APPENDIX B

CHAPTERS 2 & 5

Appendix B details the population, household, and employment distribution projections and distributions identified in Chapter 2 and used for Chapter 5's travel demand model. Population projections were developed in conjunction with the IDOT, SIMPCO staff, and SIMPCO member agencies. The MPO used a mathematical technique of population projection to forecast future population and housing for each of the jurisdictions within the MPO. A linear population projection method was used to forecast the population of Dakota City, and South Sioux City using 1980 and 2010 decennial census data. In forecasting the population of the unincorporated areas, the MPO used the step-down population technique. With this technique, the MPO projected the 2015 to 2045 population of each of the counties (Dakota – NE, Plymouth – IA, Union – SD, and Woodbury - IA) that make up the MPO area using the growth rate from the 1980 and 2010 decennial census. The MPO then applied proportions (population of unincorporated area in 2010/sum of the population of the 4 counties in 2010) to the sum of the population of the four counties from 2015 to 2045 to arrive at the future population for the unincorporated areas in the MPO. The 2015 to 2045 population of Sioux City, Sergeant Bluff, North Sioux City, Jefferson, and Dakota Dunes were obtained by averaging the result of the linear and geometric methods of population projections using the growth rate from the American Community Survey, 2011 to 2017. The MPO used this growth rate due to the irregularities of the historic population of these jurisdictions. The MPO held the future population of Dakota Dunes from 2025 to 2045 constant, as Dakota Dunes is expected to be built out by 2025. The MPO then adjusted the forecasted population of each of the jurisdictions from 2015 to 2045, based on the outcome of meeting with representatives from each of the jurisdictions.

The travel demand model relies on data about economic activity to predict transportation decisions and trip generation. In residential areas, the number of housing units determines trip-making potential. In non-residential areas, economic activity can be represented by several possible indicators including employment, building area, and land use area. A small number of specialized activities can be more accurately measured by more specific indicators such as student enrollment, hospital beds, or air passenger enplanements. The 2045 travel demand model relies on parcel data as the main source of socio-economic (SE) information to predict future travel behaviors in the MPO. After processing the parcel data from the four counties, each Traffic Attraction Zone's (TAZ) unique number was tagged to the parcel data using a join tool in TransCad. Socio-economic data must be imported into the parcel bin to be aggregated to the TAZ level during the travel demand model run.

The base year (2015) housing data was obtained from the parcel data. The projected population was converted to housing units using the 2010 decennial census average household size for each of the jurisdictions within the MPO. The result was then added to the base year housing data to obtain the total estimated housing units from 2025 to 2045 for each of the MPO entities. Each entity provided input to identify where planned housing is to occur for the planning period. Future housing growth was then allocated to the parcel of each of the communities based on the input provided by MPO members. South Sioux City is currently annexing and developing all land east of its corporate limits to the Missouri River.

Historic employment for each of the four counties was gathered and forecasted from 2015 to 2045. Each of the jurisdiction's shares of total 2010 employment in each of the four counties

was applied to their respective counties to get the forecasted employment numbers for each MPO community from 2015 to 2045. MPO members then discussed and reviewed the forecasted numbers to discuss expected future employment. The numbers were adjusted and distributed according to expected business expansion and where new businesses were expected to be located within the planning period. The final forecasted employment numbers were converted to square footage based on rates generated by Iowa DOT using Iowa Workforce Development Employment Data.

Table B.1 Population Trend and Projections Determined Using US Census Bureau Data									
Jurisdiction	**1990**	**2000**	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**	**2045**
Unincorporated	N/A	N/A	8,689	8,719	8,749	8,779	8,809	8,869	8,899
Sioux City	80,505	85,012	82,684	82,812	82,940	83,068	83,196	83,452	83,580
Sergeant Bluff	2,772	3,321	4,227	4,596	4,964	5,333	5,702	6,439	6,808
South Sioux City	9,677	11,925	13,353	14,120	14,886	15,653	16,419	17,952	18,719
Dakota City	1,470	1,821	1,919	2,009	2,099	2,189	2,279	2,459	2,549
North Sioux City	2,019	2,288	2,530	2,628	2,726	2,824	2,922	3,118	3,216
Jefferson	527	586	547	541	534	527	520	507	500
Dakota Dunes	N/A	N/A	2,540	2,730	2,920	3,060	3,200	3,200	3,310
Total Population	96,970	104,953	116,489	118,155	119,818	121,433	123,047	125,996	127,581

Table B.2.1 Population Summary by Jurisdiction and Year as Distributed into the Model							
	Population						
Jurisdiction	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
Unincorporated	8,071	8,257	8,372	8,435	8,533	8,636	8,746
Sioux City	83,057	83,805	84,153	84,396	84,403	84,566	84,882
Sergeant Bluff	4,817	5,840	6,296	6,663	6,993	7,301	7,754
South Sioux City	13,774	14,186	15,024	15,793	16,850	17,436	18,123
Dakota City	2,018	2,108	2,198	2,298	2,379	2,468	2,558
North Sioux City	3,175	3,329	3,398	3,466	3,513	3,586	3,684
Jefferson	542	535	528	520	514	507	500
Dakota Dunes	2,775	2,875	3,040	3,205	3,205	3,205	3,315
Total Population	118,229	120,935	123,009	124,776	126,390	127,705	129,562

Table B.2.2 Housing Summary by Jurisdiction and Year as Distributed into the Model							
	Housing Units						
Jurisdiction	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
Unincorporated	2,846	2,890	2,929	2,938	2,957	2,981	3,013
Sioux City	31,660	31,797	31,819	31,885	31,891	32,275	32,391
Sergeant Bluff	1,650	2,008	2,201	2,296	2,388	2,504	2,658
South Sioux City	4,719	4,880	5,151	5,414	5,774	5,941	6,181
Dakota City	669	697	726	754	783	815	844
North Sioux City	1,335	1,397	1,443	1,461	1,481	1,509	1,550
Jefferson	232	228	224	220	218	215	212
Dakota Dunes	1,040	1,082	1,127	1,167	1,167	1,167	1,200
Total Population	44,151	44,979	45,620	46,135	46,659	47,407	48,049

Table B.3 Employment Summary by Jurisdiction and Year as Distributed into the Model							
Employment Rate:	**Employment**						
Jurisdiction	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
Unincorporated	4,087	4,287	4,632	5,197	5,512	5,898	6,263
Sioux City	45,532	49,412	50,835	52,512	53,976	55,306	57,089
Sergeant Bluff	2,351	2,376	2,526	2,551	2,576	2,621	2,673
South Sioux City	6,310	6,810	7,040	7,215	7,365	7,472	7,666
Dakota City	5,677	5,677	5,692	5,707	5,722	5,737	5,747
North Sioux City	2,659	2,699	2,724	2,724	2,924	3,143	3,240
Jefferson	198	198	198	198	198	198	198
Dakota Dunes	2,072	2,130	2,145	2,160	2,160	2,160	2,183
Total Jobs	68,886	73,589	75,792	78,264	80,433	82,535	85,058