.6	A	LTR	0.01	9.1	A	LTR	0.32	13.7	B	DeFL	0.11	19.6	B
													TR	0.22	12.5	B	
Franklin Avenue /W. Railroad Ave NB	LTR	0.12	16.5	C	LTR	0.22	22.8	C	LTR	0.81	150.4	F	LTR	0.82	150.5	F	
	SB	LTR	0.41	17.4	C	LTR	0.67	31.2	D	LTR	2.36	713.2	F	LTR	2.53	789.6	F
Overall Intersection			15.5	C			25.6	D				454.2	F			378.4	F
Clinton Avenue /County & Piermont Avenue																	
Clinton Avenue EB	LT	0.55	48.7	D	LT	0.71	59.9	E	LT	1.63	416.9	F	LT	0.31	44.8	D	
	R	0.61	30.3	C	R	0.90	51.6	D	R	0.48	18.7	B	R	0.94	95.5	F	
	WB	LTR	0.01	33.9	C	LTR	0.01	33.9	C	LTR	1.90	474.8	F	LTR	0.01	39.5	D
County Rd NB	L	0.48	40.2	D	L	0.61	45.3	D	L	0.37	47.6	D	L	0.88	106.8	F	
	TR	0.30	4.4	A	TR	0.39	5.0	A	TR	1.12	142.3	F	TR	0.53	20.5	C	
	SB	LTR	0.94	52.3	D	LTR	1.21	138.8	F	LTR	0.02	61.8	E	LTR	1.02	137.7	F
Piermont Rd T	0.40	47.4	D	T	0.51	53.4	D	T	0.95	176.8	F	T	0.24	67.3	E		
	R	0.08	37.7	D	R	0.11	38.2	D	R	0.23	81.5	F	R	0.03	39.4	D	
Overall Intersection			45.9	D			75.1	E			263.1	F			92.9	F	
Washington Street & W. Railroad Avenue																	
Washington Street EB	LTR	0.51	42.6	D	LTR	0.67	50.8	D	LTR	0.63	68.3	E	L	0.07	51.5	D	
													TR	0.57	65.0	E	
	WB	LTR	0.36	37.2	D	LTR	0.47	39.9	D	LTR	0.16	19.5	B	LTR	0.08	18.4	B
W. rail Road Avenue NB	LTR	0.26	32.0	C	LTR	0.36	34.2	C	LTR	0.47	61.0	E	LTR	0.54	68.9	E	
	SB	LTR	0.57	39.6	D	LTR	0.74	49.0	D	LTR	0.81	87.4	F	L	0.19	52.0	D
													TR	0.63	67.6	E	
Overall Intersection			38.7	D			45.1	D			63.4	E			55.3	E	
Washington St / Hill Side Ave & Piermont / Highwood SB																	
Washington St / Hillside Ave EB	LTR	0.28	34.5	C	LTR	0.67	46.8	D	LTR	0.19	25.5	C	L	0.08	25.6	C	
													TR	0.17	23.6	C	
	WB	LT	0.43	39.2	D	LT	0.56	43.2	D	LT	0.52	64.1	E	LT	0.51	64.0	E
		R	0.22	0.5	A	R	0.28	0.6	A	R	0.42	14.8	B	R	0.41	14.7	B
Piermont / Highwood SB SB	LT	0.34	41.2	D	LT	0.44	44.1	D	LT	0.28	47.6	D	LTR	0.35	45.2	D	
	(Piermont)	R	0.14	37.7	D	R	0.18	38.7	D	R	0.17	65.2	E				
	SB2	LT	0.27	43.6	D	LT	0.35	45.5	D	LT	0.33	71.9	E	LT	0.21	71.9	E
		R	0.22	43.5	D	R	0.24	43.5	D	R	0.27	70.8	E	R	0.24	70.4	E
Overall Intersection			24.9	C			29.1	C			36.7	D			35.4	D	
Riveredge Road & W. Railroad Avenue																	
Riveredge Road EB	LT	0.00	8.2	A	LT	0.01	8.4	A	LT	0.82	45.9	D	LT	0.82	45.9	D	
									R	0.10	11.8	B	R	0.10	11.8	B	
	WB	LTR	0.03	8.9	A	LTR	0.04	9.7	A	LTR	0.72	43.3	D	LTR	0.43	28.2	C
W. Railroad Avenue NB	LTR	0.23	19.4	C	LTR	0.47	36.6	E	LTR	0.39	52.4	D	LT	0.25	47.9	D	
									0.00	0.00	0.0	0.00	R	0.11	44.8	D	
	SB	LTR	0.34	20.0	C	LTR	0.60	36.5	E	LTR	0.47	53.1	D	LTR	0.46	52.9	D
Overall Intersection			18.3	C			32.9	D			44.2	D			39.2	D	
Riveredge Road/ Jay St & Piermont Rd																	
Riveredge Road / Jay St EB	LTR	0.27	10.0+	B	LTR	0.40	12.0	B	LTR	0.93	50.9	D	LTR	0.92	49.0	D	
	WB	LTR	0.03	8.1	A	LTR	0.04	8.5	A	LTR	1.02	86.6	F	LTR	1.02	86.2	F
Overall Intersection			9.8	A			11.7	B			68.3	E			67.2	E	
Central Avenue & W. Railroad Avenue																	
Central Avenue EB	LTR	0.00	7.5	A	LTR	0.00	7.6	A	LTR	0.70	69.0	E	LTR	0.39	51.0	D	
	WB	LTR	0.10	8.0	A	LTR	0.14	8.3	A	LTR	0.33	10.8	B	Def L	0.19	10.6	B
													TR	0.14	8.7	0.0	
West Railroad Avenue NB	LTR	0.09	11.6	B	LTR	0.14	13.0	B		0.52	67.0	E	LT	0.21	56.9	E	
													R	0.34	60.9	E	
	SB	LTR	0.06	15.9	C	LTR	0.10	20.4	C	LTR	0.23	58.8	E	LTR	0.20	57.6	E
Overall Intersection			9.4	A			10.3	B			38.1	D			30.8	C	

2030 Weekday No Build / Build / Build with Mitigation Comparison - AM

INTERSECTION & APPROACH		AM Peak Hour															
		Existing				No Build				Build				Mitigation			
		Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS
Central Avenue & Piermont Road																	
Central Avenue	EB	LT		12.5	B	LT		17.6	C	LT	0.65	49.2	D	L	0.36	37.7	D
														T	0.21	33.0	C
Piermont Road	WB	TR		10.5	B	TR		12.9	B	TR	0.50	60.7	E	TR	0.26	51.6	D
	NB	L		9.5	A	L		10.6	B	L	0.03	20.3	C	L	0.03	20.3	C
	SB	TR		12.5	B	TR		18.1	C	TR	0.31	15.3	B	TR	0.31	15.3	B
		LR		14.1	B	LR		27.6	D	LR	0.90	59.9	E	L	0.49	30.1	C
														R	0.43	27.0	C
Overall Intersection				12.8	B			21.0	C			45.3	D			28.8	C
TENAFLY NORTH STATION AREA																	
Piermont Road & Hudson Avenue																	
Hudson Avenue	WB	LR	0.06	8.5	A	L	0.24	29.2	D	L	0.56	65.3	F				
Piermont Road	SB	LT	0.21	15.6	C	LT	0.09	8.9	A	LT	0.14	10.0	A				
Overall Intersection				12.3	B			14.4	B			24.1	C				
Piermont Road & North Summit Street																	
North Summit Street	WB	LR	0.14	14.0	B	LR	0.24	18.9	C	LR	2.87	971.2	F	LR	0.61	41.6	D
Piermont Road	NB													TR	0.76	14.0	B
	SB	LT	0.07	8.2	A	LT	0.10	8.6	A	LT	0.35	12.2	B	L	0.76	23.4	C
														T	0.47	7.7	A
Overall Intersection				10.2	B			12.2	B			354.7	F			16.3	B
Piermont Road & Madison Avenue																	
Madison Avenue	EB	LTR	1.05	92.4	F	LTR	1.34	212.2	F	LTR	1.38	244.4	F	LT	0.92	75.6	E
														R	0.62	36.9	D
	WB	LTR	0.26	19.7	B	LTR	0.36	21.1	C	LTR	0.35	29.5	C	L	0.22	33.0	C
Piermont Road	NB	L	0.17	16.6	B	L	0.26	18.3	B	L	0.60	73.7	E	TR	0.30	28.0	C
		TR	0.35	18.3	B	TR	0.45	19.8	B	TR	0.44	25.2	C	L	0.43	42.3	D
	SB	LTR	0.45	19.7	B	LTR	0.59	22.4	C	LTR	0.76	63.3	E	TR	0.44	25.9	C
Overall Intersection				50.5	D			103.0	F			131.8	F			41.8	D
Piermont Road & Union Avenue																	
Union Avenue	EB	LT	0.50	26.0	C	LT	0.84	42.6	D	LT	0.72	45.0	D	L	0.12	37.2	D
		R	0.04	19.8	B	R	0.05	19.9	B	R	0.00	25.5	C	T	0.57	41.0	D
	WB	L	0.13	21.2	C	L	0.23	23.7	C	L	0.25	31.1	C	L	0.18	35.3	D
Piermont Road		TR	0.65	30.7	C	TR	0.83	40.6	D	TR	0.73	42.9	D	TR	0.79	59.4	E
	NB	L	0.20	13.8	B	L	0.32	17.7	B	L	0.47	40.1	D	L	0.46	40.8	D
		TR	0.48	16.8	B	TR	0.61	19.6	B	TR	0.62	28.0	C	TR	0.65	31.2	C
	SB	LT	0.67	31.5	C	LT	0.88	44.7	D	LT	1.35	252.2	F	L	0.15	28.9	C
		R	0.28	23.5	C	R	0.36	24.7	C	R	0.47	49.1	D	T	0.79	47.4	D
Overall Intersection				25.4	C			34.6	C			90.5	F			43.8	D
County Road & North Summit Street																	
North Summit Street	EB	LTR	0.40	25.3	D	LTR	0.83	79.0	F	LTR	1.35	259.7	F	LTR	0.52	34.5	C
	WB	LTR	0.19	19.3	C	LTR	0.42	37.7	E	LTR	0.48	45.4	E	LTR	0.30	39.9	D
County Road	NB	LTR	0.18	9.1	A	LTR	0.09	9.9	A	LTR	0.10	10.4	B	LTR	0.59	12.7	B
	SB	LTR	0.04	8.1	A	LTR	0.02	8.4	A	LTR	0.02	8.4	A	LTR	0.81	19.1	B
Overall Intersection				20.14	C			54.4	F			164.6	F			19.1	B

2030 Weekday No Build / Build / Build with Mitigation Comparison - PM

INTERSECTION & APPROACH	PM Peak Hour																
	Existing				No Build				Build				Mitigation				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
91st STREET STATION AREA																	
Tonnelle Avenue & 91st Street	EB	LTR	0.59	53.2	D	LTR	0.76	64.7	E	LTR	1.24	186.0	F	L	0.72	70.7	E
														TR	0.74	63.9	E
	WB	LTR	0.52	50.3	D	LTR	0.74	63.5	E	LTR	1.00	125.7	F	L	0.96	118.6	F
														TR	0.31	46.7	D
Tonnelle Avenue	NB	LTR	0.65	11.7	B	L	0.38	15.0	B	L	0.72	39.5	D	L	0.81	50.5	D
						TR	0.66	11.7	B	TR	0.66	11.7	B	TR	0.93	39.1	D
	SB	LTR	1.01	46.9	D	Def L	1.41	233.5	F	Def L	1.41	231.5	F	L	0.58	32.8	C
						TR	2.12	528.2	F	TR	2.19	559.0	F	TR	1.21	122.3	F
Overall Intersection				32.4	C			237.7	F			256.4	F			75.7	E
85th Street & Tonnelle Avenue																	
85th Street	EB	LR	0.15	53.5	D	LR	0.22	54.1	D	LR	4.96	1859.0	F	L	0.87	62.4	E
														R	0.73	43.9	D
Tonelle Avenue	NB	LT	0.49	3.5	A	LT	0.63	4.8	A	Def L	2.25	614.0	F	L	0.71	64.6	E
										T	0.93	19.8	B	T	0.69	15.9	B
	SB	TR	0.51	3.6	A	TR	0.65	4.8	A	TR	0.74	6.4	A	T	0.92	34.0	C
														R	0.22	1.7	A
Overall Intersection				3.9	A			5.2	A			301.6	F			30.2	C
RIDGEFIELD STATION AREA																	
Broad Avenue & Hendricks Causeway	EB	L	0.81	49.4	D	L	1.09	121.6	F	L	1.09	121.6	F	L	1.17	153.5	F
		R	0.45	18.1	B	R	0.66	32.5	C	R	0.66	32.5	C	R	0.64	30.3	C
	WB	LTR	0.06	27.9	C	LT	0.04	37.3	D	LT	0.04	37.3	D	LT	0.12	39.9	D
						R	0.05	37.4	D	R	0.05	37.4	D	R	0.05	39.1	D
Broad Avenue	NB	L	0.98	84.6	F	L	1.46	297.8	F	L	1.48	305.1	F	L	1.27	206.9	F
		TR	0.48	12.4	B	TR	0.56	14.4	B	TR	0.66	16.4	B	TR	0.63	14.3	B
	SB	T	0.82	28.6	C	T	0.91	36.8	D	T	0.97	46.2	D	T	0.97	46.2	D
Overall Intersection				31.6	C			70.4	E			72.0	E			62.2	E
Broad Avenue & Edgewater Avenue	EB	LTR	0.40	33.4	C	LTR	0.52	47.4	D	LTR	0.49	46.0	D	L	0.18	27.9	C
														TR	0.22	39.1	D
	WB	LTR	0.68	41.2	D	LTR	0.89	71.3	E	LTR	1.11	126.4	F	L	0.64	36.6	D
														TR	0.28	40.5	D
Broad Avenue	NB	L	0.03	10.5	B	L	0.04	16.9	B	L	0.04	16.9	B	L	0.08	23.0	C
		TR	0.55	9.3	A	TR	0.67	12.1	B	TR	0.78	15.1	B	TR	0.96	36.9	D
	SB	TR	1.04	67.7	E	TR	1.09	89.4	F	TR	1.12	100.1	F	TR	1.08	82.8	F
Overall Intersection				38.8	D			52.8	D			62.1	E			55.5	E
PALISADE PARK STATION AREA																	
Grand Avenue & Ruby Avenue	EB	LTR	0.18	21.8	C	LTR	0.29	29.5	D	LTR	1.71	376.9	F	L	0.03	28.3	C
														TR	0.85	50.5	D
	WB	LTR	0.17	23.9	C	LTR	0.29	34.3	D	LTR	-	-	F	L	0.33	32.9	C
														TR	0.07	28.6	C
Grand Avenue	NB	LTR	0.01	9.3	A	LTR	0.02	10.0	A	LTR	0.18	11.9	B	L	0.50	14.8	B
														TR	0.69	13.1	B
	SB	LTR	0.03	9.2	A	LTR	0.03	9.4	A	LTR	0.08	9.7	A	LTR	1.01	46.2	D
Overall Intersection				18.31	C			31.1	D			204.6	F			33.8	C

Notes:

- "Mvt." refers to the specific intersection approach lane(s) and how the lane(s) operate and/or specific pavement striping. TR is a combined through- right turn lane(s), R or L refers to exclusive right- or left-turn movement lane(s), and LTR is a mixed lane(s) that allows for all movement types. It is possible that lane uses change in different time periods. For example, a very heavy right-turn volume may exceed a single lane capacity, thus forcing drivers to use (or "share") an adjacent lane for additional travel capacity in the AM, but as flows decrease later in the day, a shared lane may not be needed. DefL is a defacto left-turn lane automatically input by the HCS software when the volume of left turns is high enough to create a "natural" turn lane to accommodate the demand; through movements would then use the adjacent travel lane.
- V/C is the volume-to-capacity ratio for the Mvt. listed in the first column. Values above 1.0 indicate an excess of demand over capacity.
- Level of service (LOS) for signalized intersections is based upon average control delay per vehicle (sec/veh) for each lane group listed in the Mvt. Column as noted in the 2000 HCM - TRB.
- The delay calculations for signalized intersections represent the average control delay experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the lane group is saturated.
- Level of service (LOS) for unsignalized intersections is based upon total average delay per vehicle (sec/veh) for each lane group listed in the Mvt. column as noted
- The delay calculations for signalized intersections represent the average control delay experienced by all vehicles that arrive in the analysis period, including delays incurred beyond the analysis period when the lane group is saturated
- Level of service (LOS) for Overall Intersection has been reported for only signalized intersections

2030 Weekday No Build / Build / Build with Mitigation Comparison - PM

INTERSECTION & APPROACH	PM Peak Hour																
	Existing				No Build				Build				Mitigation				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Grand Avenue & Fairview/Edsall Avenue																	
Fairview / Edsall Avenue	EB	LTR	0.13	27.8	D	LTR	0.30	55.7	F	LTR	2.54	831.2	F	L	2.02	613.3	F
														TR	0.49	75.5	F
	WB	LTR	0.11	20.1	C	LTR	0.21	32.2	D	LTR	0.50	66.7	F	LTR	0.49	64.8	F
Grand Avenue	NB	LTR	0.01	9.7	A	LTR	0.01	10.7	B	LTR	0.01	11.0	B	L	0.01	11.0	B
	SB	LTR	0.03	9.0	A	LTR	0.04	9.7	A	LTR	0.04	9.7	A	LTR	0.04	9.7	A
Overall Intersection				17.8	C			29.4	D			530.1	F			306.4	F
Grand Avenue & Central Boulevard																	
Central Boulevard	EB	LTR	0.41	29.1	C	L	0.43	34.7	C	L	0.43	34.7	C	L	0.55	53.7	D
						TR	0.61	35.0+	D	TR	0.61	35.0+	D	TR	0.65	48.0	D
	WB	LT	0.69	40.5	D	L	0.50	35.8	D	L	0.69	45.9	D	L	0.84	77.8	E
		R	0.25	27.5	C	TR	0.77	42.9	D	TR	0.77	42.9	D	TR	0.82	59.2	E
Grand Avenue	NB	L	0.13	10.5	B	L	0.24	14.4	B	L	0.26	15.4	B	L	0.21	14.2	B
		TR	0.90	39.3	D	TR	1.15	108.9	F	TR	1.30	171.5	F	TR	1.07	78.1	E
	SB	L	0.40	13.9	B	L	0.63	24.2	C	L	0.63	24.5	C	L	0.85	67.1	E
		TR	0.78	29.7	C	TR	1.00	59.7	E	TR	1.04	69.6	E	TR	0.85	33.8	C
Overall Intersection				32.7	C			66.3	E			92.4	F			58.0	E
LEONIA STATION AREA																	
Fort Lee Road & Overpeck Park Road																	
Fort Lee road	EB	LT	0.12	11.5	B	LTR	1.61	299.4	F	LTR	1.27	190.1	F	L	0.54	34.0	C
														TR	0.79	34.6	C
	WB	LT	0.02	11.2	B	LT	1.40	207.6	F	LT	1.02	46.3	D	L	0.04	30.2	C
						R	0.11	10.7	B	R	0.07	3.8	A	TR	0.72	23.2	C
Overpeck Park Road	NB	LTR	0.24	20.7	C	LTR	0.17	22.0	C	LTR	0.39	69.7	E	LT	0.08	50.9	D
														R	0.18	52.1	D
	SB	LT	0.19	26.0	D	LTR	0.24	22.7	C	LT	0.63	86.8	F	LT	0.16	51.8	D
		R	0.08	12.5	B					R				R	0.15	51.0	D
Overall Intersection				16.4	C			233.8	F			113.5	F			30.3	C
Fort Lee Road & Willow Tree Road																	
Fort Lee road	EB	LTR	0.93	33.0	C	LTR	1.34	182.4	F	LTR	1.05	66.3	E	L	0.05	21.0	C
														TR	0.96	46.9	D
	WB	LTR	0.68	24.8	C	LTR	1.18	121.5	F	LTR	1.04	82.5	F	L	0.64	99.2	F
														TR	0.92	65.9	E
Willow Tree Road	NB	L	0.34	23.6	C	L	0.44	24.7	C	L	0.54	54.8	D	L	0.52	69.6	E
		TR	0.04	21.0	C	TR	0.06	21.1	C	TR	0.07	45.1	D	TR	0.14	63.1	E
	SB	L	0.14	21.8	C	L	0.18	22.2	C	L	0.81	77.4	E	L	0.92	98.9	F
		TR	0.49	25.2	C	TR	0.68	29.8	C	TR	2.42	723.4	F	T	0.20	59.5	E
Overall Intersection				28.8	C			131.1	F			161.7	F			57.7	E
														R	0.65	44.8	D
																	57.7
																	E
Grand Avenue & Fort Lee Road																	
Fort Lee road	EB	L	0.84	57.4	E	L	1.07	103.4	F	L	1.5	257.8	F	L	1.38	235.0	F
		TR	0.84	44.1	D	TR	1.07	92.5	F	TR	1.2	132.9	F	TR	1.13	109.2	F
	WB	LTR	0.96	71.6	E	LTR	1.23	162.1	F	LTR	1.3	179.5	F	LTR	0.59	36.0	D
Grand Avenue	NB	L	0.40	21.5	C	L	0.66	32.8	C	L	0.7	42.0	D	L	0.83	54.1	D
		TR	0.67	35.1	D	TR	0.86	46.5	D	TR	0.9	46.5	D	TR	0.87	48.6	D
	SB	L	0.21	17.7	B	L	0.38	22.3	C	L	0.4	22.3	C	L	0.47	25.6	C
		TR	1.01	76.0	E	TR	1.29	179.7	F	TR	1.4	213.8	F	TR	1.33	198.7	F
Overall Intersection				55.0	D			115.2	F			152.3	F			112.4	F
ENGLEWOOD ROUTE 4 STATION AREA																	
Nordhoff Pl & Van Brunt St (Light Rail to Tenafly)																	
Nordhoff Pl	EB	LR	0.03	16.3	C	LR	0.08	27.4	D	LR	0.21	72.4	F	LR	0.03	22.3	C
	WB	L	0.25	24.2	C	LR	1.05	97.2	F	LR	1.77	387.9	F	L	0.30	24.5	C
		R	0.37	14.4	B									R	0.99	72.2	E
Van Brunt St	NB													TR	0.48	11.9	B
	SB	LT	0.16	8.9	A	LT	0.23	9.7	A	LT	0.25	9.9	A	LT	0.85	30.5	C
Overall Intersection				13.7	B			64.6	F			277.3	F			34.2	C

2030 Weekday No Build / Build / Build with Mitigation Comparison - PM

INTERSECTION & APPROACH	PM Peak Hour																
	Existing				No Build				Build				Mitigation				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Nordhoff Pl & Van Brunt St (Light rail to Englewood Rt 4)																	
Nordhoff Pl	EB	LR	0.03	16.3	C	LR	0.08	27.4	D	L	0.35	261.8	F	LR	0.24	44.5	D
										R	0.01	9.5	A				
	WB	L	0.25	24.2	C	LR	1.05	97.2	F	L	2.24	636.9	F	L	0.84	50.7	D
		R	0.37	14.4	B	0.00	0.00	0.0	0.0	R	0.88	42.9	E	R	0.77	28.0	C
Van Brunt St	NB													TR	0.83	38.9	D
	SB	LT	0.16	8.9	A	LT	0.23	9.7	A	LT	0.29	10.1	B	LT	0.97	48.6	D
	Overall Intersection			13.7	B			64.6	F			200.8	F			40.7	D
Forest Avenue & South Dean Street (Light Rail to Tenafly)																	
Forest Avenue	EB	TR	0.82	31.8	C	TR	1.10	88.3	F	TR	1.43	238.0	F	TR	0.96	53.9	D
	WB	LT	0.48	20.9	C	LT	0.72	27.6	C	LT	4.10	1441.0	F	L	0.71	57.9	E
														T	0.56	21.4	C
South Dean Street	SB	LTR	0.88	26.1	C	LTR	1.13	88.5	F	LTR	1.31	172.2	F	LT	1.02	50.6	D
														R	0.37	15.9	B
	Overall Intersection			26.8	C			77.9	E			336.5	F			45.7	D
Forest Avenue & South Dean Street (Light rail to Englewood Rt 4)																	
Forest Avenue	EB	TR	0.82	31.8	C	TR	1.10	88.3	F	TR	1.48	258.4	F	TR	1.13	100.5	F
	WB	LT	0.48	20.9	C	LT	0.72	27.6	C	LT	0.96	83.5	F	L	0.94	107.0	F
														T	0.61	24.4	C
South Dean Street	SB	LTR	0.88	26.1	C	LTR	1.13	88.5	F	LTR	1.33	181.5	F	LT	1.00	49.9	D
														R	0.71	82.5	F
	Overall Intersection			26.8	C			77.9	E			189.1	F			66.3	E
ENGLEWOOD TOWN CENTER STATION AREA																	
Englewood Avenue & Van Brunt St																	
Englewood Avenue	EB	TR	0.30	10.0	A	TR	0.39	10.9	B	TR	0.86	69.1	E	T	0.54	37.1	D
														R	0.19	30.7	C
	WB	LT	0.40	11.1	B	LT	0.52	12.9	B	LT	0.60	19.0	B	LT	0.60	21.3	C
Van Brunt Street	NB	L	0.64	31.8	C	L	0.82	43.7	D	L	0.87	73.7	E	L	0.75	46.7	D
		R	0.04	0.1	0.00	R	0.06	0.1	A	R	0.29	23.0	C	R	0.35	33.6	C
	SB	L	0.09	19.8	B	L	0.12	20.1	C	L	0.20	31.5	C	L	0.17	27.4	C
		TR	0.47	25.0	C	TR	0.61	28.2	C	TR	0.71	46.3	D	TR	0.60	36.5	D
	Overall Intersection			17.1	B			20.7	C			45.9	D			33.3	C
Englewood Avenue & South Dean Street																	
Englewood Avenue	EB	TR	0.58	27.4	C	TR	0.75	33.2	C	TR	0.55	23.2	C	TR	0.56	26.2	C
	WB	LT	0.86	45.5	D	LT	1.10	102.3	F	LT	1.32	218.4	F	L	0.88	88.4	F
														T	0.91	70.9	E
South Dean Street	SB	LTR	0.67	14.4	B	LTR	0.85	20.6	C	LTR	1.18	130.9	F	LT	0.83	35.8	D
														R	0.45	39.0	D
	Overall Intersection			23.1	C			39.4	D			124.2	F			41.8	D
Palisade Avenue & South Dean Avenue																	
Palisade avenue	EB	T	0.33	16.0	B	T	0.42	17.3	B	T	0.33	18.2	B	T	0.18	14.1	B
		R	0.33	16.7	B	R	0.43	18.4	B	R	0.33	18.9	B	R	0.39	18.4	B
	WB	L	0.81	43.0	D	L	1.18	140.9	F	L	0.90	72.2	E	L	0.74	36.0	D
		T	0.95	52.7	D	T	1.22	140.4	F	T	1.87	452.4	F	T	1.14	132.7	F
South Dean Avenue	SB	LTR	0.99	46.0	D	LTR	1.26	148.7	F	LTR	1.64	341.0	F	L	1.02	103.9	F
														T	0.89	58.7	E
														R	0.78	59.6	E
	Overall Intersection			41.6	D			121.9	F			284.8	F			71.6	E
Palisade Avenue & Van Brunt Street																	
Palisade Avenue	EB	LT	0.41	15.8	B	LT	0.53	17.9	B	LT	0.83	59.9	E	LT	0.50	41.8	D
		R	0.18	13.2	B	R	0.23	13.8	B	R	0.38	38.7	D	R	0.49	45.5	D
	WB	LT	0.58	18.8	B	LT	0.81	28.1	C	LT	0.88	50.4	D	LTR	0.53	22.9	C
		R	0.12	12.5	B	R	0.15	12.8	B		0.11	12.2	B				
Van Brunt Street	SB	L	0.20	18.9	B	L	0.26	19.6	B	L	0.73	114.6	F	L	0.48	56.9	E
		TR	0.27	19.7	B	TR	0.34	20.8	C	TR	0.50	47.5	D	TR	0.47	42.1	D
	Overall Intersection			17.3	B			21.6	C			55.0	D			34.8	C

2030 Weekday No Build / Build / Build with Mitigation Comparison - PM

INTERSECTION & APPROACH	PM Peak Hour																
	Existing				No Build				Build				Mitigation				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
ENGLEWOOD HOSPITAL STATION AREA																	
Demarest Avenue & Van Brunt Street																	
Demarest Avenue	EB	LTR	0.01	8.1	A	LTR	0.01	8.5	A	LTR	0.64	50.3	D	LTR	0.39	41.3	D
	WB	LTR	0.12	8.1	A	LTR	0.16	8.5	A	LTR	0.65	18.9	B	LTR	0.68	22.2	C
Van Brunt Street	NB	L	0.10	25.9	D	L	0.85	47.1	E	L	0.08	39.2	D	L	0.08	37.4	D
	R	0.11	10.1	B	R	0.56	10.9	B	R	0.51	63.6	E	R	0.40	56.3	E	
	SB	LTR	0.12	21.7	C	LTR	0.89	36.4	E	LTR	0.14	53.2	D	LTR	0.12	50.5	D
	Overall Intersection			10.6	B			13.3	B			33.2	C			31.8	C
Demarest Avenue & North Dean Street																	
Demarest Avenue	EB	TR	0.24	22.2	C	TR	0.57	28.3	C	TR	0.45	28.8	C	TR	0.42	24.8	C
	WB	LT	0.66	31.4	C	L	0.49	33.0	C	L	0.70	84.1	F	L	0.56	58.2	E
North Dean Street	SB	L	0.04	9.1	A	L	0.04	9.2	A	L	0.05	19.1	B	LT	0.77	57.3	E
		TR	0.62	15.0	B	TR	0.79	19.3	B	TR	1.23	161.4	F	R	0.65	49.5	D
	Overall Intersection			19.4	B			22.5	C			116.8	F			40.9	D
Hamilton Avenue & North Dean Street																	
Hamilton Avenue	EB	TR	0.27	23.2	C	TR	0.35	24.2	C	TR	0.41	27.9	C	TR	0.36	25.3	C
	WB	LT	0.41	25.7	C	LT	0.62	32.0	C	LT	0.86	101.1	F	LT	0.66	34.7	C
North Dean Street	SB	L	0.07	9.0	A	L	0.09	9.2	A	L	0.09	8.3	A	LT	0.41	11.3	B
		TR	0.46	12.1	B	TR	0.58	13.8	B	TR	0.80	69.6	E	R	0.18	17.4	B
	Overall Intersection			15.4	B			17.6	B			65.8	E			16.9	B
Hudson Avenue & Curry Avenue																	
Hudson Avenue	EB	LTR	0.38	24.7	C	LTR	0.49	26.6	C	LTR	0.32	59.4	E	LTR	0.31	46.6	D
	WB	LTR	0.45	25.9	C	LTR	0.57	28.6	C	LTR	0.21	7.8	A	LTR	0.20	6.8	A
Curry Avenue	NB	LTR	0.35	35.5	D	LTR	0.45	36.8	D	LTR	0.64	99.0	F	LTR	0.61	90.9	F
	Overall Intersection			26.1	C			28.4	C			36.8	D			30.3	C
Hudson Avenue & North Dean Street																	
Hudson Avenue	EB	LT	0.24	22.9	C	LTR	0.70	35.1	D	LTR	0.54	44.3	D	LT	0.30	37.8	D
		R	0.24	23.0	C									R	0.28	37.6	D
	WB	L	0.68	34.8	C	L	0.87	50.4	D	L	0.66	42.2	D	L	0.63	37.9	D
		TR	0.66	33.4	C	TR	0.84	46.4	D	TR	0.67	49.2	D	TR	0.67	49.2	D
North Dean Street	SB	LTR	0.80	22.5	C	LTR	1.02	55.2	E	LTR	1.71	372.5	F	LTR	0.87	51.2	D
	Overall Intersection			26.9	C			49.5	D			199.8	F			46.2	D
Ivy Lane & Curry Avenue																	
Ivy Lane	EB	T	0.28	23.1	C	T	0.37	24.2	C	T	0.32	37.6	D	T	0.32	37.6	D
	WB	T	0.56	27.6	C	T	0.72	32.5	C	T	0.28	9.6	A	T	0.28	9.6	A
Curry Avenue	SB	LR	0.11	33.4	C	LR	0.22	34.3	C	LR	0.34	59.6	E	LR	0.34	59.6	E
	Overall Intersection			26.3	C			29.9	C			21.8	C			21.8	C
Ivy Lane & North Dean Street																	
Ivy Lane	EB	LTR	0.37	24.7	C	LTR	0.55	28.8	C	LTR	0.28	21.9	C	LTR	0.28	21.9	C
	WB	LTR	0.81	38.0	D	LTR	1.04	77.0	E	LTR	0.89	65.4	E	LTR	0.89	65.4	E
North Dean Street	NB	LTR	0.07	8.7	A	LTR	0.09	8.8	A	LTR	0.24	38.3	D	LTR	0.26	37.3	D
	SB	LTR	0.55	13.5	B	LTR	0.70	16.8	B	LTR	1.45	261.9	F	LTR	0.84	52.3	D
	Overall Intersection			23.4	C			39.2	D			147.2	F			51.8	D
TENAFLY TOWN CENTER STATION AREA																	
E. Clinton Ave & Dean Dr / New Street																	
E. Clinton Ave	EB	LT		10.3	B	LT		12.3	B	T	0.62	30.3	C	T	0.72	12.4	B
	WB	LTR		9.8	A	LTR		11.2	B	LT	0.65	29.1	C	LT	0.65	29.1	C
Dean Dr / New Street	NB	LTR		8.5	A	LTR		9.0	A	L	0.80	22.3	C	L	0.80	22.3	C
											0.04	9.2	A				
	SB	LTR		8.8	A	LTR		9.3	A	LTR	0.05	29.2	C	LTR	0.05	29.2	C
	Overall Intersection			9.9	A			11.4	B			22.1	C				

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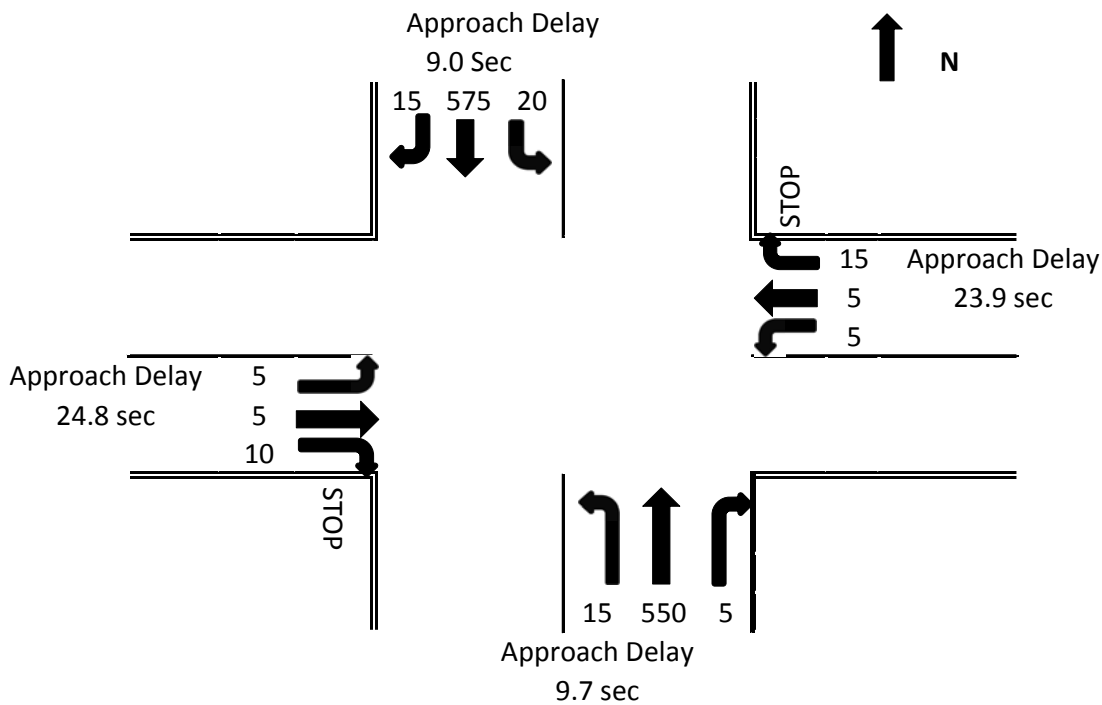
INTERSECTION & APPROACH	PM Peak Hour																
	Existing				No Build				Build				Mitigation				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
W Clinton Ave & Franklin Ave/ W. Railroad Avenue																	
West Clinton Avenue	EB	LT	0.07	8.4	A	LT	0.10	8.8	A	LTR	1.88	473.8	F	L	1.25	278.2	F
														TR	1.21	194.7	F
	WB	LTR	0.01	8.1	A	LTR	0.01	8.5	A	LTR	0.60	20.2	C	LTR	0.27	12.9	B
Franklin Avenue / W. Railroad Ave	NB	LTR	0.38	23.9	C	LTR	0.78	69.4	F	LTR	1.48	388.3	F	LTR	1.09	214.7	F
	SB	LTR	0.48	21.4	C	LTR	0.86	61.0	F	LTR	2.58	8114.4	F	LTR	2.28	679.2	F
Overall Intersection				18.4	C			48.7	E			367.0	F			211.5	F
Clinton Avenue /County & Piermont Avenue																	
Clinton Avenue	EB	LT	0.52	46.9	D	LT	0.66	55.6	E	LT	0.28	43.2	D	LT	0.31	47.1	D
		R	0.57	29.1	C	R	0.77	37.8	D	R	0.94	97.5	F	R	0.89	81.4	F
	WB	LTR	0.01	34.0	C	LTR	0.01	34.0	C	LTR	0.02	60.1	E	LTR	0.01	41.9	D
County Rd	NB	L	0.93	69.9	E	L	1.19	148.5	F	L	1.64	374.3	F	L	1.12	149.9	F
		TR	0.39	5.0	A	TR	0.50	6.1	A	TR	0.64	24.7	C	TR	0.66	21.9	C
	SB	LTR	0.62	28.5	C	LTR	0.80	36.0	D	LTR	1.70	393.5	F	LTR	0.76	72.1	E
Piermont Rd	SB	T	0.25	41.3	D	T	0.33	43.5	D	T	0.58	103.1	F	T	0.25	72.1	E
		R	0.23	41.3	D	R	0.29	43.4	D	R	0.54	102.8	F	R	0.19	60.0	E
Overall Intersection				41.2	D			49.9	D			201.9	F			78.3	E
Washington Street & W. Railroad Avenue																	
Washington Street	EB	LTR	0.37	39.1	D	LT	0.49	43.5	D	LTR	0.50	70.1	E	L	0.13	57.5	E
														TR	0.38	63.6	E
	WB	LTR	0.42	38.3	D	LTR	0.56	42.2	D	LTR	0.18	20.4	C	LTR	0.10	19.7	B
W. rail Road Avenue	NB	LTR	0.41	35.0+	D	LTR	0.53	39.1	D	LTR	0.63	69.1	E	LTR	0.71	79.4	E
	SB	LTR	0.56	39.4	D	LTR	0.74	49.1	D	LTR	0.77	78.1	E	L	0.11	48.4	D
														TR	0.63	63.6	E
Overall Intersection				38.1	D			44.1	D			59.6	E			55.3	E
Washington St / Hill Side Ave & Piermont / Highwood SB																	
Washington St / Hillside Ave	EB	LTR	0.17	33.3	C	LTR	0.42	38.8	D	LTR	0.18	26.4	C	L	0.07	16.4	B
														TR	0.06	13.9	B
	WB	LT	0.43	38.3	D	LT	0.55	41.6	D	LT	0.62	44.5	D	LT	0.50	53.4	D
		R	0.24	0.5	A	R	0.81	39.7	D	R	0.49	16.4	B	R	0.52	19.0	B
Piermont / Highwood SB	SB	LT	0.33	40.7	D	LT	0.42	42.9	D	LT	0.27	46.1	D	LTR	0.26	52.2	D
	(Piermont)	R	0.11	36.8	D	R	0.14	37.6	D	R	0.14	61.9	E				
	SB2	LT	0.30	44.2	D	LT	0.38	46.6	D	LT	0.31	68.4	E	LT	0.28	55.9	E
		R	0.36	48.2	D	R	0.40	48.6	D	R	0.38	72.6	E	R	0.32	57.8	E
Overall Intersection				22.7	C			41.2	D			40.1	D			33.9	C
Riveredge Road & W. Railroad Avenue																	
Riveredge Road	EB	LT	0.01	8.5	A	LT	0.02	9.0	A	LT	0.59	32.0	C	LT	0.60	32.0	C
		R	0.14	11.7	B	R	0.14	11.7	B	R	0.14	11.7	B	R	0.14	11.7	B
	WB	LTR	0.02	8.4	A	LTR	0.03	8.9	A	LTR	0.73	38.5	D	LTR	0.42	26.6	C
W. Railroad Avenue	NB	LTR	0.27	19.5	C	LTR	0.53	37.4	E	LTR	0.51	60.7	E	LT	0.35	52.5	D
														R	0.11	46.2	D
	SB	LTR	0.42	21.8	C	LTR	0.73	47.9	E	LTR	0.64	65.2	E	LTR	0.70	78.1	E
Overall Intersection				19.3	C			39.5	E			39.7	D			36.0	D
Riveredge Road/ Jay St & Piermont Rd																	
Riveredge Road / Jay St	EB	LTR	0.24	9.8	A	LTR	0.35	11.5	B	LTR	0.73	19.1	B	LTR	0.72	18.8	B
Piermont Rd	WB	LTR	0.00	7.8	A	LTR	0.00	7.9	A	LTR	0.86	49.2	D	LTR	0.86	49.2	D
Overall Intersection				9.8	A			11.4	B			35.5	D			35.4	D
Central Avenue & W. Railroad Avenue																	
Central Avenue	EB	LTR	0.00	7.9	A	LTR	0.00	8.2	A	LTR	0.47	54.7	D	LTR	0.26	48.4	D
	WB	LTR	0.11	7.9	A	LTR	0.14	8.1	A	LTR	0.54	14.3	B	LTR	0.27	10.0	A
West Railroad Avenue	NB	LTR	0.11	10.6	B	LTR	0.15	11.3	B	LTR	0.64	74.2	E	LT	0.16	54.7	D
														R	0.56	70.8	E
	SB	LTR	0.04	17.1	C	LTR	0.07	24.1	C	LTR	0.13	55.0	D	LTR	0.11	53.9	D
Overall Intersection				9.1	A			9.6	A			29.7	C			24.8	C

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INTERSECTION & APPROACH	PM Peak Hour																
	Existing				No Build				Build				Mitigation				
	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	Mvt.	V/C	Control Delay	LOS	
Central Avenue & Piermont Road																	
Central Avenue	EB	LT	12.4	B	LT	17.8	C	LT	0.58	44.4	D	L	0.37	37.3	D		
												T	0.13	30.7	C		
Piermont Road	WB	TR	10.7	B	TR	14.0	B	TR	0.58	63.6	E	TR	0.31	51.6	D		
	NB	L	9.8	A	L	11.1	B	L	0.04	21.4	C	L	0.04	21.4	C		
		TR	11.8	B	TR	16.4	C	TR	0.23	15.3	B	TR	0.23	15.3	B		
	SB	LR	16.0	C	LR	43.7	E	LR	0.90	56.0	E	L	0.28	25.5	C		
												R	0.65	34.7	C		
Overall Intersection			13.5	B		22.8	C			45.9	D			32.0	C		
TENAFLY NORTH STATION AREA																	
Piermont Road & Hudson Avenue																	
Hudson Avenue	WB	LR	0.03	8.2	A	L	0.29	30.5	D	L	0.72	71.5	F				
Piermont Road	SB	LT	0.24	16.2	C	LT	0.04	8.5	A	LT	0.04	8.7	A				
Overall Intersection			14.3	B		17.3	C			34.8	D						
Piermont Road & North Summit Street																	
North Summit Street	WB	LR	0.19	13.8	B	LR	0.32	18.7	C	LR	1.93	475.3	F	LR	0.59	28.1	C
Piermont Road	NB													TR	0.72	20.8	C
	SB	LT	0.03	8.3	A	LT	0.04	8.7	A	LT	0.10	9.5	A	L	0.32	15.1	B
														T	0.60	17.2	B
Overall Intersection			12.5	B		16.3	C			395.1	F			21.0	C		
Piermont Road & Madison Avenue																	
Madison Avenue	EB	LTR	0.76	32.3	C	LTR	1.04	76.5	E	LTR	1.19	163.0	F	LT	1.23	332.9	F
														R	0.30	37.0	D
	WB	LTR	0.48	23.2	C	LTR	0.67	28.7	C	LTR	0.73	48.5	D	L	0.46	175.5	F
														TR	0.51	44.1	D
Piermont Road	NB	L	0.41	20.3	C	L	0.60	26.3	C	L	0.97	111.7	F	L	0.81	42.3	D
		TR	0.63	23.5	C	TR	0.81	30.5	C	TR	0.75	32.3	C	TR	0.75	27.9	C
	SB	LTR	0.37	18.4	B	LTR	0.47	20.0	B	LTR	0.53	35.6	D	LTR	0.39	18.5	B
Overall Intersection			24.5	C		39.8	D			76.8	E			63.6	E		
Piermont Road & Union Avenue																	
Union Avenue	EB	LT	0.39	24.9	C	LT	0.80	47.0	D	LT	0.80	80.2	F	L	0.25	30.0	C
		R	0.04	19.7	B	R	0.05	19.9	B	R	0.00	27.3	C	T	0.20	25.8	C
	WB	L	0.05	19.9	B	L	0.09	20.2	C	L	0.09	28.7	C	L	0.08	29.9	C
		TR	0.70	32.4	C	TR	0.88	45.3	D	TR	0.82	51.5	D	TR	0.79	57.5	E
Piermont Road	NB	L	0.34	14.4	B	L	0.51	18.4	B	L	0.93	128.9	F	L	0.68	49.0	D
		TR	0.45	16.3	B	TR	0.58	18.8	B	TR	0.60	25.5	C	TR	0.66	31.9	C
	SB	LT	0.51	27.1	C	LT	0.67	31.8	C	LT	0.89	99.0	F	L	0.21	33.0	C
		R	0.34	24.4	C	R	0.44	26.2	C	R	0.50	44.7	D	T	0.58	40.5	D
Overall Intersection			24.0	C		31.5	C			63.1	E			42.8	D		
County Road & North Summit Street																	
North Summit Street	EB	LTR	0.36	21.5	C	LTR	0.75	60.1	F	LTR	1.57	339.5	F	LTR	0.66	38.0	D
	WB	LTR	0.16	17.4	C	LTR	0.34	30.6	D	LTR	0.36	32.0	D	LTR	0.21	27.0	C
County Road	NB	LTR	0.09	9.3	A	LTR	0.13	10.3	B	LTR	0.14	10.5	B	LTR	0.81	20.8	C
	SB	LTR	0.02	8.5	A	LTR	0.02	9.0	A	LTR	0.02	9.0	A	LTR	0.74	16.7	B
Overall Intersection			16.3	C		36.7	E			195.6	F			21.4	C		

E.5 Methodology to calculate average overall delay for nonsignalized intersection

For unsignalized intersections, HCS and the *Highway Capacity Manual 2000* do not calculate overall intersection LOS. For environmental review, to help understand the overall performance of unsignalized intersection and to provide a measure of comparison, a methodology was developed to calculate “Average Overall Delay”. At an unsignalized two-way stop controlled intersection, major movements which are not required to stop or yield encounter no delay. Minor movements and other movements experiencing a conflict (such as a left-turn) experience delay at the intersection. As such, “Average Overall Delay” is measured by dividing the sum of all delay (in seconds) experienced at the intersection by the total number of vehicles experiencing a delay. An illustration of this methodology is provided below. For an intersection with “Stop” control on East & West approach, ‘Through’ & ‘Right’ turn movements on the North -South direction are unrestricted and hence encounter no delay. All other movements experience a delay.



	Number of vehicles experiencing delay	Approach Delay (sec)	Total Delay (Sec)
North Approach	15	9.7	145.5
South Approach	20	9	180
East Approach	20	24.8	496
West Approach	25	23.9	597.5
Total	80		1419
Average overall delay			17.74

$$\text{Average overall delay} = \frac{1419}{80} = 17.74 \text{ sec}$$

C