

Appendix F. Ridership Model Results



Traffic Circulation Analysis - Vehicular Trips Added to Network (AM Peak)

Minneapolis, AM Peak

Train Times	Direction	Train Number
7:30 AM	SB	7003
8:40 AM	NB	7002
9:55 AM	SB	7007

Target Field, SB, 7:30	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	298	65	202	13	18	4	5	224	440
Ons:	HB	Access	0	0	0	0	0	0	0	0	0
SUM:				65	202	13	18	4	5	224	440

Target Field, NB, 8:40	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	0	0	0	0	0	0	0	0	0
Ons:	HB	Access	225	37	99	6	82	19	22	146	251
SUM:			225	37	99	6	82	19	22	146	251

Target Field, SB, 9:55	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	298	65	202	13	18	4	5	224	440
Ons:	HB	Access	0	0	0	0	0	0	0	0	0
SUM:			298	65	202	13	18	4	5	224	440

Coon Rapids, AM Peak

Train Times	Direction	Train Number
7:11 AM	SB	7003
8:59 AM	NB	7002
9:36 AM	SB	7007

<i>Coon Rapids, SB, 7:11</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	38	4	30	1	3	1	1	32	63
Ons:	HB	Access	46	7	18	1	20	5	5	29	49
SUM:			84	10	48	2	23	5	6	62	112

<i>Coon Rapids, NB, 8:59</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	38	4	30	1	3	1	1	32	63
Ons:	HB	Access	46	7	18	1	20	5	5	29	49
SUM:			84	10	48	2	23	5	6	62	112

<i>Coon Rapids, SB, 9:36</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	38	4	30	1	3	1	1	32	63
Ons:	HB	Access	46	7	18	1	20	5	5	29	49
SUM:			84	10	48	2	23	5	6	62	112

Cambridge, AM Peak

Train Times	Direction	Train Number
6:44 AM	SB	7003
9:09 AM	SB	7007
9:26 AM	NB	7002

<i>Cambridge, SB, 6:44</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	41	0	41	0	0	0	0	41	82
Ons:	HB	Access	157	0	0	0	157	36	41	77	77
SUM:			198	0	41	0	157	36	41	118	159

<i>Cambridge, SB, 9:09</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	41	0	41	0	0	0	0	41	82
Ons:	HB	Access	157	0	0	0	157	36	41	77	77
SUM:			198	0	41	0	157	36	41	118	159

<i>Cambridge, NB, 9:26</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	41	0	41	0	0	0	0	41	82
Ons:	HB	Access	157	0	0	0	157	36	41	77	77
SUM:			198	0	41	0	157	36	41	118	159

Hinckley, AM Peak

Train Times	Direction	Train Number
6:14 AM	SB	7003
8:34 AM	SB	7007
9:56 AM	NB	7002

<i>Hinckley, SB, 6:14</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	44	8	35	0	0	0	0	35	70
Ons:	HB	Access	95	18	0	0	77	18	20	38	38
SUM:			138	26	35	0	77	18	20	73	108

<i>Hinckley, SB, 8:34</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	44	8	35	0	0	0	0	35	70
Ons:	HB	Access	95	18	0	0	77	18	20	38	38
SUM:			138	26	35	0	77	18	20	73	108

<i>Hinckley, NB, 9:56</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	44	8	35	0	0	0	0	35	70
Ons:	HB	Access	95	18	0	0	77	18	20	38	38
SUM:			138	26	35	0	77	18	20	73	108

Superior, AM Peak

Train Times	Direction	Train Number
7:33 AM	SB	7007

<i>Superior, SB, 7:33</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	137	2	125	5	5	1	1	132	262
Ons:	HB	Access	73	0	18	1	53	12	14	46	66
SUM:			211	2	143	6	59	13	15	179	328

Duluth, AM Peak

Train Times	Direction	Train Number
7:17 AM	SB	7007

<i>Duluth, SB, 7:17</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	EB	Egress	141	5	117	10	9	2	2	131	257
Ons:	HB	Access	47	1	21	2	23	5	6	34	57
SUM:			187	6	138	12	31	7	8	165	314

Assumptions:

The number of riders at each station by time period were taken directly from the year 2040 high-end ridership projections. The split of business and non-business riders was also provided within these projections. Passenger values were calculated using the SDG trip access and egress tables.

The Parking Vehicles were calculated using the provided SDG ratios. It was assumed that parked cars had 1.75 passengers if business oriented and 2.35 passengers if non-business oriented.

The Rental Car mode was assumed to be Parking their vehicles, and was thus included in the parking calculations. Parked vehicles were counted as one trip.

The Drop-off and Taxi modes were assumed to add two trips to the system, one entering and one exiting.

For PM Peak trains, it was assumed all Ons were end-based and the egress proportions were used, while all Offs were assumed to be home-based and the access proportions were used.

For AM Peak trains, it was assumed all Ons were home-based and the access proportions were used, while all Offs were assumed to be end-based and the egress proportions were used.

During the PM Peak at Target Field, the Ons were assumed to board the northbound train, while the Offs were all assumed to alight the southbound train.

The above logic was used for both Target Field and Duluth, as long as there was at least one train in each direction during the period.

If only one train entered/exited a terminal station during one of these time periods, the given ons and offs were all allocated to the single train.

Traffic Circulation Analysis - Vehicular Trips Added to Network (PM Peak)

Minneapolis, PM Peak

Train Times	Direction	Train Number
3:12 PM	SB	7009
5:20 PM	NB	7010

Target Field, SB, 15:12	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	HB	Access	288	47	127	8	105	31	18	184	318
Ons:	EB	Egress	0	0	0	0	0	0	0	0	0
SUM:			288	47	127	8	105	31	18	184	318

Target Field, NB, 17:20	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	HB	Access	0	0	0	0	0	0	0	0	0
Ons:	EB	Egress	467	102	318	21	28	8	5	351	689
SUM:			467	102	318	21	28	8	5	351	689

Coon Rapids, PM Peak

Train Times	Direction	Train Number
5:39 PM	NB	7010

Coon Rapids, NB, 17:39	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	HB	Access	145	21	58	3	64	19	11	91	152
Ons:	EB	Egress	114	12	90	4	8	2	1	98	192
SUM:			259	32	148	7	72	21	12	189	344

Cambridge, PM Peak

Train Times	Direction	Train Number
6:06 PM	NB	7010

<i>Cambridge, NB, 18:06</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	HB	Access	375	0	0	0	375	112	64	176	176
Ons:	EB	Egress	148	0	148	0	0	0	0	148	296
SUM:			523	0	148	0	375	112	64	324	472

Hinckley, PM Peak

Train Times	Direction	Train Number
6:31 PM	SB	7013
6:36 PM	NB	7010

<i>Hinckley, SB, 18:31</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	HB	Access	123	23	0	0	100	30	17	47	47
Ons:	EB	Egress	86	16	70	0	0	0	0	70	140
SUM:			210	40	70	0	100	30	17	117	187

<i>Hinckley, NB, 18:36</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	HB	Access	123	23	0	0	100	30	17	47	47
Ons:	EB	Egress	86	16	70	0	0	0	0	70	140
SUM:			210	40	70	0	100	30	17	117	187

Superior, PM Peak

Train Times	Direction	Train Number
5:30 PM	SB	7013

<i>Superior, SB, 17:30</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	HB	Access	65	0	16	1	47	14.0	8.1	40	57
Ons:	EB	Egress	131	1	119	5	5	1	1	127	251
SUM:			196	2	136	6	52	15	9	166	308

Duluth, PM Peak

Train Times	Direction	Train Number
5:14 PM	SB	7013

<i>Duluth, SB, 17:14</i>	Trip Type	Movement Type	Total Number of Passengers	Transit & Walking Passengers	Dropped Off Passengers	Taxi Riding Passengers	Parking Passengers	Leisure Vehicles Parked	Business Vehicles Parked	Added Vehicles	Added Vehicle Trips
Offs:	HB	Access	43	1	19	2	21	6.3	3.6	31	52
Ons:	EB	Egress	129	5	107	9	8	2	1	120	236
SUM:			172	5	127	11	29	9	5	151	288

Assumptions:

The number of riders at each station by time period were taken directly from the year 2040 high-end ridership projections. The split of business and non-business riders was also provided within these projections. Passenger values were calculated using the SDG trip access and egress tables.

The Parking Vehicles were calculated using the provided SDG ratios. It was assumed that parked cars had 1.75 passengers if business oriented and 2.35 passengers if non-business oriented.

The Rental Car mode was assumed to be Parking their vehicles, and was thus included in the parking calculations. Parked vehicles were counted as one trip.

The Drop-off and Taxi modes were assumed to add two trips to the system, one entering and one exiting.

For PM Peak trains, it was assumed all Ons were end-based and the Egress proportions were used, while all Offs were assumed to be home-based and the Access proportions were used.

For AM Peak trains, it was assumed all Ons were home-based and the Access proportions were used, while all Offs were assumed to be end-based and the Egress proportions were used.

During the PM Peak at Target Field, the Ons were assumed to board the northbound train, while the Offs were all assumed to alight the southbound train.

The above logic was used for both Target Field and Duluth, as long as there was at least one train in each direction during the period.

If only one train entered/exited a terminal station during one of these time periods, the given ons and offs were all allocated to the single train.