

2002 Southeast Michigan Traffic Crash Facts

August 2003

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Mission

SEMCOG's mission is solving regional planning problems — improving the efficiency and effectiveness of the region's local governments as well as the quality of life in Southeast Michigan. Essential functions are:

- providing a forum for addressing issues which extend beyond individual governmental boundaries by fostering collaborative regional planning, and
- facilitating intergovernmental relations among local governments and state and federal agencies.

As a regional planning partnership in Southeast Michigan, SEMCOG is accountable to local governments who join as members. Membership is open to all counties, cities, villages, townships, intermediate school districts, and community colleges in Livingston, Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties.

Responsibilities

SEMCOG's principle activities support local planning through use of SEMCOG's technical, data, and intergovernmental resources. In collaboration with local governments, SEMCOG has responsibility for adopting regionwide plans and policies for community and economic development, water and air quality, land use, and transportation, including approval of state and federal transportation projects. Funding for SEMCOG is provided by federal and state grants, contracts, and membership fees.

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All SEMCOG policy decisions are made by local elected officials, ensuring that regional policies reflect the interests of member communities. Participants serve on one or both of the policymaking bodies — the General Assembly and the Executive Committee.

Prior to policy adoption, technical advisory councils provide the structure for gaining input on transportation, environment, community and economic development, data analysis, and education. This deliberative process includes broad-based representation from local governments, the business community, environmental organizations, and other special interest citizen groups.

2002 Southeast Michigan Traffic Crash Facts

July 2003

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Abstract

This report contains important statistical information about all traffic crashes reported in Southeast Michigan in 2002. It focuses on 10 categories of traffic crashes: all traffic crashes, injury traffic crashes, fatal traffic crashes, alcohol-involved traffic crashes, vehicle-deer crashes, young-driver traffic crashes, elderly driver traffic crashes, pedestrian crashes, bicycle crashes, and truck/bus crashes. Sections at the end of the report contain details about safety-belt use and holiday traffic crashes. The main objective of this report is to provide useful data to aid local communities in their efforts to improve traffic safety.

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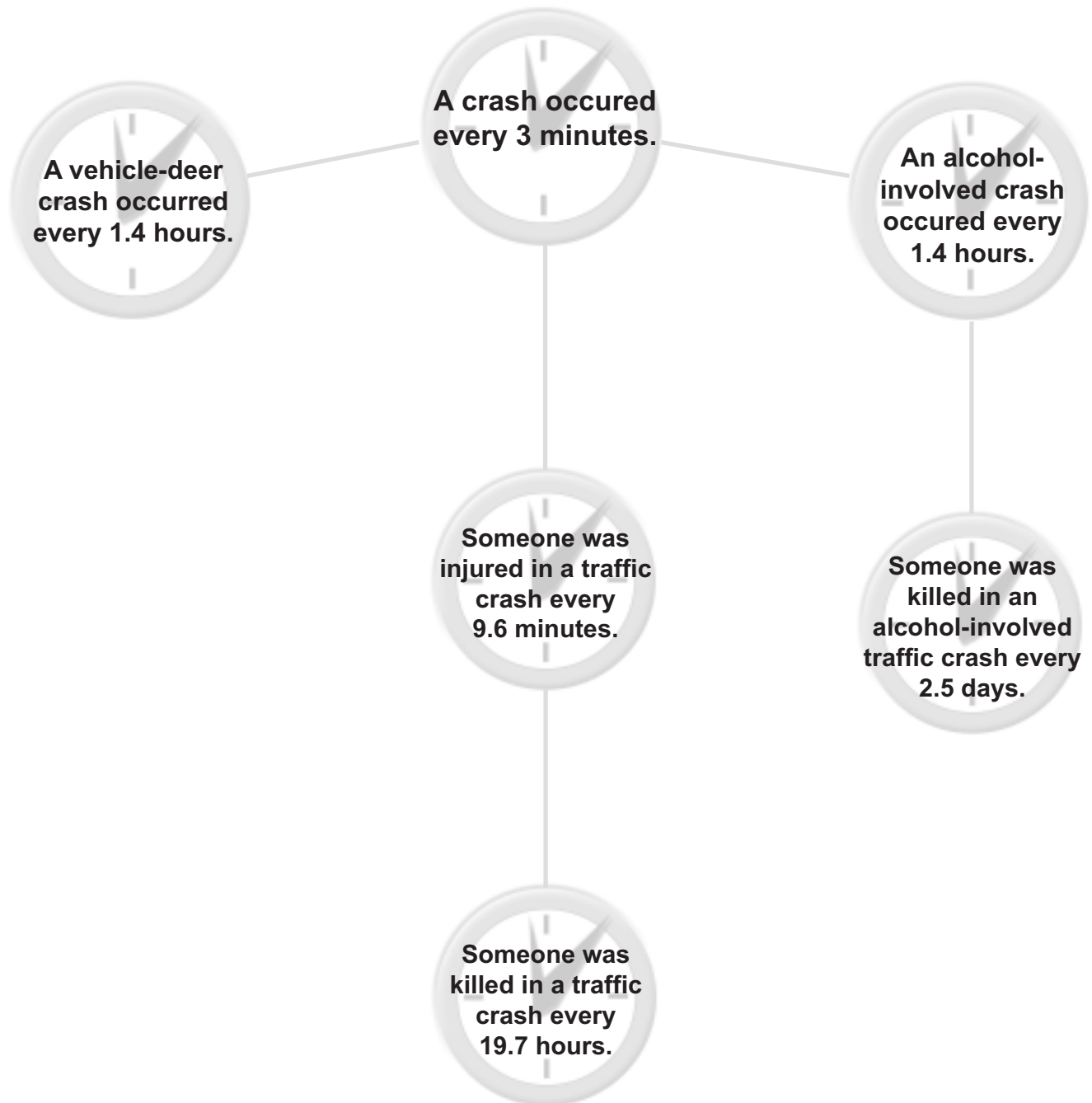
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2002 Quick Crash Facts

- Vehicle miles traveled (VMT) in Southeast Michigan increased from 45,460 million miles in 2001 to 46,067 million in 2002. During 2002, 174,770 traffic crashes were reported in Southeast Michigan. These crashes resulted in 54,859 injuries and 445 fatalities. Compared with 2001, traffic crashes decreased 3.3 percent, injuries decreased 3.2 percent, and fatalities decreased 11.9 percent.
- There were 0.91 fatal traffic crashes for every 100 million miles traveled on Southeast Michigan roads in 2002. This is a decrease from the 2001 rate of 1.03 fatal crashes for every 100 million miles of travel.
- Of drivers involved in fatal crashes, 21 percent were between the ages of 25 and 34.
- Drivers in the 65-74 age group had the lowest rate of fatal traffic crashes among drivers aged 16 and older, at 0.8 fatal crashes per 100 million miles traveled. The 85-94 age group had the highest rate (12.4).
- Crashes involving alcohol continued to decrease, from 6,314 in 2001 to 6,263 in 2002. In Southeast Michigan, 3.6 percent of all traffic crashes involved alcohol, but over 30 percent of fatal traffic crashes involved alcohol consumption.
- There were 6,094 vehicle-deer crashes in Southeast Michigan in 2002, down from 6,451 in 2001. Nearly 96 percent of collisions with deer resulted only in property damage. Although vehicle-deer crashes occurred in every month in 2002, 35 percent of these crashes took place in October and November. Deer crashes were most common in the early morning hours and in the evening.
- Young drivers (ages 16-24) were involved in over 35 percent of all traffic crashes in 2002. Crashes among young drivers peaked at age 18 for all young drivers.
- Elderly drivers (ages 65 and older) were involved in 11.1 percent of all traffic crashes in 2002. Elderly drivers were more likely to be involved in angle crashes, but less likely to have single-vehicle crashes than non-elderly drivers.
- Traffic crashes involving pedestrians or bicycles decreased in 2002 compared to 1999 numbers, the last year for which reliable data are available. Only 17 percent of crashes involving pedestrians resulted in no injury and only 27 percent of all bicycle crashes resulted in no injury.
- Crashes involving commercial trucks or buses in Southeast Michigan decreased 8.5 percent in 2002. Southeast Michigan had a higher rate of truck/bus crashes than the State of Michigan, with 4.9 percent of all crashes involving a commercial truck or bus compared to 4.2 percent in the state.
- Safety-belt use among drivers in traffic crashes increased in Southeast Michigan in 2002, where 79.7 percent of drivers in crashes reported wearing their safety belts at the time of the crash. Over 85 percent of belted drivers escaped injury during their crash, compared to only 55 percent of unbelted drivers.

2002 Crash Clock



Introduction

This report contains statistical information about all traffic crashes in Southeast Michigan reported in 2002. This information is divided into several categories:

- All traffic crashes
- Injury traffic crashes
- Fatal traffic crashes
- Alcohol-involved crashes
- Vehicle-deer crashes
- Young-driver traffic crashes
- Elderly driver traffic crashes
- Pedestrian crashes
- Bicycle crashes
- Truck/bus crashes
- Safety-belt use

This report is part of SEMCOG's Safety Management System and is designed to assist communities in understanding traffic safety issues.

Traffic crash data used in this report were received from the Michigan Department of State Police, Criminal Justice Information Center (CJIC). While it is true that at the time this report was written only 70 percent of all traffic crashes in Southeast Michigan had been assigned to specific locations on the roadway network, this does not affect the accuracy of this report at the regional level or at the county level. Crashes are assigned to counties and communities separately from their location on the roadway.

Due to issues regarding the accuracy of some data fields, sections about pedestrian and bicycle crashes were excluded from the 2000 and 2001 *Southeast Michigan Traffic Crash Facts*. Some information on pedestrian and bicycle crashes is included in this year's report. However, specific data about the age, sex, and injury severity of pedestrians and bicyclists is not available in about 25 percent of pedestrian or bicycle crashes. This information is not included in this report.

Glossary

Crash rate – The number of crashes per 100 million vehicle miles traveled.

Crash type – A crash is typed by the first injury-producing or damage-producing event, which may or may not be the most serious or significant event.

Fatal traffic crash – A fatality is counted when a person dies due to injuries from a traffic crash. Prior to 1979, deaths were counted if they occurred up to one year after the crash; in 1979, this time period was reduced to 90 days. In 1988, it was further reduced to 30 days.

Had-been-drinking (HBD) driver – Driver who had been drinking prior to the crash, as reported by the police, the coroner, or other accepted authorities.

Injury crash – A crash is counted as an injury crash when it results in at least one injury but no deaths. Injury crashes are further typed by the most severe injury caused by the crash. See “Injury severity.”

Injury severity

K (Fatal) – Any injury that results in death.

A (Incapacitating injury) – Any injury, other than a fatal injury, that prevents the injured person from walking, driving, or normally continuing the activities the person was capable of performing before the injury occurred.

B (Nonincapacitating injury) – Any injury not incapacitating but evident to observers at the scene of the crash in which the injury occurred.

C (Possible injury) – Any injury reported or claimed that is not a fatal injury, incapacitating injury, or nonincapacitating injury.

Property damage only (PDO) crash – A crash that results in no fatalities or injuries, with a value of \$400.00 as a minimum reporting threshold.

Traffic crash – A crash that involves a motor vehicle in transport on a public trafficway (in Michigan) and results in injury, death, or at least \$400.00 in property damage.

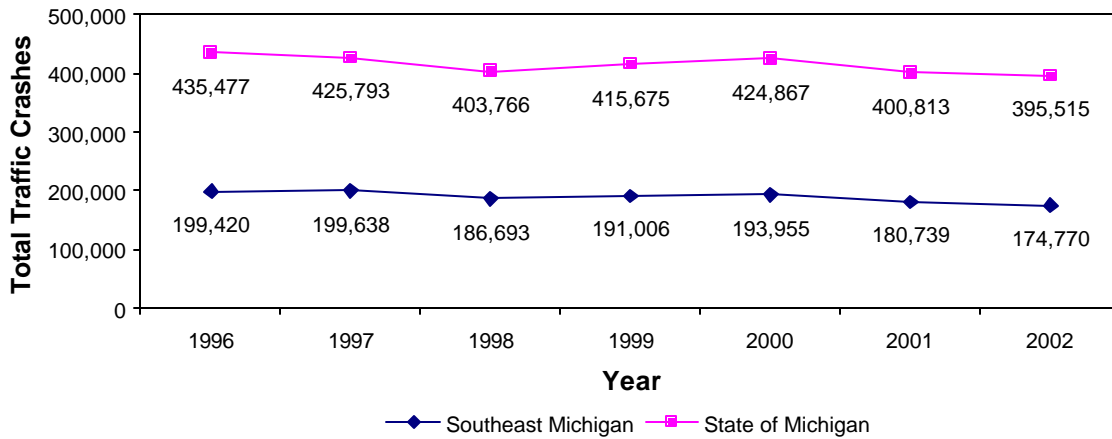
VMT – Vehicle miles traveled. In traffic crash analysis, VMT is typically measured in hundreds of millions of miles. For example, 44,000,000,000 vehicle miles traveled may be represented as 440 hundred million VMT or as 44,000 million VMT.

All Traffic Crashes

In 2002, 174,770 traffic crashes were reported in Southeast Michigan. This is a decrease of 3.3 percent from 2001. The State of Michigan saw a 1.3 percent decrease between 2001 and 2002 (Figure 1).

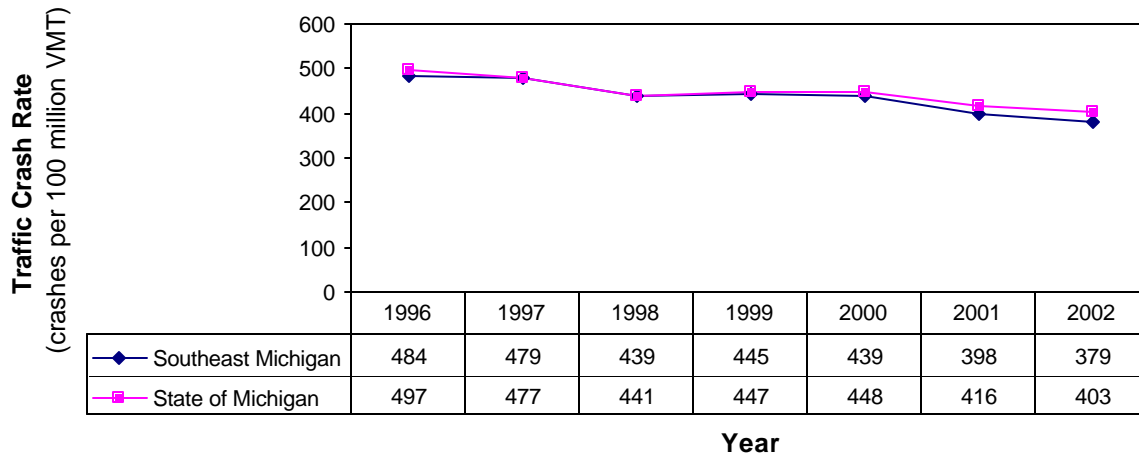
The traffic crash rate, defined as the number of traffic crashes per 100 million vehicle miles traveled (VMT), provides an alternative method of examining traffic crash trends. Figure 2 shows traffic crash rates in Southeast Michigan and the State of Michigan for 1996-2002.

Figure 1
Traffic Crashes, 1996-2002



Source: Michigan State Police Traffic Crash Database (MSPTCD) and SEMCOG, 2002.

Figure 2
Traffic Crash Rate, 1996-2002



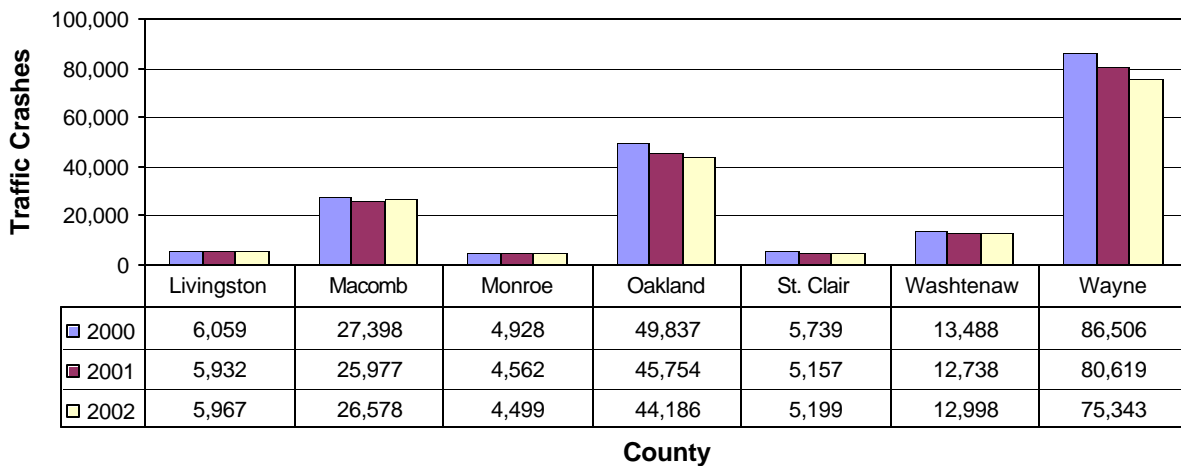
Source: MSPTCD and SEMCOG, 2002.

Traffic Crashes by County

Figure 3 shows the number of traffic crashes in each Southeast Michigan county for 2000, 2001, and 2002. Wayne County experienced a 6.5 percent decrease in traffic crashes. Monroe and Oakland Counties also saw a decrease in crashes, while the crashes increased slightly in other counties.

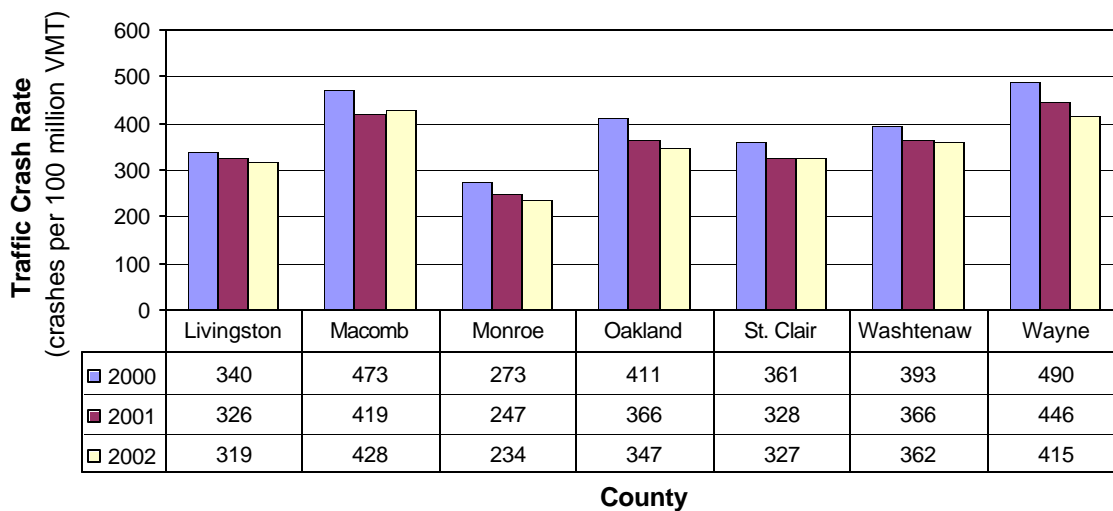
As shown in Figure 4, the traffic crash rate decreased in 2002 in all counties except Macomb, although the crash rate in Macomb County remains lower than in 2000. Monroe County continues to enjoy the lowest traffic crash rate in the region, while Macomb County's crash rate surpassed Wayne County's to become the highest in the region in 2002.

Figure 3
Traffic Crashes by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 4
Traffic Crash Rate by County, 2000-2002

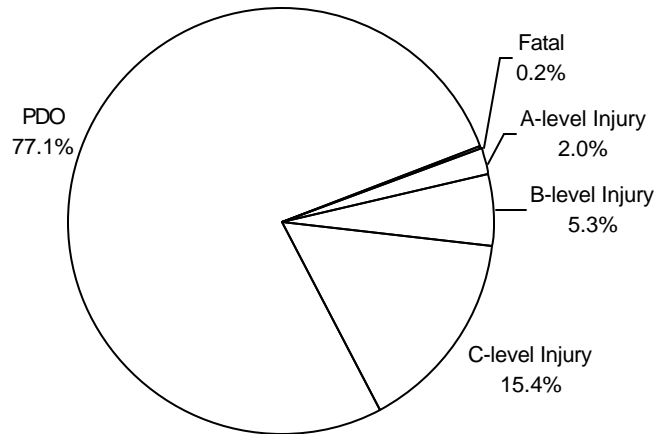


Source: MSPTCD and SEMCOG, 2002.

Traffic Crashes by Severity

Of the 174,770 traffic crashes in Southeast Michigan in 2002, nearly 23 percent resulted in some degree of injury. A total of 420 fatal crashes resulted in the deaths of 445 people, a decrease from the 505 deaths in 2001. Figure 5 shows how traffic crashes in 2002 were divided by severity. Table 1 shows the number of crashes of each severity as well as the number of fatalities and injuries caused by the crashes.

Figure 5
Traffic Crash Severity, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 1
Traffic Crash Severity, 2002

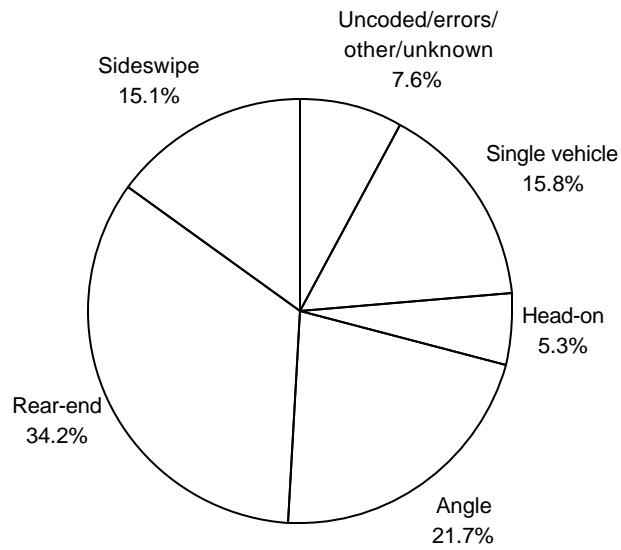
Crash Severity	Number of Crashes	Number of Injuries
Fatal	420	445
A-level Injury	3,431	4,279
B-level Injury	9,271	11,893
C-level Injury	26,908	38,687
Injury & Fatality Subtotal	40,030	55,304
PDO	134,740	
Total	174,770	

Source: MSPTCD and SEMCOG, 2002.

Traffic Crashes by Crash Type

Figure 6 shows how traffic crashes were distributed among the various crash types in 2002. As in 2001, the most common type of crash was rear-end crashes (34.2 percent). The least common type of crash was head-on (5.3 percent).

Figure 6
Traffic Crashes by Crash Type, 2002

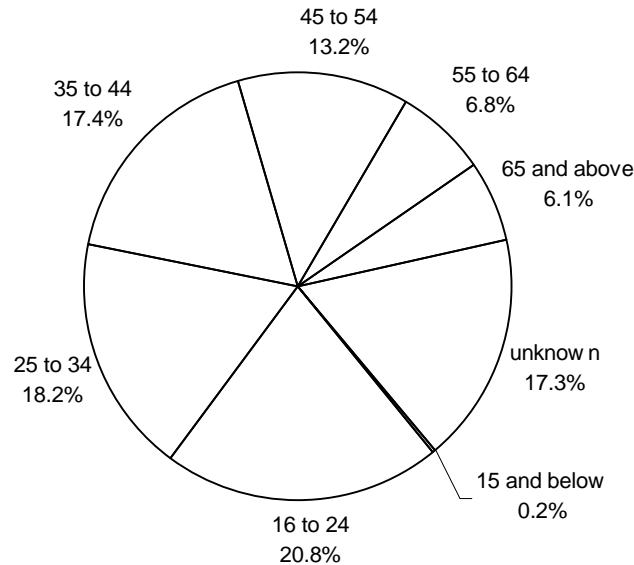


Source: MSPTCD and SEMCOG, 2002.

Age and Sex of Drivers in Traffic Crashes

Figure 7 shows how the 334,450 drivers involved in traffic crashes in 2002 were distributed among the age groups. Table 2 breaks down age groups by sex. The age group with the greatest involvement in traffic crashes was the 16-24 age group (20.8 percent of drivers in traffic crashes), followed by the 25-34 age group (18.2 percent). Over six percent of all drivers in crashes were age 65 or older.

Figure 7
Drivers in Traffic Crashes by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 2
Age and Sex of Drivers in Traffic Crashes, 2002

Age of Driver	Number of Drivers by Sex			Total
	Female	Male	Unknown	
15 and below	327	464	28	819
16 to 24	29,768	37,737	2,115	69,620
25 to 34	25,716	33,322	1,826	60,864
35 to 44	24,673	31,784	1,793	58,250
45 to 54	18,520	24,232	1,334	44,086
55 to 64	9,059	12,858	682	22,599
65 to 74	4,630	6,458	351	11,439
75 to 84	3,270	4,044	222	7,536
85 to 94	569	688	40	1,297
95 and above	13	24	1	38
Unknown	5,998	14,220	37,684	57,902
Total	122,543	165,831	46,076	334,450

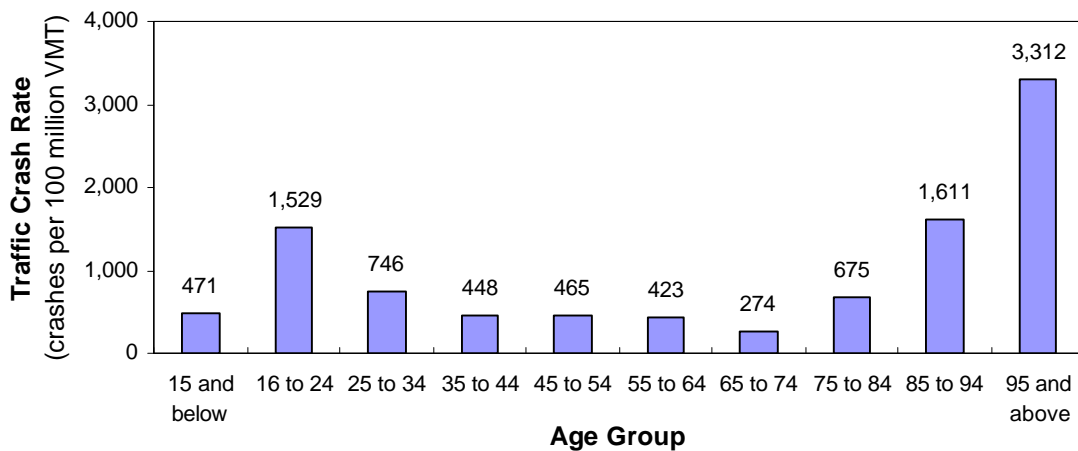
Source: MSPTCD and SEMCOG, 2002.

Rate of Crash Involvement by Age Group

Figure 8 shows the traffic-crash rate for each age group in 2002. According to 2002 VMT estimates, drivers age 65-74 had the lowest crash rate of any age group, at 274 crashes per 100 million VMT. Drivers aged 95 or older had the highest rate followed by the 85-94 and 16-24 age groups (3,312, 1,611, and 1,529 crashes per 100 million VMT, respectively).

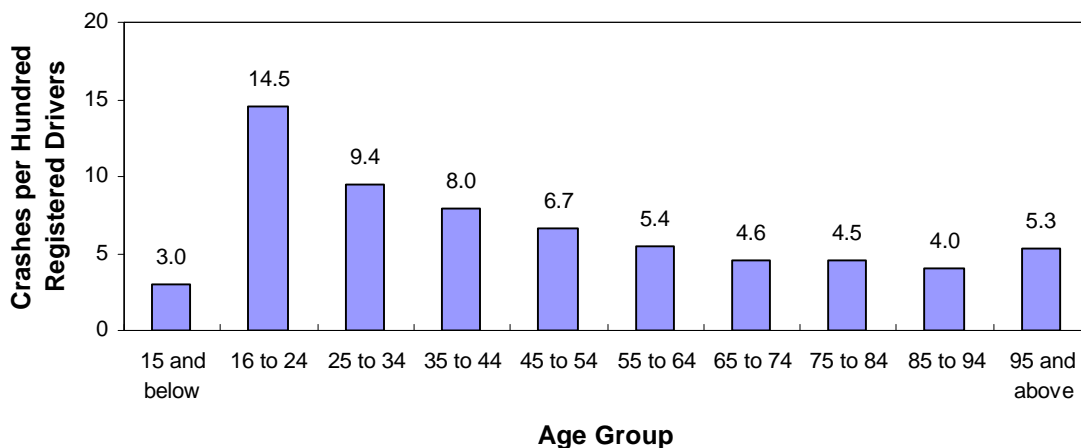
Figure 9 shows how many drivers were in traffic crashes out of every hundred drivers in each age group. There were almost 15 drivers aged 16-24 involved in crashes for every hundred registered drivers in that age group, which was the highest rate of any group.

Figure 8
Traffic Crash Rate by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 9
Drivers in Traffic Crashes per Hundred Registered Drivers, 2002



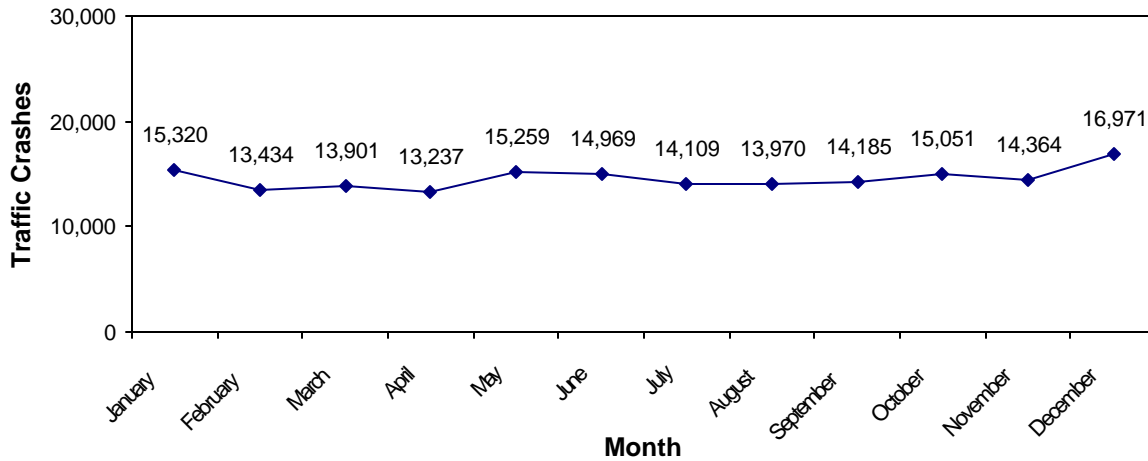
Source: MSPTCD, Michigan Department of State (MDOS), and SEMCOG, 2002.

Traffic Crashes by Month, Day, and Hour

As seen in Figure 10, more traffic crashes (16,971) occurred during December 2002 than any other month in 2002. April had the fewest crashes (13,237) in 2002.

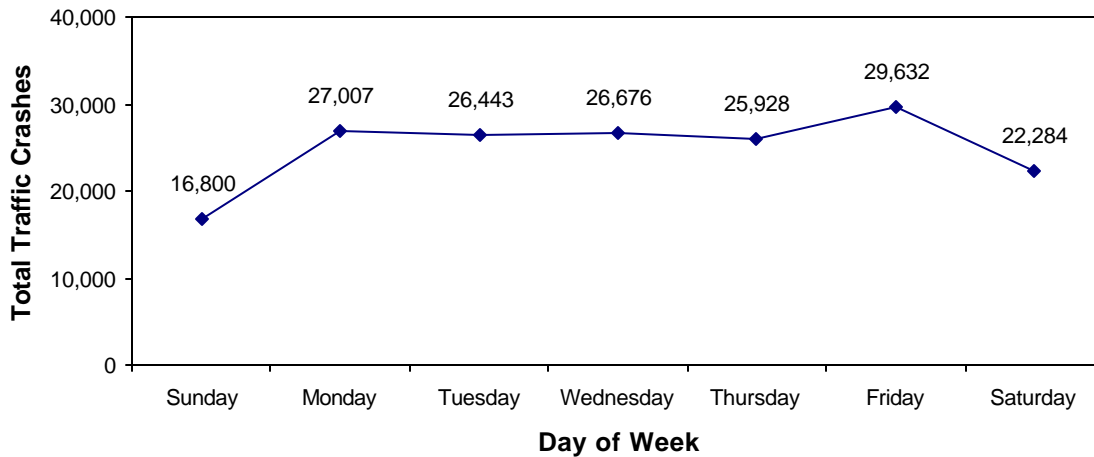
Figure 11 shows that more traffic crashes took place on Fridays than any other day of the week (29,632), and that Sundays had the fewest crashes (16,800).

Figure 10
Traffic Crashes by Month, 2002



Source: MSPTCD and SEMCOG, 2002.

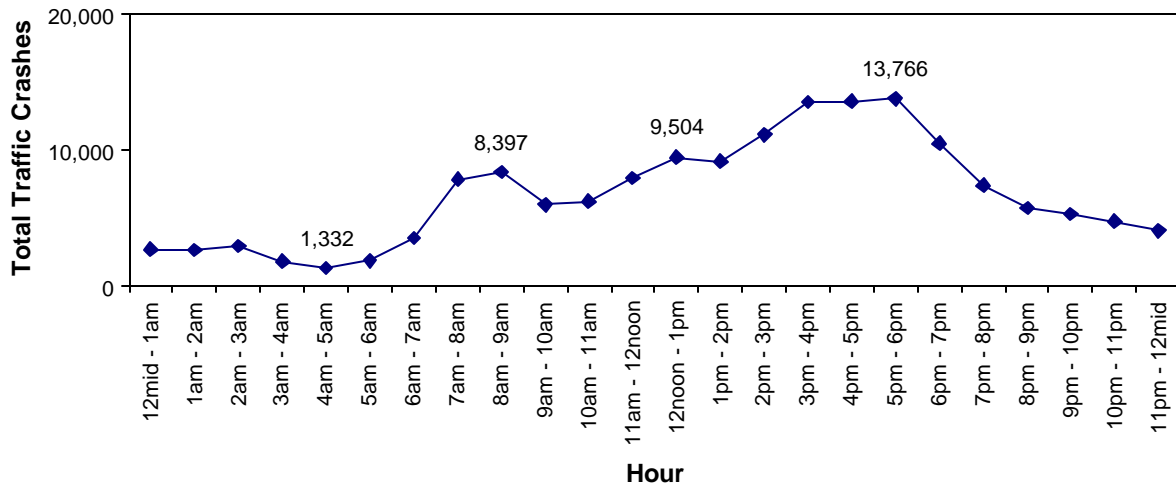
Figure 11
Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 12 shows the total number of traffic crashes that took place during each hour of 2002. The fewest crashes — 1,332 — took place between 4 a.m. and 5 a.m. The time of day with the greatest number of crashes was the period from 3 p.m. to 6 p.m., with nearly one out of every four traffic crashes taking place during these hours.

Figure 12
Traffic Crashes by Hour of Day, 2002



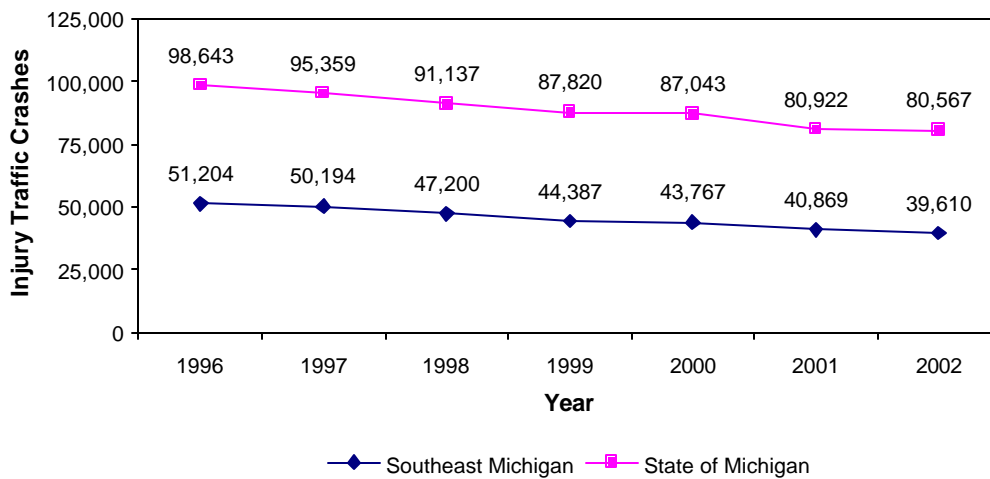
Source: MSPTCD and SEMCOG, 2002.

Injury Traffic Crashes

An injury traffic crash is any crash that results in an injury, but not a fatality. Crashes that result in fatalities are discussed in the section on fatal crashes.

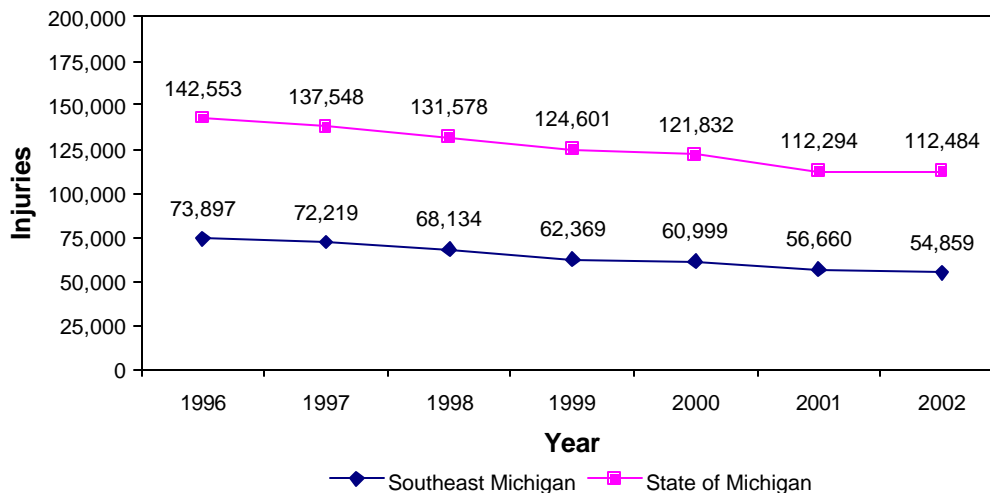
As shown in Figure 13, injury traffic crashes in Southeast Michigan decreased in 2002 — the seventh consecutive year that they have decreased. Injury crashes were down 3.1 percent in Southeast Michigan and 0.4 percent in Michigan. Figure 14 shows the number of injuries caused by traffic crashes for the years 1996-2002. Injuries decreased 3.2 percent in Southeast Michigan and increased slightly in Michigan.

Figure 13
Injury Traffic Crashes, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

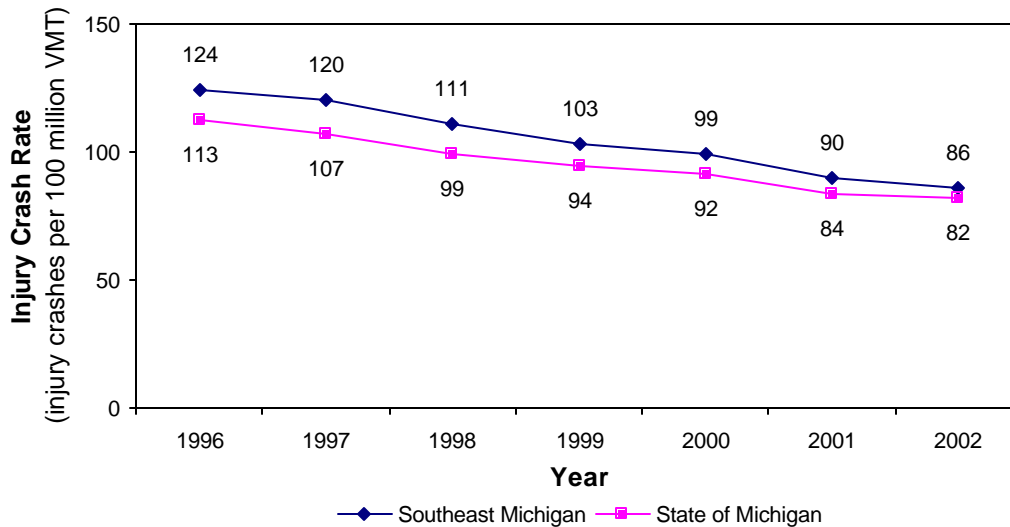
Figure 14
Traffic Crash Injuries, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

A decrease in injury crashes at the same time that VMT increased means that the rate of injury traffic crashes per 100 million VMT continued to decrease in Southeast Michigan as well as in Michigan. Figure 15 shows this decrease in greater detail. Table 3 shows how the number of injury traffic crashes compared to VMT for 1996-2002.

Figure 15
Injury Traffic Crash Rate, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

Table 3
Injury Traffic Crashes and VMT, 1996-2002

	Injury Traffic Crashes		VMT (in millions)		Injury Traffic Crash Rate (crashes per 100 million VMT)	
	Southeast Michigan	Michigan	Southeast Michigan	Michigan	Southeast Michigan	Michigan
1996	51,204	98,643	41,239	87,664	124	113
1997	50,194	95,359	41,678	89,232	120	107
1998	47,200	91,137	42,513	91,616	111	99
1999	44,387	87,820	42,924	93,060	103	94
2000	43,767	87,043	44,167	94,915	99	92
2001	40,869	80,922	45,460	96,428	90	84
2002	39,610	80,567	46,067	98,175	86	82

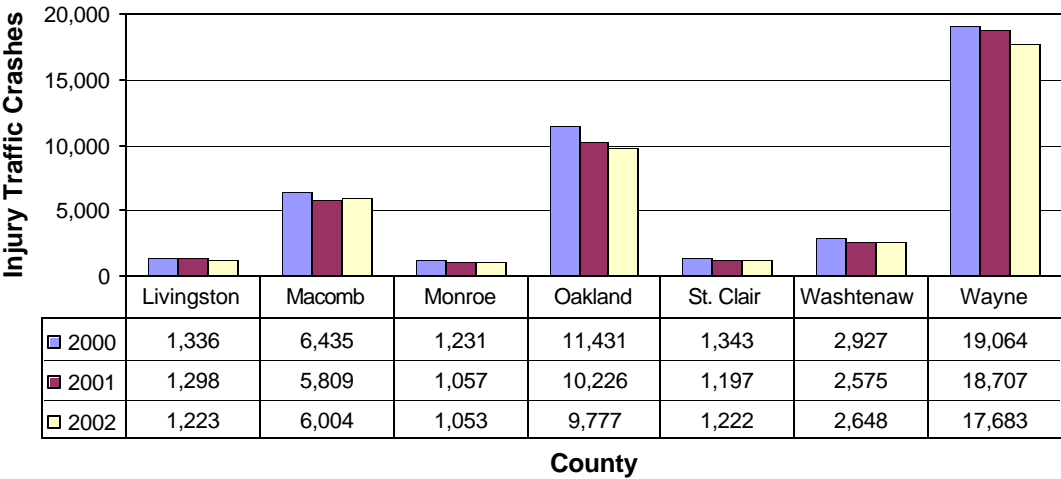
Source: MSPTCD and SEMCOG, 2002.

Injury Traffic Crashes by County

Injury crashes in Macomb, St. Clair, and Washtenaw Counties increased in 2002 (Figure 16), although injury crashes in those counties still remained below 2000 levels. The other four counties experienced decreases in injury crashes, with the largest decrease taking place in Livingston County (-5.8 percent).

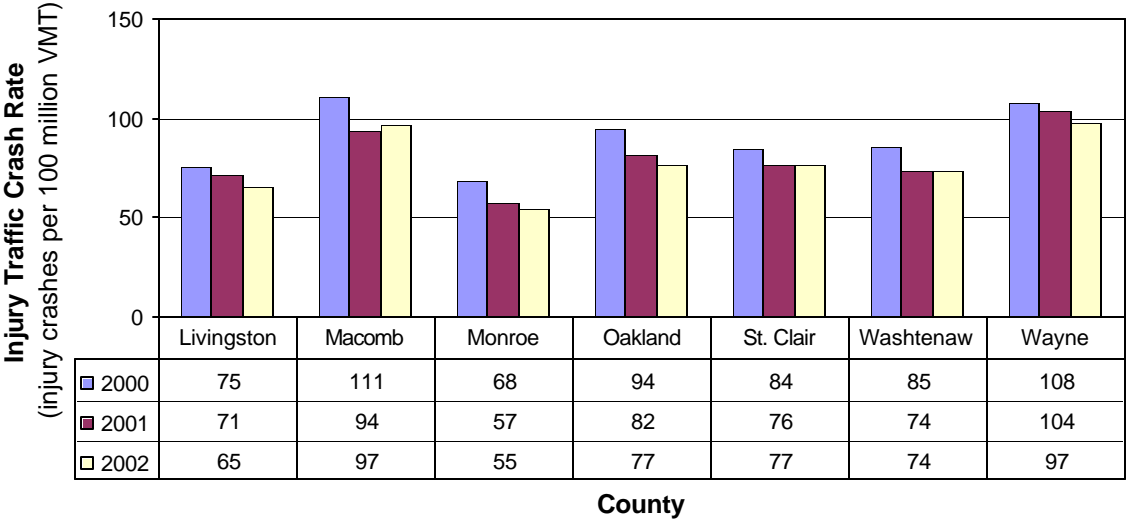
As Figure 17 shows, all counties except Macomb and Wayne had injury crash rates lower than the regional average of 86 injury crashes per 100 million VMT. Although Macomb County has slightly more than one-third of the injury crashes that Wayne County has, the crash rates in those two counties were the same in 2002 at 97 injury crashes per 100 million VMT — the highest in the region.

Figure 16
Injury Traffic Crashes by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 17
Injury Traffic Crash Rate by County, 2000-2002



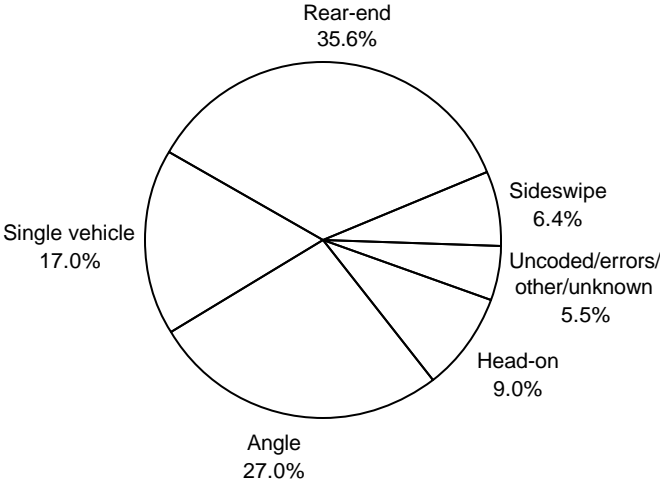
Source: MSPTCD and SEMCOG, 2002.

Injury Traffic Crashes by Crash Type

Rear-end crashes accounted for more injury crashes (35.6 percent) than any other crash type in 2002, and sideswipe crashes made up the smallest portion (6.4 percent). Figure 18 shows the percentages of other crash types.

Table 4 shows a comparison of injury crashes to all crashes by crash type. This type of comparison shows that head-on crashes were the most likely to result in injury, with over 38 percent of all head-on crashes causing injury. Only 9.7 percent of sideswipe crashes caused injury in 2002.

Figure 18
Injury Traffic Crashes by Crash Type, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 4
Crash Types by Percent Resulting in Injury, 2002

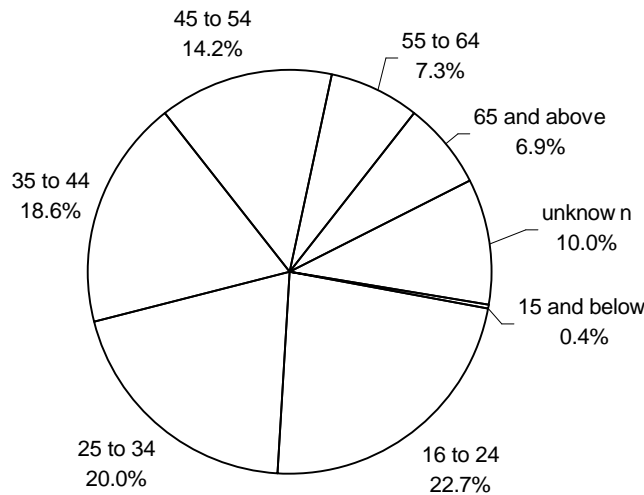
Crash Type	Injury Crashes	All Crashes	Percent resulting in injury
Head-on	3,553	9,293	38.2%
Angle	10,682	37,849	28.2%
Single vehicle	6,717	27,586	24.3%
Rear-end	14,083	59,844	23.5%
Sideswipe	2,545	26,323	9.7%
Uncoded/errors/other/unknown	2,030	13,875	14.6%
Total	39,610	174,770	22.7%

Source: MSPTCD and SEMCOG, 2002.

Age and Sex of Drivers in Injury Traffic Crashes

Figure 19 and Table 5 show that more drivers in the 16-24 age group were involved in injury traffic crashes than any other age group. The number of drivers in injury crashes in each age group decreases as age increases. For example, drivers age 65 or older were involved in 5,354 injury crashes in 2002, or 6.9 percent of all injury crashes, lower than any of the younger age groups except drivers age 15 or younger. Male drivers made up a majority of drivers in injury crashes.

Figure 19
Drivers in Injury Traffic Crashes by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 5
Drivers in Injury Traffic Crashes by Age and Sex, 2002

Age of Driver	Number of Drivers by Sex			Total
	Female	Male	Unknown	
15 and below	104	182	13	299
16 to 24	8,059	9,115	505	17,679
25 to 34	6,973	8,151	431	15,555
35 to 44	6,477	7,641	409	14,527
45 to 54	4,890	5,828	323	11,041
55 to 64	2,388	3,148	186	5,722
65 to 74	1,193	1,646	85	2,924
75 to 84	877	1,126	56	2,059
85 to 94	157	189	12	358
95 And Above	3	10	0	13
Unknown	1,163	2,891	3,715	7,769
Total	32,284	39,927	5,735	77,946

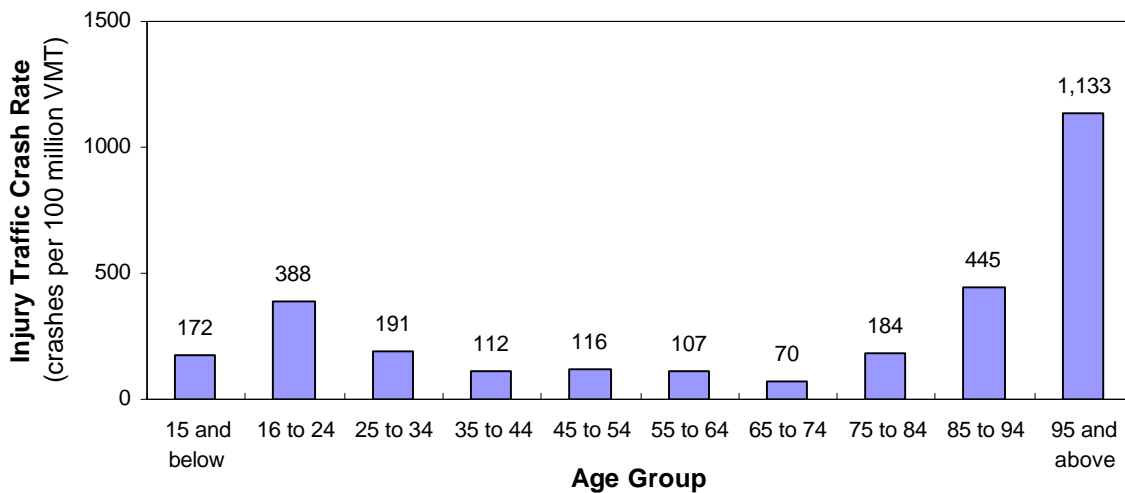
Source: MSPTCD and SEMCOG, 2002.

Rate of Injury Traffic Crash Involvement by Age Group

As shown in Figure 20, the 65-74 age group had the lowest rate of injury crashes per 100 million VMT in 2002 (70 crashes). The 95-and-above age group had the highest rate (1,133), followed by the 85-94 age group (445) and the 16-24 age group (388).

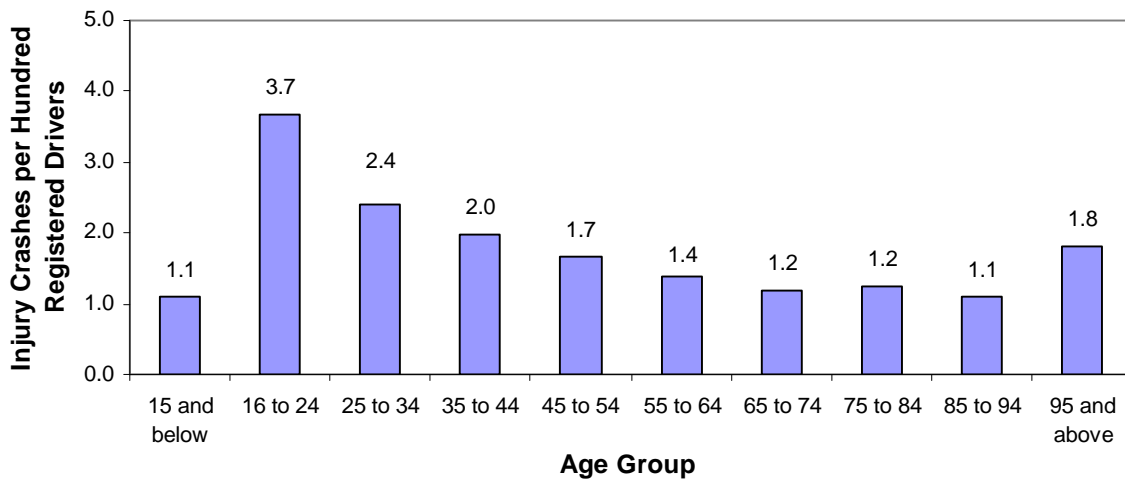
Figure 21 shows the rate of driver involvement in injury crashes for every hundred registered drivers. In 2002, 3.7 drivers age 16-24 were involved in traffic crashes for every hundred registered drivers in that age group. This was the highest rate of involvement of any age group. Drivers age 85-94 had the lowest rate of involvement, at 1.1 drivers for every hundred drivers registered.

Figure 20
Injury Traffic Crash Rate by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 21
Drivers Involved in Injury Traffic Crashes per Hundred Registered Drivers, 2002

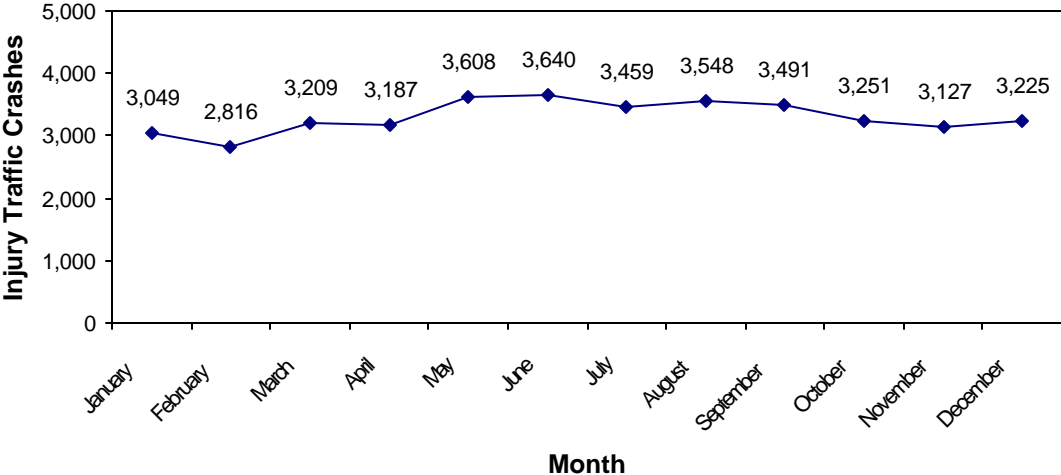


Source: MSPTCD, MDOS, and SEMCOG, 2002.

Injury Traffic Crashes by Month, Day, and Hour

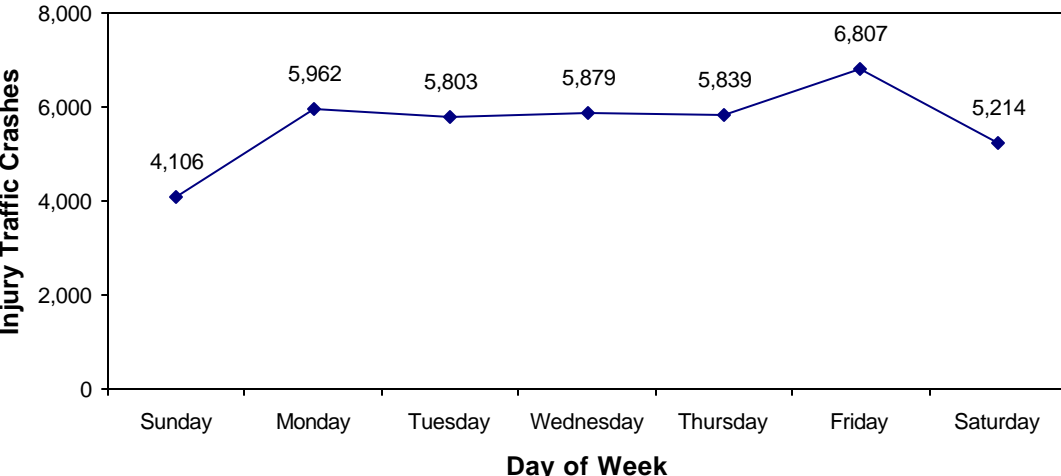
As Figure 22 shows, June was the month in 2002 with the most injury traffic crashes (3,640) even though December was the month with the most overall crashes (Figure 10); February, with 2,816 injury crashes, was the month with the fewest. More injury traffic crashes occurred on Fridays (6,807) than any other day. Sundays (4,106) had the fewest injury crashes of any day (Figure 23).

Figure 22
Injury Traffic Crashes by Month, 2002



Source: MSPTCD and SEMCOG, 2002.

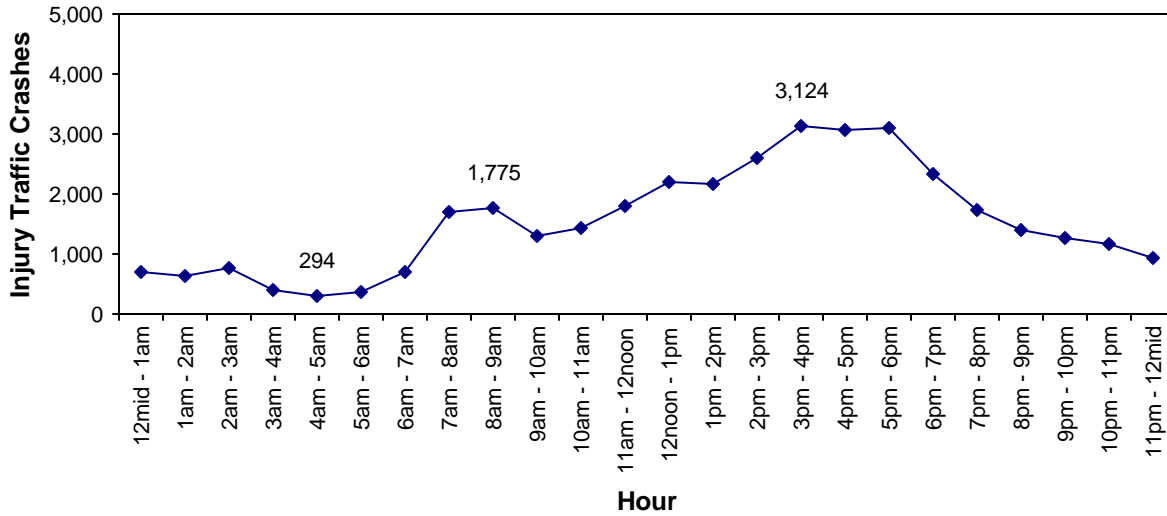
Figure 23
Injury Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 24 shows the total number of injury traffic crashes that took place during each hour in 2002. Following the same general pattern as total crashes (Figure 12), injury crashes were least frequent between 4 a.m. and 5 a.m. (294 injury crashes) and most common between 3 p.m. and 6 p.m. Nearly one out of every four injury crashes took place between 3 p.m. and 6 p.m.

Figure 24
Injury Traffic Crashes by Hour of Day, 2002



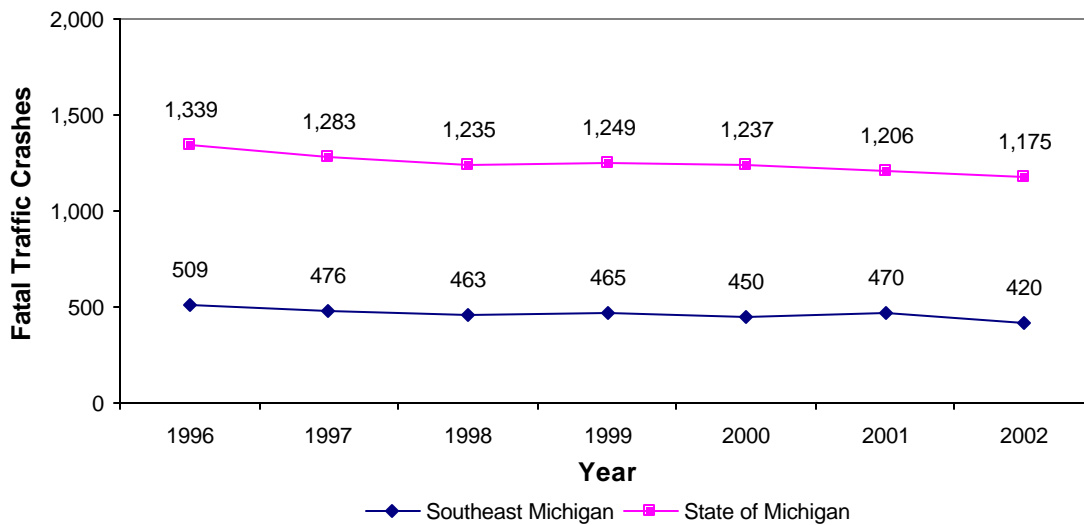
Source: MSPTCD and SEMCOG, 2002.

Fatal Traffic Crashes

A fatal traffic crash is a traffic crash that causes a death within 30 days of the crash. After increasing in 2001, fatal traffic crashes in Southeast Michigan decreased 10.6 percent in 2002 to 420. Fatal traffic crashes also decreased 2.6 percent in the state as a whole. Figure 25 shows the number of fatal traffic crashes in Michigan and Southeast Michigan for 1996-2002.

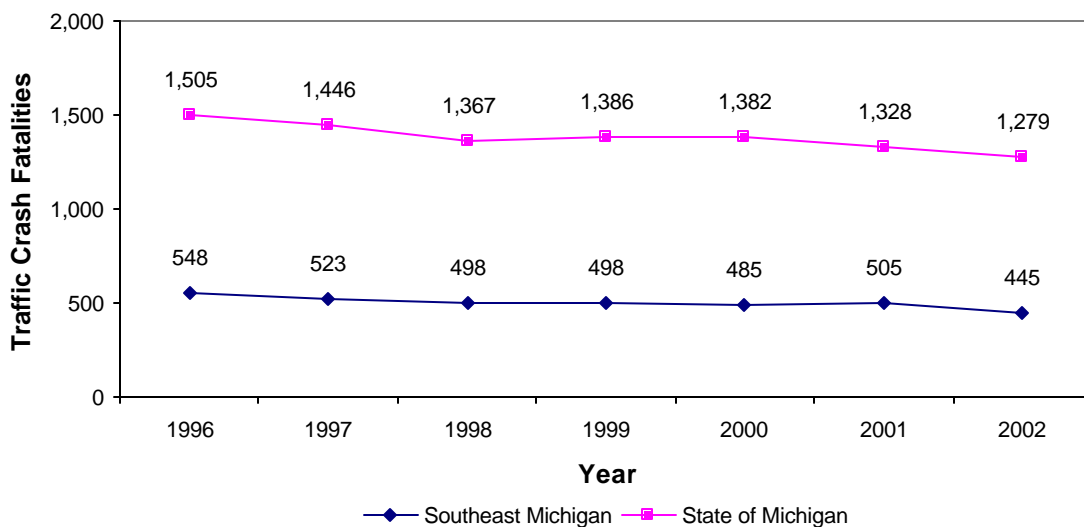
Figure 26 shows that in 2002 traffic-crash fatalities decreased 11.9 percent in Southeast Michigan and 3.7 percent in the State of Michigan.

Figure 25
Fatal Traffic Crashes, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

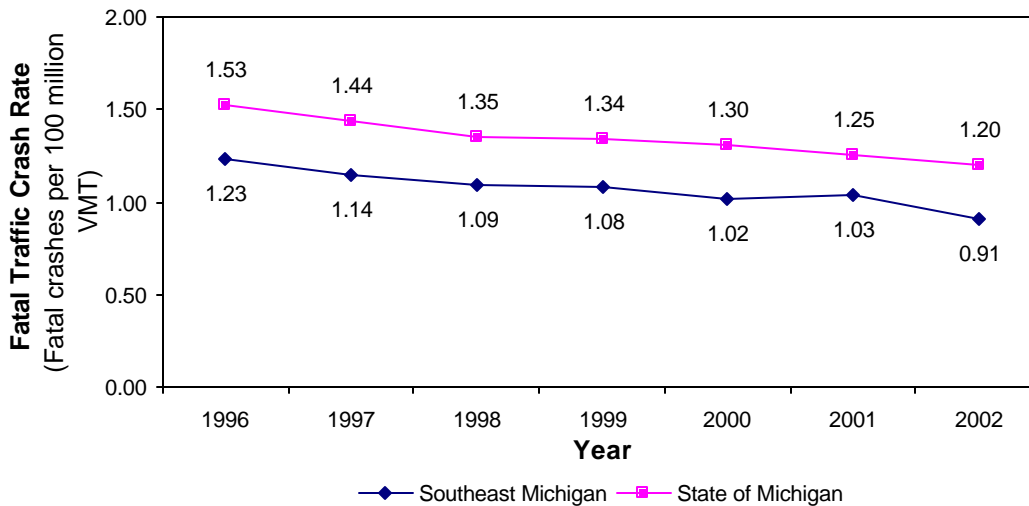
Figure 26
Traffic-Crash Fatalities, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

As shown in Figure 27, the rate of fatal traffic crashes per 100 million miles traveled decreased in Southeast Michigan. This is the lowest regional fatal crash rate since 1987 when SEMCOG began compiling these statistics. Table 6 shows how the number of fatal traffic crashes compared to VMT for 1996-2002.

Figure 27
Fatal Traffic Crash Rate, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

Table 6
Fatal Traffic Crashes and VMT, 1996-2002

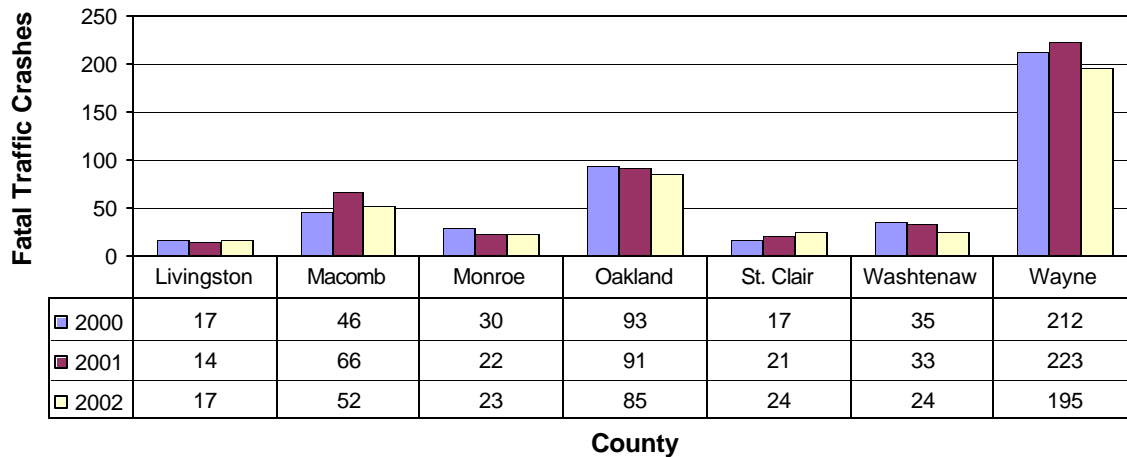
	Fatal Traffic Crashes		VMT (in millions)		Fatal Traffic Crash Rate (crashes per 100 million VMT)	
	Southeast Michigan	Michigan	Southeast Michigan	Michigan	Southeast Michigan	Michigan
1996	509	1,339	41,239	87,664	1.23	1.53
1997	476	1,283	41,678	89,232	1.14	1.44
1998	463	1,235	42,513	91,616	1.09	1.35
1999	465	1,249	42,924	93,060	1.08	1.34
2000	450	1,237	44,167	94,915	1.02	1.30
2001	470	1,206	45,460	96,428	1.03	1.25
2002	420	1,175	46,067	98,175	0.91	1.20

Source: MSPTCD and SEMCOG, 2002.

Fatal Traffic Crashes by County

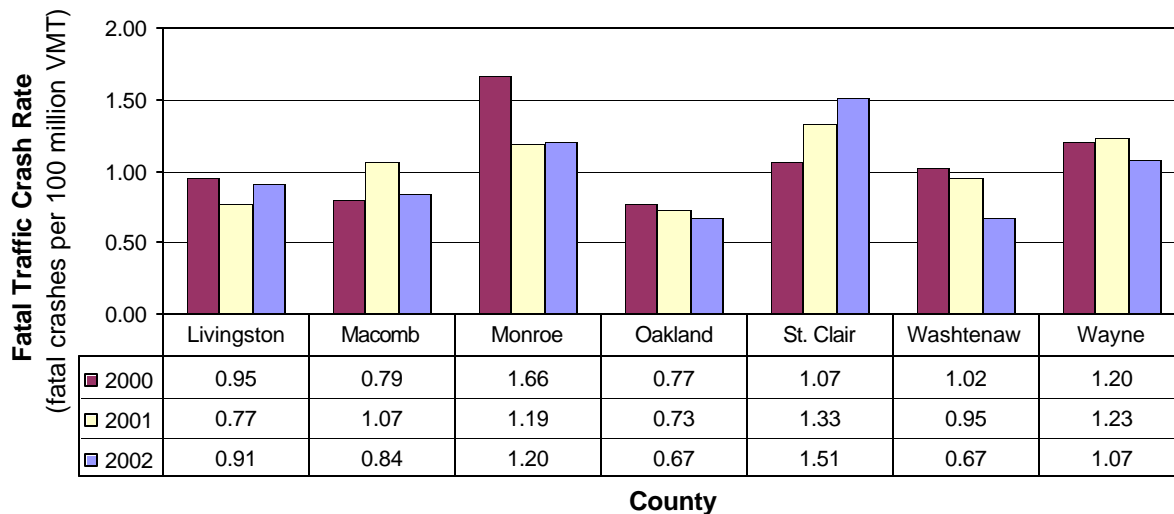
Fatal traffic crashes increased in 2002 in Livingston, Monroe, and St. Clair Counties (Figure 28), although the numbers in Livingston and Monroe Counties were still below 2000 levels. The same three counties also saw increases in fatal crash rate, which indicates that the increase in fatal crashes is not fully accounted for by an increase in traffic (Figure 29).

Figure 28
Fatal Traffic Crashes by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 29
Fatal Traffic Crash Rates by County, 2000-2002



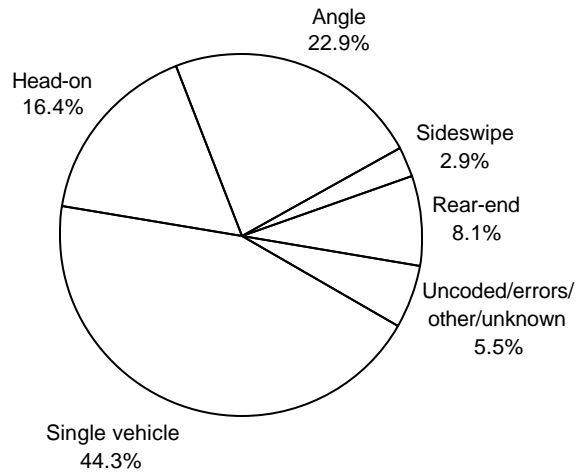
Source: MSPTCD and SEMCOG, 2002.

Fatal Traffic Crashes by Crash Type

As shown in Figure 30, over 40 percent of all fatal crashes in 2002 were single-vehicle crashes. Angle crashes made up the next biggest portion of fatal crashes at nearly 23 percent.

Table 7 shows that head-on crashes were the crash type most likely to result in a fatality, with 74 out of every 10,000 head-on crashes resulting in a death. Rear-end and sideswipe crashes were the least likely to cause a death.

Figure 30
Fatal Traffic Crashes by Crash Type, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 7
Crash Types by Percent Resulting in a Fatality, 2002

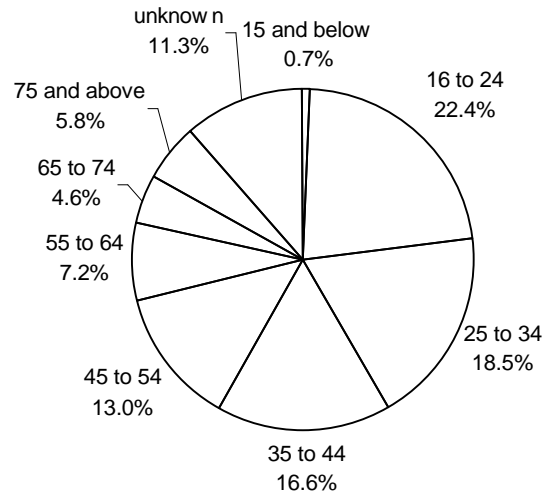
	Fatal Crashes	All Crashes	Percent Resulting in a Fatality
Head-on	69	9,293	0.74%
Single vehicle	186	27,586	0.67%
Angle	96	37,849	0.25%
Rear-end	34	59,844	0.06%
Sideswipe	12	26,323	0.05%
Uncoded/errors/other/unknown	23	13,875	0.17%
Total	420	174,770	0.24%

Source: MSPTCD and SEMCOG, 2002.

Age and Sex of Drivers in Fatal Traffic Crashes

Figure 31 shows the age distribution of drivers involved in fatal traffic crashes in 2002. Over 57 percent of drivers in fatal crashes were age 44 or younger. Table 8 divides age groups by sex of the driver. Male drivers outnumbered female drivers in fatal crashes by a two-to-one ratio.

Figure 31
Drivers in Fatal Traffic Crashes by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 8
Drivers in Fatal Crashes by Age and Sex, 2002

Age of Driver	Number of Drivers by Sex			Total
	Female	Male	Unknown	
15 and below	1	4	0	5
16 to 24	46	105	4	155
25 to 34	27	99	2	128
35 to 44	34	78	3	115
45 to 54	22	68	0	90
55 to 64	16	34	0	50
65 to 74	12	20	0	32
75 to 84	9	21	0	30
85 to 94	3	7	0	10
Unknown	7	21	50	78
Total	177	457	59	693

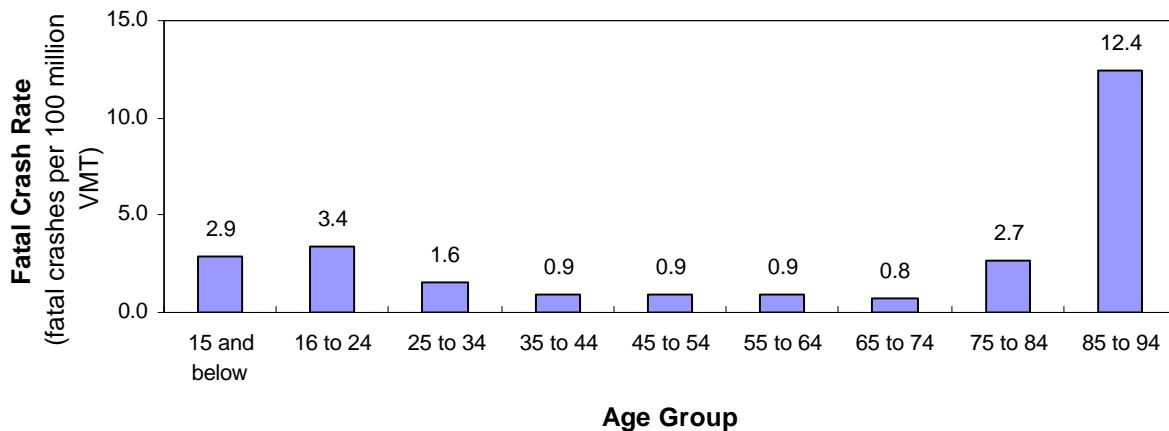
Source: MSPTCD and SEMCOG, 2002.

Rate of Fatal Traffic Crash Involvement by Age Group

Figure 32 shows the rate of fatal traffic crashes per 100 million VMT for each age group. No drivers age 95 or older were involved in a fatal traffic crash in 2002. Of all drivers age 16-94, drivers age 65-74 had the lowest fatal crash rate with 0.8 fatal crashes per 100 million VMT. Drivers age 85-94 had the highest fatal crash rate (12.4), followed by drivers age 16-24 (3.4).

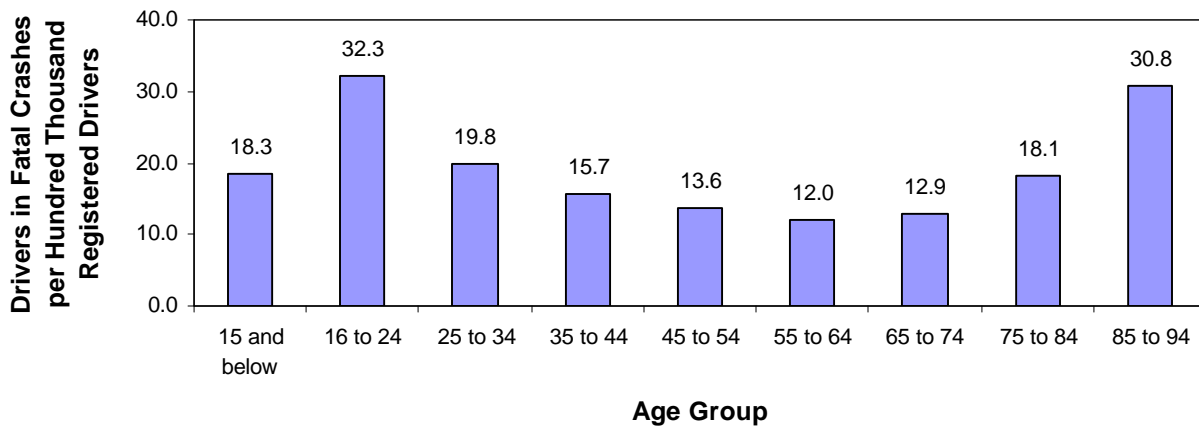
Figure 33 shows the number of drivers involved in fatal crashes compared to the number of registered drivers in that age group. By this measurement, drivers age 55-64 were least likely to be involved in a fatal traffic crash — 12.0 drivers in this age group were in fatal crashes for every hundred thousand registered drivers. Drivers age 16-24 were most likely to be in a fatal crash (32.3), followed by drivers age 85-94 (30.8).

Figure 32
Fatal Traffic Crash Rate by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 33
Drivers in Fatal Traffic Crashes per 100,000 Registered Drivers, 2002



Source: MSPTCD, MDOS, and SEMCOG, 2002.

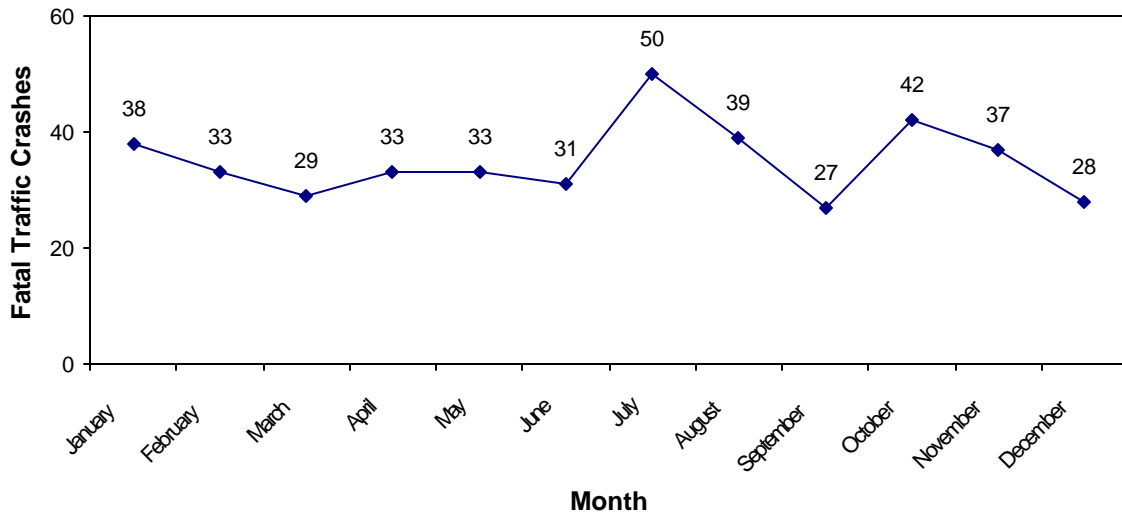
Fatal Traffic Crashes by Month, Day, and Hour

As shown in Figure 34, more fatal traffic crashes took place in July 2002 than any other month (50), even though December 2002 had the most crashes overall (Figure 10). September 2002 had the fewest fatal crashes (27).

Figure 35 shows the total number of fatal crashes that occurred on each day in 2002. Saturdays in 2002 saw the most fatal crashes (82), even though Fridays had the most overall crashes (Figure 11). Tuesdays had the fewest fatal crashes (41).

Figure 34

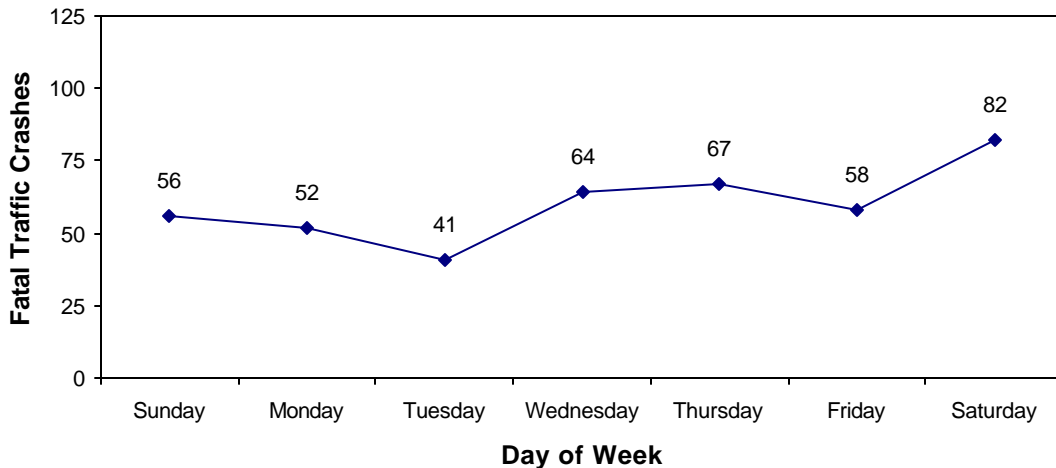
Fatal Traffic Crashes by Month, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 35

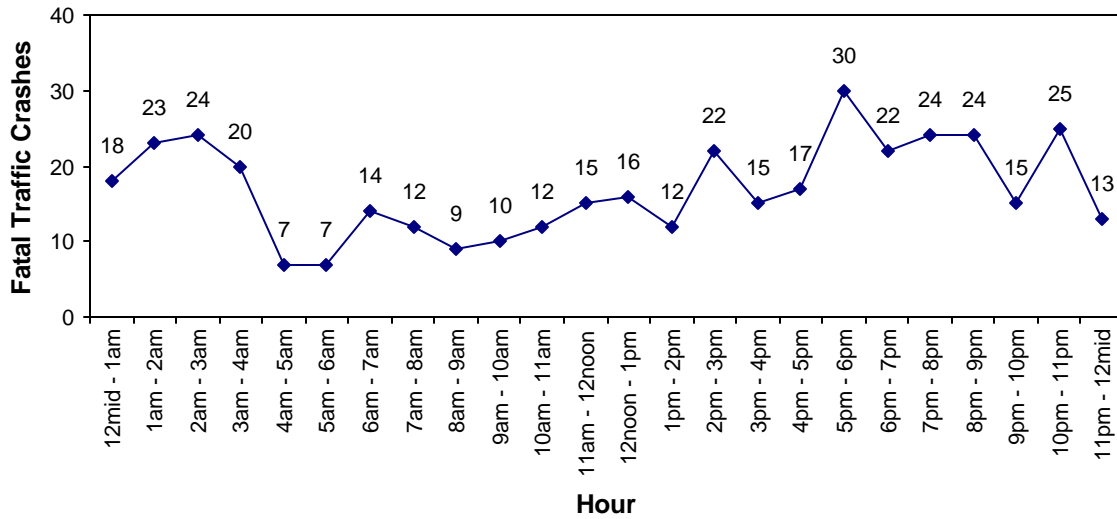
Fatal Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

As shown in Figure 36, the hour from 5 p.m. to 6 p.m. had the most fatal traffic crashes (30), followed by 10 p.m. – 11 p.m. (30). The period with the fewest fatal crashes was the 4 a.m. – 6 a.m. period, with seven fatal crashes taking place in each one hour period. Comparing this figure to Figure 12 illustrates that times of day with low numbers of overall crashes can have high numbers of fatal crashes.

Figure 36
Fatal Traffic Crashes by Hour of Day, 2002



Source: MSPTCD and SEMCOG, 2002.

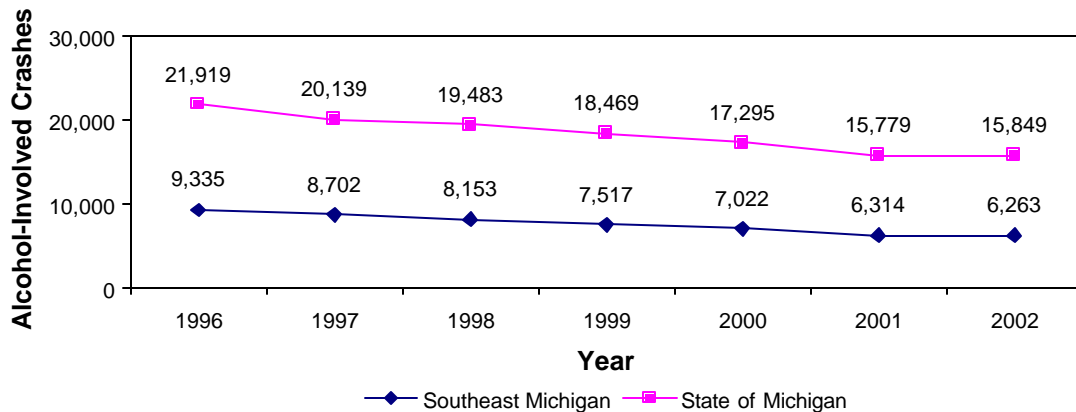
Alcohol-Involved Traffic Crashes

Beginning in 2000, an alcohol-involved crash is defined as a traffic crash where a driver, pedestrian, or cyclist had been drinking prior to the crash as reported by police, the coroner, or other accepted authorities. *Alcohol-involved crashes no longer include crashes where drugs other than alcohol were a factor.*

Figure 37 shows that the decrease in alcohol-involved traffic crashes in Southeast Michigan continued in 2002, although the State of Michigan saw a slight increase. Fewer than 6,300 alcohol-involved crashes took place in Southeast Michigan in 2002.

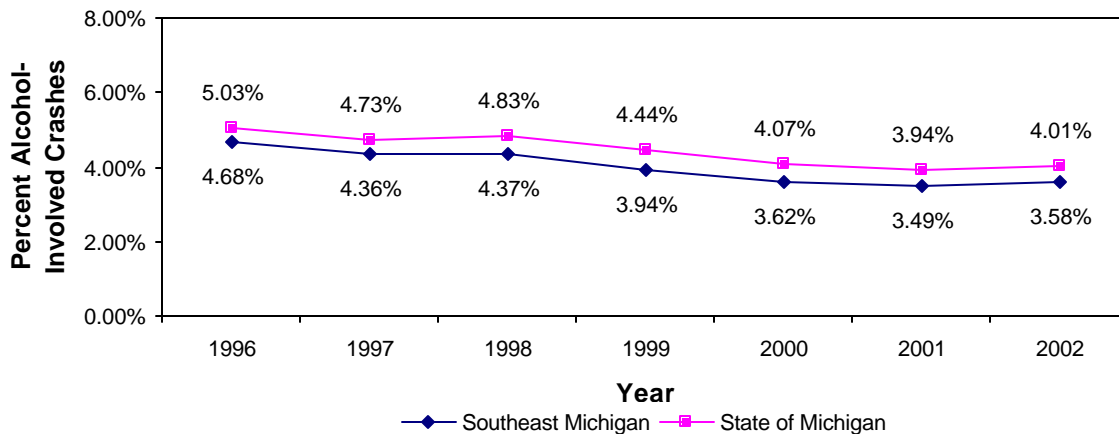
Since the decrease in total crashes both in Southeast Michigan and in Michigan was not accompanied by a proportional decrease in alcohol-involved crashes, the alcohol-involved crash percentage increased in both the region and the state (Figure 38).

Figure 37
Alcohol-Involved Traffic Crashes, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 38
Alcohol-Involved Traffic Crash Percentage, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

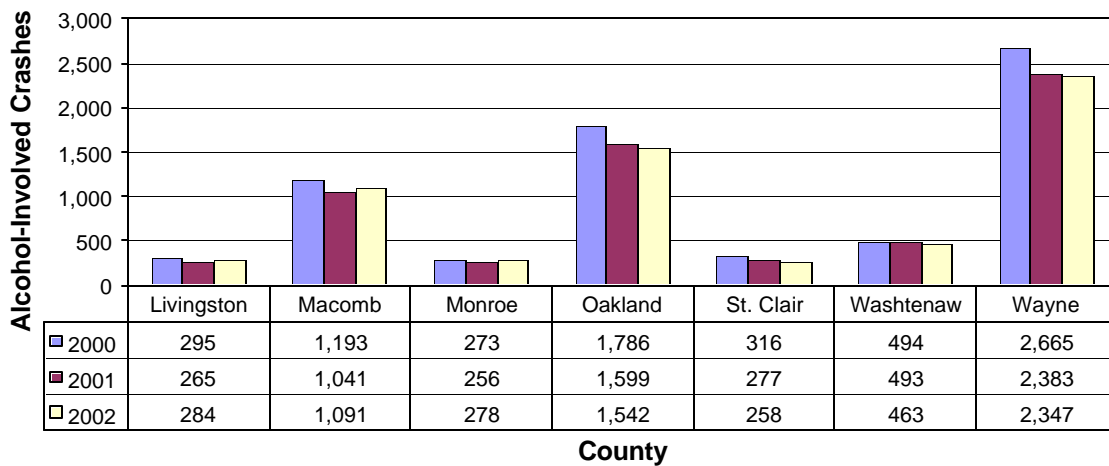
Alcohol-Involved Traffic Crashes by County

Since the decrease in alcohol-involved crashes in Southeast Michigan in 2002 was small, it is not unexpected that some counties saw increases in alcohol-involved crashes while other counties saw decreases (Figure 39). Monroe County had an 8.6 percent increase while St. Clair County had a 6.9 percent decrease.

Figure 40 shows that Wayne County continues to have the lowest percentage of alcohol-involved crashes in the region. Monroe County had the highest percentage of alcohol-related crashes — six out of every 100 crashes in Monroe County in 2002 involved alcohol.

Figure 39

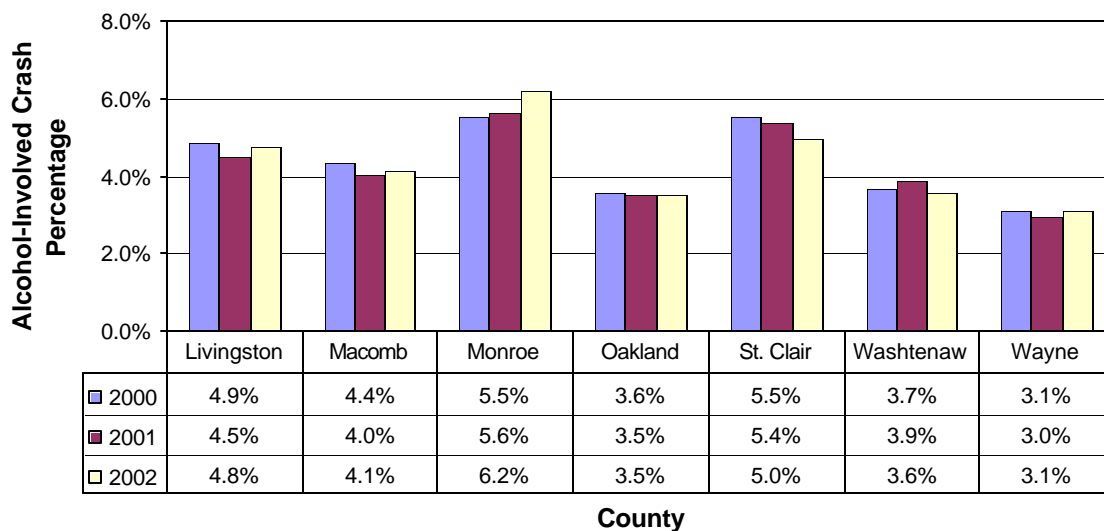
Alcohol-Involved Traffic Crashes by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 40

Alcohol-Involved Traffic Crash Percentage by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

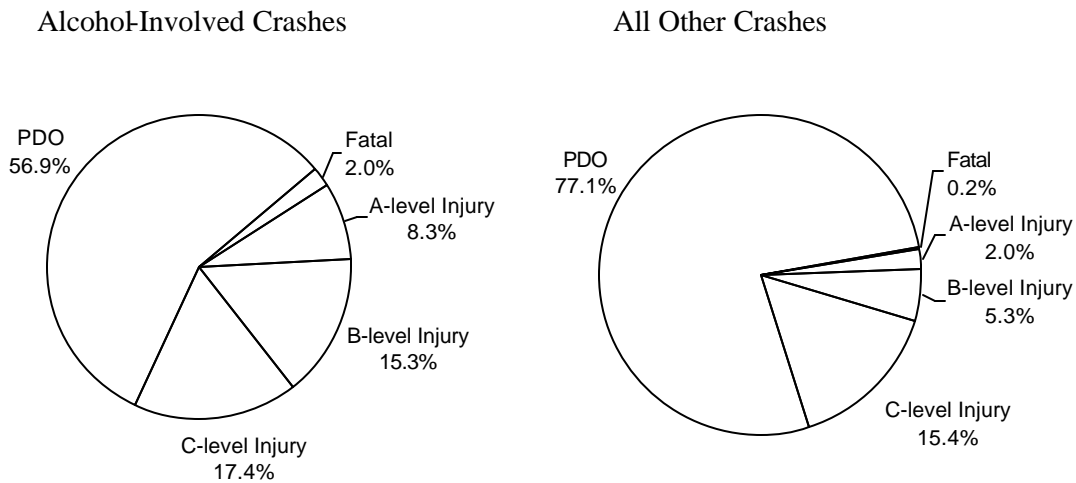
Alcohol-Involved Traffic Crashes by Severity

Over 77 percent of all traffic crashes that did not involve alcohol did not result in any injuries, compared to nearly 57 percent of alcohol-involved crashes. Alcohol-involved crashes were 10 times as likely to be fatal as non-alcohol-involved crashes. Figure 41 shows how the severity of alcohol-involved crashes compared to all other crashes in 2002.

Table 9 shows that over 30 percent of all fatal crashes in Southeast Michigan in 2002 involved alcohol, and over 15 percent of all A-level injury crashes involved alcohol.

Figure 41

Severity of Alcohol-Involved Crashes Compared to All Other Crashes, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 9

Crash Severity by Alcohol-Involved Percentage, 2002

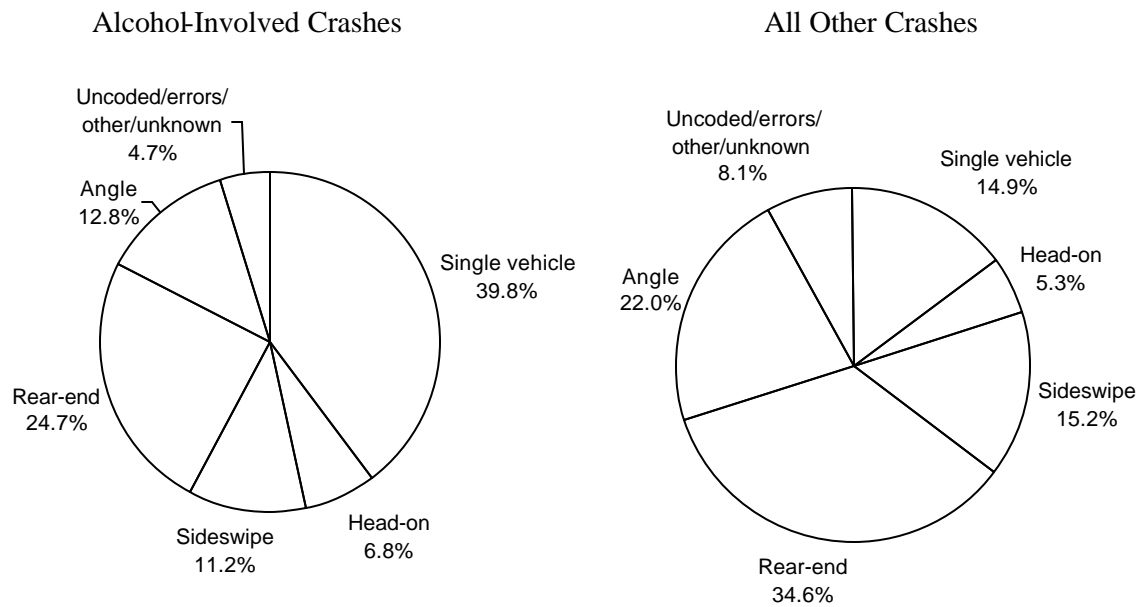
Crash Severity	Alcohol-Involved Traffic Crashes	All Traffic Crashes	Alcohol-Involved Percentage
Fatal	128	420	30.5%
A-level Injury	520	3,431	15.2%
B-level Injury	960	9,271	10.4%
C-level Injury	1,090	26,908	4.1%
PDO	3,565	134,740	2.6%
Total	6,263	174,770	3.6%

Source: MSPTCD and SEMCOG, 2002.

Alcohol-Involved Traffic Crashes by Crash Type

As shown in Figure 42, crashes involving alcohol in 2002 were most often single-vehicle crashes, followed by rear-end crashes. This pattern is different from the one shown by crashes that did not involve alcohol, where rear-end crashes were most common, followed by angle crashes. Nearly one out of every 11 single-vehicle crashes in 2002 involved alcohol (Table 10).

Figure 42
Crash Types of Alcohol-Involved Crashes Compared to All Other Crashes, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 10
Crash Types by Alcohol-Involved Percentage, 2002

Crash Type	Alcohol-Involved Traffic Crashes	All Traffic Crashes	Alcohol-Involved Percentage
Single vehicle	2,493	27,586	9.0%
Head-on	428	9,293	4.6%
Sideswipe	701	26,323	2.7%
Rear-end	1,544	59,844	2.6%
Angle	803	37,849	2.1%
Uncoded/errors/other/unknown	294	13,875	2.1%
Total	6,263	174,770	3.6%

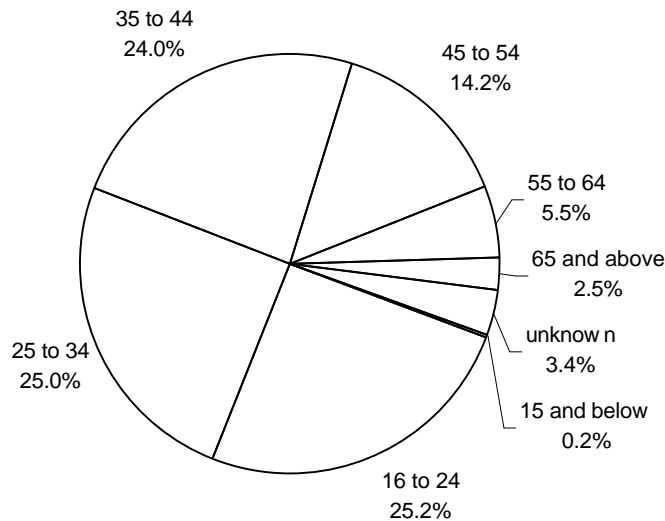
Source: MSPTCD and SEMCOG, 2002.

Had-Been-Drinking Drivers by Age and Sex

As in 2001, drivers between the ages of 16 and 44 accounted for nearly 75 percent of had-been-drinking (HBD) drivers in 2002. Figure 43 shows the percent of HBD drivers in each age group in 2002.

Table 11 shows the numbers of HBD drivers in each age group and sex. In 2002, there were more than three male drinking drivers in crashes for every female drinking driver in a crash.

Figure 43
HBD Drivers by Age, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 11
HBD Drivers by Age and Sex, 2002

Age of Driver	Number of Drivers by Sex			Total
	Female	Male	Unknown	
15 and below	3	7	0	10
16 to 24	303	1,239	37	1,579
25 to 34	327	1,192	43	1,562
35 to 44	423	1,049	30	1,502
45 to 54	187	688	16	891
55 to 64	54	277	14	345
65 to 74	20	88	4	112
75 to 84	5	36	1	42
85 to 94	0	1	0	1
Unknown	44	150	16	210
Total	1,366	4,727	161	6,254

Source: MSPTCD and SEMCOG, 2002.

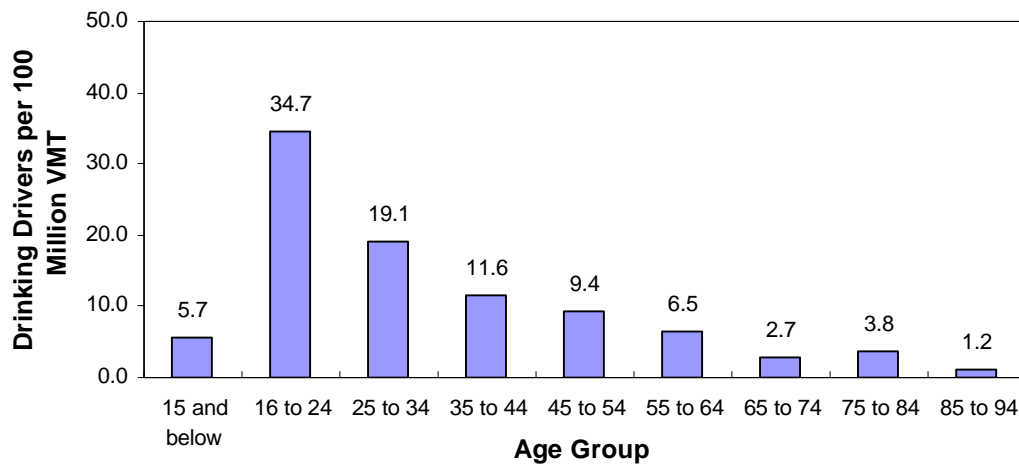
Rate of Involvement by Age Group

Figure 44 shows the number of HBD drivers in each age group per 100 million miles traveled by that age group. No drivers age 95 and above were drinking before they were involved in a traffic crash, so they are not included in the figures below. The 16-24 age group had the highest number of HBD drivers compared to the number of miles traveled, and the 85-94 age group had the lowest number.

Figure 45 shows the number of HBD drivers compared to the number of registered drivers in each age group. This comparison reveals results similar to Figure 44, with the 16-24 age group having the highest rate of HBD drivers and the 85-94 age group having the lowest rate.

Figure 44

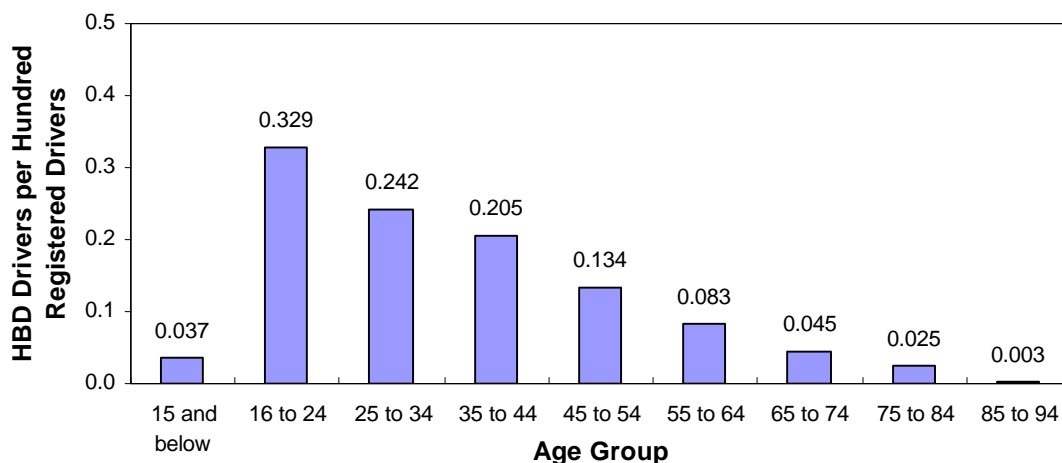
HBD Drivers per 100 Million VMT by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 45

HBD Drivers per Hundred Registered Drivers by Age Group, 2002



Source: MSPTCD, MDOS, and SEMCOG, 2002.

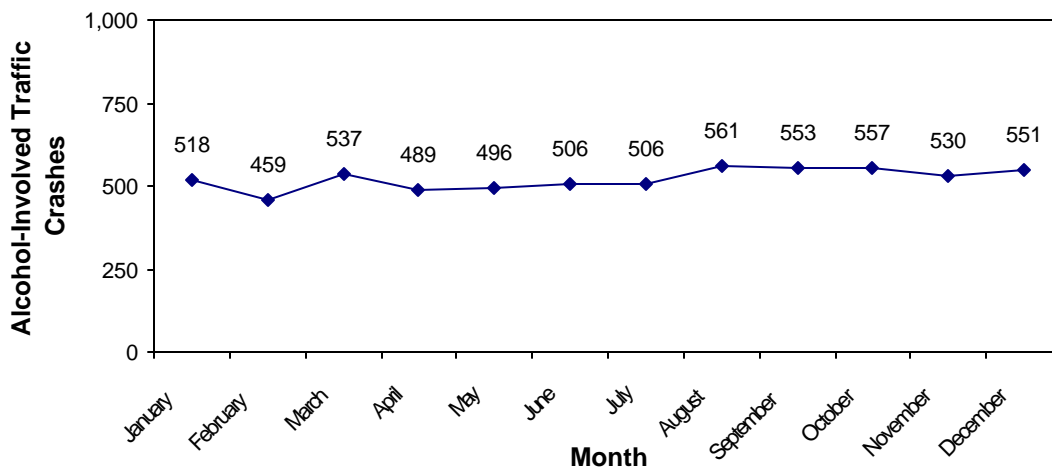
Alcohol-Involved Traffic Crashes by Month, Day, and Hour

Figure 46 shows the number of alcohol-involved traffic crashes that took place during each month of 2002. August had the most alcohol-involved crashes (561) even though December had the most crashes overall (Figure 10). February saw the fewest alcohol-involved crashes (459), but April had the fewest overall crashes.

As shown in Figure 47, alcohol-involved traffic crashes increase on the weekends, the opposite of the pattern shown by all crashes (Figure 11). Saturdays had the most alcohol-involved crashes (1,365) and Mondays saw the fewest (628).

Figure 46

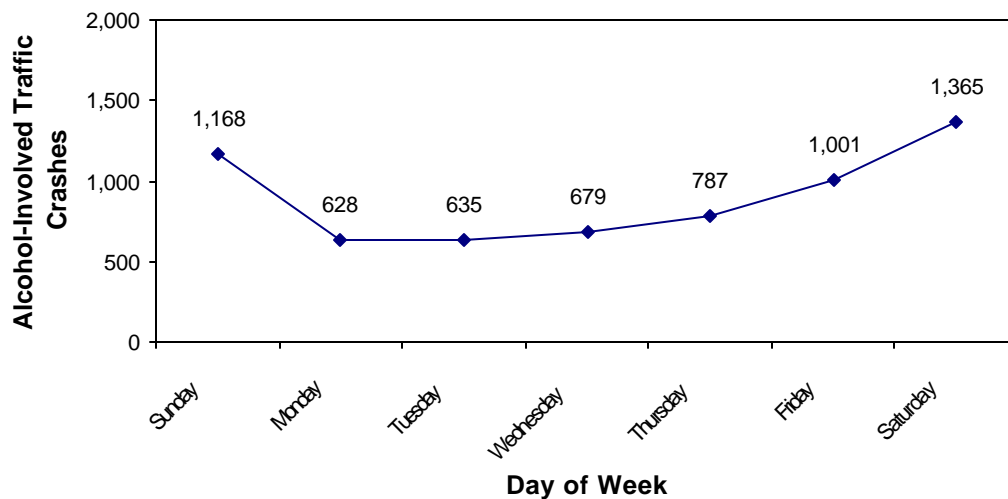
Alcohol-Involved Traffic Crashes by Month, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 47

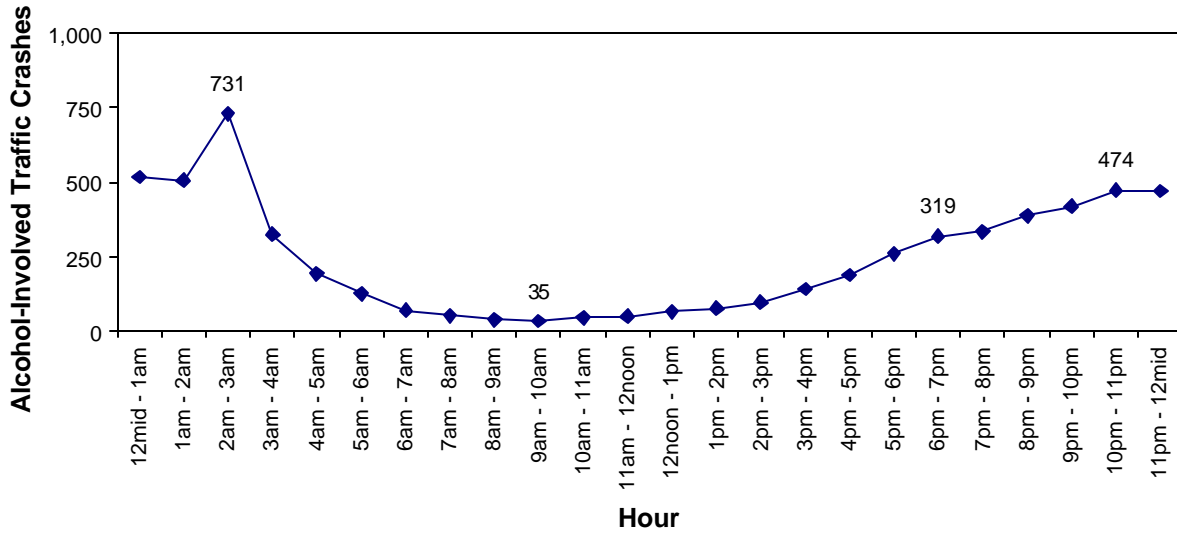
Alcohol-Involved Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

More alcohol-involved crashes (731) took place between 2 a.m. and 3 a.m. than during any other hour in 2002, as shown in Figure 48. Because of the relatively small number of overall crashes (Figure 12) taking place during that hour, nearly one out of every four traffic crashes that took place between 2 a.m. and 3 a.m. involve alcohol.

Figure 48
Alcohol-Involved Traffic Crashes by Hour of Day, 2002



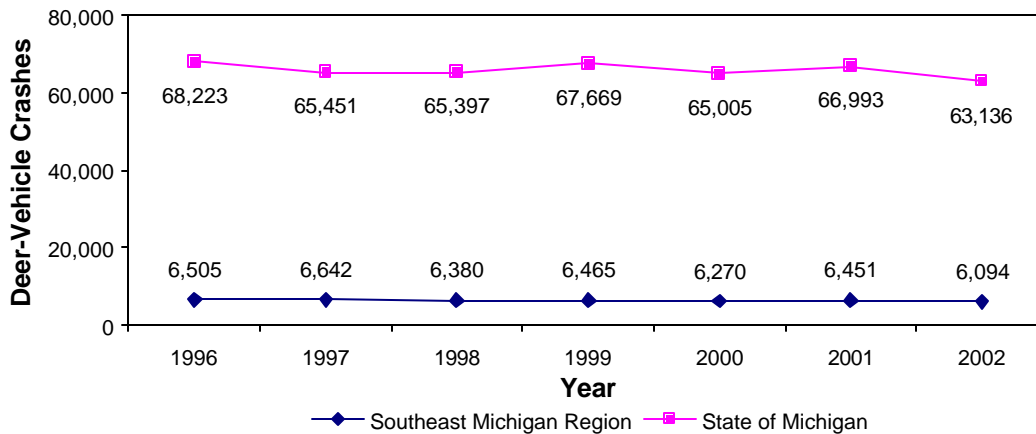
Source: MSPTCD and SEMCOG, 2002.

Vehicle-Deer Crashes

Collisions between deer and motor vehicles decreased in 2002 after increasing in 2001. This decrease in vehicle-deer crashes was seen both in Southeast Michigan and in the State of Michigan (Figure 49).

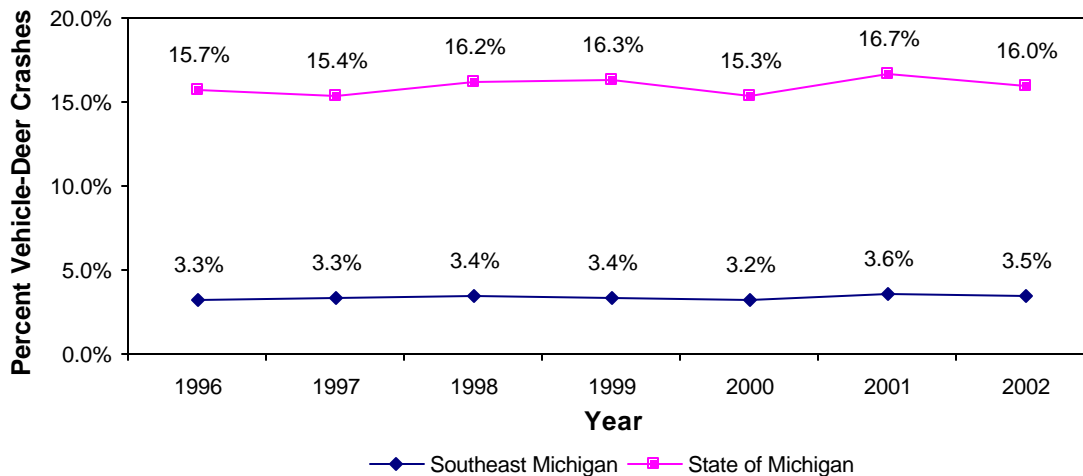
While the percentage of all crashes that involved deer decreased to 3.5 percent in 2002, it is still the second-highest rate since SEMCOG began keeping records in 1993. The deer-crash rate decreased in Michigan as well, to 16.0 percent (Figure 50).

Figure 49
Vehicle-Deer Crashes, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 50
Vehicle-Deer Crash Percentage, 1996-2002



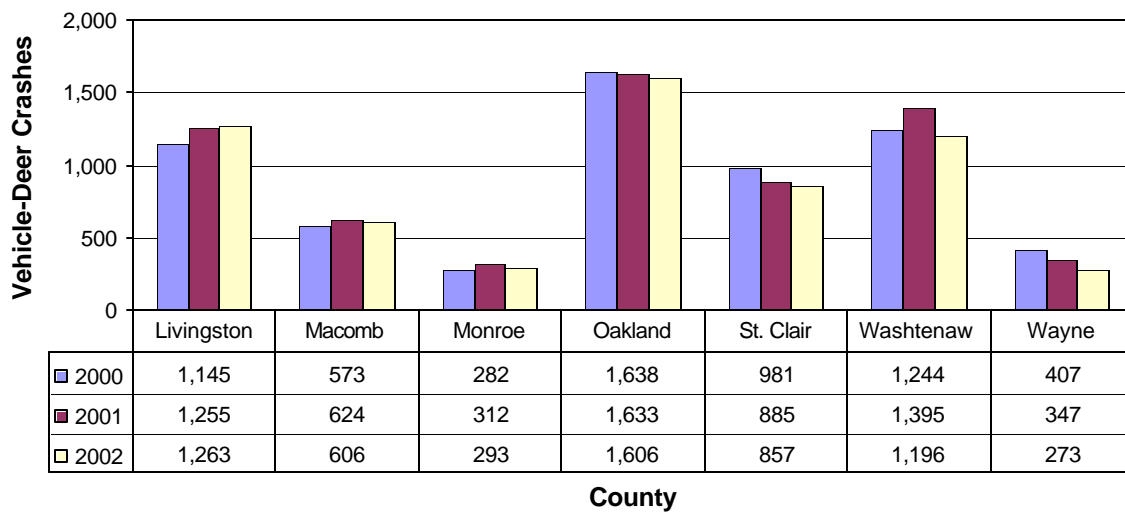
Source: MSPTCD and SEMCOG, 2002.

Vehicle-Deer Crashes by County

All Southeast Michigan counties except Livingston County saw a decrease in car-deer crashes in 2002. The largest decrease was in Wayne County (-21 percent). Figure 51 shows the number of vehicle-deer crashes in each county in 2000-2002.

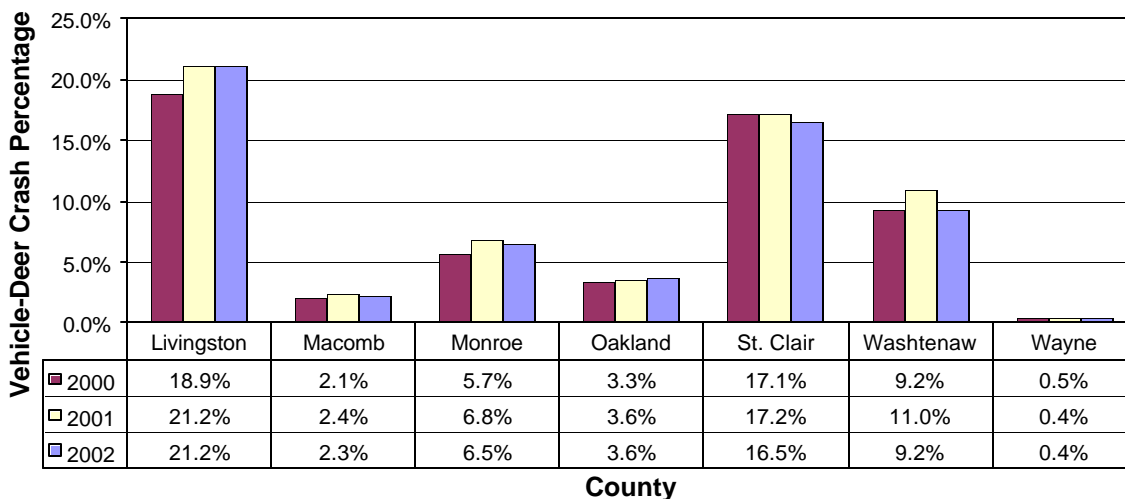
As Figure 52 shows, Livingston County continues to lead the region in vehicle-deer crash percentage. More than one out of every five crashes in Livingston County in 2002 involved a deer. St. Clair and Washtenaw Counties followed, with nearly 17 percent deer crashes and over nine percent deer crashes, respectively.

Figure 51
Vehicle-Deer Crashes by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 52
Vehicle-Deer Crash Percentage by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Vehicle-Deer Crashes by Severity

As shown in Table 12, crashes with deer accounted for more than four percent of all PDO crashes in Southeast Michigan in 2002. No vehicle-deer crashes were fatal in Southeast Michigan in 2002, and nearly 96 percent of all crashes with deer resulted only in property damage.

Table 12
Severity of Vehicle-Deer Crashes, 2002

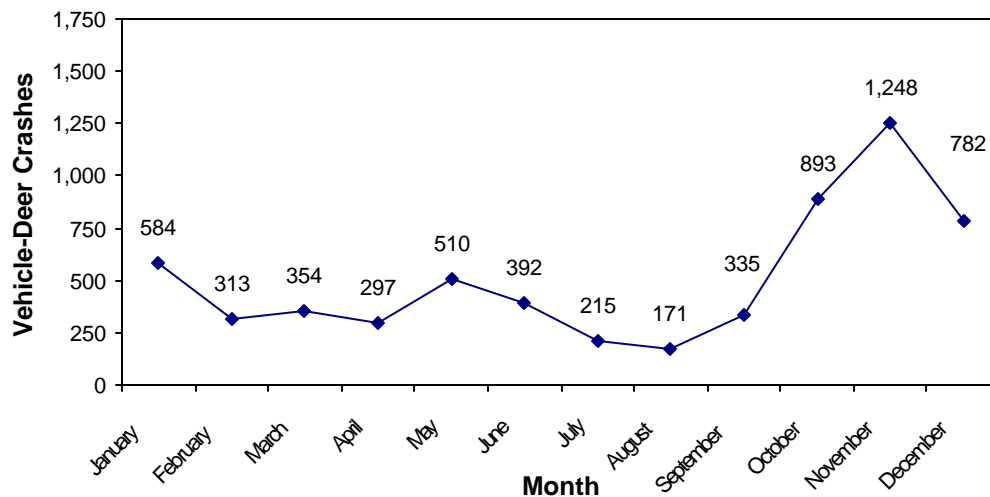
Crash Severity	Vehicle-Deer Crashes	All Crashes	Vehicle-Deer Crash Percentage
Fatal	0	420	0.0%
A-level Injury	9	3,431	0.3%
B-level Injury	76	9,271	0.8%
C-level Injury	176	26,908	0.7%
PDO	5,833	134,740	4.3%
Total	6,094	174,770	3.5%

Source: MSPTCD and SEMCOG, 2002.

Vehicle-Deer Crashes by Month, Day, and Hour

Figure 53 shows the number of vehicle-deer crashes that took place in each month of 2002. Deer crashes peaked in November at 1,248. Over 35 percent of all deer crashes took place in October or November. August had the fewest crashes at 171.

Figure 53
Vehicle-Deer Crashes by Month, 2002

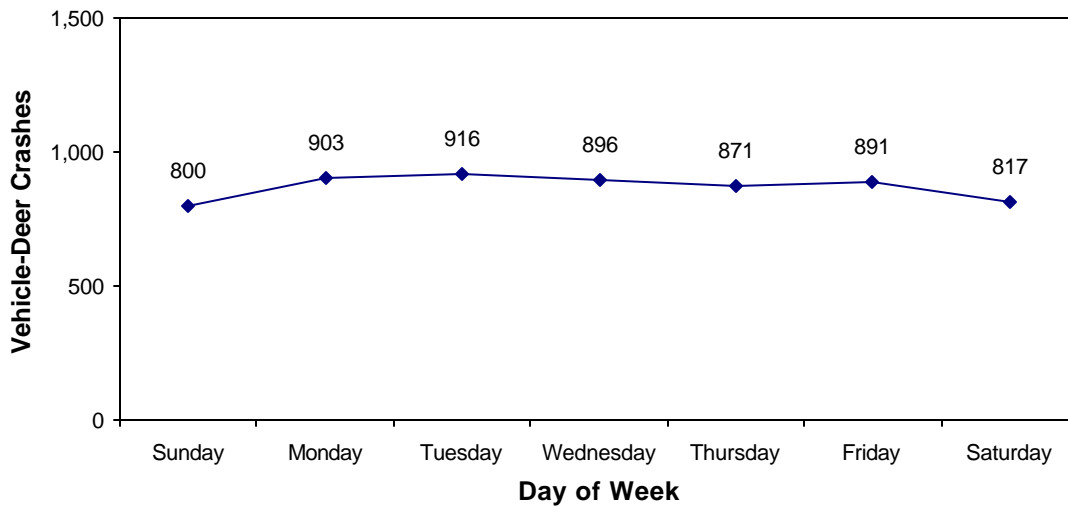


Source: MSPTCD and SEMCOG, 2002.

Figure 54 shows the number of vehicle-deer crashes in 2002 grouped by the day on which they happened. The most crashes with deer occurred on Tuesdays (916) and the fewest occurred on Sundays (800). Sunday was also the day of the week with the fewest overall crashes (Figure 12).

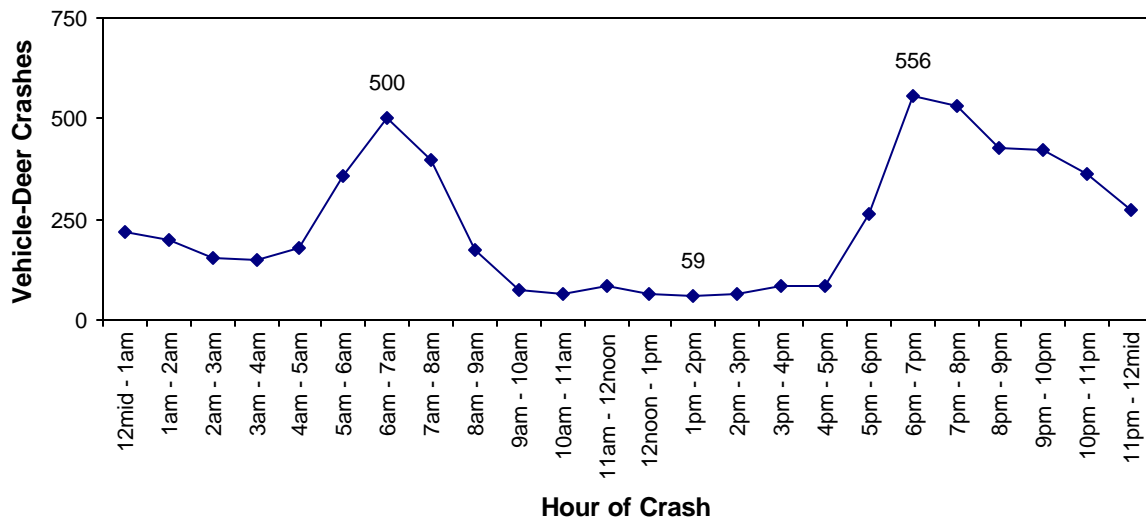
Deer crashes were most likely to occur during evenings or early mornings (Figure 55). The pattern of deer crashes by time of day is quite different from the pattern of all traffic crashes (Figure 12). The morning peak in deer crashes is almost equal to the evening peak, and crashes decrease sharply during daylight hours.

Figure 54
Vehicle-Deer Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 55
Vehicle-Deer Crashes by Hour of Day, 2002

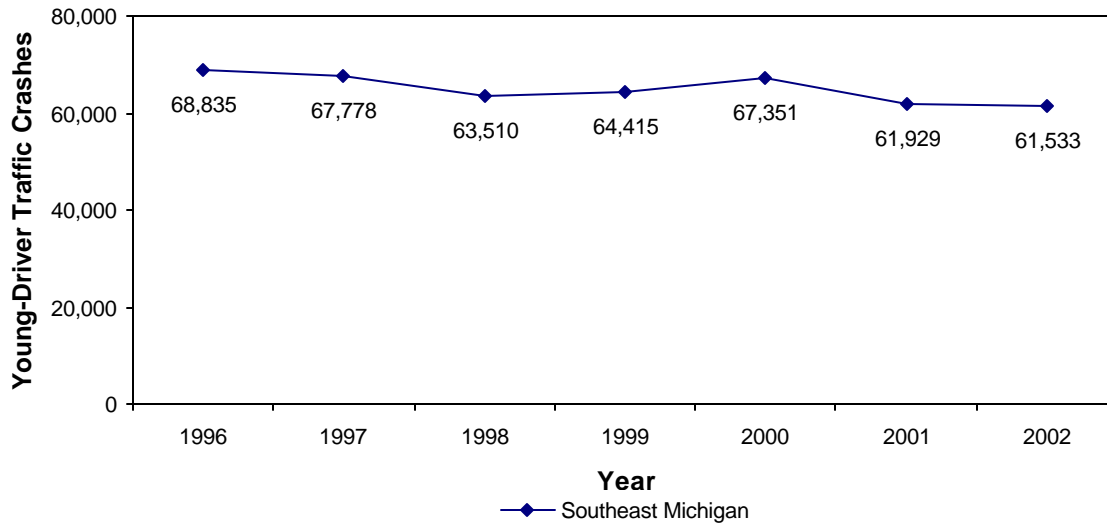


Source: MSPTCD and SEMCOG, 2002.

Young-Driver Traffic Crashes

A young driver is commonly defined as a driver between the ages of 16 and 24. As Figure 56 shows, young-driver crashes decreased 0.6 percent in Southeast Michigan in 2002. Data for Michigan are not available. Though traffic crashes of all types decreased in Southeast Michigan in 2002, young-driver crashes accounted for a slightly larger percentage of all crashes than in 2001. Table 13 shows young-driver crash percentages for 1996-2002.

Figure 56
Young-Driver Traffic Crashes, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

Table 13
Young-Driver Traffic Crash Percentage, 1996-2002

	1996	1997	1998	1999	2000	2001	2002
Young-Driver Traffic Crashes	68,835	67,778	63,510	64,415	67,351	61,929	61,533
All Traffic Crashes	199,420	199,638	186,693	191,006	193,955	180,739	174,770
Young Driver Percentage	34.5%	34.0%	34.0%	33.7%	34.7%	34.3%	35.2%

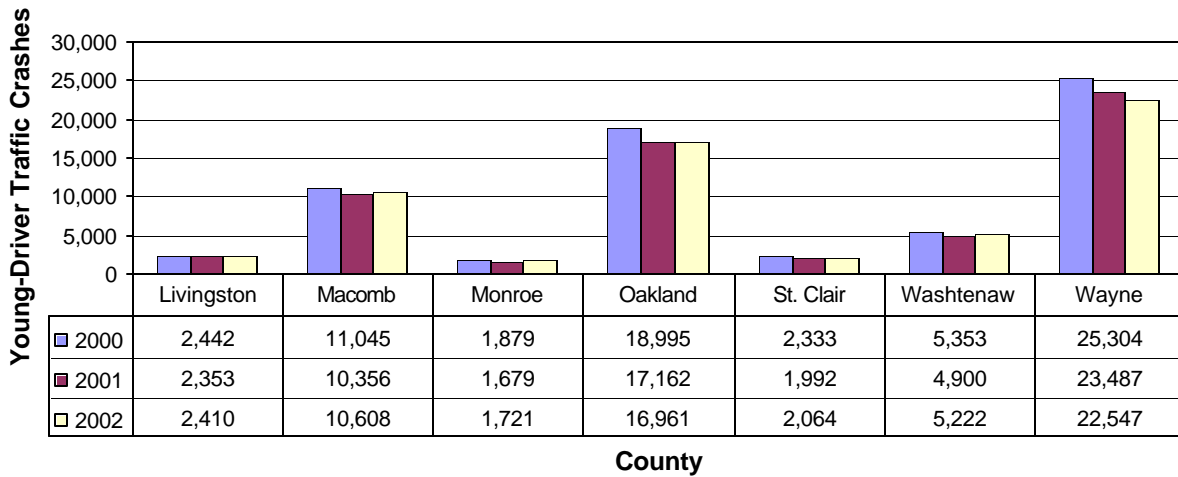
Source: MSPTCD and SEMCOG, 2002.

Young-Driver Traffic Crashes by County

Figure 57 shows the number of young-driver crashes in each county in 2000-2002. All Southeast Michigan counties experienced an increase in young-driver crashes except Oakland County and Wayne County.

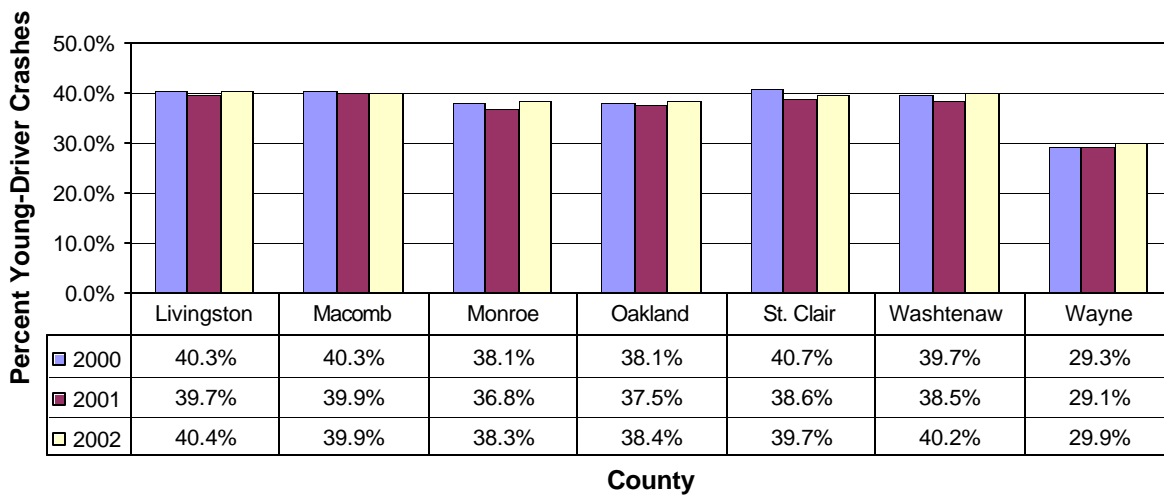
Wayne County continued to have the lowest young-driver traffic crash percentage in the region at nearly 30 percent (Figure 58). All counties except Wayne County have young-driver crash rates above the regional average of 35.2 percent.

Figure 57
Young-Driver Traffic Crashes by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 58
Young-Driver Traffic Crash Percentage by County, 2000-2002

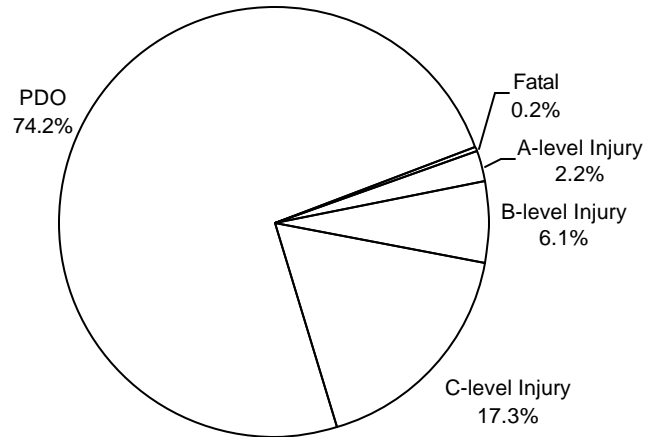


Source: MSPTCD and SEMCOG, 2002.

Young-Driver Traffic Crashes by Severity and Crash Type

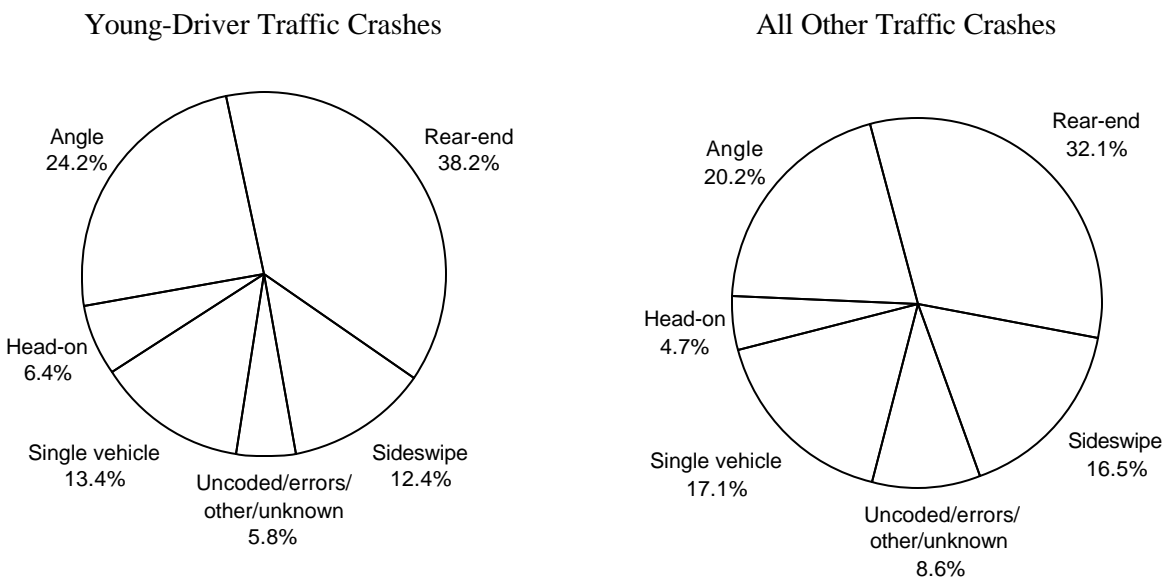
Over 74 percent of traffic crashes involving young drivers resulted in property damage only. Figure 59 shows the severity of crashes involving young drivers in 2002. When compared to all other drivers (Figure 60), young drivers were more likely to have rear-end or angle crashes and less likely to have sideswipe or single-vehicle crashes.

Figure 59
Young-Driver Traffic Crashes by Severity, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 60
Young-Driver Traffic Crashes by Crash Type, 2002

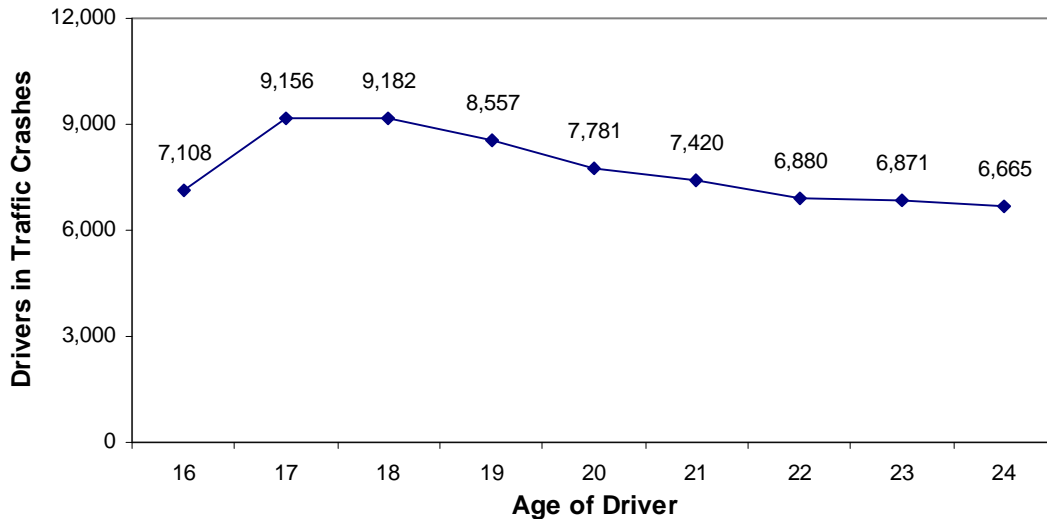


Source: MSPTCD and SEMCOG, 2002.

Young Drivers in Traffic Crashes by Age and Sex

Figure 61 shows how many young drivers of each specific age were involved in traffic crashes in 2002. Crashes among young drivers peaked at ages 17 and 18 for young drivers as a group with over 18,400 crashes, although crashes peaked at age 17 for female young drivers and age 18 for male young drivers. Table 14 breaks down each age by sex.

Figure 61
Young Drivers in Traffic Crashes by Age, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 14
Young Drivers in Traffic Crashes by Age and Sex, 2002

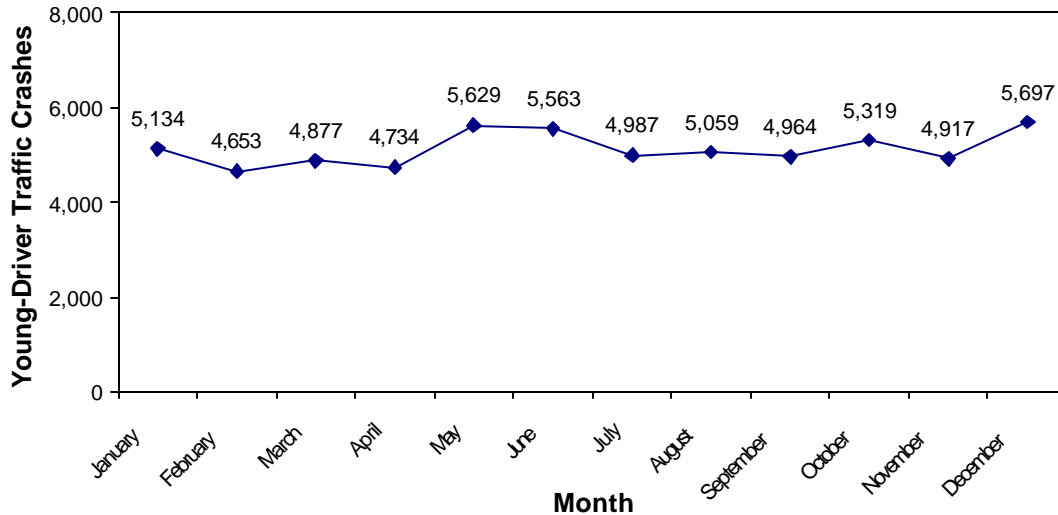
Age of Driver	Number of Drivers by Sex			Total
	Female	Male	Unknown	
16	3,096	3,802	210	7,108
17	3,980	4,885	291	9,156
18	3,746	5,167	269	9,182
19	3,618	4,676	263	8,557
20	3,288	4,264	229	7,781
21	3,158	4,033	229	7,420
22	3,024	3,638	218	6,880
23	2,970	3,711	190	6,871
24	2,888	3,561	216	6,665
Total	29,768	37,737	2,115	69,620

Source: MSPTCD and SEMCOG, 2002.

Young-Driver Traffic Crashes by Month, Day, and Hour

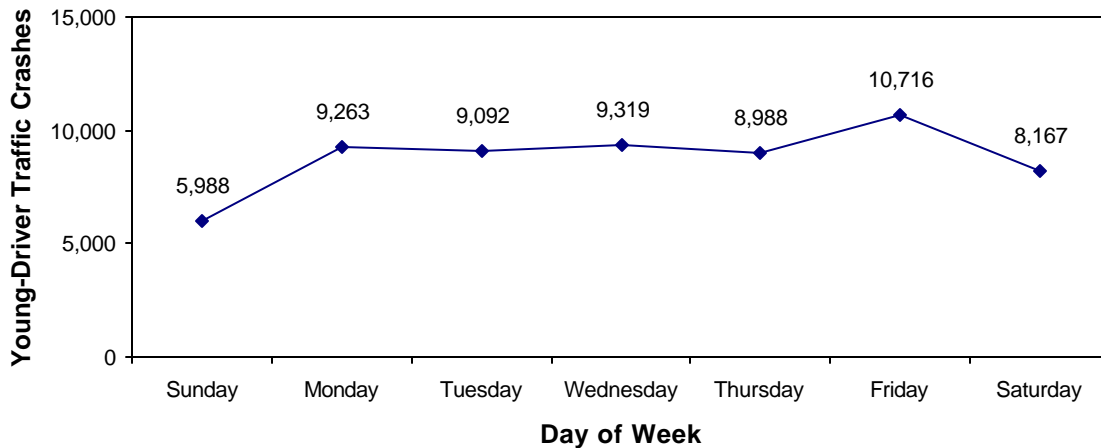
As with all traffic crashes, crashes involving young drivers were most frequent in December (5,697) and least frequent in February and April. When grouped by day of week, young-driver crashes followed the same pattern as all crashes (Figure 11), with the most crashes taking place on Fridays (10,716) and the fewest taking place on Sundays (5,988). Figures 62 and 63 show these numbers in greater detail.

Figure 62
Young-Driver Traffic Crashes by Month, 2002



Source: MSPTCD and SEMCOG, 2002.

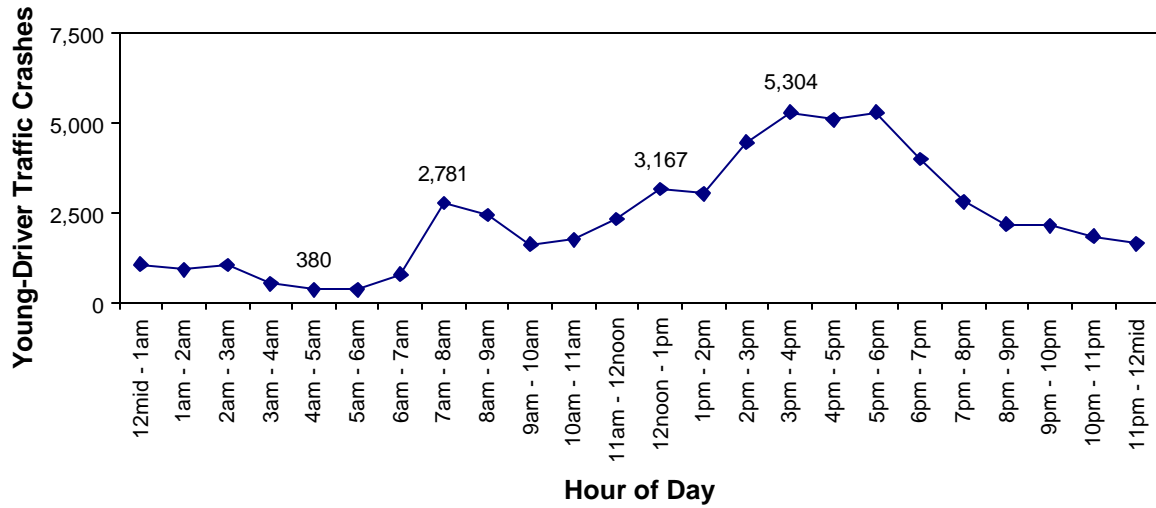
Figure 63
Young-Driver Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 64 shows the number of young-driver traffic crashes grouped by the hour they occurred. As with all traffic crashes in 2002 (Figure 12), traffic crashes involving young drivers were most frequent between 3 p.m. and 6 p.m. and least frequent between 4 a.m. and 5 a.m.

Figure 64
Young-Driver Traffic Crashes by Hour of Day, 2002



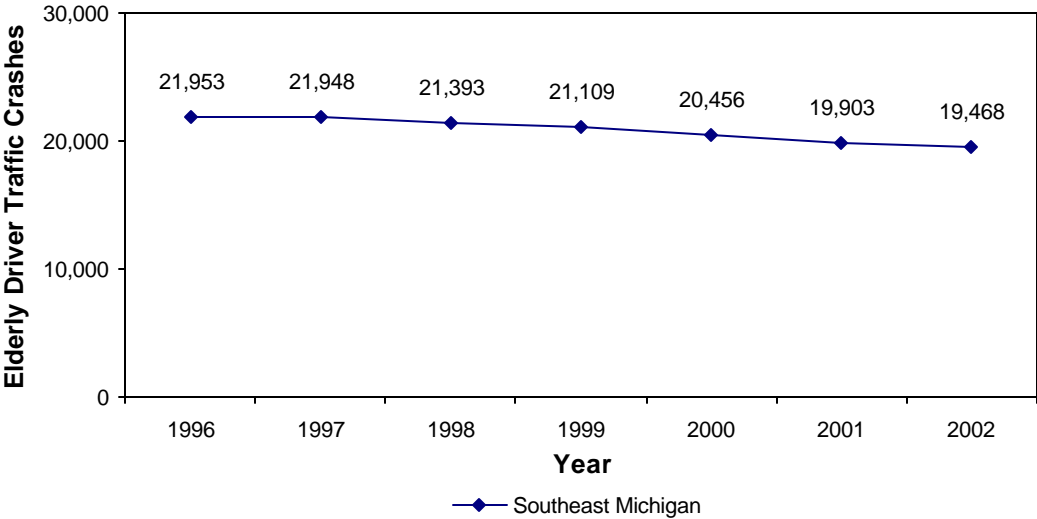
Source: MSPTCD and SEMCOG, 2002.

Elderly Driver Traffic Crashes

An elderly driver is commonly defined as a driver who is age 65 or older. Figure 65 shows the number of traffic crashes involving elderly drivers in Southeast Michigan in 2002, regardless of the cause of the crash. Crashes involving elderly drivers in Southeast Michigan declined in 2002 for the sixth consecutive year, to 19,468 crashes.

Table 15 shows that 11.1 percent of all traffic crashes in Southeast Michigan in 2002 involved an elderly driver, up from 11.0 percent in 2001.

Figure 65
Elderly Driver Traffic Crashes, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

Table 15
Elderly Driver Traffic Crash Percentage, 1996-2002

	1996	1997	1998	1999	2000	2001	2002
Elderly-Driver Traffic Crashes	21,953	21,948	21,393	21,109	20,456	19,903	19,468
All Traffic Crashes	199,420	199,638	186,693	191,006	193,955	180,739	174,770
Elderly Driver Crash Percentage	11.0%	11.0%	11.5%	11.1%	10.5%	11.0%	11.1%

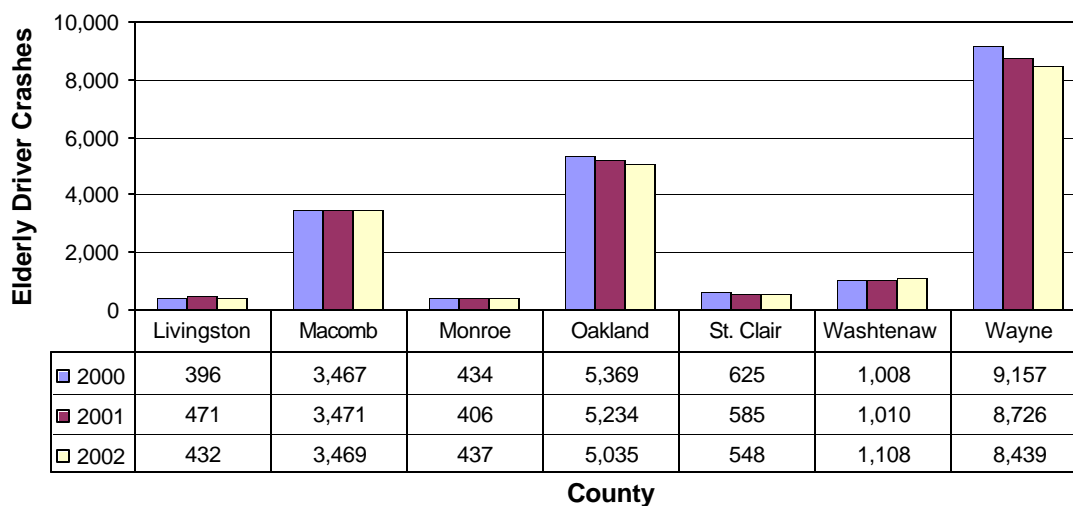
Source: MSPTCD and SEMCOG, 2002.

Elderly Driver Traffic Crashes by County

Figures 66 and 67 show the number of elderly driver traffic crashes in each county as well as the elderly driver traffic crash percentage by county. Though the region as a whole saw a decrease in elderly-driver crashes, elderly driver crashes increased in Monroe and Washtenaw Counties.

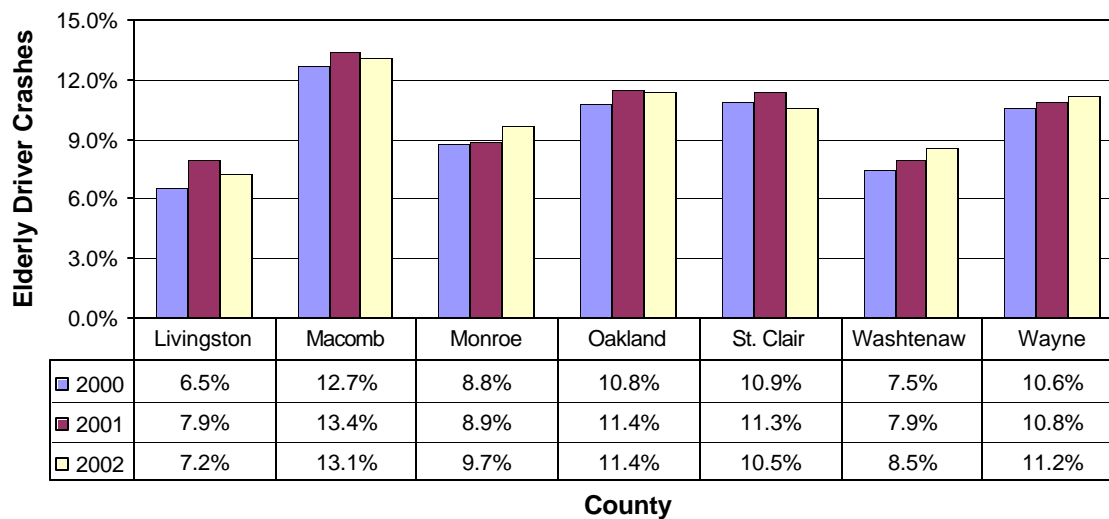
Macomb County continued to have the highest rate of elderly driver crashes in the region at 13.1 percent. Livingston County had the lowest rate in the region at just over seven percent.

Figure 66
Elderly Driver Traffic Crashes by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 67
Elderly Driver Traffic Crash Percentage by County, 2000-2002



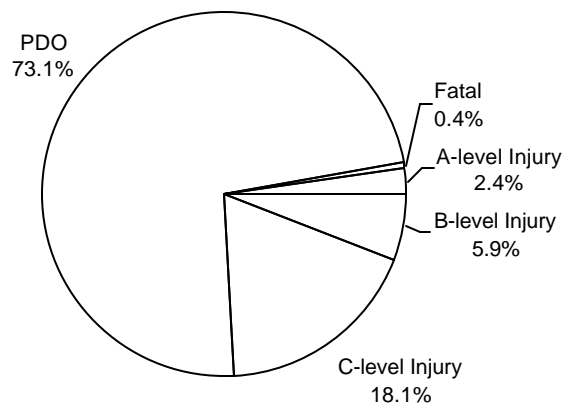
Source: MSPTCD and SEMCOG, 2002.

Elderly Driver Traffic Crashes by Severity and Crash Type

As shown in Figure 68, over 73 percent of all traffic crashes involving elderly drivers resulted in property damage only, compared to just over 77 percent of all traffic crashes (Figure 5).

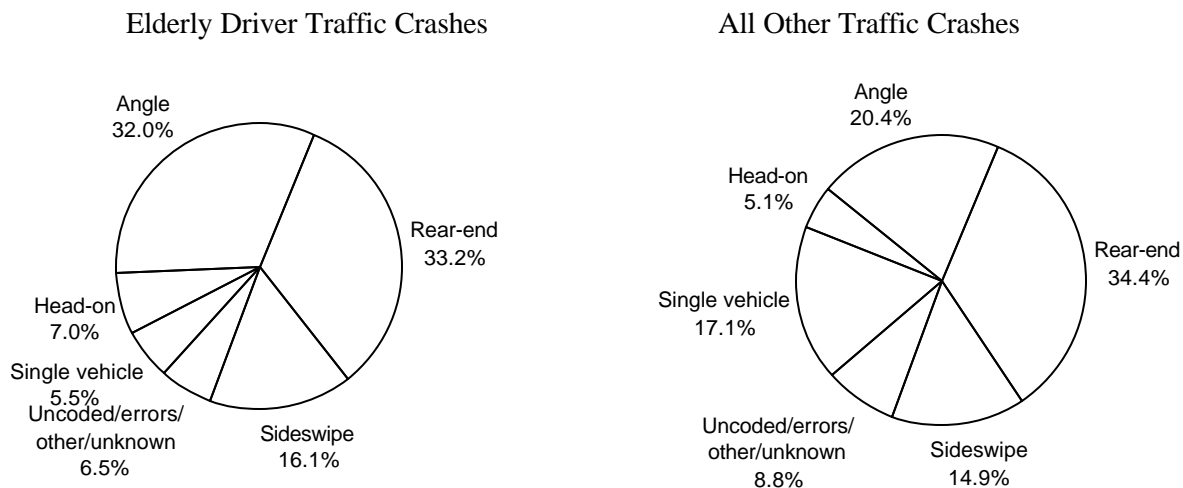
Figure 69 shows that elderly drivers were more likely to be involved in angle crashes and less likely to be involved in single-vehicle crashes than non-elderly drivers.

Figure 68
Elderly Driver Traffic Crashes by Severity, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 69
Elderly Driver Traffic Crashes by Crash Type, 2002



Source: MSPTCD and SEMCOG, 2002.

Elderly Drivers in Traffic Crashes by Age and Sex

In 2002, 20,423 elderly drivers were involved in traffic crashes in Southeast Michigan. Over half of these drivers were in the 65-74 age group. Table 16 shows the distribution of elderly drivers in traffic crashes by age and sex.

Table 16
Elderly Drivers in Traffic Crashes by Age and Sex, 2002

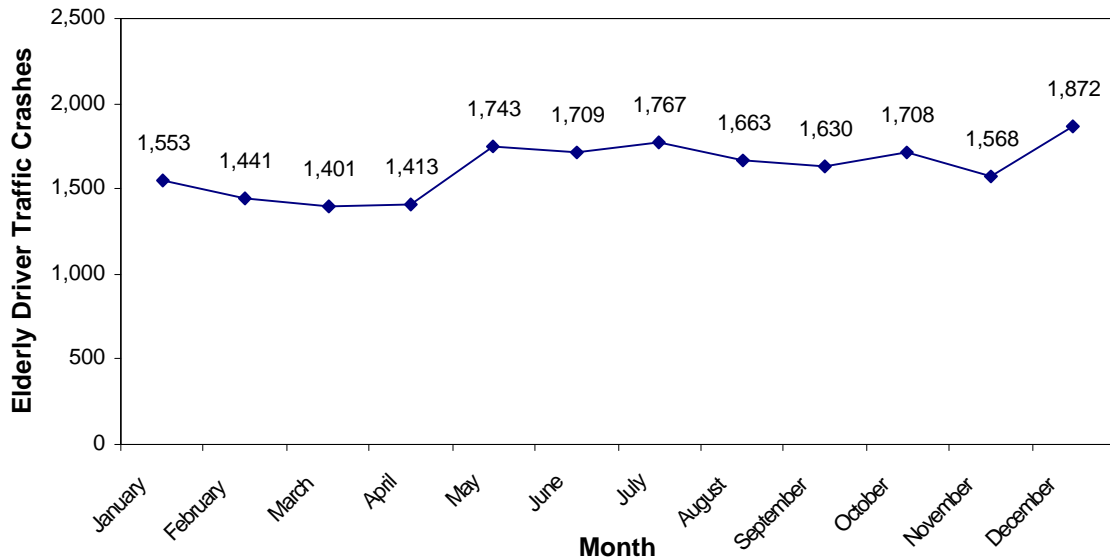
Age of Driver	Number of Drivers by Sex			Total
	Female	Male	Unknown	
65 to 74	4,630	6,458	351	11,439
75 to 84	3,270	4,044	222	7,536
85 to 94	569	688	40	1,297
95 and above	13	24	1	38
Elderly Driver Total	8,482	11,214	614	20,310

Source: MSPTCD and SEMCOG, 2002.

Elderly Driver Traffic Crashes by Month, Day, and Hour

As shown in Figure 70, elderly driver crashes were most common in December (1,872) and least common in March and April.

Figure 70
Elderly Driver Traffic Crashes by Month, 2002

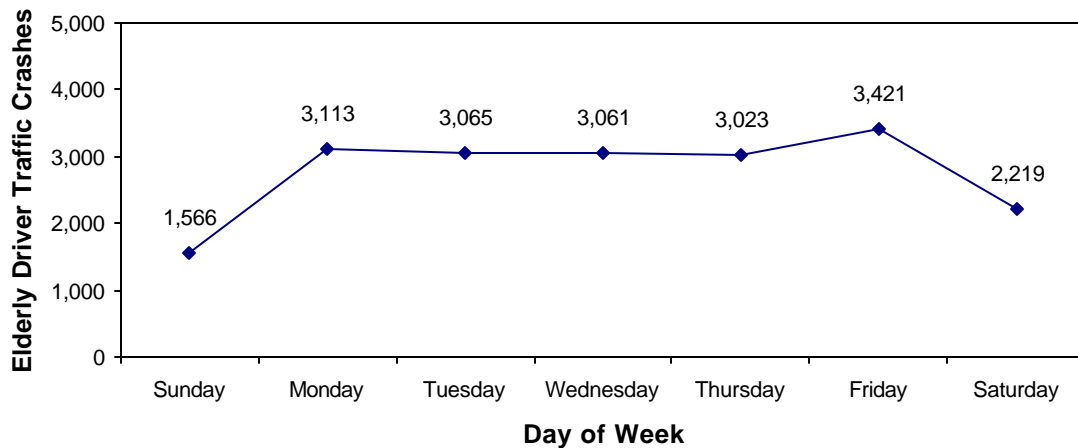


Source: MSPTCD and SEMCOG, 2002.

As with all traffic crashes in 2002, crashes involving elderly drivers occurred more often on Fridays than any other day and least often on Sundays.

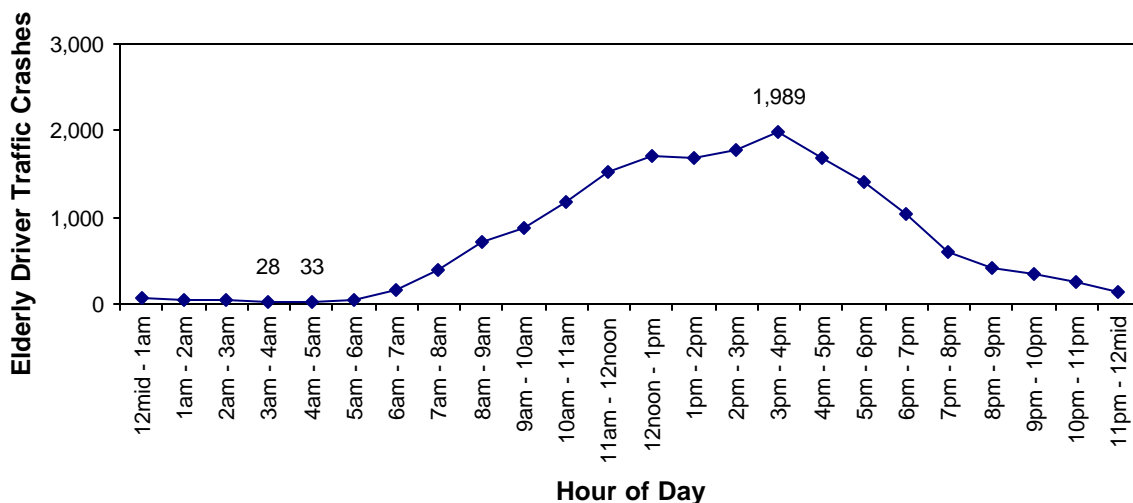
Figure 72 shows the number of elderly driver traffic crashes grouped by the hour during which they occurred. The peak time for elderly driver crashes was between 3 p.m. and 4 p.m., with a noticeable drop after this hour. This is different from the pattern of all traffic crashes (Figure 12), where the afternoon peak lasts for three hours, from 3 p.m. to 6 p.m. Elderly driver crashes also do not appear to have the morning peak between 7 a.m. and 9 a.m. that is shown among all traffic crashes.

Figure 71
Elderly Driver Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 72
Elderly Driver Traffic Crashes by Hour of Day, 2002



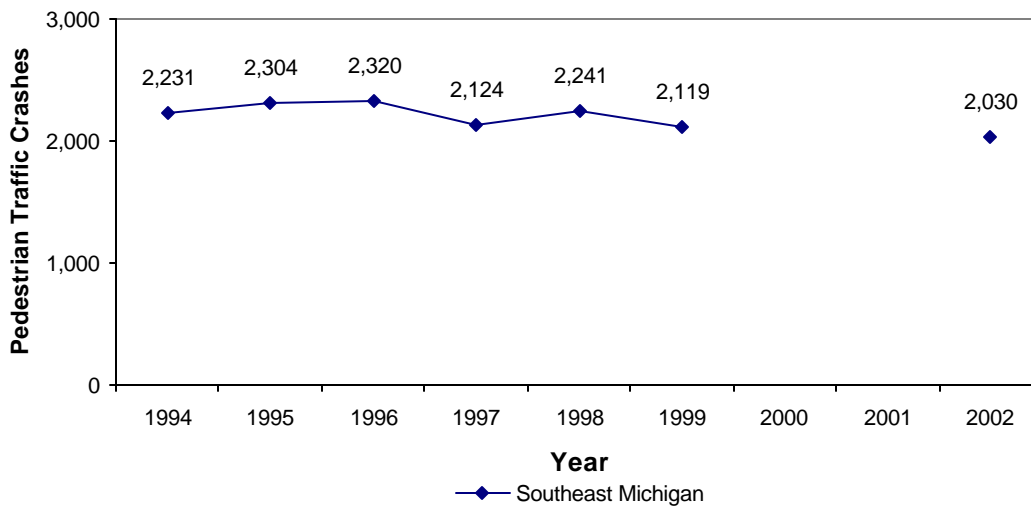
Source: MSPTCD and SEMCOG, 2002.

Pedestrian Traffic Crashes

A pedestrian is typically defined as a person traveling on foot. Crashes in Southeast Michigan involving pedestrians totaled 2,030 in 2002 as shown in Figure 73. This represents a 4.2 percent decrease from 1999, the last year for which reliable data are available.

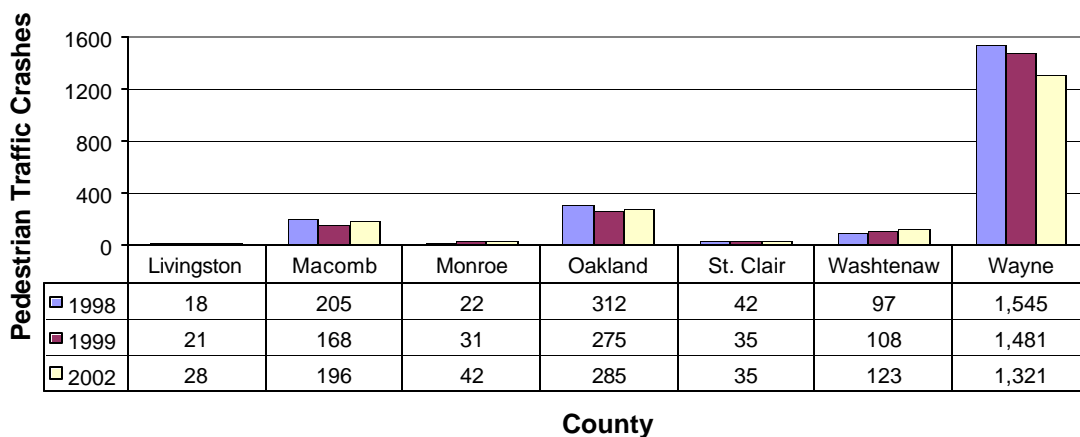
Figure 74 shows how many pedestrian crashes occurred in each Southeast Michigan county in 2002. Wayne County had the highest number of pedestrian crashes, followed by Oakland and Macomb Counties.

Figure 73
Pedestrian Traffic Crashes, 1994-1999 and 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 74
Pedestrian Traffic Crashes by County, 1998-1999 and 2002

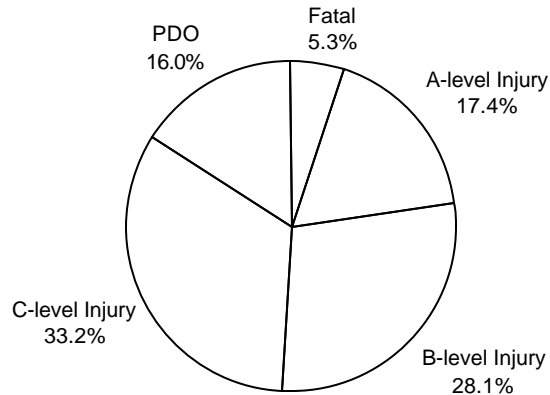


Source: MSPTCD and SEMCOG, 2002.

Pedestrian Traffic Crashes by Severity

Figure 75 shows that 5.3 percent of the traffic crashes involving pedestrians in 2002 were fatal, compared to only 0.2 percent of all crashes. Only 16 percent of pedestrian crashes resulted in no injury, compared to 77 percent of all crashes. Due to ongoing issues with the data, it is not possible to compare the injury severity of pedestrians with the injury severity of drivers, although it may be reasonable to assume that in most cases pedestrians are injured more severely than drivers.

Figure 75
Pedestrian Traffic Crash Severity, 2002

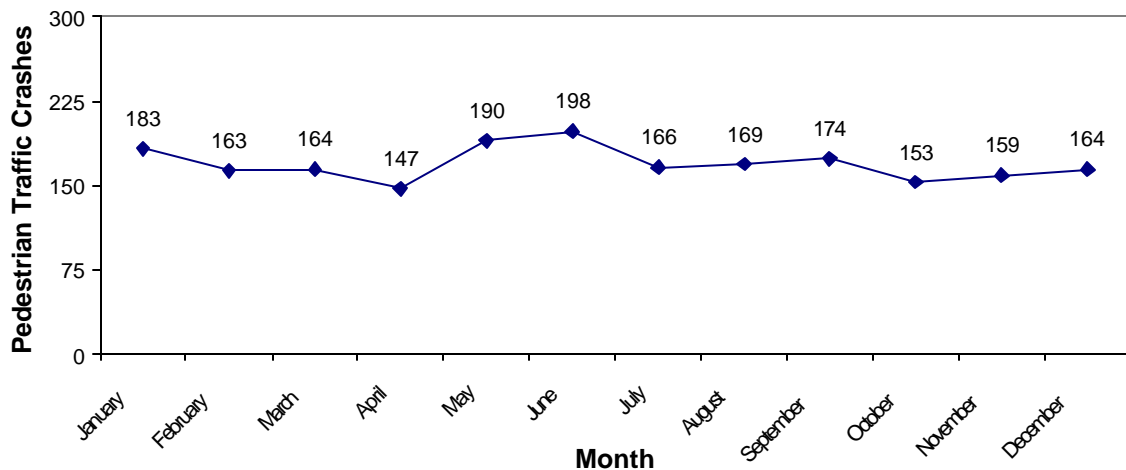


Source: MSPTCD and SEMCOG, 2002.

Pedestrian Traffic Crashes by Month, Day, and Hour

As shown in Figure 76, traffic crashes involving pedestrians peaked in June, although pedestrian crashes are not as significantly less frequent during cold weather months as bicycle crashes (Figure 82). April had the fewest pedestrian crashes with 147.

Figure 76
Pedestrian Traffic Crashes by Month, 2002

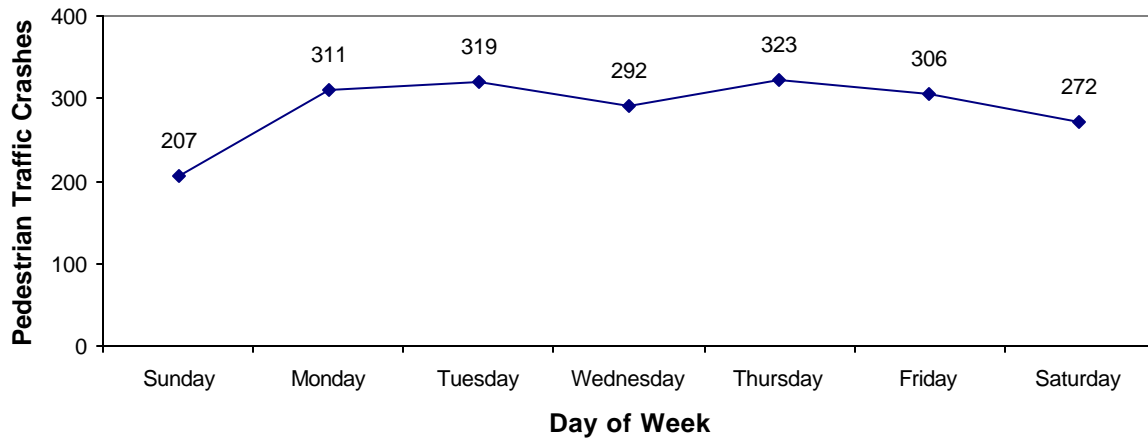


Source: MSPTCD and SEMCOG, 2002.

Pedestrian crashes were slightly less likely to take place on weekends than on weekdays. The lowest pedestrian crash total was 207 on Sundays, and the highest number was 323 on Thursdays (Figure 77).

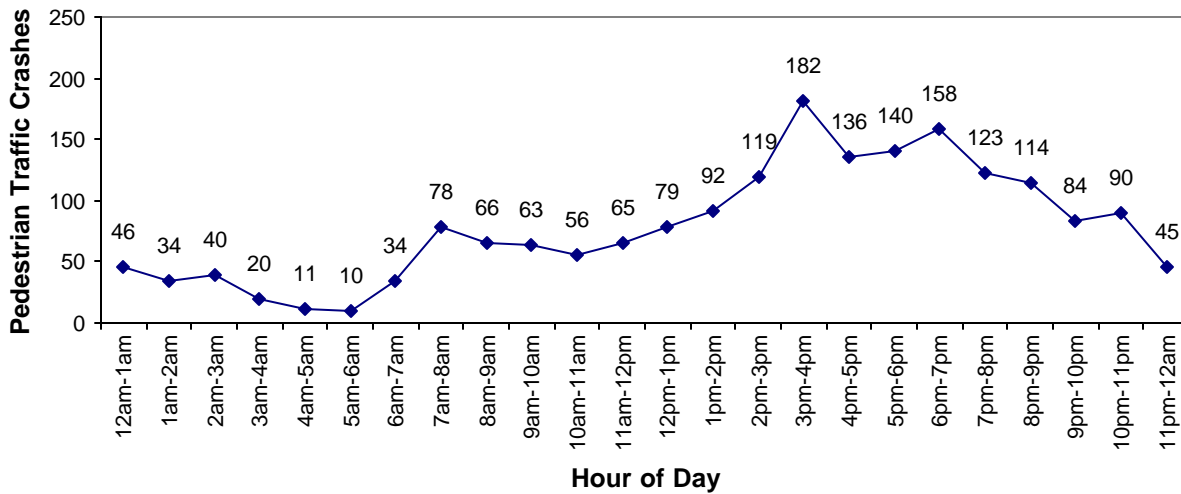
Pedestrian crashes, like all crashes, were more frequent during daylight hours, with most pedestrian crashes taking place in the late afternoon and evening hours (Figure 78).

Figure 77
Pedestrian Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 78
Pedestrian Traffic Crashes by Hour of Day, 2002



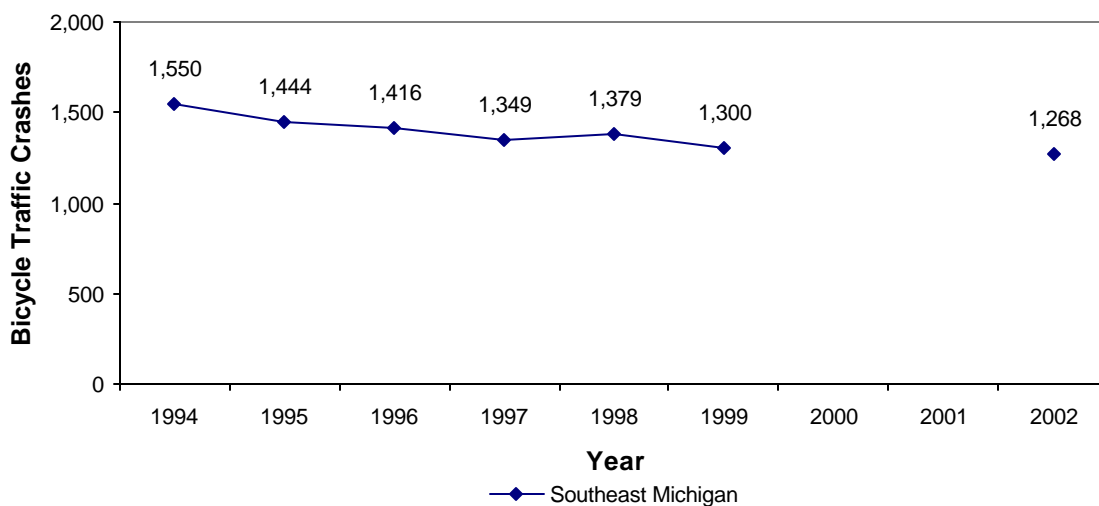
Source: MSPTCD and SEMCOG, 2002.

Bicycle Traffic Crashes

A bicycle is defined in the 2000 Michigan Traffic Crash Facts Book as a device propelled by human power upon which a person may ride. A bicycle under this definition may have two or three wheels. As shown in Figure 79, traffic crashes in Southeast Michigan involving bicycles decreased 2.5 percent between 1999 and 2002.

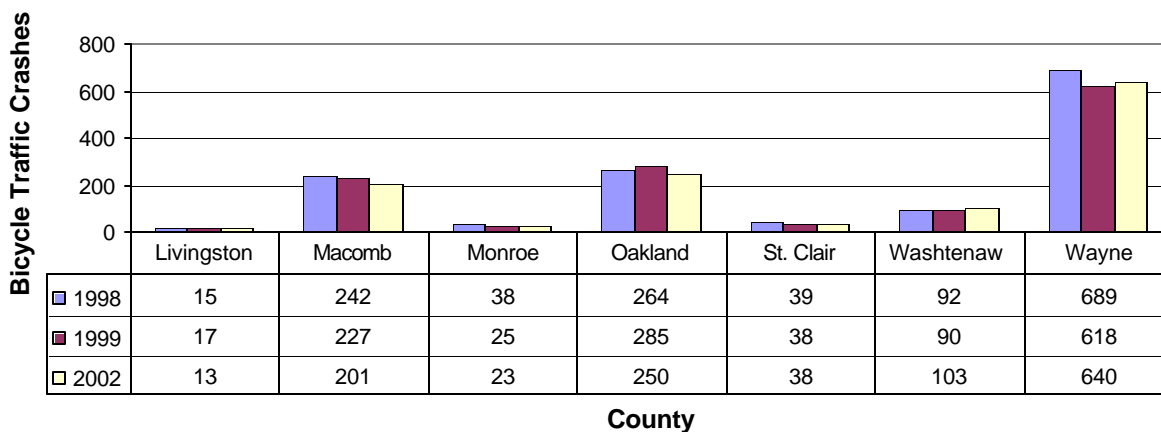
As with pedestrian crashes, Wayne County led the region in bicycle crashes, followed by Oakland County and Macomb County. Washtenaw and Wayne Counties were the only counties to experience increases in traffic crashes involving bicycles (Figure 80).

Figure 79
Bicycle Traffic Crashes, 1994-1999 and 2002



Source: MSPTCD and SEMCOG, 2002.

Figure 80
Bicycle Traffic Crashes by County, 1998-1999 and 2002

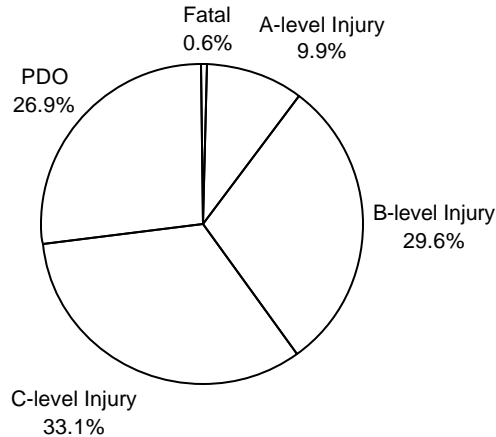


Source: MSPTCD and SEMCOG, 2002.

Bicycle Traffic Crashes by Severity

Figure 81 shows that traffic crashes involving bicycles are more severe than overall crashes (Figure 5), but less severe than crashes involving pedestrians (Figure 75). Nearly 27 percent of crashes involving bicycles resulted in no injuries, compared to 77 percent of all crashes and 17 percent of pedestrian crashes.

Figure 81
Bicycle Traffic Crash Severity, 2002

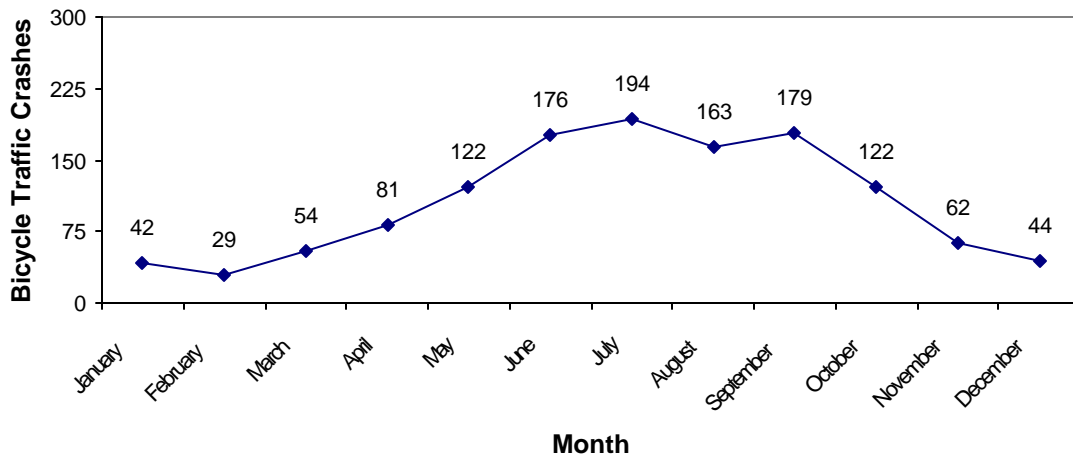


Source: MSPTCD and SEMCOG, 2002.

Bicycle Traffic Crashes by Month, Day, and Hour

Bicycle crashes were more common in warmer months, unlike pedestrian crashes. This is probably due to the difficulties of bicycling in snowy or icy conditions. Bicycle crashes peaked in July at 194 crashes and hit a low point in February with 29 crashes (Figure 82).

Figure 82
Bicycle Traffic Crashes by Month, 2002

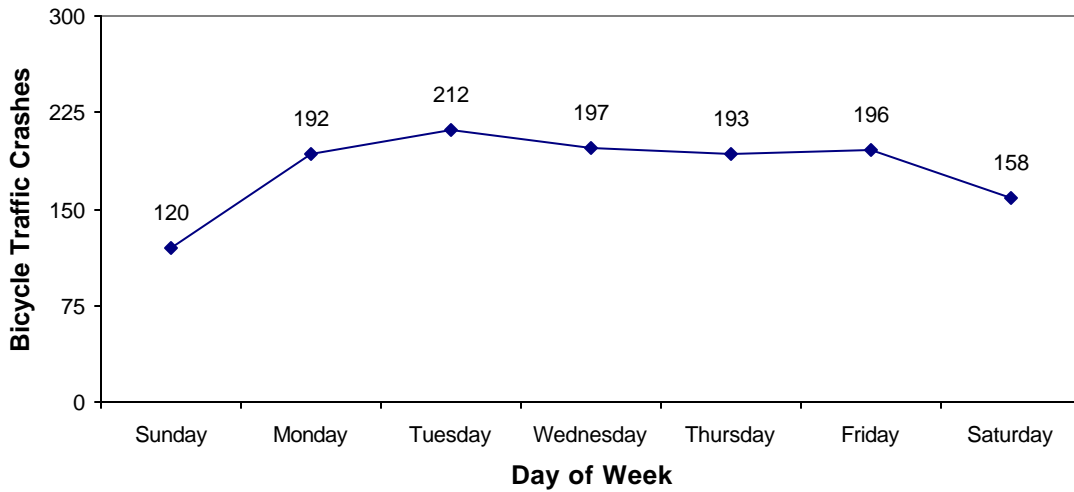


Source: MSPTCD and SEMCOG, 2002.

As with pedestrian crashes and all crashes, bicycle crashes were more common on weekdays (Figure 83). Tuesdays had the most bicycle crashes (212) and Sundays had the fewest (120).

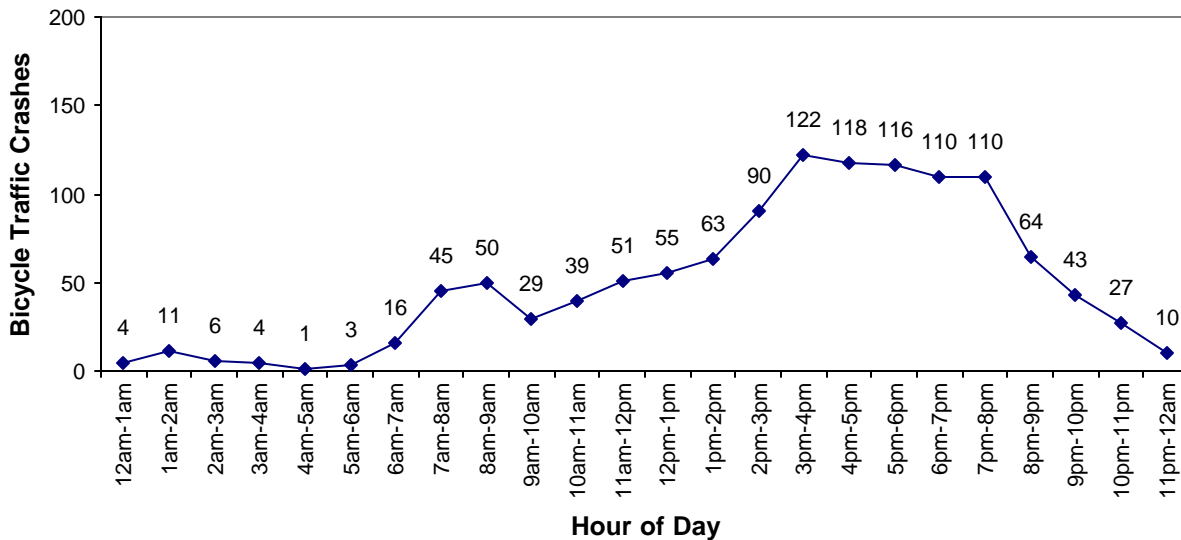
Bicycle crashes follow a time-of-day pattern that is similar to pedestrian crashes, with most crashes occurring in the late afternoon and early evening hours (Figure 84).

Figure 83
Bicycle Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002

Figure 84
Bicycle Traffic Crashes by Hour of Day, 2002



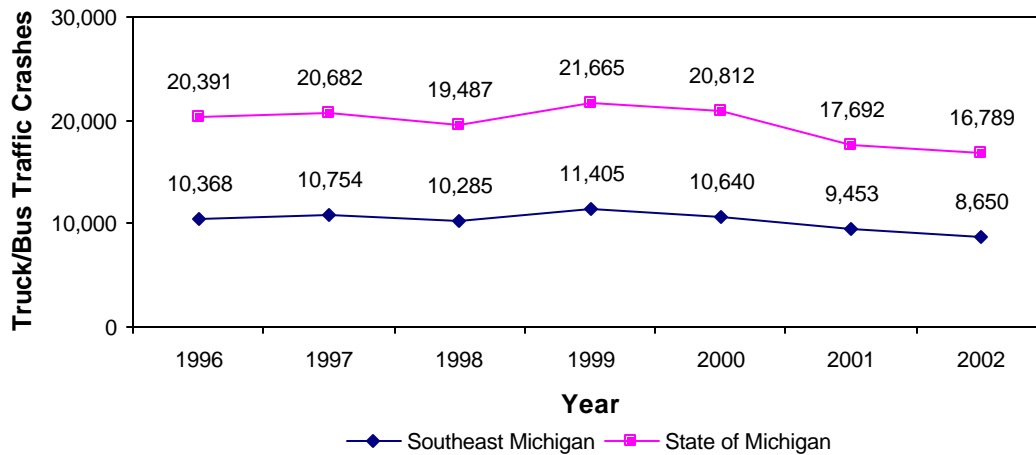
Source: MSPTCD and SEMCOG, 2002.

Truck/Bus Traffic Crashes

Truck/bus traffic crashes are crashes that involve a commercial truck or bus. Truck/bus crashes continued to decrease in 2002 in Southeast Michigan and in the state (Figure 85). Truck/bus traffic crashes decreased 8.5 percent in Southeast Michigan and 5.1 percent in Michigan.

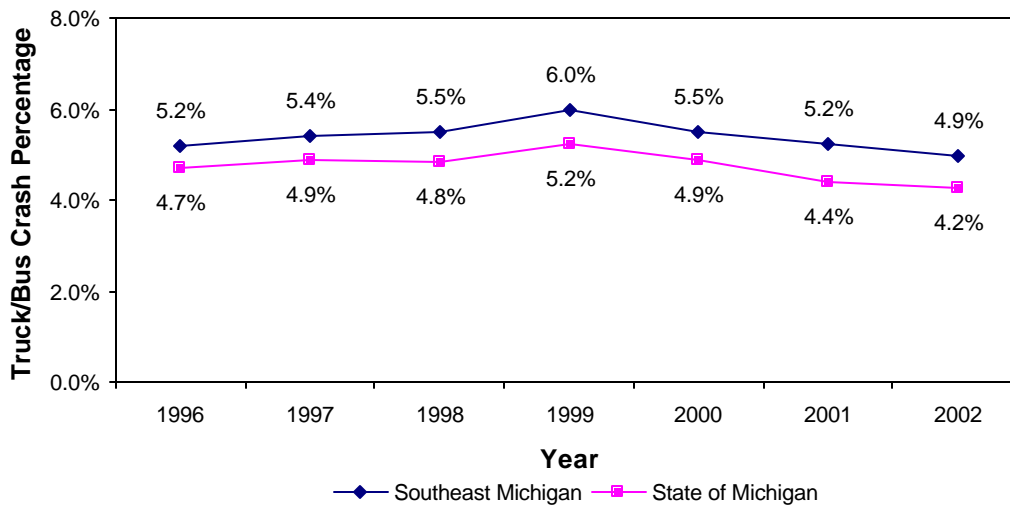
As Figure 86 shows, Southeast Michigan continues to have a higher rate of truck/bus crashes than the State of Michigan. Nearly one out of every 20 traffic crashes (4.9 percent) in Southeast Michigan in 2002 involved a commercial truck or bus.

Figure 85
Truck/Bus Traffic Crashes, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 86
Truck/Bus Traffic Crash Percentage, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

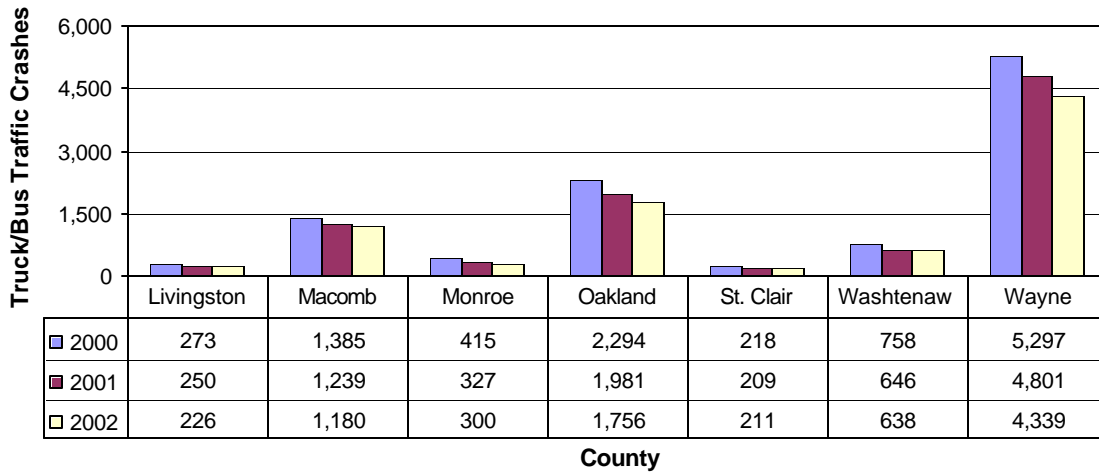
Truck/Bus Traffic Crashes by County

Figure 87 shows the number of truck/bus traffic crashes that took place in each Southeast Michigan county in 2000-2002. All counties experienced a drop in truck/bus crashes in 2002 except St. Clair County, which saw a very small increase.

Monroe County continued to lead the region in truck/bus traffic crash percentage at nearly seven percent. The counties with the lowest truck/bus crash percentages were Oakland and St. Clair at just over four percent (Figure 88).

Figure 87

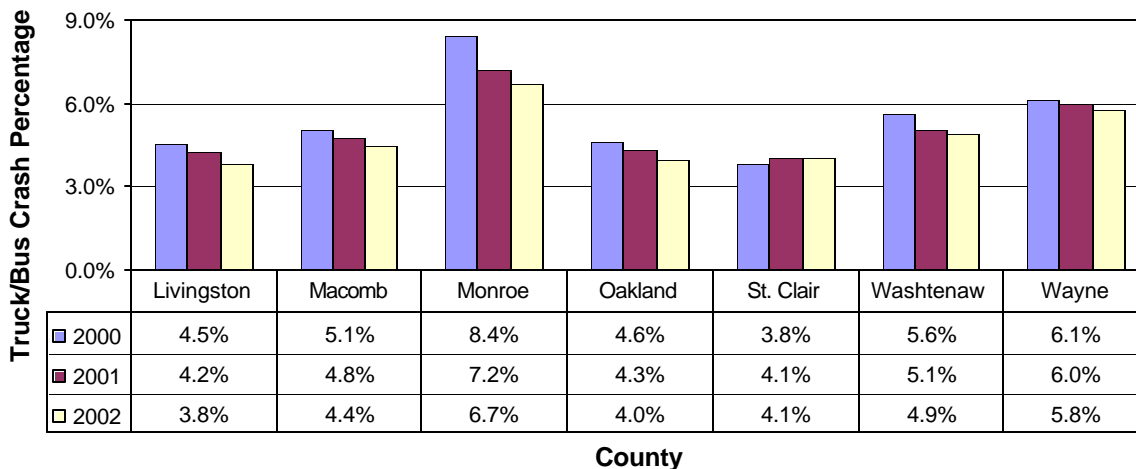
Truck/Bus Traffic Crashes by County, 2000-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 88

Truck/Bus Traffic Crash Percentage by County, 2000-2002

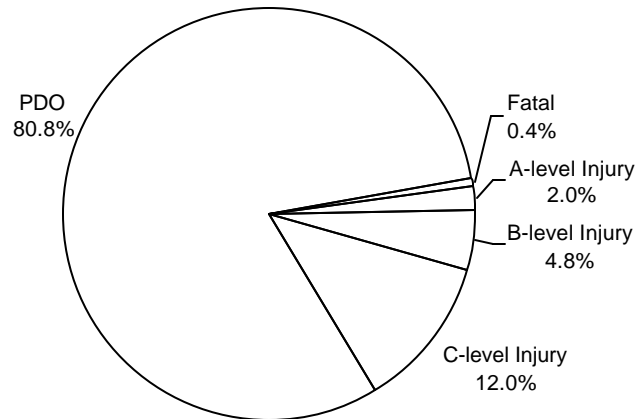


Source: MSPTCD and SEMCOG, 2002.

Truck/Bus Traffic Crashes by Severity

As shown in Figure 89, over 80 percent of truck/bus crashes resulted in property damage only, compared to 77 percent of all traffic crashes. Thirty-seven truck/bus crashes were fatal, which is 0.4 percent of all truck/bus crashes. Table 17 shows the numbers of truck/bus crashes compared to all crashes for each severity level.

Figure 89
Truck/Bus Traffic Crashes by Severity, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 17
Severity of Truck/Bus Traffic Crashes Compared to All Traffic Crashes, 2002

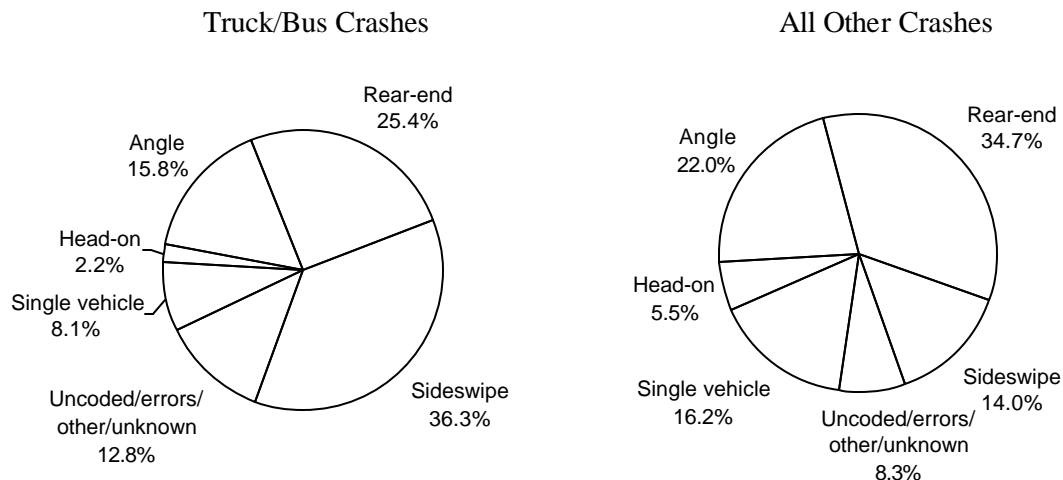
Crash Severity	Truck/Bus Traffic Crashes	All Traffic Crashes
Fatal	37	420
A-level Injury	175	3,431
B-level Injury	412	9,271
C-level Injury	1,037	26,908
PDO	6,989	134,740
Total	8,650	174,770

Source: MSPTCD and SEMCOG, 2002.

Truck/Bus Traffic Crashes by Crash Type

Figure 90 shows how truck/bus crashes and all other crashes were distributed among crash types. Crashes involving commercial trucks and buses were more often sideswipes and less often angle crashes, single-vehicle crashes, and rear-end crashes than all other crashes. Table 18 shows that nearly 12 percent of all sideswipe crashes involved a commercial truck or bus.

Figure 90
Crash Types of Truck/Bus Crashes Compared to All Other Crashes, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 18
Crash Types by Truck/Bus Percentage, 2002

Crash Type	Truck/Bus Traffic Crashes	All Traffic Crashes	Truck/Bus Percentage
Sideswipe	3,143	26,323	11.9%
Uncoded/errors/other/unknown	1,047	13,875	7.5%
Rear-end	2,200	59,844	3.7%
Angle	1,368	37,849	3.6%
Single vehicle	704	27,586	2.6%
Head-on	188	9,293	2.0%
Total	8,650	174,770	4.9%

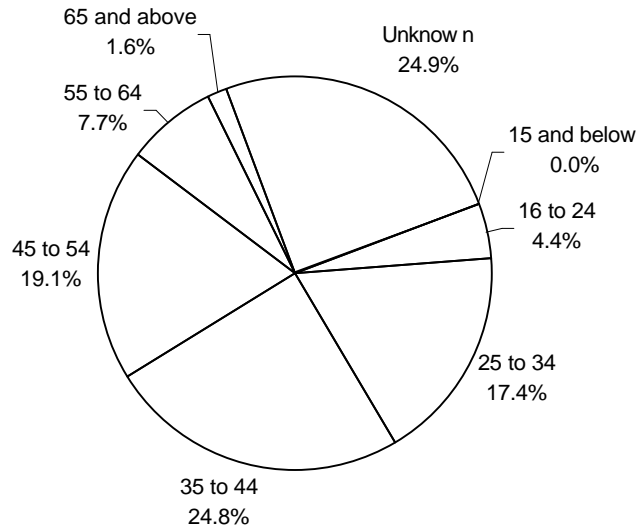
Source: MSPTCD and SEMCOG, 2002.

Truck/Bus Drivers in Traffic Crashes by Age and Sex

Since the age of nearly 25percent of truck or bus drivers in traffic crashes in 2002 is unknown, it is difficult to determine with much certainty the age distribution of truck and bus drivers. Of the truck or bus drivers whose ages were recorded, 24.8 percent were in the 35-44 age group (Figure 91). Table 19 shows the age and sex of truck or bus drivers in crashes in 2002. Most of those drivers were male.

Figure 91

Truck/Bus Drivers in Crashes by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

Table 19

Truck/Bus Drivers in Crashes by Age and Sex, 2002

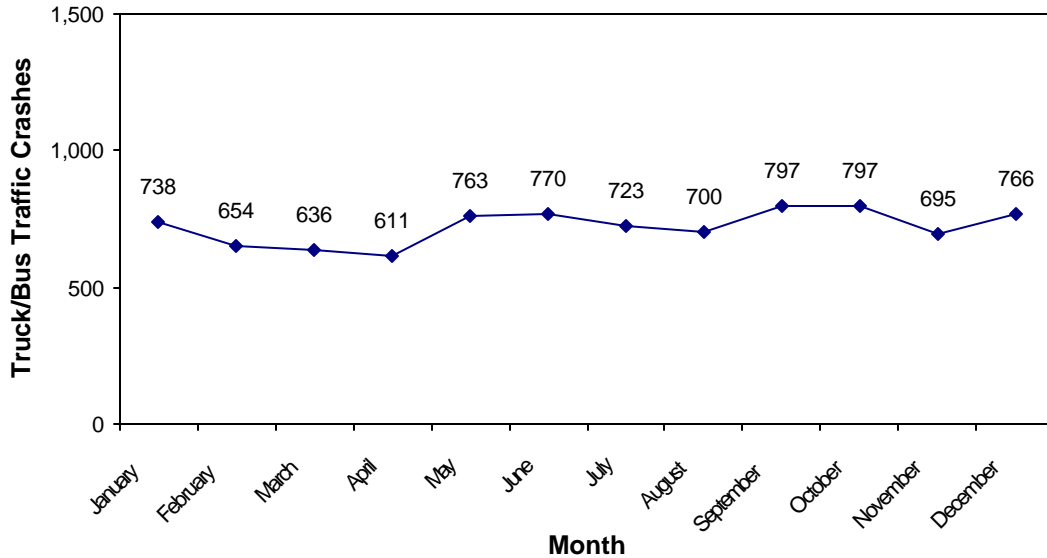
Age of Driver	Number of Drivers by Sex			Total
	Female	Male	Unknown	
15 and below	1	2	0	3
16 to 24	32	330	7	369
25 to 34	167	1,258	41	1,466
35 to 44	301	1,733	50	2,084
45 to 54	304	1,267	44	1,615
55 to 64	88	543	6	637
65 to 74	10	106	4	120
75 to 84	0	18	0	18
Unknown	58	1,989	690	2,737
Total	961	7,246	842	9,049

Source: MSPTCD and SEMCOG, 2002.

Truck/Bus Traffic Crashes by Month, Day, and Hour

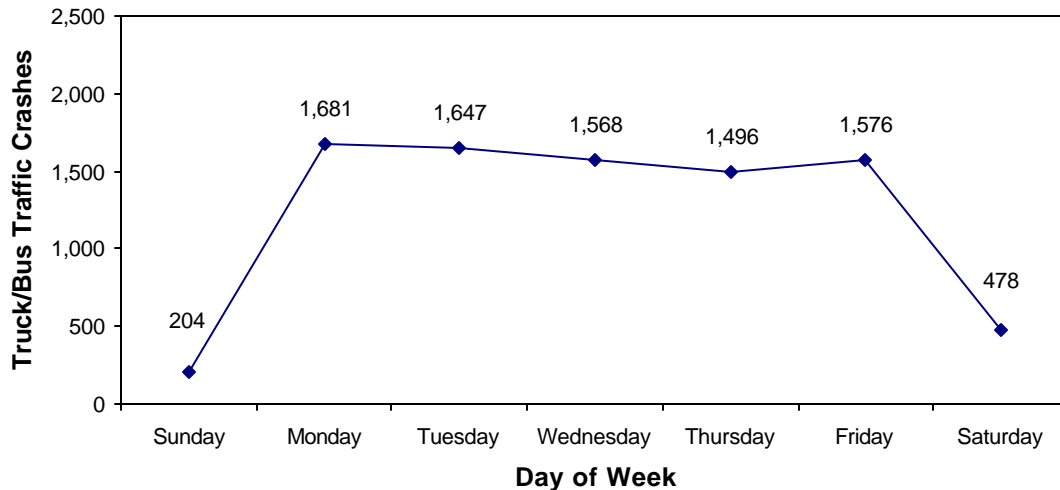
Traffic crashes involving trucks and buses were more frequent during September and October than any other month (Figure 92), even though December had the most traffic crashes (Figure 10). Truck/bus crashes were least frequent in April. As Figure 93 shows, truck/bus crashes were much more common on weekdays, with 92 percent of truck/bus crashes taking place during the Monday-Friday period.

Figure 92
Truck/Bus Traffic Crashes by Month, 2002



Source: MSPTCD and SEMCOG, 2002.

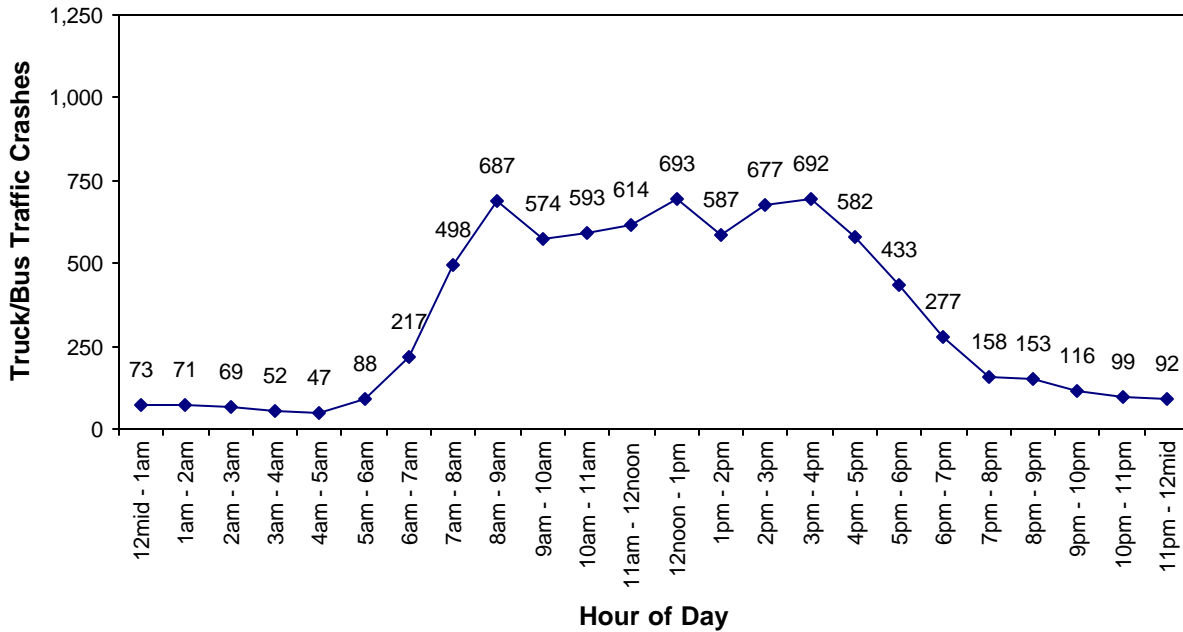
Figure 93
Truck/Bus Traffic Crashes by Day of Week, 2002



Source: MSPTCD and SEMCOG, 2002.

When grouped by hour of day as in Figure 94, truck/bus crashes were more common during daylight hours. Unlike all traffic crashes (Figure 12), truck/bus crashes were almost as common in the morning as in the evening, with a sharper evening peak.

Figure 94
Truck/Bus Traffic Crashes by Hour of Day, 2002

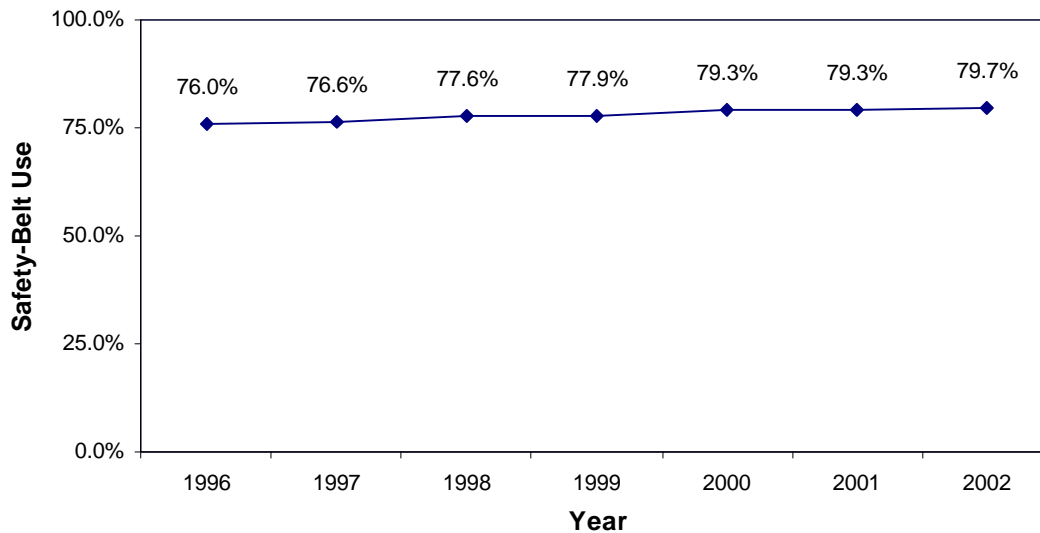


Source: MSPTCD and SEMCOG, 2002.

Safety-Belt Use

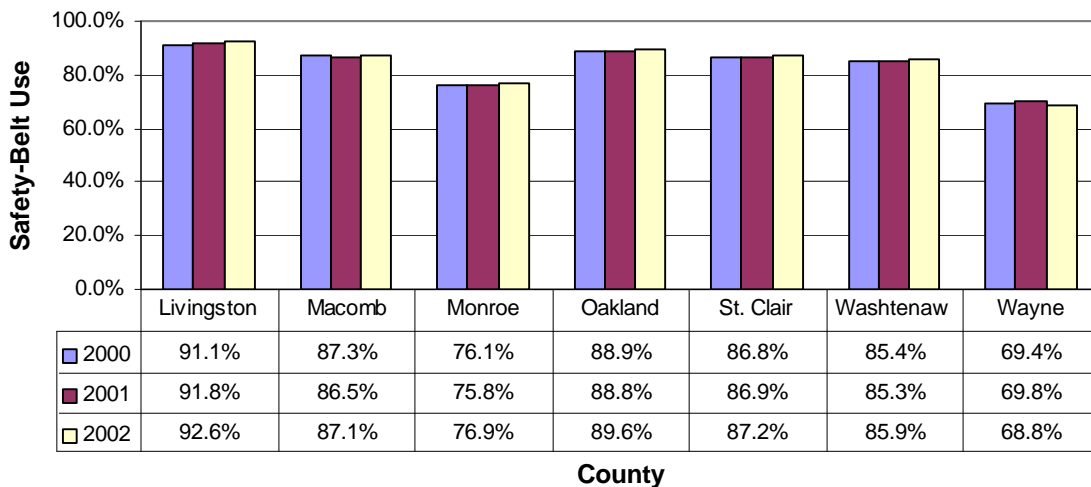
Use of safety belts by drivers in traffic crashes increased slightly in 2002 in Southeast Michigan (Figure 95). Nearly 80 percent of drivers in crashes reported that they were wearing their safety belts at the time of the crash. This percentage may actually be higher, since the field indicating safety-belt use was not coded for nearly 19 percent of crash records. Figure 96 shows safety-belt use in each county. Livingston County (92.6 percent) was the only county with safety-belt use above 90 percent. Wayne County continued to have the lowest rate of belt use at 68.8 percent. All counties except Wayne showed increases in safety belt use over 2001.

Figure 95
Driver Safety-Belt Use, 1996-2002



Source: MSPTCD and SEMCOG, 2002.

Figure 96
Driver Safety-Belt Use by County, 2000-2002



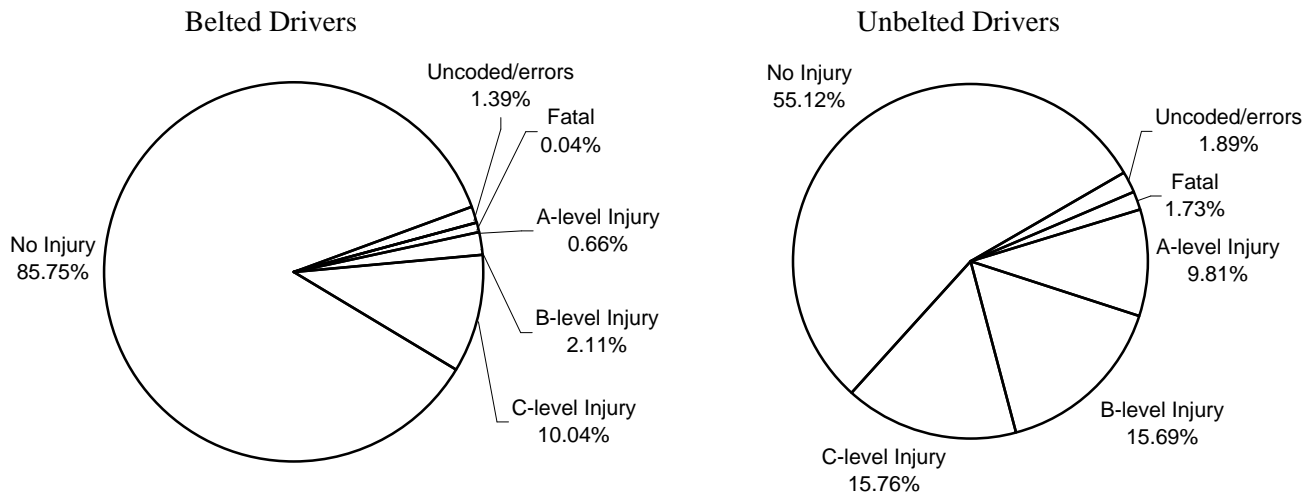
Source: MSPTCD and SEMCOG, 2002.

Injury Severity

As shown in Figure 97, nearly 86 percent of belted drivers escaped injury altogether, but only 55 percent of unbelted drivers were not injured at all. These figures should not be confused with crash severity, which is determined by the most severe injury outcome in a crash.

Figure 97

Injury Severity of Belted Drivers Compared to Unbelted Drivers, 2002

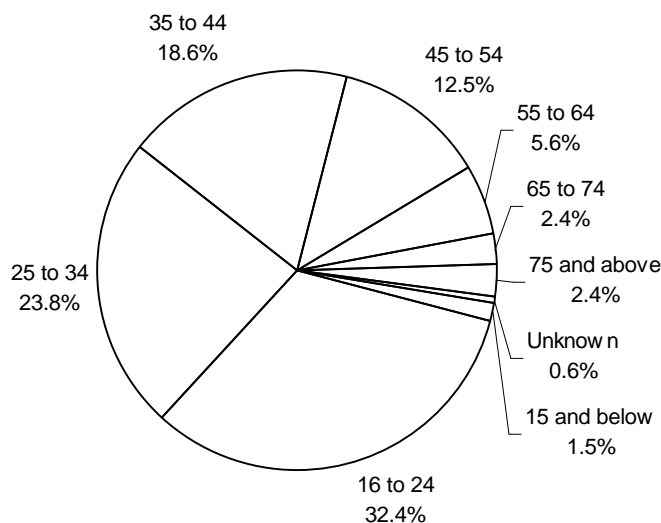


Source: MSPTCD and SEMCOG, 2002.

Unbelted Drivers by Age, Sex, and Alcohol Use

Figure 98 shows how unbelted drivers in 2002 were distributed among the age groups. Over 56 percent of drivers who were not wearing their safety belts during a crash were between the ages of 16 and 34. Table 20 shows that more than twice as many males as females were not wearing their safety belts at the time of a crash.

Figure 98
Unbelted Drivers by Age Group, 2002



Source: MSPTCD and SEMCOG, 2002.

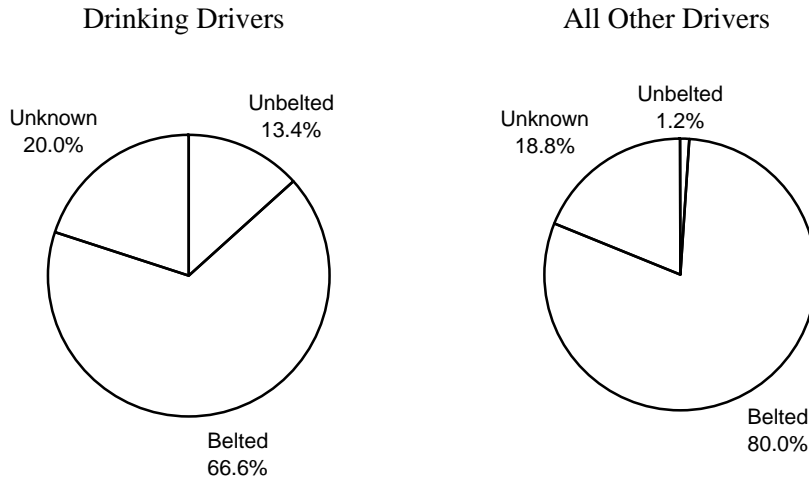
Table 20
Unbelted Drivers by Age and Sex, 2002

Age of Driver	Number of Drivers by Sex			Total
	Female	Male	Unknown	
15 and below	18	47	1	66
16 to 24	403	963	40	1,406
25 to 34	306	704	23	1,033
35 to 44	261	526	21	808
45 to 54	166	362	13	541
55 to 64	60	180	4	244
65 to 74	30	73	2	105
75 to 84	22	60	2	84
85 to 94	9	11		20
95 and above	0	0	0	0
Unknown	9	17	1	27
Total	1,284	2,943	107	4,334

Source: MSPTCD and SEMCOG, 2002.

Drivers who had been consuming alcohol were more than 12 times as likely as non-drinking drivers to not wear their safety belts. As Figure 99 shows, over 13 percent of drinking drivers were unbelted at the time of a crash, compared to only 1.1 percent of all other drivers.

Figure 99
Safety-Belt Use among HBD Drivers, 2002



Source: MSPTCD and SEMCOG, 2002.

Holiday Traffic Crashes

Holiday periods as defined by the National Safety Council vary according to the day of the week on which the holiday falls. Time periods for holidays that always fall on the same day of the week (such as Memorial Day and Thanksgiving) will always be the same length, and time periods for holidays determined by date (such as Fourth of July and Christmas) will vary from year to year. Time periods for holidays are defined in Table 21.

Table 21
Holiday Time Periods

Holiday day of week	Holiday period begins	Holiday period ends	Number of Days
Sunday	6:00 p.m. Friday	11:59 p.m. Monday	$3\frac{1}{4}$
Monday	6:00 p.m. Friday	11:59 p.m. Monday	$3\frac{1}{4}$
Tuesday	6:00 p.m. Friday	11:59 p.m. Tuesday	$4\frac{1}{4}$
Wednesday	6:00 p.m. Tuesday	11:59 p.m. Wednesday	$1\frac{1}{4}$
Thursday	6:00 p.m. Wednesday	11:59 p.m. Sunday	$4\frac{1}{4}$
Friday	6:00 p.m. Thursday	11:59 p.m. Sunday	$3\frac{1}{4}$
Saturday	6:00 p.m. Thursday	11:59 p.m. Sunday	$3\frac{1}{4}$

Source: 2000 Michigan Traffic Crash Facts Book.

Table 22 shows the number of fatal crashes and fatalities that took place in Southeast Michigan during selected holidays in 2000-2002. The number of days in each holiday period is listed in brackets after the year. The number of alcohol-related fatal crashes and fatalities is listed in parentheses.

Taking into account all traffic crashes in 2002, there were an average of 1.2 deaths per day, and 0.4 alcohol-involved traffic deaths every day. During holiday periods in 2002, there was an average of 1.4 traffic deaths for every day of holiday, and 0.7 alcohol-involved deaths for every day of holiday.

Table 22
Fatal Holiday Traffic Crashes, 2000-2002

Holiday Period [number of whole days]	Fatal Crashes (alcohol-involved fatal crashes)	Persons Killed (persons killed in alcohol- involved crashes)
Memorial Day		
2002 [3]	5 (3)	5 (3)
2001 [3]	5 (2)	6 (2)
2000 [3]	10 (6)	10 (6)
Fourth of July		
2002 [4]	8 (3)	9 (4)
2001 [1]	2 (1)	2 (1)
2000 [4]	7 (1)	8 (1)
Labor Day		
2002 [3]	3 (2)	3 (2)
2001 [3]	6 (3)	6 (3)
2000 [3]	4 (1)	4 (1)
Thanksgiving		
2002 [4]	5 (2)	5 (2)
2001 [4]	1 (1)	1 (1)
2000 [4]	5 (2)	5 (2)
Christmas		
2002 [1]	0 (0)	0 (0)
2001 [4]	2 (1)	2 (1)
2000 [3]	4 (0)	5 (0)
New Year Holiday		
2002 [1]	1* (0)*	1* (0)*
2001 [4]	3 (2)	4 (2)
2000 [3]	3 (1)	3 (1)

Source: MSPTCD and SEMCOG, 2002.

* Data are incomplete for 2002/2003 New Year Holiday. This count does not include crashes that took place in 2003.

Appendix A

Vehicle Miles Traveled (VMT)

Data about VMT in each county in 2002 come from the Michigan Department of Transportation (MDOT). These estimates (Table 23) come from information about traffic volumes provided by local agencies through the Highway Performance Monitoring System (HPMS).

Table 23
Estimated Million VMT by County, 2002

County	VMT (in millions)
Livingston	1,870
Macomb	6,205
Monroe	1,920
Oakland	12,724
St. Clair	1,590
Washtenaw	3,591
Wayne	18,167
Total	46,067

Source: MDOT, 2002.

The results of a 1994 SEMCOG survey were used to estimate VMT for each age group in 2001. As part of this survey, 18,344 randomly selected participants kept diaries detailing their driving habits. The percentages of miles driven by each age group in the 1994 survey were used to partition the 2002 VMT for Southeast Michigan among the age groups. Table 24 shows the percent of all VMT driven by each age group in the 1994 survey.

Table 24
Percent VMT Driven by Age Group, 1994

Age Group	Percent VMT
15 and below	0.378%
16 to 24	9.883%
25 to 34	17.706%
35 to 44	28.200%
45 to 54	20.598%
55 to 64	11.587%
65 to 74	9.048%
75 to 84	2.424%
85 to 94	0.175%
95 and above	0.002%
Total	100.000%

Source: SEMCOG, 1994.

The percentages for each age group were then multiplied by the total VMT driven in Southeast Michigan in 2002 to obtain an estimate for the number of miles driven by each age group in 2002. The results are shown in Table 25.

Table 25
 Estimated Million VMT by Age Group, 2002

Age Group	Estimated 2002 VMT (in millions)
15 and below	174.0
16 to 24	4,552.8
25 to 34	8,156.8
35 to 44	12,990.8
45 to 54	9,488.9
55 to 64	5,337.6
65 to 74	4,168.2
75 to 84	1,116.7
85 to 94	80.5
95 and above	1.1
Total	46,067.3

Source: MDOT and SEMCOG, 2002.

Appendix B

Registered Driver Data

Data on the numbers of registered drivers were obtained from the Michigan Department of State (MDOS). The numbers of registered drivers used in this report are the numbers that were registered as of January 2003, as shown in Table 26.

As of January 2003, there were 3,409,697 drivers registered in Southeast Michigan counties, a 0.7 percent increase over February 2002. Wayne County remained the only county with more than one million registered drivers. Monroe County had the fewest registered drivers in the region at over 114,000. Livingston County had the largest increase in registered drivers with a 2.3 percent gain over February 2002.

The 35-44 age group continued to have more registered drivers than any other age group, though nearly 5,000 fewer than February 2002. This was the largest age group in all counties except Washtenaw, in which drivers age 25-34 made up the largest age group.

Table 27 shows the number of male and female drivers in each age group. There are slightly more female registered drivers than male registered drivers in Southeast Michigan.

Table 26

Southeast Michigan Registered Drivers by Age and County, January 2003

Driver Age	Livingston	Macomb	Monroe	Oakland	St. Clair	Washtenaw	Wayne	Total
15 and below	1,568	5,391	901	8,821	1,105	1,944	7,540	27,270
16 to 24	18,799	86,457	17,852	128,795	18,416	36,718	172,757	479,794
25 to 34	19,497	114,364	18,825	172,674	19,955	52,427	247,263	645,005
35 to 44	30,923	130,885	24,512	205,265	26,625	49,852	263,589	731,651
45 to 54	27,234	114,086	23,061	187,502	24,125	45,177	241,534	662,719
55 to 64	16,507	75,679	14,548	116,499	15,938	26,452	149,746	415,369
65 to 74	7,813	49,861	8,472	63,295	9,762	13,135	96,446	248,784
75 to 84	4,258	33,133	5,064	42,294	6,198	8,027	66,930	165,904
85 to 94	760	6,428	960	8,598	1,344	1,740	12,649	32,479
95 and above	13	108	25	209	30	44	293	722
Total	127,372	616,392	114,220	933,952	123,498	235,516	1,258,747	3,409,697

Source: MDOS, 2003.

Table 27

Southeast Michigan Registered Drivers by Age and Sex, January 2003

	Female	Male	Total
15 and below	13,841	13,429	27,270
16 to 24	233,390	246,404	479,794
25 to 34	318,499	326,506	645,005
35 to 44	366,343	365,308	731,651
45 to 54	337,109	325,610	662,719
55 to 64	210,131	205,238	415,369
65 to 74	131,208	117,576	248,784
75 to 84	90,317	75,587	165,904
85 to 94	17,986	14,493	32,479
95 and above	326	396	722
Total	1,719,150	1,690,547	3,409,697

Source: MDOS, 2003.

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