APPENDIX C

MSP Area Roadway Improvements
Project Memos

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APPENDIX C
MSP Area Roadway Improvements Project Memos

In late 2010, the Minneapolis-St. Paul International Airport (MSP) Area Roadway Improvements Project funded by the Metropolitan Airports Commission (MAC), City of Bloomington and Minnesota Department of Transportation (Mn/DOT) commenced. The main objective of this project is to develop interchange concepts at I-494/34th Avenue South, Trunk Highway (TH) 5/Post Road, and TH 5/Glumack Drive; roadway improvements required on the MSP Campus; and roadway improvements near Thunderbird Road in Bloomington's South Loop, required to serve the anticipated traffic demand. This project includes analysis required as a part of the MSP Environmental Assessment (EA) planning horizons and the 2030 forecast year that is typical of the roadway planning.

The following technical memos were developed as part of this project:

1 Kimley-Horn & Associates, Inc. (KH) Technical Memorandum #1

2 KH DDI Memorandum

3 KH Post Road Memorandum

4 Travel Demand Forecast Memorandum

5 Freeway Operations Analysis Memorandum

6 Arterial Traffic Operations Technical Memorandum

Attachment 1:

KH Technical Memorandum #1

Kimley-Horn
and Associates, Inc.

Technical Memorandum #1

Suite 238N
2550 University Avenue West
St. Paul, Minnesota
55114

To: Kevin Sommers, Mn/DOT

Copy: Al Dye, MAC
Jim Gates, City of Bloomington
Scott Pedersen, Mn/DOT
Greg Alberg, HNTB
Don Demers, SRF

From: Brandon Bourdon

Date: February 10, 2011

Subj: Existing Traffic Data Collection
MSP Area Roadway Improvements
MAC Contract #120-6-020
KHA No: 160400084.E

Kimley-Horn and SRF have collected the traffic data that will be used to complete the traffic modeling and analysis required for the MSP Area Roadway Improvements Project being completed jointly by the MAC, City of Bloomington, and Mn/DOT. **Exhibit 1** shows the locations where traffic data was collected and the locations of Mn/DOT loop detectors. This memo summarizes and provides copies of the raw traffic data collected as a part of this project.

The data collection effort included tube data to determine peak periods and daily and weekly traffic patterns, vehicle class counts at specific locations, and turning movement counts. All traffic volume data has been aggregated into 15-minute intervals. Below is a summary of the three types of data that were collected:

Tube Count Data – Directional daily traffic count data, aggregated by 15 minute intervals, was collected October 25 to November 5, 2010. A brief description of the tube count locations that correspond to the locations in **Exhibit 1** are included below:

- Access to the south off of Post Road located immediately east of the eastbound TH 5 Ramps
- Access to the Fort Snelling State Park and Officer's Club
- Glumack Drive (Terminal 1) Return to Terminal Loop
- E 70th Street, east of 34th Avenue S
- Humphrey Drive, west of 34th Avenue S and Post Road intersection

TEL 651 645 4197
FAX 651 645 5116

- E 72nd Street, west of 34th Avenue S
- 34th Avenue S, south of E 70th Street
- 34th Avenue S, south of E 72nd Street
- 34th Avenue S, south of Airport Lane
- Airport Lane, west of 34th Avenue S

Vehicle Classification Data – Vehicle classification data was collected for two weeks at three locations:

- Cargo Road, east of Longfellow Ave
- Longfellow Avenue, north of 77th Street
- Post Road, west of the Super America accesses

The number of southbound and northbound lanes along 34th Avenue S. did not allow for tube counters to be used to collect vehicle classification along 34th Avenue S. Therefore a manual vehicle classification count was collected on December 15, 2010, between 5:30 a.m. – 8:00 a.m. and 1:30 p.m. – 6:30 p.m. for traffic on 34th Avenue S. located south of E. 72nd Street.

Turning Movement Counts – Turning movement counts were collected November 2, 2010, and November 3, 2010, along 34th Avenue S.; November 4, 2010, along Post Road; and November 9, 2010, near Thunderbird Road. Based on the tube count data, turning movement counts were collected for two sets of peak periods. Typical three hour weekday a.m. (5:30 a.m.-8:30 a.m.) and p.m. (3:30 p.m.–6:30 p.m.) peak period turning movement counts were collected at the following intersections:

- 24th Avenue S/American Boulevard
- 24th Avenue S/Lindau Lane
- Thunderbird Road/American Boulevard
- Thunderbird Road/Hotel Access North Driveway
- Thunderbird Road/Hotel Access Middle Driveway
- Thunderbird Road/Hotel Access South Driveway

Employee shift changes cause some additional traffic peak periods. The tube count data shows an early morning peak and an early afternoon peak that differs from the typical a.m. and p.m. peak periods. Therefore, data was collected for a slightly earlier period during the a.m. peak and a longer period during the p.m. peak. Three hour weekday a.m. (5:30 a.m.-8:30 a.m.) and five hour p.m. (1:30 p.m.-6:30 p.m.) peak period turning movement counts were collected at the following intersections:

- 34th Avenue S/American Boulevard
- 34th Avenue S/WB I-494 Ramps
- 34th Avenue S/EB I-494 Ramps
- 34th Avenue S/Airport Lane
- 34th Avenue S/E 73rd Street
- 34th Avenue S/E 75th Street

- 34th Avenue S/E 72nd Street
- 34th Avenue S/E 70th Street
- 34th Avenue S/Humphrey Drive
- Humphrey Drive/Purple Ramp Employee/Commercial Vehicle Exit
- Post Road/West Employee Lot Entrance
- Post Road/East Employee Lot Entrance
- Post Road/Taxi Staging Area West Driveway
- Post Road/Taxi Staging Area Middle Driveway
- Post Road/Taxi Staging Area East Driveway
- Post Road/Super America West Driveway
- Post Road/Super America East Driveway
- Post Road/SB TH 5 Ramps/Northwest Drive
- Post Road/NB TH 5 Ramps
- E 77th Street/Airport Lane
- 24th Avenue S/I-494 SPUI
- Airport Lane/Delta Employee Parking East Driveway
- Airport Lane/Delta Employee Parking Middle Driveway
- Airport Lane/Delta Employee Parking West Driveway

A CD-ROM that includes pdf files of the raw traffic data is included with this memorandum.

Exhibits that summarize peak hour balanced turning movement counts and the daily tube count data are included for the following areas:

- **Exhibit 2** – 34th Avenue S (a.m. peak hours)
- **Exhibit 3**- 34th Avenue S (afternoon and p.m. peak hours)
- **Exhibit 4** – Post Road (a.m. and p.m. peak hours)
- **Exhibit 5** – 24th Avenue S (a.m. and p.m. peak hours)

As the existing conditions traffic models are built, additional volume balancing will be completed to balance the traffic count data that was collected to the Mn/DOT loop data. **Tables 1** and **2** include the balanced freeway volumes being utilized for the existing conditions model development for a.m. and p.m. peak period conditions, respectively. These tables are included in pdf format on the CD-ROM.

Please feel free to contact me with any additional questions or concerns at (651) 643-0421.

XREFS
MSP-LTCP-22x34_BOR-BOT-TIA

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\TRAFFIC-COUNT-LOCATIONS-FINAL.dwg February 04, 2011 - 2:59pm

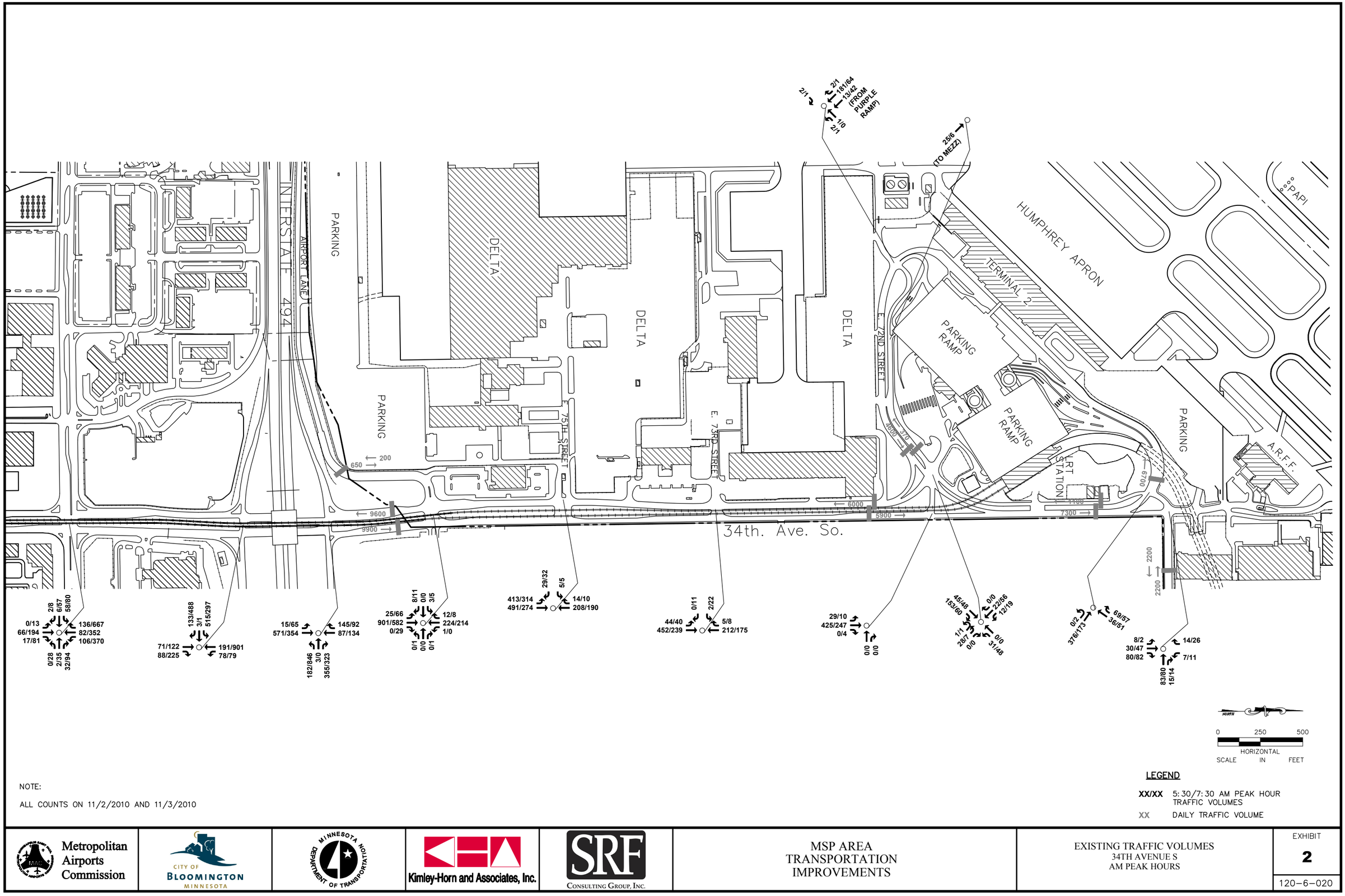
STATE HWY. No. 77
CEDAR AVE.
WEST CARGO APRON
MAC CARGO
17-35
TUNNEL
DONAY
SUN COUNTRY
MAC MAINT. SO.
OFA
RSA
LOC UNIT
MALSR
RTR
PAPI
RVR
GS ANT
WC
BUDGET
AIR CARGO CENTER
MT GARAGE
AVIS
UPS
RTR
EXIT: 1530' DSP. THRESHOLD 66+38.75=EL.831.5
INT. RWY 4/35 51+16.97 EL.833.31 (HIGH PT.)
END RWY 4 50+88.75 EL.833.24
100+00 EL.833.1 (LOW PT.)
I.M. LOC.
HUMPHREY REMOTE APRON
HUMPHREY APRON
ARFF
PARKING
LRT PORTAL
LRT STATION
PARKING RAMP
NWA
SIGNATURE FLIGHT SUPPORT
RWY 11-29 10,000' x 200'
RWY 28° W. TRUE
TUNNEL PORTAL
VEHICULAR TUNNEL
LRT
EL. 824.1
E. 70th. St.
BLAST FENCE
POST ROAD
30L DEICING PAD
30R DEICING PAD
FWC
DME
124+00 EL. 814.1 (LOW PT.)
RSA
OFA
LOC
EMAS
FM No.3
FUEL STORAGE
ALSF-2
RUNWAY MARKER
RIVER
MSP POND No.4
MSP POND No.3
MSP POND No.2
MSP POND No.1
ALMAZ POND
34th. Ave. So.
NATIONAL CEMETERY
Airport Ln.
INTERSTATE 494
MINNESOTA
BLOOMINGTON
American Blvd.
Thunderbird Rd.
24th Ave. S.

LEGEND

- TWO WEEK DIRECTIONAL TUBE COUNT
- TURNING MOVEMENT COUNT
- VEHICLE CLASSIFICATION COUNT
- MN/DOT LOOP DETECTORS

0 250 500 1000
HORIZONTAL SCALE IN FEET

Metropolitan Airports Commission	CITY OF BLOOMINGTON MINNESOTA	MINNESOTA DEPARTMENT OF TRANSPORTATION	Kimley-Horn and Associates, Inc.	SRF CONSULTING GROUP, INC.	MSP AREA TRANSPORTATION IMPROVEMENTS	TRAFFIC COUNT LOCATIONS	EXHIBIT 1 120-6-020



NOTE:

ALL COUNTS ON 11/2/2010 AND 11/3/2010

LEGEND

XX/XX 5:30/7:30 AM PEAK HOUR TRAFFIC VOLUMES

XX DAILY TRAFFIC VOLUME

Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

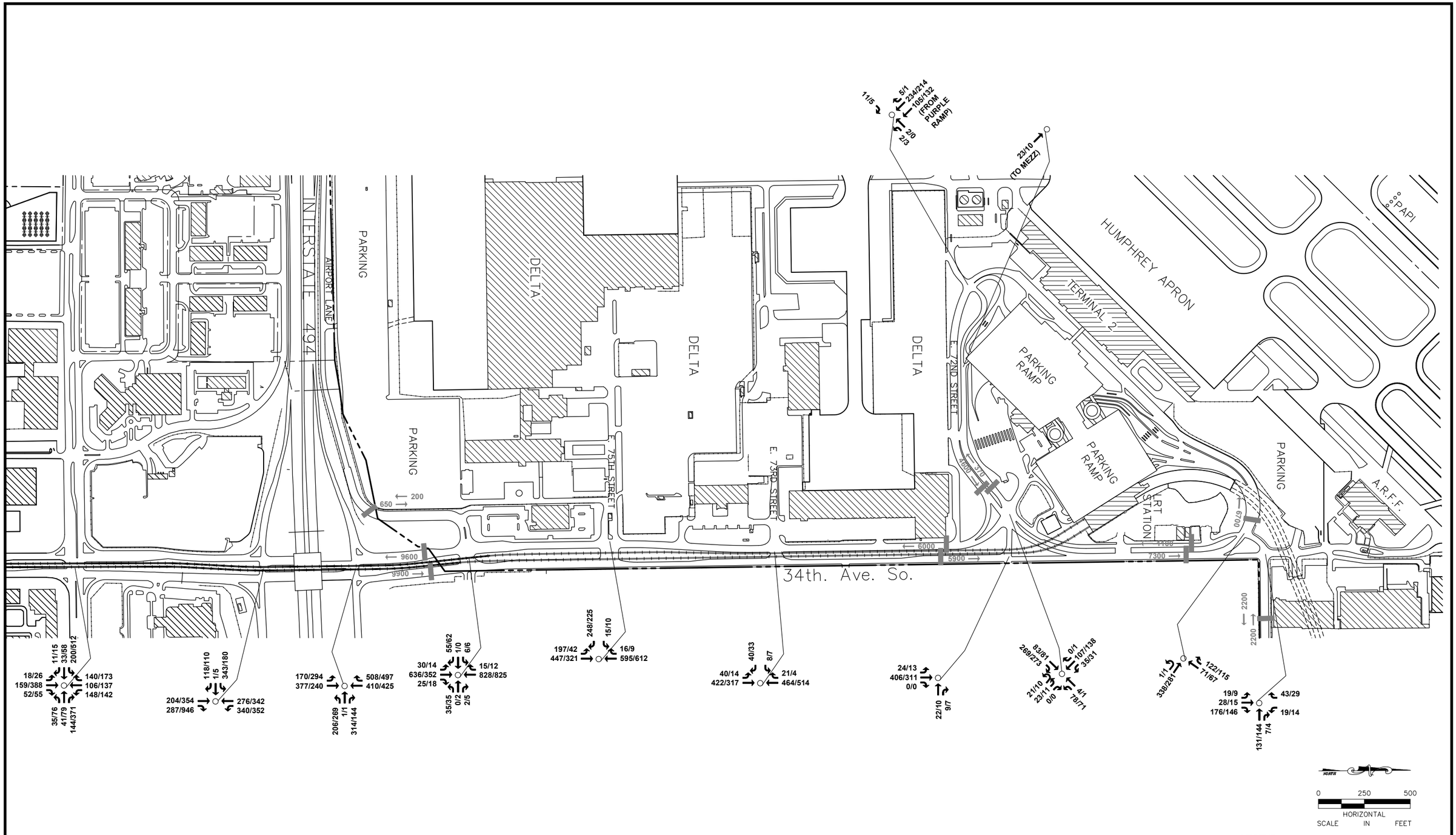
SRF CONSULTING GROUP, INC.

MSP AREA TRANSPORTATION IMPROVEMENTS

EXISTING TRAFFIC VOLUMES
34TH AVENUE S
AM PEAK HOURS

EXHIBIT **2**

120-6-020



NOTE:

ALL COUNTS ON 11/2/2010 AND 11/3/2010

NORTH

0 250 500

HORIZONTAL SCALE IN FEET

LEGEND

XX/XX 2:15/4:15 PM PEAK HOUR TRAFFIC VOLUMES

XX DAILY TRAFFIC VOLUME

Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

SRF CONSULTING GROUP, INC.

MSP AREA TRANSPORTATION IMPROVEMENTS

EXISTING TRAFFIC VOLUMES
34TH AVENUE S
AFTERNOON/PM PEAK HOURS

EXHIBIT **3**

120-6-020

30R DEICING PAD

PARKING RAMP

PARKING RAMP

PARKING RAMP

PARKING RAMP

LRT STATION

TUNNEL

DELTA

NSP

PARKING RAMP

MSP POND No.4

30L DEICING PAD

LRT

PWC

EL. 824.1

RWY 10,000'x 200'

30 L

PAPI

GS

ANT

RVR

DME

BLAST FENCE

PARKING "R"

POST ROAD

BLAST FENCE

121+00 EL.814.1

EMAS

LOC

INNER MARKER

ALSF-2

BM NO.3

STATE HWY. 5

PARKING

FUEL STORAGE

RIVER

3300

2700

2800

400

400

40

40

0/1 5/5
0/0 110/228 0/14 102/149

0/6 4/4
1/14 120/265 17/17 109/186

109/303 0/1 133/238 67/120

109/303 4/9 7/39 196/349

116/342 3/9 29/132 193/340

119/442 26/32 21/23 77/60 172/317 107/120

195/502 1/0 3/5 57/104 276/432 42/26

9/16 18/24 3/17
12/27 207/518 33/61

43/122 247/303 0/0 21/145
46/25 62/139 8/7

206/545 25/35 111/163 1/0 25/16 8/20 5/8

0 250 500
HORIZONTAL SCALE IN FEET

NOTE:

ALL COUNTS ON 11/4/2010

LEGEND

XX/XX 7:30 AM/4:15 PM PEAK HOUR TRAFFIC VOLUMES

XX DAILY TRAFFIC VOLUME

Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

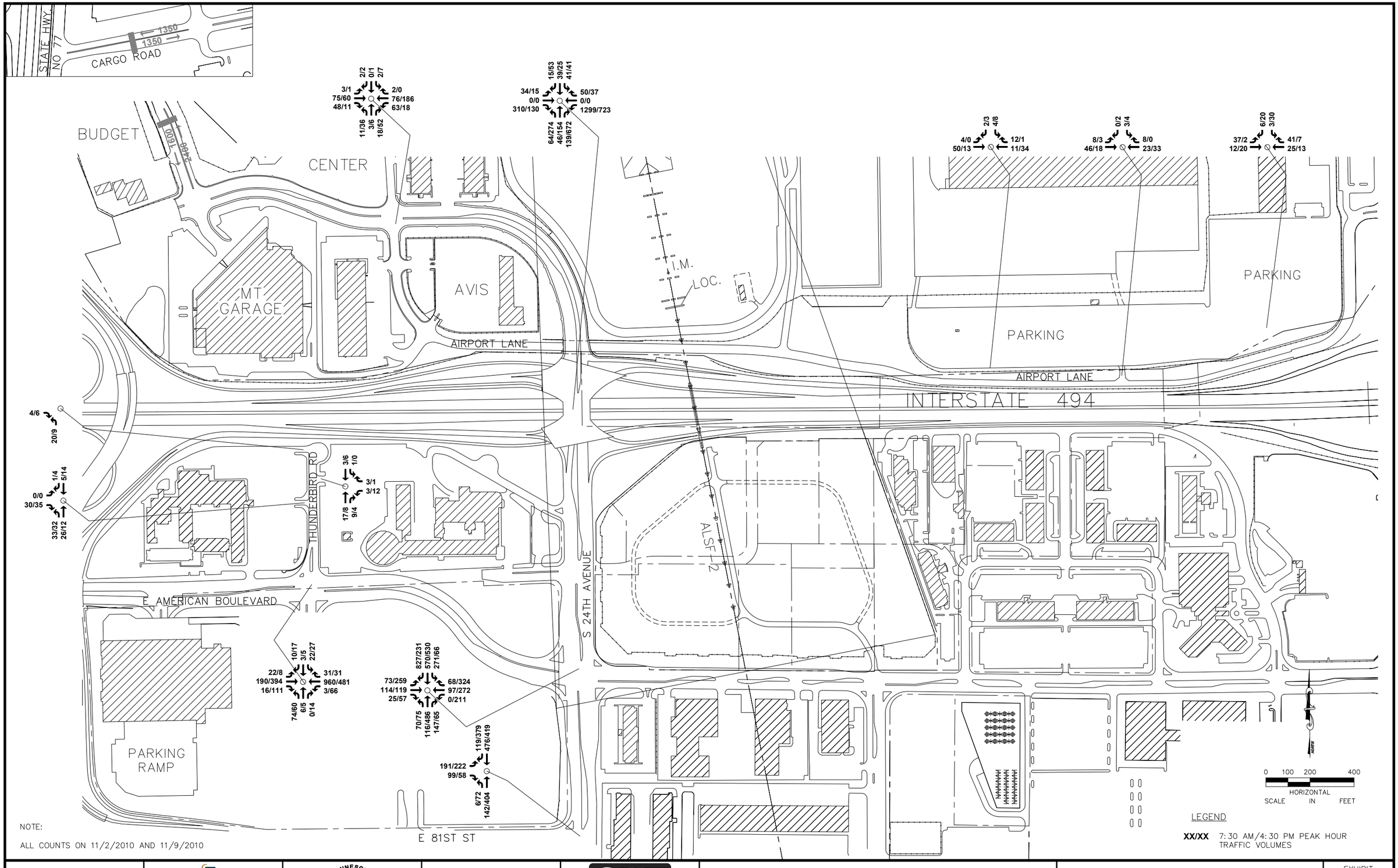
SRF CONSULTING GROUP, INC.

MSP AREA TRANSPORTATION IMPROVEMENTS

EXISTING TRAFFIC VOLUMES
POST ROAD
AM AND PM PEAK HOURS

EXHIBIT 4

120-6-020



Metropolitan Airports Commission | City of Bloomington Minnesota | Minnesota Department of Transportation | Kimley-Horn and Associates, Inc. | SRF Consulting Group, Inc.

MSP AREA TRANSPORTATION IMPROVEMENTS

EXISTING TRAFFIC VOLUMES
24TH AVENUE S
AM AND PM PEAK HOURS

EXHIBIT **5**

120-6-020

Table 1
Existing AM Freeway Traffic Volumes

Location	5:45	6:00	6:15	6:30	6:45	7:00	7:15	7:30	7:45	8:00	8:15	8:30
I-494 WB Mainline	486	589	601	779	1051	1072	1209	1376	1318	1238	1117	1023
34th Ave Exit	70	95	73	92	94	136	111	147	184	220	153	130
TH 5 Exit	55	56	51	33	41	44	51	67	77	63	53	55
I-494 WB Under TH 5	354	410	458	622	859	903	1007	1163	1076	940	887	853
TH 5/34th Exit	127	159	128	130	143	178	168	214	257	286	211	182
I-494 WB Mainline	359	430	473	649	908	894	1041	1162	1061	952	906	841
TH 5 Entrance	235	230	241	246	292	282	307	388	389	376	347	452
I-494 WB Mainline	594	660	714	895	1200	1176	1348	1550	1450	1328	1253	1293
34th Ave Entrance	52	43	45	50	63	53	38	44	47	35	43	57
Detector Check 34th-24th	600	707	754	914	1205	1234	1381	1547	1484	1369	1322	1336
I-494 WB Mainline	646	703	759	945	1263	1229	1386	1594	1497	1363	1296	1350
24th Ave Exit	56	76	55	51	74	151	103	289	369	467	360	302
TH 77 NB Exit	24	25	29	31	40	38	56	80	94	112	83	81
I-494 WB Under 24th Ave	503	592	659	813	1072	1038	1184	1092	917	833	923	889
24th Ave Exit	62	77	56	54	79	151	106	315	400	451	342	321
I-494 WB Mainline	584	626	703	891	1184	1078	1280	1279	1097	912	954	1029
TH 77 NB Exit	27	25	30	33	43	38	58	87	102	108	79	86
I-494 WB Mainline	557	601	673	858	1141	1040	1222	1192	995	804	875	943
24th Ave Entrance	14	20	23	22	28	37	35	24	20	13	23	17
I-494 WB Mainline	571	621	696	880	1169	1077	1257	1216	1015	817	898	960
TH 77 NB HOV Entrance	4	11	13	19	52	40	36	30	33	30	25	20
I-494 WB Mainline	575	632	709	899	1221	1117	1293	1246	1048	847	923	980
TH 77 SB Exit	34	47	47	53	58	67	84	102	77	79	95	93
I-494 WB after TH 77 SB Exit	No Detector											
TH 77 SB Exit	40	47	47	53	58	67	84	102	77	79	95	93
I-494 WB Mainline	535	585	662	846	1163	1050	1209	1144	971	768	828	887
TH 77 NB/SB Entrance	263	256	348	423	463	450	494	470	386	364	364	397
I-494 WB Mainline	798	841	1010	1269	1626	1500	1703	1614	1357	1132	1192	1284
12th Ave Exit	26	49	44	71	62	112	163	204	274	318	312	293
I-494 WB 12th to Portland	696	750	881	1104	1414	1375	1298	1182	936	899	978	946
I-494 WB "Thru Volume"	459	543	577	752	1013	1037	967	916	824	853	926	842
12th Ave Exit	29	52	48	77	68	113	190	238	307	296	288	304
I-494 WB Mainline	769	789	962	1192	1558	1387	1513	1376	1050	836	904	980
Portland Ave Entrance	62	66	68	71	98	89	89	74	106	87	66	76
I-494 WB Mainline	831	855	1030	1263	1656	1476	1602	1450	1156	923	970	1056
Nicollet Exit	41	68	52	72	66	65	52	48	29	28	62	52
I-494 WB Under Nicollet	700	783	926	1081	1416	1412	1282	1179	995	959	1014	996
Nicollet Ave Exit	46	68	55	79	74	65	62	57	33	26	56	52
I-494 WB Mainline	785	787	975	1184	1582	1411	1540	1393	1123	897	914	1004
Nicollet Ave Entrance	74	54	65	72	89	86	69	107	108	121	67	90
I-494 WB Mainline	859	841	1040	1256	1671	1497	1609	1500	1231	1018	981	1094
Lyndale Exit	28	24	36	54	68	94	53	53	27	43	35	42
I-494 WB Under Lyndale	722	794	908	1085	1394	1378	1280	1225	986	1059	1020	1054
Lyndale Ave Exit	32	25	40	60	78	96	64	62	33	40	33	42
I-494 WB Mainline	827	816	1000	1196	1593	1401	1545	1438	1198	978	948	1052
Lyndale Ave Entrance	25	27	33	26	49	49	40	59	79	60	58	58
I-494 WB Mainline	852	843	1033	1222	1642	1450	1585	1497	1277	1038	1006	1110
I-35W NB Exit	29	24	31	34	42	57	42	36	27	25	36	51
I-35W SB Exit	63	71	49	65	87	102	65	61	32	47	37	47

Table 1
Existing AM Freeway Traffic Volumes

I-494 WB after I-35W SB Exit	830	984	1123	1377	1679	1584	1531	1454	1239	1293	1208	1228
I-494 WB "Thru Volume"	614	731	830	1004	1271	1235	1213	1146	1018	1048	991	1010
I-35W NB Exit	35	24	35	38	49	59	50	43	32	23	34	51
I-494 WB Mainline	817	819	998	1184	1593	1391	1535	1454	1245	1015	972	1059
I-35W NB Entrance	216	253	293	373	408	349	318	308	221	245	217	218
I-494 WB Mainline	1033	1072	1291	1557	2001	1740	1853	1762	1466	1260	1189	1277
I-35W SB Exit	76	72	56	72	102	106	78	73	38	44	35	47
I-494 WB Mainline	957	1000	1235	1485	1899	1634	1775	1689	1428	1216	1154	1230
I-35W SB Entrance	74	84	69	89	98	143	138	193	220	263	266	242
I-494 WB Mainline	1031	1084	1304	1574	1997	1777	1913	1882	1648	1479	1420	1472
Penn Ave Exit	44	67	56	73	86	120	102	94	82	104	94	101
I-494 WB Under Penn	Data Not Valid											
Penn Ave Exit	44	67	56	73	86	120	102	94	82	104	94	101
I-494 WB Mainline	987	1017	1248	1501	1911	1657	1811	1788	1566	1375	1326	1371
Penn Ave Entrance	33	26	26	41	63	61	64	104	164	183	167	147
I-494 WB Mainline	1020	1043	1274	1542	1974	1718	1875	1892	1730	1558	1493	1518
I-494 WB Penn to France	886	1044	1129	1466	1731	1695	1626	1586	1579	1632	1534	1541
I-494 EB France to Penn	720	786	876	1153	1389	1470	1595	1616	1715	1600	1655	1480
I-494 EB Mainline	720	786	876	1153	1389	1470	1595	1616	1715	1600	1655	1480
Penn Ave Exit	38	43	44	63	94	114	116	141	176	198	227	205
I-494 EB Under Penn Ave	678	766	835	1090	1319	1369	1487	1488	1522	1440	1427	1312
Penn Ave Exit	38	42	44	63	92	113	115	140	178	193	227	200
I-494 EB Mainline	682	744	832	1090	1297	1357	1480	1476	1537	1407	1428	1280
Penn Ave Entrance	40	47	39	42	49	78	61	86	102	102	110	88
I-494 EB Mainline	722	791	871	1132	1346	1435	1541	1562	1639	1509	1538	1368
I-35W SB Exit	105	116	143	231	298	307	246	240	261	239	249	270
I-494 WB after I-35W SB Exit	593	690	712	854	1040	1119	1273	1324	1349	1294	1248	1142
I-35W SB Exit	109	114	146	241	300	309	250	240	266	235	256	262
I-494 EB Mainline	613	677	725	891	1046	1126	1291	1322	1373	1274	1282	1106
I-35W SB Entrance	18	37	22	40	58	70	69	84	102	115	84	79
I-494 EB Mainline	631	714	747	931	1104	1196	1360	1406	1475	1389	1366	1185
I-35W NB Exit	69	61	86	78	90	78	67	70	74	88	86	68
I-494 WB after I-35W SB Exit	No Detector											
I-35W NB Exit	69	61	86	78	90	78	67	70	74	88	86	68
I-494 EB Mainline	562	653	661	853	1014	1118	1293	1336	1401	1301	1280	1117
I-35W NB Entrance	36	43	60	77	87	91	102	93	111	71	84	72
I-494 EB Mainline	598	696	721	930	1101	1209	1395	1429	1512	1372	1364	1189
Lyndale Ave Exit	25	35	26	48	60	95	63	66	66	69	91	65
I-494 EB Under Lyndale	624	698	738	855	1051	1084	1241	1301	1365	1373	1253	1169
Lyndale Ave Exit	23	33	25	49	59	97	67	69	70	66	92	63
I-494 EB Mainline	575	663	696	881	1042	1112	1328	1360	1442	1306	1272	1126
Lyndale Ave Entrance	13	11	10	16	20	41	40	56	65	70	61	52
I-494 EB Mainline	588	674	706	897	1062	1153	1368	1416	1507	1376	1333	1178
Nicollet Ave Exit	39	50	45	76	67	91	101	121	116	100	90	111
I-494 EB Under Nicollet	620	683	714	840	1014	1075	1191	1314	1388	1378	1268	1179
Nicollet Ave Exit	35	46	42	74	66	90	107	119	116	93	88	101
I-494 EB Mainline	553	628	664	823	996	1063	1261	1297	1391	1283	1245	1077
Nicollet Ave Entrance	48	42	56	64	101	97	87	120	161	161	118	125
I-494 EB Mainline	601	670	720	887	1097	1160	1348	1417	1552	1444	1363	1202

Table 1
Existing AM Freeway Traffic Volumes

Portland Ave Exit	22	31	47	42	64	76	79	102	88	114	101	95
I-494 EB Portland-12th	633	674	701	825	1003	1072	1143	1288	1374	1327	1254	1151
Portland Ave Exit	20	29	45	43	66	77	87	104	93	114	102	92
I-494 EB Mainline	581	641	675	844	1031	1083	1261	1313	1459	1330	1261	1110
12th Ave Entrance	51	60	52	48	95	86	101	113	146	112	108	118
I-494 EB Mainline	632	701	727	892	1126	1169	1362	1426	1605	1442	1369	1228
TH 77 SB Exit	52	88	77	113	167	186	187	223	232	229	222	188
TH 77 NB Exit	22	41	38	46	50	46	55	47	46	44	34	49
24th Ave Exit	38	42	42	33	57	62	69	85	82	105	96	99
I-494 EB under 24th Ave	607	628	619	726	861	945	990	1125	1296	1197	1104	1036
I-494 EB "Thru Volume"	555	577	581	682	791	867	913	1034	1168	1073	1013	949
TH 77 SB Exit	49	82	76	115	177	187	208	229	244	228	223	180
I-494 EB Mainline	583	619	651	777	949	982	1154	1197	1361	1214	1146	1048
TH 77 SB Entrance	52	51	38	44	70	78	77	91	128	124	91	87
I-494 EB Mainline	635	670	689	821	1019	1060	1231	1288	1489	1338	1237	1135
TH 77 NB Exit	21	38	37	47	53	46	61	48	48	44	34	47
I-494 EB Mainline	614	632	652	774	966	1014	1170	1240	1441	1294	1203	1088
24th Ave Exit	36	39	41	34	60	62	77	87	86	104	96	95
I-494 EB Mainline	578	593	611	740	906	952	1093	1153	1355	1190	1107	993
TH 77 NB/MOA Entrance	191	160	144	127	148	159	157	183	228	217	188	174
I-494 EB Mainline	769	753	755	867	1054	1111	1250	1336	1583	1407	1295	1167
24th Ave Entrance	18	15	18	31	47	38	46	52	45	43	56	56
Detector Check 24th to 34th	796	818	776	868	1033	1152	1175	1363	1543	1465	1346	1288
I-494 EB Mainline	787	768	773	898	1101	1149	1296	1388	1628	1450	1351	1223
34th Ave Exit	185	196	150	171	169	199	167	191	203	246	183	183
TH 5 Exit	388	405	314	231	319	334	385	460	545	486	489	509
I-494 EB under TH 5	287	329	390	535	644	680	684	806	929	852	765	767
34th Ave Exit	169	162	136	164	164	189	175	182	197	225	172	153
I-494 EB Mainline	618	606	637	734	937	960	1121	1206	1431	1225	1179	1070
TH 5 Exit	355	334	284	221	310	316	404	438	529	445	460	427
I-494 EB Mainline	263	272	353	513	627	644	717	768	902	780	719	643
34th Ave/TH 5 WB Entrance	39	40	41	44	45	52	60	40	72	64	75	69
I-494 EB Mainline	302	312	394	557	672	696	777	808	974	844	794	712
TH 5 WB Mainline	284	345	306	353	440	498	534	620	705	701	598	615
TH 5/TH 55 CD Road Exit	63	77	106	128	170	199	227	253	270	269	231	199
TH 5 WB Mainline	221	268	200	225	270	299	307	367	435	432	367	416
TH 5/TH 55 CD Road Entrance	51	28	31	26	23	37	48	49	55	61	55	44
TH 5 WB Mainline	272	296	231	251	293	336	355	416	490	493	422	460
TH 55/62 EB Entrance	167	182	141	98	84	85	93	133	118	165	162	193
TH 5 WB Mainline	439	478	372	349	377	421	448	549	608	658	584	653
Glumack Exit	215	277	214	134	93	98	114	141	156	185	229	191
TH 5 WB Under Glumack	Data not valid											
Glumack Exit	215	277	214	134	93	98	114	141	156	185	229	191
TH 5 WB Mainline	224	201	158	215	284	323	334	408	452	473	355	462
Glumack Entrance	170	167	188	150	121	73	117	125	144	138	181	224
TH 5 WB Mainline	394	368	346	365	405	396	451	533	596	611	536	686
Post Rd Exit	80	57	52	56	43	39	68	54	65	88	70	87
TH 5 WB Under Glumack	Data not valid											
TH 5 WB minus Post Entrance	292	315	310	311	350	356	388	452	533	541	467	574

Table 1
Existing AM Freeway Traffic Volumes

Post Rd Exit	85	56	50	56	44	39	67	57	65	85	70	90
TH 5 WB Mainline	309	312	296	309	361	357	384	476	531	526	466	596
Post Rd Entrance	9	8	20	11	19	13	15	16	14	22	8	15
TH 5 WB Post to I-494/34th	301	323	330	322	369	369	403	468	547	563	475	589
TH 5 WB Mainline	318	320	316	320	380	370	399	492	545	548	474	611
34th Ave Exit	61	71	56	56	68	70	68	86	122	147	105	122
I-494 EB Exit	22	19	19	18	20	18	24	18	34	25	22	37
TH 5 WB before I-494 merge	275	299	349	416	487	504	557	652	707	685	590	635
34th/I-494 WB Exit	83	90	75	74	88	88	92	104	156	172	127	159
TH 5 WB Mainline	235	230	241	246	292	282	307	388	389	376	347	452
TH 5 EB Mainline	355	334	284	221	310	316	404	438	529	445	460	427
34th/I-494 WB Entrance	96	89	99	55	83	76	96	105	161	120	110	100
TH 5 EB Mainline	451	423	383	276	393	392	500	543	690	565	570	527
Post Rd Exit	46	39	30	18	23	30	30	26	34	35	32	40
TH 5 EB under Post	504	266	204	192	283	315	336	443	546	457	667	447
Post Rd Exit	46	39	30	18	23	30	30	26	34	35	32	40
TH 5 EB Mainline	405	384	353	258	370	362	470	517	656	530	538	487
Post Rd Entrance	31	32	27	36	33	25	21	33	26	48	88	73
TH 5 EB Mainline	436	416	380	294	403	387	491	550	682	578	626	560
Glumack Dr Exit	342	373	285	182	150	143	185	214	237	243	304	289
TH 5 EB under Glumack	122	118	121	139	241	264	266	354	441	375	361	357
Glumack Dr Exit	321	316	267	167	155	136	201	207	238	227	286	251
TH 5 EB Mainline	115	100	113	127	248	251	290	343	444	351	340	309
Glumack Dr Entrance	107	144	157	89	75	65	74	89	101	112	163	184
TH 5 EB Mainline	222	244	270	216	323	316	364	432	545	463	503	493
TH 55 Exit	93	110	148	98	124	109	111	144	156	159	164	204
TH 5 EB under TH 55 flyover	141	147	136	132	191	217	233	299	388	321	378	330
TH 55 Exit	88	104	141	92	127	106	117	140	156	153	152	188
TH 5 EB Mainline	134	140	129	124	196	210	247	292	389	310	351	305
TH 55 EB Entrance	27	35	47	73	75	97	119	153	211	149	199	192
TH 5 EB Mainline	161	175	176	197	271	307	366	445	600	459	550	497
TH 55 WB Entrance	46	37	21	22	32	48	61	114	153	135	170	94
TH 5 EB Mainline	207	212	197	219	303	355	427	559	753	594	720	591
TH 5 WB to I-494 EB Loop	83	90	75	74	88	88	92	104	156	172	127	159
34th Ave Exit	61	71	56	56	68	70	68	86	122	147	105	122
I-494 EB Exit	22	19	19	18	20	18	24	18	34	25	22	37
34th Ave Exit	61	71	56	56	68	70	68	86	122	147	105	122
TH 5 WB to I-494 EB Loop	22	19	19	18	20	18	24	18	34	25	22	37
34th Ave Entrance	17	21	22	26	25	34	36	22	38	39	53	32
TH 5 WB to I-494 EB Loop	39	40	41	44	45	52	60	40	72	64	75	69
I-494 WB to TH 5 EB Loop	127	159	128	130	143	178	168	214	257	286	211	182
34th Ave Exit	70	95	73	92	94	136	111	147	184	220	153	130
TH 5 EB Exit	55	56	51	33	41	44	51	67	77	63	53	55
34th Ave Exit	71	100	75	96	100	134	115	147	181	222	157	128
I-494 WB to TH 5 EB Loop	56	59	53	34	43	44	53	67	76	64	54	54
34th Ave Entrance	40	30	46	21	40	32	43	38	85	56	56	46
I-494 WB to TH 5 EB Loop	96	89	99	55	83	76	96	105	161	120	110	100

Table 1
Existing AM Freeway Traffic Volumes

TH 5 WB CD Road	63	77	106	128	170	199	227	253	270	269	231	199
TH 55 WB Entrance	51	28	31	26	23	37	48	49	55	61	55	44
TH 5 WB CD Road	114	105	137	154	193	236	275	302	325	330	286	243
TH 55 EB Exit	10	14	15	27	31	48	48	79	102	107	69	68
TH 55 EB Exit	10	14	15	27	31	48	48	79	102	107	69	68
TH 5 WB CD Road	104	91	122	127	162	188	227	223	223	223	217	175
TH 55 WB/Bloomington Exit	53	63	91	101	139	151	179	174	168	162	162	131
TH 5 WB CD Road	51	28	31	26	23	37	48	49	55	61	55	44
TH 77 NB Mainline	715	758	888	1207	1424	1601	1700	1783	1687	1614	1506	1372
EOSR Exit	78	97	80	142	193	253	272	390	408	409	328	280
TH 77 NB under EOSR	588	627	760	1015	1200	1321	1409	1334	1249	1236	1183	1035
EOSR Exit	84	102	85	148	197	257	275	403	415	401	327	292
TH 77 NB Mainline	631	656	803	1059	1227	1344	1425	1380	1272	1213	1179	1080
EOSR Entrance	39	42	47	55	85	63	86	108	116	94	87	65
TH 77 NB Mainline	670	698	850	1114	1312	1407	1511	1488	1388	1307	1266	1145
MOA CD Rd Exit	53	77	74	94	155	200	208	278	258	336	231	181
TH 77 NB under Killebrew	569	633	731	974	1121	1199	1294	1187	1098	1017	1041	933
MOA CD Rd Exit	57	76	78	98	159	201	209	282	264	325	230	186
TH 77 NB Mainline	613	622	772	1016	1153	1206	1302	1206	1124	982	1036	959
I-494 EB Exit	145	129	105	97	115	132	131	140	181	191	165	142
I-494 WB Exit	179	201	265	335	318	299	308	258	202	191	244	259
TH 77 NB under Lindau	228	283	327	520	677	750	804	761	694	630	620	502
I-494 CD Exit	360	335	410	461	450	440	460	414	400	371	412	426
TH 77 NB Mainline	253	287	362	555	703	766	842	792	724	611	624	533
I-494 EB Entrance	21	38	37	47	53	46	61	48	48	44	34	47
TH 77 NB Mainline	274	325	399	602	756	812	903	840	772	655	658	580
I-494 WB HOV Exit	4	11	12	17	49	39	35	29	32	31	25	19
TH 77 NB after HOV Exit	243	313	356	526	668	756	834	773	709	635	630	544
I-494 WB HOV Exit	4	11	13	19	52	40	36	30	33	30	25	20
TH 77 NB Mainline	270	314	386	583	704	772	867	810	739	625	633	560
I-494 WB/MOA Entrance	28	28	38	42	58	50	72	101	117	115	93	100
Detector Check north of I-494	271	340	386	576	720	803	902	862	831	756	740	628
TH 77 NB Mainline	298	342	424	625	762	822	939	911	856	740	726	660
66th St Exit	24	36	35	38	69	92	99	157	214	211	155	110
TH 77 NB under 66th	240	298	335	523	652	693	802	723	605	547	591	517
66th St Exit	27	37	40	42	73	96	103	163	224	206	151	116
TH 77 NB Mainline	271	305	384	583	689	726	836	748	632	534	575	544
66th St Entrance	35	20	42	62	61	59	63	60	78	65	52	82
TH 77 NB Mainline	306	325	426	645	750	785	899	808	710	599	627	626
TH 62 EB Exit	49	83	76	122	127	136	154	149	164	139	135	122
TH 77 NB after TH 62 EB exit	223	234	296	455	578	639	671	554	540	484	507	525
TH 62 EB Exit	55	85	87	136	135	138	168	171	165	134	132	118
TH 77 NB Mainline	251	240	339	509	615	647	731	637	545	465	495	508
TH 62 EB Entrance	7	8	12	10	17	13	19	12	15	13	17	18
TH 77 NB Mainline	258	248	351	519	632	660	750	649	560	478	512	526
TH 62 WB Exit	177	171	226	323	412	446	436	254	214	214	255	331
TH 62 WB Exit	177	171	226	323	412	446	436	254	214	214	255	331
TH 77 NB Mainline	81	77	125	196	220	214	314	395	346	264	257	195

Table 1
Existing AM Freeway Traffic Volumes

TH 62 WB Entrance	8	6	10	12	26	21	22	51	52	39	43	36
TH 77 NB Mainline	89	83	135	208	246	235	336	446	398	303	300	231
TH 77 SB Mainline	103	70	96	109	179	232	219	358	416	447	336	292
TH 62 WB Exit	26	23	36	39	66	66	77	107	108	85	74	49
TH 62 WB Exit	26	23	36	39	66	66	77	107	108	85	74	49
TH 77 SB Mainline	77	47	60	70	113	166	142	251	308	362	262	243
TH 62 WB Entrance	27	34	28	27	50	62	63	96	96	94	104	84
TH 77 SB Mainline	104	81	88	97	163	228	205	347	404	456	366	327
TH 62 EB Exit	20	13	15	15	27	32	39	64	71	71	57	38
TH 62 EB Exit	20	13	15	15	27	32	39	64	71	71	57	38
TH 77 SB Mainline	84	68	73	82	136	196	166	283	333	385	309	289
TH 62 EB Entrance	119	129	115	147	195	205	214	238	289	301	284	259
TH 77 SB Mainline	203	197	188	229	331	401	380	521	622	686	593	548
66th St Exit	32	30	29	21	34	53	43	84	92	96	118	106
TH 77 SB under 66th	168	158	164	214	280	347	330	437	501	596	463	447
66th St Exit	32	31	28	20	36	53	44	84	96	95	120	105
TH 77 SB Mainline	171	166	160	209	295	348	336	437	526	591	473	443
66th St Entrance	14	10	13	15	29	35	34	31	52	50	38	48
TH 77 SB Mainline	185	176	173	224	324	383	370	468	578	641	511	491
Diagonal Blvd Exit	6	3	5	4	9	12	16	43	33	29	24	26
TH 77 SB after Diagonal exit	181	165	170	219	302	374	359	413	538	616	491	488
Diagonal Blvd Exit	6	3	5	4	9	12	16	44	33	29	24	25
TH 77 SB Mainline	179	173	168	220	315	371	354	424	545	612	487	466
Diagonal Blvd Entrance	29	16	14	17	29	20	15	21	32	28	16	20
TH 77 SB Mainline	208	189	182	237	344	391	369	445	577	640	503	486
I-494 CD Rd Exit	104	90	75	84	128	144	138	154	196	225	151	170
TH 77 SB south of I-494 exit	100	92	106	148	195	241	236	267	374	419	349	334
I-494 CD Rd Exit	106	93	75	86	136	146	136	163	198	224	152	164
TH 77 SB Mainline	102	96	107	151	208	245	233	282	379	416	351	322
MOA CD Rd Exit	23	34	18	26	36	58	49	69	86	128	103	98
TH 77 SB south of MOA exit	76	60	86	121	160	185	188	198	280	291	255	230
MOA CD Rd Exit	24	35	19	27	38	58	48	73	89	127	101	96
Detector Check under Lindau	74	61	86	116	165	182	183	208	282	289	251	235
TH 77 SB Mainline	78	61	88	124	170	187	185	209	290	289	250	226
I-494 WB/MOA CD Entrance	29	34	39	47	52	48	64	91	67	65	78	77
Detector Check after CD Ent	108	104	133	168	216	242	258	292	354	361	343	326
TH 77 SB Mainline	107	95	127	171	222	235	249	300	357	354	328	303
Lindau Ln Entrance	0	2	3	2	4	0	4	17	9	13	21	10
TH 77 SB Mainline	107	97	130	173	226	235	253	317	366	367	349	313
I-494 EB CD Entrance	37	48	56	91	131	113	132	143	140	130	137	112
Detector Check after 494 ent	149	159	197	278	357	367	403	478	527	536	518	458
TH 77 SB Mainline	144	145	186	264	357	348	385	460	506	497	486	425
Killebrew Dr Entrance	2	1	17	10	13	14	14	23	15	18	23	15
TH 77 SB Mainline	146	146	203	274	370	362	399	483	521	515	509	440
EOSR Exit	19	22	19	38	39	53	58	108	103	99	99	90
TH 77 SB Under EOSR	125	133	186	227	323	317	332	377	416	423	417	382
EOSR Exit	19	21	19	39	40	52	59	108	103	98	98	84
TH 77 SB Mainline	127	125	184	235	330	310	340	375	418	417	411	356
EOSR WB Entrance	2	5	4	16	16	5	4	4	12	8	14	10

Table 1
Existing AM Freeway Traffic Volumes

TH 77 SB Mainline	129	130	188	251	346	315	344	379	430	425	425	366
EOSR EB Entrance	18	19	22	25	45	30	36	54	73	81	64	69
Detector Check south of EOSR	149	159	214	277	391	367	381	451	521	527	494	469
TH 77 SB Mainline	147	149	210	276	391	345	380	433	503	506	489	435
TH 62 EB Mainline	404	450	419	502	633	672	714	855	885	891	816	796
TH 77 SB Exit	119	129	115	147	195	205	214	238	289	301	284	259
TH 77 SB Exit	119	129	115	147	195	205	214	238	289	301	284	259
TH 62 EB Mainline	285	321	304	355	438	467	500	617	596	590	532	537
TH 77 SB Entrance	20	13	15	15	27	32	39	64	71	71	57	38
TH 62 EB Mainline	305	334	319	370	465	499	539	681	667	661	589	575
TH 77 NB Exit	7	8	12	10	17	13	19	12	15	13	17	18
TH 77 NB Exit	7	8	12	10	17	13	19	12	15	13	17	18
TH 62 EB Mainline	298	326	307	360	448	486	520	669	652	648	572	557
TH 77 NB Entrance	55	85	87	136	135	138	168	171	165	134	132	118
TH 62 EB Mainline	353	411	394	496	583	624	688	840	817	782	704	675
28th Ave Exit	17	44	31	72	47	41	41	52	65	51	75	51
TH 62 EB under 28th	346	365	331	411	516	602	602	759	737	741	642	638
28th Ave Exit	17	44	34	74	49	40	44	54	66	50	74	50
TH 62 EB Mainline	336	367	360	422	534	584	644	786	751	732	630	625
28th Ave Entrance	10	7	10	13	25	38	41	34	29	46	32	29
TH 62 EB Mainline	346	374	370	435	559	622	685	820	780	778	662	654
34th Ave Exit	27	45	38	65	95	108	86	105	79	95	40	49
TH 62 EB Under 34th	330	323	308	362	440	524	562	680	706	693	635	613
34th Ave Exit	26	46	41	66	99	106	91	110	78	94	39	48
TH 62 EB Mainline	320	328	329	369	460	516	594	710	702	684	623	606
34th Ave Entrance	4	17	16	15	27	25	37	31	59	39	40	34
Detector Check 34th to Hiawatha	324	348	321	366	474	546	579	724	749	736	682	637
TH 62 EB Mainline	324	345	345	384	487	541	631	741	761	723	663	640
Hiawatha Exit	50	62	77	93	112	139	151	163	123	127	107	125
TH 62 EB under Hiawatha	263	296	236	280	350	402	445	558	622	619	576	521
Hiawatha Exit	52	60	85	96	118	139	160	168	126	123	104	124
TH 62 EB Mainline	272	285	260	288	369	402	471	573	635	600	559	516
Hiawatha Entrance	53	69	55	77	85	124	121	160	211	234	209	206
TH 62 EB Mainline	325	354	315	365	454	526	592	733	846	834	768	722
Bloomington Rd Exit	12	17	11	23	16	32	24	19	19	20	24	9
TH 62 EB after Blm Rd exit	309	340	283	340	418	502	545	688	814	855	753	735
Bloomington Rd Exit	12	17	12	23	17	32	25	20	19	19	24	9
TH 62 EB Mainline	313	337	303	342	437	494	567	713	827	815	744	713
Bloomington Rd Entrance	2	5	2	2	6	8	5	16	17	19	14	17
TH 62 EB Mainline	315	342	305	344	443	502	572	729	844	834	758	730
TH 5 WB Exit	167	182	141	98	84	85	93	133	118	165	162	193
TH 62 EB after TH 5 WB exit	153	168	147	246	349	426	454	574	703	726	607	549
TH 5 WB Exit	167	182	141	98	84	85	93	133	118	165	162	193
TH 62 EB Mainline	148	160	164	246	359	417	479	596	726	669	596	537
TH 5 EB/WB Entrance	22	34	44	43	51	65	70	98	130	136	95	104
TH 62 EB Mainline	170	194	208	289	410	482	549	694	856	805	691	641
TH 5 EB Exit	27	35	47	73	75	97	119	153	211	149	199	192
TH 5 EB Exit	27	35	47	73	75	97	119	153	211	149	199	192
TH 62 EB Mainline	143	159	161	216	335	385	430	541	645	656	492	449

Table 1
Existing AM Freeway Traffic Volumes

TH 62 WB Mainline	256	277	304	401	579	678	753	968	935	852	813	655
TH 5 EB Exit	46	37	21	22	32	48	61	114	153	135	170	94
TH 5 EB Exit	46	37	21	22	32	48	61	114	153	135	170	94
TH 62 WB Mainline	210	240	283	379	547	630	692	854	782	717	643	561
TH 5 WB Exit	51	28	31	26	23	37	48	49	55	61	55	44
TH 5 WB Exit	51	28	31	26	23	37	48	49	55	61	55	44
TH 62 WB Mainline	159	212	252	353	524	593	644	805	727	656	588	517
Bloomington Rd Exit	30	61	51	68	91	132	100	156	118	104	76	48
Hiawatha Exit	96	106	167	215	283	324	346	483	482	470	387	365
Bloomington Rd/TH 55 WB Exit	78	114	135	176	233	294	273	398	359	339	270	231
TH 62 WB Mainline	81	98	117	177	291	299	371	407	368	317	318	286
TH 5 EB/WB Entrance	161	176	259	270	358	367	412	519	514	489	458	453
TH 62 WB Mainline	242	274	376	447	649	666	783	926	882	806	776	739
Bloomington Rd Entrance	3	0	0	3	3	1	6	2	5	6	11	6
TH 62 WB Mainline	245	274	376	450	652	667	789	928	887	812	787	745
Hiawatha Exit	96	106	167	215	283	324	346	483	482	470	387	365
TH 62 WB under Hiawatha	150	168	213	247	378	374	488	509	465	414	440	426
Hiawatha Exit	96	106	165	209	279	310	327	452	451	432	368	344
TH 62 WB Mainline	149	168	211	241	373	357	462	476	436	380	419	401
Hiawatha Entrance	20	21	16	29	49	46	55	71	72	57	66	76
Detector Check Haiwatha-34th	169	186	225	278	419	433	527	581	539	460	502	507
TH 62 WB Mainline	169	189	227	270	422	403	517	547	508	437	485	477
34th Ave Exit	14	15	15	19	21	31	28	40	18	28	17	16
TH 62 WB under 34th	155	178	200	270	392	414	506	549	521	434	486	507
34th Ave Exit	14	15	16	18	21	28	27	37	17	26	16	15
TH 62 WB Mainline	155	174	211	252	401	375	490	510	491	411	469	462
34th Ave Entrance	42	54	52	48	76	64	65	121	80	57	65	61
TH 62 WB Mainline	197	228	263	300	477	439	555	631	571	468	534	523
28th Ave Exit	11	16	20	25	20	21	18	35	36	35	30	25
TH 62 WB under 28th	174	210	231	285	432	445	525	625	549	458	515	530
28th Ave Exit	12	16	21	24	21	20	18	33	35	33	29	24
TH 62 WB Mainline	185	212	242	276	456	419	537	598	536	435	505	499
28th Ave Entrance	23	27	24	38	46	74	66	83	66	33	42	43
TH 62 WB Mainline	208	239	266	314	502	493	603	681	602	468	547	542
TH 77 NB Exit	7	6	10	12	25	23	21	50	50	46	50	40
TH 77 SB Exit	25	33	27	28	48	67	59	94	92	110	121	93
TH 62 WB after TH 77 SB exit	339	365	450	608	819	888	924	776	647	606	721	800
TH 62 WB "Thru Volume"	162	194	224	285	407	442	488	522	433	392	466	469
TH 77 NB Exit	8	6	10	12	26	21	22	51	52	39	43	36
TH 62 WB Mainline	200	233	256	302	476	472	581	630	550	429	504	506
TH 77 NB Entrance	177	171	226	323	412	446	436	254	214	214	255	331
TH 62 WB Mainline	377	404	482	625	888	918	1017	884	764	643	759	837
TH 77 SB Exit	27	34	28	27	50	62	63	96	96	94	104	84
TH 62 WB Mainline	350	370	454	598	838	856	954	788	668	549	655	753
TH 77 SB Entrance	26	23	36	39	66	66	77	107	108	85	74	49
TH 62 WB Mainline	376	393	490	637	904	922	1031	895	776	634	729	802
MOA NB CD Rd	57	76	78	98	159	201	209	282	264	325	230	186
Killebrew Dr Exit	11	20	31	31	41	81	64	75	82	153	103	84

Table 1
Existing AM Freeway Traffic Volumes

MOA NB CD after Killebrew Exit	46	56	47	67	118	120	145	207	182	172	127	102
MOA NB CD Rd	46	56	47	67	118	120	145	207	182	172	127	102
Killebrew Dr Entrance	9	5	17	13	16	18	24	25	19	17	20	21
MOA NB CD Rd	55	61	64	80	134	138	169	232	201	189	147	123
Lindau Ln Exit	16	24	15	26	28	30	27	56	51	74	60	52
MOA NB CD Rd	39	37	49	54	106	108	142	176	150	115	87	71
TH 77 NB/I-494 WB Exit	9	8	21	31	78	84	122	140	113	84	66	51
MOA NB CD after 77 NB/494 WB ex	30	29	28	23	28	24	20	36	37	31	21	20
TH 77 NB/I-494 WB Exit	9	8	21	31	78	84	122	140	113	84	66	51
MOA NB CD Rd	30	29	28	23	28	24	20	36	37	31	21	20
Lindau Ln Entrance	0	0	0	0	0	0	0	1	2	0	1	3
MOA NB CD Rd	30	29	28	23	28	24	20	37	39	31	22	23
TH 77 NB Entrance	161	131	116	104	120	135	137	146	189	186	166	151
MOA NB CD Rd	191	160	144	127	148	159	157	183	228	217	188	174
TH 77 NB CD Rd	360	335	410	461	450	440	460	414	400	371	412	426
I-494 EB Exit	145	129	105	97	115	132	131	140	181	191	165	142
TH 77 NB CD after 494 EB exit	179	201	265	335	318	299	308	258	202	191	244	259
I-494 EB Exit	161	131	116	104	120	135	137	146	189	186	166	151
TH 77 NB CD Rd	199	204	294	357	330	305	323	268	211	185	246	275
Lindau Ln/MOA CD Entrance	10	10	17	24	67	77	112	130	105	79	57	45
TH 77 NB CD Rd	209	214	311	381	397	382	435	398	316	264	303	320
TH 77 SB Entrance	54	42	37	42	66	68	59	72	70	100	61	77
TH 77 NB CD Rd	263	256	348	423	463	450	494	470	386	364	364	397
Lindau Ln to TH 77 NB/I-494 WB	2	5	4	2	4	5	4	4	7	2	5	8
MOA CD Entrance	9	8	21	31	78	84	122	140	113	84	66	51
Lindau/MOA to TH 77 NB	11	13	25	33	82	89	126	144	120	86	71	59
I-494 WB Exit	10	10	17	24	67	77	112	130	105	79	57	45
Lindau/MOA to TH 77 NB after 494	1	3	8	9	15	12	14	14	15	7	14	14
Lindau/MOA to TH 77 NB	1	3	8	9	15	12	14	14	15	7	14	14
I-494 WB Entrance	27	25	30	33	43	38	58	87	102	108	79	86
Lindau/MOA to TH 77 NB	28	28	38	42	58	50	72	101	117	115	93	100
TH 77 SB CD Rd	106	93	75	86	136	146	136	163	198	224	152	164
I-494 WB Exit	45	36	33	40	52	63	52	66	64	89	57	74
I-494 EB Exit	43	43	34	41	55	72	67	83	116	110	85	83
I-494 WB Exit	54	42	37	42	66	68	59	72	70	100	61	77
TH 77 SB CD Rd	52	51	38	44	70	78	77	91	128	124	91	87
TH 77 SB Entrance	24	35	19	27	38	58	48	73	89	127	101	96
TH 77 SB CD Rd	76	86	57	71	108	136	125	164	217	251	192	183
I-494 WB Entrance	40	47	47	53	58	67	84	102	77	79	95	93
TH 77 SB CD Rd	116	133	104	124	166	203	209	266	294	330	287	276
I-494 EB Exit	52	51	38	44	70	78	77	91	128	124	91	87
TH 77 SB CD Rd	64	82	66	80	96	125	132	175	166	206	196	189
Lindau Ln Exit	17	15	9	11	13	21	20	25	21	36	35	39
Killebrew Dr Exit	21	36	22	25	34	60	55	60	79	113	89	83
TH 77 SB CD end	32	36	45	52	54	51	70	93	69	69	82	85
Lindau Ln Exit	16	14	8	10	12	20	18	25	21	34	33	36
TH 77 SB CD Rd	48	68	58	70	84	105	114	150	145	172	163	153

Table 1
Existing AM Freeway Traffic Volumes

Killebrew Dr Exit	19	34	19	23	32	57	50	59	78	107	85	76
TH 77 SB CD Rd	29	34	39	47	52	48	64	91	67	65	78	77
I-494 EB to TH 77 SB CD Rd	49	82	76	115	177	187	208	229	244	228	223	180
Lindau Ln Exit	6	17	10	12	23	37	38	43	52	49	43	34
I-494 EB to TH 77 SB CD Rd	43	65	66	103	154	150	170	186	192	179	180	146
Killebrew Dr Exit	6	17	10	12	23	37	38	43	52	49	43	34
494 EB to 77 SB end	38	48	57	91	131	113	132	143	141	130	137	112
I-494 EB to TH 77 SB CD Rd	37	48	56	91	131	113	132	143	140	130	137	112
TH 5 EB to TH 55/62	88	104	141	92	127	106	117	140	156	153	152	188
TH 55 EB Exit	14	22	29	19	19	18	22	20	29	31	28	43
after TH 55 EB exit	87	92	114	90	104	93	96	126	135	132	138	179
TH 55 EB Exit	12	20	29	16	20	17	22	19	28	29	26	36
TH 5 EB to TH 55/62	76	84	112	76	107	89	95	121	128	124	126	152
TH 5 WB Entrance	36	38	63	79	105	108	132	138	132	118	131	113
TH 5 EB to TH 55/62	112	122	175	155	212	197	227	259	260	242	257	265
TH 55 EB Entrance	78	114	135	176	233	294	273	398	359	339	270	231
TH 5 EB to TH 55/62	190	236	310	331	445	491	500	657	619	581	527	496
Bloomington Rd Exit	30	61	51	68	91	132	100	156	118	104	76	48
after Blm Rd exit	168	180	261	302	375	391	469	587	579	555	502	502
Bloomington Rd Exit	29	60	51	61	87	124	88	138	105	92	69	43
TH 5 EB to TH 55/62	161	176	259	270	358	367	412	519	514	489	458	453
TH 5 WB CD to TH 55 WB/Blooming	53	63	91	101	139	151	179	174	168	162	162	131
Bloomington Rd Exit	17	25	28	22	34	43	47	36	36	44	31	18
TH 5 WB to TH 55 WB	36	38	63	79	105	108	132	138	132	118	131	113
Bloomington Rd Exit	17	25	28	22	34	43	47	36	36	44	31	18
TH 5 WB CD to TH 55 WB/Blooming	36	38	63	79	105	108	132	138	132	118	131	113
TH 5 WB to TH 55 EB	10	14	15	27	31	48	48	79	102	107	69	68
TH 5 EB to TH 55 EB	12	20	29	16	20	17	22	19	28	29	26	36
TH 5 EB/WB to TH 55 EB	22	34	44	43	51	65	70	98	130	136	95	104

Table 2
Existing PM Freeway Traffic Volumes

Location	1:45	2:00	2:15	2:30	2:45	3:00	3:15	3:30	3:45	4:00	4:15	4:30	4:45	5:00	5:15	5:30	5:45	6:00	6:15	6:30
I-494 WB Mainline	695	673	685	670	776	738	724	812	937	862	919	875	877	818	951	862	840	724	719	692
34th Ave Exit	48	51	39	51	65	52	28	43	46	57	45	55	59	45	53	50	38	37	31	32
TH 5 Exit	71	49	57	47	47	40	46	53	51	53	43	50	48	51	50	66	49	65	44	42
I-494 WB Under TH 5	574	561	592	562	655	631	644	673	831	755	806	768	774	720	837	739	760	599	634	628
TH 5/34th Exit	119	102	96	99	113	94	75	101	98	110	90	105	107	96	104	117	86	105	76	73
I-494 WB Mainline	576	571	589	571	663	644	649	711	839	752	829	770	770	722	847	745	754	619	643	619
TH 5 Entrance	444	413	512	433	509	500	444	443	495	480	539	507	608	586	645	582	485	489	538	515
I-494 WB Mainline	1020	984	1101	1004	1172	1144	1093	1154	1334	1232	1368	1277	1378	1308	1492	1327	1239	1108	1181	1134
34th Ave Entrance	169	167	166	157	192	105	222	170	246	176	178	135	176	172	184	171	146	111	155	119
Detector Check 34th-24th	1225	1188	1256	1187	1362	1248	1350	1291	1554	1490	1457	1504	1529	1500	1573	1362	1459	1296	1397	1334
I-494 WB Mainline	1189	1151	1267	1161	1364	1249	1315	1324	1580	1408	1546	1412	1554	1480	1676	1498	1385	1219	1336	1253
24th Ave Exit	148	153	159	129	163	150	136	186	182	230	168	240	221	296	305	332	352	323	299	240
TH 77 NB Exit	52	81	77	73	85	76	85	76	123	92	113	137	164	198	183	198	185	136	149	136
I-494 WB Under 24th Ave	1024	927	998	953	1088	995	1082	1016	1209	1180	1141	1077	1088	976	976	850	877	888	948	987
24th Ave Exit	144	152	163	130	166	153	137	193	190	216	183	233	233	298	349	360	345	292	286	221
I-494 WB Mainline	1045	999	1104	1031	1198	1096	1178	1131	1390	1192	1363	1179	1321	1182	1327	1138	1040	927	1050	1032
TH 77 NB Exit	51	80	79	73	87	78	86	79	128	86	123	133	173	199	210	215	181	123	143	125
I-494 WB Mainline	994	919	1025	958	1111	1018	1092	1052	1262	1106	1240	1046	1148	983	1117	923	859	804	907	907
24th Ave Entrance	68	52	67	62	74	51	91	61	81	83	103	88	77	65	81	75	55	49	70	60
I-494 WB Mainline	1062	971	1092	1020	1185	1069	1183	1113	1343	1189	1343	1134	1225	1048	1198	998	914	853	977	967
TH 77 NB HOV Entrance	13	4	10	9	12	18	18	22	20	17	9	17	17	17	16	14	9	14	12	14
I-494 WB Mainline	1075	975	1102	1029	1197	1087	1201	1135	1363	1206	1352	1151	1242	1065	1214	1012	923	867	989	981
TH 77 SB Exit	139	152	122	113	157	128	179	141	188	219	185	178	167	179	162	149	140	128	179	195
I-494 WB after TH 77 SB Exit	No Detector																			
TH 77 SB Exit	141	150	130	111	166	132	190	142	204	209	221	175	195	170	198	164	142	111	176	184
I-494 WB Mainline	934	825	972	918	1031	955	1011	993	1159	997	1131	976	1047	895	1016	848	781	756	813	797
TH 77 NB/SB Entrance	389	343	384	358	353	342	338	341	331	335	335	329	349	309	313	308	320	295	328	376
I-494 WB Mainline	1323	1168	1356	1276	1384	1297	1349	1334	1490	1332	1466	1305	1396	1204	1329	1156	1101	1051	1141	1173
12th Ave Exit	123	105	140	145	131	168	124	136	133	196	198	243	285	253	245	288	263	272	268	267
I-494 WB 12th to Portland	1189	1071	1155	1150	1197	1099	1167	1188	1268	1186	1082	1079	959	1001	900	788	830	891	886	952
I-494 WB "Thru Volume"	923	833	911	937	975	925	953	983	1070	1047	945	993	895	945	832	768	773	868	826	843
12th Ave Exit	124	104	147	143	137	172	130	137	141	189	227	240	320	243	284	309	265	246	265	257
I-494 WB Mainline	1199	1064	1209	1133	1247	1125	1219	1197	1349	1143	1239	1065	1076	961	1045	847	836	805	876	916
Portland Ave Entrance	119	90	129	131	115	119	100	117	117	90	95	74	96	89	100	81	61	80	65	87
I-494 WB Mainline	1318	1154	1338	1264	1362	1244	1319	1314	1466	1233	1334	1139	1172	1050	1145	928	897	885	941	1003
Nicollet Exit	119	112	94	101	66	87	99	112	97	98	106	104	102	91	90	90	80	71	72	99
I-494 WB Under Nicollet	1192	1109	1198	1192	1250	1145	1185	1229	1234	1160	1096	1106	973	1045	879	869	843	891	894	994
Nicollet Ave Exit	120	106	97	99	68	88	102	110	107	96	118	98	111	84	106	87	78	65	70	91
I-494 WB Mainline	1198	1048	1241	1165	1294	1156	1217	1204	1359	1137	1216	1041	1061	966	1039	841	819	820	871	912
Nicollet Ave Entrance	100	103	86	100	115	103	114	82	85	84	74	76	86	70	102	74	63	70	102	68
I-494 WB Mainline	1298	1151	1327	1265	1409	1259	1331	1286	1444	1221	1290	1117	1147	1036	1141	915	882	890	973	980
Lyndale Exit	83	92	74	98	91	116	111	117	130	100	75	78	67	68	58	54	61	64	75	78
I-494 WB Under Lyndale	1172	1076	1211	1208	1175	1101	1153	1168	1146	1119	1109	1089	959	961	909	879	842	861	911	967
Lyndale Ave Exit	86	91	76	95	101	120	117	117	147	100	82	75	75	68	68	53	60	62	74	73
I-494 WB Mainline	1212	1060	1251	1170	1308	1139	1214	1169	1297	1121	1208	1042	1072	968	1073	862	822	828	899	907
Lyndale Ave Entrance	148	146	136	138	123	123	99	89	96	104	80	91	69	106	78	75	71	62	72	105
I-494 WB Mainline	1360	1206	1387	1308	1431	1262	1313	1258	1393	1225	1288	1133	1141	1074	1151	937	893	890	971	1012
I-35W NB Exit	124	114	148	132	111	127	130	111	108	117	105	101	86	89	75	89	71	71	70	81
I-35W SB Exit	111	123	115	143	98	107	103	128	78	98	87	64	52	45	56	56	42	49	65	57

Table 2
Existing PM Freeway Traffic Volumes

I-494 WB after I-35W SB Exit	1427	1326	1321	1388	1338	1317	1312	1300	1307	1261	1270	1212	1133	1093	1091	973	1020	970	1040	1161
I-494 WB "Thru Volume"	1110	1015	1014	1068	1041	1028	1032	1003	1028	1000	1000	985	922	893	871	787	831	799	836	927
I-35W NB Exit	125	110	161	129	127	127	135	112	124	118	113	100	93	93	86	89	67	69	70	77
I-494 WB Mainline	1235	1096	1226	1179	1304	1135	1178	1146	1269	1107	1175	1033	1048	981	1065	848	826	821	901	935
I-35W NB Entrance	317	311	307	320	297	289	280	297	279	261	270	227	211	200	220	186	189	171	204	234
I-494 WB Mainline	1552	1407	1533	1499	1601	1424	1458	1443	1548	1368	1445	1260	1259	1181	1285	1034	1015	992	1105	1169
I-35W SB Exit	112	118	125	139	112	107	107	130	90	99	94	63	56	47	64	56	40	47	65	54
I-494 WB Mainline	1440	1289	1408	1360	1489	1317	1351	1313	1458	1269	1351	1197	1203	1134	1221	978	975	945	1040	1115
I-35W SB Entrance	150	137	135	150	155	148	121	89	139	132	109	115	125	116	101	109	113	116	84	116
I-494 WB Mainline	1590	1426	1543	1510	1644	1465	1472	1402	1597	1401	1460	1312	1328	1250	1322	1087	1088	1061	1124	1231
Penn Ave Exit	149	131	121	124	116	114	123	94	111	112	115	85	91	79	83	82	85	79	62	91
I-494 WB Under Penn	Data Not Valid																			
Penn Ave Exit	149	131	121	124	116	114	123	94	111	112	115	85	91	79	83	82	85	79	62	91
I-494 WB Mainline	1441	1295	1422	1386	1528	1351	1349	1308	1486	1289	1345	1227	1237	1171	1239	1005	1003	982	1062	1140
Penn Ave Entrance	125	113	146	129	155	123	152	151	190	146	202	209	207	196	175	150	211	164	221	152
I-494 WB Mainline	1566	1408	1568	1515	1683	1474	1501	1459	1676	1435	1547	1436	1444	1367	1414	1155	1214	1146	1283	1292
I-494 WB Penn to France	1553	1493	1500	1521	1491	1510	1485	1436	1513	1487	1436	1400	1424	1347	1276	1296	1275	1229	1291	1392
I-494 EB France to Penn	1426	1380	1440	1463	1522	1444	1471	1433	1471	1544	1408	1473	1422	1367	1265	1249	1318	1231	1343	1470
I-494 EB Mainline	1426	1380	1440	1463	1522	1444	1471	1433	1471	1544	1408	1473	1422	1367	1265	1249	1318	1231	1343	1470
Penn Ave Exit	112	96	84	81	86	71	85	55	49	51	42	39	40	43	31	26	38	44	44	60
I-494 EB Under Penn Ave	1308	1308	1367	1379	1443	1381	1409	1397	1436	1484	1383	1446	1389	1304	1181	1292	1266	1209	1309	1424
Penn Ave Exit	112	94	83	81	86	71	84	54	49	51	41	39	40	44	32	25	38	43	44	59
I-494 EB Mainline	1314	1286	1357	1382	1436	1373	1387	1379	1422	1493	1367	1434	1382	1323	1233	1224	1280	1188	1299	1411
Penn Ave Entrance	140	146	140	181	184	147	172	167	179	199	226	227	280	251	267	254	266	243	202	213
I-494 EB Mainline	1454	1432	1497	1563	1620	1520	1559	1546	1601	1692	1593	1661	1662	1574	1500	1478	1546	1431	1501	1624
I-35W SB Exit	315	314	305	314	345	306	302	310	309	302	278	281	253	237	224	220	248	259	262	280
I-494 WB after I-35W SB Exit	1121	1118	1184	1212	1255	1207	1246	1208	1296	1343	1331	1394	1400	1283	1219	1340	1292	1223	1240	1313
I-35W SB Exit	319	314	307	322	349	307	304	316	308	311	275	279	254	245	233	208	249	250	262	285
I-494 EB Mainline	1135	1118	1190	1241	1271	1213	1255	1230	1293	1381	1318	1382	1408	1329	1267	1270	1297	1181	1239	1339
I-35W SB Entrance	70	68	72	99	69	82	74	65	78	74	79	74	57	57	58	53	61	53	58	61
I-494 EB Mainline	1205	1186	1262	1340	1340	1295	1329	1295	1371	1455	1397	1456	1465	1386	1325	1323	1358	1234	1297	1400
I-35W NB Exit	159	142	145	147	174	148	165	155	172	157	160	137	151	140	156	133	130	98	134	153
I-494 WB after I-35W SB Exit	No Detector																			
I-35W NB Exit	159	142	145	147	174	148	165	155	172	157	160	137	151	140	156	133	130	98	134	153
I-494 EB Mainline	1046	1044	1117	1193	1166	1147	1164	1140	1199	1298	1237	1319	1314	1246	1169	1190	1228	1136	1163	1247
I-35W NB Entrance	133	128	136	126	124	92	114	96	86	89	86	112	117	104	97	138	111	97	109	119
I-494 EB Mainline	1179	1172	1253	1319	1290	1239	1278	1236	1285	1387	1323	1431	1431	1350	1266	1328	1339	1233	1272	1366
Lyndale Ave Exit	110	119	96	108	100	124	88	79	67	74	67	43	57	70	69	62	56	79	52	92
I-494 EB Under Lyndale	1129	1089	1188	1236	1264	1243	1283	1268	1394	1425	1424	1469	1396	1309	1231	1380	1307	1082	1173	1309
Lyndale Ave Exit	105	115	94	106	95	112	82	72	59	68	59	41	56	69	67	57	55	84	54	90
I-494 EB Mainline	1074	1057	1159	1213	1195	1127	1196	1164	1226	1319	1264	1390	1375	1281	1199	1271	1284	1149	1218	1276
Lyndale Ave Entrance	98	96	79	74	98	78	106	67	102	84	117	86	100	97	125	90	102	101	81	122
I-494 EB Mainline	1172	1153	1238	1287	1293	1205	1302	1231	1328	1403	1381	1476	1475	1378	1324	1361	1386	1250	1299	1398
Nicollet Ave Exit	152	158	169	146	126	136	119	102	102	82	96	90	70	87	112	126	94	148	125	141
I-494 EB Under Nicollet	1155	1119	1189	1233	1280	1244	1337	1277	1427	1444	1492	1489	1426	1374	1334	1431	1343	1349	1298	1384
Nicollet Ave Exit	136	143	154	136	116	119	106	91	89	75	83	84	69	82	103	110	91	124	114	129
I-494 EB Mainline	1036	1010	1084	1151	1177	1086	1196	1140	1239	1328	1298	1392	1406	1296	1221	1251	1295	1126	1185	1269
Nicollet Ave Entrance	146	154	151	137	164	156	160	165	159	138	141	148	180	132	183	148	150	158	147	109
I-494 EB Mainline	1182	1164	1235	1288	1341	1242	1356	1305	1398	1466	1439	1540	1586	1428	1404	1399	1445	1284	1332	1378

Table 2
Existing PM Freeway Traffic Volumes

Portland Ave Exit	95	133	105	110	115	113	97	105	98	116	83	77	76	54	54	47	54	64	85	135
I-494 EB Portland-12th	1134	1067	1148	1216	1242	1247	1327	1272	1427	1447	1503	1514	1495	1439	1403	1466	1396	1399	1308	1335
Portland Ave Exit	91	129	103	107	114	103	92	100	90	109	75	75	77	52	52	43	54	56	81	127
I-494 EB Mainline	1091	1035	1132	1181	1227	1139	1264	1205	1308	1357	1364	1465	1509	1376	1352	1356	1391	1228	1251	1251
12th Ave Entrance	112	112	104	130	139	151	151	136	196	162	217	218	247	236	284	231	216	223	172	156
I-494 EB Mainline	1203	1147	1236	1311	1366	1290	1415	1341	1504	1519	1581	1683	1756	1612	1636	1587	1607	1451	1423	1407
TH 77 SB Exit	287	267	310	326	363	371	373	357	426	422	474	473	484	463	481	435	475	453	449	429
TH 77 NB Exit	84	83	84	106	96	93	75	84	72	79	88	78	76	94	80	79	69	84	87	92
24th Ave Exit	54	55	42	46	40	56	55	42	26	33	37	41	30	29	34	34	31	38	39	36
I-494 EB under 24th Ave	906	846	876	944	952	951	1023	1052	1121	1163	1165	1247	1208	1183	1194	1207	1116	1098	1026	1012
I-494 EB "Thru Volume"	843	773	809	869	888	890	955	990	1055	1100	1093	1164	1137	1117	1117	1146	1054	1041	978	955
TH 77 SB Exit	272	260	308	317	358	339	362	325	406	392	443	453	492	438	460	408	469	407	411	399
I-494 EB Mainline	931	887	928	994	1008	951	1053	1016	1098	1127	1138	1230	1264	1174	1176	1179	1138	1044	1012	1008
TH 77 SB Entrance	63	73	67	75	64	61	68	62	66	63	72	83	71	66	77	61	62	57	48	57
I-494 EB Mainline	994	960	995	1069	1072	1012	1121	1078	1164	1190	1210	1313	1335	1240	1253	1240	1200	1101	1060	1065
TH 77 NB Exit	80	81	83	103	95	85	73	76	69	73	82	75	77	89	76	74	68	75	80	86
I-494 EB Mainline	914	879	912	966	977	927	1048	1002	1095	1117	1128	1238	1258	1151	1177	1166	1132	1026	980	979
24th Ave Exit	51	54	42	45	39	51	53	38	25	31	35	39	31	27	32	32	31	34	36	34
I-494 EB Mainline	863	825	870	921	938	876	995	964	1070	1086	1093	1199	1227	1124	1145	1134	1101	992	944	945
TH 77 NB/MOA Entrance	126	135	145	135	146	146	141	130	173	137	155	147	183	182	196	176	177	168	143	150
I-494 EB Mainline	989	960	1015	1056	1084	1022	1136	1094	1243	1223	1248	1346	1410	1306	1341	1310	1278	1160	1087	1095
24th Ave Entrance	139	103	149	130	143	128	161	154	173	147	159	180	199	201	206	207	163	177	189	150
Detector Check 24th to 34th	1170	1086	1156	1227	1243	1225	1302	1361	1456	1452	1462	1570	1599	1576	1589	1599	1453	1459	1377	1285
I-494 EB Mainline	1128	1063	1164	1186	1227	1150	1297	1248	1416	1370	1407	1526	1609	1507	1547	1517	1441	1337	1276	1245
34th Ave Exit	174	121	119	153	135	141	115	119	104	95	91	85	74	86	73	54	46	60	60	56
TH 5 Exit	393	385	394	410	387	370	432	444	482	502	483	488	473	531	558	544	457	503	491	458
I-494 EB under TH 5	803	758	807	846	857	904	898	952	989	1041	1060	1124	1206	1124	1172	1120	1048	1002	992	997
34th Ave Exit	143	102	105	129	120	115	103	98	94	79	78	76	68	74	63	48	43	51	50	46
I-494 EB Mainline	985	961	1059	1057	1107	1035	1194	1150	1322	1291	1329	1450	1541	1433	1484	1469	1398	1286	1226	1199
TH 5 Exit	324	324	347	345	344	301	388	366	433	420	416	439	434	460	479	480	425	430	406	377
I-494 EB Mainline	661	637	712	712	763	734	806	784	889	871	913	1011	1107	973	1005	989	973	856	820	822
34th Ave/TH 5 WB Entrance	118	102	106	130	149	135	151	147	204	172	266	190	276	241	288	232	197	176	177	135
I-494 EB Mainline	779	739	818	842	912	869	957	931	1093	1043	1179	1201	1383	1214	1293	1221	1170	1032	997	957
TH 5 WB Mainline	490	397	456	459	436	501	492	586	549	560	656	689	803	752	817	855	797	644	535	522
TH 5/TH 55 CD Road Exit	143	128	127	128	145	162	185	219	195	225	259	297	363	346	372	324	348	285	196	203
TH 5 WB Mainline	347	269	329	331	291	339	307	367	354	335	397	392	440	406	445	531	449	359	339	319
TH 5/TH 55 CD Road Entrance	55	57	27	44	43	39	33	43	35	47	43	44	28	40	32	32	44	40	26	30
TH 5 WB Mainline	402	326	356	375	334	378	340	410	389	382	440	436	468	446	477	563	493	399	365	349
TH 55/62 EB Entrance	194	175	187	182	209	195	191	198	237	220	200	192	218	173	183	207	193	186	168	154
TH 5 WB Mainline	596	501	543	557	543	573	531	608	626	602	640	628	686	619	660	770	686	585	533	503
Glumack Exit	233	199	186	197	162	164	170	205	206	209	184	161	170	177	179	213	206	165	155	143
TH 5 WB Under Glumack	Data not valid																			
Glumack Exit	233	199	186	197	162	164	170	205	206	209	184	161	170	177	179	213	206	165	155	143
TH 5 WB Mainline	363	302	357	360	381	409	361	403	420	393	456	467	516	442	481	557	480	420	378	360
Glumack Entrance	297	282	331	293	324	304	265	230	259	252	298	245	303	343	389	274	253	312	355	343
TH 5 WB Mainline	660	584	688	653	705	713	626	633	679	645	754	712	819	785	870	831	733	732	733	703
Post Rd Exit	109	83	110	95	114	107	95	88	82	85	96	84	92	74	101	98	85	96	100	107
TH 5 WB Under Glumack	Data not valid																			
TH 5 WB minus Post Entrance	567	519	549	572	577	606	552	529	582	582	643	652	698	733	763	709	676	638	630	620

Table 2
Existing PM Freeway Traffic Volumes

Post Rd Exit	106	81	115	93	116	107	92	90	84	82	98	81	95	72	102	101	82	96	100	103
TH 5 WB Mainline	554	503	573	560	589	606	534	543	595	563	656	631	724	713	768	730	651	636	633	600
Post Rd Entrance	23	21	45	27	54	38	35	28	37	32	14	19	30	25	21	12	22	19	25	25
TH 5 WB Post to I-494/34th	590	540	594	599	631	644	587	557	619	614	657	671	728	758	784	721	698	657	655	645
TH 5 WB Mainline	577	524	618	587	643	644	569	571	632	595	670	650	754	738	789	742	673	655	658	625
34th Ave Exit	87	74	60	98	82	88	78	68	81	57	69	90	82	81	65	81	138	90	58	43
I-494 EB Exit	46	37	46	56	52	56	47	60	56	58	62	53	64	71	79	79	50	76	62	67
TH 5 WB before I-494 merge	647	631	645	674	729	753	708	721	796	841	853	920	980	971	1023	926	782	793	855	821
34th/I-494 WB Exit	133	111	106	154	134	144	125	128	137	115	131	143	146	152	144	160	188	166	120	110
TH 5 WB Mainline	444	413	512	433	509	500	444	443	495	480	539	507	608	586	645	582	485	489	538	515
TH 5 EB Mainline	324	324	347	345	344	301	388	366	433	420	416	439	434	460	479	480	425	430	406	377
34th/I-494 WB Entrance	156	127	134	101	120	112	130	138	156	146	168	129	180	166	200	205	137	143	149	109
TH 5 EB Mainline	480	451	481	446	464	413	518	504	589	566	584	568	614	626	679	685	562	573	555	486
Post Rd Exit	56	59	63	44	37	34	41	44	35	35	32	43	47	44	33	45	32	47	61	59
TH 5 EB under Post	361	335	384	492	369	333	416	411	501	486	465	465	503	508	645	539	464	451	474	491
Post Rd Exit	56	59	63	44	37	34	41	44	35	35	32	43	47	44	33	45	32	47	61	59
TH 5 EB Mainline	424	392	418	402	427	379	477	460	554	531	552	525	567	582	646	640	530	526	494	427
Post Rd Entrance	116	141	105	118	117	108	110	80	95	116	115	109	123	151	117	104	106	106	121	81
TH 5 EB Mainline	540	533	523	520	544	487	587	540	649	647	667	634	690	733	763	744	636	632	615	508
Glumack Dr Exit	332	294	267	254	269	235	262	275	276	295	314	274	250	333	323	324	268	321	310	221
TH 5 EB under Glumack	279	285	317	327	337	306	351	352	401	445	399	420	453	462	520	496	413	376	381	393
Glumack Dr Exit	293	271	239	227	241	212	251	237	265	258	294	250	245	307	292	294	250	291	276	183
TH 5 EB Mainline	247	262	284	293	303	275	336	303	384	389	373	384	445	426	471	450	386	341	339	325
Glumack Dr Entrance	244	226	235	194	214	211	197	174	197	193	205	205	244	271	268	217	208	256	250	254
TH 5 EB Mainline	491	488	519	487	517	486	533	477	581	582	578	589	689	697	739	667	594	597	589	579
TH 55 Exit	201	230	218	212	231	212	204	183	232	224	227	201	253	284	292	238	219	257	243	237
TH 5 EB under TH 55 flyover	320	282	329	316	318	313	334	350	360	420	378	431	448	454	487	479	406	385	380	413
TH 55 Exit	189	219	207	196	218	196	202	164	228	202	217	187	249	268	277	221	208	239	230	211
TH 5 EB Mainline	302	269	312	291	299	290	331	313	353	380	361	402	440	429	462	446	386	358	359	368
TH 55 EB Entrance	82	68	99	83	125	116	101	136	151	145	170	166	185	180	209	188	164	159	173	168
TH 5 EB Mainline	384	337	411	374	424	406	432	449	504	525	531	568	625	609	671	634	550	517	532	536
TH 55 WB Entrance	31	33	31	33	44	46	45	45	73	98	61	71	84	97	117	113	94	95	64	63
TH 5 EB Mainline	415	370	442	407	468	452	477	494	577	623	592	639	709	706	788	747	644	612	596	599
TH 5 WB to I-494 EB Loop	133	111	106	154	134	144	125	128	137	115	131	143	146	152	144	160	188	166	120	110
34th Ave Exit	87	74	60	98	82	88	78	68	81	57	69	90	82	81	65	81	138	90	58	43
I-494 EB Exit	46	37	46	56	52	56	47	60	56	58	62	53	64	71	79	79	50	76	62	67
34th Ave Exit	87	74	60	98	82	88	78	68	81	57	69	90	82	81	65	81	138	90	58	43
TH 5 WB to I-494 EB Loop	46	37	46	56	52	56	47	60	56	58	62	53	64	71	79	79	50	76	62	67
34th Ave Entrance	72	65	60	74	97	79	104	87	148	114	204	137	212	170	209	153	147	100	115	68
TH 5 WB to I-494 EB Loop	118	102	106	130	149	135	151	147	204	172	266	190	276	241	288	232	197	176	177	135
I-494 WB to TH 5 EB Loop	119	102	96	99	113	94	75	101	98	110	90	105	107	96	104	117	86	105	76	73
34th Ave Exit	48	51	39	51	65	52	28	43	46	57	45	55	59	45	53	50	38	37	31	32
TH 5 EB Exit	71	49	57	47	47	40	46	53	51	53	43	50	48	51	50	66	49	65	44	42
34th Ave Exit	48	52	39	52	66	53	28	45	46	57	46	55	59	45	54	50	38	38	31	32
I-494 WB to TH 5 EB Loop	71	50	57	47	47	41	47	56	52	53	44	50	48	51	50	67	48	67	45	41
34th Ave Entrance	85	77	77	54	73	71	83	82	104	93	124	79	132	115	150	138	89	76	104	68
I-494 WB to TH 5 EB Loop	156	127	134	101	120	112	130	138	156	146	168	129	180	166	200	205	137	143	149	109

Table 2
Existing PM Freeway Traffic Volumes

TH 5 WB CD Road	143	128	127	128	145	162	185	219	195	225	259	297	363	346	372	324	348	285	196	203
TH 55 WB Entrance	55	57	27	44	43	39	33	43	35	47	43	44	28	40	32	32	44	40	26	30
TH 5 WB CD Road	198	185	154	172	188	201	218	262	230	272	302	341	391	386	404	356	392	325	222	233
TH 55 EB Exit	52	38	48	40	45	63	73	87	73	93	80	122	148	128	126	107	135	95	70	64
TH 55 EB Exit	52	38	48	40	45	63	73	87	73	93	80	122	148	128	126	107	135	95	70	64
TH 5 WB CD Road	146	147	106	132	143	138	145	175	157	179	222	219	243	258	278	249	257	230	152	169
TH 55 WB/Bloomington Exit	91	90	79	88	100	99	112	132	122	132	179	175	215	218	246	217	213	190	126	139
TH 5 WB CD Road	55	57	27	44	43	39	33	43	35	47	43	44	28	40	32	32	44	40	26	30
TH 77 NB Mainline	528	567	563	560	543	517	596	620	639	607	620	672	708	712	728	717	733	661	608	740
EOSR Exit	72	87	76	79	66	76	73	106	106	108	111	97	108	106	150	146	149	122	128	147
TH 77 NB under EOSR	456	462	469	453	475	437	496	481	541	484	479	559	582	575	539	537	556	503	483	561
EOSR Exit	72	90	79	83	66	77	76	112	105	111	117	99	111	111	158	153	155	129	127	154
TH 77 NB Mainline	456	477	484	477	477	440	520	508	534	496	503	573	597	601	570	564	578	532	481	586
EOSR Entrance	59	51	61	65	77	72	56	67	69	76	66	77	90	101	109	92	89	88	54	73
TH 77 NB Mainline	515	528	545	542	554	512	576	575	603	572	569	650	687	702	679	656	667	620	535	659
MOA CD Rd Exit	87	81	68	80	82	89	80	80	91	90	71	105	115	98	99	98	100	119	71	111
TH 77 NB under Killebrew	439	446	475	450	489	426	476	497	533	485	494	528	571	601	561	539	554	500	471	519
MOA CD Rd Exit	85	81	68	82	80	88	83	80	88	90	72	108	115	98	102	101	102	119	70	116
TH 77 NB Mainline	430	447	477	460	474	424	493	495	515	482	497	542	572	604	577	555	565	501	465	543
I-494 EB Exit	91	80	97	81	90	81	81	83	113	92	92	80	100	108	110	117	114	108	86	87
I-494 WB Exit	150	153	131	132	133	123	131	135	141	133	122	143	130	116	109	115	125	112	113	137
TH 77 NB under Lindau	187	186	228	240	243	207	250	260	251	252	260	286	322	362	323	294	302	269	250	285
I-494 CD Exit	242	249	239	216	227	210	226	226	259	227	224	237	238	231	233	245	250	225	206	239
TH 77 NB Mainline	188	198	238	244	247	214	267	269	256	255	273	305	334	373	344	310	315	276	259	304
I-494 EB Entrance	80	81	83	103	95	85	73	76	69	73	82	75	77	89	76	74	68	75	80	86
TH 77 NB Mainline	268	279	321	347	342	299	340	345	325	328	355	380	411	462	420	384	383	351	339	390
I-494 WB HOV Exit	13	4	10	9	12	18	17	22	20	17	9	16	17	16	15	13	9	14	12	14
TH 77 NB after HOV Exit	257	260	309	340	320	282	306	321	306	315	334	348	390	432	388	356	364	345	321	366
I-494 WB HOV Exit	13	4	10	9	12	18	18	22	20	17	9	17	17	17	16	14	9	14	12	14
TH 77 NB Mainline	255	275	311	338	330	281	322	323	305	311	346	363	394	445	404	370	374	337	327	376
I-494 WB/MOA Entrance	115	152	160	151	180	155	172	177	234	178	265	281	319	324	352	330	302	216	245	229
Detector Check north of I-494	372	411	462	500	497	434	486	489	531	501	584	626	710	762	710	670	676	579	564	611
TH 77 NB Mainline	370	427	471	489	510	436	494	500	539	489	611	644	713	769	756	700	676	553	572	605
66th St Exit	63	69	78	78	52	83	77	74	71	90	98	102	128	163	170	147	144	119	88	104
TH 77 NB under 66th	322	333	379	422	438	352	404	413	459	412	473	518	561	601	554	516	542	449	469	509
66th St Exit	61	73	80	76	54	83	79	76	72	88	105	106	132	164	178	155	142	116	90	103
TH 77 NB Mainline	309	354	391	413	456	353	415	424	467	401	506	538	581	605	578	545	534	437	482	502
66th St Entrance	120	121	124	117	131	137	146	156	174	155	171	168	162	183	173	185	170	144	148	157
TH 77 NB Mainline	429	475	515	530	587	490	561	580	641	556	677	706	743	788	751	730	704	581	630	659
TH 62 EB Exit	105	111	114	112	144	126	142	141	128	120	142	146	145	197	204	208	197	183	183	151
TH 77 NB after TH 62 EB exit	320	344	394	414	442	373	384	440	482	446	514	527	522	590	530	469	453	470	473	493
TH 62 EB Exit	106	116	116	113	144	124	151	141	135	118	147	153	162	197	209	224	213	163	176	155
TH 77 NB Mainline	323	359	399	417	443	366	410	439	506	438	530	553	581	591	542	506	491	418	454	504
TH 62 EB Entrance	30	28	31	53	49	37	38	38	36	44	45	49	40	31	35	31	35	47	50	48
TH 77 NB Mainline	353	387	430	470	492	403	448	477	542	482	575	602	621	622	577	537	526	465	504	552
TH 62 WB Exit	201	222	232	258	295	240	250	270	314	264	286	304	310	305	291	212	200	227	313	307
TH 62 WB Exit	201	222	232	258	295	240	250	270	314	264	286	304	310	305	291	212	200	227	313	307
TH 77 NB Mainline	152	165	198	212	197	163	198	207	228	218	289	298	311	317	286	325	326	238	191	245

Table 2
Existing PM Freeway Traffic Volumes

TH 62 WB Entrance	24	22	31	29	29	30	23	35	47	51	47	53	59	36	35	53	41	32	37	48
TH 77 NB Mainline	176	187	229	241	226	193	221	242	275	269	336	351	370	353	321	378	367	270	228	293
TH 77 SB Mainline	210	217	237	235	258	293	272	311	305	413	395	418	397	421	433	414	435	425	426	421
TH 62 WB Exit	41	52	54	45	52	49	49	54	53	51	52	50	42	37	46	31	46	42	27	43
TH 62 WB Exit	41	52	54	45	52	49	49	54	53	51	52	50	42	37	46	31	46	42	27	43
TH 77 SB Mainline	169	165	183	190	206	244	223	257	252	362	343	368	355	384	387	383	389	383	399	378
TH 62 WB Entrance	141	106	127	118	138	143	153	121	195	172	189	178	180	127	129	123	107	112	104	126
TH 77 SB Mainline	310	271	310	308	344	387	376	378	447	534	532	546	535	511	516	506	496	495	503	504
TH 62 EB Exit	24	28	20	25	24	20	34	33	36	43	34	45	38	43	36	47	35	36	29	48
TH 62 EB Exit	24	28	20	25	24	20	34	33	36	43	34	45	38	43	36	47	35	36	29	48
TH 77 SB Mainline	286	243	290	283	320	367	342	345	411	491	498	501	497	468	480	459	461	459	474	456
TH 62 EB Entrance	283	306	294	342	304	349	320	331	377	408	368	404	437	386	392	357	394	369	336	367
TH 77 SB Mainline	569	549	584	625	624	716	662	676	788	899	866	905	934	854	872	816	855	828	810	823
66th St Exit	81	92	105	82	114	112	104	105	110	107	127	118	102	106	108	120	117	118	150	138
TH 77 SB under 66th	469	446	494	529	498	587	548	565	674	782	716	786	787	735	763	694	732	694	658	663
66th St Exit	84	94	102	84	116	115	106	106	111	108	130	118	107	108	108	120	118	120	150	142
TH 77 SB Mainline	485	455	482	541	508	601	556	570	677	791	736	787	827	746	764	696	737	708	660	681
66th St Entrance	60	57	75	62	74	77	74	76	81	81	92	91	108	91	121	100	93	100	76	92
TH 77 SB Mainline	545	512	557	603	582	678	630	646	758	872	828	878	935	837	885	796	830	808	736	773
Diagonal Blvd Exit	27	24	41	36	48	35	45	36	32	56	49	59	47	56	41	28	30	42	34	43
TH 77 SB after Diagonal exit	523	491	551	560	554	640	605	612	739	830	793	829	888	804	883	765	801	775	720	717
Diagonal Blvd Exit	27	24	39	36	46	35	44	36	31	55	48	58	47	55	39	28	30	42	33	44
TH 77 SB Mainline	518	488	518	567	536	643	586	610	727	817	780	820	888	782	846	768	800	766	703	729
Diagonal Blvd Entrance	18	14	26	27	16	18	16	24	18	18	33	29	25	23	40	19	27	21	27	16
TH 77 SB Mainline	536	502	544	594	552	661	602	634	745	835	813	849	913	805	886	787	827	787	730	745
I-494 CD Rd Exit	184	150	164	165	153	162	152	139	152	168	142	148	163	134	150	148	139	132	148	167
TH 77 SB south of I-494 exit	354	348	397	428	395	502	456	495	602	672	672	692	757	688	753	628	682	654	590	564
I-494 CD Rd Exit	183	151	159	165	154	161	151	139	150	167	142	150	162	131	147	150	140	132	146	170
TH 77 SB Mainline	353	351	385	429	398	500	451	495	595	668	671	699	751	674	739	637	687	655	584	575
MOA CD Rd Exit	104	87	105	86	82	105	82	78	99	107	89	83	92	101	99	93	102	103	80	86
TH 77 SB south of MOA exit	251	266	293	338	324	397	373	417	508	563	588	606	675	585	655	543	581	553	511	480
MOA CD Rd Exit	103	87	102	87	80	105	81	78	97	107	88	84	90	99	97	93	103	103	79	87
Detector Check under Lindau	250	266	292	339	316	398	377	411	498	562	596	610	667	594	651	543	585	561	500	482
TH 77 SB Mainline	250	264	283	342	318	395	370	417	498	561	583	615	661	575	642	544	584	552	505	488
I-494 WB/MOA CD Entrance	104	108	102	90	132	111	142	116	162	173	167	145	171	144	159	131	121	92	146	146
Detector Check after CD Ent	373	397	409	451	456	523	546	537	674	783	755	772	851	750	811	685	719	680	680	652
TH 77 SB Mainline	354	372	385	432	450	506	512	533	660	734	750	760	832	719	801	675	705	644	651	634
Lindau Ln Entrance	16	17	38	33	30	32	35	35	45	35	47	41	49	50	70	58	44	43	38	44
TH 77 SB Mainline	370	389	423	465	480	538	547	568	705	769	797	801	881	769	871	733	749	687	689	678
I-494 EB CD Entrance	174	162	200	217	254	261	286	289	308	346	379	375	414	370	404	364	385	331	359	309
Detector Check after 494 ent	576	606	653	726	776	851	887	893	1052	1205	1238	1239	1350	1217	1308	1187	1182	1092	1108	1032
TH 77 SB Mainline	544	551	623	682	734	799	833	857	1013	1115	1176	1176	1295	1139	1275	1097	1134	1018	1048	987
Killebrew Dr Entrance	79	71	102	109	109	83	108	132	134	121	147	150	152	163	165	235	141	148	154	126
TH 77 SB Mainline	623	622	725	791	843	882	941	989	1147	1236	1323	1326	1447	1302	1440	1332	1275	1166	1202	1113
EOSR Exit	64	76	61	76	75	99	93	101	94	128	130	105	119	110	108	120	115	103	119	107
TH 77 SB Under EOSR	560	600	666	740	779	787	886	893	1044	1144	1211	1242	1323	1229	1301	1258	1180	1104	1103	1036
EOSR Exit	64	70	61	74	74	99	89	100	95	124	128	103	119	107	110	116	113	100	117	104
TH 77 SB Mainline	559	552	664	717	769	783	852	889	1052	1112	1195	1223	1328	1195	1330	1216	1162	1066	1085	1009
EOSR WB Entrance	10	19	18	16	21	18	27	29	37	28	65	51	73	58	85	105	74	65	52	54

Table 2
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TH 77 SB Mainline	569	571	682	733	790	801	879	918	1089	1140	1260	1274	1401	1253	1415	1321	1236	1131	1137	1063
EOSR EB Entrance	73	71	85	90	105	105	109	106	154	131	135	118	142	177	187	196	195	180	138	130
Detector Check south of EOSR	643	717	765	861	934	920	1042	1017	1267	1331	1431	1462	1543	1529	1576	1617	1471	1388	1322	1255
TH 77 SB Mainline	642	642	767	823	895	906	988	1024	1243	1271	1395	1392	1543	1430	1602	1517	1431	1311	1275	1193
TH 62 EB Mainline	714	737	725	798	749	774	782	812	912	950	898	982	1001	913	981	962	930	929	845	805
TH 77 SB Exit	283	306	294	342	304	349	320	331	377	408	368	404	437	386	392	357	394	369	336	367
TH 77 SB Exit	283	306	294	342	304	349	320	331	377	408	368	404	437	386	392	357	394	369	336	367
TH 62 EB Mainline	431	431	431	456	445	425	462	481	535	542	530	578	564	527	589	605	536	560	509	438
TH 77 SB Entrance	24	28	20	25	24	20	34	33	36	43	34	45	38	43	36	47	35	36	29	48
TH 62 EB Mainline	455	459	451	481	469	445	496	514	571	585	564	623	602	570	625	652	571	596	538	486
TH 77 NB Exit	30	28	31	53	49	37	38	38	36	44	45	49	40	31	35	31	35	47	50	48
TH 77 NB Exit	30	28	31	53	49	37	38	38	36	44	45	49	40	31	35	31	35	47	50	48
TH 62 EB Mainline	425	431	420	428	420	408	458	476	535	541	519	574	562	539	590	621	536	549	488	438
TH 77 NB Entrance	106	116	116	113	144	124	151	141	135	118	147	153	162	197	209	224	213	163	176	155
TH 62 EB Mainline	531	547	536	541	564	532	609	617	670	659	666	727	724	736	799	845	749	712	664	593
28th Ave Exit	65	68	65	63	75	58	56	62	79	73	77	80	101	102	109	127	154	141	114	85
TH 62 EB under 28th	443	480	460	483	485	478	534	558	578	582	581	643	587	636	664	711	563	612	538	518
28th Ave Exit	68	68	66	62	76	58	58	62	81	73	78	80	106	102	113	128	161	133	116	84
TH 62 EB Mainline	463	479	470	479	488	474	551	555	589	586	588	647	618	634	686	717	588	579	548	509
28th Ave Entrance	19	12	15	29	23	33	22	29	29	23	31	31	44	32	36	29	33	32	18	26
TH 62 EB Mainline	482	491	485	508	511	507	573	584	618	609	619	678	662	666	722	746	621	611	566	535
34th Ave Exit	55	76	60	66	68	82	79	93	83	90	100	91	83	100	105	107	77	106	96	100
TH 62 EB Under 34th	419	414	414	450	442	435	469	494	528	520	518	584	549	573	598	622	529	542	464	440
34th Ave Exit	56	76	61	65	68	80	83	93	84	90	100	91	87	99	108	109	79	100	97	99
TH 62 EB Mainline	426	415	424	443	443	427	490	491	534	519	519	587	575	567	614	637	542	511	469	436
34th Ave Entrance	23	34	26	32	36	30	36	35	27	44	43	29	55	36	36	38	44	32	38	22
Detector Check 34th to Hiawatha	440	437	442	483	479	462	500	532	552	559	552	614	610	591	634	664	578	575	498	458
TH 62 EB Mainline	449	449	450	475	479	457	526	526	561	563	562	616	630	603	650	675	586	543	507	458
Hiawatha Exit	89	90	105	103	108	90	91	109	82	89	92	104	90	105	108	115	118	94	97	94
TH 62 EB under Hiawatha	336	365	343	376	366	384	395	437	465	487	460	503	514	503	521	558	467	470	415	369
Hiawatha Exit	94	89	105	102	109	87	98	105	84	87	94	106	94	104	112	115	118	91	96	93
TH 62 EB Mainline	355	360	345	373	370	370	428	421	477	476	468	510	536	499	538	560	468	452	411	365
Hiawatha Entrance	143	184	189	231	222	215	218	246	320	307	357	354	411	384	339	371	355	332	279	247
TH 62 EB Mainline	498	544	534	604	592	585	646	667	797	783	825	864	947	883	877	931	823	784	690	612
Bloomington Rd Exit	12	9	7	13	13	7	9	3	9	10	6	6	9	3	8	9	8	9	15	14
TH 62 EB after Blm Rd exit	487	516	524	611	578	594	611	673	776	784	805	871	922	887	867	926	828	799	684	614
Bloomington Rd Exit	12	9	7	13	13	7	9	3	9	10	6	6	9	3	8	9	8	9	15	14
TH 62 EB Mainline	486	535	527	591	579	578	637	664	788	773	819	858	938	880	869	922	815	775	675	598
Bloomington Rd Entrance	28	34	55	38	85	71	92	84	151	92	164	108	152	110	124	79	102	76	67	43
TH 62 EB Mainline	514	569	582	629	664	649	729	748	939	865	983	966	1090	990	993	1001	917	851	742	641
TH 5 WB Exit	194	175	187	182	209	195	191	198	237	220	200	192	218	173	183	207	193	186	168	154
TH 62 EB after TH 5 WB exit	330	374	408	459	477	483	540	566	711	653	782	778	865	834	822	804	740	710	590	518
TH 5 WB Exit	194	175	187	182	209	195	191	198	237	220	200	192	218	173	183	207	193	186	168	154
TH 62 EB Mainline	320	394	395	447	455	454	538	550	702	645	783	774	872	817	810	794	724	665	574	487
TH 5 EB/WB Entrance	81	87	82	91	99	102	122	129	140	152	134	173	216	197	199	173	199	164	124	117
TH 62 EB Mainline	401	481	477	538	554	556	660	679	842	797	917	947	1088	1014	1009	967	923	829	698	604
TH 5 EB Exit	82	68	99	83	125	116	101	136	151	145	170	166	185	180	209	188	164	159	173	168
TH 5 EB Exit	82	68	99	83	125	116	101	136	151	145	170	166	185	180	209	188	164	159	173	168
TH 62 EB Mainline	319	413	378	455	429	440	559	543	691	652	747	781	903	834	800	779	759	670	525	436

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TH 62 WB Mainline	355	357	355	382	400	406	374	430	542	521	498	517	563	595	627	663	527	511	427	402
TH 5 EB Exit	31	33	31	33	44	46	45	45	73	98	61	71	84	97	117	113	94	95	64	63
TH 5 EB Exit	31	33	31	33	44	46	45	45	73	98	61	71	84	97	117	113	94	95	64	63
TH 62 WB Mainline	324	324	324	349	356	360	329	385	469	423	437	446	479	498	510	550	433	416	363	339
TH 5 WB Exit	55	57	27	44	43	39	33	43	35	47	43	44	28	40	32	32	44	40	26	30
TH 5 WB Exit	55	57	27	44	43	39	33	43	35	47	43	44	28	40	32	32	44	40	26	30
TH 62 WB Mainline	269	267	297	305	313	321	296	342	434	376	394	402	451	458	478	518	389	376	337	309
Bloomington Rd Exit	12	25	14	10	11	12	9	12	18	10	13	15	13	8	15	17	16	7	13	15
Hiawatha Exit	179	145	197	192	206	216	179	208	225	231	237	211	272	297	331	289	223	228	211	179
Bloomington Rd/TH 55 WB Exit	102	98	113	106	114	120	99	116	131	126	132	121	149	157	181	162	128	121	119	105
TH 62 WB Mainline	167	169	184	199	199	201	197	226	303	250	262	281	302	301	297	356	261	255	218	204
TH 5 EB/WB Entrance	339	324	343	324	365	359	349	354	390	386	451	408	527	563	613	513	455	469	403	383
TH 62 WB Mainline	506	493	527	523	564	560	546	580	693	636	713	689	829	864	910	869	716	724	621	587
Bloomington Rd Entrance	16	9	19	15	18	10	13	27	20	15	11	17	26	6	7	10	4	4	20	4
TH 62 WB Mainline	522	502	546	538	582	570	559	607	713	651	724	706	855	870	917	879	720	728	641	591
Hiawatha Exit	179	145	197	192	206	216	179	208	225	231	237	211	272	297	331	289	223	228	211	179
TH 62 WB under Hiawatha	312	337	361	322	402	370	392	411	472	437	459	515	586	598	591	621	533	491	478	381
Hiawatha Exit	190	151	193	201	197	210	175	204	230	225	247	205	271	289	329	279	212	231	196	189
TH 62 WB Mainline	332	351	353	337	385	360	384	403	483	426	477	501	584	581	588	600	508	497	445	402
Hiawatha Entrance	123	103	159	120	127	167	165	165	218	185	173	179	131	137	105	93	98	112	100	85
Detector Check Haiwatha-34th	417	458	520	437	524	536	556	577	696	629	625	691	708	743	687	730	538	598	653	477
TH 62 WB Mainline	455	454	512	457	512	527	549	568	701	611	650	680	715	718	693	693	606	609	545	487
34th Ave Exit	25	26	12	26	26	24	28	30	25	35	26	38	42	91	60	102	89	120	134	34
TH 62 WB under 34th	400	434	505	429	499	539	530	546	661	617	584	689	641	658	626	540	437	473	551	520
34th Ave Exit	27	26	12	26	25	22	28	30	26	33	28	36	44	87	61	110	103	123	107	30
TH 62 WB Mainline	428	428	500	431	487	505	521	538	675	578	622	644	671	631	632	583	503	486	438	457
34th Ave Entrance	80	80	79	75	96	94	114	80	114	79	122	95	128	61	62	42	29	25	27	68
TH 62 WB Mainline	508	508	579	506	583	599	635	618	789	657	744	739	799	692	694	625	532	511	465	525
28th Ave Exit	13	20	26	16	19	21	21	17	20	25	25	38	50	75	73	53	47	48	67	37
TH 62 WB under 28th	453	479	555	473	551	604	608	598	726	680	667	715	663	635	588	525	429	454	555	588
28th Ave Exit	14	20	26	17	19	20	21	17	21	23	27	37	56	73	77	57	53	49	50	31
TH 62 WB Mainline	494	488	553	489	564	579	614	601	768	634	717	702	743	619	617	568	479	462	415	494
28th Ave Entrance	65	58	52	54	81	77	59	60	82	63	60	60	77	92	97	74	90	98	97	74
TH 62 WB Mainline	559	546	605	543	645	656	673	661	850	697	777	762	820	711	714	642	569	560	512	568
TH 77 NB Exit	22	22	31	29	28	32	23	35	43	56	44	53	53	37	34	45	41	32	51	60
TH 77 SB Exit	131	106	128	117	135	152	152	121	177	188	175	178	163	131	126	105	106	110	142	158
TH 62 WB after TH 77 SB exit	567	638	683	649	764	754	743	776	865	781	788	834	835	871	826	610	617	637	818	800
TH 62 WB "Thru Volume"	366	416	451	391	469	514	493	506	551	517	502	530	525	566	535	398	417	410	505	493
TH 77 NB Exit	24	22	31	29	29	30	23	35	47	51	47	53	59	36	35	53	41	32	37	48
TH 62 WB Mainline	535	524	574	514	616	626	650	626	803	646	730	709	761	675	679	589	528	528	475	520
TH 77 NB Entrance	201	222	232	258	295	240	250	270	314	264	286	304	310	305	291	212	200	227	313	307
TH 62 WB Mainline	736	746	806	772	911	866	900	896	1117	910	1016	1013	1071	980	970	801	728	755	788	827
TH 77 SB Exit	141	106	127	118	138	143	153	121	195	172	189	178	180	127	129	123	107	112	104	126
TH 62 WB Mainline	595	640	679	654	773	723	747	775	922	738	827	835	891	853	841	678	621	643	684	701
TH 77 SB Entrance	41	52	54	45	52	49	49	54	53	51	52	50	42	37	46	31	46	42	27	43
TH 62 WB Mainline	636	692	733	699	825	772	796	829	975	789	879	885	933	890	887	709	667	685	711	744
MOA NB CD Rd	85	81	68	82	80	88	83	80	88	90	72	108	115	98	102	101	102	119	70	116
Killebrew Dr Exit	56	51	45	50	53	56	60	54	58	61	47	80	82	61	70	75	70	81	42	81

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MOA NB CD after Killebrew Exit	29	30	23	32	27	32	23	26	30	29	25	28	33	37	32	26	32	38	28	35
MOA NB CD Rd	29	30	23	32	27	32	23	26	30	29	25	28	33	37	32	26	32	38	28	35
Killebrew Dr Entrance	97	113	143	138	144	139	138	128	136	129	197	193	219	174	221	165	180	140	161	164
MOA NB CD Rd	126	143	166	170	171	171	161	154	166	158	222	221	252	211	253	191	212	178	189	199
Lindau Ln Exit	26	16	28	19	26	30	21	26	28	26	26	26	23	26	32	22	27	25	33	32
MOA NB CD Rd	100	127	138	151	145	141	140	128	138	132	196	195	229	185	221	169	185	153	156	167
TH 77 NB/I-494 WB Exit	83	100	114	117	111	111	109	104	106	107	160	156	178	142	167	136	151	116	120	132
MOA NB CD after 77 NB/494 WB ex	17	27	24	34	34	30	31	24	32	25	36	39	51	43	54	33	34	37	36	35
TH 77 NB/I-494 WB Exit	83	100	114	117	111	111	109	104	106	107	160	156	178	142	167	136	151	116	120	132
MOA NB CD Rd	17	27	24	34	34	30	31	24	32	25	36	39	51	43	54	33	34	37	36	35
Lindau Ln Entrance	18	23	19	19	20	33	24	20	26	19	23	23	29	28	25	19	24	21	18	22
MOA NB CD Rd	35	50	43	53	54	63	55	44	58	44	59	62	80	71	79	52	58	58	54	57
TH 77 NB Entrance	91	85	102	82	92	83	86	86	115	93	96	85	103	111	117	124	119	110	89	93
MOA NB CD Rd	126	135	145	135	146	146	141	130	173	137	155	147	183	182	196	176	177	168	143	150
TH 77 NB CD Rd	242	249	239	216	227	210	226	226	259	227	224	237	238	231	233	245	250	225	206	239
I-494 EB Exit	91	80	97	81	90	81	81	83	113	92	92	80	100	108	110	117	114	108	86	87
TH 77 NB CD after 494 EB exit	150	153	131	132	133	123	131	135	141	133	122	143	130	116	109	115	125	112	113	137
I-494 EB Exit	91	85	102	82	92	83	86	86	115	93	96	85	103	111	117	124	119	110	89	93
TH 77 NB CD Rd	151	164	137	134	135	127	140	140	144	134	128	152	135	120	116	121	131	115	117	146
Lindau Ln/MOA CD Entrance	118	101	155	134	128	115	115	124	103	97	137	110	123	123	127	98	111	105	113	117
TH 77 NB CD Rd	269	265	292	268	263	242	255	264	247	231	265	262	258	243	243	219	242	220	230	263
TH 77 SB Entrance	120	78	92	90	90	100	83	77	84	104	70	67	91	66	70	89	78	75	98	113
TH 77 NB CD Rd	389	343	384	358	353	342	338	341	331	335	335	329	349	309	313	308	320	295	328	376
Lindau Ln to TH 77 NB/I-494 WB	99	73	122	95	110	81	92	118	103	82	119	102	91	106	102	77	81	82	95	89
MOA CD Entrance	83	100	114	117	111	111	109	104	106	107	160	156	178	142	167	136	151	116	120	132
Lindau/MOA to TH 77 NB	182	173	236	212	221	192	201	222	209	189	279	258	269	248	269	213	232	198	215	221
I-494 WB Exit	118	101	155	134	128	115	115	124	103	97	137	110	123	123	127	98	111	105	113	117
Lindau/MOA to TH 77 NB after 494	64	72	81	78	93	77	86	98	106	92	142	148	146	125	142	115	121	93	102	104
Lindau/MOA to TH 77 NB	64	72	81	78	93	77	86	98	106	92	142	148	146	125	142	115	121	93	102	104
I-494 WB Entrance	51	80	79	73	87	78	86	79	128	86	123	133	173	199	210	215	181	123	143	125
Lindau/MOA to TH 77 NB	115	152	160	151	180	155	172	177	234	178	265	281	319	324	352	330	302	216	245	229
TH 77 SB CD Rd	183	151	159	165	154	161	151	139	150	167	142	150	162	131	147	150	140	132	146	170
I-494 WB Exit	107	73	84	87	82	90	77	74	77	100	67	57	82	60	69	79	71	65	101	100
I-494 EB Exit	56	68	61	72	59	55	63	60	60	61	68	70	64	60	76	54	57	49	50	50
I-494 WB Exit	120	78	92	90	90	100	83	77	84	104	70	67	91	66	70	89	78	75	98	113
TH 77 SB CD Rd	63	73	67	75	64	61	68	62	66	63	72	83	71	65	77	61	62	57	48	57
TH 77 SB Entrance	103	87	102	87	80	105	81	78	97	107	88	84	90	99	97	93	103	103	79	87
TH 77 SB CD Rd	166	160	169	162	144	166	149	140	163	170	160	167	161	164	174	154	165	160	127	144
I-494 WB Entrance	141	150	130	111	166	132	190	142	204	209	221	175	195	170	198	164	142	111	176	184
TH 77 SB CD Rd	307	310	299	273	310	298	339	282	367	379	381	342	356	334	372	318	307	271	303	328
I-494 EB Exit	63	73	67	75	64	61	68	62	66	63	72	83	71	66	77	61	62	57	48	57
TH 77 SB CD Rd	244	237	232	198	246	237	271	220	301	316	309	259	285	268	295	257	245	214	255	271
Lindau Ln Exit	62	49	76	42	61	58	63	55	58	83	58	54	55	54	60	57	57	59	45	62
Killebrew Dr Exit	93	91	70	71	60	74	77	59	83	86	71	72	59	83	63	72	76	85	80	72
TH 77 SB CD end	114	118	114	95	140	116	152	126	165	204	151	161	169	158	144	134	129	110	167	156
Lindau Ln Exit	56	45	68	40	57	55	58	50	57	70	64	49	55	49	66	56	53	50	39	58
TH 77 SB CD Rd	188	192	164	158	189	182	213	170	244	246	245	210	230	219	229	201	192	164	216	213

Table 2
Existing PM Freeway Traffic Volumes

Killebrew Dr Exit	84	84	62	68	57	71	71	54	82	73	78	65	59	75	70	70	71	72	70	67
TH 77 SB CD Rd	104	108	102	90	132	111	142	116	162	173	167	145	171	144	159	131	121	92	146	146
I-494 EB to TH 77 SB CD Rd	272	260	308	317	358	339	362	325	406	392	443	453	492	438	460	408	469	407	411	399
Lindau Ln Exit	49	49	54	50	52	39	38	18	49	23	32	39	39	34	28	22	42	38	26	45
I-494 EB to TH 77 SB CD Rd	223	211	254	267	306	300	324	307	357	369	411	414	453	404	432	386	427	369	385	354
Killebrew Dr Exit	49	49	54	50	52	39	38	18	49	23	32	39	39	34	28	22	42	38	26	45
494 EB to 77 SB end	175	163	200	217	255	262	286	289	309	346	379	376	415	370	405	365	386	332	360	310
I-494 EB to TH 77 SB CD Rd	174	162	200	217	254	261	286	289	308	346	379	375	414	370	404	364	385	331	359	309
TH 5 EB to TH 55/62	189	219	207	196	218	196	202	164	228	202	217	187	249	268	277	221	208	239	230	211
TH 55 EB Exit	32	52	38	58	57	44	51	48	69	67	58	58	67	80	80	76	70	75	58	60
after TH 55 EB exit	180	181	196	166	173	179	160	141	166	161	177	153	180	229	223	177	156	185	191	179
TH 55 EB Exit	29	49	34	51	54	39	49	42	67	59	54	51	68	69	73	66	64	69	54	53
TH 5 EB to TH 55/62	160	170	173	145	164	157	153	122	161	143	163	136	181	199	204	155	144	170	176	158
TH 5 WB Entrance	89	84	71	83	98	93	106	127	117	127	169	165	210	215	243	212	198	185	120	135
TH 5 EB to TH 55/62	249	254	244	228	262	250	259	249	278	270	332	301	391	414	447	367	342	355	296	293
TH 55 EB Entrance	102	98	113	106	114	120	99	116	131	126	132	121	149	157	181	162	128	121	119	105
TH 5 EB to TH 55/62	351	352	357	334	376	370	358	365	409	396	464	422	540	571	628	529	470	476	415	398
Bloomington Rd Exit	12	25	14	10	11	12	9	12	18	10	13	15	13	8	15	17	16	7	13	15
after Blm Rd exit	330	292	347	330	364	387	351	382	374	391	436	444	518	586	631	545	473	478	427	374
Bloomington Rd Exit	12	28	14	10	11	11	9	11	19	10	13	14	13	8	15	16	15	7	12	15
TH 5 EB to TH 55/62	339	324	343	324	365	359	349	354	390	386	451	408	527	563	613	513	455	469	403	383
TH 5 WB CD to TH 55 WB/Blooming	91	90	79	88	100	99	112	132	122	132	179	175	215	218	246	217	213	190	126	139
Bloomington Rd Exit	2	6	8	5	2	6	6	5	5	5	10	10	5	3	3	5	15	5	6	4
TH 5 WB to TH 55 WB	89	84	71	83	98	93	106	127	117	127	169	165	210	215	243	212	198	185	120	135
Bloomington Rd Exit	2	6	8	5	2	6	6	5	5	5	10	10	5	3	3	5	15	5	6	4
TH 5 WB CD to TH 55 WB/Blooming	89	84	71	83	98	93	106	127	117	127	169	165	210	215	243	212	198	185	120	135
TH 5 WB to TH 55 EB	52	38	48	40	45	63	73	87	73	93	80	122	148	128	126	107	135	95	70	64
TH 5 EB to TH 55 EB	29	49	34	51	54	39	49	42	67	59	54	51	68	69	73	66	64	69	54	53
TH 5 EB/WB to TH 55 EB	81	87	82	91	99	102	122	129	140	152	134	173	216	197	199	173	199	164	124	117

Attachment 2:

KH DDI Memorandum

Kimley-Horn
and Associates, Inc.

Memorandum

Suite 238N
2550 University Avenue West
St. Paul, Minnesota
55114

To: Al Dye, MAC
Jim Gates, City of Bloomington
Scott Pederson, Mn/DOT

From: Brandon Bourdon

Date: November 7, 2011

Subj: Interchange Concept Selection Process
I-494 and 34th Avenue South Interchange
MSP Area Roadway Improvements
MAC Contract #120-6-020
KHA No: 160400084.E

Considerable analysis has been completed to review traffic operations and to study potential interchange configurations at the I-494/34th Avenue S. interchange.

In late 2010, the MSP Area Roadway Improvements Project funded by the MAC, City of Bloomington and Mn/DOT commenced. The main objective of this project is to develop interchange concepts at I-494/34th Avenue S., TH 5/Post Road, and TH 5/Glumack Drive; and roadway improvements required on the Minneapolis-St. Paul International Airport Campus; and roadway improvements near Thunderbird Road in Bloomington's South Loop required to serve the anticipated traffic demand.

This memorandum summarizes recent analyses and documents the interchange concept selection process completed as part of the MSP Area Roadway Improvements Project.

Background

2015 Environmental Assessment

The operations at the interchange of I-494 and 34th Avenue S. have been an area of focus of several agencies over the last several years. The MAC completed a draft environmental assessment for the 2015 Terminal Expansion Project in 2005. Several individual traffic movements that were experiencing an undesirable level of service under existing conditions were documented at this interchange. The traffic operations were anticipated to further deteriorate with the additional traffic growth anticipated through 2015.

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I-494 Forecasting Project

In 2007, a joint study involving Mn/DOT, Bloomington, and the Metropolitan Airports Commission, was conducted to develop traffic forecasts and interchange concepts along I-494. The I-494/34th Avenue S. interchange was one area of focus for the project. One of the project goals was to determine if changes to the 2001 I-494 Environmental Impact Statement Geometric Layout (I-494 EIS Layout) were warranted, based upon updated traffic forecasts. Concept layouts and revised traffic lane assignments were developed to address the potential areas of operational concern. The project management team (PMT) then selected concepts to be carried forward based on traffic-lane assignment, cost implications, and impacts.

There were a total of six interchange concepts developed of which four concepts were discarded since they did not address capacity needs along 34th Avenue S. A description of the two concept alternatives that were advanced are summarized below:

- Single point urban interchange (SPUI) with a relocated 34th Avenue S., with LRT bridging over I-494 on the east side of the relocated 34th Avenue S. The ramps would include a bridge braid for the westbound entrance from 34th Avenue S. under the westbound exit to TH 77, and extending the eastbound TH 77 and 24th Avenue S. entrance to the location of the TH 5 interchange.

- Folded diamond to the west of 34th Avenue S. with LRT on the east side of 34th Avenue S. Construction of a folded diamond interchange to the west of existing 34th Avenue S. would require considerable right of way and the MAC and City of Bloomington were not ready to carry this option forward. This option could be considered if the SPUI interchange alternative is not considered.

Both alternatives had significant costs and impacts. These concepts were developed prior to the DDI becoming a widely accepted interchange alternative.

TED Application

In December, 2010 the MAC and the City of Bloomington jointly submitted a Transportation and Economic Development (TED) Phase 1 Funding Application to Mn/DOT's Office of Financial Management. The purpose of this program was to provide state funding for a portion of selected project(s) where improvements to the transportation network will result in the expansion of business. A conceptual analysis was completed as a part of the TED application that included the comparison of seven interchange alternatives. The analysis reviewed planning-level critical lane V/C ratios, conceptual level estimates, and sketch planning for each concept. This analysis is summarized in a technical memorandum completed by SRF Consulting on December 2, 2010. A diverging diamond interchange (DDI) was the interchange concept selected for the Phase 1 TED Application. The DDI had an estimated cost of $6.0 million and the Phase

1 TED application was selected by Mn/DOT and the MN Department of Economic Development (DEED) to receive $4.2 million in funding on December 23, 2010. The second phase of the selection process extended through June 30, 2011. The purpose of the second phase was for Mn/DOT to confirm that the schedule was being maintained and adequate progress was being made in the following areas: environmental permitting (as required), progress on acquiring necessary properties, design layout development, interstate access approval, and that funding was being secured.

At PMT Meeting #5 of the MSP Area Roadway Improvements Project, described further in next section, Mn/DOT confirmed that the TED Phase II requirements were satisfied based on the project progress to date.

MSP Area Roadway Improvements Project

Below is an overview of the key decisions regarding the interchange concept selection process at I-494/34th Avenue S made as a part of the MSP Area Roadway Improvements Project.

PMT Meeting #1 – February 2, 2011

This project included the formation of a PMT. The PMT began meeting February 2, 2011. The agencies represented on the PMT included the following:

- Metropolitan Airports Commission
- City of Bloomington
- Mn/DOT
- Federal Highway Administration
- Federal Aviation Administration
- Metro Transit
- Metropolitan Council
- Minnesota Department of Economic Development

The successful Phase I TED Application for improvements at the interchange of I-494/34th Avenue S. was reviewed at PMT meeting #1. Two DDI concepts that were part of the preliminary traffic analysis completed as a part of the TED funding application were presented.

Several additional interchange concepts would be evaluated and presented to the PMT to determine which interchange configuration should be pursued. The success of the Phase 1 TED Funding Application did not preclude other interchange solutions, and further evaluation was required to determine the ultimate interchange configuration.

PMT Meeting #2 – March 1, 2011

At PMT meeting #2, draft interchange evaluation criteria were presented for review and comment. The evaluation criteria included a project purpose, a list of

factors the proposed actions should address, and a list of parameters that could be used to meet project objectives. A draft alternative screening matrix (not attached) was also distributed. The matrix provided a summary of the function of each interchange, a summary of needs by location, overall goals and objectives, and list of potential screening criteria.

PMT Meeting #3 – April 5, 2011

The results of the existing traffic modeling were presented.

PMT Meeting #4 – May 4, 2011

Seven sketch plans were presented along with associated planning level critical lane V/C analyses. No decision was requested of the PMT at meeting #4.

PMT Meeting #5 – June 7, 2011

At PMT meeting #5, draft 2020 No Action modeling results and five I-494/34th Avenue S. interchange concepts were presented along with a screening matrix (attached). Below is a brief summary of the key features documented in the matrix:

- ROW Required qualitatively describes the amount of right-of-way (ROW) necessary for each alternative.
- ROW Sensitivity describes the likelihood of negative impacts associated with additional right-of-way required for each concept.
- Construction Cost includes high-level conceptual estimates for each interchange configuration.
- Construction Impact describes the level of impact the project is anticipated to have during construction.
- V/C Ratio summarizes the AM and PM peak hour planning level volume to capacity ratios. A V/C ratio over one means that the interchange is operating over capacity.

Below is a description of the concepts presented:

Two concepts were based on maintaining the existing diamond interchange and adding various improvements to relieve particular traffic movements.

- Exhibit 1a included Inverted Entrance Loops for the southbound to eastbound and northbound to westbound movements.

- Exhibit 1b depicted Inverted South Loops for the southbound to eastbound and eastbound to northbound movements.

Two concepts focused on a diverging diamond interchange.

- Exhibit 2 is the base layout and Exhibit 2a adds an additional flyover for the southbound to eastbound movement.

Exhibit 3 is a Single Point Urban Interchange (SPUI), similar to the interchange configuration at I-494/24th Avenue S. located immediately west of this interchange.

Alternative 2, the diverging diamond interchange, was the recommended solution from the design team. Mn/DOT, MAC, and Bloomington all agreed that the DDI should advance as the selected alternative. FHWA, Met Council and Metro Transit were also generally supportive of the DDI. The consensus of the group was to further refine the DDI concept for future meetings.

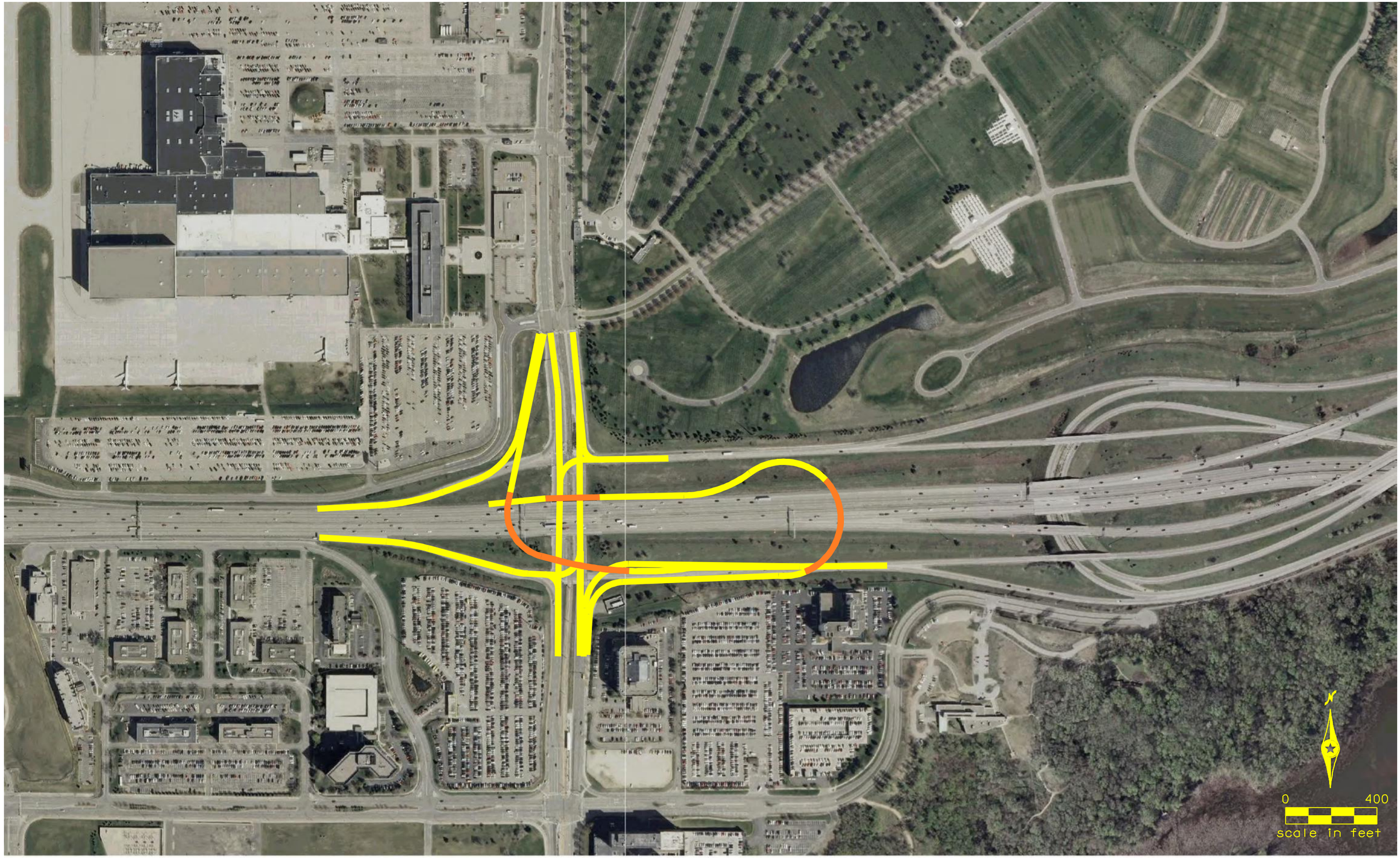
Mn/DOT confirmed that the TED Phase II requirements were satisfied based on the project progress to date.

Future PMT meetings will be conducted to review VISSIM traffic modeling results and concept layouts of the DDI. A staff approved geometric layout and interchange access modification report will also be completed. These documents are required as a part of the project development process.

Alternative Screening Matrix

34th Ave S and I-494 Interchange

Alternative or Concept	Existing Diamond		Diverging Diamond		SPUI
	1a	1b	2	2a	3
Description:	*Inverted Entrance Loops*	*Inverted South Loops*	*Base Layout**	*SB to EB Flyover*	*Base Layout*
ROW Required:	*Minimal*	*Minimal*	---	*Minimal*	---
ROW Sensitivity:	*Low*	*Medium*	---	*Low*	---
Construction Cost:	*$48*	*$51*	*$6*	*$29*	*$65*
Construction Impact:	*Medium*	*Medium*	*Low*	*Medium*	*High*
2030 V/C (AM/PM):	*0.95 / 0.71*	*0.92 / 0.75*	*0.88 / 0.77*	*0.83 / 0.61*	*1.05 / 1.06*



Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

SRF Consulting Group, Inc.

MSP AREA ROADWAY IMPROVEMENTS
34TH AVE ACCESS
INTERCHANGE CONCEPT PLAN
INVERTED ENTRANCE LOOPS

EXHIBIT

1a

Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

SRF Consulting Group, Inc.

MSP AREA ROADWAY IMPROVEMENTS
34TH AVE ACCESS
INTERCHANGE CONCEPT PLAN
INVERTED SOUTH LOOPS

EXHIBIT **1b**

Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

SRF Consulting Group, Inc.

MSP AREA ROADWAY IMPROVEMENTS
34TH AVE ACCESS
INTERCHANGE CONCEPT PLAN
DIVERGING DIAMOND INTERCHANGE

EXHIBIT
2

Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

SRF Consulting Group, Inc.

MSP AREA ROADWAY IMPROVEMENTS
34TH AVE ACCESS
INTERCHANGE CONCEPT PLAN
DDI WITH SB TO EB FLYOVER

EXHIBIT
2a

Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

SRF Consulting Group, Inc.

MSP AREA ROADWAY IMPROVEMENTS
34TH AVE ACCESS
INTERCHANGE CONCEPT PLAN
SINGLE POINT URBAN INTERCHANGE

EXHIBIT
3

Attachment 3:

Post Road Memorandum

Kimley-Horn
and Associates, Inc.

Memorandum

Suite 238N
2550 University Avenue West
St. Paul, Minnesota
55114

To: Al Dye, MAC
Jim Gates, City of Bloomington
Scott Pederson, Mn/DOT

From: Brandon Bourdon

Date: November 7, 2011

Subj: Interchange Concept Selection Process
TH 5 and Post Road Interchange
MSP Area Roadway Improvements
MAC Contract #120-6-020
KHA No: 160400084.E

This memorandum summarizes recent analyses and documents the interchange concept selection process completed as part of the MSP Area Roadway Improvements Project.

MSP Area Roadway Improvements Project

The MSP Area Roadway Improvements Project funded by the MAC, City of Bloomington and Mn/DOT commenced in late 2010. The main objective of this project is to develop interchange concepts at I-494/34th Avenue S., Trunk Highway (TH) 5/Post Road, and TH 5/Glumack Drive; and roadway improvements required on the Minneapolis-St. Paul International Airport Campus; and roadway improvements near Thunderbird Road in Bloomington's South Loop required to serve the anticipated traffic demand. Below is an overview of the information presented and decisions made regarding the interchange concept selection process at TH 5/Post Road.

This project included the formation of a project management team (PMT). The PMT began meeting February 2, 2011. The agencies represented on the PMT included the following:

- Metropolitan Airports Commission
- City of Bloomington
- Mn/DOT
- Federal Highway Administration
- Federal Aviation Administration
- Metro Transit
- Metropolitan Council
- Minnesota Department of Economic Development

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PMT Meeting #1 – February 2, 2011

The initial PMT Meeting was conducted to provide an introduction to the project, identify stakeholders, and review the proposed process for the project. Several interchange concepts would be evaluated and presented to the PMT to determine which interchange configuration should be pursued.

PMT Meeting #2 – March 1, 2011

Draft interchange evaluation criteria were presented for review and comment. The evaluation criteria included a project purpose, a list of factors the proposed actions should address, and a list of parameters that could be used to meet project objectives. A draft alternative screening matrix (not attached) was also distributed. The matrix provided a summary of the function of each interchange, a summary of needs by location, overall goals and objectives, and list of potential screening criteria.

PMT Meeting #3 – April 5, 2011

The results of the existing traffic modeling were presented.

PMT Meeting #4 – May 4, 2011

No material regarding the TH 5/Post Road interchange was presented at this meeting.

PMT Meeting #5 – June 7, 2011

At TH 5 and Post Road, many interchange alternatives that would typically be considered were not feasible due to a variety of constraints in the area. These constraints include the Runway 30L RPZ (runway protection zone) and security fence on the northwest quadrant, the Minnesota River federal land to the southeast, and MAC stormwater ponds/fuel facilities to the southwest.

Three initial 2030 interchange sketch plans and a draft alternative screening matrix was presented:

- Exhibit 2a (attached) was a traditional diamond interchange with a realigned Northwest Drive.
- Exhibit 2b (attached) was a diamond with roundabout controlled ramp terminal intersections and a realigned Northwest Drive.
- Exhibit 3 (attached) was a partial diverging diamond with a realigned Northwest Drive.

Although no formal decisions were made, the design team anticipated that the partial diverging diamond would quickly be eliminated from further consideration due to its unique configuration. Additional analyses were required to confirm whether other alternatives had merit and to develop interim 2020 solutions.

PMT Meeting #6 – July 19, 2011

An updated screening matrix (attached) and revised concepts to serve 2020 and 2030 traffic volumes were presented. Below is a brief summary of several key features documented in the matrix:

- PMT Meeting identifies whether the concept was presented at PMT Meeting #5 or #6.
- For each intersection, a summary of impacts is included for the north ramp, south ramp, Northwest Drive, SuperAmerica accesses/fuel facility accesses, and destinations located northeast of TH 5.
- ROW Required qualitatively describes the amount of right-of-way (ROW) necessary for each alternative.
- Airside Impact describes whether roadway modifications will require that the security fence be relocated closer to Runway 30L.
- RPZ Impact describes whether there are negative impacts anticipated with physical obstructions penetrating the 50:1 approach surface for Runway 30L.
- ROW Sensitivity describes the likelihood of negative impacts associated with additional right-of-way required for each concept.
- Construction Cost provides an assessment of the anticipated interchange costs.
- Construction Impact describes the level of impact the project is anticipated to have during construction.
- Staged Construction identifies whether an alternative is not compatible with the 2030 alternative.
- Operations indicate whether traffic operations at the interchange are anticipated to be at/over capacity, near capacity, or under capacity for the time horizon identified.

Below is a brief summary of the information presented:

- Several interim concepts were reviewed to determine if less expensive options would adequately serve projected 2020 traffic volumes. Concepts 1b (attached) and 1d-1 (attached) did not require bridge expansion. Since both concepts were at/over capacity, additional bridge capacity will be required to serve anticipated 2020 traffic.
- The existing bridge over TH 5 does not satisfy current design clearance standards. A deeper bridge cross-section will be required for the new bridge. To satisfy standards, the new bridge will need to be constructed at an elevation about 3' higher than the existing bridge. Concept 2a-2020 (attached) shows where the new bridge would need to be constructed to adequately address the grade differences between the two bridges. This concept is not feasible due to the distance between eastbound and westbound traffic.

- Concept 2b-2020 (attached) includes a new bridge over TH 5 located as far to the north as possible that satisfies vertical clearance design standards.
- Concepts 2a (signal control) and 2b (roundabout controlled) were presented at PMT #5. Concept 2a was recommended by the design team at that PMT as the basic interchange configuration that should be used to serve 2030 conditions.
- Concept 2C was a more refined concept based upon Concept 2a. Concept 2C maximizes the taxi cab staging lot and SuperAmerica footprints, simplifies the intersection geometry, and reduces the number of required traffic movements. Alternative routes required to access the facilities served by Northwest Drive will need to be reviewed.

MAC requested the following be considered as part of future concept development work:

- If the security fence can be relocated, would it improve the roadway geometry and traffic operations for the various concepts?
- Is a less complicated interchange solution possible if some of the landside functions, taxi cab staging lot and gas station, located along Post Road were relocated?

PMT Meeting #7 – August 9, 2011

The design team reviewed potential implications of relocating either the taxi cab staging lot, removing the Super America, or both on future traffic operations. A matrix (attached) was presented that identified several different interchange concept drawings and the likelihood of each configuration adequately being able to serve future traffic volumes. The impacts of the following four different volume levels: taxi cab staging lot and SuperAmerica included, taxi cab staging lot off-site relocation, SuperAmerica removal, and taxi cab staging lot off-site relocation/SuperAmerica removal were reviewed. A summary of the results are included below:

- Existing 2-Lane Bridge with signal control (attached - lane schematic 3) – Over capacity for all four volume combinations reviewed for the 2020 Airlines Relocate scenario.
- Existing 2-Lane Bridge with Button Hook (attached - lane schematic 6) – This alternative will not serve all traffic volumes and would result in considerable throw-away costs when the 2030 diamond interchange is constructed.
- Existing 2-Lane and New 2-Lane Bridges (attached - lane schematic 8) – Results in volumes at/near capacity with all traffic present under the 2020 Airlines Relocate scenario. If the taxi cab staging lot is moved west on Post Rd, the interchange is under capacity for 2030 Airlines Relocate conditions. There would still be concerns under this alternative regarding bridge clearance requirements.

- New 5-Lane Bridge, Northwest Drive Removed (attached - lane schematic 10) – If no change in taxi cab staging location occurs and the SuperAmerica remains, this interchange is anticipated to operate at/near capacity in 2030. With the relocation of the taxi cab staging lot west on Post Rd, the interchange is anticipated to adequately serve 2030 volumes regardless of whether a reconstructed SuperAmerica is on the north or south side of Post Road.

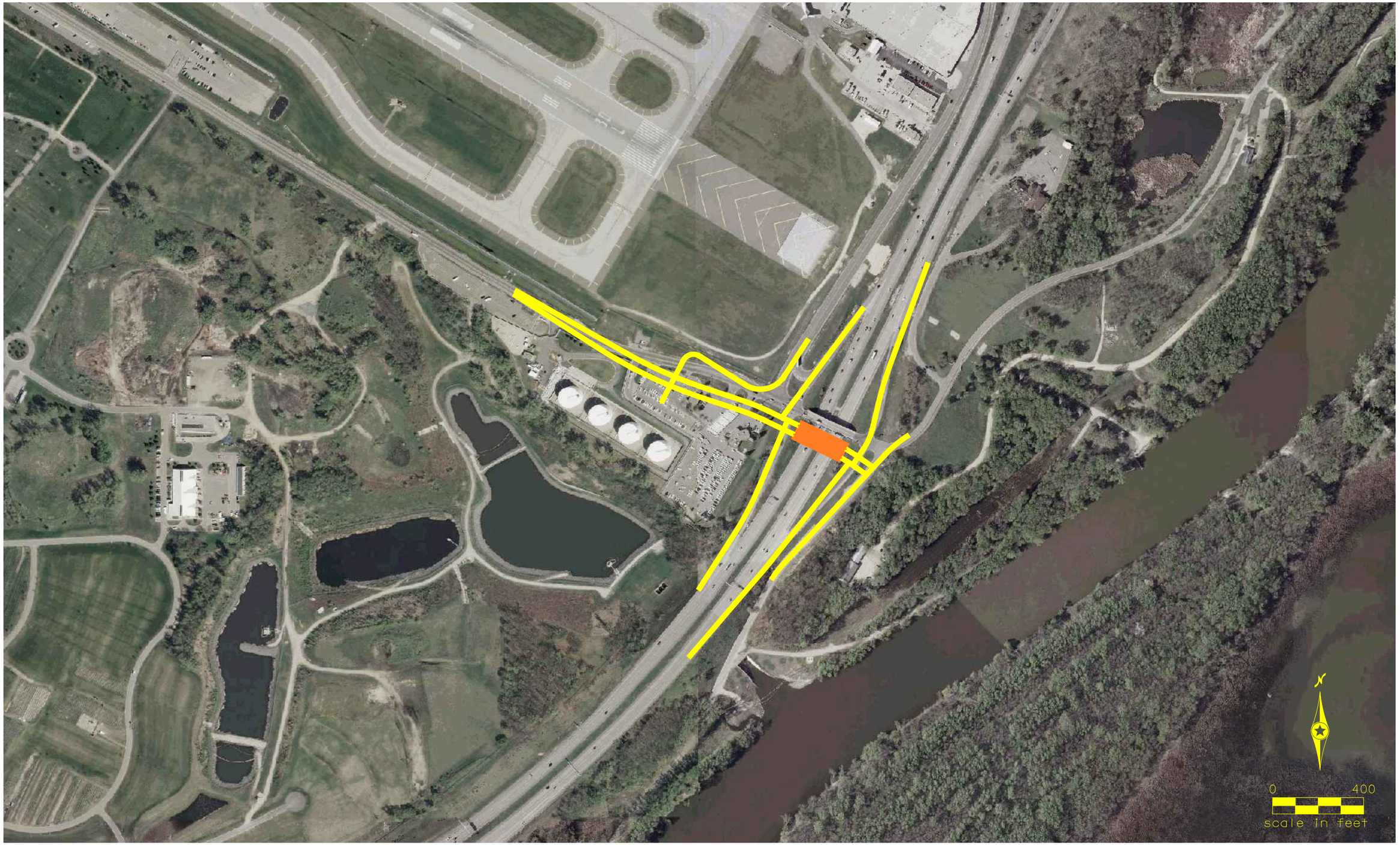
The PMT agreed that the traditional diamond configuration should be used for future interchange concepts developed. The MAC requested that the design team review the benefits of relocating Post Road to the south due to potential construction phasing advantages.

PMT Meeting #8 – September 13, 2011

Several concept drawings were presented for the TH5/Post Rd interchange. Based on input received at PMT Meeting #7, the focus of PMT #8 was to obtain approval to refine one of the three the interchange concepts described below:

- Lane Schematic 8 (attached): fuel facility access with SA at the intersection opposite Northwest Drive. The interchange is shifted north similar to the existing Post Road alignment. This concept required that TH 5 be lowered to provide adequate clearance under the proposed bridge.
- Lane Schematic 10 (attached): Includes a new 5-lane bridge without the Northwest Drive connection. The interchange remains on a similar alignment as Lane Schematic 8.
- Lane Schematic 11 (attached): Shows a revised Post Road alignment to the south. This alignment would require that the SuperAmerica be reconstructed in an area to the south. The feasibility of a SuperAmerica located north of the realigned Post Road was reviewed but there is not enough room north of Post Road. Since fuel facility expansion is not anticipated until after 2030, a SuperAmerica site to the south of the realigned Post Road is feasible. This alignment would result in improved construction phasing and staging, reduced impacts to airside, and allow for the Northwest Drive connection to Post Road to remain in a location further to the west.

Lane Schematic 11 was selected as the preferred alternative for the environmental assessment during PMT #8. Future PMT meetings will be conducted to review VISSIM traffic modeling results and refined concept layouts of this interchange.



Metropolitan Airports Commission

CITY OF BLOOMINGTON MINNESOTA

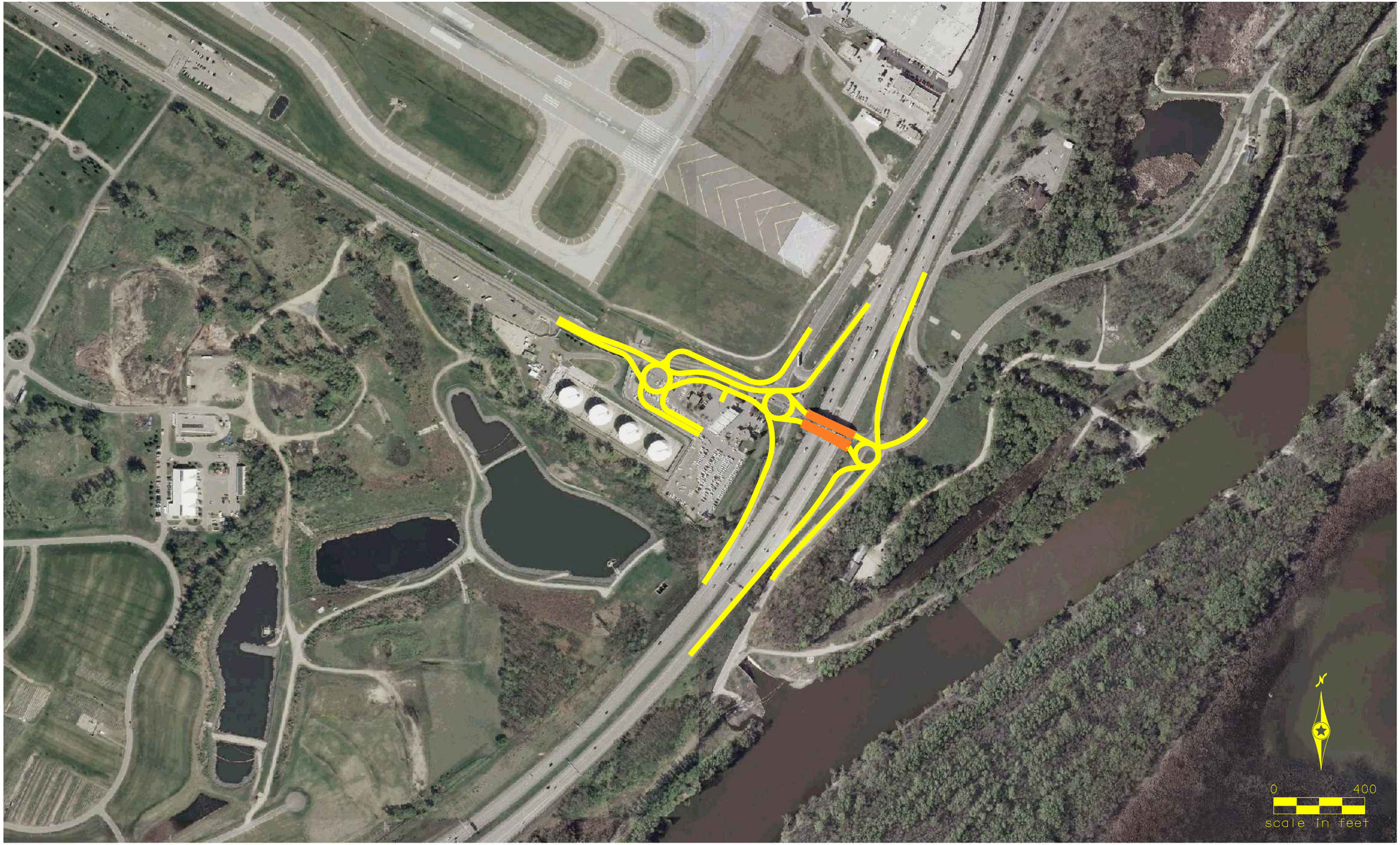
MINNESOTA DEPARTMENT OF TRANSPORTATION

Kimley-Horn and Associates, Inc.

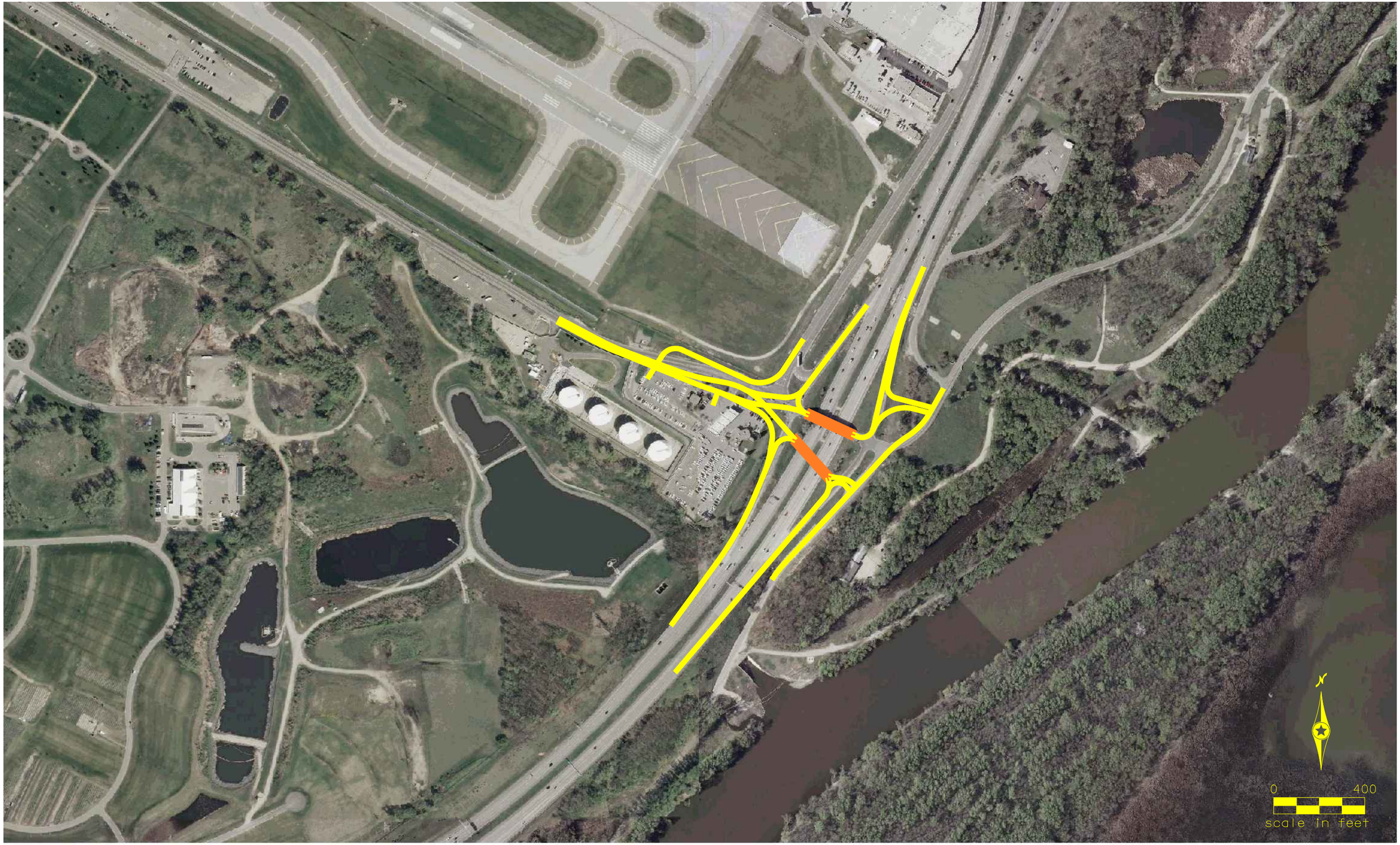
SRF Consulting Group, Inc.

MSP AREA ROADWAY IMPROVEMENTS
POST ROAD ACCESS
INTERCHANGE CONCEPT PLAN-
2030 DIAMOND

EXHIBIT
2a



Metropolitan Airports Commission	CITY OF BLOOMINGTON MINNESOTA	MINNESOTA DEPARTMENT OF TRANSPORTATION	Kimley-Horn and Associates, Inc.	SRF Consulting Group, Inc.		MSP AREA ROADWAY IMPROVEMENTS POST ROAD ACCESS INTERCHANGE CONCEPT PLAN- 2030 ROUNDABOUT	EXHIBIT **2b**



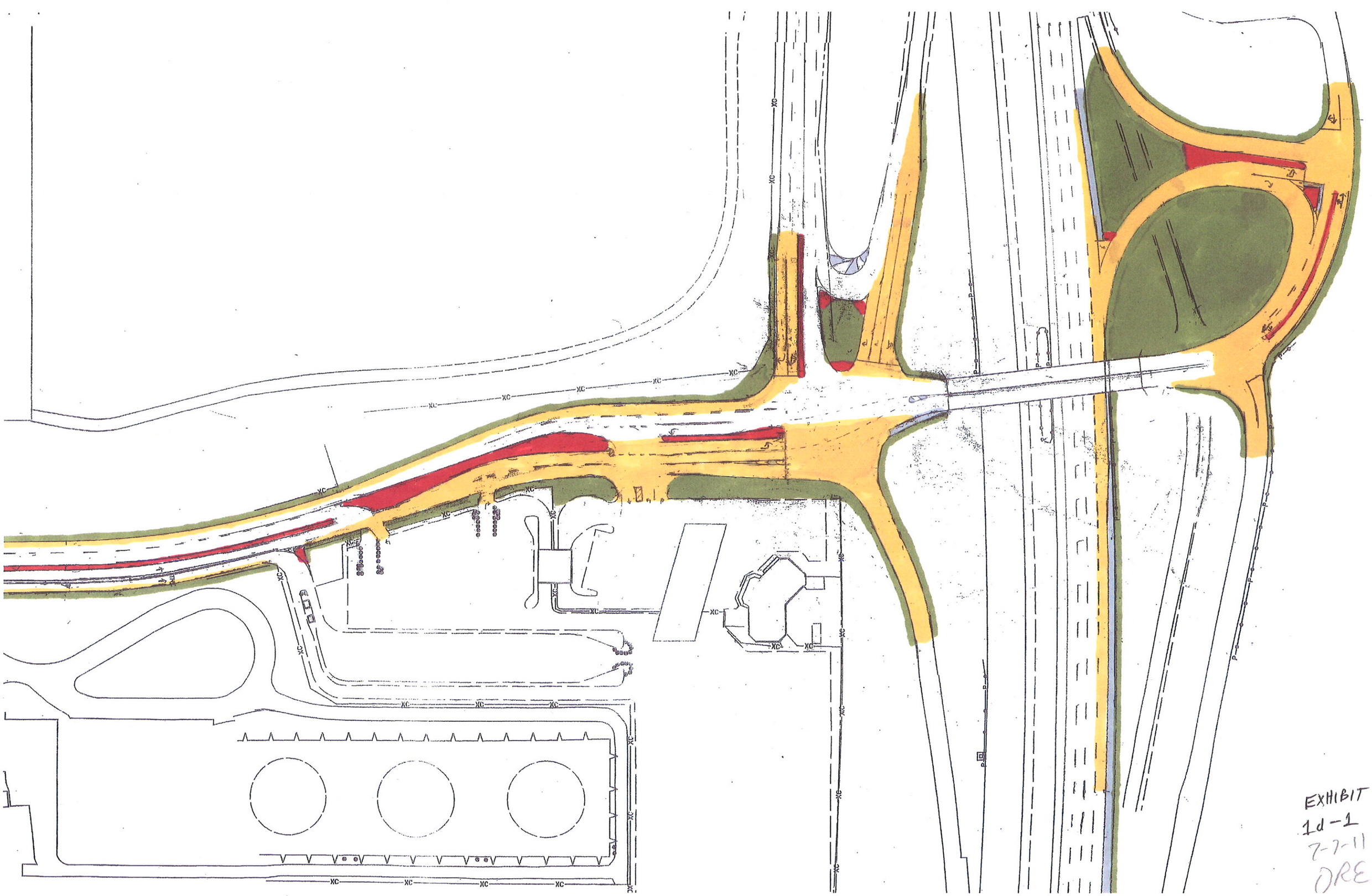
Metropolitan Airports Commission	CITY OF BLOOMINGTON MINNESOTA	MINNESOTA DEPARTMENT OF TRANSPORTATION	Kimley-Horn and Associates, Inc.	SRF Consulting Group, Inc.		**MSP AREA ROADWAY IMPROVEMENTS POST ROAD ACCESS INTERCHANGE CONCEPT PLAN- 2030 DIVERGING DIAMOND**	**EXHIBIT 3**

Alternative Screening Matrix

Post Road and TH 5 Interchange

Alternative or Concept	Existing Diamond					New Diamond		
	1a	1b	1d-1	2a-2020	2b-2020	2a	2b	2c
PMT Meetings:	PMT-05	PMT-05				PMT-05	PMT-05	
PMT Meetings:	PMT-06	PMT-06	PMT-06	PMT-06	PMT-06	PMT-06	PMT-06	PMT-06
Description:	Existing	2020 median	2020 south ramp buttonhook	2020 New Bridge Shifted south 100 ft +/-	2020 New Bridge	2030 Signal Control	2030 Roundabout Control	2030 Northwest Drive Eliminated
North Ramp Intersection	no change	no thru movement	all movements provided	all movements provided	all movements provided	all movements provided	all movements provided	all movements provided
South Ramp Intersection	no change	all movements provided	convert to buttonhook design	all movements provided	all movements provided	all movements provided	all movements provided	all movements provided
NW Drive Intersection	no change	Add median	Add median	Revise	Revise	Relocate West	Relocate West	Eliminated
SA, Fuel Farm Drives	no change	Access Control w/ median	Access Control w/ median	Access Control w/ median	Access Control w/ median	Relocate opposite NW Drive	Relocate opposite NW Drive	Access Control w/ median
Ft Snelling, Etc. Drives	no change	New Signal	Reconstruction	Partial reconstruction	Partial reconstruction	Partial reconstruction	Partial reconstruction	Partial reconstruction
ROW Required:	Minimal	Minimal	Low	Low	Low	Medium SA impacted	Low	Low
Air Side Impact:	None	None	None	None	None	None	Minor	None
RPZ Clearance Impact:	None	None	None	None	None	None	None	None
ROW Sensitivity:	Low	Low	Low	Low	Low	Low	Low	Low
Construction Cost:		Low	Medium	High	High	High	High	High
Construction Impact:		Low	Low	Low	Low	Medium	Medium	Medium
Staged Construction		Not compatible w/ 2030	Not compatible w/ 2030	Not compatible w/ 2030				
2010 Operations	At/over capacity	under capacity						
2020 Operations	At/over capacity	At/over capacity	At/over capacity	Near capacity (pending detailed analysis)	Near capacity			
2030 Operations	At/over capacity	At/over capacity				Near capacity (pending detailed analysis)	Near capacity (pending detailed analysis)	Near capacity (pending detailed analysis)

EXHIBIT 1B


XC
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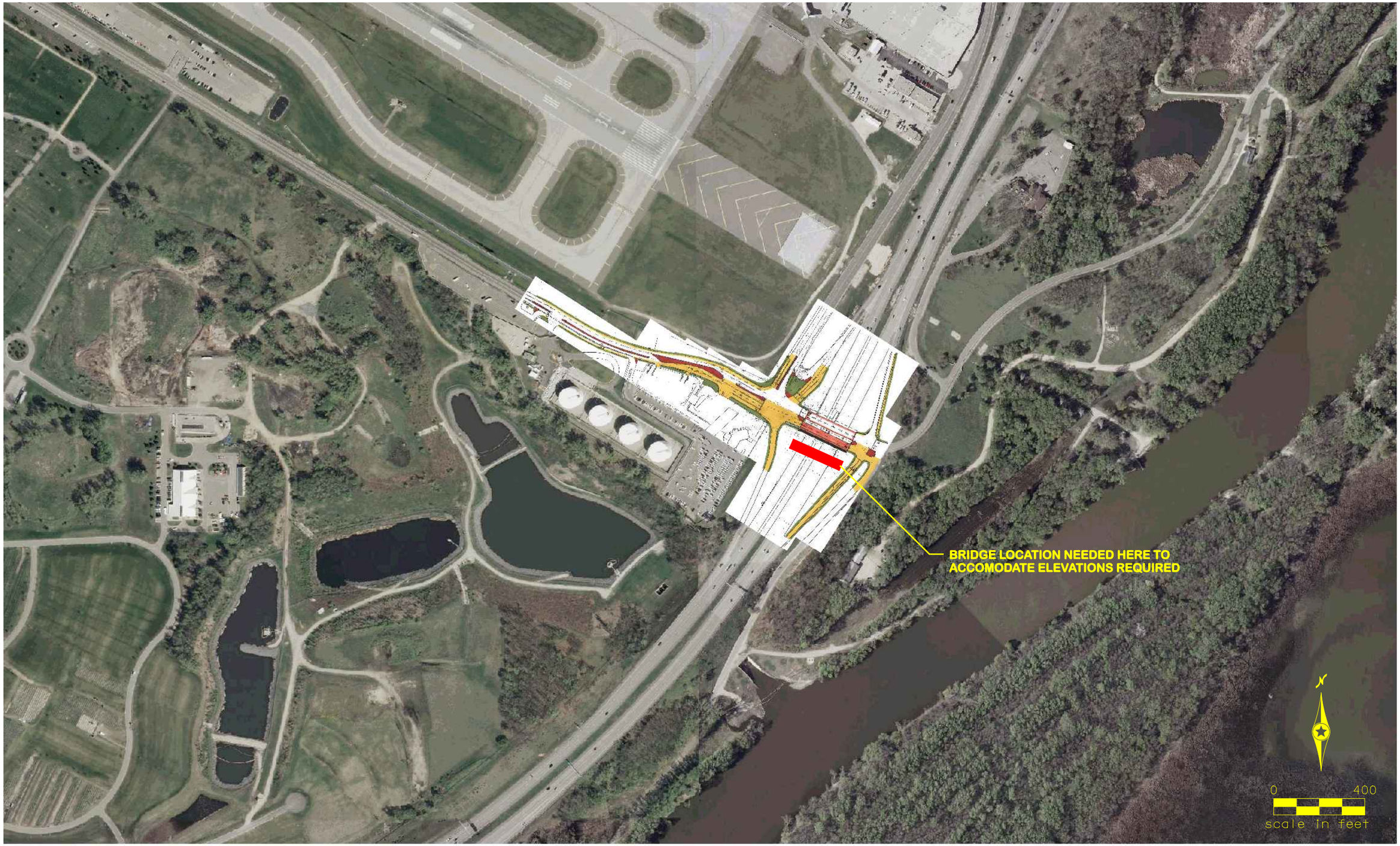
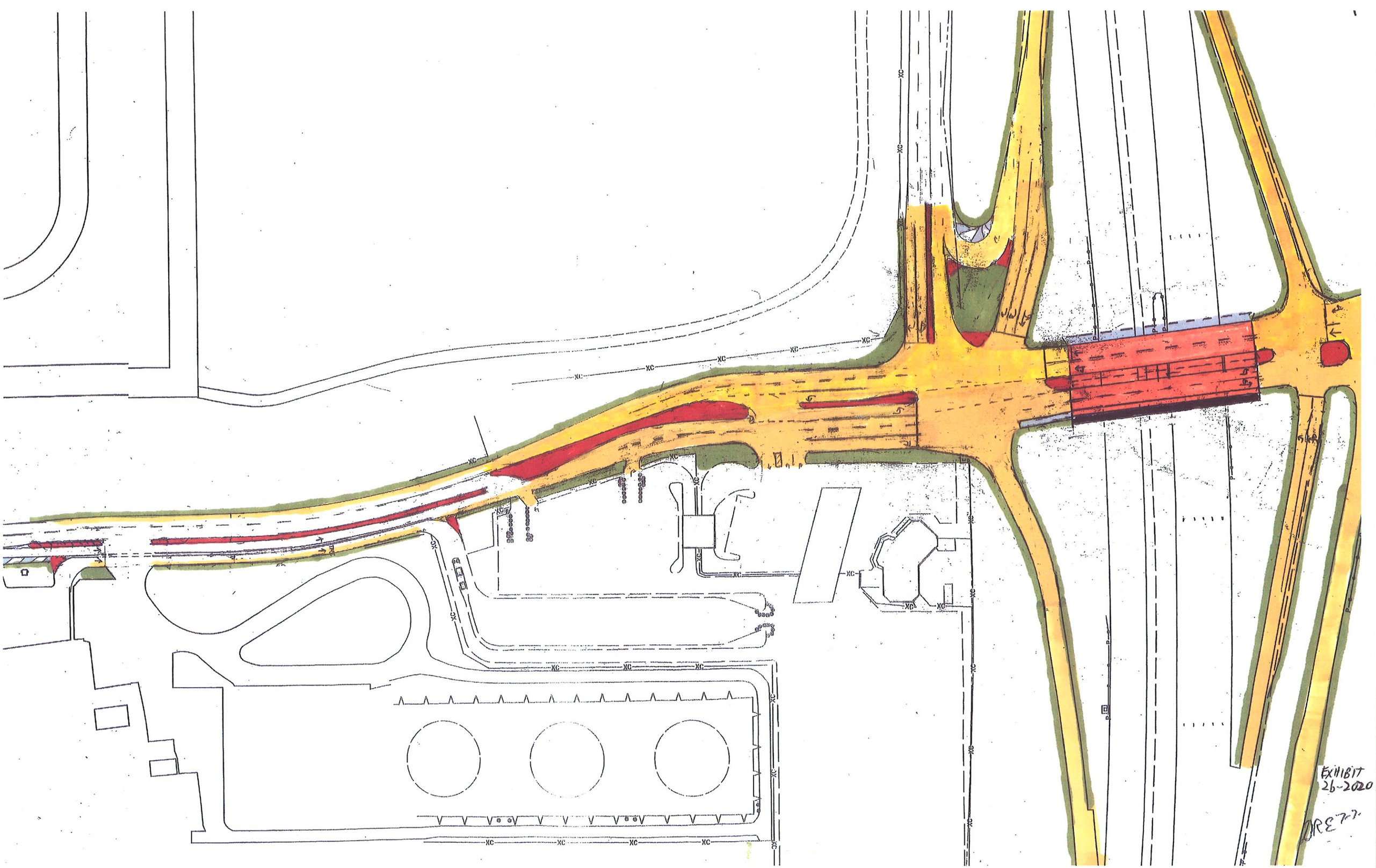
1d-1
7-7-11
DRE



Metropolitan Airports Commission	CITY OF BLOOMINGTON MINNESOTA	MINNESOTA DEPARTMENT OF TRANSPORTATION	Kimley-Horn and Associates, Inc.	SRF Consulting Group, Inc.		MSP AREA ROADWAY IMPROVEMENTS POST ROAD ACCESS INTERCHANGE CONCEPT PLAN- 2020 INTERIM	EXHIBIT 2a-2020


XC
EXHIBIT
2b-2020
DRE 7-7-

2C
Diamond without NW Drive

JRE
7-6-11

Post Road Concepts
MSP Area Roadway Improvements
August 8, 2011

Interchange Bridge	South Ramp Intersection	North Ramp Intersection	Northwest Drive Alignment	Taxi/Super America Access Driveways	Lane Schematic	Year 2020		Year 2030
						Airlines Remain	Airlines Relocate	Airlines Relocate
Existing 2-lane Bridge	Revised Geometrics (Traffic Signal Control)	Revised Geometrics (Traffic Signal Control)	Proposed Alignment (Traffic Signal Control)	Consolidated Driveways	3	All Volumes	All Volumes	
						Taxi Off-site Relocation	Taxi Off-site Relocation	
						Remove Super America	Remove Super America	
						Taxi Off-site Relocation/Remove Super America	Taxi Off-site Relocation/Remove Super America	
	Button Hook Configuration (Side-street Stop Control)	Revised Geometrics (Traffic Signal Control)	Proposed Alignment (Traffic Signal Control)	Consolidated Driveways	6	All Volumes	All Volumes	
						Taxi Off-site Relocation	Taxi Off-site Relocation	
						Remove Super America	Remove Super America	
						Taxi Off-site Relocation/Remove Super America	Taxi Off-site Relocation/Remove Super America	
Existing 2-lane Bridge + New 2-lane Bridge	Revised Geometrics (Traffic Signal Control)	Revised Geometrics (Traffic Signal Control)	Proposed Alignment (Traffic Signal Control)	Consolidated Driveways	8	All Volumes	All Volumes (5)	
						Taxi Off-site Relocation	Taxi Off-site Relocation	
						Remove Super America	Remove Super America	
						Taxi Off-site Relocation/Remove Super America	Taxi Off-site Relocation/Remove Super America	
				Taxi Lot Moves West on Post Road SA Remains as Existing	8A			All Volumes
New 5-lane Bridge	Revised Geometrics (Traffic Signal Control)	Revised Geometrics (Traffic Signal Control)	Northwest Drive Removed	Consolidated Driveways	10			All Volumes (6)
								Taxi Off-site Relocation
								Remove Super America
								Taxi Off-site Relocation/Remove Super America
			Proposed Alignment (Traffic Signal Control)	Taxi Lot Moves West on Post Road SA Remains as Existing	10A			All Volumes
				Taxi Lot Moves West on Post Road SA Moves Across Post Road	10B			All Volumes

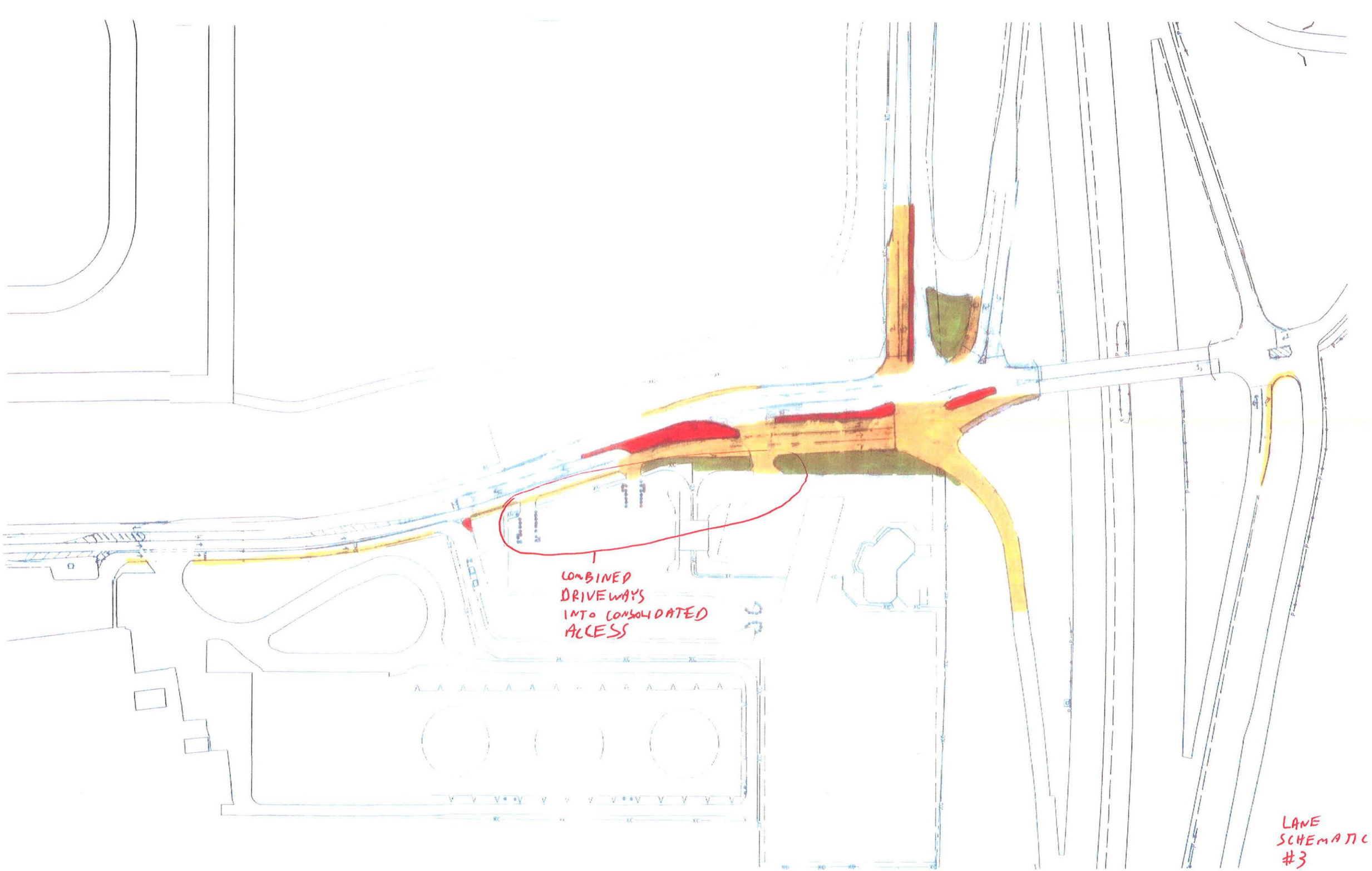
Notes:

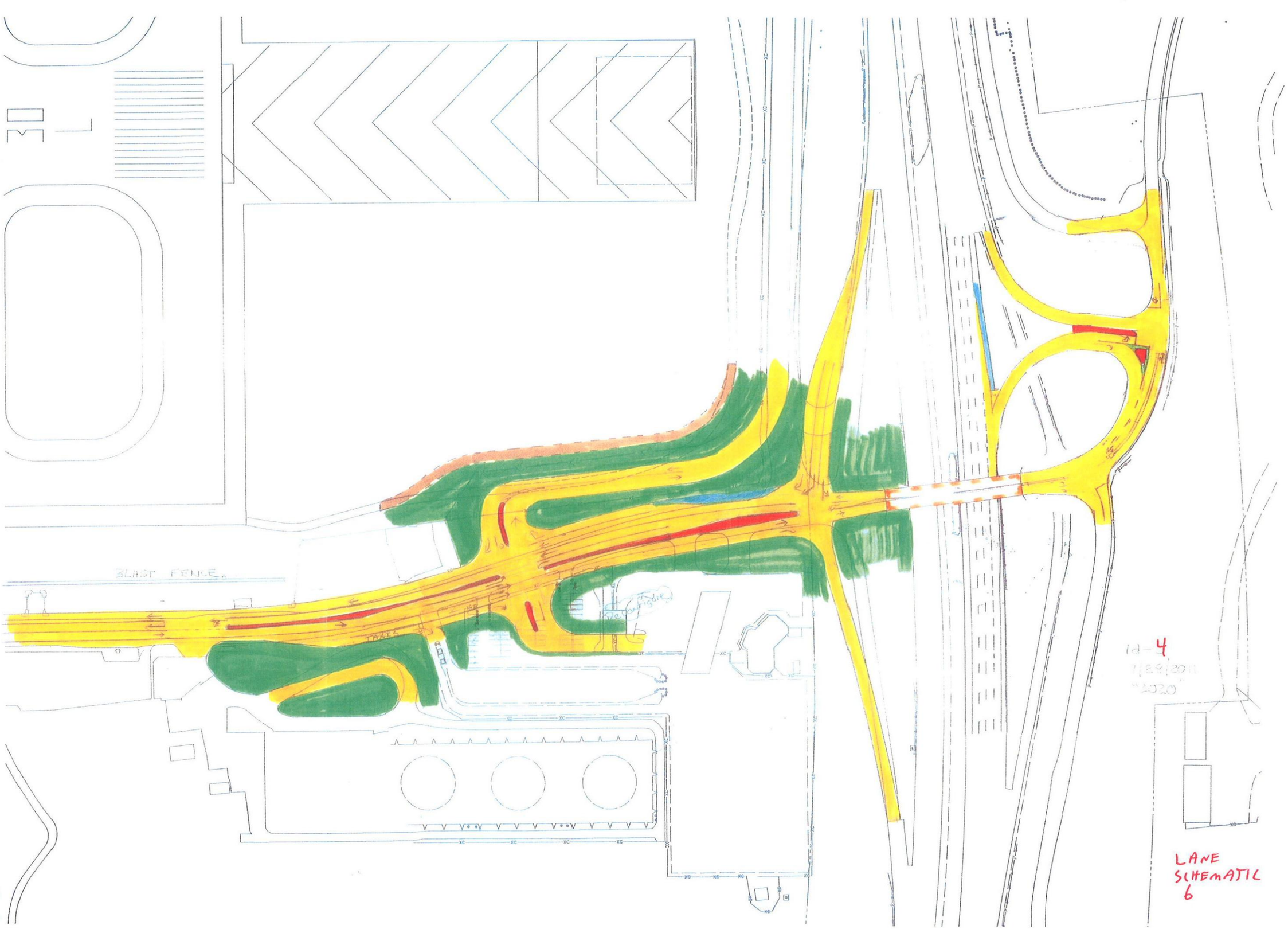
(1) Long queues expected for South Ramp intersection TH 5 off-ramp.
(2) Combined southbound TH 5 off-ramp/Northwest Drive intersection operates poorly.
(3) Combined southbound TH 5 off-ramp/Northwest Drive intersection operates poorly with its close proximity to the taxi lot and Super America access.
(4) Super America access operates poorly.
(5) Consolidated/realigned Northwest Drive intersection operates near capacity.
(6) Consolidated/realigned Northwest Drive intersection operates near capacity. Dual left-turns into taxi lot and Super America would improve operations.

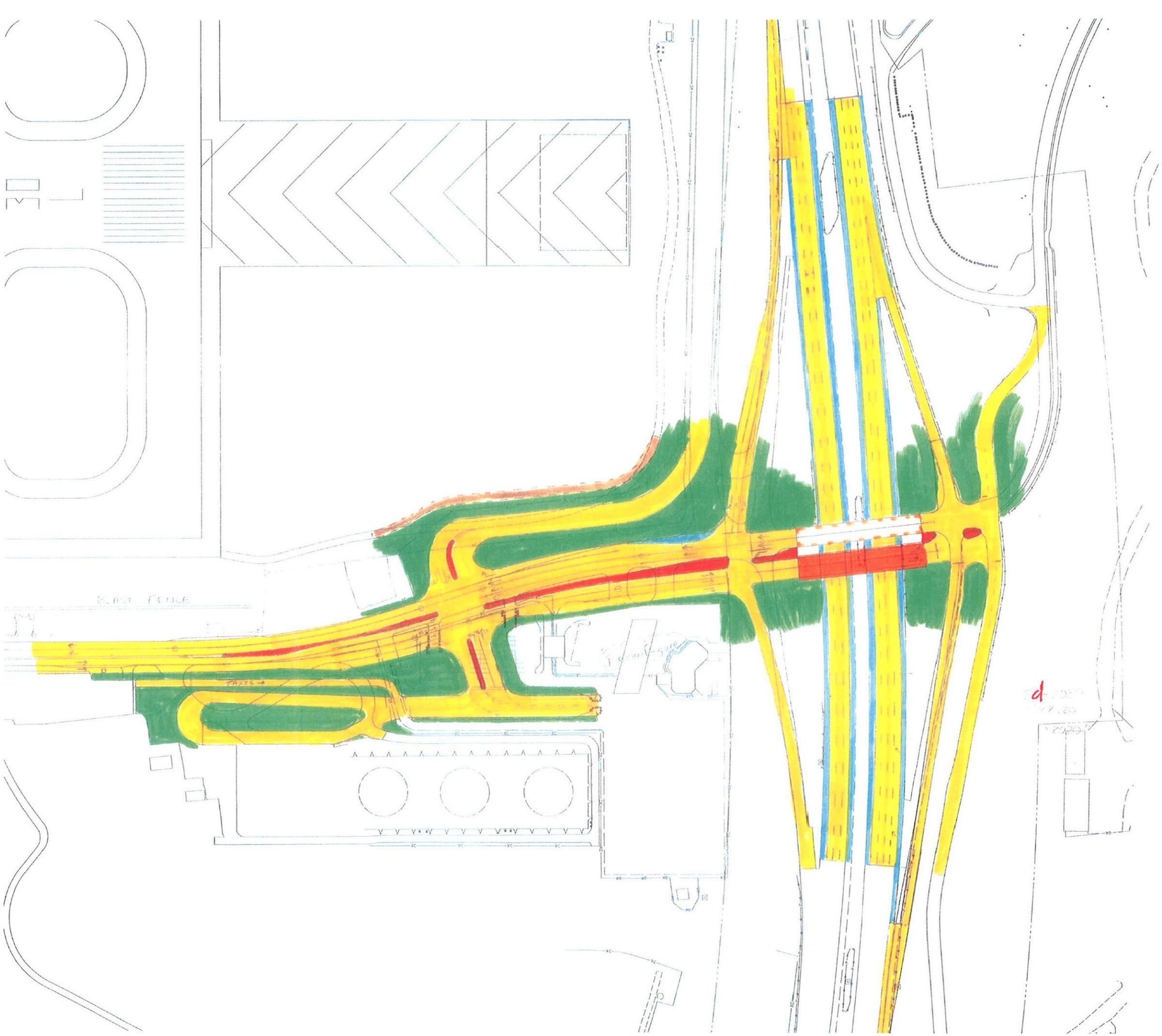
Legend:

All Volumes - Includes all taxi and Super America volumes.
Taxi Off-site Relocation - Assumes the taxi lot is relocated off-site of Post Road, but the Super America remains.
Remove Super America - Assumes the Super America is removed, but the taxi lot remains.
Taxi Off-site Relocation/Remove Super America - Assumes the taxi lot is relocated off-site of Post Road AND the Super America is removed.

Over Capacity
Near/At Capacity
Under Capacity


COMBINED
DRIVEWAYS
INTO CONSOLIDATED
ACCESS
LANE
SCHEMATIC
#3

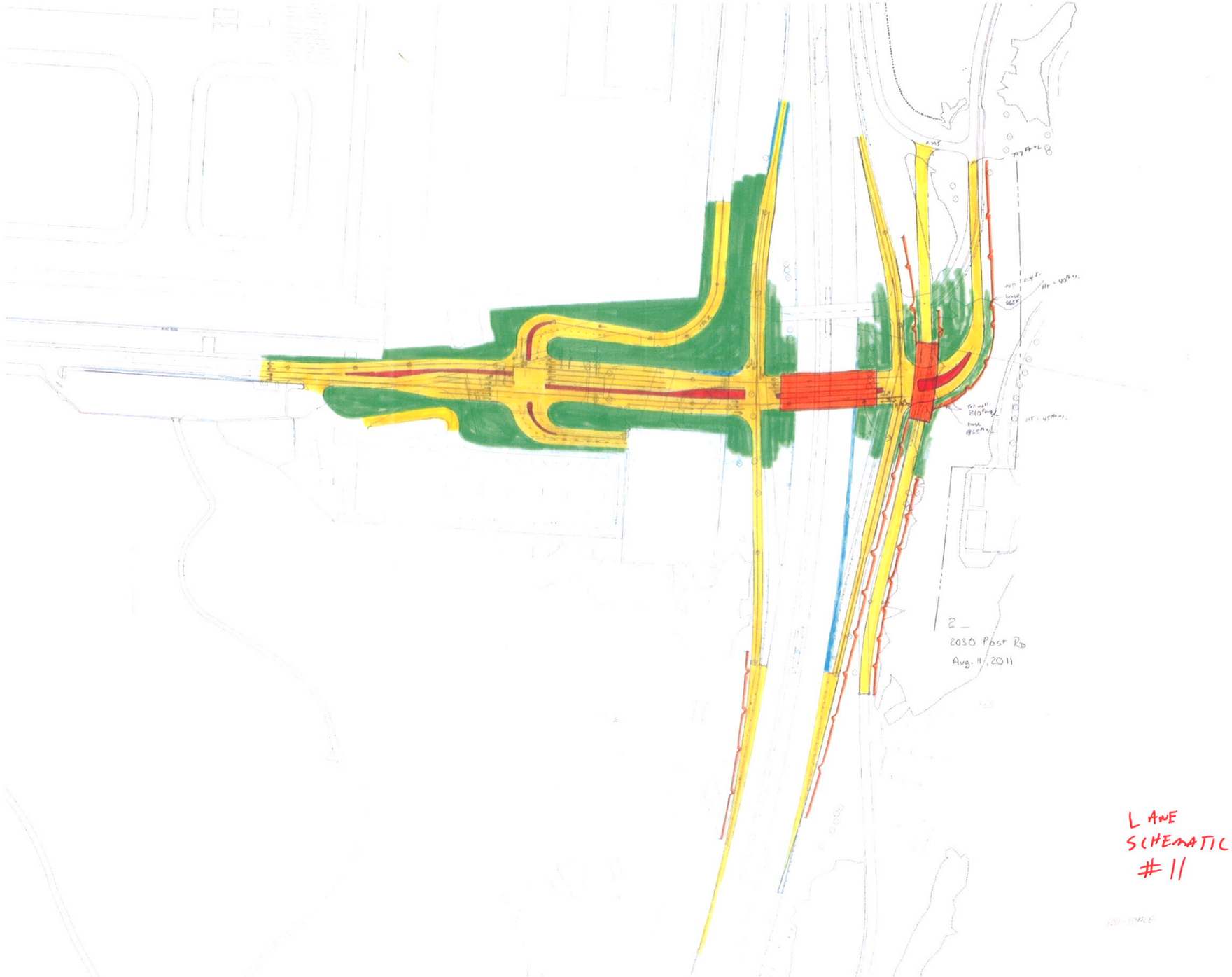

BLAST FENCE
LANE SCHEMATIC 6


BLAST FENCE
LANE
SCHEMATIC
8

Diamond without NW Drive

JRE
7-6-11

2030 LANE SCHEMATIC 10


2_
2030 Post Rd
Aug. 11, 2011
LANE
SCHEMATIC
#11

Attachment 4:

Travel Demand Forecast Memorandum

SRF No. 0117343

TECHNICAL MEMORANDUM

TO: Brandon Bourdon, P.E.
Kimley-Horn & Associates, Inc.

FROM: Steve Wilson, Principal
Paul Morris, Senior Engineer

DATE: August 25, 2011

SUBJECT: MINNEAPOLIS-ST. PAUL INTERNATIONAL AIRPORT AREA ROADWAY IMPROVEMENTS (INCLUDING THUNDERBIRD ROAD ACCESS) STUDY TRAVEL DEMAND FORECASTS

INTRODUCTION

This memorandum documents the data collection, evaluation of existing conditions, and calibration and validation process used to prepare travel demand modeling forecasts for the Minneapolis-St. Paul International Airport (MSP) Area Roadway Improvements Study. The purposes of the study are to: 1) support the environmental process for the MSP 2020 Improvements Environmental Assessment (EA); 2) support the design process for potential modifications to existing regional freeway interchanges at Glumack Drive, Post Road, and 34th Avenue South; and 3) to provide traffic input to potential regional roadway system access modifications to Thunderbird Road in the Bloomington South Loop District.

The Twin Cities Regional Travel Demand Model (TCRTDM) is the primary tool for development of these forecasts. Airport-specific modifications were incorporated to reflect policy and operational considerations of the airport development alternatives. Future year scenarios and forecast results are then discussed, along with supporting materials including traffic forecast volume maps and reasonableness checks.

This memorandum includes consideration of average weekday traffic conditions on area roadways, plus unique design-related peaking characteristics at MSP and in the Bloomington South Loop District. For example, an operations analysis was conducted for the time periods of 5:30 a.m. to 8:30 a.m. and 1:30 p.m. to 6:30 p.m. The traffic operations analysis is addressed under a separate technical memorandum. Included in the operations analysis, where appropriate, are any seasonal or other adjustments to forecast volumes in order to satisfy design approval processes. For example, the MSP internal roadway system is being analyzed as a season worst-case summer peak, which is 14 percent higher than an average annual weekday.

STUDY AREA

The project area for the MSP Area Roadway Improvements include the roadways leading to Terminals 1 and 2 at MSP Airport, specifically Glumack Drive, Post Road, and 34th Avenue South (see Figure 1). This project area includes these roadways' respective interchanges along I-494 and TH 5. In addition, the Bloomington Thunderbird Road Access project area includes the segment of the northbound-to-eastbound collector-distributor (CD) roadway serving the Mall of America along TH 77 and I-494. In addition, freeway operations were reviewed along an extended area along TH 5, I-494 and TH 77.

Figure 1: Study Area Travel Demand Model Network

DATA COLLECTION

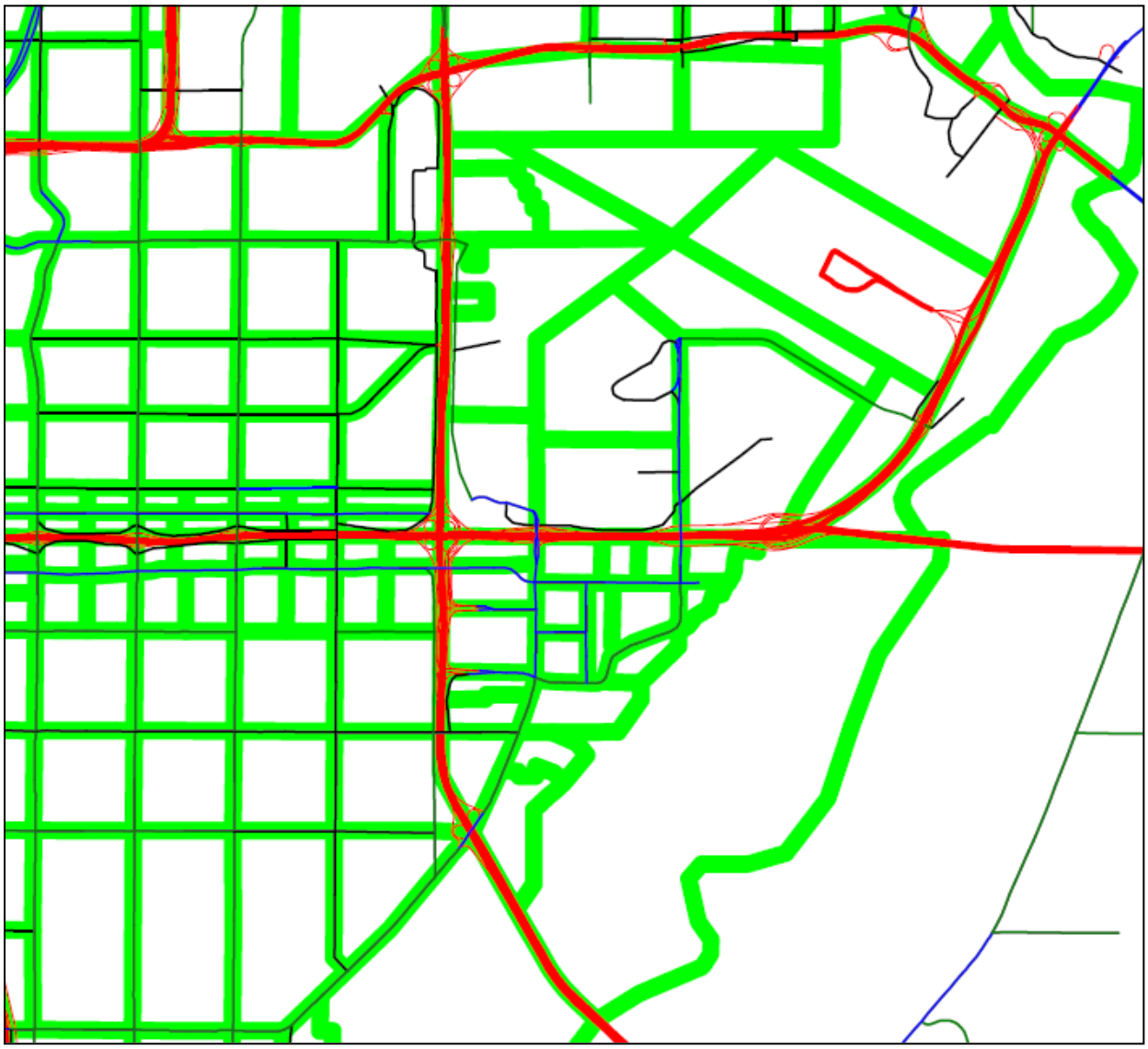
An extensive data collection effort was undertaken to accurately capture existing traffic patterns in the study area. This data includes road tube counts, manual turning movement counts, freeway loop detector counts and vehicle classification counts. A comprehensive description of the data collection locations and a summary of the observed traffic volumes are documented in the memorandum "Existing Data Collection MSP Area Roadway Improvements", dated February 10, 2011.

MODEL DEVELOPMENT

The Metropolitan Council's Twin Cities Regional Travel Demand Model (TCRTDM) was used as the basis for the traffic modeling for this study. Two recently updated elements of the regional model were used in this study: a geodatabase version of the regional highway network; and, an updated highway assignment process that included a more robust functionality for high-occupancy and toll (HOT) lane operations.

Additional detail was added to the TCRTDM to provide increased resolution on the study area. This detail includes more extensive coding of local roadways near the MSP Airport and in the Cities of Bloomington and Richfield. Transportation analysis zones (TAZs) were also subdivided within the study area to more accurately capture travel patterns. These splits involved 21 of the original 1201 regional model zones, which were further subdivided into 89 zones, for a total of 1269 zones in the seven-county metro area. An illustration of the resulting roadway network and TAZ boundaries is provided in Figure 2.

Figure 2: Roadway Network and TAZ Boundaries



EXISTING MODEL MODIFICATIONS

Two significant modifications were made to the TCRTDM to improve model performance: MSP airport trip special generator distribution and the TH 5 Mississippi River crossing traffic flow. These modifications improved model performance in the study area, and were consistently applied across all alternatives.

MSP Airport Trips

For the purpose of the environmental assessment of the airport development options, the traffic generation for the MSP terminal areas uses exogenous vehicle trip generation data rather than the special generator functions of the TCRTDM. However, the regional model's distribution/ direction of approach functions are still needed to better represent work-related and visitor-related traffic patterns on the roadway system.

The vehicle trip generation method implicitly assumes that future year airport workers and users will maintain the same transit market share as currently exists, regardless of changes in future travel costs, parking convenience or transit accessibility.

Existing airport trips to and from Terminal 1 estimated using the Metropolitan Council travel demand model were found to have travel patterns inconsistent with observed traffic counts. Specifically, trips accessing TH 5 to and from the east (north) were found to be significantly greater than loop detector counts, and trips to and from the west (south) were much less than loop detector counts. To produce results more consistent with ground measurements, adjustments were made to the airport special generator model file.

Airport passenger trips to Terminal 1 under base model conditions were tracked with respect to whether they access Glumack Drive from the east or west (the TCRTDM does not distinguish between Terminal 1 and Terminal 2 origin-destination patterns). These model volumes were normalized and then compared to loop detector counts accessing the airport. Based on the distribution, the proportion of trips in the special generator model origin-destination file were adjusted to increase or decrease the percentage of trips going to the east or west on TH 5. Table 1 shows the observed model volumes, loop detector counts, and the calculations used to compute the adjustment factors.

Table 1: MSP Airport Special Generator Adjustment Factors

Location	Model Volume	Model Percent	Normalized Model Volume	Count Volume	Count Percent	Adjustment Factor to Directional Percent
TH 5 East	32,900	56.5%	33,900	24,000	40.0%	-0.29
TH 5 West	25,300	43.5%	26,100	36,000	60.0%	0.38
Total Trips	*58,200*			*60,000*		

The adjustment was applied immediately following the special generation step of the model. Thus, the modified tables were carried forward into all subsequent model processes including trip distribution, mode choice, and highway assignment. This process resulted in airport travel patterns that are more consistent with observed traffic volumes.

TH 5 Mississippi River Crossing Trips

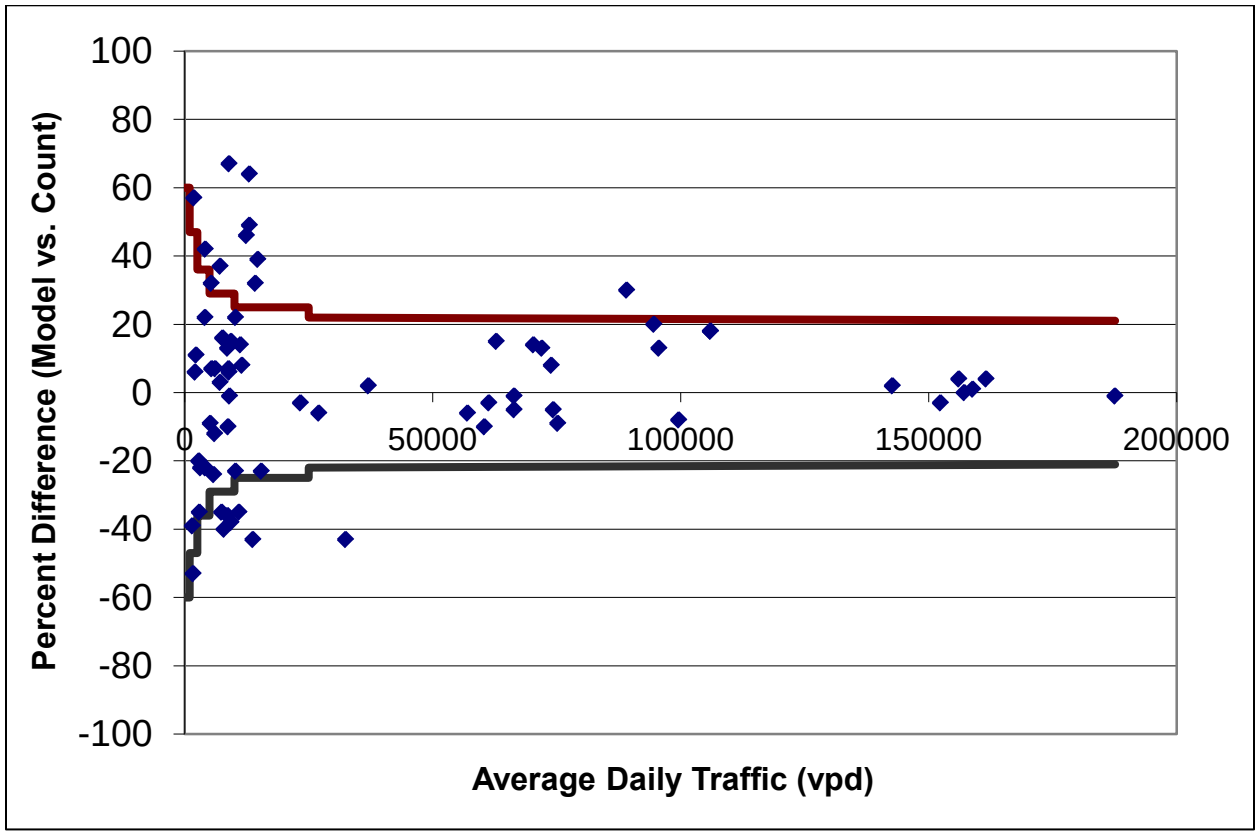
The TCRTDM produced traffic volumes on the TH 5 Mississippi River crossing that were approximately 20 percent higher than observed traffic volumes and, in future years, higher than the practical capacity of the bridge. The source of this variance is related to capacity constraints at the north end of the bridge, including tight merge areas and a freeway ending at a signalized intersection. TCRTDM model volume-delay functions do not sufficiently control traffic flow to reflect this condition. The issue was resolved by applying a travel time penalty to above-capacity movements using the river crossing. This adjustment produced more accurate daily traffic volumes on the TH 5 river bridge and on TH 5 near the MSP Airport, as well as more feasible future-year volumes.

EVALUATION OF EXISTING MODEL RESULTS

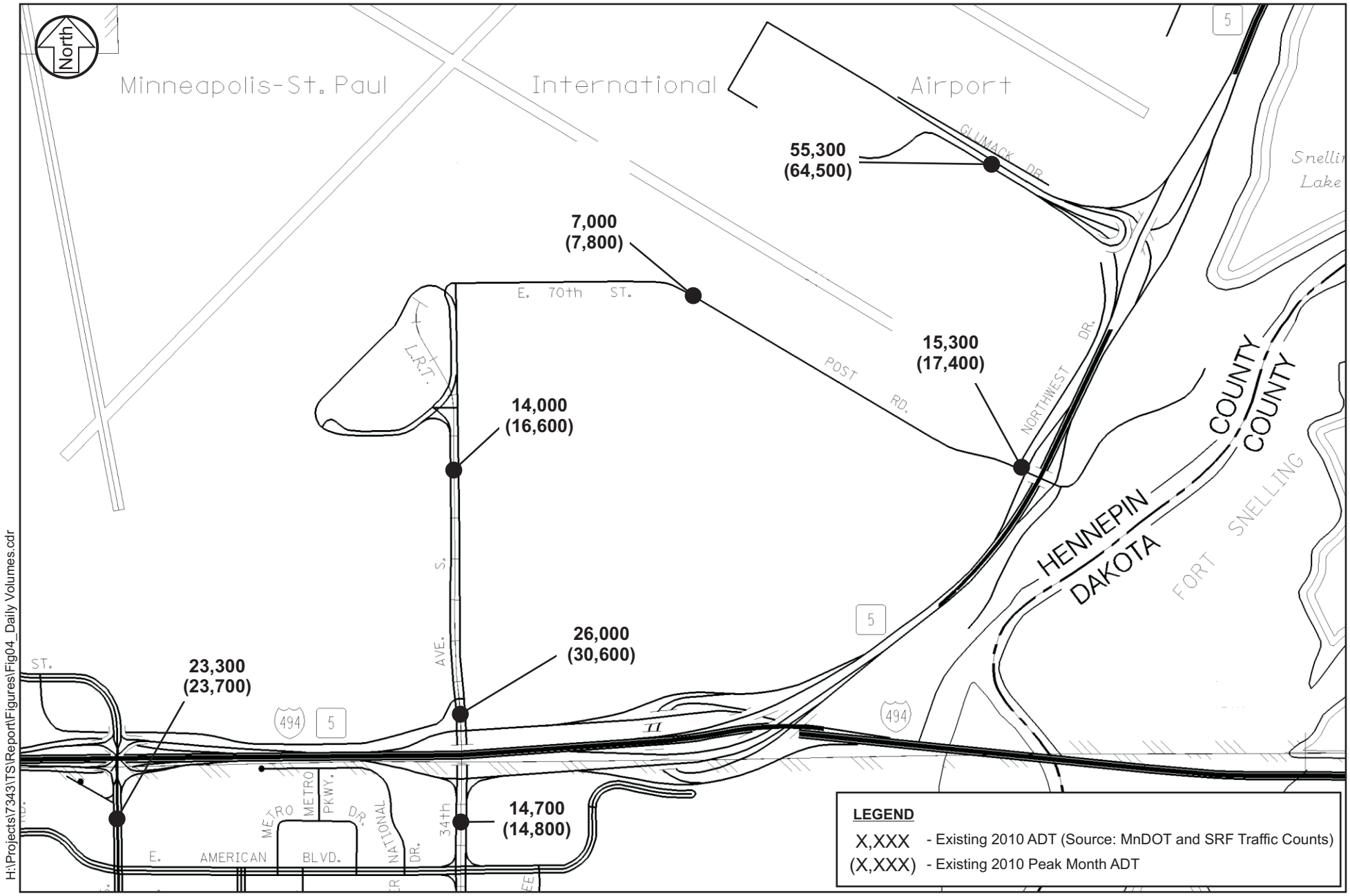
The travel demand model was validated for goodness of fit comparison to existing traffic volumes. Daily traffic volumes in the study area were obtained from MnDOT AADT traffic flow maps and freeway loop detector counts. Freeway loop detector counts were obtained for October 2010 weekday conditions, to reflect the Regional Model structure designed to replicate weekday travel patterns. On non-freeway facilities where loop detector data was not available, AADT volumes were obtained from MnDOT traffic flow maps.

Figure 3 shows the results of the validation comparison of modeled daily volumes compared to known traffic counts. Nearly 70 percent of the links in the study area were found to fall within acceptable error limits specified by the FHWA *Model Validation and Reasonableness Checking Manual*. The study area is relatively small; consequently broader statistical measure of modeling fit would not provide meaningful results.

Figure 3: Daily Traffic Assignment Goodness-of-Fit



Figures 4 and 5 show the base 2010 traffic volumes for the study area. Values represent an average weekday, as well as for a typical summer peak day (the design horizon for MSP). Existing and forecast daily traffic volumes in the vicinity of the planned Thunderbird Road interchange are shown elsewhere (in Figure 11).



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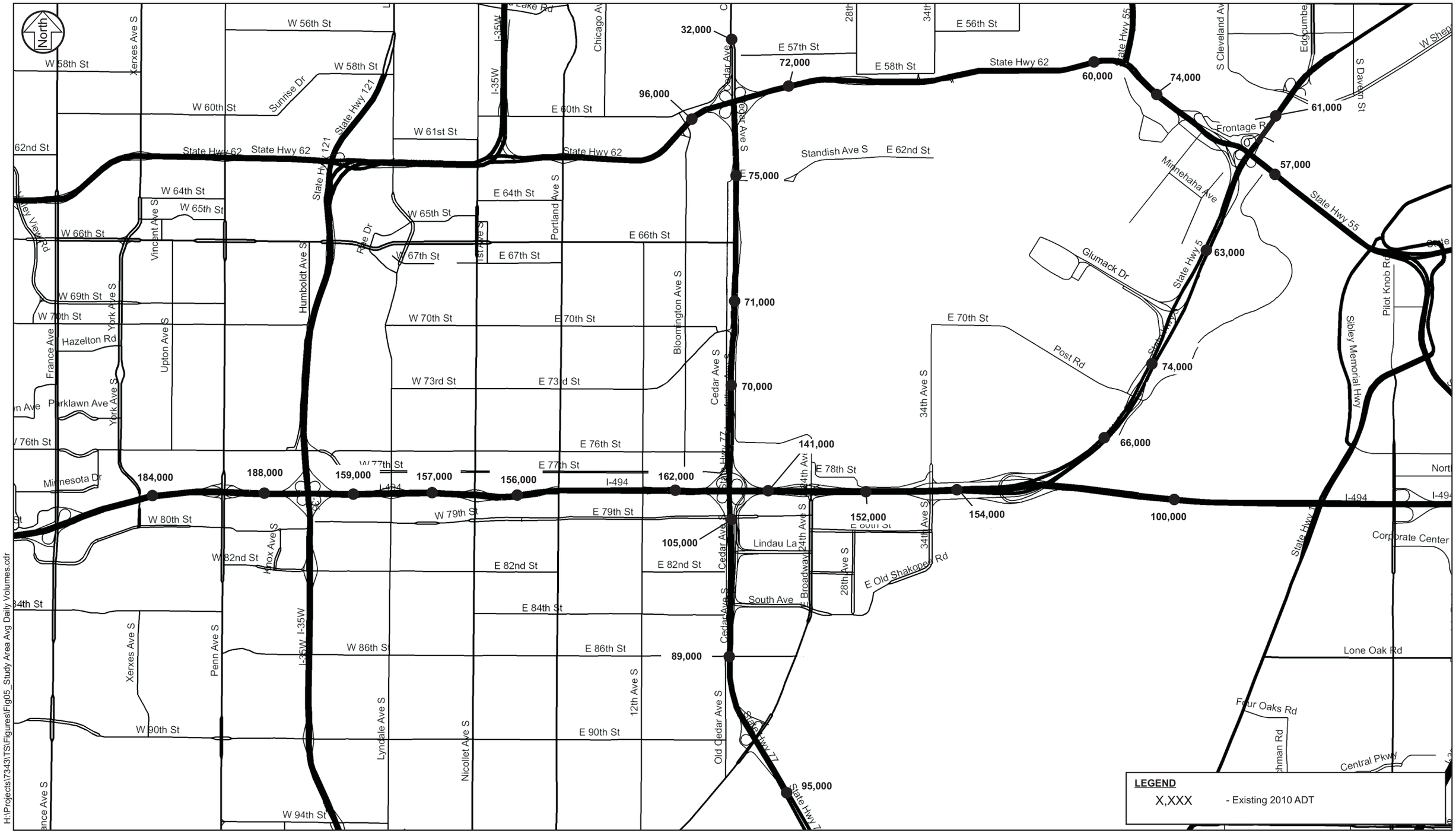
Terminal Area Average Daily Traffic Volumes (Existing)

Figure 4

MSP Area Roadway Improvements

MAC, City of Bloomington, MnDOT



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Study Area Average Daily Volumes (Existing)

MSP Area Roadway Improvements
MAC, City of Bloomington, MnDOT

Figure 5

DEVELOPMENT ASSUMPTIONS

Land use information was also updated for the refined TAZ structure in the study area. Default model input (Metropolitan Council year 2005 socioeconomic data) was reviewed against Minnesota Department of Employment and Economic Development (DEED) estimates for year 2009, with adjustments made to employment in the Cities of Bloomington and Richfield. Population and household estimates were similarly factored to year 2009 conditions based on Metropolitan Council population estimates. These locally adjusted land use estimates were used in combination with default TCRTDM data as the basis for a modeling of existing (2010) conditions. Land use information at MSP Airport was estimated based on employment data provided by MAC, and calibrated to reproduce observed traffic volumes along project area roadways.

Future year socioeconomic data for years 2020 and 2030 was primarily obtained from the Metropolitan Council, as provided with the regional model information. These assumptions are consistent with the local comprehensive plans, as accepted by the Metropolitan Council as of November 2010. Additional detail was used in the split-zone TAZ areas of the MSP Airport and the Cities of Bloomington and Richfield. Year 2025 demographic forecasts were interpolated except in the South Loop district and at MSP, where specific assumptions were made as described below.

Bloomington South Loop District

Land use forecasts for the South Loop District (area bounded by I-494, TH 77, and the Minnesota River) were provided by the City of Bloomington. These forecasts, shown in Table 2, reflect continued development of the South Loop District, but at a slower pace than previously forecast. All development forecasts are subject to market conditions.

Land use forecasts for the remainder of the split-zone areas of Bloomington and Richfield were consistent with the data used in the *I-494 & TH 77 Corridor Forecasting* study (Forecast Technical Memorandum dated 6/24/08).

Table 2: South Loop Development Assumptions

Land Use Type	2010	2020	2025	2030
Office (square feet)	2,295,000	3,626,000	4,173,000	4,720,000
Commercial (square feet)	4,575,000	6,370,000	6,483,000	6,595,000
Manufacturing/assembly (flex)	879,000	878,000	888,000	998,000
Hotel Rooms	2,884	4,299	4,588	4,876
Residential Units	1,172	2,162	2,560	2,962

MSP International Airport

The location and magnitude of activity at the MSP International Airport is a primary focus of this project. The assumed development levels at the MSP International Airport are shown in Tables 3 and 4. Three development scenarios are being considered as part of the MSP 2020 Improvements EA:

- **No Action**: airline tenants remain at their current terminals, with only expansion of airport facilities that have received prior environmental approval or are categorically excluded from environmental review.
- **Airlines Remain**: airline tenants remain at their current terminals, and terminals and landside facilities would be expanded as required.
- **Airlines Relocate**: SkyTeam airlines (Delta Airlines and alliance partners) remain at Terminal 1 and all other carriers are relocated to Terminal 2, and terminals and landside facilities would be expanded as required.

Table 3 shows the general levels of activity at each terminal and at the airport as a whole, under the various alternatives. As discussed elsewhere, airport activity is expressed in terms of the peak month of air travel (July). Analysis years include 2020 and 2025 for the MSP 2020 Improvements EA and 2030 for the freeway design components. Under the Airlines Relocate scenarios, a greater share of airport traveler activity is expected to occur at Terminal 2, compared to the No Action and Airlines Remain scenarios. Moreover, airlines operating at Terminal 1 are expected to serve a greater share of transfer flights, whereas Terminal 2 trips are expected to have more origins and destinations based at MSP Airport. The result of this difference is that Terminal 2 will have comparatively more roadway traffic accessing the terminal per enplanement than Terminal 1.

Table 3
Air Passenger and Terminal Vehicle Traffic Forecasts

	2010	2020			2025		2030
	Base	No Action	Airlines Remain	Airlines Relocate	Airlines Remain	Airlines Relocate	Airlines Relocate[1]
Terminal 1							
Enplanements+Deplanements	98,745	122,410	121,816	102,031	137,318	113,815	n/a
Originations+Destinations	43,625	55,272	54,635	36,169	60,909	38,971	47,590
Hubbing Ratio	41%	45%	45%	35%	44%	34%	n/a
Daily Vehicle Trips	64,528	81,025	85,217	57,943	96,232	64,587	69,959
Daily Vehicle Trips per O+D	1.48	1.47	1.56	1.60	1.58	1.66	1.47
AM Peak (generator) Vehicle Trips	3,212	4,311	4,375	3,593	4,528	3,833	4,140
PM Peak (generator) Vehicle Trips	4,808	6,218	6,685	4,301	7,777	4,754	5,463
AM Peak Percent	5.0%	5.3%	5.1%	6.2%	4.7%	5.9%	5.9%
PM Peak Percent	7.5%	7.7%	7.8%	7.4%	8.1%	7.4%	7.8%
Terminal 2[2]							
Enplanements+Deplanements	8,518	14,710	15,304	35,089	19,534	43,037	n/a
Originations+Destinations	8,457	14,554	15,191	33,657	19,401	41,339	44,848
Hubbing Ratio	99%	99%	99%	96%	99%	96%	n/a
Daily Vehicle Trips	17,460	30,020	25,933	52,926	32,740	64,600	74,613
Daily Vehicle Trips per O+D	2.06	2.06	1.71	1.57	1.69	1.56	1.66
AM Peak (generator) Vehicle Trips	885	1,541	1,339	3,309	1,324	3,288	3,743
PM Peak (generator) Vehicle Trips	1,558	2,656	2,444	4,074	2,964	5,421	6,268
AM Peak Percent	5.1%	5.1%	5.2%	6.3%	4.0%	5.1%	5.0%
PM Peak Percent	8.9%	8.8%	9.4%	7.7%	9.1%	8.4%	8.4%
MSP Total							
Enplanements+Deplanements	107,263	137,120	137,120	137,120	156,852	156,852	n/a
Originations+Destinations	52,082	69,826	69,826	69,826	80,310	80,310	92,438
Hubbing Ratio	49%	51%	51%	51%	51%	51%	n/a
Daily Vehicle Trips	81,988	111,045	111,150	110,869	128,972	129,187	144,572
Daily Vehicle Trips per O+D	1.57	1.59	1.59	1.59	1.61	1.61	1.56
AM Peak (generator) Vehicle Trips [3]	3,794	5,324	5,314	5,301	5,722	5,960	6,674
PM Peak (generator) Vehicle Trips[3]	5,977	8,215	8,329	8,203	10,332	10,471	11,560
AM Peak Percent	4.6%	4.8%	4.8%	4.8%	4.4%	4.6%	4.6%
PM Peak Percent	7.3%	7.4%	7.5%	7.4%	8.0%	8.1%	8.0%

(1) 2030 forecasts based on origin-destination growth, not emplanements

(2) Include employee parking at 72nd St. S. lot where applicable

(3)Terminal 1 and Terminal 2 have different peak hours, consequently MSP total does not represent sum of terminals

Forecasts are developed as vehicle trips, which consequently reflect the current mode share at the airport including LRT; it was assumed for future planning that the passenger access mode shares would remain the same. The forecasts also include MSP and air carrier employee traffic that park at the Terminal 1 and Terminal 2 parking structures. Employee parking is included in the terminal traffic totals, which constitutes four to five percent of the overall vehicle trips. As shown in Table 4, employee parking would be accommodated differently depending on the alternative. Employee traffic currently accounts for 19 percent of all vehicle trips to/from the Terminal 2 area. It would remain at a similar level for the 2020 No Action scenario, but varying amounts of employee parking would move to Terminal 1 under the Airlines Remain and Airlines Relocate scenarios.

Table 4: Terminal 1 and Terminal 2 Parking Characteristics

	Terminal 1		Terminal 2		MSP Total	
	Employee Trips	Percent of Total Terminal Trips	Employee Trips	Percent of Total Terminal Trips	Employee Trips	Percent of Total Terminal Trips
2010 Base Case	-	0%	3,396	19%	3,396	4%
2020 No Action	-	0%	6,016	20%	6,016	5%
2020 Airlines Remain	5,009	9%	1,026	2%	6,034	5%
2020 Airlines Relocate	3,309	4%	2,707	10%	6,016	4%
2025 Remain	5,488	8%	1,124	2%	6,613	5%
2025 Relocate	3,647	4%	2,984	9%	6,630	5%
2030 Relocate	3,937	6%	3,226	4%	7,162	5%

As previously noted, this study uses a vehicle trip-based traffic generation method, which is not sensitive to changes in parking convenience, travel costs, or transit accessibility. Consequently, future year forecasts implicitly assume current levels of passenger dropped offs, public transit, and park and fly lot use.

The methodology for determining air passenger forecasts is documented in a separate memorandum (*Activity Forecast Technical Report).* In general, historical MSP origin/ destination traffic has grown much faster than population and employment in the region. The principal variables in the forecasts include real metropolitan income and average air fares, along with an adjustment factor for travel stimulation due to discount air service.

Table 5 shows the assumed change in traffic generation for non-terminal in the Post Road/34th Avenue South area. One of the activities included is the taxi staging area and convenience store/gas station on Post Road at TH 5; this activity is assumed to continue at its present location, but may be affected by roadway realignment or fuel storage expansion. Delta Airlines has some office and maintenance activities on 34th Avenue South near I-494; the location of parking access may be reevaluated as part of the airport planning process. Traffic growth associated with Delta facilities on 34th Avenue South are projected based on anticipated operational changes and other input for Delta Airline staff; other areas reflect a growth rate slightly lower than that of the air passenger forecasts.

Table 5:
34th Avenue South/Post Road Area Background/Non-Terminal 2 Forecast Vehicle Trips

Location	2010 Oct/Nov	2010 Est. July (peak)	2020	2025	2030
Ft. Snelling [1]	800	1,600	1,700	1,725	1,750
Northwest Drive[2]	3,600	4,100	5,250	5,975	6,700
Super America/Taxi/Fuel Storage[2]	9,250	10,550	13,500	15,400	17,300
Post Road Parking[1]	700	800	850	875	900
General Aviation/Support[2]	1,350	1,550	1,800	1,950	2,100
Delta: East 75th Street[3]	8,450	9,650	10,650	11,200	11,750
Delta: Airport Lane[3]	1,700	1,950	2,150	2,275	2,400
Ft. Snelling National Cemetery	750	750	750	750	750
Total Traffic	25,250	29,400	34,850	38,200	41,550

(1) Growth assumed at 0.5% per year
(2) Growth assumed at 2.5% per year
(3) Growth assumed at 1.0% per year

Terminal traffic has unique peaking characteristics relative to the surrounding regional traffic. Figures 6 through 8 show the current peaking characteristics of the I-494/34th Avenue South, TH 5/Post Road and TH 5/Glumack Drive interchanges based on 2010 MnDOT loop detector information. For example, Glumack Drive (the Terminal 1 access) generally has a directionally balanced traffic flow throughout the day (Figure 6), with a distinct inbound peak around 5:00 a.m. and outbound peak around 9:00 p.m. (referenced as 21:00 in Figures 6 through 9); total volumes are highest in the late afternoon. This is representative of the airline passenger traffic peaking. The TH 5/Post Road interchange ramp volumes (Figure 7) show a similar pattern, plus the addition of airport employee commuting, which is concentrated in the Terminal 2 area. Figure 8, the I-494/34th Avenue South interchange, includes a mix of not only MSP Terminal 2 and Delta employee traffic, but includes interchange users destined for the more typically-peaking South Loop District (though an early pulse of traffic exiting the freeway around 6:00 a.m. and a second pulse in the early p.m. hours when the shift changes occur at Delta airlines can be observed).

Future year hourly traffic estimates for airport trips have been prepared for each airport development scenario and are being used in the analysis of peak hour traffic operations. The hourly distributions for terminal traffic are shown in Appendix A.

Figure 6: Peaking Characteristics – TH 5/Glumack Drive Interchange

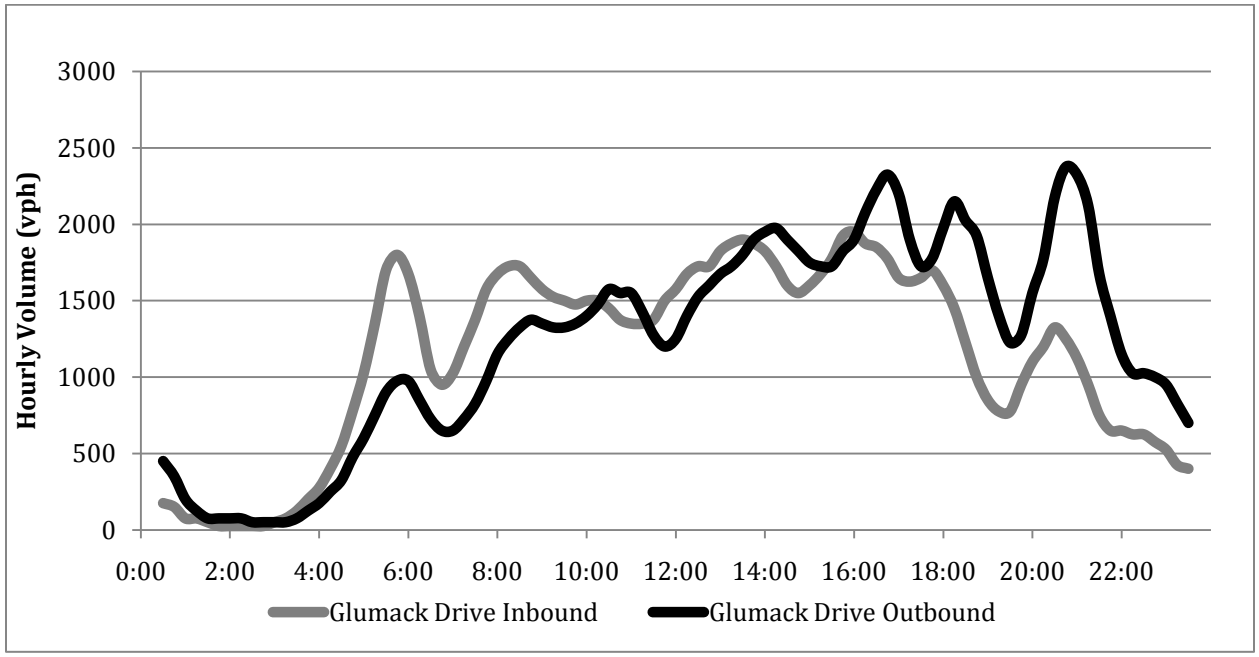


Figure 7: Peaking Characteristics – TH 5/Post Road

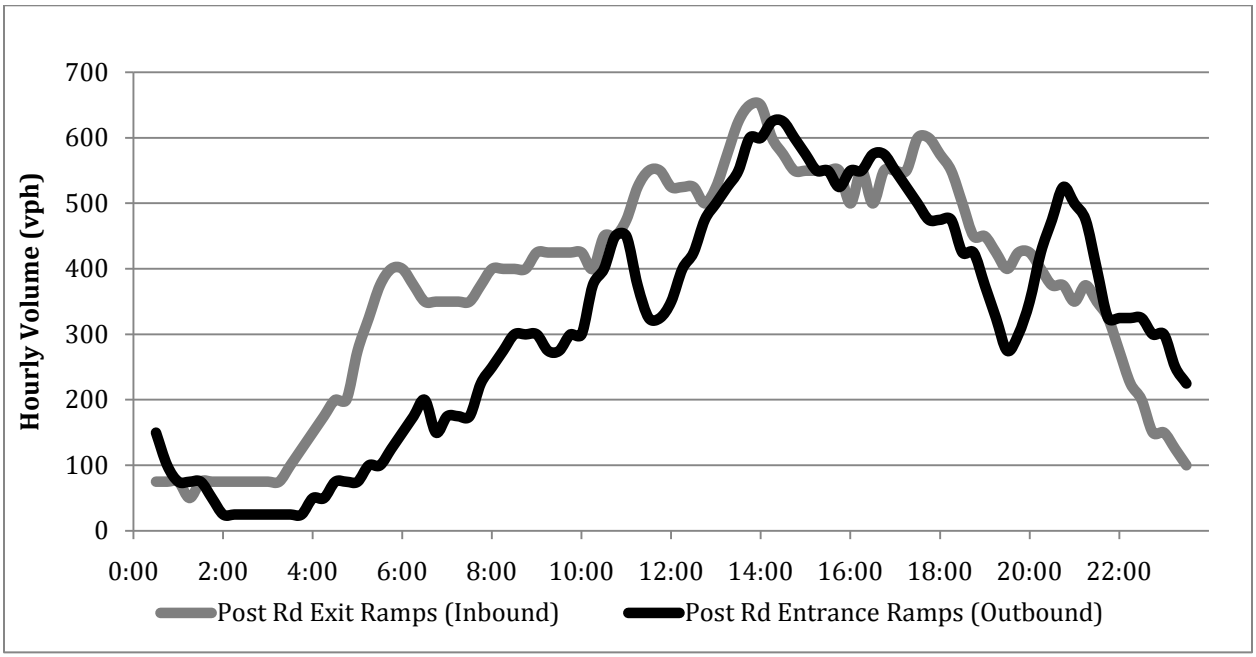


Figure 8: Peaking Characteristics – I-494/34th Avenue South Ramps

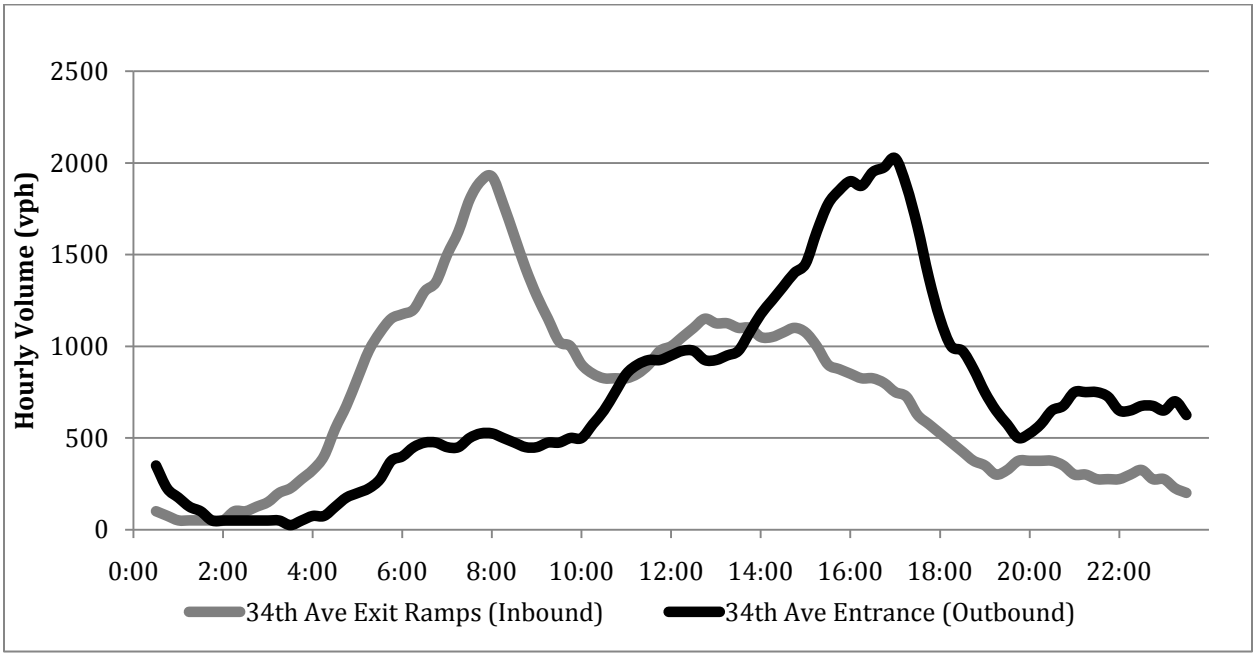
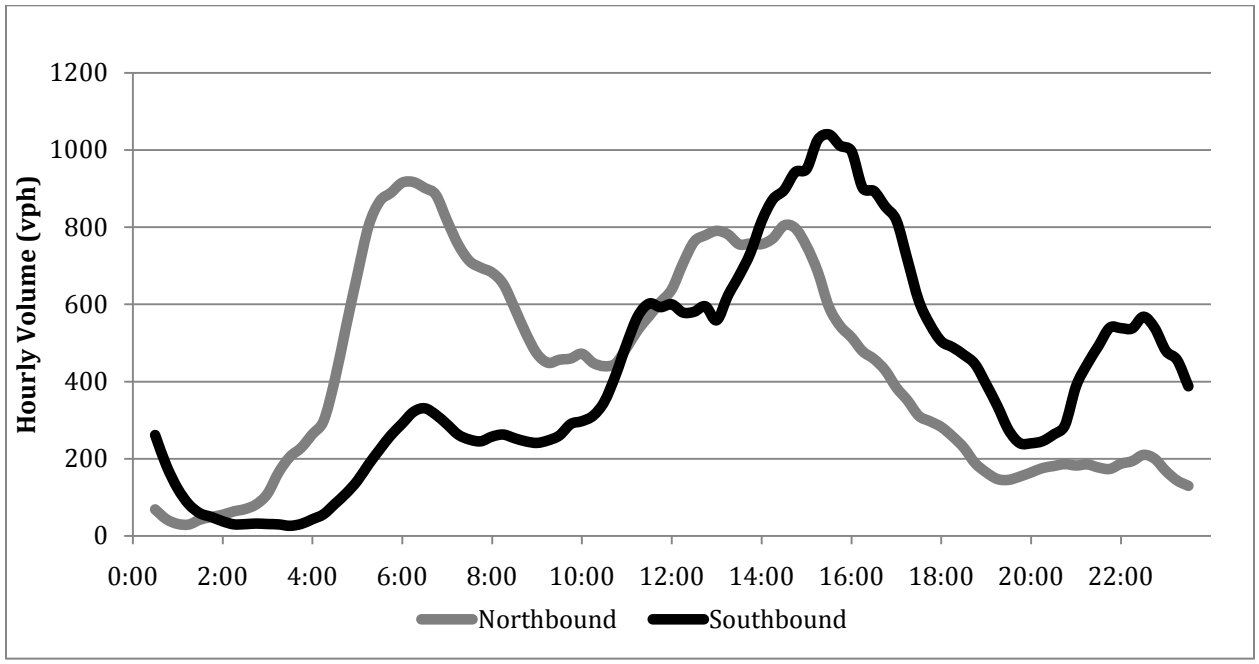


Figure 9: Peaking Characteristics – 34th Avenue South (North of I-494)



ROADWAY IMPROVEMENTS/ASSUMPTIONS

Future roadway improvements were also considered as assumptions for traffic forecasts. Assumed future-year regional roadway improvements are based on the most recent Metropolitan Council Transportation Policy Plan (November 2010). The plan contains a limited number of roadway improvements in response to anticipated limitations in revenues for roadway construction. As a result, MnDOT and Metropolitan Council planning documents include numerous improvements on the regional system that are uncertain due do fiscal constraints. These unfunded improvements are not assumed to be in place for the development of traffic forecasts; however some are evaluated through sensitivity testing at a later stage in the forecasting effort. A list of the roadway improvements, and whether they were assumed in future conditions, is provided in Table 6.

Table 6: Future Roadway Improvement Assumptions

Facility	Location	Description	Forecast Year
Various	Bloomington South Loop District	Capacity improvements to 24th Ave S, 28th Ave S, American Blvd, Killebrew Dr, Old Shakopee Rd Convert American Blvd to one way westbound between 28th Ave So And 34th Ave S	2020
I-494	I-35W to TH 100	Westbound Auxiliary Lane	2020
I-35W	I-494	Northbound to Westbound Flyover Ramp	Not assumed*
I-494	12th Ave to Nicollet Ave	Access consolidation including Single-Point Urban Interchange at Portland Avenue and removal of all ramps at 12th Avenue and Nicollet Avenue	Not assumed*
TH 77	77th Street	Local Roadway Underpass	2030
I-494	MSP Airport to TH 100	MnPASS Lanes	Not assumed*
TH 62	TH 77 to I-35W	Additional Lanes	Not assumed*
TH 77	Apple Valley to Bloomington	MnPASS Lanes	Not assumed*

*While these improvements are not included in the assumptions used to prepare the official traffic forecasts, they are considered in a sensitivity test to evaluate their traffic impact.

FORECAST RESULTS

The results of the future year model runs show that the significant increases in air passenger travel at MSP and the continued development of the South Loop District are expected to contribute to increases on study area roadways. The daily traffic volumes on Glumack Drive, Post Road, and 34th Avenue South are all expected to increase in the future. The magnitude of the increase will vary, depending on the airport development alternative. The differences between the No Action and Airport Remain scenarios affect mainly the peaking characteristics of the airport traffic, and do not significantly affect the average daily traffic (as shown in Appendix A).

Detailed operations analysis and levels of service for the various year/airport development scenarios, including tests of potential interchange/roadway improvements, are included in a separate memorandum.

Figures 10 through 13 show the results of the forecast scenarios which are summarized below. The primary forecast years include 2020 and 2030 (the roadway design year), followed by the analysis of 2025.

Year 2020 No Action and 2020 Airlines Remain

Under the 2020 No Action scenario, the distribution of air traveler activity between Terminals 1 and 2 will be similar to existing conditions, but with significant overall growth. As a result, traffic volumes on roadways serving the airport will resemble existing patterns. The largest growth is expected on Glumack Drive, which is forecast to increase from 55,300 vehicles per day (vpd) to 80,500 vpd. In contrast, increases on Post Road and 34th Avenue South are not as dramatic, with Post Road increasing from 15,300 to 26,600 vpd and 34th Avenue South increasing from 26,000 to 36,500 vpd. While these increases are not as dramatic as that on Glumack Drive, the growth is still notable due to increases in air traveler activity at Terminal 2, and employment growth at airport-related locations along Post Road and 34th Avenue South.

Traffic volume growth on I-494 is expected to be limited by lack of available capacity, particularly at the west end of the study area. As a result, regionally-oriented traffic from MSP airport is expected to displace through traffic on I-494, which may have other travel options. Previously planned expansions to I-494 are no longer expected by 2030 due to funding limitations.

Year 2020 Airlines Relocate

As shown in Table 3, the difference between the No Action and Airlines Relocate scenarios is a large shift in air traveler activity from Terminal 1 to Terminal 2. This shift is expected to result in changes to year 2020 traffic volumes compared to the 2020 No Action/Airlines Remain forecast. Glumack Drive is expected to serve a similar traffic volume to existing conditions, while Post Road and 34th Avenue South are expected to nearly double over existing volumes. Under this scenario, the demand on Post Road is expected to be 30,300 vpd and on 34th Avenue South is 59,000 vpd. These volumes are demand-based and subject to available capacity or traffic operations strategies, which may alter the split of traffic between Post Road and 34th Avenue South.

Relative to the 2020 No Action and Airlines Remain scenarios, traffic on the regional roadways will be affected by the reduction of traffic to/from Glumack Drive (Terminal 1) and the increase in traffic to/from the Post Road and 34th Avenue South interchanges serving Terminal 2. The increases/decreases are approximately 5,000 vehicles per day switch between TH 77 and TH 62, in the immediate vicinity of the airport, but as much as 15,000 vehicles per day on TH 5 between Glumack Drive and I-494 (Figure 11).

Year 2030 Airlines Relocate

The characteristics of the Airlines Relocate scenario for 2030 are very similar to the Airlines Relocate scenario for 2020, with an increased share of air traveler activity at Terminal 2, as well as continued overall growth in air traveler activity. Traffic volumes on Glumack Drive, Post Road, and 34th Avenue South are all expected to continue increasing beyond the forecast levels for the 2020 Airlines Relocate scenario. These large volumes, particularly on Post Road and 34th Avenue South, may require infrastructure improvements to be reasonably served.

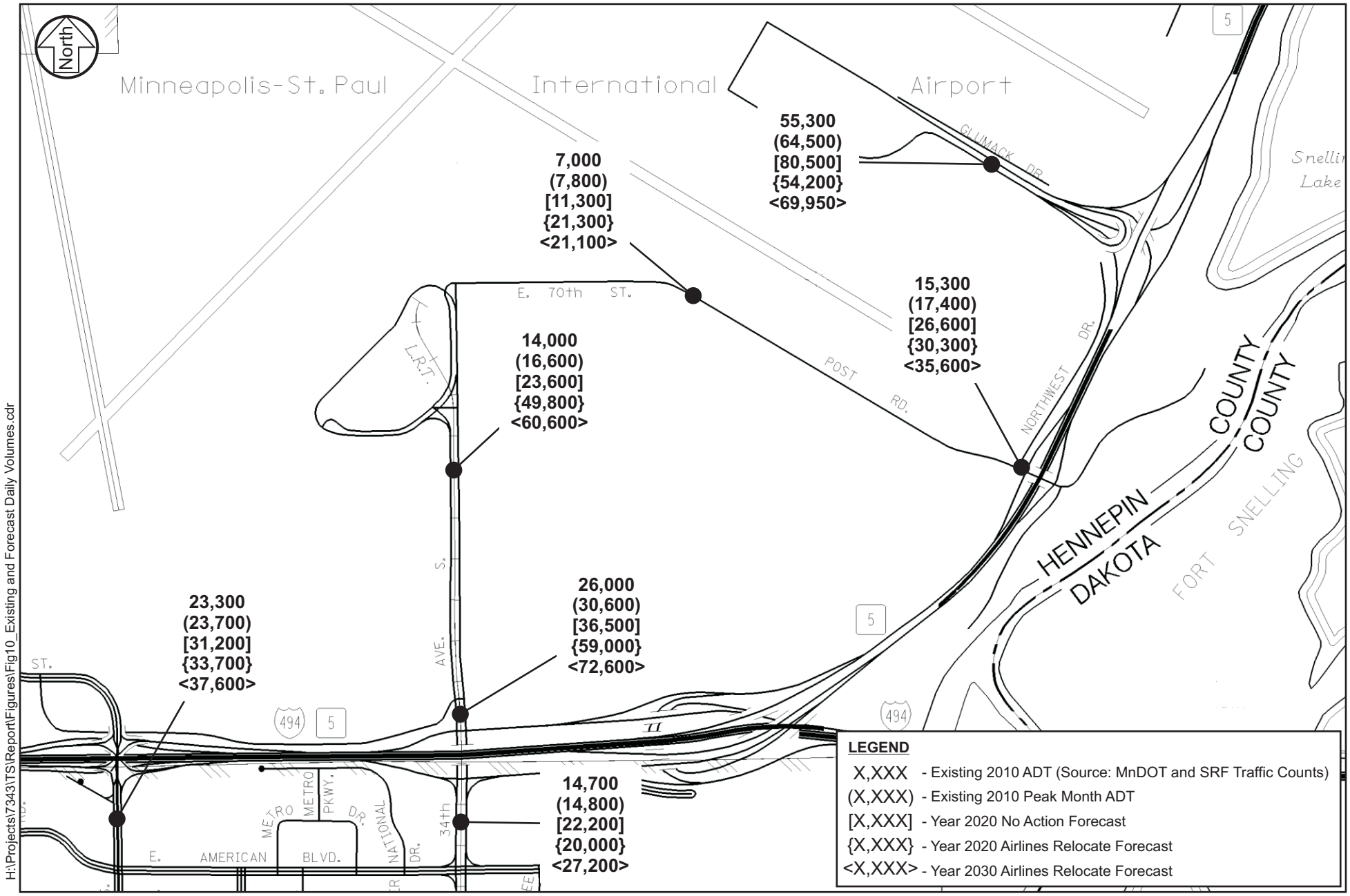
Year 2030 Thunderbird Road Access (with Airlines Relocate)

A subset of the 2030 Airlines Relocate scenario includes evaluating a potential access modification to the regional roadway system at Thunderbird Road (Figure 12). An exit from and entrance to the northbound TH 77 to eastbound I-494 ramp is expected to provide relief to the Lindau Lane and 24th Avenue South interchanges. Because the service area for the access is dominated by retail land uses, the design and analysis will be primarily addressing a retail peak condition (the third Saturday in August).

Year 2025 Airlines Remain and Year 2025 Airlines Relocate

Traffic forecasts for year 2025 scenarios were developed after the completion of year 2020 and 2030 volume forecasts. Socioeconomic forecasts for the TCRTDM were not available for year 2025, so results were interpolated between years 2020 and 2030. As a result, daily traffic volumes on roadways serving MSP Airport are expected to be higher than year 2020 volumes and less than the year 2030 volumes. The relationship between the Airlines Remain and Airlines Relocate scenarios are also similar to year 2020 forecasts. Under the Airlines Remain scenario, Glumack Drive is expected to experience traffic demand of 89,000 vpd accessing Terminal 1, which would likely exceed acceptable operations between TH 5 and Terminal 1 and at the ramps to TH 5.

Under the Airlines Relocate scenario, traffic growth is expected to shift away from Terminal 1, resulting in larger growth at Terminal 2. Daily volumes of 34,500 and 68,500 along Post Road and 34th Avenue South, respectively, represent a two- to four-fold increase over existing volumes under this scenario. Additional capacity along these roadways, and at the interchanges connecting them to the freeway system, would be necessary to accommodate this demand. Daily forecast volumes for year 2025 scenarios are provided in Figure 13.



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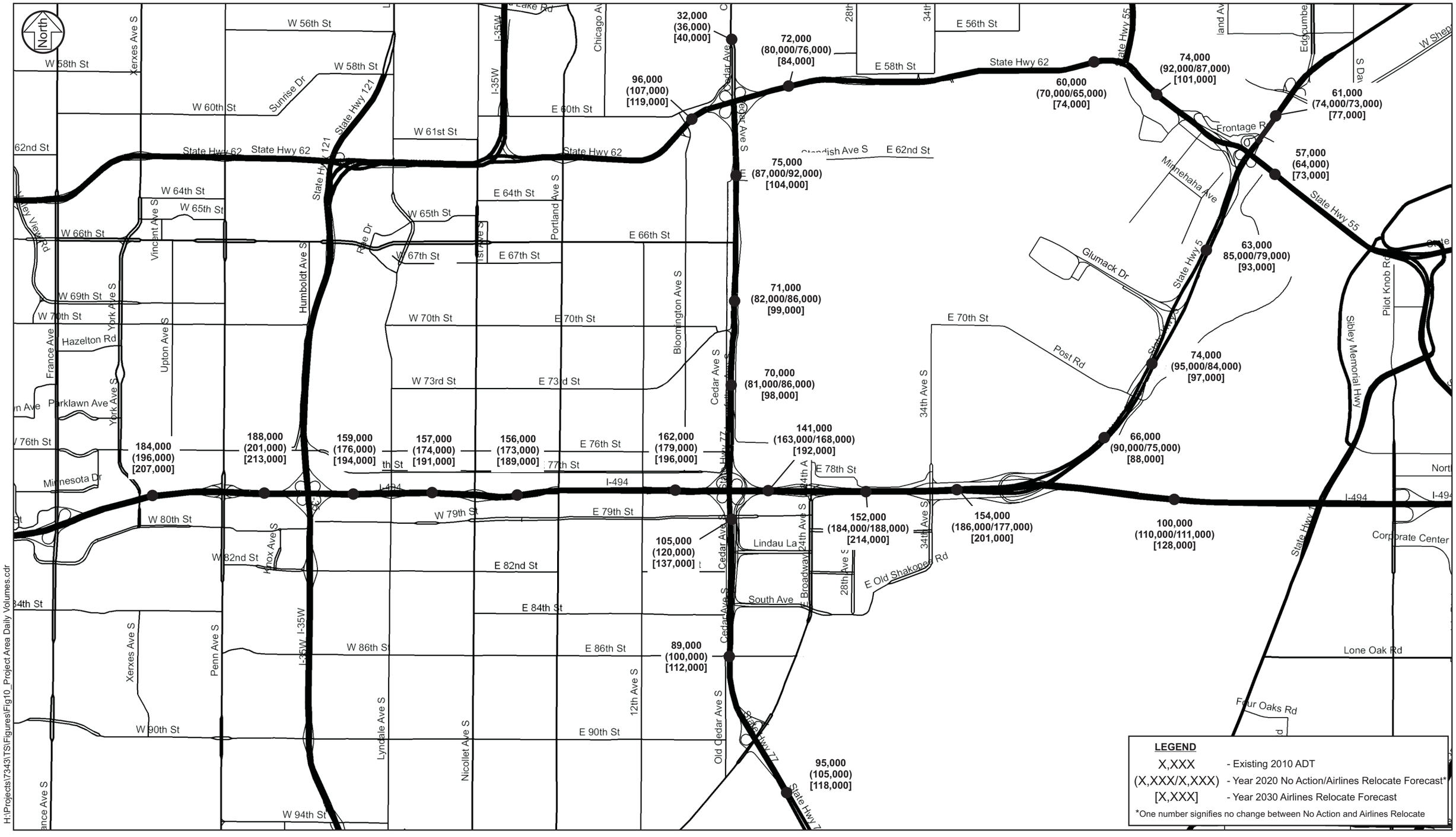
Existing and Forecast Daily Traffic Volumes

MSP Area Roadway Improvements

MAC, City of Bloomington, MnDOT

Figure 10



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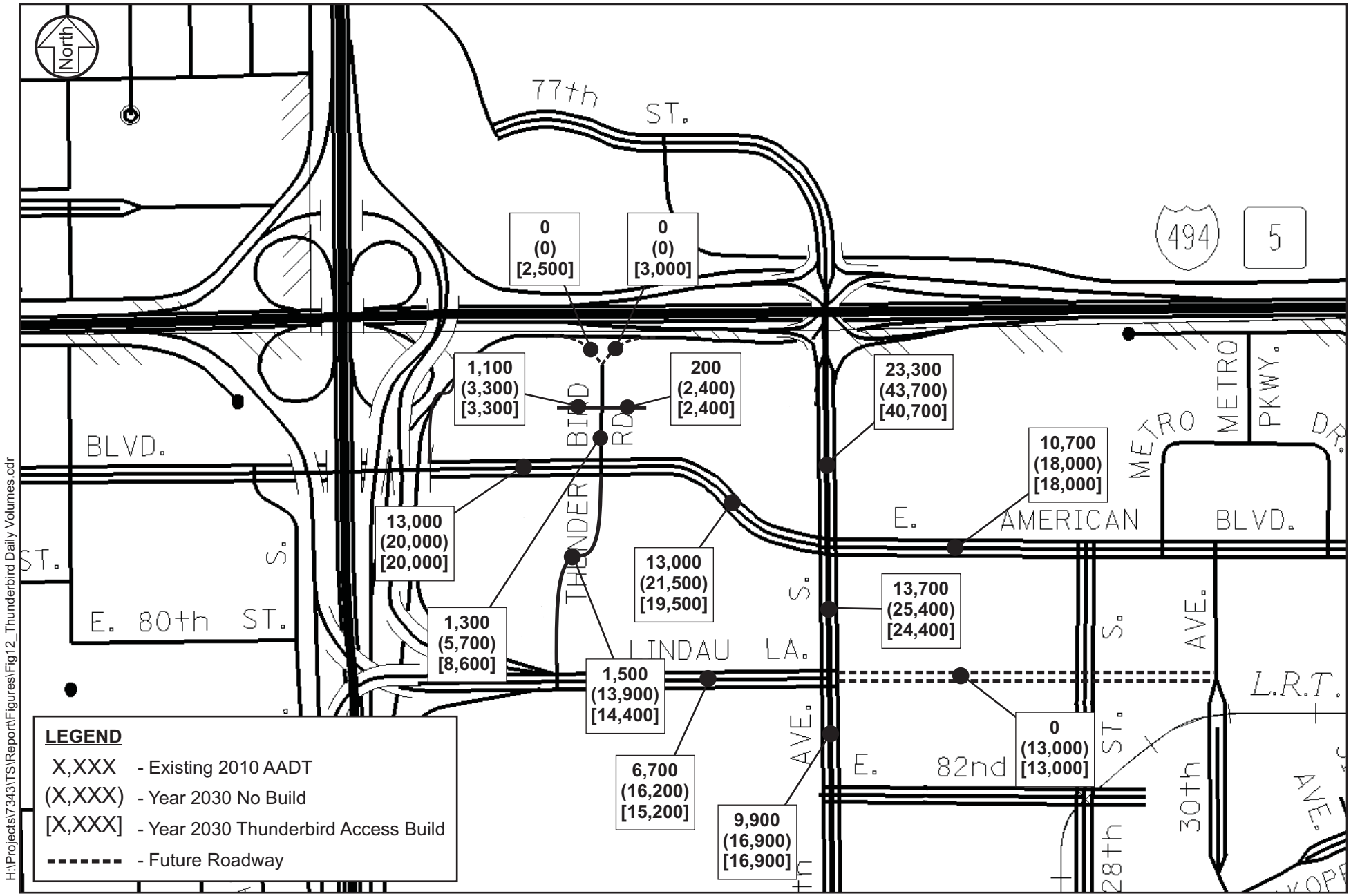
Study Area Daily Volumes

MSP Area Roadway Improvements

MAC, City of Bloomington, MnDOT

Figure 11



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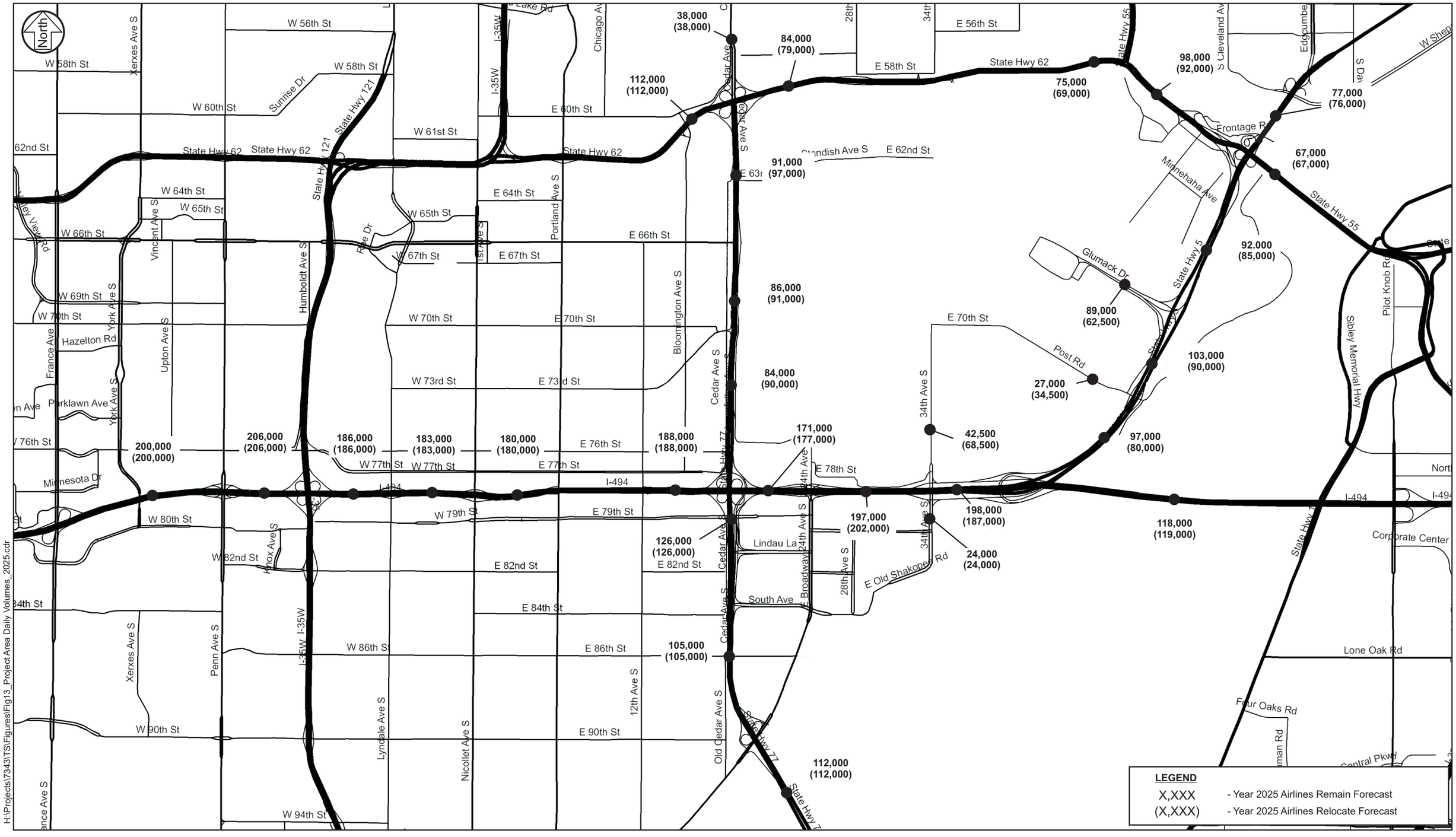
Thunderbird Road Daily Traffic Volumes

MSP Area Roadway Improvements

MAC, City of Bloomington, MnDOT

Figure 12



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Study Area 2025 Daily Volumes

MSP Area Roadway Improvements

MAC, City of Bloomington, MnDOT

Figure 13

SENSITIVITY TESTS

Two sensitivity tests were performed to evaluate the range of expected traffic volumes on study area roadways resulting from future conditions that differ from the assumptions described in this memorandum.

Terminal 2 Access Configuration

Various alternatives along the roadways serving Terminal 2 were evaluated to gauge the range of possible traffic volumes that might be expected to use Post Road or 34th Avenue South. These alternatives included increased capacity on Post Road, 34th Avenue South, or both, including options where all air traveler traffic accessing Terminal 2 would be allowed to use Post Road only and 34th Avenue South would not provide access to Terminal 2. Subsequent engineering evaluation determined the most feasible option was to use both 34th Avenue South and Post Road to maximize use of existing and planned infrastructure.

Regional Roadway Improvements

The roadway improvements described in Table 6 that were not assumed in the development of the official forecasts were considered in a sensitivity test to evaluate their traffic impacts relative to the MSP roadway improvements. Table 7 provides a summary of the changes in daily traffic volumes expected on affected roadways for year 2030 conditions. Whereas traffic to/from MSP generally uses the regional system already, the mainline capacity improvements result in virtually no additional traffic on the 34th Avenue South interchange.

Table 7: Year 2030 Sensitivity Test Traffic Volumes Changes

Facility	Segment	Forecast Change Daily (vpd)	Resulting Volume (compared to 2030 Airlines Relocate)
I-494	34th Avenue to TH77	+12,000	226,000 (+5.6%)
I-494	TH77 to I-35W	+18,000	203,000 (+9.7%)
TH 62	TH77 to I-35W	+13,000	132,000 (+10.9%)
TH 77	Minnesota River Bridge	+11,000	129,000 (+9.3%)
I-94/34th Avenue South Interchange	West Ramp Volumes (on plus off)	+500	38,500 (+1.2%)

PEAK HOUR VOLUMES

The daily traffic forecasts developed for year 2020 and 2030 conditions were used, along with existing traffic data, to produce peak period volumes along study area roadways. These volumes are used in the traffic operations analysis and concept development to evaluate whether the traffic demand can be accommodated at a reasonable level of service.

Three peak hours have been identified from existing conditions and these are again used to estimate future peak hour volumes. These peak hours consist of: 1) an a.m. peak hour when air traveler traffic and regional commuter traffic both reach peak levels; 2) an afternoon peak hour resulting in part from an employee shift change at the airport support centers; 3) and an evening peak hour during the regional commuter peak.

Peak hour volumes, in tabular form, are contained in Appendix B. The tables in Appendix B contain all of the freeway mainline and ramp volumes for a.m., airport, and p.m. peak hours as modeled in the operations analysis.

REASONABLENESS CHECKS

The daily and peak hour traffic volumes forecasts are evaluated for reasonableness using a series of checks described in the *Revised Guidelines for Twin City Travel Demand Forecasts Prepared for the Metro District*. Each of these checks is discussed in detail below. Tables C-1, C-2, and C-3 in Appendix C illustrate the volumes analyzed in the a.m. peak hour (7:00-8:00 a.m.), p.m. airport/shift peak (1:45-2:45 p.m.) and p.m. commuter peak (4:30-5:30 p.m.).

The first check is the percentage of daily traffic occurring in the peak hours. In most cases, this is expected to decrease as roadways become increasingly congested and peaks spread to the shoulders and off-peak hours. Under year 2020 and 2030 conditions, this is expected as no new capacity is added to the freeway system in the study area. The corridor is currently at or near capacity in the existing peak periods in the study area; however, as traffic volumes grow towards year 2030 forecasts, the peak hours will not be able to accommodate the existing peak hour percentages.

The second check is the directional split of peak hour traffic. The directional split is generally expected to decrease into the future as a corridor becomes more developed. The I-494 corridor in the study area has a relatively even directional split under existing conditions, rarely exceeding 55 percent in the peak direction. Year 2030 forecasts for both the no build and build scenarios show overall decreases in directional splits, as some segments approach 50 percent-50 percent in both peak hours.

The third check is to ensure that traffic entering the study area is within the capacity of those roadways. Assuming a 2,200 vehicle per hour (vph) per lane capacity for each of the roadways entering the study area, this condition is met in most locations entering the study area. The one exception is on northbound TH 77 during the a.m. peak period. The existing volume in this location was observed to be 6,785 vph, which already exceeds the theoretical capacity of 6,600 vph for a three-lane freeway segment. To demonstrate an increase in traffic demand on TH 77, this volume was increased slightly for years 2020 and 2030; however this facility may not be able to deliver significantly more traffic than this in a one-hour period. This conclusion will be confirmed during the operations analysis.

The fourth check is a comparison of the daily traffic forecasts to historical traffic volume growth. Annual average daily traffic (AADT) volumes were obtained from MnDOT flow maps for years from 1990 to 2006. The MnESAL 2008 (source: MnDOT) spreadsheet was used with these volumes to establish annual growth rates for selected segments in the study area. Forecast 2030 volumes are lower than the 2030 historical projections due to the lack of capacity on I-494.

As previously described, profiles of traffic across the 24-hour period were reviewed to identify peak hour conditions on study area roadways. For example, those resulting from employee shift changes, peak airport visitor times, as well as general commuter peaking on regional roadways.

In addition, traffic speeds along major freeway routes, particularly I-494, were examined to identify the duration and extent of congestion.

PREVIOUS TRAFFIC FORECASTS

Traffic forecasts were previously developed near MSP Airport as part of the *I-494/TH 77 Corridor Forecasting and Concept Development* study completed in June 2008. As part of this study, the Regional Model was heavily refined near MSP airport and in the communities of Bloomington, Richfield, and Edina. This effort included subdividing traffic analysis zones (TAZ) and obtaining current land use information and future land use forecasts. The existing conditions validation year in this study was 2005. Traffic forecasts were developed for years 2020 and 2030 along I-494 between the Minnesota River and TH 169 and along TH 77 between the Minnesota River and TH 62. Traffic volumes were also developed for cross-streets with interchanges along these freeways in the study area. Land use information obtained from the *I-494/TH 77* study was carried forward to the current study, except where otherwise noted.

The traffic volumes produced in the I-494/TH 77 study were generally much higher than those expected as part of the current forecasting effort. This is due to a combination of reductions in land use forecasts and less expansion of roadway system capacity. Development assumptions in the Bloomington South Loop district for years 2020 and 2030 were reduced in intensity compared to the I-494/TH 77 study, resulting in lower trips generation totals. Under year 2030 conditions, the I-494 2001 EIS layout was assumed to be constructed, which included dramatic capacity expansion along I-494 from the Minnesota River to TH 100, including new system interchanges at I-35W and TH 100. As a result of these changes, daily traffic forecasts along I-494 in the study area are expected to be approximately 20,000 vpd less than the I-494/TH 77 forecasts. This change, and the subsequent impacts to traffic balance on the local and regional roadway systems, causes these forecasts not to provide meaningful comparisons with the current traffic forecasts.

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APPENDIX A

MSP International Airport

Diurnal (Time-of-Day) Traffic Profile

Table A-1

Terminal 1 - Inbound Rd

	2010 Base Case	2020 No Action	2020 Proposed (Airlines Relocate)	2020 Alternative (Airlines Remain)	2025 Relocate	2025 Remain	2030 Relocate
12:00 AM	134	253	254	262	254	280	354
01:00 AM	24	42	42	46	42	47	56
02:00 AM	15	37	62	77	64	81	67
03:00 AM	134	168	282	362	295	380	307
04:00 AM	645	851	655	1,099	612	1,154	763
05:00 AM	1,870	2,374	1,352	2,498	1,528	2,624	1,616
06:00 AM	1,278	1,770	1,345	2,017	1,405	2,077	1,610
07:00 AM	1,551	2,062	1,390	2,219	1,495	2,546	1,958
08:00 AM	1,659	2,448	2,025	2,469	2,138	2,495	2,247
09:00 AM	1,656	2,057	1,620	2,148	1,795	2,381	2,040
10:00 AM	1,687	2,135	1,365	2,159	1,448	2,307	1,706
11:00 AM	1,673	2,148	1,497	2,294	1,560	2,609	2,098
12:00 PM	2,118	2,792	1,796	3,073	2,029	3,440	2,169
01:00 PM	2,341	3,102	2,366	3,264	2,511	3,573	2,954
02:00 PM	1,895	2,565	1,927	2,723	2,057	2,965	2,253
03:00 PM	1,865	2,489	1,663	2,482	2,576	4,073	3,350
04:00 PM	2,166	2,971	1,990	3,129	2,200	3,543	2,515
05:00 PM	1,933	2,620	1,796	2,526	2,609	3,023	2,490
06:00 PM	1,543	2,174	1,393	2,135	1,566	2,403	1,745
07:00 PM	910	1,221	865	1,236	940	1,495	1,339
08:00 PM	1,731	2,211	1,835	2,292	1,960	2,649	2,074
09:00 PM	860	1,273	952	1,325	969	1,353	1,083
10:00 PM	510	707	372	691	380	709	427
11:00 PM	444	632	272	637	272	644	342
Daily Total	30,643	41,102	29,119	43,163	32,706	48,851	37,562

Terminal 1 - Outbound Rd

	2010 Base Case	2020 No Action	2020 Proposed (Airlines Relocate)	2020 Alternative (Airlines Remain)	2025 Relocate	2025 Remain	2030 Relocate
12:00 AM	445	416	423	510	431	537	600
01:00 AM	71	47	51	63	53	65	67
02:00 AM	43	26	31	35	32	36	32
03:00 AM	109	114	115	121	115	121	116
04:00 AM	419	498	272	509	245	527	324
05:00 AM	1,043	1,240	478	1,208	541	1,270	676
06:00 AM	929	992	726	1,062	752	1,110	989
07:00 AM	1,077	1,304	828	1,378	870	1,524	1,229
08:00 AM	1,553	1,863	1,568	1,906	1,695	2,033	1,893
09:00 AM	1,536	1,803	1,380	1,832	1,496	2,034	1,755
10:00 AM	1,892	2,244	1,420	2,190	1,494	2,343	1,776
11:00 AM	1,527	1,823	1,227	1,858	1,288	2,086	1,584
12:00 PM	1,987	2,381	1,536	2,587	1,746	2,963	2,002
01:00 PM	2,347	2,924	2,269	3,082	2,399	3,402	2,849
02:00 PM	2,310	2,690	2,120	2,967	2,342	3,382	2,572
03:00 PM	1,734	2,041	1,499	2,210	1,968	3,086	2,560
04:00 PM	2,642	3,248	2,311	3,556	2,554	4,234	2,948
05:00 PM	2,225	2,680	1,933	2,694	2,724	3,242	2,537
06:00 PM	2,557	2,985	2,074	2,990	2,281	3,300	2,545
07:00 PM	1,371	1,534	1,126	1,590	1,181	1,818	1,411
08:00 PM	2,662	3,257	2,657	3,409	2,778	3,796	2,996
09:00 PM	1,763	1,971	1,545	2,181	1,574	2,240	1,704
10:00 PM	874	981	718	1,144	744	1,188	843
11:00 PM	768	862	515	972	578	1,046	711
Daily Total	33,885	39,923	28,824	42,054	31,882	47,381	36,719

Table A-2

T2 - Inbound Rd

	2010 Base Case	2020 No Action	2020 Proposed (Airlines Relocate)	2020 Alternative (Airlines Remain)	2025 Relocate	2025 Remain	2030 Relocate
12:00 AM	92	160	158	152	159	148	178
01:00 AM	15	26	26	9	12	9	13
02:00 AM	41	72	48	22	39	22	41
03:00 AM	149	264	148	52	140	56	150
04:00 AM	340	596	790	168	902	172	1,070
05:00 AM	579	1,011	2,024	803	2,015	795	2,265
06:00 AM	493	859	1,273	631	1,189	545	1,399
07:00 AM	313	546	1,207	387	1,554	587	1,732
08:00 AM	295	514	926	498	1,145	660	1,372
09:00 AM	350	611	1,038	526	1,252	810	1,596
10:00 AM	443	771	1,529	863	1,861	1,245	2,159
11:00 AM	485	847	1,485	729	1,700	797	1,940
12:00 PM	527	908	1,910	467	2,203	696	2,644
01:00 PM	662	1,134	1,859	973	2,156	1,190	2,475
02:00 PM	793	1,358	1,990	1,189	2,689	1,499	3,053
03:00 PM	700	1,192	2,043	1,151	2,848	1,462	3,284
04:00 PM	530	906	1,881	780	2,821	1,501	3,095
05:00 PM	364	621	1,439	827	2,061	1,560	2,421
06:00 PM	282	477	1,252	522	1,737	897	2,130
07:00 PM	226	382	735	386	972	492	1,127
08:00 PM	169	291	662	209	751	236	1,051
09:00 PM	192	323	642	272	749	276	775
10:00 PM	248	415	747	440	802	429	850
11:00 PM	259	434	799	430	799	427	923
Daily Total	8,547	14,718	26,613	12,483	32,558	16,510	37,743

T2 - Outbound Rd

	2010 Base Case	2020 No Action	2020 Proposed (Airlines Relocate)	2020 Alternative (Airlines Remain)	2025 Relocate	2025 Remain	2030 Relocate
12:00 AM	239	415	407	330	413	328	435
01:00 AM	25	44	39	14	26	15	27
02:00 AM	18	31	26	12	16	12	16
03:00 AM	19	34	31	8	13	9	14
04:00 AM	121	209	434	19	497	19	626
05:00 AM	306	531	1,285	536	1,273	529	1,478
06:00 AM	299	518	773	454	736	409	873
07:00 AM	228	396	861	325	1,043	424	1,259
08:00 AM	287	499	782	441	982	534	1,161
09:00 AM	228	396	809	373	1,078	575	1,439
10:00 AM	413	716	1,529	802	1,838	1,065	2,102
11:00 AM	470	815	1,397	856	1,678	954	1,862
12:00 PM	457	781	1,633	522	1,882	712	2,305
01:00 PM	658	1,123	1,767	977	2,041	1,129	2,369
02:00 PM	743	1,270	1,833	1,011	2,302	1,191	2,611
03:00 PM	857	1,464	2,031	1,293	2,573	1,501	2,984
04:00 PM	638	1,091	2,021	865	2,896	1,054	3,002
05:00 PM	474	808	1,549	1,029	2,419	1,627	2,830
06:00 PM	452	773	1,679	761	2,236	1,161	2,566
07:00 PM	362	619	1,024	613	1,392	754	1,490
08:00 PM	245	421	1,017	280	1,138	312	1,501
09:00 PM	363	623	1,047	440	1,166	440	1,261
10:00 PM	555	951	1,211	812	1,277	804	1,410
11:00 PM	454	776	1,128	677	1,127	673	1,350
Daily Total	8,913	15,302	26,313	13,450	32,042	16,230	36,973

(Updated by KHA to include E. 72nd Inbound)

Table A-3

Total - Inbound Rd

	2010 Base Case	2020 No Action	2020 Proposed (Airlines Relocate)	2020 Alternative (Airlines Remain)	2025 Relocate	2025 Remain	2030 Relocate
12:00 AM	226	413	412	414	413	428	532
01:00 AM	39	68	68	55	55	55	69
02:00 AM	56	109	109	99	103	103	108
03:00 AM	283	432	431	414	435	436	457
04:00 AM	985	1,447	1,445	1,267	1,513	1,326	1,833
05:00 AM	2,449	3,384	3,376	3,301	3,543	3,419	3,881
06:00 AM	1,771	2,630	2,618	2,648	2,593	2,622	3,009
07:00 AM	1,864	2,609	2,597	2,607	3,049	3,133	3,690
08:00 AM	1,954	2,962	2,951	2,967	3,283	3,155	3,619
09:00 AM	2,006	2,667	2,658	2,674	3,048	3,191	3,636
10:00 AM	2,130	2,906	2,895	3,022	3,309	3,553	3,864
11:00 AM	2,159	2,995	2,982	3,022	3,260	3,406	4,038
12:00 PM	2,645	3,700	3,707	3,540	4,232	4,135	4,813
01:00 PM	3,004	4,236	4,226	4,237	4,668	4,763	5,429
02:00 PM	2,688	3,923	3,917	3,912	4,746	4,463	5,306
03:00 PM	2,565	3,681	3,706	3,633	5,424	5,536	6,634
04:00 PM	2,697	3,877	3,871	3,908	5,021	5,044	5,609
05:00 PM	2,297	3,241	3,235	3,352	4,669	4,582	4,911
06:00 PM	1,825	2,651	2,646	2,657	3,303	3,299	3,875
07:00 PM	1,135	1,603	1,600	1,621	1,912	1,986	2,466
08:00 PM	1,901	2,502	2,498	2,501	2,711	2,885	3,125
09:00 PM	1,052	1,596	1,594	1,597	1,718	1,629	1,858
10:00 PM	758	1,122	1,120	1,131	1,181	1,137	1,277
11:00 PM	703	1,066	1,071	1,067	1,071	1,071	1,265
Daily Total	39,190	55,820	55,732	55,645	65,264	65,361	75,305

Total - Outbound Rd

	2010 Base Case	2020 No Action	2020 Proposed (Airlines Relocate)	2020 Alternative (Airlines Remain)	2025 Relocate	2025 Remain	2030 Relocate
12:00 AM	684	831	830	840	844	864	1,035
01:00 AM	96	91	90	77	79	80	94
02:00 AM	60	57	57	47	47	48	48
03:00 AM	129	147	146	129	129	130	130
04:00 AM	540	708	706	528	742	546	951
05:00 AM	1,349	1,771	1,763	1,744	1,814	1,799	2,154
06:00 AM	1,229	1,510	1,499	1,516	1,488	1,519	1,863
07:00 AM	1,305	1,700	1,689	1,703	1,913	1,948	2,488
08:00 AM	1,840	2,362	2,351	2,347	2,677	2,567	3,055
09:00 AM	1,764	2,198	2,189	2,205	2,574	2,609	3,194
10:00 AM	2,305	2,961	2,950	2,992	3,333	3,408	3,878
11:00 AM	1,997	2,637	2,625	2,714	2,966	3,040	3,446
12:00 PM	2,445	3,163	3,169	3,109	3,628	3,675	4,307
01:00 PM	3,005	4,046	4,036	4,059	4,440	4,531	5,219
02:00 PM	3,053	3,959	3,953	3,978	4,644	4,574	5,183
03:00 PM	2,591	3,505	3,529	3,503	4,541	4,587	5,544
04:00 PM	3,280	4,338	4,333	4,421	5,450	5,288	5,950
05:00 PM	2,698	3,488	3,482	3,723	5,144	4,869	5,367
06:00 PM	3,009	3,758	3,753	3,751	4,516	4,461	5,111
07:00 PM	1,734	2,153	2,149	2,203	2,573	2,572	2,901
08:00 PM	2,907	3,678	3,674	3,689	3,916	4,108	4,497
09:00 PM	2,127	2,594	2,592	2,621	2,740	2,680	2,964
10:00 PM	1,429	1,932	1,930	1,956	2,021	1,991	2,253
11:00 PM	1,222	1,639	1,643	1,649	1,706	1,718	2,061
Daily Total	42,798	55,225	55,137	55,504	63,924	63,612	73,692

APPENDIX B

Traffic Operations Model

Peak Hour Freeway Volumes

Scenario	Existing (2010)			2020 No Action			2020 Airlines Remain			2020 Airlines Relocate			2025 Airlines Remain			2025 Airlines Relocate			2030 Airlines Relocate		
Location	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM
I-494 WB Mainline	5,141	2,804	3,508	5,650	3,100	3,825	5,625	3,100	3,850	5,675	3,125	3,850	5,825	3,500	4,100	6,025	3,700	4,175	6,325	3,525	4,300
TH 5/34th Exit	925	410	424	1,450	525	575	1,425	525	600	1,425	525	600	1,475	600	725	1,675	800	825	2,025	900	825
I-494 WB Mainline	4,216	2,393	3,084	4,200	2,575	3,250	4,200	2,575	3,250	4,250	2,600	3,250	4,350	2,900	3,375	4,350	2,900	3,375	4,300	2,625	3,475
TH 5 Entrance	1,460	1,869	2,421	1,675	2,425	2,875	1,675	2,450	2,925	1,475	2,050	2,350	1,500	2,600	2,850	1,425	2,250	2,550	1,475	2,350	2,675
I-494 WB Mainline	5,676	4,262	5,505	5,875	5,000	6,125	5,875	5,025	6,175	5,725	4,650	5,600	5,850	5,475	6,200	5,775	5,150	5,925	5,775	4,975	6,150
34th Ave Entrance	164	682	703	325	1,000	1,200	300	950	1,175	600	1,450	1,850	350	1,075	1,475	625	1,550	2,175	775	1,825	2,225
I-494 WB Mainline	5,840	4,944	6,208	6,200	6,000	7,325	6,200	5,950	7,350	6,325	6,100	7,450	6,200	6,550	7,675	6,400	6,700	8,100	6,550	6,800	8,375
24th Ave Exit	1,272	611	1,240	1,650	950	1,750	1,650	950	1,750	1,725	975	1,750	1,750	1,025	1,875	1,775	1,025	1,850	1,850	1,075	1,950
I-494 WB Mainline	4,568	4,333	4,968	4,550	5,050	5,575	4,550	5,025	5,600	4,600	5,125	5,700	4,450	5,550	5,800	4,625	5,675	6,250	4,700	5,725	6,425
TH 77 NB Exit	355	319	797	550	475	1,150	550	450	1,150	625	600	1,350	550	600	1,200	675	800	1,575	800	775	1,625
I-494 WB Mainline	4,213	4,014	4,171	4,000	4,575	4,425	4,000	4,550	4,450	3,975	4,525	4,350	3,900	4,950	4,625	3,950	4,900	4,675	3,900	4,950	4,800
24th Ave Entrance	92	255	298	325	650	725	325	650	725	350	700	800	400	825	850	400	825	850	475	775	875
I-494 WB Mainline	4,305	4,269	4,469	4,325	5,225	5,150	4,325	5,225	5,175	4,325	5,225	5,150	4,300	5,775	5,450	4,350	5,725	5,500	4,375	5,725	5,675
TH 77 NB HOV Entrance	129	35	64	150	50	75	150	50	75	150	50	75	150	75	75	150	75	75	175	50	100
I-494 WB Mainline	4,434	4,304	4,533	4,475	5,275	5,225	4,475	5,275	5,250	4,475	5,275	5,225	4,450	5,850	5,525	4,500	5,800	5,575	4,550	5,775	5,775
TH 77 SB Exit	339	559	727	475	800	950	475	800	975	475	800	950	500	1,075	1,150	500	1,000	1,100	575	1,050	1,200
I-494 WB Mainline	4,094	3,745	3,806	4,000	4,475	4,275	4,000	4,450	4,300	4,000	4,475	4,275	3,950	4,750	4,375	4,000	4,800	4,475	3,975	4,725	4,575
TH 77 NB/SB Entrance	1,712	1,438	1,279	1,825	1,650	1,400	1,825	1,650	1,400	1,800	1,625	1,400	1,850	1,625	1,475	1,850	1,625	1,475	1,900	1,825	1,525
I-494 WB Mainline	5,806	5,184	5,085	5,825	6,125	5,675	5,825	6,100	5,700	5,800	6,100	5,675	5,800	6,375	5,850	5,875	6,425	5,950	5,875	6,550	6,100
12th Ave Exit	1,031	531	1,156	1,100	600	1,300	1,100	600	1,300	1,100	600	1,300	1,125	700	1,325	1,125	700	1,350	1,175	650	1,400
I-494 WB Mainline	4,775	4,653	3,929	4,725	5,525	4,375	4,725	5,500	4,400	4,700	5,500	4,375	4,675	5,700	4,525	4,725	5,725	4,600	4,700	5,900	4,700
Portland Ave Entrance	356	465	366	450	525	425	450	525	425	450	525	425	475	525	425	475	525	425	475	550	450
I-494 WB Mainline	5,131	5,118	4,295	5,175	6,050	4,800	5,175	6,025	4,825	5,150	6,025	4,800	5,150	6,225	4,950	5,200	6,250	5,025	5,175	6,450	5,150
Nicollet Ave Exit	178	370	388	225	450	475	225	450	475	225	450	475	225	375	475	225	400	500	250	475	500
I-494 WB Mainline	4,953	4,748	3,907	4,950	5,600	4,325	4,950	5,575	4,350	4,925	5,575	4,325	4,925	5,850	4,475	4,975	5,875	4,550	4,925	5,975	4,650
Nicollet Ave Entrance	405	404	332	500	475	400	500	475	400	500	475	400	525	550	425	525	550	425	550	525	425
I-494 WB Mainline	5,358	5,152	4,239	5,450	6,075	4,725	5,450	6,050	4,750	5,425	6,050	4,725	5,450	6,400	4,900	5,500	6,425	4,950	5,475	6,500	5,075
Lyndale Ave Exit	199	363	264	250	450	325	250	450	325	250	450	325	250	575	325	250	600	350	275	500	350
I-494 WB Mainline	5,159	4,789	3,975	5,200	5,625	4,400	5,200	5,600	4,425	5,175	5,600	4,400	5,175	5,825	4,550	5,225	5,825	4,625	5,200	6,000	4,725
Lyndale Ave Entrance	238	543	328	300	650	400	300	650	400	300	650	400	325	600	425	325	600	425	350	775	475
I-494 WB Mainline	5,397	5,332	4,303	5,500	6,275	4,800	5,500	6,250	4,825	5,475	6,250	4,800	5,500	6,425	5,000	5,550	6,425	5,050	5,550	6,775	5,200
I-35W NB Exit	148	527	361	200	675	475	200	675	475	200	675	475	225	725	525	225	750	550	250	850	600
I-494 WB Mainline	5,249	4,805	3,942	5,300	5,600	4,325	5,300	5,600	4,350	5,275	5,575	4,325	5,275	5,700	4,475	5,325	5,675	4,500	5,300	5,925	4,600
I-35W NB Entrance	1,092	1,235	817	1,125	1,275	850	1,125	1,275	850	1,125	1,275	850	1,150	1,225	875	1,150	1,225	875	1,150	1,300	875
I-494 WB Mainline	6,341	6,040	4,759	6,425	6,875	5,175	6,425	6,875	5,200	6,400	6,850	5,175	6,425	6,900	5,325	6,475	6,900	5,375	6,450	7,225	5,475
I-35W SB Exit	233	494	223	275	600	275	275	600	275	275	600	275	300	625	300	300	625	300	325	725	325
I-494 WB Mainline	6,108	5,546	4,536	6,150	6,275	4,900	6,150	6,275	4,925	6,125	6,250	4,900	6,125	6,300	5,025	6,175	6,275	5,075	6,125	6,500	5,150
I-35W SB Entrance	814	577	451	875	625	475	875	625	475	875	625	475	900	650	500	900	650	500	925	675	500
I-494 WB Mainline	6,922	6,123	4,987	7,025	6,900	5,375	7,025	6,900	5,400	7,000	6,875	5,375	7,025	6,950	5,525	7,075	6,925	5,550	7,050	7,175	5,650
Penn Ave Exit	382	492	335	475	575	400	475	575	400	475	575	400	500	575	425	500	575	450	550	675	475
I-494 WB Mainline	6,540	5,631	4,652	6,550	6,325	4,975	6,550	6,325	5,000	6,525	6,300	4,975	6,525	6,375	5,075	6,550	6,375	5,125	6,500	6,500	5,175
Penn Ave Entrance	515	543	728	550	600	775	550	600	775	550	600	775	575	675	800	575	675	800	600	650	850
I-494 WB Mainline	7,055	6,175	5,381	7,100	6,925	5,750	7,100	6,925	5,775	7,075	6,900	5,750	7,100	7,050	5,900	7,125	7,050	5,925	7,100	7,150	6,025

Scenario	Existing (2010)			2020 No Action			2020 Airlines Remain			2020 Airlines Relocate			2025 Airlines Remain			2025 Airlines Relocate			2030 Airlines Relocate		
Location	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM
I-494 EB Mainline	6,526	5,806	5,304	6,575	6,175	5,450	6,600	6,225	5,500	6,575	6,175	5,450	6,550	6,575	5,625	6,550	6,625	5,675	6,625	6,525	5,650
Penn Ave Exit	626	344	141	700	375	150	700	375	150	700	375	150	750	350	175	750	350	175	800	425	175
I-494 EB Mainline	5,900	5,461	5,163	5,875	5,800	5,300	5,900	5,850	5,350	5,875	5,800	5,300	5,800	6,225	5,450	5,800	6,275	5,500	5,825	6,100	5,475
Penn Ave Entrance	351	651	1,052	400	725	1,125	400	725	1,125	400	725	1,125	425	875	1,200	425	875	1,225	450	825	1,275
I-494 EB Mainline	6,251	6,112	6,214	6,275	6,525	6,425	6,300	6,575	6,475	6,275	6,525	6,425	6,225	7,100	6,650	6,225	7,150	6,725	6,275	6,925	6,750
I-35W SB Exit	991	1,292	940	1,025	1,325	1,000	1,025	1,325	1,000	1,025	1,325	1,000	1,050	1,350	1,025	1,050	1,350	1,025	1,050	1,350	1,025
I-494 EB Mainline	5,260	4,820	5,274	5,250	5,200	5,425	5,275	5,250	5,475	5,250	5,200	5,425	5,175	5,725	5,650	5,175	5,800	5,725	5,225	5,575	5,725
I-35W SB Entrance	370	308	225	500	425	300	500	425	300	500	425	300	575	525	325	575	525	350	675	575	375
I-494 EB Mainline	5,630	5,128	5,499	5,750	5,625	5,725	5,775	5,675	5,775	5,750	5,625	5,725	5,750	6,250	5,975	5,775	6,325	6,050	5,900	6,150	6,100
I-35W NB Exit	299	608	580	325	650	625	325	650	625	325	650	625	350	725	650	350	725	650	350	700	675
I-494 EB Mainline	5,331	4,520	4,919	5,425	4,975	5,100	5,450	5,025	5,150	5,425	4,975	5,100	5,400	5,525	5,325	5,425	5,600	5,400	5,550	5,450	5,425
I-35W NB Entrance	377	514	456	450	600	550	450	600	550	450	600	550	500	575	600	500	575	600	550	725	625
I-494 EB Mainline	5,708	5,034	5,375	5,875	5,575	5,650	5,900	5,625	5,700	5,875	5,575	5,650	5,900	6,100	5,925	5,925	6,175	6,025	6,100	6,175	6,050
Lyndale Ave Exit	272	410	249	300	500	300	300	500	300	300	500	300	325	525	325	325	525	325	350	600	350
I-494 EB Mainline	5,435	4,624	5,126	5,575	5,075	5,350	5,600	5,125	5,400	5,575	5,075	5,350	5,575	5,600	5,600	5,600	5,675	5,675	5,750	5,575	5,700
Lyndale Ave Entrance	231	347	412	300	425	475	300	425	475	300	425	475	300	450	500	300	475	500	325	475	525
I-494 EB Mainline	5,667	4,971	5,538	5,875	5,500	5,825	5,900	5,550	5,875	5,875	5,500	5,825	5,900	6,050	6,100	5,925	6,125	6,200	6,075	6,050	6,225
Nicollet Ave Exit	435	549	364	475	625	425	475	625	425	475	625	425	500	525	450	500	525	450	500	650	450
I-494 EB Mainline	5,231	4,422	5,174	5,400	4,875	5,400	5,425	4,925	5,450	5,400	4,875	5,400	5,400	5,525	5,675	5,425	5,600	5,750	5,575	5,400	5,775
Nicollet Ave Entrance	529	606	643	625	675	700	625	675	700	625	675	700	625	700	700	625	725	725	650	700	725
I-494 EB Mainline	5,760	5,028	5,817	6,025	5,550	6,100	6,050	5,600	6,150	6,025	5,550	6,100	6,025	6,225	6,375	6,050	6,325	6,475	6,225	6,100	6,500
Portland Ave Exit	398	453	224	425	525	275	425	525	275	425	525	275	450	525	300	450	525	300	450	550	300
I-494 EB Mainline	5,362	4,574	5,593	5,600	5,025	5,825	5,625	5,075	5,875	5,600	5,025	5,825	5,600	5,700	6,100	5,625	5,800	6,200	5,775	5,550	6,200
12th Ave Entrance	472	485	998	600	550	1,100	600	550	1,100	600	550	1,100	625	700	1,150	625	725	1,175	650	600	1,200
I-494 EB Mainline	5,834	5,060	6,591	6,200	5,575	6,925	6,250	5,625	7,000	6,200	5,575	6,925	6,225	6,400	7,250	6,250	6,525	7,375	6,425	6,150	7,400
TH 77 SB Exit	909	1,243	1,798	1,000	1,375	1,950	1,000	1,375	1,950	1,000	1,375	1,950	1,050	1,725	2,000	1,050	1,725	2,000	1,100	1,525	2,050
I-494 EB Mainline	4,925	3,816	4,793	5,200	4,200	4,975	5,225	4,250	5,025	5,200	4,200	4,975	5,150	4,675	5,250	5,200	4,800	5,375	5,325	4,625	5,350
TH 77 SB Entrance	421	281	275	600	450	425	600	450	425	650	575	575	650	550	625	700	675	725	800	750	725
I-494 EB Mainline	5,346	4,097	5,068	5,800	4,650	5,400	5,825	4,700	5,475	5,850	4,775	5,550	5,800	5,225	5,875	5,900	5,475	6,100	6,125	5,375	6,075
TH 77 NB Exit	201	362	316	225	425	350	225	425	350	225	425	350	225	450	375	225	450	375	250	475	375
I-494 EB Mainline	5,145	3,735	4,752	5,575	4,225	5,050	5,600	4,275	5,125	5,625	4,350	5,200	5,575	4,775	5,500	5,675	5,000	5,750	5,875	4,900	5,700
24th Ave Exit	354	180	122	600	350	400	600	350	400	675	400	425	725	475	525	725	475	525	750	550	625
I-494 EB Mainline	4,791	3,555	4,630	4,975	3,875	4,650	5,000	3,925	4,725	4,950	3,950	4,775	4,850	4,300	4,975	4,950	4,550	5,200	5,125	4,350	5,075
TH 77 NB/MOA Entrance	786	561	737	1,050	775	950	1,075	800	1,000	1,050	775	975	1,150	1,000	1,175	1,075	1,000	1,150	1,175	1,000	1,200
I-494 EB Mainline	5,577	4,116	5,367	6,025	4,650	5,600	6,075	4,725	5,725	6,000	4,725	5,750	6,000	5,325	6,150	6,050	5,525	6,375	6,300	5,350	6,275
24th Ave Entrance	186	525	813	375	975	1,300	375	975	1,300	375	1,025	1,350	400	1,175	1,425	400	1,200	1,450	425	1,175	1,475
I-494 EB Mainline	5,763	4,641	6,180	6,400	5,625	6,900	6,450	5,700	7,025	6,375	5,750	7,100	6,400	6,500	7,575	6,450	6,725	7,800	6,725	6,525	7,750
34th Ave Exit	779	456	253	1,200	875	575	1,150	850	575	1,525	1,275	1,150	1,325	1,050	1,175	1,650	1,475	1,525	1,925	1,725	1,400
I-494 EB Mainline	4,983	4,186	5,927	5,200	4,750	6,325	5,300	4,850	6,450	4,850	4,475	5,950	5,100	5,450	6,400	4,775	5,250	6,275	4,800	4,800	6,350
TH 5 Exit	1,816	1,363	1,851	2,375	1,875	2,525	2,475	1,975	2,625	2,075	1,575	2,125	2,525	2,000	2,500	2,225	1,825	2,375	2,450	1,850	2,375
I-494 EB Mainline	3,167	2,822	4,075	2,825	2,875	3,800	2,825	2,875	3,825	2,775	2,900	3,825	2,575	3,450	3,900	2,550	3,450	3,900	2,350	2,950	3,975
34th Ave/TH 5 WB Entrance	236	487	1,037	725	650	1,550	725	625	1,550	750	650	1,575	900	800	1,725	875	1,025	1,950	1,250	1,025	2,125
I-494 EB Mainline	3,403	3,310	5,113	3,550	3,525	5,350	3,550	3,500	5,375	3,525	3,550	5,400	3,450	4,250	5,625	3,450	4,475	5,850	3,600	3,975	6,100

Scenario	Existing (2010)			2020 No Action			2020 Airlines Remain			2020 Airlines Relocate			2025 Airlines Remain			2025 Airlines Relocate			2030 Airlines Relocate		
Location	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM
TH 5 WB Mainline	2,560	1,748	3,227	3,050	2,100	3,750	3,075	2,150	3,800	3,025	2,075	3,725	3,300	2,425	4,075	3,250	2,375	3,975	3,525	2,350	4,100
TH 5/TH 55 CD Road Exit	1,019	528	1,405	1,125	600	1,600	1,150	600	1,575	1,125	600	1,600	1,225	750	1,675	1,225	750	1,675	1,275	675	1,800
TH 5 WB Mainline	1,541	1,221	1,822	1,925	1,500	2,150	1,950	1,550	2,200	1,900	1,475	2,125	2,100	1,675	2,400	2,025	1,625	2,300	2,250	1,675	2,300
TH 5/TH 55 CD Road Entrance	213	171	132	225	200	175	250	225	175	225	200	175	325	250	225	225	200	175	250	225	200
TH 5 WB Mainline	1,754	1,391	1,954	2,150	1,700	2,325	2,200	1,775	2,375	2,125	1,675	2,300	2,425	1,950	2,625	2,275	1,800	2,475	2,500	1,900	2,500
TH 55/62 EB Entrance	509	752	781	825	1,200	1,250	875	1,300	1,325	725	1,075	1,075	950	1,500	1,475	775	1,350	1,325	925	1,375	1,375
TH 5 WB Mainline	2,263	2,144	2,735	2,975	2,900	3,575	3,075	3,075	3,700	2,850	2,750	3,375	3,350	3,425	4,100	3,050	3,175	3,825	3,425	3,275	3,875
Glumack Exit	596	745	739	875	1,300	1,300	1,000	1,500	1,425	650	1,050	950	1,225	1,625	1,625	725	1,100	1,200	875	1,425	1,275
TH 5 WB Mainline	1,667	1,399	1,996	2,100	1,600	2,275	2,075	1,575	2,275	2,200	1,700	2,425	2,150	1,800	2,475	2,325	2,050	2,600	2,550	1,850	2,600
Glumack Entrance	524	1,230	1,310	875	1,725	1,825	875	1,775	1,925	600	1,275	1,200	750	1,650	1,875	525	1,325	1,500	750	1,625	1,525
TH 5 WB Mainline	2,190	2,628	3,306	2,975	3,325	4,100	2,950	3,350	4,225	2,800	2,975	3,625	2,875	3,450	4,350	2,850	3,375	4,100	3,300	3,475	4,125
Post Rd Exit	275	408	373	450	725	650	425	700	700	550	825	800	375	750	800	550	1,050	1,025	650	975	925
TH 5 WB Mainline	1,916	2,221	2,932	2,525	2,600	3,450	2,525	2,625	3,525	2,250	2,150	2,825	2,525	2,700	3,550	2,325	2,325	3,075	2,650	2,500	3,200
Post Rd Entrance	69	154	91	175	500	300	175	475	300	175	500	300	100	575	250	175	725	375	225	650	400
TH 5 WB Mainline	1,985	2,374	3,023	2,700	3,100	3,750	2,700	3,100	3,825	2,425	2,650	3,125	2,625	3,250	3,800	2,500	3,050	3,475	2,875	3,150	3,600
34th/I-494 WB Exit	524	505	602	1,025	675	875	1,025	650	900	950	600	775	1,125	675	950	1,075	800	925	1,400	800	925
TH 5 WB Mainline	1,460	1,869	2,421	1,675	2,425	2,875	1,675	2,450	2,925	1,475	2,050	2,350	1,500	2,600	2,850	1,425	2,250	2,550	1,475	2,350	2,675
TH 5 EB Mainline	1,816	1,363	1,851	2,375	1,875	2,525	2,475	1,975	2,625	2,075	1,575	2,125	2,525	2,000	2,500	2,225	1,825	2,375	2,450	1,850	2,375
34th/I-494 WB Entrance	482	483	751	650	625	1,075	675	625	1,100	600	575	1,000	625	525	1,100	650	675	1,225	775	775	1,275
TH 5 EB Mainline	2,298	1,846	2,602	3,025	2,500	3,600	3,150	2,600	3,725	2,675	2,150	3,125	3,150	2,525	3,600	2,875	2,475	3,575	3,225	2,625	3,650
Post Rd Exit	127	212	172	325	500	400	300	475	425	325	500	400	250	325	400	350	475	550	400	625	500
TH 5 EB Mainline	2,171	1,634	2,430	2,700	2,000	3,200	2,825	2,100	3,300	2,350	1,650	2,725	2,900	2,200	3,175	2,525	2,000	3,025	2,825	2,000	3,150
Post Rd Entrance	131	483	506	300	750	775	300	750	800	350	825	900	375	875	1,000	325	875	1,050	400	975	1,050
TH 5 EB Mainline	2,302	2,117	2,935	3,000	2,750	3,975	3,125	2,850	4,100	2,700	2,475	3,625	3,275	3,075	4,175	2,875	2,875	4,075	3,225	2,975	4,200
Glumack Dr Exit	874	976	1,141	1,150	1,375	1,600	1,300	1,525	1,750	775	975	1,075	1,375	1,525	1,750	825	1,050	1,275	975	1,225	1,350
TH 5 EB Mainline	1,429	1,141	1,794	1,850	1,375	2,375	1,825	1,325	2,375	1,925	1,500	2,550	1,875	1,550	2,425	2,050	1,850	2,800	2,250	1,750	2,850
Glumack Dr Entrance	376	870	999	675	1,400	1,600	700	1,450	1,675	500	1,125	1,175	825	1,675	2,175	425	1,025	1,400	650	1,475	1,550
TH 5 EB Mainline	1,804	2,011	2,793	2,525	2,775	3,975	2,525	2,775	4,050	2,425	2,625	3,725	2,700	3,225	4,600	2,475	2,875	4,200	2,900	3,225	4,400
TH 55 Exit	566	840	1,015	850	1,250	1,525	850	1,275	1,575	775	1,125	1,325	925	1,425	1,825	775	1,175	1,550	975	1,400	1,650
TH 5 EB Mainline	1,238	1,171	1,778	1,675	1,525	2,450	1,675	1,525	2,475	1,650	1,500	2,400	1,775	1,800	2,775	1,700	1,700	2,650	1,925	1,825	2,750
TH 55 EB Entrance	632	375	762	700	425	850	700	425	850	700	425	850	750	575	925	750	575	925	800	475	975
TH 5 EB Mainline	1,870	1,546	2,540	2,375	1,950	3,300	2,375	1,950	3,325	2,350	1,925	3,250	2,525	2,375	3,675	2,450	2,275	3,550	2,725	2,300	3,725
TH 55 WB Entrance	463	141	411	500	150	475	500	150	475	500	150	475	525	225	500	525	225	500	550	175	525
TH 5 EB Mainline	2,333	1,687	2,951	2,875	2,100	3,775	2,875	2,100	3,800	2,850	2,075	3,725	3,050	2,575	4,175	2,975	2,475	4,050	3,275	2,475	4,250
TH 5 WB to I-494 EB Loop	524	505	602	1,025	675	875	1,025	650	900	950	600	775	1,125	675	950	1,075	800	925	1,400	800	925
34th Ave Exit	423	314	309	675	450	375	650	425	375	650	450	375	675	475	400	775	600	475	925	625	475
TH 5 WB to I-494 EB Loop	101	191	293	350	225	500	350	225	500	300	150	400	475	200	550	300	175	450	475	175	450
34th Ave Entrance	135	296	744	375	425	1,050	350	400	1,050	450	500	1,175	425	600	1,175	575	850	1,500	775	850	1,675
TH 5 WB to I-494 EB Loop	236	487	1,037	725	650	1,550	725	625	1,550	750	650	1,575	900	800	1,725	875	1,025	1,950	1,250	1,025	2,125
I-494 WB to TH 5 EB Loop	925	410	424	1,450	525	575	1,425	525	600	1,425	525	600	1,475	600	725	1,675	800	825	2,025	900	825
34th Ave Exit	665	209	208	1,175	425	325	1,150	400	325	1,225	500	450	1,225	525	525	1,450	750	650	1,800	850	650
I-494 WB to TH 5 EB Loop	260	201	216	275	100	250	300	100	275	200	25	150	250	50	200	200	50	175	225	50	175
34th Ave Entrance	222	281	535	375	525	825	375	500	825	400	550	850	375	475	900	450	625	1,025	550	725	1,100
I-494 WB to TH 5 EB Loop	482	483	751	650	625	1,075	675	625	1,100	600	575	1,000	625	525	1,100	650	675	1,225	775	775	1,275

Scenario	Existing (2010)			2020 No Action			2020 Airlines Remain			2020 Airlines Relocate			2025 Airlines Remain			2025 Airlines Relocate			2030 Airlines Relocate		
Location	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM
TH 5 WB CD Road	1,019	528	1,405	1,125	600	1,600	1,150	600	1,575	1,125	600	1,600	1,225	750	1,675	1,225	750	1,675	1,275	675	1,800
TH 55 WB Entrance	213	171	132	250	200	150	250	225	175	250	200	150	325	250	225	225	200	175	275	225	175
TH 5 WB CD Road	1,232	699	1,537	1,375	800	1,750	1,400	825	1,750	1,375	800	1,750	1,525	1,000	1,925	1,450	950	1,875	1,550	900	1,975
TH 55 EB Exit	336	171	509	375	200	575	375	200	575	375	200	575	400	275	625	400	275	625	425	225	650
TH 5 WB CD Road	896	528	1,028	1,000	600	1,175	1,025	625	1,175	1,000	600	1,175	1,125	750	1,300	1,050	675	1,250	1,125	675	1,325
TH 55 WB/Bloomington Exit	683	357	896	775	400	1,000	775	400	1,000	775	400	1,000	825	475	1,075	825	475	1,075	875	450	1,125
TH 5 WB CD Road	213	171	132	225	200	175	250	225	175	225	200	175	325	250	225	225	200	175	250	225	200
TH 77 NB Mainline	6,784	2,233	2,865	6,800	2,475	3,025	6,825	2,500	3,050	6,800	2,475	3,025	6,825	2,675	3,275	6,775	2,625	3,250	6,825	2,750	3,375
EOSR Exit	1,494	318	533	1,525	375	600	1,525	375	600	1,525	375	600	1,575	375	650	1,575	375	650	1,625	425	675
TH 77 NB Mainline	5,290	1,915	2,332	5,275	2,100	2,425	5,300	2,125	2,450	5,275	2,100	2,425	5,250	2,300	2,650	5,200	2,250	2,625	5,200	2,325	2,700
EOSR Entrance	404	254	392	650	325	500	650	325	500	650	325	500	775	400	550	750	400	550	875	375	600
TH 77 NB Mainline	5,694	2,169	2,724	5,925	2,425	2,925	5,950	2,450	2,950	5,925	2,425	2,925	6,025	2,700	3,200	5,975	2,675	3,175	6,075	2,700	3,300
MOA CD Rd Exit	1,080	288	391	1,200	325	425	1,200	325	450	1,200	325	425	1,200	375	450	1,200	375	450	1,200	375	475
TH 77 NB Mainline	4,614	1,881	2,333	4,725	2,100	2,500	4,750	2,125	2,500	4,725	2,100	2,500	4,825	2,325	2,750	4,775	2,275	2,725	4,875	2,325	2,825
I-494 CD Exit	1,644	948	962	1,900	1,100	1,050	1,925	1,125	1,075	1,900	1,100	1,050	2,050	1,150	1,200	1,975	1,125	1,175	2,100	1,250	1,175
TH 77 NB Mainline	2,970	933	1,371	2,825	1,000	1,450	2,825	1,000	1,425	2,825	1,000	1,450	2,775	1,175	1,525	2,800	1,175	1,525	2,775	1,075	1,650
I-494 EB Entrance	201	362	316	225	425	350	225	425	350	225	425	350	225	450	375	225	450	375	250	475	375
TH 77 NB Mainline	3,171	1,295	1,687	3,050	1,425	1,800	3,050	1,425	1,775	3,050	1,425	1,800	3,025	1,625	1,900	3,025	1,625	1,900	3,025	1,550	2,025
I-494 WB HOV Exit	129	35	64	150	50	75	150	50	75	150	50	75	150	75	75	150	75	75	175	50	100
TH 77 NB Mainline	3,042	1,260	1,623	2,900	1,375	1,725	2,900	1,375	1,700	2,900	1,375	1,725	2,875	1,550	1,825	2,875	1,550	1,825	2,850	1,500	1,925
I-494 WB/MOA Entrance	405	637	1,315	725	825	1,700	725	800	1,700	800	950	1,900	725	1,025	1,750	850	1,225	2,125	975	1,175	2,200
TH 77 NB Mainline	3,447	1,897	2,938	3,625	2,200	3,425	3,625	2,175	3,400	3,700	2,325	3,625	3,600	2,575	3,575	3,725	2,775	3,950	3,825	2,675	4,125
66th St Exit	696	283	629	750	325	725	750	325	725	750	325	725	775	325	750	775	350	775	825	350	800
TH 77 NB Mainline	2,751	1,614	2,309	2,875	1,875	2,700	2,875	1,850	2,675	2,950	2,000	2,900	2,825	2,250	2,825	2,950	2,425	3,175	3,000	2,325	3,325
66th St Entrance	266	493	703	400	575	825	400	575	825	400	575	825	450	675	875	450	675	875	475	650	925
TH 77 NB Mainline	3,017	2,107	3,012	3,275	2,450	3,525	3,275	2,425	3,500	3,350	2,575	3,725	3,275	2,925	3,700	3,375	3,100	4,050	3,475	2,975	4,250
TH 62 EB Exit	638	489	792	775	600	975	775	600	975	775	600	975	800	775	1,050	800	775	1,075	825	700	1,150
TH 77 NB Mainline	2,379	1,618	2,220	2,500	1,850	2,550	2,500	1,825	2,525	2,575	1,975	2,750	2,475	2,150	2,650	2,575	2,325	3,000	2,650	2,275	3,100
TH 62 EB Entrance	59	161	137	150	200	175	150	200	175	150	200	175	175	275	200	175	275	200	200	225	200
TH 77 NB Mainline	2,438	1,779	2,357	2,650	2,050	2,725	2,650	2,025	2,700	2,725	2,175	2,925	2,650	2,425	2,850	2,750	2,600	3,175	2,850	2,500	3,300
TH 62 WB Exit	1,118	1,007	1,118	1,275	1,175	1,300	1,275	1,150	1,300	1,325	1,275	1,450	1,250	1,425	1,375	1,350	1,550	1,600	1,400	1,450	1,650
TH 77 NB Mainline	1,319	772	1,239	1,375	875	1,425	1,375	875	1,400	1,400	900	1,475	1,375	1,000	1,475	1,425	1,050	1,575	1,450	1,050	1,650
TH 62 WB Entrance	164	111	183	200	125	225	200	125	225	175	100	175	200	125	200	200	125	200	225	125	200
TH 77 NB Mainline	1,483	883	1,422	1,575	1,000	1,650	1,575	1,000	1,625	1,575	1,000	1,650	1,575	1,125	1,650	1,625	1,150	1,775	1,675	1,175	1,850

Scenario	Existing (2010)			2020 No Action			2020 Airlines Remain			2020 Airlines Relocate			2025 Airlines Remain			2025 Airlines Relocate			2030 Airlines Relocate		
Location	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM
TH 77 SB Mainline	1,440	947	1,665	1,600	1,050	1,775	1,600	1,050	1,775	1,600	1,050	1,775	1,675	1,300	1,850	1,675	1,300	1,850	1,775	1,175	1,925
TH 62 WB Exit	377	203	156	450	250	200	450	250	200	450	250	200	475	275	225	475	275	225	500	275	225
TH 77 SB Mainline	1,063	744	1,509	1,150	800	1,575	1,150	800	1,575	1,150	800	1,575	1,200	1,025	1,625	1,200	1,050	1,650	1,275	900	1,700
TH 62 WB Entrance	349	489	559	450	625	725	450	625	725	450	625	725	500	775	800	500	775	800	550	750	850
TH 77 SB Mainline	1,412	1,233	2,068	1,600	1,425	2,300	1,600	1,425	2,300	1,600	1,425	2,300	1,700	1,800	2,425	1,700	1,825	2,425	1,825	1,650	2,550
TH 62 EB Exit	245	97	164	300	125	200	300	125	200	275	100	150	300	100	175	300	100	175	300	100	175
TH 77 SB Mainline	1,167	1,136	1,904	1,300	1,300	2,100	1,300	1,300	2,100	1,325	1,325	2,150	1,425	1,700	2,250	1,425	1,700	2,275	1,525	1,550	2,375
TH 62 EB Entrance	1,042	1,246	1,572	1,250	1,425	1,800	1,250	1,425	1,800	1,325	1,525	1,925	1,350	1,675	2,025	1,400	1,775	2,100	1,500	1,725	2,150
TH 77 SB Mainline	2,209	2,382	3,476	2,550	2,725	3,900	2,550	2,725	3,900	2,650	2,850	4,075	2,775	3,350	4,275	2,825	3,475	4,375	3,025	3,275	4,525
66th St Exit	319	396	443	375	475	550	375	475	550	375	475	550	400	600	575	400	600	575	425	550	625
TH 77 SB Mainline	1,890	1,986	3,033	2,175	2,250	3,350	2,175	2,250	3,350	2,275	2,375	3,525	2,375	2,775	3,700	2,425	2,875	3,775	2,600	2,725	3,900
66th St Entrance	167	268	420	200	325	500	200	325	500	200	325	500	200	400	525	200	400	550	225	375	575
TH 77 SB Mainline	2,057	2,254	3,453	2,375	2,575	3,850	2,375	2,575	3,850	2,475	2,700	4,025	2,575	3,175	4,225	2,650	3,275	4,325	2,825	3,100	4,475
Diagonal Blvd Exit	122	145	169	150	175	200	150	175	200	150	175	200	175	250	225	175	250	225	175	200	225
TH 77 SB Mainline	1,935	2,109	3,284	2,225	2,400	3,650	2,225	2,400	3,650	2,325	2,525	3,825	2,400	2,925	4,025	2,475	3,050	4,125	2,650	2,900	4,250
Diagonal Blvd Entrance	96	83	108	125	100	125	125	100	125	125	100	125	125	100	125	125	100	150	150	125	150
TH 77 SB Mainline	2,031	2,192	3,391	2,350	2,500	3,775	2,350	2,500	3,775	2,450	2,625	3,950	2,550	3,025	4,150	2,600	3,150	4,250	2,800	3,025	4,400
I-494 CD Rd Exit	721	628	590	850	825	750	925	850	775	950	950	925	950	925	1,000	1,025	1,050	1,100	1,125	1,175	1,100
TH 77 SB Mainline	1,310	1,564	2,801	1,500	1,675	3,025	1,425	1,650	3,000	1,500	1,675	3,025	1,575	2,100	3,150	1,575	2,100	3,150	1,675	1,850	3,300
MOA CD Rd Exit	342	357	379	375	400	425	375	400	425	375	400	425	400	400	450	400	400	450	425	450	475
TH 77 SB Mainline	968	1,207	2,422	1,125	1,275	2,600	1,050	1,250	2,575	1,125	1,275	2,600	1,175	1,700	2,700	1,175	1,700	2,700	1,250	1,400	2,825
I-494 WB/MOA CD Entrance	294	432	605	300	550	600	375	575	650	375	575	625	400	825	750	400	725	700	450	725	725
TH 77 SB Mainline	1,262	1,639	3,027	1,425	1,825	3,200	1,425	1,825	3,225	1,500	1,850	3,225	1,575	2,525	3,450	1,575	2,425	3,425	1,700	2,125	3,550
Lindau Ln Entrance	43	118	227	50	125	250	50	125	250	50	125	250	50	175	275	50	175	275	50	150	300
TH 77 SB Mainline	1,305	1,757	3,254	1,475	1,950	3,450	1,475	1,950	3,475	1,550	1,975	3,475	1,625	2,675	3,725	1,625	2,600	3,700	1,750	2,275	3,850
I-494 EB CD Entrance	544	833	1,552	600	925	1,700	600	925	1,700	600	925	1,700	625	1,300	1,750	625	1,300	1,750	650	1,025	1,775
TH 77 SB Mainline	1,849	2,590	4,806	2,075	2,875	5,150	2,075	2,875	5,175	2,150	2,900	5,175	2,250	4,000	5,475	2,250	3,900	5,425	2,400	3,300	5,625
Killebrew Dr Entrance	70	391	715	75	425	750	75	425	750	75	425	750	75	500	775	75	500	775	75	475	825
TH 77 SB Mainline	1,919	2,981	5,521	2,150	3,300	5,900	2,150	3,300	5,925	2,225	3,325	5,925	2,325	4,500	6,250	2,325	4,425	6,225	2,475	3,775	6,450
EOSR Exit	368	279	452	450	350	600	450	350	600	450	350	600	475	475	650	475	475	650	525	400	700
TH 77 SB Mainline	1,551	2,702	5,069	1,700	2,950	5,300	1,700	2,950	5,325	1,775	2,975	5,325	1,850	4,025	5,600	1,850	3,950	5,575	1,950	3,375	5,750
EOSR WB Entrance	28	74	321	25	100	375	25	100	375	25	100	375	25	150	425	25	150	425	25	125	450
TH 77 SB Mainline	1,579	2,776	5,390	1,725	3,050	5,675	1,725	3,050	5,700	1,800	3,075	5,700	1,875	4,175	6,025	1,875	4,100	5,975	1,975	3,500	6,200
EOSR EB Entrance	244	351	702	275	400	750	275	400	750	275	400	750	300	550	800	300	550	800	300	450	850
TH 77 SB Mainline	1,823	3,128	6,093	2,000	3,450	6,425	2,000	3,450	6,450	2,075	3,475	6,450	2,150	4,725	6,825	2,150	4,650	6,775	2,275	3,950	7,050
TH 62 EB Mainline	3,345	3,009	3,857	3,650	3,350	4,100	3,650	3,350	4,100	3,650	3,350	4,100	3,850	3,725	4,325	3,850	3,725	4,325	4,050	3,725	4,400
TH 77 SB Exit	1,042	1,246	1,572	1,250	1,425	1,800	1,250	1,425	1,800	1,325	1,525	1,925	1,350	1,675	2,025	1,400	1,775	2,100	1,500	1,725	2,150
TH 62 EB Mainline	2,303	1,763	2,285	2,400	1,925	2,300	2,400	1,925	2,300	2,325	1,825	2,175	2,475	2,050	2,300	2,425	1,950	2,225	2,550	2,000	2,250
TH 77 SB Entrance	245	97	164	300	125	200	300	125	200	275	100	150	300	100	175	300	100	175	300	100	175
TH 62 EB Mainline	2,548	1,860	2,449	2,700	2,050	2,500	2,700	2,050	2,500	2,600	1,925	2,325	2,775	2,150	2,450	2,725	2,050	2,375	2,850	2,100	2,425
TH 77 NB Exit	59	161	137	150	200	175	150	200	175	150	200	175	175	275	200	175	275	200	200	225	200
TH 62 EB Mainline	2,489	1,699	2,312	2,550	1,850	2,325	2,550	1,850	2,325	2,450	1,725	2,150	2,600	1,900	2,275	2,550	1,800	2,200	2,650	1,875	2,225
TH 77 NB Entrance	638	489	792	775	600	975	775	600	975	775	600	975	800	775	1,050	800	775	1,075	825	700	1,150
TH 62 EB Mainline	3,127	2,188	3,104	3,325	2,450	3,300	3,325	2,450	3,300	3,225	2,325	3,125	3,400	2,650	3,325	3,350	2,550	3,250	3,475	2,575	3,375

Scenario	Existing (2010)			2020 No Action			2020 Airlines Remain			2020 Airlines Relocate			2025 Airlines Remain			2025 Airlines Relocate			2030 Airlines Relocate		
Location	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM
TH 62 EB Mainline	2,856	1,853	2,558	3,125	2,150	2,850	3,150	2,200	2,875	3,025	2,025	2,675	3,325	2,450	3,000	3,225	2,325	2,900	3,450	2,300	3,050
Hiawatha Exit	577	405	425	650	450	475	650	450	475	650	450	475	700	475	500	700	475	500	725	500	525
TH 62 EB Mainline	2,279	1,448	2,133	2,475	1,700	2,375	2,500	1,750	2,400	2,375	1,575	2,200	2,625	1,975	2,500	2,525	1,825	2,400	2,725	1,800	2,525
Hiawatha Entrance	726	826	1,505	1,200	1,175	1,800	1,225	1,200	1,825	1,200	1,175	1,800	1,350	1,550	2,025	1,300	1,550	2,000	1,425	1,400	2,075
TH 62 EB Mainline	3,005	2,274	3,638	3,675	2,875	4,175	3,725	2,975	4,250	3,575	2,750	4,000	3,975	3,525	4,525	3,825	3,400	4,400	4,150	3,200	4,600
Bloomington Rd Exit	83	42	29	100	50	25	100	50	25	100	50	25	125	50	25	125	50	25	125	50	25
TH 62 EB Mainline	2,922	2,232	3,609	3,575	2,825	4,150	3,625	2,900	4,225	3,475	2,700	3,975	3,875	3,475	4,500	3,725	3,350	4,375	4,025	3,150	4,575
Bloomington Rd Entrance	57	212	465	75	250	525	75	250	525	75	250	525	75	525	600	75	525	575	75	300	600
TH 62 EB Mainline	2,979	2,444	4,074	3,650	3,075	4,675	3,700	3,175	4,750	3,550	2,950	4,500	3,950	4,000	5,100	3,775	3,850	4,950	4,100	3,450	5,175
TH 5 WB Exit	509	752	781	825	1,200	1,250	875	1,300	1,325	725	1,075	1,075	950	1,500	1,475	775	1,350	1,325	925	1,375	1,375
TH 62 EB Mainline	2,470	1,692	3,293	2,825	1,875	3,425	2,825	1,875	3,425	2,825	1,875	3,425	3,000	2,500	3,600	3,000	2,500	3,600	3,175	2,075	3,800
TH 5 EB/WB Entrance	434	359	785	475	400	875	475	400	900	475	400	875	525	550	1,025	475	500	950	525	450	975
TH 62 EB Mainline	2,904	2,051	4,078	3,300	2,275	4,300	3,300	2,275	4,300	3,300	2,275	4,300	3,525	3,075	4,625	3,475	3,000	4,550	3,700	2,525	4,775
TH 5 EB Exit	632	375	762	700	425	850	700	425	850	700	425	850	750	575	925	750	575	925	800	475	975
TH 62 EB Mainline	2,272	1,676	3,317	2,600	1,850	3,450	2,600	1,850	3,450	2,600	1,850	3,450	2,775	2,500	3,725	2,725	2,425	3,650	2,900	2,050	3,800
TH 62 WB Mainline	3,508	1,494	2,448	3,850	1,675	2,625	3,875	1,700	2,650	3,850	1,675	2,625	4,125	1,975	2,825	4,050	1,900	2,800	4,275	1,850	2,925
TH 5 EB Exit	463	141	411	500	150	475	500	150	475	500	150	475	525	225	500	525	225	500	550	175	525
TH 62 WB Mainline	3,045	1,353	2,037	3,350	1,525	2,150	3,375	1,550	2,175	3,350	1,525	2,150	3,600	1,750	2,325	3,525	1,700	2,300	3,725	1,675	2,400
TH 5 WB Exit	213	171	132	250	200	150	250	225	175	250	200	150	325	250	225	225	200	175	275	225	175
TH 62 WB Mainline	2,832	1,182	1,905	3,100	1,325	2,000	3,100	1,325	2,000	3,100	1,325	2,000	3,275	1,500	2,100	3,275	1,500	2,100	3,450	1,450	2,225
Bloomington Rd/TH 55 WB Exit	1,674	425	748	1,800	475	850	1,950	475	875	1,800	475	850	2,100	575	975	2,100	575	975	2,000	525	950
TH 62 WB Mainline	1,159	757	1,157	1,300	850	1,150	1,175	850	1,125	1,300	850	1,150	1,175	900	1,125	1,175	900	1,125	1,450	925	1,275
TH 5 EB/WB Entrance	2,239	1,350	2,315	2,700	1,825	2,975	2,850	1,850	3,050	2,625	1,700	2,775	3,050	2,125	3,350	2,925	1,950	3,150	3,025	2,025	3,275
TH 62 WB Mainline	3,397	2,107	3,472	4,000	2,675	4,125	4,000	2,675	4,150	3,925	2,550	3,925	4,250	3,050	4,500	4,125	2,850	4,275	4,475	2,950	4,550
Bloomington Rd Entrance	19	61	49	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50	25	75	50
TH 62 WB Mainline	3,416	2,168	3,521	4,025	2,750	4,175	4,025	2,750	4,200	3,950	2,625	3,975	4,275	3,125	4,550	4,150	2,925	4,325	4,500	3,025	4,600
Hiawatha Exit	1,662	742	1,168	2,100	1,000	1,575	2,100	1,000	1,600	2,100	1,000	1,575	2,300	1,200	1,825	2,225	1,125	1,750	2,450	1,175	1,850
TH 62 WB Mainline	1,754	1,426	2,353	1,925	1,750	2,600	1,925	1,750	2,625	1,850	1,625	2,400	1,975	1,925	2,700	1,925	1,800	2,600	2,050	1,850	2,750
Hiawatha Entrance	255	509	466	325	575	525	325	575	525	325	575	525	325	700	550	325	700	550	350	650	575
TH 62 WB Mainline	2,009	1,935	2,819	2,250	2,325	3,125	2,250	2,325	3,150	2,175	2,200	2,925	2,325	2,625	3,250	2,250	2,500	3,150	2,400	2,500	3,325
TH 62 WB Mainline	2,354	2,339	2,887	2,575	2,625	3,125	2,575	2,625	3,125	2,500	2,500	2,925	2,725	3,100	3,325	2,650	2,950	3,100	2,800	2,800	3,275
TH 77 NB Exit	164	111	183	200	125	225	200	125	225	175	100	175	200	125	200	200	125	200	225	125	200
TH 62 WB Mainline	2,190	2,228	2,704	2,375	2,500	2,900	2,375	2,500	2,900	2,325	2,400	2,750	2,525	2,975	3,150	2,450	2,850	2,900	2,575	2,675	3,075
TH 77 NB Entrance	1,118	1,007	1,118	1,275	1,175	1,300	1,275	1,150	1,300	1,325	1,275	1,450	1,250	1,425	1,375	1,350	1,550	1,600	1,400	1,450	1,650
TH 62 WB Mainline	3,308	3,235	3,822	3,650	3,675	4,200	3,650	3,650	4,200	3,650	3,675	4,200	3,800	4,400	4,500	3,800	4,400	4,500	3,975	4,125	4,725
TH 77 SB Exit	349	489	559	450	625	725	450	625	725	450	625	725	500	775	800	500	775	800	550	750	850
TH 62 WB Mainline	2,959	2,746	3,263	3,200	3,050	3,475	3,200	3,025	3,475	3,200	3,050	3,475	3,300	3,625	3,725	3,300	3,625	3,725	3,425	3,375	3,875
TH 77 SB Entrance	377	203	156	450	250	200	450	250	200	450	250	200	475	275	225	475	275	225	500	275	225
TH 62 WB Mainline	3,336	2,949	3,419	3,650	3,300	3,675	3,650	3,275	3,675	3,650	3,300	3,675	3,775	3,900	3,925	3,775	3,900	3,925	3,925	3,650	4,100
MOA NB CD Rd	1,080	288	391	1,200	325	425	1,200	325	450	1,200	325	425	1,200	375	450	1,200	375	450	1,200	375	475
Killebrew Dr Exit	374	199	288	425	225	325	425	225	325	425	225	300	450	250	325	450	250	325	475	250	350
MOA NB CD Rd	706	89	103	775	100	100	775	100	125	775	100	125	750	125	125	750	125	125	725	125	125
Killebrew Dr Entrance	85	538	779	175	600	825	175	600	825	175	600	825	175	725	850	175	725	850	200	675	875
MOA NB CD Rd	791	627	882	950	700	925	950	700	950	950	700	950	925	850	975	925	850	975	925	800	1,000
Lindau Ln Exit	208	89	103	225	100	125	225	100	125	225	100	125	250	125	125	250	125	125	250	125	150
MOA NB CD Rd	582	538	779	725	600	800	725	600	825	725	600	825	700	725	850	700	725	850	675	675	850
TH 77 NB/I-494 WB Exit	459	427	606	575	475	625	575	475	625	575	475	625	550	550	650	550	550	650	625	525	650
MOA NB CD Rd	123	111	173	150	125	175	150	125	200	150	125	200	125	175	200	125	175	200	50	150	200
Lindau Ln Entrance	3	81	101	0	200	250	0	200	250	0	200	250	25	300	325	0	300	325	25	300	375
MOA NB CD Rd	126	192	274	150	325	425	150	325	450	150	325	450	150	475	525	150	500	525	75	450	575
TH 77 NB Entrance	659	369	463	900	450	525	925	475	550	900	450	525	1,000	525	650	950	500	625	1,100	550	625
MOA NB CD Rd	786	561	737	1,050	775	950	1,075	800	1,000	1,050	775	975	1,150	1,000	1,175	1,075	1,000	1,150	1,175	1,000	1,200

Scenario	Existing (2010)			2020 No Action			2020 Airlines Remain			2020 Airlines Relocate			2025 Airlines Remain			2025 Airlines Relocate			2030 Airlines Relocate		
Location	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM	AM	Airport	PM
TH 77 NB CD Rd	1,644	948	962	1,900	1,100	1,050	1,925	1,125	1,075	1,900	1,100	1,050	2,050	1,150	1,200	1,975	1,125	1,175	2,100	1,250	1,175
I-494 EB Exit	659	369	463	900	450	525	925	475	550	900	450	525	1,000	525	650	950	500	625	1,100	550	625
TH 77 NB CD Rd	984	579	499	1,000	650	525	1,000	650	525	1,000	650	525	1,050	625	550	1,050	625	550	1,000	700	550
Lindau Ln/MOA CD Entrance	426	509	464	500	600	525	500	600	525	500	600	525	500	625	575	500	625	575	575	700	600
TH 77 NB CD Rd	1,410	1,088	963	1,500	1,250	1,050	1,500	1,250	1,050	1,500	1,250	1,050	1,550	1,250	1,125	1,550	1,250	1,125	1,575	1,400	1,150
TH 77 SB Entrance	301	351	316	325	400	350	325	400	350	300	375	350	325	375	375	325	375	375	325	425	375
TH 77 NB CD Rd	1,712	1,438	1,279	1,825	1,650	1,400	1,825	1,650	1,400	1,800	1,625	1,400	1,850	1,625	1,475	1,850	1,625	1,475	1,900	1,825	1,525
Lindau Ln to TH 77 NB/I-494 WB	17	400	376	100	475	450	100	475	450	100	475	450	125	500	475	125	500	475	125	575	525
MOA CD Entrance	459	427	606	575	475	625	575	475	625	575	475	625	550	550	650	550	550	650	625	525	650
Lindau/MOA to TH 77 NB	476	827	982	675	950	1,075	675	950	1,075	675	950	1,075	675	1,050	1,125	675	1,050	1,125	750	1,100	1,175
I-494 WB Exit	426	509	464	500	600	525	500	600	525	500	600	525	500	625	575	500	625	575	575	700	600
Lindau/MOA to TH 77 NB	50	318	518	175	350	550	175	350	550	175	350	550	175	425	550	175	425	550	175	400	575
I-494 WB Entrance	355	319	797	550	475	1,150	550	450	1,150	625	600	1,350	550	600	1,200	675	800	1,575	800	775	1,625
Lindau/MOA to TH 77 NB	405	637	1,315	725	825	1,700	725	800	1,700	800	950	1,900	725	1,025	1,750	850	1,225	2,125	975	1,175	2,200
TH 77 SB CD Rd	721	628	590	850	825	750	925	850	775	950	950	925	950	925	1,000	1,025	1,050	1,100	1,125	1,175	1,100
I-494 WB Exit	301	351	316	325	400	350	325	400	350	300	375	350	325	375	375	325	375	375	325	425	375
TH 77 SB CD Rd	420	278	274	525	425	400	600	450	425	650	575	575	650	550	625	700	675	725	800	750	725
TH 77 SB Entrance	342	357	379	375	400	425	375	400	425	375	400	425	400	400	450	400	400	450	425	450	475
TH 77 SB CD Rd	762	634	653	900	825	825	975	850	850	1,025	975	1,000	1,050	950	1,075	1,100	1,075	1,175	1,225	1,200	1,200
I-494 WB Entrance	339	559	727	475	800	950	475	800	975	475	800	950	500	1,075	1,150	500	1,000	1,100	575	1,050	1,200
TH 77 SB CD Rd	1,101	1,193	1,380	1,375	1,625	1,775	1,450	1,650	1,825	1,500	1,775	1,950	1,550	2,025	2,225	1,600	2,075	2,300	1,800	2,250	2,400
I-494 EB Exit	421	281	275	600	450	425	600	450	425	650	575	575	650	550	625	700	675	725	800	750	725
TH 77 SB CD Rd	680	912	1,105	775	1,175	1,350	850	1,200	1,400	850	1,200	1,375	900	1,475	1,600	900	1,400	1,550	1,000	1,500	1,675
Lindau Ln Exit	97	210	226	150	325	400	150	325	400	150	325	400	175	400	475	175	400	475	200	450	550
TH 77 SB CD Rd	583	702	879	625	850	950	700	875	1,000	700	875	975	725	1,100	1,125	725	1,000	1,075	800	1,050	1,125
Killebrew Dr Exit	289	271	274	325	300	350	325	300	350	325	300	350	325	275	375	325	275	375	350	325	400
TH 77 SB CD Rd	294	432	605	300	550	600	375	575	650	375	575	625	400	825	750	400	725	700	450	725	725
I-494 EB to TH 77 SB CD Rd	909	1,243	1,798	1,000	1,375	1,950	1,000	1,375	1,950	1,000	1,375	1,950	1,050	1,725	2,000	1,050	1,725	2,000	1,100	1,525	2,050
Lindau Ln Exit	182	205	123	200	225	125	200	225	125	200	225	125	225	200	125	225	200	125	225	250	125
I-494 EB to TH 77 SB CD Rd	727	1,038	1,675	800	1,150	1,825	800	1,150	1,825	800	1,150	1,825	850	1,525	1,875	850	1,525	1,875	875	1,275	1,925
Killebrew Dr Exit	182	205	123	200	225	125	200	225	125	200	225	125	225	200	150	225	200	150	225	250	150
I-494 EB to TH 77 SB CD Rd	544	833	1,552	600	925	1,700	600	925	1,700	600	925	1,700	625	1,300	1,750	625	1,300	1,750	650	1,025	1,775
TH 5 EB to TH 55/62	566	840	1,015	850	1,250	1,525	850	1,275	1,575	775	1,125	1,325	925	1,425	1,825	775	1,175	1,550	975	1,400	1,650
TH 55 EB Exit	98	188	276	100	200	300	100	200	300	100	200	300	125	300	400	75	225	325	100	225	325
TH 5 EB to TH 55/62	468	652	739	750	1,050	1,225	750	1,050	1,250	675	925	1,025	825	1,125	1,425	700	950	1,225	875	1,175	1,325
TH 5 WB Entrance	520	336	880	600	375	975	600	375	975	600	375	975	625	475	1,050	625	475	1,050	675	425	1,100
TH 5 EB to TH 55/62	988	988	1,619	1,350	1,425	2,200	1,350	1,425	2,250	1,275	1,300	2,000	1,450	1,600	2,475	1,325	1,400	2,275	1,550	1,600	2,425
TH 55 EB Entrance	1,674	425	748	1,800	475	850	1,950	475	875	1,800	475	850	2,100	575	975	2,100	575	975	2,000	525	950
TH 5 EB to TH 55/62	2,662	1,413	2,367	3,150	1,900	3,050	3,300	1,925	3,125	3,075	1,775	2,850	3,550	2,200	3,450	3,425	2,000	3,250	3,550	2,125	3,375
Bloomington Rd Exit	423	63	52	450	75	75	450	75	75	450	75	75	475	50	100	500	50	100	525	100	100
TH 5 EB to TH 55/62	2,239	1,350	2,315	2,700	1,825	2,975	2,850	1,850	3,050	2,625	1,700	2,775	3,050	2,125	3,350	2,925	1,950	3,150	3,025	2,025	3,275
TH 5 WB CD to TH 55 WB/Bloomington	683	357	896	775	400	1,000	775	400	1,000	775	400	1,000	825	475	1,075	825	475	1,075	875	450	1,125
Bloomington Rd Exit	163	21	16	175	25	25	175	25	25	175	25	25	175	25	25	175	25	25	200	25	25
TH 5 WB CD to TH 55 WB/Bloomington	520	336	880	600	375	975	600	375	975	600	375	975	625	475	1,050	625	475	1,050	675	425	1,100
TH 5 WB to TH 55 EB	336	171	509	375	200	575	375	200	575	375	200	575	400	275	625	400	275	625	425	225	650
TH 5 EB to TH 55 EB	98	188	276	100	200	300	100	200	300	100	200	300	125	300	400	75	225	325	100	225	325
TH 5 EB/WB to TH 55 EB	434	359	785	475	400	875	475	400	900	475	400	875	525	550	1,025	475	500	950	525	450	975

APPENDIX C

Travel Demand Model Reasonableness Check Tables

Table C-1
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 No Action Scenario
AM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2020 No Action											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	13,582	7.4%	6,526	48%	7,055	52%	3	3	6600	6600	196,100	13,675	7.0%	6,575	48%	7,100	52%	1.06	1.01
	Penn Ave to I-35W	4	4	8400	8400	187,700	13,173	7.0%	6,251	47%	6,922	53%	4	4	8400	8400	200,500	13,300	6.6%	6,275	47%	7,025	53%	1.07	1.01
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	11,105	7.0%	5,708	51%	5,397	49%	4	4	8400	8400	176,000	11,375	6.5%	5,875	52%	5,500	48%	1.11	1.02
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	11,024	7.0%	5,667	51%	5,358	49%	4	4	8400	8400	173,900	11,325	6.5%	5,875	52%	5,450	48%	1.11	1.03
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,891	7.0%	5,760	53%	5,131	47%	3	3	6600	6600	172,600	11,200	6.5%	6,025	54%	5,175	46%	1.10	1.03
	12th Ave to TH 77	4	4	8400	8400	161,700	11,640	7.2%	5,834	50%	5,806	50%	4	4	8400	8400	178,500	12,025	6.7%	6,200	52%	5,825	48%	1.10	1.03
	24th Ave to 34th Ave	5	5	10200	10200	152,400	11,603	7.6%	5,763	50%	5,840	50%	5	5	10200	10200	183,800	12,600	6.9%	6,400	51%	6,200	49%	1.21	1.09
	East of TH 5	3	3	6600	6600	99,600	8,544	8.6%	3,403	40%	5,141	60%	3	3	6600	6600	110,000	9,200	8.4%	3,550	39%	5,650	61%	1.10	1.08
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	8,607	9.1%	6,784	79%	1,823	21%	3	3	6600	6600	105,400	8,800	8.3%	6,800	77%	2,000	23%	1.11	1.02
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	7,613	8.5%	5,694	75%	1,919	25%	4	4	8400	8400	99,700	8,075	8.1%	5,925	73%	2,150	27%	1.12	1.06
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	5,478	7.8%	3,447	63%	2,031	37%	2	3	4500	6600	80,900	5,975	7.4%	3,625	61%	2,350	39%	1.15	1.09
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	5,504	7.8%	3,447	63%	2,057	37%	2	2	4500	4500	81,500	6,000	7.4%	3,625	60%	2,375	40%	1.15	1.09
	66th St to TH 62	3	2	6600	4500	75,200	5,226	6.9%	3,017	58%	2,209	42%	3	2	6600	4500	86,800	5,825	6.7%	3,275	56%	2,550	44%	1.15	1.11
	North of TH 62	2	2	4500	4500	32,400	2,923	9.0%	1,483	51%	1,440	49%	2	2	4500	4500	36,200	3,175	8.8%	1,575	50%	1,600	50%	1.12	1.09
TH 62*	West of TH 77	2	2	4500	4500	95,600	6,681	7.0%	3,345	50%	3,336	50%	2	2	4500	4500	106,600	7,300	6.8%	3,650	50%	3,650	50%	1.12	1.09
	East of TH 77	2	2	4500	4500	72,000	5,482	7.6%	3,127	57%	2,354	43%	2	2	4500	4500	80,400	5,900	7.3%	3,325	56%	2,575	44%	1.12	1.08
	West of Hiawatha Ave	2	2	4500	4500	60,400	4,865	8.1%	2,856	59%	2,009	41%	2	2	4500	4500	69,800	5,375	7.7%	3,125	58%	2,250	42%	1.16	1.10
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	6,421	8.7%	3,005	47%	3,416	53%	3	3	6600	6600	91,800	7,700	8.4%	3,675	48%	4,025	52%	1.24	1.20
	East of TH 5	2	2	4500	4500	57,000	5,780	10.1%	2,272	39%	3,508	61%	2	2	4500	4500	64,000	6,450	10.1%	2,600	40%	3,850	60%	1.12	1.12
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	4,283	6.4%	2,298	54%	1,985	46%	4	3	8400	6600	89,800	5,725	6.4%	3,025	53%	2,700	47%	1.35	1.34
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	4,492	6.0%	2,302	51%	2,190	49%	3	3	6600	6600	95,100	5,975	6.3%	3,000	50%	2,975	50%	1.28	1.33
	Glumack Dr to TH 55	3	3	6600	6600	62,800	4,068	6.5%	1,804	44%	2,263	56%	3	3	6600	6600	84,800	5,500	6.5%	2,525	46%	2,975	54%	1.35	1.35
	North of TH 55	2	2	4500	4500	61,300	4,894	8.0%	2,333	48%	2,560	52%	2	2	4500	4500	74,300	5,925	8.0%	2,875	49%	3,050	51%	1.21	1.21

Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	776	8.6%	421	54%	355	46%	Loop	Ramp	1500	2000	13,600	1,150	8.5%	600	52%	550	48%	1.51	1.48
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,125	6.5%	786	70%	339	30%	Ramp	Loop	2000	1500	23,800	1,525	6.4%	1,050	69%	475	31%	1.38	1.36
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,448	6.7%	1,539	63%	909	37%	Ramp/Loop	Ramp	2000	2000	40,800	2,650	6.5%	1,650	62%	1,000	38%	1.12	1.08
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	502	5.0%	301	60%	201	40%	Ramp	Loop	2000	1500	11,700	550	4.7%	325	59%	225	41%	1.16	1.09

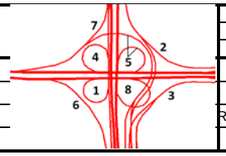
*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Table C-2
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 No Action Scenario
PM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2020 No Action											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	10,685	5.8%	5,304	50%	5,381	50%	3	3	6600	6600	196,100	11,200	5.7%	5,450	49%	5,750	51%	1.06	1.05
	Penn Ave to I-35W	4	4	8400	8400	187,700	11,202	6.0%	6,214	55%	4,987	45%	4	4	8400	8400	200,500	11,800	5.9%	6,425	54%	5,375	46%	1.07	1.05
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	9,678	6.1%	5,375	56%	4,303	44%	4	4	8400	8400	176,000	10,450	5.9%	5,650	54%	4,800	46%	1.11	1.08
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	9,777	6.2%	5,538	57%	4,239	43%	4	4	8400	8400	173,900	10,550	6.1%	5,825	55%	4,725	45%	1.11	1.08
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,112	6.5%	5,817	58%	4,295	42%	3	3	6600	6600	172,600	10,900	6.3%	6,100	56%	4,800	44%	1.10	1.08
	12th Ave to TH 77	4	4	8400	8400	161,700	11,676	7.2%	6,591	56%	5,085	44%	4	4	8400	8400	178,500	12,600	7.1%	6,925	55%	5,675	45%	1.10	1.08
	24th Ave to 34th Ave	5	5	10200	10200	152,400	12,388	8.1%	6,180	50%	6,208	50%	5	5	10200	10200	183,800	14,225	7.7%	6,900	49%	7,325	51%	1.21	1.15
	East of TH 5	3	3	6600	6600	99,600	8,621	8.7%	5,113	59%	3,508	41%	3	3	6600	6600	110,000	9,175	8.3%	5,350	58%	3,825	42%	1.10	1.06
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	8,958	9.5%	2,865	32%	6,093	68%	3	3	6600	6600	105,400	9,450	9.0%	3,025	32%	6,425	68%	1.11	1.05
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	8,245	9.3%	2,724	33%	5,521	67%	4	4	8400	8400	99,700	8,825	8.9%	2,925	33%	5,900	67%	1.12	1.07
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	6,329	9.0%	2,938	46%	3,391	54%	2	3	4500	6600	80,900	7,200	8.9%	3,425	48%	3,775	52%	1.15	1.14
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	6,391	9.0%	2,938	46%	3,453	54%	2	2	4500	4500	81,500	7,275	8.9%	3,425	47%	3,850	53%	1.15	1.14
	66th St to TH 62	3	2	6600	4500	75,200	6,488	8.6%	3,012	46%	3,476	54%	3	2	6600	4500	86,800	7,425	8.6%	3,525	47%	3,900	53%	1.15	1.14
	North of TH 62	2	2	4500	4500	32,400	3,087	9.5%	1,422	46%	1,665	54%	2	2	4500	4500	36,200	3,425	9.5%	1,650	48%	1,775	52%	1.12	1.11
TH 62*	West of TH 77	2	2	4500	4500	95,600	7,276	7.6%	3,857	53%	3,419	47%	2	2	4500	4500	106,600	7,775	7.3%	4,100	53%	3,675	47%	1.12	1.07
	East of TH 77	2	2	4500	4500	72,000	5,992	8.3%	3,104	52%	2,887	48%	2	2	4500	4500	80,400	6,425	8.0%	3,300	51%	3,125	49%	1.12	1.07
	West of Hiawatha Ave	2	2	4500	4500	60,400	5,377	8.9%	2,558	48%	2,819	52%	2	2	4500	4500	69,800	5,975	8.6%	2,850	48%	3,125	52%	1.16	1.11
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	7,159	9.7%	3,638	51%	3,521	49%	3	3	6600	6600	91,800	8,350	9.1%	4,175	50%	4,175	50%	1.24	1.17
	East of TH 5	2	2	4500	4500	57,000	5,765	10.1%	3,317	58%	2,448	42%	2	2	4500	4500	64,000	6,075	9.5%	3,450	57%	2,625	43%	1.12	1.05
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	5,624	8.5%	2,602	46%	3,023	54%	4	3	8400	6600	89,800	7,350	8.2%	3,600	49%	3,750	51%	1.35	1.31
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	6,241	8.4%	2,935	47%	3,306	53%	3	3	6600	6600	95,100	8,075	8.5%	3,975	49%	4,100	51%	1.28	1.29
	Glumack Dr to TH 55	3	3	6600	6600	62,800	5,529	8.8%	2,793	51%	2,735	49%	3	3	6600	6600	84,800	7,550	8.9%	3,975	53%	3,575	47%	1.35	1.37
	North of TH 55	2	2	4500	4500	61,300	6,178	10.1%	2,951	48%	3,227	52%	2	2	4500	4500	74,300	7,525	10.1%	3,775	50%	3,750	50%	1.21	1.22

Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	1,072	11.9%	275	26%	797	74%	Loop	Ramp	1500	2000	13,600	1,575	11.6%	425	27%	1,150	73%	1.51	1.47
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,464	8.5%	737	50%	727	50%	Ramp	Loop	2000	1500	23,800	1,900	8.0%	950	50%	950	50%	1.38	1.30
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,825	7.8%	1,027	36%	1,798	64%	Ramp/Loop	Ramp	2000	2000	40,800	3,075	7.5%	1,125	37%	1,950	63%	1.12	1.09
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	632	6.3%	316	50%	316	50%	Ramp	Loop	2000	1500	11,700	700	6.0%	350	50%	350	50%	1.16	1.11



*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Table C-3
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 No Action Scenario
Airport Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2020 No Action											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	11,980	6.5%	5,806	48%	6,175	52%	3	3	6600	6600	196,100	13,100	6.7%	6,175	47%	6,925	53%	1.06	1.09
	Penn Ave to I-35W	4	4	8400	8400	187,700	12,236	6.5%	6,112	50%	6,123	50%	4	4	8400	8400	200,500	13,425	6.7%	6,525	49%	6,900	51%	1.07	1.10
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	10,366	6.5%	5,034	49%	5,332	51%	4	4	8400	8400	176,000	11,850	6.7%	5,575	47%	6,275	53%	1.11	1.14
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	10,123	6.4%	4,971	49%	5,152	51%	4	4	8400	8400	173,900	11,575	6.7%	5,500	48%	6,075	52%	1.11	1.14
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,145	6.5%	5,028	50%	5,118	50%	3	3	6600	6600	172,600	11,600	6.7%	5,550	48%	6,050	52%	1.10	1.14
	12th Ave to TH 77	4	4	8400	8400	161,700	10,244	6.3%	5,060	49%	5,184	51%	4	4	8400	8400	178,500	11,700	6.6%	5,575	48%	6,125	52%	1.10	1.14
	24th Ave to 34th Ave	5	5	10200	10200	152,400	9,586	6.3%	4,641	48%	4,944	52%	5	5	10200	10200	183,800	11,625	6.3%	5,625	48%	6,000	52%	1.21	1.21
	East of TH 5	3	3	6600	6600	99,600	6,113	6.1%	3,310	54%	2,804	46%	3	3	6600	6600	110,000	6,625	6.0%	3,525	53%	3,100	47%	1.10	1.08
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	5,361	5.7%	2,233	42%	3,128	58%	3	3	6600	6600	105,400	5,925	5.6%	2,475	42%	3,450	58%	1.11	1.11
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	5,150	5.8%	2,169	42%	2,981	58%	4	4	8400	8400	99,700	5,725	5.7%	2,425	42%	3,300	58%	1.12	1.11
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	4,089	5.8%	1,897	46%	2,192	54%	2	3	4500	6600	80,900	4,700	5.8%	2,200	47%	2,500	53%	1.15	1.15
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	4,151	5.9%	1,897	46%	2,254	54%	2	2	4500	4500	81,500	4,775	5.9%	2,200	46%	2,575	54%	1.15	1.15
	66th St to TH 62	3	2	6600	4500	75,200	4,489	6.0%	2,107	47%	2,382	53%	3	2	6600	4500	86,800	5,175	6.0%	2,450	47%	2,725	53%	1.15	1.15
	North of TH 62	2	2	4500	4500	32,400	1,830	5.6%	883	48%	947	52%	2	2	4500	4500	36,200	2,050	5.7%	1,000	49%	1,050	51%	1.12	1.12
TH 62*	West of TH 77	2	2	4500	4500	95,600	5,958	6.2%	3,009	51%	2,949	49%	2	2	4500	4500	106,600	6,650	6.2%	3,350	50%	3,300	50%	1.12	1.12
	East of TH 77	2	2	4500	4500	72,000	4,528	6.3%	2,188	48%	2,339	52%	2	2	4500	4500	80,400	5,075	6.3%	2,450	48%	2,625	52%	1.12	1.12
	West of Hiawatha Ave	2	2	4500	4500	60,400	3,788	6.3%	1,853	49%	1,935	51%	2	2	4500	4500	69,800	4,475	6.4%	2,150	48%	2,325	52%	1.16	1.18
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	4,442	6.0%	2,274	51%	2,168	49%	3	3	6600	6600	91,800	5,625	6.1%	2,875	51%	2,750	49%	1.24	1.27
	East of TH 5	2	2	4500	4500	57,000	3,170	5.6%	1,676	53%	1,494	47%	2	2	4500	4500	64,000	3,525	5.5%	1,850	52%	1,675	48%	1.12	1.11
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	4,220	6.4%	1,846	44%	2,374	56%	4	3	8400	6600	89,800	5,600	6.2%	2,500	45%	3,100	55%	1.35	1.33
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	4,746	6.4%	2,117	45%	2,628	55%	3	3	6600	6600	95,100	6,075	6.4%	2,750	45%	3,325	55%	1.28	1.28
	Glumack Dr to TH 55	3	3	6600	6600	62,800	4,155	6.6%	2,011	48%	2,144	52%	3	3	6600	6600	84,800	5,675	6.7%	2,775	49%	2,900	51%	1.35	1.37
	North of TH 55	2	2	4500	4500	61,300	3,435	5.6%	1,687	49%	1,748	51%	2	2	4500	4500	74,300	4,200	5.7%	2,100	50%	2,100	50%	1.21	1.22

Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	600	6.7%	281	47%	319	53%	Loop	Ramp	1500	2000	13,600	925	6.8%	450	49%	475	51%	1.51	1.54
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,120	6.5%	561	50%	559	50%	Ramp	Loop	2000	1500	23,800	1,575	6.6%	775	49%	800	51%	1.38	1.41
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,366	6.5%	1,123	47%	1,243	53%	Ramp/Loop	Ramp	2000	2000	40,800	2,675	6.6%	1,300	49%	1,375	51%	1.12	1.13
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	713	7.1%	351	49%	362	51%	Ramp	Loop	2000	1500	11,700	825	7.1%	400	48%	425	52%	1.16	1.16

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Table C-4
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 Airlines Remain Scenario
AM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Remain											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	13,582	7.4%	6,526	48%	7,055	52%	3	3	6600	6600	200,300	13,700	6.8%	6,600	48%	7,100	52%	1.09	1.01
	Penn Ave to I-35W	4	4	8400	8400	187,700	13,173	7.0%	6,251	47%	6,922	53%	4	4	8400	8400	205,700	13,325	6.5%	6,300	47%	7,025	53%	1.10	1.01
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	11,105	7.0%	5,708	51%	5,397	49%	4	4	8400	8400	186,000	11,400	6.1%	5,900	52%	5,500	48%	1.17	1.03
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	11,024	7.0%	5,667	51%	5,358	49%	4	4	8400	8400	183,300	11,350	6.2%	5,900	52%	5,450	48%	1.17	1.03
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,891	7.0%	5,760	53%	5,131	47%	3	3	6600	6600	182,200	11,225	6.2%	6,050	54%	5,175	46%	1.17	1.03
	12th Ave to TH 77	4	4	8400	8400	161,700	11,640	7.2%	5,834	50%	5,806	50%	4	4	8400	8400	187,700	12,075	6.4%	6,250	52%	5,825	48%	1.16	1.04
	24th Ave to 34th Ave	5	5	10200	10200	152,400	11,603	7.6%	5,763	50%	5,840	50%	5	5	10200	10200	197,400	12,650	6.4%	6,450	51%	6,200	49%	1.30	1.09
	East of TH 5	3	3	6600	6600	99,600	8,544	8.6%	3,403	40%	5,141	60%	3	3	6600	6600	117,600	9,175	7.8%	3,550	39%	5,625	61%	1.18	1.07
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	8,607	9.1%	6,784	79%	1,823	21%	3	3	6600	6600	111,600	8,825	7.9%	6,825	77%	2,000	23%	1.18	1.03
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	7,613	8.5%	5,694	75%	1,919	25%	4	4	8400	8400	105,100	8,100	7.7%	5,950	73%	2,150	27%	1.18	1.06
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	5,478	7.8%	3,447	63%	2,031	37%	2	3	4500	6600	84,300	5,975	7.1%	3,625	61%	2,350	39%	1.20	1.09
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	5,504	7.8%	3,447	63%	2,057	37%	2	2	4500	4500	85,900	6,000	7.0%	3,625	60%	2,375	40%	1.21	1.09
	66th St to TH 62	3	2	6600	4500	75,200	5,226	6.9%	3,017	58%	2,209	42%	3	2	6600	4500	91,200	5,825	6.4%	3,275	56%	2,550	44%	1.21	1.11
	North of TH 62	2	2	4500	4500	32,400	2,923	9.0%	1,483	51%	1,440	49%	2	2	4500	4500	38,400	3,175	8.3%	1,575	50%	1,600	50%	1.19	1.09
TH 62*	West of TH 77	2	2	4500	4500	95,600	6,681	7.0%	3,345	50%	3,336	50%	2	2	4500	4500	111,600	7,300	6.5%	3,650	50%	3,650	50%	1.17	1.09
	East of TH 77	2	2	4500	4500	72,000	5,482	7.6%	3,127	57%	2,354	43%	2	2	4500	4500	84,000	5,900	7.0%	3,325	56%	2,575	44%	1.17	1.08
	West of Hiawatha Ave	2	2	4500	4500	60,400	4,865	8.1%	2,856	59%	2,009	41%	2	2	4500	4500	75,400	5,400	7.2%	3,150	58%	2,250	42%	1.25	1.11
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	6,421	8.7%	3,005	47%	3,416	53%	3	3	6600	6600	97,900	7,750	7.9%	3,725	48%	4,025	52%	1.32	1.21
	East of TH 5	2	2	4500	4500	57,000	5,780	10.1%	2,272	39%	3,508	61%	2	2	4500	4500	67,000	6,475	9.7%	2,600	40%	3,875	60%	1.18	1.12
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	4,283	6.4%	2,298	54%	1,985	46%	4	3	8400	6600	97,400	5,850	6.0%	3,150	54%	2,700	46%	1.47	1.37
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	4,492	6.0%	2,302	51%	2,190	49%	3	3	6600	6600	103,300	6,075	5.9%	3,125	51%	2,950	49%	1.39	1.35
	Glumack Dr to TH 55	3	3	6600	6600	62,800	4,068	6.5%	1,804	44%	2,263	56%	3	3	6600	6600	91,800	5,600	6.1%	2,525	45%	3,075	55%	1.46	1.38
	North of TH 55	2	2	4500	4500	61,300	4,894	8.0%	2,333	48%	2,560	52%	2	2	4500	4500	77,300	5,950	7.7%	2,875	48%	3,075	52%	1.26	1.22

Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	776	8.6%	421	54%	355	46%	Loop	Ramp	1500	2000	15,400	1,150	7.5%	600	52%	550	48%	1.71	1.48
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,125	6.5%	786	70%	339	30%	Ramp	Loop	2000	1500	27,400	1,550	5.7%	1,075	69%	475	31%	1.59	1.38
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,448	6.7%	1,539	63%	909	37%	Ramp/Loop	Ramp	2000	2000	42,600	2,650	6.2%	1,650	62%	1,000	38%	1.17	1.08
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	502	5.0%	301	60%	201	40%	Ramp	Loop	2000	1500	12,000	550	4.6%	325	59%	225	41%	1.19	1.09

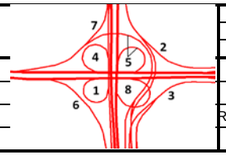
*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-5
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 Airlines Remain Scenario
PM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Remain										Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	10,685	5.8%	5,304	50%	5,381	50%	3	3	6600	6600	200,300	11,275	5.6%	5,500	49%	5,775	51%	1.09	1.06
	Penn Ave to I-35W	4	4	8400	8400	187,700	11,202	6.0%	6,214	55%	4,987	45%	4	4	8400	8400	205,700	11,875	5.8%	6,475	55%	5,400	45%	1.10	1.06
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	9,678	6.1%	5,375	56%	4,303	44%	4	4	8400	8400	186,000	10,525	5.7%	5,700	54%	4,825	46%	1.17	1.09
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	9,777	6.2%	5,538	57%	4,239	43%	4	4	8400	8400	183,300	10,625	5.8%	5,875	55%	4,750	45%	1.17	1.09
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,112	6.5%	5,817	58%	4,295	42%	3	3	6600	6600	182,200	10,975	6.0%	6,150	56%	4,825	44%	1.17	1.09
	12th Ave to TH 77	4	4	8400	8400	161,700	11,676	7.2%	6,591	56%	5,085	44%	4	4	8400	8400	187,700	12,700	6.8%	7,000	55%	5,700	45%	1.16	1.09
	24th Ave to 34th Ave	5	5	10200	10200	152,400	12,388	8.1%	6,180	50%	6,208	50%	5	5	10200	10200	197,400	14,375	7.3%	7,025	49%	7,350	51%	1.30	1.16
	East of TH 5	3	3	6600	6600	99,600	8,621	8.7%	5,113	59%	3,508	41%	3	3	6600	6600	117,600	9,225	7.8%	5,375	58%	3,850	42%	1.18	1.07
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	8,958	9.5%	2,865	32%	6,093	68%	3	3	6600	6600	111,600	9,500	8.5%	3,050	32%	6,450	68%	1.18	1.06
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	8,245	9.3%	2,724	33%	5,521	67%	4	4	8400	8400	105,100	8,875	8.4%	2,950	33%	5,925	67%	1.18	1.08
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	6,329	9.0%	2,938	46%	3,391	54%	2	3	4500	6600	84,300	7,175	8.5%	3,400	47%	3,775	53%	1.20	1.13
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	6,391	9.0%	2,938	46%	3,453	54%	2	2	4500	4500	85,900	7,250	8.4%	3,400	47%	3,850	53%	1.21	1.13
	66th St to TH 62	3	2	6600	4500	75,200	6,488	8.6%	3,012	46%	3,476	54%	3	2	6600	4500	91,200	7,400	8.1%	3,500	47%	3,900	53%	1.21	1.14
	North of TH 62	2	2	4500	4500	32,400	3,087	9.5%	1,422	46%	1,665	54%	2	2	4500	4500	38,400	3,400	8.9%	1,625	48%	1,775	52%	1.19	1.10
TH 62*	West of TH 77	2	2	4500	4500	95,600	7,276	7.6%	3,857	53%	3,419	47%	2	2	4500	4500	111,600	7,775	7.0%	4,100	53%	3,675	47%	1.17	1.07
	East of TH 77	2	2	4500	4500	72,000	5,992	8.3%	3,104	52%	2,887	48%	2	2	4500	4500	84,000	6,425	7.6%	3,300	51%	3,125	49%	1.17	1.07
	West of Hiawatha Ave	2	2	4500	4500	60,400	5,377	8.9%	2,558	48%	2,819	52%	2	2	4500	4500	75,400	6,025	8.0%	2,875	48%	3,150	52%	1.25	1.12
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	7,159	9.7%	3,638	51%	3,521	49%	3	3	6600	6600	97,900	8,450	8.6%	4,250	50%	4,200	50%	1.32	1.18
	East of TH 5	2	2	4500	4500	57,000	5,765	10.1%	3,317	58%	2,448	42%	2	2	4500	4500	67,000	6,100	9.1%	3,450	57%	2,650	43%	1.18	1.06
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	5,624	8.5%	2,602	46%	3,023	54%	4	3	8400	6600	97,400	7,550	7.8%	3,725	49%	3,825	51%	1.47	1.34
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	6,241	8.4%	2,935	47%	3,306	53%	3	3	6600	6600	103,300	8,325	8.1%	4,100	49%	4,225	51%	1.39	1.33
	Glumack Dr to TH 55	3	3	6600	6600	62,800	5,529	8.8%	2,793	51%	2,735	49%	3	3	6600	6600	91,800	7,750	8.4%	4,050	52%	3,700	48%	1.46	1.40
	North of TH 55	2	2	4500	4500	61,300	6,178	10.1%	2,951	48%	3,227	52%	2	2	4500	4500	77,300	7,600	9.8%	3,800	50%	3,800	50%	1.26	1.23

Inter-change	Movement	Existing (2010)											Year 2020 No Action										Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	1,072	11.9%	275	26%	797	74%	Loop	Ramp	1500	2000	15,400	1,575	10.2%	425	27%	1,150	73%	1.71	1.47
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,464	8.5%	737	50%	727	50%	Ramp	Loop	2000	1500	27,400	1,975	7.2%	1,000	51%	975	49%	1.59	1.35
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,825	7.8%	1,027	36%	1,798	64%	Ramp/Loop	Ramp	2000	2000	42,600	3,075	7.2%	1,125	37%	1,950	63%	1.17	1.09
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	632	6.3%	316	50%	316	50%	Ramp	Loop	2000	1500	12,000	700	5.8%	350	50%	350	50%	1.19	1.11

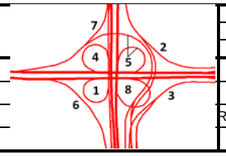


*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-6
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 Airlines Remain Scenario
Airport Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Remain											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	11,980	6.5%	5,806	48%	6,175	52%	3	3	6600	6600	200,300	13,625	6.8%	6,425	47%	7,200	53%	1.09	1.14
	Penn Ave to I-35W	4	4	8400	8400	187,700	12,236	6.5%	6,112	50%	6,123	50%	4	4	8400	8400	205,700	14,000	6.8%	6,925	49%	7,075	51%	1.10	1.14
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	10,366	6.5%	5,034	49%	5,332	51%	4	4	8400	8400	186,000	12,300	6.6%	5,850	48%	6,450	52%	1.17	1.19
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	10,123	6.4%	4,971	49%	5,152	51%	4	4	8400	8400	183,300	12,275	6.7%	5,825	47%	6,450	53%	1.17	1.21
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,145	6.5%	5,028	50%	5,118	50%	3	3	6600	6600	182,200	12,325	6.8%	6,000	49%	6,325	51%	1.17	1.21
	12th Ave to TH 77	4	4	8400	8400	161,700	10,244	6.3%	5,060	49%	5,184	51%	4	4	8400	8400	187,700	12,650	6.7%	6,175	49%	6,475	51%	1.16	1.23
	24th Ave to 34th Ave	5	5	10200	10200	152,400	9,586	6.3%	4,641	48%	4,944	52%	5	5	10200	10200	197,400	12,550	6.4%	6,100	49%	6,450	51%	1.30	1.31
	East of TH 5	3	3	6600	6600	99,600	6,113	6.1%	3,310	54%	2,804	46%	3	3	6600	6600	117,600	7,325	6.2%	4,025	55%	3,300	45%	1.18	1.20
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	5,361	5.7%	2,233	42%	3,128	58%	3	3	6600	6600	111,600	6,825	6.1%	2,500	37%	4,325	63%	1.18	1.27
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	5,150	5.8%	2,169	42%	2,981	58%	4	4	8400	8400	105,100	6,650	6.3%	2,525	38%	4,125	62%	1.18	1.29
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	4,089	5.8%	1,897	46%	2,192	54%	2	3	4500	6600	84,300	5,150	6.1%	2,400	47%	2,750	53%	1.20	1.26
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	4,151	5.9%	1,897	46%	2,254	54%	2	2	4500	4500	85,900	5,300	6.2%	2,400	45%	2,900	55%	1.21	1.28
	66th St to TH 62	3	2	6600	4500	75,200	4,489	6.0%	2,107	47%	2,382	53%	3	2	6600	4500	91,200	5,775	6.3%	2,700	47%	3,075	53%	1.21	1.29
	North of TH 62	2	2	4500	4500	32,400	1,830	5.6%	883	48%	947	52%	2	2	4500	4500	38,400	2,275	5.9%	1,050	46%	1,225	54%	1.19	1.24
TH 62*	West of TH 77	2	2	4500	4500	95,600	5,958	6.2%	3,009	51%	2,949	49%	2	2	4500	4500	111,600	7,175	6.4%	3,500	49%	3,675	51%	1.17	1.20
	East of TH 77	2	2	4500	4500	72,000	4,528	6.3%	2,188	48%	2,339	52%	2	2	4500	4500	84,000	5,475	6.5%	2,550	47%	2,925	53%	1.17	1.21
	West of Hiawatha Ave	2	2	4500	4500	60,400	3,788	6.3%	1,853	49%	1,935	51%	2	2	4500	4500	75,400	4,825	6.4%	2,325	48%	2,500	52%	1.25	1.27
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	4,442	6.0%	2,274	51%	2,168	49%	3	3	6600	6600	97,900	6,200	6.3%	3,300	53%	2,900	47%	1.32	1.40
	East of TH 5	2	2	4500	4500	57,000	3,170	5.6%	1,676	53%	1,494	47%	2	2	4500	4500	67,000	4,125	6.2%	2,300	56%	1,825	44%	1.18	1.30
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	4,220	6.4%	1,846	44%	2,374	56%	4	3	8400	6600	97,400	5,950	6.1%	2,550	43%	3,400	57%	1.47	1.41
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	4,746	6.4%	2,117	45%	2,628	55%	3	3	6600	6600	103,300	6,425	6.2%	2,900	45%	3,525	55%	1.39	1.35
	Glumack Dr to TH 55	3	3	6600	6600	62,800	4,155	6.6%	2,011	48%	2,144	52%	3	3	6600	6600	91,800	5,925	6.5%	2,850	48%	3,075	52%	1.46	1.43
	North of TH 55	2	2	4500	4500	61,300	3,435	5.6%	1,687	49%	1,748	51%	2	2	4500	4500	77,300	4,575	5.9%	2,350	51%	2,225	49%	1.26	1.33

Inter-change	Movement		Existing (2010)										Year 2020 No Action										Growth Factor	
			Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)	Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		
			NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)		Loop	Ramp	1500	2000	9,000	600	6.7%	281	47%	319	53%	Loop	Ramp	1500	2000	15,400	950	6.2%	425	45%	525	55%	1.71	1.58
	South ↔ East (3,4)		Ramp	Loop	2000	1500	17,200	1,120	6.5%	561	50%	559	50%	Ramp	Loop	2000	1500	27,400	1,750	6.4%	850	49%	900	51%	1.59	1.56
	South ↔ West (5,6)		Ramp/Loop	Ramp	2000	2000	36,400	2,366	6.5%	1,123	47%	1,243	53%	Ramp/Loop	Ramp	2000	2000	42,600	2,875	6.7%	1,250	43%	1,625	57%	1.17	1.22
	North ↔ West (7,8)		Ramp	Loop	2000	1500	10,100	713	7.1%	351	49%	362	51%	Ramp	Loop	2000	1500	12,000	800	6.7%	375	47%	425	53%	1.19	1.12

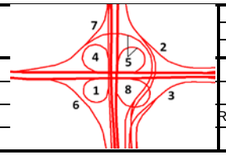
*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-7
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 Airlines Relocate Scenario
AM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Year 2020 No Action											Year 2020 Proposed Action											Difference Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	196,100	13,675	7.0%	6,575	48%	7,100	52%	3	3	6600	6600	196,100	13,650	7.0%	6,575	48%	7,075	52%	1.00	1.00
	Penn Ave to I-35W	4	4	8400	8400	200,500	13,300	6.6%	6,275	47%	7,025	53%	4	4	8400	8400	200,500	13,275	6.6%	6,275	47%	7,000	53%	1.00	1.00
	I-35W to Lyndale Ave	4	4	8400	8400	176,000	11,375	6.5%	5,875	52%	5,500	48%	4	4	8400	8400	176,000	11,350	6.4%	5,875	52%	5,475	48%	1.00	1.00
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	173,900	11,325	6.5%	5,875	52%	5,450	48%	4	4	8400	8400	173,900	11,300	6.5%	5,875	52%	5,425	48%	1.00	1.00
	Nicollet Ave to Portland Ave	3	3	6600	6600	172,600	11,200	6.5%	6,025	54%	5,175	46%	3	3	6600	6600	172,600	11,175	6.5%	6,025	54%	5,150	46%	1.00	1.00
	12th Ave to TH 77	4	4	8400	8400	178,500	12,025	6.7%	6,200	52%	5,825	48%	4	4	8400	8400	178,500	12,000	6.7%	6,200	52%	5,800	48%	1.00	1.00
	24th Ave to 34th Ave	5	5	10200	10200	183,800	12,600	6.9%	6,400	51%	6,200	49%	5	5	10200	10200	188,000	12,700	6.8%	6,375	50%	6,325	50%	1.02	1.01
	East of TH 5	3	3	6600	6600	110,000	9,200	8.4%	3,550	39%	5,650	61%	3	3	6600	6600	111,000	9,200	8.3%	3,525	38%	5,675	62%	1.01	1.00
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	105,400	8,800	8.3%	6,800	77%	2,000	23%	3	3	6600	6600	105,400	8,875	8.4%	6,800	77%	2,075	23%	1.00	1.01
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	99,700	8,075	8.1%	5,925	73%	2,150	27%	4	4	8400	8400	99,700	8,150	8.2%	5,925	73%	2,225	27%	1.00	1.01
	I-494 to Diagonal Blvd	2	3	4500	6600	80,900	5,975	7.4%	3,625	61%	2,350	39%	2	3	4500	6600	85,700	6,150	7.2%	3,700	60%	2,450	40%	1.06	1.03
	Diagonal Blvd to 66th St	2	2	4500	4500	81,500	6,000	7.4%	3,625	60%	2,375	40%	2	2	4500	4500	86,300	6,175	7.2%	3,700	60%	2,475	40%	1.06	1.03
	66th St to TH 62	3	2	6600	4500	86,800	5,825	6.7%	3,275	56%	2,550	44%	3	2	6600	4500	91,600	6,000	6.6%	3,350	56%	2,650	44%	1.06	1.03
	North of TH 62	2	2	4500	4500	36,200	3,175	8.8%	1,575	50%	1,600	50%	2	2	4500	4500	36,200	3,175	8.8%	1,575	50%	1,600	50%	1.00	1.00
TH 62*	West of TH 77	2	2	4500	4500	106,600	7,300	6.8%	3,650	50%	3,650	50%	2	2	4500	4500	106,600	7,300	6.8%	3,650	50%	3,650	50%	1.00	1.00
	East of TH 77	2	2	4500	4500	80,400	5,900	7.3%	3,325	56%	2,575	44%	2	2	4500	4500	75,600	5,725	7.6%	3,225	56%	2,500	44%	0.94	0.97
	West of Hiawatha Ave	2	2	4500	4500	69,800	5,375	7.7%	3,125	58%	2,250	42%	2	2	4500	4500	65,000	5,200	8.0%	3,025	58%	2,175	42%	0.93	0.97
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	91,800	7,700	8.4%	3,675	48%	4,025	52%	3	3	6600	6600	87,000	7,525	8.6%	3,575	48%	3,950	52%	0.95	0.98
	East of TH 5	2	2	4500	4500	64,000	6,450	10.1%	2,600	40%	3,850	60%	2	2	4500	4500	64,000	6,450	10.1%	2,600	40%	3,850	60%	1.00	1.00
TH 5	I-494 to Post Rd	4	3	8400	6600	89,800	5,725	6.4%	3,025	53%	2,700	47%	4	3	8400	6600	74,700	5,100	6.8%	2,675	52%	2,425	48%	0.83	0.89
	Post Rd to Glumack Dr	3	3	6600	6600	95,100	5,975	6.3%	3,000	50%	2,975	50%	3	3	6600	6600	83,700	5,500	6.6%	2,700	49%	2,800	51%	0.88	0.92
	Glumack Dr to TH 55	3	3	6600	6600	84,800	5,500	6.5%	2,525	46%	2,975	54%	3	3	6600	6600	79,100	5,275	6.7%	2,425	46%	2,850	54%	0.93	0.96
	North of TH 55	2	2	4500	4500	74,300	5,925	8.0%	2,875	49%	3,050	51%	2	2	4500	4500	73,400	5,875	8.0%	2,850	49%	3,025	51%	0.99	0.99

Inter-change	Movement	Existing (2010)											Year 2020 No Action											Difference Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	13,600	1,150	8.5%	600	52%	550	48%	Loop	Ramp	1500	2000	18,400	1,275	6.9%	650	51%	625	49%	1.35	1.11
	South ↔ East (3,4)	Ramp	Loop	2000	1500	23,800	1,525	6.4%	1,050	69%	475	31%	Ramp	Loop	2000	1500	23,800	1,525	6.4%	1,050	69%	475	31%	1.00	1.00
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	40,800	2,650	6.5%	1,650	62%	1,000	38%	Ramp/Loop	Ramp	2000	2000	40,800	2,650	6.5%	1,650	62%	1,000	38%	1.00	1.00
	North ↔ West (7,8)	Ramp	Loop	2000	1500	11,700	550	4.7%	325	59%	225	41%	Ramp	Loop	2000	1500	11,700	525	4.5%	300	57%	225	43%	1.00	0.95

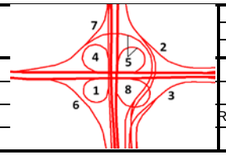


*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Table C-8
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 Airlines Relocate Scenario
PM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Year 2020 No Action											Year 2020 Airl;ines Relocate											Difference Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	196,100	11,200	5.7%	5,450	49%	5,750	51%	3	3	6600	6600	196,100	11,200	5.7%	5,450	49%	5,750	51%	1.00	1.00
	Penn Ave to I-35W	4	4	8400	8400	200,500	11,800	5.9%	6,425	54%	5,375	46%	4	4	8400	8400	200,500	11,800	5.9%	6,425	54%	5,375	46%	1.00	1.00
	I-35W to Lyndale Ave	4	4	8400	8400	176,000	10,450	5.9%	5,650	54%	4,800	46%	4	4	8400	8400	176,000	10,450	5.9%	5,650	54%	4,800	46%	1.00	1.00
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	173,900	10,550	6.1%	5,825	55%	4,725	45%	4	4	8400	8400	173,900	10,550	6.1%	5,825	55%	4,725	45%	1.00	1.00
	Nicollet Ave to Portland Ave	3	3	6600	6600	172,600	10,900	6.3%	6,100	56%	4,800	44%	3	3	6600	6600	172,600	10,900	6.3%	6,100	56%	4,800	44%	1.00	1.00
	12th Ave to TH 77	4	4	8400	8400	178,500	12,600	7.1%	6,925	55%	5,675	45%	4	4	8400	8400	178,500	12,600	7.1%	6,925	55%	5,675	45%	1.00	1.00
	24th Ave to 34th Ave	5	5	10200	10200	183,800	14,225	7.7%	6,900	49%	7,325	51%	5	5	10200	10200	188,000	14,550	7.7%	7,100	49%	7,450	51%	1.02	1.02
	East of TH 5	3	3	6600	6600	110,000	9,175	8.3%	5,350	58%	3,825	42%	3	3	6600	6600	111,000	9,250	8.3%	5,400	58%	3,850	42%	1.01	1.01
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	105,400	9,450	9.0%	3,025	32%	6,425	68%	3	3	6600	6600	105,400	9,475	9.0%	3,025	32%	6,450	68%	1.00	1.00
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	99,700	8,825	8.9%	2,925	33%	5,900	67%	4	4	8400	8400	99,700	8,850	8.9%	2,925	33%	5,925	67%	1.00	1.00
	I-494 to Diagonal Blvd	2	3	4500	6600	80,900	7,200	8.9%	3,425	48%	3,775	52%	2	3	4500	6600	85,700	7,575	8.8%	3,625	48%	3,950	52%	1.06	1.05
	Diagonal Blvd to 66th St	2	2	4500	4500	81,500	7,275	8.9%	3,425	47%	3,850	53%	2	2	4500	4500	86,300	7,650	8.9%	3,625	47%	4,025	53%	1.06	1.05
	66th St to TH 62	3	2	6600	4500	86,800	7,425	8.6%	3,525	47%	3,900	53%	3	2	6600	4500	91,600	7,800	8.5%	3,725	48%	4,075	52%	1.06	1.05
	North of TH 62	2	2	4500	4500	36,200	3,425	9.5%	1,650	48%	1,775	52%	2	2	4500	4500	36,200	3,425	9.5%	1,650	48%	1,775	52%	1.00	1.00
TH 62*	West of TH 77	2	2	4500	4500	106,600	7,775	7.3%	4,100	53%	3,675	47%	2	2	4500	4500	106,600	7,775	7.3%	4,100	53%	3,675	47%	1.00	1.00
	East of TH 77	2	2	4500	4500	80,400	6,425	8.0%	3,300	51%	3,125	49%	2	2	4500	4500	75,600	6,050	8.0%	3,125	52%	2,925	48%	0.94	0.94
	West of Hiawatha Ave	2	2	4500	4500	69,800	5,975	8.6%	2,850	48%	3,125	52%	2	2	4500	4500	65,000	5,600	8.6%	2,675	48%	2,925	52%	0.93	0.94
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	91,800	8,350	9.1%	4,175	50%	4,175	50%	3	3	6600	6600	87,000	7,975	9.2%	4,000	50%	3,975	50%	0.95	0.96
	East of TH 5	2	2	4500	4500	64,000	6,075	9.5%	3,450	57%	2,625	43%	2	2	4500	4500	64,000	6,075	9.5%	3,450	57%	2,625	43%	1.00	1.00
TH 5	I-494 to Post Rd	4	3	8400	6600	89,800	7,350	8.2%	3,600	49%	3,750	51%	4	3	8400	6600	74,700	6,250	8.4%	3,125	50%	3,125	50%	0.83	0.85
	Post Rd to Glumack Dr	3	3	6600	6600	95,100	8,075	8.5%	3,975	49%	4,100	51%	3	3	6600	6600	83,700	7,250	8.7%	3,625	50%	3,625	50%	0.88	0.90
	Glumack Dr to TH 55	3	3	6600	6600	84,800	7,550	8.9%	3,975	53%	3,575	47%	3	3	6600	6600	79,100	7,100	9.0%	3,725	52%	3,375	48%	0.93	0.94
	North of TH 55	2	2	4500	4500	74,300	7,525	10.1%	3,775	50%	3,750	50%	2	2	4500	4500	73,400	7,450	10.1%	3,725	50%	3,725	50%	0.99	0.99

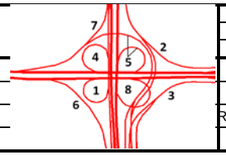
Inter-change	Movement		Existing (2010)											Year 2020 No Action											Difference Factor	
			Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		
			NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)		Loop	Ramp	1500	2000	13,600	1,575	11.6%	425	27%	1,150	73%	Loop	Ramp	1500	2000	18,400	1,925	10.5%	575	30%	1,350	70%	1.35	1.22
	South ↔ East (3,4)		Ramp	Loop	2000	1500	23,800	1,900	8.0%	950	50%	950	50%	Ramp	Loop	2000	1500	23,800	1,925	8.1%	975	51%	950	49%	1.00	1.01
	South ↔ West (5,6)		Ramp/Loop	Ramp	2000	2000	40,800	3,075	7.5%	1,125	37%	1,950	63%	Ramp/Loop	Ramp	2000	2000	40,800	3,075	7.5%	1,125	37%	1,950	63%	1.00	1.00
	North ↔ West (7,8)		Ramp	Loop	2000	1500	11,700	700	6.0%	350	50%	350	50%	Ramp	Loop	2000	1500	11,700	700	6.0%	350	50%	350	50%	1.00	1.00

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Table C-9
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2020 Airlines Relocate Scenario
Airport Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Year 2020 No Action											Year 2020 Airl;ines Relocate											Difference Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	196,100	13,100	6.7%	6,175	47%	6,925	53%	3	3	6600	6600	196,100	13,075	6.7%	6,175	47%	6,900	53%	1.00	1.00
	Penn Ave to I-35W	4	4	8400	8400	200,500	13,425	6.7%	6,525	49%	6,900	51%	4	4	8400	8400	200,500	13,400	6.7%	6,525	49%	6,875	51%	1.00	1.00
	I-35W to Lyndale Ave	4	4	8400	8400	176,000	11,850	6.7%	5,575	47%	6,275	53%	4	4	8400	8400	176,000	11,825	6.7%	5,575	47%	6,250	53%	1.00	1.00
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	173,900	11,575	6.7%	5,500	48%	6,075	52%	4	4	8400	8400	173,900	11,550	6.6%	5,500	48%	6,050	52%	1.00	1.00
	Nicollet Ave to Portland Ave	3	3	6600	6600	172,600	11,600	6.7%	5,550	48%	6,050	52%	3	3	6600	6600	172,600	11,575	6.7%	5,550	48%	6,025	52%	1.00	1.00
	12th Ave to TH 77	4	4	8400	8400	178,500	11,700	6.6%	5,575	48%	6,125	52%	4	4	8400	8400	178,500	11,675	6.5%	5,575	48%	6,100	52%	1.00	1.00
	24th Ave to 34th Ave	5	5	10200	10200	183,800	11,625	6.3%	5,625	48%	6,000	52%	5	5	10200	10200	188,000	11,850	6.3%	5,750	49%	6,100	51%	1.02	1.02
	East of TH 5	3	3	6600	6600	110,000	6,625	6.0%	3,525	53%	3,100	47%	3	3	6600	6600	111,000	6,675	6.0%	3,550	53%	3,125	47%	1.01	1.01
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	105,400	5,925	5.6%	2,475	42%	3,450	58%	3	3	6600	6600	105,400	5,950	5.6%	2,475	42%	3,475	58%	1.00	1.00
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	99,700	5,725	5.7%	2,425	42%	3,300	58%	4	4	8400	8400	99,700	5,750	5.8%	2,425	42%	3,325	58%	1.00	1.00
	I-494 to Diagonal Blvd	2	3	4500	6600	80,900	4,700	5.8%	2,200	47%	2,500	53%	2	3	4500	6600	85,700	4,950	5.8%	2,325	47%	2,625	53%	1.06	1.05
	Diagonal Blvd to 66th St	2	2	4500	4500	81,500	4,775	5.9%	2,200	46%	2,575	54%	2	2	4500	4500	86,300	5,025	5.8%	2,325	46%	2,700	54%	1.06	1.05
	66th St to TH 62	3	2	6600	4500	86,800	5,175	6.0%	2,450	47%	2,725	53%	3	2	6600	4500	91,600	5,425	5.9%	2,575	47%	2,850	53%	1.06	1.05
	North of TH 62	2	2	4500	4500	36,200	2,050	5.7%	1,000	49%	1,050	51%	2	2	4500	4500	36,200	2,050	5.7%	1,000	49%	1,050	51%	1.00	1.00
TH 62*	West of TH 77	2	2	4500	4500	106,600	6,650	6.2%	3,350	50%	3,300	50%	2	2	4500	4500	106,600	6,650	6.2%	3,350	50%	3,300	50%	1.00	1.00
	East of TH 77	2	2	4500	4500	80,400	5,075	6.3%	2,450	48%	2,625	52%	2	2	4500	4500	75,600	4,825	6.4%	2,325	48%	2,500	52%	0.94	0.95
	West of Hiawatha Ave	2	2	4500	4500	69,800	4,475	6.4%	2,150	48%	2,325	52%	2	2	4500	4500	65,000	4,225	6.5%	2,025	48%	2,200	52%	0.93	0.94
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	91,800	5,625	6.1%	2,875	51%	2,750	49%	3	3	6600	6600	87,000	5,375	6.2%	2,750	51%	2,625	49%	0.95	0.96
	East of TH 5	2	2	4500	4500	64,000	3,525	5.5%	1,850	52%	1,675	48%	2	2	4500	4500	64,000	3,525	5.5%	1,850	52%	1,675	48%	1.00	1.00
TH 5	I-494 to Post Rd	4	3	8400	6600	89,800	5,600	6.2%	2,500	45%	3,100	55%	4	3	8400	6600	74,700	4,800	6.4%	2,150	45%	2,650	55%	0.83	0.86
	Post Rd to Glumack Dr	3	3	6600	6600	95,100	6,075	6.4%	2,750	45%	3,325	55%	3	3	6600	6600	83,700	5,450	6.5%	2,475	45%	2,975	55%	0.88	0.90
	Glumack Dr to TH 55	3	3	6600	6600	84,800	5,675	6.7%	2,775	49%	2,900	51%	3	3	6600	6600	79,100	5,375	6.8%	2,625	49%	2,750	51%	0.93	0.95
	North of TH 55	2	2	4500	4500	74,300	4,200	5.7%	2,100	50%	2,100	50%	2	2	4500	4500	73,400	4,150	5.7%	2,075	50%	2,075	50%	0.99	0.99

Inter-change	Movement		Existing (2010)											Year 2020 No Action											Difference Factor	
			Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
			NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)		Loop	Ramp	1500	2000	13,600	925	6.8%	450	49%	475	51%	Loop	Ramp	1500	2000	18,400	1,175	6.4%	575	49%	600	51%	1.35	1.27
	South ↔ East (3,4)		Ramp	Loop	2000	1500	23,800	1,575	6.6%	775	49%	800	51%	Ramp	Loop	2000	1500	23,800	1,575	6.6%	775	49%	800	51%	1.00	1.00
	South ↔ West (5,6)		Ramp/Loop	Ramp	2000	2000	40,800	2,675	6.6%	1,300	49%	1,375	51%	Ramp/Loop	Ramp	2000	2000	40,800	2,675	6.6%	1,300	49%	1,375	51%	1.00	1.00
	North ↔ West (7,8)		Ramp	Loop	2000	1500	11,700	825	7.1%	400	48%	425	52%	Ramp	Loop	2000	1500	11,700	800	6.8%	375	47%	425	53%	1.00	0.97

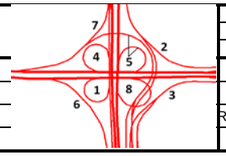
*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Table C-10
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2025 Airlines Remain Scenario
AM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Remain											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	13,582	7.4%	6,526	48%	7,055	52%	3	3	6600	6600	200,300	13,650	6.8%	6,550	48%	7,100	52%	1.09	1.01
	Penn Ave to I-35W	4	4	8400	8400	187,700	13,173	7.0%	6,251	47%	6,922	53%	4	4	8400	8400	205,700	13,250	6.4%	6,225	47%	7,025	53%	1.10	1.01
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	11,105	7.0%	5,708	51%	5,397	49%	4	4	8400	8400	186,000	11,400	6.1%	5,900	52%	5,500	48%	1.17	1.03
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	11,024	7.0%	5,667	51%	5,358	49%	4	4	8400	8400	183,300	11,350	6.2%	5,900	52%	5,450	48%	1.17	1.03
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,891	7.0%	5,760	53%	5,131	47%	3	3	6600	6600	182,200	11,175	6.1%	6,025	54%	5,150	46%	1.17	1.03
	12th Ave to TH 77	4	4	8400	8400	161,700	11,640	7.2%	5,834	50%	5,806	50%	4	4	8400	8400	187,700	12,025	6.4%	6,225	52%	5,800	48%	1.16	1.03
	24th Ave to 34th Ave	5	5	10200	10200	152,400	11,603	7.6%	5,763	50%	5,840	50%	5	5	10200	10200	197,400	12,600	6.4%	6,400	51%	6,200	49%	1.30	1.09
	East of TH 5	3	3	6600	6600	99,600	8,544	8.6%	3,403	40%	5,141	60%	3	3	6600	6600	117,600	9,275	7.9%	3,450	37%	5,825	63%	1.18	1.09
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	8,607	9.1%	6,784	79%	1,823	21%	3	3	6600	6600	111,600	8,975	8.0%	6,825	76%	2,150	24%	1.18	1.04
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	7,613	8.5%	5,694	75%	1,919	25%	4	4	8400	8400	105,100	8,350	7.9%	6,025	72%	2,325	28%	1.18	1.10
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	5,478	7.8%	3,447	63%	2,031	37%	2	3	4500	6600	84,300	6,150	7.3%	3,600	59%	2,550	41%	1.20	1.12
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	5,504	7.8%	3,447	63%	2,057	37%	2	2	4500	4500	85,900	6,175	7.2%	3,600	58%	2,575	42%	1.21	1.12
	66th St to TH 62	3	2	6600	4500	75,200	5,226	6.9%	3,017	58%	2,209	42%	3	2	6600	4500	91,200	6,050	6.6%	3,275	54%	2,775	46%	1.21	1.16
	North of TH 62	2	2	4500	4500	32,400	2,923	9.0%	1,483	51%	1,440	49%	2	2	4500	4500	38,400	3,250	8.5%	1,575	48%	1,675	52%	1.19	1.11
TH 62*	West of TH 77	2	2	4500	4500	95,600	6,681	7.0%	3,345	50%	3,336	50%	2	2	4500	4500	111,600	7,625	6.8%	3,850	50%	3,775	50%	1.17	1.14
	East of TH 77	2	2	4500	4500	72,000	5,482	7.6%	3,127	57%	2,354	43%	2	2	4500	4500	84,000	6,125	7.3%	3,400	56%	2,725	44%	1.17	1.12
	West of Hiawatha Ave	2	2	4500	4500	60,400	4,865	8.1%	2,856	59%	2,009	41%	2	2	4500	4500	75,400	5,650	7.5%	3,325	59%	2,325	41%	1.25	1.16
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	6,421	8.7%	3,005	47%	3,416	53%	3	3	6600	6600	97,900	8,250	8.4%	3,975	48%	4,275	52%	1.32	1.28
	East of TH 5	2	2	4500	4500	57,000	5,780	10.1%	2,272	39%	3,508	61%	2	2	4500	4500	67,000	6,900	10.3%	2,775	40%	4,125	60%	1.18	1.19
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	4,283	6.4%	2,298	54%	1,985	46%	4	3	8400	6600	97,400	5,775	5.9%	3,150	55%	2,625	45%	1.47	1.35
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	4,492	6.0%	2,302	51%	2,190	49%	3	3	6600	6600	103,300	6,150	6.0%	3,275	53%	2,875	47%	1.39	1.37
	Glumack Dr to TH 55	3	3	6600	6600	62,800	4,068	6.5%	1,804	44%	2,263	56%	3	3	6600	6600	91,800	6,050	6.6%	2,700	45%	3,350	55%	1.46	1.49
	North of TH 55	2	2	4500	4500	61,300	4,894	8.0%	2,333	48%	2,560	52%	2	2	4500	4500	77,300	6,350	8.2%	3,050	48%	3,300	52%	1.26	1.30

Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	776	8.6%	421	54%	355	46%	Loop	Ramp	1500	2000	15,400	1,200	7.8%	650	54%	550	46%	1.71	1.55
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,125	6.5%	786	70%	339	30%	Ramp	Loop	2000	1500	27,400	1,650	6.0%	1,150	70%	500	30%	1.59	1.47
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,448	6.7%	1,539	63%	909	37%	Ramp/Loop	Ramp	2000	2000	42,600	2,750	6.5%	1,700	62%	1,050	38%	1.17	1.12
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	502	5.0%	301	60%	201	40%	Ramp	Loop	2000	1500	12,000	550	4.6%	325	59%	225	41%	1.19	1.09



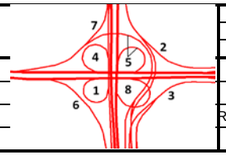
*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-11
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2025 Airlines Remain Scenario
PM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Remain											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	10,685	5.8%	5,304	50%	5,381	50%	3	3	6600	6600	200,300	11,525	5.8%	5,625	49%	5,900	51%	1.09	1.08
	Penn Ave to I-35W	4	4	8400	8400	187,700	11,202	6.0%	6,214	55%	4,987	45%	4	4	8400	8400	205,700	12,175	5.9%	6,650	55%	5,525	45%	1.10	1.09
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	9,678	6.1%	5,375	56%	4,303	44%	4	4	8400	8400	186,000	10,925	5.9%	5,925	54%	5,000	46%	1.17	1.13
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	9,777	6.2%	5,538	57%	4,239	43%	4	4	8400	8400	183,300	11,000	6.0%	6,100	55%	4,900	45%	1.17	1.13
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,112	6.5%	5,817	58%	4,295	42%	3	3	6600	6600	182,200	11,325	6.2%	6,375	56%	4,950	44%	1.17	1.12
	12th Ave to TH 77	4	4	8400	8400	161,700	11,676	7.2%	6,591	56%	5,085	44%	4	4	8400	8400	187,700	13,100	7.0%	7,250	55%	5,850	45%	1.16	1.12
	24th Ave to 34th Ave	5	5	10200	10200	152,400	12,388	8.1%	6,180	50%	6,208	50%	5	5	10200	10200	197,400	15,250	7.7%	7,575	50%	7,675	50%	1.30	1.23
	East of TH 5	3	3	6600	6600	99,600	8,621	8.7%	5,113	59%	3,508	41%	3	3	6600	6600	117,600	9,725	8.3%	5,625	58%	4,100	42%	1.18	1.13
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	8,958	9.5%	2,865	32%	6,093	68%	3	3	6600	6600	111,600	10,100	9.1%	3,275	32%	6,825	68%	1.18	1.13
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	8,245	9.3%	2,724	33%	5,521	67%	4	4	8400	8400	105,100	9,450	9.0%	3,200	34%	6,250	66%	1.18	1.15
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	6,329	9.0%	2,938	46%	3,391	54%	2	3	4500	6600	84,300	7,725	9.2%	3,575	46%	4,150	54%	1.20	1.22
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	6,391	9.0%	2,938	46%	3,453	54%	2	2	4500	4500	85,900	7,800	9.1%	3,575	46%	4,225	54%	1.21	1.22
	66th St to TH 62	3	2	6600	4500	75,200	6,488	8.6%	3,012	46%	3,476	54%	3	2	6600	4500	91,200	7,975	8.7%	3,700	46%	4,275	54%	1.21	1.23
	North of TH 62	2	2	4500	4500	32,400	3,087	9.5%	1,422	46%	1,665	54%	2	2	4500	4500	38,400	3,500	9.1%	1,650	47%	1,850	53%	1.19	1.13
TH 62*	West of TH 77	2	2	4500	4500	95,600	7,276	7.6%	3,857	53%	3,419	47%	2	2	4500	4500	111,600	8,250	7.4%	4,325	52%	3,925	48%	1.17	1.13
	East of TH 77	2	2	4500	4500	72,000	5,992	8.3%	3,104	52%	2,887	48%	2	2	4500	4500	84,000	6,650	7.9%	3,325	50%	3,325	50%	1.17	1.11
	West of Hiawatha Ave	2	2	4500	4500	60,400	5,377	8.9%	2,558	48%	2,819	52%	2	2	4500	4500	75,400	6,250	8.3%	3,000	48%	3,250	52%	1.25	1.16
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	7,159	9.7%	3,638	51%	3,521	49%	3	3	6600	6600	97,900	9,075	9.3%	4,525	50%	4,550	50%	1.32	1.27
	East of TH 5	2	2	4500	4500	57,000	5,765	10.1%	3,317	58%	2,448	42%	2	2	4500	4500	67,000	6,550	9.8%	3,725	57%	2,825	43%	1.18	1.14
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	5,624	8.5%	2,602	46%	3,023	54%	4	3	8400	6600	97,400	7,400	7.6%	3,600	49%	3,800	51%	1.47	1.32
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	6,241	8.4%	2,935	47%	3,306	53%	3	3	6600	6600	103,300	8,525	8.3%	4,175	49%	4,350	51%	1.39	1.37
	Glumack Dr to TH 55	3	3	6600	6600	62,800	5,529	8.8%	2,793	51%	2,735	49%	3	3	6600	6600	91,800	8,700	9.5%	4,600	53%	4,100	47%	1.46	1.57
	North of TH 55	2	2	4500	4500	61,300	6,178	10.1%	2,951	48%	3,227	52%	2	2	4500	4500	77,300	8,250	10.7%	4,175	51%	4,075	49%	1.26	1.34

Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	1,072	11.9%	275	26%	797	74%	Loop	Ramp	1500	2000	15,400	1,825	11.9%	625	34%	1,200	66%	1.71	1.70
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,464	8.5%	737	50%	727	50%	Ramp	Loop	2000	1500	27,400	2,325	8.5%	1,175	51%	1,150	49%	1.59	1.59
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,825	7.8%	1,027	36%	1,798	64%	Ramp/Loop	Ramp	2000	2000	42,600	3,200	7.5%	1,200	38%	2,000	63%	1.17	1.13
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	632	6.3%	316	50%	316	50%	Ramp	Loop	2000	1500	12,000	750	6.3%	375	50%	375	50%	1.19	1.19

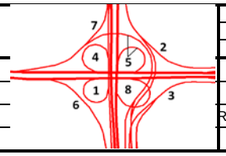


*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-12
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2025 Airlines Remain Scenario
Airport Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Remain											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	11,980	6.5%	5,806	48%	6,175	52%	3	3	6600	6600	200,300	13,625	6.8%	6,575	48%	7,050	52%	1.09	1.14
	Penn Ave to I-35W	4	4	8400	8400	187,700	12,236	6.5%	6,112	50%	6,123	50%	4	4	8400	8400	205,700	14,050	6.8%	7,100	51%	6,950	49%	1.10	1.15
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	10,366	6.5%	5,034	49%	5,332	51%	4	4	8400	8400	186,000	12,525	6.7%	6,100	49%	6,425	51%	1.17	1.21
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	10,123	6.4%	4,971	49%	5,152	51%	4	4	8400	8400	183,300	12,450	6.8%	6,050	49%	6,400	51%	1.17	1.23
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,145	6.5%	5,028	50%	5,118	50%	3	3	6600	6600	182,200	12,450	6.8%	6,225	50%	6,225	50%	1.17	1.23
	12th Ave to TH 77	4	4	8400	8400	161,700	10,244	6.3%	5,060	49%	5,184	51%	4	4	8400	8400	187,700	12,775	6.8%	6,400	50%	6,375	50%	1.16	1.25
	24th Ave to 34th Ave	5	5	10200	10200	152,400	9,586	6.3%	4,641	48%	4,944	52%	5	5	10200	10200	197,400	13,050	6.6%	6,500	50%	6,550	50%	1.30	1.36
	East of TH 5	3	3	6600	6600	99,600	6,113	6.1%	3,310	54%	2,804	46%	3	3	6600	6600	117,600	7,750	6.6%	4,250	55%	3,500	45%	1.18	1.27
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	5,361	5.7%	2,233	42%	3,128	58%	3	3	6600	6600	111,600	7,400	6.6%	2,675	36%	4,725	64%	1.18	1.38
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	5,150	5.8%	2,169	42%	2,981	58%	4	4	8400	8400	105,100	7,200	6.9%	2,700	38%	4,500	63%	1.18	1.40
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	4,089	5.8%	1,897	46%	2,192	54%	2	3	4500	6600	84,300	5,600	6.6%	2,575	46%	3,025	54%	1.20	1.37
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	4,151	5.9%	1,897	46%	2,254	54%	2	2	4500	4500	85,900	5,750	6.7%	2,575	45%	3,175	55%	1.21	1.39
	66th St to TH 62	3	2	6600	4500	75,200	4,489	6.0%	2,107	47%	2,382	53%	3	2	6600	4500	91,200	6,275	6.9%	2,925	47%	3,350	53%	1.21	1.40
	North of TH 62	2	2	4500	4500	32,400	1,830	5.6%	883	48%	947	52%	2	2	4500	4500	38,400	2,425	6.3%	1,125	46%	1,300	54%	1.19	1.33
TH 62*	West of TH 77	2	2	4500	4500	95,600	5,958	6.2%	3,009	51%	2,949	49%	2	2	4500	4500	111,600	7,625	6.8%	3,725	49%	3,900	51%	1.17	1.28
	East of TH 77	2	2	4500	4500	72,000	4,528	6.3%	2,188	48%	2,339	52%	2	2	4500	4500	84,000	5,750	6.8%	2,650	46%	3,100	54%	1.17	1.27
	West of Hiawatha Ave	2	2	4500	4500	60,400	3,788	6.3%	1,853	49%	1,935	51%	2	2	4500	4500	75,400	5,075	6.7%	2,450	48%	2,625	52%	1.25	1.34
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	4,442	6.0%	2,274	51%	2,168	49%	3	3	6600	6600	97,900	6,650	6.8%	3,525	53%	3,125	47%	1.32	1.50
	East of TH 5	2	2	4500	4500	57,000	3,170	5.6%	1,676	53%	1,494	47%	2	2	4500	4500	67,000	4,475	6.7%	2,500	56%	1,975	44%	1.18	1.41
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	4,220	6.4%	1,846	44%	2,374	56%	4	3	8400	6600	97,400	5,775	5.9%	2,525	44%	3,250	56%	1.47	1.37
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	4,746	6.4%	2,117	45%	2,628	55%	3	3	6600	6600	103,300	6,525	6.3%	3,075	47%	3,450	53%	1.39	1.37
	Glumack Dr to TH 55	3	3	6600	6600	62,800	4,155	6.6%	2,011	48%	2,144	52%	3	3	6600	6600	91,800	6,650	7.2%	3,225	48%	3,425	52%	1.46	1.60
	North of TH 55	2	2	4500	4500	61,300	3,435	5.6%	1,687	49%	1,748	51%	2	2	4500	4500	77,300	5,000	6.5%	2,575	52%	2,425	49%	1.26	1.46

Inter-change	Movement		Existing (2010)										Year 2020 No Action										Growth Factor	
			Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)	Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		
			NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)		Loop	Ramp	1500	2000	9,000	600	6.7%	281	47%	319	53%	Loop	Ramp	1500	2000	15,400	1,150	7.5%	550	48%	600	52%	1.71	1.92
	South ↔ East (3,4)		Ramp	Loop	2000	1500	17,200	1,120	6.5%	561	50%	559	50%	Ramp	Loop	2000	1500	27,400	2,075	7.6%	1,000	48%	1,075	52%	1.59	1.85
	South ↔ West (5,6)		Ramp/Loop	Ramp	2000	2000	36,400	2,366	6.5%	1,123	47%	1,243	53%	Ramp/Loop	Ramp	2000	2000	42,600	3,050	7.2%	1,325	43%	1,725	57%	1.17	1.29
	North ↔ West (7,8)		Ramp	Loop	2000	1500	10,100	713	7.1%	351	49%	362	51%	Ramp	Loop	2000	1500	12,000	825	6.9%	375	45%	450	55%	1.19	1.16

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-13
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2025 Airlines Relocate Scenario
AM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Relocate											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	13,582	7.4%	6,526	48%	7,055	52%	3	3	6600	6600	200,300	13,675	6.8%	6,550	48%	7,125	52%	1.09	1.01
	Penn Ave to I-35W	4	4	8400	8400	187,700	13,173	7.0%	6,251	47%	6,922	53%	4	4	8400	8400	205,700	13,300	6.5%	6,225	47%	7,075	53%	1.10	1.01
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	11,105	7.0%	5,708	51%	5,397	49%	4	4	8400	8400	186,000	11,475	6.2%	5,925	52%	5,550	48%	1.17	1.03
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	11,024	7.0%	5,667	51%	5,358	49%	4	4	8400	8400	183,300	11,425	6.2%	5,925	52%	5,500	48%	1.17	1.04
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,891	7.0%	5,760	53%	5,131	47%	3	3	6600	6600	182,200	11,250	6.2%	6,050	54%	5,200	46%	1.17	1.03
	12th Ave to TH 77	4	4	8400	8400	161,700	11,640	7.2%	5,834	50%	5,806	50%	4	4	8400	8400	187,700	12,125	6.5%	6,250	52%	5,875	48%	1.16	1.04
	24th Ave to 34th Ave	5	5	10200	10200	152,400	11,603	7.6%	5,763	50%	5,840	50%	5	5	10200	10200	202,400	12,850	6.3%	6,450	50%	6,400	50%	1.33	1.11
	East of TH 5	3	3	6600	6600	99,600	8,544	8.6%	3,403	40%	5,141	60%	3	3	6600	6600	118,600	9,475	8.0%	3,450	36%	6,025	64%	1.19	1.11
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	8,607	9.1%	6,784	79%	1,823	21%	3	3	6600	6600	111,600	8,925	8.0%	6,775	76%	2,150	24%	1.18	1.04
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	7,613	8.5%	5,694	75%	1,919	25%	4	4	8400	8400	105,100	8,300	7.9%	5,975	72%	2,325	28%	1.18	1.09
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	5,478	7.8%	3,447	63%	2,031	37%	2	3	4500	6600	90,300	6,325	7.0%	3,725	59%	2,600	41%	1.28	1.15
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	5,504	7.8%	3,447	63%	2,057	37%	2	2	4500	4500	90,900	6,375	7.0%	3,725	58%	2,650	42%	1.28	1.16
	66th St to TH 62	3	2	6600	4500	75,200	5,226	6.9%	3,017	58%	2,209	42%	3	2	6600	4500	97,200	6,200	6.4%	3,375	54%	2,825	46%	1.29	1.19
	North of TH 62	2	2	4500	4500	32,400	2,923	9.0%	1,483	51%	1,440	49%	2	2	4500	4500	38,400	3,300	8.6%	1,625	49%	1,675	51%	1.19	1.13
TH 62*	West of TH 77	2	2	4500	4500	95,600	6,681	7.0%	3,345	50%	3,336	50%	2	2	4500	4500	111,600	7,625	6.8%	3,850	50%	3,775	50%	1.17	1.14
	East of TH 77	2	2	4500	4500	72,000	5,482	7.6%	3,127	57%	2,354	43%	2	2	4500	4500	79,000	6,000	7.6%	3,350	56%	2,650	44%	1.10	1.09
	West of Hiawatha Ave	2	2	4500	4500	60,400	4,865	8.1%	2,856	59%	2,009	41%	2	2	4500	4500	69,400	5,475	7.9%	3,225	59%	2,250	41%	1.15	1.13
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	6,421	8.7%	3,005	47%	3,416	53%	3	3	6600	6600	91,900	7,975	8.7%	3,825	48%	4,150	52%	1.24	1.24
	East of TH 5	2	2	4500	4500	57,000	5,780	10.1%	2,272	39%	3,508	61%	2	2	4500	4500	67,000	6,775	10.1%	2,725	40%	4,050	60%	1.18	1.17
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	4,283	6.4%	2,298	54%	1,985	46%	4	3	8400	6600	80,400	5,375	6.7%	2,875	53%	2,500	47%	1.21	1.26
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	4,492	6.0%	2,302	51%	2,190	49%	3	3	6600	6600	90,300	5,725	6.3%	2,875	50%	2,850	50%	1.22	1.27
	Glumack Dr to TH 55	3	3	6600	6600	62,800	4,068	6.5%	1,804	44%	2,263	56%	3	3	6600	6600	84,800	5,525	6.5%	2,475	45%	3,050	55%	1.35	1.36
	North of TH 55	2	2	4500	4500	61,300	4,894	8.0%	2,333	48%	2,560	52%	2	2	4500	4500	76,300	6,225	8.2%	2,975	48%	3,250	52%	1.24	1.27

Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	776	8.6%	421	54%	355	46%	Loop	Ramp	1500	2000	19,400	1,375	7.1%	700	51%	675	49%	2.16	1.77
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,125	6.5%	786	70%	339	30%	Ramp	Loop	2000	1500	26,500	1,575	5.9%	1,075	68%	500	32%	1.54	1.40
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,448	6.7%	1,539	63%	909	37%	Ramp/Loop	Ramp	2000	2000	42,600	2,750	6.5%	1,700	62%	1,050	38%	1.17	1.12
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	502	5.0%	301	60%	201	40%	Ramp	Loop	2000	1500	12,000	550	4.6%	325	59%	225	41%	1.19	1.09

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-14
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2025 Airlines Relocate Scenario
PM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Relocate											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	10,685	5.8%	5,304	50%	5,381	50%	3	3	6600	6600	200,300	11,600	5.8%	5,675	49%	5,925	51%	1.09	1.09
	Penn Ave to I-35W	4	4	8400	8400	187,700	11,202	6.0%	6,214	55%	4,987	45%	4	4	8400	8400	205,700	12,275	6.0%	6,725	55%	5,550	45%	1.10	1.10
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	9,678	6.1%	5,375	56%	4,303	44%	4	4	8400	8400	186,000	11,075	6.0%	6,025	54%	5,050	46%	1.17	1.14
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	9,777	6.2%	5,538	57%	4,239	43%	4	4	8400	8400	183,300	11,150	6.1%	6,200	56%	4,950	44%	1.17	1.14
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,112	6.5%	5,817	58%	4,295	42%	3	3	6600	6600	182,200	11,500	6.3%	6,475	56%	5,025	44%	1.17	1.14
	12th Ave to TH 77	4	4	8400	8400	161,700	11,676	7.2%	6,591	56%	5,085	44%	4	4	8400	8400	187,700	13,325	7.1%	7,375	55%	5,950	45%	1.16	1.14
	24th Ave to 34th Ave	5	5	10200	10200	152,400	12,388	8.1%	6,180	50%	6,208	50%	5	5	10200	10200	202,400	15,900	7.9%	7,800	49%	8,100	51%	1.33	1.28
	East of TH 5	3	3	6600	6600	99,600	8,621	8.7%	5,113	59%	3,508	41%	3	3	6600	6600	118,600	10,025	8.5%	5,850	58%	4,175	42%	1.19	1.16
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	8,958	9.5%	2,865	32%	6,093	68%	3	3	6600	6600	111,600	10,025	9.0%	3,250	32%	6,775	68%	1.18	1.12
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	8,245	9.3%	2,724	33%	5,521	67%	4	4	8400	8400	105,100	9,400	8.9%	3,175	34%	6,225	66%	1.18	1.14
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	6,329	9.0%	2,938	46%	3,391	54%	2	3	4500	6600	90,300	8,200	9.1%	3,950	48%	4,250	52%	1.28	1.30
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	6,391	9.0%	2,938	46%	3,453	54%	2	2	4500	4500	90,900	8,275	9.1%	3,950	48%	4,325	52%	1.28	1.29
	66th St to TH 62	3	2	6600	4500	75,200	6,488	8.6%	3,012	46%	3,476	54%	3	2	6600	4500	97,200	8,425	8.7%	4,050	48%	4,375	52%	1.29	1.30
	North of TH 62	2	2	4500	4500	32,400	3,087	9.5%	1,422	46%	1,665	54%	2	2	4500	4500	38,400	3,625	9.4%	1,775	49%	1,850	51%	1.19	1.17
TH 62*	West of TH 77	2	2	4500	4500	95,600	7,276	7.6%	3,857	53%	3,419	47%	2	2	4500	4500	111,600	8,250	7.4%	4,325	52%	3,925	48%	1.17	1.13
	East of TH 77	2	2	4500	4500	72,000	5,992	8.3%	3,104	52%	2,887	48%	2	2	4500	4500	79,000	6,350	8.0%	3,250	51%	3,100	49%	1.10	1.06
	West of Hiawatha Ave	2	2	4500	4500	60,400	5,377	8.9%	2,558	48%	2,819	52%	2	2	4500	4500	69,400	6,050	8.7%	2,900	48%	3,150	52%	1.15	1.13
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	7,159	9.7%	3,638	51%	3,521	49%	3	3	6600	6600	91,900	8,725	9.5%	4,400	50%	4,325	50%	1.24	1.22
	East of TH 5	2	2	4500	4500	57,000	5,765	10.1%	3,317	58%	2,448	42%	2	2	4500	4500	67,000	6,450	9.6%	3,650	57%	2,800	43%	1.18	1.12
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	5,624	8.5%	2,602	46%	3,023	54%	4	3	8400	6600	80,400	7,050	8.8%	3,575	51%	3,475	49%	1.21	1.25
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	6,241	8.4%	2,935	47%	3,306	53%	3	3	6600	6600	90,300	8,175	9.1%	4,075	50%	4,100	50%	1.22	1.31
	Glumack Dr to TH 55	3	3	6600	6600	62,800	5,529	8.8%	2,793	51%	2,735	49%	3	3	6600	6600	84,800	8,025	9.5%	4,200	52%	3,825	48%	1.35	1.45
	North of TH 55	2	2	4500	4500	61,300	6,178	10.1%	2,951	48%	3,227	52%	2	2	4500	4500	76,300	8,025	10.5%	4,050	50%	3,975	50%	1.24	1.30

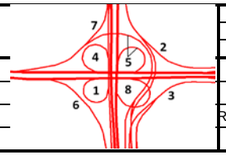
Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	9,000	1,072	11.9%	275	26%	797	74%	Loop	Ramp	1500	2000	19,400	2,300	11.9%	725	32%	1,575	68%	2.16	2.15
	South ↔ East (3,4)	Ramp	Loop	2000	1500	17,200	1,464	8.5%	737	50%	727	50%	Ramp	Loop	2000	1500	26,500	2,250	8.5%	1,150	51%	1,100	49%	1.54	1.54
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	36,400	2,825	7.8%	1,027	36%	1,798	64%	Ramp/Loop	Ramp	2000	2000	42,600	3,200	7.5%	1,200	38%	2,000	63%	1.17	1.13
	North ↔ West (7,8)	Ramp	Loop	2000	1500	10,100	632	6.3%	316	50%	316	50%	Ramp	Loop	2000	1500	12,000	750	6.3%	375	50%	375	50%	1.19	1.19

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-15
MSP Area Roadway Improvements Study
Traffic Forecast Reasonableness Check
Year 2025 Airlines Relocate Scenario
Airport Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Existing (2010)											Year 2025 Airlines Relocate											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	184,300	11,980	6.5%	5,806	48%	6,175	52%	3	3	6600	6600	200,300	13,675	6.8%	6,625	48%	7,050	52%	1.09	1.14
	Penn Ave to I-35W	4	4	8400	8400	187,700	12,236	6.5%	6,112	50%	6,123	50%	4	4	8400	8400	205,700	14,075	6.8%	7,150	51%	6,925	49%	1.10	1.15
	I-35W to Lyndale Ave	4	4	8400	8400	159,000	10,366	6.5%	5,034	49%	5,332	51%	4	4	8400	8400	186,000	12,600	6.8%	6,175	49%	6,425	51%	1.17	1.22
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	157,300	10,123	6.4%	4,971	49%	5,152	51%	4	4	8400	8400	183,300	12,550	6.8%	6,125	49%	6,425	51%	1.17	1.24
	Nicollet Ave to Portland Ave	3	3	6600	6600	156,200	10,145	6.5%	5,028	50%	5,118	50%	3	3	6600	6600	182,200	12,575	6.9%	6,325	50%	6,250	50%	1.17	1.24
	12th Ave to TH 77	4	4	8400	8400	161,700	10,244	6.3%	5,060	49%	5,184	51%	4	4	8400	8400	187,700	12,950	6.9%	6,525	50%	6,425	50%	1.16	1.26
	24th Ave to 34th Ave	5	5	10200	10200	152,400	9,586	6.3%	4,641	48%	4,944	52%	5	5	10200	10200	202,400	13,425	6.6%	6,725	50%	6,700	50%	1.33	1.40
	East of TH 5	3	3	6600	6600	99,600	6,113	6.1%	3,310	54%	2,804	46%	3	3	6600	6600	118,600	8,175	6.9%	4,475	55%	3,700	45%	1.19	1.34
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	94,600	5,361	5.7%	2,233	42%	3,128	58%	3	3	6600	6600	111,600	7,275	6.5%	2,625	36%	4,650	64%	1.18	1.36
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	89,100	5,150	5.8%	2,169	42%	2,981	58%	4	4	8400	8400	105,100	7,100	6.8%	2,675	38%	4,425	62%	1.18	1.38
	I-494 to Diagonal Blvd	2	3	4500	6600	70,300	4,089	5.8%	1,897	46%	2,192	54%	2	3	4500	6600	90,300	5,925	6.6%	2,775	47%	3,150	53%	1.28	1.45
	Diagonal Blvd to 66th St	2	2	4500	4500	70,900	4,151	5.9%	1,897	46%	2,254	54%	2	2	4500	4500	90,900	6,050	6.7%	2,775	46%	3,275	54%	1.28	1.46
	66th St to TH 62	3	2	6600	4500	75,200	4,489	6.0%	2,107	47%	2,382	53%	3	2	6600	4500	97,200	6,575	6.8%	3,100	47%	3,475	53%	1.29	1.46
	North of TH 62	2	2	4500	4500	32,400	1,830	5.6%	883	48%	947	52%	2	2	4500	4500	38,400	2,450	6.4%	1,150	47%	1,300	53%	1.19	1.34
TH 62*	West of TH 77	2	2	4500	4500	95,600	5,958	6.2%	3,009	51%	2,949	49%	2	2	4500	4500	111,600	7,625	6.8%	3,725	49%	3,900	51%	1.17	1.28
	East of TH 77	2	2	4500	4500	72,000	4,528	6.3%	2,188	48%	2,339	52%	2	2	4500	4500	79,000	5,500	7.0%	2,550	46%	2,950	54%	1.10	1.21
	West of Hiawatha Ave	2	2	4500	4500	60,400	3,788	6.3%	1,853	49%	1,935	51%	2	2	4500	4500	69,400	4,825	7.0%	2,325	48%	2,500	52%	1.15	1.27
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	73,900	4,442	6.0%	2,274	51%	2,168	49%	3	3	6600	6600	91,900	6,325	6.9%	3,400	54%	2,925	46%	1.24	1.42
	East of TH 5	2	2	4500	4500	57,000	3,170	5.6%	1,676	53%	1,494	47%	2	2	4500	4500	67,000	4,325	6.5%	2,425	56%	1,900	44%	1.18	1.36
TH 5	I-494 to Post Rd	4	3	8400	6600	66,400	4,220	6.4%	1,846	44%	2,374	56%	4	3	8400	6600	80,400	5,525	6.9%	2,475	45%	3,050	55%	1.21	1.31
	Post Rd to Glumack Dr	3	3	6600	6600	74,300	4,746	6.4%	2,117	45%	2,628	55%	3	3	6600	6600	90,300	6,250	6.9%	2,875	46%	3,375	54%	1.22	1.32
	Glumack Dr to TH 55	3	3	6600	6600	62,800	4,155	6.6%	2,011	48%	2,144	52%	3	3	6600	6600	84,800	6,050	7.1%	2,875	48%	3,175	52%	1.35	1.46
	North of TH 55	2	2	4500	4500	61,300	3,435	5.6%	1,687	49%	1,748	51%	2	2	4500	4500	76,300	4,850	6.4%	2,475	51%	2,375	49%	1.24	1.41

Inter-change	Movement		Existing (2010)										Year 2020 No Action										Growth Factor	
			Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)	Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		
			NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)		Loop	Ramp	1500	2000	9,000	600	6.7%	281	47%	319	53%	Loop	Ramp	1500	2000	19,400	1,475	7.6%	675	46%	800	54%	2.16	2.46
	South ↔ East (3,4)		Ramp	Loop	2000	1500	17,200	1,120	6.5%	561	50%	559	50%	Ramp	Loop	2000	1500	26,500	2,000	7.5%	1,000	50%	1,000	50%	1.54	1.79
	South ↔ West (5,6)		Ramp/Loop	Ramp	2000	2000	36,400	2,366	6.5%	1,123	47%	1,243	53%	Ramp/Loop	Ramp	2000	2000	42,600	3,050	7.2%	1,325	43%	1,725	57%	1.17	1.29
	North ↔ West (7,8)		Ramp	Loop	2000	1500	10,100	713	7.1%	351	49%	362	51%	Ramp	Loop	2000	1500	12,000	825	6.9%	375	45%	450	55%	1.19	1.16

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume or peaking)
XXXXX Volume lower than comparison base

Table C-16
MAC Study
Traffic Forecast Reasonableness Check
Year 2030 Airlines Relocate Scenario
AM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Year 2020 Airlines Relocate											Year 2030 Airlines Relocate											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	196,100	13,650	7.0%	6,575	48%	7,075	52%	3	3	6600	6600	207,300	13,725	6.6%	6,625	48%	7,100	52%	1.06	1.01
	Penn Ave to I-35W	4	4	8400	8400	200,500	13,275	6.6%	6,275	47%	7,000	53%	4	4	8400	8400	212,900	13,325	6.3%	6,275	47%	7,050	53%	1.06	1.00
	I-35W to Lyndale Ave	4	4	8400	8400	176,000	11,350	6.4%	5,875	52%	5,475	48%	4	4	8400	8400	194,200	11,650	6.0%	6,100	52%	5,550	48%	1.10	1.03
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	173,900	11,300	6.5%	5,875	52%	5,425	48%	4	4	8400	8400	190,700	11,550	6.1%	6,075	53%	5,475	47%	1.10	1.02
	Nicollet Ave to Portland Ave	3	3	6600	6600	172,600	11,175	6.5%	6,025	54%	5,150	46%	3	3	6600	6600	189,200	11,400	6.0%	6,225	55%	5,175	45%	1.10	1.02
	12th Ave to TH 77	4	4	8400	8400	178,500	12,000	6.7%	6,200	52%	5,800	48%	4	4	8400	8400	195,700	12,300	6.3%	6,425	52%	5,875	48%	1.10	1.03
	24th Ave to 34th Ave	5	5	10200	10200	188,000	12,700	6.8%	6,375	50%	6,325	50%	5	5	10200	10200	214,000	13,275	6.2%	6,725	51%	6,550	49%	1.14	1.05
	East of TH 5	3	3	6600	6600	111,000	9,200	8.3%	3,525	38%	5,675	62%	3	3	6600	6600	123,800	9,925	8.0%	3,600	36%	6,325	64%	1.12	1.08
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	105,400	8,875	8.4%	6,800	77%	2,075	23%	3	3	6600	6600	117,800	9,100	7.7%	6,825	75%	2,275	25%	1.12	1.03
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	99,700	8,150	8.2%	5,925	73%	2,225	27%	4	4	8400	8400	111,700	8,550	7.7%	6,075	71%	2,475	29%	1.12	1.05
	I-494 to Diagonal Blvd	2	3	4500	6600	85,700	6,150	7.2%	3,700	60%	2,450	40%	2	3	4500	6600	97,900	6,625	6.8%	3,825	58%	2,800	42%	1.14	1.08
	Diagonal Blvd to 66th St	2	2	4500	4500	86,300	6,175	7.2%	3,700	60%	2,475	40%	2	2	4500	4500	98,500	6,650	6.8%	3,825	58%	2,825	42%	1.14	1.08
	66th St to TH 62	3	2	6600	4500	91,600	6,000	6.6%	3,350	56%	2,650	44%	3	2	6600	4500	104,400	6,500	6.2%	3,475	53%	3,025	47%	1.14	1.08
	North of TH 62	2	2	4500	4500	36,200	3,175	8.8%	1,575	50%	1,600	50%	2	2	4500	4500	40,400	3,450	8.5%	1,675	49%	1,775	51%	1.12	1.09
TH 62*	West of TH 77	2	2	4500	4500	106,600	7,300	6.8%	3,650	50%	3,650	50%	2	2	4500	4500	118,600	7,975	6.7%	4,050	51%	3,925	49%	1.11	1.09
	East of TH 77	2	2	4500	4500	75,600	5,725	7.6%	3,225	56%	2,500	44%	2	2	4500	4500	84,200	6,275	7.5%	3,475	55%	2,800	45%	1.11	1.10
	West of Hiawatha Ave	2	2	4500	4500	65,000	5,200	8.0%	3,025	58%	2,175	42%	2	2	4500	4500	74,200	5,850	7.9%	3,450	59%	2,400	41%	1.14	1.13
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	87,000	7,525	8.6%	3,575	48%	3,950	52%	3	3	6600	6600	101,000	8,650	8.6%	4,150	48%	4,500	52%	1.16	1.15
	East of TH 5	2	2	4500	4500	64,000	6,450	10.1%	2,600	40%	3,850	60%	2	2	4500	4500	71,200	7,175	10.1%	2,900	40%	4,275	60%	1.11	1.11
TH 5	I-494 to Post Rd	4	3	8400	6600	74,700	5,100	6.8%	2,675	52%	2,425	48%	4	3	8400	6600	87,900	6,100	6.9%	3,225	53%	2,875	47%	1.18	1.20
	Post Rd to Glumack Dr	3	3	6600	6600	83,700	5,500	6.6%	2,700	49%	2,800	51%	3	3	6600	6600	97,300	6,525	6.7%	3,225	49%	3,300	51%	1.16	1.19
	Glumack Dr to TH 55	3	3	6600	6600	79,100	5,275	6.7%	2,425	46%	2,850	54%	3	3	6600	6600	93,300	6,325	6.8%	2,900	46%	3,425	54%	1.18	1.20
	North of TH 55	2	2	4500	4500	73,400	5,875	8.0%	2,850	49%	3,025	51%	2	2	4500	4500	83,200	6,800	8.2%	3,275	48%	3,525	52%	1.13	1.16

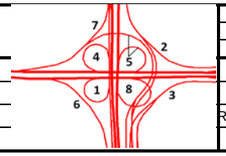
Inter-change	Movement	Existing (2010)											Year 2020 No Action											Growth Factor	
		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
		NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)	Loop	Ramp	1500	2000	18,400	1,275	6.9%	650	51%	625	49%	Loop	Ramp	1500	2000	23,800	1,600	6.7%	800	50%	800	50%	1.29	1.25
	South ↔ East (3,4)	Ramp	Loop	2000	1500	23,800	1,525	6.4%	1,050	69%	475	31%	Ramp	Loop	2000	1500	30,600	1,750	5.7%	1,175	67%	575	33%	1.29	1.15
	South ↔ West (5,6)	Ramp/Loop	Ramp	2000	2000	40,800	2,650	6.5%	1,650	62%	1,000	38%	Ramp/Loop	Ramp	2000	2000	45,200	2,850	6.3%	1,750	61%	1,100	39%	1.11	1.08
	North ↔ West (7,8)	Ramp	Loop	2000	1500	11,700	525	4.5%	300	57%	225	43%	Ramp	Loop	2000	1500	13,300	575	4.3%	325	57%	250	43%	1.14	1.10

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Table C-17
MAC Study
Traffic Forecast Reasonableness Check
Year 2030 Airlines Relocate Scenario
PM Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Year 2020 Airlines Relocate											Year 2030 Airlines Relocate											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	196,100	11,200	5.7%	5,450	49%	5,750	51%	3	3	6600	6600	207,300	11,675	5.6%	5,650	48%	6,025	52%	1.06	1.04
	Penn Ave to I-35W	4	4	8400	8400	200,500	11,800	5.9%	6,425	54%	5,375	46%	4	4	8400	8400	212,900	12,400	5.8%	6,750	54%	5,650	46%	1.06	1.05
	I-35W to Lyndale Ave	4	4	8400	8400	176,000	10,450	5.9%	5,650	54%	4,800	46%	4	4	8400	8400	194,200	11,250	5.8%	6,050	54%	5,200	46%	1.10	1.08
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	173,900	10,550	6.1%	5,825	55%	4,725	45%	4	4	8400	8400	190,700	11,300	5.9%	6,225	55%	5,075	45%	1.10	1.07
	Nicollet Ave to Portland Ave	3	3	6600	6600	172,600	10,900	6.3%	6,100	56%	4,800	44%	3	3	6600	6600	189,200	11,650	6.2%	6,500	56%	5,150	44%	1.10	1.07
	12th Ave to TH 77	4	4	8400	8400	178,500	12,600	7.1%	6,925	55%	5,675	45%	4	4	8400	8400	195,700	13,500	6.9%	7,400	55%	6,100	45%	1.10	1.07
	24th Ave to 34th Ave	5	5	10200	10200	188,000	14,550	7.7%	7,100	49%	7,450	51%	5	5	10200	10200	214,000	16,125	7.5%	7,750	48%	8,375	52%	1.14	1.11
	East of TH 5	3	3	6600	6600	111,000	9,250	8.3%	5,400	58%	3,850	42%	3	3	6600	6600	123,800	10,400	8.4%	6,100	59%	4,300	41%	1.12	1.12
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	105,400	9,475	9.0%	3,025	32%	6,450	68%	3	3	6600	6600	117,800	10,425	8.8%	3,375	32%	7,050	68%	1.12	1.10
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	99,700	8,850	8.9%	2,925	33%	5,925	67%	4	4	8400	8400	111,700	9,750	8.7%	3,300	34%	6,450	66%	1.12	1.10
	I-494 to Diagonal Blvd	2	3	4500	6600	85,700	7,575	8.8%	3,625	48%	3,950	52%	2	3	4500	6600	97,900	8,525	8.7%	4,125	48%	4,400	52%	1.14	1.13
	Diagonal Blvd to 66th St	2	2	4500	4500	86,300	7,650	8.9%	3,625	47%	4,025	53%	2	2	4500	4500	98,500	8,600	8.7%	4,125	48%	4,475	52%	1.14	1.12
	66th St to TH 62	3	2	6600	4500	91,600	7,800	8.5%	3,725	48%	4,075	52%	3	2	6600	4500	104,400	8,775	8.4%	4,250	48%	4,525	52%	1.14	1.13
	North of TH 62	2	2	4500	4500	36,200	3,425	9.5%	1,650	48%	1,775	52%	2	2	4500	4500	40,400	3,775	9.3%	1,850	49%	1,925	51%	1.12	1.10
TH 62*	West of TH 77	2	2	4500	4500	106,600	7,775	7.3%	4,100	53%	3,675	47%	2	2	4500	4500	118,600	8,500	7.2%	4,400	52%	4,100	48%	1.11	1.09
	East of TH 77	2	2	4500	4500	75,600	6,050	8.0%	3,125	52%	2,925	48%	2	2	4500	4500	84,200	6,650	7.9%	3,375	51%	3,275	49%	1.11	1.10
	West of Hiawatha Ave	2	2	4500	4500	65,000	5,600	8.6%	2,675	48%	2,925	52%	2	2	4500	4500	74,200	6,375	8.6%	3,050	48%	3,325	52%	1.14	1.14
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	87,000	7,975	9.2%	4,000	50%	3,975	50%	3	3	6600	6600	101,000	9,200	9.1%	4,600	50%	4,600	50%	1.16	1.15
	East of TH 5	2	2	4500	4500	64,000	6,075	9.5%	3,450	57%	2,625	43%	2	2	4500	4500	71,200	6,725	9.4%	3,800	57%	2,925	43%	1.11	1.11
TH 5	I-494 to Post Rd	4	3	8400	6600	74,700	6,250	8.4%	3,125	50%	3,125	50%	4	3	8400	6600	87,900	7,250	8.2%	3,650	50%	3,600	50%	1.18	1.16
	Post Rd to Glumack Dr	3	3	6600	6600	83,700	7,250	8.7%	3,625	50%	3,625	50%	3	3	6600	6600	97,300	8,325	8.6%	4,200	50%	4,125	50%	1.16	1.15
	Glumack Dr to TH 55	3	3	6600	6600	79,100	7,100	9.0%	3,725	52%	3,375	48%	3	3	6600	6600	93,300	8,275	8.9%	4,400	53%	3,875	47%	1.18	1.17
	North of TH 55	2	2	4500	4500	73,400	7,450	10.1%	3,725	50%	3,725	50%	2	2	4500	4500	83,200	8,350	10.0%	4,250	51%	4,100	49%	1.13	1.12

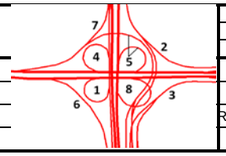
Inter-change	Movement		Existing (2010)											Year 2020 No Action											Growth Factor	
			Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
			NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)		Loop	Ramp	1500	2000	18,400	1,925	10.5%	575	30%	1,350	70%	Loop	Ramp	1500	2000	23,800	2,350	9.9%	725	31%	1,625	69%	1.29	1.22
	South ↔ East (3,4)		Ramp	Loop	2000	1500	23,800	1,925	8.1%	975	51%	950	49%	Ramp	Loop	2000	1500	30,600	2,400	7.8%	1,200	50%	1,200	50%	1.29	1.25
	South ↔ West (5,6)		Ramp/Loop	Ramp	2000	2000	40,800	3,075	7.5%	1,125	37%	1,950	63%	Ramp/Loop	Ramp	2000	2000	45,200	3,300	7.3%	1,250	38%	2,050	62%	1.11	1.07
	North ↔ West (7,8)		Ramp	Loop	2000	1500	11,700	700	6.0%	350	50%	350	50%	Ramp	Loop	2000	1500	13,300	750	5.6%	375	50%	375	50%	1.14	1.07

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Table C-18
MAC Study
Traffic Forecast Reasonableness Check
Year 2030 Airlines Relocate Scenario
Airport Peak Hour Percentage and Directional Distribution Comparison

Facility	Segment	Year 2020 Airlines Relocate											Year 2030 Airlines Relocate											Growth Factor	
		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB		Number of Lanes		Capacity		Two Way			NB/EB		SB/WB			
		NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/EB	SB/WB	NB/EB	SB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494*	West of Penn Ave	3	3	6600	6600	196,100	13,075	6.7%	6,175	47%	6,900	53%	3	3	6600	6600	207,300	13,675	6.6%	6,525	48%	7,150	52%	1.06	1.05
	Penn Ave to I-35W	4	4	8400	8400	200,500	13,400	6.7%	6,525	49%	6,875	51%	4	4	8400	8400	212,900	14,100	6.6%	6,925	49%	7,175	51%	1.06	1.05
	I-35W to Lyndale Ave	4	4	8400	8400	176,000	11,825	6.7%	5,575	47%	6,250	53%	4	4	8400	8400	194,200	12,950	6.7%	6,175	48%	6,775	52%	1.10	1.10
	Lyndale Ave to Nicollet Ave	4	4	8400	8400	173,900	11,550	6.6%	5,500	48%	6,050	52%	4	4	8400	8400	190,700	12,550	6.6%	6,050	48%	6,500	52%	1.10	1.09
	Nicollet Ave to Portland Ave	3	3	6600	6600	172,600	11,575	6.7%	5,550	48%	6,025	52%	3	3	6600	6600	189,200	12,550	6.6%	6,100	49%	6,450	51%	1.10	1.08
	12th Ave to TH 77	4	4	8400	8400	178,500	11,675	6.5%	5,575	48%	6,100	52%	4	4	8400	8400	195,700	12,700	6.5%	6,150	48%	6,550	52%	1.10	1.09
	24th Ave to 34th Ave	5	5	10200	10200	188,000	11,850	6.3%	5,750	49%	6,100	51%	5	5	10200	10200	214,000	13,325	6.2%	6,525	49%	6,800	51%	1.14	1.12
	East of TH 5	3	3	6600	6600	111,000	6,675	6.0%	3,550	53%	3,125	47%	3	3	6600	6600	123,800	7,500	6.1%	3,975	53%	3,525	47%	1.12	1.12
TH 77*	South of Old Shakopee Rd	3	3	6600	6600	105,400	5,950	5.6%	2,475	42%	3,475	58%	3	3	6600	6600	117,800	6,700	5.7%	2,750	41%	3,950	59%	1.12	1.13
	Old Shakopee Rd to MOA CD Road	4	4	8400	8400	99,700	5,750	5.8%	2,425	42%	3,325	58%	4	4	8400	8400	111,700	6,475	5.8%	2,700	42%	3,775	58%	1.12	1.13
	I-494 to Diagonal Blvd	2	3	4500	6600	85,700	4,950	5.8%	2,325	47%	2,625	53%	2	3	4500	6600	97,900	5,700	5.8%	2,675	47%	3,025	53%	1.14	1.15
	Diagonal Blvd to 66th St	2	2	4500	4500	86,300	5,025	5.8%	2,325	46%	2,700	54%	2	2	4500	4500	98,500	5,775	5.9%	2,675	46%	3,100	54%	1.14	1.15
	66th St to TH 62	3	2	6600	4500	91,600	5,425	5.9%	2,575	47%	2,850	53%	3	2	6600	4500	104,400	6,250	6.0%	2,975	48%	3,275	52%	1.14	1.15
	North of TH 62	2	2	4500	4500	36,200	2,050	5.7%	1,000	49%	1,050	51%	2	2	4500	4500	40,400	2,350	5.8%	1,175	50%	1,175	50%	1.12	1.15
TH 62*	West of TH 77	2	2	4500	4500	106,600	6,650	6.2%	3,350	50%	3,300	50%	2	2	4500	4500	118,600	7,375	6.2%	3,725	51%	3,650	49%	1.11	1.11
	East of TH 77	2	2	4500	4500	75,600	4,825	6.4%	2,325	48%	2,500	52%	2	2	4500	4500	84,200	5,375	6.4%	2,575	48%	2,800	52%	1.11	1.11
	West of Hiawatha Ave	2	2	4500	4500	65,000	4,225	6.5%	2,025	48%	2,200	52%	2	2	4500	4500	74,200	4,800	6.5%	2,300	48%	2,500	52%	1.14	1.14
	Hiawatha Ave to Bloomington Rd	3	3	6600	6600	87,000	5,375	6.2%	2,750	51%	2,625	49%	3	3	6600	6600	101,000	6,225	6.2%	3,200	51%	3,025	49%	1.16	1.16
	East of TH 5	2	2	4500	4500	64,000	3,525	5.5%	1,850	52%	1,675	48%	2	2	4500	4500	71,200	3,900	5.5%	2,050	53%	1,850	47%	1.11	1.11
TH 5	I-494 to Post Rd	4	3	8400	6600	74,700	4,800	6.4%	2,150	45%	2,650	55%	4	3	8400	6600	87,900	5,775	6.6%	2,625	45%	3,150	55%	1.18	1.20
	Post Rd to Glumack Dr	3	3	6600	6600	83,700	5,450	6.5%	2,475	45%	2,975	55%	3	3	6600	6600	97,300	6,450	6.6%	2,975	46%	3,475	54%	1.16	1.18
	Glumack Dr to TH 55	3	3	6600	6600	79,100	5,375	6.8%	2,625	49%	2,750	51%	3	3	6600	6600	93,300	6,500	7.0%	3,225	50%	3,275	50%	1.18	1.21
	North of TH 55	2	2	4500	4500	73,400	4,150	5.7%	2,075	50%	2,075	50%	2	2	4500	4500	83,200	4,825	5.8%	2,475	51%	2,350	49%	1.13	1.16

Inter-change	Movement		Existing (2010)											Year 2020 No Action											Growth Factor	
			Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)		Exit Type		Capacity		Two Way			NB/SB Exit (Odd)		EB/WB Exit (Even)			
			NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	NB/SB	EB/WB	NB/SB	EB/WB	Daily	Peak	% of Daily	Peak Hour	Dir %	Peak Hour	Dir %	Daily	Peak
I-494 - TH 77	North ↔ East (1,2)		Loop	Ramp	1500	2000	18,400	1,175	6.4%	575	49%	600	51%	Loop	Ramp	1500	2000	23,800	1,525	6.4%	750	49%	775	51%	1.29	1.30
	South ↔ East (3,4)		Ramp	Loop	2000	1500	23,800	1,575	6.6%	775	49%	800	51%	Ramp	Loop	2000	1500	30,600	2,050	6.7%	1,000	49%	1,050	51%	1.29	1.30
	South ↔ West (5,6)		Ramp/Loop	Ramp	2000	2000	40,800	2,675	6.6%	1,300	49%	1,375	51%	Ramp/Loop	Ramp	2000	2000	45,200	2,975	6.6%	1,450	49%	1,525	51%	1.11	1.11
	North ↔ West (7,8)		Ramp	Loop	2000	1500	11,700	800	6.8%	375	47%	425	53%	Ramp	Loop	2000	1500	13,300	900	6.8%	425	47%	475	53%	1.14	1.13

*Freeway segments with complex CD roadways or bridge braid ramps are not reported in reasonableness check tables. These segments include: I-494 between TH 77 and 24th Ave, I-494 between 34th Ave and TH 5, TH 77 between the MOA CD Road and I-494, and TH 62 between TH 5 and Bloomington Rd.

XXXXX Nearing counter-intuitive result (volume or peaking)
XXXXX Potential counter-intuitive result (volume of peaking)
XXXXX Volume lower than comparison base

Attachment 5:

Freeway Operations Analysis Memorandum

SRF No. 0117343

MEMORANDUM

TO: Brandon Bourdon, P.E.
Kimley-Horn & Associates, Inc.

FROM: Leif Garnass, P.E. (MN, MO), PTOE

DATE: June 5, 2012

SUBJECT: FREEWAY OPERATIONS ANALYSIS SUMMARY
2020 MSP IMPROVEMENTS ENVIRONMENTAL ASSESSMENT (EA)

INTRODUCTION

This memorandum summarizes the freeway operations analysis completed for the MSP Area Roadway Improvements Project and 2020 MSP Improvements Environmental Assessment (EA). The location and magnitude of activity at the Minneapolis-St. Paul (MSP) International Airport is a primary focus of this project. The purpose of the freeway operations portion of the study is to evaluate the impacts to the freeway system in the study area as a result of three airport development scenarios:

1. **No Action:** airline tenants remain at their current terminals, with only expansion of airport facilities that have received prior environmental approval or are categorically excluded from environmental review.
2. **Airlines Remain:** airline tenants remain at their current terminals, and terminals and landside facilities would be expanded as required.
3. **Airlines Relocate:** SkyTeam airlines (Delta Airlines and alliance partners) remain at Terminal 1 and all other carriers are relocated to Terminal 2, and terminals and landside facilities would be expanded as required.

TRAVEL DEMAND FORECASTS

The data collection, evaluation of existing conditions, and calibration and validation process used to prepare travel demand modeling forecasts for the aforementioned scenarios are detailed in the *Minneapolis-St. Paul International Airport Area Roadway Improvements (including Thunderbird Road Access) Study Travel Demand Forecasts* technical memorandum (SRF Consulting Group, Inc., August 25, 2011).

The 2025 Airlines Relocate traffic volumes account for the increase in vehicular traffic anticipated in 2025. Only airside and terminal area improvements constructed under the 2020 Airlines Relocate scenario are assumed.

The 2025 Airlines Remain traffic volumes account for the increase in vehicular traffic anticipated in 2025. Only airside and terminal area improvements constructed under the 2020 Airlines Remain scenario are assumed.

The 2030 Build traffic volumes account for the anticipated increase in vehicular traffic anticipated in 2030 based upon the updated forecast activity documented in this Environmental Assessment.

This analysis includes the standard a.m. peak and p.m. peak hours, plus a systematically occurring mid-afternoon peak resulting from airport shift changes. The Twin Cities Regional Travel Demand Model was used to develop origin destination pairs for the analysis.

MODELING LIMITS

The freeway operations modeling limits include:

- I-494: Penn Avenue to TH 5
- TH 5: I-494 to TH 55
- TH 77: Old Shakopee Road to TH 62
- TH 62: East of Portland Avenue to west of CR 54 (28th Avenue)
- TH 55: TH 62 to TH 5

The following interchanges are included in the model:

- I-494/TH 77
- I-494/24th Avenue
- I-494/34th Avenue
- I-494/TH 5
- TH 5/Post Road
- TH 5/Glumack Drive (Terminal 1 access)
- TH 5/TH 55
- TH 77/TH 62

For the purposes of this operations summary, the analysis reported in this memorandum focuses on I-494 from TH 77 to TH 5, and TH 5 from I-494 to TH 55.

BASE MODEL DEVELOPMENT

VISSIM Version 5.30-04 was used to perform the operational analysis. VISSIM is a microscopic time-step/behavior-based traffic simulation software program designed to model complex geometry and multi-modal traffic flows. VISSIM was selected because of the need to model the unconventional interchange alternatives proposed at 34th Avenue identified during an initial screening study and to properly model the Hiawatha light rail transit (LRT) corridor operations along 34th Avenue. VISSIM is an FHWA and MnDOT approved operational analysis software program.

Volume Data

As per MnDOT standards, peak period traffic volumes and average travel speeds for the freeway mainline and ramps from the Fall of 2010 (October 20, 2010) were obtained from MnDOT's Regional Traffic Management Center (RTMC). Year 2010 data was used since it reflects the I-35W/TH 62 Crosstown reconstruction and Urban Partnership Agreement (UPA) improvements to I-35W. In addition, year 2010 a.m. and p.m. peak period intersection counts were collected to supplement the year 2010 data as detailed in the *Existing Traffic Data Collection MSP Area Roadway Improvements* technical memorandum (Kimley-Horn and Associates, Inc., February 7, 2011) at locations where RTMC data does not exist. Truck volumes and vehicle compositions were developed based on the most current vehicle classification counts provided by MnDOT.

LRT Operations

For the existing conditions alternative, existing LRT operating schedules were assumed along with the current mixture of 2 and 3-car trains. Under the year 2020 and year 2025 analysis conditions, existing schedules were assumed with 3-car trains. For the year 2030 analysis, 3-car trains were assumed but headways were reduced to 7.5 minutes in both directions.

Ramp Metering

Freeway ramp metering was coded into the model based on ramp meter headways obtained from MnDOT. The northbound TH 77 to westbound I-494 (a.m. peak period) and the eastbound I-494 to southbound I-35W (p.m. peak) ramp meters were not used because of the limitations of VISSIM. The short headways used at these ramp meters during "dump" mode were not achievable in the model because vehicles would not react properly to the short green times needed. Ramp meters currently exist for the 24th Avenue and 34th Avenue on-ramps to westbound I-494, but they are not in operation. This was reflected in the modeling.

Northbound TH 77 CD Road Volume Routing

As congestion on the northbound TH 77 to westbound I-494 regional ramp worsens, drivers choose alternate routes. Multiple possible routes exist for northbound TH 77 to eastbound and westbound I-494 via the collector-distributor (CD) road system. As a result, partial routes were coded into the model. The percentage breakdown by route was determined from detector data.

Model Calibration

Calibration of the existing conditions VISSIM model based on detector speeds and volumes was completed to reproduce local driving behavior conditions observed in the field and from loop detector data. Simulated volumes were considered acceptable within 10 percent of the detector data and simulated speeds were considered acceptable within 20 percent of detector speeds. Observed congestion and the resulting queues were validated visually from the model simulation. With the variability of the results of multiple runs, it was difficult to calibrate the speeds for all locations to the goal of 20 percent. However, the model does identify congestion areas where speed reductions occur. Additionally, a review of detector data indicated that westbound I-494 experiences daily variations in speeds, while traffic volumes experience little change. The modeling conforms to current MnDOT modeling guidelines.

SUMMARY OF KEY FINDINGS

The following provides a summary of the key findings of the operations study. Table 1 details the programmed improvements, EA mitigation measures, and assumed non-programmed no build improvements for each alternative beyond the existing year 2010. Table 2 provides a summary of the freeway LOS at key locations in the study area. Details of the analysis can be found in the appendix.

Existing Conditions (2010)

- Poor operations were identified on westbound I-494 where queues caused by these poor operations typically extend east along I-494 to 34th Avenue during the a.m. peak and p.m. peak hours. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp. During the p.m. airport peak (1:45 to 2:45 p.m.), queues caused by these poor operations can extend east along I-494 to the Portland Avenue on-ramp.
- Poor operations were identified for the I-494/34th Avenue interchange. This finding is the result of a combination of: 1) the magnitude of traffic volume; 2) the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections; and, the current design of the interchange.
- No operational issues were observed under existing conditions for the TH 5/Post Road or TH 5/Glumack Drive interchanges.

No Action

Year 2020

- Poor operations previously identified (Existing conditions) on westbound I-494 are improved (reduced queues and duration of congestion) with the programmed improvements; however, queues still exist that typically extend east along I-494 to 24th Avenue. This still causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- Poor operations previously identified (Existing conditions) for the I-494/34th Avenue interchange worsen under Year 2020 No Action conditions. Again, this finding is the result of a combination of: 1) the magnitude of traffic volume; 2) the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections; and, the current design of the interchange.
- New areas of poor operations were identified:
    - Poor operations were identified for the TH 5/Post Road interchange. This finding is a result of the ramp terminal intersections operating poorly, causing ramp queues to spill back onto the freeway mainlines.
    - Poor operations were identified for the TH 5/Glumack Drive interchange. This finding is a result of the entrance to TH 5 from the airport experiencing poor operations due to a combination of the heavy weaving volumes along Glumack Drive, and the ramps to TH 5 operating near capacity.
    - Poor operations were identified along westbound I-494 between 24th Avenue and TH 77 causing the northbound and westbound approaches at the I-494/24th Avenue single-point interchange intersection to operate poorly and experience long queues. This finding is a result of right-lane congestion.
    - Poor operations were identified on northbound TH 77 between I-494 and TH 62. This finding is a result of the northbound TH 77 to westbound TH 62 off-ramp loop operating near capacity, and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

- Acceptable operations were identified for the westbound I-494 weave between 34th Avenue and 24th Avenue but a reduction in speed was observed. An increase in weaving volume at this location would further reduce speeds causing poor operations.

Year 2025

- Poor operations previously identified (Year 2020 No Action conditions) worsen under Year 2025 No Action conditions. Queues resulting from poor operations on northbound TH 77 begin to spill back potentially impacting the operations of the I-494/34th Avenue interchange.
- Acceptable operations are still identified for the westbound I-494 weave between 34th Avenue and 24th Avenue but a reduction in speed was observed. An increase in weaving volume at this location would further reduce speeds causing poor operations.
- A new area of poor operations was identified:
    - Poor operations were identified during the p.m. airport peak (1:45 to 2:45 p.m.) on southbound TH 5. This finding is a result of the weave between the southbound TH 55 on-ramp and the Glumack Drive off-ramp (Terminal 1 access).

Year 2030

- Poor operations are still on westbound I-494 and they impact the operation of the I-494/34th Avenue interchange. This still also causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp. Also, poor operations were still identified on northbound TH 77 between I-494 and TH 62 and the queues spill back and impact the I-494/34th Avenue interchange. These operational deficiencies outside of the EA project area impact the ability to accurately test the proposed EA mitigation measures; therefore, additional improvements were assumed to be completed "by others".

Airlines Remain

Year 2020

- Poor operations for the I-494/34th Avenue interchange, the TH 5/Post Road interchange, and the TH 5/Glumack Drive interchange were mitigated (see Table 1) and the mitigation provides acceptable operations under Year 2020 Airlines Remain conditions.
- Poor operations were still identified on westbound I-494 but are improved (reduced queues and duration of congestion) with the programmed improvements; however, queues still exist that typically extend east along I-494 to 24th Avenue. This still causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- Poor operations were still identified on westbound I-494 between 24th Avenue and TH 77 causing the northbound and westbound approaches at the I-494/24th Avenue single-point interchange intersection to operate poorly and experience long queues; however, the mainline queues do not impact the operations of the I-494/34th Avenue interchange.

- Poor operations were still identified on northbound TH 77 between I-494 and TH 62; however, the queues do not spill back and impact the I-494/34th Avenue interchange.
- Acceptable operations were still identified for the westbound I-494 weave between 34th Avenue and 24th Avenue but a reduction in speed was observed. An increase in weaving volume at this location would further reduce speeds causing poor operations.

Year 2025

- Poor operations for the I-494/34th Avenue interchange, the TH 5/Post Road interchange, and the TH 5/Glumack Drive interchange were mitigated (see Table 1) and the mitigation provides acceptable operations under Year 2025 Airlines Remain conditions.
- Poor operations were still identified on westbound I-494 but are improved (reduced queues and duration of congestion) with the programmed improvements; however, queues still exist that typically extend east along I-494 to 24th Avenue. This still causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- Poor operations were still identified on westbound I-494 between 24th Avenue and TH 77 causing the northbound and westbound approaches at the I-494/24th Avenue single-point interchange intersection to operate poorly and experience long queues; however, the mainline queues do not impact the operations of the I-494/34th Avenue interchange.
- Acceptable operations were still identified for the westbound I-494 weave between 34th Avenue and 24th Avenue but a reduction in speed was observed. An increase in weaving volume at this location would further reduce speeds causing poor operations.

Airlines Relocate

Year 2020

- Poor operations for the I-494/34th Avenue interchange, the TH 5/Post Road interchange, and the TH 5/Glumack Drive interchange were mitigated (see Table 1) and the mitigation provides acceptable operations under Year 2020 Airlines Relocate conditions.
- Poor operations along westbound I-494 between 24th Avenue and TH 77 were mitigated (see Table 1) to ensure mainline queues would not spill back and impact the I-494/34th Avenue interchange. The mitigation provides acceptable operations under Year 2020 Airlines Relocate conditions.
- Poor operations were still identified on westbound I-494 but are improved (reduced queues and duration of congestion) with the programmed improvements; however, queues still exist that typically extend east along I-494 to 24th Avenue. This still causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- Poor operations were still identified on northbound TH 77 between I-494 and TH 62; however, the queues do not spill back and impact the I-494/34th Avenue interchange.
- Acceptable operations were still identified for the westbound I-494 weave between 34th Avenue and 24th Avenue but a reduction in speed was observed. An increase in weaving volume at this location would further reduce speeds causing poor operations.

Year 2025

- Poor operations for the TH 5/Post Road interchange and the TH 5/Glumack Drive interchange were mitigated (see Table 1) and the mitigation provides acceptable operations under Year 2025 Airlines Relocate conditions.
- Poor operations along westbound I-494 between 24th Avenue and TH 77 were mitigated (see Table 1) to ensure mainline queues would not spill back and impact the I-494/34th Avenue interchange. The mitigation provides acceptable operations under Year 2025 Airlines Relocate conditions.
- Poor operations were still identified on northbound TH 77 between I-494 and TH 62 and the queues begin to spill back and impact the mitigated I-494/34th Avenue interchange.
- Poor operations were identified for the westbound I-494 weave between 34th Avenue and 24th Avenue and mitigation was included (see Table 1). The mitigation provides acceptable operations under Year 2025 Airlines Relocate conditions.
- Poor operations are still identified on westbound I-494 but are improved (reduced queues and duration of congestion) with the programmed improvements; however, queues still exist that typically extend east along I-494 to 24th Avenue. This still causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.

Year 2030 Build

- Poor operations are still identified on westbound I-494 and they impact the operation of the I-494/34th Avenue interchange. This still also causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp. Also, poor operations were still identified on northbound TH 77 between I-494 and TH 62 and the queues spill back and impact the mitigated I-494/34th Avenue interchange. These operational deficiencies outside of the EA project area impact the ability to accurately test the proposed EA mitigation measures; therefore, additional improvements were assumed to be completed “by others”.
- Poor operations for the I-494/34th Avenue interchange, the TH 5/Post Road interchange and the TH 5/Glumack Drive interchange were mitigated (see Table 1) and the mitigation provides acceptable operations under Year 2030 Build conditions.
- Poor operations along westbound I-494 between 24th Avenue and TH 77 were mitigated (see Table 1) to ensure mainline queues would not spill back and impact the I-494/34th Avenue interchange. The mitigation provides acceptable operations under Year 2030 Build conditions.
- Poor operations were identified for the westbound I-494 weave between 34th Avenue and 24th Avenue and mitigation was included (see Table 1). The mitigation provides acceptable operations under Year 2030 Build conditions.

cc: Melissa Barnes, KHA Don Demers, SRF
Steve Wilson, SRF Josh Maus, SRF

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Table 1
Assumed Improvements & Mitigation Measures

Details of Improvements/Mitigation	Year 2020			Year 2025			Year 2030		
	No Action	Airlines Remain	Airlines Relocate	No Action	Airlines Remain	Airlines Relocate	No Action	No Action Improved	Build
Programmed Improvements									
Construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model.	X	X	X	X	X	X	X	X	X
EA Mitigation Measures									
Reconfigure the I-494/34th Avenue standard diamond interchange into a diverging diamond interchange, which includes upgrading 34th Avenue to a 6-lane roadway within the interchange influence area.		X	X		X	X			X
Construct a dual-lane exit ramp to 34th Avenue from eastbound I-494.		X	X		X	X			X
Construct a new Post Road 5-lane bridge interchange (with associated ramp improvements) at TH 5 just south of the existing 2-lane bridge. Upgrade Post Road to a 4-lane roadway at the TH 5 interchange.		X	X		X	X			X
Realign Northwest Drive to the west and the driveways south of Post Road are consolidated into one driveway which will align across from Northwest Drive		X	X		X	X			X
Construct a dual-lane exit ramp to 24th Avenue from westbound I-494.		X	X		X	X [(1)]			X [(1)]
Construct dual-lane entrance ramps to northbound and southbound TH 5 from Glumack Drive (Terminal 1 access). This includes an auxiliary lane to Post Road (southbound TH 5) and an auxiliary lane with escape lane to TH 55 (northbound TH 5).		X			X				X
Construct auxiliary lane (with escape lane) from the 24th Avenue on-ramp to the southbound TH 77 off-ramp loop along westbound I-494. This requires modification of the northbound TH 77 to westbound I-494 HOV loop.			X			X			X
Modifications to the I-494/34th Avenue diverging diamond interchange to provide additional turn lane improvements and signalization.						X			X
Construct a bridge braid over the 34th Avenue on-ramp to westbound I-494 by combining the 24th Avenue off-ramp and the northbound TH 77 off-ramp. Access to northbound TH 77 from 34th Avenue will be provided as a part of the braid.						X			X
Non-Programmed No Build Improvements [(2)]									
An additional lane on westbound I-494 from TH 77 to the end of the model; on westbound TH 62 from TH 77 to the end of the model; and on southbound TH 77 from the eastbound Old Shakopee Road on-ramp to the end of the model.								X	X
An auxiliary lane on northbound TH 77 from I-494 to the 66th Street off-ramp.								X	X
Removal of the northbound TH 77 to westbound TH 62 loop ramp. This movement is replaced with a flyover connection.								X	X

Notes:
[(1)] Dual-lane exit ramp included as a part of the bridge braid design.
[(2)] Operational deficiencies outside of the EA project area impact the ability to accurately test the proposed EA mitigation measures; therefore, additional improvements were assumed to be completed “by others”.

Table 2
Freeway Level of Service (Density) Summary

Airlines Remain

Airport Development Scenario / Freeway Segment	Year 2010 Existing						Year 2020 No Action						Year 2020 Airlines Remain					
	AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour	
I-494	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**
TH 77 to 24th Ave	B (19)	**F (47)**	B (14)	C (22)	B (18)	**F (57)**	C (22)	C (23)	B (16)	**E (36)**	B (19)	**E (40)**	C (22)	C (23)	B (16)	**E (39)**	B (19)	**F (51)**
24th Ave to 34th Ave	B (19)	C (25)	B (14)	B (15)	C (28)	**D (32)**	B (18)	C (21)	B (17)	B (20)	C (20)	**D (30)**	B (18)	B (18)	B (16)	B (18)	B (20)	C (23)
34th Ave to TH 5	B (18)	C (24)	B (14)	B (15)	C (23)	**D (31)**	B (19)	C (23)	B (17)	B (19)	C (25)	**D (30)**	B (19)	C (25)	B (18)	B (19)	C (27)	**D (28)**
TH 5	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**
I-494 to Post Rd	A (9)	B (11)	A (8)	B (14)	B (11)	B (19)	B (12)	B (18)	**F (88)**	B (18)	B (15)	B (20)	B (12)	B (16)	A (10)	B (19)	B (14)	C (21)
Post Rd to Glumack Dr	B (12)	B (12)	B (12)	B (15)	B (16)	B (19)	B (16)	B (17)	B (14)	**D (34)**	C (22)	C (22)	B (17)	B (12)	B (16)	B (14)	C (24)	B (17)
Glumack Dr to TH 55	A (10)	B (12)	B (11)	B (12)	B (15)	B (15)	B (14)	B (16)	B (15)	B (16)	C (22)	B (18)	B (10)	B (17)	B (12)	B (17)	B (17)	B (18)
TH 77	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**
I-494 to Diagonal Rd	**D (30)**	B (11)	B (15)	B (12)	C (27)	B (19)	**F (53)**	B (14)	B (19)	B (15)	**D (32)**	C (20)	**F (54)**	B (13)	B (19)	B (15)	**D (33)**	C (20)
Diagonal Rd to 66th St		B (16)		B (18)		C (28)		B (18)		C (21)		**D (31)**		B (18)		C (21)		**D (31)**
66th St to TH 62	C (23)	B (12)	B (10)	B (14)	B (15)	B (20)	**E (37)**	B (14)	B (13)	B (16)	B (18)	C (21)	**D (35)**	B (14)	B (13)	B (16)	B (18)	C (21)

Airport Development Scenario / Freeway Segment	Year 2025 No Action						Year 2025 Airlines Remain						Year 2030
	AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour		
I-494	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	
TH 77 to 24th Ave	C (22)	**F (44)**	B (17)	**E (42)**	B (20)	**F (55)**	C (22)	**D (34)**	B (17)	**E (43)**	C (21)	**F (68)**	
24th Ave to 34th Ave	C (20)	B (19)	C (23)	C (20)	C (21)	**F (55)**	B (18)	B (19)	B (17)	B (19)	C (21)	**D (33)**	
34th Ave to TH 5	B (19)	C (20)	B (18)	B (19)	C (25)	**E (42)**	B (19)	C (26)	B (18)	B (19)	C (25)	**D (34)**	
TH 5	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	
I-494 to Post Rd	B (12)	B (19)	**F (101)**	B (18)	B (14)	B (20)	B (12)	B (16)	A (9)	B (18)	B (14)	C (20)	
Post Rd to Glumack Dr	B (17)	B (17)	B (13)	C (24)	C (21)	B (20)	B (18)	B (12)	B (16)	B (14)	C (24)	B (16)	
Glumack Dr to TH 55	B (15)	B (18)	B (17)	**D (32)**	C (23)	B (19)	B (11)	B (18)	B (13)	**E (37)**	C (22)	C (22)	
TH 77	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	
I-494 to Diagonal Rd	**F (61)**	B (15)	C (21)	B (16)	**F (50)**	C (21)	**F (66)**	B (15)	C (21)	B (16)	**E (36)**	C (21)	
Diagonal Rd to 66th St		C (20)		C (23)		**D (34)**		B (20)		C (23)		**D (34)**	
66th St to TH 62	**E (40)**	B (15)	B (14)	B (18)	**F (46)**	C (23)	**E (39)**	B (15)	B (15)	B (18)	C (21)	C (22)	

Airlines Relocate

Airport Development Scenario / Freeway Segment	Year 2010 Existing						Year 2020 No Action						Year 2020 Airlines Relocate					
	AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour	
I-494	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**
TH 77 to 24th Ave	B (19)	**F (47)**	B (14)	C (22)	B (18)	**F (57)**	C (22)	C (23)	B (16)	**E (36)**	B (19)	**E (40)**	C (22)	C (22)	B (17)	C (23)	B (20)	C (22)
24th Ave to 34th Ave	B (19)	C (25)	B (14)	B (15)	C (28)	**D (32)**	B (18)	C (21)	B (17)	B (20)	C (20)	**D (30)**	B (18)	B (19)	B (17)	B (18)	C (20)	C (23)
34th Ave to TH 5	B (18)	C (24)	B (14)	B (15)	C (23)	**D (31)**	B (19)	C (23)	B (17)	B (19)	C (25)	**D (30)**	B (17)	C (24)	B (16)	B (17)	C (22)	C (22)
TH 5	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**
I-494 to Post Rd	A (9)	B (11)	A (8)	B (14)	B (11)	B (19)	B (12)	B (18)	**F (88)**	B (18)	B (15)	B (20)	B (10)	B (14)	A (8)	B (16)	B (12)	B (17)
Post Rd to Glumack Dr	B (12)	B (12)	B (12)	B (15)	B (16)	B (19)	B (16)	B (17)	B (14)	**D (34)**	C (22)	C (22)	B (14)	B (11)	B (14)	B (13)	C (20)	B (14)
Glumack Dr to TH 55	A (10)	B (12)	B (11)	B (12)	B (15)	B (15)	B (14)	B (16)	B (15)	B (16)	C (22)	B (18)	A (9)	B (15)	B (11)	B (16)	B (15)	B (17)
TH 77	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**
I-494 to Diagonal Rd	**D (30)**	B (11)	B (15)	B (12)	C (27)	B (19)	**F (53)**	B (14)	B (19)	B (15)	**D (32)**	C (20)	**F (75)**	B (14)	C (21)	B (16)	**E (37)**	C (21)
Diagonal Rd to 66th St		B (16)		B (18)		C (28)		B (18)		C (21)		**D (31)**		B (19)		C (22)		**D (33)**
66th St to TH 62	C (23)	B (12)	B (10)	B (14)	B (15)	B (20)	**E (37)**	B (14)	B (13)	B (16)	B (18)	C (21)	**E (36)**	B (15)	B (15)	B (17)	**D (30)**	C (22)

Airport Development Scenario / Freeway Segment	Year 2025 No Action						Year 2025 Airlines Relocate						Year 2030 No Action						Year 2030 No Action Improved						Year 2030 Build					
	AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour		AM Peak Hour		Airport Peak Hour		PM Peak Hour	
I-494	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**
TH 77 to 24th Ave	C (22)	**F (44)**	B (17)	**E (42)**	B (20)	**F (55)**	C (23)	**D (32)**	B (18)	C (22)	C (21)	C (24)	C (22)	**E (39)**	B (17)	**F (51)**	B (20)	**F (46)**	C (22)	C (21)	B (17)	**F (47)**	B (20)	**F (64)**	C (23)	B (16)	B (19)	C (22)	C (23)	C (22)
24th Ave to 34th Ave	C (20)	B (19)	C (23)	C (20)	C (21)	**F (55)**	B (18)	C (23)	B (18)	C (22)	C (22)	C (23)	C (20)	B (16)	C (26)	C (23)	C (21)	**F (97)**	C (20)	B (16)	C (27)	C (22)	C (21)	**F (74)**	B (18)	B (17)	B (19)	C (23)	C (22)	C (22)
34th Ave to TH 5	B (19)	C (20)	B (18)	B (19)	C (25)	**E (42)**	B (17)	C (22)	B (17)	B (18)	C (23)	C (26)	B (19)	B (16)	B (19)	B (20)	C (24)	**F (90)**	B (19)	B (16)	B (19)	B (19)	C (25)	**F (69)**	B (18)	C (20)	B (17)	B (18)	C (23)	**D (30)**
TH 5	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**	**EB**	**WB**
I-494 to Post Rd	B (12)	B (19)	**F (101)**	B (18)	B (14)	B (20)	B (11)	B (15)	A (9)	B (17)	B (13)	B (18)	B (12)	B (20)	**F (122)**	B (18)	B (15)	**D (33)**	B (12)	C (20)	**F (126)**	B (18)	B (15)	C (25)	B (12)	B (17)	A (10)	B (18)	B (14)	B (19)
Post Rd to Glumack Dr	B (17)	B (17)	B (13)	C (24)	C (21)	B (20)	B (15)	B (15)	B (15)	B (18)	C (22)	C (21)	B (17)	B (13)	B (12)	**D (30)**	C (21)	C (24)	B (17)	B (17)	B (12)	**D (29)**	C (21)	C (22)	B (17)	B (12)	B (17)	B (14)	C (24)	B (16)
Glumack Dr to TH 55	B (15)	B (18)	B (17)	**D (32)**	C (23)	B (19)	B (13)	B (16)	B (15)	B (17)	C (23)	B (18)	B (12)	B (18)	B (14)	C (22)	B (19)	B (19)	B (13)	B (18)	B (14)	C (22)	C (20)	B (18)	B (11)	B (18)	B (12)	B (18)	B (18)	B (17)
TH 77	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**	**NB**	**SB**
I-494 to Diagonal Rd	**F (61)**	B (15)	C (21)	B (16)	**F (50)**	C (21)	**F (79)**	B (15)	C (22)	B (17)	**F (80)**	C (22)	**F (73)**	B (16)	C (22)	B (17)	**F (84)**	C (22)	B (17)	B (16)	B (13)	B (17)	B (20)	C (22)	B (18)	B (16)	B (15)	B (18)	C (21)	C (23)
Diagonal Rd to 66th St		C (20)		C (23)		**D (34)**		C (20)		C (23)		**E (37)**		C (21)		C (24)		**E (43)**		C (21)		C (24)		**F (48)**		B (21)		C (25)		**F (65)**
66th St to TH 62	**E (40)**	B (15)	B (14)	B (18)	**F (46)**	C (23)	**E (40)**	B (16)	B (18)	B (18)	**F (68)**	C (23)	**F (47)**	B (16)	B (18)	B (19)	**F (94)**	C (23)	B (17)	B (16)	B (15)	B (19)	**D (29)**	C (23)	B (17)	B (16)	B (16)	B (19)	C (21)	C (24)

APPENDIX

Freeway Operations Modeling Highlights by Model Scenario

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YEAR 2010 EXISTING CONDITIONS

Model submitted to MnDOT: April 1, 2011
Model approved by MnDOT: April 15, 2011

Results of the existing conditions calibrated VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour Results (7:00-8:00)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E

Westbound I-494

- from TH 77 to beginning of model (Penn Avenue), LOS E/F

Northbound TH 77

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS E/F
- at 66th Street off-ramp, LOS E

Most of the freeway segments expected to operate at poor levels of service are currently at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by the weave between the northbound I-35W on-ramp loop and southbound I-35W off-ramp loop. The congestion generated by the weave impacts the operations of the adjacent lanes. Additionally, the entering volume from southbound I-35W and the entering volume from Penn Avenue cause this segment of I-494 to be at capacity. Queues caused by these poor operations typically extend east along I-494 to 34th Avenue. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- Poor operations were identified for the I-494 at 34th Avenue interchange (LOS E). At the north ramp intersection, the westbound approach experiences long queues. This is caused by the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections.

P.M. Peak Hour Results (Airport Shift Change Peak 1:45-2:45)

Westbound I-494

- from Lyndale Avenue off-ramp to end of model (Penn Avenue), LOS E/F

Most of the freeway segments expected to operate at poor levels of service are currently at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by the weave between the northbound I-35W on-ramp loop and southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes. Additionally, the

entering volume from southbound I-35W and the entering volume from Penn Avenue cause this segment of I-494 to be at capacity. Queues caused by these poor operations can extend east along I-494 to the Portland Avenue on-ramp.

P.M. Peak Hour Results (Commuter Peak 4:30-5:30)

Eastbound I-494

- from northbound I-35W on-ramp to 12th Avenue on-ramp, LOS E/F

Westbound I-494

- from 24th Avenue off-ramp to beginning of model (Penn Avenue), LOS E/F

Southbound TH 5

- from beginning of model to TH 55 off-ramp, LOS E

Southbound TH 77

- from Old Shakopee Road on-ramp loop to end of model (Minnesota River), LOS E/F

Most of the freeway segments expected to operate at poor levels of service are currently at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by the weave between the northbound I-35W on-ramp loop and southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes. Additionally, the entering volume from southbound I-35W and the entering volume from Penn Avenue cause this segment of I-494 to be at capacity. Queues caused by these poor operations typically extend east along I-494 to 34th Avenue.

Critical areas and bottleneck locations have been identified in the MnDOT Congestion Management and Safety Plan (CMSP) *System Problem Statement* (September 2009) and the results from the existing conditions VISSIM model were compared to these critical areas and bottleneck locations.

YEAR 2020 NO ACTION

Model submitted to MnDOT: June 3, 2011
Model approved by MnDOT: June 13, 2011

Year 2020 No Action conditions assume airline tenants remain at their current terminals, with only expansion of airport facilities that have received prior environmental approval or are categorically excluded from environmental review. This alternative assumes construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (programmed improvement). The remaining network geometry is consistent with the existing conditions model.

Results of the Year 2020 No Action VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour Results (7:00-8:00)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from TH 77 to Nicollet Avenue off-ramp, LOS E/F
- from Lyndale Avenue off-ramp to Lyndale Avenue on-ramp, LOS E/F
- at southbound I-35W off-ramp loop, LOS E

Northbound TH 77

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS E/F
- from westbound I-494/northbound TH 77 CD road on-ramp to westbound TH 62 off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by freeway segments operating near capacity. Queues caused by these poor operations typically extend east along I-494 to 24th Avenue. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- The poor operations identified on northbound TH 77 from the westbound I-494/northbound TH 77 CD road on-ramp to the westbound TH 62 off-ramp loop are caused by the TH 62 off-ramp loop operating near capacity and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The westbound approach experiences long queues that spill back onto the westbound I-494 mainline. This is caused by a combination of the magnitude of traffic volume and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange.

P.M. Peak Hour Results (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E

Westbound I-494

- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS E
- from 12th Avenue on-ramp to Nicollet Avenue on-ramp, LOS E/F
- from Lyndale Avenue off-ramp to Lyndale Avenue on-ramp, LOS E
- from northbound I-35W off-ramp to southbound I-35W off-ramp loop, LOS E/F

Northbound TH 5

- from westbound I-494/34th Avenue on-ramp to Post Road off-ramp, LOS F

Southbound TH 5

- at Post Road off-ramp, LOS F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the northbound I-35W off-ramp to the southbound I-35W off-ramp loop are caused by the weave between the northbound I-35W on-ramp loop and the southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes.
- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion.
- The poor operations identified on northbound TH 5 from the westbound I-494/34th Avenue on-ramp to the Post Road off-ramp, and on southbound TH 5 at Post Road, are caused by the TH 5/Post Road interchange ramp terminal intersections operating poorly (LOS F) causing ramp queues to spill back onto the freeway mainlines.
- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS E). The southbound approach experiences long queues. This is caused by a combination of the magnitude of traffic volume during the airport shift change and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange.

P.M. Peak Hour Results (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS E/F

Westbound I-494

- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS E

Northbound TH 5

- from northbound TH 55 on-ramp to end of model, LOS E/F

Southbound TH 5

- from beginning of model to northbound TH 55 off-ramp, LOS F

Northbound TH 77

- at 66th Street off-ramp, LOS E

Southbound TH 77

- from Old Shakopee Road off-ramp to end of model (Minnesota River), LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion. The right-lane congestion also causes poor operations for the I-494/24th Avenue single-point interchange intersection (LOS E) where the northbound and westbound approaches will experience long queues.
- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The southbound approach experiences long queues. This is caused by a combination of the magnitude of traffic volume and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange.
- Poor operations were identified for the Glumack Drive entrance to TH 5 from Terminal 1. This is caused by a combination of the heavy weaving volumes along Glumack Drive, and the ramps to TH 5 operating near capacity.

Although acceptable operations (LOS D) were identified for the westbound I-494 weave between 34th Avenue and 24th Avenue, a reduction in speed was observed. An increase in weaving volume at this location would further reduce speeds causing poor operations.

YEAR 2020 AIRLINES REMAIN

Model submitted to MnDOT: TBD
Model approved by MnDOT: TBD

Year 2020 Airlines Remain conditions assume airline tenants remain at their current terminals, and terminals and landside facilities would be expanded as required.

Programmed improvements assumed for this model include:

- Construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (also assumed in the Year 2020 No Action).

The following roadway improvements are assumed to mitigate operational issues:

- Reconfigure the I-494/34th Avenue standard diamond interchange into a diverging diamond interchange, which includes upgrading 34th Avenue to a 6-lane roadway within the interchange influence area.
- Construct a dual-lane exit ramp to 34th Avenue from eastbound I-494.
- Construct a new Post Road 5-lane bridge interchange (with associated ramp improvements) at TH 5 just south of the existing 2-lane bridge. Upgrade Post Road to a 4-lane roadway at the TH 5 interchange.
- Realign Northwest Drive to the west and the driveways south of Post Road are consolidated into one driveway which will align across from Northwest Drive
- Construct a dual-lane exit ramp to 24th Avenue from westbound I-494.
- Construct dual-lane entrance ramps to northbound and southbound TH 5 from Glumack Drive (Terminal 1 access). This includes an auxiliary lane to Post Road (southbound TH 5) and an auxiliary lane with escape lane to TH 55 (northbound TH 5).

Results of the Year 2020 Airlines Remain VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour Results (7:00-8:00)

<u>Eastbound I-494</u>

- at beginning of model (Penn Avenue), LOS E
- at Portland Avenue off-ramp, LOS E

<u>Westbound I-494</u>

- from TH 77 to Lyndale Avenue on-ramp, LOS E/F
- at southbound I-35W off-ramp loop, LOS E

<u>Northbound TH 77</u>

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS E/F
- from westbound I-494/northbound TH 77 CD road on-ramp to westbound TH 62 off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by freeway segments operating near capacity. Queues caused by these poor operations typically extend east along I-494 to 24th Avenue. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- The poor operations identified on northbound TH 77 from the westbound I-494/northbound TH 77 CD road on-ramp to the westbound TH 62 off-ramp loop are caused by the TH 62 off-ramp loop operating near capacity and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

P.M. Peak Hour Results (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E

Westbound I-494

- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS E
- from 12th Avenue off-ramp to Nicollet Avenue on-ramp, LOS E/F
- from Lyndale Avenue off-ramp to Lyndale Avenue on-ramp, LOS E/F
- from northbound I-35W off-ramp to southbound I-35W off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion.
- The poor operations identified on westbound I-494 from the northbound I-35W off-ramp to the southbound I-35W off-ramp loop are caused by the weave between the northbound I-35W on-ramp loop and the southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes.

P.M. Peak Hour Results (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS E/F

Westbound I-494

- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS F
- at 12th Avenue off-ramp, LOS E

Northbound TH 5

- from southbound TH 55 on-ramp loop to end of model, LOS E/F

Southbound TH 5

- from beginning of model to southbound TH 5 CD Road off-ramp, LOS F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion. The right-lane congestion also causes poor operations for the I-494/24th Avenue single-point interchange intersection (LOS E) where the northbound and westbound approaches will experience long queues.

Mitigation Summary

Poor operations for the I-494/34th Avenue interchange, the TH 5/Post Road interchange, and the TH 5/Glumack Drive interchange were mitigated and the mitigation provides acceptable operations under Year 2020 Airlines Remain conditions.

YEAR 2020 AIRLINES RELOCATE

Model submitted to MnDOT: TBD
Model approved by MnDOT: TBD

Year 2020 Airlines Relocate conditions assume SkyTeam airlines (Delta Airlines and alliance partners) remain at Terminal 1 and all other carriers are relocated to Terminal 2, and terminals and landside facilities would be expanded as required.

Programmed improvements assumed for this model include:

- Construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (also assumed in the Year 2020 No Action).

The following roadway improvements are assumed to mitigate operational issues:

- Reconfigure the I-494/34th Avenue standard diamond interchange into a diverging diamond interchange, which includes upgrading 34th Avenue to a 6-lane roadway within the interchange influence area.
- Construct a dual-lane exit ramp to 34th Avenue from eastbound I-494.
- Construct a new Post Road 5-lane bridge interchange (with associated ramp improvements) at TH 5 just south of the existing 2-lane bridge. Upgrade Post Road to a 4-lane roadway at the TH 5 interchange.
- Realign Northwest Drive to the west and the driveways south of Post Road are consolidated into one driveway which will align across from Northwest Drive
- Construct a dual-lane exit ramp to 24th Avenue from westbound I-494.
- Construct auxiliary lane (with escape lane) from the 24th Avenue on-ramp to the southbound TH 77 off-ramp loop along westbound I-494. This requires modification of the northbound TH 77 to westbound I-494 HOV loop.

Results of the Year 2020 Airlines Relocate VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour Results (7:00-8:00)

<u>Eastbound I-494</u>

- at beginning of model (Penn Avenue), LOS E
- at Portland Avenue off-ramp, LOS E

<u>Westbound I-494</u>

- from TH 77 to Lyndale Avenue on-ramp, LOS E/F
- at southbound I-35W off-ramp loop, LOS E

<u>Northbound TH 77</u>

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS E/F
- from westbound I-494 HOV off-ramp loop to westbound TH 62 off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by freeway segments operating near capacity. Queues caused by these poor operations typically extend east along I-494 to 24th Avenue. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- The poor operations identified on northbound TH 77 from the westbound I-494 HOV off-ramp loop to the westbound TH 62 off-ramp loop are caused by the TH 62 off-ramp loop operating near capacity and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

P.M. Peak Hour Results (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E

Westbound I-494

- from 12th Avenue off-ramp to Nicollet Avenue on-ramp, LOS E/F
- from Lyndale Avenue off-ramp to Lyndale Avenue on-ramp, LOS E
- from northbound I-35W off-ramp to southbound I-35W off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the northbound I-35W off-ramp to the southbound I-35W off-ramp loop are caused by the weave between the northbound I-35W on-ramp loop and the southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes.

P.M. Peak Hour Results (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS E/F

Westbound I-494

- at 12th Avenue off-ramp, LOS E

Northbound TH 5

- from northbound TH 55 on-ramp to end of model, LOS E/F

Southbound TH 5

- from beginning of model to southbound TH 5 CD Road off-ramp, LOS F

Northbound TH 77

- at westbound I-494/northbound TH 77 CD road on-ramp, LOS E
- at 66th Street off-ramp, LOS E
- from eastbound TH 62 off-ramp to westbound TH 62 off-ramp loop, LOS E/F

Southbound TH 77

- at Diagonal Boulevard on-ramp, LOS E
- from Old Shakopee Road off-ramp to end of model (Minnesota River), LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity.

Mitigation Summary

Poor operations for the I-494/34th Avenue interchange, the TH 5/Post Road interchange, and the TH 5/Glumack Drive interchange were mitigated and the mitigation provides acceptable operations under Year 2020 Airlines Relocate conditions.

Poor operations along westbound I-494 between 24th Avenue and TH 77 were mitigated to ensure mainline queues would not spill back and impact the I-494/34th Avenue interchange. The mitigation provides acceptable operations under Year 2020 Airlines Relocate conditions.

YEAR 2025 NO ACTION

Model submitted to MnDOT: October 17, 2011
Model approved by MnDOT: October 21, 2001

Year 2025 No Action conditions assume airline tenants remain at their current terminals, with only expansion of airport facilities that have received prior environmental approval or are categorically excluded from environmental review. This alternative also assumes construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (programmed improvement). The remaining network geometry is also consistent with the Year 2020 No Action model.

Results of the Year 2025 No Action VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour (7:00-8:00)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Nicollet Avenue on-ramp, LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from beginning of model (Minnesota River) to northbound TH 5/34th Avenue off-ramp, LOS E
- from 24th Avenue on-ramp to Lyndale Avenue on-ramp, LOS E/F
- at southbound I-35W off-ramp loop, LOS E

Northbound TH 77

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS E/F
- from westbound I-494 HOV off-ramp loop to westbound TH 62 off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by freeway segments operating near capacity. Queues caused by these poor operations typically extend east along I-494 to 24th Avenue. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- The poor operations identified on northbound TH 77 from the westbound I-494 HOV off-ramp loop to the westbound TH 62 off-ramp loop are caused by the TH 62 off-ramp loop operating near capacity and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The westbound approach experiences long queues that spill back onto the westbound I-494 mainline. This is caused by a combination of the magnitude of traffic volume and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange.

P.M. Peak Hour (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS E
- from 12th Avenue on-ramp to Nicollet Avenue on-ramp, LOS E/F
- from Lyndale Avenue off-ramp to Lyndale Avenue on-ramp, LOS E/F
- from northbound I-35W off-ramp to southbound I-35W off-ramp loop, LOS E/F

Northbound TH 5

- from westbound I-494/34th Avenue on-ramp to Post Road off-ramp, LOS F

Southbound TH 5

- at Glumack Drive off-ramp, LOS E

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion.
- The poor operations identified on westbound I-494 from the northbound I-35W off-ramp to the southbound I-35W off-ramp loop are caused by the weave between the northbound I-35W on-ramp loop and the southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes.
- The poor operations identified on northbound TH 5 from the westbound I-494/34th Avenue on-ramp to the Post Road off-ramp, and on southbound TH 5 at Post Road, are caused by the TH 5/Post Road interchange ramp terminal intersections operating poorly (LOS E/F) causing ramp queues to spill back onto the freeway mainlines.
- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The southbound approach experiences long queues. This is caused by a combination of the magnitude of traffic volume during the airport shift change and the frequency and duration of the Hiawatha LRT priority operations of he traffic control signals at the ramp intersections given the current design of the interchange.

P.M. Peak Hour (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS F
- at southbound TH 5/34th Avenue on-ramp, LOS E

Westbound I-494

- from southbound TH 5 on-ramp to northbound TH 77 HOV on-ramp loop, LOS E/F

Northbound TH 5

- from southbound TH 55 on-ramp loop to end of model, LOS E/F

Southbound TH 5

- from beginning of model to northbound TH 55 off-ramp, LOS F

Northbound TH 77

- from westbound I-494/northbound TH 77 CD road on-ramp to westbound TH 62 off-ramp loop, LOS E/F

Southbound TH 77

- from Diagonal Blvd off-ramp to Diagonal Blvd on-ramp, LOS E
- from southbound TH 77 CD road on-ramp to end of model (Minnesota River), LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the southbound TH 5 on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion. The right-lane congestion also causes poor operations for the I-494/24th Avenue single-point interchange intersection (LOS F) where the northbound and westbound approaches will experience long queues.
- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The southbound approach experiences long queues. This is caused by a combination of the magnitude of traffic volume and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange. In addition, the interchange south ramp intersection is expected to operate poorly (LOS E) with long northbound approach queues.
- Poor operations were identified for the Glumack Drive entrance to TH 5 from Terminal 1. This is caused by a combination of the heavy weaving volumes along Glumack Drive, and the ramps to TH 5 operating near capacity.

YEAR 2025 AIRLINES REMAIN

Model submitted to MnDOT: TBD
Model approved by MnDOT: TBD

Year 2025 Airlines Remain conditions assume airline tenants remain at their current terminals. The 2025 Airlines Remain traffic volumes account for the increase in vehicular traffic anticipated in 2025. Only airside and terminal area improvements constructed under the 2020 Airlines Remain scenario are assumed.

Programmed improvements assumed for this model include:

- Construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (also assumed in the Year 2025 No Action).

The following roadway improvements are assumed to mitigate operational issues:

- Reconfigure the I-494/34th Avenue standard diamond interchange into a diverging diamond interchange, which includes upgrading 34th Avenue to a 6-lane roadway within the interchange influence area.
- Construct a dual-lane exit ramp to 34th Avenue from eastbound I-494.
- Construct a new Post Road 5-lane bridge interchange (with associated ramp improvements) at TH 5 just south of the existing 2-lane bridge. Upgrade Post Road to a 4-lane roadway at the TH 5 interchange.
- Realign Northwest Drive to the west and the driveways south of Post Road are consolidated into one driveway which will align across from Northwest Drive
- Construct a dual-lane exit ramp to 24th Avenue from westbound I-494.
- Construct dual-lane entrance ramps to northbound and southbound TH 5 from Glumack Drive (Terminal 1 access). This includes an auxiliary lane to Post Road (southbound TH 5) and an auxiliary lane with escape lane to TH 55 (northbound TH 5).

Results of the Year 2025 Airlines Remain VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour Results (7:00-8:00)

<u>Eastbound I-494</u>

- at beginning of model (Penn Avenue), LOS E
- at Nicollet Avenue on-ramp, LOS E
- at Portland Avenue off-ramp, LOS E

<u>Westbound I-494</u>

- at northbound TH 5/34th Avenue off-ramp, LOS E
- from TH 77 to Lyndale Avenue on-ramp, LOS E/F
- from northbound I-35W on-ramp loop to southbound I-35W off-ramp loop, LOS E

Northbound TH 77

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS E/F
- from westbound I-494/northbound TH 77 CD road on-ramp to westbound TH 62 off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by freeway segments operating near capacity. Queues caused by these poor operations typically extend east along I-494 to 24th Avenue. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- The poor operations identified on northbound TH 77 from the westbound I-494/northbound TH 77 CD road on-ramp to the westbound TH 62 off-ramp loop are caused by the TH 62 off-ramp loop operating near capacity and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

P.M. Peak Hour Results (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS E/F
- from 12th Avenue off-ramp to Nicollet Avenue on-ramp, LOS E/F
- from Lyndale Avenue off-ramp to Lyndale Avenue on-ramp, LOS F
- from northbound I-35W off-ramp to southbound I-35W off-ramp loop, LOS E/F

Southbound TH 5

- from southbound TH 55 on-ramp to Glumack Drive off-ramp, LOS E

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion.
- The poor operations identified on westbound I-494 from the northbound I-35W off-ramp to the southbound I-35W off-ramp loop are caused by the weave between the northbound I-35W on-ramp loop and the southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes.

- The poor operations identified on southbound TH 5 between the southbound TH 55 on-ramp and the Glumack Drive off-ramp are caused by the off-ramp operating near capacity.

P.M. Peak Hour Results (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS F
- at southbound TH 5/34th Avenue on-ramp, LOS E

Westbound I-494

- at southbound TH 5 on-ramp, LOS E
- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS F
- at southbound TH 77 off-ramp loop, LOS E
- at 12th Avenue off-ramp, LOS E

Northbound TH 5

- from southbound TH 55 on-ramp loop to end of model, LOS E/F

Southbound TH 5

- from beginning of model to southbound TH 5 CD Road off-ramp, LOS F

Northbound TH 77

- at westbound I-494/northbound TH 77 CD road on-ramp, LOS E
- at 66th Street off-ramp, LOS E
- from eastbound TH 62 on-ramp loop to westbound TH 62 off-ramp loop, LOS E

Southbound TH 77

- from beginning of model to southbound TH 5 CD Road off-ramp, LOS F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion. The right-lane congestion also causes poor operations for the I-494/24th Avenue single-point interchange intersection (LOS F) where the northbound and westbound approaches will experience long queues.
- The poor operations identified on northbound TH 77 from the eastbound TH 62 on-ramp loop to the westbound TH 62 off-ramp loop are caused by the TH 62 off-ramp loop operating near capacity and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

Mitigation Summary

Poor operations for the I-494/34th Avenue interchange, the TH 5/Post Road interchange, and the TH 5/Glumack Drive interchange were mitigated and the mitigation provides acceptable operations under Year 2025 Airlines Remain conditions.

YEAR 2025 AIRLINES RELOCATE

Model submitted to MnDOT: TBD
Model approved by MnDOT: TBD

Year 2025 Airlines Relocate conditions assume SkyTeam airlines (Delta Airlines and alliance partners) remain at Terminal 1 and all other carriers are relocated to Terminal 2. The 2025 Airlines Relocate traffic volumes account for the increase in vehicular traffic anticipated in 2025. Only airside and terminal area improvements constructed under the 2020 Airlines Relocate scenario are assumed.

Programmed improvements assumed for this model include:

- Construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (also assumed in the Year 2025 No Action).

The following roadway improvements are assumed to mitigate operational issues:

- Reconfigure the I-494/34th Avenue standard diamond interchange into a diverging diamond interchange, which includes upgrading 34th Avenue to a 6-lane roadway within the interchange influence area. Modifications to the diverging diamond interchange to provide additional turn lane improvements and signalization.
- Construct a dual-lane exit ramp to 34th Avenue from eastbound I-494.
- Construct a new Post Road 5-lane bridge interchange (with associated ramp improvements) at TH 5 just south of the existing 2-lane bridge. Upgrade Post Road to a 4-lane roadway at the TH 5 interchange.
- Realign Northwest Drive to the west and the driveways south of Post Road are consolidated into one driveway which will align across from Northwest Drive
- Construct auxiliary lane (with escape lane) from the 24th Avenue on-ramp to the southbound TH 77 off-ramp loop along westbound I-494. This requires modification of the northbound TH 77 to westbound I-494 HOV loop.
- Construct a dual-lane exit with bridge braid over the 34th Avenue on-ramp to westbound I-494 by combining the 24th Avenue off-ramp and the northbound TH 77 off-ramp. Access to northbound TH 77 from 34th Avenue will be provided as a part of the braid.
- Modifications to the I-494/34th Avenue diverging diamond interchange to provide additional turn lane improvements and signalization.

Results of the Year 2025 Airlines Relocate VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour Results (7:00-8:00)

<u>Eastbound I-494</u>

- at beginning of model (Penn Avenue), LOS E
- at Nicollet Avenue on-ramp, LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from beginning of model (Minnesota River) to northbound TH 5/34th Avenue off-ramp, LOS E
- from TH 77 to Lyndale Avenue on-ramp, LOS E/F
- from northbound I-35W on-ramp loop to southbound I-35W off-ramp loop, LOS E

Southbound TH 5

- at southbound TH 5 CD Road off-ramp, LOS F

Northbound TH 77

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS E/F
- from westbound I-494 HOV off-ramp loop to westbound TH 62 off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by freeway segments operating near capacity. Queues caused by these poor operations typically extend east along I-494 to 24th Avenue. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- The poor operations identified on northbound TH 77 from the westbound I-494 HOV off-ramp loop to the westbound TH 62 off-ramp loop are caused by the TH 62 off-ramp loop operating near capacity and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

P.M. Peak Hour Results (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Nicollet Avenue on-ramp, LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from 12th Avenue off-ramp to Nicollet Avenue on-ramp, LOS E/F
- from Lyndale Avenue off-ramp to Lyndale Avenue on-ramp, LOS E/F
- from northbound I-35W off-ramp to southbound I-35W off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the northbound I-35W off-ramp to the southbound I-35W off-ramp loop are caused by the weave between the northbound

I-35W on-ramp loop and the southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes.

P.M. Peak Hour Results (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS F
- at southbound TH 5/34th Avenue on-ramp, LOS E

Westbound I-494

- at 12th Avenue off-ramp, LOS E

Northbound TH 5

- from southbound TH 55 off-ramp to end of model, LOS F

Southbound TH 5

- from beginning of model to southbound TH 5 CD Road off-ramp, LOS F

Northbound TH 77

- from westbound I-494/northbound TH 77 CD road on-ramp to westbound TH 62 off-ramp loop, LOS F

Southbound TH 77

- at from 66th Street on-ramp to Diagonal Boulevard on-ramp, LOS E
- from westbound Old Shakopee Road on-ramp loop to end of model (Minnesota River), LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- Poor operations were identified for the I-494/24th Avenue single-point interchange intersection (LOS F). The northbound and westbound approaches will experience long queues. Queues for the westbound off-ramp approach at times will spill back onto the freeway mainline. This is caused by these movements operating near capacity.

Mitigation Summary

Poor operations for the TH 5/Post Road interchange and the TH 5/Glumack Drive interchange were mitigated and the mitigation provides acceptable operations under Year 2025 Airlines Relocate conditions.

Poor operations along westbound I-494 between 24th Avenue and TH 77 were mitigated to ensure mainline queues would not spill back and impact the I-494/34th Avenue interchange. The mitigation provides acceptable operations under Year 2025 Airlines Relocate conditions.

Poor operations were still identified on northbound TH 77 between I-494 and TH 62 and the queues begin to spill back and impact the mitigated I-494/34th Avenue interchange.

Poor operations were identified for the westbound I-494 weave between 34th Avenue and 24th Avenue and mitigation was included. The mitigation provides acceptable operations under Year 2025 Airlines Relocate conditions.

YEAR 2030 NO ACTION

Model submitted to MnDOT: TBD
Model approved by MnDOT: TBD

Year 2030 No Action conditions assume airline tenants remain at their current terminals, with only expansion of airport facilities that have received prior environmental approval or are categorically excluded from environmental review. This alternative also assumes construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (programmed roadway improvement). The remaining network geometry is also consistent with the Year 2025 No Action model.

Results of the Year 2030 No Action VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour (7:00-8:00)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Nicollet Avenue on-ramp, LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from beginning of model (Minnesota River) to northbound TH 5/34th Avenue off-ramp, LOS E/F
- from 24th Avenue on-ramp to Lyndale Avenue on-ramp, LOS E/F
- from northbound I-35W off-ramp to southbound I-35W off-ramp loop, LOS E/F

Southbound TH 5

- at southbound TH 5 CD Road off-ramp, LOS F

Northbound TH 77

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS F
- from westbound I-494 HOV off-ramp loop to westbound TH 62 off-ramp loop, LOS F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 are caused by freeway segments operating near capacity. Queues caused by these poor operations typically extend east along I-494 to 24th Avenue. This further causes poor operations on the northbound TH 77 to westbound I-494 regional flyover ramp.
- The poor operations identified on northbound TH 77 from the westbound I-494 HOV off-ramp loop to the westbound TH 62 off-ramp loop are caused by the TH 62 off-ramp loop

operating near capacity and the weave on westbound TH 62 from the northbound TH 77 on-ramp loop and the southbound TH 77 off-ramp loop.

- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The westbound approach experiences long queues that spill back onto the westbound I-494 mainline. This is caused by a combination of the magnitude of traffic volume and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange.

P.M. Peak Hour (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Nicolet Avenue on-ramp, LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS E/F
- from 12th Avenue on-ramp to southbound I-35W off-ramp loop, LOS E/F

Northbound TH 5

- from westbound I-494/34th Avenue on-ramp to Post Road off-ramp, LOS F

Southbound TH 5

- at Post Road off-ramp, LOS E

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion. The right-lane congestion also causes poor operations for the I-494/24th Avenue single-point interchange intersection (LOS E) where the northbound and westbound approaches will experience long queues.
- The poor operations identified on westbound I-494 from the northbound I-35W off-ramp to the southbound I-35W off-ramp loop are caused by the weave between the northbound I-35W on-ramp loop and the southbound I-35W off-ramp loop. The congestion generated by this weave impacts the operations of the adjacent lanes.
- The poor operations identified on northbound TH 5 from the westbound I-494/34th Avenue on-ramp to the Post Road off-ramp, and on southbound TH 5 at Post Road, are caused by the TH 5/Post Road interchange ramp terminal intersections operating poorly (LOS F) causing ramp queues to spill back onto the freeway mainlines.

- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The southbound approach experiences long queues. This is caused by a combination of the magnitude of traffic volume during the airport shift change and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange.

P.M. Peak Hour (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS F

Westbound I-494

- from southbound TH 5 on-ramp to northbound TH 77 HOV on-ramp loop, LOS E/F

Northbound TH 5

- from southbound TH 55 on-ramp loop to end of model, LOS E/F

Southbound TH 5

- from beginning of model to northbound TH 55 off-ramp, LOS F

Northbound TH 77

- from westbound I-494/northbound TH 77 CD road on-ramp to westbound TH 62 off-ramp loop, LOS F

Southbound TH 77

- from 66th Street on-ramp to Diagonal Blvd on-ramp, LOS E/F
- from Lindau Ln on-ramp to end of model (Minnesota River), LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the southbound TH 5 on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion. The right-lane congestion also causes poor operations for the I-494/24th Avenue single-point interchange intersection (LOS F) where the northbound and westbound approaches will experience long queues.
- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The southbound approach experiences long queues. This is caused by a combination of the magnitude of traffic volume and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange. In addition, the interchange south ramp intersection is expected to operate poorly (LOS F) with long northbound approach queues.

- Poor operations were identified for the Glumack Drive entrance to TH 5 from Terminal 1. This is caused by a combination of the heavy weaving volumes along Glumack Drive, and the ramps to TH 5 operating near capacity.

Operational deficiencies outside of the EA project area impact the ability to accurately test the proposed EA mitigation measures; therefore, additional improvements were assumed to be completed "by others". An "improved" alternative will be developed with the additional improvements. These additional improvements will also be included with the Year 2030 Airlines Relocate alternative.

YEAR 2030 NO ACTION IMPROVED

Model submitted to MnDOT: TBD
Model approved by MnDOT: TBD

As noted under Year 2030 No Action conditions, operational deficiencies outside of the EA project area impact the ability to accurately test the proposed EA mitigation measures; therefore, additional improvements were assumed to be completed "by others". This alternative assumes construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (programmed improvement); however, other non-programmed no build improvements were also included in the model as described below:

- An additional lane on westbound I-494 from TH 77 to the end of the model; on westbound TH 62 from TH 77 to the end of the model; and on southbound TH 77 from the eastbound Old Shakopee Road on-ramp to the end of the model.
- An auxiliary lane on northbound TH 77 from I-494 to the 66th Street off-ramp.
- Removal of the northbound TH 77 to westbound TH 62 loop ramp. The movement is replaced with a flyover connection.

The remaining network geometry is consistent with the Year 2025 No Action model.

Results of the Year 2030 No Action Improved VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour (7:00-8:00)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Nicollet Avenue on-ramp, LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from beginning of model (Minnesota River) to northbound TH 5/34th Avenue off-ramp, LOS E/F
- from northbound I-35W off-ramp to southbound I-35W off-ramp loop, LOS E

Southbound TH 5

- at southbound TH 5 CD Road off-ramp, LOS F

Northbound TH 77

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The westbound approach experiences long queues that spill back onto the westbound I-494 mainline. This is caused by a combination of the magnitude of traffic volume and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange.

P.M. Peak Hour (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- at Nicolet Avenue on-ramp, LOS E
- at Portland Avenue off-ramp, LOS E

Westbound I-494

- from 24th Avenue on-ramp to northbound TH 77 HOV on-ramp loop, LOS F
- at southbound I-35W off-ramp loop, LOS E/F

Northbound TH 5

- from westbound I-494/34th Avenue on-ramp to Post Road off-ramp, LOS F

Southbound TH 5

- at Post Road off-ramp, LOS E

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the 24th Avenue on-ramp to the northbound TH 77 HOV on-ramp loop are caused by right-lane congestion. The right-lane congestion also causes poor operations for the I-494/24th Avenue single-point interchange intersection (LOS E) where the northbound and westbound approaches will experience long queues.
- The poor operations identified on northbound TH 5 from the westbound I-494/34th Avenue on-ramp to the Post Road off-ramp, and on southbound TH 5 at Post Road, are caused by the TH 5/Post Road interchange ramp terminal intersections operating poorly (LOS F) causing ramp queues to spill back onto the freeway mainlines.
- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The southbound approach experiences long queues. This is caused by a combination of the magnitude of traffic volume during the airport shift change and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange.

P.M. Peak Hour (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS F
- at southbound TH 5/34th Avenue on-ramp, LOS E

Westbound I-494

- from southbound TH 5 on-ramp to southbound TH 77 off-ramp loop, LOS E/F

Northbound TH 5

- from southbound TH 55 on-ramp loop to end of model, LOS F

Southbound TH 5

- from beginning of model to northbound TH 55 off-ramp, LOS F

Southbound TH 77

- from westbound Old Shakopee Road on-ramp loop to eastbound Old Shakopee Road on-ramp, LOS E

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity. In addition, several locations are expected to operate poorly due to the following:

- The poor operations identified on westbound I-494 from the southbound TH 5 on-ramp to the southbound TH 77 off-ramp loop are caused by right-lane congestion. The right-lane congestion also causes poor operations for the I-494/24th Avenue single-point interchange intersection (LOS F) where the northbound and westbound approaches will experience long queues.
- Poor operations were identified for the I-494/34th Avenue interchange north ramp intersection (LOS F). The southbound approach experiences long queues. This is caused by a combination of the magnitude of traffic volume and the frequency and duration of the Hiawatha LRT priority operations of the traffic control signals at the ramp intersections given the current design of the interchange. In addition, the interchange south ramp intersection is expected to operate poorly (LOS F) with long northbound approach queues.
- Poor operations were identified for the Glumack Drive entrance to TH 5 from Terminal 1. This is caused by a combination of the heavy weaving volumes along Glumack Drive, and the ramps to TH 5 operating near capacity.

YEAR 2030 BUILD

Model submitted to MnDOT: TBD
Model approved by MnDOT: TBD

Year 2030 Build conditions assume SkyTeam airlines (Delta Airlines and alliance partners) remain at Terminal 1 and all other carriers are relocated to Terminal 2. The 2030 Build traffic volumes account for the anticipated increase in vehicular traffic anticipated in 2030 based upon the updated forecast activity documented in this Environmental Assessment.

Programmed improvements assumed for this model include:

- Construction of an auxiliary lane on westbound I-494 from the northbound I-35W on-ramp loop to the west end of the model (also assumed in the Year 2030 No Action).

The following roadway improvements are assumed to mitigate operational issues:

- Reconfigure the I-494/34th Avenue standard diamond interchange into a diverging diamond interchange, which includes upgrading 34th Avenue to a 6-lane roadway within the interchange influence area. Modifications to the diverging diamond interchange to provide additional turn lane improvements and signalization.
- Construct a dual-lane exit ramp to 34th Avenue from eastbound I-494.
- Construct a new Post Road 5-lane bridge interchange (with associated ramp improvements) at TH 5 just south of the existing 2-lane bridge. Upgrade Post Road to a 4-lane roadway at the TH 5 interchange.
- Realign Northwest Drive to the west and the driveways south of Post Road are consolidated into one driveway which will align across from Northwest Drive
- Construct auxiliary lane (with escape lane) from the 24th Avenue on-ramp to the southbound TH 77 off-ramp loop along westbound I-494. This requires modification of the northbound TH 77 to westbound I-494 HOV loop.
- Construct a dual-lane exit with bridge braid over the 34th Avenue on-ramp to westbound I-494 by combining the 24th Avenue off-ramp and the northbound TH 77 off-ramp. Access to northbound TH 77 from 34th Avenue will be provided as a part of the braid.
- Construct dual-lane entrance ramps to northbound and southbound TH 5 from Glumack Drive (Terminal 1 access). This includes an auxiliary lane to Post Road (southbound TH 5) and an auxiliary lane with escape lane to TH 55 (northbound TH 5).
- Modifications to the I-494/34th Avenue diverging diamond interchange to provide additional turn lane improvements and signalization.

As noted under Year 2030 No Action conditions, operational deficiencies outside of the EA project area impact the ability to accurately test the proposed EA mitigation measures; therefore, additional improvements were assumed to be completed “by others”. Other non-programmed no build improvements were also included in the model as described below:

- An additional lane on westbound I-494 from TH 77 to the end of the model; on westbound TH 62 from TH 77 to the end of the model; and on southbound TH 77 from the eastbound Old Shakopee Road on-ramp to the end of the model.
- An auxiliary lane on northbound TH 77 from I-494 to the 66th Street off-ramp.

- Removal of the northbound TH 77 to westbound TH 62 loop ramp. The movement is replaced with a flyover connection.

Results of the Year 2030 Build VISSIM model identify poor levels of service (LOS E or worse) at the following locations:

A.M. Peak Hour Results (7:00-8:00)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- from Nicollet Avenue on-ramp to Portland Avenue off-ramp, LOS E

Westbound I-494

- from beginning of model (Minnesota River) to northbound TH 5/34th Avenue off-ramp, LOS F
- at 12th Avenue off-ramp, LOS E

Southbound TH 5

- at southbound TH 5 CD Road off-ramp, LOS F

Northbound TH 77

- from beginning of model (Minnesota River) to Old Shakopee Road off-ramp, LOS F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity.

P.M. Peak Hour Results (Airport Shift Change Peak 1:45-2:45)

Eastbound I-494

- at beginning of model (Penn Avenue), LOS E
- from Nicollet Avenue on-ramp to Portland Avenue off-ramp, LOS E

Westbound I-494

- at southbound I-35W off-ramp loop, LOS E/F

Most of the freeway segments expected to operate at poor levels of service will be at or near capacity.

P.M. Peak Hour Results (Commuter Peak 4:30-5:30)

Eastbound I-494

- from beginning of model (Penn Avenue) to 12th Avenue on-ramp, LOS F
- at southbound TH 5/34th Avenue on-ramp, LOS E

Westbound I-494

- at southbound TH 5 on-ramp, LOS E
- at 12th Avenue off-ramp, LOS F

Northbound TH 5

- from southbound TH 55 off-ramp to end of model, LOS E/F

Southbound TH 5

- from beginning of model to southbound TH 5 CD Road off-ramp, LOS F

Southbound TH 77

- at from 66th Street on-ramp to Diagonal Boulevard on-ramp, LOS E/F

Mitigation Summary

Poor operations for the TH 5/Post Road interchange and the TH 5/Glumack Drive interchange were mitigated and the mitigation provides acceptable operations under Year 2030 Build conditions.

Poor operations along westbound I-494 between 24th Avenue and TH 77 were mitigated to ensure mainline queues would not spill back and impact the I-494/34th Avenue interchange. The mitigation provides acceptable operations under Year 2030 Build conditions.

Poor operations were identified for the westbound I-494 weave between 34th Avenue and 24th Avenue and mitigation was included. The mitigation provides acceptable operations under Year 2030 Build conditions.

Attachment 6:

Arterial Traffic Operations

Technical Memorandum

Arterial Traffic Operations Technical Memorandum

Prepared by:

Kimley-Horn & Associates, Inc.

May 31, 2012

Minneapolis-St. Paul International Airport
2020 Improvements
Environmental Assessment

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INTRODUCTION

The Minneapolis-Saint Paul International Airport (MSP) is owned and operated by the Metropolitan Airports Commission (MAC). MAC staff is currently completing the state and federal environmental review process for Phases I and 2 of the MSP 2030 Long Term Comprehensive Plan (LTCP), as described in the 2010 LTCP Update. The Project is a proposed airport expansion plan that would include several facility additions as well as changes in the current operations at both the Terminal 1-Lindbergh and Terminal 2-Humphrey.

This report summarizes the traffic study performed and the anticipated traffic impacts that would result from the Project. This report has been prepared as a supporting document to the surface transportation section of the Environmental Assessment for the Project; it addresses those issues relevant to the requirements of the Environmental Assessment, including identification of mitigation measures. If implemented, the Project is anticipated to be completed by 2020.

BUILD ALTERNATIVES

Two build alternatives are considered in the environmental review process:

- Alternative 1 - Airlines Remain: This alternative includes the improvements needed through 2020 presuming that the airlines remain in their current terminals. The gate, terminal, landside, roadway and airside facility improvements consist of those necessary to accommodate the forecasted airlines' growth at each terminal.

- Alternative 2 - Airlines Relocate: This alternative includes the improvements needed through 2020 presuming that the non-SkyTeam airlines currently located in Terminal 1-Lindbergh are relocated to Terminal 2-Humphrey. This Alternative was conceived in recognition of the fact that the MSP's two-terminal system could be utilized more efficiently. Relocating all airlines other than Delta and the SkyTeam airlines would relieve some capacity constraints at Terminal 1-Lindbergh while better balancing the mix of passengers at the two terminals.

STUDY AREA

The study area is generally bounded by I-494 on the south, Trunk Highway (TH) 77 on the west, TH 62 and TH 55 on the north, and TH 5 on the east, and is surrounded by the cities of Minneapolis, Saint Paul, Bloomington, Richfield, and Mendota Heights. The Hiawatha Light Rail Transit (LRT) Line operates along 34th Avenue South through the study area. The study area is shown as part of the existing conditions information in **Figures 1** and **2**. This report focuses on the two primary surface (non-freeway) roadways within the study area, 34th Avenue South and East 70th Street/Post Road. The adjacent regional roadway network has been analyzed and documented in the Freeway Operations Analysis Summary – 2020 MSP Improvements Environmental Assessment (EA) memorandum included in Appendix C of the EA document.

Traffic volumes along 34th Avenue South and East 70th Street/Post Road within the study area are expected to increase under all alternatives. As a result, AM peak hour and PM peak hour analyses, as well as a midday analysis for the airport employee shift change (referred to in this report as "airport peak"), were conducted for the following intersections:

- 34th Avenue South/American Boulevard
- 34th Avenue South/Eastbound I-494 Ramps
- 34th Avenue South/Westbound I-494 Ramps
- 34th Avenue South/Airport Lane
- 34th Avenue South/East 75th Street
- 34th Avenue South/East 73rd Street
- 34th Avenue South/Northbound East 72nd Street
- 34th Avenue South/Southbound East 72nd Street
- 34th Avenue South/East 70th Street
- Humphrey Drive/East 70th Street
- Post Road/West Employee Lot Entrance
- Post Road/East Employee Lot Entrance
- Post Road/Taxi Staging Lot West Entrance
- Post Road/Taxi Staging Lot Middle Exit
- Post Road/Taxi Staging Lot East Exit
- Post Road/SuperAmerica West Driveway
- Post Road/SuperAmerica East Driveway
- Post Road/Northwest Dr/Southbound TH 5 Ramps
- Post Road/Northbound TH 5 Ramps

The majority of the land within the study area is occupied by MSP. The other major land uses within the study area are primarily related to the Fort Snelling National Cemetery. Land uses located south of I-494 are primarily commercial. The areas to the west of TH 77 (Cedar Avenue) and north of TH 62 (Crosstown) are primarily residential. The adjacent land to the east and northeast includes the Mississippi River, Minnesota River, and adjacent parkland.

MODELING GUIDELINES

Measures of effectiveness were estimated using VISSIM v5.30-05 microsimulation software. Results are reported in terms of level of service (LOS). LOS is a qualitative measure that describes operational conditions and motorists' perceptions within a traffic stream. The *Highway Capacity Manual (HCM)* defines six levels of service, LOS A through LOS F, with A being the best and F the worst. For planning purposes, LOS D or better (LOS A-D) are levels typically recognized by transportation agencies as satisfactory. At intersections, LOS is based on the average control delay per vehicle. **Tables 1** and **2** list the LOS thresholds for signalized intersections and unsignalized intersections, respectively. The LOS of the overall intersections as well as the LOS of the individual turning or through movements were considered.

Table 1: LOS Criteria for Signalized Intersections*	
LOS	**Control Delay per Vehicle (sec/veh)**
A	≤ 10
B	> 10-20
C	> 20-35
D	> 35-55
E	> 55-80
F	> 80

* *HCM*, Chapter 16 – Signalized Intersections (sec/veh = seconds per vehicle)

Table 2: LOS Criteria for Unsignalized Intersections*	
LOS	**Control Delay per Vehicle (sec/veh)**
A	≤ 10
B	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

* *HCM*, Chapter 17 – Unsignalized Intersections (sec/veh = seconds per vehicle)

Delay and LOS are based on the average of five one-hour simulations for each of the three peak periods.

Detailed tables showing the delay, queues, and LOS for each movement are included for all scenarios in the **Appendix** to this memorandum.

Forecast traffic volumes for the No Action, Airlines Remain, and Airlines Relocate alternatives were developed for the years 2020, 2025 and 2030. A detailed description of the forecasting methodology is explained in the Minneapolis-St. Paul International Airport Area Roadway Improvements (Including Thunderbird Road Access) Study Travel Demand Forecasts memorandum included in Appendix C of the EA document.

1 Existing Conditions

This section of the report documents the existing roadway conditions, traffic volumes, and traffic operations on 34th Avenue South and East 70th Street/Post Road.

Existing conditions were modeled for the a.m. peak hour (7:30 a.m. – 8:30 a.m.) and p.m. peak hour (4:30 p.m. – 5:30 p.m.) as well as the airport peak hour (1:30 p.m. – 2:30 p.m.) in order to capture the airport employee shift change. Based on the traffic volume data collected, the project team determined that the employee shift change in the early part of the a.m. peak period would not be modeled since little other traffic is present at that time. Existing traffic conditions were modeled so as to have a basis of comparison for future scenarios.

The off-airport roadways within the Traffic and Circulation Study Area include 34th Avenue South, Post Road, and East 70th Street. **Table 3** summarizes the general characteristics of these roadways including the posted speed, number of lanes, and the 2010 average daily traffic (ADT) volumes. Intersection geometrics are shown on **Figures 3** and **4**. Descriptions of additional features are provided in the following sub-sections.

34th Avenue South follows a north/south alignment and provides access from I-494 to Terminal 2-Humphrey, Fort Snelling National Cemetery, and several Delta Air Lines Facilities. The portion of 34th Avenue South located north of I-494 is owned and maintained by the MAC. Five through-lanes are provided south of East 72nd Street with two lanes for northbound traffic and three lanes for southbound traffic. Traffic flow along 34th Avenue South is influenced by the Hiawatha LRT line which runs in the median. All left-turn movements across the LRT tracks have exclusive left-turn lanes, with turns permitted only when the traffic signal shows a green arrow. All of the intersections studied along 34th Avenue South are signalized, except 34th Avenue South/East 70th Street which is all-way stop-controlled.

Table 3

Off-Airport Roadways Characteristics

Roadway	Posted Speed (mph)	Thru Lanes	2010 Average Daily Traffic	
			Location	Vehicles per Day
34th Avenue South	35	5	north of I-494 south of East 72nd Street	26,000 14,000
Post Road/East 70th Street	35	2	west of TH 5 east of 34th Avenue South	15,000 7,000

The Hiawatha LRT Line, operated by Metro Transit, runs in the median along 34th Avenue South in the study area. All left-turn movements across the LRT tracks have exclusive left-turn lanes and protected-only left-turn phasing. The traffic signals operate under transit priority during all light rail vehicle (LRV) events along 34th Avenue South, except at American Boulevard and at East 72nd Street where the signals operate under preemption. Under preemption, the signal will change to the light rail phase for an approaching light rail vehicle regardless of the current position in the cycle. Under priority, phases will be extended or shortened to minimize transit delay, but will not be skipped completely in order to serve the light rail phase immediately.

Post Road/East 70th Street provides access from TH 5 to the Terminal 2-Humphrey and several other businesses and parking lots along Post Road/East 70th Street. The businesses and parking lots are primarily associated with the airport. Post Road/East 70th Street follows a northwest/southeast alignment from TH 5 prior to curving to an east/west alignment immediately east of 34th Avenue South. The east/west portion is named East 70th Street while the northwest/southeast portion is named Post Road. Post Road/East 70th Street has a posted speed of 35 mph and is an undivided two lane roadway without turn lanes between the TH 5

Interchange and 34th Avenue South. Although Post Road can be used to reach the Terminal 2-Humphrey from TH 5, the current signing directs travelers to 34th Avenue South. All intersections analyzed along Post Road are side-street stop-controlled, except the Post Road/Northwest Drive/Southbound TH 5 Ramp which is signalized.

Existing turning movement volumes for each of the analyzed intersections were collected in the fall of 2010. Due to MSP employee shift changes peak traffic volumes occur on MSP roadways at times that differ from the standard a.m. and p.m. traffic peak hours. Based on tube counts collected in the fall of 2010, turning movement counts were collected for an earlier three-hour a.m. weekday peak (5:30 a.m.-8:30 a.m.) and a longer five-hour p.m. weekday peak (1:30 p.m.-6:30 p.m.) to better capture the true peak hours of each roadway. Peak hour traffic volumes are shown in **Figures 5-8.**

Vehicle classification data was collected for two weeks in October and November 2010 on Post Road west of the SuperAmerica accesses. Vehicle classification data was also collected manually on 34th Avenue South because the number of lanes on 34th Avenue South did not allow for tube counters to be used. The manual count was conducted in December 2010, from 5:30 a.m. to 8:00 a.m. and 1:30 p.m.-6:30 p.m., immediately south of East 72nd Street. All traffic count data collected is summarized in the Existing Traffic Data Collection Memorandum, included in Appendix C of the EA document.

1.1 2010 Existing Conditions

1.1.1 A.M. Peak

In the a.m. peak hour (7:30 a.m. - 8:30 a.m.), all intersections operate at LOS C or better except the intersection of 34th Avenue South/Westbound I-494 Ramps, which operates at LOS D (see **Table 4** and **Figures 3** and **4**). This is due to the heavy westbound left turn movement, which operates at LOS F. The maximum queue on the westbound exit ramp extends over 1,200 feet, beyond the point where the westbound I-494 exit merges with the westbound TH 5 exit. The average back-of-queue is 342 feet, which would not block access to the right turn lane.

Aside from the westbound I-494 exit ramp, the only other queuing issue is the southbound left at 34th Avenue South/American Boulevard. The maximum queue length is 341 feet, compared to 270 feet of storage length. The average back-of-queue is 47 feet. The storage lane is also sometimes blocked by the queue in the adjacent through lane, which reached up to 423 feet in the model.

1.1.2 P.M. Peak

In the p.m. peak hour (4:30 p.m. - 5:30 p.m.), all intersections operate at LOS C or better except Post Road/SuperAmerica East Driveway (see **Table 4** and **Figures 3** and **4**). During the PM peak, this intersection operates at LOS F due insufficient gaps in Post Road traffic. In the

model, eastbound queues often fill the short Post Road link between the driveway and the signalized intersection of Post Road/Southbound TH 5 Ramps to the east, preventing northbound right turn vehicles from being able to exit. In reality, northbound right turn vehicles will typically become more aggressive about making the turn the longer they wait, or will be allowed onto Post Road by a forgiving eastbound driver.

Other unsatisfactory LOS results during PM peak hour occur for the following four individual roadway intersection movements, all of which operate at LOS E. These movements serve a low volume of vehicles and are not considered critical:

- 34th Avenue South/American Boulevard, northbound left (21 vehicles served per hour)
- 34th Avenue South/American Boulevard, westbound left (84 vehicles served per hour)
- 34th Avenue South/Northbound East 72nd Street, westbound through (4 vehicles served per hour)
- Post Road/Taxi Staging Lot East Exit, northbound right (115 vehicles served per hour)

Similar to the northbound vehicles at the SuperAmerica East Driveway, the northbound vehicles at the Taxi Staging Lot East Exit onto Post Road do not have sufficient gaps to exit. The westbound through traffic volume at the intersection of 34th Avenue South/Northbound East 72nd Street consists of only four vehicles during the peak hour. Due to the low volumes, the unacceptable LOS for this intersection is not considered an operational concern. It is not uncommon for signalized roadway intersection movements with low traffic volumes to have an undesirable LOS.

The only significant queue during the PM peak period occurs at the eastbound left at 34th Avenue South/American Boulevard, with a maximum queue of approximately 540 feet compared to 260 feet of available storage space. While the maximum queue greatly exceeds the storage space, the average queue of 88 feet does not.

1.1.3 Airport Peak

In the airport peak hour (1:30 p.m. - 2:30 p.m.), during the shift change for airport employees, all intersections operate at LOS C or better (see **Table 4** and **Figures 3** and **4**). The northbound left and right turn movements at Post Road/SuperAmerica East Driveway operate at LOS E and F, respectively. As in the p.m. peak period, though to a much lesser extent, there are insufficient gaps on Post Road for vehicles to exit from the east driveway. Gaps are sufficient for exiting from the west SuperAmerica driveway and the east taxi staging lot driveway during the airport peak.

Table 4
Existing Conditions Overall Intersection LOS

Intersection	Control	2010		
		AM Peak	Airport Peak	PM Peak
34th Ave S & American Blvd	Signal	B	B	C
34th Ave S & EB I-494 Ramps	Signal	B	B	B
34th Ave S & WB I-494 Ramps	Signal	D	B	B
34th Ave S & Airport Lane	Signal	A	A	A
34th Ave S & E 75th St	Signal	B	B	B
34th Ave S & E 73rd St	Signal	A	A	A
34th Ave S & E 72nd St NB	Signal	A	A	A
34th Ave S & E 72nd St SB	Signal	B	B	B
34th Ave S & E 70th St	All Way Stop	A	B	B
34th Ave S & Humphrey Dr	Signal	A	A	A
Post Rd & West Employee Lot Entrance	Side Street Stop	A	A	A
Post Rd & East Employee Lot Entrance	Side Street Stop	A	A	A
Post Rd & Taxi Staging Middle Exit	Side Street Stop	A	A	A
Post Rd & Taxi Staging East Exit	Side Street Stop	A	A	B
Post Rd & SA West Driveway	Side Street Stop	A	A	C
Post Rd & SA East Driveway	Side Street Stop	A	C	F
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	B	B	B
Post Rd & NB TH 5 Ramps	Side Street Stop	A	A	A

Notes:
S = South SB = South Bound
E = East NB = North Bound
SA = SuperAmerica

2 No Action

Traffic operations were analyzed with year 2020 and 2025 traffic volumes, assuming no changes to roadway facilities and only changes to the airport facilities that will occur prior to completion of this EA, to have a basis for comparison when assessing the future impacts of airport changes and need for additional roadway capacity.

2.1 2020 No Action

No Action 2020 traffic volumes were used to complete the analysis and all signal timings were optimized and all LRT trains were assumed to retain the same schedule as existing operations and to be upgraded to 3-car vehicles. See **Figures 9 and 10** for geometrics and **Figures 11-14** for volumes.

2.1.1 A.M. Peak

In the a.m. peak hour, with an increase in background volumes but no changes to airport facilities or roadway, all intersections are expected to operate at LOS C or better except 34th Avenue South/Westbound I-494 Ramps and Post Road/Taxi Staging Middle Exit (see **Table 5** and **Figures 9** and **10**). The westbound left-turn movement from the I-494 exit ramp to 34th Avenue South continues to operate at LOS F under 2020 No Action conditions.

The delay at Post Road/Taxi Staging Middle Exit is caused by eastbound queuing from the signal at Post Road/Northwest Drive/Southbound TH 5. Delay in the VISSIM model is only attributed to the nearest downstream intersection so the delay an eastbound vehicle experiences from the Post Road/Northwest Drive/Southbound TH 5 intersection does not start accumulating until it passes the Post Road/SuperAmerica East Driveway intersection. Because the eastbound queue from Post Road/Northwest Drive/Southbound TH 5 spills back to nearly 1,400 feet west of the middle exit of the taxi staging lot, the delay is divided among all of the intersections modeled in between: Post Road/SuperAmerica East Driveway, Post Road/SuperAmerica West Driveway, Post Road/Taxi Staging East Exit, and Post Road/Taxi Staging West Exit. The free eastbound Post Road movement should have no delay due to operations at each of the driveways. The following movements are expected to operate at LOS E or worse due at least in part due to the eastbound delay at Post Road/Northwest Dr/Southbound TH 5 Ramps:

- Post Road/Taxi Staging Middle Exit, eastbound through: LOS F
- Post Road/Taxi Staging East Exit, northbound left: LOS E
- Post Road/Taxi Staging East Exit, northbound right: LOS F
- Post Road/SuperAmerica West Driveway, northbound right: LOS E
- Post Road/SuperAmerica East Driveway, northbound left: LOS F
- Post Road/SuperAmerica East Driveway, northbound right: LOS F

The intersection of 34th Avenue South/American Boulevard is expected to have westbound left and through movements operating at LOS E, with only 58 and 73 vehicles making those movements, respectively. Because these are low volume movements this is not considered a critical issue. The intersection is also expected to have some queuing and blocking issues:

- The southbound left-turn queue sometimes spills out of the turn lane with 122 feet average back-of-queue, 751 feet maximum queue length, and 270-foot storage length. The adjacent through lane also blocks access to the left turn lane sometimes with an average back-of-queue of 91 feet and maximum queue length of 609 feet.

- The eastbound left turn queue is expected to spill out of the turn lane occasionally, with a maximum queue of 300 feet and 260 feet of storage length. Average back-of-queue is 54 feet.

- Access to the 315-foot northbound left turn lane is expected to be blocked sometimes by the adjacent through lane queue, with a maximum queue length of 573 feet and average back-of-queue of 128 feet.

2.1.2 P.M. Peak

In the 2020 No Action p.m. peak hour analysis, the distribution of trips was adjusted to better balance delays on 34th Avenue South and Post Road. Some vehicles originally assigned by the traffic forecasts to Post Road were re-routed to 34th Avenue South due to unreasonable delays on Post Road and to better utilize available capacity on 34th Avenue South.

During the p.m. peak hour, with background traffic growth but no facility changes, the following intersection near the I-494 and TH 5 interchanges operates at LOS E or worse (See **Table 5** and **Figures 9** and **10**):

- Post Road/Northbound TH 5 Ramps: LOS F

At 34th Avenue South/American Boulevard, the following movements operate at LOS E or worse:

- Northbound left: LOS F
- Northbound through: LOS E
- Eastbound left: LOS E
- Southbound left: LOS F
- Westbound left: LOS F
- Westbound through: LOS F

At 34th Avenue South/Eastbound I-494 Ramps, there are two lanes for the 945 vehicles forecasted to make the southbound left turn onto eastbound I-494. The maximum queue for this movement backs up through several intersections and nearly to East 72nd Street. There are an additional 797 vehicles forecasted to make the southbound right from 34th Avenue South to westbound I-494. The heavy southbound movement along 34th Avenue South contributes to several LOS E or worse movements along the corridor:

- 34th Avenue South/Eastbound I-494 Ramps, eastbound left: LOS E
- 34th Avenue South/Eastbound I-494 Ramps, southbound left: LOS E
- 34th Avenue South/Westbound I-494 Ramps, southbound through: LOS F
- 34th Avenue South/Westbound I-494 Ramps, westbound left: LOS E
- 34th Avenue South/Airport Lane, westbound left: LOS F

On Post Road there are insufficient gaps for vehicles to exit the SuperAmerica and the taxi staging lot, due in part to the eastbound queue from the signal at Post Road/Northwest

Drive/Southbound TH 5 Ramps. The following movements are affected by the signal at Post Road/Northwest Drive/Southbound TH 5 Ramps:

- Post Road/Taxi Staging East Exit, northbound left: LOS E
- Post Road/Taxi Staging East Exit, northbound right: LOS E
- Post Road/SuperAmerica West Driveway, northbound left: LOS E
- Post Road/SuperAmerica West Driveway, northbound right: LOS E
- Post Road/SuperAmerica East Driveway, northbound left: LOS F
- Post Road/SuperAmerica East Driveway, northbound right: LOS F

The volumes at Post Road/Northwest Drive/Southbound TH 5 Ramps are not particularly high during the p.m. peak, but the extra intersection leg adds additional movements which require time for the signal to service all approaches.

Vehicles exiting northbound TH 5 also have difficulty finding sufficient gaps in the Post Road traffic. The northbound lefts and rights at the Post Road/Northbound TH 5 Ramps intersection are expected to operate at LOS F with average delay of 170 and 160 seconds per vehicle, respectively.

2.1.3 Airport Peak

During the 2020 No Action airport peak, all intersections are expected to operate at LOS D or better except along Post Road near the TH 5 ramps (see **Table 5** and **Figures 9** and **10**):

- Post Road/Taxi Staging East Exit: LOS E
- Post Road/SuperAmerica West Driveway: LOS E
- Post Road/SuperAmerica East Driveway: LOS E
- Post Road/Northbound TH 5 Ramps: LOS F

The delays are due to the eastbound queue that forms at the Post Road/Northwest Drive/Southbound TH 5 Ramps signal. The eastbound queue is expected to extend over 2,000 feet, preventing vehicles from exiting the taxi lot and the SuperAmerica station:

- Post Road/Taxi Staging Middle Exit, northbound left: LOS F
- Post Road/Taxi Staging Middle Exit, northbound right: LOS F
- Post Road/Taxi Staging Middle Exit, eastbound through: LOS F
- Post Road/Taxi Staging East Exit, northbound left: LOS F
- Post Road/Taxi Staging East Exit, northbound right: LOS F
- Post Road/SuperAmerica West Driveway, northbound left: LOS F
- Post Road/SuperAmerica West Driveway, northbound right: LOS F
- Post Road/SuperAmerica West Driveway, eastbound through: LOS F
- Post Road/SuperAmerica West Driveway, eastbound right: LOS F
- Post Road/SuperAmerica East Driveway, northbound left: LOS F
- Post Road/SuperAmerica East Driveway, northbound right: LOS F

As mentioned previously, the eastbound delays at each intersection west of southbound TH 5 are actually due to the signal at Post Road/Northwest Drive/Southbound TH 5 Ramps. At the signalized intersection, the westbound through movement is expected to operate at LOS E and the eastbound left operates at a LOS F. In addition, the southbound Northwest Drive and southbound TH 5 right turn movements operate at LOS E due to the right turn lanes being blocked by through/left queues. As with the p.m. peak, the volumes at the intersection are not particularly high during the airport peak, but the extra intersection leg adds additional movements which require time for the signal to service all approaches.

The intersection of Post Road/Northbound TH 5 Ramps is also expected to operate at LOS F in the airport peak. This is again due to northbound vehicles not finding sufficient gaps. The stop-controlled northbound movements are expected to operate at LOS F.

The queue for the southbound through movement at 34th Avenue South/Westbound I-494 Ramps sometimes blocks the 390-foot right turn lane, with a maximum queue of 653 feet, and average back-of-queue of 195 feet. This does not affect the southbound right turn delay though, which is expected to operate at LOS A. The queue for the southbound through movement at 34th Avenue South/Airport Lane also sometimes blocks the 135-foot southbound right-turn lane and 160-foot southbound left-turn lane, with a maximum queue of 718 feet and average back-of-queue of 108 feet. The right turn (LOS A) and left turn (LOS C) movement delays are not significantly affected.

2.2 2025 No Action

No Action 2025 traffic volumes were used to complete the analysis and all signal timings were optimized and all LRT trains were assumed to retain the same schedule as existing operations and to be upgraded to 3-car vehicles. See **Figures 15 and 16** for geometrics and **Figures 17-20** for volumes.

The 2025 No Action modeling results showed that 14 overall intersections and 61 individual intersection movements would operate at LOS E or F. Poor operating conditions at the TH 5/Post Road and I-494/34th Avenue South interchanges would cause the majority of the intersection movements to operate at an unacceptable LOS. Traffic could not be processed through the model and backed up beyond modeling limits. See the **Appendix** for intersection and movement LOS.

Table 5
No Action Alternative Overall Intersection LOS

Intersection	Control	2020			2025		
		AM Peak	Airport Peak	PM Peak	AM Peak	Airport Peak	PM Peak
34th Ave S & American Blvd	Signal	C	B	D	D	C	E
34th Ave S & EB I-494 Ramps	Signal	B	C	D	C	D	E
34th Ave S & WB I-494 Ramps	Signal	F	C	D	F	C	E
34th Ave S & Airport Lane	Signal	A	B	C	A	B	D
34th Ave S & E 75th St	Signal	A	B	C	A	B	E
34th Ave S & E 73rd St	Signal	A	A	B	A	A	E
34th Ave S & E 72nd St NB	Signal	A	A	A	A	A	A
34th Ave S & E 72nd St SB	Signal	C	B	B	B	A	E
34th Ave S & E 70th St	All Way Stop	C	B	B	D	A	A
34th Ave S & Humphrey Dr	Signal	A	A	B	A	B	B
Post Rd & West Employee Lot Entrance	Side Street Stop	A	A	A	A	A	A
Post Rd & East Employee Lot Entrance	Side Street Stop	A	A	A	A	A	A
Post Rd & Taxi Staging Middle Exit	Side Street Stop	E	C	A	E	D	A
Post Rd & Taxi Staging East Exit	Side Street Stop	A	E	A	B	E	B
Post Rd & SA West Driveway	Side Street Stop	B	E	B	C	E	C
Post Rd & SA East Driveway	Side Street Stop	B	E	D	C	E	E
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	B	D	C	B	C	C
Post Rd & NB TH 5 Ramps	Side Street Stop	B	F	F	B	F	F

Notes:
S = South SB = South Bound
E = East NB = North Bound
SA = SuperAmerica

3 Alternative 1 - Airlines Remain

3.1 2020 Airlines Remain

Intersection operations were analyzed using year 2020 Airlines Remain Alternative traffic volumes. The following geometric improvements were incorporated into the traffic analysis models:

- Reconstruct 34th Avenue South interchange at I-494 to a diverging diamond
    - LRT trains continue to operate under priority operations
    - LRT trains were never allowed to stop between the eastbound and westbound I-494 ramps

- Reconfigure the 34th Avenue South/East 70th Street/Humphrey Drive and 34th Avenue South/East 70th Street intersections
- Reconfigure East 70th Street beginning at 34th Avenue South to a four lane roadway for about 750 feet
- Construct new TH 5 and Post Road interchange
    - Remove existing and construct new bridge over TH 5
    - Realign Post Road and Northwest Drive
    - Relocate the intersection of Northwest Drive and Post Road

Signal retiming was assumed. See **Figures 21** and **22** for geometrics and **Figures 23-26** for volumes.

3.1.1 A.M. Peak

The modeling results show that all intersections would operate at LOS C or better (see **Table 6** and **Figures 21** and **22**). All individual turning movements would operate at LOS D or better.

3.1.2 P.M. Peak

The modeling results show that all intersections would operate at LOS C or better (see **Table 6** and **Figures 21** and **22**).

While the Airlines Remain Alternative would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The northbound left (LOS E) at 34th Avenue South/Northbound East 72nd Street would have low traffic volumes (under 50 vehicles per hour for each peak period) and there would not be any periods when the queuing would extend outside of the turn lane.

3.1.3 Airport Peak

The modeling results show that all intersections would operate at LOS C or better (see **Table 6** and **Figures 21** and **22**).

While the Airlines Remain Alternative would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The northbound left (LOS E) at 34th Avenue South/Northbound East 72nd Street would have low traffic volumes (under 50 vehicles per hour for each peak period) and there would not be any periods when the queuing would extend outside of the turn lane.

3.2 2025 Airlines Remain

Intersection operations were analyzed using year 2025 Airlines Remain Alternative traffic volumes. No improvements beyond the improvements implemented in the 2020 Airlines Remain model were assumed. See **Figures 27** and **28** for geometrics and **Figures 29-32** for volumes.

3.2.1 A.M. Peak

The modeling results show that all intersections would operate at LOS C or better (see **Table 6**, **Figures 27** and **28**).

While the Airlines Remain Alternative would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The westbound left (LOS E) and through (LOS E) movements at 34th Avenue South/American Boulevard would have relatively low traffic volumes (under 90 vehicles per hour for each peak period) and the left turn queues would not extend outside of the turn lane.

- The northbound through (LOS E) movement at 34th Avenue South/Eastbound I-494 Ramps queue will not impact the American Boulevard intersection.

- The southbound left (LOS E) movement at 34th Avenue South/Humphrey Drive would have relatively low traffic volumes (under 50 vehicles per hour for each peak period) and the queues would not extend outside of the turn lane.

3.2.2 P.M. Peak

The modeling results show that all intersections would operate at LOS D or better (see **Table 6** and **Figures 27** and **28**).

While the Airlines Remain Alternative would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The northbound left (LOS E) at 34th Avenue South/East 72th Street would experience minimal queuing and have adequate space available for vehicle queuing. In addition, this is a low volume movement and the delay experienced would not negatively impact adjacent traffic movements.

- The northbound through (LOS E) and right turn (LOS E) movements at 34th Avenue South/American Boulevard would not significantly impact the adjacent intersection operations.

3.2.3 Airport Peak

The modeling results show that all intersections would operate at LOS C or better (see **Table 6** and **Figures 27** and **28**).

While the Airlines Remain Alternative would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The northbound left (LOS E) at 34th Avenue South/East 72th Street would experience minimal queuing and have adequate space available for vehicle queuing. In addition, this is a low volume movement and the delay experienced would not negatively impact adjacent traffic movements.

Table 6
Alternative 1 - Airlines Remain Overall Intersection LOS

Intersection	Control	2020			2025		
		AM Peak	Airport Peak	PM Peak	AM Peak	Airport Peak	PM Peak
34th Ave S & American Blvd	Signal	C	B	C	C	B	D
34th Ave S & EB I-494 Ramps	Signal	B	B	B	B	B	C
34th Ave S & WB I-494 Ramps	Signal	B	B	B	B	B	C
34th Ave S & Airport Lane	Signal	A	A	A	A	B	A
34th Ave S & E 75th St	Signal	B	B	B	B	B	B
34th Ave S & E 73rd St	Signal	A	A	A	A	A	A
34th Ave S & E 72nd St NB	Signal	A	A	A	A	A	A
34th Ave S & E 72nd St SB	Signal	C	C	B	B	C	B
34th Ave S & Humphrey Dr	Signal	C	B	B	C	B	B
Post Rd & North Taxi Lot	Side Street Stop	A	A	A	A	A	A
Post Rd & NW Drive	Side Street Stop	A	A	A	A	A	A
Post Rd & SB TH 5 Ramps	Signal	A	A	A	A	A	A
Post Rd & NB TH 5 Ramps	Signal	B	B	B	B	B	B

Notes
S = South SB = South Bound
E = East NB = North Bound

4 Alternative 2 - Airlines Relocate

4.1 2020 Airlines Relocate

Off-airport intersection and freeway operations were analyzed using year 2020 Airlines Relocate Alternative traffic volumes. The following Airlines Relocate Alternative improvements were incorporated into the traffic analysis models:

- Reconstruct 34th Avenue South interchange at I-494 to a diverging diamond
    - LRT trains continue to operate under priority operations
    - LRT trains were never allowed to stop between the eastbound and westbound I-494 ramps
- Add lane to northbound 34th Avenue South
- Improve the intersection of East 72nd Street and 34th Avenue intersection
- Reconfigure the intersections of 34th Avenue South / East 70th Street and Humphrey Drive East 70th Street
- Reconfigure East 70th Street beginning at 34th Avenue South to a four lane roadway for about 1,500 feet
- Construct new TH 5 and Post Road interchange
    - Remove existing and construct new bridge over TH 5
    - Realign Post Road and Northwest Drive
    - Relocate the intersection of Northwest Drive and Post Road

See **Figures 33** and **34** for geometry and **Figures 35-38** for intersection volumes.

4.1.1 A.M. Peak

The modeling results showed that all intersections would operate at LOS C or better (see **Table 7** and **Figures 33** and **34**).

While the Airlines Relocate Alternative would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The westbound left at 34th Avenue South/American Boulevard would have a delay of 56 seconds which is near the lower limit of the LOS E threshold and this delay would not

significantly impact the adjacent roadway segment or intersection operations.

- The westbound right (LOS F) and through (LOS E) movements at East TH 5/Post Road ramp intersection would have low traffic volumes (under 75 vehicles per hour for the peak periods modeled) and the delay would not significantly impact an adjacent roadway segment or intersection operations.

4.1.2 P.M. Peak

The modeling results showed that all intersections would operate at LOS C or better (see **Table 7** and **Figures 33** and **34**)

While the Airlines Relocate Alternative would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The northbound left (LOS E) at 34th Avenue South/East 73rd Street would have a delay of 56 seconds per vehicle which is near the lower limit of the LOS E threshold and this delay would not significantly impact the adjacent roadway segment or intersection operations.

- The westbound right (LOS E) and through (LOS F) movements at East TH 5/Post Road ramp intersection would have low traffic volumes (under 75 vehicles per hour for the peak periods modeled) and the delay would not significantly impact an adjacent roadway segment or intersection operations.

4.1.3 Airport Peak

The modeling results showed that all intersections would operate at LOS C or better (see **Table 7** and **Figures 33** and **34**)

While the Airlines Relocate Alternative would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The westbound right (LOS E) and through (LOS E) movements at the East TH 5/Post Road ramp intersection would have low traffic volumes (under 75 vehicles per hour for the peak periods modeled) and the delay would not significantly impact any adjacent roadway segment or intersection operations.

4.2 2025 Airlines Relocate

The 2025 Airlines Relocate modeling results showed that two overall intersections would operate at LOS E or worse (see **Table 7**). See **Figures 39** and **40** for geometry and **Figures 41-44** for intersection volumes. The intersection of 34th Avenue South/American Boulevard would operate at LOS E during the AM and PM peak hours. The intersection of 34th Avenue South/Westbound I-494 Ramps would also operate at LOS E in the AM peak hour.

Only one of these intersections would have a worse LOS under the Airlines Relocate Alternative than with the 2025 No Action Alternative. The intersection of 34th Avenue South and American Boulevard would degrade from an LOS D under the 2025 No Action Alternative to an E under the 2025 Airlines Relocate Alternative during the AM peak hour.

Given these operational results, a 2025 Mitigated Airlines Relocate alternative was developed, as discussed below.

Table 7

Alternative 2 – Airlines Relocate Overall Intersection LOS

Intersection	Control	2020			2025		
		AM Peak	Airport Peak	PM Peak	AM Peak	Airport Peak	PM Peak
34th Ave S & American Blvd	Signal	C	B	C	**E**	B	**E**
34th Ave S & EB I-494 Ramps	Signal	B	B	B	D	C	D
34th Ave S & WB I-494 Ramps	Signal	B	B	B	**E**	C	D
34th Ave S & Airport Lane	Signal	A	B	A	A	B	B
34th Ave S & E 75th St	Signal	B	B	B	B	B	B
34th Ave S & E 73rd St	Signal	A	A	A	A	B	C
34th Ave S & E 72nd St NB	Signal	A	B	B	B	B	B
34th Ave S & E 72nd St SB	Signal	B	C	B	B	B	C
34th Ave S & Humphrey Dr	Signal	B	C	C	B	C	C
Post Rd & North Taxi Lot	Side Street Stop	A	A	A	A	A	B
Post Rd & NW Drive	Side Street Stop	A	A	A	A	A	A
Post Rd & SB TH 5 Ramps	Signal	A	A	A	A	A	A
Post Rd & NB TH 5 Ramps	Signal	C	B	B	C	B	B

Notes
S = South SB = South Bound
E = East NB = North Bound

4.3 2025 Mitigated Airlines Relocate

To develop the 2025 Mitigated Airlines Relocate scenario, intersection operations were analyzed using year 2025 Relocate Alternative traffic volumes and the following geometric improvements were made to the model in addition to the geometric improvements assumed in the 2020 Airlines Relocate scenario:

- Modification of the southbound double right turn lane to a triple right at the westbound I-494 ramps
- Modification of the eastbound left and right turn lanes from double to triple turn lanes at the eastbound I-494 ramps

- Modification of the northbound right to a triple right turn lane at the eastbound I-494 ramps
- Modification of the westbound left turn lane to southbound 34th Avenue from a double to a triple left at the westbound I-494 ramps

The following mitigation would improve traffic operations for the 2025 Airlines Relocate Alternative:

- The Taxi Staging Access southbound movements would operate at LOS F during the PM peak period. Traffic volumes should be monitored to determine when a signalized intersection is warranted per the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD).

See **Figures 45** and **46** for geometrics and **Figures 41-44** for volumes.

4.3.1 A.M. Peak

All overall intersections would operate at an LOS of C or better with the Mitigated Airlines Relocate Alternative in 2025 (see **Table 8**, **Figures 45** and **46**).

While there would be impacts to individual turning movements, they would not exceed the threshold of significance because:

- The northbound through (LOS E) movement at 34th Avenue South/Eastbound I-494 Ramps queue will not impact the American Boulevard intersection.
- The westbound right (LOS F) and through (LOS F) movements at East TH 5/Post Road Ramp intersection, would have low traffic volumes (under 100 vehicles per hour for the peak periods modeled) and the delay would not significantly impact the adjacent roadway segments or intersection operations.

4.3.2 P.M. Peak

All overall intersections would operate at an LOS of C or better with the Mitigated Airlines Relocate Alternative in 2025 (see **Table 8** and **Figures 45** and **46**).

While there would be impacts to individual turning movements, they would not exceed the threshold of significance because:

- The westbound right (LOS E) and through (LOS E) movements at East TH 5/Post Road Ramp intersection, would have low traffic volumes (under 100 vehicles per hour for the peak periods modeled) and the delay would not significantly impact the adjacent roadway segments or intersection operations.
- The Post Road/Taxi Staging intersection would have over 150 southbound vehicles turning left and 150 southbound vehicles turning right. The southbound left would operate with a delay of 127 seconds per vehicle under side street stop controlled operations. This delay is

significantly over the 50 seconds per vehicle threshold that defines an LOS F. Therefore, traffic volumes should be monitored at this location. When warranted, a traffic signal should be installed to improve traffic operations, reducing delay below the threshold of significance.

4.3.3 Airport Peak

All overall intersections would operate at an LOS of C or better with the Mitigated Airlines Relocate Alternative in 2025 (see **Table 8** and **Figures 45** and **46**).

While there would be impacts to individual turning movements, they would not exceed the threshold of significance because:

- The westbound right (LOS E) at East TH 5/Post Road Ramp intersection would have low traffic volumes (under 100 vehicles per hour for the peak periods modeled) and the delay would not significantly impact the adjacent roadway segments or intersection operations.
- The southbound left and through (LOS E) at 34th Avenue South/Humphrey Drive intersection would have low traffic volumes (under 50 vehicles per hour for the peak periods modeled) and the delay would not significantly impact the adjacent roadway segments or intersection operations.

Table 8

Mitigated Alternative 2 – Airlines Relocate Overall Intersection LOS

Intersection	Control	2025		
		AM Peak	Airport Peak	PM Peak
34th Ave S & American Blvd	Signal	C	B	B
34th Ave S & EB I-494 Ramps	Signal	C	B	C
34th Ave S & WB I-494 Ramps	Signal	C	C	C
34th Ave S & Airport Lane	Signal	B	A	A
34th Ave S & E 75th St	Signal	B	B	B
34th Ave S & E 73rd St	Signal	A	A	A
34th Ave S & E 72nd St NB	Signal	A	B	B
34th Ave S & E 72nd St SB	Signal	B	B	B
34th Ave S & Humphrey Dr	Signal	B	C	C
Post Rd & North Taxi Lot	Side Street Stop	A	A	B
Post Rd & NW Drive	Side Street Stop	A	A	A
Post Rd & SB TH 5 Ramps	Signal	A	A	A
Post Rd & NB TH 5 Ramps	Signal	C	B	B

Notes

S = South SB = South Bound

E = East NB = North Bound

5 Year 2030 Analysis Scenarios (FHWA)

To meet the requirements of the Federal Highway Administration (FHWA), a 20-year forecast (year 2030) was conducted for the off-airport arterial regional roadways for the No Action and Airport Relocate alternatives. This included analysis of the following ramp terminal intersections:

- 34th Ave S & EB I-494 Ramps
- 34th Ave S & WB I-494 Ramps
- Post Rd & SA West Driveway
- Post Rd & SA East Driveway
- Post Rd & Northwest Dr/SB TH 5 Ramps
- Post Rd & NB TH 5 Ramps

The results are described below.

5.1 2030 No Action

No Action 2030 traffic volumes were used to complete the analysis and all signal timings were optimized and all LRT trains were assumed to retain the same schedule as existing operations and to be 3 car vehicles. See **Figures 47** and **48** for geometrics and **Figures 49-52** for volumes.

The 2030 No Action modeling results showed that 5 of 6 intersections will operate at LOS E or F. There would be impacts to adjacent intersection similar to those that would occur under the 2025 No Action scenario.

Table 9
2030 No Action Overall Intersection LOS

Intersection	Control	2030		
		AM Peak	Airport Peak	PM Peak
34th Ave S & EB I-494 Ramps	Signal	D	D	F
34th Ave S & WB I-494 Ramps	Signal	F	C	F
Post Rd & SA West Driveway	Side Street Stop	C	E	D
Post Rd & SA East Driveway	Side Street Stop	B	E	D
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	B	D	B
Post Rd & NB TH 5 Ramps	Signal	B	F	E

Notes
S = South
E = East
SA = SuperAmerica
SB = South Bound
NB = North Bound

5.2 2030 Build

Intersection operations were analyzed using year 2030 Build traffic volumes. The same geometrics as under the 2025 Mitigated Airline Relocate scenario were used. Signal retiming was assumed. **See Figures 53** and **54** for geometrics and **Figures 55-58** for volumes.

5.2.1 A.M. Peak

The modeling results show that all intersections would operate at LOS C or better (see **Table 10** and **Figures 53-54**).

While the 2030 Build would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The westbound through (LOS E) and right (LOS F) at Post Road and the northbound TH 5 ramps would have low traffic volumes (under 110 vehicles per hour for the peak periods modeled) and the delay would not significantly impact the adjacent roadway segments or intersection operations.

5.2.2 P.M. Peak

The modeling results show that all intersections would operate at LOS C or better (**see Table 10** and **Figures 53-54**).

While the 2030 Build would result in impacts to individual turning movements, these impacts would not exceed the threshold of significance because:

- The southbound through (LOS E) at 34th Avenue South and eastbound I-494 ramps because the queuing will not negatively impact the 34th Avenue South and Airport Lane intersection.

- The westbound through and right turn movements (both LOS E) at Post Road and NB TH 5 ramps would have low traffic volumes (under 110 vehicles per hour for the peak periods modeled) and the delay would not significantly impact the adjacent roadway segments or intersection operations.

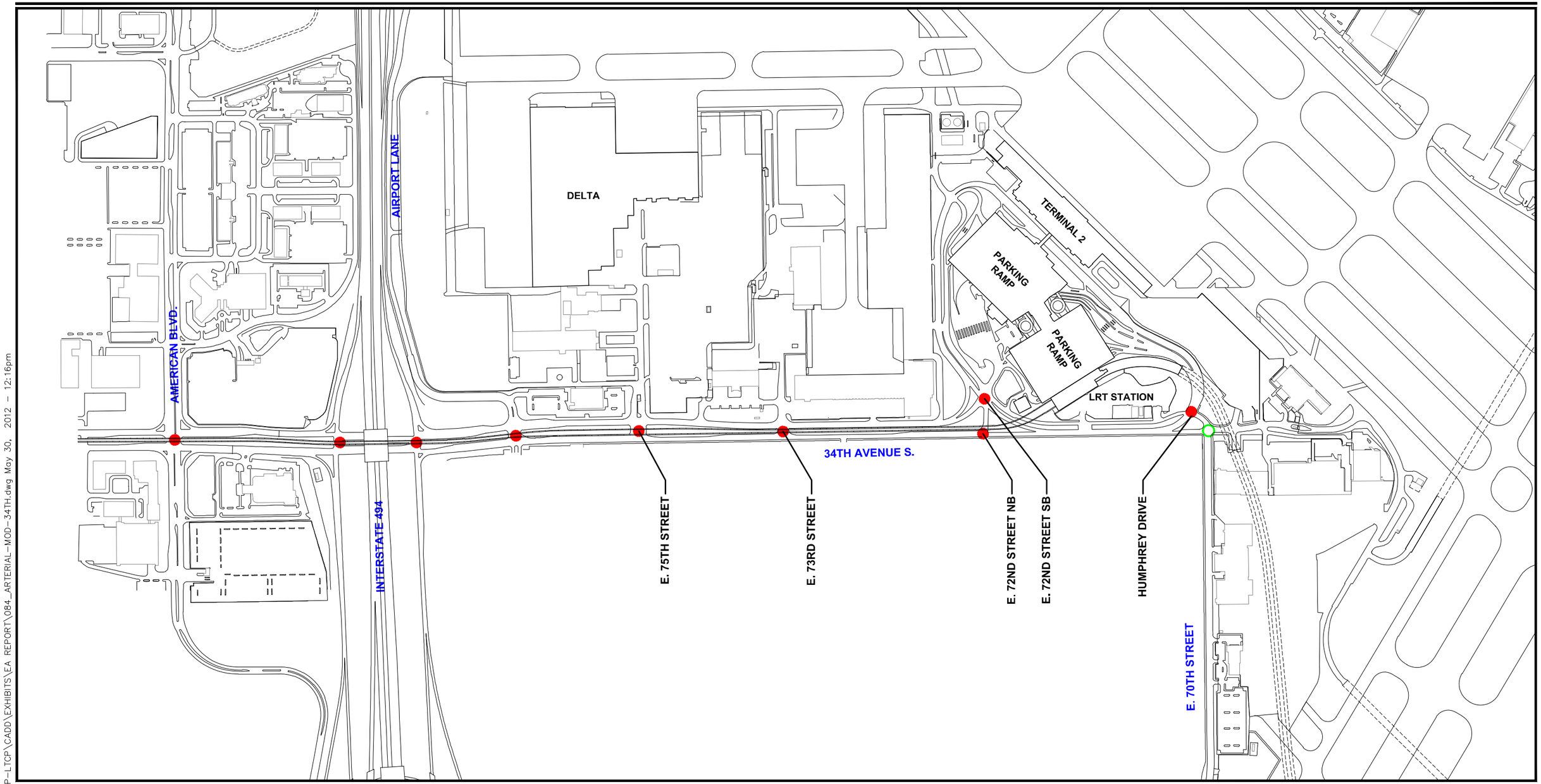
5.2.3 Airport Peak

The modeling results show that all intersections would operate at LOS C or better (see **Table 10** and **Figures 53-54**).

Table 10
2030 Build Overall Intersection LOS

Intersection	Control	2030		
		AM Peak	Airport Peak	PM Peak
34th Ave S & EB I-494 Ramps	Signal	C	C	C
34th Ave S & WB I-494 Ramps	Signal	C	C	C
Post Rd & NW Drive	Side Street Stop	A	A	A
Post Rd & SB TH 5 Ramps	Signal	A	B	A
Post Rd & NB TH 5 Ramps	Signal	C	B	B

Notes
S = South SB = South Bound
E = East NB = North Bound



LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION

Arterial Operations Modeled Intersections - Existing Conditions - 34th Avenue S.

N

0 600' 1200'

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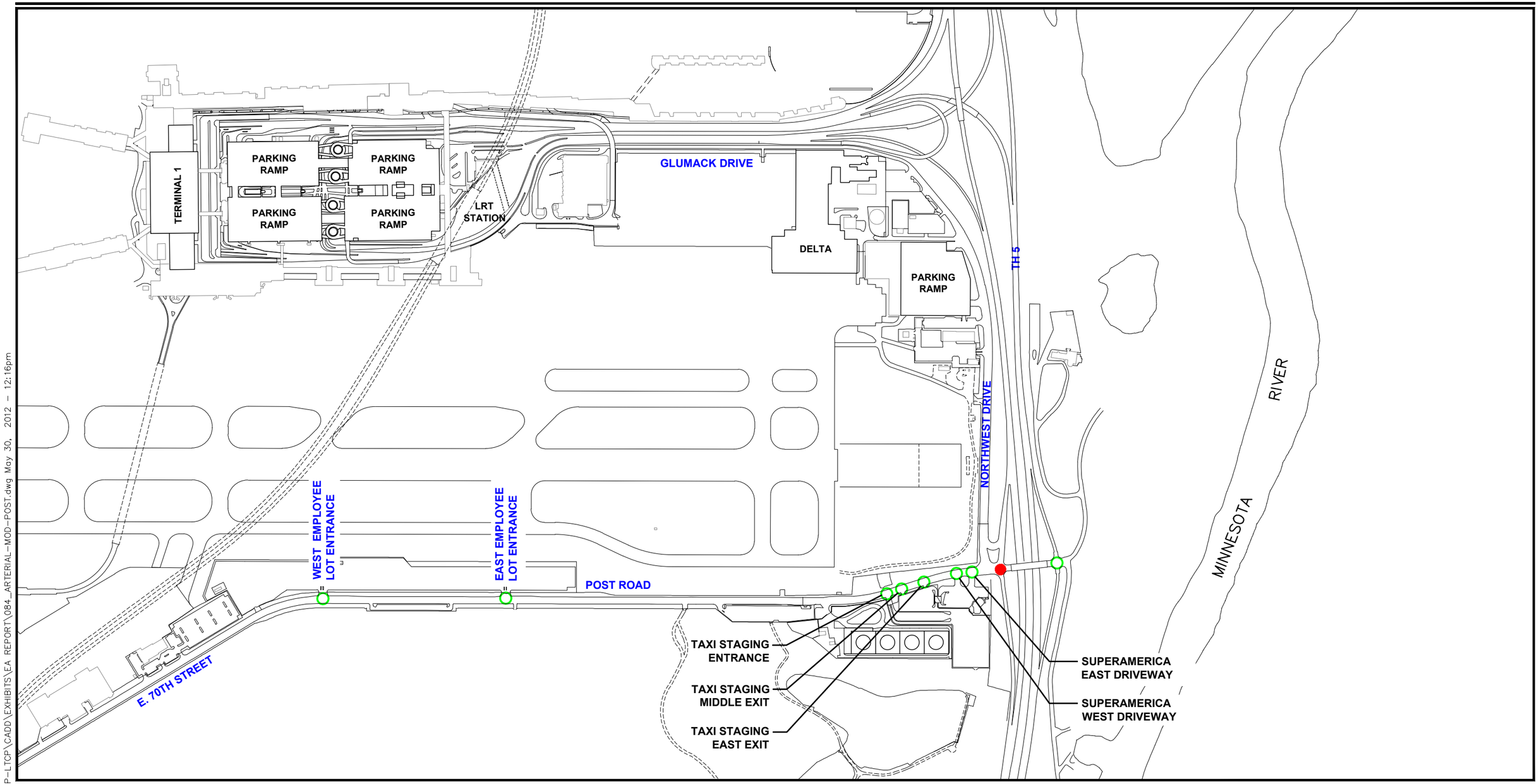

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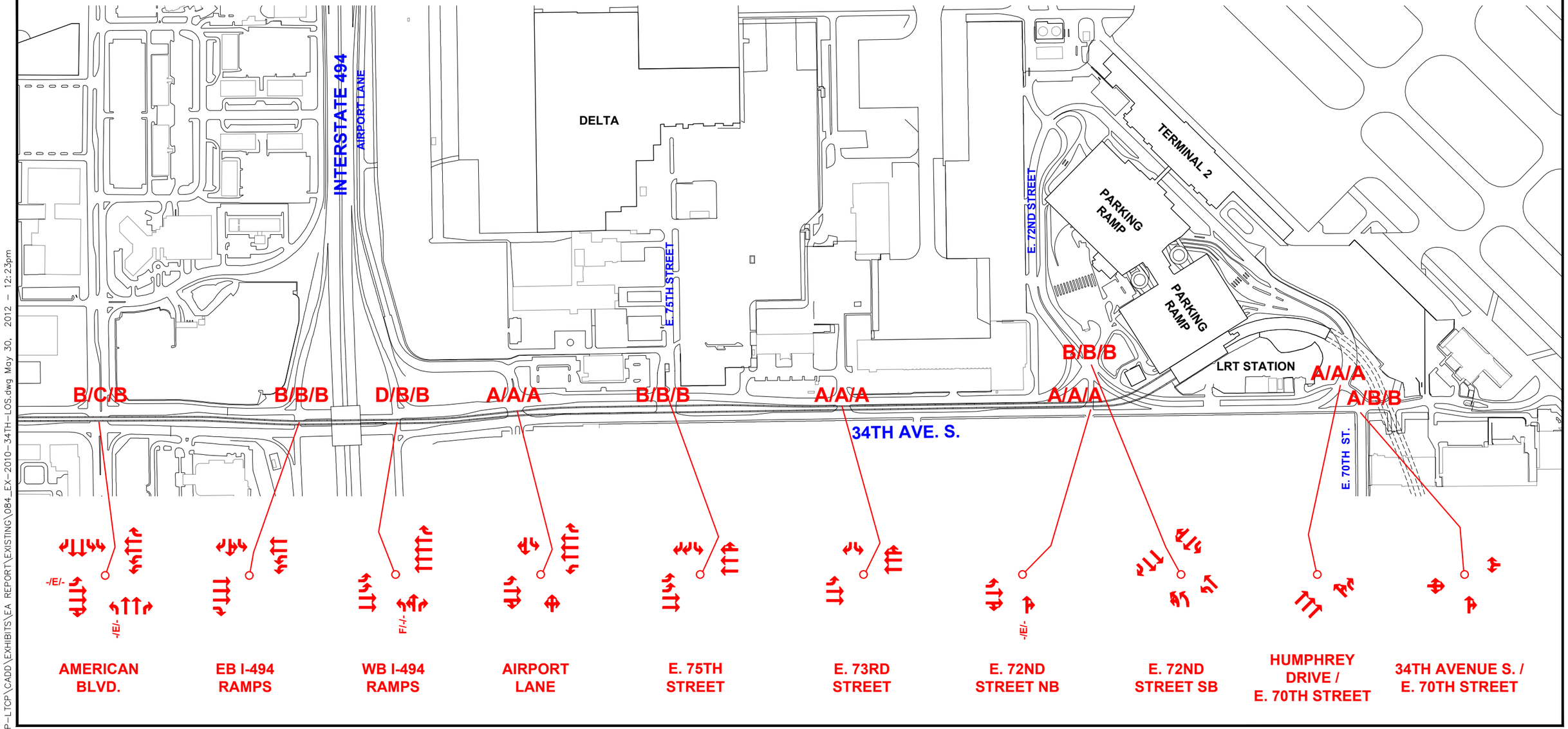
LEGEND

- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION

Arterial Operations Modeled Intersections - Existing Conditions - Post Road

N

0 600' 1200'



LEGEND

X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

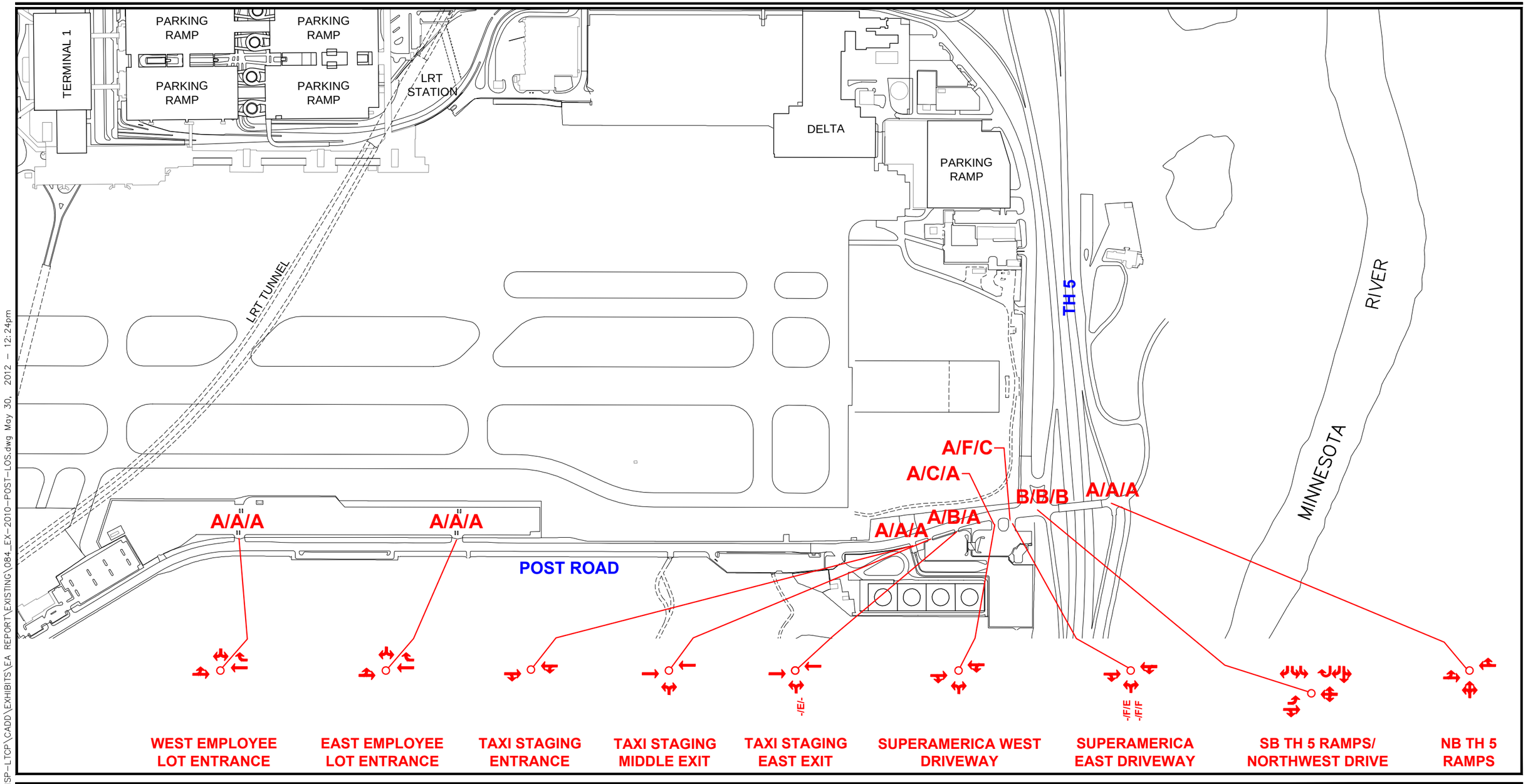
* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

Existing Lane Geometrics and Level of Service - 34th Avenue South

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\EXISTING\084_EX-2010-34TH_LOS.dwg May 30, 2012 - 12:23pm



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\EXISTING\084_EX-2010-POST-LOS.dwg May 30, 2012 - 12:24pm

LEGEND

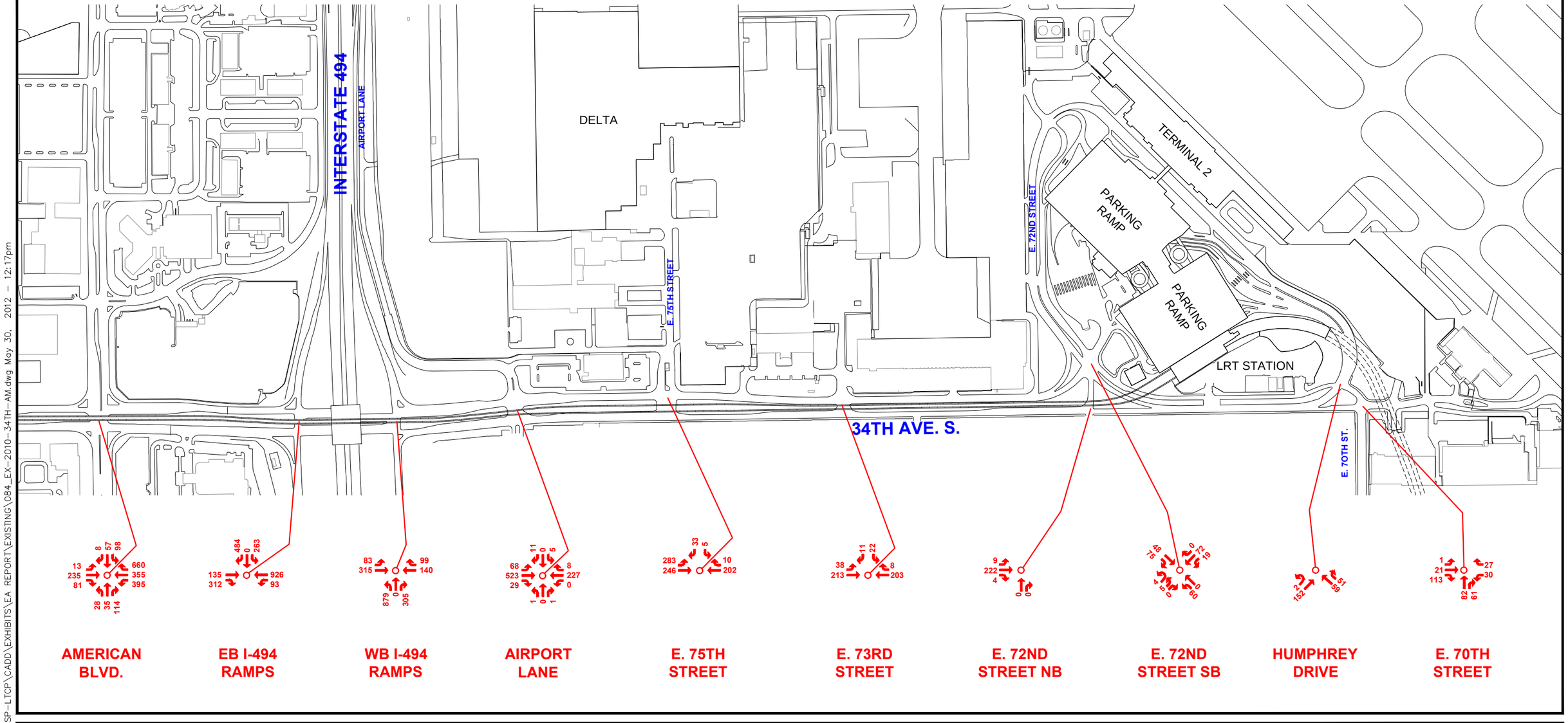
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

Existing Lane Geometrics and Level of Service - Post Road

N

0 500' 1000'



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\EXISTING\084_EX-2010-34TH-AM.dwg May 30, 2012 - 12:17pm

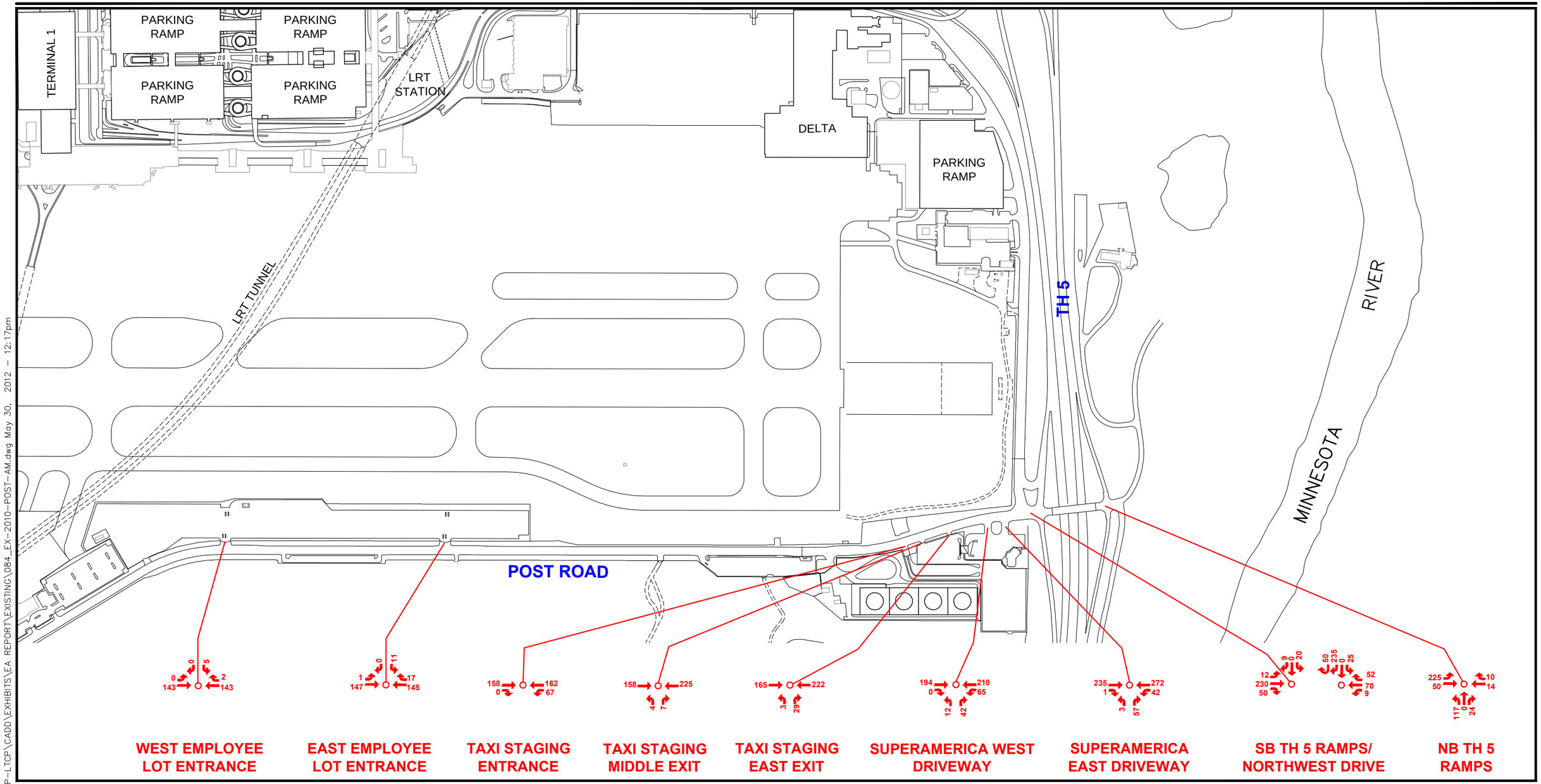
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

Existing Traffic Volumes AM Peak Hour - 34th Avenue S

N

0 500' 1000'



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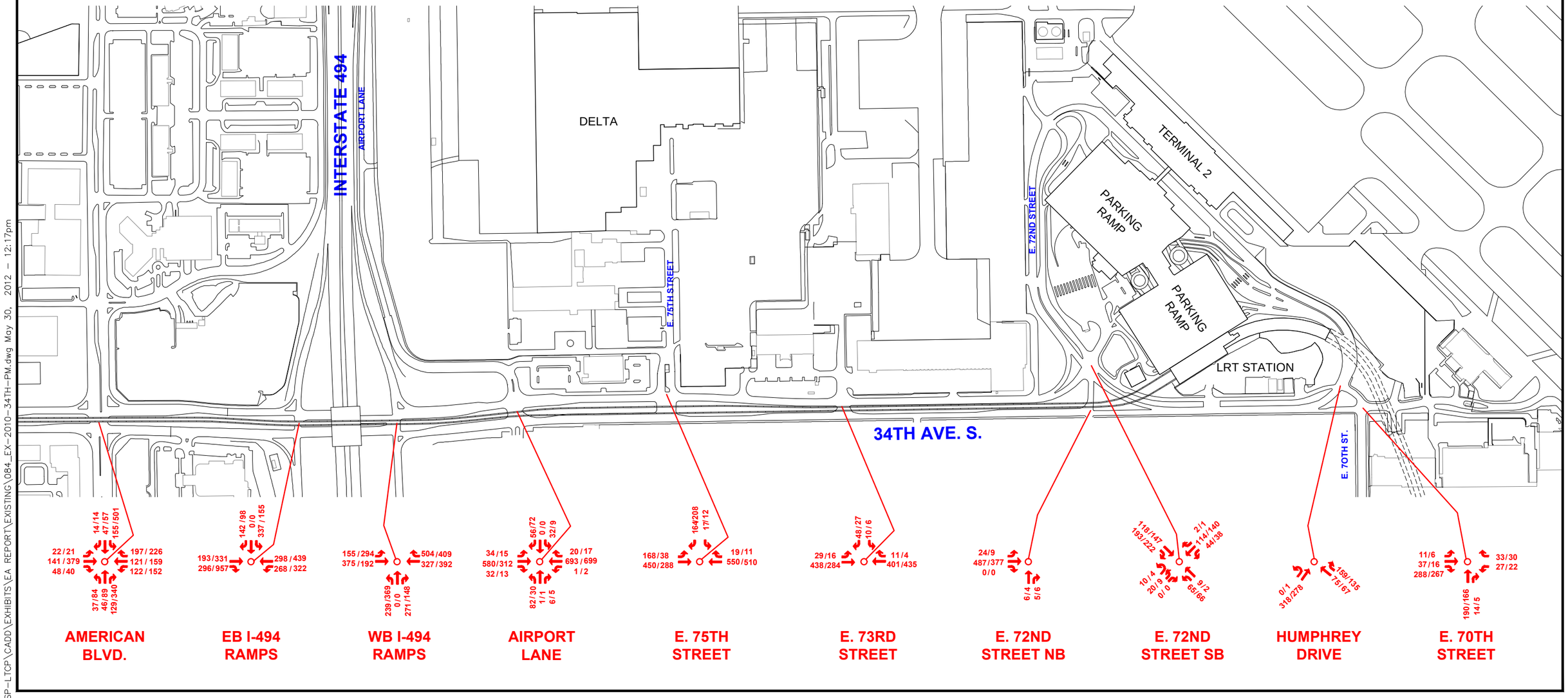
LEGEND
XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

Existing Traffic Volumes AM Peak Hour - Post Road

N

0 500' 1000'



LEGEND

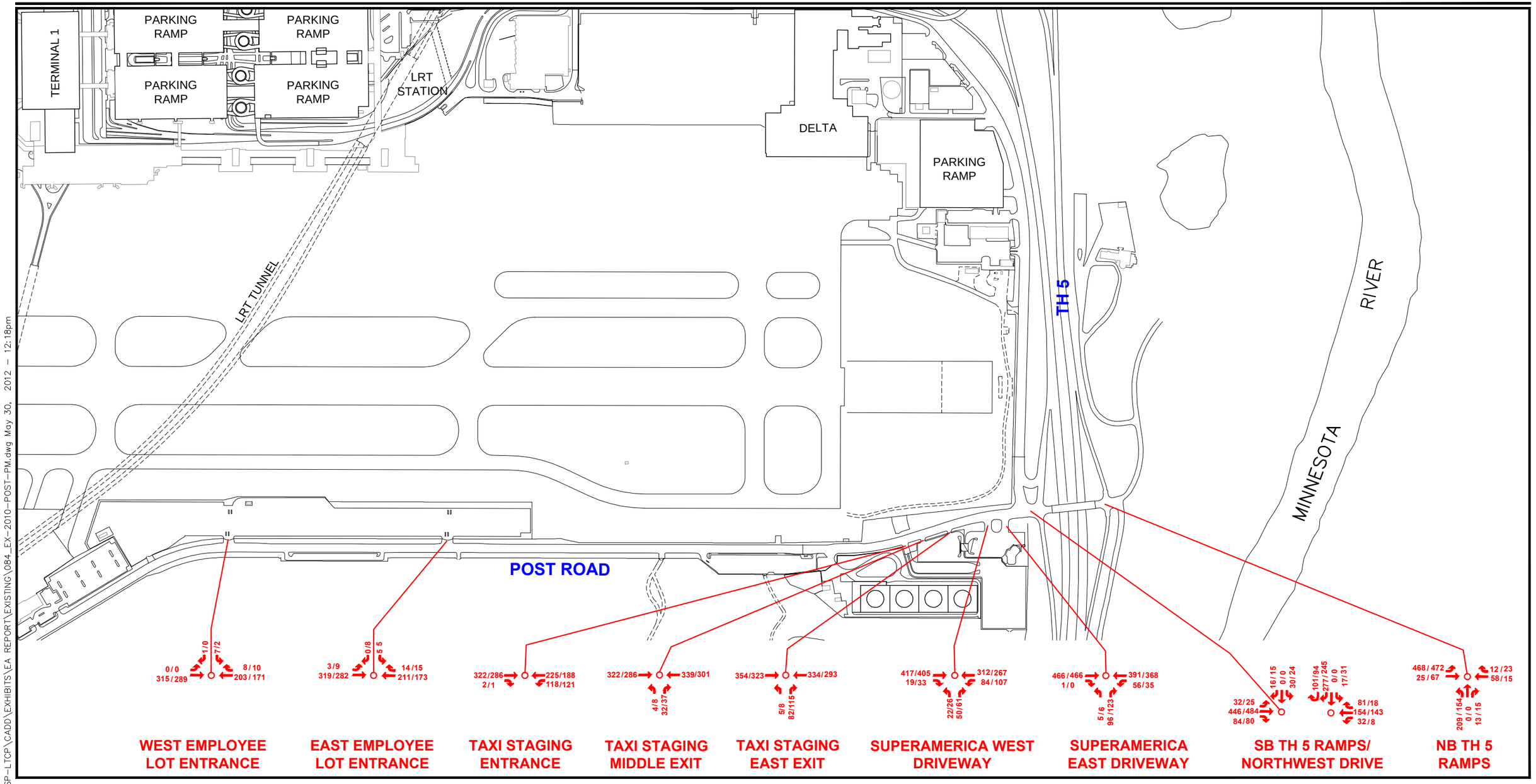
XX/XX 1:30/4:30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

Existing Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\EXISTING\084_EX-2010-34TH-PM.dwg May 30, 2012 - 12:17pm



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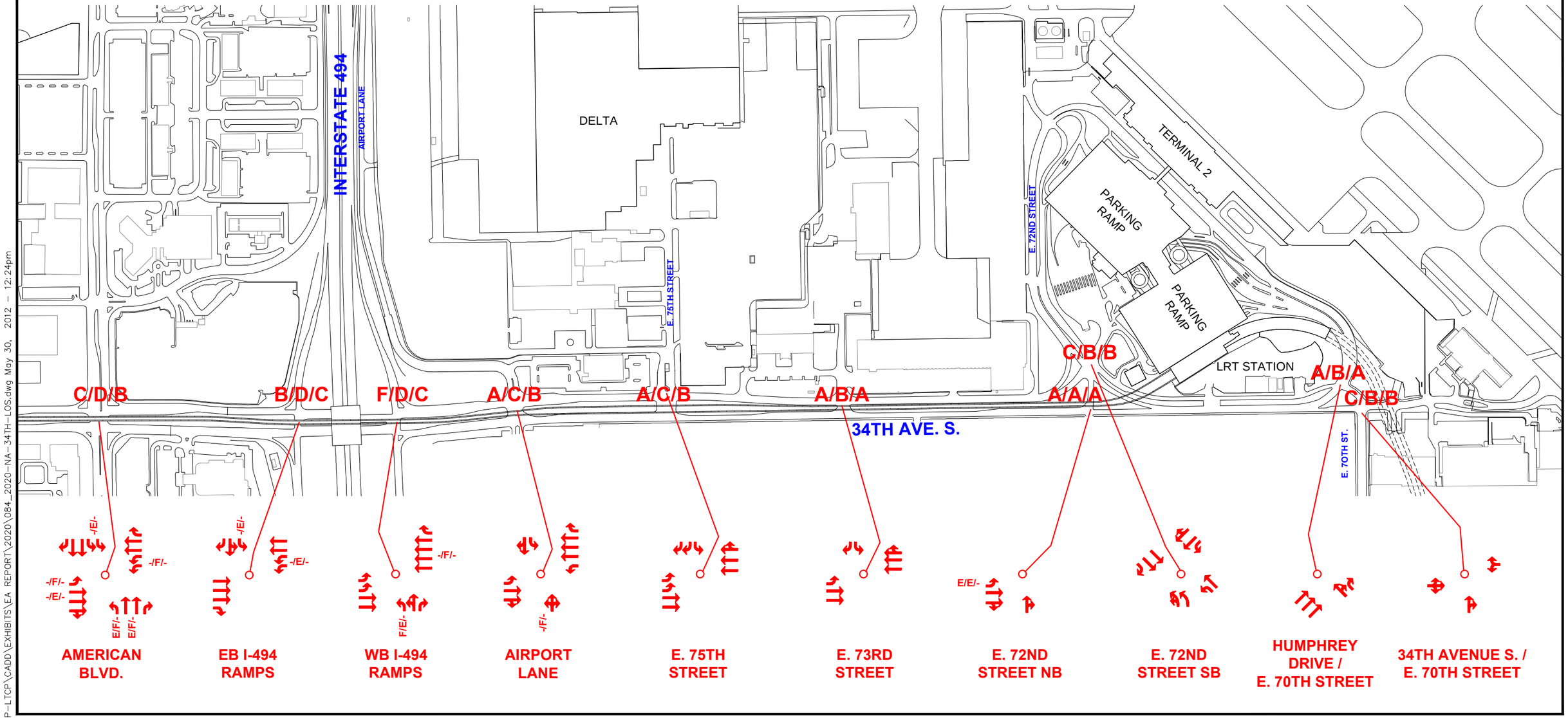
LEGEND

XX/XX 1:30/4:30 AIRPORT PM PEAK HOUR TRAFFIC VOLUMES

Existing Traffic Volumes Airport/PM Peak Hours - Post Road

N

0 500' 1000'



2020 No Action Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

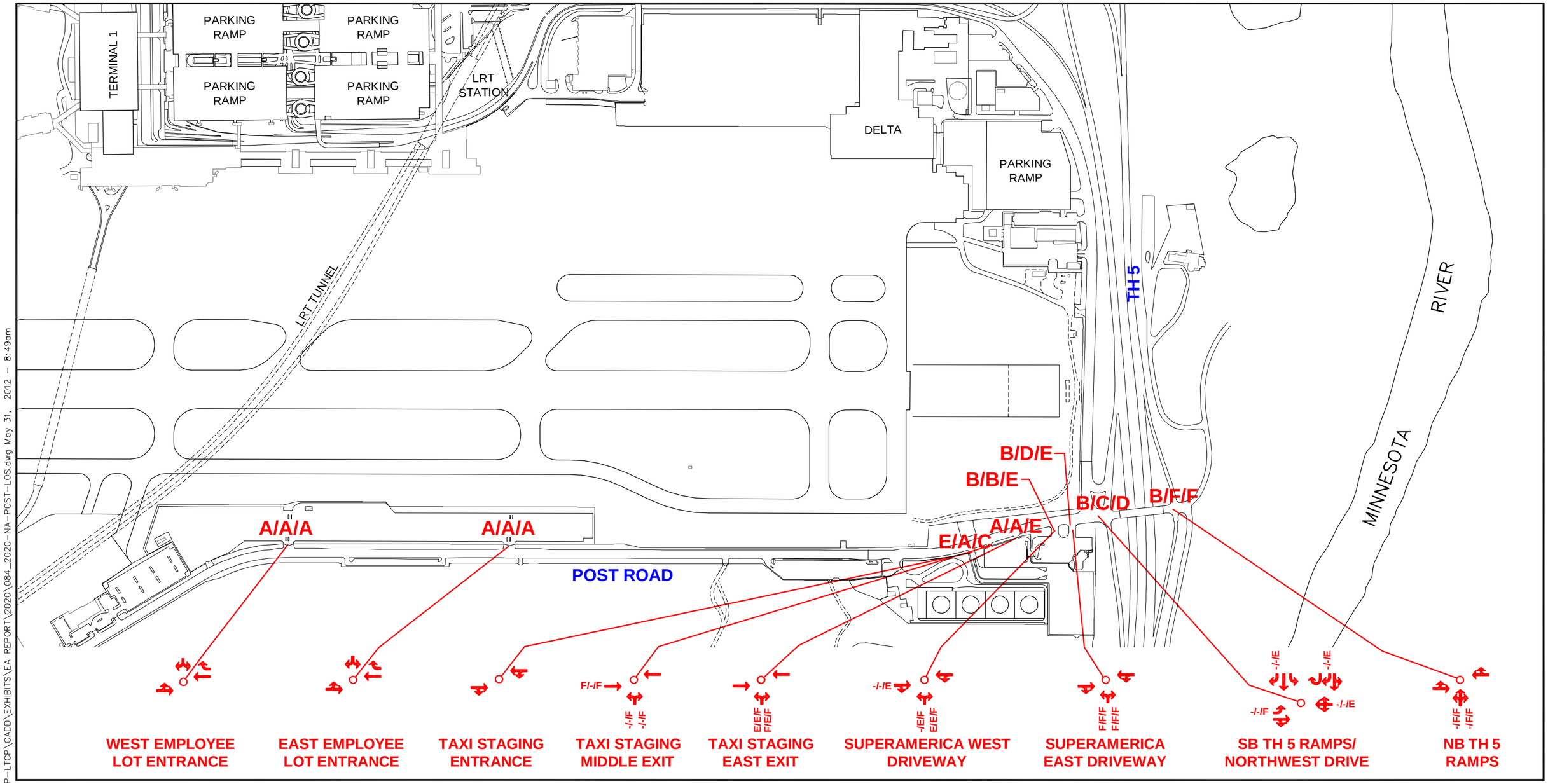
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-NA-34TH-LOS.dwg May 30, 2012 - 12:24pm



2020 No Action Lane Geometrics and Level of Service - Post Road

LEGEND

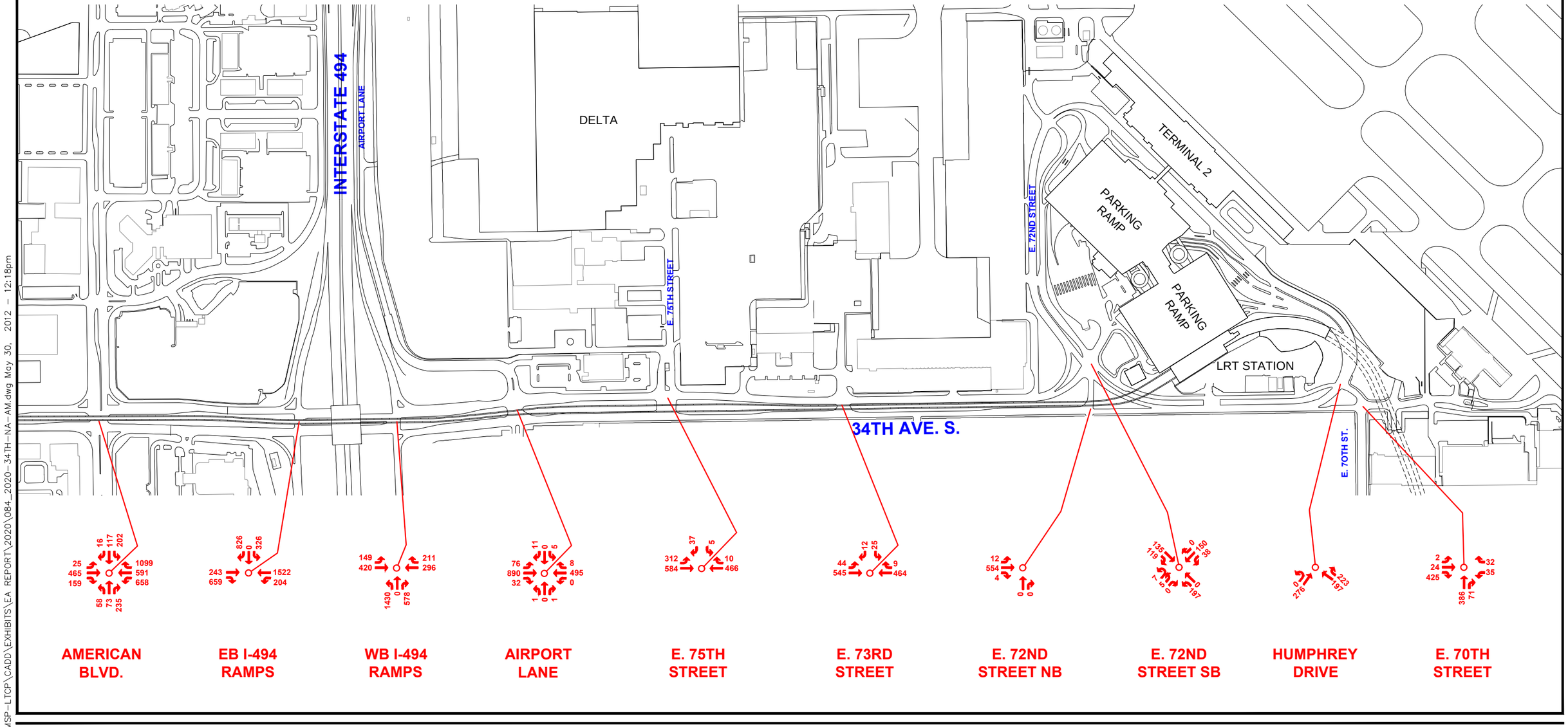
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 500' 1000'

K:_TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-NA-POST-LOS.dwg May 31, 2012 - 8:49am



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-34TH-NA-AM.dwg May 30, 2012 - 12:18pm

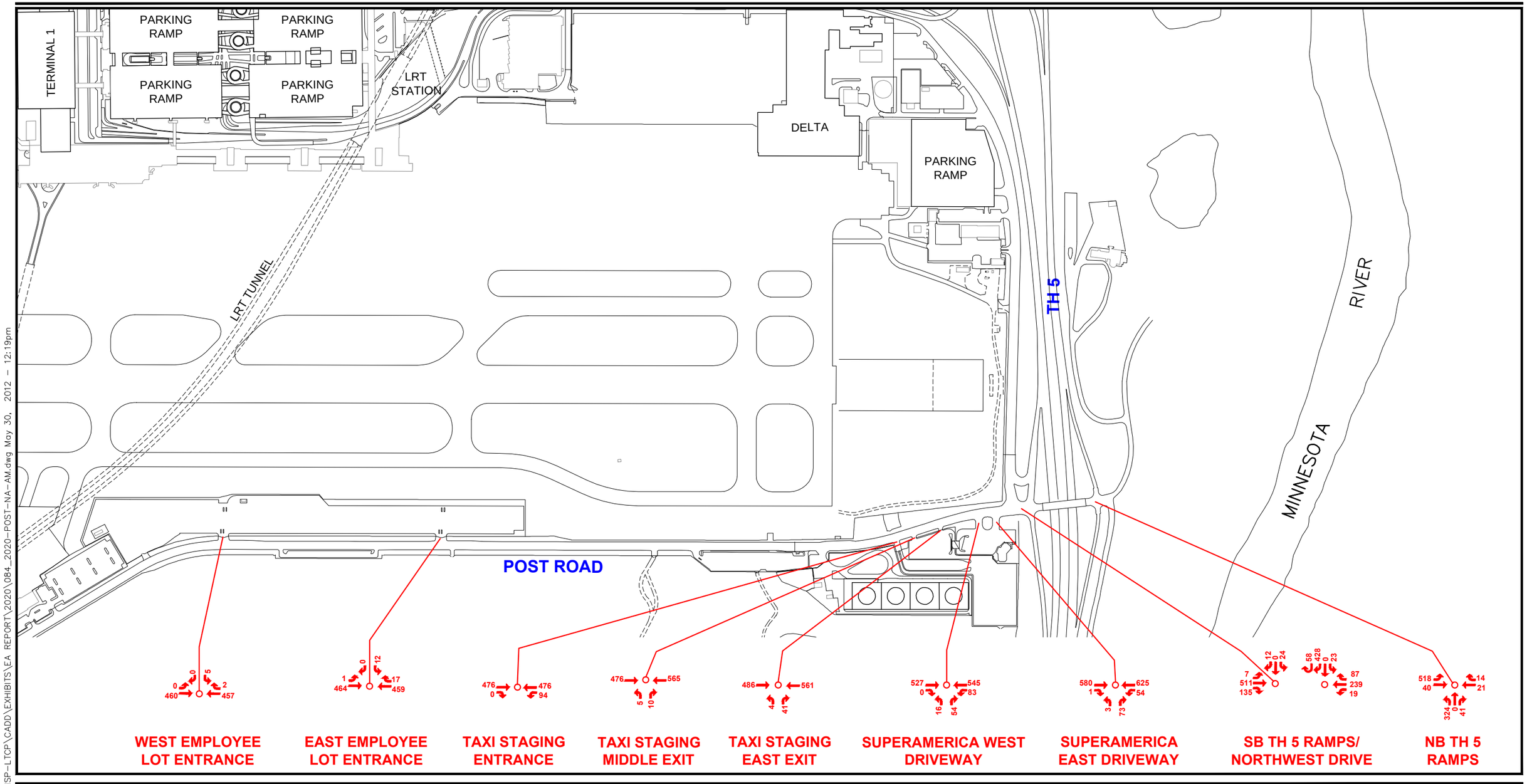
2020 No Action Traffic Volumes AM Peak Hour - 34th Avenue S

LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

0 500' 1000'



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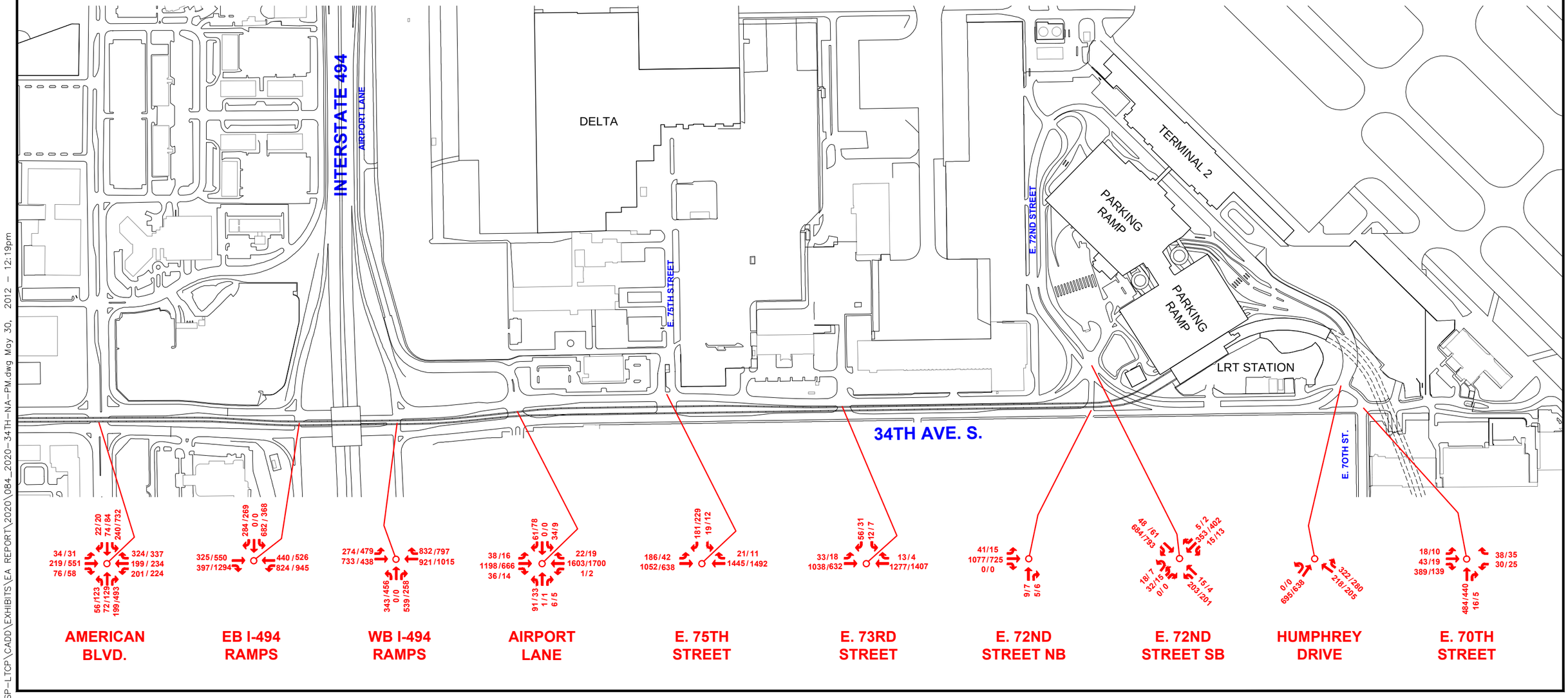
LEGEND
XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

2020 No Action Traffic Volumes AM Peak Hour - Post Road

N

0 500' 1000'



2020 No Action Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

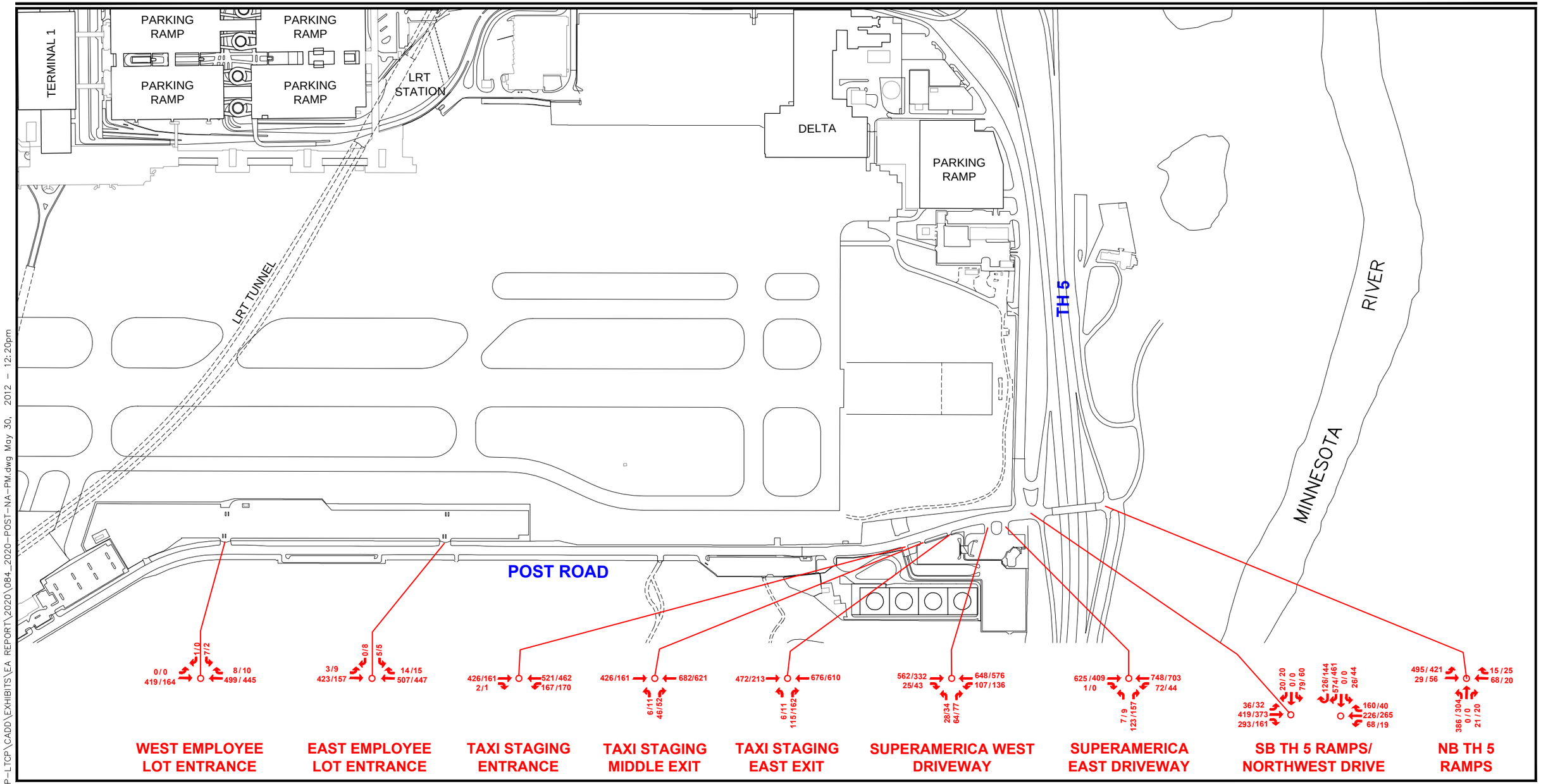
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-34TH-NA-PM.dwg May 30, 2012 - 12:19pm



K:\TWC_Aviation\MAC\084_MSP_LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020_POST_NA_PM.dwg May 30, 2012 — 12:20pm

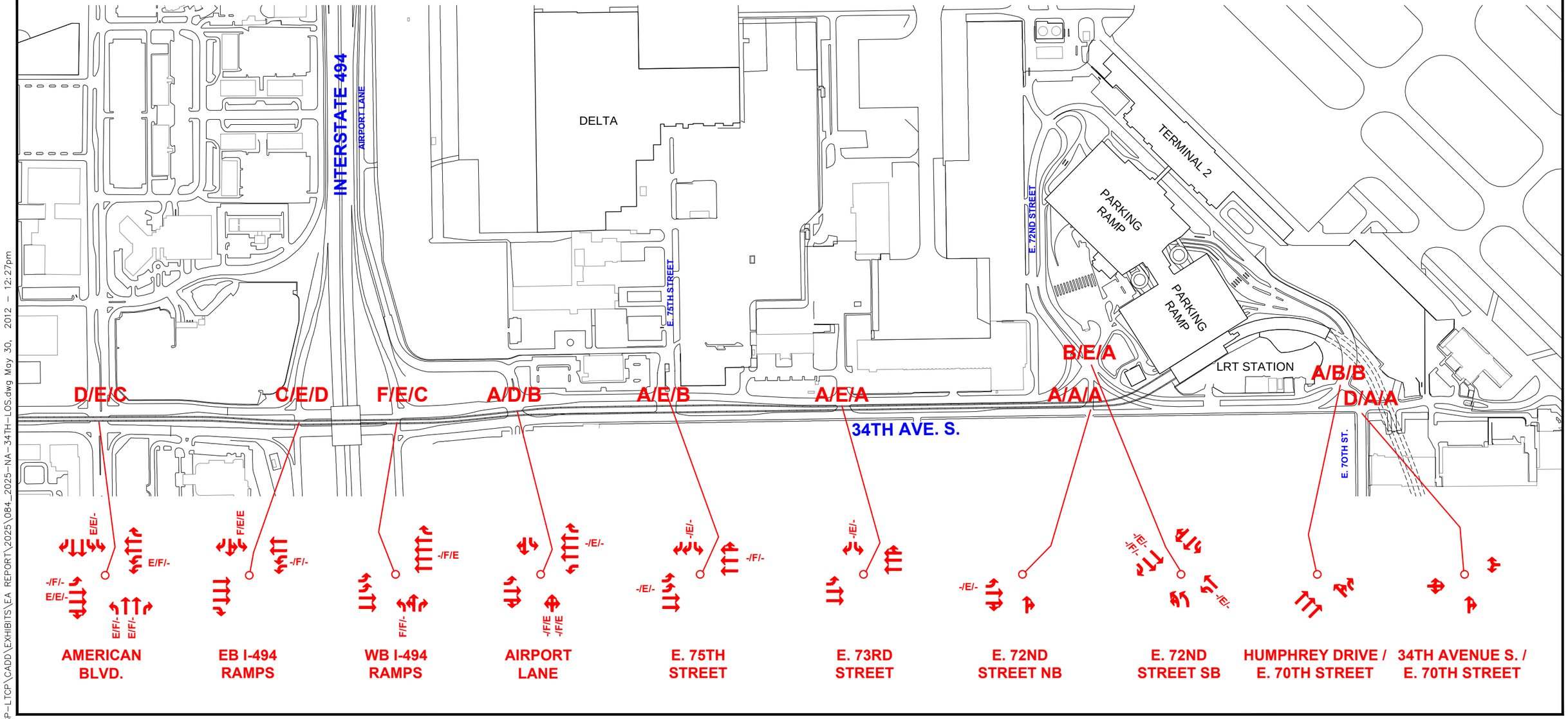
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

2020 No Action Traffic Volumes Airport/PM Peak Hours - Post Road

N

0 500' 1000'



2025 No Action Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

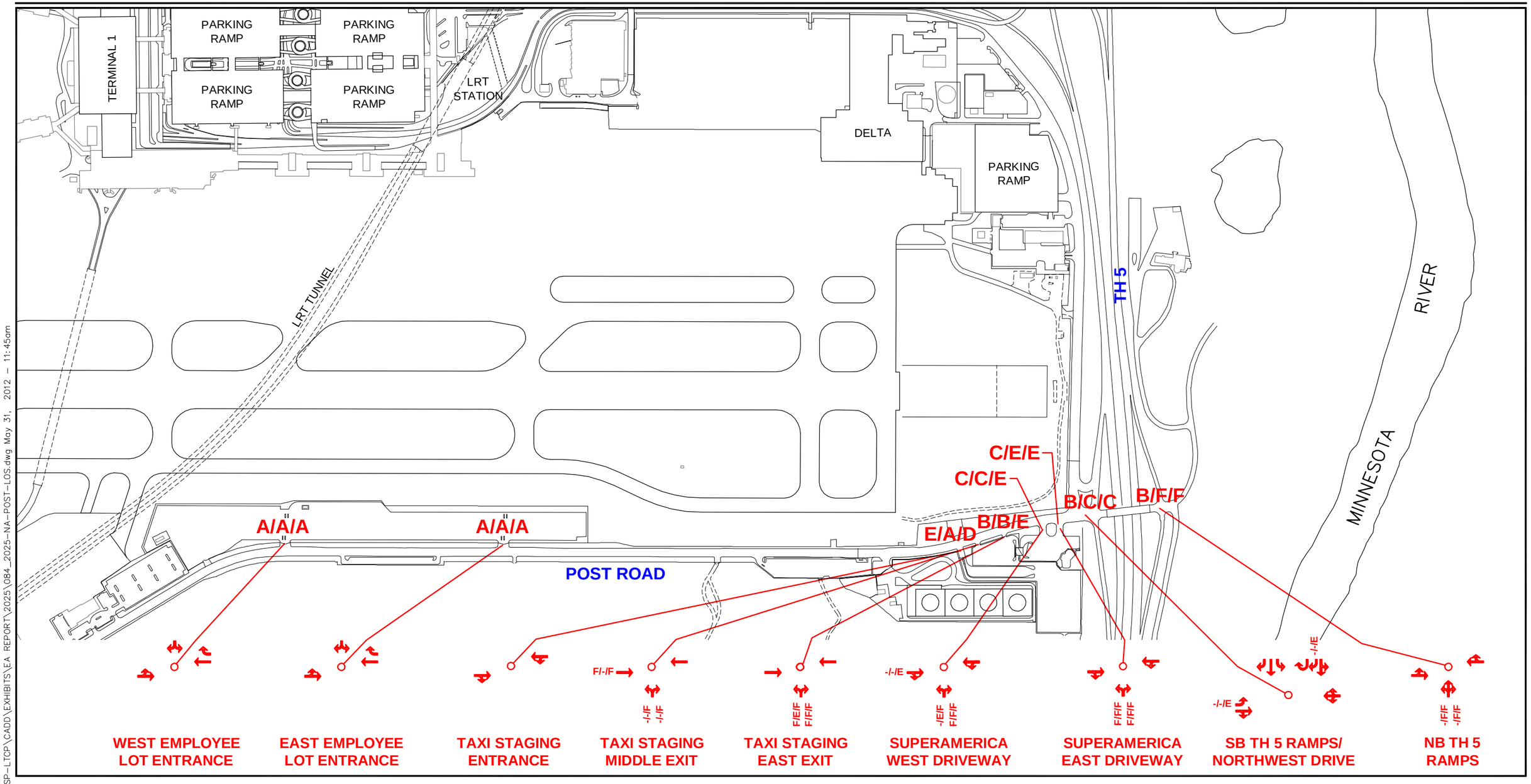
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-NA-34TH-LOS.dwg May 30, 2012 - 12:27pm



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-NA-POST-LOS.dwg May 31, 2012 - 11:45am

LEGEND

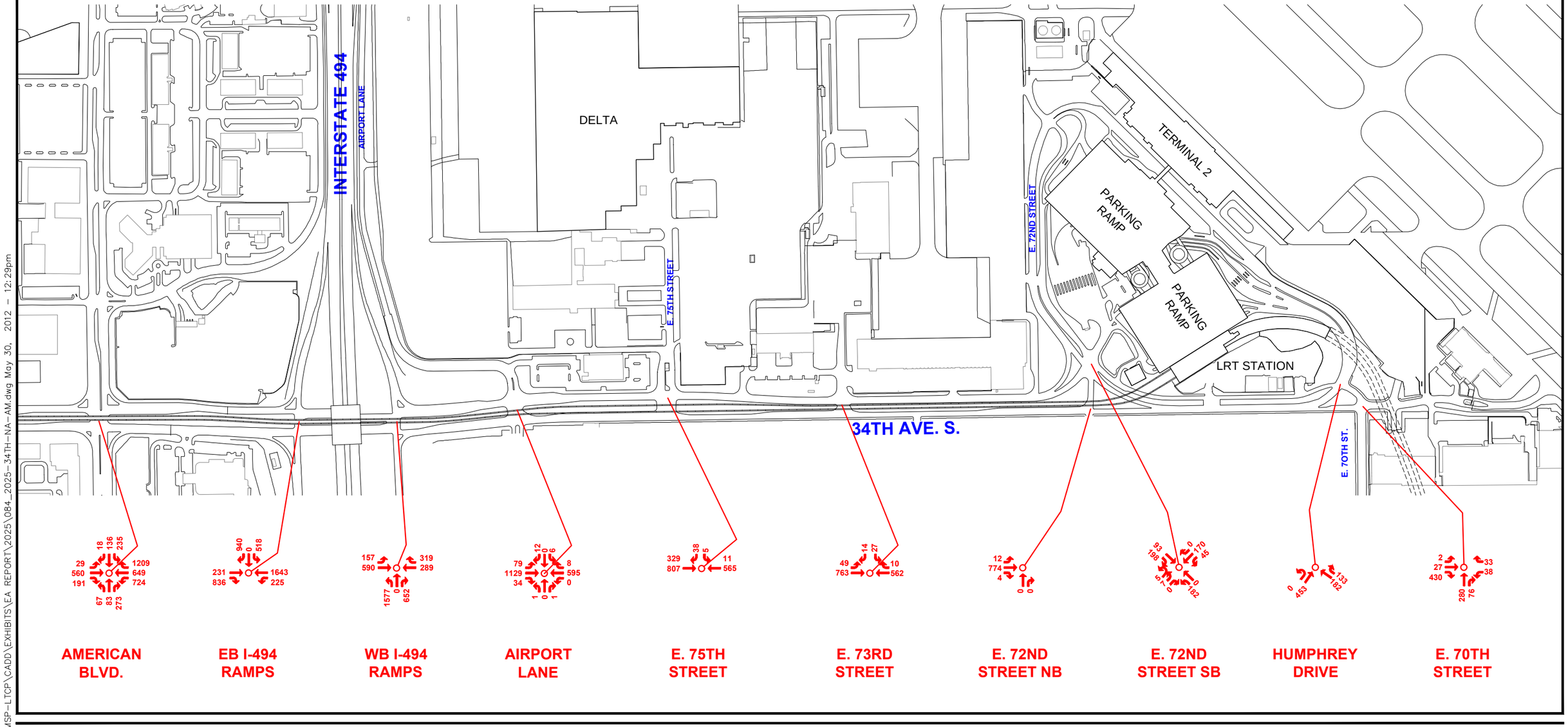
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

2025 No Action Lane Geometrics and Level of Service - Post Road

N

0 500' 1000'



LEGEND

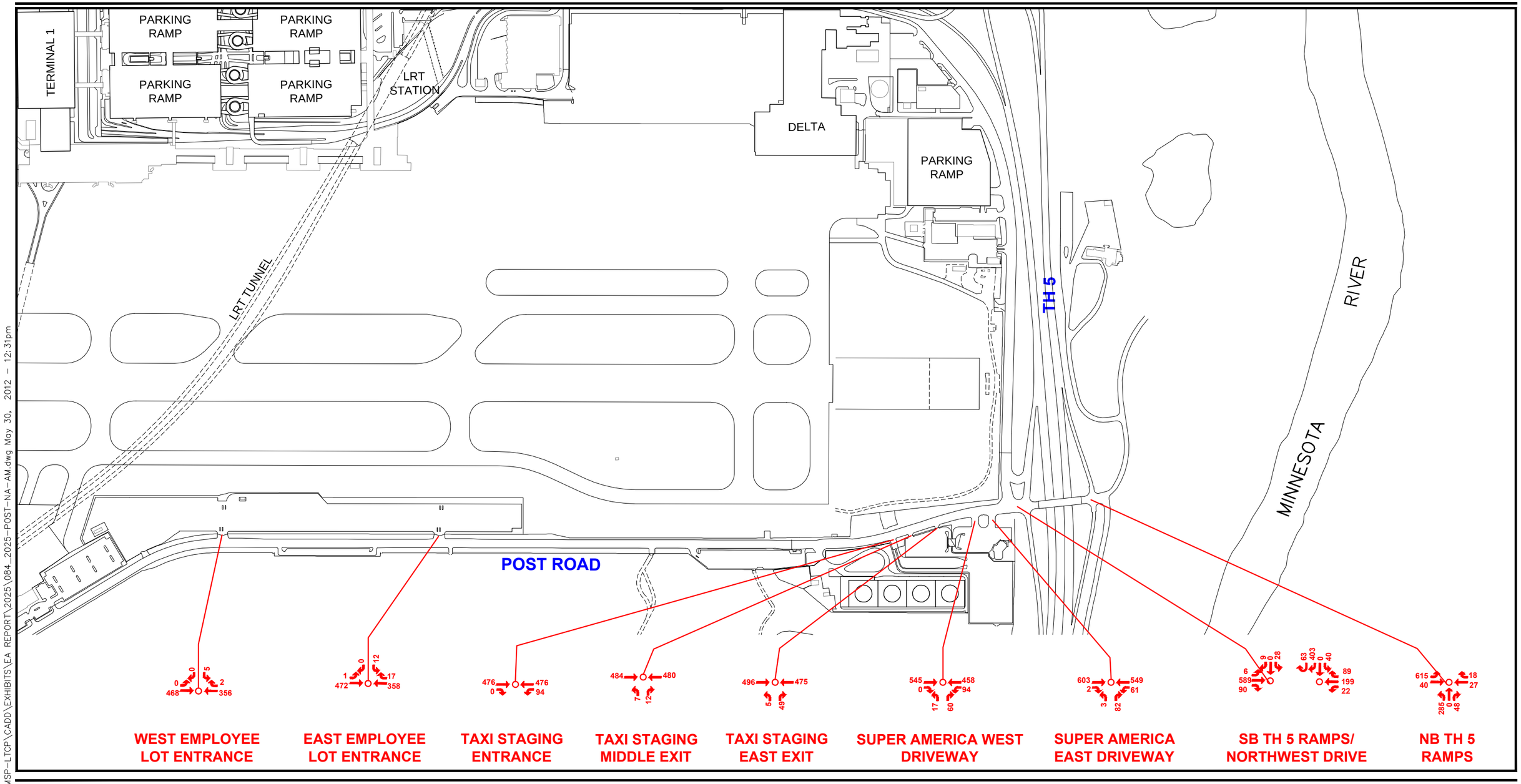
XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

2025 No Action Traffic Volumes AM Peak Hour - 34th Avenue S

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-34TH-NA-AM.dwg May 30, 2012 - 12:29pm



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-POST-NA-AM.dwg May 30, 2012 - 12:31pm

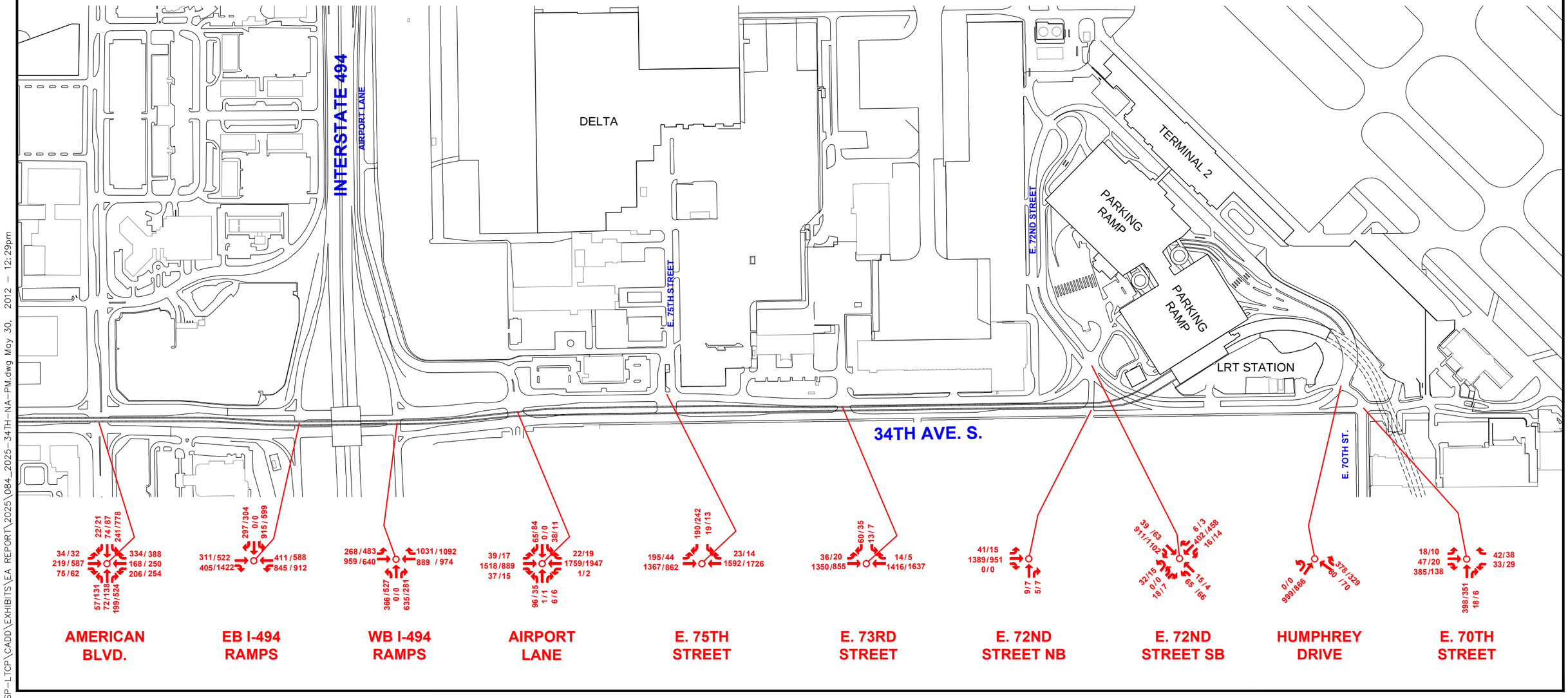
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

2025 No Action Traffic Volumes AM Peak Hour - Post Road

N

0 500' 1000'



2025 No Action Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

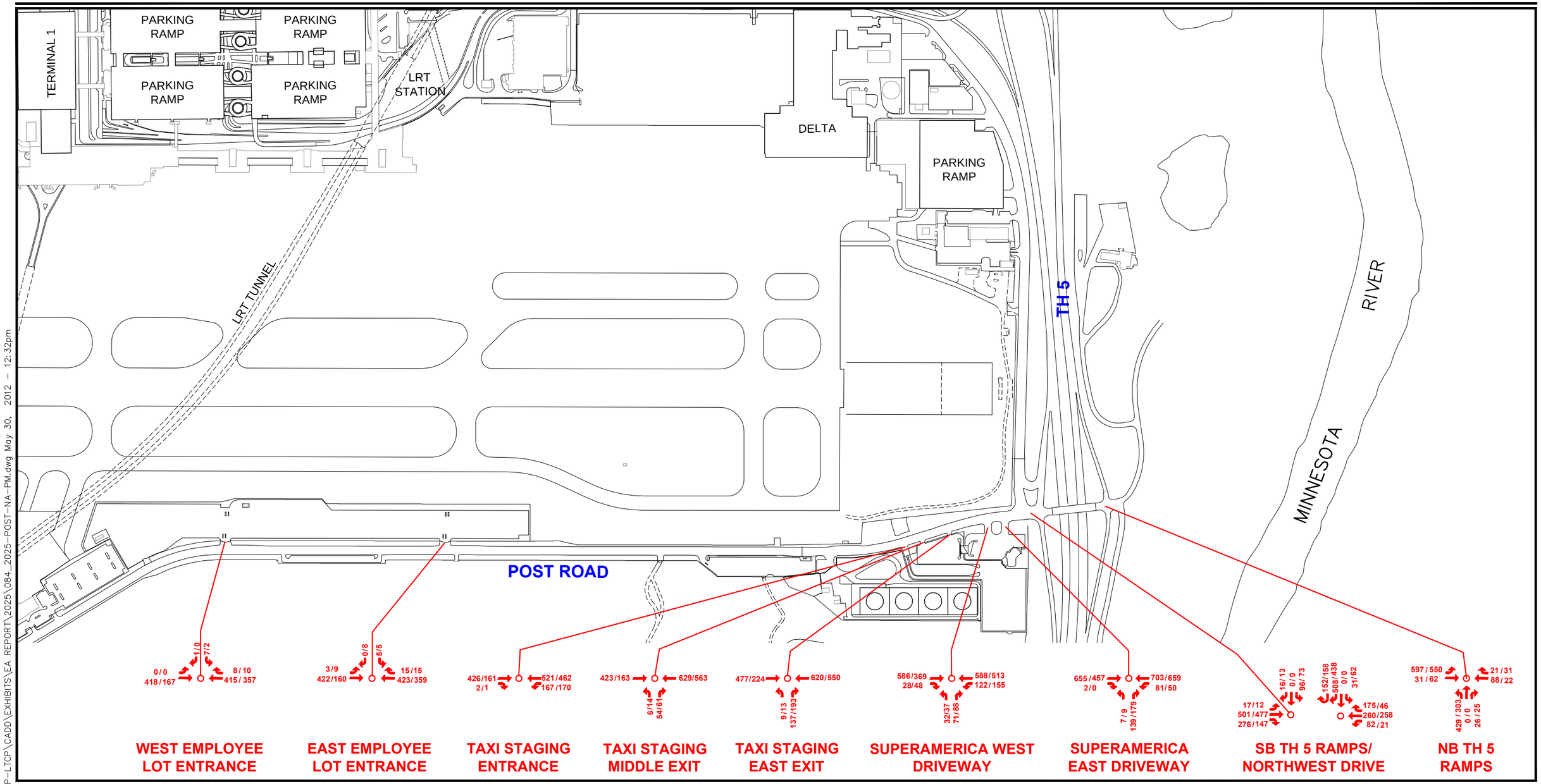
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-34TH-NA-PM.dwg May 30, 2012 - 12:29pm



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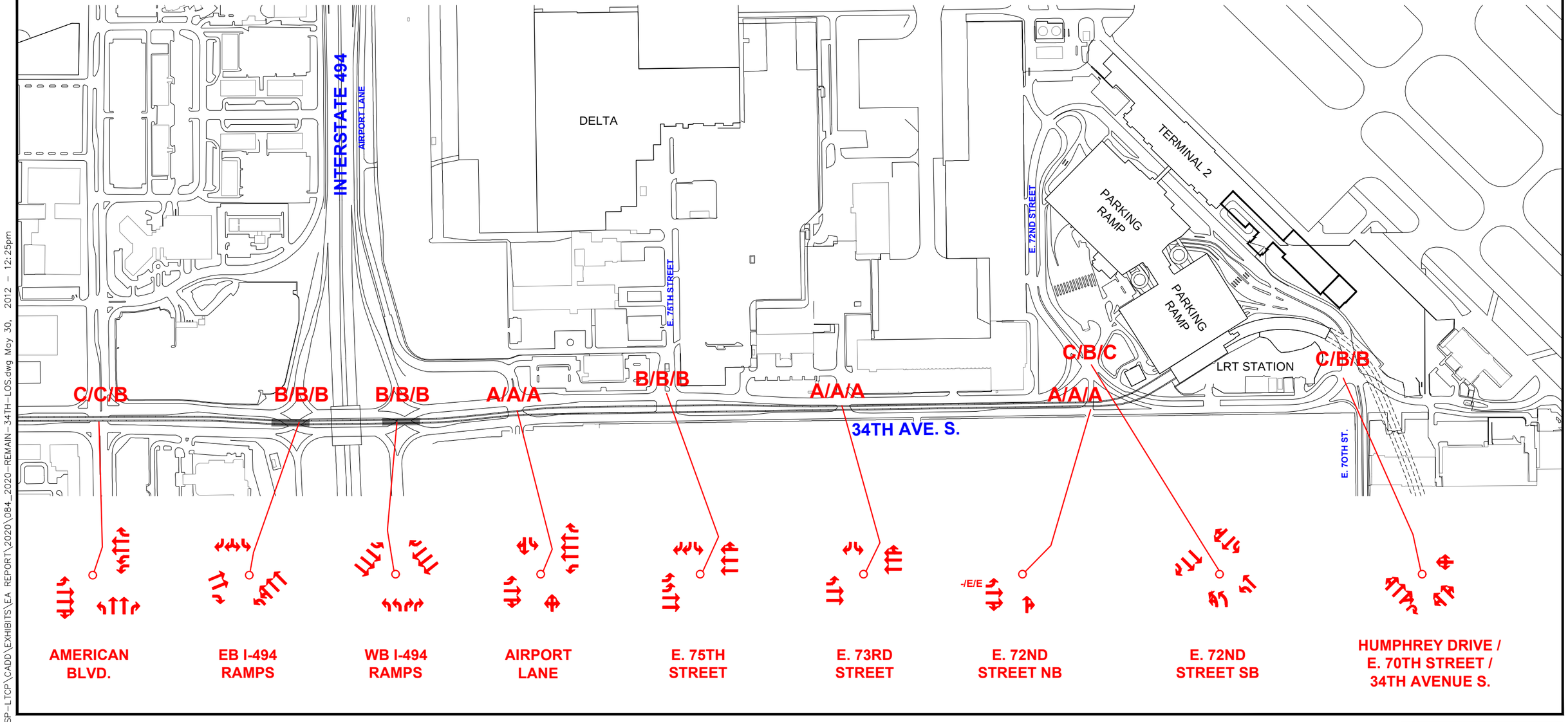
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

2025 No Action Traffic Volumes Airport/PM Peak Hours - Post Road

N

0 500' 1000'



2020 Airlines Remain Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

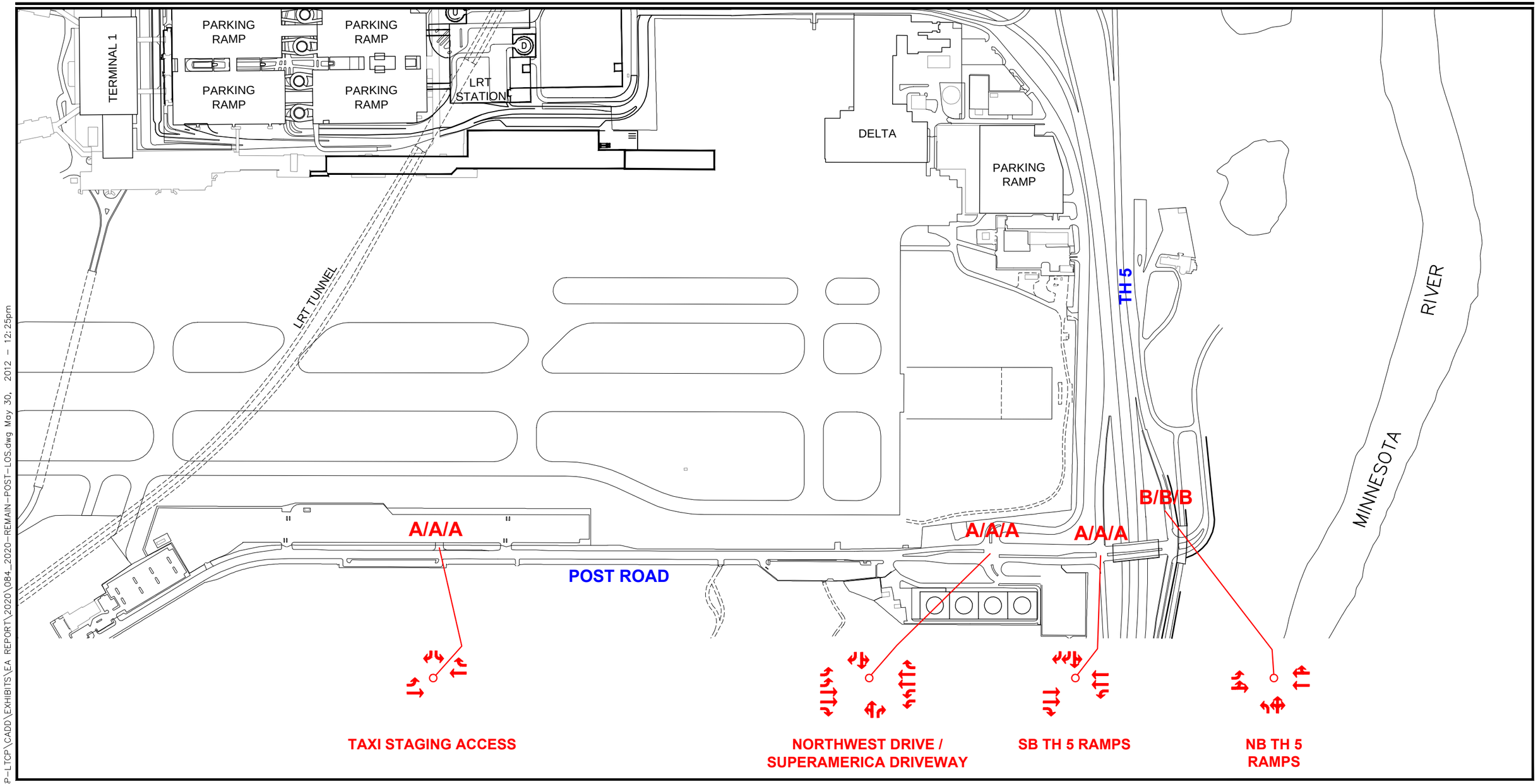
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-REMAIN-34TH-LOS.dwg May 30, 2012 - 12:25pm



LEGEND

X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

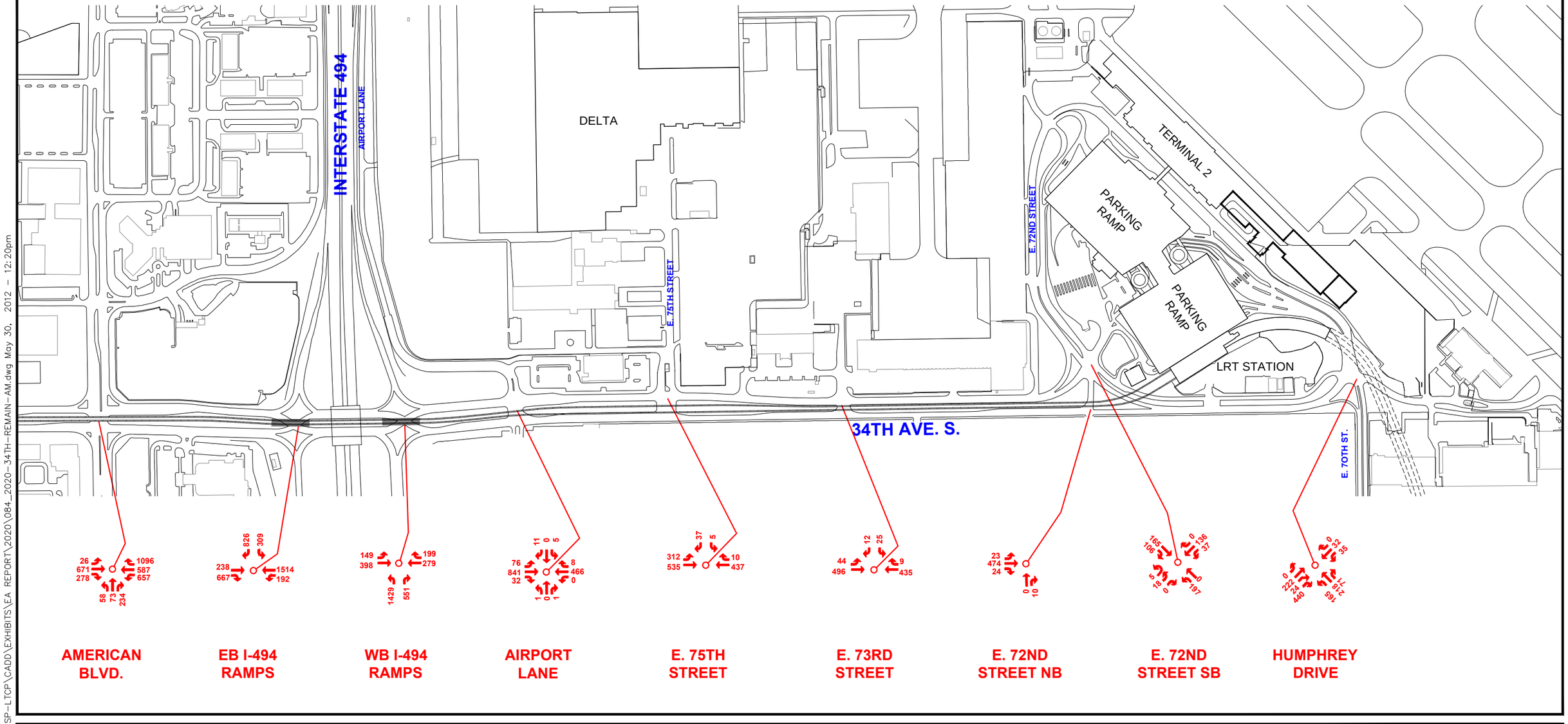
* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F IN AT LEAST ONE PEAK PERIOD

2020 Airlines Remain Lane Geometrics and Level of Service - Post Road

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-REMAIN-POST-LOS.dwg May 30, 2012 - 12:25pm



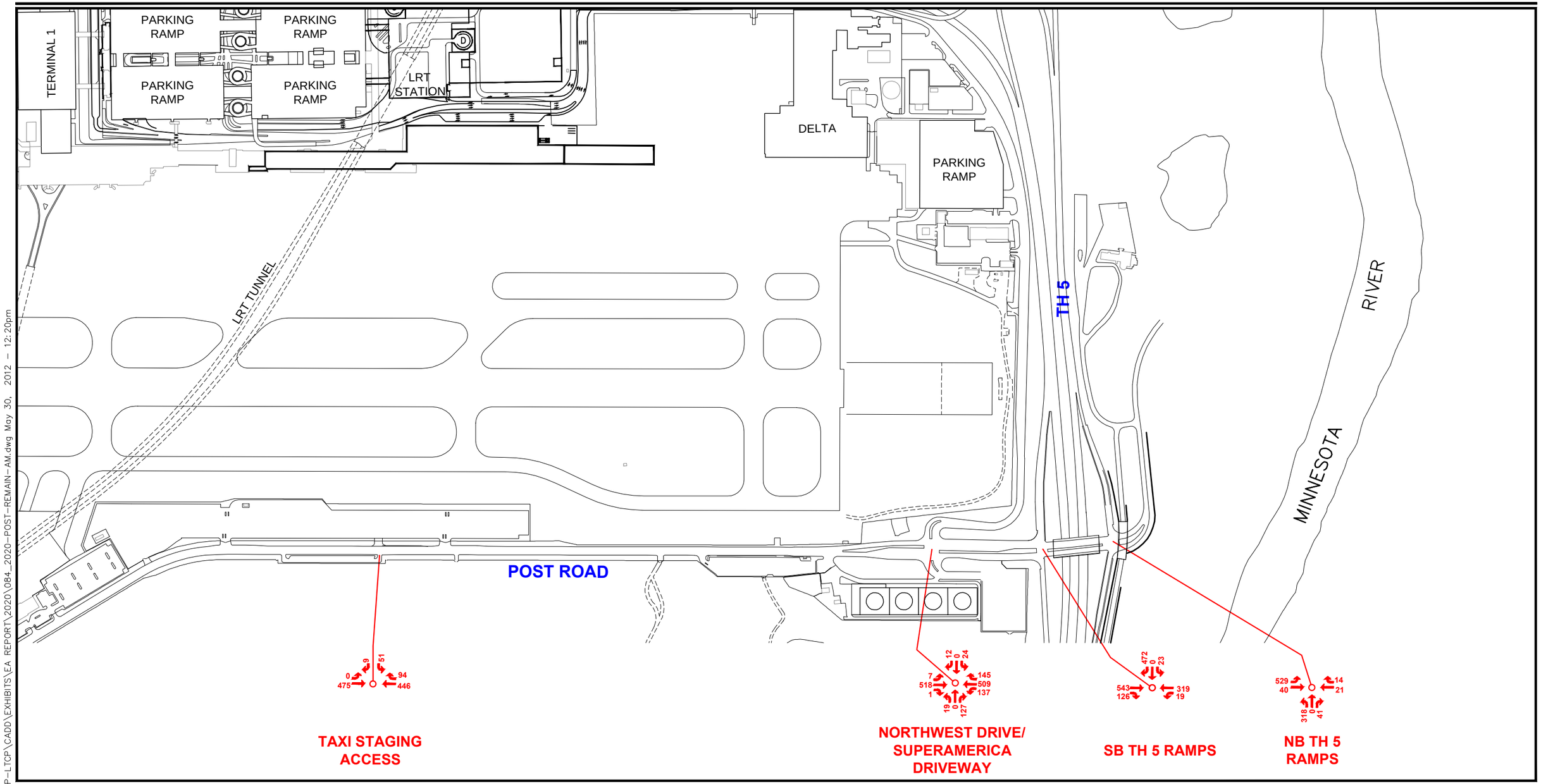
2020 Airlines Remain Traffic Volumes AM Peak Hour - 34th Avenue S

LEGEND
XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-34TH-REMAIN-AM.dwg May 30, 2012 - 12:20pm



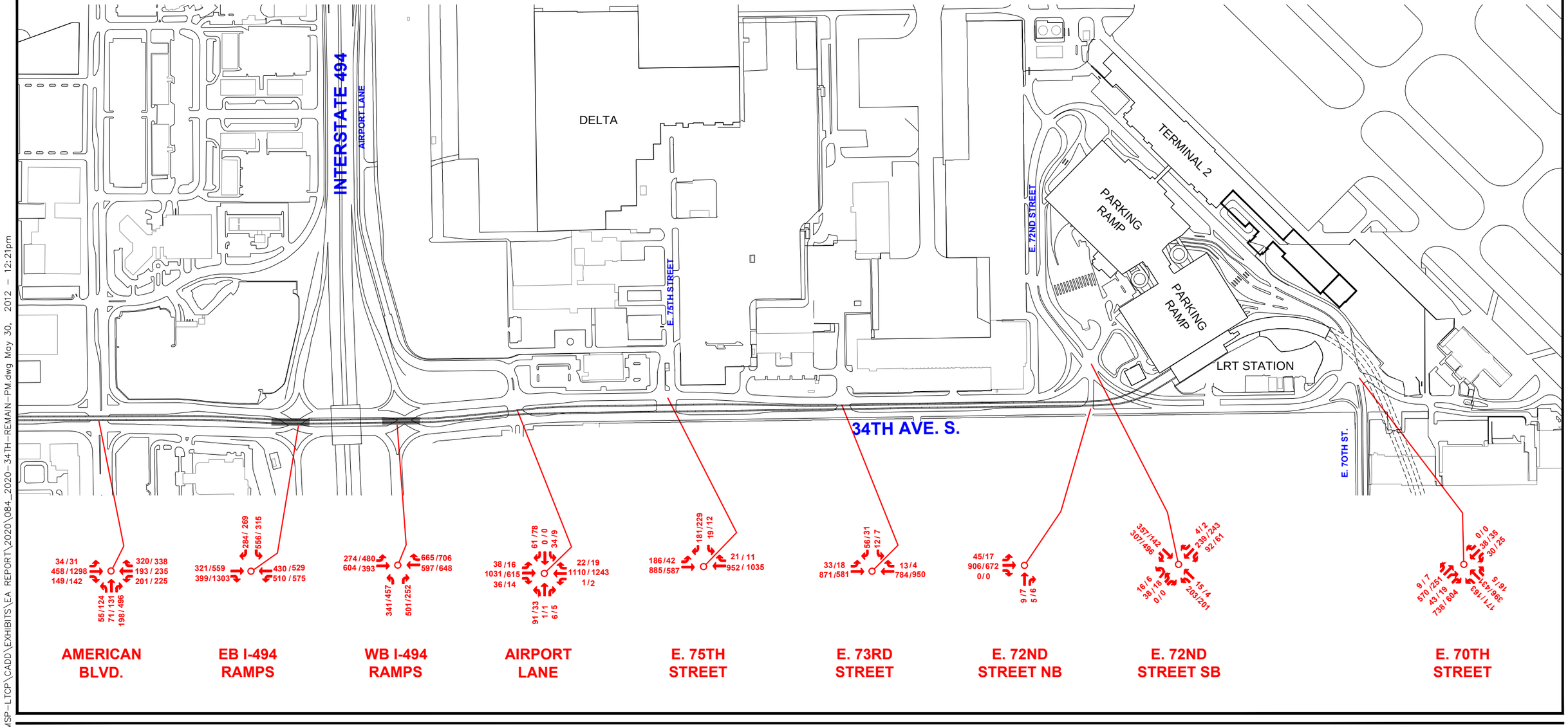
LEGEND
XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

2020 Airlines Remain Traffic Volumes AM Peak Hour - Post Road

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-POST-REMAIN-AM.dwg May 30, 2012 - 12:20pm



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-34TH-REMAIN-PM.dwg May 30, 2012 - 12:21pm

LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

2020 Airlines Remain Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

N

0 500' 1000'

TERMINAL 1

PARKING RAMP

PARKING RAMP

PARKING RAMP

PARKING RAMP

D

LRT STATION

LRT TUNNEL

DELTA

PARKING RAMP

TH 5

RIVER

MINNESOTA

POST ROAD

2 / 1
766 / 630

12 / 22
161 / 214

167 / 170
572 / 575

TAXI STAGING ACCESS

20 / 21
0 / 0
79 / 60

33 / 32
868 / 769
26 / 43

286 / 184
684 / 681
179 / 180

35 / 43
0 / 0
187 / 234

NORTHWEST DRIVE/ SUPERAMERICA DRIVEWAY

685 / 648
0 / 0
26 / 44

735 / 790
399 / 273

464 / 397
68 / 19

SB TH 5 RAMPS

731 / 778
29 / 57

15 / 25
68 / 20

462 / 396
0 / 0
21 / 20

NB TH 5 RAMPS

K:\TWC_Aviation\MAC\084_MSP_LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-POST-REMAIN-PM.dwg May 30, 2012 - 12:21pm

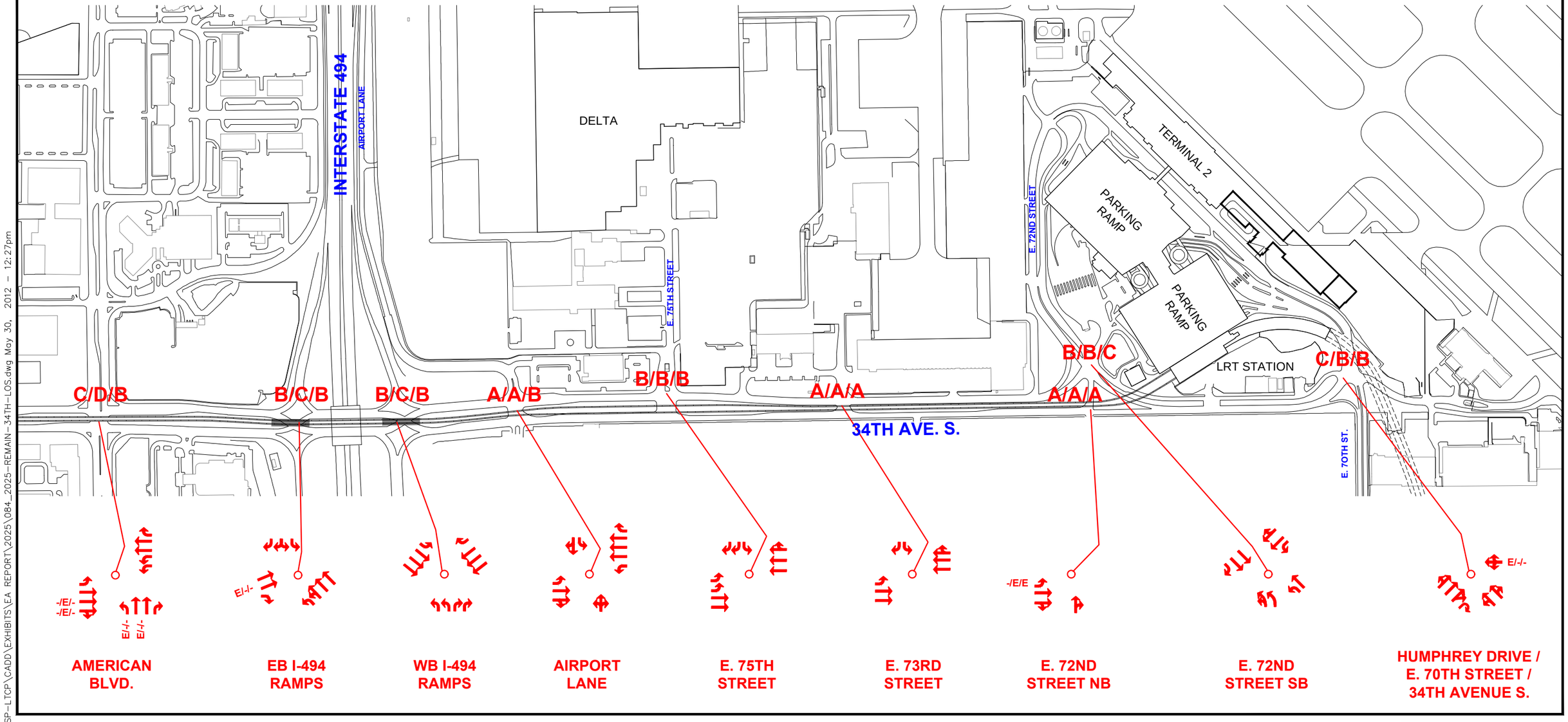
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

2020 Airlines Remain Traffic Volumes Airport/PM Peak Hours - Post Road

N

0 500' 1000'



2025 Airlines Remain Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-REMAIN-34TH-LOS.dwg May 30, 2012 - 12:27pm

TERMINAL 1

PARKING RAMP

PARKING RAMP

PARKING RAMP

PARKING RAMP

LRT STATION

D

DELTA

PARKING RAMP

LRT TUNNEL

TH 5

RIVER

MINNESOTA

POST ROAD

A/A/A

A/A/A

A/A/A

B/B/B

TAXI STAGING ACCESS

NORTHWEST DRIVE / SUPERAMERICA DRIVEWAY

SB TH 5 RAMPS

NB TH 5 RAMPS

LEGEND

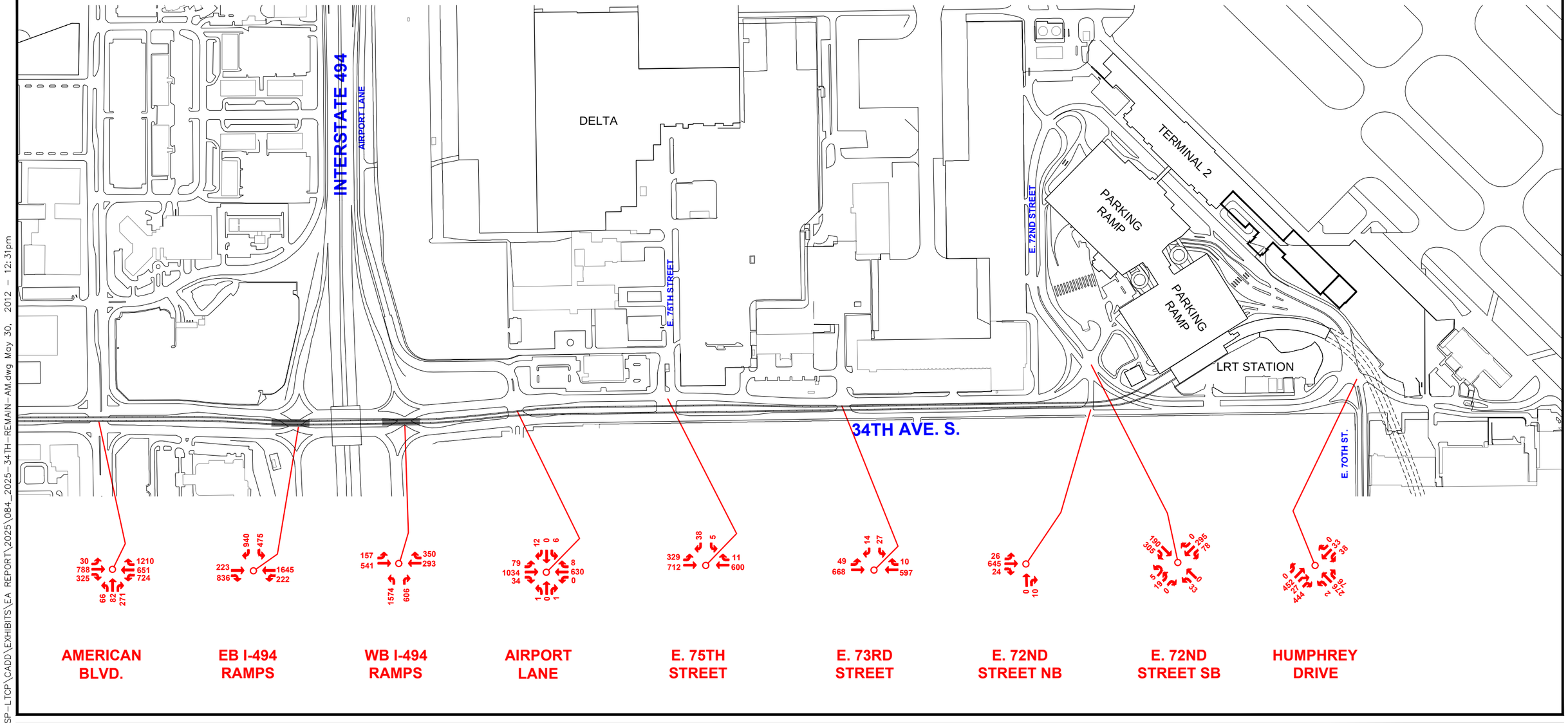
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

2025 Airlines Remain Lane Geometrics and Level of Service - Post Road

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-REMAIN-POST-LOS.dwg May 30, 2012 - 12:28pm



AMERICAN BLVD. | EB I-494 RAMPS | WB I-494 RAMPS | AIRPORT LANE | E. 75TH STREET | E. 73RD STREET | E. 72ND STREET NB | E. 72ND STREET SB | HUMPHREY DRIVE

2025 Airlines Remain Traffic Volumes AM Peak Hour - 34th Avenue S

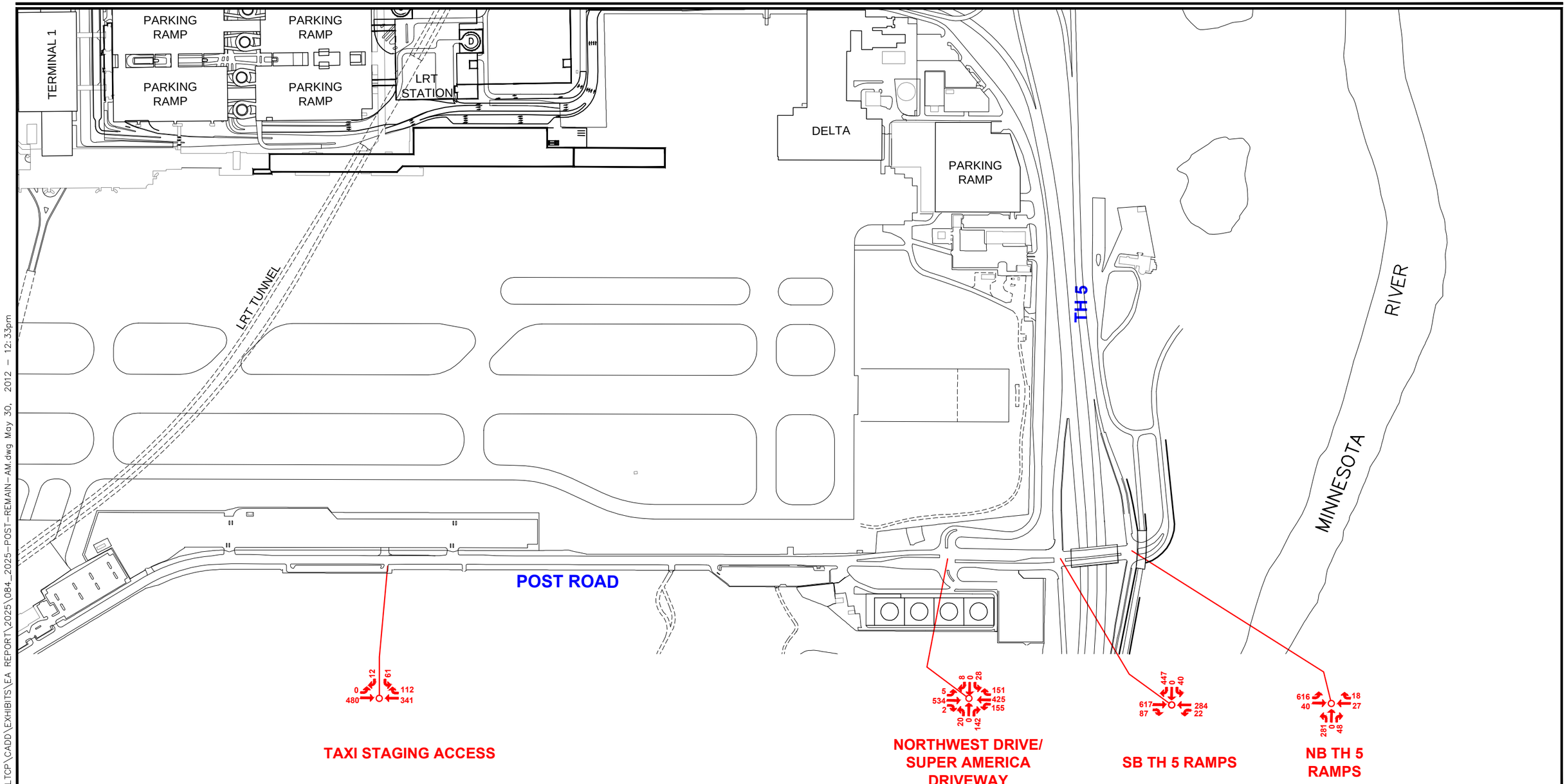
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-34TH-REMAIN-AM.dwg May 30, 2012 - 12:31pm



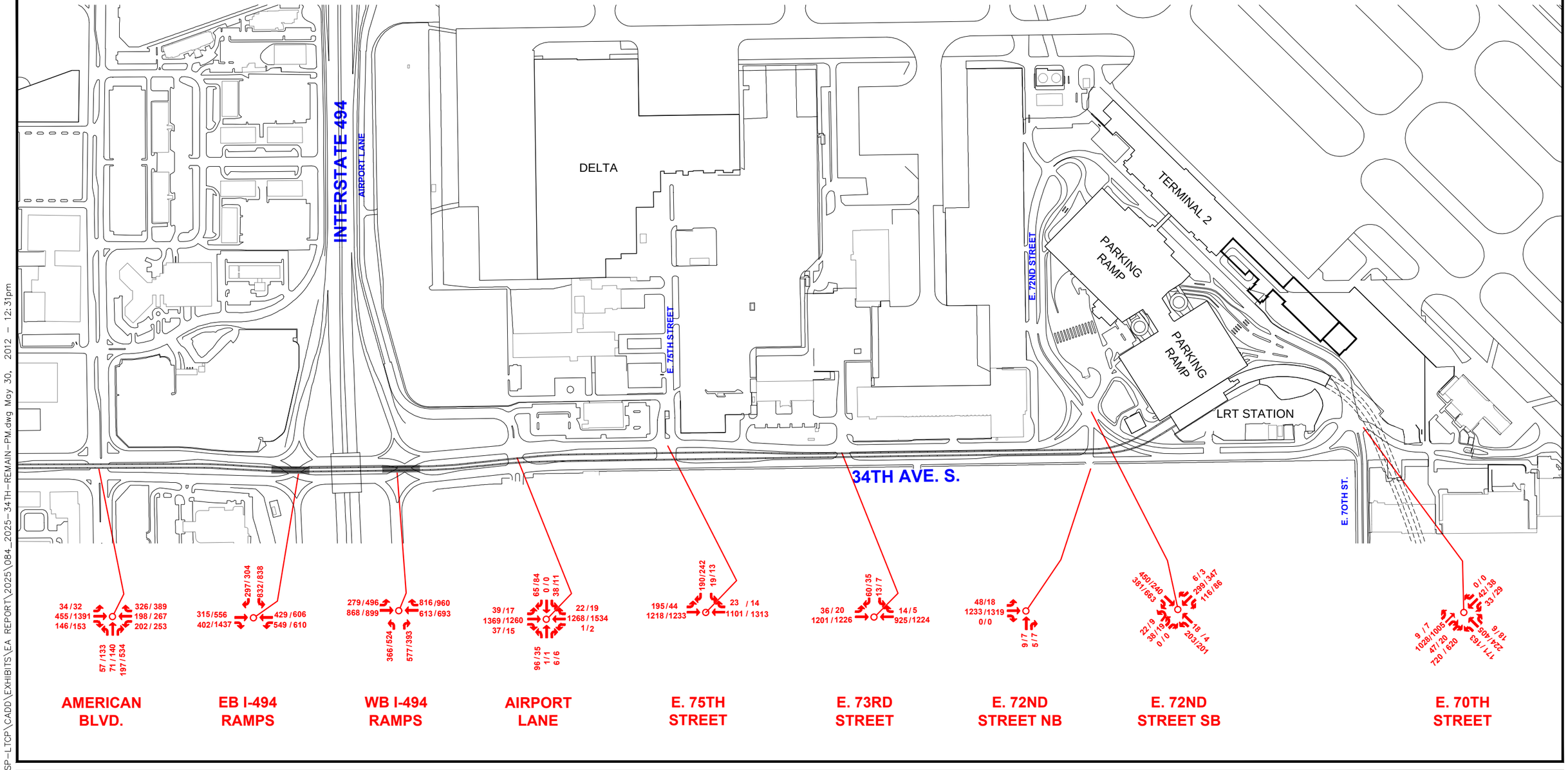
LEGEND
XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

2025 Airlines Remain Traffic Volumes AM Peak Hour - Post Road

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-POST-REMAIN-AM.dwg May 30, 2012 - 12:33pm



2025 Airlines Remain Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

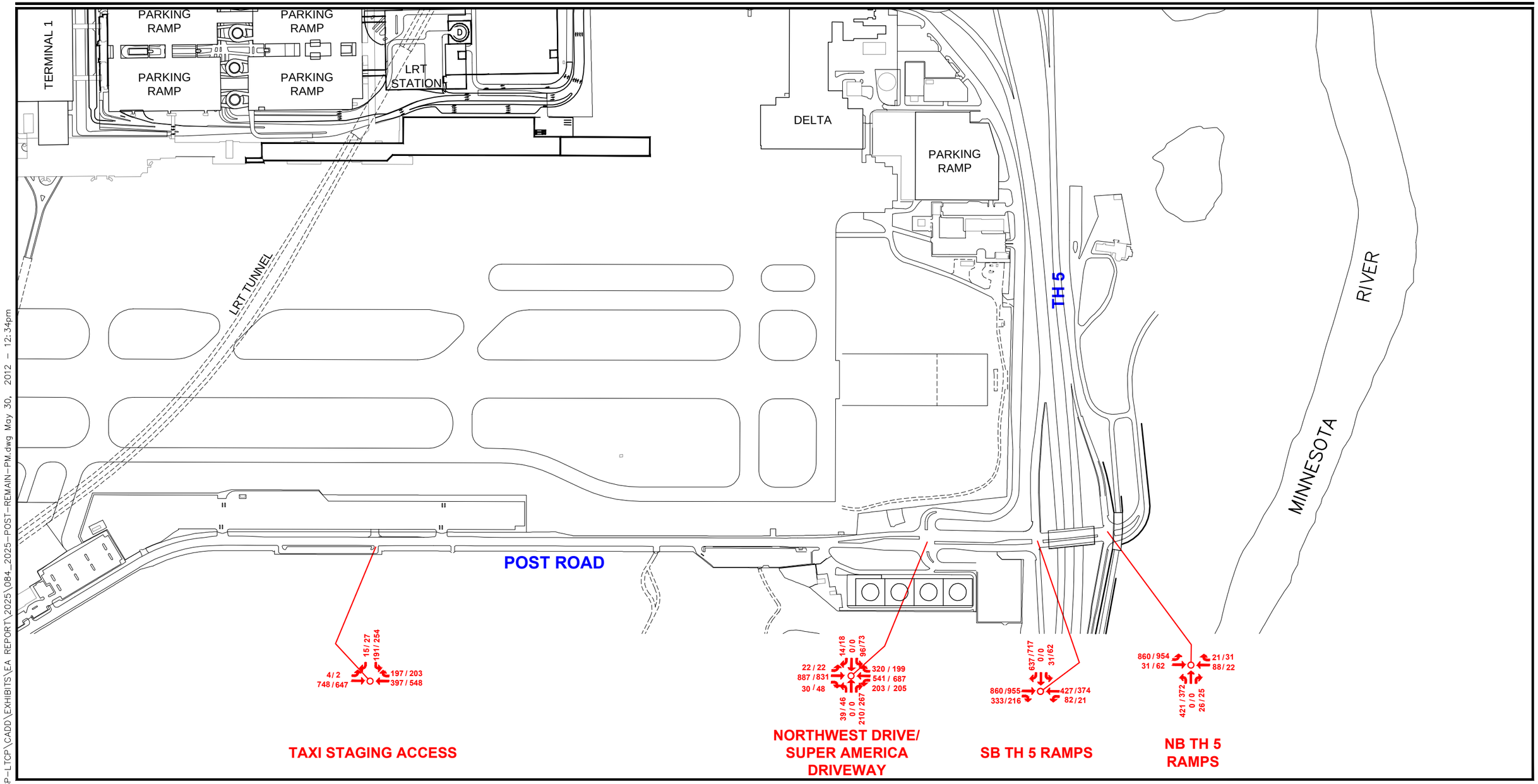
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOURS TRAFFIC VOLUMES

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-34TH-REMAIN-PM.dwg May 30, 2012 - 12:31pm



LEGEND

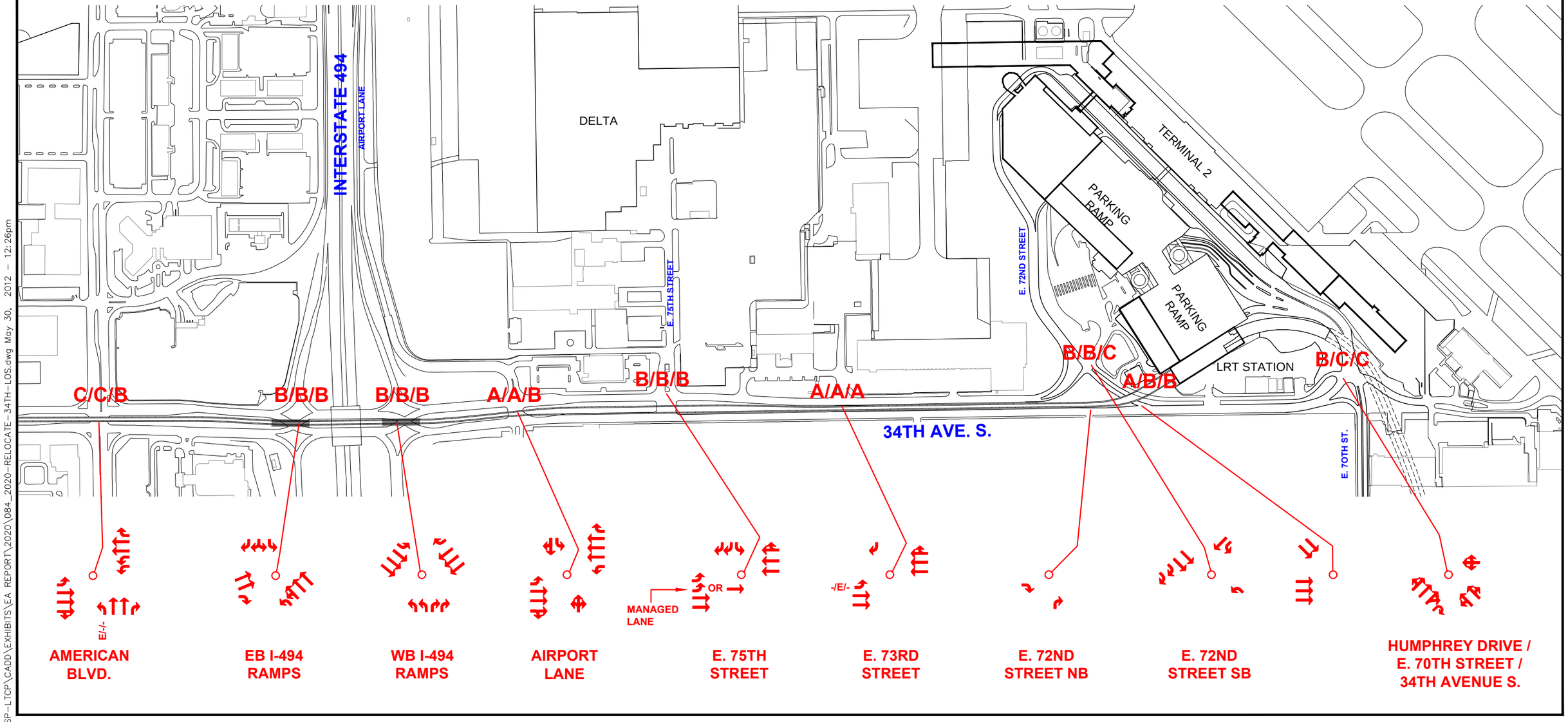
XX/XX 1:30/4:30 AIRPORT/PM PEAK HOURS TRAFFIC VOLUMES

2025 Airlines Remain Traffic Volumes Afternoon/PM Peak Hours - Post Road

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-POST-REMAIN-PM.dwg May 30, 2012 - 12:34pm



2020 Airlines Relocate Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

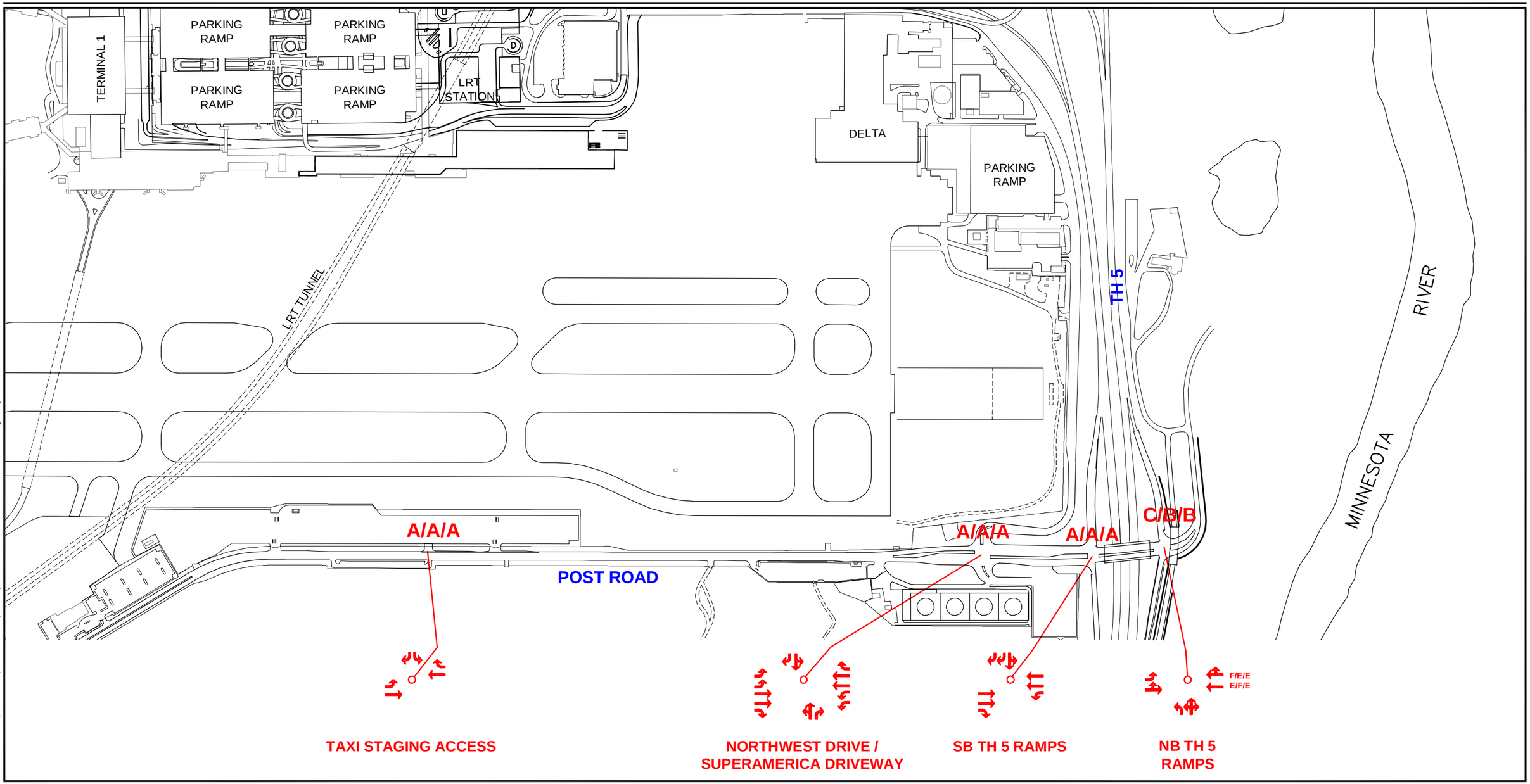
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020--RELOCATE-34TH-LOS.dwg May 30, 2012 - 12:26pm



LEGEND

X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

2020 Airlines Relocate Lane Geometrics and Level of Service - Post Road

N

0 500' 1000'

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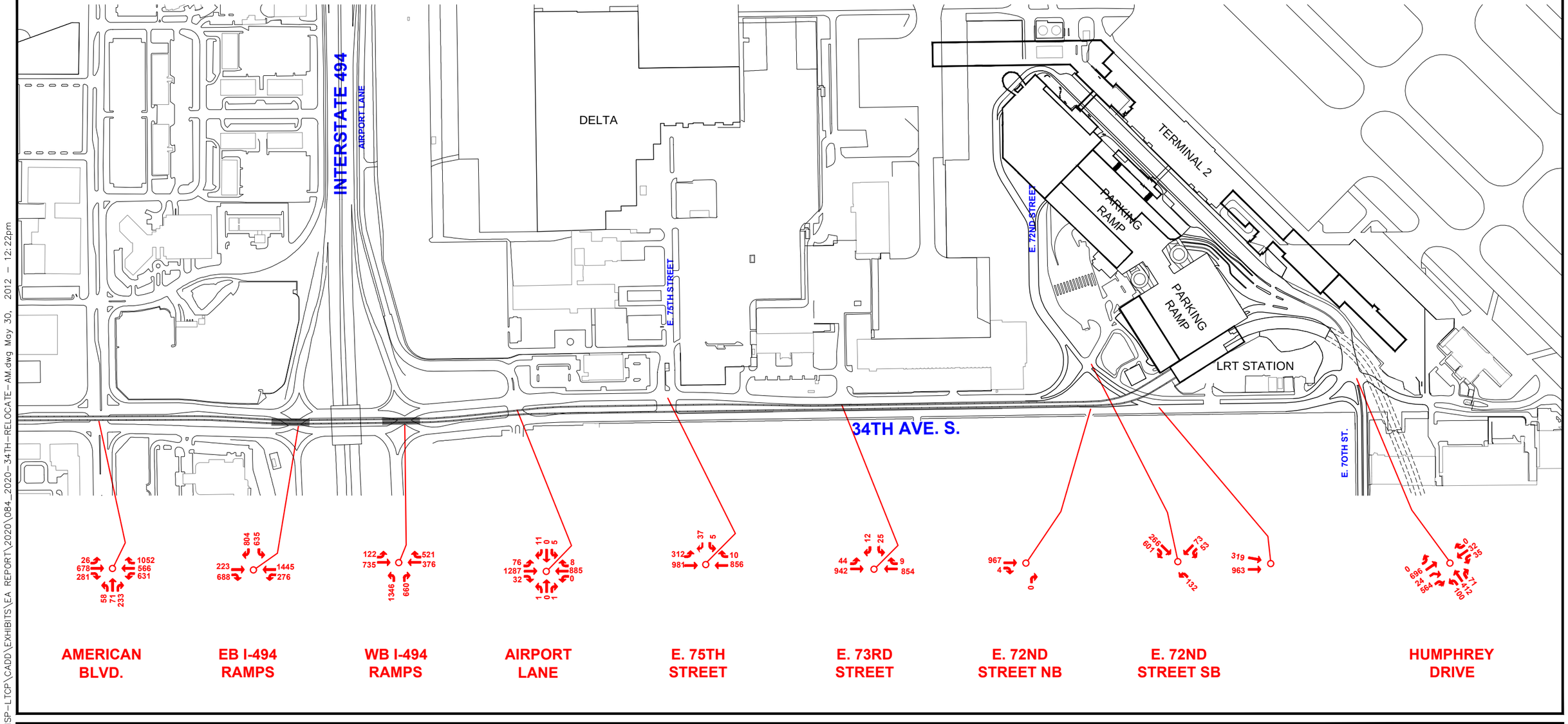


2020 Airlines Relocate Traffic Volumes AM Peak Hour - 34th Avenue S

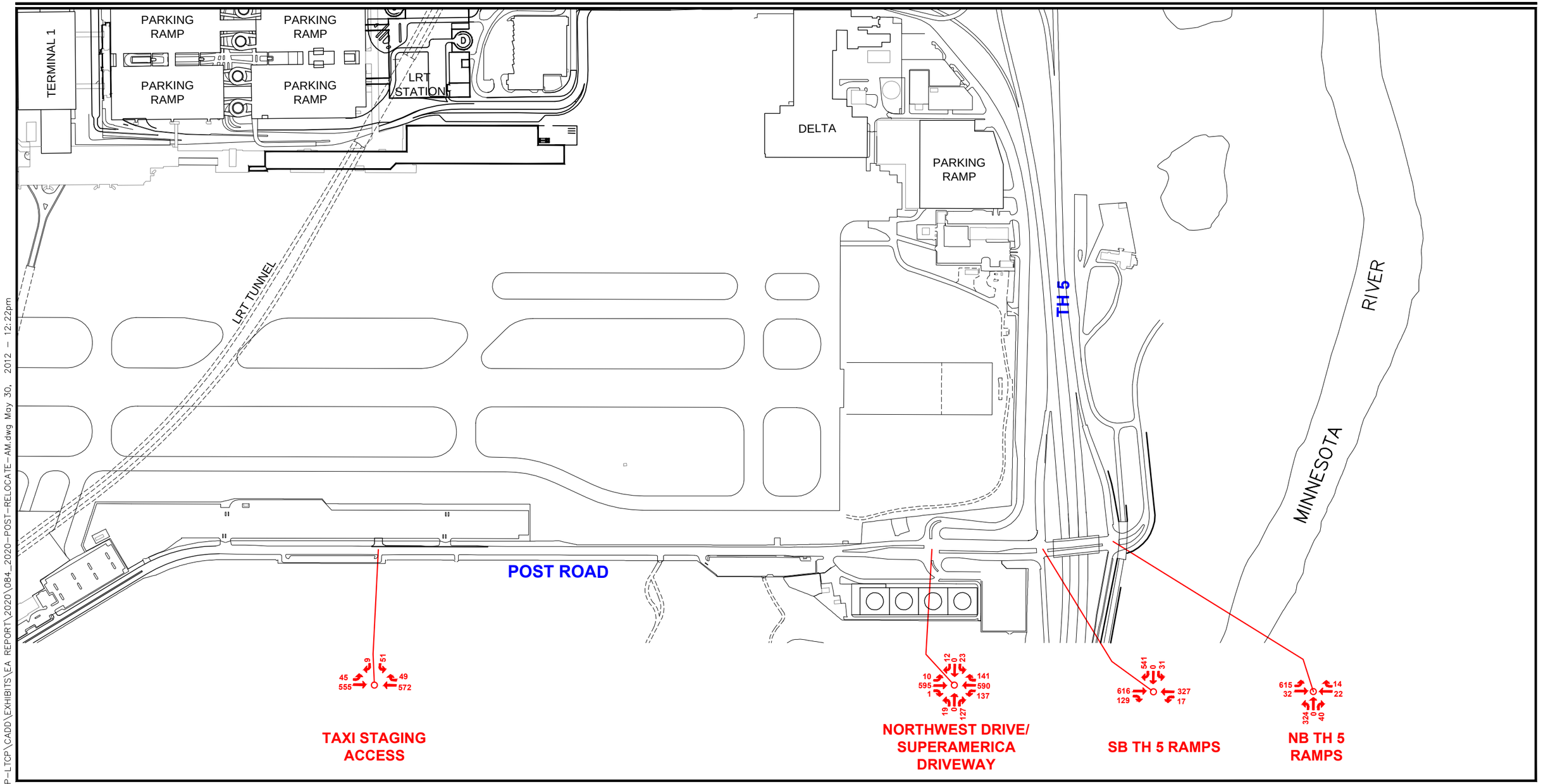
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-34TH-RELOCATE-AM.dwg May 30, 2012 - 12:22pm



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-POST-RELOCATE-AM.dwg May 30, 2012 - 12:22pm

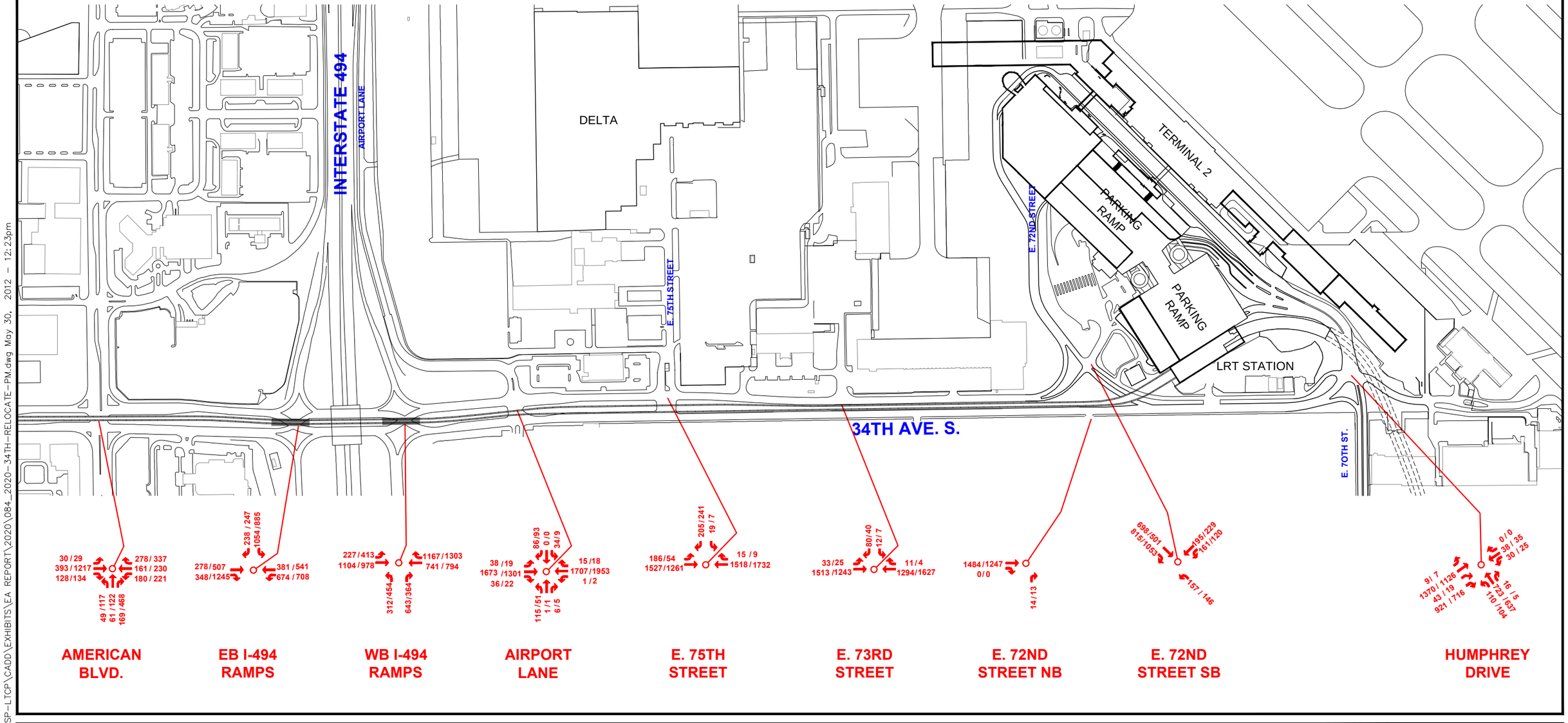
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

2020 Airlines Relocate Traffic Volumes AM Peak Hour - Post Road

N

0 500' 1000'



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-34TH-RELOCATE-PM.dwg May 30, 2012 - 12:23pm

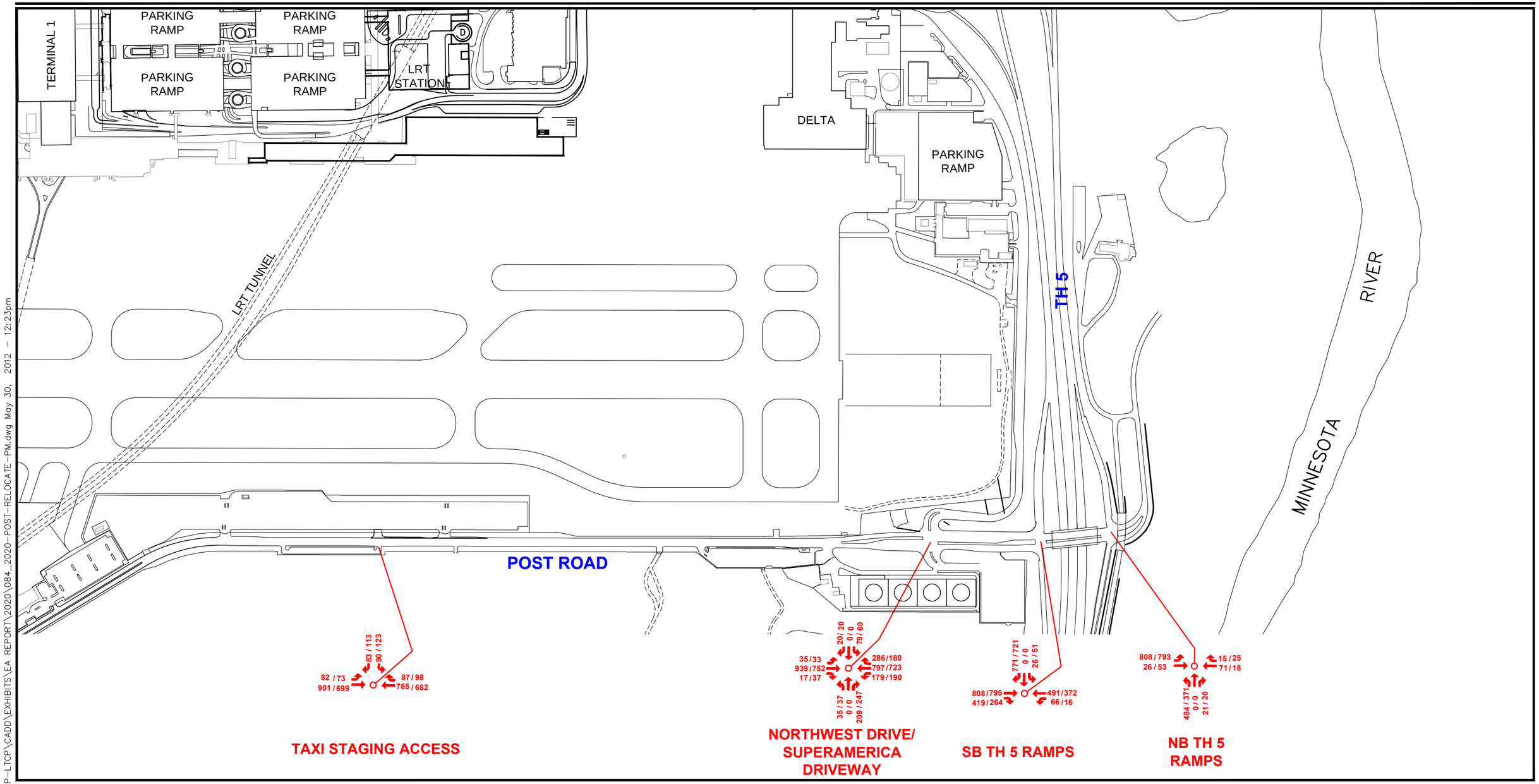
2020 Airlines Relocate Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOURS TRAFFIC VOLUMES

N

0 500' 1000'



K:\TWC_Aviation\MAC\084_MSP_LTCP\CADD\EXHIBITS\EA REPORT\2020\084_2020-POST-RELOCATE-PM.dwg May 30, 2012 - 12:23pm

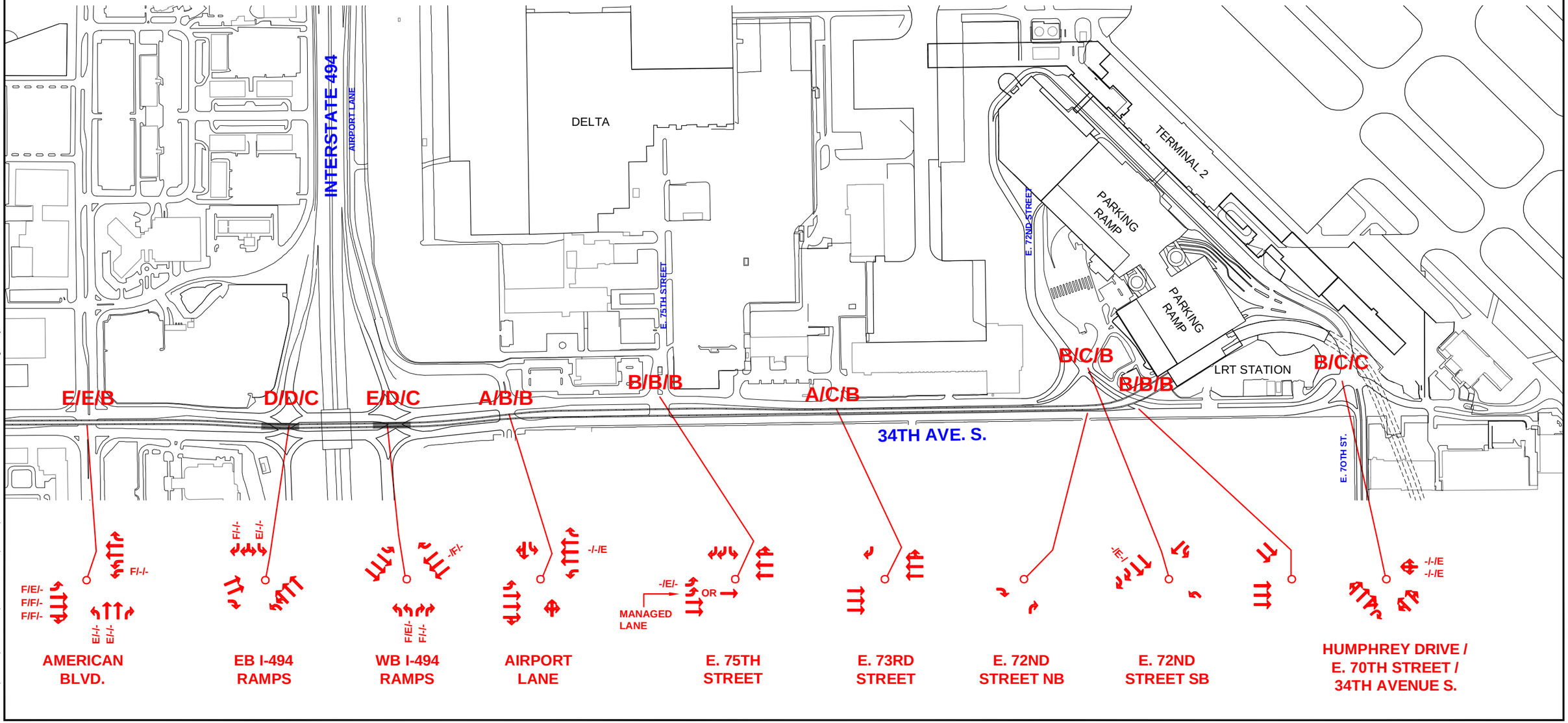
LEGEND

XX 1:30/4:30 AIRPORT/PM PEAK HOURS TRAFFIC VOLUMES

2020 Airlines Relocate Traffic Volumes Airport/PM Peak Hours - Post Road

N

0 500' 1000'



2025 Airlines Relocate Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

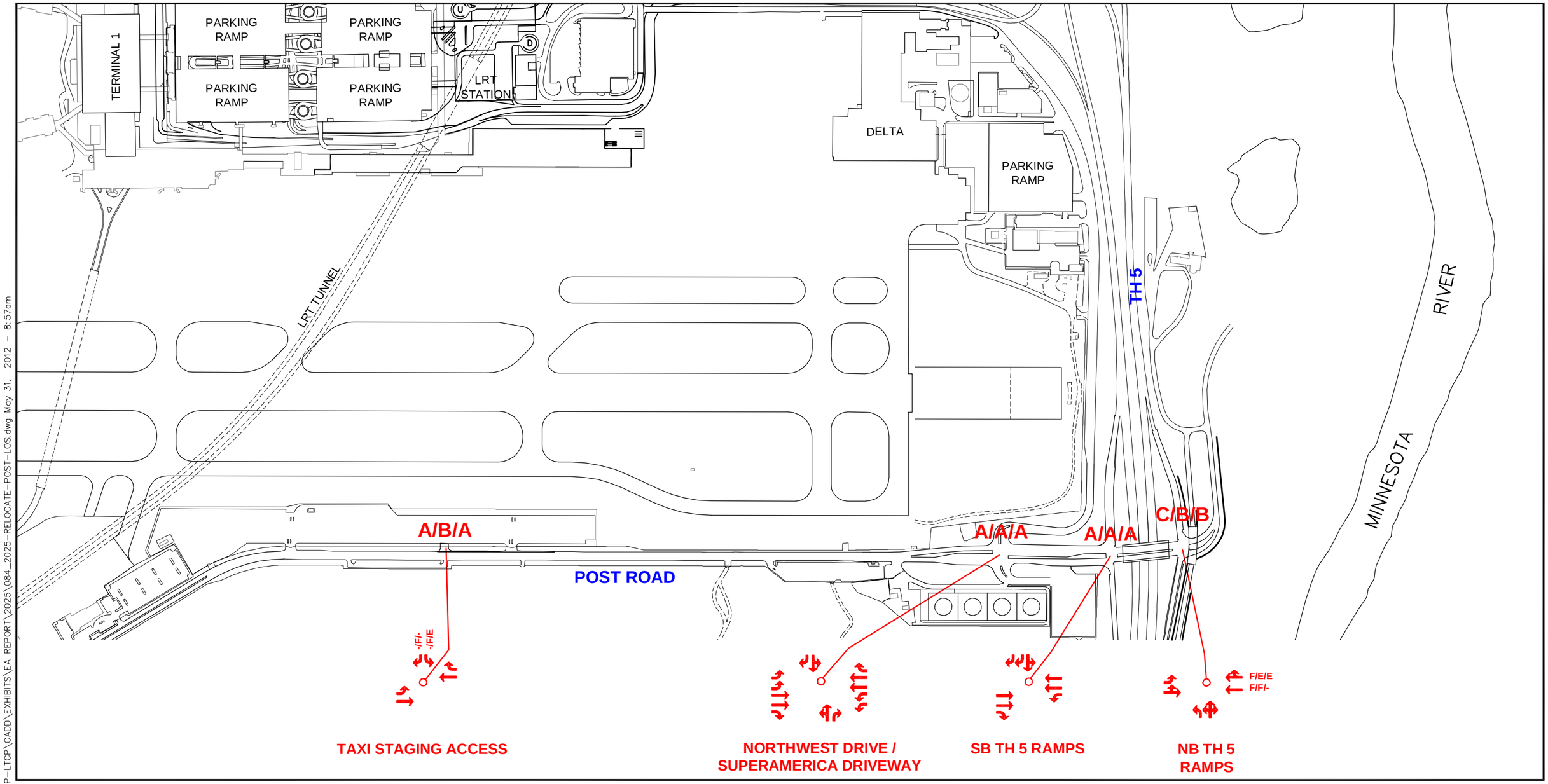
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-RELOCATE-34TH-LOS.dwg May 31, 2012 - 9:06am



LEGEND

X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

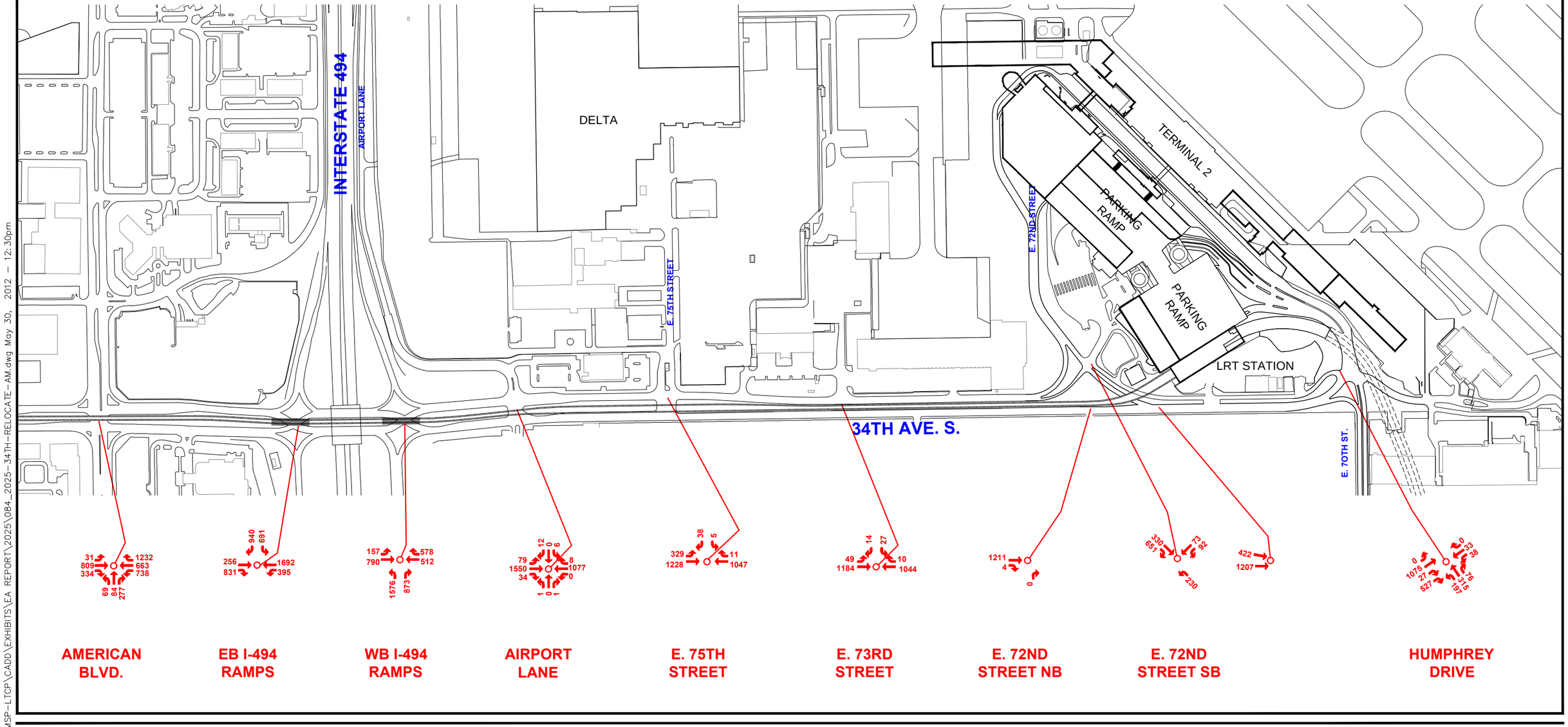
* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

2025 Airlines Relocate Lane Geometrics and Level of Service - Post Road

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-RELOCATE-POST-LOS.dwg May 31, 2012 - 8:57am



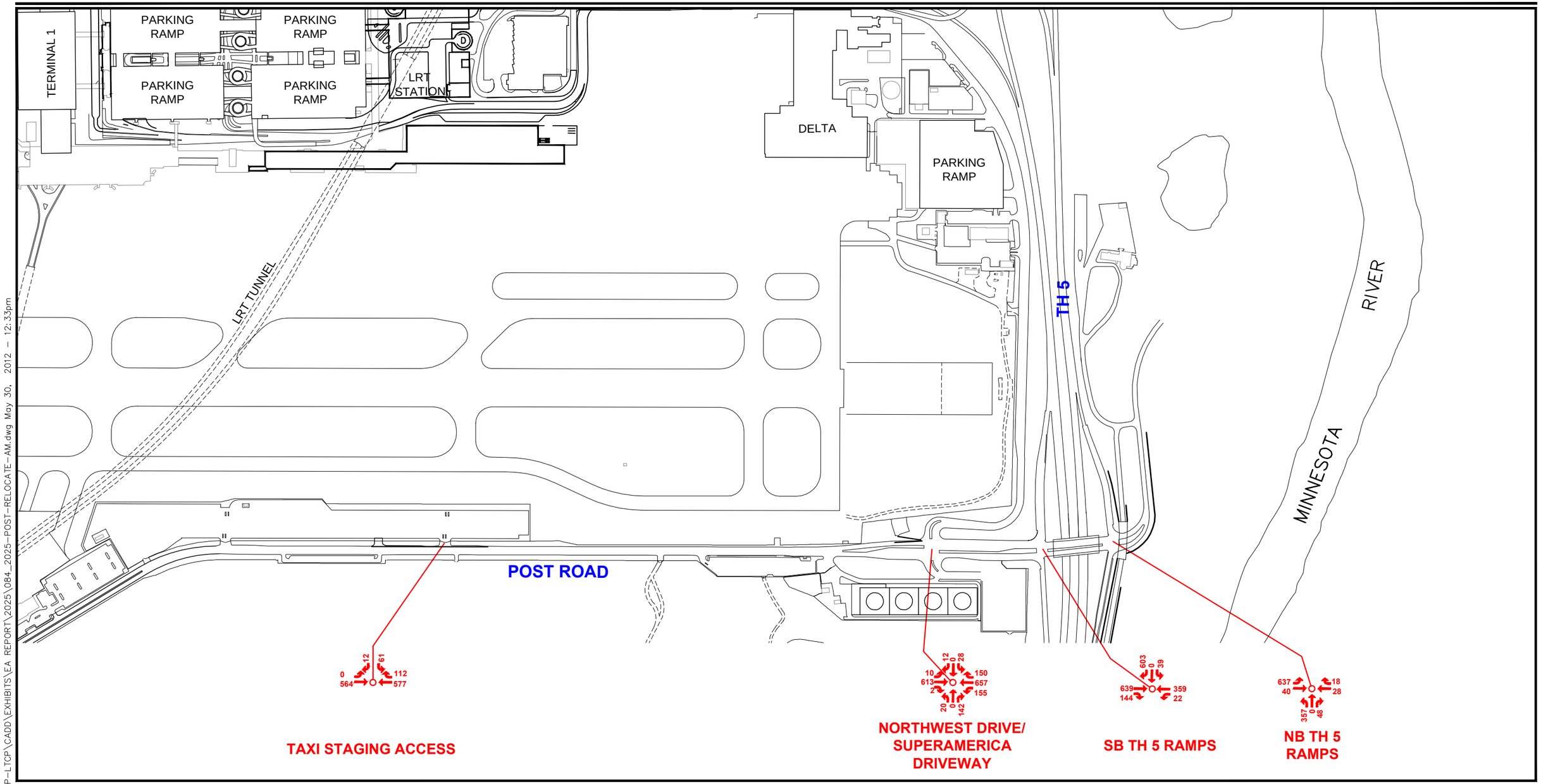
2025 Airlines Relocate Traffic Volumes AM Peak Hour - 34th Avenue S

LEGEND
XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-34TH-RELOCATE-AM.dwg May 30, 2012 - 12:30pm



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-POST-RELOCATE-AM.dwg May 30, 2012 - 12:33pm

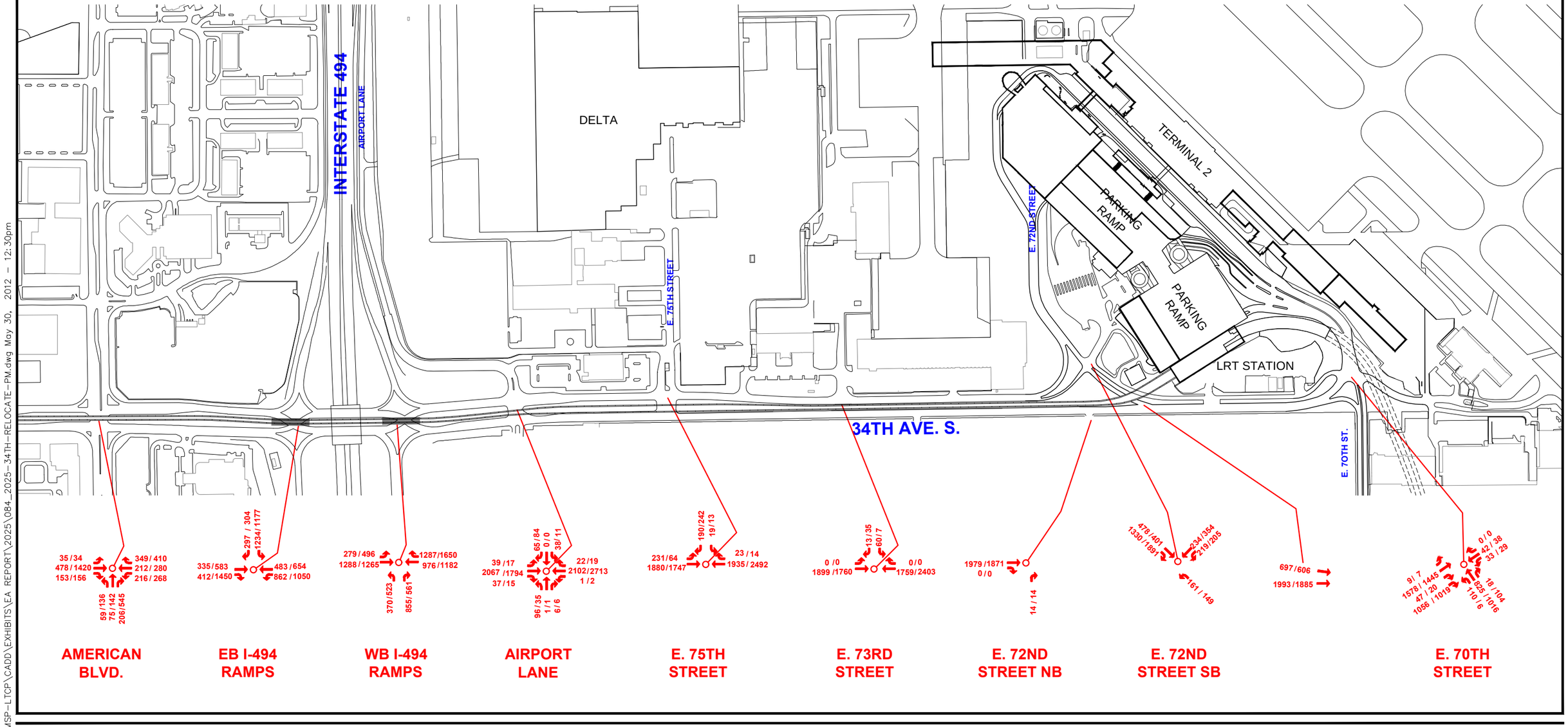
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

2025 Airlines Relocate Traffic Volumes AM Peak Hour - Post Road

N

0 500' 1000'



K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-34TH-RELOCATE-PM.dwg May 30, 2012 - 12:30pm

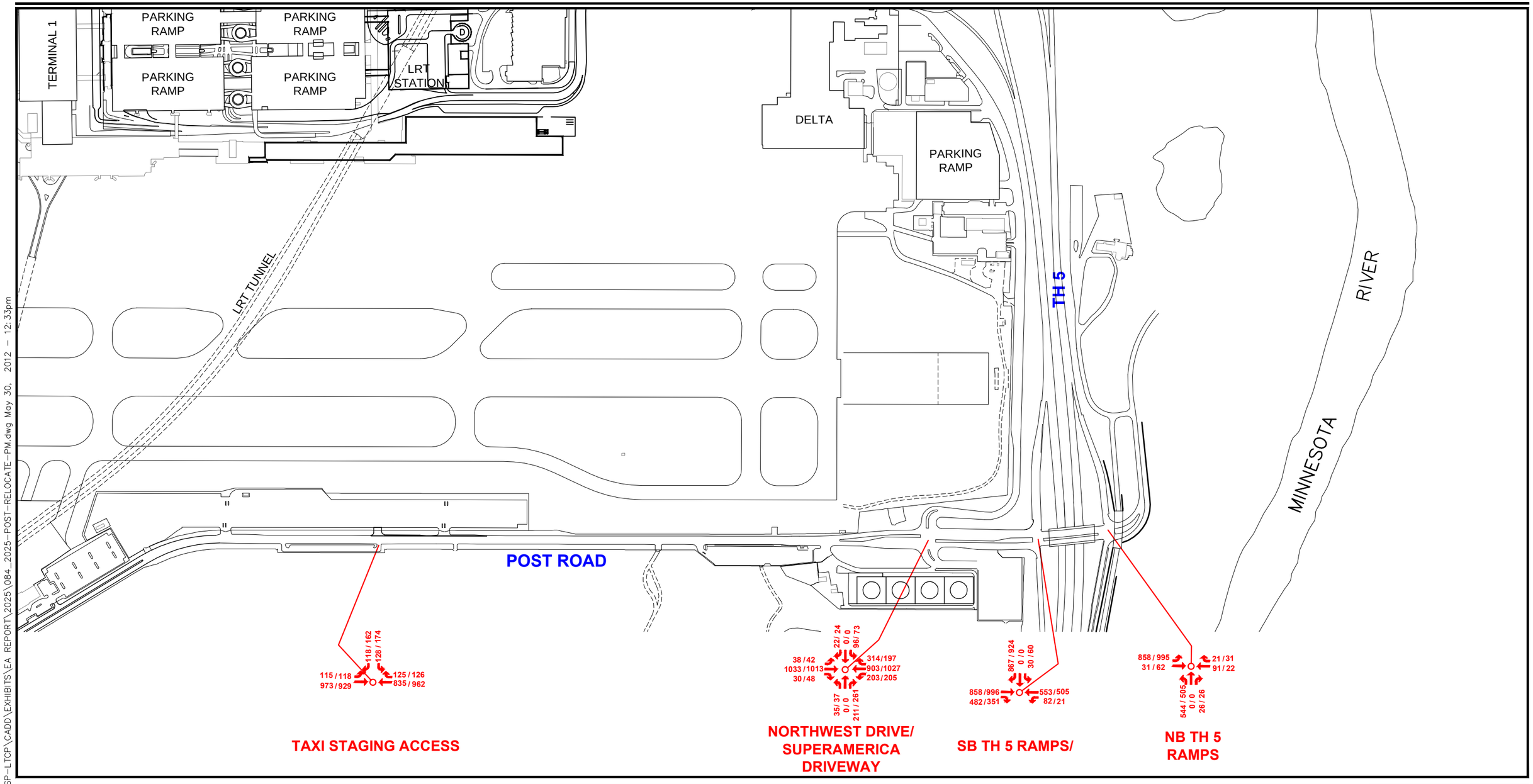
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOURS TRAFFIC VOLUMES

2025 Airlines Relocate Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

N

0 500' 1000'



K:\TWC_Aviation\MAC\084_MSP_LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-POST-RELOCATE-PM.dwg May 30, 2012 - 12:33pm

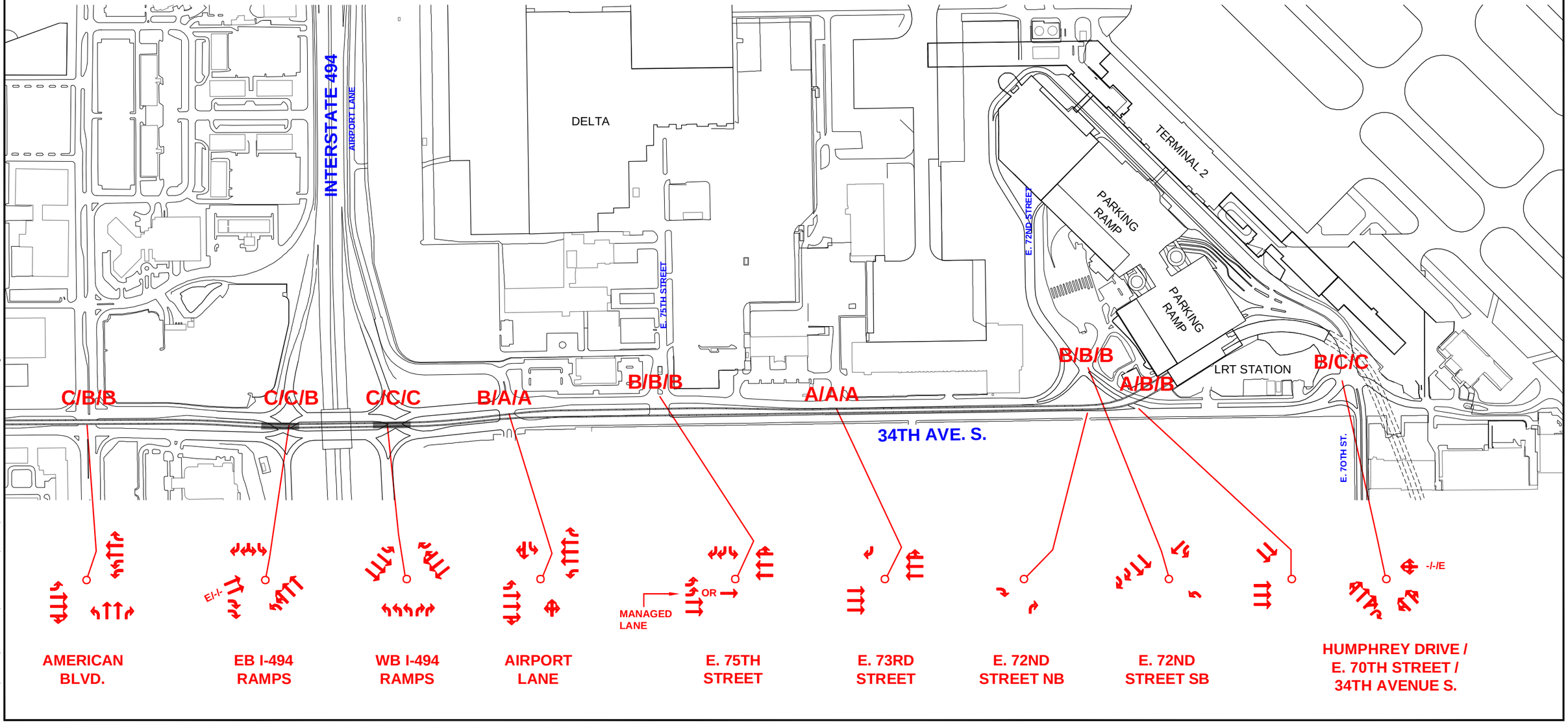
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

2025 Airlines Relocate Traffic Volumes Airport/PM Peak Hours - Post Road

N

0 500' 1000'



2025 Mitigated Airlines Relocate Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

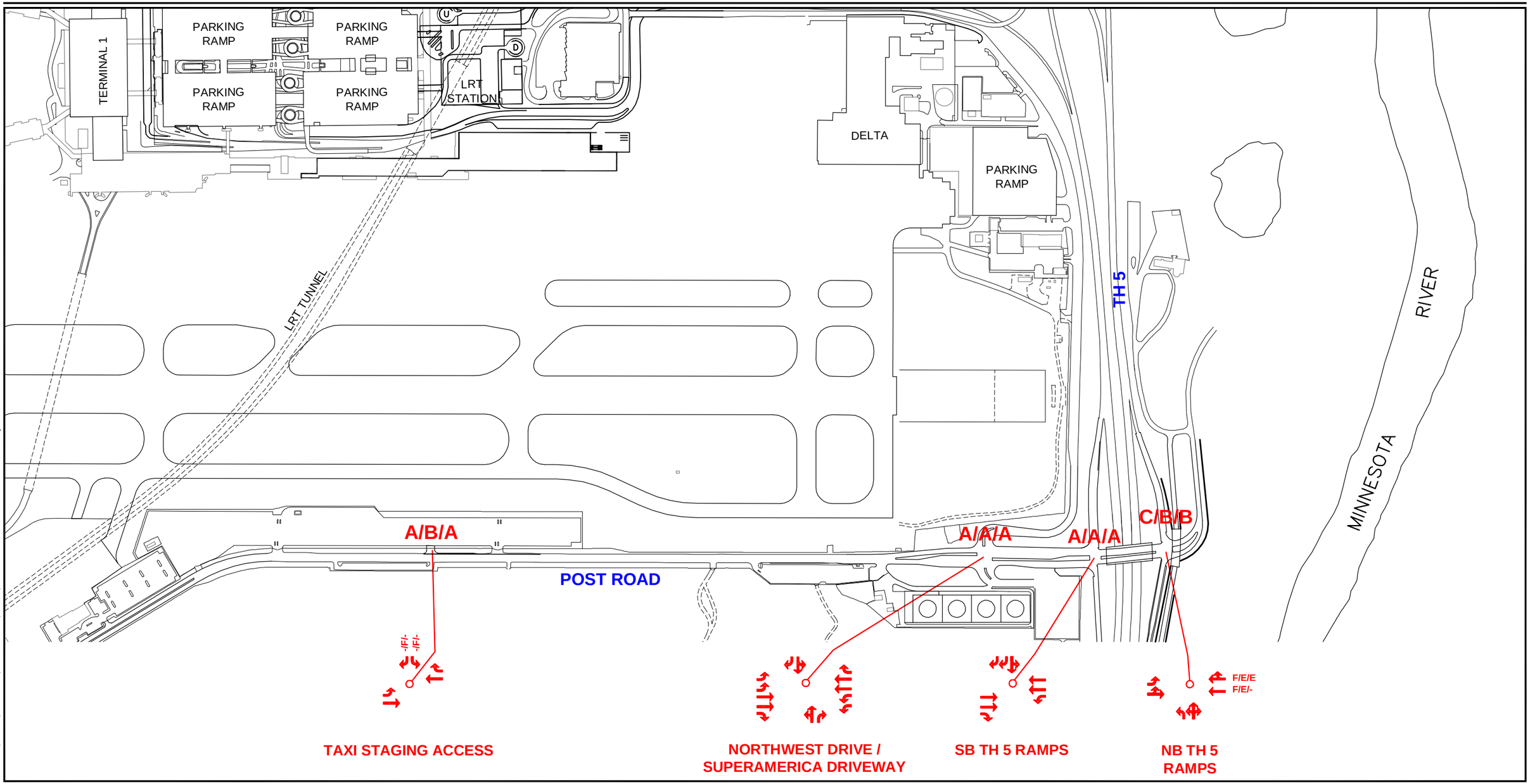
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-IMPROVE-34TH-LOS.dwg June 05, 2012 - 10:10am



LEGEND

X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

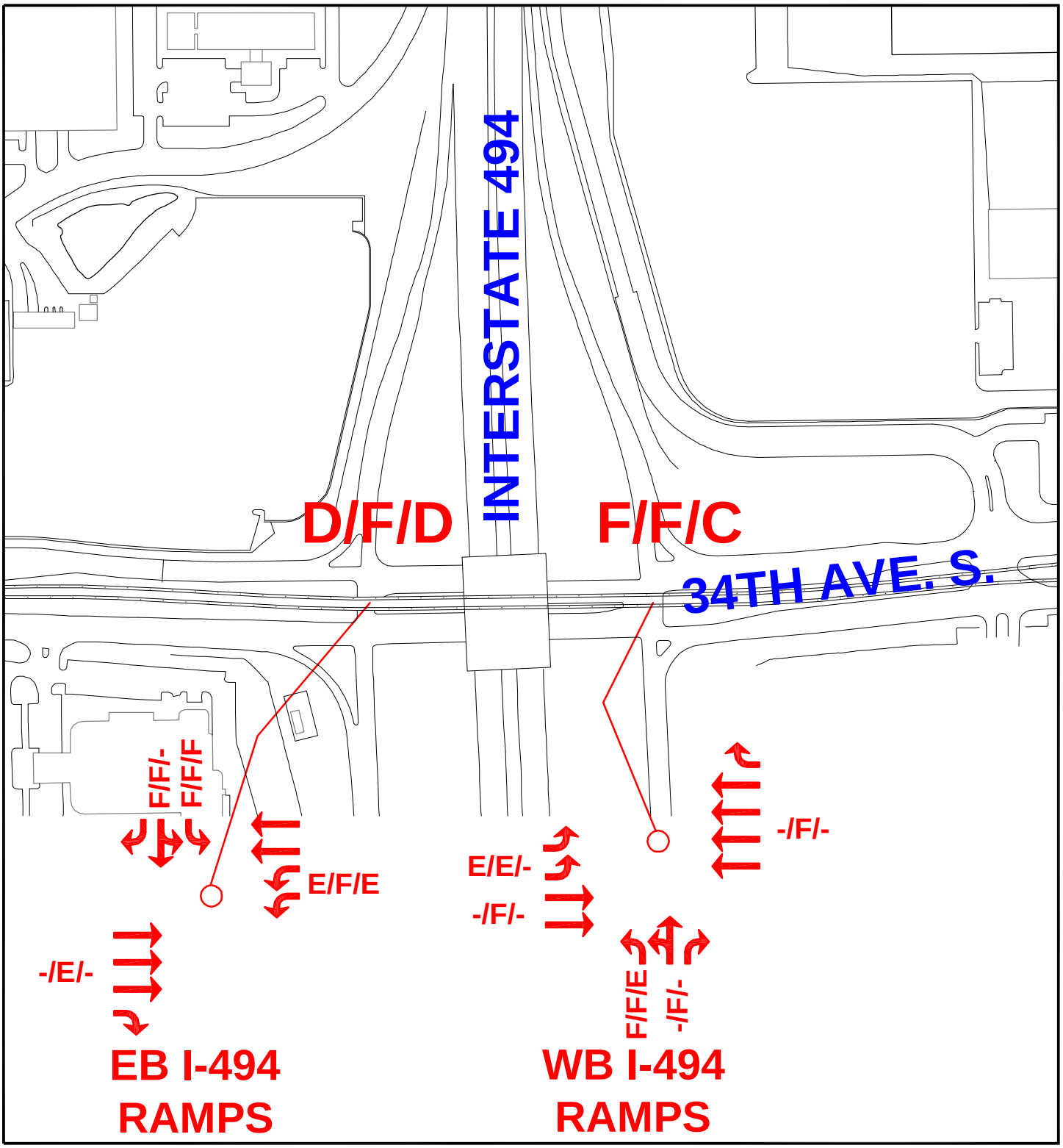
* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

2025 Mitigated Airlines Relocate Lane Geometrics and Level of Service - Post Road

N

0 500' 1000'

K:\TWC_Aviation\MAC\084_MSP_LTCP\CADD\EXHIBITS\EA REPORT\2025\084_2025-IMPROVE-POST-LOS.dwg June 05, 2012 - 10:13am



2030 No Build Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

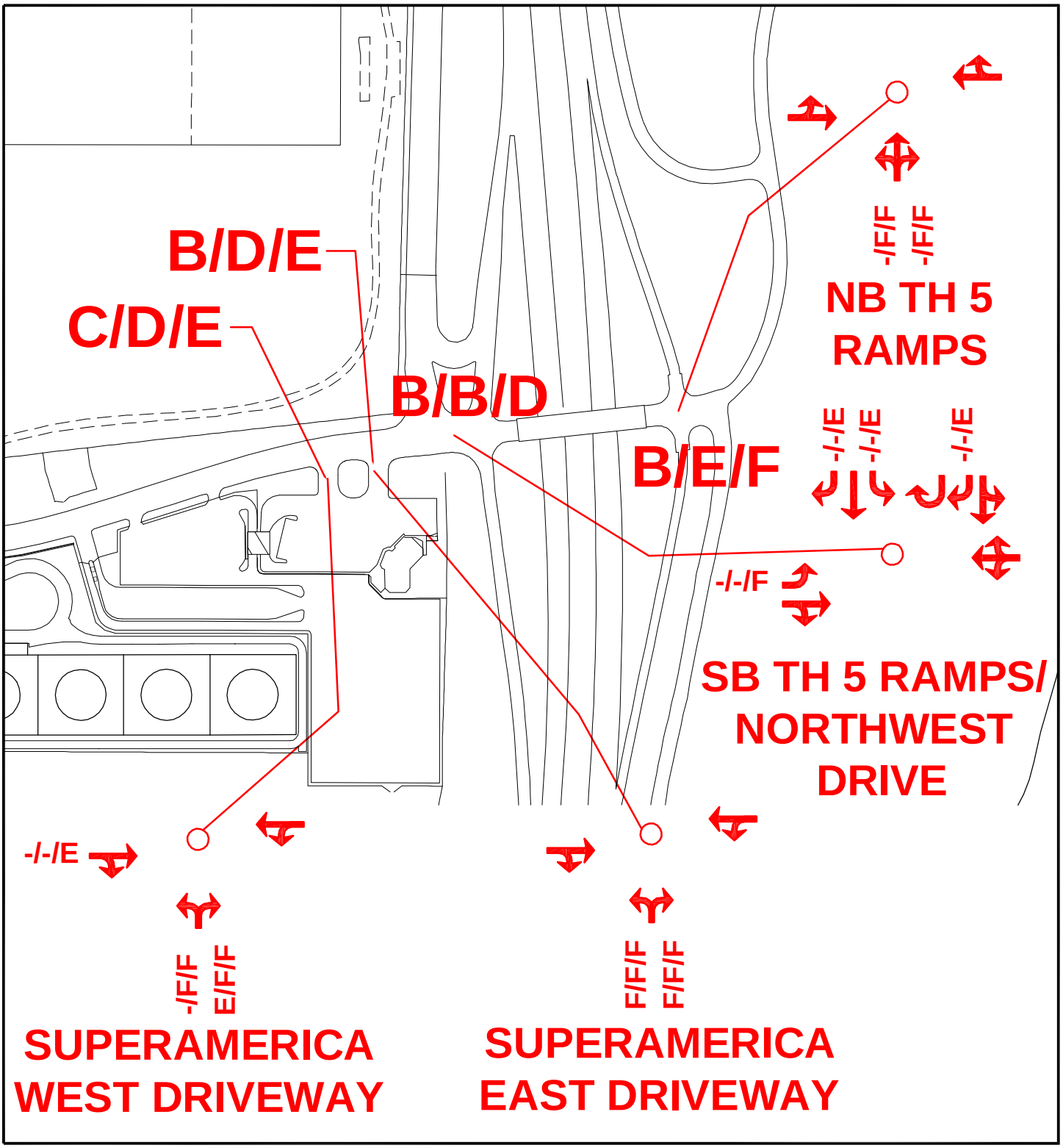
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-NA-34TH-LOS.dwg



2030 No Build Lane Geometrics and Level of Service - Post Road

LEGEND

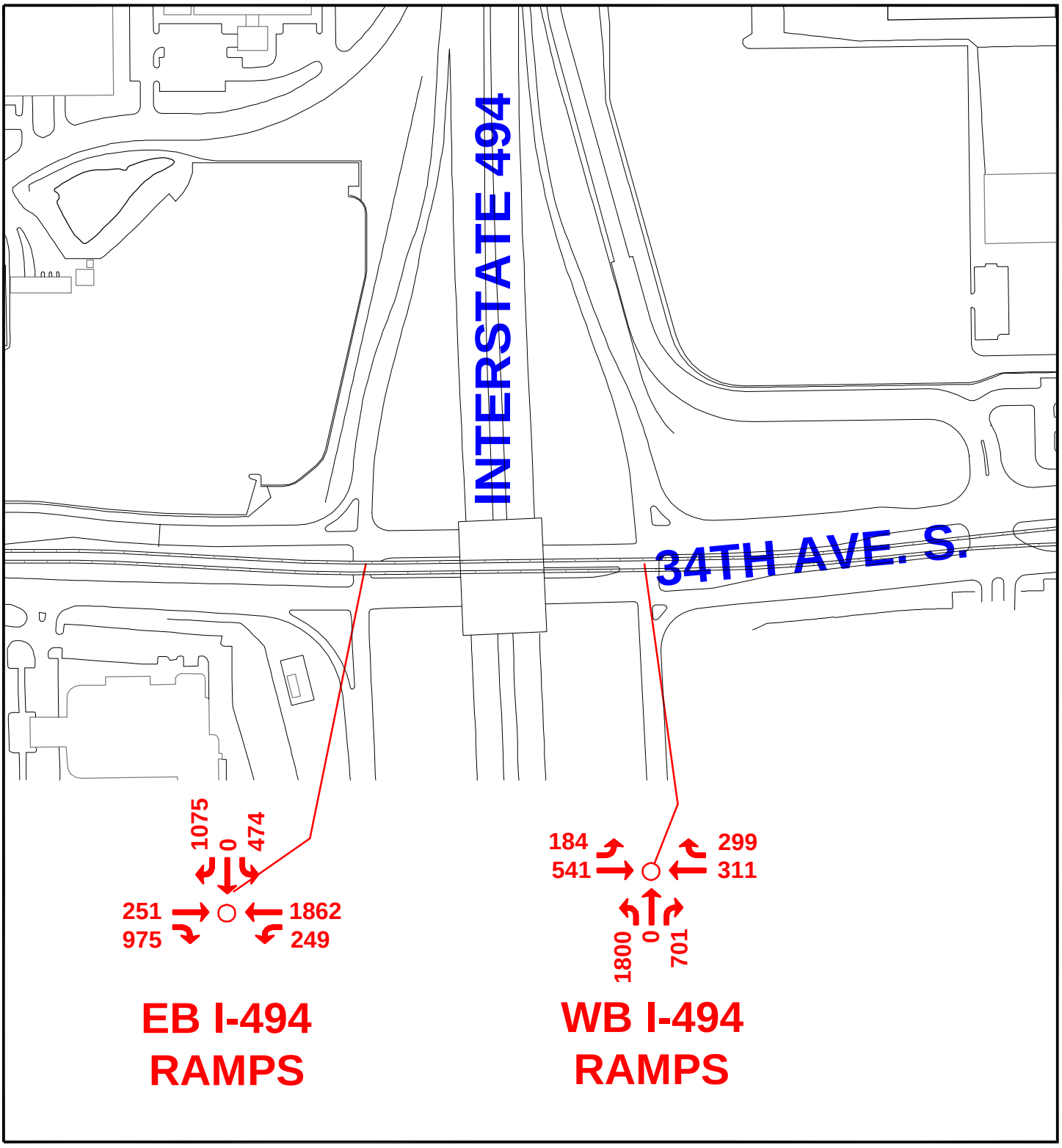
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-NA-POST-LOS.dwg



2030 No Build Traffic Volumes AM Peak Hour - 34th Avenue S

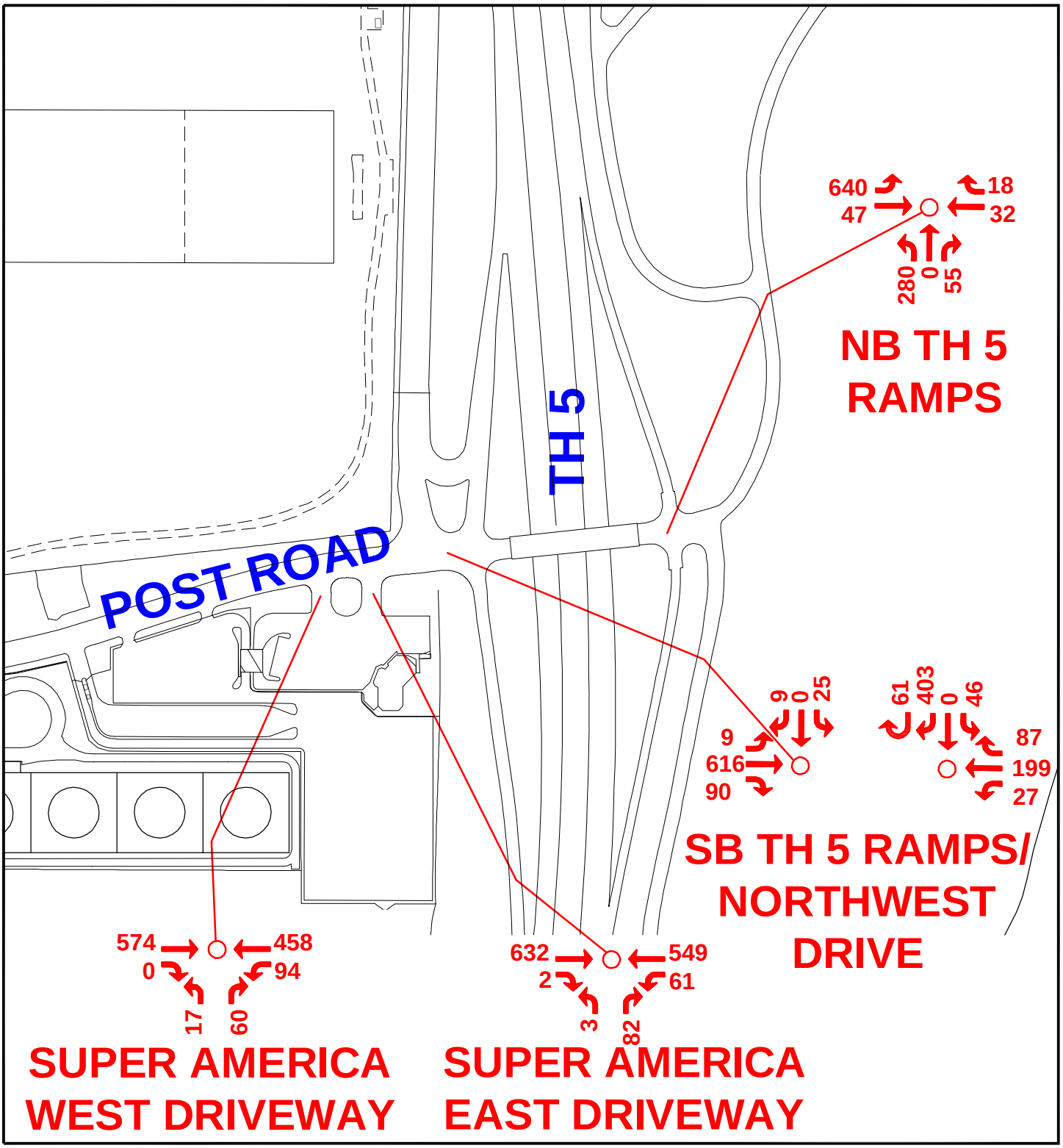
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

0 250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-34TH-NA-AM.dwg



2030 No Build Traffic Volumes AM Peak Hour - Post Road

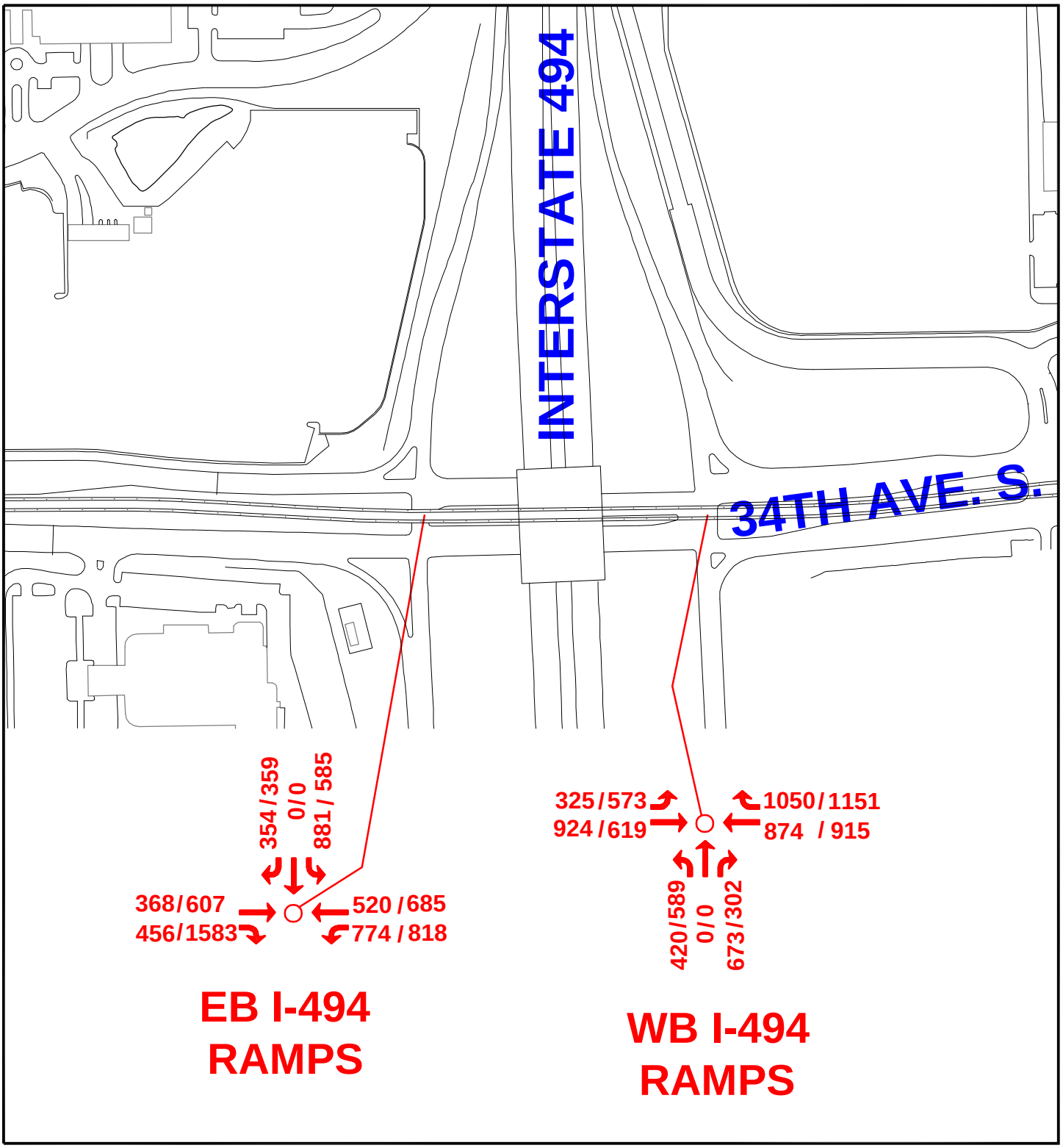
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

0 250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-POST-NA-AM.dwg



2030 No Build Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

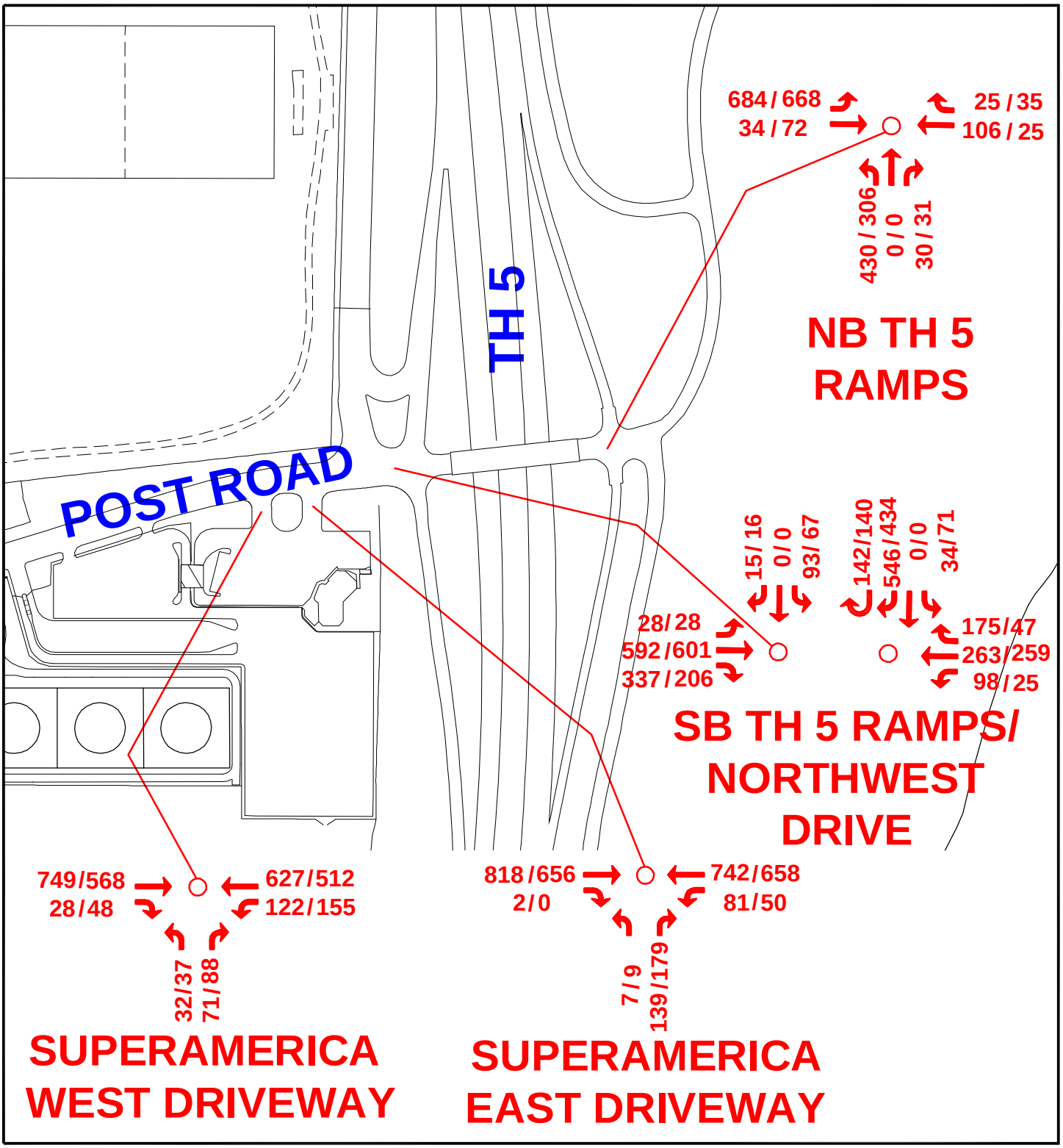
LEGEND

XX/XX 1: 30/4: 30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

N

0 250' 500'

K: \TWC_Aviation \MAC\084_MSP–LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030–34TH–NA–PM.dwg



2030 No Build Traffic Volumes Airport/PM Peak Hours - Post Road

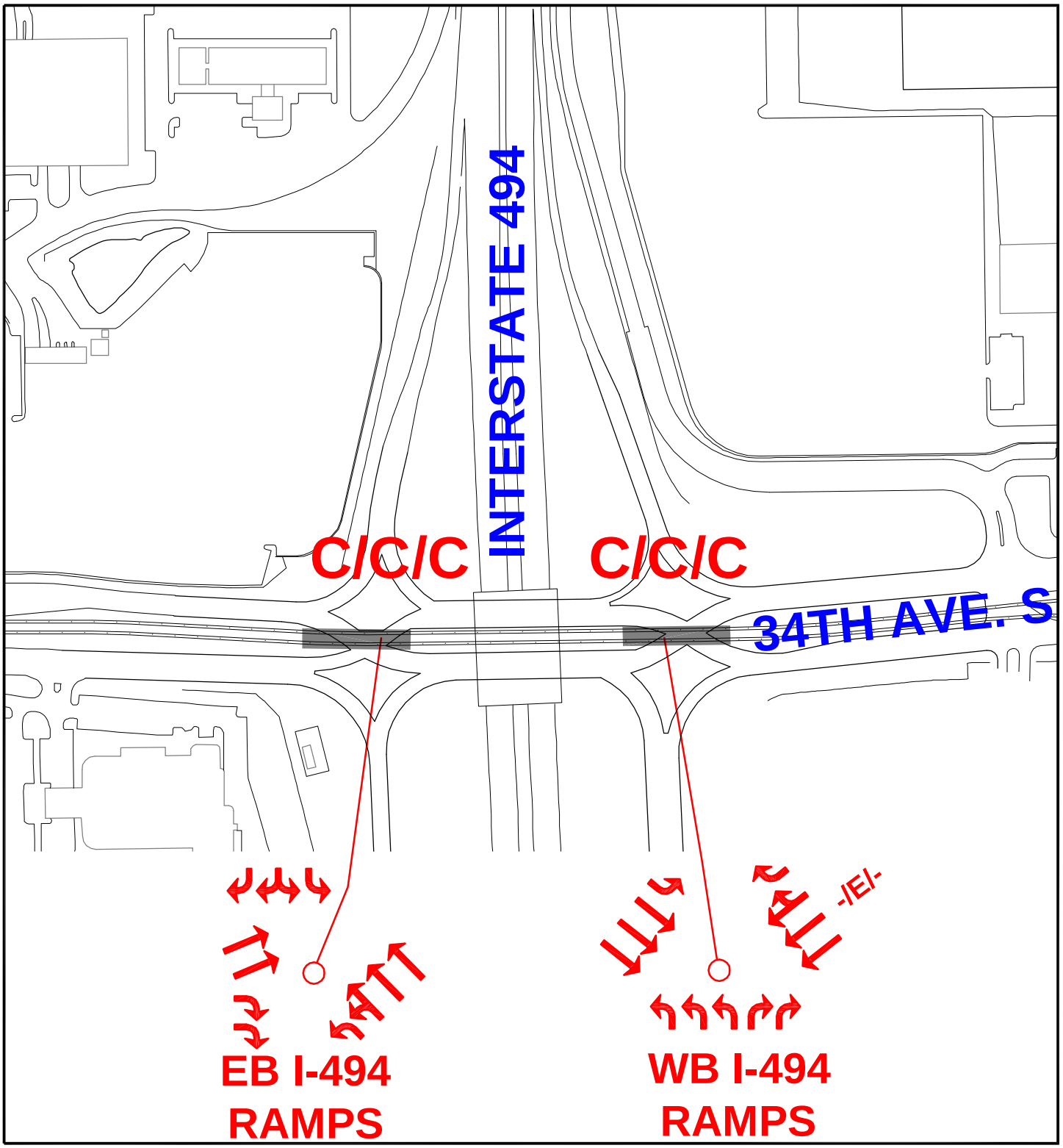
LEGEND

XX/XX 1: 30/4: 30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

N

0 250' 500'

K: \TWC_Aviation \MAC\ 084_MSP–LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030–POST–NA–PM.dwg



2030 Build Lane Geometrics and Level of Service - 34th Avenue South

LEGEND

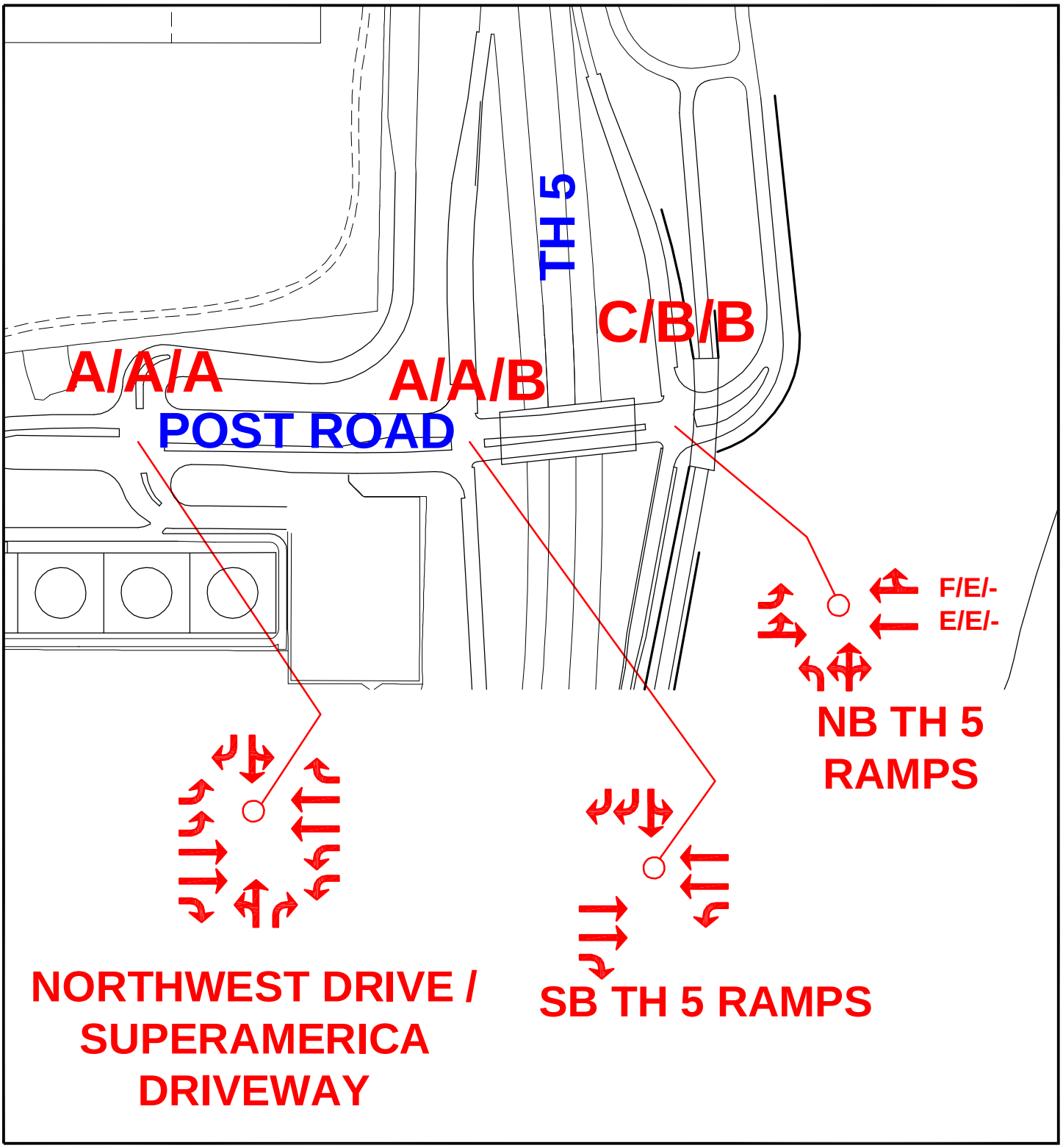
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-RELOCATE-34TH-LOS-8X11.dwg



2030 Build Lane Geometrics and Level of Service - Post Road

LEGEND

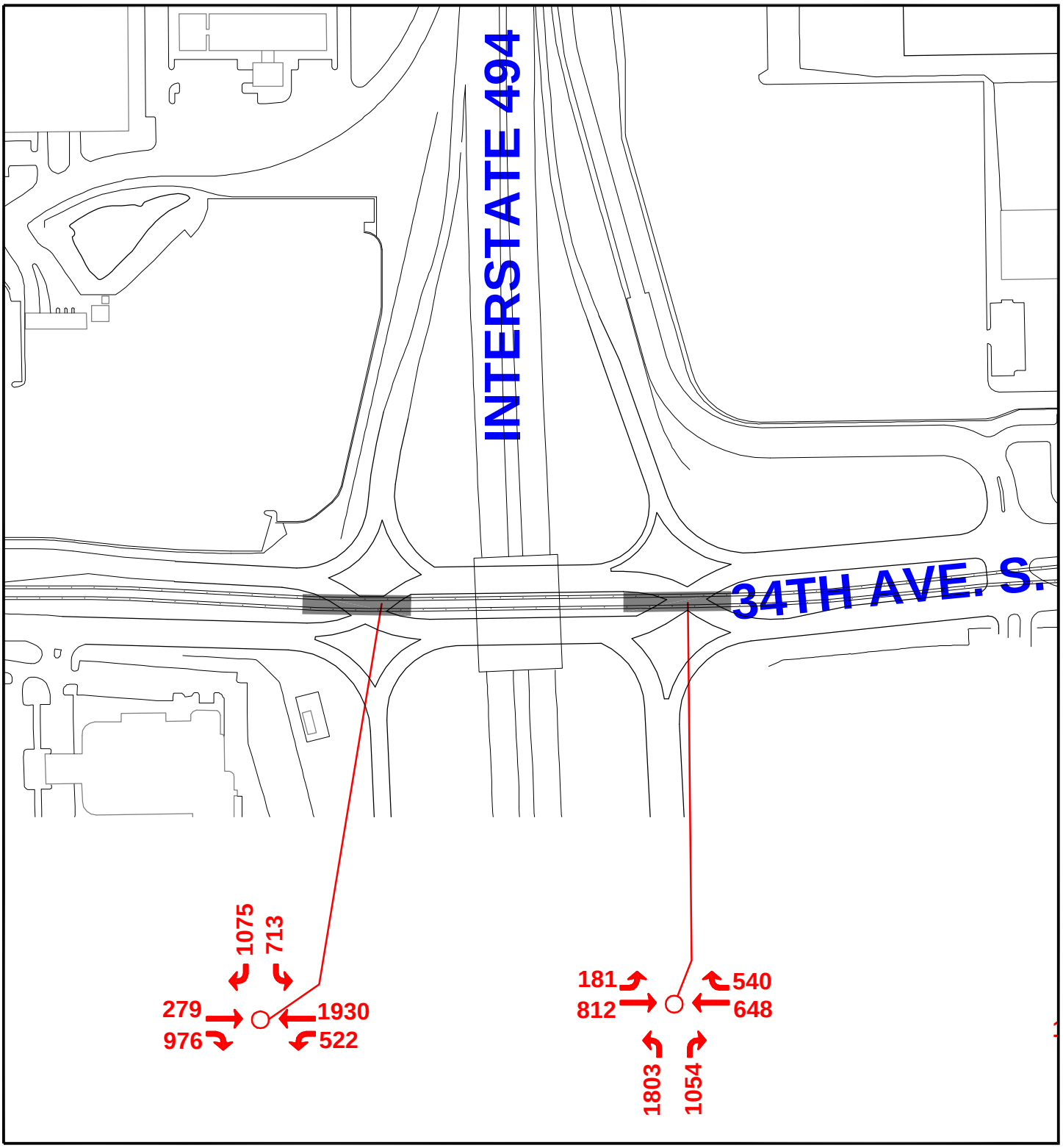
X/X/X AM/PM/AIRPORT PEAK HOUR LEVEL OF SERVICE (LOS)

* LOS FOR INDIVIDUAL MOVEMENTS ARE ONLY NOTED FOR MOVEMENTS THAT ARE EXPERIENCING LOS E OR F.

N

0 250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-RELOCATE-POST-LOS-8X11.dwg



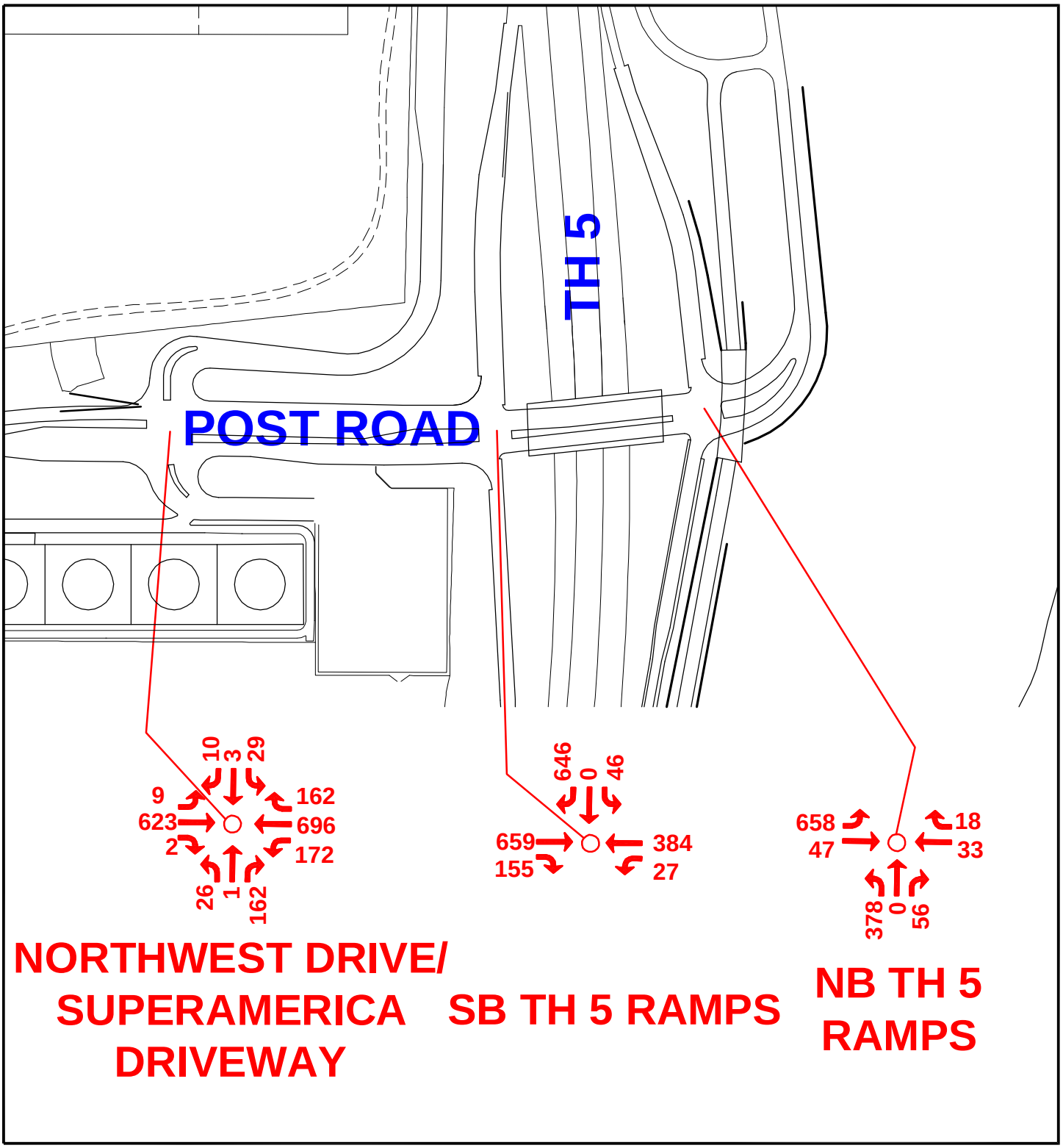
2030 Build Traffic Volumes AM Peak Hour - 34th Avenue S

LEGEND
XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-34TH-RELOCATE-AM.dwg



2030 Build Traffic Volumes AM Peak Hour - Post Road

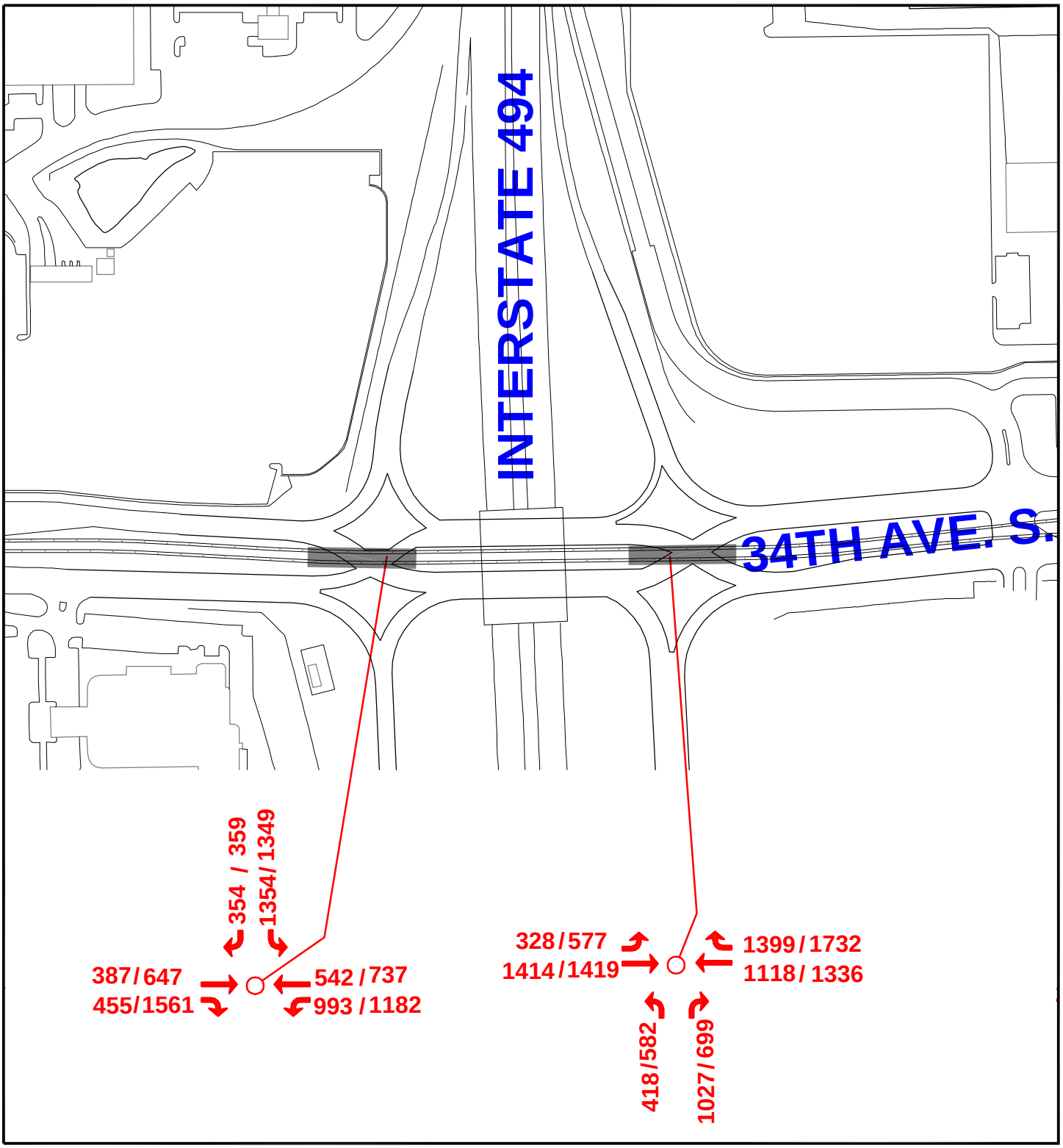
LEGEND

XX 7:30 AM PEAK HOUR TRAFFIC VOLUMES

N

0 250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-POST-RELOCATE-AM.dwg



2030 Build Traffic Volumes Airport/PM Peak Hours - 34th Avenue S

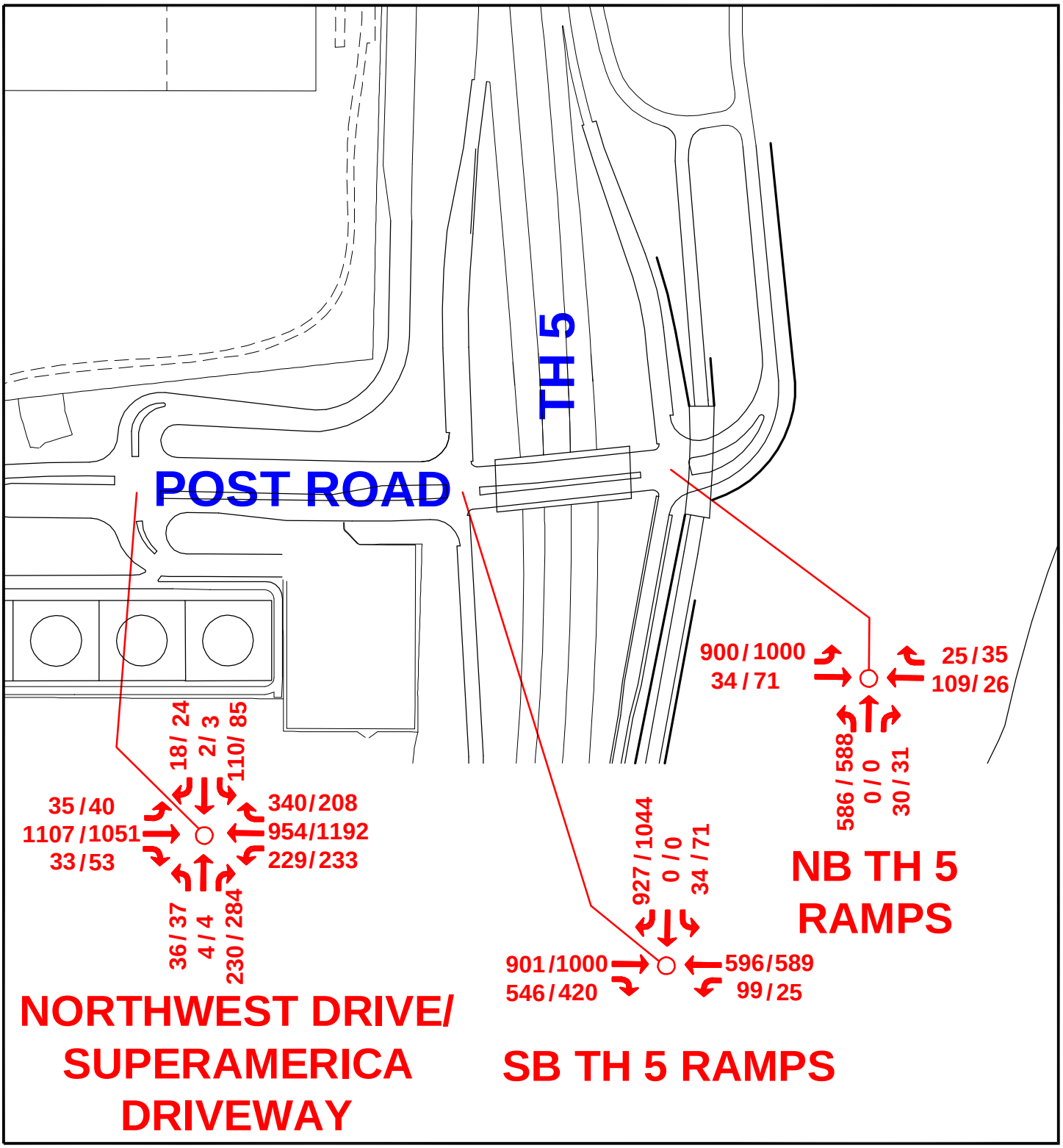
LEGEND

XX/XX 1:30/4:30 AIRPORT/PM PEAK HOURS TRAFFIC VOLUMES

N

0 250' 500'

K:\TWC_Aviation\MAC\084_MSP-LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030-34TH-RELOCATE-PM.dwg



2030 Build Traffic Volumes Airport/PM Peak Hours - Post Road

LEGEND

XX/XX 1: 30/4: 30 AIRPORT/PM PEAK HOUR TRAFFIC VOLUMES

N

0 250' 500'

K: \TWC_Aviation \MAC\ 084_MSP–LTCP\CADD\EXHIBITS\EA REPORT\2030\084_2030–POST–RELOCATE–PM.dwg

Appendix

			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing				
															Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	13	235	81	329	37	27	8	D	C	A	18	B	32	315	3		
		EB	98	57	8	163	29	31	0	C	C	A			8	260	16	420	0
		SB	395	355	660	1410	34	13	8	C	B	A			31	270	47		
		WB	28	35	114	177	38	43	1	D	D	A			7	200	5		
34th Ave S & EB I-494 Ramps	Signal	NB	0	135	312	447	0	27	1	-	C	A	12	B	14				
		EB	263	0	484	747	47	0	1	D	-	A			44			220	0
		SB	93	926	0	1019	23	8	0	C	A	-			32				
34th Ave S & WB I-494 Ramps	Signal	NB	83	315	0	398	28	5	0	C	A	-	49	D	0	435	12		
		SB	0	140	99	239	0	26	1	-	C	A			12			390	0
		WB	879	0	305	1184	89	0	5	F	-	A			342			565	0
34th Ave S & Airport Lane	Signal	NB	68	523	29	620	19	1	1	B	A	A	4	A	0	340	5		
		EB	5	0	11	16	24	0	5	C	A	A			1			50	0
		SB	0	227	8	235	0	5	3	A	A	A			0	160	0	135	0
		WB	1	0	1	2	0	0	5	A	A	A			0				
34th Ave S & E 75th St	Signal	NB	283	246	0	529	17	2	0	B	A	-	11	B	0	450	18		
		EB	5	0	33	38	38	0	15	D	-	B			3			175	3
		SB	0	202	10	212	0	11	5	-	B	A			7				
34th Ave S & S Delta Driveway	Side Street Stop	EB	0	0	0	0	0	0	0	-	-	A	0	A	0				
		SB	0	212	2	214	0	0	1	-	A	A			0				
34th Ave S & 73rd St	Signal	NB	38	213	0	251	23	2	0	C	A	-	6	A	0	295	4		
		EB	22	0	11	33	25	0	5	C	-	A			4			210	0
		SB	0	203	8	211	0	5	2	-	A	A			0				
34th Ave S & E 72nd St NB	Signal	NB	9	222	4	235	32	0	0	C	A	A	1	A	0	450	2		
		WB	0	0	0	0	0	0	0	-	A	A			0				
34th Ave S & E 72nd St SB	Signal	NB	0	48	75	123	0	36	0	-	D	A	17	B	8				
		EB	19	72	0	91	14	9	0	B	A	A			2	165	1		
		SB	60	0	0	60	36	0	0	D	A	-			7				
		WB	5	0	4	5	0	0	8	A	A	A			0				
34th Ave S & E 70th St	All Way Stop	NB	1	21	113	135	8	10	8	A	B	A	8	A	2				
		SB	30	0	27	57	7	0	6	A	-	A			1				
		WB	0	82	61	143	0	11	7	-	B	A			2				
34th Ave S & Humphrey Dr	Signal	SB	0	59	51	110	0	8	6	-	A	A	6	A	4				
		WB	2	152	0	154	0	5	0	A	A	-			3				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	143	0	143	6	0	0	A	A	-	0	A	0				
		SB	5	0	0	5	0	0	0	A	-	A			0				
		WB	0	143	2	145	0	0	0	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	1	147	0	148	1	0	0	A	A	-	0	A	0				
		SB	11	0	0	11	1	0	2	A	-	A			0				
		WB	0	145	17	162	0	0	6	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	4	0	7	11	7	0	6	A	-	A	1	A	0				
		EB	0	158	0	158	0	0	0	-	A	-			0				
		WB	0	225	0	225	0	1	0	-	A	-			0				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	3	0	29	32	5	0	5	A	-	A	1	A	0				
		EB	0	165	0	165	0	0	0	-	A	-			0				
		WB	0	222	0	222	0	0	0	-	A	-			0				
Post Rd & SA West Driveway	Side Street Stop	NB	12	0	42	54	7	0	7	A	-	A	2	A	0				
		EB	0	194	0	194	0	0	0	-	A	A			0				
		WB	65	210	0	275	0	3	0	A	A	-			1				
Post Rd & SA East Driveway	Side Street Stop	NB	3	0	57	60	0	0	24	A	-	C	5	A	7				
		EB	0	235	1	236	0	6	7	-	A	A			9				
		WB	42	272	0	314	1	0	0	A	A	-			0				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	12	230	50	292	23	8	9	C	A	A	12	B	12	245	12		
		SB NW Dr	20	0	9	29	29	0	30	C	A	C			20			50	0
		SB TH 5	25	0	235	260	14	0	17	B	-	B			3	235	12		
		SB TH 5 U	0	50	0	50	0	1	0	-	A	-			-				
		WB	9	70	52	131	14	13	14	B	B	B			7				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	117	0	24	141	9	0	6	A	A	A	4	A	3				
		EB	225	50	0	275	1	1	0	A	A	-			0				
		WB	0	14	10	24	0	0	0	-	A	A			0				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	22	141	48	211	53	21	3	D	C	A	18	B	14	315	7		
		EB	155	47	14	216	24	24	0	C	C	A			4	260	19	420	0
		SB	122	121	197	440	35	15	2	C	B	A			7	270	16		
		WB	37	46	129	212	37	40	1	D	D	A			9	200	6		
34th Ave S & EB I-494 Ramps	Signal	NB	0	193	296	489	-	30	1	-	C	A	18	B	23				
		EB	337	0	142	479	41	-	1	D	-	A			47			220	0
		SB	268	298	0	566	20	7	-	C	A	-			21				
34th Ave S & WB I-494 Ramps	Signal	NB	155	375	0	530	18	1	-	B	A	-	11	B	12	435	12		
		SB	0	327	504	831	-	24	2	-	C	A			22			390	0
		WB	239	0	271	510	39	-	1	D	-	A			0			565	0
34th Ave S & Airport Lane	Signal	NB	34	580	32	646	22	5	4	C	A	A	9	A	7	340	3		
		EB	32	0	56	88	21	0	6	C	A	A			3			50	0
		SB	1	693	20	714	0	9	4	A	A	A			20	160	0	135	0
		WB	82	1	6	89	20	22	6	B	C	A			8				
34th Ave S & E 75th St	Signal	NB	168	450	0	618	22	4	-	C	A	-	12	B	5	450	15		
		EB	17	0	164	181	27	-	15	C	-	B			12			175	12
		SB	0	550	19	569	-	14	12	-	B	B			29				
34th Ave S & 73rd St	Signal	NB	29	438	0	467	22	3	-	C	A	-	4	A	3	295	2		
		EB	10	0	48	58	22	-	5	C	-	A			1			210	0
		SB	0	401	11	412	-	5	3	-	A	A			4				
34th Ave S & E 72nd St NB	Signal	NB	24	487	0	511	44	0	0	D	A	A	3	A	1	450	5		
		WB	0	6	5	11	-	46	3	-	D	A			1				
34th Ave S & E 72nd St SB	Signal	NB	0	118	193	311	-	36	0	-	D	A	15	B	19				
		EB	44	114	2	160	12	10	2	B	B	A			3	165	3		
		SB	65	9	0	74	39	35	-	D	C	-			8				
		WB	20	0	10	20	3	0	1	A	A	A			1				
34th Ave S & E 70th St	All Way Stop	NB	11	37	288	336	19	21	15	C	C	C	14	B	27				
		SB	27	0	33	60	8	-	6	A	-	A			1				
		WB	0	190	14	204	-	12	9	-	B	A			5				
34th Ave S & Humphrey Dr	Signal	SB	0	75	159	234	-	8	6	-	A	A	8	A	10				
		WB	0	318	0	318	0	8	-	A	A	-			9				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	315	0	315	0	0	-	A	A	-	0	A	0				
		SB	7	0	1	8	7	-	4	A	-	A			0				
		WB	0	203	8	211	-	0	0	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	3	319	0	322	2	0	-	A	A	-	0	A	0				
		SB	5	0	0	5	7	-	0	A	-	A			0				
		WB	0	211	14	225	-	0	1	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	4	0	32	36	8	-	7	A	-	A	1	A	0				
		EB	0	322	0	322	-	2	-	-	A	-			2				
		WB	0	339	0	339	-	1	-	-	A	-			0				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	5	0	82	87	15	-	12	B	-	B	3	A	3				
		EB	0	354	0	354	-	3	-	-	A	-			5				
		WB	0	334	0	334	-	0	-	-	A	-			0				
Post Rd & SA West Driveway	Side Street Stop	NB	22	0	50	72	17	-	20	C	-	C	8	A	3				
		EB	0	417	19	436	-	13	6	-	B	A			26				
		WB	84	312	0	396	3	0	-	A	A	-			1				
Post Rd & SA East Driveway	Side Street Stop	NB	5	0	96	101	39	-	163	E	-	F	20	C	32				
		EB	0	466	1	467	-	9	0	-	A	A			43				
		WB	56	391	0	447	1	0	-	A	A	-			0				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	32	446	84	562	33	9	8	C	A	A	16	B	31	245	31		
		SB NW Dr	30	0	16	46	32	37	32	C	D	C			5			50	3
		SB TH 5	17	0	277	294	19	-	24	B	-	C			36	235	36		
		SB TH 5 U	0	101	0	101	-	1	-	-	A	-			0				
		WB	32	154	81	267	31	23	21	C	C	C			35				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	209	0	13	222	16	0	9	C	A	A	7	A	11				
		EB	468	25	0	493	3	2	-	A	A	-			3				
		WB	0	58	12	70	-	1	1	-	A	A			0				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	21	379	40	440	72	40	19	E	D	B	28	C	74	315	9		
		EB	501	57	14	572	33	27	0	C	C	A			8	260	88	420	0
		SB	152	159	226	537	51	28	2	D	C	A			16	270	31		
		WB	84	89	340	513	58	52	1	E	D	A			19	200	27		
34th Ave S & EB I-494 Ramps	Signal	NB	0	331	957	1288	-	32	4	-	C	A	15	B	55				
		EB	155	0	98	253	47	-	0	D	-	A			27			220	0
		SB	322	439	0	761	29	7	-	C	A	-			34				
34th Ave S & WB I-494 Ramps	Signal	NB	294	192	0	486	29	6	-	C	A	-	19	B	32	435	32		
		SB	0	392	409	801	-	24	2	-	C	A			28			390	0
		WB	369	0	148	517	39	-	1	D	-	A			0			565	0
34th Ave S & Airport Lane	Signal	NB	15	312	13	340	23	5	2	C	A	A	7	A	4	340	2		
		EB	9	0	72	81	21	0	5	C	A	A			1			50	0
		SB	2	699	17	718	18	6	2	B	A	A			13	160	0	135	0
		WB	30	1	5	36	19	20	8	B	B	A			3				
34th Ave S & E 75th St	Signal	NB	38	288	0	326	26	5	-	C	A	-	11	B	4	450	4		
		EB	12	0	208	220	20	-	18	B	-	B			15			175	15
		SB	0	510	11	521	-	10	5	-	A	A			16				
34th Ave S & 73rd St	Signal	NB	16	284	0	300	20	1	-	C	A	-	3	A	1	295	1		
		EB	6	0	27	33	20	-	5	B	-	A			1			210	0
		SB	0	435	4	439	-	3	2	-	A	A			3				
34th Ave S & E 72nd St NB	Signal	NB	9	377	0	386	53	0	0	D	A	A	2	A	0	450	2		
		WB	0	4	6	10	-	66	16	-	E	B			2				
34th Ave S & E 72nd St SB	Signal	NB	0	147	222	369	-	34	0	-	C	A	16	B	23	165	4		
		EB	38	140	1	179	16	10	1	B	B	A			4				
		SB	66	2	0	68	43	22	-	D	C	-			7				
		WB	9	0	4	9	3	0	15	A	A	B			1				
34th Ave S & E 70th St	All Way Stop	NB	6	16	267	289	15	19	16	B	C	C	14	B	29				
		SB	22	0	30	52	8	-	6	A	-	A			1				
		WB	0	166	5	171	-	12	8	-	B	A			3				
34th Ave S & Humphrey Dr	Signal	SB	0	67	135	202	-	8	6	-	A	A	7	A	9				
		WB	1	278	0	279	0	8	-	A	A	-			7				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	289	0	289	0	0	-	A	A	-	0	A	0				
		SB	2	0	0	2	6	-	0	A	-	A			0				
		WB	0	171	10	181	-	0	0	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	9	282	0	291	1	0	-	A	A	-	0	A	0				
		SB	5	0	8	13	7	-	5	A	-	A			0				
		WB	0	173	15	188	-	0	1	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	8	0	37	45	14	-	11	B	-	B	9	A	1				
		EB	0	286	0	286	-	17	-	-	C	-			38				
		WB	0	301	0	301	-	2	-	-	A	-			1				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	8	0	115	123	31	-	42	D	-	E	13	B	24				
		EB	0	323	0	323	-	12	-	-	B	-			28				
		WB	0	293	0	293	-	0	-	-	A	-			0				
Post Rd & SA West Driveway	Side Street Stop	NB	26	0	61	87	25	-	26	C	-	D	15	C	6				
		EB	0	405	33	438	-	24	21	-	C	C			67				
		WB	107	267	0	374	6	0	-	A	A	-			2				
Post Rd & SA East Driveway	Side Street Stop	NB	6	0	123	129	170	-	540	F	-	F	69	F	187				
		EB	0	466	0	466	-	11	0	-	B	A			57				
		WB	35	368	0	403	2	1	-	A	A	-			0				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	25	484	80	589	30	9	8	C	A	A	13	B	37	245	37		
		SB NW Dr	24	0	15	39	28	36	29	C	D	C			4			50	2
		SB TH 5	31	0	245	276	17	-	21	B	-	C			28	235	28		
		SB TH 5 U	0	94	0	94	-	1	-	-	A	-			0				
		WB	8	143	18	169	24	15	13	C	B	B			12				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	154	0	15	169	16	0	8	C	A	A	6	A	8				
		EB	472	67	0	539	3	3	-	A	A	-			3				
		WB	0	15	23	38	-	1	1	-	A	A			0				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	25	465	159	649	45	42	30	D	D	C	32	C	128	315	7		
		EB	202	117	16	335	50	55	1	D	D	A			27	260	54	420	0
		SB	658	591	1099	2348	54	25	16	D	C	B			91	270	122		
		WB	58	73	235	366	60	61	1	E	E	A			20	200	20		
34th Ave S & EB I-494 Ramps	Signal	NB	0	243	659	902	0	28	2	-	C	A	13	B	25				
		EB	326	0	826	1152	48	0	5	D	-	A			58			220	9
		SB	204	1522	0	1726	24	10	0	C	A	-			47				
34th Ave S & WB I-494 Ramps	Signal	NB	149	420	0	569	27	7	0	C	A	-	91	F	21	435	21		
		SB	0	296	211	507	0	25	1	-	C	A			20			390	0
		WB	1430	0	578	2008	191	0	40	F	-	D			1548			565	0
34th Ave S & Airport Lane	Signal	NB	76	890	32	998	19	1	2	B	A	A	4	A	2	340	5		
		EB	5	0	11	16	24	0	5	C	A	A			1			50	0
		SB	0	495	8	503	0	6	3	A	A	A			8	160	0	135	0
		WB	1	0	1	2	0	0	5	A	A	A			0				
34th Ave S & E 75th St	Signal	NB	312	584	0	896	17	2	0	B	A	-	9	A	2	450	16		
		EB	5	0	37	42	38	0	16	D	-	B			4			175	4
		SB	0	466	10	476	0	11	9	-	B	A			17				
34th Ave S & 73rd St	Signal	NB	44	545	0	589	24	2	0	C	A	-	5	A	3	295	4		
		EB	25	0	12	37	23	0	5	C	-	A			4			210	0
		SB	0	464	9	473	0	5	3	-	A	A			7				
34th Ave S & E 72nd St NB	Signal	NB	12	554	4	570	62	0	3	E	A	A	1	A	0	450	2		
		WB	0	0	0	0	0	0	0	-	A	A			0				
34th Ave S & E 72nd St SB	Signal	NB	0	135	119	254	0	0	32	-	A	C	21	C	0				
		EB	38	150	0	188	13	12	0	B	B	A			2	165	6		
		SB	197	0	0	197	42	0	0	D	A	-			23				
		WB	5	0	7	5	0	0	0	A	A	A			0				
34th Ave S & E 70th St	All Way Stop	NB	2	24	425	451	0	25	24	A	D	C	24	C	55				
		SB	35	0	32	67	10	0	8	B	-	A			1				
		WB	0	386	71	457	0	28	23	-	D	C			64				
34th Ave S & Humphrey Dr	Signal	SB	0	197	223	420	0	6	8	-	A	A	8	A	16				
		WB	0	276	0	276	0	10	0	A	B	-			8				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	460	0	460	0	0	0	A	A	-	0	A	0				
		SB	5	0	0	5	7	0	0	A	-	A			0				
		WB	0	457	2	459	0	0	0	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	1	464	0	465	5	0	0	A	A	-	0	A	0				
		SB	12	0	0	12	9	0	1	A	-	A			0				
		WB	0	459	17	476	0	0	2	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	5	0	10	15	25	0	32	C	-	D	37	E	1				
		EB	0	476	0	476	0	91	0	-	F	-			384				
		WB	0	565	0	565	0	2	0	-	A	-			0				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	4	0	41	45	45	0	60	E	-	F	9	A	12				
		EB	0	486	0	486	0	17	0	-	C	-			50				
		WB	0	561	0	561	0	0	0	-	A	-			0				
Post Rd & SA West Driveway	Side Street Stop	NB	16	0	54	70	14	0	40	B	-	E	14	B	7				
		EB	0	527	0	527	0	30	0	-	D	A			69				
		WB	83	545	0	628	6	0	0	A	A	-			1				
Post Rd & SA East Driveway	Side Street Stop	NB	3	0	73	76	121	0	114	F	-	F	11	B	100				
		EB	0	580	1	581	0	13	3	-	B	A			59				
		WB	54	625	0	679	3	0	0	A	A	-			0				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	7	511	135	653	36	11	11	D	B	B	17	B	35	245	35		
		SB NW Dr	24	0	12	36	18	0	33	B	A	C			52			50	2
		SB TH 5	23	0	428	451	29	0	22	C	-	C			5	235	52		
		SB TH 5 U	0	58	0	58	0	1	0	-	A	-			-				
		WB	19	239	87	345	28	21	18	C	C	B			41				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	324	0	41	365	32	0	2	D	A	A	15	B	64				
		EB	518	40	0	558	3	15	0	A	B	-			64				
		WB	0	21	14	35	0	1	0	-	A	A			0				

			Demand Volumes				Modeled Volumes				LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing				
																Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Total	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	34	219	76	329	41	215	76	332	D	C	A	20	B	27	315	12		
		EB	240	74	22	336	238	79	21	338	C	C	A			9	260	31	420	0
		SB	201	199	324	724	187	200	326	714	D	B	A			14	270	27		
		WB	56	72	199	327	56	69	203	329	D	D	A			12	200	13		
34th Ave S & EB I-494 Ramps	Signal	NB	0	325	397	722	0	311	413	723	-	D	A	31	C	59				
		EB	682	0	284	966	694	0	281	975	D	-	A			130			220	0
		SB	824	440	0	1264	791	429	0	1220	D	B	-			136				
34th Ave S & WB I-494 Ramps	Signal	NB	274	733	0	1007	272	738	0	1010	B	A	-	21	C	17	435	17		
		SB	0	921	832	1753	0	886	831	1717	-	D	A			195			390	3
		WB	343	0	539	882	341	0	521	863	D	-	A			72			565	0
34th Ave S & Airport Lane	Signal	NB	38	1198	36	1272	32	1191	36	1258	D	A	A	13	B	19	340	6		
		EB	34	0	61	95	35	0	61	96	C	A	B			5			50	1
		SB	1	1603	22	1626	1	1564	18	1583	C	B	A			108	160	0	135	0
		WB	91	1	6	98	92	1	4	97	D	B	D			19				
34th Ave S & E 75th St	Signal	NB	186	1052	0	1238	170	1050	0	1220	C	A	-	14	B	16	450	18		
		EB	19	0	181	200	18	0	182	200	C	-	B			15			175	15
		SB	0	1445	21	1466	0	1399	17	1415	-	B	B			90				
34th Ave S & 73rd St	Signal	NB	33	1038	0	1071	28	1039	0	1039	C	A	-	5	A	8	295	3		
		EB	12	0	56	68	12	0	57	68	C	-	A			2			210	0
		SB	0	1277	13	1290	0	1220	14	1234	-	A	A			20				
34th Ave S & E 72nd St NB	Signal	NB	41	1077	0	1118	43	1074	0	1074	D	A	A	2	A	3	450	9		
		WB	0	9	5	14	0	0	6	6	-	A	A			0				
34th Ave S & E 72nd St SB	Signal	NB	0	48	684	732	0	690	51	740	-	A	D	11	B	1				
		EB	15	353	5	373	355	12	0	367	B	A	A			0	165	14		
		SB	203	15	0	218	151	0	0	151	D	A	-			24				
		WB	32	0	18	32	2	0	2	2	A	A	A			0				
34th Ave S & E 70th St	All Way Stop	NB	18	43	389	450	0	47	393	440	A	C	A	12	B	4				
		SB	30	0	38	68	29	0	39	68	A	-	A			1				
		WB	0	484	16	500	0	341	15	356	-	C	C			37				
34th Ave S & Humphrey Dr	Signal	SB	0	218	322	540	0	222	157	380	-	A	A	9	A	14				
		WB	0	695	0	695	0	707	0	707	A	B	-			24				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	419	0	419	0	419	0	419	A	A	-	0	A	0				
		SB	7	0	1	8	7	0	1	8	A	-	A			0				
		WB	0	499	8	507	0	356	5	362	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	3	423	0	426	2	423	0	423	A	A	-	2	A	10				
		SB	5	0	0	5	5	0	0	5	B	-	A			0				
		WB	0	507	14	521	0	363	10	373	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	6	0	46	52	6	0	44	44	F	-	F	25	C	31				
		EB	0	426	0	426	0	376	0	376	-	F	-			467				
		WB	0	682	0	682	0	609	0	609	-	A	-			3				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	6	0	115	121	4	0	62	62	F	-	F	35	E	174				
		EB	0	472	0	472	0	417	0	417	-	D	-			104				
		WB	0	676	0	676	0	606	0	606	-	A	-			3				
Post Rd & SA West Driveway	Side Street Stop	NB	28	0	64	92	20	0	59	59	F	-	F	39	E	172				
		EB	0	562	25	587	0	458	20	478	-	E	D			134				
		WB	107	648	0	755	96	586	0	682	C	A	-			10				
Post Rd & SA East Driveway	Side Street Stop	NB	7	0	123	130	4	0	35	35	F	-	F	37	E	347				
		EB	0	625	1	626	0	517	1	518	-	B	A			80				
		WB	72	748	0	820	70	678	0	748	A	A	-			11				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	36	419	293	748	29	332	192	553	F	B	B	43	D	49	245	49		
		SB NW Dr	79	0	20	99	52	0	21	73	D	A	E			19			50	7
		SB TH 5	26	0	574	600	29	0	579	608	D	-	E			570	235	66		
		SB TH 5 U	0	126	0	126	0	125	0	125	-	C	-			-				
		WB	68	226	160	454	67	147	97	311	D	E	D			103				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	386	0	21	407	241	0	12	12	F	A	F	65	F	990				
		EB	495	29	0	524	384	30	0	414	A	A	-			7				
		WB	0	68	15	83	0	68	15	83	-	A	A			0				

			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing: Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	31	551	58	640	96	57	38	F	E	D	50	D	166	315	16		
		EB	732	84	20	836	58	45	0	E	D	A			11	260	432	420	0
		SB	224	234	337	795	122	52	4	F	D	A			47	270	104		
		WB	123	129	493	745	110	101	5	F	F	A			52	200	80		
34th Ave S & EB I-494 Ramps	Signal	NB	0	550	1294	1844	0	49	42	-	D	D	44	D	377				
		EB	368	0	269	637	66	0	1	E	-	A			80			220	0
		SB	945	526	0	1471	62	16	0	E	B	-			259				
34th Ave S & WB I-494 Ramps	Signal	NB	479	438	0	917	39	5	0	D	A	-	40	D	62	435	62		
		SB	0	1015	797	1812	0	85	7	-	F	A			404			390	5
		WB	456	0	258	714	57	0	1	E	-	A			96			565	0
34th Ave S & Airport Lane	Signal	NB	16	666	14	696	50	6	5	D	A	A	26	C	10	340	4		
		EB	9	0	78	87	41	0	10	D	A	B			1			50	1
		SB	2	1700	19	1721	31	32	4	C	C	A			498	160	0	135	0
		WB	33	1	5	39	109	35	22	F	C	C			18				
34th Ave S & E 75th St	Signal	NB	42	638	0	680	53	6	0	D	A	-	26	C	13	450	10		
		EB	12	0	229	241	29	0	31	C	-	C			29			175	29
		SB	0	1492	11	1503	0	34	9	-	C	A			228				
34th Ave S & 73rd St	Signal	NB	18	632	0	650	30	1	0	C	A	-	14	B	3	295	3		
		EB	7	0	31	38	31	0	6	C	-	A			1			210	0
		SB	0	1407	4	1411	0	20	1	-	C	A			162				
34th Ave S & E 72nd St NB	Signal	NB	15	725	0	740	71	1	0	E	A	A	2	A	1	450	5		
		WB	0	7	6	13	0	0	31	-	A	C			0				
34th Ave S & E 72nd St SB	Signal	NB	0	61	793	854	0	2	34	-	A	C	12	B	3				
		EB	13	402	2	417	13	15	0	B	B	A			0	165	16		
		SB	201	4	0	205	46	0	0	D	A	-			26				
		WB	15	0	7	15	2	0	2	A	A	A			0				
34th Ave S & E 70th St	All Way Stop	NB	10	19	139	168	0	12	2	A	B	A	11	B	1				
		SB	25	0	35	60	8	0	6	A	-	A			1				
		WB	0	440	5	445	0	16	8	-	C	A			16				
34th Ave S & Humphrey Dr	Signal	SB	0	205	280	485	0	6	8	-	A	A	11	B	15				
		WB	0	638	0	638	0	13	0	A	B	-			26				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	164	0	164	0	0	0	A	A	-	0	A	0				
		SB	2	0	0	2	6	0	0	A	-	A			0				
		WB	0	445	10	455	0	0	0	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	9	157	0	166	3	0	0	A	A	-	0	A	0				
		SB	5	0	8	13	6	0	5	A	-	A			0				
		WB	0	447	15	462	0	0	1	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	11	0	52	63	11	0	7	B	-	A	2	A	0				
		EB	0	161	0	161	0	5	0	-	A	-			3				
		WB	0	621	0	621	0	1	0	-	A	-			0				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	11	0	162	173	39	0	41	E	-	E	9	A	39				
		EB	0	213	0	213	0	8	0	-	A	-			12				
		WB	0	610	0	610	0	0	0	-	A	-			0				
Post Rd & SA West Driveway	Side Street Stop	NB	34	0	77	111	36	0	46	E	-	E	11	B	18				
		EB	0	332	43	375	0	22	11	-	C	B			43				
		WB	136	576	0	712	3	0	0	A	A	-			1				
Post Rd & SA East Driveway	Side Street Stop	NB	9	0	157	166	312	0	247	F	-	F	29	D	242				
		EB	0	409	0	409	0	13	0	-	B	A			51				
		WB	44	703	0	747	1	0	0	A	A	-			1				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	32	373	161	566	47	11	12	D	B	B	27	C	43	245	43		
		SB NW Dr	60	0	20	80	46	0	40	D	A	D			14			50	5
		SB TH 5	44	0	461	505	30	0	43	C	-	D			148	235	66		
		SB TH 5 U	0	144	0	144	0	4	0	-	A	-			-				
		WB	19	265	40	324	37	36	33	D	D	C			58				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	304	0	20	324	170	0	160	F	A	F	61	F	970				
		EB	421	56	0	477	3	2	0	A	A	-			4				
		WB	0	20	25	45	0	1	0	-	A	A			0				

Intersection	Control	Approach	Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing: Through	Left Turn		Right Turn	
			Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	26	671	278	975	49	42	34	D	D	C	26	C	198	315	8		
		SB	657	587	1096	2340	52	15	5	D	B	A			39	500	147		
		WB	58	73	234	365	45	44	5	D	D	A			16	200	17		
34th Ave S & EB I-494 Ramps	Signal	NB	0	238	667	905	0	50	2	-	D	A	16	B	50				
		EB	309	0	826	1135	9	0	22	A	-	C			15			360	97
		SB	192	1514	0	1706	3	17	0	A	B	-			66	550	51		
34th Ave S & WB I-494 Ramps	Signal	NB	149	398	0	547	1	16	0	A	B	-	13	B	17	550	0		
		SB	0	279	199	478	0	54	1	-	D	A			43			500	7
		WB	1429	0	551	1980	7	0	17	A	-	B			32	1000	32	1000	37
34th Ave S & Airport Lane	Signal	NB	76	841	32	949	22	1	1	C	A	A	3	A	2	340	8		
		EB	5	0	11	16	26	0	5	C	A	A			1			50	0
		SB	0	466	8	474	0	5	2	A	A	A			6	160	0	135	0
		WB	1	0	1	2	0	0	4	A	A	A			0				
34th Ave S & E 75th St	Signal	NB	312	535	0	847	25	1	0	C	A	-	10	B	2	450	28		
		EB	5	0	37	42	43	0	19	D	-	B			5			175	5
		SB	0	437	10	447	0	10	8	-	A	A			14				
34th Ave S & 73rd St	Signal	NB	44	496	0	540	29	3	0	C	A	-	6	A	4	295	6		
		EB	25	0	12	37	29	0	5	C	-	A			4			210	0
		SB	0	435	9	444	0	6	5	-	A	A			7				
34th Ave S & E 72nd St NB	Signal	NB	23	474	24	521	51	0	5	D	A	A	3	A	0	450	6		
		WB	0	0	10	10	0	0	1	-	A	A			0				
34th Ave S & E 72nd St SB	Signal	NB	0	165	106	271	0	38	0	-	D	A	24	C	26				
		EB	37	136	0	173	21	13	0	C	B	A			6	165	1		
		SB	197	0	0	197	41	0	0	D	A	-			26				
		WB	18	0	5	18	13	0	13	B	A	B			0				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	440	440	0	0	1	-	-	A	27	C	0				
		NB	0	222	24	246	0	7	8	A	A	A			6				
		SB	35	32	0	67	55	51	0	D	D	A			19				
		WB	165	218	71	454	22	44	44	C	D	D			55				
Post Rd & North Taxi Lot	Side Street Stop	EB	0	475	0	475	0	0	0	A	A	-	1	A	0	200	0		
		SB	51	0	9	60	9	0	7	A	-	A			0				
		WB	0	446	94	540	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Side Street Stop	NB	19	0	127	146	25	0	0	D	A	A	2	A	3				
		EB	7	518	1	526	7	0	1	A	A	A			0	200	0	200	0
		SB	24	0	12	36	0	0	4	A	A	A			3			150	1
		WB	137	509	145	791	5	3	0	A	A	A			5	300	2	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	543	126	669	0	7	3	-	A	A	8	A	11			250	1
		SB	23	0	472	495	22	0	7	C	-	A			8	300	8	300	12
		WB	19	319	0	338	0	12	0	A	B	-			-	400	13		
Post Rd & NB TH 5 Ramps	Signal	NB	318	0	41	359	23	0	18	C	A	B	15	B	31	300	31		
		EB	529	40	0	569	9	6	0	A	A	-			17				
		WB	0	21	14	35	0	38	38	-	D	D			6				

Intersection	Control	Approach	Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing				
															Through	Left Turn		Right Turn	
			Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	34	458	149	641	34	16	5	C	B	A	12	B	29	315	7		
		SB	201	193	320	714	25	9	1	C	A	A			6	500	20		
		WB	55	71	198	324	29	31	1	C	C	A			9	200	8		
34th Ave S & EB I-494 Ramps	Signal	NB	0	321	399	720	0	24	1	-	C	A	11	B	34				
		EB	556	0	284	840	9	0	10	A	-	B			18			360	9
		SB	510	430	0	940	3	23	0	A	C	-			34	550	42		
34th Ave S & WB I-494 Ramps	Signal	NB	274	604	0	878	2	27	0	A	C	-	13	B	42	550	1		
		SB	0	597	665	1262	0	24	2	-	C	A			41			500	4
		WB	341	0	501	842	9	0	10	A	-	A			10	1000	19	1000	7
34th Ave S & Airport Lane	Signal	NB	38	1031	36	1105	29	6	7	C	A	A	9	A	16	340	5		
		EB	34	0	61	95	26	0	5	C	A	A			4			50	0
		SB	1	1110	22	1133	25	9	8	C	A	A			36	160	0	135	0
		WB	91	1	6	98	26	24	14	C	C	B			13				
34th Ave S & E 75th St	Signal	NB	186	885	0	1071	24	5	0	C	A	-	13	B	12	450	16		
		EB	19	0	181	200	24	0	16	C	-	B			12			175	12
		SB	0	952	21	973	0	17	15	-	B	B			73				
34th Ave S & 73rd St	Signal	NB	33	871	0	904	25	3	0	C	A	-	4	A	6	295	3		
		EB	12	0	56	68	27	0	7	C	-	A			2			210	0
		SB	0	784	13	797	0	5	4	-	A	A			10				
34th Ave S & E 72nd St NB	Signal	NB	45	906	0	951	58	1	0	E	A	A	3	A	2	450	17		
		WB	0	9	5	14	0	0	11	-	A	B			0				
34th Ave S & E 72nd St SB	Signal	NB	0	357	307	664	0	46	1	-	D	A	25	C	67				
		EB	92	239	4	335	29	19	0	C	B	A			16	165	8		
		SB	203	15	0	218	46	0	0	D	A	-			34				
		WB	38	0	16	38	9	0	9	A	A	A			0				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	738	738	0	0	2	-	-	A	17	B	0				
		NB	9	570	43	622	0	11	12	A	B	B			17				
		SB	30	38	0	68	35	39	0	C	D	A			12				
		WB	171	396	16	583	24	22	22	C	C	C			48				
Post Rd & North Taxi Lot	Side Street Stop	EB	2	766	0	768	7	0	0	A	A	-	1	A	0	200	0		
		SB	161	0	12	173	12	0	7	B	-	A			1				
		WB	0	572	167	739	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Side Street Stop	NB	35	0	187	222	26	0	0	D	A	A	2	A	9				
		EB	33	868	26	927	8	0	4	A	A	A			1	200	1	200	0
		SB	79	0	20	99	0	0	4	A	A	A			9			150	2
		WB	179	684	286	1149	8	4	0	A	A	A			10	300	5	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	735	399	1134	0	5	5	-	A	A	6	A	12			250	1
		SB	26	0	685	711	20	0	10	B	-	B			20	300	18	300	22
		WB	68	464	0	532	0	3	0	A	A	-			-	400	5		
Post Rd & NB TH 5 Ramps	Signal	NB	462	0	21	483	25	0	20	C	A	C	15	B	43	300	37		
		EB	731	29	0	760	5	25	0	A	C	-			13				
		WB	0	68	15	83	0	34	37	-	C	D			13				

Intersection	Control	Approach	Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing				
															Through	Left Turn		Right Turn	
			Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	31	1298	142	1471	31	39	40	C	D	D	27	C	294	315	5		
		SB	225	235	338	798	39	12	2	D	B	A			9	500	31		
		WB	124	131	496	751	38	37	4	D	D	A			24	200	25		
34th Ave S & EB I-494 Ramps	Signal	NB	0	559	1303	1862	0	29	11	-	C	B	16	B	130				
		EB	315	0	269	584	13	0	9	B	-	A			14			360	9
		SB	575	529	0	1104	4	37	0	A	D	-			58	550	42		
34th Ave S & WB I-494 Ramps	Signal	NB	480	393	0	873	3	35	0	A	C	-	13	B	37	550	1		
		SB	0	648	706	1354	0	22	2	-	C	A			37			500	4
		WB	457	0	252	709	13	0	7	B	-	A			19	1000	19	1000	7
34th Ave S & Airport Lane	Signal	NB	16	615	14	645	26	5	4	C	A	A	6	A	7	340	2		
		EB	9	0	78	87	26	0	6	C	A	A			1			50	0
		SB	2	1243	19	1264	30	6	4	C	A	A			24	160	0	135	0
		WB	33	1	5	39	22	14	10	C	B	A			4				
34th Ave S & E 75th St	Signal	NB	42	587	0	629	27	7	0	C	A	-	11	B	12	450	5		
		EB	12	0	229	241	23	0	19	C	-	B			18			175	18
		SB	0	1035	11	1046	0	12	11	-	B	B			41				
34th Ave S & 73rd St	Signal	NB	18	581	0	599	23	2	0	C	A	-	3	A	3	295	2		
		EB	7	0	31	38	26	0	7	C	-	A			1			210	0
		SB	0	950	4	954	0	3	2	-	A	A			8				
34th Ave S & E 72nd St NB	Signal	NB	17	672	0	689	73	1	0	E	A	A	2	A	1	450	7		
		WB	0	7	6	13	0	0	17	-	A	B			0				
34th Ave S & E 72nd St SB	Signal	NB	0	142	496	638	0	43	1	-	D	A	15	B	23				
		EB	61	243	2	306	24	15	0	C	B	A			11	165	4		
		SB	201	4	0	205	37	0	0	D	A	-			21				
		WB	18	0	6	18	7	0	7	A	A	A			0				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	604	604	0	0	2	-	-	A	17	B	0				
		NB	7	251	19	277	0	12	13	A	B	B			9				
		SB	25	35	0	60	33	32	0	C	C	A			10				
		WB	163	431	5	599	18	17	14	B	B	B			34				
Post Rd & North Taxi Lot	Side Street Stop	EB	1	630	0	631	5	0	0	A	A	-	2	A	0	200	0		
		SB	214	0	22	236	13	0	7	B	-	A			2				
		WB	0	575	170	745	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Side Street Stop	NB	43	0	234	277	28	0	0	D	A	A	2	A	13				
		EB	32	769	43	844	5	0	4	A	A	A			1	200	1	200	0
		SB	60	0	21	81	0	0	4	A	A	A			9			150	2
		WB	180	681	184	1045	7	4	0	A	A	A			9	300	5	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	790	273	1063	0	6	3	-	A	A	6	A	15			250	1
		SB	44	0	648	692	20	0	9	C	-	A			18	300	18	300	22
		WB	19	397	0	416	0	4	0	A	A	-			-	400	5		
Post Rd & NB TH 5 Ramps	Signal	NB	396	0	20	416	24	0	21	C	A	C	13	B	37	300	37		
		EB	778	57	0	835	5	19	0	A	B	-			17				
		WB	0	20	25	45	0	41	36	-	D	D			8				

														Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	26	678	281	985	34	42	34	C	D	C	26	C	185	315	4		
		SB	631	566	1052	2249	48	19	7	D	B	A			45	500	102		
		WB	58	71	233	362	56	54	1	E	D	A			18	200	18		
34th Ave S & EB I-494 Ramps	Signal	NB	0	223	688	911	0	55	3	-	D	A	18	B	51				
		EB	635	0	804	1439	11	0	18	B	-	B			25			360	77
		SB	276	1445	0	1721	5	26	0	A	C	-			98	550	82		
34th Ave S & WB I-494 Ramps	Signal	NB	122	735	0	857	1	23	0	A	C	-	18	B	46	550	5		
		SB	0	376	521	897	0	48	2	-	D	A			47			500	14
		WB	1346	0	660	2006	13	0	18	B	-	B			63	1000	63	1000	61
34th Ave S & Airport Lane	Signal	NB	76	1287	32	1395	22	1	1	C	A	A	3	A	3	340	8		
		EB	5	0	11	16	34	0	6	C	A	A			1			50	0
		SB	0	885	8	893	0	4	4	A	A	A			12	160	0	135	0
		WB	1	0	1	2	0	0	4	A	A	A			0				
34th Ave S & E 75th St	Signal	NB	312	981	0	1293	22	1	0	C	A	-	10	B	3	450	38		
		EB	5	0	37	42	41	0	16	D	-	B			4			175	4
		SB	0	856	10	866	0	17	17	-	B	B			50				
34th Ave S & 73rd St	Signal	NB	44	942	0	986	26	3	0	C	A	-	5	A	7	295	6		
		EB	25	0	12	37	27	0	5	C	-	A			4			210	0
		SB	0	854	9	863	0	6	6	-	A	A			14				
34th Ave S & E 72nd St NB	Signal	NB	0	963	0	963	0	10	0	-	A	-	9	A	30				
		EB	0	319	0	319	0	8	0	-	A	-			0				
34th Ave S & E 72nd St SB	Signal	NB	0	266	601	867	0	28	1	-	C	A	14	B	40			400	0
		EB	53	73	0	126	24	10	0	C	A	-			3				
		SB	132	0	0	132	33	0	0	C	-	-			14				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	564	564	0	0	2	-	-	A	17	B	0				
		NB	0	696	24	720	1	14	15	A	B	B			39				
		SB	35	32	0	67	33	34	0	C	C	A			11				
		WB	100	412	71	583	18	18	16	B	B	B			37				
Post Rd & North Taxi Lot	Side Street Stop	EB	45	555	0	600	4	0	0	A	A	-	1	A	0	200	0		
		SB	51	0	9	60	14	0	8	B	-	A			1				
		WB	0	572	49	621	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Signal	NB	19	0	127	146	30	0	0	C	A	A	2	A	4				
		EB	10	595	1	606	5	0	2	A	A	A			0	200	0	200	0
		SB	23	0	12	35	0	0	4	A	A	A			3			150	0
		WB	137	590	141	868	5	3	0	A	A	A			4	300	1	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	616	129	745	0	8	4	-	A	A	7	A	13			250	1
		SB	31	0	541	572	21	0	9	C	-	A			13	300	13	300	20
		WB	17	327	0	344	3	3	0	A	A	-			3	400	3		
Post Rd & NB TH 5 Ramps	Signal	NB	324	0	40	364	23	0	16	C	A	B	22	C	30	300	30		
		EB	615	32	0	647	19	1	0	B	A	-			36				
		WB	0	22	14	36	0	71	96	-	E	F			11				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	30	393	128	551	30	16	4	C	B	A	12	B	23	315	5		
		SB	180	161	278	619	25	8	1	C	A	A			4	500	17		
		WB	49	61	169	279	26	28	2	C	C	A			8	200	6		
34th Ave S & EB I-494 Ramps	Signal	NB	0	278	348	626	0	28	1	-	C	A	13	B	32				
		EB	1054	0	238	1292	12	0	18	B	-	B			46			360	17
		SB	674	381	0	1055	4	25	0	A	C	-			38	550	25		
34th Ave S & WB I-494 Ramps	Signal	NB	227	1104	0	1331	1	28	0	A	C	-	17	B	83	550	27		
		SB	0	741	1167	1908	0	30	5	-	C	A			72			500	36
		WB	312	0	643	955	9	0	16	A	-	B			9	1000	9	1000	35
34th Ave S & Airport Lane	Signal	NB	38	1673	36	1747	43	8	8	D	A	A	11	B	34	340	9		
		EB	34	0	86	120	35	0	14	C	A	B			7			50	2
		SB	1	1707	15	1723	46	12	11	D	B	B			96	160	0	135	0
		WB	115	1	6	122	4	34	26	A	C	C			26				
34th Ave S & E 75th St	Signal	NB	186	1527	0	1713	46	7	0	D	A	-	15	B	31	450	50		
		EB	19	0	205	224	38	0	27	D	-	C			22			175	22
		SB	0	1518	15	1533	0	18	19	-	B	B			152				
34th Ave S & 73rd St	Signal	NB	33	1513	0	1546	40	6	0	D	A	-	7	A	20	295	5		
		EB	12	0	80	92	37	0	11	D	-	B			3			210	0
		SB	0	1294	11	1305	0	7	6	-	A	A			35				
34th Ave S & E 72nd St NB	Signal	NB	0	1484	0	1484	0	22	0	-	C	-	18	B	112				
		EB	0	859	0	859	0	11	0	-	B	-			1				
34th Ave S & E 72nd St SB	Signal	NB	0	698	815	1513	0	43	2	-	D	A	25	C	199			400	0
		EB	161	195	0	356	42	25	0	D	C	-			23				
		SB	157	0	0	157	41	0	0	D	-	-			19				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	921	921	0	0	6	-	-	A	26	C	0				
		NB	9	1370	43	1422	29	22	22	C	C	C			113				
		SB	30	38	0	68	43	43	0	D	D	A			17				
		WB	110	723	16	849	28	26	25	C	C	C			96				
Post Rd & North Taxi Lot	Side Street Stop	EB	82	901	0	983	6	0	0	A	A	-	2	A	0	200	0		
		SB	90	0	83	173	18	0	11	C	-	B			3				
		WB	0	765	87	852	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Signal	NB	35	0	209	244	26	0	0	C	A	A	3	A	9				
		EB	35	939	17	991	7	0	4	A	A	A			1	200	1	200	0
		SB	79	0	20	99	0	0	5	A	A	A			12			150	6
		WB	179	797	286	1262	11	5	0	B	A	A			12	300	7	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	808	419	1227	0	6	6	-	A	A	8	A	15			250	7
		SB	26	0	771	797	20	0	10	B	-	B			24	300	24	300	30
		WB	66	491	0	557	23	5	0	C	A	-			11	400	11		
Post Rd & NB TH 5 Ramps	Signal	NB	484	0	21	505	25	0	19	C	A	B	16	B	46	300	46		
		EB	808	26	0	834	5	25	0	A	C	-			13				
		WB	0	71	15	86	0	56	73	-	E	E			20				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	29	1217	134	1380	39	40	36	D	D	D	33	C	230	315	7		
		SB	221	230	337	788	43	14	2	D	B	A			12	500	35		
		WB	117	122	468	707	38	42	35	D	D	C			94	200	24		
34th Ave S & EB I-494 Ramps	Signal	NB	0	507	1245	1752	0	32	6	-	C	A	16	B	91				
		EB	885	0	247	1132	16	0	18	B	-	B			53			360	17
		SB	708	541	0	1249	6	35	0	A	C	-			64	550	49		
34th Ave S & WB I-494 Ramps	Signal	NB	413	978	0	1391	3	40	0	A	D	-	20	B	109	550	44		
		SB	0	794	1303	2097	0	30	9	-	C	A			91			500	53
		WB	454	0	364	818	11	0	13	B	-	B			16	1000	16	1000	17
34th Ave S & Airport Lane	Signal	NB	19	1301	22	1342	44	6	9	D	A	A	9	A	22	340	5		
		EB	9	0	93	102	36	0	16	D	A	B			2			50	3
		SB	2	1953	18	1973	9	10	10	A	B	B			109	160	0	135	0
		WB	51	1	5	57	21	17	14	C	B	B			11				
34th Ave S & E 75th St	Signal	NB	54	1261	0	1315	49	7	0	D	A	-	13	B	30	450	15		
		EB	7	0	241	248	32	0	32	C	-	C			30			175	30
		SB	0	1732	9	1741	0	14	11	-	B	B			109				
34th Ave S & 73rd St	Signal	NB	25	1243	0	1268	56	7	0	E	A	-	7	A	21	295	5		
		EB	7	0	40	47	32	0	16	C	-	B			2			210	1
		SB	0	1627	4	1631	0	7	6	-	A	A			54				
34th Ave S & E 72nd St NB	Signal	NB	0	1247	0	1247	0	16	0	-	B	-	14	B	68				
		EB	0	621	0	621	0	12	0	-	B	-			0				
34th Ave S & E 72nd St SB	Signal	NB	0	501	1053	1554	0	37	1	-	D	A	17	B	105			400	0
		EB	120	229	0	349	38	20	0	D	C	-			22				
		SB	146	0	0	146	41	0	0	D	-	-			18				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	716	716	0	0	3	-	-	A	21	C	0				
		NB	7	1126	19	1152	19	16	20	B	B	B			60				
		SB	25	35	0	60	40	44	0	D	D	A			13				
		WB	104	637	5	746	24	22	16	C	C	B			64				
Post Rd & North Taxi Lot	Side Street Stop	EB	73	699	0	772	5	1	0	A	A	-	3	A	0	200	0		
		SB	123	0	113	236	21	0	11	C	-	B			7				
		WB	0	682	98	780	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Signal	NB	37	0	247	284	28	0	0	C	A	A	3	A	13				
		EB	33	752	37	822	8	0	4	A	A	A			1	200	1	200	0
		SB	60	0	20	80	0	0	4	A	A	A			7			150	2
		WB	190	723	180	1093	8	5	0	A	A	A			10	300	5	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	795	264	1059	0	6	3	-	A	A	7	A	15			250	2
		SB	51	0	721	772	20	0	9	C	-	A			20	300	20	300	26
		WB	16	372	0	388	21	5	0	C	A	-			5	400	5		
Post Rd & NB TH 5 Ramps	Signal	NB	371	0	20	391	26	0	22	C	A	C	13	B	37	300	37		
		EB	793	53	0	846	4	20	0	A	C	-			11				
		WB	0	18	25	43	0	95	71	-	F	E			14				

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Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	29	560	191	780	51	55	45	D	E	D	41	D	202	315	9		
		EB	235	136	18	389	57	53	1	E	D	A			28	260	74	420	0
		SB	724	649	1209	2582	71	33	19	E	C	B			116	270	167		
		WB	67	83	273	423	67	70	1	E	E	A			25	200	26		
34th Ave S & EB I-494 Ramps	Signal	NB	0	231	836	1067	0	32	4	-	C	A	30	C	27				
		EB	518	0	940	1458	89	0	38	F	-	D			454			220	0
		SB	225	1643	0	1868	46	13	0	D	B	-			65				
34th Ave S & WB I-494 Ramps	Signal	NB	157	590	0	747	28	10	0	C	A	-	90	F	34	435	34		
		SB	0	289	319	608	0	26	2	-	C	A			20			390	0
		WB	1577	0	652	2229	217	0	42	F	-	D			1559			565	0
34th Ave S & Airport Lane	Signal	NB	79	1129	34	1242	19	1	2	B	A	A	3	A	2	340	5		
		EB	6	0	12	18	26	0	5	C	A	A			1			50	0
		SB	0	595	8	603	0	5	3	A	A	A			7	160	0	135	0
		WB	1	0	1	2	13	0	4	B	A	A			0				
34th Ave S & E 75th St	Signal	NB	329	807	0	1136	17	2	0	B	A	-	8	A	3	450	16		
		EB	5	0	38	43	37	0	15	D	-	B			4			175	4
		SB	0	565	11	576	0	11	9	-	B	A			18				
34th Ave S & 73rd St	Signal	NB	49	763	0	812	27	3	0	C	A	-	5	A	5	295	5		
		EB	27	0	14	41	24	0	5	C	-	A			4			210	0
		SB	0	562	10	572	0	5	3	-	A	A			7				
34th Ave S & E 72nd St NB	Signal	NB	12	774	4	790	36	0	3	D	A	A	1	A	0	450	2		
		WB	0	0	0	0	0	0	0	-	A	A			0				
34th Ave S & E 72nd St SB	Signal	NB	0	93	198	291	0	0	32	-	A	C	18	B	0	165	6		
		EB	45	170	0	215	12	14	0	B	B	A			3				
		SB	182	0	0	182	42	0	0	D	A	-			24				
		WB	5	0	7	5	0	0	0	A	A	A			0				
34th Ave S & E 70th St	All Way Stop	NB	2	27	430	459	0	30	34	A	D	D	26	D	87				
		SB	38	0	33	71	9	0	7	A	-	A			1				
		WB	0	280	76	356	0	20	16	-	C	C			28				
34th Ave S & Humphrey Dr	Signal	SB	0	182	133	315	0	6	8	-	A	A	8	A	12				
		WB	0	453	0	453	0	9	0	A	A	-			10				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	468	0	468	0	0	0	A	A	-	0	A	0				
		SB	5	0	0	5	8	0	0	A	-	A			0				
		WB	0	356	2	358	0	0	0	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	1	472	0	473	2	0	0	A	A	-	0	A	0				
		SB	12	0	0	12	8	0	1	A	-	A			0				
		WB	0	358	17	375	0	0	1	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	7	0	12	19	23	0	32	C	-	D	46	E	1				
		EB	0	484	0	484	0	109	0	-	F	-			444				
		WB	0	480	0	480	0	2	0	-	A	-			0				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	5	0	49	54	89	0	111	F	-	F	14	B	38				
		EB	0	496	0	496	0	20	0	-	C	-			55				
		WB	0	475	0	475	0	0	0	-	A	-			0				
Post Rd & SA West Driveway	Side Street Stop	NB	17	0	60	77	23	0	50	C	-	F	18	C	11				
		EB	0	545	0	545	0	35	0	-	D	A			77				
		WB	94	458	0	552	9	0	0	A	A	-			3				
Post Rd & SA East Driveway	Side Street Stop	NB	3	0	82	85	89	0	165	F	-	F	16	C	92				
		EB	0	603	2	605	0	13	2	-	B	A			61				
		WB	61	549	0	610	3	1	0	A	A	-			2				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	6	589	90	685	32	12	9	C	B	A	17	B	36	245	36		
		SB NW Dr	28	0	9	37	18	0	26	B	A	C			49			50	1
		SB TH 5	40	0	403	443	29	0	22	C	-	C			4	235	49		
		SB TH 5 U	0	63	0	63	0	1	0	-	A	-			-				
		WB	22	199	89	310	34	21	19	C	C	B			39				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	285	0	48	333	30	0	2	D	A	A	13	B	50				
		EB	615	40	0	655	4	14	0	A	B	-			50				
		WB	0	27	18	45	0	2	1	-	A	A			0				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	34	219	75	328	48	26	7	D	C	A	21	C	29	315	9		
		EB	241	74	22	337	29	28	0	C	C	A			8	260	34	420	0
		SB	206	168	334	708	42	19	4	D	B	A			13	270	32		
		WB	57	72	199	328	48	42	1	D	D	A			14	200	14		
34th Ave S & EB I-494 Ramps	Signal	NB	0	311	405	716	0	36	1	-	D	A	37	D	50				
		EB	915	0	297	1212	62	0	4	E	-	A			222			220	0
		SB	845	411	0	1256	53	14	0	D	B	-			177				
34th Ave S & WB I-494 Ramps	Signal	NB	268	959	0	1227	20	1	0	C	A	-	22	C	23	435	23		
		SB	0	889	1031	1920	0	62	9	-	E	A			248			390	8
		WB	366	0	635	1001	53	0	1	D	-	A			79			565	0
34th Ave S & Airport Lane	Signal	NB	39	1518	37	1594	35	8	8	C	A	A	17	B	31	340	6		
		EB	38	0	65	103	27	0	14	C	A	B			6			50	1
		SB	1	1759	22	1782	33	20	8	C	B	A			174	160	0	135	0
		WB	96	1	6	103	72	18	74	E	B	E			36				
34th Ave S & E 75th St	Signal	NB	195	1367	0	1562	29	5	0	C	A	-	13	B	25	450	23		
		EB	19	0	190	209	30	0	24	C	-	C			21			175	21
		SB	0	1592	23	1615	0	17	19	-	B	B			105				
34th Ave S & 73rd St	Signal	NB	36	1350	0	1386	28	3	0	C	A	-	5	A	10	295	5		
		EB	13	0	60	73	31	0	6	C	-	A			2			210	0
		SB	0	1416	14	1430	0	6	3	-	A	A			24				
34th Ave S & E 72nd St NB	Signal	NB	41	1389	0	1430	35	1	0	C	A	A	1	A	2	450	7		
		WB	0	9	5	14	0	0	3	-	A	A			0				
34th Ave S & E 72nd St SB	Signal	NB	0	39	911	950	0	2	41	-	A	D	7	A	4				
		EB	16	402	6	424	10	21	0	A	C	A			0	165	12		
		SB	65	15	0	80	40	0	0	D	A	-			7				
		WB	32	0	18	32	4	0	4	A	A	A			0				
34th Ave S & E 70th St	All Way Stop	NB	18	47	385	450	0	15	3	A	B	A	9	A	4				
		SB	33	0	42	75	9	0	6	A	-	A			1				
		WB	0	398	18	416	0	18	13	-	C	B			17				
34th Ave S & Humphrey Dr	Signal	SB	0	80	378	458	0	6	8	-	A	A	10	B	11				
		WB	0	999	0	999	0	11	0	A	B	-			33				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	418	0	418	0	0	0	A	A	-	0	A	0				
		SB	7	0	1	8	7	0	4	A	-	A			0				
		WB	0	415	8	423	0	0	0	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	3	422	0	425	1	0	0	A	A	-	0	A	0				
		SB	5	0	0	5	7	0	0	A	-	A			0				
		WB	0	423	15	438	0	0	1	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	6	0	54	60	34	0	63	D	-	F	29	D	12				
		EB	0	423	0	423	0	73	0	-	F	-			489				
		WB	0	629	0	629	0	2	0	-	A	-			2				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	9	0	137	146	370	0	448	F	-	F	50	E	233				
		EB	0	477	0	477	0	34	0	-	D	-			109				
		WB	0	620	0	620	0	1	0	-	A	-			0				
Post Rd & SA West Driveway	Side Street Stop	NB	32	0	71	103	252	0	260	F	-	F	42	E	155				
		EB	0	586	28	614	0	44	34	-	E	D			141				
		WB	122	588	0	710	18	1	0	C	A	-			9				
Post Rd & SA East Driveway	Side Street Stop	NB	7	0	139	146	960	0	1011	F	-	F	46	E	355				
		EB	0	655	2	657	0	14	18	-	B	C			81				
		WB	81	703	0	784	7	2	0	A	A	-			9				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	17	501	276	794	76	13	12	E	B	B	33	C	43	245	43		
		SB NW Dr	96	0	16	112	52	0	46	D	A	D			22			50	4
		SB TH 5	31	0	508	539	41	0	56	D	-	E			296	235	50		
		SB TH 5 U	0	152	0	152	0	10	0	-	A	-			-				
		WB	82	260	175	517	46	43	42	D	D	D			75				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	429	0	26	455	224	0	201	F	A	F	65	F	1009				
		EB	597	31	0	628	8	4	0	A	A	-			15				
		WB	0	88	21	109	0	2	0	-	A	A			0				

			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing: Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	32	587	62	681	95	62	40	F	E	D	57	E	194	315	16		
		EB	778	87	21	886	66	37	1	E	D	A			9	260	515	420	0
		SB	254	250	388	892	142	52	6	F	D	A			46	270	132		
		WB	131	138	524	793	127	109	5	F	F	A			67	200	107		
34th Ave S & EB I-494 Ramps	Signal	NB	0	522	1422	1944	0	49	42	-	D	D	61	E	397				
		EB	599	0	304	903	79	0	3	E	-	A			177			220	0
		SB	912	588	0	1500	120	48	0	F	D	-			484				
34th Ave S & WB I-494 Ramps	Signal	NB	483	640	0	1123	45	6	0	D	A	-	66	E	77	435	77		
		SB	0	974	1092	2066	0	171	9	-	F	A			570			390	77
		WB	527	0	281	808	130	0	1	F	-	A			233			565	0
34th Ave S & Airport Lane	Signal	NB	17	889	15	921	41	11	9	D	B	A	53	D	25	340	4		
		EB	11	0	84	95	27	0	21	C	A	C			2			50	4
		SB	2	1947	19	1968	0	73	17	A	E	B			750	160	0	135	0
		WB	35	1	6	42	228	206	164	F	F	F			51				
34th Ave S & E 75th St	Signal	NB	44	862	0	906	66	9	0	E	A	-	59	E	28	450	14		
		EB	13	0	242	255	35	0	77	D	-	E			104			175	104
		SB	0	1726	14	1740	0	86	31	-	F	C			362				
34th Ave S & 73rd St	Signal	NB	20	855	0	875	53	4	0	D	A	-	61	E	14	295	5		
		EB	7	0	35	42	47	0	56	D	-	E			1			210	1
		SB	0	1637	5	1642	0	95	52	-	F	D			550				
34th Ave S & E 72nd St NB	Signal	NB	15	951	0	966	56	1	0	E	A	A	1	A	2	450	3		
		WB	0	7	7	14	0	0	28	-	A	C			0				
34th Ave S & E 72nd St SB	Signal	NB	0	63	1102	1165	0	69	105	-	E	F	62	E	232				
		EB	14	458	3	475	41	12	0	D	B	A			0	165	23		
		SB	66	4	0	70	58	0	0	E	A	-			6				
		WB	15	0	7	15	5	0	5	A	A	A			0				
34th Ave S & E 70th St	All Way Stop	NB	10	20	138	168	0	13	3	A	B	A	9	A	1				
		SB	29	0	38	67	8	0	6	A	-	A			1				
		WB	0	351	6	357	0	14	8	-	B	A			8				
34th Ave S & Humphrey Dr	Signal	SB	0	70	329	399	0	6	7	-	A	A	12	B	10				
		WB	0	866	0	866	0	14	0	A	B	-			37				
Post Rd & West Employee Lot Entrance	Side Street Stop	EB	0	167	0	167	0	0	0	A	A	-	0	A	0				
		SB	2	0	0	2	6	0	0	A	-	A			0				
		WB	0	357	10	367	0	0	0	-	A	A			0				
Post Rd & East Employee Lot Entrance	Side Street Stop	EB	9	160	0	169	2	0	0	A	A	-	0	A	0				
		SB	5	0	8	13	9	0	7	A	-	A			0				
		WB	0	359	15	374	0	0	2	-	A	A			0				
Post Rd & Taxi Staging Middle Exit	Side Street Stop	NB	14	0	61	75	15	0	14	C	-	B	4	A	3				
		EB	0	163	0	163	0	11	0	-	B	-			5				
		WB	0	563	0	563	0	2	0	-	A	-			1				
Post Rd & Taxi Staging East Exit	Side Street Stop	NB	13	0	193	206	40	0	58	E	-	F	14	B	62				
		EB	0	224	0	224	0	10	0	-	B	-			18				
		WB	0	550	0	550	0	0	0	-	A	-			0				
Post Rd & SA West Driveway	Side Street Stop	NB	37	0	88	125	65	0	89	F	-	F	19	C	49				
		EB	0	369	48	417	0	27	20	-	D	C			61				
		WB	155	513	0	668	7	1	0	A	A	-			5				
Post Rd & SA East Driveway	Side Street Stop	NB	9	0	179	188	442	0	314	F	-	F	37	E	299				
		EB	0	457	0	457	0	13	0	-	B	A			61				
		WB	50	659	0	709	3	1	0	A	A	-			2				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	12	477	147	636	53	11	11	D	B	B	24	C	43	245	43		
		SB NW Dr	73	0	13	86	41	0	41	D	A	D			15			50	3
		SB TH 5	62	0	438	500	29	0	41	C	-	D			142	235	50		
		SB TH 5 U	0	158	0	158	0	5	0	-	A	-			-				
		WB	21	258	46	325	32	29	32	C	C	C			39				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	303	0	25	328	196	0	174	F	A	F	60	F	1002				
		EB	550	62	0	612	5	2	0	A	A	-			7				
		WB	0	22	31	53	0	1	0	-	A	A			0				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	30	788	325	1143	29	31	23	C	C	C	25	C	222	315	5		
		SB	724	651	1210	2585	54	17	7	D	B	A			59	500	167		
		WB	66	82	271	419	60	55	9	E	E	A			22	200	25		
34th Ave S & EB I-494 Ramps	Signal	NB	0	223	836	1059	0	58	4	-	E	A	19	B	62				
		EB	475	0	940	1415	17	0	32	B	-	C			91			360	261
		SB	222	1645	0	1867	4	17	0	A	B	-			72	550	58		
34th Ave S & WB I-494 Ramps	Signal	NB	157	541	0	698	2	13	0	A	B	-	12	B	17	550	0		
		SB	0	293	350	643	0	50	1	-	D	A			43			500	3
		WB	1574	0	606	2180	7	0	18	A	-	B			37	1000	37	1000	41
34th Ave S & Airport Lane	Signal	NB	79	1034	34	1147	23	1	1	C	A	A	4	A	2	340	9		
		EB	6	0	12	18	42	0	5	D	A	A			1			50	0
		SB	0	630	8	638	0	5	3	A	A	A			8	160	0	135	0
		WB	1	0	1	2	0	0	5	A	A	A			0				
34th Ave S & E 75th St	Signal	NB	329	712	0	1041	24	1	0	C	A	-	10	B	2	450	28		
		EB	5	0	38	43	40	0	17	D	-	B			4			175	4
		SB	0	600	11	611	0	12	12	-	B	B			27				
34th Ave S & 73rd St	Signal	NB	49	668	0	717	31	3	0	C	A	-	6	A	5	295	8		
		EB	27	0	14	41	30	0	6	C	-	A			5			210	0
		SB	0	597	10	607	0	6	6	-	A	A			11				
34th Ave S & E 72nd St NB	Signal	NB	26	645	24	695	45	0	5	D	A	A	2	A	0	450	7		
		WB	0	0	10	10	0	0	2	-	A	A			0				
34th Ave S & E 72nd St SB	Signal	NB	0	190	305	495	0	39	1	-	D	A	15	B	31				
		EB	78	295	0	373	18	12	0	B	B	A			11	165	3		
		SB	33	0	0	33	45	0	0	D	A	-			5				
		WB	19	0	5	19	8	0	8	A	A	A			0				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	444	444	0	0	1	-	-	A	23	C	0				
		NB	0	452	27	479	0	9	8	A	A	A			11				
		SB	38	33	0	71	55	51	0	E	D	A			21				
		WB	2	276	76	354	26	46	49	C	D	D			53				
Post Rd & North Taxi Lot	Side Street Stop	EB	0	480	0	480	0	0	0	A	A	-	1	A	0	200	0		
		SB	61	0	12	73	9	0	6	A	-	A			0				
		WB	0	341	112	453	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Side Street Stop	NB	20	0	142	162	29	0	0	D	A	A	2	A	4				
		EB	5	534	2	541	4	0	1	A	A	A			0	200	0	200	0
		SB	28	0	8	36	0	0	4	A	A	A			3			150	1
		WB	155	425	151	731	5	3	0	A	A	A			5	300	3	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	617	87	704	0	7	3	-	A	A	8	A	13			250	1
		SB	40	0	447	487	21	0	7	C	-	A			9	300	9	300	13
		WB	22	284	0	306	0	14	0	A	B	-			-	400	13		
Post Rd & NB TH 5 Ramps	Signal	NB	281	0	48	329	24	0	18	C	A	B	16	B	29	300	29		
		EB	616	40	0	656	11	4	0	B	A	-			22				
		WB	0	27	18	45	0	35	37	-	D	D			7				

Intersection	Control	Approach	Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing				
															Through	Left Turn		Right Turn	
			Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	34	455	146	635	37	16	5	D	B	A	12	B	28	315	7		
		SB	202	198	326	726	25	10	1	C	A	A			6	500	19		
		WB	57	71	197	325	29	29	2	C	C	A			8	200	9		
34th Ave S & EB I-494 Ramps	Signal	NB	0	315	402	717	0	25	1	-	C	A	11	B	36				
		EB	832	0	297	1129	10	0	12	A	-	B			28			360	15
		SB	549	429	0	978	4	23	0	A	C	-			35	550	60		
34th Ave S & WB I-494 Ramps	Signal	NB	279	868	0	1147	2	27	0	A	C	-	14	B	57	550	42		
		SB	0	613	816	1429	0	24	2	-	C	A			44			500	11
		WB	366	0	577	943	8	0	11	A	-	B			10	1000	26	1000	11
34th Ave S & Airport Lane	Signal	NB	39	1369	37	1445	35	8	8	C	A	A	10	B	31	340	7		
		EB	38	0	65	103	25	0	6	C	A	A			5			50	0
		SB	1	1268	22	1291	22	10	7	C	A	A			49	160	0	135	0
		WB	96	1	6	103	27	33	18	C	C	B			15				
34th Ave S & E 75th St	Signal	NB	195	1218	0	1413	28	5	0	C	A	-	13	B	18	450	20		
		EB	19	0	190	209	24	0	19	C	-	B			15			175	15
		SB	0	1101	23	1124	0	17	19	-	B	B			96				
34th Ave S & 73rd St	Signal	NB	36	1201	0	1237	26	4	0	C	A	-	5	A	16	295	4		
		EB	13	0	60	73	29	0	8	C	-	A			2			210	0
		SB	0	925	14	939	0	6	6	-	A	A			18				
34th Ave S & E 72nd St NB	Signal	NB	48	1233	0	1281	64	1	0	E	A	A	3	A	3	450	19		
		WB	0	9	5	14	0	0	14	-	A	B			0				
34th Ave S & E 72nd St SB	Signal	NB	0	450	381	831	0	51	1	-	D	A	27	C	98				
		EB	116	299	6	421	32	21	0	C	C	A			21	165	13		
		SB	203	18	0	221	48	0	0	D	A	-			34				
		WB	38	0	22	38	9	0	9	A	A	A			0				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	720	720	0	0	3	-	-	A	13	B	0				
		NB	9	1028	47	1084	0	9	10	A	A	A			22				
		SB	33	42	0	75	39	35	0	D	C	A			14				
		WB	171	224	18	413	11	29	30	B	C	C			34				
Post Rd & North Taxi Lot	Side Street Stop	EB	4	748	0	752	3	0	0	A	A	-	2	A	0	200	0		
		SB	191	0	15	206	13	0	6	B	-	A			2				
		WB	0	397	197	594	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Side Street Stop	NB	39	0	210	249	26	0	0	D	A	A	3	A	10				
		EB	22	887	30	939	9	0	4	A	A	A			1	200	1	200	0
		SB	96	0	14	110	0	0	4	A	A	A			12			150	2
		WB	203	541	320	1064	9	5	0	A	A	A			10	300	9	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	860	333	1193	0	6	4	-	A	A	6	A	15			250	1
		SB	31	0	637	668	21	0	10	C	-	B			19	300	21	300	26
		WB	82	427	0	509	0	3	0	A	A	-			-	400	6		
Post Rd & NB TH 5 Ramps	Signal	NB	421	0	26	447	25	0	20	C	A	C	14	B	39	300	36		
		EB	860	31	0	891	7	26	0	A	C	-			21				
		WB	0	88	21	109	0	31	36	-	C	D			15				

Intersection	Control	Approach	Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Modeled Storage and Traffic Queueing				
															Through	Left Turn		Right Turn	
			Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	32	1391	153	1576	36	65	62	D	E	E			583	315	6		
		SB	253	267	389	909	50	19	3	D	B	A	48	D	17	500	46		
		WB	133	140	534	807	39	55	48	D	D	D			157	200	27		
34th Ave S & EB I-494 Ramps	Signal	NB	0	556	1437	1993	0	38	15	-	D	B			187				
		EB	838	0	304	1142	17	0	13	B	-	B	20	C	58			360	15
		SB	610	606	0	1216	6	41	0	A	D	-			76	550	60		
34th Ave S & WB I-494 Ramps	Signal	NB	496	899	0	1395	3	51	0	A	D	-			119	550	42		
		SB	0	693	960	1653	0	24	4	-	C	A	20	C	51			500	11
		WB	524	0	393	917	15	0	8	B	-	A			26	1000	26	1000	11
34th Ave S & Airport Lane	Signal	NB	17	1260	15	1292	39	6	7	D	A	A			20	340	3		
		EB	11	0	84	95	35	0	7	C	A	A	7	A	2			50	1
		SB	2	1534	19	1555	20	7	6	B	A	A			51	160	0	135	0
		WB	35	1	6	42	27	38	15	C	D	B			6				
34th Ave S & E 75th St	Signal	NB	44	1233	0	1277	35	6	0	D	A	-			32	450	7		
		EB	13	0	242	255	28	0	24	C	-	C	11	B	24			175	24
		SB	0	1313	14	1327	0	13	14	-	B	B			82				
34th Ave S & 73rd St	Signal	NB	20	1226	0	1246	28	2	0	C	A	-			8	295	2		
		EB	7	0	35	42	31	0	10	C	-	A	3	A	1			210	0
		SB	0	1224	5	1229	0	3	2	-	A	A			13				
34th Ave S & E 72nd St NB	Signal	NB	18	1319	0	1337	77	0	0	E	A	A	2	A	2	450	11		
		WB	0	7	7	14	0	0	32	-	A	C			0				
34th Ave S & E 72nd St SB	Signal	NB	0	240	663	903	0	44	1	-	D	A			46				
		EB	86	347	3	436	27	17	0	C	B	A	18	B	18	165	6		
		SB	201	4	0	205	48	0	0	D	A	-			30				
		WB	19	0	9	19	9	0	9	A	A	A			0				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	620	620	0	0	3	-	-	A			0				
		NB	7	1005	20	1032	0	10	10	A	A	A	15	B	24				
		SB	29	38	0	67	39	39	0	D	D	A			14				
		WB	163	405	6	574	12	25	22	B	C	C			40				
Post Rd & North Taxi Lot	Side Street Stop	EB	2	647	0	649	5	0	0	A	A	-			0	200	0		
		SB	254	0	27	281	14	0	8	B	-	A	2	A	5				
		WB	0	548	203	751	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Side Street Stop	NB	46	0	267	313	28	0	0	D	A	A			18				
		EB	22	831	48	901	9	0	4	A	A	A	3	A	1	200	1	200	0
		SB	73	0	18	91	0	0	5	A	A	A			10			150	2
		WB	205	687	199	1091	9	5	0	A	A	A			11	300	9	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	955	216	1171	0	6	3	-	A	A			16			250	1
		SB	62	0	717	779	22	0	9	C	-	A	7	A	21	300	21	300	26
		WB	21	374	0	395	0	5	0	A	A	-			-	400	6		
Post Rd & NB TH 5 Ramps	Signal	NB	372	0	25	397	25	0	19	C	A	B			36	300	36		
		EB	954	62	0	1016	7	22	0	A	C	-	13	B	29				
		WB	0	22	31	53	0	36	35	-	D	D			9				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	31	809	334	1174	96	157	150	F	F	F	68	E	580	315	6		
		SB	738	663	1232	2633	93	24	8	F	C	A			55	500	288		
		WB	69	84	277	430	63	62	1	E	E	A			22	200	25		
34th Ave S & EB I-494 Ramps	Signal	NB	0	256	831	1087	0	39	17	-	D	B	44	D	49				
		EB	691	0	940	1631	77	0	84	E	-	F			621			360	686
		SB	395	1692	0	2087	35	23	0	D	C	-			101	550	92		
34th Ave S & WB I-494 Ramps	Signal	NB	157	790	0	947	19	12	0	B	B	-	59	E	25	550	7		
		SB	0	512	578	1090	0	39	8	-	D	A			48			500	18
		WB	1576	0	873	2449	95	0	92	F	-	F			563	1000	563	1000	566
34th Ave S & Airport Lane	Signal	NB	79	1550	34	1663	21	1	2	C	A	A	4	A	4	340	8		
		EB	6	0	12	18	34	0	6	C	A	A			1			50	0
		SB	0	1077	8	1085	0	6	6	A	A	A			20	160	0	135	0
		WB	1	0	1	2	0	0	5	A	A	A			0				
34th Ave S & E 75th St	Signal	NB	329	1228	0	1557	24	1	0	C	A	-	10	B	4	450	41		
		EB	5	0	38	43	53	0	16	D	-	B			5			175	5
		SB	0	1047	11	1058	0	16	14	-	B	B			58				
34th Ave S & 73rd St	Signal	NB	49	1184	0	1233	31	4	0	C	A	-	6	A	11	295	6		
		EB	27	0	14	41	29	0	7	C	-	A			5			210	0
		SB	0	1044	10	1054	0	7	6	-	A	A			20				
34th Ave S & E 72nd St NB	Signal	NB	0	1207	0	1207	0	11	0	-	B	-	10	B	40				
		EB	0	422	0	422	0	8	0	-	A	-			0				
34th Ave S & E 72nd St SB	Signal	NB	0	330	651	981	0	31	1	-	C	A	17	B	54			400	0
		EB	92	73	0	165	32	14	0	C	B	-			4				
		SB	230	0	0	230	31	0	0	C	-	-			28				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	527	527	0	0	2	-	-	A	17	B	0				
		NB	0	1075	27	1102	6	14	13	A	B	B			64				
		SB	38	33	0	71	33	38	0	C	D	A			13				
		WB	197	315	76	588	17	17	13	B	B	B			38				
Post Rd & Signature Flight Entrance	Side Street Stop	EB	0	565	0	565	0	0	0	A	A	-	0	A	0				
		SB	0	0	0	0	0	0	0	A	-	A			0				
		WB	0	588	0	588	0	0	0	-	A	A			0				
Post Rd & North Taxi Lot	Side Street Stop	EB	0	564	0	564	0	0	0	A	A	-	1	A	0	200	0		
		SB	61	0	12	73	13	0	7	B	-	A			1				
		WB	0	577	112	689	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Signal	NB	20	0	142	162	29	0	0	C	A	A	2	A	4				
		EB	10	613	2	625	8	0	2	A	A	A			0	200	0	200	0
		SB	28	0	12	40	0	0	4	A	A	A			3			150	0
		WB	155	657	150	962	5	2	0	A	A	A			4	300	1	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	639	144	783	0	10	5	-	B	A	8	A	18			250	2
		SB	39	0	603	642	22	0	9	C	-	A			14	300	14	300	20
		WB	22	359	0	381	34	3	0	C	A	-			6	400	6		
Post Rd & NB TH 5 Ramps	Signal	NB	357	0	48	405	25	0	19	C	A	B	21	C	36	300	36		
		EB	637	40	0	677	15	3	0	B	A	-			29				
		WB	0	28	18	46	0	84	91	-	F	F			13				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	35	478	153	666	40	18	8	D	B	A	13	B	36	315	8		
		SB	216	212	349	777	26	11	1	C	B	A			7	500	22		
		WB	59	75	206	340	27	29	1	C	C	A			10	200	8		
34th Ave S & EB I-494 Ramps	Signal	NB	0	335	412	747	0	30	12	-	C	B	24	C	41				
		EB	1234	0	297	1531	24	0	18	C	-	B			124			360	26
		SB	862	483	0	1345	32	18	0	C	B	-			91	550	108		
34th Ave S & WB I-494 Ramps	Signal	NB	279	1288	0	1567	22	28	0	C	C	-	23	C	100	550	33		
		SB	0	976	1287	2263	0	35	14	-	D	B			109			500	69
		WB	370	0	855	1225	20	0	13	C	-	B			26	1000	26	1000	41
34th Ave S & Airport Lane	Signal	NB	39	2067	37	2143	45	7	8	D	A	A	12	B	37	340	9		
		EB	38	0	65	103	39	0	20	D	A	B			8			50	3
		SB	1	2102	22	2125	56	15	15	E	B	B			153	160	1	135	0
		WB	96	1	6	103	5	20	25	A	C	C			24				
34th Ave S & E 75th St	Signal	NB	231	1880	0	2111	52	6	0	D	A	-	17	B	33	450	72		
		EB	19	0	190	209	43	0	30	D	-	C			22			175	22
		SB	0	1935	23	1958	0	23	28	-	C	C			239				
34th Ave S & 73rd St	Signal	NB	0	1899	0	1899	0	7	0	A	A	-	12	B	37	295	0		
		EB	13	0	60	73	39	0	31	D	-	C			3			210	3
		SB	0	1759	0	1759	0	17	0	-	B	A			176				
34th Ave S & E 72nd St NB	Signal	NB	0	1993	0	1993	0	16	0	-	B	-	15	B	124				
		EB	0	697	0	697	0	12	0	-	B	-			0				
34th Ave S & E 72nd St SB	Signal	NB	0	478	1330	1808	0	35	2	-	D	A	17	B	101			400	0
		EB	219	234	0	453	49	20	0	D	C	-			21				
		SB	161	0	0	161	40	0	0	D	-	-			24				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	1056	1056	0	0	5	-	-	A	32	C	0				
		NB	9	1578	47	1634	35	28	21	C	C	C			217				
		SB	33	42	0	75	55	56	0	E	E	A			25				
		WB	110	825	18	953	36	35	32	D	D	C			147				
Post Rd & North Taxi Lot	Side Street Stop	EB	115	973	0	1088	9	1	0	A	A	-	4	A	0	200	1		
		SB	128	0	118	246	37	0	16	E	-	C			16				
		WB	0	835	125	960	0	1	1	-	A	A			0			165	0
Post Rd & NW Drive	Signal	NB	35	0	211	246	24	0	0	C	A	A	3	A	10				
		EB	38	1033	30	1101	9	0	4	A	A	A			1	200	1	200	0
		SB	96	0	22	118	0	0	5	A	A	A			13			150	6
		WB	203	903	314	1420	12	5	0	B	A	A			16	300	9	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	858	482	1340	0	8	10	-	A	A	9	A	21			250	19
		SB	30	0	867	897	17	0	12	B	-	B			32	300	32	300	38
		WB	82	553	0	635	27	4	0	C	A	-			14	400	14		
Post Rd & NB TH 5 Ramps	Signal	NB	544	0	26	570	26	0	24	C	A	C	17	B	52	300	52		
		EB	858	31	0	889	5	30	0	A	C	-			14				
		WB	0	91	21	112	0	52	65	-	D	E			24				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	34	1420	156	1610	60	111	106	E	F	F	61	E	561	315	8		
		SB	268	280	410	958	51	17	2	D	B	A			16	500	50		
		WB	136	142	545	823	42	39	5	D	D	A			30	200	31		
34th Ave S & EB I-494 Ramps	Signal	NB	0	583	1450	2033	0	49	39	-	D	D	44	D	222				
		EB	1177	0	304	1481	49	0	39	D	-	D			305			360	147
		SB	1050	654	0	1704	48	35	0	D	D	-			255	550	302		
34th Ave S & WB I-494 Ramps	Signal	NB	496	1265	0	1761	30	36	0	C	D	-	44	D	155	550	99		
		SB	0	1182	1650	2832	0	83	27	-	F	C			348			500	288
		WB	523	0	561	1084	70	0	13	E	-	B			85	1000	85	1000	69
34th Ave S & Airport Lane	Signal	NB	17	1794	15	1826	50	6	8	D	A	A	15	B	27	340	5		
		EB	11	0	84	95	38	0	22	D	A	C			3			50	4
		SB	2	2713	19	2734	33	20	19	C	C	B			212	160	0	135	0
		WB	35	1	6	42	20	20	16	B	B	B			8				
34th Ave S & E 75th St	Signal	NB	64	1747	0	1811	61	9	0	E	A	-	19	B	55	450	24		
		EB	13	0	242	255	50	0	40	D	-	D			39			175	39
		SB	0	2492	14	2506	0	22	42	-	C	D			224				
34th Ave S & 73rd St	Signal	NB	0	1760	0	1760	0	9	0	A	A	-	21	C	37	295	0		
		EB	7	0	35	42	50	0	47	D	-	D			2			210	1
		SB	0	2403	0	2403	0	30	0	-	C	A			431				
34th Ave S & E 72nd St NB	Signal	NB	0	1885	0	1885	0	14	0	-	B	-	15	B	97				
		EB	0	606	0	606	0	17	0	-	B	-			0				
34th Ave S & E 72nd St SB	Signal	NB	0	401	1891	2292	0	68	9	-	E	A	23	C	207			400	94
		EB	205	354	0	559	50	22	0	D	C	-			41				
		SB	149	0	0	149	40	0	0	D	-	-			21				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	1019	1019	0	0	5	-	-	A	32	C	0				
		NB	7	1445	20	1472	33	28	26	C	C	C			162				
		SB	29	38	0	67	55	51	0	D	D	A			19				
		WB	104	1016	6	1126	29	29	27	C	C	C			126				
Post Rd & North Taxi Lot	Side Street Stop	EB	118	929	0	1047	11	1	0	B	A	-	11	B	0	200	1		
		SB	174	0	162	336	99	0	50	F	-	F			82				
		WB	0	962	126	1088	0	1	1	-	A	A			0			165	0
Post Rd & NW Drive	Signal	NB	37	0	261	298	24	0	0	C	A	A	3	A	16				
		EB	42	1013	48	1103	6	0	4	A	A	A			1	200	1	200	0
		SB	73	0	24	97	0	0	4	A	A	A			10			150	4
		WB	205	1027	197	1429	11	5	0	B	A	A			15	300	8	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	996	351	1347	0	7	4	-	A	A	8	A	22			250	3
		SB	60	0	924	984	20	0	11	C	-	B			35	300	35	300	40
		WB	21	505	0	526	20	5	0	C	A	-			7	400	7		
Post Rd & NB TH 5 Ramps	Signal	NB	505	0	26	531	26	0	24	C	A	C	14	B	49	300	49		
		EB	995	62	0	1057	4	25	0	A	C	-			17				
		WB	0	22	31	53	0	80	63	-	F	E			15				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	31	809	334	1174	40	31	20	D	C	B	24	C	102	315	6		
		SB	738	663	1232	2633	49	19	10	D	B	B			67	500	134		
		WB	69	84	277	430	54	52	1	D	D	A			19	200	20		
34th Ave S & EB I-494 Ramps	Signal	NB	0	256	831	1087	0	72	27	-	E	C	28	C	82				
		EB	691	0	940	1631	37	0	38	D	-	D			163			360	195
		SB	395	1692	0	2087	7	17	0	A	B	-			71	550	9		
34th Ave S & WB I-494 Ramps	Signal	NB	157	790	0	947	49	32	0	D	C	-	34	C	105	550	69		
		SB	0	512	578	1090	0	42	10	-	D	A			53			500	26
		WB	1576	0	873	2449	33	0	47	C	-	D			292	1000	292	1000	305
34th Ave S & Airport Lane	Signal	NB	79	1550	34	1663	18	18	9	B	B	A	18	B	114	340	6		
		EB	6	0	12	18	23	0	4	C	A	A			3			50	0
		SB	0	1077	8	1085	0	4	3	A	A	A			0	160	0	135	0
		WB	1	0	1	2	0	0	5	A	A	A			0				
34th Ave S & E 75th St	Signal	NB	329	1228	0	1557	19	3	0	B	A	-	12	B	5	450	179		
		EB	5	0	38	43	44	0	13	D	-	B			3			175	3
		SB	0	1047	11	1058	0	21	9	-	C	A			62				
34th Ave S & 73rd St	Signal	NB	49	1184	0	1233	36	4	0	D	A	-	6	A	11	295	8		
		EB	27	0	14	41	31	0	5	C	-	A			6			210	0
		SB	0	1044	10	1054	0	6	4	-	A	A			11				
34th Ave S & E 72nd St NB	Signal	NB	0	1207	0	1207	0	10	0	-	B	-	10	A	43				
		EB	0	422	0	422	0	8	0	-	A	-			0				
34th Ave S & E 72nd St SB	Signal	NB	0	330	651	981	0	28	1	-	C	A	16	B	47			400	0
		EB	92	73	0	165	32	15	0	C	B	-			4				
		SB	230	0	0	230	33	0	0	C	-	-			25				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	527	527	0	0	2	-	-	A	18	B	0				
		NB	0	1075	27	1102	16	14	13	B	B	B			62				
		SB	38	33	0	71	34	34	0	C	C	A			13				
		WB	197	315	76	588	21	19	17	C	B	B			46				
Post Rd & North Taxi Lot	Side Street Stop	EB	0	564	0	564	0	0	0	A	A	-	1	A	0	200	0		
		SB	61	0	12	73	13	0	8	B	-	A			1				
		WB	0	577	112	689	0	0	1	-	A	A			0			165	0
Post Rd & NW Drive	Signal	NB	20	0	142	162	27	0	0	C	A	A	2	A	5				
		EB	10	613	2	625	4	0	3	A	A	A			0	200	0	200	0
		SB	28	0	12	40	0	0	4	A	A	A			3			150	0
		WB	155	657	150	962	5	2	0	A	A	A			4	300	1	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	639	144	783	0	10	4	-	A	A	8	A	17			250	1
		SB	39	0	603	642	22	0	9	C	-	A			14	300	14	300	20
		WB	22	359	0	381	32	3	0	C	A	-			6	400	6		
Post Rd & NB TH 5 Ramps	Signal	NB	357	0	48	405	25	0	19	C	A	B	21	C	36	300	36		
		EB	637	40	0	677	15	3	0	B	A	-			29				
		WB	0	28	18	46	0	84	91	-	F	F			13				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	35	478	153	666	39	16	3	D	B	A	12	B	22	315	8		
		SB	216	212	349	777	25	9	1	C	A	A			6	500	20		
		WB	59	75	206	340	28	29	1	C	C	A			10	200	8		
34th Ave S & EB I-494 Ramps	Signal	NB	0	335	412	747	0	26	18	-	C	B	18	B	38				
		EB	1234	0	297	1531	18	0	17	B	-	B			61			360	17
		SB	862	483	0	1345	10	28	0	B	C	-			45	550	43		
34th Ave S & WB I-494 Ramps	Signal	NB	279	1288	0	1567	5	27	0	A	C	-	24	C	83	550	30		
		SB	0	976	1287	2263	0	40	17	-	D	B			121			500	86
		WB	370	0	855	1225	16	0	18	B	-	B			27	1000	27	1000	57
34th Ave S & Airport Lane	Signal	NB	39	2067	37	2143	42	8	9	D	A	A	10	A	43	340	8		
		EB	38	0	65	103	35	0	5	D	A	A			8			50	0
		SB	1	2102	22	2125	43	10	8	D	B	A			58	160	0	135	0
		WB	96	1	6	103	5	19	16	A	B	B			22				
34th Ave S & E 75th St	Signal	NB	231	1880	0	2111	51	7	0	D	A	-	16	B	39	450	75		
		EB	19	0	190	209	43	0	23	D	-	C			21			175	21
		SB	0	1935	23	1958	0	20	19	-	C	B			105				
34th Ave S & 73rd St	Signal	NB	0	1899	0	1899	0	5	0	A	A	-	4	A	19	295	0		
		EB	13	0	60	73	34	0	9	C	-	A			2			210	0
		SB	0	1759	0	1759	0	2	0	-	A	A			7				
34th Ave S & E 72nd St NB	Signal	NB	0	1993	0	1993	0	17	0	-	B	-	16	B	129				
		EB	0	697	0	697	0	13	0	-	B	-			0				
34th Ave S & E 72nd St SB	Signal	NB	0	478	1330	1808	0	35	2	-	D	A	16	B	97			400	0
		EB	219	234	0	453	43	21	0	D	C	-			23				
		SB	161	0	0	161	35	0	0	C	-	-			18				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	1056	1056	0	0	6	-	-	A	31	C	0				
		NB	9	1578	47	1634	37	29	24	D	C	C			220				
		SB	33	42	0	75	58	50	0	E	D	A			24				
		WB	110	825	18	953	33	32	30	C	C	C			129				
Post Rd & North Taxi Lot	Side Street Stop	EB	115	973	0	1088	8	1	0	A	A	-	3	A	0	200	1		
		SB	128	0	118	246	29	0	15	D	-	C			12				
		WB	0	835	125	960	0	1	1	-	A	A			0			165	0
Post Rd & NW Drive	Signal	NB	35	0	211	246	22	0	0	C	A	A	3	A	10				
		EB	38	1033	30	1101	9	0	4	A	A	A			1	200	1	200	0
		SB	96	0	22	118	0	0	5	A	A	A			14			150	6
		WB	203	903	314	1420	11	5	0	B	A	A			15	300	8	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	858	482	1340	0	8	10	-	A	A	9	A	20			250	17
		SB	30	0	867	897	19	0	12	B	-	B			32	300	32	300	38
		WB	82	553	0	635	28	4	0	C	A	-			14	400	14		
Post Rd & NB TH 5 Ramps	Signal	NB	544	0	26	570	27	0	24	C	A	C	17	B	54	300	54		
		EB	858	31	0	889	5	29	0	A	C	-			16				
		WB	0	91	21	112	0	52	57	-	D	E			24				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	34	1420	156	1610	32	24	14	C	C	B	19	B	107	315	6		
		SB	268	280	410	958	34	15	2	C	B	A			13	500	34		
		WB	136	142	545	823	37	36	3	D	D	A			21	200	27		
34th Ave S & EB I-494 Ramps	Signal	NB	0	583	1450	2033	0	40	32	-	D	C	25	C	149				
		EB	1177	0	304	1481	19	0	18	B	-	B			65			360	19
		SB	1050	654	0	1704	12	33	0	B	C	-			70	550	74		
34th Ave S & WB I-494 Ramps	Signal	NB	496	1265	0	1761	7	28	0	A	C	-	27	C	88	550	34		
		SB	0	1182	1650	2832	0	47	23	-	D	C			187			500	145
		WB	523	0	561	1084	17	0	18	B	-	B			28	1000	28	1000	37
34th Ave S & Airport Lane	Signal	NB	17	1794	15	1826	35	5	7	C	A	A	8	A	20	340	3		
		EB	11	0	84	95	36	0	5	D	A	A			3			50	1
		SB	2	2713	19	2734	38	9	7	D	A	A			75	160	1	135	0
		WB	35	1	6	42	20	15	21	B	B	C			8				
34th Ave S & E 75th St	Signal	NB	64	1747	0	1811	55	8	0	D	A	-	14	B	47	450	20		
		EB	13	0	242	255	34	0	29	C	-	C			35			175	35
		SB	0	2492	14	2506	0	15	19	-	B	B			100				
34th Ave S & 73rd St	Signal	NB	0	1760	0	1760	0	6	0	A	A	-	4	A	17	295	0		
		EB	7	0	35	42	35	0	14	D	-	B			1			210	0
		SB	0	2403	0	2403	0	2	0	-	A	A			8				
34th Ave S & E 72nd St NB	Signal	NB	0	1885	0	1885	0	15	0	-	B	-	15	B	105				
		EB	0	606	0	606	0	16	0	-	B	-			1				
34th Ave S & E 72nd St SB	Signal	NB	0	401	1891	2292	0	52	3	-	D	A	17	B	141			400	0
		EB	205	354	0	559	50	21	0	D	C	-			36				
		SB	149	0	0	149	37	0	0	D	-	-			20				
34th Ave S & Humphrey Dr	Signal	NBR	0	0	1019	1019	0	0	5	-	-	A	33	C	0				
		NB	7	1445	20	1472	31	28	24	C	C	C			160				
		SB	29	38	0	67	51	51	0	D	D	A			19				
		WB	104	1016	6	1126	29	30	38	C	C	D			131				
Post Rd & North Taxi Lot	Side Street Stop	EB	118	929	0	1047	12	1	0	B	A	-	14	B	0	200	2		
		SB	174	0	162	336	127	0	58	F	-	F			104				
		WB	0	962	126	1088	0	1	1	-	A	A			1			165	0
Post Rd & NW Drive	Signal	NB	37	0	261	298	25	0	0	C	A	A	3	A	15				
		EB	42	1013	48	1103	8	0	4	A	A	A			1	200	1	200	0
		SB	73	0	24	97	0	0	5	A	A	A			10			150	5
		WB	205	1027	197	1429	11	5	0	B	A	A			15	300	8	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	996	351	1347	0	7	4	-	A	A	8	A	21			250	3
		SB	60	0	924	984	19	0	11	B	-	B			34	300	34	300	40
		WB	21	505	0	526	20	5	0	C	A	-			7	400	7		
Post Rd & NB TH 5 Ramps	Signal	NB	505	0	26	531	26	0	23	C	A	C	14	B	49	300	49		
		EB	995	62	0	1057	4	25	0	A	C	-			17				
		WB	0	22	31	53	0	72	67	-	E	E			15				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & EB I-494 Ramps	Signal	NB	0	251	975	1226	0	35	5	-	D	A	52	D	37				
		EB	474	0	1075	1549	148	0	86	F	-	F			1139			220	259
		SB	249	1862	0	2111	60	18	0	E	B	-			84				
34th Ave S & WB I-494 Ramps	Signal	NB	184	541	0	725	58	24	0	E	C	-	111	F	79	435	79		
		SB	0	311	299	610	0	21	2	-	C	A			18			390	0
		WB	1800	0	701	2501	267	0	52	F	-	D			1577			565	0
Post Rd & SA West Driveway	Side Street Stop	EB	0	574	0	574	0	31	0	-	D	A	16	C	69				
		WB	94	458	0	552	9	0	0	A	A	-			3				
Post Rd & SA East Driveway	Side Street Stop	NB	3	0	82	85	130	0	126	F	-	F	14	B	78				
		EB	0	632	2	634	0	12	5	-	B	A			56				
		WB	61	549	0	610	3	1	0	A	A	-			3				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	9	616	90	714	36	11	12	D	B	B	17	B	33	245	33		
		SB NW Dr	25	0	9	34	15	0	30	B	A	C			48			50	1
		SB TH 5	46	0	403	449	30	0	22	C	-	C			4	235	48		
		SB TH 5 U	0	61	0	61	0	1	0	-	A	-			-				
		WB	27	199	87	312	35	21	17	C	C	B			39				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	280	0	55	336	31	0	2	D	A	A	13	B	53				
		EB	640	47	0	687	4	13	0	A	B	-			53				
		WB	0	32	18	50	0	2	1	-	A	A			0				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & EB I-494 Ramps	Signal	NB	0	368	456	824	0	39	2	-	D	A	47	D	68				
		EB	881	0	354	1236	107	0	8	F	-	A			934			220	0
		SB	774	520	0	1294	59	12	0	E	B	-			192				
34th Ave S & WB I-494 Ramps	Signal	NB	325	924	0	1249	54	6	0	D	A	-	25	C	69	435	69		
		SB	0	874	1050	1923	0	53	11	-	D	B			183			390	15
		WB	420	0	673	1093	62	0	1	E	-	A			105			565	0
Post Rd & SA West Driveway	Side Street Stop	NB	32	0	71	103	419	0	413	F	-	F	50	E	241				
		EB	0	749	28	777	0	41	32	-	E	D			142				
		WB	122	627	0	749	18	2	0	C	A	-			11				
Post Rd & SA East Driveway	Side Street Stop	NB	7	0	139	146	933	0	938	F	-	F	42	E	356				
		EB	0	818	2	820	0	13	11	-	B	B			81				
		WB	81	742	0	823	7	2	0	A	A	-			11				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	28	592	337	957	87	12	14	F	B	B	40	D	46	245	46		
		SB NW Dr	93	0	15	107	55	0	61	E	A	E			24			50	3
		SB TH 5	34	0	546	580	50	0	69	D	-	E			486	235	121		
		SB TH 5 U	0	142	0	142	0	18	0	-	B	-			-				
		WB	98	263	175	536	54	54	50	D	D	D			89				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	430	0	30	460	253	0	242	F	A	F	68	F	1018				
		EB	684	34	0	719	9	2	0	A	A	-			20				
		WB	0	106	25	131	0	2	0	-	A	A			0				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & EB I-494 Ramps	Signal	NB	0	607	1583	2190	0	61	52	-	E	D			494				
		EB	585	0	359	945	882	0	85	F	-	F	149	F	713			220	0
		SB	818	685	0	1503	95	22	0	F	C	-			365				
34th Ave S & WB I-494 Ramps	Signal	NB	573	619	0	1192	63	668	0	E	F	-			245	435	245		
		SB	0	915	1151	2066	0	105	14	-	F	B	197	F	440			390	122
		WB	589	0	302	890	89	0	1228	F	-	F			162			565	355
Post Rd & SA West Driveway	Side Street Stop	NB	37	0	88	125	184	0	191	F	-	F			230				
		EB	0	568	48	616	0	26	20	-	D	C	30	D	85				
		WB	155	512	0	667	10	1	0	B	A	-			42				
Post Rd & SA East Driveway	Side Street Stop	NB	9	0	179	188	461	0	435	F	-	F			345				
		EB	0	656	0	656	0	10	0	-	A	A	33	D	48				
		WB	50	658	0	708	2	1	0	A	A	-			90				
Post Rd & Northwest Dr/SB TH 5 Ramps	Signal	EB	28	601	206	835	47	10	7	D	A	A			29	245	29		
		SB NW Dr	67	0	16	83	32	0	30	C	A	C			226			50	222
		SB TH 5	71	0	434	505	24	0	34	C	-	C	20	B	567	235	121		
		SB TH 5 U	0	140	0	140	0	4	0	-	A	-			-				
		WB	25	259	47	331	28	24	23	C	C	C			159				
Post Rd & NB TH 5 Ramps	Side Street Stop	NB	306	0	31	337	172	0	164	F	A	F			1017				
		EB	668	72	0	739	4	2	0	A	A	-	46	E	149				
		WB	0	25	35	61	0	1	1	-	A	A			87				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & American Blvd	Signal	NB	35	929	382	1346	36	36	23	D	D	C			131	315	7		
		SB	842	758	1406	3006	36	13	8	D	B	A	24	C	54	500	106		
		WB	79	96	320	495	120	119	2	F	F	A			46	200	55		
34th Ave S & EB I-494 Ramps	Signal	NB	0	279	976	1256	0	40	23	-	D	C			53				
		EB	713	0	1075	1788	18	0	28	B	-	C	21	C	66			360	105
		SB	522	1930	0	2451	34	10	0	C	B	-			77	550	76		
Post Rd & NW Drive	Signal	NB	26	1	162	189	31	23	0	C	C	A			5				
		EB	9	623	2	634	5	0	4	A	A	A	2	A	0	200	0	200	0
		SB	29	3	10	42	0	26	6	A	C	A			5			150	1
		WB	172	696	162	1030	5	2	0	A	A	A			2	300	2	300	0
Post Rd & SB TH 5 Ramps	Signal	EB	0	659	155	814	0	11	5	-	B	A			22			250	3
		SB	46	0	646	692	21	0	9	C	-	A	9	A	15	300	15	300	21
		WB	27	384	0	411	36	3	0	D	A	-			8	400	8		
Post Rd & NB TH 5 Ramps	Signal	NB	378	0	56	434	26	0	23	C	A	C			39	300	39		
		EB	658	47	0	705	16	3	0	B	A	-	21	C	33				
		WB	0	33	18	51	0	66	82	-	E	F			15				

															Modeled Storage and Traffic Queueing				
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through	Left Turn		Right Turn	
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Available	Average Queue	Available	Average Queue
34th Ave S & EB I-494 Ramps	Signal	NB	0	387	455	842	0	25	15	-	C	B	23	C	38				
		EB	1354	0	354	1709	20	0	18	B	-	B			79			360	21
		SB	993	542	0	1535	26	36	0	C	D	-			95	550	116		
34th Ave S & WB I-494 Ramps	Signal	NB	328	1414	0	1741	7	29	0	A	C	-	25	C	100	550	45		
		SB	0	1118	1399	2516	0	46	18	-	D	B			158			500	105
		WB	418	0	1027	1444	15	0	18	B	-	B			35	1000	35	1000	68
Post Rd & NW Drive	Signal	NB	36	4	230	270	27	24	0	C	C	A	3	A	12				
		EB	35	1107	33	1175	9	0	6	A	A	A			1	200	1	200	0
		SB	110	2	18	130	0	36	7	A	D	A			17			150	10
		WB	229	954	340	1523	12	5	0	B	A	A			12	300	11	300	1
Post Rd & SB TH 5 Ramps	Signal	EB	0	901	546	1447	0	12	15	-	B	B	12	B	21			250	46
		SB	34	0	927	961	19	0	14	B	-	B			40	300	40	300	46
		WB	99	596	0	695	27	3	0	C	A	-			16	400	16		
Post Rd & NB TH 5 Ramps	Signal	NB	586	0	30	616	32	0	30	C	A	C	20	B	67	300	67		
		EB	900	34	0	934	7	34	0	A	C	-			20				
		WB	0	109	25	134	0	44	49	-	D	D			25				

															Modeled Storage and Traffic Queueing								
			Demand Volumes				Total Delay by Movement (sec/veh)			LOS By Movement			LOS by Intersection		Through		Left Turn			Right Turn		
Intersection	Control	Approach	Left	Through	Right	Total	Left	Through	Right	Left	Through	Right	Delay	LOS	Average Queue	Max Queue	Available	Average Queue	Max Queue	Available	Average Queue	Max Queue
34th Ave S & EB I-494 Ramps	Signal	NB	0	647	1561	2208	0	38	34	-	D	C	31	C	169	497						
		EB	1349	0	359	1709	23	0	21	C	-	C			98	488				360	38	458
		SB	1182	737	0	1919	32	38	0	C	D	-			143	455	550	180	519			
34th Ave S & WB I-494 Ramps	Signal	NB	577	1419	0	1996	8	29	0	A	C	-	30	C	109	513	550	55	404			
		SB	0	1336	1732	3068	0	59	26	-	E	C			264	697				500	198	620
		WB	582	0	699	1281	16	0	19	B	-	B			32	297	1000	32	297	1000	48	319
Post Rd & NW Drive	Signal	NB	37	4	284	325	29	27	0	C	C	A	3	A	16	121						
		EB	40	1051	53	1144	8	0	6	A	A	A			1	53	200	1	53	200	0	25
		SB	85	3	24	111	0	13	7	A	B	A			12	119				150	6	104
		WB	233	1192	208	1633	11	5	0	B	A	A			13	198	300	10	151	300	0	65
Post Rd & SB TH 5 Ramps	Signal	EB	0	1000	420	1420	0	9	5	-	A	A	9	A	23	337				250	4	140
		SB	71	0	1044	1115	19	0	12	B	-	B			41	297	300	41	297	300	46	304
		WB	25	589	0	614	24	5	0	C	A	-			9	251	400	9	251			
Post Rd & NB TH 5 Ramps	Signal	NB	588	0	31	619	30	0	27	C	A	C	17	B	63	343	300	63	343			
		EB	1000	71	0	1071	5	28	0	A	C	-			21	348						
		WB	0	26	35	61	0	71	66	-	E	E			17	91						