APPENDIX C
ACCURACY CHECKS OF THE YEAR 2011 TRAVEL SURVEYS

INTRODUCTION

During the years 2011 and 2012, the Southeastern Wisconsin Regional Planning Commission (SEWRPC) conducted an inventory of travel for the seven-county Southeastern Wisconsin Region. Historically, a large-scale travel inventory has been conducted approximately once every 10 years in conjunction with the U.S. Census and land use and transportation system inventories conducted as part of a major review and update of the Commission's land use and transportation plan. Similar travel inventories were previously conducted in 1963, 1972, 1991, and 2001. This travel inventory consisted of five major elements—a resident household travel survey, a group-quartered travel survey, a public transit travel survey, a truck travel survey, and an external travel survey. The following sections of this appendix describe the travel inventory and accuracy checks of the expanded data.

THE 2011 REGIONAL INVENTORY OF TRAVEL: MAJOR ELEMENTS

The 2011 survey of resident households was based on a sample of 15,400 households, or approximately 2 percent of the estimated total of 800,100 households in the Region. This large scale sample provides a rich set of data, permitting the description and analysis of resident household travel both by subarea and between subareas of the Region. Information obtained from each sampled household included detailed data concerning specific household characteristics, including the number of household members, number of vehicles available, structure type of residence, and household income range; specific data for each household member, such as relationship to head of household, age, license-to-drive status, race/ethnicity, gender, and employment status; and, for each trip made by people over the age of five on the assigned travel day, the origin and destination of trip, trip purpose, time of day, mode of travel, and, for drivers of personal vehicles—automobiles, vans, sport utility vehicles, or pickup trucks—the number of passengers in the vehicle, parking location, type of parking, and cost of parking.

In addition, 900 samples, representing approximately 2 percent of the 45,400 residents of the Region living in group quarters, such as Huber jail facilities, shelters, and schools and other institutions, were surveyed. The sample was drawn from a list of such facilities compiled by the Commission using telephone directories and consultations with various agencies of government. Group quartered residents who were severely restricted in their ability to travel were not surveyed. This group included residents of mental health facilities, prisons, and nursing homes.

The five major public transit systems operating in the Region in 2011 were also surveyed. Each of the five systems was sampled at rates designed to permit analysis of the characteristics of existing transit system ridership. For

the Kenosha area transit system, 390 samples were obtained, an 11 percent sample of its estimated 3,600 average weekday boarding passengers. For the Milwaukee area transit system, 6,400 samples were obtained, representing a 4 percent sample of its estimated 157,500 average weekday boarding passengers. For the Racine area transit system, 290 samples were obtained, representing a 6 percent sample of its estimated 4,600 average weekday boarding passengers. For the City of Waukesha transit system, 180 samples were obtained, representing a 7 percent sample of its estimated 2,600 average weekday boarding passengers. For the Waukesha County transit system, 210 samples were obtained, representing a 31 percent sample of its estimated 670 average weekday boarding passengers. Information obtained through mail-back survey forms included detailed data concerning specific household characteristics, including the location of each tripmaker's home, number of household members, number of vehicles available, and household income range; specific data regarding each tripmaker, such as age, sex, license-to-drive status, and race/ethnicity; and for each trip, the origin and destination of the trip, trip purpose, time of day, transfer information, mode of travel to the bus stop, fares, round-trip frequency, and length of time using transit.

The 2011 regional travel inventory also included a commercial truck survey. The truck survey was intended to provide information regarding the movement of freight and the delivery of services within the Region by commercial trucks registered and garaged within the Region. The survey of commercial truck travel was based on a sample of about 640 commercial trucks, or approximately 0.5 percent of the estimated 121,600 commercial trucks registered in the Region. Information obtained through a mail-back survey for each sampled truck included detailed data concerning the business or industry of the truck owner; the truck garaging location, carrier type, odometer reading at the beginning and end of the travel day, and vehicle type; and for each trip made using the truck on the assigned travel survey day, the origin and destination of the trip, trip purpose, and time of day.

The 2011 survey also included an external cordon survey of interregional vehicle traffic. Interregional or external travel is travel where one or both ends of the trip are located outside of Southeastern Wisconsin. In the external cordon survey, roadside interview stations were established on 38 major streets and highways crossing the boundaries of the Region. At these stations, mail-back survey forms were distributed to 161,900 motorists crossing these stations during the hours of 8:00 a.m. to 6:00 p.m. in the spring of 2011 and spring of 2012. Approximately 20,100 usable survey forms were returned, representing more than 6 percent of the 363,800 regional boundary crossings by vehicles estimated to occur at the interview stations during an average weekday. Information obtained through the mail-back survey included: the vehicle used in making the trip, the garaging address of the vehicle, type of vehicle, and number of passengers carried; and, for trucks, the carrier type. For trips crossing the cordon line, data regarding the origin, destination, and purpose of each trip were also obtained.

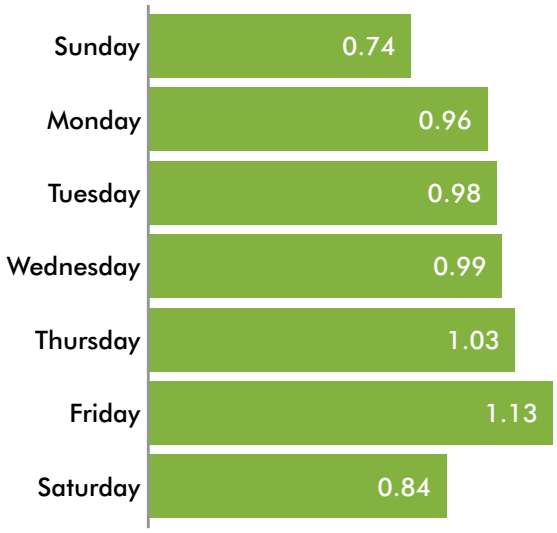
The external cordon survey also included a survey of interregional personal travel by other modes to provide information regarding the movement of individuals not using a personal vehicle to enter or exit the Region. The 2011 interregional travel survey captured travel by airplane, intercity rail, intercity bus, and the Lake Express Ferry. The survey of airport travel sampled approximately 1,100 deplaning weekday passengers at General Mitchell International Airport from Tuesday, September 27, through Thursday, September 29, 2011, for 12 hours each day (7:00 a.m. – 7:00 p.m. on

Tuesday, 9:00 a.m. – 9:00 p.m. on Wednesday, 11:00 a.m. – 11:00 p.m. on Thursday). This sample represents approximately 6 percent of the estimated 18,800 average weekday passengers utilizing the Airport in 2011. The intercity rail survey, which was conducted on September 13 and 22, 2011, captured travel on Amtrak and Metra intercity rail services operating within the Region. The sample of 150 boarding Amtrak passengers and 80 boarding Metra passengers represents an approximately 8 percent sample of the estimated 2,800 average weekday intercity rail passengers in 2011. The survey of intercity bus travel, which was conducted on September 14, 15, 20, and 22, 2011, captured travel on routes operated by Greyhound, Megabus, Badger Bus, Coach USA, Lamers, Indian Trails, and Jefferson Bus Lines. The sample of 170 boarding intercity bus passengers represents an approximately 11 percent sample of the estimated 1,600 average weekday intercity bus passengers in 2011. The survey of the Lake Express Ferry, which was conducted on September 15, 2011, elicited a sample of 100 boarding passengers representing approximately 33 percent of the estimated 300 average weekday passengers. Information on interregional travel was obtained through a handout/mail-back survey for each individual boarding the Amtrak, Metra, interregional bus, and the Lake Express Ferry, and approximately 20 percent of the deplaning passengers exiting a concourse at General Mitchell International Airport. The interregional travel surveys included detailed data concerning origin, destination, and purpose of each trip; information about transport to and from the terminal end of the interregional mode surveyed; and the gender, age, and household income of the individual completing the survey.

The expanded data obtained in these surveys and estimates provided a representation of the total travel occurring within the Region on an average weekday in 2011. In each survey, careful attention was given to data collection scheduling to prevent any day-related or seasonal bias in the information. Travel surveys are usually conducted by the Commission in either the spring (March through May), or in the fall (September through November), in order to obtain travel data representative of average weekday conditions. Traffic volume counts collected by the Wisconsin Department of Transportation (WisDOT) in Southeastern Wisconsin indicate that traffic volumes on Tuesdays, Wednesdays, and Thursdays most closely approximate average weekday traffic volumes, while those on Fridays are slightly higher, and on Mondays are slightly lower, than the average weekday (see Figure C.1). Traffic volumes on Saturdays and Sundays are substantially lower than the average weekday. With respect to monthly variations, traffic volumes in the spring and the fall generally approximate average weekday traffic volumes (see Figure C.2). Traffic volumes in the summer months of June, July, and August are generally higher than average, and traffic volumes in the winter months of January and February are lower than average.

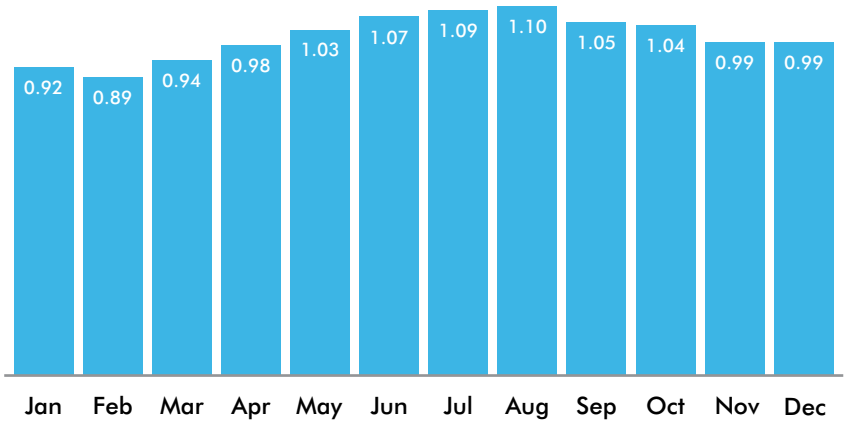
Two distinct sets of accuracy checks were employed to determine the degree of accuracy and completeness of data obtained in the major travel surveys. In one set, data on socioeconomic characteristics obtained from the major surveys were compared with data from the 2010 Census, 2006-2010 Federal Census American Community Survey (ACS), and other independent sources. In the other set of accuracy checks, vehicle trip volumes derived from travel surveys were compared to vehicle trip volumes obtained by classification

Figure C.1
Comparison of the Ratio of Daily Traffic Volumes to Average Weekday Traffic Volumes by Day of Week: 2011



Source: Wisconsin Department of Transportation and SEWRPC

Figure C.2
Comparison of the Ratio of Average Monthly Weekday Traffic Volumes to Average Weekday Traffic Volumes by Month of Year: 2011



Source: Wisconsin Department of Transportation and SEWRPC

counts made at screenlines and cordon lines.[54] The level of vehicle-miles of travel (VMT) derived from travel surveys was also compared to actual VMT estimated from traffic counts. The following sections document the results of accuracy checks.

SOCIOECONOMIC ACCURACY CHECKS

The socioeconomic data from the 2011 household travel survey was compared to data from the 2010 Census, Census Transportation Planning Package (CTPP), ACS, and other sources. The data comparisons included the distribution of households by household size, vehicles available, income, and lifestyle;[55] the distribution of population by age, gender, and employment status; and estimated total regional personal vehicle and commercial truck availability.

The percentage distribution of households by household size, as established by the survey, was essentially the same as that identified by the 2010 Census at county and regional levels. Table C.1 provides a comparison of the distribution of households by household size within each county as measured by the 2010 Census and as derived from the year 2011 resident household survey. The county-level survey data on household size are within 0.2 percent of corresponding 2010 Census data in almost all categories. At the regional level, the Census and survey data were essentially the same.

The next socioeconomic accuracy check compared vehicle availability as measured by the 2006-2010 CTPP and SEWRPC estimates based on 2011 WisDOT vehicle registration data, to vehicle availability as estimated by the 2011 resident household survey. Table C.2 compares estimates of the total number of vehicles available to households in the Region from the travel survey to those of the 2006-2010 CTPP and WisDOT vehicle registrations. The total distribution of vehicles available was accurately estimated by the survey, varying from 2006-2010 CTPP estimates by no more than 0.5 percent at the regional and county levels. As compared to 2011 estimates based on WisDOT vehicle registration data, the vehicle availability estimates from the survey were within 7.3 percent at the county level and within 0.5 percent for the Region.

Table C.3 compares the distribution of households by vehicles available, and indicates that the distribution of households by vehicle availability is accurately estimated by the travel survey as compared to the 2006-2010 CTPP. The county-level survey data on vehicle availability are within 1.0 percent of the corresponding 2006-2010 CTPP data in almost all categories.

The distribution of annual household income estimated from the travel survey was also compared with similar data estimated from the 2006-2010 CTPP as shown in Table C.4. The estimated household income based upon

[54] A screenline is an imaginary line extending through a selected portion of a geographic area along natural or built barriers, providing a limited number of crossing points established for the purpose of comparing and analyzing travel data, as estimated from traffic counts, with data derived from travel surveys. A cordon line is an imaginary line extending around a selected geographic area for the purpose of comparing and analyzing external travel data, as estimated from traffic counts, with data derived from travel surveys.

[55] The lifestyle of a household is defined by whether a household is a retired or working household, determined by whether age of head of household is less than or greater than 65, respectively, and whether the working household includes children.

Table C.1
Comparison of the Estimated Distribution of Households by Household Size in the Region

	Household Size	2010 Federal Census		2011 Household Survey		Difference in Percent
		Number of Households	Percent Distribution	Number of Households	Percent Distribution	
Kenosha County	One Person	16,388	26.2	16,427	26.2	--
	Two People	19,968	31.9	19,978	31.9	--
	Three People	10,484	16.7	10,509	16.7	--
	Four People	9,088	14.5	9,110	14.5	--
	Five or More People	6,722	10.7	6,738	10.7	--
	Total	62,650	100.0	62,762	100.0	--
Milwaukee County	One Person	129,317	33.7	129,573	33.7	--
	Two People	116,827	30.5	117,073	30.5	--
	Three People	57,206	14.9	57,327	14.9	--
	Four People	42,925	11.2	43,015	11.2	--
	Five or More People	37,316	9.7	37,395	9.7	--
	Total	383,591	100.0	384,383	100.0	--
Ozaukee County	One Person	8,475	24.8	8,509	24.7	-0.1
	Two People	12,791	37.4	12,864	37.4	--
	Three People	5,321	15.5	5,359	15.6	0.1
	Four People	4,802	14.0	4,812	14.0	--
	Five or More People	2,839	8.3	2,845	8.3	--
	Total	34,228	100.0	34,389	100.0	--
Racine County	One Person	19,958	26.4	19,997	26.4	--
	Two People	26,130	34.5	26,213	34.6	0.1
	Three People	11,955	15.8	11,979	15.8	--
	Four People	10,185	13.5	10,205	13.4	-0.1
	Five or More People	7,423	9.8	7,438	9.8	--
	Total	75,651	100.0	75,832	100.0	--
Walworth County	One Person	10,554	26.6	10,581	26.6	--
	Two People	14,008	35.3	14,044	35.4	0.1
	Three People	6,068	15.3	6,083	15.3	--
	Four People	5,090	12.8	5,018	12.6	-0.2
	Five or More People	3,979	10.0	3,989	10.1	0.1
	Total	39,699	100.0	39,715	100.0	--
Washington County	One Person	11,839	22.9	11,908	23.0	0.1
	Two People	19,195	37.2	19,222	37.1	-0.1
	Three People	8,336	16.2	8,341	16.1	-0.1
	Four People	7,719	15.0	7,748	15.0	--
	Five or More People	4,516	8.7	4,533	8.8	0.1
	Total	51,605	100.0	51,752	100.0	--
Waukesha County	One Person	36,286	23.8	36,366	23.7	-0.1
	Two People	56,297	36.9	56,464	36.9	--
	Three People	24,083	15.8	24,152	15.8	--
	Four People	22,846	14.9	22,996	15.0	0.1
	Five or More People	13,151	8.6	13,189	8.6	--
	Total	152,663	100.0	153,167	100.0	--
Region	One Person	232,817	29.1	233,361	29.1	--
	Two People	265,216	33.2	265,858	33.2	--
	Three People	123,453	15.4	123,750	15.4	--
	Four People	102,655	12.8	102,904	12.8	--
	Five or More People	75,946	9.5	76,127	9.5	--
	Total	800,087	100.0	802,000	100.0	--

Source: U.S. Bureau of the Census and SEWRPC

Table C.2
Comparison of the Estimated Number of Vehicles Available in the Region

County	2006-2010 CTPP		2011 Household Survey		Difference	
	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	Number	Percent
Kenosha	114,600	8.5	118,456	8.6	3,856	0.1
Milwaukee	553,250	40.8	556,404	40.6	3,154	-0.2
Ozaukee	66,765	4.9	69,221	5.0	2,456	0.1
Racine	135,560	10.0	140,145	10.2	4,585	0.2
Walworth	77,300	5.7	78,072	5.7	772	--
Washington	104,245	7.7	109,253	8.0	5,008	0.3
Waukesha	303,585	22.4	300,359	21.9	-3,226	-0.5
Region	1,355,305	100.0	1,371,910	100.0	16,605	--

County	2011 Estimate Based on Vehicle Registrations		2011 Household Survey		Difference	
	Number of Vehicles	Percent of Total	Number of Vehicles	Percent of Total	Number	Percent
Kenosha	120,050	8.7	118,456	8.6	-1,594	-1.3
Milwaukee	544,540	39.5	556,404	40.6	11,864	2.2
Ozaukee	70,280	5.1	69,221	5.0	-1,059	-1.5
Racine	146,840	10.7	140,145	10.2	-6,695	-4.6
Walworth	84,230	6.1	78,072	5.7	-6,158	-7.3
Washington	105,420	7.6	109,253	8.0	3,833	3.6
Waukesha	307,310	22.3	300,359	21.9	-6,951	-2.3
Region	1,378,670	100.0	1,371,910	100.0	-6,760	-0.5

Source: 2006-2010 Census Transportation Planning Package, WisDOT, and SEWRPC

the travel survey data by county varied by 0.1 to 26.6 percent from CTPP derived distributions, and at the regional level, the percentage of households in any given income range based on the 2011 resident household survey did not differ from the corresponding percentage of households based on CTPP data by more or less than 12.4 percent. Given that only 59 percent of the households provided income data and that the two datasets both represent sampled data, the variation in the travel survey distribution as compared with the CTPP is not unexpected.

The distribution of households based on household lifestyle from the travel survey was compared to the distribution obtained from the 2010 Census and is set forth in Table C.5. As shown in Table C.5, the comparison indicates that the distribution of households was accurately estimated by the 2011 resident household survey, varying from the 2010 Census by 0.0 to 4.7 percent at the county level, and 1.1 to 2.5 percent for the Region.

Table C.6 provides comparisons of data on the distribution of regional population by age category from the 2010 Census data and from the 2011 household travel survey. This comparison indicates that the distribution of population by age category was accurately estimated by the survey, with a difference no greater or less than 1.2 percent from Census estimates.

Table C.7 provides comparisons of data on the distribution of regional and county population by gender from the 2010 Census data and from the 2011 household travel survey. The comparison indicates that the distribution of population by gender by county was accurately estimated by the survey, with a difference no greater or less than 0.8 percent from 2010 Census estimates. Figure C.3 compares the composition of regional population by age and gender. This comparison indicates that the distribution of population by age and gender is accurately estimated by the 2011 resident household survey.

Table C.3
Comparison of the Distribution of Households by Vehicle Availability in the Region

	Vehicle Availability	2006-2010 CTPP		2011 Household Survey		Difference in Percent
		Number of Households	Percent Distribution	Number of Households	Percent Distribution	
Kenosha County	No Vehicles	4,285	6.7	3,828	6.1	-0.6
	One Vehicle	21,109	33.2	19,943	31.8	-1.4
	Two Vehicles	25,807	40.6	26,179	41.7	1.1
	Three Vehicles	8,170	12.9	8,428	13.4	0.5
	Four or More Vehicles	4,194	6.6	4,384	7.0	0.4
	Total	63,565	100.0	62,762	100.0	--
Milwaukee County	No Vehicles	51,500	13.6	51,052	13.3	-0.3
	One Vehicle	164,488	43.4	163,493	42.5	-0.9
	Two Vehicles	125,798	33.2	130,867	34.0	0.8
	Three Vehicles	28,080	7.4	29,470	7.7	0.3
	Four or More Vehicles	9,010	2.4	9,501	2.5	0.1
	Total	378,876	100.0	384,383	100.0	--
Ozaukee County	No Vehicles	723	2.1	712	2.1	--
	One Vehicle	10,127	29.8	9,911	28.8	-1.0
	Two Vehicles	16,597	48.7	16,924	49.2	0.5
	Three Vehicles	5,296	15.6	5,515	16.0	0.4
	Four or More Vehicles	1,284	3.8	1,327	3.9	0.1
	Total	34,027	100.0	34,389	100.0	--
Racine County	No Vehicles	6,582	8.8	5,052	6.7	-2.1
	One Vehicle	25,725	34.4	24,528	32.3	-2.1
	Two Vehicles	28,519	38.2	30,650	40.5	2.3
	Three Vehicles	9,386	12.5	10,574	13.9	1.4
	Four or More Vehicles	4,596	6.1	5,028	6.6	0.5
	Total	74,808	100.0	75,832	100.0	--
Walworth County	No Vehicles	2,000	5.1	2,351	5.9	0.8
	One Vehicle	10,163	26.0	11,293	28.4	2.4
	Two Vehicles	16,647	42.6	16,383	41.3	-1.3
	Three Vehicles	7,487	19.1	6,941	17.5	-1.6
	Four or More Vehicles	2,811	7.2	2,747	6.9	-0.3
	Total	39,108	100.0	39,715	100.0	--
Washington County	No Vehicles	2,573	5.0	1,816	3.5	-1.5
	One Vehicle	12,646	24.7	12,690	24.5	-0.2
	Two Vehicles	21,899	42.7	22,450	43.4	0.7
	Three Vehicles	10,180	19.9	10,709	20.7	0.8
	Four or More Vehicles	3,930	7.7	4,087	7.9	0.2
	Total	51,228	100.0	51,752	100.0	--
Waukesha County	No Vehicles	7,422	4.9	7,039	4.6	-0.3
	One Vehicle	40,396	26.7	41,316	27.0	0.3
	Two Vehicles	69,215	45.9	70,183	45.8	-0.1
	Three Vehicles	24,087	15.9	24,454	16.0	0.1
	Four or More Vehicles	9,993	6.6	10,175	6.6	--
	Total	151,113	100.0	153,167	100.0	--
Region	No Vehicles	75,085	9.5	71,850	9.0	-0.5
	One Vehicle	284,654	35.9	283,174	35.3	-0.6
	Two Vehicles	304,482	38.4	313,636	39.1	0.7
	Three Vehicles	92,686	11.7	96,091	12.0	0.3
	Four or More Vehicles	35,818	4.5	37,249	4.6	0.1
	Total	792,725	100.0	802,000	100.0	--

Source: 2006-2010 Census Transportation Planning Package and SEWRPC

Table C.4
Comparison of the Distribution of the Percentage of Households by Income in the Region

Household Income (in dollars)	Kenosha County 2006-2010 CTPP	Kenosha County 2011 Household Survey	Kenosha County Difference in Percent	Milwaukee County 2006-2010 CTPP	Milwaukee County 2011 Household Survey	Milwaukee County Difference in Percent
Under 20,000	5.1	8.9	3.8	8.8	11.8	3.0
20,000 to 39,999	13.7	22.1	8.4	18.4	18.8	0.4
40,000 to 49,999	9.1	8.8	-0.3	9.9	10.9	1.0
50,000 to 74,999	20.6	19.7	-0.9	22.2	25.0	2.8
75,000 to 99,999	19.3	18.5	-0.8	16.6	14.5	-2.1
100,000 or Over	32.2	22.0	-10.2	24.1	19.0	-5.1
Total	100.0	100.0	--	100.0	100.0	--

Household Income (in dollars)	Ozaukee County 2006-2010 CTPP	Ozaukee County 2011 Household Survey	Ozaukee County Difference in Percent	Racine County 2006-2010 CTPP	Racine County 2011 Household Survey	Racine County Difference in Percent
Under 20,000	2.1	11.9	9.8	4.6	11.4	6.8
20,000 to 39,999	9.2	22.6	13.4	14.5	18.1	3.6
40,000 to 49,999	5.8	9.5	3.7	7.0	11.1	4.1
50,000 to 74,999	17.5	21.5	4.0	23.4	23.7	0.3
75,000 to 99,999	20.7	13.6	-7.1	19.4	14.9	-4.5
100,000 or Over	44.7	20.9	-23.8	31.1	20.8	-10.3
Total	100.0	100.0	--	100.0	100.0	--

Household Income (in dollars)	Walworth County 2006-2010 CTPP	Walworth County 2011 Household Survey	Walworth County Difference in Percent	Washington County 2006-2010 CTPP	Washington County 2011 Household Survey	Washington County Difference in Percent
Under 20,000	5.4	11.4	6.0	2.6	9.6	7.0
20,000 to 39,999	14.0	20.8	6.8	9.7	20.9	11.2
40,000 to 49,999	8.4	11.0	2.6	6.9	13.6	6.7
50,000 to 74,999	25.6	25.5	-0.1	21.8	22.2	0.4
75,000 to 99,999	20.0	14.3	-5.7	22.8	14.8	-8.0
100,000 or Over	26.6	17.0	-9.6	36.2	18.9	-17.3
Total	100.0	100.0	--	100.0	100.0	--

Household Income (in dollars)	Waukesha County 2006-2010 CTPP	Waukesha County 2011 Household Survey	Waukesha County Difference in Percent	Region 2006-2010 CTPP	Region 2011 Household Survey	Region Difference in Percent
Under 20,000	2.2	10.5	8.3	5.8	11.1	5.3
20,000 to 39,999	7.4	19.2	11.8	14.1	19.5	5.4
40,000 to 49,999	5.6	10.7	5.1	8.2	10.8	2.6
50,000 to 74,999	17.2	22.5	5.3	21.1	23.7	2.6
75,000 to 99,999	20.1	16.2	-3.9	18.6	15.1	-3.5
100,000 or Over	47.5	20.9	-26.6	32.2	19.8	-12.4
Total	100.0	100.0	--	100.0	100.0	--

Source: 2006-2010 Census Transportation Planning Package and SEWRPC

Table C.5
Comparison of the Distribution of the Percentage of Households by Lifestyle in the Region

	Age of Head of Household	2010 Federal Census		2011 Household Survey		Difference in Percent
		Number	Percent Distribution	Number	Percent Distribution	
Kenosha County	65 or Older	12,208	19.5	11,658	18.6	-0.9
	Under 65					
	without Children	28,834	46.0	29,639	47.2	1.2
	with Children	21,608	34.5	21,465	34.2	-0.3
	Total	62,650	100.0	62,762	100.0	--
Milwaukee County	65 or Older	74,402	19.4	68,329	17.8	-1.6
	Under 65					
	without Children	193,543	50.5	212,416	55.2	4.7
	with Children	115,646	30.1	103,638	27.0	-3.1
	Total	383,591	100.0	384,383	100.0	--
Ozaukee County	65 or Older	8,559	25.0	8,290	24.1	-0.9
	Under 65					
	without Children	15,121	44.2	15,682	45.6	1.4
	with Children	10,548	30.8	10,417	30.3	-0.5
	Total	34,228	100.0	34,389	100.0	--
Racine County	65 or Older	16,953	22.4	15,688	20.7	-1.7
	Under 65					
	without Children	34,456	45.6	35,844	47.3	1.7
	with Children	24,242	32.0	24,300	32.0	--
	Total	75,651	100.0	75,832	100.0	--
Walworth County	65 or Older	8,981	22.6	9,208	23.2	0.6
	Under 65					
	without Children	18,707	47.1	18,643	46.9	-0.2
	with Children	12,011	30.3	11,864	29.9	-0.4
	Total	39,699	100.0	39,715	100.0	--
Washington County	65 or Older	11,377	22.0	11,314	21.9	-0.1
	Under 65					
	without Children	23,420	45.4	24,014	46.4	1.0
	with Children	16,808	32.6	16,424	31.7	-0.9
	Total	51,605	100.0	51,752	100.0	--
Waukesha County	65 or Older	36,142	23.7	36,146	23.6	-0.1
	Under 65					
	without Children	68,092	44.6	67,193	43.9	-0.7
	with Children	48,429	31.7	49,828	32.5	0.8
	Total	152,663	100.0	153,167	100.0	--
Region	65 or Older	168,622	21.1	160,633	20.0	-1.1
	Under 65					
	without Children	382,173	47.8	403,431	50.3	2.5
	with Children	249,292	31.1	237,936	29.7	-1.4
	Total	800,087	100.0	802,000	100.0	--

Source: U.S. Bureau of the Census and SEWRPC

Table C.6
Comparison of the Distribution of Population by Age Group in the Region

Age Group	2010 Federal Census		2011 Resident Household Survey		Difference in Percent
	Number	Percent	Number	Percent	
Under 5 years	133,503	6.6	156,270	7.8	1.2
5 to 9 years	137,010	6.8	138,254	6.9	0.1
10 to 14 years	140,118	6.9	141,294	7.0	0.1
15 to 17 years	87,644	4.3	87,652	4.4	0.1
18 and 19 years	57,282	2.8	47,080	2.3	-0.5
20 years	28,168	1.4	21,600	1.1	-0.3
21 years	27,476	1.4	22,563	1.1	-0.3
22 to 24 years	81,951	4.1	80,221	4.0	-0.1
25 to 29 years	137,321	6.8	136,433	6.8	--
30 to 34 years	128,174	6.3	127,601	6.3	--
35 to 39 years	125,851	6.2	125,641	6.2	--
40 to 44 years	136,456	6.8	136,229	6.8	--
45 to 49 years	153,577	7.6	153,340	7.6	--
50 to 54 years	153,402	7.6	153,326	7.6	--
55 to 59 years	132,272	6.5	132,335	6.6	0.1
60 and 61 years	46,132	2.3	46,134	2.3	--
62 to 64 years	59,626	3.0	59,665	3.0	--
65 and 66 years	31,045	1.5	31,033	1.5	--
67 to 69 years	41,577	2.1	41,519	2.1	--
70 to 74 years	54,925	2.7	54,620	2.7	--
75 to 79 years	46,609	2.3	45,731	2.3	--
80 to 84 years	39,940	2.0	38,193	1.9	-0.1
85 years and older	39,911	2.0	34,544	1.7	-0.3
Total	2,019,970	100.0	2,011,278	100.0	--

Source: U.S. Bureau of the Census and SEWRPC

Table C.8 compares employed population estimates at the county and Region levels from the U.S. Bureau of Labor Statistics 2011 Local Area Unemployment Statistics (LAUS) and 2011 household travel survey. This comparison shows that the distribution of population by employment status was accurately estimated by the survey, with the distribution of employed people varying by no more than 0.4 percent at the county and Region levels.

Lastly, estimates of commercial truck availability, including estimates by type, as determined by the 2011 travel survey, were compared with corresponding estimates as derived from 2011 WisDOT Division of Motor Vehicles (DMV), registration records. This comparison, shown in Table C.9, indicates a high degree of accuracy for the commercial truck data derived from the survey, within the Region.

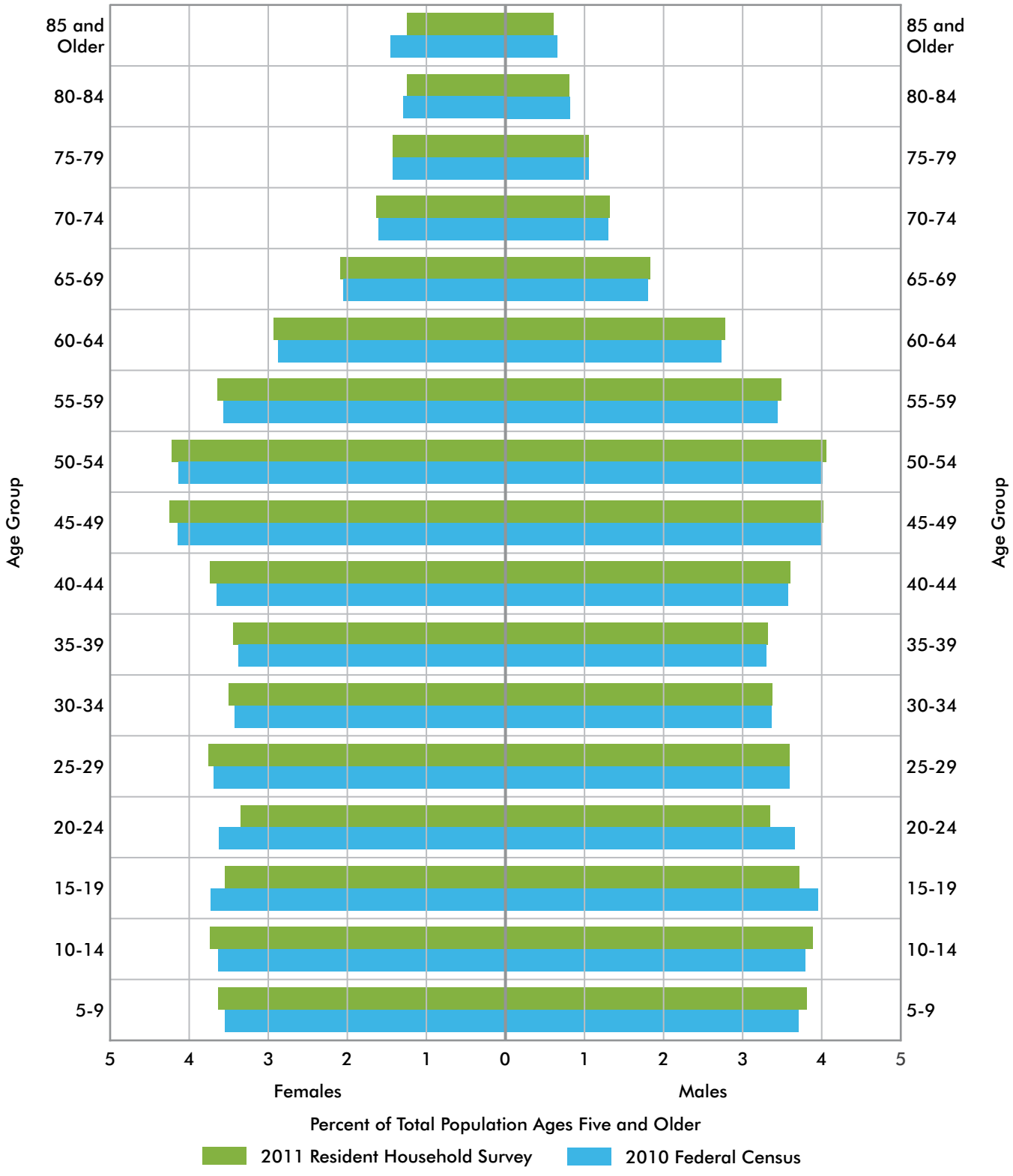
The results of the accuracy checks of the household and truck travel survey with respect to socioeconomic characteristics and vehicle availability data indicate that the survey data demonstrate a high degree of accuracy and completeness, particularly considering that the surveys, Census, CTPP, and ACS were conducted in different years; the Census, CTPP, and ACS include the Region's group-quartered population and the household travel survey does not; and with respect to certain socioeconomic characteristics, the travel survey, CTPP, and ACS are all sample surveys.

Table C.7
Comparison of the Distribution of Population Ages Five and Older by Gender in the Region

	Gender	2010 Federal Census		2011 Household Survey		Difference in Percent
		Population	Percent Distribution	Population	Percent Distribution	
Kenosha County	Male	76,861	49.5	74,546	49.2	-0.3
	Female	78,570	50.5	76,901	50.8	0.3
	Total	155,431	100.0	151,446	100.0	--
Milwaukee County	Male	422,425	48.1	413,540	47.9	-0.2
	Female	455,946	51.9	450,168	52.1	0.2
	Total	878,371	100.0	863,708	100.0	--
Ozaukee County	Male	39,994	48.9	39,509	49.0	0.1
	Female	41,853	51.1	41,051	51.0	-0.1
	Total	81,847	100.0	80,561	100.0	--
Racine County	Male	90,251	49.4	86,536	48.6	-0.8
	Female	92,410	50.6	91,506	51.4	0.8
	Total	182,661	100.0	178,039	100.0	--
Walworth County	Male	48,069	50.1	47,512	50.8	0.7
	Female	47,963	49.9	46,070	49.2	-0.7
	Total	96,032	100.0	93,581	100.0	--
Washington County	Male	61,260	49.5	60,780	49.4	-0.1
	Female	62,448	50.5	62,271	50.6	0.1
	Total	123,708	100.0	123,052	100.0	--
Waukesha County	Male	180,487	49.0	178,933	49.1	0.1
	Female	187,930	51.0	185,685	50.9	-0.1
	Total	368,417	100.0	364,620	100.0	--
Region	Male	919,347	48.7	901,356	48.6	-0.1
	Female	967,120	51.3	953,652	51.4	0.1
	Total	1,886,467	100.0	1,855,008	100.0	--

Source: U.S. Bureau of the Census and SEWRPC

Figure C.3
Comparison of Age and Gender Composition of the Population Ages Five and Older in the Region



Source: U.S. Census Bureau and SEWRPC

Table C.8
Comparison of Employment Status in the Region

County	Employment Status				
	2011 Local Area Unemployment Statistics		2011 Household Survey		
	Employed People	Percent Distribution	Employed People	Percent Distribution	Difference in Percent
Kenosha	78,800	8.3	76,600	7.9	-0.4
Milwaukee	420,900	44.1	428,700	44.4	0.3
Ozaukee	44,200	4.6	44,100	4.6	--
Racine	88,600	9.3	92,100	9.5	0.2
Walworth	51,000	5.3	50,300	5.2	-0.1
Washington	69,300	7.3	71,700	7.4	0.1
Waukesha	201,100	21.1	202,300	21.0	-0.1
Region	953,900	100.0	965,800	100.0	--

Source: U.S. Bureau of Labor Statistics and SEWRPC

Table C.9
Comparison of Truck Registrations and Truck Availability in the Region

Truck Classification	2011 Truck Registrations		2011 Truck Survey		Difference	
	Number	Percent Distribution	Number	Percent Distribution	Number	Percent
Light	71,400	60.1	67,300	55.3	-4,100	-5.7
Medium and Heavy	36,700	30.9	43,600	35.9	6,900	18.8
Municipal	10,700	9.0	10,700	8.8	--	--
Total	118,800	100.0	121,600	100.0	2,800	2.4

Source: Wisconsin Department of Transportation and SEWRPC

TRAVEL ACCURACY CHECKS

The travel accuracy checks include comparisons of travel to work characteristics as obtained from the ACS datasets and from the 2011 travel survey. The comparisons include mode of travel to work and work purpose travel between the counties of the Region. In considering these comparisons, it must be recognized that the ACS data and travel survey data are both from sample surveys, and that the ACS data are not the same as the travel survey data. The ACS data represent the "usual" mode and location of work travel over the prior week, and the Commission travel survey data represent travel on a specific assigned survey day. Therefore, some difference between the travel survey and Census data should be expected.

Table C.10 provides comparisons of the distribution of mode of travel to work by county as obtained from the 2009-2011 ACS data and from the 2011 travel survey. Table C.11 compares county-to-county travel within the Region from place of residence to place of employment. The data from the two sources closely compare, particularly when the differences between the two surveys are considered.

To verify that travel into and out of the Region was adequately represented by the 2011 travel inventory, travel accuracy checks were conducted at the boundaries of the Region along a defined cordon line as shown on Map C.1. The findings shown in Table C.12 indicated that the travel survey data accurately represented external travel affecting the Southeastern Wisconsin Region.

Another set of travel accuracy checks included comparisons of the travel survey data with traffic counts of vehicle crossings at selected east-west screenlines within the Region. Three screenlines, as shown on Map C.1, were defined

Table C.10
Comparison of Mode Share for Travel to Work in the Region

	Source	Mode					Total
		Drive Alone	Carpool	Public Transit	Taxi/ Motorcycle	Bicycle/Walk	
Kenosha County	2009-2011 ACS	86.1	9.1	1.5	1.1	2.2	100.0
	2011 Household Survey	87.7	5.8	1.3	0.8	4.4	100.0
	Difference in Percent	1.6	-3.3	-0.2	-0.3	2.2	--
Milwaukee County	2009-2011 ACS	77.4	11.3	6.0	0.8	4.5	100.0
	2011 Household Survey	79.2	6.5	5.3	0.5	8.5	100.0
	Difference in Percent	1.8	-4.8	-0.7	-0.3	4.0	--
Ozaukee County	2009-2011 ACS	88.2	8.0	0.5	0.6	2.7	100.0
	2011 Household Survey	92.4	4.4	0.8	0.3	2.1	100.0
	Difference in Percent	4.2	-3.6	0.3	-0.3	-0.6	--
Racine County	2009-2011 ACS	86.9	8.8	1.5	1.0	1.8	100.0
	2011 Household Survey	91.2	4.5	0.9	0.3	3.1	100.0
	Difference in Percent	4.3	-4.3	-0.6	-0.7	1.3	--
Walworth County	2009-2011 ACS	83.1	10.2	0.7	1.3	4.7	100.0
	2011 Household Survey	93.6	3.4	0.2	1.3	1.5	100.0
	Difference in Percent	10.5	-6.8	-0.5	--	-3.2	--
Washington County	2009-2011 ACS	89.2	8.0	0.5	0.9	1.4	100.0
	2011 Household Survey	93.4	2.7	0.5	1.7	1.7	100.0
	Difference in Percent	4.2	-5.3	--	0.8	0.3	--
Waukesha County	2009-2011 ACS	90.2	7.0	0.7	0.6	1.5	100.0
	2011 Household Survey	95.0	2.6	0.2	0.9	1.3	100.0
	Difference in Percent	4.8	-4.4	-0.5	0.3	-0.2	--
Region	2009-2011 ACS	83.2	9.6	3.2	0.8	3.2	100.0
	2011 Household Survey	86.9	4.9	2.6	0.7	4.9	100.0
	Difference in Percent	3.7	-4.7	-0.6	-0.1	1.7	--

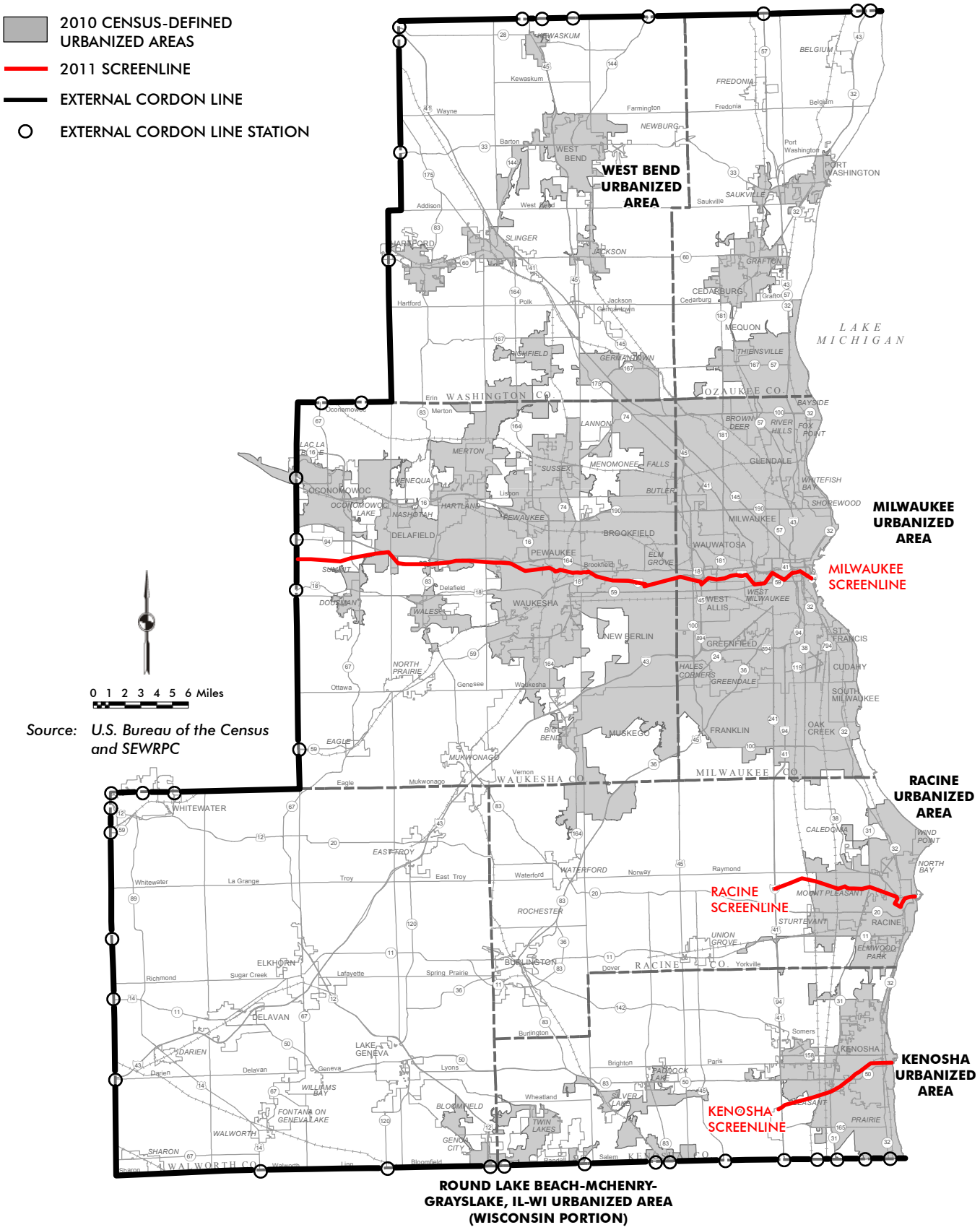
Source: 2009-2011 American Community Survey and SEWRPC

Table C.11
Comparison of the Distribution of the Percentage of County-to-County Work Travel in the Region

County of Residence	Source	County of Employment							
		Kenosha	Milwaukee	Ozaukee	Racine	Walworth	Washington	Waukesha	Total
Kenosha County	2006-2010 CTPP	76.25	5.90	0.16	14.05	1.79	0.03	1.82	100.00
	2011 Household Survey	75.66	4.94	--	13.56	4.16	0.07	1.61	100.00
	Difference in Percent	-0.59	-0.96	-0.16	-0.49	2.37	0.04	-0.21	--
Milwaukee County	2006-2010 CTPP	0.41	82.08	1.83	1.12	0.18	1.02	13.36	100.00
	2011 Household Survey	0.59	77.03	2.45	3.23	0.38	2.09	14.23	100.00
	Difference in Percent	0.18	-5.05	0.62	2.11	0.20	1.07	0.87	--
Ozaukee County	2006-2010 CTPP	0.14	34.52	52.93	0.21	0.08	4.59	7.53	100.00
	2011 Household Survey	0.13	33.74	48.21	0.20	0.05	10.78	6.89	100.00
	Difference in Percent	-0.01	-0.78	-4.72	-0.01	-0.03	6.19	-0.64	--
Racine County	2006-2010 CTPP	7.63	17.38	0.13	67.64	1.77	0.15	5.30	100.00
	2011 Household Survey	8.65	17.34	0.09	66.78	1.97	0.11	5.06	100.00
	Difference in Percent	1.02	-0.04	-0.04	-0.86	0.20	-0.04	-0.24	--
Walworth County	2006-2010 CTPP	2.91	6.50	0.12	5.06	76.03	0.22	9.16	100.00
	2011 Household Survey	5.01	5.77	--	4.32	78.71	--	6.19	100.00
	Difference in Percent	2.10	-0.73	-0.12	-0.74	2.68	-0.22	-2.97	--
Washington County	2006-2010 CTPP	0.10	21.37	6.99	0.33	0.02	51.52	19.67	100.00
	2011 Household Survey	0.10	17.56	6.06	0.05	--	60.29	15.94	100.00
	Difference in Percent	--	-3.81	-0.93	-0.28	-0.02	8.77	-3.73	--
Waukesha County	2006-2010 CTPP	0.28	31.59	0.83	1.07	0.64	1.80	63.79	100.00
	2011 Household Survey	0.31	31.23	1.11	1.81	0.97	4.06	60.51	100.00
	Difference in Percent	0.03	-0.36	0.28	0.74	0.33	2.26	-3.28	--

Source: 2006-2010 Census Transportation Planning Package and SEWRPC

Map C.1
Travel Inventory Cordon Line and Screenline Locations for Accuracy Checks



Source: U.S. Bureau of the Census and SEWRPC

Table C.12
Comparison of Estimated Average Weekday Traffic Volumes Crossing the Region Boundary: 2011

Region Boundary Cordon Line Segment	Estimated Average Weekday Traffic Volumes		Difference	
	Traffic Counts	Travel Survey Data	Number	Percent
Northern	46,700	51,000	4,300	9.2
Western	160,100	164,600	4,500	2.8
Southern	178,500	165,700	-12,800	-7.2
Total	385,300	381,300	-4,000	-1.0

Source: Wisconsin Department of Transportation and SEWRPC

Table C.13
Comparison of Estimated Average Weekday Vehicular Traffic Crossing Kenosha, Milwaukee, and Racine Screenlines: 2011

Screenline	Estimated Average Weekday Traffic Volumes		Difference	
	Traffic Counts	Travel Survey Data	Number	Percent
Kenosha	227,900	198,800	-29,100	-12.8
Milwaukee	957,300	959,400	2,100	0.2
Racine	215,200	212,200	-3,000	-1.4

Source: SEWRPC

in the Milwaukee, Racine, and Kenosha urbanized areas. These screenlines parallel natural or manmade barriers to minimize undetected crossings. The Milwaukee screenline, which roughly paralleled IH 94, extended across the Region from the Waukesha-Jefferson County line on the west to Lake Michigan on the east. The results of the screenline accuracy checks on the travel survey data, as shown in Table C.13, indicated that the simulated traffic volumes from the travel survey data accurately represented actual traffic counts in 2011, accounting for 87.2 percent of the traffic volumes crossing the screenlines in Kenosha, 100.2 percent in Milwaukee, and 98.6 percent in Racine. It should be noted that freeway reconstruction activities in 2011 likely impacted the accuracy of the Kenosha screenline traffic counts collected in 2011, overstating the difference between the travel survey data and estimated actual traffic flows.

The final major travel accuracy check compared simulated VMT by county and for the Region as derived from the travel surveys and estimated actual VMT based upon traffic counts. As shown in Table C.14, VMT as derived from the 2011 travel inventory varied by 4.4 to 13.4 percent from estimated actual VMT at the county level. At the regional level, simulated VMT represented 98.1 percent of total VMT estimated from traffic counts, indicating that the simulated travel from travel survey data accurately replicates travel in the Region.

The results of socioeconomic and travel accuracy checks on the travel inventory data indicate that the 2011 travel surveys are able to replicate regional socioeconomic characteristics and travel with a high degree of accuracy and completeness.

Table C.14
Comparison of Estimated Average Weekday Arterial Vehicle-Miles of Travel in the Region: 2011

County	Estimated Average Weekday Vehicle-Miles of Travel (Thousands)		Difference	
	Traffic Counts	Travel Survey Data	Number	Percent
Kenosha	3,497	3,235	-262	-7.5
Milwaukee	16,210	14,035	-2,175	-13.4
Ozaukee	2,378	2,482	104	4.4
Racine	3,468	3,917	449	12.9
Walworth	2,452	2,726	274	11.2
Washington	3,442	3,771	329	9.6
Waukesha	9,415	9,938	523	5.6
Region	40,862	40,104	-758	-1.9

Source: Wisconsin Department of Transportation and SEWRPC