

# Northwest Metro Mississippi River Crossing Feasibility Analysis

## Appendix B: Origin-Destination Analysis Technical Memorandum

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**Subject:** Northwest Metro Mississippi River Crossing Feasibility Analysis:  
Origin-Destination Analysis Technical Memorandum

## Introduction

There are currently three crossings over the Mississippi River in the Twin Cities Northwest Metro area. These crossings include Trunk Highway (TH) 101, US Highway (US) 169, and TH 610. There have been multiple studies completed to investigate the need for additional capacity along and across the Mississippi River in this area. An exclusive Mississippi River Crossing Study was completed in 2002. Since then, the traffic on the three river crossings and adjacent highways has increased significantly due to continued land use development in the region.

As shown in Table 1 below, the overall traffic volumes crossing the river have increased by 22% from 2002 to 2016 while the TH 610 crossing has increased by 31%, followed by the TH 101 crossing (18%) and then the US 169/TH 47 crossing (12%). The travel patterns have changed as well due to the land uses development and transportation improvements on TH 10, TH 101, US 169, and TH 610 in the region.

*Table 1: Existing Traffic Volume Growth*

River Crossing	2002 AADT	Current AADT
TH 101	44,100	52,000 (2014, 18% increase)
US 169/TH 47	42,500	47,500 (2016, 12% increase)
TH 610	78,000	102,000 (2015, 31% increase)
Total	164,600	201,500 (22% increase)

Based on the latest 2040 comprehensive plans, growth is anticipated to continue throughout the region. Therefore, discussions have recently revisited the need for a fourth river crossing in the region.

Origin-Destination (OD) analysis is one of the major tasks for the river crossing feasibility analysis. The primary purpose of the OD analysis is to investigate the existing traffic conditions on the major highways, as well as the traffic characteristics of the trips using the river crossings and identify

transportation deficiencies in the region. The task was completed using StreetLight Insights, a cloud-based big data analytical platform through MnDOT's subscription. The data is mainly from 2019 prior to the COVID-19 pandemic. The results will be incorporated with the subsequent 2040 travel demand modeling and benefit cost analysis within the context of the land use changes, regional programmed transportation projects, and other potential concepts or improvements to identify the feasibility of a fourth river crossing. This memorandum documents the OD analysis methodology and results.

## Origin-Destination Analysis

The major findings of the OD analysis for typical weekday traffic include:

- Nearly 240,000 average daily vehicle trips (weekdays in April, September, and October 2019) use the three river crossings with 55 percent using TH 610, 27 percent using TH 101, and 18 percent using US 169.
- Approximately 70 percent of trips using the crossings are within the immediate river crossing area (Subregion 1 in Figure 0.1 in the Appendix), while approximately two percent of trips are interregional trips (origins or destinations are beyond the metro and its ring counties) with most trips using the TH 101 crossing.
- The top five destination cities of trips using the three crossings are Coon Rapids (9.9 percent), Brooklyn Park (9.7 percent), Blaine (7.3 percent), Elk River (6.7 percent) and Maple Grove (5.9 percent).
- The area between the TH 610 crossing and the US 169 crossing has a much higher density of trips using the crossing (greater than 700 trips per square mile) than the area located between the TH 101 crossing and the US 169 crossing (less than 350 daily trips per square mile).
- Trips crossing the river tend to use nearby crossings with most trips from Elk River using TH 101, while trips from Anoka use US 169 and trips from Coon Rapids use TH 610.
- Each of the three crossings serves a distinct market that varies in terms of the communities of the origins and destinations and trip lengths including:
  - The TH 101 crossing carries a larger proportion of much longer distance interregional trips. The median trip length is 24.2 miles.
  - The US 169 crossing carries trips representing a more compact travelshed with shorter trip lengths. The median trip length is 14.8 miles.
  - The median length of the trips using the TH 610 river crossing is 21.5 miles.
  - The TH 610 crossing carries 8.1 percent of trips from Downtown Minneapolis while TH 101 carries 2.3 percent of the trips and US 169 carries 0.7 percent of the trips.
- It was observed that the recreational interregional traffic during the holiday weekend Friday afternoon on the TH 101 crossing is four times higher than a typical weekday.

## Streetlight Platform and Data Configurations

The OD analysis was completed using the StreetLight Data software platform. StreetLight is a private company that compiles anonymized location records from smart phones and navigation devices in connected vehicles and transforms these location records into travel patterns. It delivers unique insights into how vehicles, bicycles, and pedestrians move on virtually every road and census block.

Two types of data were extracted from StreetLight for the OD analysis: Origin-Middle-Filter-Destination (OMD) trips and Top Routes data. This data was used to identify the origins (Os) and destinations (Ds) of the trips using the river crossings (Middle Filters) via different highways (Top Routes).

The OD analysis was conducted primarily for person trips during the AM peak period (6:00 to 10:00 am), the PM peak period (3:00 to 7:00 pm) and daily during weekdays (Monday – Thursday) from April 1st to 30th and September 1st to October 31st, 2019. A comparative analysis was conducted later between weekdays and Memorial Day Friday afternoon to investigate how travel patterns change between a weekday afternoon and a holiday weekend Friday afternoon.

## Origin-Destination Zone Development

MnDOT conducted an initial OD study using zip code boundaries in the study area. Further OD analysis indicated two major drawbacks when the zip code boundaries were used for the crossing OD analysis:

- Some zip code areas covered both sides of the Mississippi River, and thus the extracted OD trips within those zip codes do not demonstrate how the trips used the river crossings (for example, the zip code for the city of Elk River).
- Some zip code areas covered multiple cities in the immediate river crossing area and the OD trips within those zip codes do not fully demonstrate how the trips would differ from city to city in the immediate river crossing while this level of OD data would be the most desirable for this analysis.

To overcome these drawbacks, a refined Traffic Analysis Zone (TAZ) structure was used. This TAZ structure was developed by the Met Council for its regional travel demand model and modified to establish ODs for this analysis. The Met Council TAZ structure with 3,030 TAZs was aggregated into 86 ODs in three subregions. Figure 0.1 in the appendix illustrates the three subregions and ODs based on the Met Council TAZs. The city and county jurisdictional boundaries were used as boundaries whenever possible in the OD development process to ensure that OD trips from the StreetLight data could be aggregated at those jurisdiction levels. There were 31 external pass-through stations which were included to capture interregional trips using the river crossings. To capture OD trips using the river crossings, six pass-through gates were defined on the three crossings in both directions as Middle Filter Zones.

## Origin-Destination Data Postprocessing

StreetLight provides visualization results along with hundreds of thousands of OD data records in CSV files. Each raw OD record includes the total volumes (averaged from the three months of data)

during each time period (AM, PM or daily) using any crossing (TH 101, US 169, or TH 610) in any direction (northbound or southbound) from any origin or destination. The OD data was postprocessed and summarized in tables and displayed in GIS figures.

Postprocessing raw OD records included two major steps. First, all the OD records were aggregated into 86 OD zones to obtain the total origin and destination trips for each time period, crossing and direction as listed above. Summations were performed to obtain overall trips for the three river crossings regardless of direction. Second, the OD data at this level of aggregation was normalized to obtain the average trips per square mile and were displayed as heatmaps in GIS. The ODs were then further aggregated into jurisdictional city or county levels and were summarized in tables and displayed as labels in the GIS heatmaps.

The top trip routes on the highways for each of the crossings were obtained from StreetLight and were then displayed as bandwidth layers in the GIS heatmaps. The trip length and travel times of all the OD trips using the three crossings were summarized in tables and displayed in figures. These maps, tables, and figures are included in the appendix.

## Origin-Destination Analysis Results

The postprocessed OD data is summarized in the following tables described in this section. Results are also illustrated in GIS figures which are described below and are included in the appendix.

Table 2 summarizes the total AM (6:00 to 10:00 am), PM (3:00 to 7:00 pm), and daily trips using the three crossings. These are shown by direction for the peak period and daily volumes. The overall percent of traffic each of the three crossings is provided at the daily level.

Table 2: Total Trips Using the Three Crossings

Duration	TH 101		US 169		TH 610		Total	
	SB	NB	SB	NB	SB	NB	SB	NB
AM (6:00 to 10:00 am)	10,228	4,976	6,444	4,050	20,863	11,798	37,535	20,824
PM (3:00 to 7:00 pm)	8,620	13,512	5,027	8,516	17,612	27,560	31,259	49,588
Daily	32,144	32,320	20,900	21,982	66,692	65,987	119,736	120,289
	64,464 (27%)		42,882 (18%)		132,679 (55%)		240,025 (100%)	

Table 3 identifies the top five communities in terms of the proportion of traffic using each of the three existing river crossings. Percentages of the total river crossing volumes at each location are provided for trips originating from and destined for each community, respectively.

Table 3: Top Cities of Trips Using the Three Crossings (Origin/Destination Daily Trip Percentages)

TH 101	US 169	TH 610
1. Elk River (23.7%/24.0%)	1. Anoka (17.4%/17.5%)	1. Brooklyn Park (14.3%/14.4%)
2. Otsego (11.8%/12.4%)	2. Champlin (15.8%/14.4%)	2. Coon Rapids (14.2%/14.2%)
3. Rogers (8.3%/8.2%)	3. Ramsey (10.2%/10.0%)	3. Blaine (12.1%/12.5%)
4. Maple Grove (5.7%/5.0%)	4. Coon Rapids (8.4%/9.6%)	4. Maple Grove (6.1%/6.1%)
5. Ramsey (3.1%/3.5%)	5. Brooklyn Park (7.4%/7.4%)	5. Downtown MPLS (4.2%/3.9%)

Table 4 identifies communities with the highest share of trips using each of the three existing river crossings in the southbound direction during the AM peak period. Since these trips are traveling from one side of the river to the other, communities where trips originate versus those trips are destined to are presented separately.

*Table 4: Top Cities of Trips Using the Southbound Crossings During AM Peak Period (6:00 to 10:00 am)*

O/D	TH 101	US 169	TH 610
Origin	1. Elk River (41.8%)	1. Anoka (26.8%)	1. Coon Rapids (27.6%)
	2. Ramsey (5.6%)	2. Ramsey (26.0%)	2. Blaine (23.7%)
	3. Nowthen (3.2%), plus	3. Andover (14.6%)	3. Andover (10.4%)
	4. Sherburne Co other (31.9%)	4. Coon Rapids (10.9%)	4. Anoka (2.7%)
	5. Northern External (5.4%)	5. Nowthen (3.0%)	5. Ramsey (2.5%)
Destination	1. Rogers (16.3%)	1. Rogers (16.3%)	1. Brooklyn Park (17.3%)
	2. Otsego (13.6%)	2. Otsego (13.6%)	2. Champlin (17.3%)
	3. Maple Grove (12.4%)	3. Maple Grove (12.4%)	3. Maple Grove (14.6%)
	4. Brooklyn Park (4.7%)	4. Brooklyn Park (4.7%)	4. Rogers (3.8%)
	5. St Michael (4.2%); Plus	5. St Michael (4.2%); Plus	5. Dayton (2.7%); Plus
	6. Hennepin Co. Other (28.5%)	6. Hennepin Co. Other (28.5%)	6. Hennepin Co. Other (33.6%)

Table 5 identifies the communities with the highest proportion of trips on each river crossing that are destined for downtown Minneapolis during the AM peak period. This is intended to provide an indication of the use of each crossing for work commuting purposes.

*Table 5: Top Cities of Trips Destined to Downtown Minneapolis Using the Southbound Crossings (6:00 to 10:00 am)*

TH 101	US 169	TH 610
1. Elk River (55.4%)	1. Anoka (41.8%)	1. Coon Rapids (31.3%)
2. Nowthen (1.9%), plus	2. Ramsey (28.6%)	2. Blaine (17.7%)
3. Sherburne Co. other area (34.3%)	3. Coon Rapids (7.7%)	3. Andover (16.7%)
4. Northern External (6.9%)	4. Andover (2.2%)	4. Ramsey (7.5%)
	5. Nowthen (2.2%)	5. Anoka (7.2%)

Table 6 identifies communities with the highest share of trips using each of the three existing river crossings in the northbound destination during the PM peak period. Similar to Table 4, communities where trips originate versus those trips are destined to are presented separately.

Table 6: Top Cities of Trips Using the Northbound Crossings During Typical PM Peak Period (3:00 to 7:00 pm)

O/D	TH 101	US 169	TH 610
Origin	1. Otsego (18.1%)	1. Champlin (29.2%)	1. Brooklyn Park (26.6%)
	2. Rogers (15.9%)	2. Brooklyn Park (15.1%)	2. Downtown MPLS (12.3%)
	3. Maple Grove (12.0%)	3. Maple Grove (13.7%)	3. Maple Grove (10.9%)
	4. St Michael (4.7%)	4. Rogers (4.0%)	4. Brooklyn Center (5.6%)
	5. Brooklyn Park (4.4%) plus	5. Dayton (3.3%); plus	5. Champlin (3.2%); plus
	6. Hennepin Co. other (23.9%)	6. Hennepin Co. other (24.2%)	6. Hennepin Co. other (31.5%)
Destination	1. Elk River (45.5%)	1. Anoka (30.5%)	1. Anoka (30.5%)
	2. Ramsey (6.6%)	2. Ramsey (21.3%)	2. Ramsey (21.3%)
	3. Nowthen (2.6%) plus	3. Coon Rapids (16.8%)	3. Coon Rapids (16.8%)
	4. Sherburne Co. other (24.7%)	4. Andover (11.5%)	4. Andover (11.5%)
	5. External North (5.3%)	5. Blaine (2.2%) plus	5. Blaine (2.2%) plus
		6. Anoka Co. other (7.3%)	6. Anoka Co. other (7.3%)

Table 7 identifies communities with the highest share of trips using each of the three existing river crossings during on Friday afternoons on holiday weekends. Communities where trips originate versus those trips are destined to are presented separately. The results show that the destination of “External North” – which is where US 169 passes from Sherburne County to Mille Lacs County has a much higher share of trips compared to typical weekday afternoons.

Table 7: Top Cities of Trips Using the Northbound Crossings During Holiday Friday PM Peak Period (3:00 to 7:00 pm)

O/D	TH 101	US 169	TH 610
Origin	1. Otsego (20.0%)	1. Champlin (31.5%)	1. Brooklyn Park (28.4%)
	2. Rogers (13.6%)	2. Brooklyn Park (13.9%)	2. Downtown MPLS (7.8%)
	3. Maple Grove (12.8%)	3. Maple Grove (13.6%)	3. Maple Grove (11.1%)
	4. St Michael (2.5%)	4. Rogers (2.8%)	4. Brooklyn Center (6.5%)
	5. Brooklyn Park (4.6%) plus	5. Dayton (3.9%); plus	5. Champlin (3.8%); plus
	6. Hennepin Co. other (15.6%)	6. Hennepin Co. other (21.7%)	6. Hennepin Co. other (29.2%)
Destination	1. Elk River (39.8%)	1. Anoka (26.5%)	1. Coon Rapids (27.1%)
	2. Ramsey (6.2%)	2. Ramsey (17.0%)	2. Blaine (25.7%)
	3. Nowthen (1.4%) plus	3. Coon Rapids (15.0%)	3. Andover (7.2%)
	4. Sherburne Co. other (17.3%)	4. Andover (9.4%)	4. Fridley (4.2%)
	5. External North (20.9%)	5. Blaine (2.5%) plus	5. Anoka (2.9%) plus
		6. Anoka Co. other (6.8%)	6. Anoka Co. other (11.0%)
		7. External North (7.9%)	7. External North (2.1%)

Table 8 provides a distribution of trip lengths observed for each of the three river crossings. These are provided for the 25<sup>th</sup>, 50<sup>th</sup> (median), and 75<sup>th</sup> percentile of all trips using each crossing. The results show that TH 101 has the longest trip lengths, US 169 has the shortest trip lengths, and TH 610 is in between. The distribution of travel times are also provided, and these follow the same trend as the trip distances.

Table 8: Trip Length and Travel Time of 25%-50%-75% Trips Using the Crossings (Daily)

MOES	Trip Percentile	TH 101	US 169	TH 610
Trip Distance (Miles)	25%	14.2	8.6	14.5
	50%	24.2	14.8	21.5
	75%	37.3	23.1	31.4
Travel Time (Minutes)	25%	30.5	26.6	31.5
	50%	45.2	38.8	44.5
	75%	64.0	56.0	62.6

- Tables 2.1 – 2.3 summarize the total AM (6:00 to 10:00 am), PM (3:00 to 7:00 pm), and daily trips using the TH 610 crossing.
- Tables 3.1 – 3.3 summarize the total AM (6:00 to 10:00 am), PM (3:00 to 7:00 pm), and daily trips using the US 169/TH 47 crossing.
- Tables 4.1 – 4.3 summarize the total AM (6:00 to 10:00 am), PM (3:00 to 7:00 pm), and daily trips using the TH 101 crossing.
- Figure 1.1 illustrates the total origin daily trips using the three crossings.
- Figure 1.2 illustrates the total destination daily trips using the three crossings.
- Figures 2.1 – 2.2 illustrate the total origin and destination daily trips using the TH 610 crossing and their top routes.
- Figure 3.1 – 3.2 illustrate the total origin and destination daily trips using the US 169/TH 47 crossing and their top routes.
- Figure 4.1 – 4.2 illustrate the total origin and destination daily trips using TH 101 crossing and their top routes.
- Figures 5.1 – 5.2 illustrate the total origin and destination trips using the three crossings in the southbound direction during the AM peak period (6:00 to 10:00 am).
- Figure 5.3 illustrates the total daily origin trips using the three crossings with Downtown Minneapolis as the destination.
- Figure 6 illustrates the total origin/destination trips and top routes using the southbound TH 610 crossing during the AM peak period (6:00 to 10:00 am).
- Figure 7 illustrates the total origin/destination trips and top routes using the southbound US 169/TH 47 crossing during the AM peak period (6:00 to 10:00 am).
- Figure 8 illustrates the total origin/destination trips and top routes using the southbound TH 101 crossing during the AM peak period (6:00 to 10:00 am).
- Figures 9.1 – 9.2 illustrate the total origin and destination trips using the three crossings in the northbound direction during the PM peak period (3:00 to 7:00 pm).
- Figures 9.3 – 9.4 illustrate the comparison of the total origin and destination trips using the three crossings in the northbound direction during the PM peak period (3:00 to 7:00 pm) for weekdays and holiday Friday.
- Figure 10 illustrates the total origin/destination trips and top routes using the northbound TH 610 crossing during the PM peak period (3:00 to 7:00 pm).
- Figure 11 illustrates the total origin/destination trips and top routes using the northbound US 169/TH 47 crossing during the PM peak period (3:00 to 7:00 pm).

- Figure 12 illustrates the total origin/destination trips and top routes using the northbound TH 101 crossing during the PM peak period (3:00 to 7:00 pm).
- Figures 13.1 – 13.2 illustrate trip length and travel time distributions of the trips using the three river crossings.

[https://srfconsultinggroup-my.sharepoint.com/personal/pmorris\\_srfconsulting\\_com/Documents/Northwest Metro River Crossing/Documentation/OD\\_Analysis\\_Tech\\_Memo\\_20210607.docx](https://srfconsultinggroup-my.sharepoint.com/personal/pmorris_srfconsulting_com/Documents/Northwest Metro River Crossing/Documentation/OD_Analysis_Tech_Memo_20210607.docx)

## **Appendix**

**Table 2.1**  
**AM (6-10am), PM (3-7pm) and Daily Trips Using the TH 610 Crossing (Both Directions)**

Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	36	0.1%	46	0.1%	67	0.1%	69	0.2%	204	0.2%	226	0.2%
	City of Fridley	402	1.2%	1,230	3.8%	1,465	3.2%	975	2.2%	3,124	2.4%	3,610	2.7%
	City of Spring Lake Park	118	0.4%	269	0.8%	330	0.7%	293	0.6%	852	0.6%	927	0.7%
	City of Blaine	5,013	15.3%	2,346	7.2%	4,292	9.5%	7,392	16.4%	16,009	12.1%	16,640	12.5%
	City of Coon Rapids	5,861	17.9%	2,974	9.1%	3,364	7.4%	7,678	17.0%	18,862	14.2%	18,859	14.2%
	City of Anoka	591	1.8%	357	1.1%	623	1.4%	763	1.7%	2,067	1.6%	2,003	1.5%
	City of Andover	2,187	6.7%	365	1.1%	825	1.8%	2,642	5.8%	4,645	3.5%	4,920	3.7%
	City of Ramsey	540	1.7%	100	0.3%	256	0.6%	567	1.3%	1,273	1.0%	1,222	0.9%
	City of Nowthen	75	0.2%	14	0.0%	23	0.1%	88	0.2%	172	0.1%	156	0.1%
City of Elk River	143	0.4%	41	0.1%	57	0.1%	118	0.3%	319	0.2%	271	0.2%	
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	435	1.3%	1,066	3.3%	1,622	3.6%	874	1.9%	3,632	2.7%	3,575	2.7%
	City of Brooklyn Park	3,840	11.8%	4,786	14.7%	7,511	16.6%	5,713	12.6%	18,949	14.3%	19,092	14.4%
	City of Osseo	87	0.3%	159	0.5%	257	0.6%	204	0.5%	611	0.5%	572	0.4%
	City of Champlin	1,079	3.3%	544	1.7%	918	2.0%	1,559	3.5%	3,040	2.3%	3,547	2.7%
	City of Maple Grove	1,656	5.1%	2,265	6.9%	3,078	6.8%	2,427	5.4%	8,049	6.1%	8,105	6.1%
	City of Dayton	101	0.3%	106	0.3%	119	0.3%	171	0.4%	387	0.3%	478	0.4%
	City of Rogers	490	1.5%	362	1.1%	355	0.8%	520	1.2%	1,389	1.0%	1,625	1.2%
	City of Otsego	162	0.5%	45	0.1%	53	0.1%	258	0.6%	331	0.2%	479	0.4%
	City of Albertville	94	0.3%	25	0.1%	86	0.2%	157	0.3%	354	0.3%	384	0.3%
City of St Michael	305	0.9%	106	0.3%	193	0.4%	380	0.8%	741	0.6%	790	0.6%	
Downtowns	Downtown Minneapolis	205	0.6%	3,007	9.2%	3,511	7.8%	681	1.5%	5,536	4.2%	5,121	3.9%
	Downtown St Paul	8	0.0%	140	0.4%	203	0.4%	35	0.1%	310	0.2%	226	0.2%
Outer Counties*	Anoka County	2,508	7.7%	586	1.8%	1,104	2.4%	2,653	5.9%	5,566	4.2%	5,440	4.1%
	Isanti County	419	1.3%	103	0.3%	10	0.0%	502	1.1%	1,074	0.8%	1,044	0.8%
	Sherburne County	143	0.4%	36	0.1%	39	0.1%	97	0.2%	264	0.2%	264	0.2%
	Wright County	419	1.3%	198	0.6%	229	0.5%	532	1.2%	1,082	0.8%	1,248	0.9%
	Hennepin County	2,313	7.1%	7,444	22.8%	9,158	20.3%	3,354	7.4%	19,332	14.6%	18,473	13.9%
	Ramsey County	1,366	4.2%	2,560	7.8%	3,875	8.6%	1,949	4.3%	7,730	5.8%	6,633	5.0%
	Washington County	655	2.0%	258	0.8%	507	1.1%	822	1.8%	1,708	1.3%	1,714	1.3%
	Dakota County	141	0.4%	197	0.6%	198	0.4%	184	0.4%	632	0.5%	717	0.5%
	Scott County	135	0.4%	141	0.4%	192	0.4%	156	0.3%	696	0.5%	647	0.5%
	Carver County	154	0.5%	109	0.3%	150	0.3%	134	0.3%	482	0.4%	412	0.3%
	Chisago County	561	1.7%	159	0.5%	0	0.0%	558	1.2%	1,304	1.0%	1,184	0.9%
	McLeod/Sibley County	9	0.0%	9	0.0%	0	0.0%	8	0.0%	62	0.0%	40	0.0%
	Le Sueur/Rice/Goodhue County	13	0.0%	17	0.1%	0	0.0%	18	0.0%	76	0.1%	68	0.1%
Wisconsin	109	0.3%	46	0.1%	0	0.0%	115	0.3%	248	0.2%	250	0.2%	
External Roadways**	North	104	0.3%	130	0.4%	157	0.3%	185	0.4%	512	0.4%	536	0.4%
	East	24	0.1%	29	0.1%	64	0.1%	25	0.1%	157	0.1%	109	0.1%
	South	21	0.1%	69	0.2%	78	0.2%	31	0.1%	204	0.2%	221	0.2%
	West	139	0.4%	217	0.7%	203	0.4%	285	0.6%	694	0.5%	851	0.6%
Total		32,661	100%	32,661	100%	45,172	100%	45,172	100%	132,679	100%	132,679	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater

**Table 2.2**  
**AM (6-10am), PM (3-7pm) and Daily Trips Using the Southbound TH 610 Crossing**

Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	22	0.1%	25	0.1%	47	0.3%	16	0.1%	118	0.2%	102	0.2%
	City of Fridley	374	1.8%	46	0.2%	1,386	7.9%	74	0.4%	2,896	4.3%	260	0.4%
	City of Spring Lake Park	114	0.5%	7	0.0%	320	1.8%	8	0.0%	821	1.2%	37	0.1%
	City of Blaine			62	0.3%			151	0.9%			453	0.7%
	City of Coon Rapids	5,752	27.6%	92	0.4%	3,259	18.5%	179	1.0%	18,327	27.5%	598	0.9%
	City of Anoka	560	2.7%	29	0.1%	573	3.3%	37	0.2%	1,917	2.9%	151	0.2%
	City of Andover			20	0.1%			40	0.2%			115	0.2%
	City of Ramsey	524	2.5%	10	0.0%	240	1.4%	16	0.1%	1,224	1.8%	62	0.1%
	City of Nowthen	75	0.4%	0	0.0%	22	0.1%	3	0.0%	164	0.2%	9	0.0%
City of Elk River	104	0.5%	30	0.1%	39	0.2%	43	0.2%	236	0.4%	118	0.2%	
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	22	0.1%	1,042	5.0%	65	0.4%	822	4.7%	142	0.2%	3,417	5.1%
	City of Brooklyn Park	103	0.5%	4,672	22.4%	185	1.1%	5,490	31.2%	573	0.9%	18,482	27.7%
	City of Osseo	1	0.0%	154	0.7%	13	0.1%	196	1.1%	23	0.0%	550	0.8%
	City of Champlin	34	0.2%	526	2.5%	38	0.2%	1,503	8.5%	128	0.2%	3,410	5.1%
	City of Maple Grove	40	0.2%	2,239	10.7%	65	0.4%	2,361	13.4%	194	0.3%	7,920	11.9%
	City of Dayton	4	0.0%	105	0.5%	6	0.0%	167	0.9%	16	0.0%	462	0.7%
	City of Rogers	6	0.0%	358	1.7%	9	0.1%	506	2.9%	40	0.1%	1,584	2.4%
	City of Otsego	7	0.0%	44	0.2%	5	0.0%	251	1.4%	23	0.0%	458	0.7%
	City of Albertville	0	0.0%	25	0.1%	1	0.0%	153	0.9%	5	0.0%	377	0.6%
City of St Michael	0	0.0%	105	0.5%	2	0.0%	375	2.1%	18	0.0%	777	1.2%	
Downtowns	Downtown Minneapolis	13	0.1%	2,941	14.1%	117	0.7%	639	3.6%	208	0.3%	4,957	7.4%
	Downtown St Paul	6	0.0%	24	0.1%	187	1.1%	6	0.0%	255	0.4%	47	0.1%
Outer Counties*	Anoka County	2,471	11.8%	16	0.1%	1,067	6.1%	42	0.2%	5,443	8.2%	115	0.2%
	Isanti County	416	2.0%	1	0.0%	10	0.1%	5	0.0%	1,063	1.6%	20	0.0%
	Sherburne County	95	0.5%	25	0.1%	21	0.1%	55	0.3%	157	0.2%	158	0.2%
	Wright County	15	0.1%	189	0.9%	10	0.1%	517	2.9%	38	0.1%	1,203	1.8%
	Hennepin County	161	0.8%	7,140	34.2%	487	2.8%	3,110	17.7%	1,169	1.8%	17,496	26.2%
	Ramsey County	1,298	6.2%	228	1.1%	3,636	20.6%	120	0.7%	7,122	10.7%	646	1.0%
	Washington County	641	3.1%	24	0.1%	478	2.7%	26	0.1%	1,622	2.4%	82	0.1%
	Dakota County	102	0.5%	124	0.6%	111	0.6%	57	0.3%	342	0.5%	386	0.6%
	Scott County	4	0.0%	134	0.6%	9	0.1%	148	0.8%	25	0.0%	613	0.9%
	Carver County	2	0.0%	107	0.5%	0	0.0%	128	0.7%	11	0.0%	397	0.6%
	Chisago County	555	2.7%	2	0.0%	0	0.0%	4	0.0%	1,261	1.9%	25	0.0%
	McLeod/Sibley County	0	0.0%	9	0.0%	0	0.0%	8	0.0%	0	0.0%	40	0.1%
	Le Sueur/Rice/Goodhue County	3	0.0%	13	0.1%	0	0.0%	12	0.1%	34	0.1%	44	0.1%
Wisconsin	109	0.5%	5	0.0%	0	0.0%	0	0.0%	235	0.4%	11	0.0%	
External Roadways**	North	87	0.4%	16	0.1%	142	0.8%	37	0.2%	451	0.7%	75	0.1%
	East	24	0.1%	1	0.0%	62	0.4%	0	0.0%	148	0.2%	8	0.0%
	South	3	0.0%	59	0.3%	25	0.1%	24	0.1%	46	0.1%	185	0.3%
	West	0	0.0%	214	1.0%	4	0.0%	283	1.6%	11	0.0%	842	1.3%
Total		20,863	100%	20,863	100%	17,612	100%	17,612	100%	66,692	100%	66,692	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater

**Table 2.3  
AM (6-10am), PM (3-7pm) and Daily Trips Using the Northbound TH 610 Crossing**

Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	14	0.1%	21	0.2%	20	0.1%	53	0.2%	86	0.1%	124	0.2%
	City of Fridley	28	0.2%	1,184	10.0%	79	0.3%	901	3.3%	228	0.3%	3,350	5.1%
	City of Spring Lake Park	4	0.0%	262	2.2%	10	0.0%	285	1.0%	31	0.0%	890	1.3%
	City of Blaine	63	0.5%			123	0.4%			382	0.6%		
	City of Coon Rapids	109	0.9%	2,882	24.4%	105	0.4%	7,499	27.2%	535	0.8%	18,261	27.7%
	City of Anoka	31	0.3%	328	2.8%	50	0.2%	726	2.6%	150	0.2%	1,852	2.8%
	City of Andover	21	0.2%	345	2.9%	23	0.1%			86	0.1%		
	City of Ramsey	16	0.1%	90	0.8%	16	0.1%	551	2.0%	49	0.1%	1,160	1.8%
	City of Nowthen	0	0.0%	14	0.1%	1	0.0%	85	0.3%	8	0.0%	147	0.2%
City of Elk River	39	0.3%	11	0.1%	18	0.1%	75	0.3%	83	0.1%	153	0.2%	
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	413	3.5%	24	0.2%	1,557	5.6%	52	0.2%	3,490	5.3%	158	0.2%
	City of Brooklyn Park	3,737	31.7%	114	1.0%	7,326	26.6%	223	0.8%	18,376	27.8%	610	0.9%
	City of Osseo	86	0.7%	5	0.0%	244	0.9%	8	0.0%	588	0.9%	22	0.0%
	City of Champlin	1,045	8.9%	18	0.2%	880	3.2%	56	0.2%	2,912	4.4%	137	0.2%
	City of Maple Grove	1,616	13.7%	26	0.2%	3,013	10.9%	66	0.2%	7,855	11.9%	185	0.3%
	City of Dayton	97	0.8%	1	0.0%	113	0.4%	4	0.0%	371	0.6%	16	0.0%
	City of Rogers	484	4.1%	4	0.0%	346	1.3%	14	0.1%	1,349	2.0%	41	0.1%
	City of Otsego	155	1.3%	1	0.0%	48	0.2%	7	0.0%	308	0.5%	21	0.0%
	City of Albertville	94	0.8%	0	0.0%	85	0.3%	4	0.0%	349	0.5%	7	0.0%
City of St Michael	305	2.6%	1	0.0%	191	0.7%	5	0.0%	723	1.1%	13	0.0%	
Downtowns	Downtown Minneapolis	192	1.6%	66	0.6%	3,394	12.3%	42	0.2%	5,328	8.1%	164	0.2%
	Downtown St Paul	2	0.0%	116	1.0%	16	0.1%	29	0.1%	55	0.1%	179	0.3%
Outer Counties*	Anoka County	37	0.3%	570	4.8%	37	0.1%	2,611	9.5%	123	0.2%	5,325	8.1%
	Isanti County	3	0.0%	102	0.9%	0	0.0%	497	1.8%	11	0.0%	1,024	1.6%
	Sherburne County	48	0.4%	11	0.1%	18	0.1%	42	0.2%	107	0.2%	106	0.2%
	Wright County	404	3.4%	9	0.1%	219	0.8%	15	0.1%	1,044	1.6%	45	0.1%
	Hennepin County	2,152	18.2%	304	2.6%	8,671	31.5%	244	0.9%	18,163	27.5%	977	1.5%
	Ramsey County	68	0.6%	2,332	19.8%	239	0.9%	1,829	6.6%	608	0.9%	5,987	9.1%
	Washington County	14	0.1%	234	2.0%	29	0.1%	796	2.9%	86	0.1%	1,632	2.5%
	Dakota County	39	0.3%	73	0.6%	87	0.3%	127	0.5%	290	0.4%	331	0.5%
	Scott County	131	1.1%	7	0.1%	183	0.7%	8	0.0%	671	1.0%	34	0.1%
	Carver County	152	1.3%	2	0.0%	150	0.5%	6	0.0%	471	0.7%	15	0.0%
	Chisago County	6	0.1%	157	1.3%	0	0.0%	554	2.0%	43	0.1%	1,159	1.8%
	McLeod/Sibley County	9	0.1%	0	0.0%	0	0.0%	0	0.0%	62	0.1%	0	0.0%
	Le Sueur/Rice/Goodhue County	10	0.1%	4	0.0%	0	0.0%	6	0.0%	42	0.1%	24	0.0%
Wisconsin	0	0.0%	41	0.3%	0	0.0%	115	0.4%	13	0.0%	239	0.4%	
External Roadways**	North	17	0.1%	114	1.0%	15	0.1%	148	0.5%	61	0.1%	461	0.7%
	East	0	0.0%	28	0.2%	2	0.0%	25	0.1%	9	0.0%	101	0.2%
	South	18	0.2%	10	0.1%	53	0.2%	7	0.0%	158	0.2%	36	0.1%
	West	139	1.2%	3	0.0%	199	0.7%	2	0.0%	683	1.0%	9	0.0%
Total		11,798	100%	11,798	100%	27,560	100%	27,560	100%	65,987	100%	65,987	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater

**Table 3.1**  
**AM (6-10am), PM (3-7pm) and Daily Trips Using the US 169 Crossing (Both Directions)**

Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	3	0.0%	4	0.0%	7	0.1%	8	0.1%	16	0.0%	22	0.1%
	City of Fridley	11	0.1%	52	0.5%	52	0.4%	28	0.2%	110	0.3%	132	0.3%
	City of Spring Lake Park	4	0.0%	4	0.0%	10	0.1%	8	0.1%	25	0.1%	24	0.1%
	City of Blaine	114	1.1%	105	1.0%	132	1.0%	202	1.5%	446	1.0%	488	1.1%
	City of Coon Rapids	719	6.9%	884	8.4%	402	3.0%	1,463	10.8%	3,620	8.4%	4,133	9.6%
	City of Anoka	1,781	17.0%	1,750	16.7%	2,355	17.4%	2,627	19.4%	7,453	17.4%	7,503	17.5%
	City of Andover	959	9.1%	172	1.6%	457	3.4%	988	7.3%	2,180	5.1%	2,014	4.7%
	City of Ramsey	1,702	16.2%	543	5.2%	1,023	7.6%	1,829	13.5%	4,373	10.2%	4,285	10.0%
	City of Nowthen	197	1.9%	31	0.3%	53	0.4%	159	1.2%	386	0.9%	338	0.8%
	City of Elk River	163	1.6%	59	0.6%	164	1.2%	146	1.1%	526	1.2%	414	1.0%
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	54	0.5%	137	1.3%	147	1.1%	68	0.5%	339	0.8%	335	0.8%
	City of Brooklyn Park	513	4.9%	1,152	11.0%	1,312	9.7%	689	5.1%	3,183	7.4%	3,156	7.4%
	City of Osseo	26	0.2%	65	0.6%	100	0.7%	81	0.6%	272	0.6%	262	0.6%
	City of Champlin	1,214	11.6%	1,156	11.0%	2,500	18.5%	1,779	13.1%	6,792	15.8%	6,165	14.4%
	City of Maple Grove	475	4.5%	965	9.2%	1,181	8.7%	700	5.2%	2,875	6.7%	2,867	6.7%
	City of Dayton	256	2.4%	181	1.7%	283	2.1%	253	1.9%	880	2.1%	894	2.1%
	City of Rogers	182	1.7%	246	2.3%	350	2.6%	233	1.7%	869	2.0%	922	2.2%
	City of Otsego	181	1.7%	23	0.2%	28	0.2%	131	1.0%	276	0.6%	286	0.7%
	City of Albertville	46	0.4%	7	0.1%	9	0.1%	43	0.3%	72	0.2%	90	0.2%
	City of St Michael	106	1.0%	11	0.1%	32	0.2%	77	0.6%	173	0.4%	170	0.4%
Downtowns	Downtown Minneapolis	9	0.1%	56	0.5%	86	0.6%	19	0.1%	178	0.4%	119	0.3%
	Downtown St Paul	0	0.0%	2	0.0%	10	0.1%	3	0.0%	18	0.0%	8	0.0%
Outer Counties*	Anoka County	618	5.9%	114	1.1%	191	1.4%	621	4.6%	1,219	2.8%	1,214	2.8%
	Isanti County	97	0.9%	25	0.2%	11	0.1%	111	0.8%	203	0.5%	221	0.5%
	Sherburne County	99	0.9%	26	0.2%	60	0.4%	83	0.6%	266	0.6%	247	0.6%
	Wright County	107	1.0%	31	0.3%	29	0.2%	74	0.5%	184	0.4%	218	0.5%
	Hennepin County	639	6.1%	2,243	21.4%	2,125	15.7%	830	6.1%	4,657	10.9%	4,987	11.6%
	Ramsey County	48	0.5%	110	1.0%	148	1.1%	76	0.6%	351	0.8%	329	0.8%
	Washington County	16	0.2%	19	0.2%	16	0.1%	15	0.1%	66	0.2%	63	0.1%
	Dakota County	37	0.4%	81	0.8%	61	0.5%	30	0.2%	187	0.4%	202	0.5%
	Scott County	51	0.5%	82	0.8%	62	0.5%	49	0.4%	238	0.6%	264	0.6%
	Carver County	23	0.2%	83	0.8%	78	0.6%	42	0.3%	163	0.4%	204	0.5%
	Chisago County	4	0.0%	3	0.0%	0	0.0%	8	0.1%	24	0.1%	28	0.1%
	McLeod/Sibley County	2	0.0%	4	0.0%	0	0.0%	5	0.0%	13	0.0%	20	0.0%
	Le Sueur/Rice/Goodhue County	6	0.1%	5	0.0%	0	0.0%	6	0.0%	27	0.1%	28	0.1%
	Wisconsin	3	0.0%	2	0.0%	0	0.0%	5	0.0%	11	0.0%	14	0.0%
External Roadways**	North	14	0.1%	28	0.3%	32	0.2%	26	0.2%	98	0.2%	96	0.2%
	East	0	0.0%	1	0.0%	3	0.0%	1	0.0%	7	0.0%	6	0.0%
	South	7	0.1%	20	0.2%	24	0.2%	14	0.1%	63	0.1%	66	0.2%
	West	8	0.1%	12	0.1%	10	0.1%	13	0.1%	43	0.1%	48	0.1%
Total		10,494	100%	10,494	100%	13,543	100%	13,543	100%	42,882	100%	42,882	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater

**Table 3.2**  
**AM (6-10am), PM (3-7pm) and Daily Trips Using the Southbound US 169 Crossing**

Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	1	0.0%	1	0.0%	4	0.1%	3	0.1%	8	0.0%	10	0.0%
	City of Fridley	5	0.1%	10	0.2%	32	0.6%	5	0.1%	64	0.3%	32	0.2%
	City of Spring Lake Park	4	0.1%	0	0.0%	8	0.2%	2	0.0%	21	0.1%	5	0.0%
	City of Blaine	103	1.6%	8	0.1%	113	2.2%	11	0.2%	379	1.8%	51	0.2%
	City of Coon Rapids	702	10.9%	21	0.3%	371	7.4%	31	0.6%	3,446	16.5%	106	0.5%
	City of Anoka	1,730	26.8%	19	0.3%	2,291	45.6%	28	0.6%	7,235	34.6%	95	0.5%
	City of Andover	943	14.6%	4	0.1%	439	8.7%	7	0.1%	2,118	10.1%	29	0.1%
	City of Ramsey	1,676	26.0%	7	0.1%	995	19.8%	17	0.3%	4,275	20.5%	47	0.2%
	City of Nowthen	195	3.0%	1	0.0%	53	1.1%	0	0.0%	379	1.8%	2	0.0%
City of Elk River	155	2.4%	1	0.0%	151	3.0%	10	0.2%	485	2.3%	33	0.2%	
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	3	0.0%	135	2.1%	5	0.1%	65	1.3%	14	0.1%	312	1.5%
	City of Brooklyn Park	8	0.1%	1,115	17.3%	22	0.4%	651	13.0%	60	0.3%	3,021	14.5%
	City of Osseo	0	0.0%	64	1.0%	1	0.0%	77	1.5%	5	0.0%	253	1.2%
	City of Champlin	10	0.2%	1,116	17.3%	17	0.3%	1,688	33.6%	52	0.2%	5,907	28.3%
	City of Maple Grove	2	0.0%	943	14.6%	13	0.3%	672	13.4%	34	0.2%	2,770	13.3%
	City of Dayton	0	0.0%	173	2.7%	2	0.0%	247	4.9%	6	0.0%	850	4.1%
	City of Rogers	2	0.0%	242	3.8%	9	0.2%	220	4.4%	17	0.1%	887	4.2%
	City of Otsego	9	0.1%	20	0.3%	5	0.1%	121	2.4%	26	0.1%	256	1.2%
	City of Albertville	0	0.0%	6	0.1%	0	0.0%	42	0.8%	3	0.0%	86	0.4%
City of St Michael	2	0.0%	11	0.2%	3	0.1%	75	1.5%	7	0.0%	166	0.8%	
Downtowns	Downtown Minneapolis	2	0.0%	42	0.7%	17	0.3%	16	0.3%	30	0.1%	91	0.4%
	Downtown St Paul	0	0.0%	0	0.0%	3	0.1%	0	0.0%	8	0.0%	0	0.0%
Outer Counties*	Anoka County	609	9.5%	2	0.0%	183	3.6%	3	0.1%	1,183	5.7%	15	0.1%
	Isanti County	95	1.5%	0	0.0%	11	0.2%	1	0.0%	198	0.9%	4	0.0%
	Sherburne County	96	1.5%	0	0.0%	52	1.0%	6	0.1%	242	1.2%	22	0.1%
	Wright County	2	0.0%	31	0.5%	2	0.0%	70	1.4%	10	0.0%	201	1.0%
	Hennepin County	11	0.2%	2,168	33.6%	60	1.2%	784	15.6%	134	0.6%	4,763	22.8%
	Ramsey County	44	0.7%	28	0.4%	108	2.1%	21	0.4%	250	1.2%	94	0.4%
	Washington County	13	0.2%	6	0.1%	12	0.2%	3	0.1%	48	0.2%	18	0.1%
	Dakota County	5	0.1%	68	1.1%	11	0.2%	26	0.5%	28	0.1%	168	0.8%
	Scott County	0	0.0%	79	1.2%	0	0.0%	48	1.0%	4	0.0%	249	1.2%
	Carver County	0	0.0%	83	1.3%	0	0.0%	41	0.8%	2	0.0%	198	0.9%
	Chisago County	4	0.1%	0	0.0%	0	0.0%	0	0.0%	21	0.1%	0	0.0%
	McLeod/Sibley County	0	0.0%	4	0.1%	0	0.0%	5	0.1%	0	0.0%	20	0.1%
	Le Sueur/Rice/Goodhue County	0	0.0%	5	0.1%	0	0.0%	5	0.1%	3	0.0%	26	0.1%
Wisconsin	1	0.0%	0	0.0%	0	0.0%	0	0.0%	7	0.0%	2	0.0%	
External Roadways**	North	12	0.2%	1	0.0%	31	0.6%	0	0.0%	91	0.4%	3	0.0%
	East	0	0.0%	1	0.0%	2	0.0%	0	0.0%	2	0.0%	3	0.0%
	South	0	0.0%	19	0.3%	0	0.0%	13	0.3%	2	0.0%	62	0.3%
	West	0	0.0%	10	0.2%	1	0.0%	13	0.3%	3	0.0%	43	0.2%
Total		6,444	100%	6,444	100%	5,027	100%	5,027	100%	20,900	100%	20,900	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater

**Table 3.3  
AM (6-10am), PM (3-7pm) and Daily Trips Using the Northbound US 169 Crossing**

Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	2	0.0%	3	0.1%	3	0.0%	5	0.1%	8	0.0%	12	0.1%
	City of Fridley	6	0.1%	42	1.0%	20	0.2%	23	0.3%	46	0.2%	100	0.5%
	City of Spring Lake Park	0	0.0%	4	0.1%	2	0.0%	6	0.1%	4	0.0%	19	0.1%
	City of Blaine	11	0.3%	97	2.4%	19	0.2%	191	2.2%	67	0.3%	437	2.0%
	City of Coon Rapids	17	0.4%	863	21.3%	31	0.4%	1,432	16.8%	174	0.8%	4,027	18.3%
	City of Anoka	51	1.3%	1,731	42.7%	64	0.8%	2,599	30.5%	218	1.0%	7,408	33.7%
	City of Andover	16	0.4%	168	4.1%	18	0.2%	981	11.5%	62	0.3%	1,985	9.0%
	City of Ramsey	26	0.6%	536	13.2%	28	0.3%	1,812	21.3%	98	0.4%	4,238	19.3%
	City of Nowthen	2	0.0%	30	0.7%	0	0.0%	159	1.9%	7	0.0%	336	1.5%
City of Elk River	8	0.2%	58	1.4%	13	0.2%	136	1.6%	41	0.2%	381	1.7%	
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	51	1.3%	2	0.0%	142	1.7%	3	0.0%	325	1.5%	23	0.1%
	City of Brooklyn Park	505	12.5%	37	0.9%	1,290	15.1%	38	0.4%	3,123	14.2%	135	0.6%
	City of Osseo	26	0.6%	1	0.0%	99	1.2%	4	0.0%	267	1.2%	9	0.0%
	City of Champlin	1,204	29.7%	40	1.0%	2,483	29.2%	91	1.1%	6,740	30.7%	258	1.2%
	City of Maple Grove	473	11.7%	22	0.5%	1,168	13.7%	28	0.3%	2,841	12.9%	97	0.4%
	City of Dayton	256	6.3%	8	0.2%	281	3.3%	6	0.1%	874	4.0%	44	0.2%
	City of Rogers	180	4.4%	4	0.1%	341	4.0%	13	0.2%	852	3.9%	35	0.2%
	City of Otsego	172	4.2%	3	0.1%	23	0.3%	10	0.1%	250	1.1%	30	0.1%
	City of Albertville	46	1.1%	1	0.0%	9	0.1%	1	0.0%	69	0.3%	4	0.0%
City of St Michael	104	2.6%	0	0.0%	29	0.3%	2	0.0%	166	0.8%	4	0.0%	
Downtowns	Downtown Minneapolis	7	0.2%	14	0.3%	69	0.8%	3	0.0%	148	0.7%	28	0.1%
	Downtown St Paul	0	0.0%	2	0.0%	7	0.1%	3	0.0%	10	0.0%	8	0.0%
Outer Counties*	Anoka County	9	0.2%	112	2.8%	8	0.1%	618	7.3%	36	0.2%	1,199	5.5%
	Isanti County	2	0.0%	25	0.6%	0	0.0%	110	1.3%	5	0.0%	217	1.0%
	Sherburne County	3	0.1%	26	0.6%	8	0.1%	77	0.9%	24	0.1%	225	1.0%
	Wright County	105	2.6%	0	0.0%	27	0.3%	4	0.0%	174	0.8%	17	0.1%
	Hennepin County	628	15.5%	75	1.9%	2,065	24.2%	46	0.5%	4,523	20.6%	224	1.0%
	Ramsey County	4	0.1%	82	2.0%	40	0.5%	55	0.6%	101	0.5%	235	1.1%
	Washington County	3	0.1%	13	0.3%	4	0.0%	12	0.1%	18	0.1%	45	0.2%
	Dakota County	32	0.8%	13	0.3%	50	0.6%	4	0.0%	159	0.7%	34	0.2%
	Scott County	51	1.3%	3	0.1%	62	0.7%	1	0.0%	234	1.1%	15	0.1%
	Carver County	23	0.6%	0	0.0%	78	0.9%	1	0.0%	161	0.7%	6	0.0%
	Chisago County	0	0.0%	3	0.1%	0	0.0%	8	0.1%	3	0.0%	28	0.1%
	McLeod/Sibley County	2	0.0%	0	0.0%	0	0.0%	0	0.0%	13	0.1%	0	0.0%
	Le Sueur/Rice/Goodhue County	6	0.1%	0	0.0%	0	0.0%	1	0.0%	24	0.1%	2	0.0%
Wisconsin	2	0.0%	2	0.0%	0	0.0%	5	0.1%	4	0.0%	12	0.1%	
External Roadways**	North	2	0.0%	27	0.7%	1	0.0%	26	0.3%	7	0.0%	93	0.4%
	East	0	0.0%	0	0.0%	1	0.0%	1	0.0%	5	0.0%	3	0.0%
	South	7	0.2%	1	0.0%	24	0.3%	1	0.0%	61	0.3%	4	0.0%
	West	8	0.2%	2	0.0%	9	0.1%	0	0.0%	40	0.2%	5	0.0%
Total		4,050	100%	4,050	100%	8,516	100%	8,516	100%	21,982	100%	21,982	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater

**Table 4.1  
AM (6-10am), PM (3-7pm) and Daily Trips Using the TH 101 Crossing (Both Directions)**

Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	14	0.1%	8	0.1%	14	0.1%	6	0.0%	48	0.1%	30	0.0%
	City of Fridley	9	0.1%	64	0.4%	77	0.3%	14	0.1%	154	0.2%	192	0.3%
	City of Spring Lake Park	0	0.0%	12	0.1%	11	0.0%	3	0.0%	22	0.0%	16	0.0%
	City of Blaine	101	0.7%	88	0.6%	111	0.5%	180	0.8%	379	0.6%	400	0.6%
	City of Coon Rapids	125	0.8%	193	1.3%	146	0.7%	274	1.2%	848	1.3%	822	1.3%
	City of Anoka	96	0.6%	364	2.4%	413	1.9%	181	0.8%	852	1.3%	872	1.4%
	City of Andover	126	0.8%	128	0.8%	175	0.8%	207	0.9%	496	0.8%	505	0.8%
	City of Ramsey	586	3.9%	372	2.4%	649	2.9%	924	4.2%	1,980	3.1%	2,236	3.5%
	City of Nowthen	331	2.2%	78	0.5%	179	0.8%	368	1.7%	732	1.1%	834	1.3%
City of Elk River	4,385	28.8%	2,233	14.7%	4,422	20.0%	6,418	29.0%	15,258	23.7%	15,472	24.0%	
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	20	0.1%	140	0.9%	173	0.8%	31	0.1%	304	0.5%	261	0.4%
	City of Brooklyn Park	98	0.6%	502	3.3%	619	2.8%	149	0.7%	1,128	1.7%	957	1.5%
	City of Osseo	17	0.1%	54	0.4%	57	0.3%	38	0.2%	142	0.2%	113	0.2%
	City of Champlin	52	0.3%	111	0.7%	156	0.7%	67	0.3%	312	0.5%	232	0.4%
	City of Maple Grove	362	2.4%	1,295	8.5%	1,670	7.5%	667	3.0%	3,704	5.7%	3,252	5.0%
	City of Dayton	84	0.6%	212	1.4%	316	1.4%	135	0.6%	633	1.0%	621	1.0%
	City of Rogers	649	4.3%	1,701	11.2%	2,224	10.0%	1,456	6.6%	5,323	8.3%	5,268	8.2%
	City of Otsego	1,743	11.5%	1,445	9.5%	2,587	11.7%	2,929	13.2%	7,609	11.8%	8,007	12.4%
	City of Albertville	236	1.6%	138	0.9%	313	1.4%	405	1.8%	998	1.5%	997	1.5%
City of St Michael	439	2.9%	447	2.9%	671	3.0%	698	3.2%	1,813	2.8%	1,873	2.9%	
Downtowns	Downtown Minneapolis	34	0.2%	361	2.4%	460	2.1%	91	0.4%	818	1.3%	743	1.2%
	Downtown St Paul	0	0.0%	13	0.1%	18	0.1%	10	0.0%	57	0.1%	46	0.1%
Outer Counties*	Anoka County*	311	2.0%	179	1.2%	277	1.3%	396	1.8%	981	1.5%	955	1.5%
	Isanti County	225	1.5%	69	0.5%	138	0.6%	324	1.5%	620	1.0%	617	1.0%
	Sherburne County	3,364	22.1%	606	4.0%	1,197	5.4%	3,485	15.7%	7,372	11.4%	7,036	10.9%
	Wright County	428	2.8%	340	2.2%	499	2.3%	715	3.2%	1,650	2.6%	1,823	2.8%
	Hennepin County	508	3.3%	3,009	19.8%	3,344	15.1%	777	3.5%	6,276	9.7%	6,149	9.5%
	Ramsey County	50	0.3%	203	1.3%	201	0.9%	87	0.4%	443	0.7%	511	0.8%
	Washington County	18	0.1%	46	0.3%	47	0.2%	15	0.1%	124	0.2%	113	0.2%
	Dakota County	56	0.4%	108	0.7%	112	0.5%	57	0.3%	349	0.5%	319	0.5%
	Scott County	38	0.2%	89	0.6%	81	0.4%	43	0.2%	243	0.4%	284	0.4%
	Carver County	25	0.2%	82	0.5%	109	0.5%	42	0.2%	217	0.3%	207	0.3%
	Chisago County	17	0.1%	27	0.2%	0	0.0%	44	0.2%	87	0.1%	104	0.2%
	McLeod/Sibley County	6	0.0%	6	0.0%	0	0.0%	3	0.0%	27	0.0%	19	0.0%
	Le Sueur/Rice/Goodhue County	9	0.1%	16	0.1%	0	0.0%	13	0.1%	53	0.1%	68	0.1%
Wisconsin	2	0.0%	10	0.1%	0	0.0%	6	0.0%	19	0.0%	26	0.0%	
External Roadways**	North	564	3.7%	314	2.1%	464	2.1%	735	3.3%	1,889	2.9%	1,947	3.0%
	East	4	0.0%	5	0.0%	14	0.1%	6	0.0%	27	0.0%	26	0.0%
	South	14	0.1%	40	0.3%	40	0.2%	27	0.1%	156	0.2%	139	0.2%
	West	58	0.4%	96	0.6%	148	0.7%	106	0.5%	321	0.5%	372	0.6%
Total		15,204	100%	15,204	100%	22,132	100%	22,132	100%	64,464	100%	64,464	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater

**Table 4.2  
AM (6-10am), PM (3-7pm) and Daily Trips Using the Southbound TH 101 Crossing**

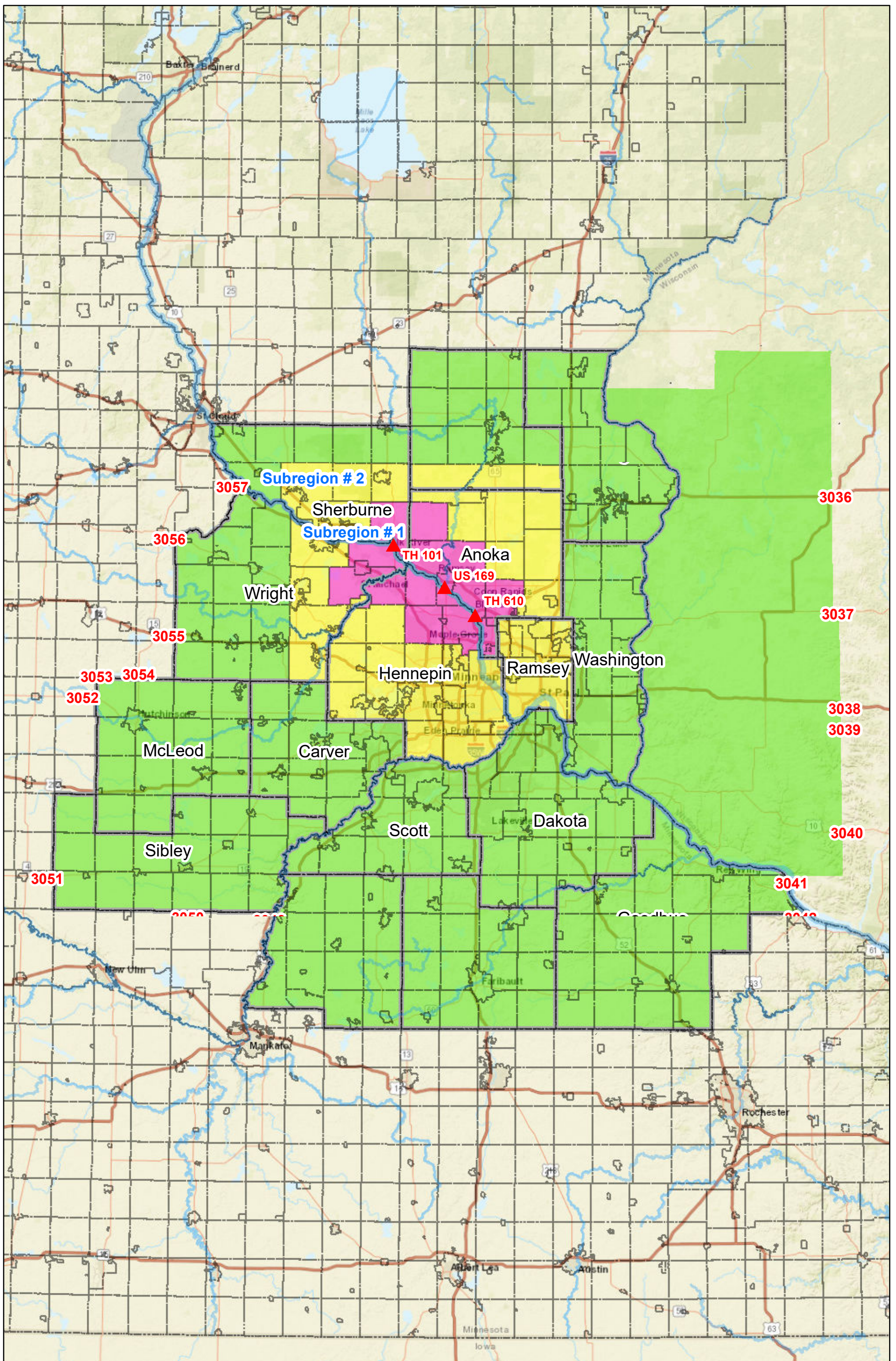
Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	1	0.0%	7	0.1%	4	0.0%	4	0.0%	6	0.0%	24	0.1%
	City of Fridley	4	0.0%	21	0.2%	36	0.4%	2	0.0%	75	0.2%	76	0.2%
	City of Spring Lake Park	0	0.0%	6	0.1%	5	0.1%	0	0.0%	13	0.0%	6	0.0%
	City of Blaine	96	0.9%	8	0.1%	96	1.1%	11	0.1%	328	1.0%	40	0.1%
	City of Coon Rapids	112	1.1%	23	0.2%	129	1.5%	16	0.2%	765	2.4%	78	0.2%
	City of Anoka	92	0.9%	15	0.1%	394	4.6%	9	0.1%	807	2.5%	42	0.1%
	City of Andover	124	1.2%	3	0.0%	164	1.9%	12	0.1%	477	1.5%	22	0.1%
	City of Ramsey	575	5.6%	25	0.2%	623	7.2%	33	0.4%	1,916	6.0%	86	0.3%
	City of Nowthen	327	3.2%	0	0.0%	173	2.0%	14	0.2%	710	2.2%	29	0.1%
City of Elk River	4,274	41.8%	93	0.9%	4,236	49.1%	267	3.1%	14,700	45.7%	638	2.0%	
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	0	0.0%	136	1.3%	13	0.2%	30	0.3%	19	0.1%	251	0.8%
	City of Brooklyn Park	4	0.0%	485	4.7%	30	0.3%	132	1.5%	62	0.2%	908	2.8%
	City of Osseo	0	0.0%	54	0.5%	2	0.0%	38	0.4%	6	0.0%	113	0.4%
	City of Champlin	2	0.0%	104	1.0%	15	0.2%	53	0.6%	38	0.1%	196	0.6%
	City of Maple Grove	22	0.2%	1,267	12.4%	54	0.6%	646	7.5%	130	0.4%	3,157	9.8%
	City of Dayton	4	0.0%	212	2.1%	12	0.1%	133	1.5%	26	0.1%	595	1.9%
	City of Rogers	32	0.3%	1,664	16.3%	76	0.9%	1,397	16.2%	204	0.6%	5,094	15.8%
	City of Otsego	103	1.0%	1,388	13.6%	141	1.6%	2,771	32.1%	414	1.3%	7,590	23.6%
	City of Albertville	15	0.1%	132	1.3%	21	0.2%	388	4.5%	55	0.2%	951	3.0%
City of St Michael	32	0.3%	426	4.2%	31	0.4%	662	7.7%	95	0.3%	1,786	5.6%	
Downtowns	Downtown Minneapolis	0	0.0%	315	3.1%	73	0.8%	86	1.0%	88	0.3%	677	2.1%
	Downtown St Paul	0	0.0%	11	0.1%	6	0.1%	8	0.1%	11	0.0%	38	0.1%
Outer Counties*	Anoka County*	303	3.0%	6	0.1%	264	3.1%	18	0.2%	935	2.9%	48	0.1%
	Isanti County	218	2.1%	2	0.0%	132	1.5%	10	0.1%	597	1.9%	20	0.1%
	Sherburne County	3,261	31.9%	23	0.2%	1,143	13.3%	147	1.7%	7,129	22.2%	270	0.8%
	Wright County	17	0.2%	322	3.1%	31	0.4%	653	7.6%	102	0.3%	1,683	5.2%
	Hennepin County	20	0.2%	2,918	28.5%	116	1.3%	751	8.7%	224	0.7%	5,962	18.5%
	Ramsey County	10	0.1%	100	1.0%	88	1.0%	32	0.4%	153	0.5%	296	0.9%
	Washington County	7	0.1%	25	0.2%	26	0.3%	2	0.0%	53	0.2%	56	0.2%
	Dakota County	0	0.0%	103	1.0%	6	0.1%	50	0.6%	13	0.0%	298	0.9%
	Scott County	0	0.0%	86	0.8%	4	0.0%	43	0.5%	9	0.0%	278	0.9%
	Carver County	0	0.0%	82	0.8%	6	0.1%	40	0.5%	10	0.0%	199	0.6%
	Chisago County	17	0.2%	0	0.0%	0	0.0%	2	0.0%	83	0.3%	6	0.0%
	McLeod/Sibley County	0	0.0%	6	0.1%	0	0.0%	3	0.0%	0	0.0%	19	0.1%
	Le Sueur/Rice/Goodhue County	0	0.0%	15	0.1%	0	0.0%	13	0.2%	2	0.0%	66	0.2%
Wisconsin	0	0.0%	5	0.0%	0	0.0%	2	0.0%	7	0.0%	14	0.0%	
External Roadways**	North	552	5.4%	6	0.1%	450	5.2%	16	0.2%	1,851	5.8%	33	0.1%
	East	1	0.0%	4	0.0%	9	0.1%	4	0.0%	12	0.0%	20	0.1%
	South	0	0.0%	40	0.4%	3	0.0%	25	0.3%	5	0.0%	134	0.4%
	West	3	0.0%	90	0.9%	8	0.1%	97	1.1%	14	0.0%	345	1.1%
Total		10,228	100%	10,228	100%	8,620	100%	8,620	100%	32,144	100%	32,144	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater

**Table 4.3  
AM (6-10am), PM (3-7pm) and Daily Trips Using the Northbound TH 101 Crossing**

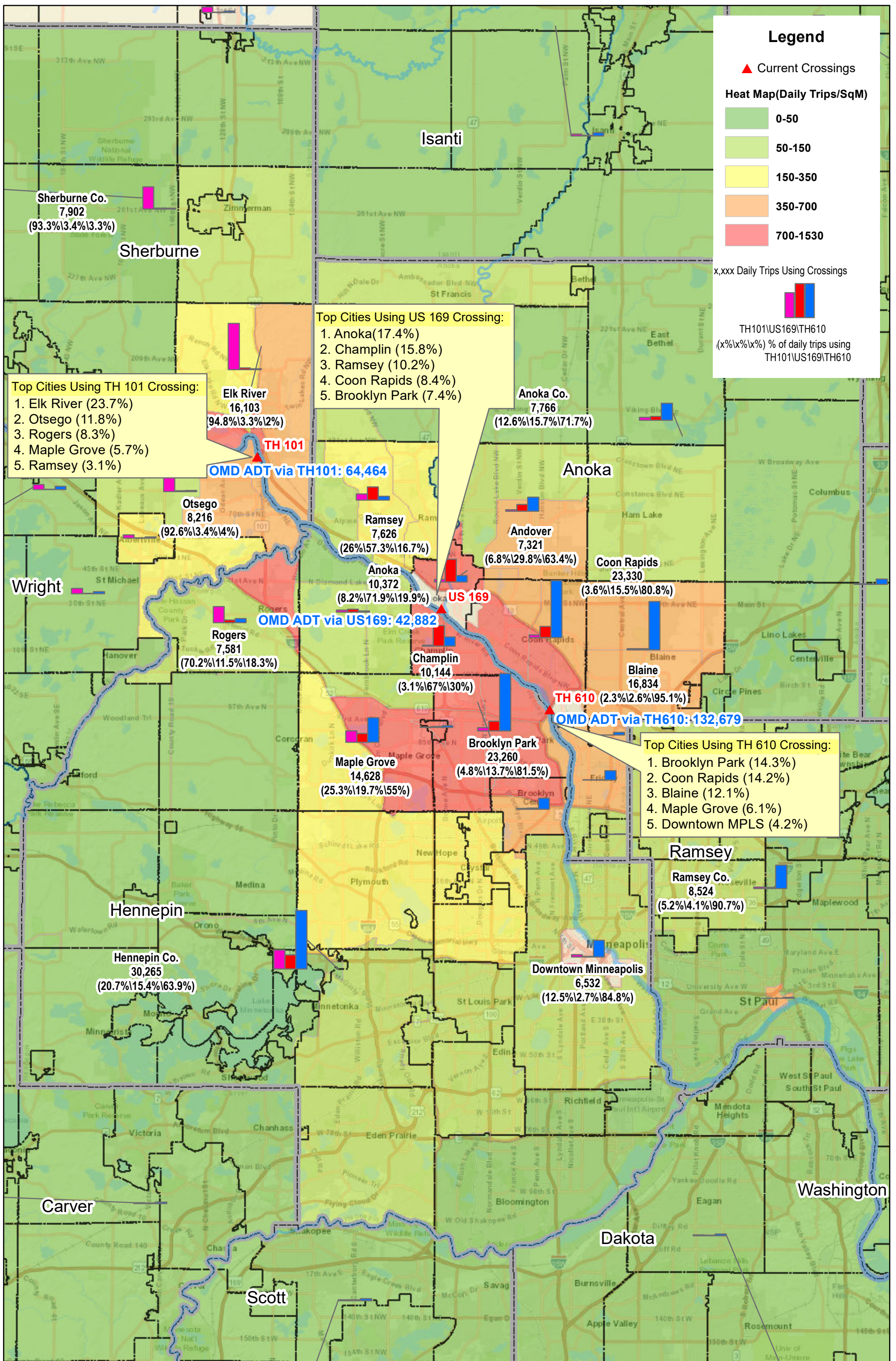
Jurisdiction		AM Peak Period (6-10am)				PM Peak Period (3-7pm)				Daily			
		Origin		Destination		Origin		Destination		Origin		Destination	
		Trips	%	Trips	%	Trips	%	Trips	%	Trips	%	Trips	%
Cities in the Study Area (North/East Side of the River)	City of Columbia Heights	13	0.3%	1	0.0%	10	0.1%	2	0.0%	42	0.1%	6	0.0%
	City of Fridley	5	0.1%	43	0.9%	41	0.3%	12	0.1%	79	0.2%	116	0.4%
	City of Spring Lake Park	0	0.0%	6	0.1%	6	0.0%	3	0.0%	9	0.0%	10	0.0%
	City of Blaine	5	0.1%	80	1.6%	15	0.1%	169	1.3%	51	0.2%	360	1.1%
	City of Coon Rapids	13	0.3%	170	3.4%	17	0.1%	258	1.9%	83	0.3%	744	2.3%
	City of Anoka	4	0.1%	349	7.0%	19	0.1%	172	1.3%	45	0.1%	830	2.6%
	City of Andover	2	0.0%	125	2.5%	11	0.1%	195	1.4%	19	0.1%	483	1.5%
	City of Ramsey	11	0.2%	347	7.0%	26	0.2%	891	6.6%	64	0.2%	2,150	6.7%
	City of Nowthen	4	0.1%	78	1.6%	6	0.0%	354	2.6%	22	0.1%	805	2.5%
City of Elk River	111	2.2%	2,140	43.0%	186	1.4%	6,151	45.5%	558	1.7%	14,834	45.9%	
Cities in the Study Area (South/West Side of the River)	City of Brooklyn Center	20	0.4%	4	0.1%	160	1.2%	1	0.0%	285	0.9%	10	0.0%
	City of Brooklyn Park	94	1.9%	17	0.3%	589	4.4%	17	0.1%	1,066	3.3%	49	0.2%
	City of Osseo	17	0.3%	0	0.0%	55	0.4%	0	0.0%	136	0.4%	0	0.0%
	City of Champlin	50	1.0%	7	0.1%	141	1.0%	14	0.1%	274	0.8%	36	0.1%
	City of Maple Grove	340	6.8%	28	0.6%	1,616	12.0%	21	0.2%	3,574	11.1%	95	0.3%
	City of Dayton	80	1.6%	0	0.0%	304	2.2%	2	0.0%	607	1.9%	26	0.1%
	City of Rogers	617	12.4%	37	0.7%	2,148	15.9%	59	0.4%	5,119	15.8%	174	0.5%
	City of Otsego	1,640	33.0%	57	1.1%	2,446	18.1%	158	1.2%	7,195	22.3%	417	1.3%
	City of Albertville	221	4.4%	6	0.1%	292	2.2%	17	0.1%	943	2.9%	46	0.1%
City of St Michael	407	8.2%	21	0.4%	640	4.7%	36	0.3%	1,718	5.3%	87	0.3%	
Downtowns	Downtown Minneapolis	34	0.7%	46	0.9%	387	2.9%	5	0.0%	730	2.3%	66	0.2%
	Downtown St Paul	0	0.0%	2	0.0%	12	0.1%	2	0.0%	46	0.1%	8	0.0%
Outer Counties*	Anoka County*	8	0.2%	173	3.5%	13	0.1%	378	2.8%	46	0.1%	907	2.8%
	Isanti County	7	0.1%	67	1.3%	6	0.0%	314	2.3%	23	0.1%	597	1.8%
	Sherburne County	103	2.1%	583	11.7%	54	0.4%	3,338	24.7%	243	0.8%	6,766	20.9%
	Wright County	411	8.3%	18	0.4%	468	3.5%	62	0.5%	1,548	4.8%	140	0.4%
	Hennepin County	488	9.8%	91	1.8%	3,228	23.9%	26	0.2%	6,052	18.7%	187	0.6%
	Ramsey County	40	0.8%	103	2.1%	113	0.8%	55	0.4%	290	0.9%	215	0.7%
	Washington County	11	0.2%	21	0.4%	21	0.2%	13	0.1%	71	0.2%	57	0.2%
	Dakota County	56	1.1%	5	0.1%	106	0.8%	7	0.1%	336	1.0%	21	0.1%
	Scott County	38	0.8%	3	0.1%	77	0.6%	0	0.0%	234	0.7%	6	0.0%
	Carver County	25	0.5%	0	0.0%	103	0.8%	2	0.0%	207	0.6%	8	0.0%
	Chisago County	0	0.0%	27	0.5%	0	0.0%	42	0.3%	4	0.0%	98	0.3%
	McLeod/Sibley County	6	0.1%	0	0.0%	0	0.0%	0	0.0%	27	0.1%	0	0.0%
	Le Sueur/Rice/Goodhue County	9	0.2%	1	0.0%	0	0.0%	0	0.0%	51	0.2%	2	0.0%
Wisconsin	2	0.0%	5	0.1%	0	0.0%	4	0.0%	12	0.0%	12	0.0%	
External Roadways**	North	12	0.2%	308	6.2%	14	0.1%	719	5.3%	38	0.1%	1,914	5.9%
	East	3	0.1%	1	0.0%	5	0.0%	2	0.0%	15	0.0%	6	0.0%
	South	14	0.3%	0	0.0%	37	0.3%	2	0.0%	151	0.5%	5	0.0%
	West	55	1.1%	6	0.1%	140	1.0%	9	0.1%	307	0.9%	27	0.1%
Total		4,976	100%	4,976	100%	13,512	100%	13,512	100%	32,320	100%	32,320	100%

\* Excluding the above cities in the study area; \*\*Consistent with the 31 External Stations in the ABM, \*\*\* Highlighted are 4% or greater



Author: HXiao  
Date: 9/9/2020

Proposed Three Subregions for Different TAZ Aggregation Levels

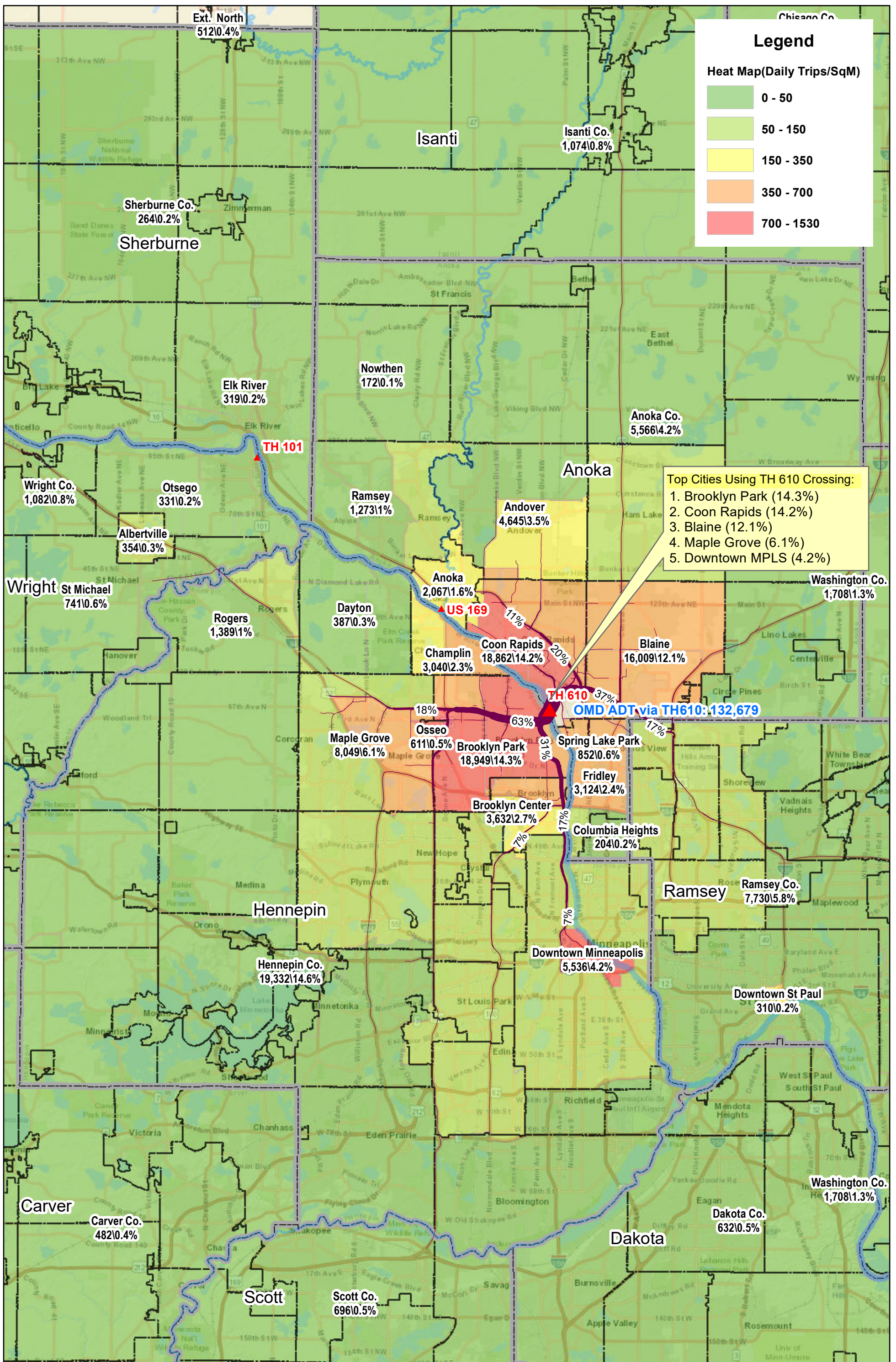


Author: HXiao  
Date: 10/5/2020

Total Origin Daily Trips Using Current Three Crossings

Figure 1.1

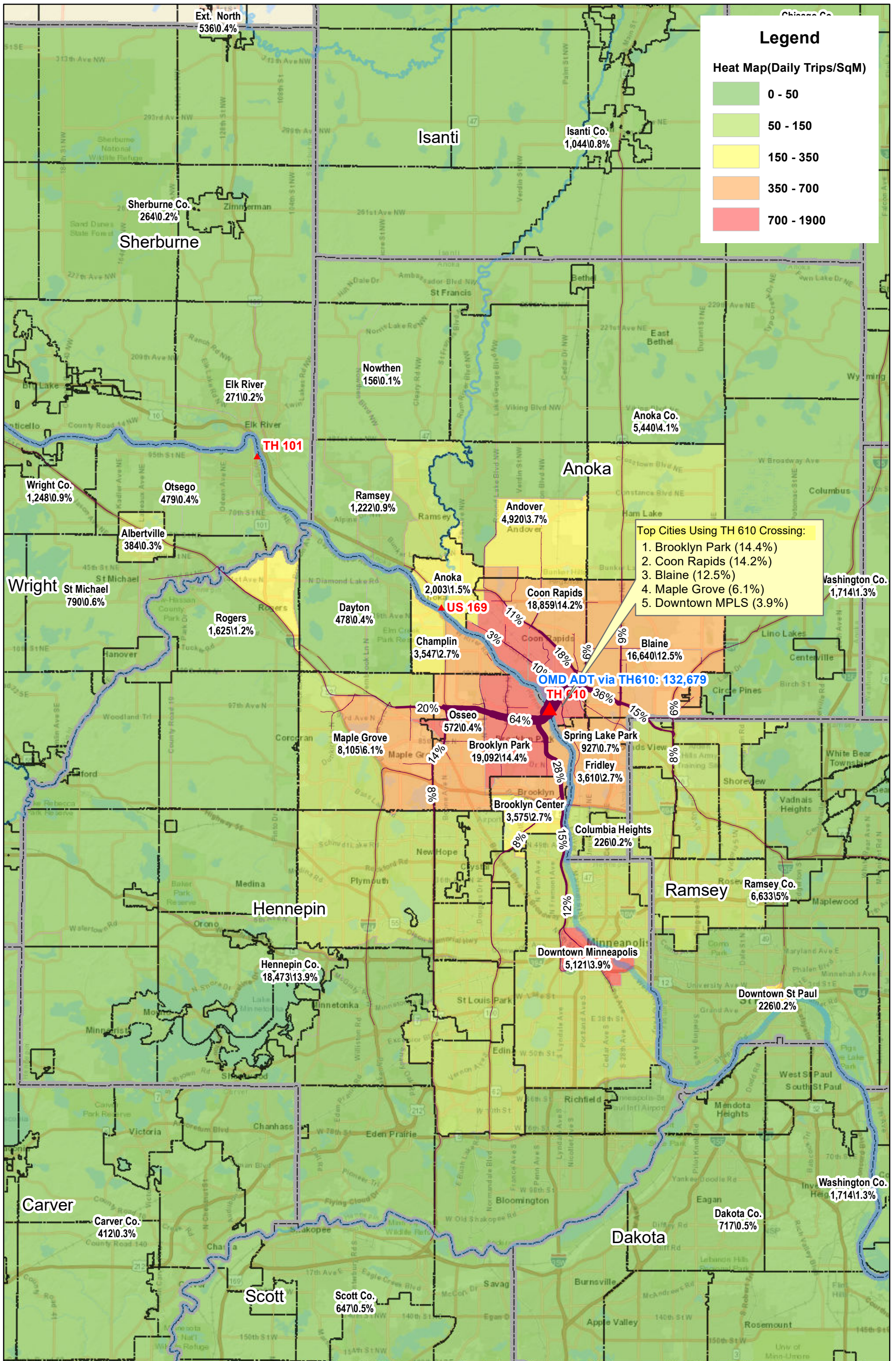




Author: HXiao  
Date: 10/5/2020

Total Origin Daily Trips Using the TH 610 Crossing

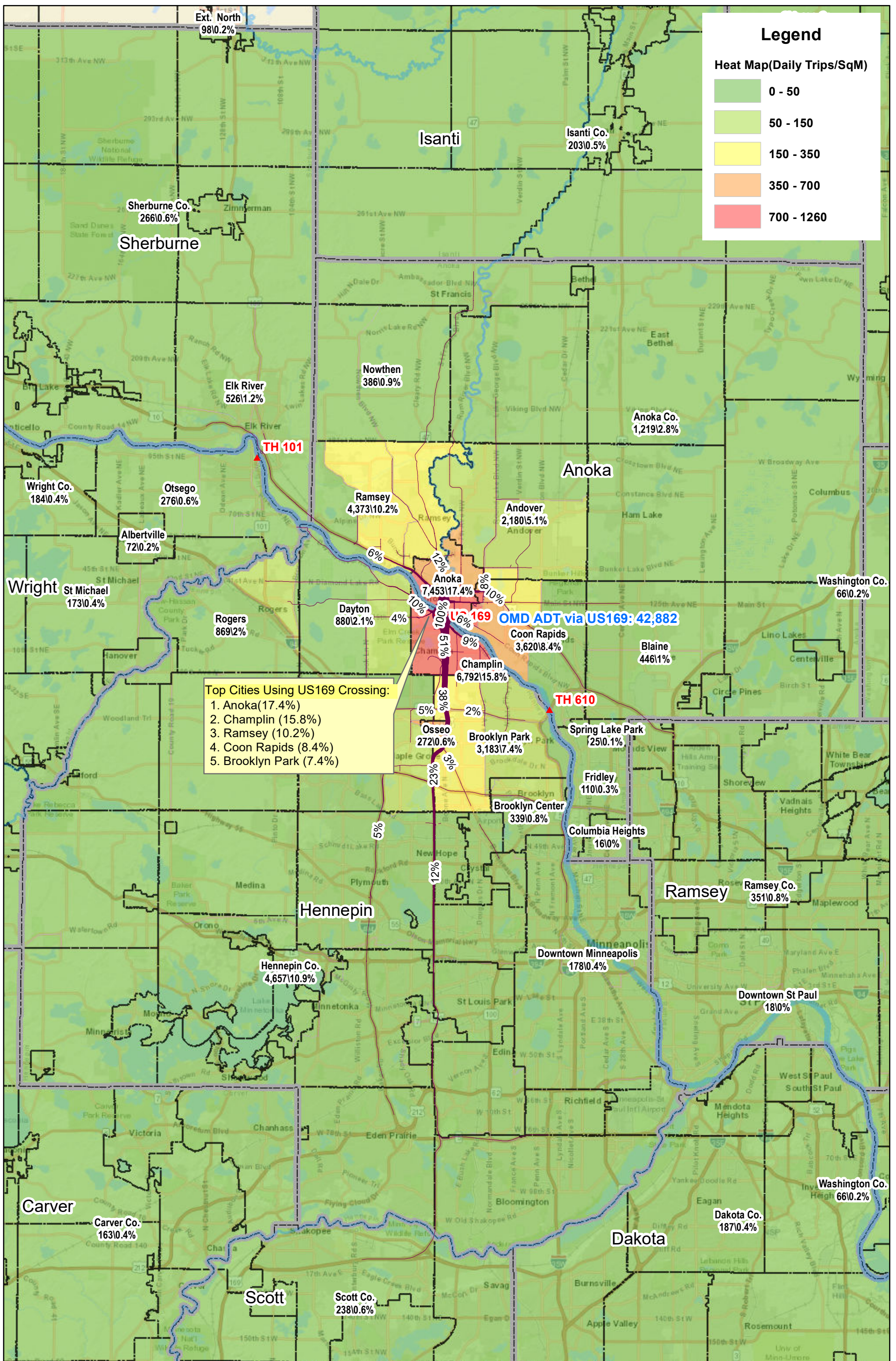
Figure 2.1



Author: HXiao  
Date: 10/5/2020

Total Destination Daily Trips Using the TH 610 Crossing

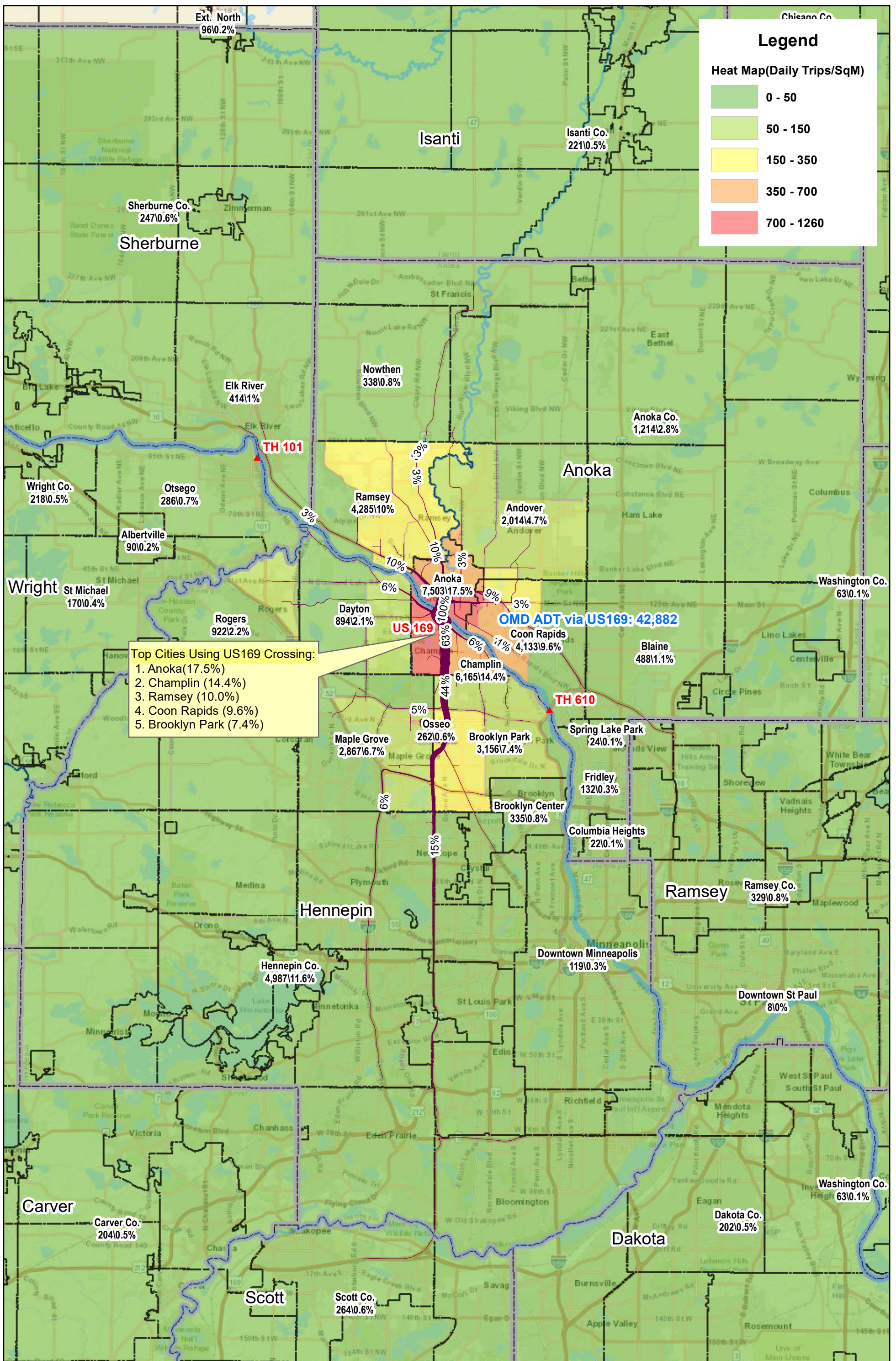
Figure 2.2



Author: HXiao  
Date: 10/5/2020

Total Origin Daily Trips Using the US169 Crossing

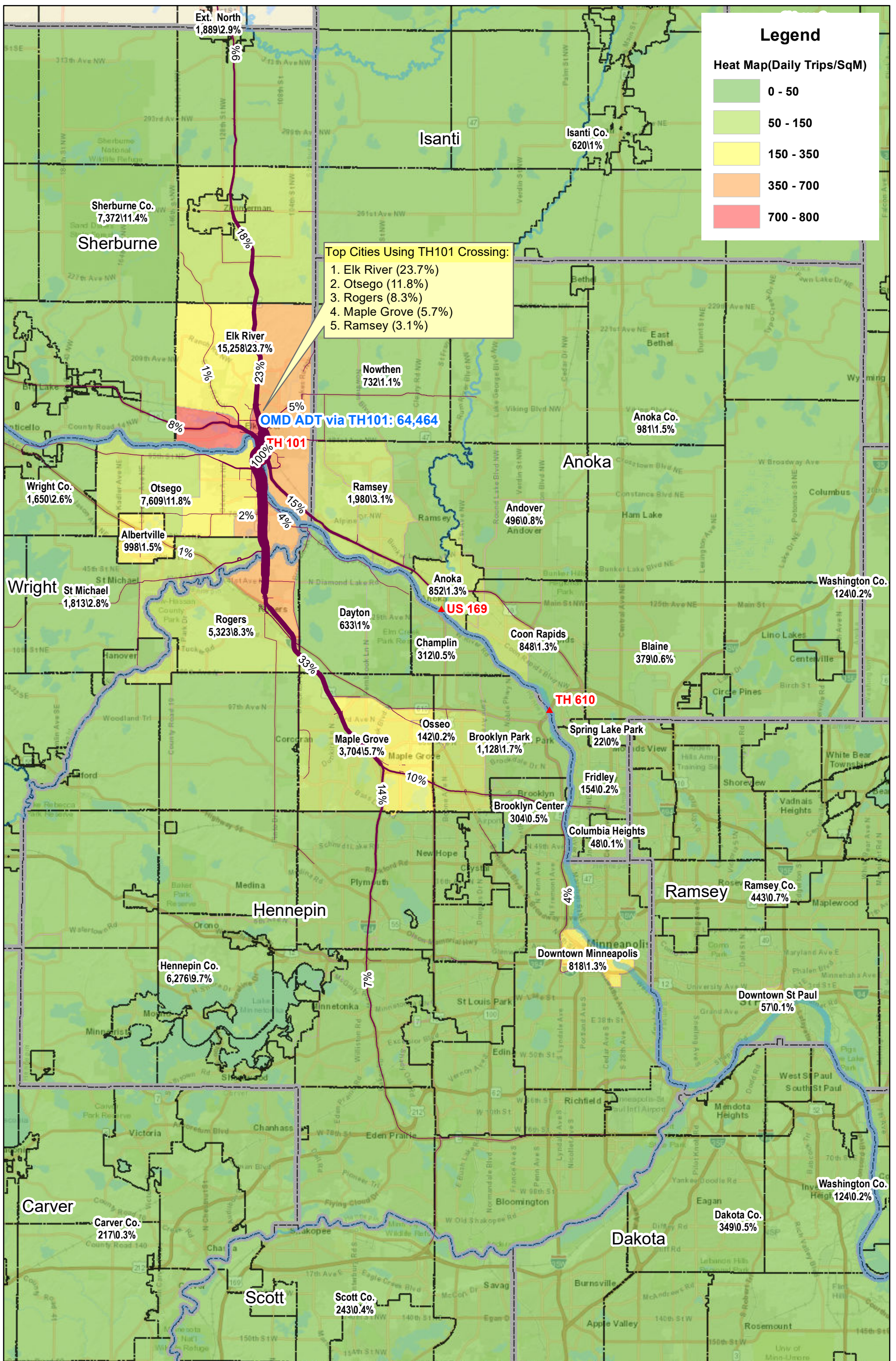
Figure 3.1



Author: HXiao  
Date: 10/5/2020

Total Destination Daily Trips Using the US169 Crossing

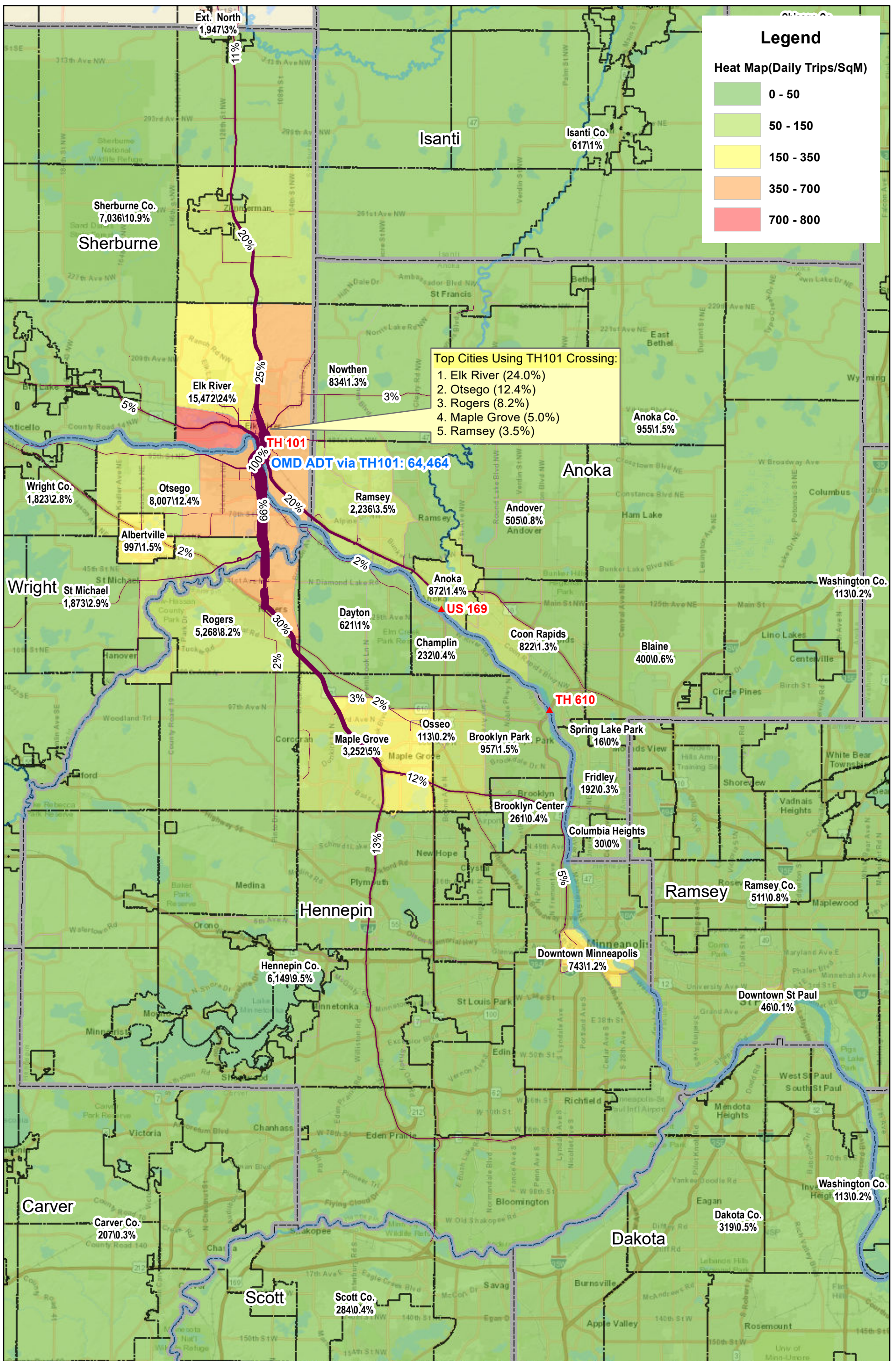
Figure 3.2



Author: HXiao  
Date: 10/5/2020

Total Origin Daily Trips Using the TH101 Crossing

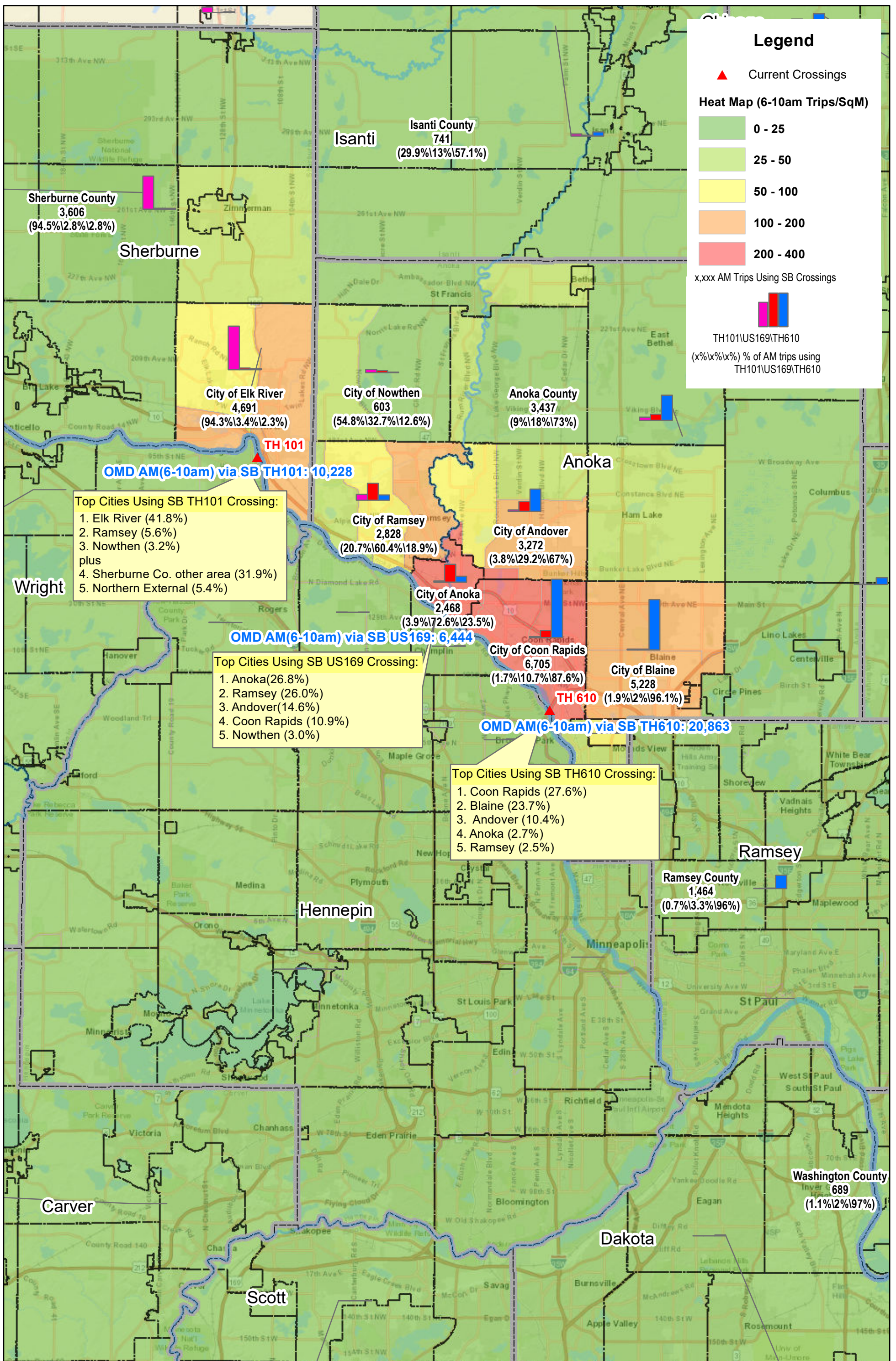
Figure 4.1



Author: HXiao  
Date: 10/5/2020

Total Destination Daily Trips Using the TH101 Crossing

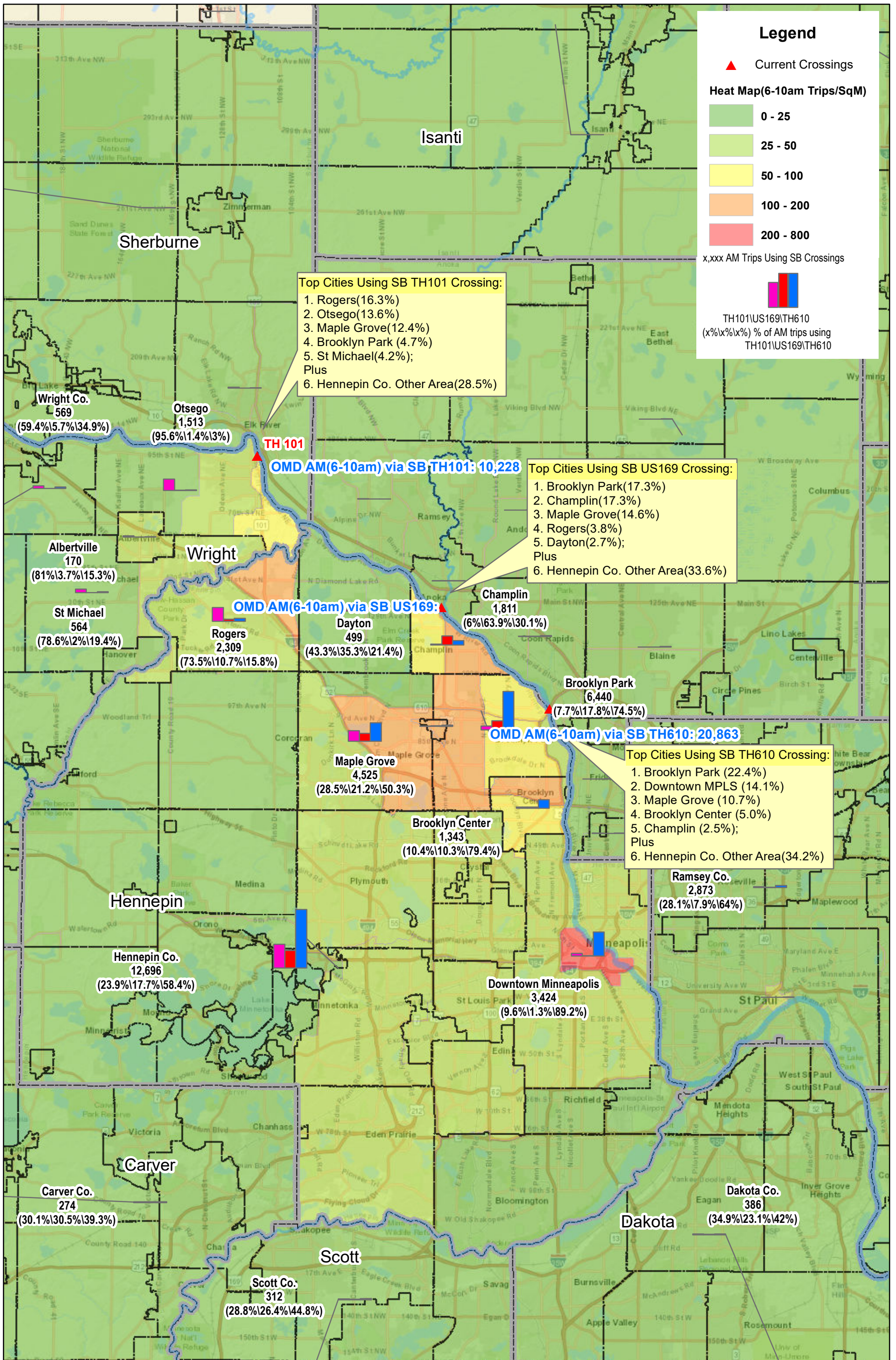
Figure 4.2



Author: HXiao  
Date: 10/5/2020

Total Origin Trips Using Current Three Crossings in Southbound(6-10am)

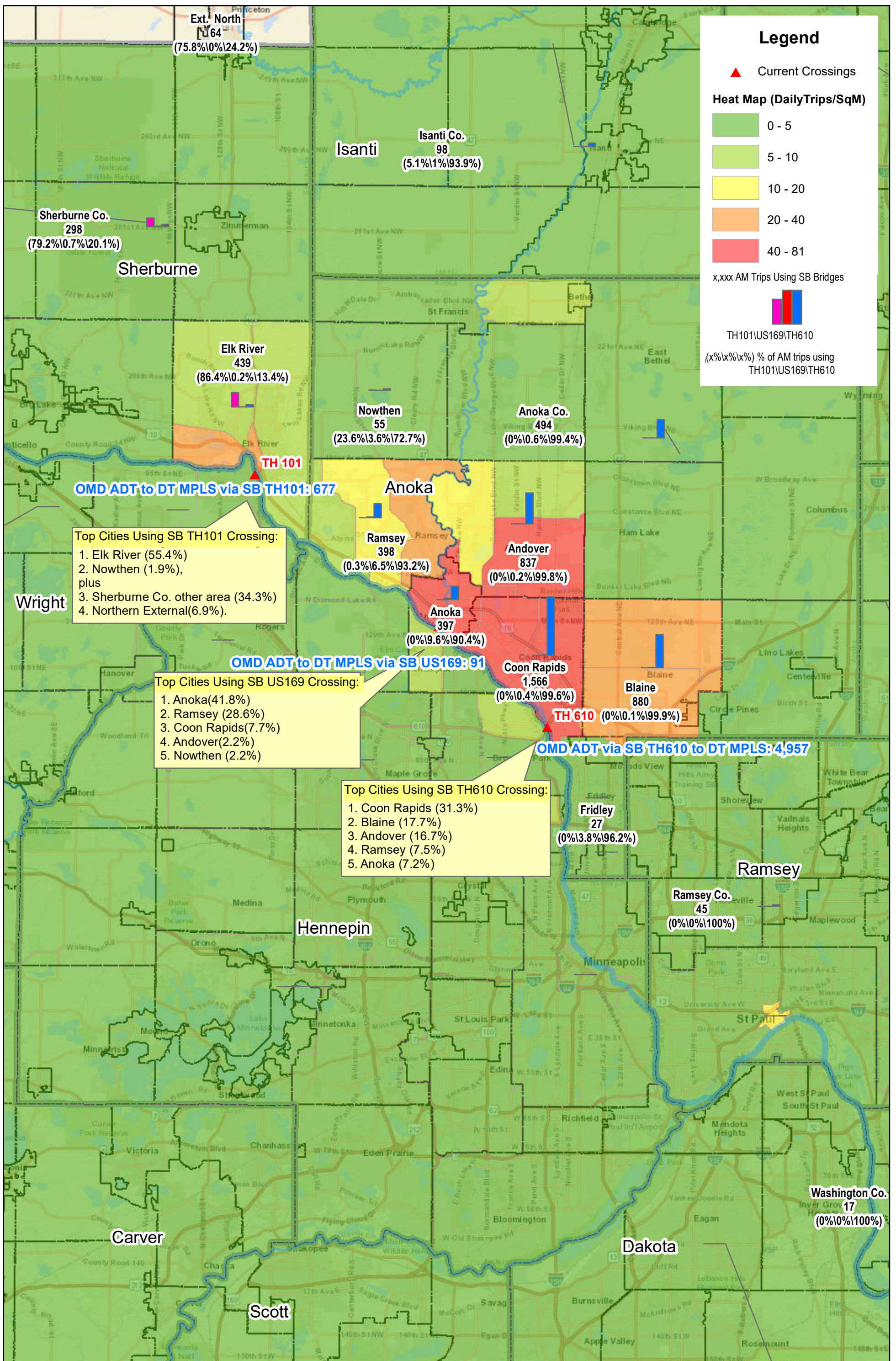
Figure 5.1



Author: HXiao  
Date: 10/5/2020

Total Destination Trips Using Current Three Crossings in Southbound(6-10am)

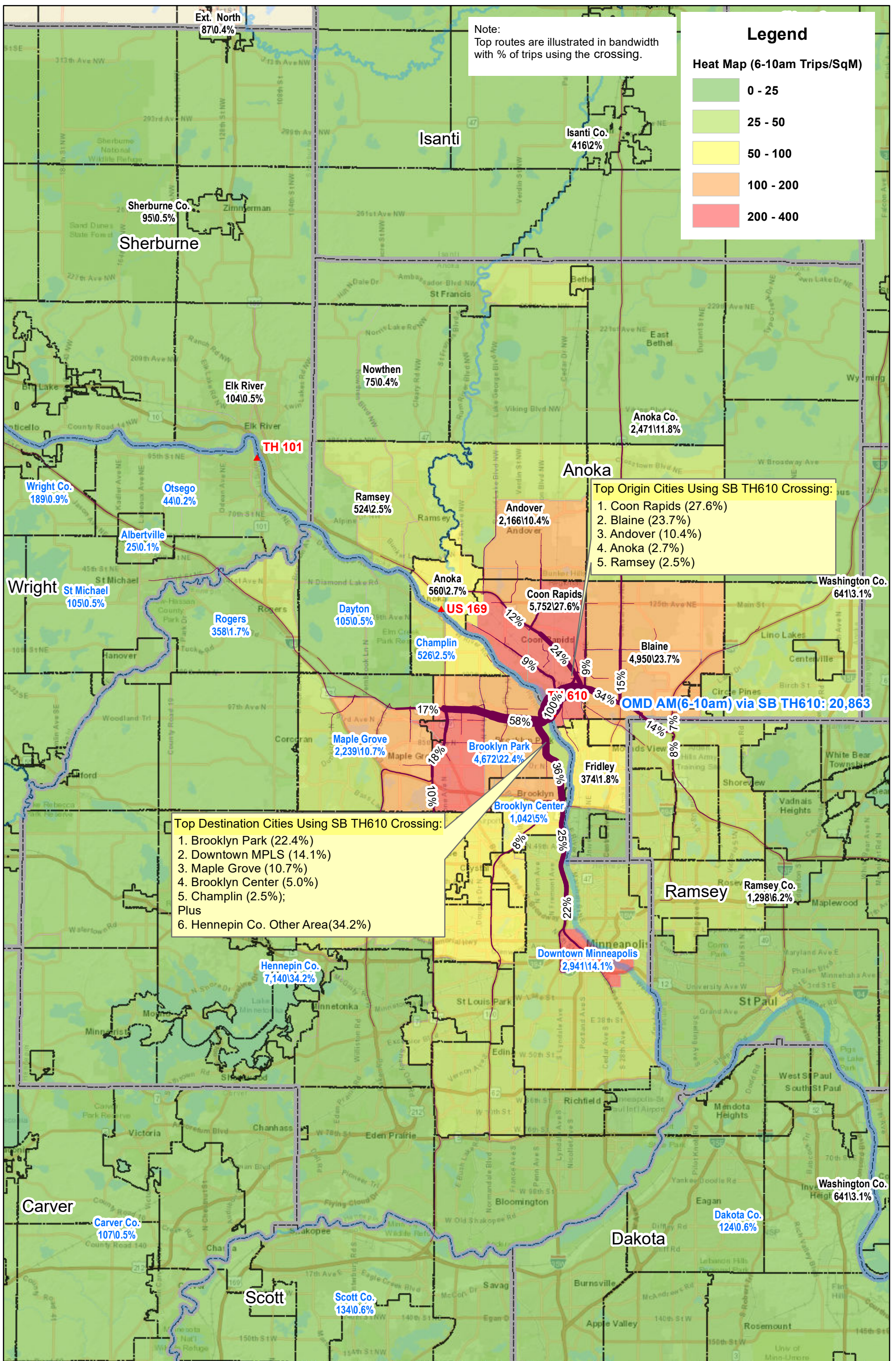
Figure 5.2



Author: HXiao  
Date: 10/5/2020

Total Daily Origin Trips Using Current Three Crossings  
with Downtown Minneapolis as the Destination

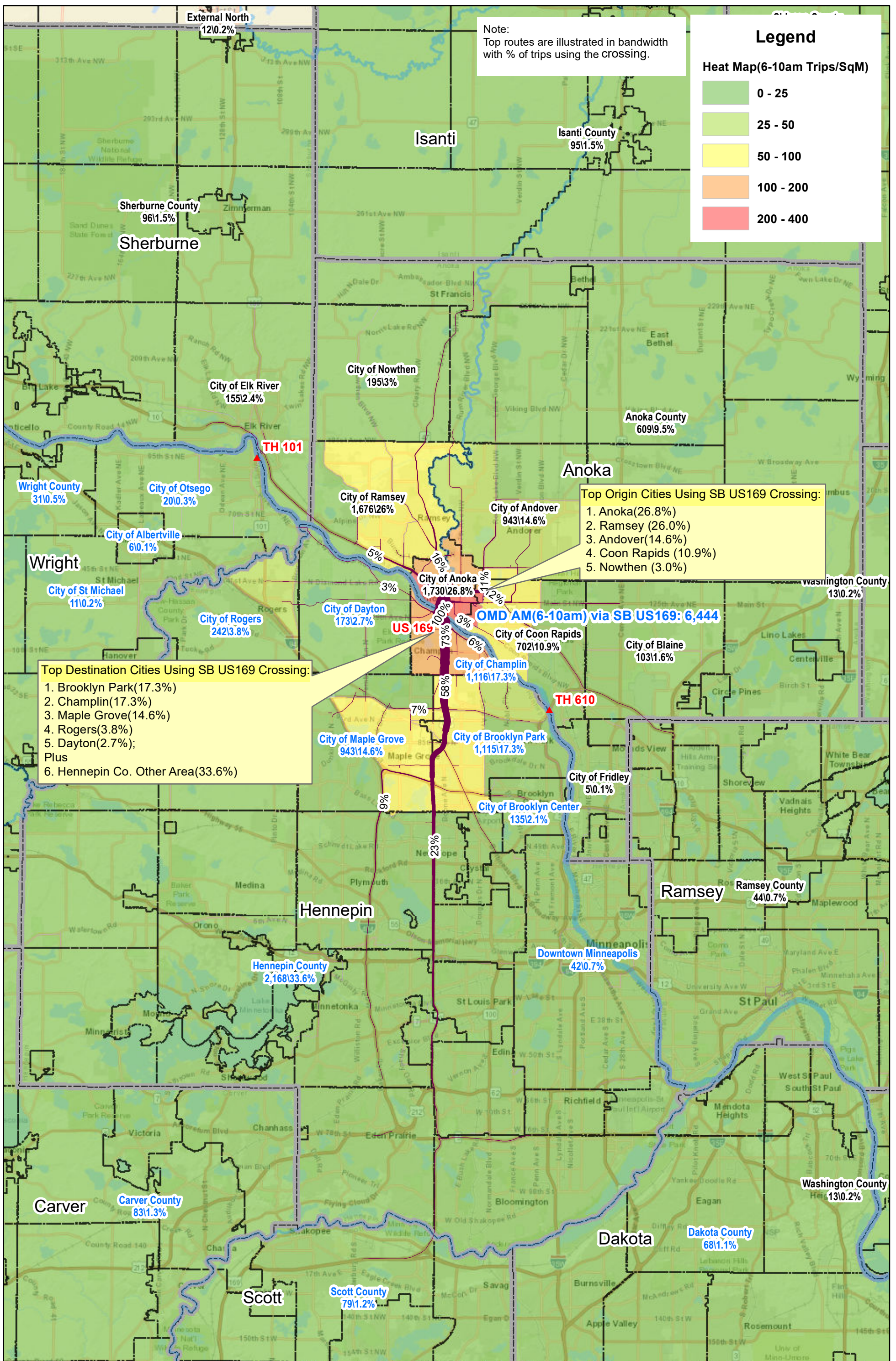
Figure 5.3



Author: HXiao  
Date: 10/5/2020

Total Origin/Destination Trips Using the Southbound TH 610 Crossing (6-10am)

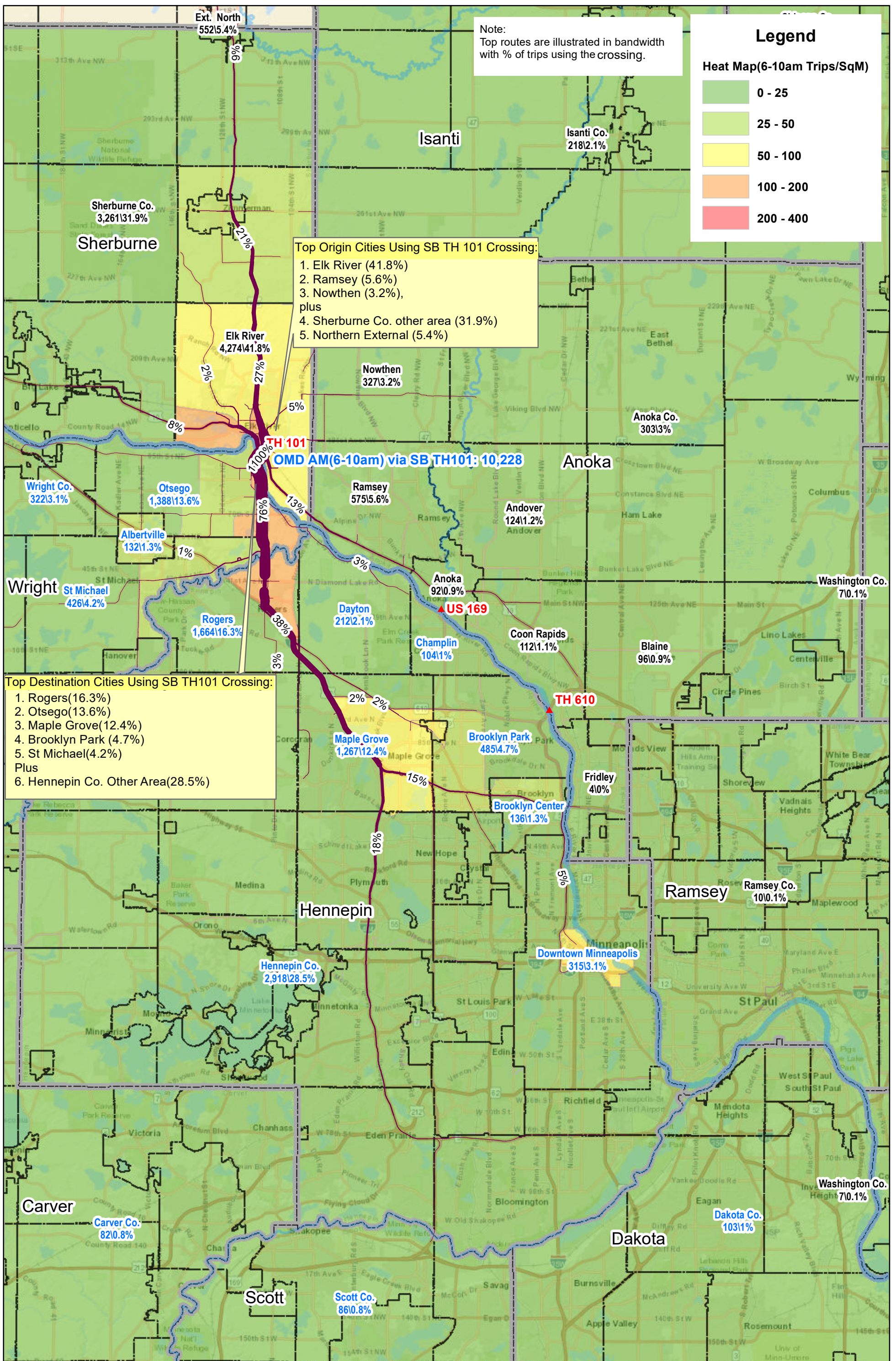
Figure 6



Author: HXiao  
Date: 10/5/2020

Total Origin/Destination Trips Using the Southbound US 169 Crossing (6-10am)

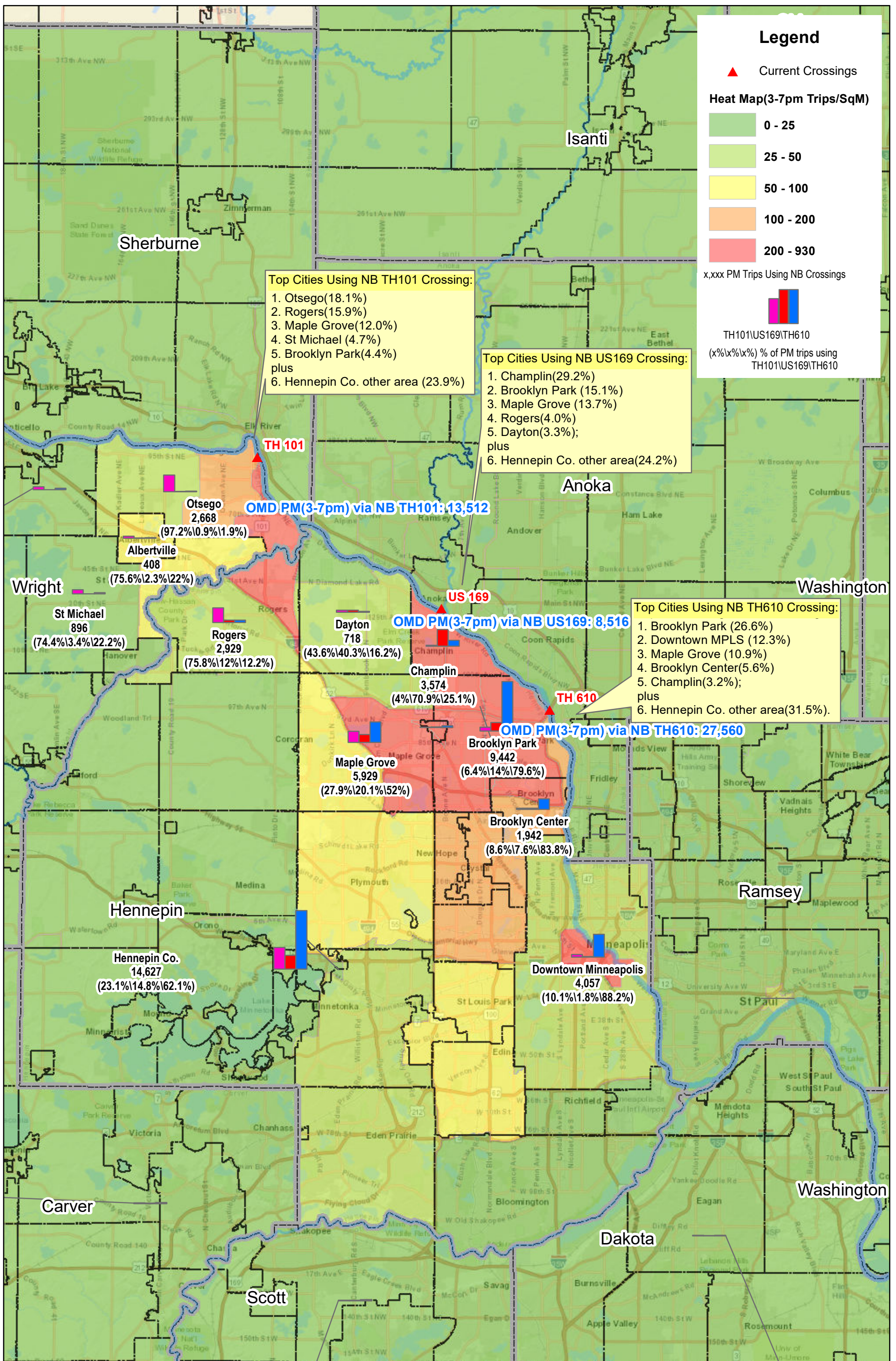
Figure 7



Author: HXiao  
Date: 10/5/2020

Total Origin/Destination Trips Using the Southbound US 101 Crossing (6-10am)

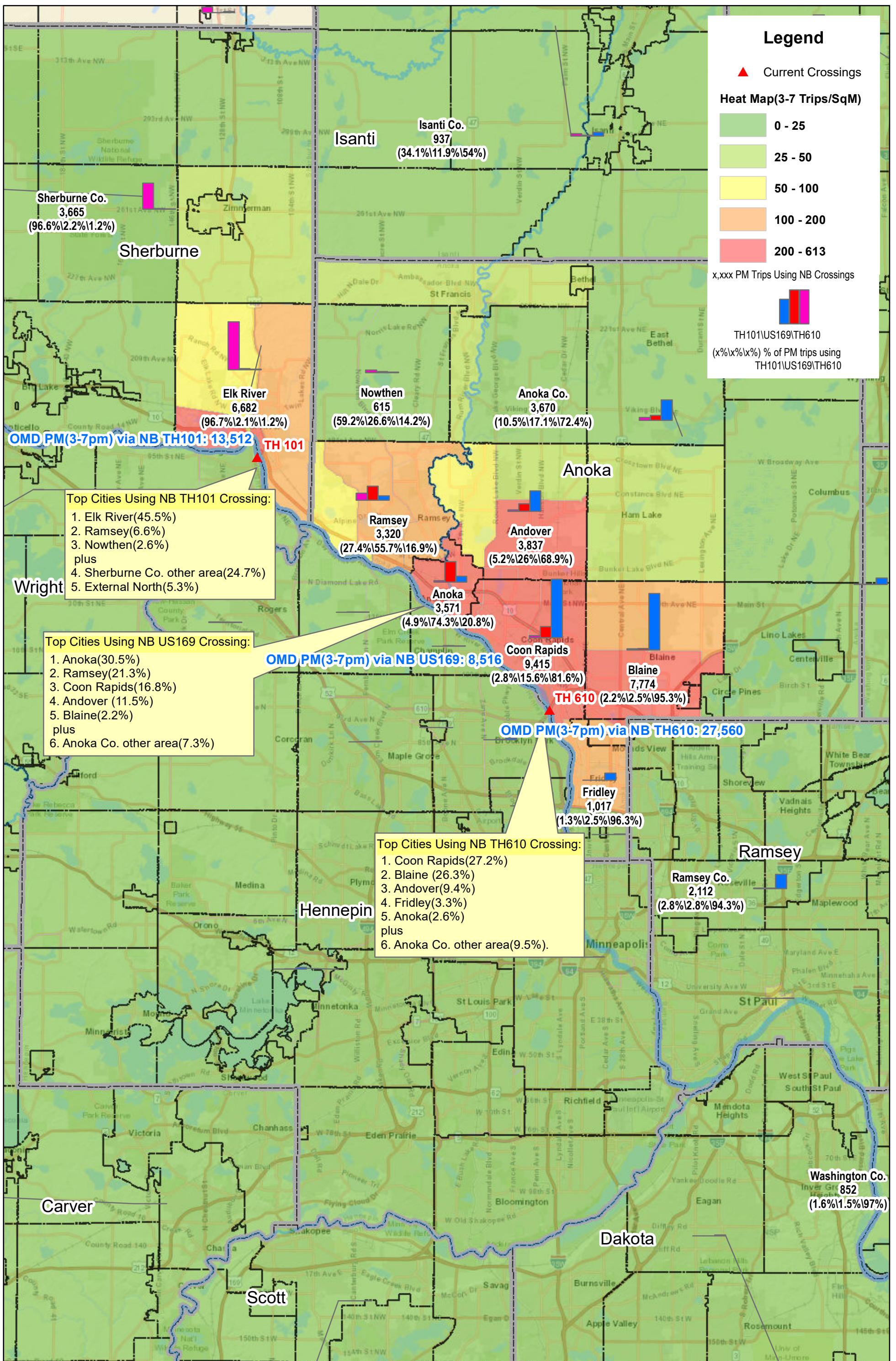
Figure 8



Author: HXiao  
Date: 10/5/2020

Total Origin Trips Using Current Three Crossings in Northbound(3-7pm)

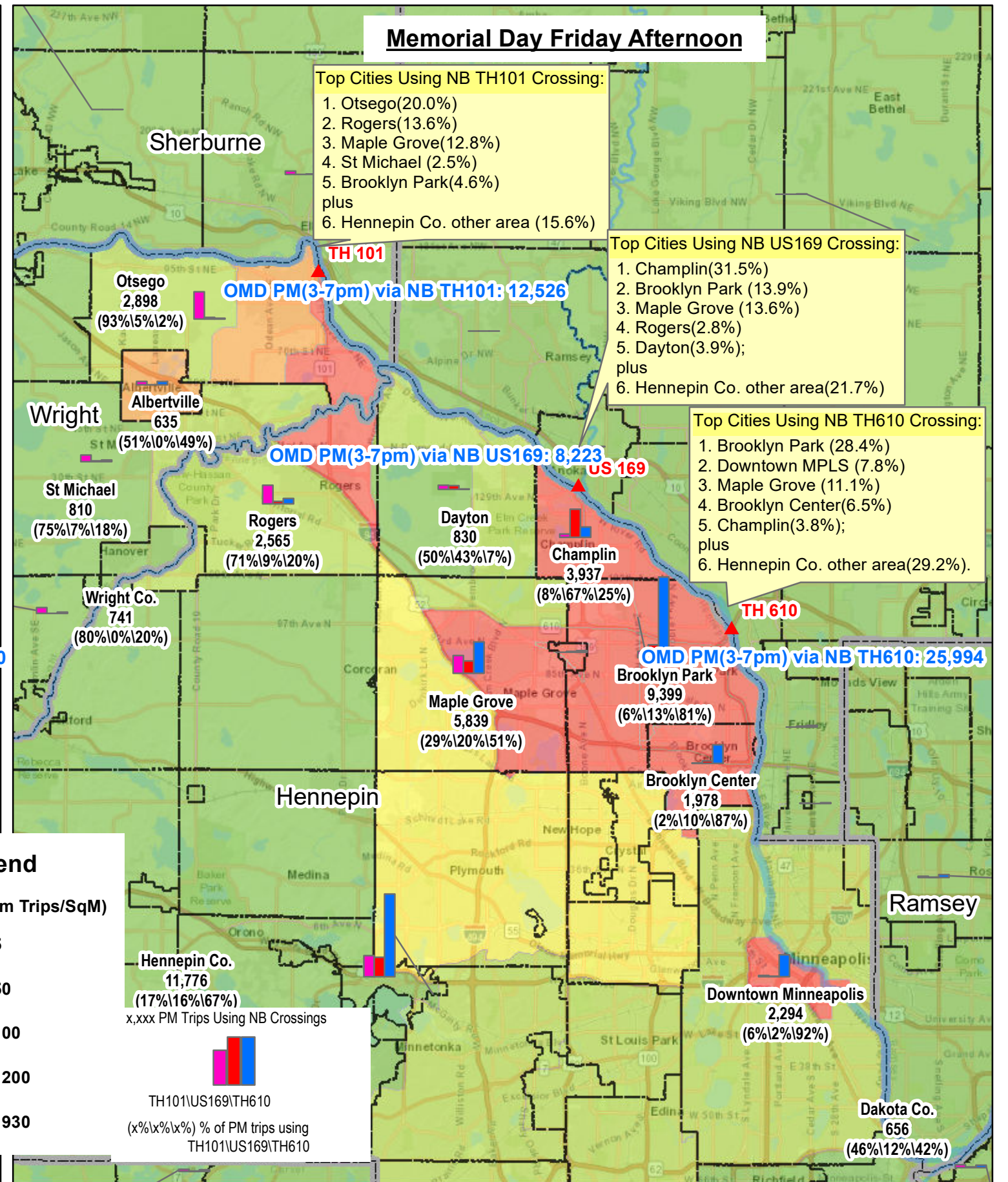
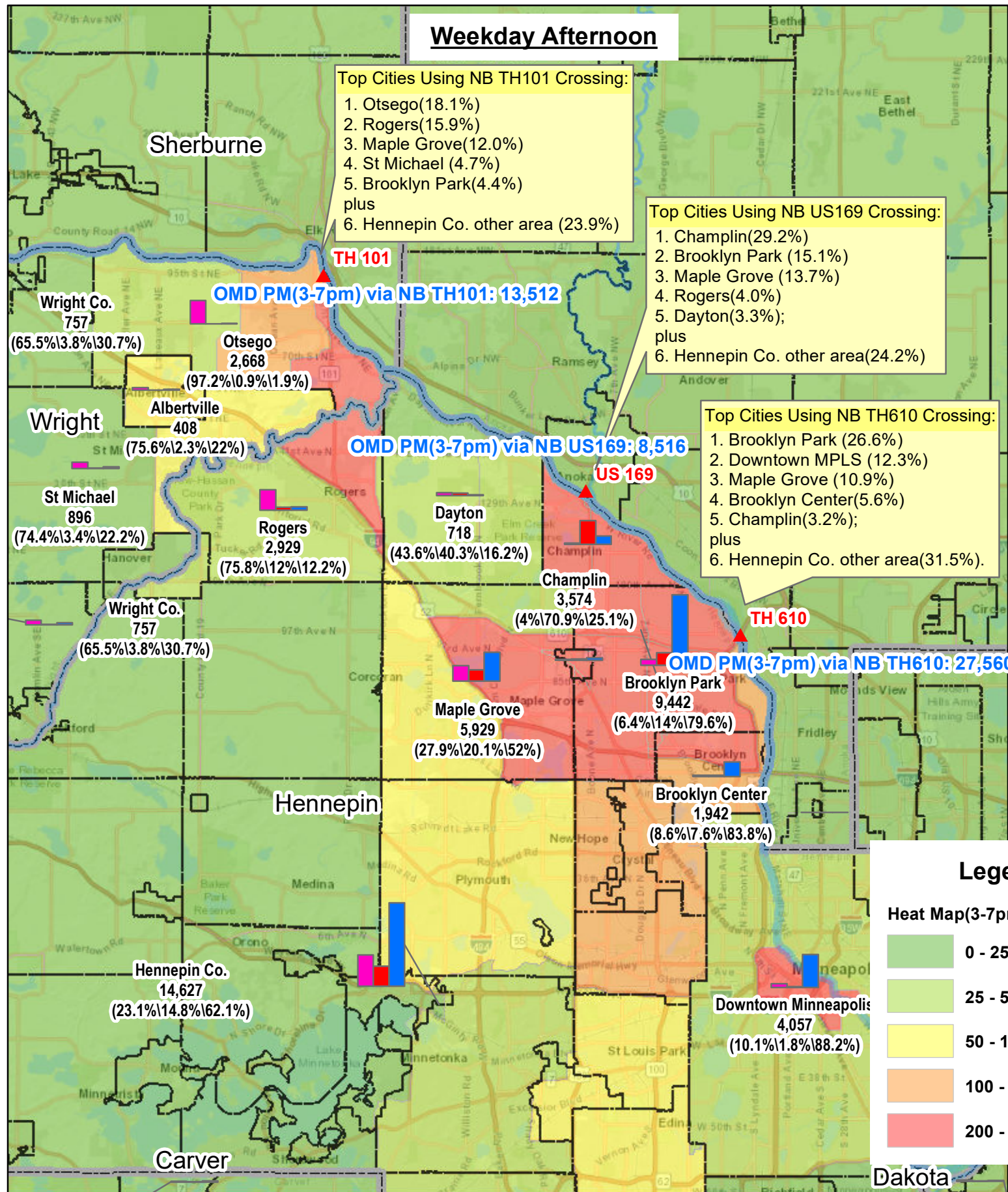
Figure 9.1



Author: HXiao  
Date: 10/5/2020

Total Destination Trips Using Current Three Crossings in Northbound(3-7pm)

Figure 9.2



N  
 Author: HXiao  
 Date: 10/12/2020

Total Origin Trips Using Current Three Crossings in Northbound  
 Comparison Between Weekday and Holiday Friday Afternoons (3-7pm)

Figure 9.3

### Weekday Afternoon

### Memorial Day Friday Afternoon

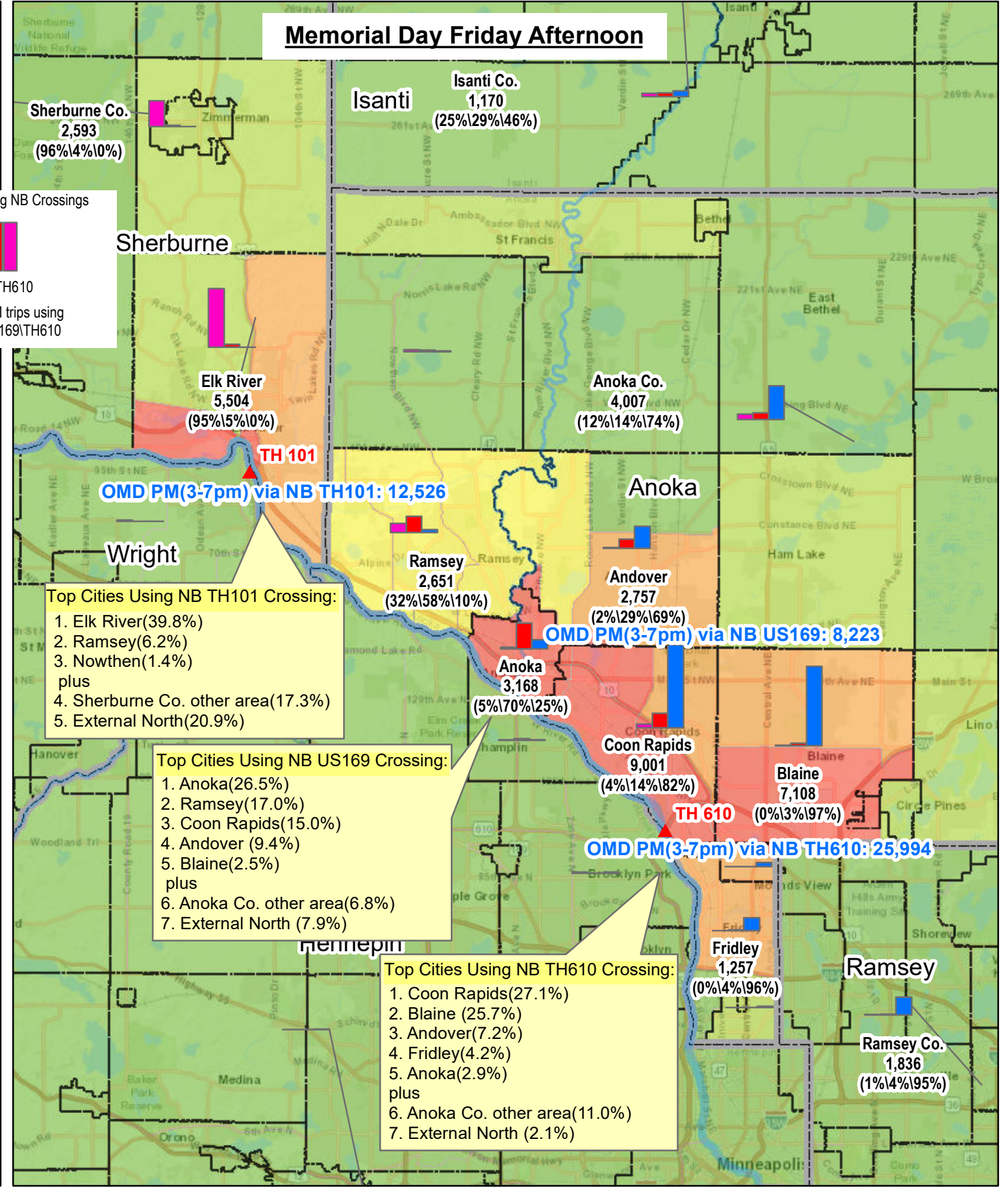
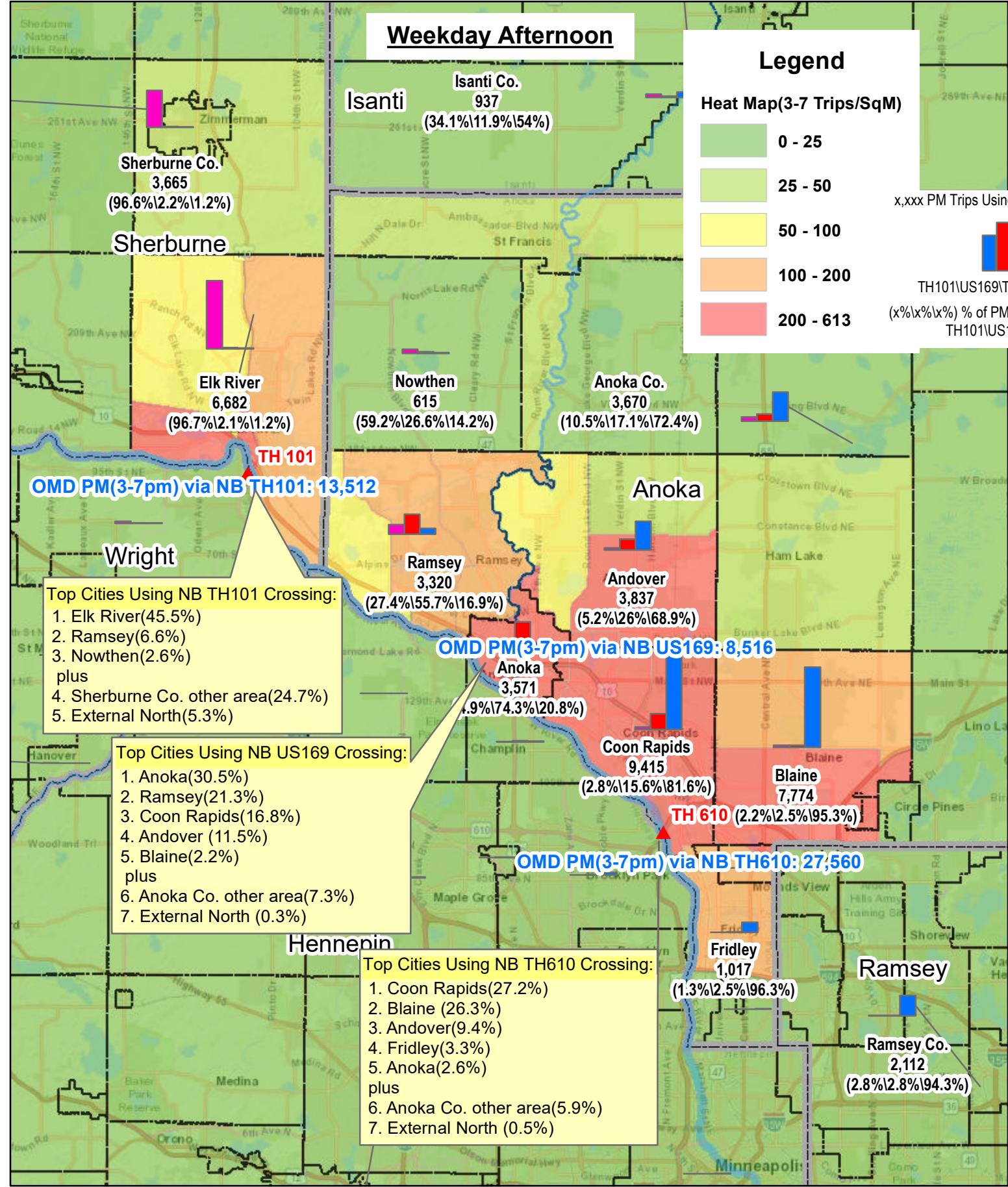
#### Legend

**Heat Map(3-7 Trips/SqM)**

- 0 - 25
- 25 - 50
- 50 - 100
- 100 - 200
- 200 - 613

x,xxx PM Trips Using NB Crossings

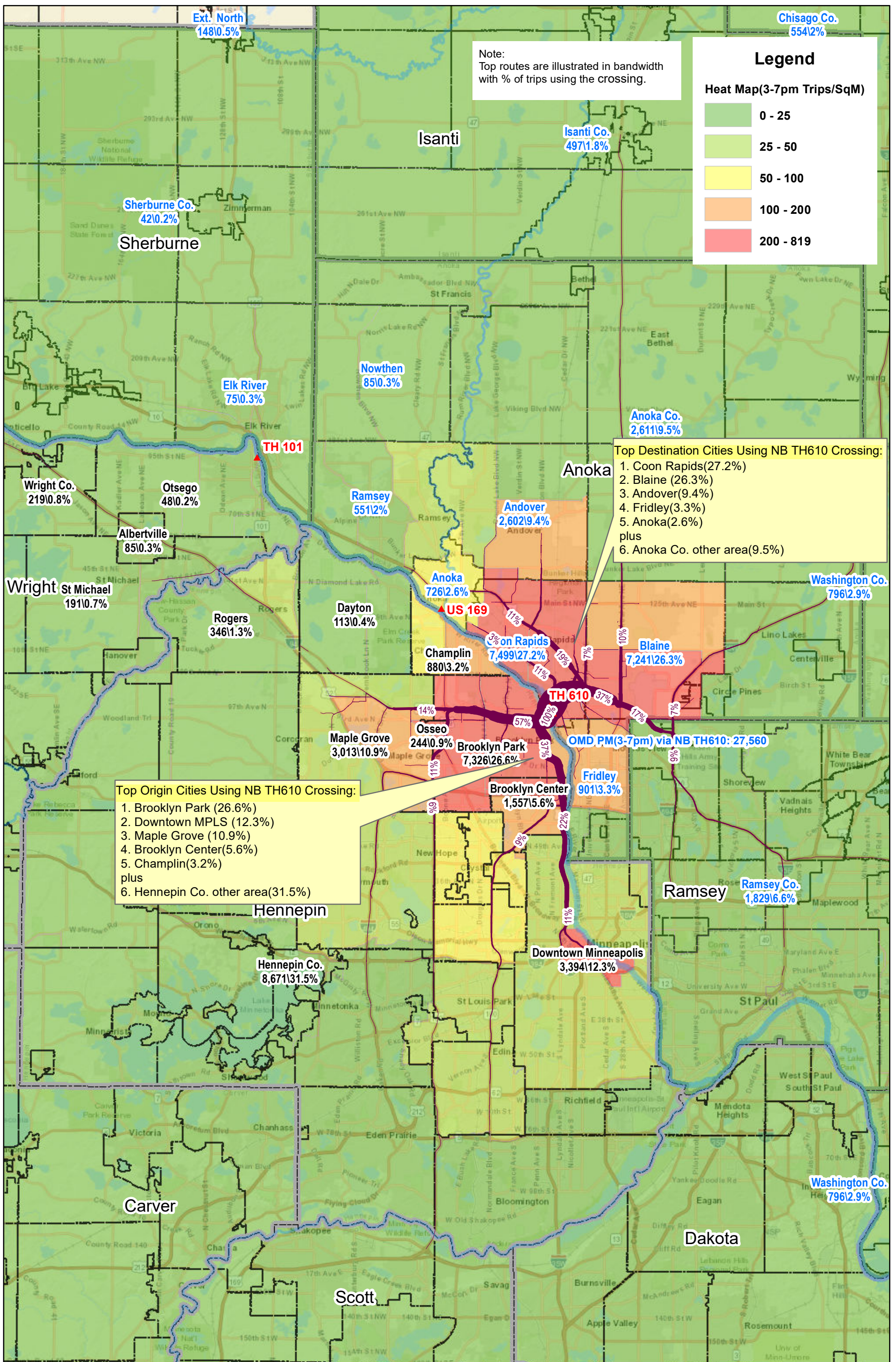
TH101\US169\TH610  
(x%\x%\x%) % of PM trips using TH101\US169\TH610



N  
 Author: HXiao  
 Date: 10/12/2020

Total Destination Trips Using Current Three Crossings in Northbound Comparison Between Weekday and Holiday Afternoons (3-7pm)

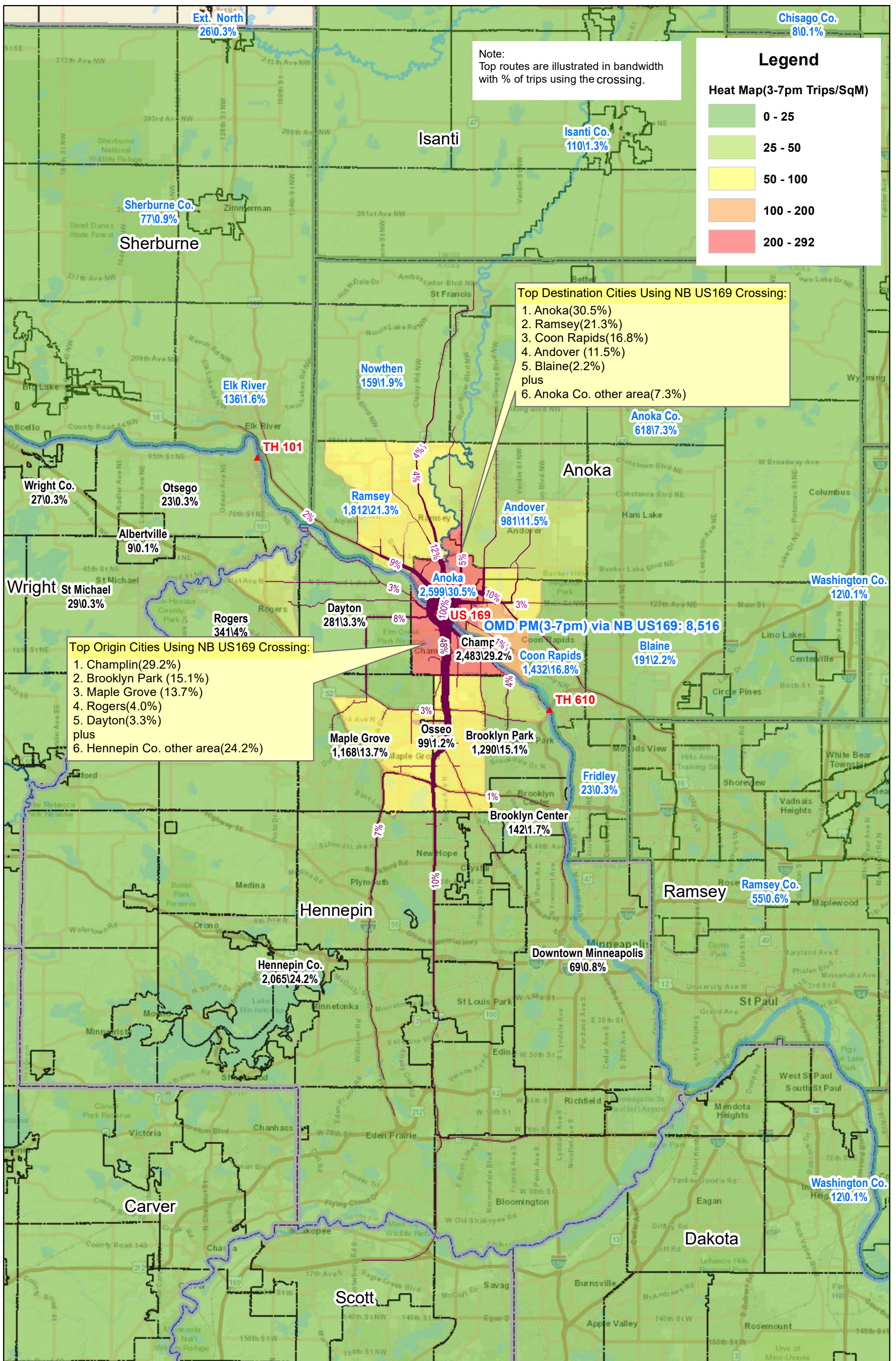
Figure 9.4



Author: HXiao  
Date: 10/5/2020

Origin/Destination Trips and Top Routes Using the Northbound TH 610 Crossings (3-7pm)

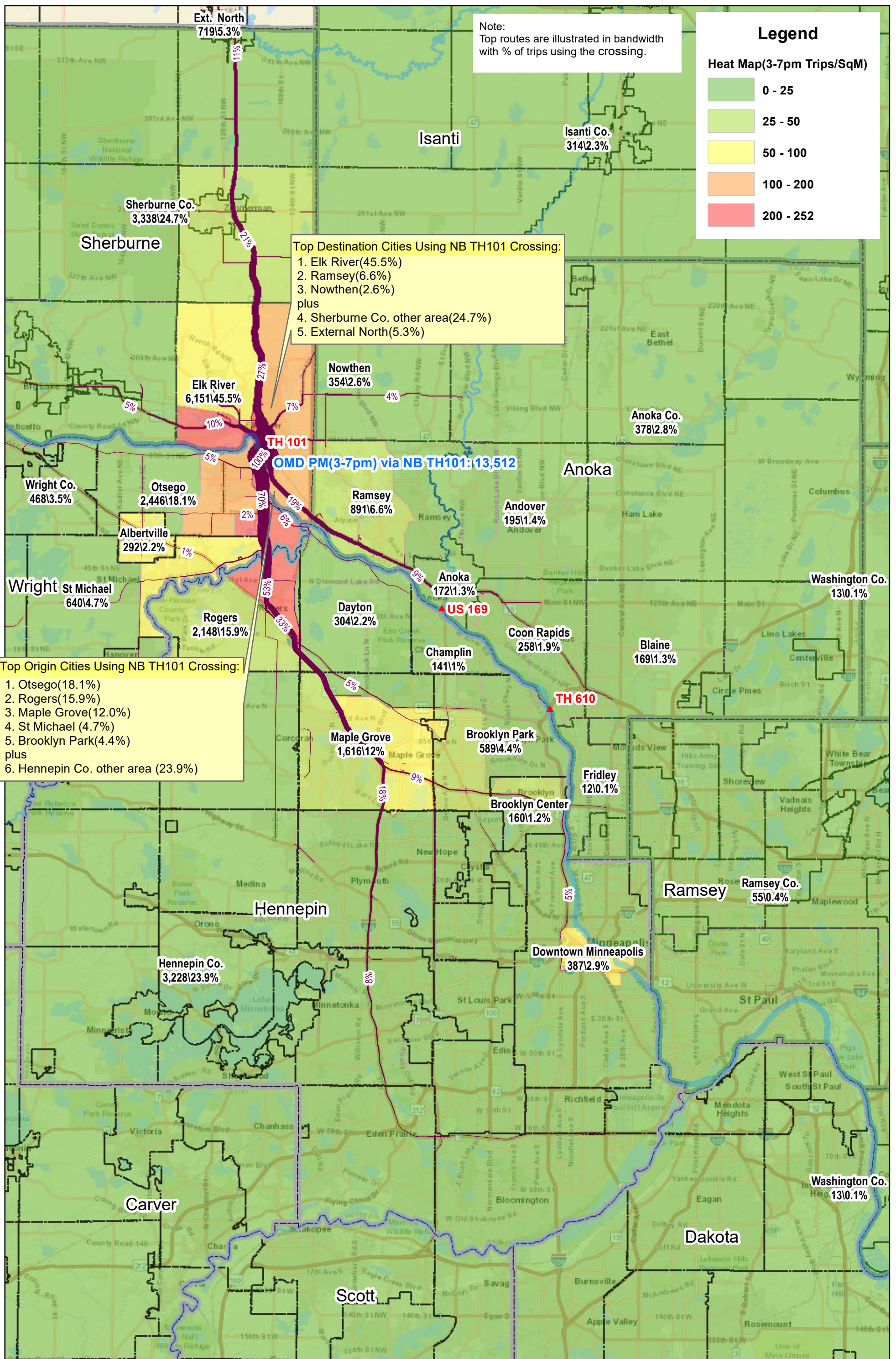
Figure 10



Author: HXiao  
 Date: 10/5/2020

Origin/Destination Trips and Top Routes Using the Northbound US 169 Crossing (3-7pm)

Figure 11



Author: HXiao  
Date: 10/5/2020

Origin/Destination Trips and Top Routes Using the Northbound TH101 Crossing (3-7pm)

Figure 12

Figure 13.1

Travel Distance Distributions of the Trips Using the Three Crossings

Travel Distance (Mile)	Trips		
	TH 101 Crossing	US 169 Crossing	TH 610 Crossing
0-5	3,500	4,748	716
5-10	6,356	8,225	12,392
10-15	7,436	8,805	22,159
15-20	8,050	6,748	24,390
20-25	8,139	4,760	21,835
25-30	7,226	2,992	15,175
30-35	5,442	2,023	9,968
35-40	4,887	1,402	7,154
40-45	3,692	915	4,658
45-50	2,899	576	3,349
50-55	2,116	396	2,662
55-60	1,290	294	1,826
60-65	866	192	1,464
65-70	600	151	1,053
70-75	394	149	790
75-80	267	102	690
80-85	237	80	443
85-90	186	67	361
90-95	149	54	280
95-100	145	39	186
100-105	101	27	162
105-110	118	27	132
110-115	51	20	119
115-120	50	11	110
120+	270	84	605
<b>Total</b>	<b>64,464</b>	<b>42,882</b>	<b>132,679</b>
<b>Average</b>	<b>27.7</b>	<b>18.5</b>	<b>25.8</b>

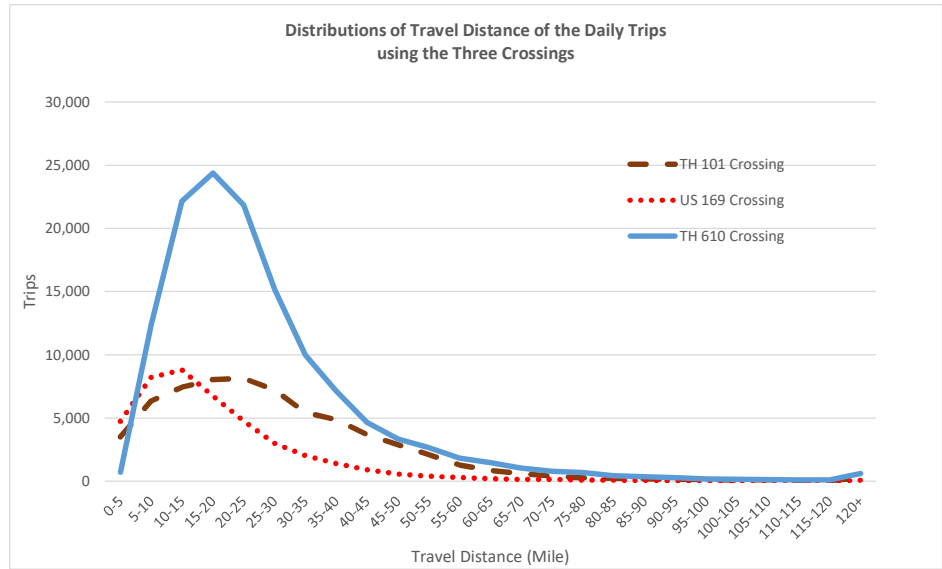
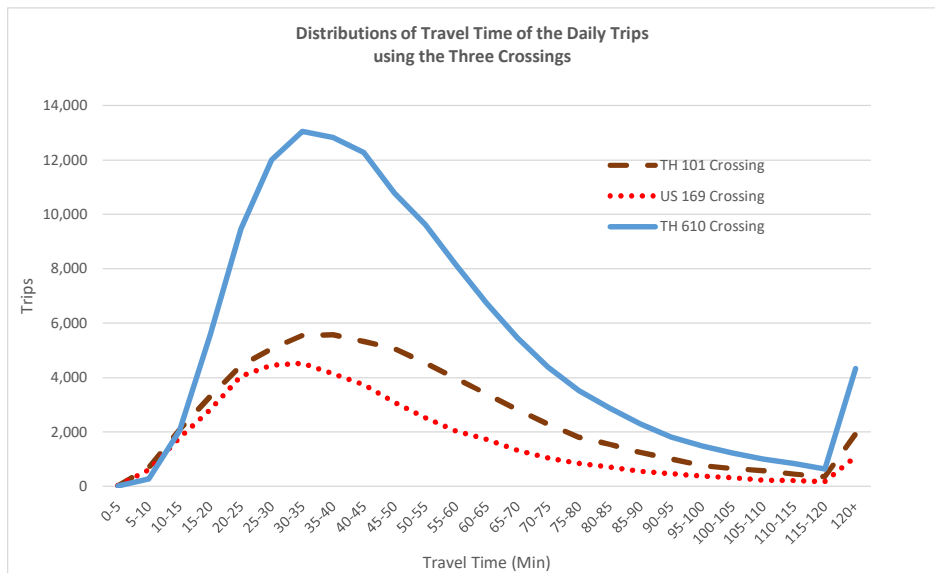


Figure 13.2

Travel Time Distributions of the Trips Using the Three Crossings

Travel Time (Min)	Trips		
	TH 101 Crossing	US 169 Crossing	TH 610 Crossing
0-5	25	33	13
5-10	686	606	277
10-15	2,074	1,781	2,038
15-20	3,301	2,818	5,573
20-25	4,439	4,052	9,470
25-30	5,063	4,458	12,007
30-35	5,550	4,525	13,047
35-40	5,574	4,143	12,826
40-45	5,333	3,734	12,271
45-50	5,063	3,091	10,786
50-55	4,537	2,525	9,629
55-60	3,976	2,036	8,140
60-65	3,398	1,725	6,729
65-70	2,816	1,323	5,462
70-75	2,286	1,044	4,374
75-80	1,809	843	3,526
80-85	1,543	711	2,876
85-90	1,246	550	2,302
90-95	1,010	467	1,815
95-100	766	379	1,484
100-105	657	318	1,226
105-110	577	232	1,002
110-115	454	218	837
115-120	359	179	642
120+	1,926	1,092	4,329
<b>Total</b>	<b>64,464</b>	<b>42,882</b>	<b>132,679</b>
<b>Average</b>	<b>50.0</b>	<b>44.5</b>	<b>50.1</b>



Note:  
Travel times include time spent looking for parking, time spent walking from the vehicle to their destination, and anytime spent stopped for traffic, red lights, or stop signs