

APPENDIX J

Year 2018 Existing VISSIM Model Validation Exhibits

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Year 2018 Existing VISSIM Model Files

(VISSIM files located in electronic Appendix J folder)

J1- Year 2018 Existing VISSIM AM

J2- Year 2018 Existing VISSIM PM

APPENDIX J1

Year 2018 Existing VISSIM AM Peak Hour

I-41 Traffic and Engineering Study
Existing (2018) AM Peak Hour Calibration
Freeway Mainline and Ramp Volumes

			% Demand	Segments									Target					Vissim					Difference					RMSPE					RMSE				
			100%	Forecast ID	Link ID	Description	Type	7:00-7:15AM	7:15-7:30AM	7:30-7:45AM	7:45-8:00AM	TOTAL	7:00-7:15AM2	7:15-7:30AM2	7:30-7:45AM2	7:45-8:00AM2	TOTAL2	7:00-7:15AM3	7:15-7:30AM3	7:30-7:45AM3	7:45-8:00AM3	TOTAL3	7:00-7:15AM6	7:15-7:30AM6	7:30-7:45AM6	7:45-8:00AM6	TOTAL6	7:00-7:15AM5	7:15-7:30AM5	7:30-7:45AM5	7:45-8:00AM5	TOTAL5					
TEOps Validation - 15 minute periods																																					
Test	Target	Model		10001	69	NB I-41 (Southern Project Limits)	MAINLINE	641	810	186	983	3300	710	820	822	934	3286	69	10	-45	-49	-14	1%	1%	5%	5%	0%	2.7	0.4	1.5	1.6	0.3					
				10002	72	NB I-41 Exit to CTH BB	RAMP	122	166	186	177	650	125	162	181	171	640	4	-3	-5	-6	-10	3%	2%	3%	3%	2%	0.3	0.2	0.4	0.4	0.4					
				10003	71	NB I-41 betw CTH BB Exit to CTH BB Ent	MAINLINE	519	645	681	806	2650	577	648	640	760	2624	58	77	3	-41	-46	-26	17%	0%	12%	12%	1%	2.5	0.1	1.6	1.6	0.5				
				10004	73	NB I-41 Ent from CTH BB	RAMP	93	100	124	93	410	88	91	129	97	406	-5	-8	6	129	4	-4	5%	0%	4%	4%	1%	0.5	0.8	0.5	0.4	0.2				
				10005	75	NB I-41 betw CTH BB Ent to WIS 125 Exit	MAINLINE	612	744	805	899	3060	661	737	773	855	3025	49	-7	-32	-44	-35	4%	1%	4%	5%	1%	2.0	0.3	1.1	1.5	0.6					
				10006	78	NB I-41 Exit to WIS 125	RAMP	109	172	198	241	650	111	151	177	210	650	2	-20	-21	-30	-70	2%	10%	10%	11%	10%	0.2	1.5	1.5	2.0	2.6					
TEOps Validation - 60 minute period																																					
Test	Target	Model		10007	77	NB I-41 betw WIS 125 Exit to WIS 125 Ent	MAINLINE	503	573	607	659	2340	536	568	573	622	2300	34	-4	-33	-36	-40	3%	1%	5%	5%	2%	1.5	0.2	1.3	1.4	0.8					
				10008	79	NB I-41 Ent from WIS 125	RAMP	49	64	94	63	270	47	62	91	66	267	-2	-2	-2	4	-3	3%	3%	3%	3%	1%	0.2	0.3	0.2	0.5	0.2					
				10009	80	NB I-41 betw WIS 125 Ent to WIS 96 Exit	MAINLINE	552	637	701	721	2610	574	623	647	654	2630	23	-14	-43	-47	-42	-80	4%	2%	7%	6%	3%	1.0	0.6	1.8	1.6	0.6				
				10010	82	NB I-41 Exit to WIS96	RAMP	123	148	159	200	630	123	148	156	186	613	0	0	-2	-14	-17	0%	0%	0%	2%	3%	0.0	0.0	0.2	1.0	0.7					
				10011	81	NB I-41 betw WIS 96 Exit to WIS 96 Ent	MAINLINE	429	489	542	521	1980	456	484	506	505	1951	28	-4	-36	-16	-29	4%	1%	7%	3%	1%	1.3	0.2	1.6	0.7	0.7					
				10012	83	NB I-41 Ent from WIS 96	RAMP	45	51	71	64	230	41	51	71	64	227	-4	0	0	1	-3	4%	0%	0%	1%	1%	0.6	0.0	0.0	0.1	0.2					
				10013	85	NB I-41 WIS 96 Ent to WIS 15 Exit	MAINLINE	473	540	613	585	2210	490	535	575	570	2171	17	490	-38	-15	-39	4%	1%	4%	2%	2%	0.8	0.2	1.5	0.6	0.8					
				10014	87	NB I-41 Exit to WIS15	RAMP	100	139	169	162	570	100	127	163	159	550	1	-12	-6	-3	-20	1%	4%	3%	2%	4%	0.1	1.0	0.4	0.2	0.9					
				10015	86	NB I-41 betw WIS 15 Exit to WIS 15 Ent	MAINLINE	374	400	444	423	1640	384	404	411	407	1607	10	404	-33	-16	-33	3%	1%	7%	4%	2%	0.5	0.2	1.6	0.8	0.8					
				10016	88	NB I-41 Ent from WIS15	RAMP	127	155	170	177	630	124	143	173	169	610	-3	-11	3	-8	-20	2%	2%	2%	5%	3%	0.3	0.9	0.2	0.6	0.8					
				10017	90	NB I-41 betw WIS 15 Ent to WIS 47 Exit	MAINLINE	501	555	614	600	2270	501	549	588	584	2222	0	-6	-26	-16	-48	0%	1%	4%	3%	2%	0.0	0.2	1.1	0.6	1.0					
				10018	93	NB I-41 Exit to WIS47	RAMP	58	69	121	121	350	64	62	93	113	332	5	-7	-9	-8	-18	2%	1%	7%	5%	5%	0.7	0.8	0.8	0.7	1.0					
				10019	92	NB I-41 betw WIS 47 Exit to WIS 47 Ent	MAINLINE	443	486	513	479	1920	423	483	487	473	1867	-20	-3	-25	-6	-53	5%	1%	5%	1%	3%	1.0	0.1	1.1	0.3	1.2					
				10020	94	NB I-41 Ent from WIS47	RAMP	160	195	150	155	660	156	191	154	156	657	-5	-3	4	1	-3	3%	2%	2%	1%	1%	0.4	0.2	0.3	0.1	0.1					
				10021	96	NB I-41 betw WIS 47 Ent to Ballard Exit	MAINLINE	603	681	663	634	2580	574	675	642	634	2525	-29	-5	-21	0	-55	5%	1%	3%	0%	2%	1.2	0.2	0.8	0.0	1.1					
				10022	98	NB I-41 Exit to Ballard	RAMP	169	208	175	217	770	144	194	183	191	712	-25	-15	-8	-26	-58	10%	0%	5%	10%	7%	1.9	1.0	0.6	1.8	2.1					
				10023	97	NB I-41 betw Ballard Exit to Ballard Ent	MAINLINE	434	472	488	417	1810	420	472	456	435	1783	-14	0	-32	18	-27	3%	0%	7%	4%	1%	0.7	0.0	1.4	0.9	0.6					
				10024	99	NB I-41 Ent from Ballard	RAMP	187	262	258	254	960	179	239	261	256	936	-8	179	22	3	-24	4%	0%	1%	1%	3%	0.6	1.4	0.2	0.1	0.8					
				10025	100	NB I-41 betw Ballard Ent to 441 Exit	MAINLINE	620	734	746	670	2770	601	708	718	694	2721	-20	-26	-28	-24	-49	3%	3%	4%	4%	2%	0.8	0.9	1.0	0.9	0.9					
				10026	102	NB I-41 Exit to SB441	RAMP	136	198	174	193	700	125	172	175	704	649	-11	-26	11	-15	-51	4%	2%	1%	4%	2%	0.9	1.8	0.1	1.1	1.9					
				10027	101	NB I-41 betw 441 Exit to 441 Ent	MAINLINE	485	536	572	478	2070	471	527	537	2051	2070	-34	0	-2	-1	-2	-19	3%	2%	2%	1%	1%	0.6	0.4	1.5	1.8	0.4				
				10028	33	NB I-41 Ent from NB441	RAMP	209	230	243	248	930	215	230	242	238	926	6	0	0	-9	-4	3%	0%	0%	4%	0%	0.4	0.0	0.0	0.6	0.1					
				10029	104	NB I-41 betw 441 Ent to CTH N Exit	MAINLINE	694	766	815	726	3000	683	760	778	2984	2984	-10	683	-37	-38	-16	2%	1%	5%	5%	1%	0.4	0.2	1.3	1.4	0.3					
				10030	106	NB I-41 Exit to CTH N	RAMP	70	48	63	78	260	76	54	58	76	264	6	6	-5	-2	4	4%	10%	8%	3%	2%	0.7	0.9	0.7	0.2	0.3					
				10031	105	NB I-41 betw CTH N Exit to CTH N Entrance	MAINLINE	624	718	751	647	2740	603	696	717	683	2700	-21	603	-22	-34	-35	3%	3%	4%	5%	1%	0.8	0.8	1.2	1.4	0.8					
				10032	107	NB I-41 Ent from CTH N	RAMP	55	64	56	46	220	53	65	45	45	218	-1	1	0	-1	-2	2%	1%	1%	2%	1%	0.2	0.1	0.1	0.1	0.1					
				10033	109	NB I-41 betw CTH N Ent to WIS 55 Exit	MAINLINE	678	782	807	693	2960	657	762	773	743	2934	-22	-20	-34	50	-26	3%	3%	4%	7%	1%	0.8	0.7	1.2	1.9	0.5					
				10034	111	NB I-41 Exit to WIS55	RAMP	68	78	62	83	290	71	72	67	76	285	-2	-6	5	-6	-5	3%	3%	3%	2%	2%	0.3	0.7	0.6	0.7	0.3					
				10035	110	NB I-41 betw WIS 55 Exit to WIS 55 Ent	MAINLINE	610	704	745	611	2670	583	683	699	627	2610	-27	0	-46	59	-35	4%	3%	3%	3%	3%	0.1	0.8	1.2	2.4	0.7					
				10036	112	NB I-41 Ent from WIS55	RAMP	39	22	33	37	130	39	22	30	36	128	0	0	-2	18	-2	1%	2%	1%	2%	2%	0.0	0.1	0.4	0.1	0.2					
				10037	114	NB I-41 betw WIS 55 Ent to CTH J Exit	MAINLINE	64																													

I-41 Traffic and Engineering Study
Existing (2018) AM Peak Period Calibration
Intersection Turning Movements

			% Demand 100%	Intersections					Target					Vissim					Difference					RNSE				
				Int ID	Int Name	From Link	To Link	Mvmt	7:00-7:15AM	7:15-7:30AM	7:30-7:45AM	7:45-8:00AM	TOTAL	7:00-7:15AM2	7:15-7:30AM2	7:30-7:45AM2	7:45-8:00AM2	TOTAL2	7:00-7:15AM3	7:15-7:30AM3	7:30-7:45AM3	7:45-8:00AM3	TOTAL3	7:00-7:15AM5	7:15-7:30AM5	7:30-7:45AM5	7:45-8:00AM5	TOTAL5
TEOps Validation - 15 minute periods				108	SB I-41 & WIS15	303	52	EBL	38	48	27	47	160	39	47	29	43	157	1	-1	2	-4	-3	0.1	0.2	0.3	0.5	0.2
Test	Target	Model		108	SB I-41 & WIS15	303	304	EBT	210	260	274	337	1080	206	259	274	333	1072	-3	-1	-1	-4	-8	0.2	0.0	0.0	0.2	0.2
Tier 1	RMSPE < 5%	Not Applicable		108	SB I-41 & WIS15	309	302	WBT	139	134	133	165	570	133	131	132	166	563	-6	-2	0	1	-7	0.5	0.2	0.0	0.1	0.3
Tier 2	RSNE < 3 for 75% of turns	99%		108	SB I-41 & WIS15	309	52	WVBR	76	84	104	86	350	82	81	100	86	349	6	-3	-4	1	-1	0.7	0.3	0.4	0.1	0.1
				108	SB I-41 & WIS15	51	304	SBL	44	62	40	44	190	41	50	48	42	180	-3	-12	7	-2	-10	0.5	1.5	1.2	0.3	0.7
				108	SB I-41 & WIS15	51	302	SBR	108	171	200	191	670	159	138	173	184	654	52	-33	-27	-7	-16	2.2	2.5	1.9	0.5	0.6
TEOps Validation - 60 minute period				106	SB I-41 & WIS96	323	325	EBT	97	144	192	177	610	97	142	189	179	607	-1	-1	-3	2	-3	0.1	0.1	0.2	0.1	0.1
Test	Target	Model		106	SB I-41 & WIS96	323	57	EBR	29	46	50	55	180	31	44	51	54	180	2	-1	1	-1	0	0.3	0.2	0.1	0.2	0.0
Tier 1	RMSPE < 5%	Not Applicable		106	SB I-41 & WIS96	332	57	WBL	60	100	100	91	350	64	94	101	88	347	4	-6	2	-3	-3	0.5	0.6	0.2	0.3	0.2
Tier 2	RSNE < 3 for 75% of turns	100%		106	SB I-41 & WIS96	332	334	WBT	118	123	143	226	610	122	122	143	204	590	5	-1	-1	-23	-20	0.4	0.1	0.0	1.5	0.8
				106	SB I-41 & WIS96	340	325	SBL	29	38	45	39	150	36	32	38	40	146	7	-6	-6	1	-4	1.3	0.9	1.0	0.2	0.3
				106	SB I-41 & WIS96	340	57	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
				106	SB I-41 & WIS96	340	334	SBR	43	72	67	89	270	59	55	65	73	253	16	-16	-1	-16	-17	2.5	1.9	0.2	1.7	1.0
				104	SB I-41 & WIS125	349	351	EBT	109	123	139	150	520	107	122	137	150	517	-1	-1	-1	0	-3	0.1	0.1	0.1	0.0	0.1
				104	SB I-41 & WIS125	349	60	EBR	40	48	38	34	160	41	49	37	33	159	1	0	-1	-1	-1	0.1	0.0	0.1	0.1	0.0
				104	SB I-41 & WIS125	361	60	WBL	60	73	70	88	290	62	73	67	87	289	2	1	-2	-1	-1	0.3	0.1	0.3	0.1	0.0
				104	SB I-41 & WIS125	361	363	WBT	96	139	170	235	640	104	133	167	223	626	7	-6	-3	-12	-14	0.8	0.5	0.2	0.8	0.5
				104	SB I-41 & WIS125	367	351	SBL	34	43	58	55	190	36	36	48	56	176	3	-7	-10	0	-14	0.5	1.1	1.3	0.1	1.0
				104	SB I-41 & WIS125	367	60	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
				104	SB I-41 & WIS125	367	363	SBR	60	57	99	93	310	68	57	78	88	291	8	0	-21	-5	-19	1.0	0.0	2.1	0.6	1.1
				101	SB I-41 & CTHBB	377	381	EBT	114	119	135	122	490	111	112	139	126	489	-3	-6	4	4	-1	0.3	0.6	0.4	0.4	0.1
				101	SB I-41 & CTHBB	377	66	EBR	41	46	56	57	200	42	47	55	56	200	1	1	-1	-1	0	0.1	0.2	0.2	0.1	0.0
				101	SB I-41 & CTHBB	382	66	WBL	35	39	44	32	150	36	40	42	32	150	1	1	-1	-1	0	0.2	0.1	0.2	0.1	0.0
				101	SB I-41 & CTHBB	382	379	WBT	91	127	126	137	480	92	122	128	136	478	2	-5	2	-1	-2	0.2	0.4	0.2	0.1	0.1
				101	SB I-41 & CTHBB	393	381	SBL	16	22	29	34	100	14	17	24	30	85	-2	-4	-5	-4	-15	0.4	0.9	1.0	0.7	1.5
				101	SB I-41 & CTHBB	393	66	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
				101	SB I-41 & CTHBB	393	379	SBR	71	101	91	108	370	77	81	95	103	355	6	-20	4	-5	-15	0.7	2.0	0.5	0.5	0.8
				109	NB I-41 & WIS15	304	316	EBL	98	128	118	146	490	98	122	124	140	484	0	-6	6	-7	-6	0.0	0.5	0.6	0.6	0.3
				109	NB I-41 & WIS15	304	311	EBT	156	193	196	234	780	154	179	201	225	759	-2	-14	5	-9	-21	0.1	1.0	0.3	0.6	0.7
				109	NB I-41 & WIS15	87	308	NBL	37	44	50	29	160	38	40	50	34	162	1	-4	1	5	2	0.2	0.6	0.1	0.8	0.2
				109	NB I-41 & WIS15	87	316	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
				109	NB I-41 & WIS15	87	311	NBR	63	96	119	132	410	65	87	114	128	394	3	-8	-5	-4	-16	0.3	0.8	0.5	0.4	0.8
				109	NB I-41 & WIS15	10338	308	WBT	178	174	187	221	760	179	171	185	217	751	1	-3	-2	-5	-9	0.0	0.2	0.1	0.3	0.3
				109	NB I-41 & WIS15	10338	315	WBR	30	27	52	31	140	27	25	50	32	135	-2	-2	-2	1	-5	0.4	0.5	0.3	0.3	0.4
				107	NB I-41 & WIS96	325	83	EBL	24	33	57	46	160	22	33	56	49	160	-2	0	-1	3	0	0.4	0.0			

I-41 Traffic and Engineering Study
Existing (2018) AM Peak Period Calibration
Intersection Turning Movements

TEOps Validation - 15 minute periods

Test	Target	Model
Tier 1	RMSPE < 5%	Not Applicable
Tier 2	RSNE < 3 for 75% of turns	99%

TEOps Validation - 60 minute period

Test	Target	Model
Tier 1	RMSPE < 5%	Not Applicable
Tier 2	RSNE < 3 for 75% of turns	100%

% Demand 100%	Intersections					Target					Vissim					Difference					RNSE				
	Int ID	Int Name	From Link	To Link	Mvmt	7:00-7:15AM	7:15-7:30AM	7:30-7:45AM	7:45-8:00AM	TOTAL	7:00-7:15AM2	7:15-7:30AM2	7:30-7:45AM2	7:45-8:00AM2	TOTAL2	7:00-7:15AM3	7:15-7:30AM3	7:30-7:45AM3	7:45-8:00AM3	TOTAL3	7:00-7:15AM5	7:15-7:30AM5	7:30-7:45AM5	7:45-8:00AM5	TOTAL5
	113	CTH N & SB I-41	222	24	NBL	75	63	99	83	320	77	64	97	81	320	2	2	-3	-1	0	0.2	0.2	0.3	0.1	0.0
	113	CTH N & SB I-41	222	216	NBT	39	61	43	67	210	50	61	46	64	220	11	0	3	-3	10	1.7	0.0	0.4	0.4	0.7
	113	CTH N & SB I-41	23	220	WBL	30	28	31	31	120	39	30	28	32	129	9	2	-3	1	9	1.6	0.4	0.5	0.2	0.8
	113	CTH N & SB I-41	23	24	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	113	CTH N & SB I-41	23	216	WBR	8	6	15	11	40	11	6	10	14	41	3	0	-5	3	1	1.2	0.0	1.3	0.8	0.1
	113	CTH N & SB I-41	217	220	SBT	39	41	34	36	150	40	40	35	34	150	1	0	1	-2	0	0.1	0.0	0.2	0.3	0.0
	113	CTH N & SB I-41	217	24	SBR	46	55	61	68	230	47	56	58	66	228	1	2	-3	-1	-2	0.1	0.2	0.3	0.1	0.1
	114	CTH N & NB I-41	224	221	EBL	29	21	14	26	90	39	23	17	22	102	10	3	3	-4	12	1.9	0.6	0.7	0.7	1.2
	114	CTH N & NB I-41	224	107	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	114	CTH N & NB I-41	224	227	EBR	41	28	49	53	170	37	33	41	54	165	-4	5	-8	2	-5	0.6	1.0	1.2	0.2	0.4
	114	CTH N & NB I-41	229	221	NBT	85	103	128	124	440	87	102	126	123	438	2	-1	-2	-1	-2	0.2	0.1	0.1	0.1	0.1
	114	CTH N & NB I-41	229	107	NBR	44	52	47	38	180	43	52	47	38	181	0	1	0	0	1	0.0	0.1	0.0	0.0	0.1
	114	CTH N & NB I-41	223	107	SBL	11	13	8	8	40	11	13	8	8	39	0	0	0	-1	-1	0.1	0.0	0.0	0.2	0.1
	114	CTH N & NB I-41	223	227	SBT	59	56	56	58	230	70	58	55	59	241	11	1	-1	0	11	1.4	0.2	0.1	0.0	0.8
	115	WIS55 & SB I-41	187	16	NBL	49	79	76	66	270	49	79	76	65	268	0	0	-1	-2	-2	0.1	0.0	0.1	0.2	0.1
	115	WIS55 & SB I-41	187	184	NBT	44	41	71	54	210	44	39	71	54	208	0	-2	-1	0	-2	0.0	0.3	0.1	0.0	0.2
	115	WIS55 & SB I-41	15	186	WBL	17	24	18	21	80	21	17	22	20	80	4	-7	4	-1	0	0.9	1.4	1.0	0.2	0.0
	115	WIS55 & SB I-41	15	16	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	115	WIS55 & SB I-41	15	184	WBR	35	2	2	1	40	9	16	5	7	37	-26	14	3	6	-3	4.4	2.8	1.9	2.0	0.5
	115	WIS55 & SB I-41	183	186	SBT	26	51	32	42	150	27	49	32	41	149	1	-2	1	0	-1	0.1	0.2	0.1	0.1	0.1
	115	WIS55 & SB I-41	183	16	SBR	20	21	30	20	90	20	20	28	19	87	0	0	-2	-1	-3	0.0	0.1	0.3	0.2	0.3
	116	WIS55 & NB I-41	111	187	EBL	7	8	7	8	30	9	6	7	7	29	1	-2	0	-1	-1	0.5	0.6	0.1	0.4	0.2
	116	WIS55 & NB I-41	111	112	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	116	WIS55 & NB I-41	111	188	EBR	61	70	55	74	260	63	66	63	69	262	3	-4	7	-5	2	0.3	0.4	1.0	0.5	0.1
	116	WIS55 & NB I-41	200	187	NBT	86	112	141	112	450	85	114	138	112	449	-1	1	-2	0	-1	0.1	0.1	0.2	0.0	0.1
	116	WIS55 & NB I-41	200	112	NBR	26	21	32	30	110	26	21	31	31	110	0	0	-2	1	0	0.0	0.0	0.3	0.2	0.0
	116	WIS55 & NB I-41	186	112	SBL	13	0	1	7	20	13	1	0	5	19	0	0	0	-2	-1	0.1	0.7	0.5	0.7	0.3
	116	WIS55 & NB I-41	186	188	SBT	31	74	49	56	210	35	65	53	57	210	4	-9	4	1	0	0.8	1.1	0.6	0.1	0.0
	117	CTH J & SB I-41	182	197	NBL	32	45	40	43	160	34	43	38	42	157	2	-2	-2	-2	-3	0.3	0.2	0.3	0.3	0.3
	117	CTH J & SB I-41	182	189	NBT	52	30	42	56	180	53	32	39	51	176	2	2	-3	-5	-4	0.3	0.4	0.5	0.7	0.3
	117	CTH J & SB I-41	196	191	WBL	32	37	23	18	110	29	33	32	21	115	-3	-4	9	2	5	0.5	0.6	1.8	0.5	0.4
	117	CTH J & SB I-41	196	197	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	117	CTH J & SB I-41	196	189	WBR	10	7	13	11	40	13	9	11	8	41	3	3	-2	-2	1	0.8	1.0	0.6	0.7	0.1
	117	CTH J & SB I-41	190	191	SBT	20	18	27	24	90	21	19	27	25	93	1	1	0	1	3	0.3	0.2	0.0	0.1	0.3
	117	CTH J & SB I-41	190	197	SBR	44	34	45	37	160	44	35	43	36	158	1	1	-2	-1	-2	0.1	0.2	0.3	0.1	0.1
	118	CTH J & NB I-41	199	182	EBL	25	22	26	37	110	26	23	24	31	105	1	1	-2	-6	-5	0.2	0.3	0.3	1.0	0.5
	118	CTH J & NB I-41	199	198	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	118	CTH J & NB I-41	199	192	EBR	29	24	28	18	100	22	27	27	27	104	-7	3	-2	9	4	1.3	0.7	0.3	2.2	0.4
	118	CTH J & NB I-41	174	182	NBT	58	53	56	63	230	60	52	53	62	227	1	-1	-3	-1	-3	0.2	0.1	0.4	0.1	0.2
	118	CTH J & NB I-41	174	198	NBR	72	77	85	67	300	74	77	81	66	299	3	0	-3	-1	-1	0.3	0.0	0.4	0.1	0.0
	118	CTH J & NB I-41	191	198	SBL	11	11	15	13	50	12	12	14	13	51	1	1	0	0	1	0.2	0.2	0.1	0.0	0.1
	118	CTH J & NB I-41	191	192	SBT	41	44	36	30	150	39	40	46	32	156	-2	-4	9	2	6	0.3	0.6	1.6	0.4	0.5
	119	CTH U & SB I-41	166	8	NBL	17	18	14	12	60	18	16	13	12	60	1	-1	-1	1	0	0.3	0.3	0.2	0.2	0.0
	119	CTH U & SB I-41	166	167	NBT	3	12	21	44	80	6	10	23	30	69	2	-2	2	-14	-11	1.2	0.6	0.4	2.1	1.2
	119	CTH U & SB I-41	7	159	WBL	18	24	24	15	80	15	21	23	19	78	-3	-3	-1	4	-2	0.6	0.5	0.2	1.1	0.2
	119	CTH U & SB I-41	7	8	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	119	CTH U & SB I-41	7	167	WBR	17	15	10	8	50	17	15	13	8	53	0	0	2	1	3	0.0	0.1	0.7	0.2	0.4

I-41 Traffic and Engineering Study
Existing (2018) AM Peak Period Calibration
Lane Utilization Comparison

I-41 NB															
Location		I-41 NB south of CTH BB			I-41 NB betw WIS 125 & WIS 96				I-41 NB betw CTH E & WIS 441			I-41 NB betw WIS 441 & CTH N		I-41 NB betw CTH U & CTH S	
	Lane	Left	Center	Right	Left	Center	Center	Right	Left	Center	Right	Left	Right	Left	Right
Field VISSIM (ATR)	7:00 AM	29%	29%	41%	25%	29%	39%	6%	38%	41%	21%	47%	53%	51%	49%
	7:15 AM	29%	29%	42%	24%	29%	38%	8%	38%	38%	24%	49%	51%	51%	49%
	7:30 AM	28%	28%	44%	24%	29%	38%	9%	37%	38%	25%	49%	51%	51%	49%
	7:45 AM	30%	30%	41%	24%	29%	38%	10%	37%	38%	25%	49%	51%	50%	50%
	7:00 AM	39%	36%	25%	12%	25%	35%	28%	25%	32%	43%	45%	55%	39%	61%
	7:15 AM	37%	35%	28%	14%	24%	33%	30%	26%	29%	45%	43%	57%	38%	62%
	7:30 AM	36%	36%	29%	13%	25%	32%	30%	27%	29%	44%	42%	58%	38%	62%
	7:45 AM	36%	33%	31%	14%	26%	31%	30%	31%	28%	41%	48%	52%	40%	60%
VISSIM	Avg	29%	29%	42%	24%	29%	38%	9%	38%	39%	24%	48%	52%	51%	49%
Field	Avg	37%	35%	28%	13%	25%	32%	29%	27%	29%	43%	45%	55%	39%	61%

I-41 SB															
Location		I-41 SB south of CTH BB			I-41 SB betw WIS 125 & WIS 96				I-41 SB betw CTH E & WIS 441			I-41 SB betw WIS 441 & CTH N		I-41 SB betw CTH U & CTH S	
	Lane	Left	Center	Right	Left	Center	Center	Right	Left	Center	Right	Left	Right	Left	Right
Field VISSIM (ATR)	7:00 AM	33%	35%	32%	27%	33%	36%	5%	31%	31%	38%	49%	51%	48%	52%
	7:15 AM	31%	35%	33%	27%	31%	37%	6%	30%	31%	39%	50%	50%	49%	51%
	7:30 AM	32%	35%	32%	25%	31%	36%	8%	32%	30%	39%	50%	50%	49%	51%
	7:45 AM	32%	35%	32%	24%	31%	37%	8%	32%	31%	38%	50%	50%	50%	50%
	7:00 AM	26%	39%	35%	7%	25%	33%	34%	27%	33%	40%	45%	55%	42%	58%
	7:15 AM	26%	37%	38%	8%	25%	31%	36%	26%	32%	42%	44%	56%	40%	60%
	7:30 AM	25%	36%	39%	9%	24%	31%	36%	28%	31%	41%	43%	57%	41%	59%
	7:45 AM	28%	36%	36%	12%	26%	29%	33%	29%	32%	39%	45%	55%	45%	55%
VISSIM	Avg	32%	35%	33%	26%	31%	36%	6%	31%	30%	38%	50%	50%	49%	51%
Field	Avg	26%	37%	37%	9%	25%	31%	35%	28%	32%	41%	44%	56%	42%	58%

TEOps Validation

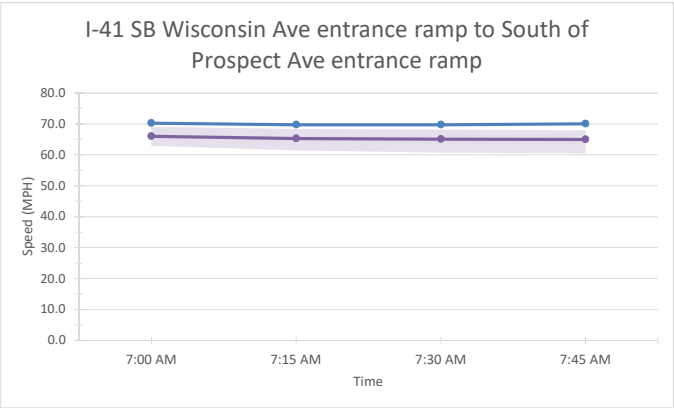
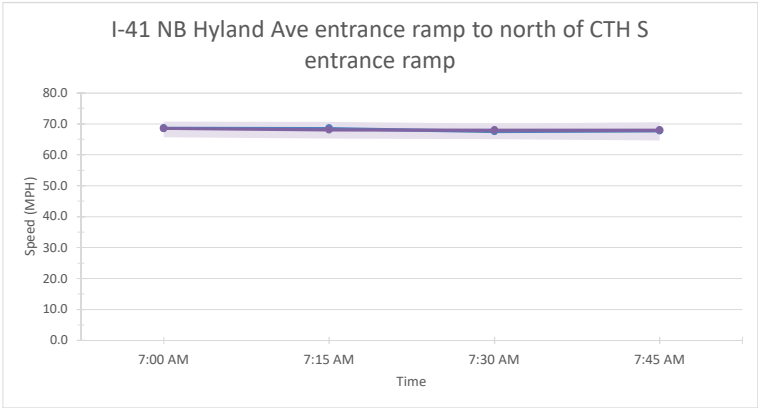
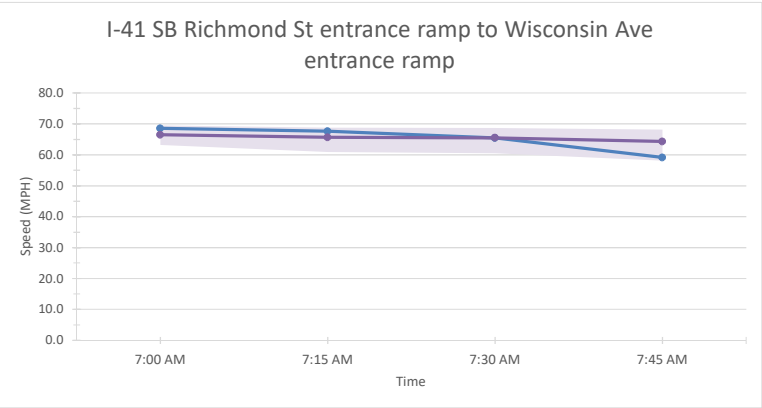
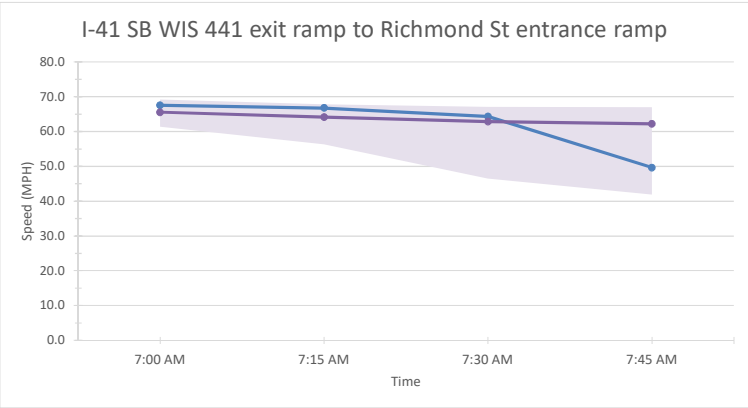
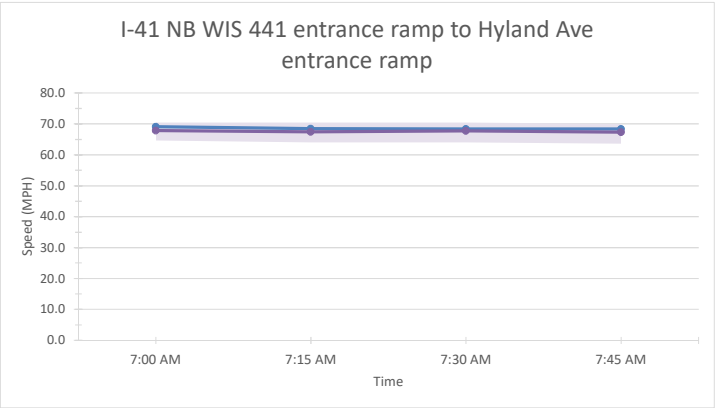
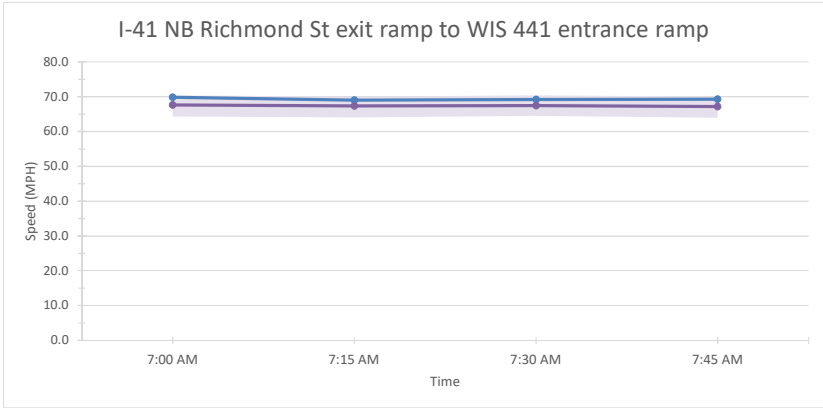
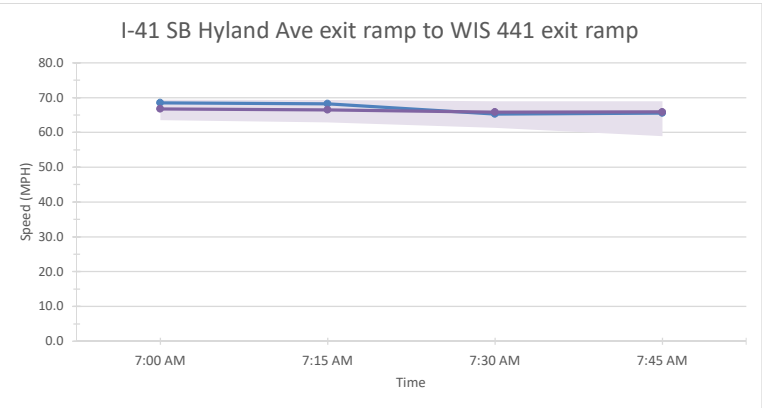
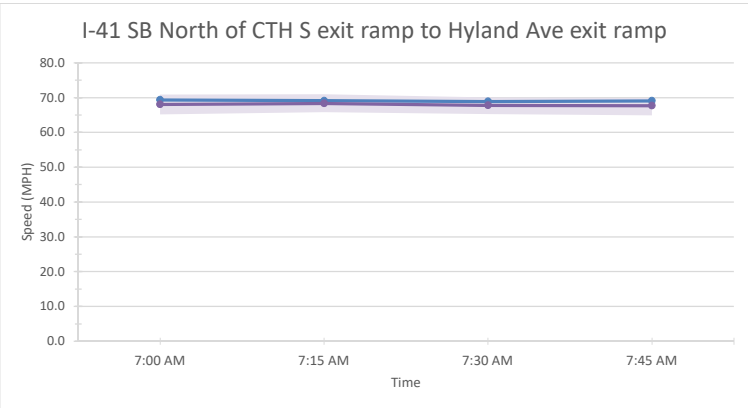
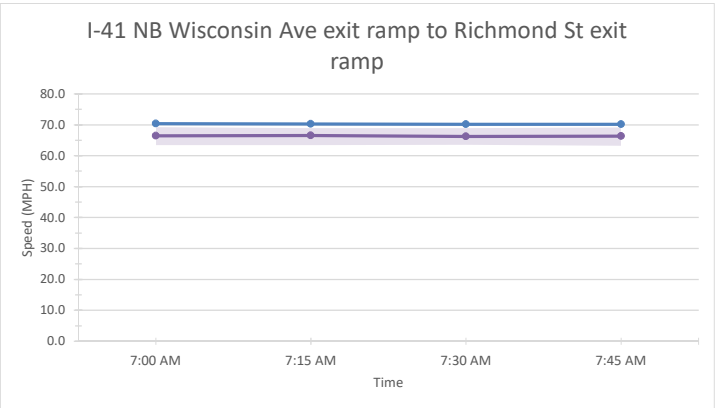
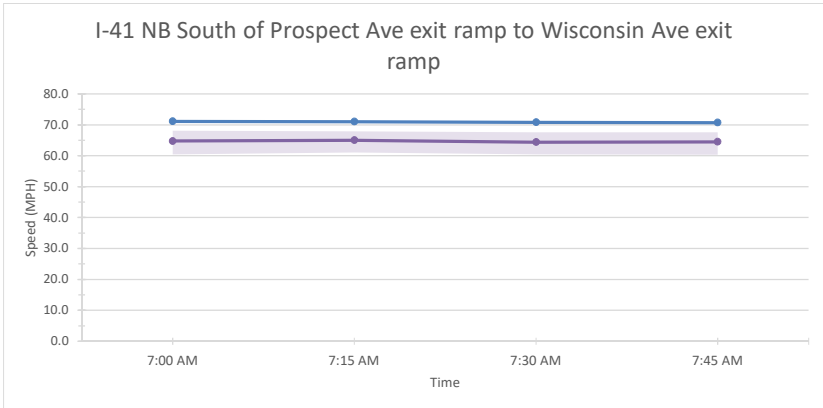
Test	Data	Target	Model
Tier 1	--	Not Applicable	--
Tier 2	ATR	RNSE < 3.0 for 85% of data points	46%

I-41 Traffic and Engineering Study
Existing (2018) AM Peak Period Calibration
Mainline Speed Comparison

Segment		I-41 NB						Segment		I-41 SB					
		I-41 NB South of Prospect Ave exit ramp to Wisconsin Ave exit ramp	I-41 NB Wisconsin Ave exit ramp to Richmond St exit ramp	I-41 NB Richmond St exit ramp to WIS 441 entrance ramp	I-41 NB WIS 441 entrance ramp to Hyland Ave entrance ramp	I-41 NB Hyland Ave entrance ramp to north of CTH S entrance ramp				I-41 SB North of CTH S exit ramp to Hyland Ave exit ramp	I-41 SB Hyland Ave exit ramp to WIS 441 exit ramp	I-41 SB WIS 441 exit ramp to Richmond St entrance ramp	I-41 SB Richmond St entrance ramp to Wisconsin Ave entrance ramp	I-41 SB Wisconsin Ave entrance ramp to South of Prospect Ave entrance ramp	
VISSIM	7:00 AM	71.1	70.4	69.8	69.1	68.6		VISSIM	7:00 AM	69.3	68.5	67.5	68.5	70.2	
	7:15 AM	71.0	70.3	69.0	68.5	68.6			7:15 AM	69.1	68.2	66.8	67.7	69.8	
	7:30 AM	70.8	70.1	69.2	68.4	67.6			7:30 AM	68.9	65.3	64.3	65.5	69.8	
	7:45 AM	70.7	70.2	69.3	68.3	67.8			7:45 AM	69.1	65.6	49.7	59.2	70.0	
Field (NPMRDS Average)	7:00 AM	64.7	66.4	67.7	67.9	68.5		Field (NPMRDS Average)	7:00 AM	68.0	66.8	65.6	66.5	66.0	
	7:15 AM	65.0	66.6	67.4	67.5	68.1			7:15 AM	68.3	66.5	64.2	65.7	65.3	
	7:30 AM	64.3	66.2	67.5	67.7	68.0			7:30 AM	67.8	65.8	62.9	65.5	65.1	
	7:45 AM	64.5	66.3	67.1	67.3	68.0			7:45 AM	67.7	65.9	62.2	64.3	65.0	
Field (NPMRDS 15th Percentile)	7:00 AM	60.5	63.4	64.3	64.7	65.8		Field (NPMRDS 15th Percentile)	7:00 AM	65.2	63.6	61.4	63.2	62.9	
	7:15 AM	61.1	63.4	64.1	64.0	65.3			7:15 AM	65.9	62.9	56.4	61.0	61.5	
	7:30 AM	60.4	63.5	64.5	64.0	65.1			7:30 AM	65.3	61.4	48.6	60.5	60.8	
	7:45 AM	60.3	63.2	64.0	63.6	64.7			7:45 AM	64.9	59.0	41.9	58.1	60.6	
Field (NPMRDS 85th Percentile)	7:00 AM	68.1	69.2	70.4	70.5	70.8		Field (NPMRDS 85th Percentile)	7:00 AM	70.9	69.4	69.2	69.5	69.1	
	7:15 AM	67.9	68.9	70.1	70.4	70.7			7:15 AM	70.9	69.3	67.8	68.8	68.4	
	7:30 AM	67.5	68.9	70.4	70.5	70.2			7:30 AM	70.1	69.0	67.1	68.6	68.2	
	7:45 AM	67.5	69.1	70.0	70.1	70.6			7:45 AM	69.9	68.9	67.0	68.1	68.0	

TEOps
Validation

Test	Data	Target	Model
Tier 1	NPMRDS	RMSPE < 10%	6%
Tier 2	NPMRDS	Spd ± 20% for 85% of pts	100%



I-41 Traffic and Engineering Study
Existing (2018) AM Peak Period Calibration
Travel Time Comparison

FULL CORRIDOR

Data	Time	I-41 NB
		Average Travel Time (min)
		South of CTH BB to North of CTH S
		Distance (mi) 26.59
VISSIM	7:00AM	23.1
NPMRDS	7:00AM	23.7

FULL CORRIDOR

Data	Time	I-41 SB
		Average Travel Time (min)
		North of CTH S to South of CTH BB
		Distance (mi) 26.58
VISSIM	7:00AM	23.8
NPMRDS	7:00AM	24.0

SEGMENTS

I-41 NB				
Average Travel Time (minutes)				
South of CTH BB to Wisc Ave Exit	Wisc Ave Exit to Richmond Exit	Richmond Exit to 441 Entrance	441 Entrance to Hyland Entrance	Hyland Entrance to North of CTH S
3.12	4.0	3.49	5.26	10.71
2.6	3.4	3.0	4.6	9.4
2.9	3.6	3.1	4.7	9.4

I-41 SB				
Average Travel Time (minutes)				
North of CTH S to Hyland Exit	Hyland Exit to 441 Exit	441 Exit to Richmond Entrance	Richmond Entrance to Wisc Ave Entrance	Wisc Ave Entrance to South of CTH BB
10.68	5.52	3.25	4.0	3.09
9.3	5.0	3.2	3.7	2.7
9.4	5.0	3.1	3.7	2.8

TEOpS Validation

Test	Data	Target	Model
Tier 1	NPMRDS	RMSPE < 10%	4%
Tier 2	NPMRDS	TT ± 15% for 85% of routes	100%

APPENDIX J2

Year 2018 Existing VISSIM PM Peak Hour

I-41 Traffic and Engineering Study
Existing (2018) PM Peak Hour Calibration
Freeway Mainline and Ramp Volumes

			% Demand	Segments					Target					Vissim					Difference					RMSPE					RMSE				
			100%	Forecast ID	Link ID	Description	Type	4:15-4:30PM	4:30-4:45PM	4:45-5:00PM	5:00-5:15PM	TOTAL	4:15-4:30PM2	4:30-4:45PM2	4:45-5:00PM2	5:00-5:15PM2	TOTAL2	4:15-4:30PM3	4:30-4:45PM3	4:45-5:00PM3	5:00-5:15PM3	TOTAL3	4:15-4:30PM6	4:30-4:45PM6	4:45-5:00PM6	5:00-5:15PM6	TOTAL6	4:15-4:30PM5	4:30-4:45PM5	4:45-5:00PM5	5:00-5:15PM5	TOTAL5	
TEOps Validation - 15 minute periods				10001	69	NB I-41 (Southern Project Limits)	MAINLINE	852	845	894	808	3400	850	847	891	807	3395	-2	2	-3	-1	-5	0%	0%	0%	0%	0%	0.1	0.1	0.1	0.0	0.1	
Test	Target	Model	9%	10002	72	NB I-41 Exit to CTH BB	RAMP	147	142	161	150	600	148	144	158	151	601	1	2	-3	1	1	0%	1%	2%	1%	0%	0.0	0.0	0.2	0.1	0.0	
				10003	71	NB I-41 betw CTH BB Exit to CTH BB Ent	MAINLINE	705	703	733	658	2800	688	709	730	656	2784	-17	7	-3	-2	-15	2%	1%	0%	0%	1%	0.7	0.2	0.1	0.1	0.3	
				10004	73	NB I-41 Ent from CTH BB	RAMP	159	169	158	154	640	157	168	158	153	636	-1	-1	0	-2	-4	1%	1%	0%	1%	1%	0.1	0.0	0.1	0.1	0.2	
Tier 1	RSNE < 3 for 85% of links	99%	99%	10005	75	NB I-41 betw CTH BB Ent to WIS 125 Exit	MAINLINE	864	872	892	813	3440	837	883	890	814	3424	-27	11	-2	1	-16	3%	1%	0%	0%	0%	0.9	0.4	0.1	0.0	0.3	
				10006	78	NB I-41 Exit to WIS 125	RAMP	252	257	236	234	980	210	225	206	236	981	-42	-33	-30	-34	-139	17%	15%	15%	14%	14%	2.6	2.0	2.0	2.2	8.2	
TEOps Validation - 60 minute period				10007	77	NB I-41 betw WIS 125 Exit to WIS 125 Ent	MAINLINE	612	614	655	579	2460	583	623	641	581	2428	-29	9	-14	3	-32	5%	1%	2%	0%	1%	1.2	0.4	0.6	0.1	0.6	
Test	Target	Model	9%	10008	79	NB I-41 Ent from WIS 125	RAMP	162	190	190	229	770	162	184	193	209	748	0	-5	3	-20	-22	0%	3%	2%	2%	3%	0.0	0.4	0.3	1.3	0.8	
				10009	80	NB I-41 betw WIS 125 Ent to WIS 96 Exit	MAINLINE	774	804	848	808	3230	736	796	824	784	3139	-38	-8	-21	-24	-91	5%	1%	2%	3%	3%	1.4	0.3	0.7	0.8	1.6	
Tier 1	RMSPE < 5%	3%	99%	10010	82	NB I-41 Exit to WIS96	RAMP	208	212	201	239	860	205	215	200	232	852	-3	3	-1	-8	-8	1%	1%	0%	3%	1%	0.2	0.2	0.1	0.5	0.3	
				10011	81	NB I-41 betw WIS 96 Exit to WIS 96 Ent	MAINLINE	566	591	644	568	2370	539	591	634	566	2331	-27	0	-10	-2	-39	5%	0%	2%	0%	2%	1.1	0.0	0.4	0.1	0.8	
				10012	83	NB I-41 Ent from WIS 96	RAMP	208	248	243	282	980	234	233	236	252	955	26	-15	-7	-30	-26	13%	6%	3%	17%	3%	1.8	0.9	0.5	1.8	0.8	
Tier 2	RSNE < 3 for 85% of links	99%	99%	10013	85	NB I-41 WIS 96 Ent to WIS 15 Exit	MAINLINE	773	839	887	851	3350	771	824	872	825	3291	-2	771	-15	-26	-59	0%	2%	2%	3%	2%	0.1	0.5	0.5	0.9	1.0	
				10014	87	NB I-41 Exit to WIS15	RAMP	239	259	238	255	990	227	250	237	238	952	-12	-9	-1	-17	-38	5%	4%	0%	7%	4%	0.8	0.6	0.1	1.0	1.2	
				10015	86	NB I-41 betw WIS 15 Exit to WIS 15 Ent	MAINLINE	535	590	650	596	2360	533	571	626	585	2315	-2	533	-23	-11	-46	0%	2%	4%	2%	2%	0.1	0.4	0.9	0.5	0.9	
Tier 1	RMSPE < 5%	9%	99%	10016	88	NB I-41 Ent from WIS15	RAMP	277	292	205	227	1000	263	234	242	213	952	-14	-58	37	-13	-48	5%	2%	2%	2%	5%	0.8	2.1	2.6	0.9	1.5	
				10017	90	NB I-41 betw WIS 15 Ent to WIS 47 Exit	MAINLINE	811	872	854	823	3360	793	809	859	827	3287	-18	-63	5	4	-73	2%	4%	1%	1%	2%	0.6	2.1	0.2	0.2	1.3	
				10018	93	NB I-41 Exit to WIS47	RAMP	145	143	138	184	610	141	137	137	169	610	-14	-6	-2	-19	-41	4%	4%	1%	3%	3%	0.2	0.3	0.2	1.4	1.7	
Tier 2	RSNE < 3 for 85% of links	99%	99%	10019	92	NB I-41 betw WIS 47 Exit to WIS 47 Ent	MAINLINE	667	729	716	639	2750	646	668	711	672	2698	-20	-61	-5	33	-53	3%	4%	1%	5%	2%	0.8	2.3	0.2	1.3	1.0	
				10020	94	NB I-41 Ent from WIS47	RAMP	175	176	179	210	740	173	173	175	209	731	-2	173	-3	-1	-9	1%	2%	2%	0%	1%	0.1	0.2	0.2	0.0	0.3	
				10021	96	NB I-41 betw WIS 47 Ent to Ballard Exit	MAINLINE	841	905	895	849	3490	822	837	889	883	3430	-19	-69	-6	34	-59	2%	6%	1%	4%	2%	0.7	2.3	0.2	1.2	1.0	
Tier 1	RMSPE < 5%	9%	99%	10022	98	NB I-41 Exit to Ballard	RAMP	101	114	142	133	490	129	101	129	142	490	28	-129	-12	-1	0	20%	130%	9%	1%	0%	2.8	1.4	1.0	0.1	0.0	
				10023	97	NB I-41 betw Ballard Exit to Ballard Ent	MAINLINE	740	791	753	716	3000	676	734	753	746	2909	-64	-57	0	30	-90	4%	7%	0%	4%	3%	2.3	2.0	0.0	1.1	1.7	
				10024	99	NB I-41 Ent from Ballard	RAMP	151	179	176	175	680	150	173	169	168	659	-1	-6	-7	-7	-21	1%	3%	4%	4%	3%	0.1	0.4	0.5	0.5	0.8	
Tier 1	RMSPE < 5%	9%	99%	10025	100	NB I-41 betw Ballard Ent to 441 Exit	MAINLINE	891	970	929	891	3680	824	906	926	912	3568	-67	-64	-2	22	-112	3%	7%	0%	2%	3%	2.2	2.1	0.1	0.7	1.8	
				10026	102	NB I-41 Exit to SB441	RAMP	273	301	252	296	1170	252	272	285	292	1102	-21	-28	-14	-5	-68	3%	3%	5%	2%	3%	1.2	1.6	0.8	0.3	2.0	
				10027	101	NB I-41 betw 441 Exit to 441 Ent	MAINLINE	618	669	629	594	2510	638	638	633	620	2438	-60	-41	4	26	-71	2%	4%	3%	4%	3%	2.4	1.6	0.2	1.1	1.4	
Tier 2	RSNE < 3 for 85% of links	99%	99%	10028	33	NB I-41 Ent from NB441	RAMP	156	139	168	177	640	153	138	166	175	632	-3	0	-2	-2	-7	2%	0%	1%	1%	1%	0.3	0.0	0.1	0.2	0.3	
				10029	104	NB I-41 betw 441 Ent to CTH N Exit	MAINLINE	774	807	797	771	3150	710	771	789	802	3071	-64	-37	-8	31	-78	4%	5%	1%	4%	2%	2.3	1.3	0.3	1.1	1.4	
				10030	106	NB I-41 Exit to CTH N	RAMP	159	193	201	177	730	136	175	186	168	665	-22	-18	-15	-10	-65	14%	6%	7%	5%	4%	1.8	1.3	1.0	0.7	2.4	
Tier 1	RMSPE < 5%	9%	99%	10031	105	NB I-41 betw CTH N Exit to CTH N Entrance	MAINLINE	615	614	591	596	2420	567	622	592	591	2327	-48	-22	-6	-17	-93	4%	4%	1%	3%	4%	1.9	0.9	0.2	0.7	1.9	
				10032	107	NB I-41 Ent from CTH N	RAMP	47	51	54	38	190	45	49	54	40	189	-2	-1	0	2	-1	4%	3%	0%	4%	1%	0.3	0.2	0.0	0.4	0.1	
				10033	109	NB I-41 betw CTH N Ent to WIS 55 Exit	MAINLINE	662	665	651	632	2610	616	640	650	621	2527	-46	-25	-1	-11	-83	7%	4%	0%	2%	3%	1.8	1.0	0.0	0.4	1.6	
Tier 1	RMSPE < 5%	9%	99%	10034	111	NB I-41 Exit to WIS55	RAMP	94	124	92	110	420	95	103	108	95	400	1	-22	16	-15	-20	1%	2%	0%	2%	3%	0.1	1.9	1.6	1.4	1.0	
				10035	110	NB I-41 betw WIS 55 Exit to WIS 55 Ent	MAINLINE	568	540	559	523	2190	515	527	543	523	2108	-53	-13	-16	1	-82	3%	2%	3%	0%	4%	2.2	0.6	0.7	0.3	0.8	
				10036	112	NB I-41 Ent from WIS55	RAMP	23	30	26	42	120	21	26	26	40	72	116	29	0	0	-2	-4	0%	3%	0%	0%	0%	0.3	0.0	0.0	0.3	0.3
Tier 2	RSNE < 3 for 85% of links	99%	99%	10037	114	NB I-41 betw WIS 55 Ent to CTH J Exit	MAINLINE	591	570	584	565	2310	534	556	575	564	2228																

I-41 Traffic and Engineering Study
Existing (2018) PM Peak Period Calibration
Intersection Turning Movements

TEOps Validation - 15 minute periods

Test	Target	Model
Tier 1	RMSPE < 5%	Not Applicable
Tier 2	RSNE < 3 for 75% of turns	99%

TEOps Validation - 60 minute period

Test	Target	Model
Tier 1	RMSPE < 5%	Not Applicable
Tier 2	RSNE < 3 for 75% of turns	97%

Demand 100%	Intersections						Target					Vissim					Difference					RNSE				
	Int ID	Int Name	Forecast ID	From Link	To Link	Mvmt	4:15-4:30PM	4:30-4:45PM	4:45-5:00PM	5:00-5:15PM	TOTAL	4:15-4:30PM2	4:30-4:45PM2	4:45-5:00PM2	5:00-5:15PM2	TOTAL2	4:15-4:30PM3	4:30-4:45PM3	4:45-5:00PM3	5:00-5:15PM3	TOTAL3	4:15-4:30PM5	4:30-4:45PM5	4:45-5:00PM5	5:00-5:15PM5	TOTAL5
	108	SB I-41 & WIS15	8EBL	303	52	EBL	62	49	29	40	180	65	43	36	39	183	3	-5	7	-1	3	0.4	0.8	1.3	0.2	0.2
	108	SB I-41 & WIS15	8EBT	303	304	EBT	370	446	346	318	1480	380	378	404	324	1487	10	-68	58	6	7	0.5	1.7	1.7	0.3	0.2
	108	SB I-41 & WIS15	8WBT	309	302	WBT	270	252	265	233	1020	252	246	221	223	942	-18	-6	-44	-10	-78	1.1	0.4	2.7	0.7	2.4
	108	SB I-41 & WIS15	8WBR	309	52	WBR	93	91	126	130	440	85	90	91	105	371	-8	-1	-35	-25	-69	0.8	0.2	1.7	2.2	1.7
	108	SB I-41 & WIS15	8SBL	51	304	SBL	26	42	40	52	160	34	31	39	45	150	8	-10	-1	-7	-10	1.6	1.6	0.1	1.0	0.8
	108	SB I-41 & WIS15	8SBR	51	302	SBR	177	187	187	189	740	177	180	181	190	729	0	-6	-6	2	-11	0.0	0.5	0.4	0.1	0.4
	106	SB I-41 & WIS96	6EBT	323	325	EBT	334	379	370	398	1480	362	373	369	372	1475	27	-6	-1	-26	-5	1.5	0.3	0.0	1.3	0.1
	106	SB I-41 & WIS96	6EBR	323	57	EBR	85	97	75	104	360	86	94	77	101	358	1	-3	2	-2	-2	0.1	0.3	0.2	0.2	0.1
	106	SB I-41 & WIS96	6WBL	332	57	WBL	131	154	152	123	560	122	137	140	126	524	-10	-17	-11	2	-36	0.8	1.4	0.9	0.2	1.5
	106	SB I-41 & WIS96	6WBT	332	334	WBT	351	421	380	399	1550	350	365	370	372	1456	-1	-56	-10	-27	-94	0.1	2.7	0.5	1.3	2.4
	106	SB I-41 & WIS96	6SBL	340	325	SBL	53	46	57	54	210	46	49	48	53	195	-7	4	-10	-1	-15	1.0	0.5	1.3	0.2	1.0
	106	SB I-41 & WIS96	6SBT	340	57	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	106	SB I-41 & WIS96	6SBR	340	334	SBR	122	101	123	114	460	98	105	110	108	422	-24	5	-13	-5	-38	2.2	0.5	1.2	0.5	1.8
	104	SB I-41 & WIS125	4EBT	349	351	EBT	296	346	306	354	1300	298	337	311	337	1283	2	-8	6	-17	-17	0.1	0.4	0.3	0.9	0.5
	104	SB I-41 & WIS125	4EBR	349	60	EBR	139	158	134	159	590	137	158	136	154	584	-2	0	2	-6	-6	0.2	0.0	0.2	0.4	0.2
	104	SB I-41 & WIS125	4WBL	361	60	WBL	111	118	100	111	440	113	117	104	111	445	2	-1	4	-1	5	0.2	0.1	0.4	0.1	0.2
	104	SB I-41 & WIS125	4WBT	361	363	WBT	346	351	361	342	1400	340	350	365	345	1400	-6	-1	4	3	0	0.3	0.0	0.2	0.1	0.0
	104	SB I-41 & WIS125	4SBL	367	351	SBL	35	37	59	39	170	44	36	43	50	173	9	-2	-15	11	3	1.5	0.3	2.0	1.8	0.2
	104	SB I-41 & WIS125	4SBT	367	60	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	104	SB I-41 & WIS125	4SBR	367	363	SBR	51	45	55	39	190	56	48	51	46	201	5	3	-5	7	11	0.8	0.4	0.6	1.2	0.8
	101	SB I-41 & CTHB8	1EBT	377	381	EBT	160	179	193	198	730	162	179	191	195	728	3	0	-2	-3	-2	0.2	0.0	0.1	0.2	0.1
	101	SB I-41 & CTHB8	1EBR	377	66	EBR	97	91	100	102	390	96	92	97	104	388	-1	1	-3	2	-2	0.1	0.1	0.3	0.2	0.1
	101	SB I-41 & CTHB8	1WBL	382	66	WBL	82	80	75	73	310	82	80	76	76	313	0	-1	1	3	3	0.0	0.1	0.2	0.3	0.2
	101	SB I-41 & CTHB8	1WBT	382	379	WBT	80	103	101	95	380	80	105	99	97	379	-1	1	-3	2	0	0.1	0.1	0.3	0.2	0.0
	101	SB I-41 & CTHB8	1SBL	393	381	SBL	41	36	26	27	130	34	37	30	26	127	-7	1	4	-1	-3	1.1	0.1	0.7	0.1	0.3
	101	SB I-41 & CTHB8	1SBT	393	66	SBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	101	SB I-41 & CTHB8	1SBR	393	379	SBR	49	64	73	64	250	58	57	66	64	245	9	-7	-7	0	-5	1.3	0.9	0.8	0.0	0.3
	109	NB I-41 & WIS15	9EBL	304	316	EBL	182	232	232	152	720	175	179	197	171	722	-7	-53	44	19	2	0.5	1.4	1.4	1.5	0.1
	109	NB I-41 & WIS15	9EBT	304	311	EBT	214	255	232	218	920	225	224	249	209	908	11	-31	17	-10	-12	0.8	1.9	1.1	0.6	0.4
	109	NB I-41 & WIS15	9NBL	87	308	NBL	67	72	41	61	240	58	76	46	55	235	-9	3	6	-5	-5	1.0	0.4	0.9	0.7	0.3
	109	NB I-41 & WIS15	9NBT	87	316	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	109	NB I-41 & WIS15	9NBR	87	311	NBR	172	187	197	194	750	170	179	195	187	730	-3	-8	-2	-7	-20	0.2	0.6	0.1	0.5	0.7
	109	NB I-41 & WIS15	9WBT	10338	308	WBT	296	271	351	302	1220	290	254	276	260	1080	-6	-18	-74	-42	-140	0.3	1.1	1.1	2.4	1.1
	109	NB I-41 & WIS15	9WBR	10338	315	WBR	94	60	52	75	280	85	63	43	50	240	-10	3	-9	-25	-40	1.0	0.4	1.2	2.9	2.4
	107	NB I-41 & WIS96	7EBL	325	83	EBL	148	170	165	197	680	169	164	166	179	678	21	-6	1	-18	-2	1.7	0.5	0.1	1.3	0.1
	107	NB I-41 & WIS96	7EBT	325	337	EBT	238	255	262	255	1010	243	256	250	240	989	4	1	-11	-15	-21	0.3	0.1	0.7	0.9	0.7
	107	NB I-41 & WIS96	7NBL	343	332	NBL	94	97	84	105	380	90	95	92	92	369	-4	-2	8	-13	-11	0.4	0.2	0.9	1.3	0.6
	107	NB I-41 & WIS96	7NBT	343	83	NBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	107	NB I-41 & WIS96	7NBR	343	337	NBR	115	115	117	134	480	116	114	116	126	472	2	-1	-1	-7	-8	0.1	0.1	0.1	0.6	0.4
	107	NB I-41 & WIS96	7WBT	331	332	WBT	388	477	448	417	1730	382	406	418	406	1611	-7	-71	-30	-11	-119	0.3	1.7	1.4	0.5	2.9
	107	NB I-41 & WIS96	7WBR	331	83	WBR	59	78	78	86	300	63	71	70	73	277	4	-7	-8	-12	-24	0.5	0.8	0.9	1.3	1.3
	105	NB I-41 & WIS125	5EBL	351	79	EBL	97	127</																		

I-41 Traffic and Engineering Study
Existing (2018) PM Peak Period Calibration
Intersection Turning Movements

TEOps Validation - 15 minute periods

Test	Target	Model
Tier 1	RMSPE < 5%	Not Applicable
Tier 2	RSNE < 3 for 75% of turns	99%

TEOps Validation - 60 minute period

Test	Target	Model
Tier 1	RMSPE < 5%	Not Applicable
Tier 2	RSNE < 3 for 75% of turns	97%

Demand 100%	Intersections						Target					Vissim					Difference					RNSE				
	Int ID	Int Name	Forecast ID	From Link	To Link	Mvmt	4:15-4:30PM	4:30-4:45PM	4:45-5:00PM	5:00-5:15PM	TOTAL	4:15-4:30PM2	4:30-4:45PM2	4:45-5:00PM2	5:00-5:15PM2	TOTAL2	4:15-4:30PM3	4:30-4:45PM3	4:45-5:00PM3	5:00-5:15PM3	TOTAL3	4:15-4:30PM5	4:30-4:45PM5	4:45-5:00PM5	5:00-5:15PM5	TOTAL5
	113	CTH N & SB I-41	13NBL	222	24	NBL	49	100	83	98	330	50	95	84	100	328	1	-5	1	2	-1	0.1	0.5	0.1	0.2	0.1
	113	CTH N & SB I-41	13NBT	222	216	NBT	108	109	132	131	480	94	97	109	111	410	-15	-12	-23	-19	-69	1.4	1.1	2.0	1.7	2.2
	113	CTH N & SB I-41	13WBL	23	220	WBL	67	78	93	83	320	49	76	79	94	299	-17	-1	-14	11	-22	2.1	0.2	1.5	1.2	1.2
	113	CTH N & SB I-41	13WBT	23	24	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	113	CTH N & SB I-41	13WBR	23	216	WBR	14	20	19	17	70	12	17	18	18	66	-3	-2	0	2	-4	0.7	0.5	0.1	0.4	0.5
	113	CTH N & SB I-41	13SBT	217	220	SBT	54	67	57	62	240	54	66	58	61	239	0	-1	1	-2	-1	0.1	0.1	0.1	0.2	0.1
	113	CTH N & SB I-41	13SBR	217	24	SBR	31	56	43	40	170	31	55	43	41	170	0	-2	0	1	0	0.1	0.2	0.1	0.1	0.0
	114	CTH N & NB I-41	14EBL	224	221	EBL	75	88	110	108	380	60	78	86	86	310	-14	-10	-24	-23	-70	1.7	1.1	2.2	2.2	2.2
	114	CTH N & NB I-41	14EBT	224	107	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	114	CTH N & NB I-41	14EBR	224	227	EBR	84	106	91	69	350	75	97	91	74	337	-9	-8	0	4	-13	0.9	0.8	0.0	0.5	0.7
	114	CTH N & NB I-41	14NBT	229	221	NBT	83	121	106	120	430	83	117	106	126	432	1	-4	0	5	3	0.1	0.3	0.0	0.5	0.1
	114	CTH N & NB I-41	14NBR	229	107	NBR	32	30	35	33	130	31	29	35	34	129	-1	-1	0	1	0	0.1	0.1	0.0	0.2	0.1
	114	CTH N & NB I-41	14SBL	223	107	SBL	15	21	19	5	60	14	20	20	7	60	-1	-1	0	2	0	0.2	0.2	0.1	0.7	0.1
	114	CTH N & NB I-41	14SBT	223	227	SBT	106	124	131	140	500	88	121	118	149	476	-18	-3	-13	9	-24	1.7	0.3	1.1	0.7	1.1
	115	WIS55 & SB I-41	15NBL	187	16	NBL	85	111	85	110	390	85	108	86	108	387	0	-2	1	-2	-4	0.0	0.2	0.2	0.2	0.2
	115	WIS55 & SB I-41	15NBT	187	184	NBT	38	62	35	55	190	43	50	45	50	187	4	-12	9	-5	-3	0.7	1.5	1.6	0.7	0.2
	115	WIS55 & SB I-41	15WBL	15	186	WBL	43	35	48	34	160	36	41	39	44	159	-7	6	-9	10	0	1.1	1.0	1.3	1.7	0.0
	115	WIS55 & SB I-41	15WBT	15	16	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	115	WIS55 & SB I-41	15WBR	15	184	WBR	7	6	9	9	30	9	6	7	8	30	2	0	-2	0	0	0.7	0.1	0.7	0.1	0.0
	115	WIS55 & SB I-41	15SBT	183	186	SBT	33	30	36	41	140	31	31	35	40	137	-1	1	-1	-2	-3	0.2	0.1	0.1	0.2	0.2
	115	WIS55 & SB I-41	15SBR	183	16	SBR	6	14	10	19	50	7	14	10	19	51	0	0	0	0	1	0.2	0.0	0.1	0.0	0.1
	116	WIS55 & NB I-41	16EBL	111	187	EBL	6	23	11	20	60	10	12	19	15	56	4	-11	7	-5	-4	1.7	2.2	2.2	1.1	0.5
	116	WIS55 & NB I-41	16EBT	111	112	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	116	WIS55 & NB I-41	16EBR	111	188	EBR	88	101	81	90	360	86	90	93	82	352	-1	-11	12	-7	-7	0.1	1.1	1.4	0.8	0.4
	116	WIS55 & NB I-41	16NBT	200	187	NBT	117	149	109	145	520	116	148	110	144	518	-1	-2	2	-2	-2	0.1	0.1	0.1	0.1	0.1
	116	WIS55 & NB I-41	16NBR	200	112	NBR	17	27	22	34	100	17	27	23	33	99	0	0	0	-1	-1	0.1	0.0	0.0	0.2	0.1
	116	WIS55 & NB I-41	16SBL	186	112	SBL	6	3	3	8	20	5	3	3	7	18	-1	0	0	0	-1	0.3	0.1	0.1	0.3	0.4
	116	WIS55 & NB I-41	16SBT	186	188	SBT	70	63	81	67	280	62	69	71	75	278	-8	6	-10	9	-2	0.9	0.8	1.1	1.1	0.1
	117	CTH J & SB I-41	17NBL	182	197	NBL	24	26	21	29	100	26	26	20	29	101	2	0	-1	0	1	0.4	0.1	0.3	0.0	0.1
	117	CTH J & SB I-41	17NBT	182	189	NBT	50	34	52	34	170	40	43	40	45	169	-9	9	-11	11	-1	1.3	1.5	1.6	1.8	0.1
	117	CTH J & SB I-41	17WBL	196	191	WBL	77	76	78	50	280	57	77	82	66	283	-19	1	4	17	3	2.2	0.1	0.5	2.4	0.2
	117	CTH J & SB I-41	17WBT	196	197	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	117	CTH J & SB I-41	17WBR	196	189	WBR	17	25	15	13	70	12	21	21	17	71	-5	-4	6	4	1	1.2	0.8	1.6	1.0	0.1
	117	CTH J & SB I-41	17SBT	190	191	SBT	36	56	26	42	160	36	56	26	42	160	0	-1	0	1	0	0.0	0.1	0.0	0.1	0.0
	117	CTH J & SB I-41	17SBR	190	197	SBR	30	43	35	52	160	31	43	35	51	160	1	0	0	0	1	0.2	0.0	0.0	0.0	0.0
	118	CTH J & NB I-41	18EBL	199	182	EBL	33	16	33	18	100	24	25	22	27	99	-9	9	-11	9	-2	1.5	2.1	1.9	2.2	0.1
	118	CTH J & NB I-41	18EBT	199	198	EBT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
	118	CTH J & NB I-41	18EBR	199	192	EBR	61	62	76	61	260	58	57	68	71	254	-3	-5	-8	10	-6	0.4	0.7	1.0	1.3	0.4
	118	CTH J & NB I-41	18NBT	174	182	NBT	41	44	40	45	170	41	45	38	45	170	1	1	-1	0	0	0.1	0.2	0.2	0.0	0.0
	118	CTH J & NB I-41	18NBR	174	198	NBR	51	48	41	50	190	53	47	42	50	191	2	-1	1	-1	1	0.3	0.2	0.2	0.1	0.1
118	CTH J & NB I-41	18SBL	191	198	SBL	11	27	7	15	60	12	27	7	15	61	1	0	0	0	1	0.3	0.1	0.1	0.1	0.1	
118	CTH J & NB I-41	18SBT	191	192	SBT	102	105	97	76	380	81	106	101	93	382	-20	1	4	17	2	2.0	0.1	0.4	2.0	0.1	
119	CTH U & SB I-41	19NBL	166	8	NBL	18	19	15	19	70	19	18	15	19	71	1	0	0	0	1	0.2	0.1	0.1	0.0	0.1	
119	CTH U & SB I-41	19NBT	166	167	NBT	35	48	47	41	170	41	36	55	38	170	6	-12	8	-3	-1	1.0	1.7	1.1	0.4	0.0	
119	CTH U & SB I-41	19WBL	7	159	WBL	27	45	48	50	170	23	39	47	46	155	-4	-6	-1	-4	-15	0.8	1.0	0.1	0.6	1.2	
119	CTH U & SB I-41	19WBT	7	8	WBT	0	0	0	0	0	0	0	0	0	0	0	0	0								

I-41 Traffic and Engineering Study
Existing (2018) PM Peak Period Calibration
Lane Utilization Comparison

I-41 NB															
Location		I-41 NB south of CTH BB			I-41 NB betw WIS 125 & WIS 96				I-41 NB betw CTH E & WIS 441			I-41 NB betw WIS 441 & CTH N		I-41 NB betw CTH U & CTH S	
	Lane	Left	Center	Right	Left	Center	Center	Right	Left	Center	Right	Left	Right	Left	Right
VISSIM	4:15 PM	29%	30%	41%	21%	25%	41%	12%	35%	35%	30%	47%	53%	50%	50%
	4:30 PM	29%	30%	40%	22%	26%	39%	13%	35%	36%	29%	46%	54%	50%	50%
	4:45 PM	30%	30%	40%	22%	27%	39%	13%	35%	35%	30%	46%	54%	50%	50%
	5:00 PM	29%	29%	42%	20%	25%	40%	15%	35%	35%	30%	46%	54%	50%	50%
Field (ATR)	4:15 PM	34%	35%	31%	13%	28%	31%	29%	32%	25%	42%	47%	53%	43%	57%
	4:30 PM	35%	35%	30%	14%	28%	31%	28%	35%	25%	40%	47%	53%	43%	57%
	4:45 PM	35%	34%	31%	15%	27%	31%	28%	33%	26%	41%	48%	52%	44%	56%
	5:00 PM	36%	35%	29%	13%	28%	31%	28%	35%	26%	39%	48%	52%	45%	55%
VISSIM	Avg	29%	30%	41%	21%	26%	40%	13%	35%	35%	30%	46%	54%	50%	50%
Field	Avg	35%	35%	30%	14%	28%	31%	28%	34%	25%	41%	47%	53%	44%	56%

I-41 SB															
Location		I-41 SB south of CTH BB			I-41 SB betw WIS 125 & WIS 96				I-41 SB betw CTH E & WIS 441			I-41 SB betw WIS 441 & CTH N		I-41 SB betw CTH U & CTH S	
	Lane	Left	Center	Right	Left	Center	Center	Right	Left	Center	Right	Left	Right	Left	Right
VISSIM	4:15 PM	32%	36%	32%	23%	28%	42%	8%	32%	46%	22%	50%	48%	48%	52%
	4:30 PM	32%	36%	32%	22%	27%	43%	8%	33%	43%	23%	50%	50%	48%	52%
	4:45 PM	32%	35%	33%	23%	28%	42%	8%	32%	47%	21%	50%	50%	49%	51%
	5:00 PM	32%	36%	32%	23%	27%	42%	8%	33%	44%	23%	50%	50%	49%	51%
Field (ATR)	4:15 PM	36%	33%	31%	10%	31%	32%	28%	24%	34%	42%	47%	53%	40%	60%
	4:30 PM	36%	33%	31%	9%	31%	31%	29%	24%	35%	42%	47%	53%	41%	59%
	4:45 PM	35%	33%	32%	10%	29%	32%	29%	24%	34%	42%	47%	53%	40%	60%
	5:00 PM	37%	33%	30%	9%	31%	32%	29%	24%	34%	42%	47%	53%	43%	57%
VISSIM	Avg	32%	36%	32%	23%	28%	42%	8%	33%	45%	22%	50%	50%	49%	51%
Field	Avg	36%	33%	31%	9%	31%	32%	29%	24%	34%	42%	47%	53%	41%	59%

TEOpS Validation

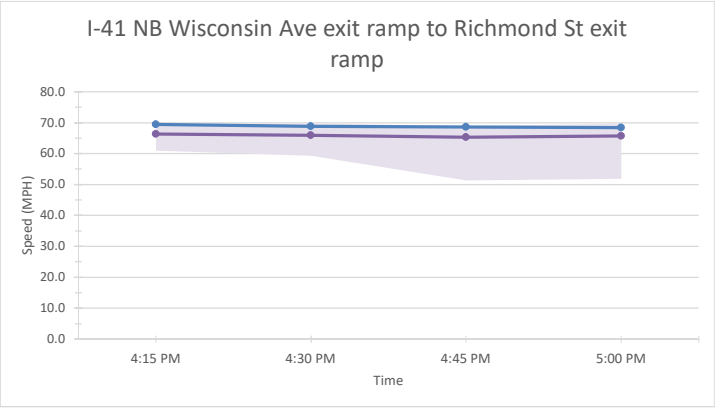
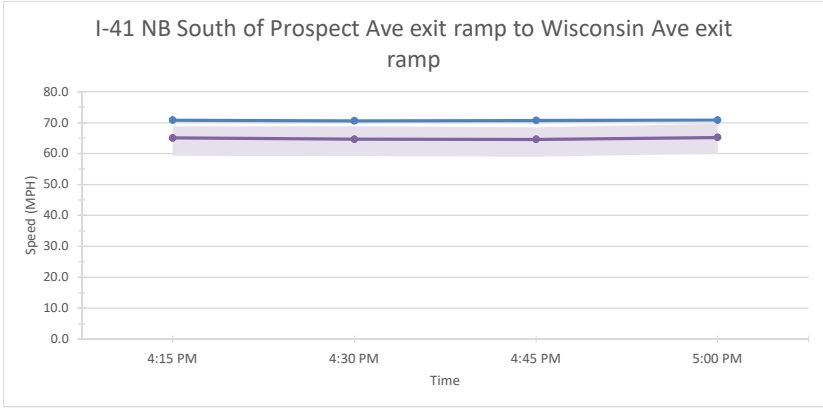
Test	Data	Target	Model
Tier 1	--	Not Applicable	--
Tier 2	ATR	RNSE < 3.0 for 85% of data points	44%

I-41 Traffic and Engineering Study
Existing (2018) PM Peak Period Calibration
Mainline Speed Comparison

		I-41 NB								I-41 SB					
Segment		I-41 NB South of Prospect Ave exit ramp to Wisconsin Ave exit ramp	I-41 NB Wisconsin Ave exit ramp to Richmond St exit ramp	I-41 NB Richmond St exit ramp to WIS 441 entrance ramp	I-41 NB WIS 441 entrance ramp to Hyland Ave entrance ramp	I-41 NB Hyland Ave entrance ramp to north of CTH S entrance ramp		Segment	I-41 SB North of CTH S exit ramp to Hyland Ave exit ramp	I-41 SB Hyland Ave exit ramp to WIS 441 exit ramp	I-41 SB WIS 441 exit ramp to Richmond St entrance ramp	I-41 SB Richmond St entrance ramp to Wisconsin Ave entrance ramp	I-41 SB Wisconsin Ave entrance ramp to South of Prospect Ave entrance ramp		
VISSIM	4:15 PM	70.8	69.4	68.5	69.5	69.8		4:15 PM	69.4	69.2	68.9	69.2	70.1		
	4:30 PM	70.6	68.9	67.6	69.2	69.6		4:30 PM	69.2	68.7	68.7	69.4	70.1		
	4:45 PM	70.7	68.6	67.4	68.9	69.5		4:45 PM	69.1	69.0	68.4	69.4	69.9		
	5:00 PM	70.8	68.4	66.8	65.4	69.5		5:00 PM	69.2	68.4	68.3	69.5	70.1		
Field (NPMRDS Average)	4:15 PM	65.0	66.3	67.2	67.8	68.3		4:15 PM	67.7	66.8	65.6	66.0	65.7		
	4:30 PM	64.6	66.0	66.7	67.3	68.4		4:30 PM	67.4	66.4	65.3	65.7	65.3		
	4:45 PM	64.6	65.3	66.2	67.1	67.8		4:45 PM	67.3	66.0	64.9	66.0	65.2		
	5:00 PM	65.2	65.7	66.7	67.2	67.9		5:00 PM	67.7	66.0	64.3	65.6	65.1		
Field (NPMRDS 15th Percentile)	4:15 PM	59.3	60.9	61.8	63.8	64.7		4:15 PM	64.8	63.5	61.0	62.0	61.9		
	4:30 PM	59.2	59.3	60.7	63.1	65.0		4:30 PM	64.3	62.6	60.1	61.9	61.8		
	4:45 PM	59.0	51.3	57.3	61.7	64.4		4:45 PM	63.2	62.6	58.9	61.9	61.4		
	5:00 PM	60.1	51.9	60.5	62.3	63.9		5:00 PM	64.4	61.6	58.4	61.5	61.1		
Field (NPMRDS 85th Percentile)	4:15 PM	68.8	69.6	70.8	71.0	71.4		4:15 PM	70.4	69.6	69.1	69.0	68.9		
	4:30 PM	68.8	69.8	70.3	70.8	71.6		4:30 PM	70.3	69.7	69.0	69.5	68.6		
	4:45 PM	68.5	68.9	70.7	70.7	71.3		4:45 PM	69.9	69.3	68.9	69.5	68.7		
	5:00 PM	69.7	69.7	70.8	70.9	71.4		5:00 PM	70.6	69.4	68.5	68.9	68.8		

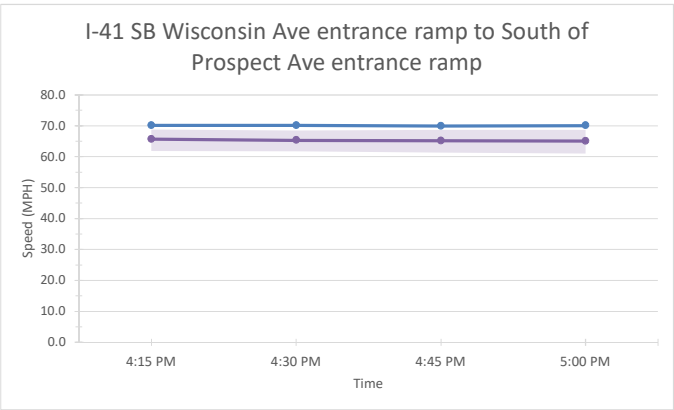
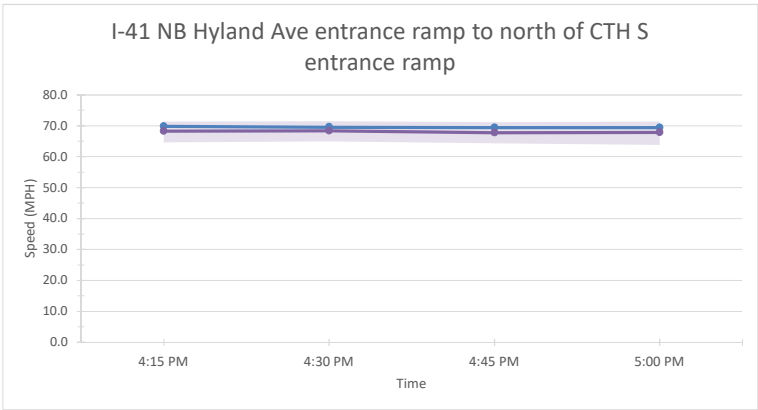
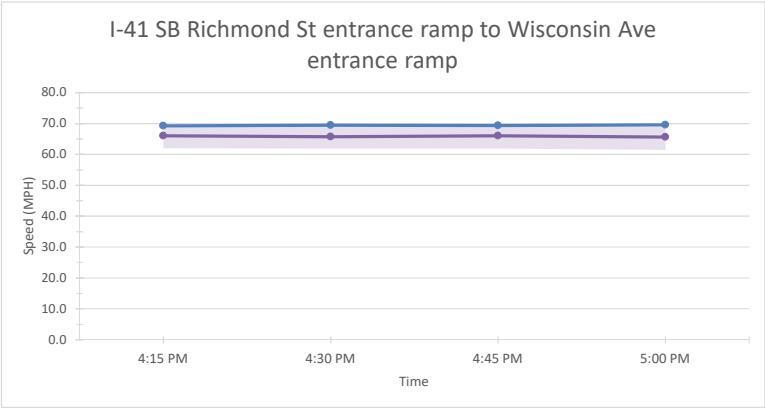
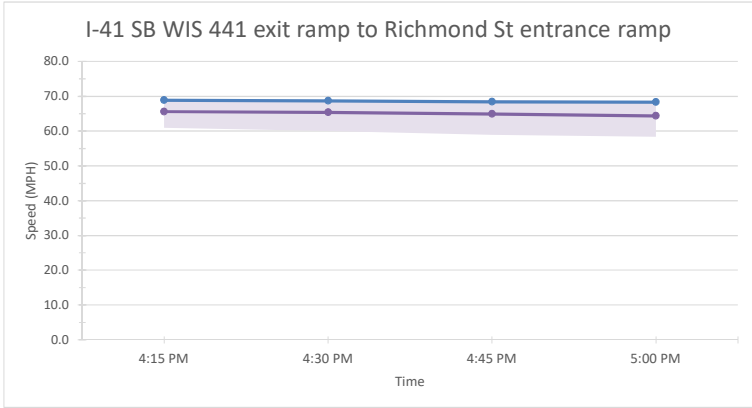
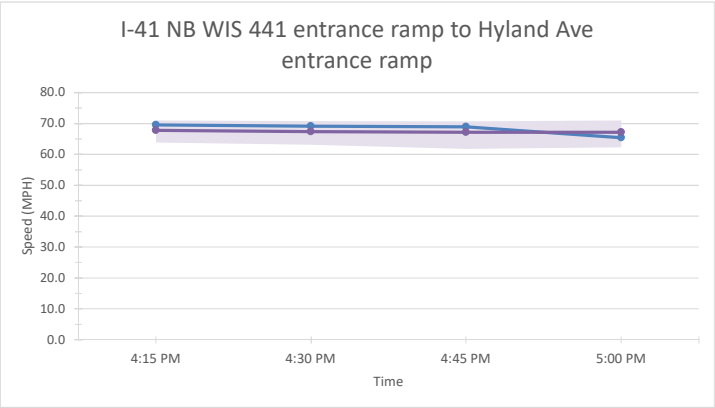
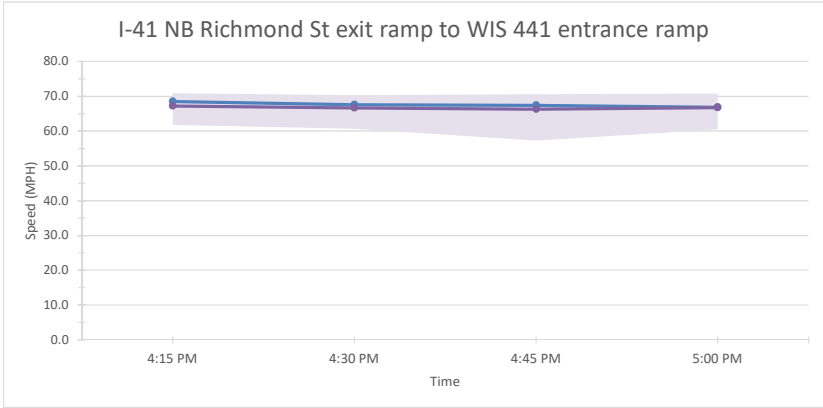
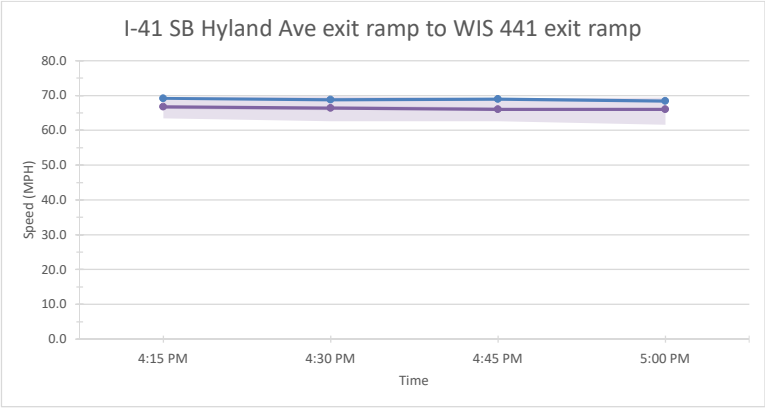
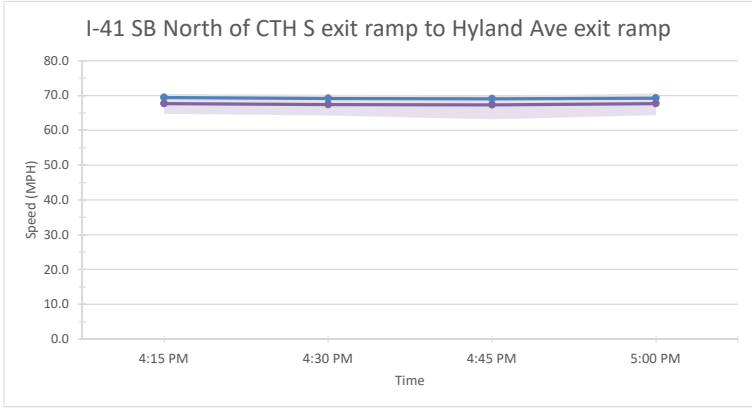
TEOps
Validation

Test	Data	Target	Model
Tier 1	NPMRDS	RMSPE < 10%	5%
Tier 2	NPMRDS	Spd ± 20% for 85% of pts	100%



TEOps
Validation

Test	Data	Target	Model
Tier 1	NPMRDS	RMSPE < 10%	5%
Tier 2	NPMRDS	Spd ± 20% for 85% of pts	100%



I-41 Traffic and Engineering Study
Existing (2018) PM Peak Period Calibration
Travel Time Comparison

FULL CORRIDOR

Data	Time	I-41 NB
		Average Travel Time (min)
		South of CTH BB to North of CTH S
Distance (mi)		26.59
VISSIM	4:15PM	23.1
NPMRDS	4:15PM	23.8

SEGMENTS

I-41 NB				
Average Travel Time (minutes)				
South of CTH BB to Wisc Ave Exit	Wisc Ave Exit to Richmond Exit	Richmond Exit to 441 Entrance	441 Entrance to Hyland Entrance	Hyland Entrance to North of CTH S
3.12	4.0	3.49	5.26	10.71
2.7	3.5	3.1	4.6	9.3
2.9	3.7	3.1	4.7	9.4

FULL CORRIDOR

Data	Time	I-41 SB
		Average Travel Time (min)
		North of CTH S to South of CTH BB
Distance (mi)		26.58
VISSIM	4:15PM	23.1
NPMRDS	4:15PM	24.0

I-41 SB				
Average Travel Time (minutes)				
North of CTH S to Hyland Exit	Hyland Exit to 441 Exit	441 Exit to Richmond Entrance	Richmond Entrance to Wisc Ave Entrance	Wisc Ave Entrance to South of CTH BB
10.68	5.52	3.25	4.0	3.09
9.3	4.8	2.8	3.5	2.7
9.5	5.0	3.0	3.7	2.8

TEOpS Validation

Test	Data	Target	Model
Tier 1	NPMRDS	RMSPE < 10%	5%
Tier 2	NPMRDS	TT ± 15% for 85% of routes	100%