

Road Services Division 2017 Collision Data Report



King County

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INTRODUCTION

The King County Department of Transportation (KCDOT) is pleased to present the 2017 Collision Data Report. This report is prepared by the Road and Traffic Engineering unit of the Engineering Services section of the King County Road Services Division.

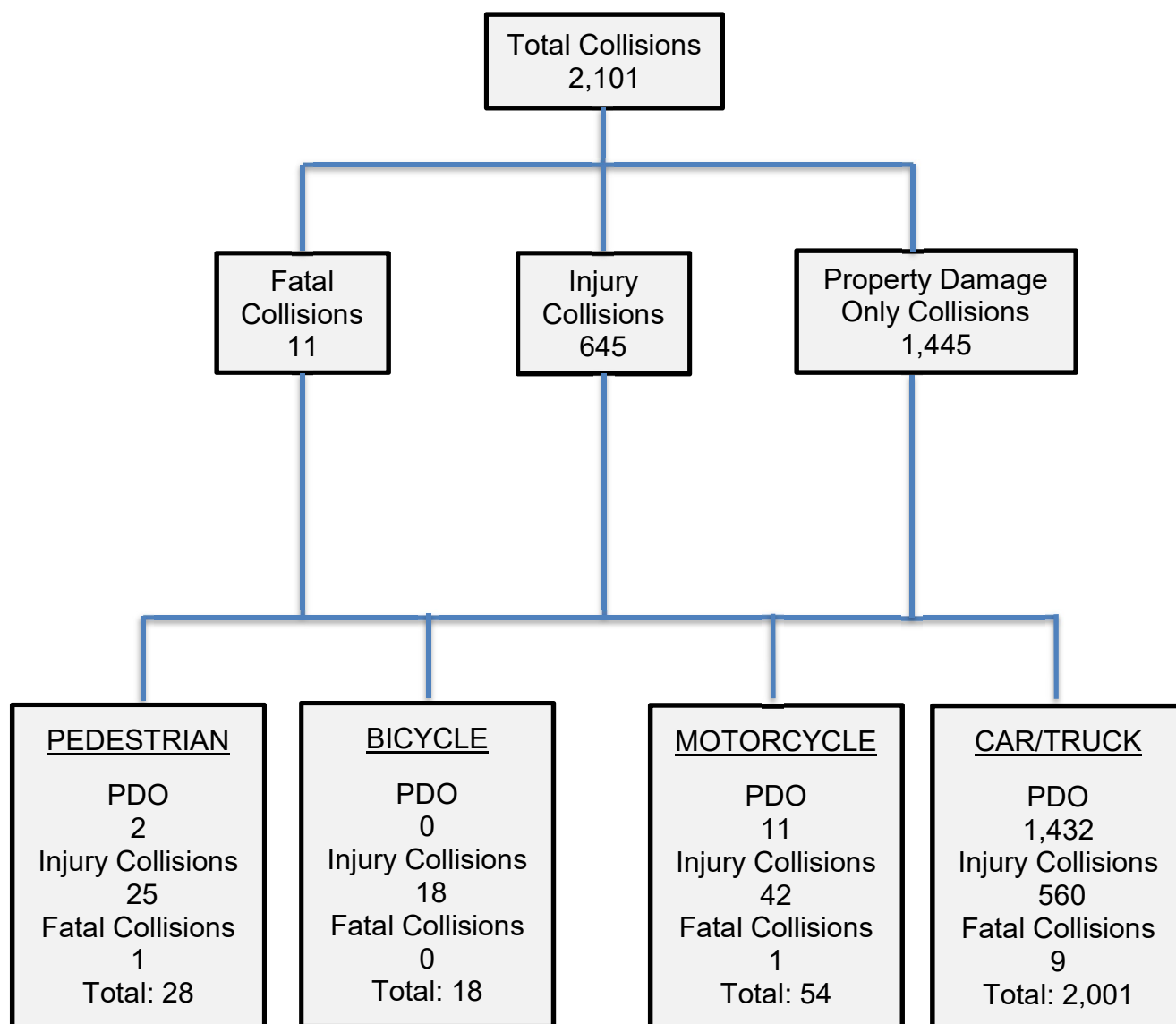
This report was prepared to provide collision and safety information to elected officials and King County staff.

The collision information provided in this report comes from the Washington State Department of Transportation (WSDOT) Collision Location Access Software (CLAS) database as of July 2018. This report covers only those collisions that occurred on a county-maintained roadway within unincorporated King County and meet the reporting threshold of \$1,000 in property damage or result in an injury or fatality.

Other information used in this report is courtesy of the State of Washington's Office of Financial Management, the County Road Administration Board (CRAB), the Washington State Department of Transportation, the King County Executive's Office, the Road Services Division's Engineering Services Section and Strategic Business and Operations Section.

1.0 EXECUTIVE SUMMARY

During 2017, a total of 2,101 collisions were reported on King County maintained roadways. This included 11 fatal, 645 injury, and 1,445 property damage only collisions. The total economic cost of these collisions is estimated at \$91.5 million.



1.1 Six Year Trends

Since 2012, population and maintained road miles continue to decline. King County's unincorporated population fell from 255,700 to 247,000 (3 percent), while the number of maintained roadway miles dropped from 1,504 to 1,466 (2 percent). The number of collisions however, increased by 34 percent from 1,572 to 2,101. This crash activity increase correlates to the economic and population boom that is occurring within the Seattle Metropolitan region, which includes Snohomish, King, and Pierce counties. According to Washington State's Office of Financial Management, the Seattle Metropolitan area has added an estimated 314,000 new residents since 2012. This population growth is reflected in the larger number of crashes and the daily congestion which is experienced across the region.

While the number of total collisions has increased, the proportion of severity has stayed the same. In 2016 and 2017, fatal collisions made up less than one percent of the total, approximately one-third were injury collisions and the remaining two-thirds were property damage only collisions.

Nearly 70 percent of the 2017 collisions were either fixed object (29%), rear-end (21%) or entering an intersection at an angle (18%). Over 55 percent of the fixed object crashes involved hitting a roadway ditch, utility pole, tree, or fence. There were a total of six fatalities involving fixed objects comprising 55 percent of all fatalities.

Pedestrian and bicycle collisions made up less than three percent of all collisions. There were 18 crashes involving bicyclists, the same as in 2016, and 28 total pedestrian involved crashes, down from 37 in 2016.

The percentage of crashes involving motorists driving under the influence (DUI) increased by one-half percent from 2016 to 2017. During 2017, there were a total of 181 DUI involved collisions (8.6%) compared to 165 (8.1%) during 2016. Of the 165 collisions, 3 were fatal, 87 incurred injuries, and 91 involved property damage only.

Table 1.1.1
Number of Collisions
By Severity

Year	PDO*	Percentage	Injury	Percentage	Fatal	Percentage	Total
2012	1,016	64.6%	544	34.6%	12	0.8%	1,572
2013	1,118	66.0%	564	33.3%	11	0.6%	1,693
2014	1,182	67.1%	566	32.1%	11	0.6%	1,759
2015	1,309	67.5%	612	31.6%	17	0.9%	1,938
2016	1,340	65.7%	687	33.7%	14	0.7%	2,041
2017	1,445	68.8%	645	30.7%	11	0.5%	2,101

*Property Damage Only

1.2 Collision Rates and Road Miles

Table 1.2.1
Road Miles By
Federal Functional Classification (FFC)

Federal Functional Class (FFC) Description	FFC	Road Miles	Annual Average Daily Traffic Volume (AADT)	Annual Million Vehicle Miles Traveled (VMT)
Rural Minor Arterial	6	41	4,900	73
Rural Major Collector	7	96	2,200	77
Rural Minor Collector	8	106	1,000	39
Rural Local Access	9	388	500	71
Urban Principal Arterial	14	37	15,700	212
Urban Minor Arterial	16	72	10,000	263
Urban Collector	17	78	3,300	94
Urban Minor Collector	18	20	1,900	14
Urban Local Access	19	628	700	160
Total		1,466		1,003
Overall Weighted Average			1,874	

Note: Average Annual Daily Traffic Volumes were derived using a three-year sampling of traffic count data (2015-2017) and averaging the daily totals.

Table 1.2.2
Collision Rate per Million Vehicle Miles Traveled

al Collision	Average Daily Traffic	Maintained	Annual Million	Collision Rate
Reports	Volumes (ADT)	Road Miles	Miles Driven	
2,158	4,034	1,758	2,588	0.83
2,070	3,667	1,743	2,333	0.89
1,741	2,377	1,632	1,416	1.23
1,501	1,798	1,531	1,005	1.49
1,577	2,022	1,504	1,110	1.42
3	1,693		1,492	

Table 1.2.3
Collision Rate per 100,000 Population

		All Collision Types		Pedestrian		Bicycle	
		Collisions per		Collisions per		Collisions per	
Year	Population	# of Collisions	100,000 Population	# of Collisions	100,000 Population	# of Collisions	100,000 Population
2008	341,150	2,157	632.27	35	10.26	25	7.33
2009	343,180	2,070	603.18	29	8.45	16	4.66
2010	284,100	1,739	612.11	28	9.86	24	8.45
2011	253,565	1,502	592.35	27	10.65	29	11.44
2012	255,700	1,572	614.78	30	11.73	21	8.21
2013	253,100	1,693	668.91	23	9.09	23	9.09

2.0 COLLISION TRENDS

2.1 Fatality Rates and Fatal Collision Rates

Table 2.1.1
Fatality Rate per 100,000 Population

		All Collision Types		Pedestrian		Bicycle	
Year	Population	# of Fatalities	Fatalities per 100,000 population	# of Fatalities	Fatalities per 100,000 population	# of Fatalities	Fatalities per 100,000 population
2012	255,700	12	4.69	1	0.39	1	0.39
2013	253,100	12	4.74	1	0.40	1	0.40
2014	252,050	12	4.76	3	1.19	0	0.00
2015	253,280	19	7.50	3	1.18	0	0.00
2016	245,900	15	6.10	2	0.81	2	0.81
2017	247,000	11	4.45	1	0.40	0	0.00

Table 2.1.2
Fatal Collision Rate per 100,000 Population

		All Collision Types		Pedestrian		Bicycle	
Year	Population	# of Fatal Collisions	Fatal Collisions per 100,000 Population	# of Fatal Collisions	Fatal Collisions per 100,000 Population	# of Fatal Collisions	Fatal Collisions per 100,000 Population
2012	255,700	12	4.69	1	0.39	1	0.39
2013	253,100	11	4.35	1	0.40	1	0.40
2014	252,050	11	4.36	3	1.19	0	0.00
2015	253,280	17	6.71	3	1.18	0	0.00
2016	245,900	14	5.69	2	0.81	2	0.81
2017	247,000	11	4.45	1	0.40	0	0.00

Table 2.1.3
Fatality Rate per
100 Million Vehicle Miles Traveled

Year	Number of Fatalities	Maintained Road Miles	Annual 100 Million Miles Traveled	Fatality Rate per 100 Million Miles Traveled
2012	12	1,504	11.10	1.08
2013	12	1,492	9.61	1.25
2014	12	1,493	9.77	1.23
2015	19	1,468	9.87	1.93
2016	15	1,467	10.34	1.45
2017	11	1,466	10.03	1.10

Table 2.1.4
Fatal Collision Rate per
100 Million Vehicle Miles Traveled

Year	Number of Fatal Collisions	Maintained Road Miles	Annual 100 Million Miles Traveled	Fatal Collision Rate per 100 Million Miles Traveled
2012	12	1,504	11.10	1.08
2013	11	1,492	9.61	1.14
2014	11	1,493	9.77	1.13
2015	17	1,468	9.87	1.72
2016	14	1,467	10.34	1.35
2017	11	1,466	10.03	1.10

2.2 US, State, and Unincorporated King County Collision, Fatal Collision and Fatality Rates

Table 2.2.1
US, State, and Unincorporated King County Collision Rates
per 100,000 Population

	Unincorporated King County			Washington State			United States		
Year	Population	Collisions	Collisions per 100,000 Population	Population	Collisions	Collisions per 100,000 Population	Population	Collisions	Collisions per 100,000 Population
2012	255,700	1,572	617	6,895,300	99,560	1,444	313,874,000	5,615,000	1,789
2013	253,100	1,693	669	6,971,400	99,689	1,430	316,219,000	5,687,000	1,798
2014	252,050	1,759	698	6,968,200	107,634	1,545	318,857,000	6,064,000	1,901
2015	253,280	1,938	765	7,170,400	117,114	1,633	321,419,000	6,296,000	1,959
2016	245,900	2,041	830	7,183,700	122,374	1,703	323,128,000	7,277,000	2,252
2017	247,000	2,101	851	7,310,300	121,051	1,656	325,720,000	Data Not Available	Data Not Available

Table 2.2.2
US, State, and Unincorporated King County Fatal Collision and
Fatality Rates per 100,000 Population

	Unincorporated King County			Washington State			United States		
Year	Population	Fatal Collisions per 100,000 Population	Fatalities per 100,000 Population	Population	Fatal Collisions per 100,000 Population	Fatalities per 100,000 Population	Population	Fatal Collisions per 100,000 population	Fatalities per 100,000 population
2012	255,700	4.69	5.48	6,895,300	5.84	6.35	313,874,000	9.81	10.69
2013	253,100	4.35	4.74	6,971,400	5.81	6.31	316,219,000	9.51	10.35
2014	252,050	4.36	4.76	6,968,200	6.16	6.63	318,857,000	9.41	10.25
2015	253,280	6.71	7.50	7,170,400	6.95	7.92	321,419,000	10.07	10.92
2016	245,900	5.69	6.10	7,183,700	7.13	7.37	323,128,000	10.66	11.59
2017	247,000	4.45	4.45	7,310,300	7.28	7.69	325,720,000	Data Not Available	Data Not Available

Source: Washington State Department of Transportation and the National Highway Traffic Safety Administration

Table 2.2.3
US, State, and Unincorporated King County
Collision Rates per Million Vehicle Miles Traveled (VMT)

	Unincorporated King County			Washington State			United States		
Year	Million VMT	Collisions	Collisions per Million VMT	Million VMT	Collisions	Collisions per Million VMT	100 Million VMT	Collisions	Collisions per Million VMT
2012	1,110	1,572	1.42	56,600	99,560	1.76	29,540	5,615,000	1.90
2013	961	1,693	1.76	57,200	99,709	1.74	29,880	5,687,000	1.90
2014	977	1,759	1.80	58,060	107,634	1.85	30,260	6,064,000	2.00
2015	987	1,938	1.96	59,650	117,114	1.96	31,310	6,296,000	2.01
2016	1,034	2,041	1.97	60,851	122,374	2.01	32,180	7,277,000	2.26
2017	1,003	2,101	2.09	61,420	121,051	1.97	32,090	Data Not Available	Data Not Available

Table 2.2.4
US, State, and Unincorporated King County Fatal Collision
and Fatality Rates per 100 Million Vehicle Miles Traveled (VMT)

	Unincorporated King County			Washington State			United States		
Year	100 Million VMT	Fatal Collision Rate per 100 Million VMT	Fatality Rate per 100 Million VMT	100 Million VMT	Fatal Collision Rate per 100 Million VMT	Fatality Rate per 100 Million VMT	100 Million VMT	Fatal Collision Rate per 100 Million VMT	Fatality Rate per 100 Million VMT
2012	11.10	1.08	1.08	566	0.71	0.77	29,540	1.04	1.14
2013	9.61	1.14	1.25	572	0.70	0.76	29,880	1.01	1.10
2014	9.77	1.13	1.23	580	0.74	0.80	30,260	0.99	1.08
2015	9.87	1.72	1.93	597	0.83	0.95	31,310	1.03	1.12
2016	10.34	1.35	1.45	609	0.84	0.92	32,180	1.07	1.18
2017	10.03	1.10	1.10	614	0.87	0.92	32,090	Data Not Available	Data Not Available

Source: Washington State Department of Transportation and the National Highway Traffic Safety Administration

2.3 Urban versus Rural Roads - Fatal Collision and Fatality Rates

Table 2.3.1
Urban versus Rural Roads in Unincorporated King County
Fatal Collision and Fatality Rates per 100,000 Population

Urban Roads in Unincorporated King County						Rural Roads in Unincorporated King County				
Year	Population	# of Fatal Collisions	# of Fatalities	Fatal Collisions per 100,000 Population	Fatalities per 100,000 Population	Population	# of Fatal Collisions	# of Fatalities	Fatal Collisions per 100,000 Population	Fatalities per 100,000 Population
2012	131,400	6	6	4.57	4.57	124,300	6	8	4.83	6.44
2013	129,840	7	8	5.39	6.16	123,260	4	4	3.25	3.25
2014	126,500	7	8	5.53	6.32	125,500	4	4	3.19	3.19
2015	127,500	9	10	7.06	7.84	125,780	8	9	6.36	7.16
2016	119,900	10	11	8.34	9.17	126,000	4	4	3.17	3.17
2017	120,400	6	6	4.99	4.99	126,600	5	5	3.95	3.95

Table 2.3.2
Urban versus Rural Roads in Unincorporated King County
Fatal Collision Rates per 100 Million Vehicle Miles Traveled (VMT)

Year	Fatal Collisions			Maintained Road Miles			Annual 100 Million VMT			Fatal Collision Rate per 100 Million VMT		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
2012	6	6	12	840	664	1,504	7.41	3.69	11.10	0.81	1.63	1.08
2013	7	4	11	861	631	1,492	6.96	2.65	9.61	1.01	1.51	1.14
2014	7	4	11	862	631	1,493	7.18	2.59	9.77	1.00	1.51	1.13
2015	9	8	17	836	632	1,468	7.18	2.69	9.87	1.25	2.97	1.72
2016	10	4	14	837	630	1,467	7.54	2.80	10.34	1.33	1.42	1.35
2017	6	5	11	836	630	1,466	7.43	2.60	10.03	0.81	1.92	1.10

Table 2.3.3
Urban versus Rural Roads in Unincorporated King County
Fatality Rates per 100 Million Vehicle Miles Traveled (VMT)

	Fatalities			Maintained Road Miles			Annual 100 Million VMT			Fatalities per 100 Million VMT		
Year	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
2012	6	8	14	840	644	1,504	7.41	3.69	11.10	0.81	2.17	1.08
2013	8	4	12	861	631	1,492	6.96	2.65	9.61	1.15	1.50	1.25
2014	8	4	12	862	631	1,493	7.18	2.59	9.77	1.14	1.51	1.14
2015	10	9	19	836	632	1,468	7.18	2.69	9.87	1.39	3.35	1.93
2016	11	4	15	837	630	1,467	7.54	2.80	10.34	1.46	1.42	1.45
2017	6	5	11	836	630	1,466	7.43	2.60	10.03	0.81	1.92	1.10

Table 2.3.4
Urban versus Rural Collision Rates
Per Million Vehicle Miles Traveled (VMT)

	Number of Collisions			Maintained Road Miles			Annual Million VMT			Collisions per Million VMT		
Year	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
2012	1,195	377	1,572	840	644	1,504	741	369	1,110	1.61	1.02	1.42
2013	1,337	356	1,693	861	631	1,492	696	265	961	1.92	1.34	1.76
2014	1,418	341	1,759	862	631	1,493	718	259	977	1.97	1.32	1.80
2015	1,548	390	1,938	836	632	1,468	718	269	987	2.16	1.45	1.96
2016	1,616	425	2,041	837	630	1,467	754	280	1,034	2.14	1.52	1.97
2017	1,672	429	2,101	836	630	1,466	743	260	1,003	2.25	1.65	2.09

2.4 Collisions by Road Classification

Table 2.4.1
Collisions by King County Road Classification

Year	Principal Arterial	Minor Arterial	Collector	Local Access	Total
2012	343	459	407	363	1,572
2013	395	504	415	379	1,693
2014	445	505	401	408	1,759
2015	462	626	456	394	1,938
2016	487	602	504	448	2,041
2017	502	620	516	463	2,101

Table 2.4.2
Collisions by Federal Functional Classification

	Federal Functional Classification									
	Rural				Urban					
	Minor Arterial	Major Collector	Minor Collector	Local Access	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local Access	
Year	6	7	8	9	14	16	17	18	19	Total
2012	74	129	94	80	343	385	184	0	283	1,572
2013	82	120	103	51	395	422	186	6	328	1,693
2014	65	112	86	78	445	440	186	17	330	1,759
2015	106	124	93	67	461	520	216	23	328	1,938
2016	88	159	104	74	487	514	226	15	374	2,041
2017	104	145	99	81	502	516	243	29	382	2,101

Note: Prior to 2013, no King County roadways had been classified as Federal Functional Classification 18.

3.0 COLLISION TYPES

3.1 Collision Type and Severity

Table 3.1.1
Collisions by Collision Type

Collision Type	2012	2013	2014	2015	2016	2017
Fixed Object	528	540	514	576	626	618
Rear - End	288	353	362	441	426	438
Entering at Angle	254	235	273	334	358	368
Hit Parked Car	117	138	146	136	151	189
Left Turn	112	118	139	116	131	117
Sideswipe	52	89	95	99	86	116
Head On	27	21	21	20	22	36
Vehicle Overturned	41	49	39	31	43	35
Pedestrian	30	23	37	33	37	28
Right Turn	18	19	20	17	22	27
U-Turn	19	0	0	0	0	23
Animal	12	18	12	21	22	21
Other	30	56	59	67	79	19
Bicycle	21	23	16	21	18	18
Other Object	6	8	3	13	10	18
Leaving Parked Position	5	0	14	11	9	11
Backing	10	0	1	0	0	10
Non Collision	1	3	8	2	1	9
Entering Driveway	1	0	0	0	0	0
Totals	1,572	1,693	1,759	1,938	2,041	2,101

Table 3.1.2
Fatal Collisions by Collision Type

Collision Type	2012	2013	2014	2015	2016	2017
Fixed object	4	8	0	7	4	6
Entering at angle	4	0	1	2	2	1
Hit Parked Car	0	0	0	0	0	1
Non-Collision	0	0	0	0	0	1
Pedestrian	1	1	3	3	2	1
Right Turn	0	0	0	0	0	1
Other	0	0	2	2	0	0
Bicycle	1	1	0	0	2	0
Head on	2	0	2	1	1	0
Rear - end	0	0	1	1	1	0
Sideswipe	0	1	0	1	2	0
Vehicle overturned	0	0	2	0	0	0
Totals	12	11	11	17	14	11

Table 3.1.3
2017 Collisions by Collision Type and Severity

Collision Type	PDO	Injury	Fatal	Total	Percentage
Fixed object	414	155	7	576	29.7%
Rear - end	288	152	1	441	22.8%
Entering at angle	219	113	2	334	17.2%
Left turn	70	46	0	116	6.0%
Hit Parked Car	123	13	0	136	7.0%
Other	46	19	2	67	3.5%
Sideswipe	75	23	1	99	5.1%
Vehicle overturned	16	15	0	31	1.6%
Pedestrian	1	29	3	33	1.7%
Head on	8	11	1	20	1.0%
Bicycle	3	18	0	21	1.1%
Right Turn	13	4	0	17	0.9%
Animal	15	6	0	21	1.1%
Backing	0	0	0	0	0.0%
Leaving Parked Position	8	3	0	11	0.6%
Non-Collision	0	2	0	2	0.1%
Other Object	10	3	0	13	0.7%
Total	1,309	612	17	1,938	100.0%

Table 3.1.4
2017 Fixed Object Collisions
By First Object Struck and Severity

Object Struck	PDO	Injury	Fatality	Total	% of Total
Boulder (stationary)	9	3	0	12	1.9%
Bridge Rail - Face	1	0	0	1	0.2%
Building	5	0	0	5	0.8%
Concrete Barrier/Jersey Barrier - Face	3	1	0	4	0.6%
Culvert and/or other Appurtenance in Ditch	7	3	1	11	1.8%
Earth Bank or Ledge	14	15	0	29	4.7%
Fence	52	11	0	63	10.2%
Fire Hydrant	2	1	0	3	0.5%
Guardrail - Face	36	13	0	49	7.9%
Guardrail - Leading End	5	3	0	8	1.3%
Guardrail - Through, Over or Under	3	2	0	5	0.8%
Guide Post	1	0	0	1	0.2%
Into River, Lake, Swamp, etc.	0	1	0	1	0.2%
Linear Curb	5	5	0	10	1.6%
Mailbox	28	8	0	36	5.8%
Metal Sign Post	6	0	0	6	1.0%
Other Objects	1	0	0	1	0.2%
Over Embankment - No Guardrail Present	7	11	0	18	2.9%
Retaining Wall (concrete, rock, brick, etc.)	10	3	0	13	2.1%
Roadway Ditch	89	34	1	124	20.0%
Signal Pole	1	0	0	1	0.2%
Street Light Pole or Base	8	0	0	8	1.3%
Temporary Traffic Sign, Barricade or Construction Materials	1	0	0	1	0.2%
Traffic Island	3	2	0	5	0.8%
Tree or Stump (stationary)	43	32	3	78	12.6%
Underside of Bridge	1	0	0	1	0.2%
Utility Pole or Box	52	24	1	77	12.5%
Wood Sign Post	40	7	0	47	7.6%
Total	433	179	6	618	100.0%

OBJECT STRUCK	PDO	Injury	Fatality	Total	% of Total
Boulder (stationary)	5	1	0	6	1.0%
Bridge Abutment	1	0	0	1	0.2%
Bridge Rail - Face	3	0	0	3	0.5%
Building	3	3	0	6	1.0%

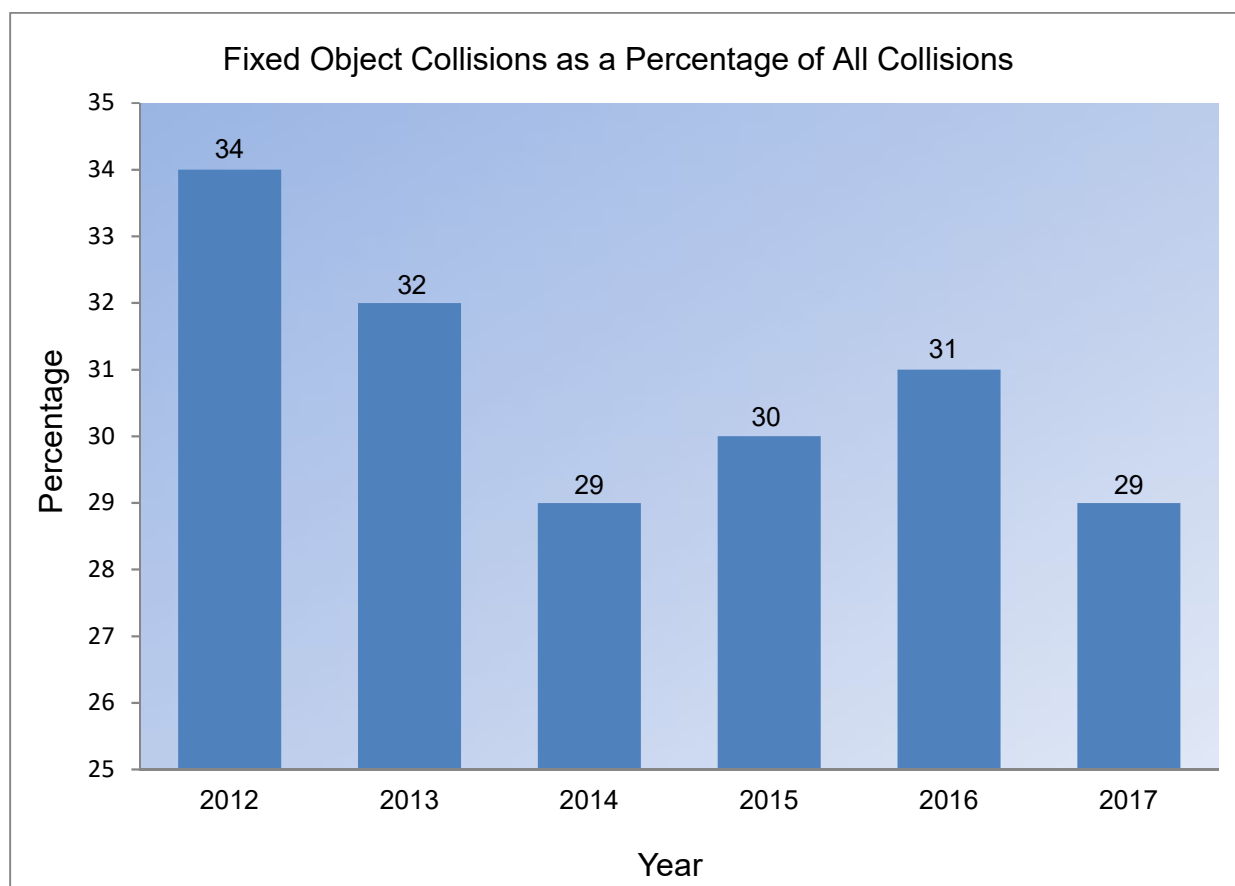
Concrete Barrier/Jersey Barrier - Face	7	1	1	9	1.6%
Crash Cushions - Impact Attenuators	0	1	0	1	0.2%
Culvert and/or other Appurtenance in Ditch	11	5	0	16	2.8%
Drawbridge Crossing Gate Arm	1	0	0	1	0.2%
Earth Bank or Ledge	26	8	0	34	5.9%
Fence	56	18	1	75	13.0%
Fire Hydrant	10	0	0	10	1.7%
Guardrail - Face	22	6	0	28	4.9%
Guardrail - Leading End	7	1	0	8	1.4%
Guardrail - Through, Over or Under	2	1	0	3	0.5%
Guide Post	0	1	0	1	0.2%
Into River, Lake, Swamp, etc.	4	1	0	5	0.9%
Linear Curb	13	2	0	15	2.6%
Mailbox	25	3	0	28	4.9%
Metal Sign Post	12	3	0	15	2.6%
Other Objects	1	0	0	1	0.2%
Over Embankment - No Guardrail Present	4	4	0	8	1.4%
Retaining Wall (concrete, rock, brick, etc.)	6	4	0	10	1.7%
Roadway Ditch	68	30	0	98	17.0%
Rock Bank or Ledge	1	1	0	2	0.3%
Signal Pole	1	0	0	1	0.2%
Street Light Pole or Base	4	4	0	8	1.4%
Tree or Stump (stationary)	33	33	2	68	11.8%
Underside of Bridge	1	0	0	1	0.2%
Utility Pole or Box	57	20	3	80	13.9%
Wood Sign Post	30	4	0	34	5.9%
Total	414	155	7	576	100.0%

3.2 Fixed Object Collisions

Table 3.2.1
Collision Rate per Million Vehicle Miles Traveled (VMT) for
Collisions Involving Fixed Objects

Year	Total Number of Fixed Object Collisions			Maintained Road Miles			Annual Million VMT			Collision Rate for Fixed Object Collisions per Million VMT		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
2012	345	197	542	840	664	1,504	741	369	1,110	0.47	0.53	0.49
2013	356	184	540	861	631	1,492	696	265	961	0.51	0.69	0.56
2014	331	183	514	862	631	1,493	718	259	977	0.47	0.70	0.53
2015	366	210	576	836	632	1,468	718	269	987	0.51	0.78	0.58
2016	399	227	626	837	630	1,467	754	280	1,034	0.53	0.81	0.61
2017	389	229	618	836	630	1,466	743	260	1,003	0.52	0.88	0.62

Figure 3.2.1
Collisions Involving Fixed Objects as a
Percentage of All Collisions



3.3 Pedestrian Involved Collisions

Table 3.3.1
Pedestrian Involved Collisions by Severity

Year	Property Damage Only	Injury	Fatality	Total
2012	1	28	1	30
2013	0	22	1	23
2014	4	30	3	37
2015	1	29	3	33
2016	2	33	2	37
2017	2	25	1	28

Table 3.3.2
2017 Pedestrian Involved Collisions by
Facility Used and Severity

Facility	Property Damage Only	Injury	Fatality	Total
Marked X walk	1	9	0	10
In Roadway	0	11	1	12
Unmarked X walk	1	3	0	4
Other	0	1	0	1
Shoulder	0	1	0	1
Total	2	25	1	28

Table 3.3.3
Pedestrian Involved Collisions
By First Contributing Circumstance

Contributing Circumstance	2012	2013	2014	2015	2016	2017
None	13	7	11	5	12	7
Other	2	8	5	6	4	7
Fail to Yield Row to Pedestrian	10	3	9	8	8	5
Inattention	1	3	4	4	4	5
Driver Distractions Outside Vehicle	0	0	0	0	1	1
Driver Not Distracted	0	0	2	1	1	1
Exceeding Reasonable Safe Speed	0	1	0	2	0	1
Improper Turn	2	1	1	1	0	1
Apparently Asleep	0	0	0	0	1	0
Did Not Grant ROW to Vehicle	0	0	0	0	1	0
Disregard Flagger - Officer	0	0	1	1	0	0
Disregard Stop and Go Light	0	0	0	0	0	0
Disregard Yield Sign – Flashing Yellow	0	0	0	0	1	0
Driver Operating Handheld Telecommunication	1	0	0	0	0	0
Exceeding Stated Speed Limit	0	0	0	1	0	0
On Wrong Side of Road	0	0	0	0	1	0
Operating Defective Equipment	1	0	1	0	0	0
Over Centerline	0	0	1	0	0	0
Under Influence of Alcohol	0	0	1	1	1	0
Under Influence of Drugs	0	0	0	0	0	0
Unknown Driver Distraction	0	0	1	3	2	0
Total	30	23	37	33	37	28

Table 3.3.4
Age of Pedestrians Involved in Collisions

Age Range	2012	2013	2014	2015	2016	2017
Unknown	2	0	2	1	0	1
0-5	3	2	0	1	2	0
6-10	2	2	0	1	1	2
11-15	0	2	5	5	6	2
16-20	7	3	4	7	2	3
21-25	2	2	6	1	6	3
26-30	1	3	2	4	3	5
31-35	2	0	2	1	1	0
36-40	1	1	2	1	2	2
41-45	3	1	2	0	0	0
46-50	2	1	2	1	2	1
51-55	2	1	2	3	2	4
56-60	1	4	1	2	2	0
61-65	1	1	2	3	2	2
66-70	0	0	0	0	4	0
71-75	0	0	0	0	2	2
76-80	0	0	1	1	0	0
81-85	0	0	1	1	0	1
86+	1	0	2	0	0	0
Total	30	23	37	33	37	28

Table 3.3.5
Gender of Pedestrians Involved in Collisions

Year	Unknown	Female	Male	Total
2009		10	19	29
2010		10	18	28
2011		14	13	27
2012		16	14	30
2013		8	15	23
2014	1	14	22	37

3.4 Bicycle Involved Collisions

Table 3.4.1
Bicycle Involved Collisions by Severity

Year	Property Damage Only	Injury	Fatality	Total
2012	2	18	1	21
2013	3	19	1	23
2014	1	15	0	16
2015	3	18	0	21
2016	1	15	2	18
2017	0	18	0	18

Table 3.4.2
2017 Bicycle Involved Collisions by First Contributing Circumstance and Severity

First Contributing Circumstance	Property Damage Only	Injury	Fatality	Total
None	0	8	0	8
Inattention	0	3	0	3
Other	0	4	0	4
Exceeding Reasonably Safe Speed	0	1	0	1
Following Too Closely	0	1	0	1
On Wrong Side of Road	0	1	0	1
Total	0	18	0	18

3.5 Motorcycle Involved Collisions

Table 3.5.1
Motorcycle Involved Collisions
By Severity

Year	Property Damage Only	Injury	Fatality	Total
2012	7	37	6	50
2013	5	38	2	45
2014	5	37	2	44
2015	13	40	4	57
2016	5	36	3	44
2017	11	42	1	54

Table 3.5.2
2017 Motorcycle Involved Collisions
By First Contributing Circumstance

First Contributing Circumstance	PDO	Injury	Fatality	Total
None / Driver Not Distracted	1	9	0	10
Inattention / Driver Distraction	1	9	0	10
Follow Too Closely Improper Passing / Improper U-Turn	2	6	1	9
Exceeding Stated Speed Limit Exceeding Reasonably Safe Speed	2	5	0	7
Other	3	4	0	6
Did Not Grant R/W to Vehicle (motorcycle <i>not</i> at fault)	0	4	0	4
Disregard Signal / Disregard Stop Sign	0	2	0	2
Improper Turn	1	1	0	2
Under the Influence of Drugs or Alcohol	0	1	0	1
Improper Backing	1	0	0	1
On Wrong Side of Road	0	1	0	1
Total	11	42	1	54

4.0 OTHER COLLISION INFORMATION

4.1 Estimated Economic Costs

Table 4.1.1
Estimated Economic Costs of Collision Activity

Severity	2017 Collisions	Estimated Economic Costs
Property Damage Only	1,445	\$16,473,000
Injury	645	\$58,050,000
Fatal	11	\$16,962,000
Total	2,101	\$91,485,000

The following estimated costs per collision are used in this calculation:

*Property Damage Only (no injury observed)-\$11,400; Injury-\$90,000; Fatality-\$1,542,000
(National Safety Council, 2017)*

4.2 Month, Day of Week, and Time of Day

Figure 4.2.1
2017 Collisions by Month

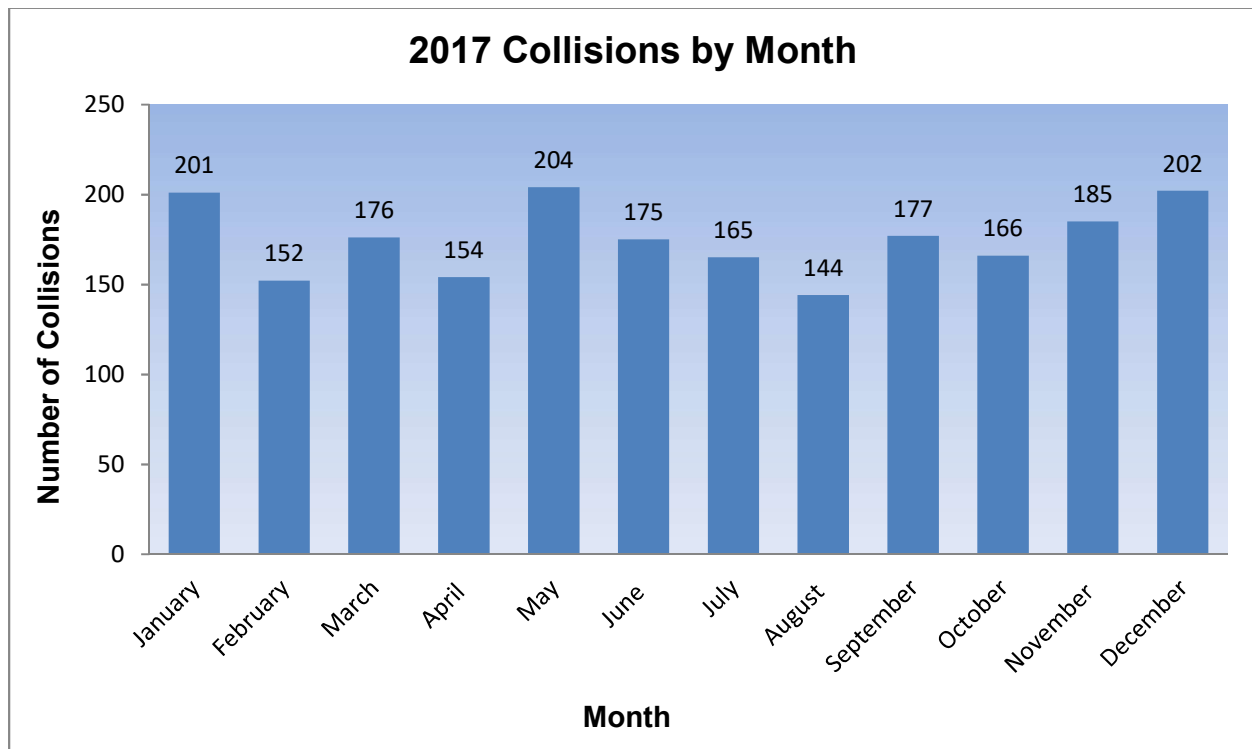


Figure 4.2.2
2017 Collisions by Day of Week

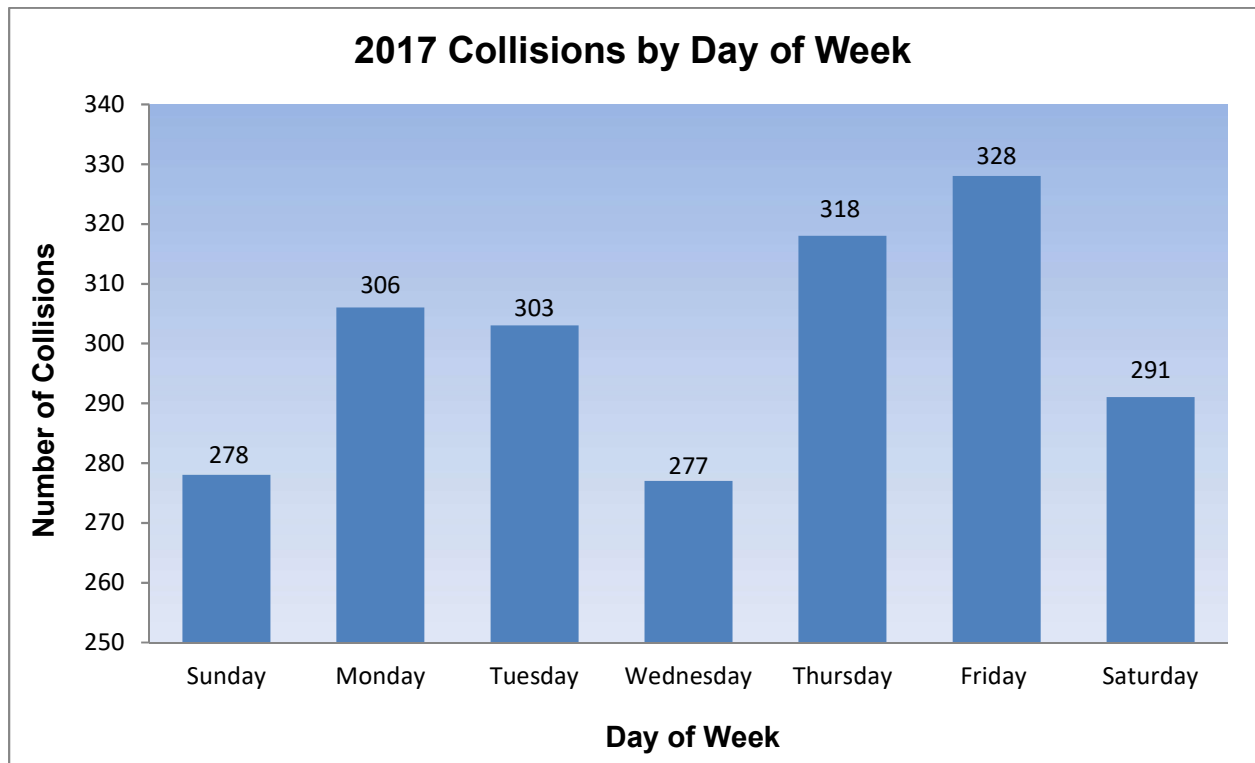


Figure 4.2.3
2017 Weekday Collisions
By Time of Day

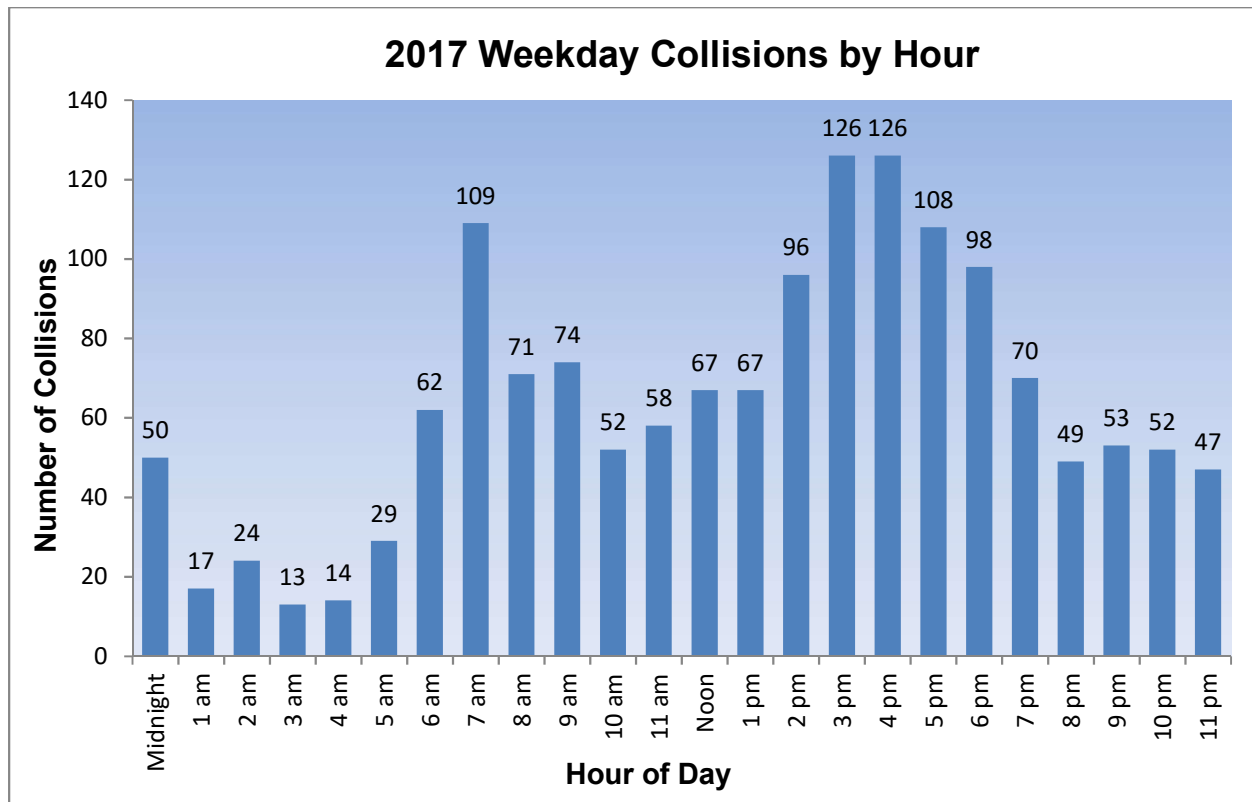
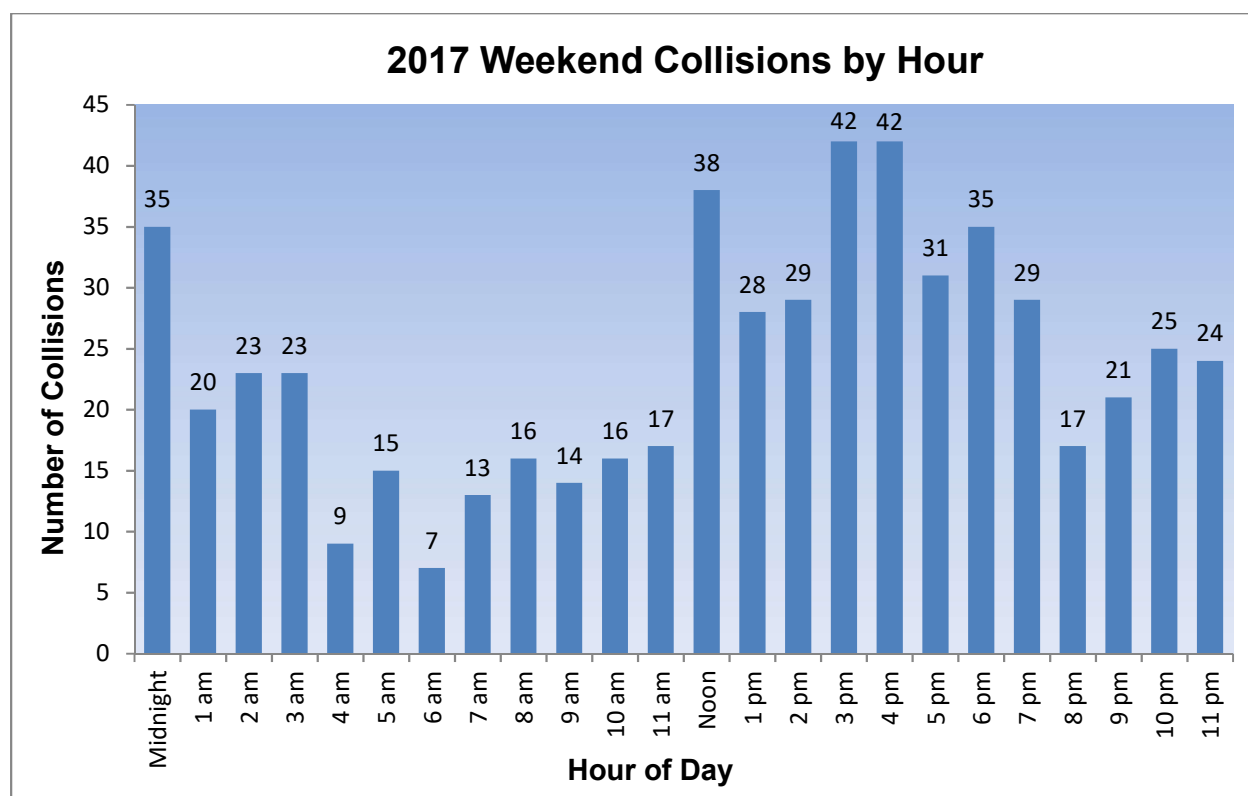
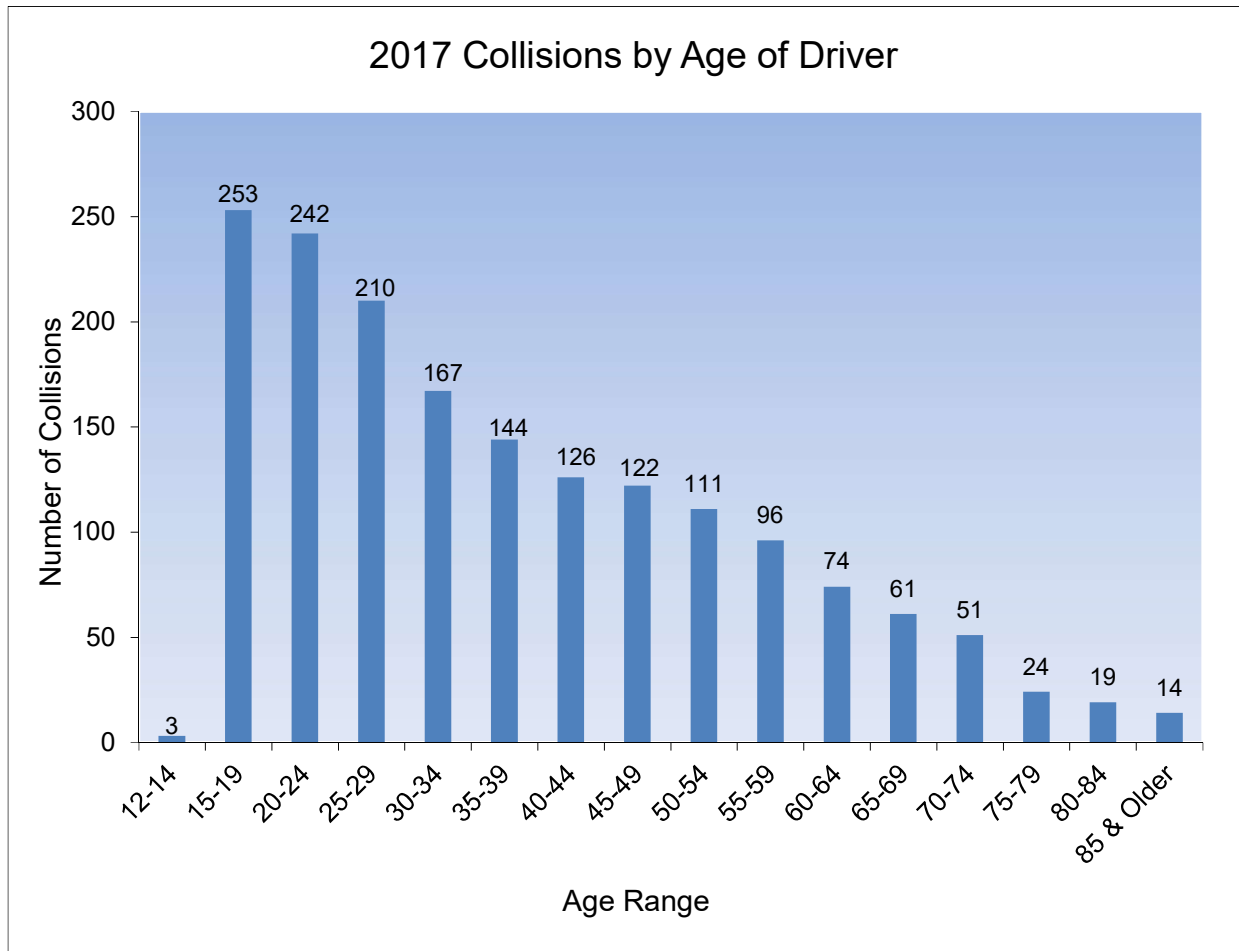


Figure 4.2.4
2017 Weekend Collisions
By Time of Day



4.3 Demographics

Figure 4.3.1
2017 Collisions by Age of Driver



Note: 384 collision reports did not disclose driver age information

4.4 Contributing Circumstances

Table 4.4.1
First Contributing Circumstance
For Drivers between ages 15 to 25 for 2017

1st Contributing Circumstance	Age 15	Age 16	Age 17	Age 18	Age 19	Age 20	Age 21	Age 22	Age 23	Age 24	Age 25	Total
Inattention/Driver Distraction	1	16	15	17	14	11	11	10	11	8	13	127
Excessive Speed	2	19	10	14	13	10	9	10	7	7	7	108
Did Not Grant ROW to Vehicle	0	3	2	13	7	6	6	8	5	0	8	58
None	0	6	5	10	2	6	7	3	3	5	7	54
Follow Too Closely	0	4	5	5	5	1	4	8	3	4	3	42
Other	2	1	5	3	4	3	4	5	5	2	4	38
Under Influence of Alcohol/Drugs	0	0	1	2	6	1	8	3	4	8	4	37
Apparently Asleep/Fatigued/Ill	0	2	2	4	1	1	1	2	3	0	2	18
Disregard Stop/Go Light/Flashing Red/Flashing Yellow/Yield Sign	0	2	2	2	1	1	0	2	3	1	1	15
Improper Turn	0	1	3	2	3	1	1	1	2	1	0	15
Operating Defective Equipment	0	1	1	0	0	1	3	0	3	1	0	10
Driver Not Distracted	0	0	1	2	0	0	0	3	0	2	0	8
On Wrong Side of Road	0	0	1	1	0	0	0	0	0	1	1	4
Over Center Line	0	0	2	2	0	0	0	0	0	0	0	4
Improper U-Turn	0	0	2	0	0	0	0	0	0	1	0	3
Improper Backing	0	0	0	0	0	0	0	1	0	0	1	2
Operating Handheld Telecommunication/ Other Electronic Device	0	0	0	1	0	0	0	0	0	0	1	2
Headlight Violation	0	0	0	0	1	0	0	0	0	0	0	1
Totals	5	55	57	78	57	42	54	56	49	41	52	546

Table 4.4.2
2017 Collisions by First Contributing Circumstance

First Contributing Circumstance	Fatality	Injury	PDO	Total
Inattention / Driver Distraction	1	160	301	462
Other	2	64	316	382
None	2	72	191	265
Excessive Speed	4	81	158	243
Did Not Grant ROW to Vehicle	0	54	140	194
Under Influence of Alcohol/Drugs	1	55	67	123
Follow Too Closely	0	38	80	118
Apparently Asleep/Fatigued/Ill	0	30	34	64
Disregard Stop/Go Light/Stop Sign - Flashing Red/Yield Sign - Flashing Yellow/Flagger - Officer	0	29	21	50
Improper Turn	0	10	31	41
Driver Not Distracted	0	13	18	31
Operating Defective Equipment	0	7	22	29
Improper Passing	1	2	19	22
Improper Backing	0	1	16	17
Not Stated	0	6	7	13
Improper U-Turn	0	5	6	11
On Wrong Side Of Road	0	6	5	11
Over Center Line	0	6	3	9
Driver Operating Handheld Telecommunications Device/ Hands-free Wireless Telephone/ Other Electronic Device	0	1	7	8
Fail to Yield Row to Pedestrian	0	4	1	5

First Contributing Circumstance	Fatality	Injury	PDO	Total
Inattention / Driver Distraction	1	160	301	462
Other	2	64	316	382
None	2	72	191	265
Excessive Speed	4	81	158	243
Did Not Grant ROW to Vehicle	0	54	140	194
Under Influence of Alcohol/Drugs	1	55	67	123
Follow Too Closely	0	38	80	118
Apparently Asleep/Fatigued/Ill	0	30	34	64
Disregard Stop/Go Light/Stop Sign - Flashing Red/Yield Sign - Flashing Yellow/Flagger - Officer	0	29	21	50
Improper Turn	0	10	31	41
Driver Not Distracted	0	13	18	31
Operating Defective Equipment	0	7	22	29
Improper Passing	1	2	19	22
Improper Backing	0	1	16	17

Not Stated	0	6	7	13
Improper U-Turn	0	5	6	11
On Wrong Side Of Road	0	6	5	11
Over Center Line	0	6	3	9
Driver Operating Handheld Telecommunications Device/ Hands-free Wireless Telephone/ Other Electronic Device	0	1	7	8
Fail to Yield Row to Pedestrian	0	4	1	5
Failing to Signal/Improper Signal	0	0	2	2
Headlight Violation	0	1	0	1
Total	11	645	1,445	2,101

4.5 Impairment

Table 4.5.1
Collisions Involving
Drivers Under the Influence (DUI)

Year	Fatal	% of all Fatalities	Injury	% of All Injury	Property Damage Only	% of all PDO	Total DUI Collisions	% of all Collisions
2012	8	66.7%	71	13.1%	77	7.6%	156	9.9%
2013	2	16.7%	65	11.5%	81	7.2%	148	8.7%
2014	3	27.3%	62	11.0%	82	6.9%	148	8.4%
2015	4	23.5%	63	10.0%	72	5.5%	139	7.1%
2016	1	7.1%	67	9.8%	97	7.2%	165	8.1%
2017	3	27.3%	87	13.5%	91	6.3%	181	8.6%

Figure 4.5.1
2017 Weekend Collisions for
Drivers under the Influence
By Time of Day

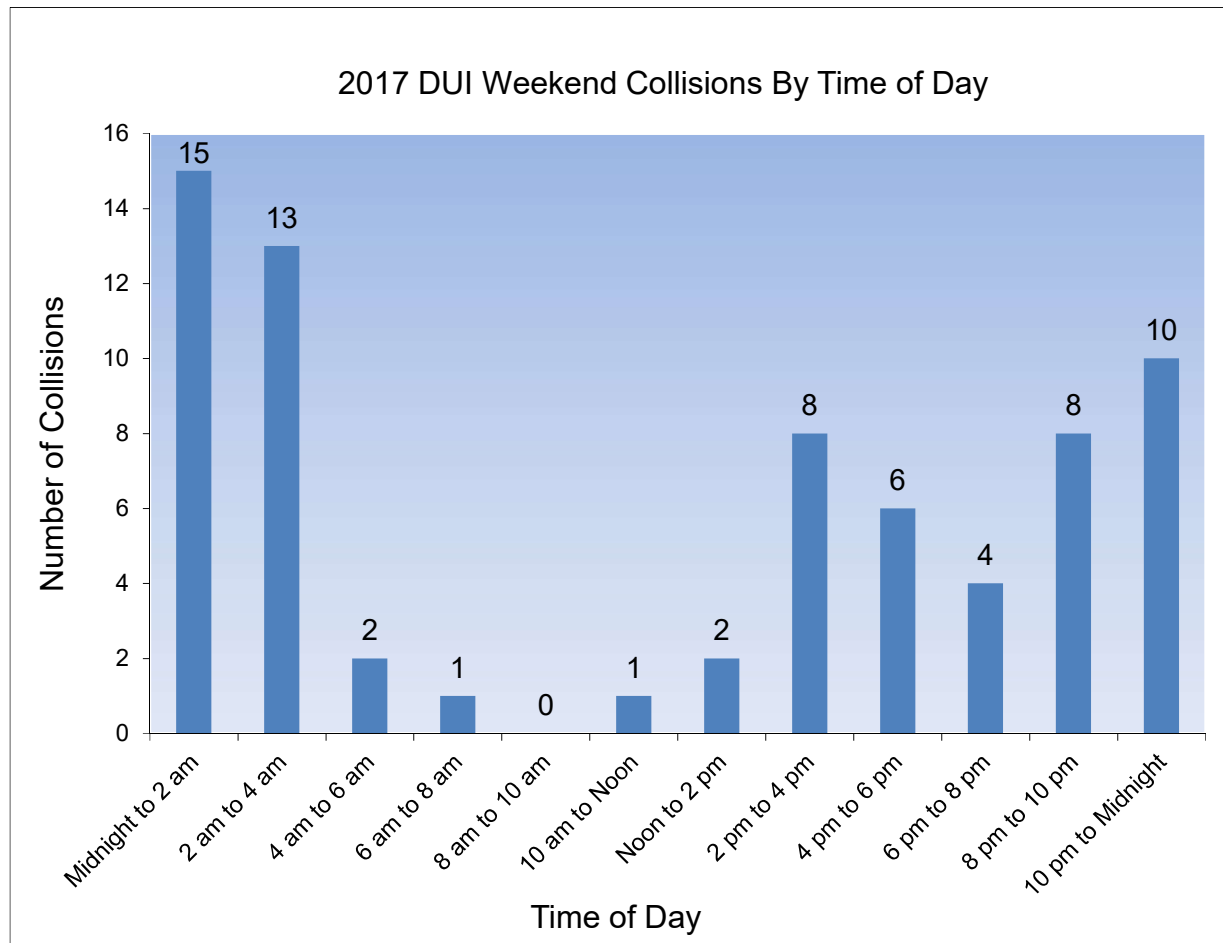
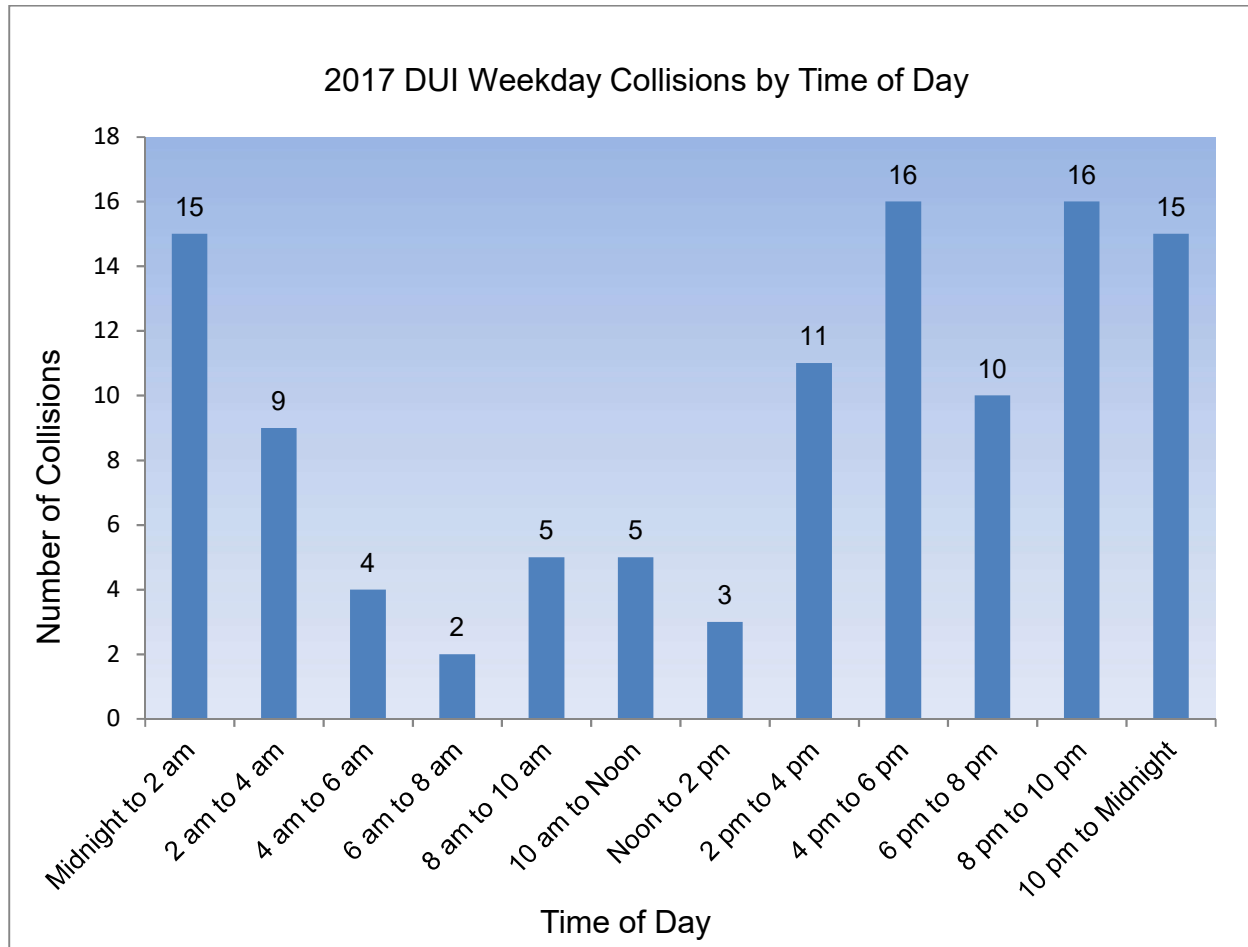


Figure 4.5.2
2017 Weekday Collisions for
Drivers under the Influence
By Time of Day



4.6 Speed

Table 4.6.1
Collisions involving Speeding as First Contributing Circumstance

Year	Fatal	% of all Fatal Collisions	Injury	% of all Injury Collisions	PDO	% of all Property Damage Only Collisions	Total	% of all Collisions
2012	4	33%	120	22%	201	20%	325	20%
2013	4	36%	86	15%	152	14%	242	14%
2014	2	18%	85	15%	130	11%	217	12%
2015	4	24%	84	14%	160	12%	248	13%
2016	3	21%	87	13%	140	10%	230	11%
2017	4	36%	81	13%	158	11%	243	12%

4.7 Lighting Conditions

Table 4.7.1
2017 Collisions By
Lighting Condition

Lighting Condition	Property Damage Only	Injury	Fatal	Total
Dark-No Street Lights	190	78	6	274
Dark-Street Lights Off	19	5	0	24
Dark-Street Lights On	248	113	5	366
Dawn	27	13	0	40
Daylight	746	376	5	1127
Dusk	42	24	1	67
Not Stated	37	3	0	40
Totals	1,309	612	17	1,938

APPENDIXES

Appendix A – Data Sources

Collision Data

Collision information is from the Washington State Department of Transportation's (WSDOT) Crash Data and Reporting Branch of the Transportation Data, GIS & Modeling Office (TDGMO). The Crash Data and Reporting Branch is responsible for updating and maintaining all electronic collision records in Washington State. Vehicular collisions which sustain more than \$1,000 in property damage, or involve an injury or a death, are required to be reported to the Washington State Patrol by a Police Traffic Collision Report. The Washington State Patrol provides hard copies of the Police Traffic Collision Report to WSDOT, where they are converted into an electronic format.

Injuries are classified based on conditions present at the time of the collision except in the case of fatalities. An injury resulting in a death, within 30 days of the collision, is classified as a fatal injury.

Population Data and King County Land Area

King County's population figure is from the Washington State Office of Financial Management. King County's land area figure is from King County's Office of Policy and Regional Planning.

King County Maintained Roadway Figures

King County's maintained roadway mile figures are from King County Road Services Strategic Business and Operations Section (SBOS).

Traffic Count Data

The traffic count information used in this report was provided by King County's Road and Traffic Engineering Unit.

Estimated Cost of Collisions

The economic costs of collisions values used in this report are from the National Safety Council.

Appendix B - Formulas used in Report

Collision Rate per Million Vehicle Miles Traveled

$R = (\text{Collisions} \times 10^6) / (\text{AADT} \times 365 \times L)$, where

Rate = Accident rate for collisions per million vehicle mile (acc/mvm)

Collisions = Total number of collisions in one year period

AADT = Annual Average Daily Traffic volume, and

L = Length of study section in miles

Collision Rate per 100,000 Population

Rate = Collisions * 100,000 / Unincorporated Population

Collisions = Total number of collisions in a one year period

Economic Cost of Collisions

The economic cost of collisions was calculated as follows:

Cost = \$9,300 * PDO + \$80,700 * I + \$1,500,000 * F, where

PDO – Total Number of Property Damage Collisions (\$9, 300/collision)

I – Total Number of Injury Collisions (\$80,700/collision)

F – Total Number of Fatal Collisions (\$1,500,000/collision)