

# Road Services Division 2021 Collision Data Report



**King County**

Department of Local Services  
**Road Services Division**  
**Engineering Services Section**

JoAnn Kosai-Eng, P.E.  
County Road Engineer

*Engineering Services Section*

Rose LeSmith, P.E.  
Engineering Services Section Manager

Wally Archuleta, P.E.  
County Traffic Engineer

Teresa Lee  
Senior Database Specialist



Department of Local Services  
Road Services Division  
Engineering Services Section  
King Street Center, KSC-LS-0315  
201 South Jackson Street  
Seattle, WA 98104

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## INTRODUCTION

The King County Department of Local Services is pleased to present the 2021 Collision Data Report. This report is prepared by the Road and Traffic Engineering unit of the Engineering Services section of the Road Services Division.

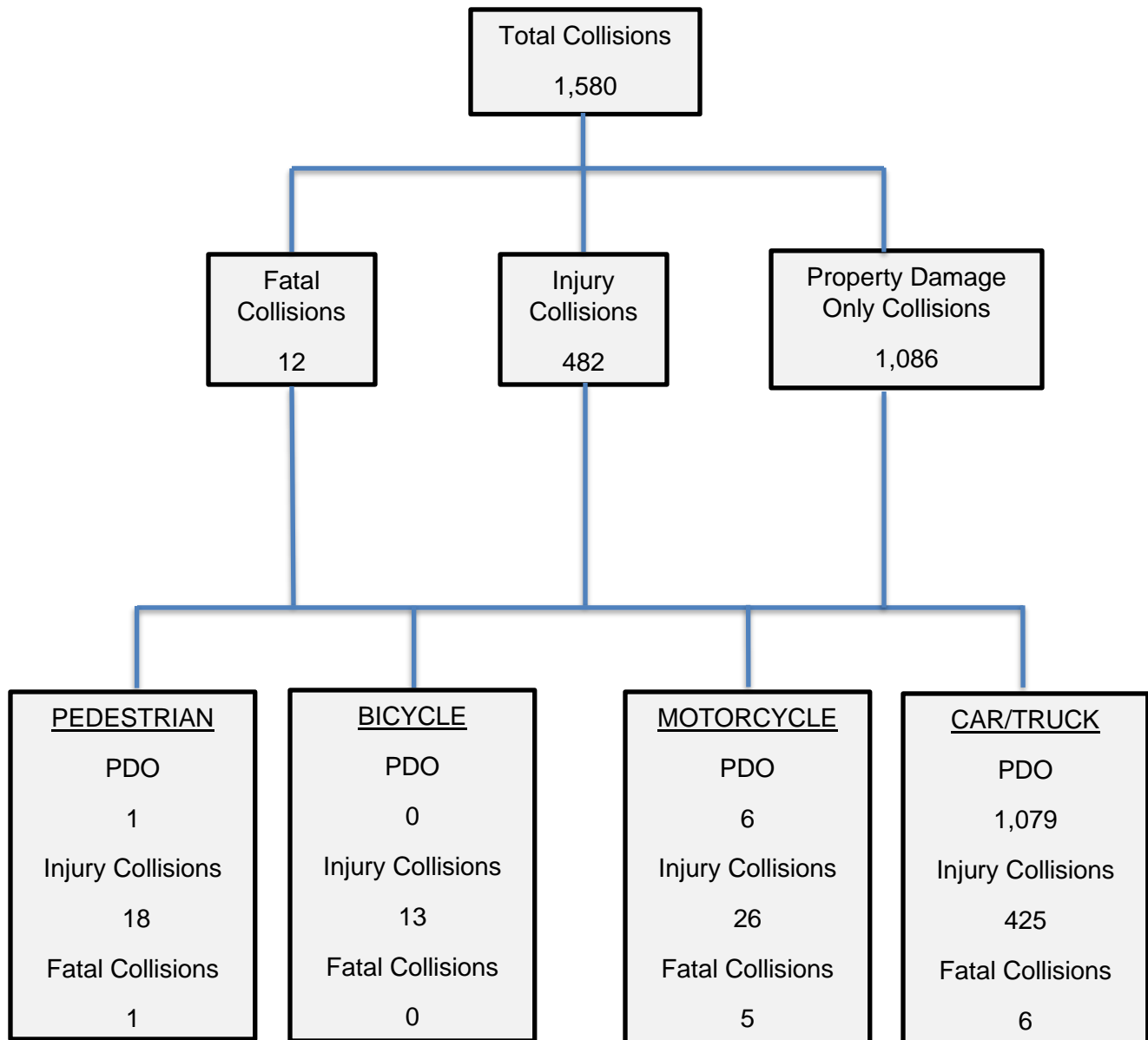
This report was prepared to provide collision and safety information to elected officials and King County staff.

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 2022. This report covers only those collisions that occurred on a county-maintained roadway within unincorporated King County for which a State of Washington Police Traffic Collision Report was filed.

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 2021, a total of 1,580 collisions were reported on King County maintained roadways. This included 12 fatal, 482 injury, and 1,086 property damage only collisions. The total economic cost of these collisions is estimated at \$51.3 million.



## 1.1 Six Year Trends

Since 2016, population and maintained road miles in unincorporated King County has remained steady. The population increased from 245,900 to 247,400 (0.6 percent), while the number of maintained roadway miles remained the same. The number of collisions however, decreased by 23 percent from 2,041 to 1,580. This reduction in crash activity is at least partially related to a decrease in traffic region-wide beginning in March 2020 as a result of the Covid-19 pandemic. The population continues to increase 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 over 299,000 new residents since 2016. As traffic patterns return to normal as Covid-19 subsides, the number of crashes and amount of daily congestion are increasing throughout the region.

While the number of total collisions decreased from 2020 to 2021, the proportions of severity has stayed the same. 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 two-thirds of the 2021 collisions were either fixed object (30%), rear-end (18%) or entering an intersection at an angle (19%). Nearly 60 percent of the fixed object crashes involved striking a roadway ditch, utility pole, tree, fence, or guardrail. There was a total of six fatalities involving fixed objects, comprising 43 percent of all fatalities.

Pedestrian and bicycle collisions made up less than three percent of all collisions. There were 13 crashes involving bicyclists, down from 18 in 2020, and 20 pedestrian involved crashes, down from 24 in 2020.

The percentage of crashes involving motorists driving under the influence (DUI) decreased by 0.9 percent from 2020 to 2021. During 2021, there were a total of 69 DUI involved collisions (4.4%) compared to 75 (5.3%) during 2020. Of the 69 collisions, 1 was fatal, 26 incurred injuries, and 42 involved property damage only.

Table 1.1.1  
Number of Collisions  
By Severity

Year	PDO*	Percentage	Injury	Percentage	Fatal	Percentage	Total
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
2018	1,333	70.8%	540	28.7%	11	0.6%	1,884
2019	1,243	68.2%	571	31.3%	10	0.5%	1,824
2020	963	68.7%	425	30.3%	14	1.0%	1,402
2021	1,086	68.8%	482	30.5%	12	0.8%	1,580

\*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	2,700	95
Rural Minor Collector	8	105	1,400	54
Rural Local Access	9	388	700	99
Urban Principal Arterial	14	37	17,000	230
Urban Minor Arterial	16	72	10,200	268
Urban Collector	17	78	3,400	97
Urban Minor Collector	18	20	2,000	15
Urban Local Access	19	630	800	184
<b>Total</b>		<b>1,467</b>		<b>1,115</b>
<b>Overall Weighted Average</b>			<b>2,080</b>	

Note: Average Annual Daily Traffic Volumes were derived using a four-year sampling of traffic count data (2018-2021) and averaging the daily totals. A four-year sampling was used rather than the three-year sampling used previously due to limited data collected during the peak pandemic years of 2020 and 2021.

**Table 1.2.2**  
**Collision Rate per Million Vehicle Miles Traveled**

Year	Total Collision Reports	Annual Average Daily Traffic Volumes (AADT)	Maintained Road Miles	Annual Million Miles Driven	Collision Rate
2016	2,041	1,931	1,467	1,034	1.97
2017	2,101	1,874	1,466	1,003	2.09
2018	1,884	1,844	1,466	987	1.91
2019	1,824	2,018	1,466	1,080	1.69
2020	1,402	2,042	1,466	1,093	1.28
2021	1,580	2,080	1,467	1,115	1.42

**Table 1.2.3**  
**Collision Rate per 100,000 Population**

Year	Population	All Collision Types		Pedestrian		Bicycle	
		# of Collisions	Collisions per 100,000 Population	# of Collisions	Collisions per 100,000 Population	# of Collisions	Collisions per 100,000 Population
2016	245,900	2,041	830.01	37	15.05	18	7.32
2017	247,000	2,101	850.61	28	11.34	18	7.29
2018	247,200	1,884	762.14	21	8.50	13	5.26
2019	248,300	1,824	734.60	27	10.87	14	5.64
2020	249,100	1,402	562.83	24	9.63	18	7.23
2021	247,400	1,580	638.64	22	8.89	13	5.25



## 2.0 COLLISION TRENDS

### 2.1 Fatality Rates and Fatal Collision Rates

Table 2.1.1  
Fatality Rate per 100,000 Population

Year	Population	All Collision Types		Pedestrian		Bicycle	
		# of Fatalities	Fatalities per 100,000 population	# of Fatalities	Fatalities per 100,000 population	# of Fatalities	Fatalities per 100,000 population
2016	245,900	15	6.10	2	0.81	2	0.81
2017	247,000	11	4.45	1	0.40	0	0.00
2018	247,200	12	4.85	0	0.00	1	0.40
2019	248,300	10	4.03	1	0.40	0	0.00
2020	249,100	14	5.62	4	1.61	0	0.00
2021	247,400	14	5.66	1	0.40	0	0.00

Table 2.1.2  
Fatal Collision Rate per 100,000 Population

Year	Population	All Collision Types		Pedestrian		Bicycle	
		# 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
2016	245,900	14	5.69	2	0.81	2	0.81
2017	247,000	11	4.45	1	0.40	0	0.00
2018	247,200	11	4.45	0	0.00	1	0.40
2019	248,300	10	4.03	1	0.40	0	0.00
2020	249,100	14	5.62	4	1.61	0	0.00
2021	247,400	12	4.85	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
2016	15	1,467	10.34	1.45
2017	11	1,466	10.03	1.10
2018	12	1,466	9.87	1.22
2019	10	1,466	10.80	0.93
2020	14	1,466	10.93	1.28
2021	14	1,467	11.15	1.26

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
2016	14	1,467	10.34	1.35
2017	11	1,466	10.03	1.10
2018	11	1,466	9.87	1.11
2019	10	1,466	10.80	0.93
2020	14	1,466	10.93	1.28
2021	12	1,467	11.15	1.08

## 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

Year	Unincorporated King County			Washington State			United States		
	Population	Collisions	Collisions per 100,000 Population	Population	Collisions	Collisions per 100,000 Population	Population	Collisions	Collisions per 100,000 Population
2016	245,900	2,041	830	7,183,700	122,374	1,703	323,128,000	6,821,000	2,111
2017	247,000	2,101	851	7,310,300	121,051	1,656	325,720,000	6,452,000	1,981
2018	247,200	1,884	762	7,427,500	115,994	1,562	327,167,000	6,734,000	2,058
2019	248,300	1,824	735	7,546,400	111,585	1,479	328,240,000	6,756,000	2,058
2020	249,100	1,402	563	7,656,200	86,274	1,126	329,484,000	5,251,000	1,594
2021	247,400	1,580	639	7,767,000	103,289	1,330	331,894,000	Not Available	Not Available

Table 2.2.276567  
US, State, and Unincorporated King County Fatal Collision and  
Fatality Rates per 100,000 Population

Year	Unincorporated King County			Washington State			United States		
	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
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	10.51	11.40
2018	247,200	4.45	4.85	7,427,500	6.65	7.35	327,167,000	10.29	11.17
2019	248,300	4.03	4.03	7,546,400	6.63	6.96	328,240,000	10.13	11.00
2020	249,100	5.62	5.62	7,656,200	6.82	7.26	329,484,000	10.85	11.78
2021	247,400	4.85	5.66	7,767,000	7.67	8.54	331,894,000	Not Available	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)**

Year	Unincorporated King County			Washington State			United States		
	Million VMT	Collisions	Collisions per Million VMT	Million VMT	Collisions	Collisions per Million VMT	100 Million VMT	Collisions	Collisions per Million VMT
2016	1,034	2,041	1.97	60,851	122,374	2.01	32,180	6,821,000	2.12
2017	1,003	2,101	2.09	61,420	121,051	1.97	32,090	6,452,000	2.01
2018	987	1,884	1.91	62,367	115,994	1.86	32,255	6,734,000	2.09
2019	1,080	1,824	1.69	62,537	111,585	1.78	32,691	6,756,000	2.07
2020	1,093	1,402	1.28	53,512	86,274	1.61	28,297	5,251,000	1.86
2021	1,115	1,580	1.42	57,797	103,289	1.79	32,288	Not Available	Not Available

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

Year	Unincorporated King County			Washington State			United States		
	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
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	1.07	1.16
2018	9.87	1.11	1.22	624	0.79	0.88	32,255	1.03	1.12
2019	10.80	0.93	0.93	625	0.83	0.87	32,691	1.02	1.10
2020	10.93	1.28	1.28	535	1.00	1.06	28,297	1.26	1.37
2021	11.15	1.08	1.26	578	1.03	1.15	32,288	Not Available	Not Available

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

## 2.3 Urban versus Rural Roads - Fatal Collision and Fatality Rates

**Table 2.3.5**  
**Urban versus Rural Roads in Unincorporated King County**  
**Fatal Collision and Fatality Rates per 100,000 Population**

Year	Urban Roads in Unincorporated King County					Rural Roads in Unincorporated King County				
	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
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
2018	120,500	7	8	5.81	6.64	126,700	4	4	3.16	3.16
2019	121,000	6	6	4.96	4.96	127,300	4	4	3.14	3.14
2020	121,400	10	10	8.24	8.24	127,700	4	4	3.13	3.13
2021	120,600	5	5	4.15	4.15	126,800	7	9	5.52	7.10

**Table 2.3.6**  
**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
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
2018	7	4	11	836	630	1,466	7.24	2.63	9.87	0.97	1.52	1.11
2019	6	4	10	835	631	1,466	7.81	2.99	10.80	0.77	1.34	0.93
2020	10	4	14	836	630	1,466	7.69	3.24	10.93	1.30	1.23	1.28
2021	5	7	12	837	630	1,467	7.94	3.21	11.15	0.63	2.18	1.08

**Table 2.3.7**  
**Urban versus Rural Roads in Unincorporated King County**  
**Fatality Rates per 100 Million Vehicle Miles Traveled (VMT)**

Year	Fatalities			Maintained Road Miles			Annual 100 Million VMT			Fatalities per 100 Million VMT		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
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
2018	8	4	12	836	630	1,466	7.24	2.63	9.87	1.10	1.52	1.22
2019	6	4	10	835	631	1,466	7.81	2.99	10.80	0.77	1.34	0.93
2020	10	4	14	836	630	1,466	7.69	3.24	10.93	1.30	1.23	1.28
2021	5	9	14	837	630	1,467	7.94	3.21	11.15	0.63	2.80	1.26

**Table 2.3.8**  
**Urban versus Rural Collision Rates**  
**Per Million Vehicle Miles Traveled (VMT)**

Year	Number of Collisions			Maintained Road Miles			Annual Million VMT			Collisions per Million VMT		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
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
2018	1,514	370	1,884	836	630	1,466	724	263	987	2.09	1.41	1.91
2019	1,485	339	1,824	835	631	1,466	781	299	1,080	1.90	1.13	1.69
2020	1,094	308	1,402	836	630	1,466	769	324	1,093	1.42	0.95	1.28
2021	1,243	337	1,580	837	630	1,467	794	321	1,115	1.57	1.05	1.42

## 2.4 Collisions by Road Classification

Table 2.4.9  
Collisions by King County Road Classification

Year	Principal Arterial	Minor Arterial	Collector	Local Access	Total
2016	487	602	504	448	2,041
2017	502	620	516	463	2,101
2018	475	586	437	386	1,884
2019	481	519	433	391	1,824
2020	334	380	376	312	1,402
2021	414	485	371	310	1,580

Table 2.4.2  
Collisions by Federal Functional Classification

	Federal Functional Classification									Total
	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	
2016	88	159	104	74	487	514	226	15	374	2,041
2017	104	145	99	81	502	516	243	29	382	2,101
2018	86	125	88	71	475	500	202	22	315	1,884
2019	84	122	78	55	481	435	214	19	336	1,824
2020	69	101	83	55	334	311	172	20	257	1,402
2021	96	122	69	50	414	389	170	10	260	1,580

## 3.0 COLLISION TYPES

### 3.1 Collision Type and Severity

Table 3.1.1  
Collisions by Collision Type

Collision Type	2016	2017	2018	2019	2020	2021
Fixed Object	626	618	548	473	459	476
Entering at Angle	358	368	348	364	244	294
Rear - End	426	438	388	377	202	289
Hit Parked Car	151	189	142	148	128	136
Left Turn	131	117	120	118	87	102
Sideswipe	86	116	126	105	90	97
Vehicle Overturned	43	35	29	24	26	25
Head On	22	36	24	35	22	21
Other Object	10	18	10	15	22	21
Animal	22	21	32	23	24	20
Pedestrian	37	28	21	27	24	20
Other	79	19	15	14	9	16
Bicycle	18	18	13	14	18	13
Non-Collision	1	9	1	10	5	12
U-Turn	0	23	29	19	20	12
Right Turn	22	27	16	25	14	11
Backing	0	10	13	17	5	10
Leaving Parked Position	9	11	9	16	3	5
<b>Totals</b>	<b>2,041</b>	<b>2,101</b>	<b>1,884</b>	<b>1,824</b>	<b>1,402</b>	<b>1,580</b>



Table 3.1.2  
Fatal Collisions by Collision Type

Collision Type	2016	2017	2018	2019	2020	2021
Fixed object	4	6	4	4	3	6
Sideswipe	2	0	0	0	0	3
Non-Collision	0	1	0	0	0	1
Pedestrian	2	1	0	1	4	1
Rear - end	1	0	1	0	1	1
Bicycle	2	0	1	0	0	0
Entering at angle	2	1	2	1	0	0
Head on	1	0	1	2	2	0
Hit Parked Car	0	1	0	0	0	0
Left Turn	0	0	0	1	0	0
Other	0	0	1	0	3	0
Right Turn	0	1	1	0	0	0
Vehicle overturned	0	0	0	1	1	0
<b>Totals</b>	<b>14</b>	<b>11</b>	<b>11</b>	<b>10</b>	<b>14</b>	<b>12</b>

**Table 3.1.3**  
**2021 Collisions by Collision Type and Severity**

Collision Type	PDO	Injury	Fatal	Total	Percentage
Fixed object	338	132	6	476	30.1%
Entering at angle	180	114	0	294	18.6%
Rear - end	207	81	1	289	18.3%
Hit Parked Car	128	8	0	136	8.6%
Left turn	58	44	0	102	6.5%
Sideswipe	73	21	3	97	6.1%
Vehicle overturned	8	17	0	25	1.6%
Head on	0	21	0	21	1.3%
Other Object	17	4	0	21	1.3%
Animal	20	0	0	20	1.3%
Pedestrian	1	18	1	20	1.3%
Other	9	7	0	16	1.0%
Bicycle	0	13	0	13	0.8%
Non-Collision	9	2	1	12	0.8%
U-Turn	7	5	0	12	0.8%
Right Turn	8	3	0	11	0.7%
Backing	10	0	0	10	0.6%
Leaving Parked Position	5	0	0	5	0.3%
<b>Total</b>	<b>1,078</b>	<b>490</b>	<b>12</b>	<b>1,580</b>	<b>100%</b>

Table 3.1.4  
2021 Fixed Object Collisions  
By First Object Struck and Severity

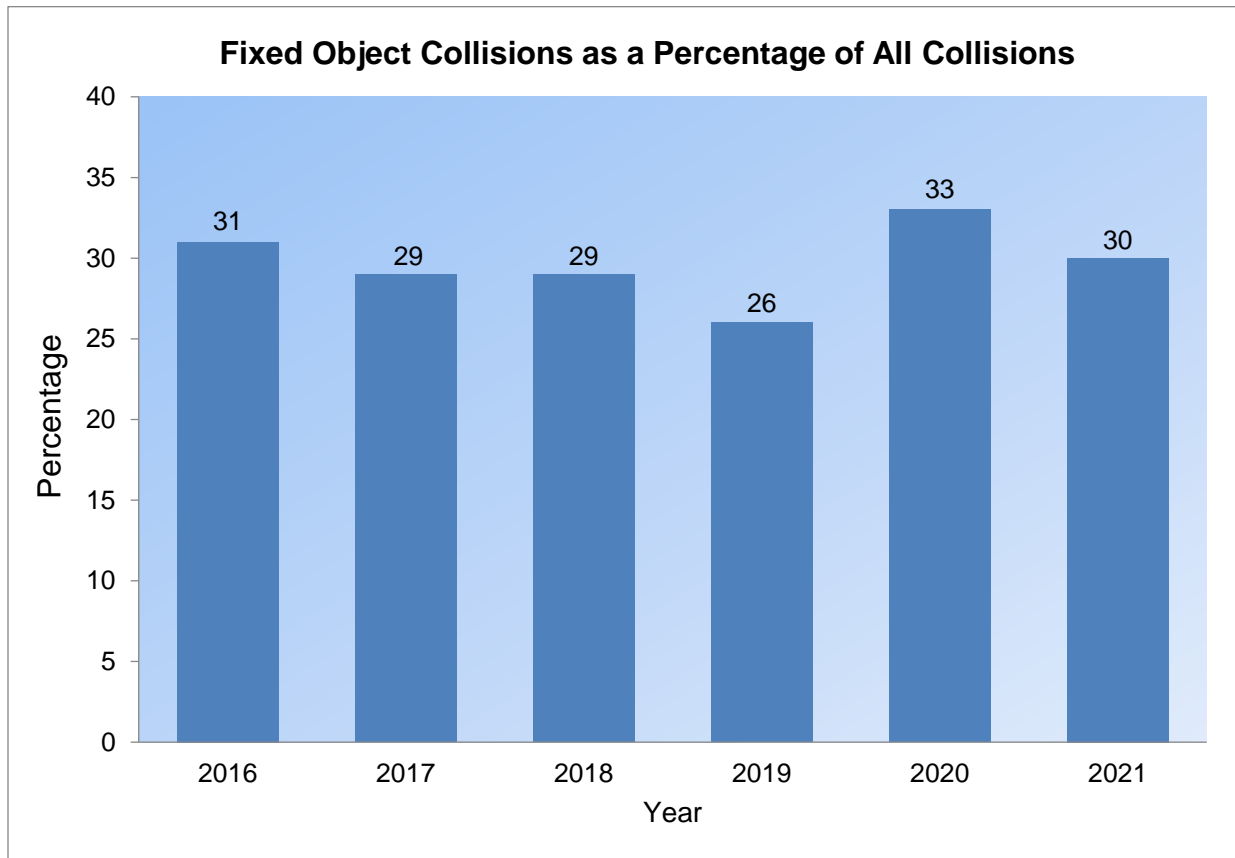
Object Struck	PDO	Injury	Fatality	Total	% of Total
Boulder (stationary)	4	2	0	6	1.3%
Bridge Column, Pier or Pillar	0	1	0	1	0.2%
Building	2	0	0	2	0.4%
Concrete Barrier/Jersey Barrier	5	1	0	6	1.3%
Culvert and/or Other Appurtenance in Ditch	5	4	0	9	1.9%
Earth Bank or Ledge	19	12	0	31	6.5%
Fence	51	11	1	63	13.2%
Fire Hydrant	4	1	0	5	1.1%
Guardrail	35	8	0	43	9.0%
Into River, Lake, Swamp, etc.	2	1	0	3	0.6%
Linear Curb	5	2	0	7	1.5%
Mailbox	19	3	0	22	4.6%
Metal Sign Post	11	2	0	13	2.7%
Over Embankment - No Guardrail Present	7	6	1	14	2.9%
Railway Signal Pole	1	0	0	1	0.2%
Retaining Wall (concrete, rock, brick, etc.)	2	1	0	3	0.6%
Roadway Ditch	58	29	2	89	18.7%
Rock Bank or Ledge	1	0	0	1	0.2%
Signal Pole	2	2	0	4	0.8%
Street Light Pole or Base	5	2	0	7	1.5%
Traffic Island	2	6	0	8	1.7%
Tunnel Wall / Barrier Within Tunnel	1	0	0	1	0.2%
Tree or Stump (stationary)	28	22	1	51	10.7%
Underside of Bridge	1	0	0	1	0.2%
Utility Pole or Box	44	9	1	54	11.3%
Wood Sign Post	24	7	0	31	6.5%
<b>Total</b>	<b>338</b>	<b>132</b>	<b>6</b>	<b>476</b>	<b>100%</b>

### 3.2 Fixed Object Collisions

Table 3.2.10  
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
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
2018	361	187	548	836	630	1,466	724	263	987	0.50	0.71	0.56
2019	313	160	473	835	631	1,466	781	299	1,080	0.40	0.54	0.44
2020	306	153	459	836	630	1,466	769	324	1,093	0.40	0.47	0.42
2021	308	168	476	837	630	1,467	794	321	1,115	0.39	0.52	0.43

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
2016	2	33	2	37
2017	2	25	1	28
2018	0	21	0	21
2019	2	24	1	27
2020	2	18	4	24
2021	1	18	1	20

**Table 3.3.2**  
**Pedestrian Involved Collisions by Facility Used**

Year	Marked Crosswalk	Unmarked Crosswalk	In Roadway	Shoulder	Sidewalk	Other	Total
2016	16	3	14	3	1	0	37
2017	10	4	12	1	0	1	28
2018	11	0	6	2	2	0	21
2019	9	3	8	3	0	4	27
2020	11	1	8	2	1	1	24
2021	6	2	6	3	1	2	20

**Table 3.3.3**  
**Pedestrian Involved Collisions**  
**By Driver First Contributing Circumstance**

Contributing Circumstance	2016	2017	2018	2019	2020	2021
Did Not Grant ROW to Pedestrian	8	5	8	4	7	6
None	13	8	2	10	8	4
Other	4	7	5	8	3	4
Unknown Driver Distraction	2	0	2	0	4	2
Improper Passing	0	0	0	0	0	1
On Wrong Side of Road	1	0	0	0	0	1
Operating Defective Equipment	0	0	0	0	0	1
Under Influence of Alcohol	1	0	0	1	1	1
Apparently Asleep	1	0	0	0	0	0
Did Not Grant ROW to Vehicle	1	0	0	0	0	0
Disregard Yield Sign – Flashing Yellow	1	0	0	0	0	0
Distracted by Other Occupant	0	0	0	0	1	0
Driver Distractions Outside Vehicle	1	1	0	0	0	0
Driver Operating Handheld Telecommunication or Other Electronic Devices	0	0	0	1	0	0
Exceeding Reasonable Safe Speed	0	1	0	0	0	0
Improper Turn	0	1	0	0	0	0
Inattention	4	5	4	3	0	0
<b>Total</b>	<b>37</b>	<b>28</b>	<b>21</b>	<b>27</b>	<b>24</b>	<b>20</b>

**Table 3.3.4**  
**Age of Pedestrians Involved in Collisions**

Age Range	2016	2017	2018	2019	2020	2021
Unknown	0	1	0	0	0	1
0-5	2	0	0	0	2	1
6-10	1	2	2	1	0	1
11-15	6	2	1	3	1	0
16-20	2	3	6	1	3	3
21-25	6	3	3	3	2	0
26-30	3	5	1	2	3	0
31-35	1	0	1	2	3	3
36-40	2	2	1	3	3	1
41-45	0	0	2	2	1	2
46-50	2	1	3	2	1	1
51-55	2	4	1	3	1	2
56-60	2	0	0	3	1	2
61-65	2	2	0	0	0	0
66-70	4	0	0	1	1	1
71-75	2	2	0	0	1	1
76-80	0	0	0	0	1	1
81-85	0	1	0	1	0	0
86+	0	0	0	0	0	0
<b>Total</b>	<b>37</b>	<b>28</b>	<b>21</b>	<b>27</b>	<b>24</b>	<b>20</b>

**Table 3.3.5**  
**Gender of Pedestrians Involved in Collisions**

Year	Unknown	Female	Male	Total
2016	0	18	19	37
2017	0	9	19	28
2018	0	12	9	21
2019	0	11	16	27
2020	0	11	13	24
2021	0	10	10	20



### 3.4 Bicycle Involved Collisions

Table 3.4.11  
Bicycle Involved Collisions by Severity

Year	Property Damage Only	Injury	Fatality	Total
2016	1	15	2	18
2017	0	18	0	18
2018	1	11	1	13
2019	4	10	0	14
2020	1	17	0	18
2021	0	13	0	13

Table 3.4.2  
2021 Bicycle Involved Collisions by First Contributing Circumstance and Severity

First Contributing Circumstance	Property Damage Only	Injury	Fatality	Total
None / Driver Not Distracted	0	8	0	8
Did Not Grant ROW to Pedalcyclist	0	1	0	1
Distractions Outside Vehicle	0	1	0	1
Other	0	3	0	3
<b>Total</b>	<b>0</b>	<b>13</b>	<b>0</b>	<b>13</b>

### 3.5 Motorcycle Involved Collisions

Table 3.5.1  
Motorcycle Involved Collisions  
By Severity

Year	Property Damage Only	Injury	Fatality	Total
2016	5	36	3	44
2017	11	42	1	54
2018	4	35	3	42
2019	9	38	3	50
2020	5	25	2	32
2021	6	26	5	37

Table 3.5.2  
2021 Motorcycle Involved Collisions  
By First Contributing Circumstance

First Contributing Circumstance	PDO	Injury	Fatality	Total
Exceeding Reasonably Safe Speed or Stated Speed Limit	1	6	4	11
None	1	8	0	9
Inattention / Driver Distraction	0	4	0	4
Other	3	1	0	4
Did Not Grant R/W to Vehicle	0	2	1	3
Overcorrecting / Oversteering	0	3	0	3
Under the Influence of Alcohol	1	1	0	2
Operating Recklessly or Aggressively	0	1	0	1
<b>Total</b>	<b>6</b>	<b>26</b>	<b>5</b>	<b>37</b>

## 4.0 OTHER COLLISION INFORMATION

### 4.1 Estimated Economic Costs

Table 4.1.1  
Estimated Economic Costs of Collision Activity

Severity	2021 Collisions	Estimated Economic Costs
Property Damage Only	1,086	\$13,900,800
Possible Injury	229	\$5,473,100
Evident Injury (Suspected Minor Injury)	204	\$5,956,800
Disabling/Serious Injury (Suspected Serious Injury)	49	\$4,949,000
Fatal	12	\$21,000,000
Total	1,580	\$51,279,700

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

Property Damage Only (no injury observed)-\$12,800; Possible Injury-\$23,900; Evident Injury-\$29,200; Disabling/Serious Injury-\$101,000; Fatality-\$1,750,000  
(National Safety Council Guide to Calculating Costs of Motor-Vehicle Injuries, 2020)

## 4.2 Month, Day of Week, and Time of Day

Figure 4.2.1  
202 Collisions by Month

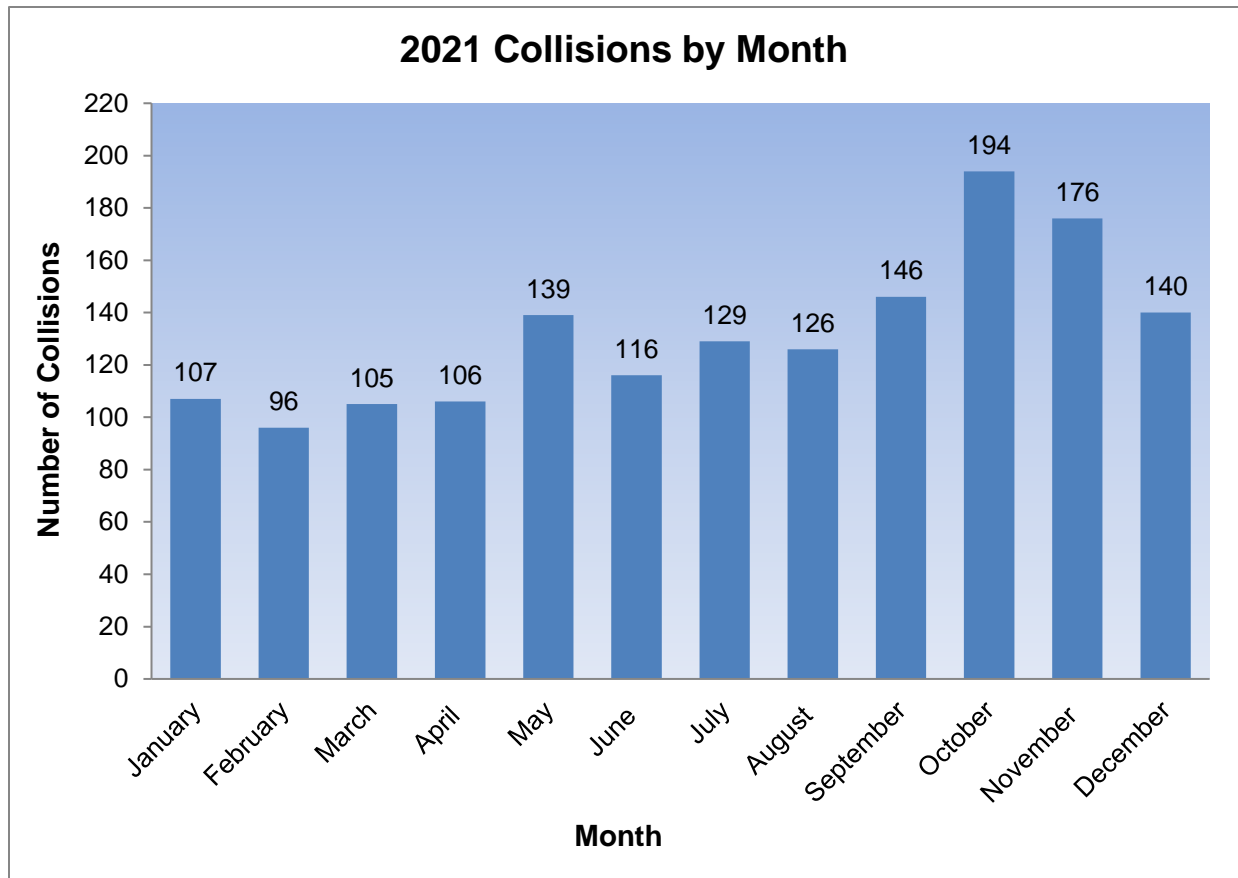


Figure 4.2.2  
2020 Collisions by Day of Week

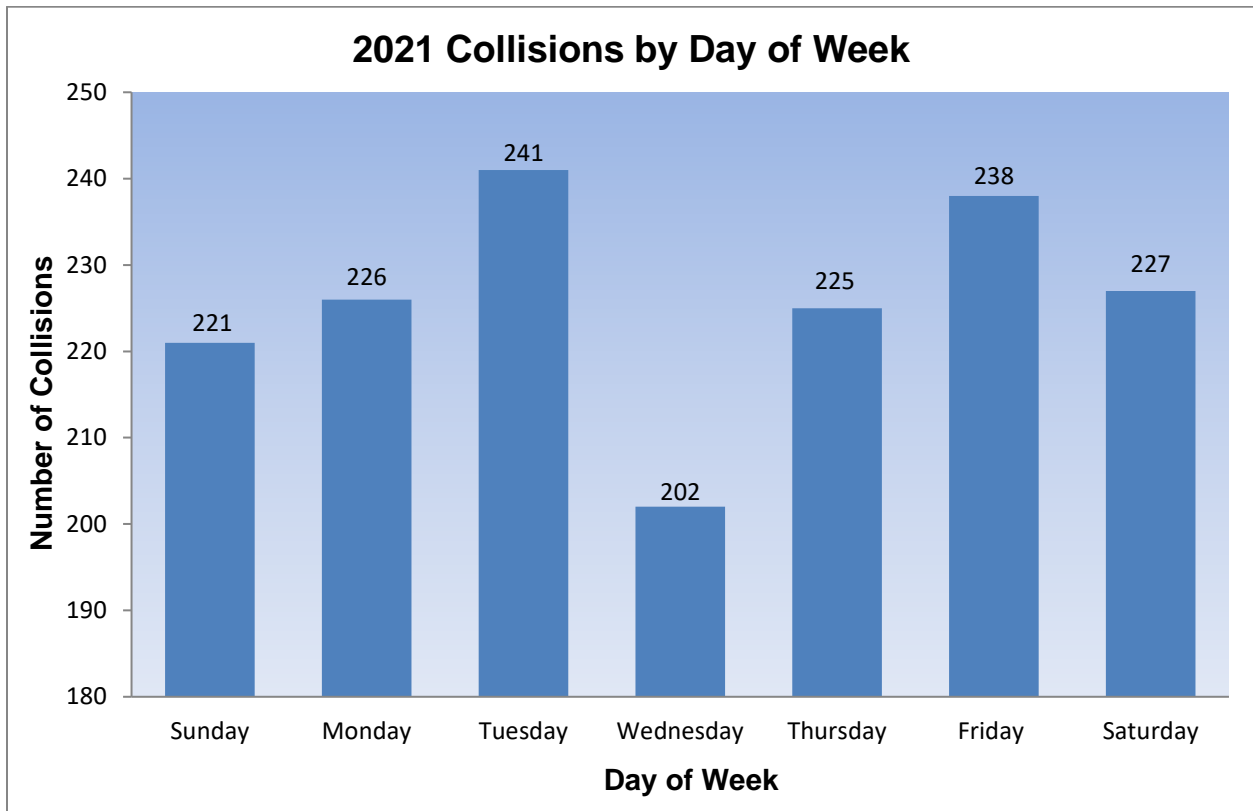


Figure 4.2.3  
2021 Weekday Collisions  
By Time of Day

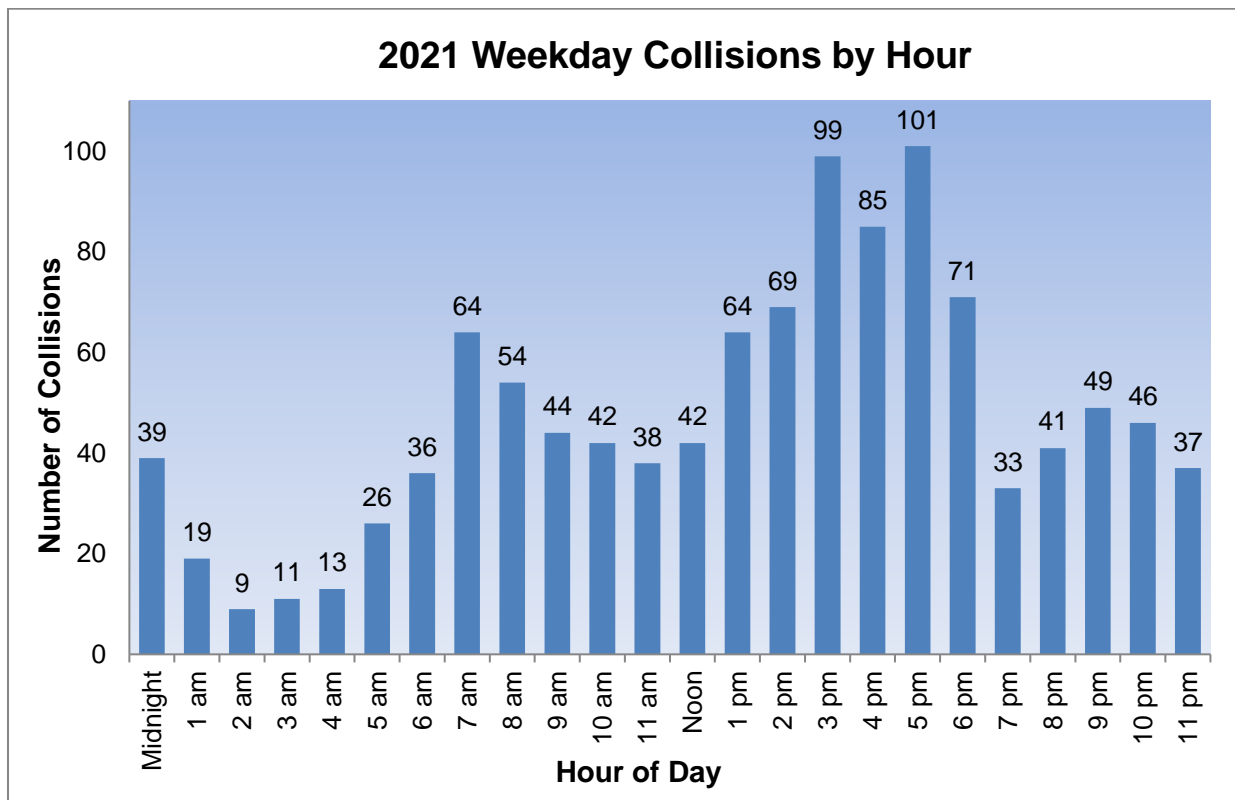
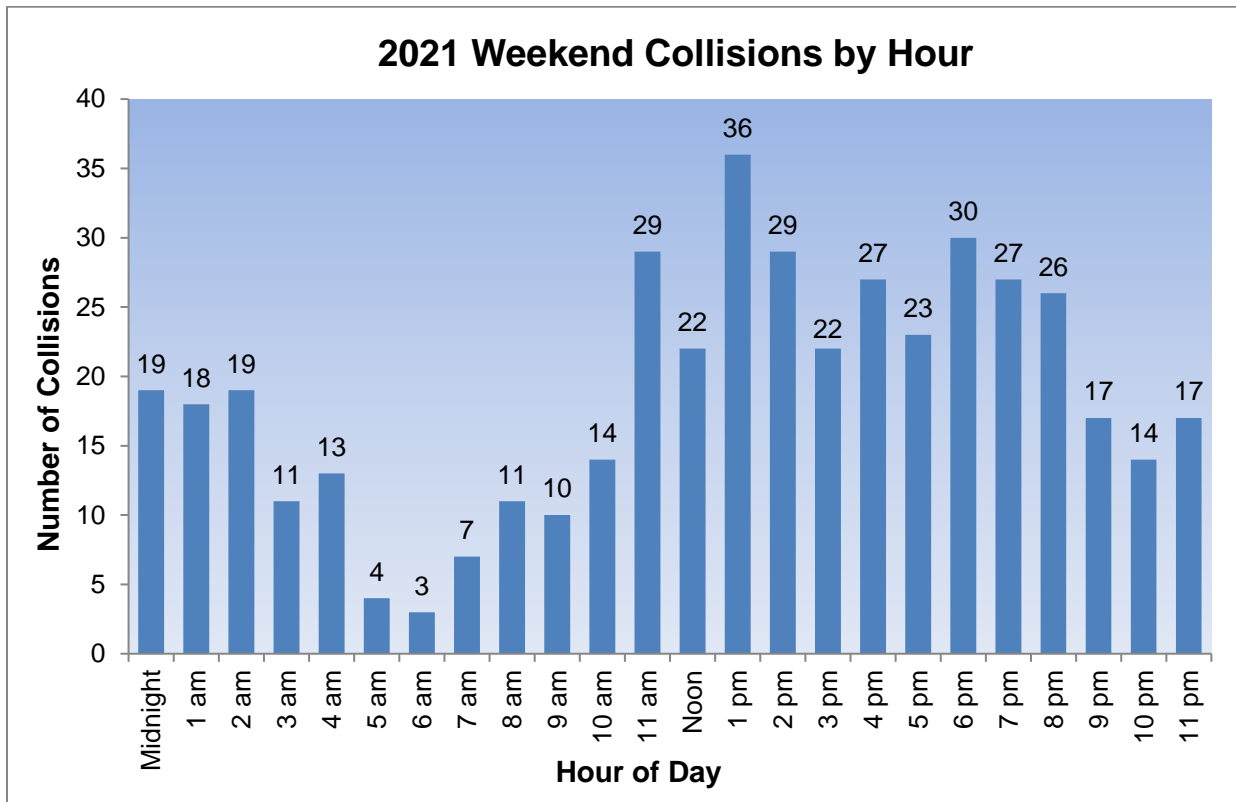
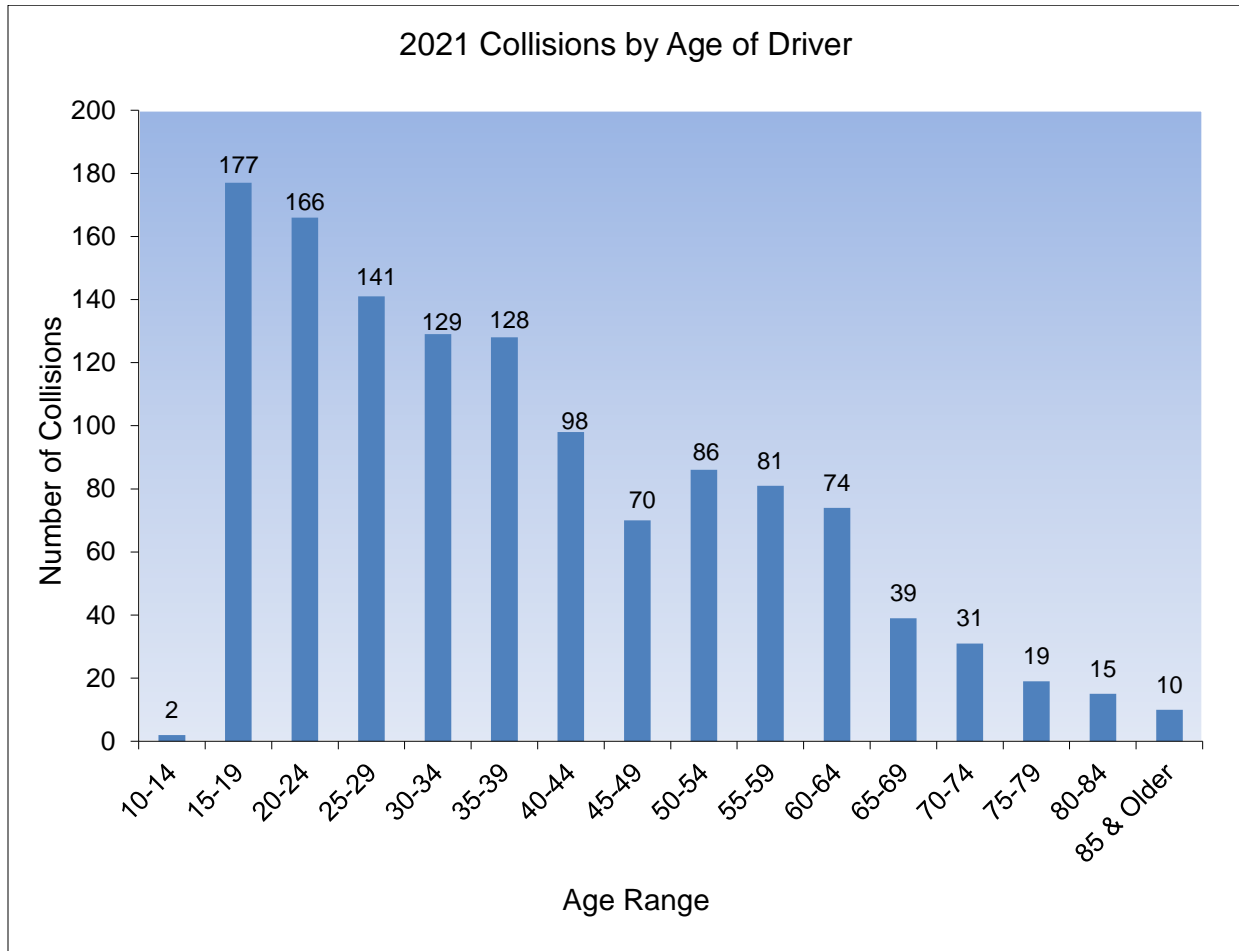


Figure 4.2.4  
2021 Weekend Collisions  
By Time of Day



### 4.3 Demographics

Figure 4.3.1  
2021 Collisions by Age of Driver



Note: 314 collision reports did not contain driver age information



## 4.4 Contributing Circumstances

Table 4.4.1  
First Contributing Circumstance  
For Drivers between ages 15 to 25 for 2021

First 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	6	13	10	7	9	6	9	5	2	4	72
Excessive Speed	0	9	6	8	9	4	5	10	1	3	5	60
None	2	5	8	4	5	6	5	5	5	4	5	54
Did Not Grant ROW to Vehicle	0	3	3	5	5	2	5	3	4	2	1	33
Follow Too Closely	0	1	5	3	3	1	1	4	3	3	3	27
Other	1	2	0	3	3	2	3	2	3	3	3	25
Apparently Asleep/Fatigued/III	0	0	0	1	3	0	5	1	2	2	1	15
Improper Turn/Merge	0	2	0	4	1	0	1	3	2	1	1	15
Operating Defective Equipment	0	1	2	4	2	1	1	1	0	1	0	13
Disregard Traffic Signs and Signals	0	2	0	2	2	2	0	0	2	2	0	12
Overcorrecting/Oversteering	0	3	3	0	1	1	0	0	2	1	0	11
Under Influence of Alcohol	0	1	2	2	1	1	1	1	0	1	1	11
Distracted by Adjusting Vehicle Controls	0	0	1	1	0	1	1	0	0	1	0	5
Improper Backing	0	0	1	0	0	0	0	1	0	1	1	4
Improper U-Turn	0	1	0	0	1	0	1	0	0	1	0	4
Operating Handheld Cell Phone	0	0	0	0	1	1	0	1	0	1	0	4
Improper Passing	0	0	0	0	0	0	1	0	0	0	1	2
Operating Recklessly or Aggressively	0	0	0	1	1	0	0	0	0	0	0	2
<b>Totals</b>	<b>4</b>	<b>36</b>	<b>44</b>	<b>48</b>	<b>45</b>	<b>31</b>	<b>36</b>	<b>41</b>	<b>29</b>	<b>29</b>	<b>26</b>	<b>369</b>

**Table 4.4.2**  
**2021 Collisions by First Contributing Circumstance**

First Contributing Circumstance	Fatality	Injury	PDO	Total
Inattention/Driver Distraction	1	90	223	314
None	1	79	206	286
Other	1	49	188	238
Excessive Speed	6	62	88	156
Did Not Grant ROW to Vehicle	1	59	84	144
Follow Too Closely	0	16	56	72
Improper Turn/Merge	0	20	46	66
Under Influence of Alcohol/Drugs	1	24	39	64
Apparently Asleep/Fatigued/Ill	0	18	32	50
Disregard Traffic Sign and Signals/Flagger - Officer	0	15	32	47
Operating Defective Equipment	0	13	23	36
Overcorrecting/Oversteering	0	10	13	23
Driver Operating Cell Phone/ Other Electronic Device	0	6	9	15
Improper Passing	0	3	11	14
Distracted by Adjusting Vehicle Controls	0	5	8	13
Improper Backing	1	0	11	12
Operating Recklessly or Aggressively	0	4	7	11
Improper U-Turn	0	3	7	10
Did Not Grant ROW to Non-Motorist	0	6	3	9

## 4.5 Impairment

Table 4.5.1  
Collisions Involving  
Drivers Under the Influence (DUI)

Year	Fatal	% of all Fatal Collisions	Injury	% of All Injury Collisions	Property Damage Only	% of all PDO Collisions	Total DUI Collisions	% of all Collisions
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%
2018	2	18.2%	46	8.5%	87	6.5%	135	7.2%
2019	0	0.0%	52	9.1%	70	5.6%	122	6.7%
2020	2	14.3%	28	6.6%	45	4.7%	75	5.3%
2021	1	8.3%	26	5.4%	42	3.9%	69	4.4%

Figure 4.5.1  
2021 Weekend Collisions for  
Drivers under the Influence  
By Time of Day

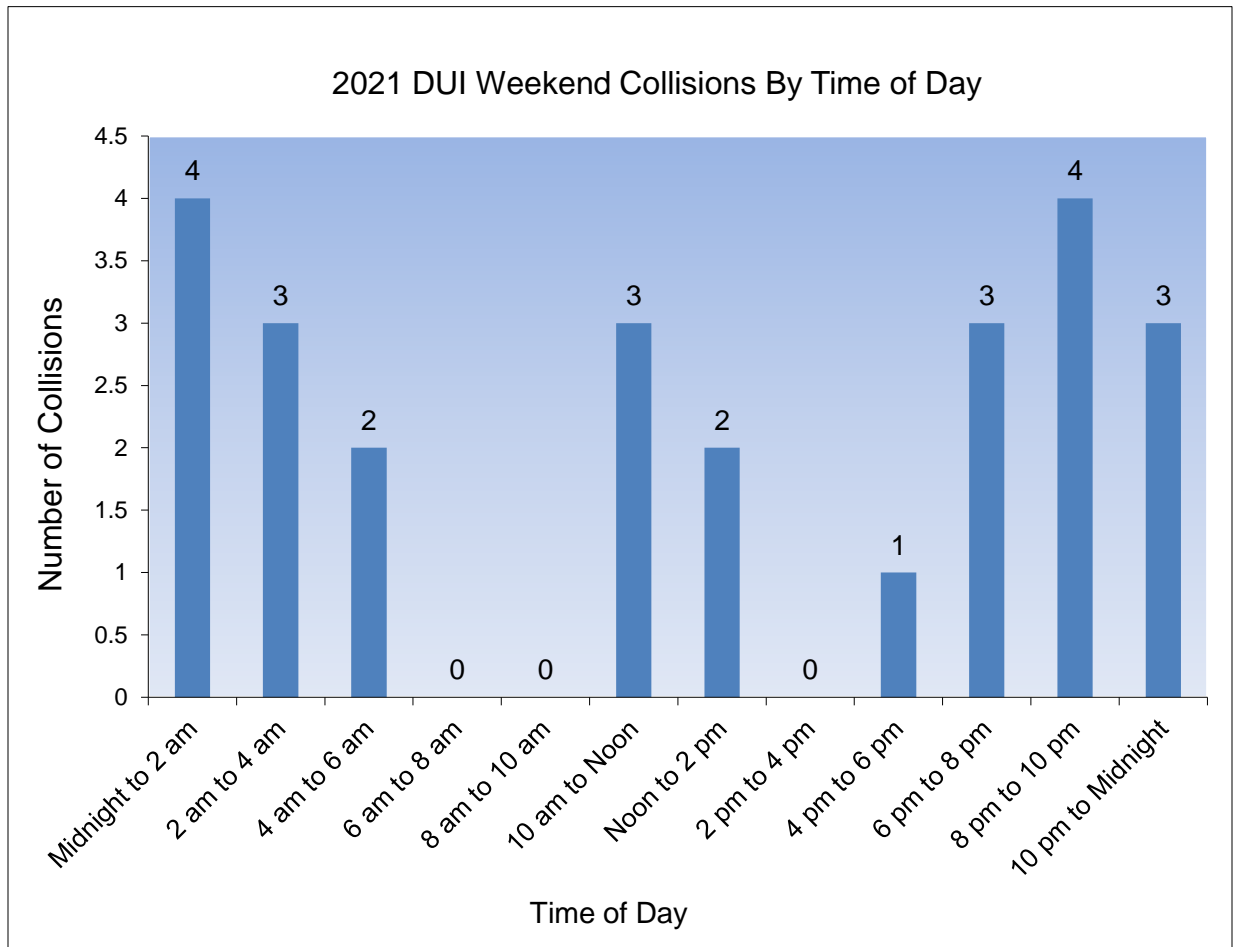
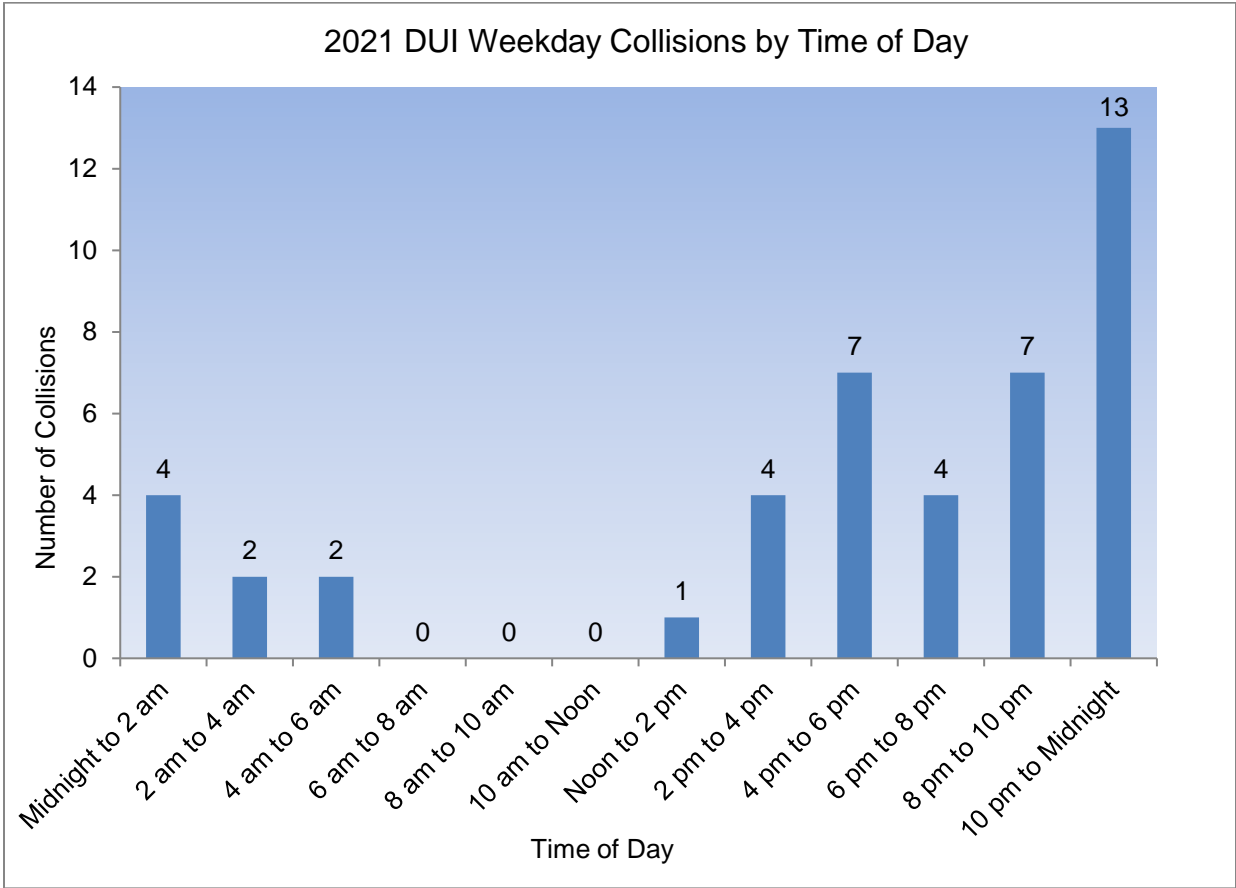


Figure 4.5.2  
2021 Weekday Collisions for  
Drivers under the Influence  
By Time of Day



## 4.6 Speed

Table 4.6.12  
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
2016	3	21%	87	13%	140	10%	230	11%
2017	4	36%	81	13%	158	11%	243	12%
2018	1	9%	64	12%	124	9%	189	10%
2019	3	30%	55	10%	93	7%	151	8%
2020	5	36%	58	14%	103	11%	166	12%
2021	6	50%	62	13%	88	8%	156	10%

## 4.7 Lighting Conditions

Table 4.7.13  
2021 Collisions By  
Lighting Condition

Lighting Condition	Property Damage Only	Injury	Fatal	Total
Dark-No Street Lights	163	64	2	229
Dark-Street Lights Off	9	2	0	11
Dark-Street Lights On	201	66	2	269
Dark-Unknown Lighting	25	7	0	32
Dawn	28	7	0	35
Daylight	602	318	6	926
Dusk	37	17	1	55
Unknown	21	1	1	23
Totals	1,086	482	12	1,580

# 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 copies of the Police Traffic Collision Report to WSDOT.

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

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

$\text{Cost} = \$12,800 * \text{PDO} + \$23,900 * \text{P} + \$29,200 * \text{E} + \$101,000 * \text{D} + \$1,750,000 * \text{F}$ ,  
where

PDO – Total Number of Property Damage Collisions (\$12,800/collision)

P – Total Number of Possible Injury Collisions (\$23,900/collision)

E – Total Number of Evident Injury Collisions (\$29,200/collision)

D – Total Number of Disabling/Serious Injury Collisions (\$101,00/collision)

F – Total Number of Fatal Collisions (\$1,750,000/collision)