



Des Moines Area MPO

CY 2023 Crash Characteristics Report

February 2024

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BACKGROUND

Safety Goals in *Mobilizing Tomorrow*

Mobilizing Tomorrow is the Des Moines Area Metropolitan Planning Organization's long-range, regional transportation plan for the year 2050. *Mobilizing Tomorrow* outlines four high-level goals to direct Greater Des Moines toward an enhanced transportation system. Each goal identified several performance measures to help track of the plan's implementation. Specifically, Goal 4 in *Mobilizing Tomorrow* seeks to "further the health, safety, and well-being of all residents in the region" and includes four of the five measures required by federal rulemaking.

This report aligns with Goal 4 in *Mobilizing Tomorrow* by examining the crash characteristics within the Des Moines Area MPO planning area.

Table 1: Des Moines Area Crash Safety Performance Measures

Crash Safety Performance Measures	2023	% Change from Previous Year	2022	2021	2020	2019	2018
Fatalities	39	11.4%	35	45	37	36	30
Fatalities (Five-Year Average)	38.4	4.9%	36.6	34.4	31.8	29.4	26.8
Serious Injuries	175	-11.6%	198	199	143	171	173
Serious Injuries (Five-Year Average)	177.2	0.23%	176.8	174.8	170.0	175.4	179.0
Non-Motorized Fatalities and Serious Injuries	29	-31.0%	42	37	27	23	28
Non-Motorized Fatalities and Serious Injuries (Five-Year Average)	31.6	0.6%	31.4	27.0	25.0	25.4	26.2

SUMMARY

Fatal Crashes Summary

- Who
 - 74.2% of drivers were male; 24.2% were female
 - 57.6% of drivers were in their 20s (21.2%), 30s (18.2%), or 60s (18.2%)
 - 28.2% of the fatalities did not use any occupant protection
 - 64.1% of the fatalities were males in their 20s and 30s (43.6%) and in their 60s and 70s (20.5%)
 - The largest group for fatalities (28.2%) was males in the 20s
- What
 - 30.8% of the vehicles were passenger cars, 20.0% motorcycles, 18.5% light trucks, and 16.9% sport utility vehicles (SUVs)
 - 40.5% of the fatal crashes were single vehicle non-collisions, 16.2% rear-end, 16.2% broadside, and 10.8% head-on
- When
 - 16.2% of the fatal crashes occurred in October, 13.5% in August, 13.5% in September, and 10.8% in June
 - 29.7% of the fatal crashes occurred on Saturdays and 18.9% on Wednesdays
 - Fatal crashes happened most between 8 PM and 10 PM (21.6%), 2 PM and 4 PM (16.2%), 10 PM and 12 AM (13.5%), and 12 AM and 2 AM (10.8%).
- Where
 - 35.1% of the fatal crashes occurred on the Interstate, 29.7% on municipal roads, and 21.6% on US Routes
 - 18.9% of the fatal crashes occurred at four-way intersections
- Why
 - 18.9% of the fatal crashes were caused by speeding and 10.8% caused by reckless driving
 - 24.3% of the fatal crashes involved drugs and 10.8% involved alcohol

Serious Injury Crashes Summary

- Who
 - 65.6% of drivers in serious injury crashes were male
 - 19.2% of drivers in serious injury crashes were in their 30s, and 19.6% of drivers were in their 40s
 - 29% of the people involved in serious injury crashes did not use any occupant protection
 - 68.6% of the serious injuries were males
 - Males in their 30s were the largest group of serious injuries (14.9%)
- What
 - 32.3% of the vehicles were passenger cars, 25.8% sport utility vehicles (SUVs), 15.8% four-tire light truck (pick up), and 15.1% motorcycles
 - 36% of the serious injury crashes were single vehicle non-collisions, 20.0% broadside (front to side) collisions, and 17% were rear end (front to rear) collisions
- When
 - 12.9% of the serious injury crashes were in July, 12.3% in September, 11.7% in April, 11.0% in August, and 9.8% in June
 - 17.8% of the serious injury crashes were on Wednesdays and 17.8% on Thursdays
 - Serious injury crashes occurred mostly between 6 PM to 8 PM (17.2%) and from 4 PM to 6 PM (16.6%)
- Where
 - 57.7% of the serious injury crashes occurred on municipal roads, 13.5% on Interstates, and 12.9% on US Routes
 - 31.3% of the serious injury crashes occurred at four-way intersections
- Why
 - 10% of the serious injury crashes were caused by losing control, 8.6% from failure to yield the right of way when making a left turn, 6.7% from exceeding the authorized speed, 6.7% from operating the vehicle recklessly, and 6.1% from running the traffic signal
 - 14% of the serious injury crashes were related to alcohol, drugs, or medications

Non-motorized Fatal and Serious Injury Crashes Summary

- Who
 - 60% of drivers were male; 23% were female
 - Drivers were between the ages of 35 and 39 (8.6%), 45 and 49 (8.6%), and 65 and 69 (8.6%).
 - 82.1% of non-motorists were pedestrians and 14.3% were pedalcyclists
 - Males accounted for all the non-motorist fatalities and about 67% of the serious injuries
 - Males in their 50s and 60s accounted for the largest group of non-motorized serious injuries
- What
 - 31.4% of the vehicles were passenger cars, 25.7% sport utility vehicles (SUVs), and 25.7% four-tire light truck (pick up)
 - 62.9% of vehicles were moving straight and 9% were turning left
- When
 - Non-motorized fatal and serious injury crashes occurred most in the months of September (17.9%), July (14.3%), and November (14.3%)
 - Non-motorized fatal and serious injury crashes occurred mostly on Tuesdays (21.4%) and Wednesdays (17.9%)
 - Non-motorized fatal and serious injury crashes occurred mostly between 8 PM and 10 PM (28.6%), 4 AM to 6 AM (14.3%), 2 PM to 4 PM (14.3%), and 6 PM to 8 PM (14.3%)
- Where
 - 53.6% of non-motorized fatality and serious injury crashes occurred on municipal roads, about 18% on US routes, and about 14% on Interstates.
 - About 18% of non-motorized fatal and non-serious injury crashes occurred at four-way intersections.
- Why
 - The major causes of the non-motorized fatal and serious injury crashes were no improper action (28.6%), unknown cause (25.0%), or other causes (17.9%)
 - Non-motorist contributing circumstances included darting/dashing (2.9%), failure to yield right-of-way (2.9%), improper crossing (2.9%), improper exit/entry from trafficway (2.9%), and not visible to driver because of dark clothing (2.9%)
 - About 7% were drug related and about 4% were alcohol related

DES MOINES AREA MPO CRASHES CHARACTERISTICS

Crash data and figures within this report are sourced from the Iowa Department of Transportation (DOT)'s Iowa Crash Analysis Tool (ICAT).¹ The Iowa DOT "records crashes that have resulted in an injury/fatality or [when] the estimated property of the crash is equal to or greater than \$1,500."²

A **crash** is defined as "a singular event that can involve several vehicles and multiple injuries."³

A **fatality** is defined as "any injury that results in death within 30 days after the motor vehicle crash in which the injury occurred."⁴

A **major or serious injury** is defined as "any injury, other than a fatality, which prevents the injured person from walking, driving, or normally continuing the activities the person was capable of before the injury occurred."⁵

Fatal Crashes Characteristics

Location

In 2023, there were 37 fatal crashes within the Des Moines Area MPO planning area. Most (75.7%) of the fatal crashes were on roadways.

Road Classification	Crashes	Percent
On roadway	28	75.7%
Outside trafficway	4	10.8%
Shoulder	2	5.4%
Roadside	2	5.4%
Gore	1	2.7%
All	37	100%

Almost all the fatal crashes (94.6%) occurred on the mainline roadway.

Classification	Crashes	Percent
Mainline	35	94.6%
Ramp	2	5.4%
All	37	100%

¹ <https://icat.iowadot.gov/>

² <https://icat.iowadot.gov/>

³ <https://icat.iowadot.gov/>

⁴ "Performance." Iowa Department of Transportation. <https://iowadot.gov/performance/safety>.

⁵ "Performance." Iowa Department of Transportation. <https://iowadot.gov/performance/safety>.

The fatal crashes occurred mostly on the Interstate (35.1%), municipal roads (29.7%), and US Routes (21.6%).

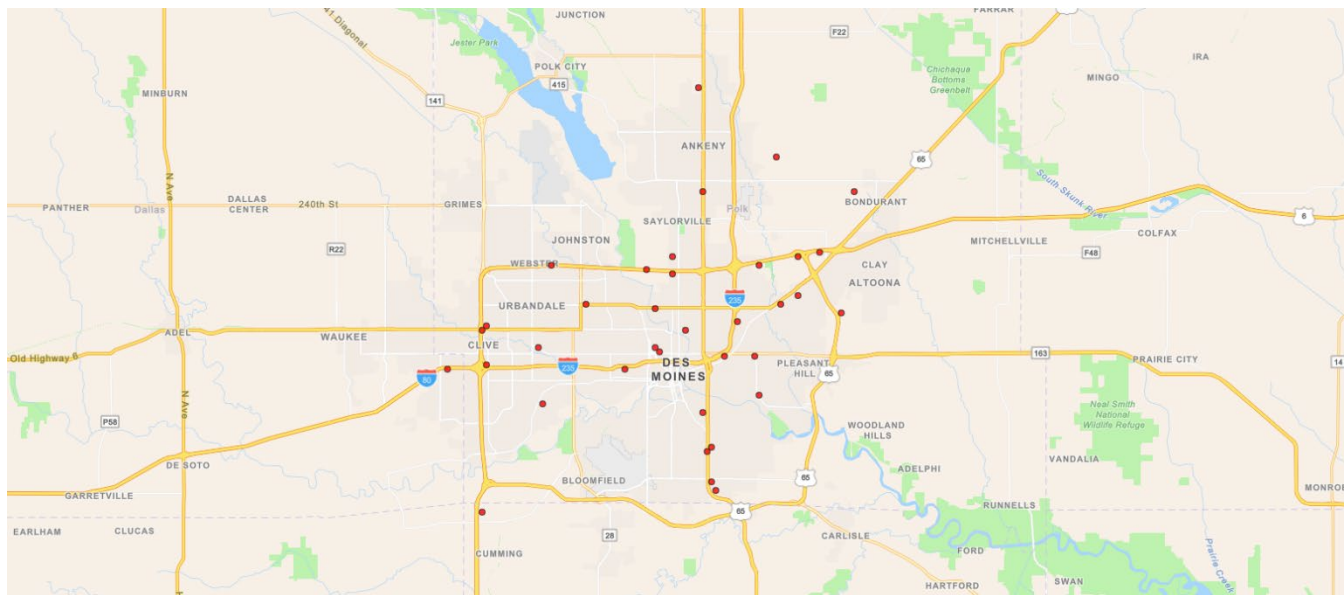
Road Classification	Crashes	Percent
Interstate	13	35.1%
Municipal Road	11	29.7%
US Route	8	21.6%
Iowa Route	3	8.1%
Secondary Road	2	5.4%
All	37	100%

More than half (64.9%) of the fatal crashes happened where there were no junctions or special road features, and 18.9% at four-way intersections

Roadway Junction/Feature	Crashes	Percent
Feature: Non-junction/no special feature	24	64.9%
Intersection: Four-way intersection	7	18.9%
Intersection: T-intersection	2	5.4%
Feature: Other non-intersection	2	5.4%
Interchange-related: On-ramp	1	2.7%
Interchange-related: Off-ramp	1	2.7%
All	37	100%

Figure 3 shows the fatal crashes around the Des Moines metropolitan area.

Figure 1 Fatal Crashes Around the Des Moines Metropolitan Area



Date and Time

Fatal crashes occurred mostly in the months of October (16.2%), August (13.5%), September (13.5%), and June (10.8%).

Month	Crashes	Percent
January	2	5.4%
February	1	2.7%
March	2	5.4%
April	1	2.7%
May	3	8.1%
June	4	10.8%
July	3	8.1%
August	5	13.5%
September	5	13.5%
October	6	16.2%
November	3	8.1%
December	2	5.4%
All	37	100%

By day of the week and time of day, fatal crashes occurred more on Saturday (29.7%) and Wednesday (18.9%), and more between 8 PM and 10 PM (21.6%), 2 PM and 4 PM (16.2%), 10 PM and 12 AM (13.5%), and 12 AM and 2 AM (10.8%).

	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Total
Sunday	1	0	0	0	0	0	0	0	0	1	1	1	4
Monday	0	0	1	0	0	0	0	0	1	0	0	0	2
Tuesday	0	0	0	0	1	0	0	0	1	0	2	1	5
Wednesday	0	0	0	0	0	2	1	2	1	0	0	1	7
Thursday	1	0	0	0	0	0	0	2	0	0	0	0	3
Friday	0	0	0	1	1	0	0	0	0	1	1	1	5
Saturday	2	0	0	0	1	0	0	2	0	1	4	1	11
Total	4	0	1	1	3	2	1	6	3	3	8	5	37
	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Percent
Sunday	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	2.7%	2.7%	10.8%
Monday	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	5.4%
Tuesday	0.0%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	0.0%	2.7%	0.0%	5.4%	2.7%	13.5%
Wednesday	0.0%	0.0%	0.0%	0.0%	0.0%	5.4%	2.7%	5.4%	2.7%	0.0%	0.0%	2.7%	18.9%
Thursday	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.4%	0.0%	0.0%	0.0%	0.0%	8.1%
Friday	0.0%	0.0%	0.0%	2.7%	2.7%	0.0%	0.0%	0.0%	0.0%	2.7%	2.7%	2.7%	13.5%
Saturday	5.4%	0.0%	0.0%	0.0%	2.7%	0.0%	0.0%	5.4%	0.0%	2.7%	10.8%	2.7%	29.7%
Percent	10.8%	0.0%	2.7%	2.7%	8.1%	5.4%	2.7%	16.2%	8.1%	8.1%	21.6%	13.5%	100%

Road Conditions

The majority (87.9%) of the vehicles involved in fatal crashes traveled along straight roads. Most of the vehicles also traveled along level roads (77.3%).

Horizontal Alignment	Vehicles	Percent
Straight	58	87.9%
Traversing curve to right	6	9.1%
Traversing curve to left	2	3.0%
All	66	100%

Vertical Alignment	Vehicles	Percent
Level	51	77.3%
Traversing downhill	8	12.1%
Traversing uphill	6	9.1%
At crest	1	1.5%
All	66	100%

About a third (31.8%) of vehicles in fatal crashes traveled where the speed limit was 65 miles per hour. Other vehicles in fatal crashes traveled where the speed limit was 35 miles per hour (21.2%) and 45 miles per hour (13.6%).

Speed Limit	Vehicles	Percent
15 MPH	1	1.5%
25 MPH	4	6.1%
30 MPH	4	6.1%
35 MPH	14	21.2%
40 MPH	3	4.5%
45 MPH	9	13.6%
50 MPH	1	1.5%
55 MPH	2	3.0%
60 MPH	4	6.1%
65 MPH	21	31.8%
70 MPH	2	3.0%
Unknown	1	1.5%
All	66	100%

Most (83.3%) of the vehicles in fatal crashes traveled where there were no traffic controls present.

Traffic Control	Vehicles	Percent
No controls present	55	83.3%
Traffic signals	8	12.1%
Stop signs	2	3.0%
Other	1	1.5%
All	66	100%

Road circumstances were not perceived as a contributing factor in the majority (89.2%) of fatal crashes.

Contributing Circumstance - Road	Crashes	Percent
None apparent	33	89.2%
Surface condition (e.g., wet, icy)	1	2.7%
Slippery, loose, or worn surface	1	2.7%
Traffic backup, prior non-recurring incident	1	2.7%
Unknown	1	2.7%
All	36	100%

Environmental Conditions

Environmental conditions were not perceived as a contributing circumstance in the the majority (94.6%) of fatal crashes.

Contributing Circumstance - Environment	Crashes	Percent
None apparent	35	94.6%
Weather conditions	1	2.7%
Non-motorist action	1	2.7%
All	37	100%

Most (83.8%) of the fatal crashes occurred under clear weather conditions.

Weather Conditions	Crashes	Percent
Clear	31	83.8%
Cloudy	4	10.8%
Fog, smoke, smog	1	2.7%
Rain	1	2.7%
All	37	100%

Most (86.5%) of the fatal crashes happened on dry roadway surface conditions.

Surface Conditions	Crashes	Percent
Dry	32	86.5%
Wet	3	8.1%
Gravel	2	5.4%
All	37	100%

More than half (56.8) of the fatal crashes occurred in darkness. While 40.5% of the fatal crashes occurred under daylight conditions, 35.1% of the fatal crashes occurred on lighted roadways during the dark and 21.6% of the fatal crashes occurred on not lighted roadways in the dark.

Lighting	Crashes	Percent
Darkness	21	56.8%
Daylight	16	43.2%
All	37	100%

Light Condition	Crashes	Percent
Daylight	15	40.5%
Dark - roadway lighted	13	35.1%
Dark - roadway not lighted	8	21.6%
Dusk	1	2.7%
All	37	100%

Work Zone Related

None of the fatal crashes were related to work zones.

Drivers

The majority (74.2%) of the drivers in the fatal crashes were male. More than half (57.6%) of the drivers in the fatal crashes were in their 20s (21.2%), 30s (18.2%), or 60s (18.2%).

Driver Age - 5 year Bins	Female	Male	Not Reported	Total
= 16	0	1	0	1
= 17	0	1	0	1
= 18	0	1	0	1
= 19	1	1	0	2
= 20	0	1	0	1
>= 21 and <= 24	1	6	0	7
>= 25 and <= 29	0	5	1	6
>= 30 and <= 34	0	5	0	5
>= 35 and <= 39	3	4	0	7
>= 40 and <= 44	1	2	0	3
>= 45 and <= 49	0	3	0	3
>= 50 and <= 54	0	6	0	6
>= 55 and <= 59	0	2	0	2
>= 60 and <= 64	4	4	0	8
>= 65 and <= 69	1	3	0	4
>= 70 and <= 74	1	3	0	4
>= 75 and <= 79	1	0	0	1
>= 80 and <= 84	0	1	0	1
Unknown	0	0	3	3
Total	13	49	4	66

Driver Age - 5 year Bins	Female	Male	Not Reported	Total
= 16	0.0%	1.5%	0.0%	1.5%
= 17	0.0%	1.5%	0.0%	1.5%
= 18	0.0%	1.5%	0.0%	1.5%
= 19	1.5%	1.5%	0.0%	3.0%
= 20	0.0%	1.5%	0.0%	1.5%
>= 21 and <= 24	1.5%	9.1%	0.0%	10.6%
>= 25 and <= 29	0.0%	7.6%	1.5%	9.1%
>= 30 and <= 34	0.0%	7.6%	0.0%	7.6%
>= 35 and <= 39	4.5%	6.1%	0.0%	10.6%
>= 40 and <= 44	1.5%	3.0%	0.0%	4.5%
>= 45 and <= 49	0.0%	4.5%	0.0%	4.5%
>= 50 and <= 54	0.0%	9.1%	0.0%	9.1%
>= 55 and <= 59	0.0%	3.0%	0.0%	3.0%
>= 60 and <= 64	6.1%	6.1%	0.0%	12.1%
>= 65 and <= 69	1.5%	4.5%	0.0%	6.1%
>= 70 and <= 74	1.5%	4.5%	0.0%	6.1%
>= 75 and <= 79	1.5%	0.0%	0.0%	1.5%
>= 80 and <= 84	0.0%	1.5%	0.0%	1.5%
Unknown	0.0%	0.0%	4.5%	4.5%
Total	19.7%	74.2%	6.1%	100%

Most (84.8%) drivers involved in the fatal crashes were licensed in Iowa.

Driver's License State	Drivers	Percent
Iowa	56	84.8%
Illinois	3	4.5%
Michigan	1	1.5%
Wisconsin	1	1.5%
Florida	1	1.5%
Texas	1	1.5%
Not reported	3	4.5%
All	66	100%

More than half (60.6%) of the drivers involved in the fatal crashes appeared normal, though a quarter (24.2%) of drivers were in an unknown condition.

Driver Condition	Drivers	Percent
Apparently normal	40	60.6%
Unknown	16	24.2%
Emotional (e.g., depressed, angry)	3	4.5%
Other	3	4.5%
Under the influence of alcohol	2	3.0%
Physical impairment	1	1.5%
Not reported	1	1.5%
All	66	100%

The majority (78.8%) of the drivers involved in the fatal crashes did not have their vision obscured, though 16.7% of drivers had unknown visual obstructions.

Vision Obscured	Drivers	Percent
Not obscured	52	78.8%
Unknown	11	16.7%
Fog/smoke/dust	1	1.5%
Not reported	1	1.5%
Other	1	1.5%
All	66	100%

More than half (59.1%) of the drivers involved in the the fatal crashes were not distracted, and more than a quarter of drivers (27.3%) had unknown distractions.

Driver Distraction	Drivers	Percent
Not distracted	39	59.1%
Unknown	18	27.3%
Not applicable/no driver	3	4.5%
Other distraction: Looked but did not see	3	4.5%
Other distraction: Passenger	1	1.5%
Other distraction inside vehicle	1	1.5%
Distraction outside vehicle	1	1.5%
All	66	100%

While 40.9% of drivers had no improper action and 16.7% of drivers had unknown contributing circumstances, 12.1% of drivers in the fatal crashes exceeded authorized speed and 9.1% of drivers lost control of their vehicles.

Contributing Circumstance - Driver	Drivers	Percent
No improper action	27	40.9%
Unknown	11	16.7%
Exceeded authorized speed	8	12.1%
Lost control	6	9.1%
Other	4	6.1%
Ran traffic signal	2	3.0%
Driving too fast for conditions	2	3.0%
Operating vehicle in an reckless, erratic, ca...	2	3.0%
Followed too close	1	1.5%
FTYROW: From stop sign	1	1.5%
FTYROW: Making left turn	1	1.5%
Failed to yield to emergency vehicle	1	1.5%
All	66	100%

Vehicles and Occupants

The majority (86.2%) of the fatal crashes involved passenger cars (30.8%), motorcycles (20.0%), light trucks (18.5%), and sport utility vehicles (16.9%).

Vehicle Configuration	Vehicles	Percent
Passenger car	20	30.8%
Motorcycle	13	20.0%
Four-tire light truck (pick-up)	12	18.5%
Sport utility vehicle	11	16.9%
Tractor/semi-trailer	3	4.6%
Passenger van (seats < 9)	2	3.1%
Single-unit truck (2-axle/6-tire)	2	3.1%
Single-unit truck (>= 3 axles)	1	1.5%
All-terrain vehicle (ATV/UTV)	1	1.5%
All	65	100%

Most (70.8%) of the vehicles in the fatal crashes were moving straight.

Vehicle Action	Vehicles	Percent
Movement essentially straight	46	70.8%
Turning left	4	6.2%
Slowing/stopping (deceleration)	3	4.6%
Legally Parked	3	4.6%
Changing lanes	2	3.1%
Unknown	2	3.1%
Overtaking/passing	1	1.5%
Leaving traffic lane	1	1.5%
Stopped in traffic	1	1.5%
Negotiating a curve	1	1.5%
Other	1	1.5%
All	65	100%

Most (70.8%) vehicles in the fatal crashes did not have any defects.

Vehicle Defect	Vehicles	Percent
None	46	70.8%
Unknown	17	26.2%
Other tire defect	1	1.5%
Wheels	1	1.5%
All	65	100%

More than half (64.1%) of the fatalities were comprised of males in their 20s and 30s (43.6%) and in their 60s and 70s (20.5%). Males in the 20s were the largest group for fatalities (28.2%).

Age Bin	Female	Male	Fatalities
Under 20	0	2	2
20 and < 30	0	11	11
30 and < 40	1	6	7
40 and < 50	1	3	4
50 and < 60	0	3	3
60 and < 70	2	4	6
70 and < 80	1	4	5
80 and < 90	0	1	1
All	5	34	39
Age Bin	Female	Male	Fatalities
Under 20	0.0%	5.1%	5.1%
20 and < 30	0.0%	28.2%	28.2%
30 and < 40	2.6%	15.4%	17.9%
40 and < 50	2.6%	7.7%	10.3%
50 and < 60	0.0%	7.7%	7.7%
60 and < 70	5.1%	10.3%	15.4%
70 and < 80	2.6%	10.3%	12.8%
80 and < 90	0.0%	2.6%	2.6%
All	12.8%	87.2%	100%

Of the 39 fatalities, 28.2% did not use any occupant protection and 41.0% of the occupants had unknown or not reported use of occupant protection.

Occupant Protection	Fatalities	Percent
None used	11	28.2%
Unknown	9	23.1%
Not reported	7	17.9%
Shoulder and lap belt used	7	17.9%
Helmet (DOT compliant)	4	10.3%
Helmet (other)	1	2.6%
All	39	100%

Major Causes

More than half (56.8%) of the fatal crashes were caused by exceeding the authorized speed (18.9%), operating the vehicle in a reckless manner (10.8%), no improper action (10.8%), or unknown actions (16.2%).

Major Cause	Crashes	Percent
Exceeded authorized speed	7	18.9%
Unknown	6	16.2%
Operating vehicle in an reckless/erratic/care...	4	10.8%
Other: No improper action	4	10.8%
Driving too fast for conditions	3	8.1%
Ran traffic signal	2	5.4%
Followed too close	2	5.4%
FTYROW: From stop sign	1	2.7%
FTYROW: Making left turn	1	2.7%
Driver Distraction: Exterior distraction	1	2.7%
Lost control	1	2.7%
Failed to yield to emergency vehicle	1	2.7%
Driver Distraction: Other interior distracti...	1	2.7%
Ran off road - right	1	2.7%
Cargo/equipment loss or shift	1	2.7%
Other	1	2.7%
All	37	100%

Single vehicle non-collisions accounted for 40.5% of the fatal crashes. Other crash collisions include rear-end (16.2%), broadside (16.2%), and head-on collisions (10.8%).

Manner of Crash Collision	Crashes	Percent
Non-collision (single vehicle)	15	40.5%
Rear-end (front to rear)	6	16.2%
Broadside (front to side)	6	16.2%
Head-on (front to front)	4	10.8%
Other	3	8.1%
Sideswipe (same direction)	2	5.4%
Angle (oncoming left turn)	1	2.7%
All	37	100%

The majority (81.8%) of the vehicles involved in the fatal crashes did not strike any fixed objects. The most prevalent objects struck were buildings (4.5%) and trees (3.0%).

Fixed Object Struck	Vehicles	Percent
None (no fixed object struck)	54	81.8%
Building	3	4.5%
Tree	2	3.0%
Ditch	1	1.5%
Ground	1	1.5%
Guardrail - face	1	1.5%
Concrete traffic barrier (median or right sid...	1	1.5%
Utility pole/light support	1	1.5%
Bridge pier or support	1	1.5%
Embankment	1	1.5%
All	66	100%

Most (62.2%) of the fatal crashes did not involve any drugs or alcohol. The other fatal crashes involved drugs (24.3%) or alcohol (10.8%).

Drug/Alcohol Related	Crashes	Percent
None Indicated	23	62.2%
Drug	9	24.3%
Alcohol (Statutory)	4	10.8%
Drug and Alcohol (Statutory)	1	2.7%
All	37	100%

Serious Injury Crashes Characteristics

Location

In 2023, there were 163 serious injury crashes within the Des Moines Area MPO planning area. Most (84.0%) of the serious injury crashes occurred on municipal roads (57.7%), Interstates (13.5%), and US Routes (12.9%).

Road Classification	Crashes	Percent
Municipal Road	94	57.7%
Interstate	22	13.5%
US Route	21	12.9%
Secondary Road	14	8.6%
Iowa Route	12	7.4%
All	163	100%

Almost all (95.7%) of the serious injury crashes occurred on mainline roads.

Classification	Crashes	Percent
Mainline	156	95.7%
Ramp	7	4.3%
All	163	100%

The vast majority (88.3%) of the serious injury crashes occurred on the roadway.

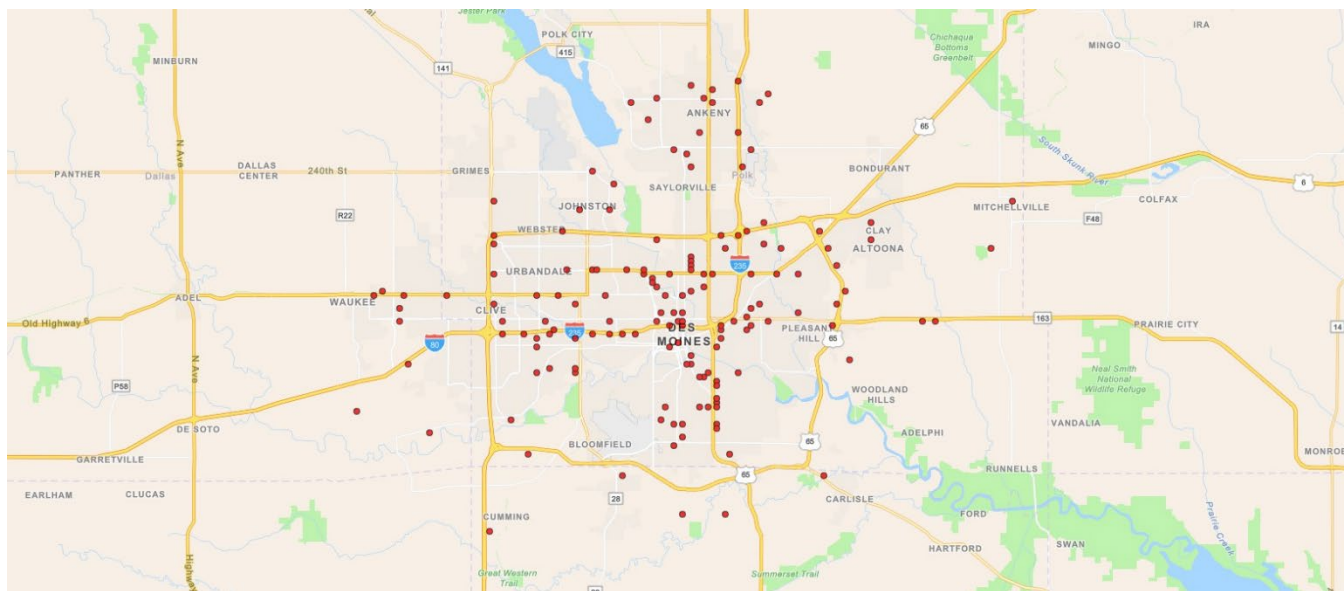
Location of First Harmful Event	Crashes	Percent
On roadway	144	88.3%
Outside trafficway	8	4.9%
Roadside	6	3.7%
Shoulder	2	1.2%
Median	2	1.2%
Gore	1	0.6%
All	163	100%

About half (50.3%) of the serious injury crashes occurred where there were no junctions or special road features. About a third (31.3%) of the serious injury crashes occurred at four-way intersections and about 7% of the serious injury crashes occurred at T-intersections.

Roadway Junction/Feature	Crashes	Percent
Feature: Non-junction/no special feature	82	50.3%
Intersection: Four-way intersection	51	31.3%
Intersection: T-intersection	12	7.4%
Feature: Driveway access (related, not in)	5	3.1%
Interchange-related: On-ramp merge area	3	1.8%
Intersection: Intersection with ramp	2	1.2%
Feature: Other non-intersection	2	1.2%
Intersection: Other intersection	2	1.2%
Feature: Driveway access (within)	1	0.6%
Intersection: Y-intersection	1	0.6%
Interchange-related: Off-ramp	1	0.6%
Unknown	1	0.6%
All	163	100%

Figure 4 shows the serious injury crashes within the Des Moines metropolitan area.

Figure 2 Serious Injury Crashes Around the Des Moines Metropolitan Area



Date and Time

More than half (57.7%) of serious injury crashes occurred in the months of July (12.9%), September (12.3%), April (11.7%), August (11.0%), and June (9.8%).

Month	Crashes	Percent
January	10	6.1%
February	9	5.5%
March	11	6.7%
April	19	11.7%
May	13	8.0%
June	16	9.8%
July	21	12.9%
August	18	11.0%
September	20	12.3%
October	11	6.7%
November	9	5.5%
December	6	3.7%
All	163	100%

By day of the week and time of the day, the serious injury crashes occurred mostly on Wednesdays (17.8%) and Thursdays (17.8%); the serious injury crashes occurred mostly from 6 PM to 8 PM (17.2%) and from 4 PM to 6 PM (16.6%).

	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Total
Sunday	2	0	0	1	1	0	0	0	5	6	2	1	18
Monday	0	2	2	3	0	3	1	4	3	3	1	3	25
Tuesday	1	1	0	2	3	1	2	1	4	4	2	1	22
Wednesday	1	0	0	2	2	4	2	4	3	3	4	4	29
Thursday	0	1	1	0	0	2	4	4	5	6	6	0	29
Friday	2	0	1	0	1	2	1	3	6	5	3	1	25
Saturday	0	3	0	0	1	2	3	2	1	1	1	1	15
Total	6	7	4	8	8	14	13	18	27	28	19	11	163
	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Percent
Sunday	1.2%	0.0%	0.0%	0.6%	0.6%	0.0%	0.0%	0.0%	3.1%	3.7%	1.2%	0.6%	11.0%
Monday	0.0%	1.2%	1.2%	1.8%	0.0%	1.8%	0.6%	2.5%	1.8%	1.8%	0.6%	1.8%	15.3%
Tuesday	0.6%	0.6%	0.0%	1.2%	1.8%	0.6%	1.2%	0.6%	2.5%	2.5%	1.2%	0.6%	13.5%
Wednesday	0.6%	0.0%	0.0%	1.2%	1.2%	2.5%	1.2%	2.5%	1.8%	1.8%	2.5%	2.5%	17.8%
Thursday	0.0%	0.6%	0.6%	0.0%	0.0%	1.2%	2.5%	2.5%	3.1%	3.7%	3.7%	0.0%	17.8%
Friday	1.2%	0.0%	0.6%	0.0%	0.6%	1.2%	0.6%	1.8%	3.7%	3.1%	1.8%	0.6%	15.3%
Saturday	0.0%	1.8%	0.0%	0.0%	0.6%	1.2%	1.8%	1.2%	0.6%	0.6%	0.6%	0.6%	9.2%
Total	3.7%	4.3%	2.5%	4.9%	4.9%	8.6%	8.0%	11.0%	16.6%	17.2%	11.7%	6.7%	100%

Road Conditions

Most vehicles in the serious injury crashes traveled along straight roads (91.8%) or on level roads (83.5%).

Horizontal Alignment	Vehicles	Percent
Straight	267	91.8%
Traversing curve to right	9	3.1%
Traversing curve to left	7	2.4%
Not reported	5	1.7%
Unknown	3	1.0%
All	291	100%

Vertical Alignment	Vehicles	Percent
Level	243	83.5%
Traversing downhill	19	6.5%
Traversing uphill	17	5.8%
Not reported	6	2.1%
Unknown	3	1.0%
At crest	2	0.7%
Other	1	0.3%
All	291	100%

More than half (59.1%) of the vehicles in the serious injury crashes traveled where the speed limit was between 30 and 45 miles per hour.

Speed Limit	Vehicles	Percent
15 MPH	1	0.3%
20 MPH	2	0.7%
25 MPH	43	14.8%
30 MPH	30	10.3%
35 MPH	89	30.6%
40 MPH	15	5.2%
45 MPH	38	13.1%
50 MPH	5	1.7%
55 MPH	13	4.5%
60 MPH	5	1.7%
65 MPH	36	12.4%
70 MPH	5	1.7%
Unknown	9	3.1%
All	291	100%

More than half (58.4%) of the vehicles in serious injury crashes traveled where there were no traffic controls present, and slightly more than a quarter (29.2%) traveled where there were traffic signals present. About 8% of the vehicles traveled where there were stop signs present.

Traffic Control	Vehicles	Percent
No controls present	170	58.4%
Traffic signals	85	29.2%
Stop signs	23	7.9%
Work zone sign	4	1.4%
Not reported	3	1.0%
Other	3	1.0%
Flashing traffic control signal	1	0.3%
Yield signs	1	0.3%
No Passing Zone (marked)	1	0.3%
All	291	100%

Road circumstances were not a contributing factor in the vast majority (92.6%) of the serious injury crashes, but surface conditions did contribute to around 6% of the serious injury crashes.

Contributing Circumstance - Road	Crashes	Percent
None apparent	151	92.6%
Surface condition (e.g., wet, icy)	9	5.5%
Work Zone (roadway-related)	2	1.2%
Traffic backup, regular congestion	1	0.6%
All	163	100%

Environmental Conditions

The vast majority (93.3%) of the serious injury crashes did not have any contributing environmental circumstances.

Contributing Circumstance - Environment	Crashes	Percent
None apparent	152	93.3%
Weather conditions	6	3.7%
Glare	2	1.2%
Visual obstruction	1	0.6%
Other	1	0.6%
Unknown	1	0.6%
All	163	100%

Most (82.2%) of the serious injury crashes occurred under clear weather conditions and about 11% occurred under cloudy weather conditions.

Weather Conditions	Crashes	Percent
Clear	134	82.2%
Cloudy	18	11.0%
Rain	7	4.3%
Snow	2	1.2%
Fog, smoke, smog	1	0.6%
Freezing rain/drizzle	1	0.6%
All	163	100%

Most (89.6%) of the serious injury crashes occurred on dry roadway surface conditions.

Surface Conditions	Crashes	Percent
Dry	146	89.6%
Wet	12	7.4%
Ice/frost	2	1.2%
Snow	2	1.2%
Gravel	1	0.6%
All	163	100%

More than half (64.4%) of the serious injury crashes occurred in daylight lighting. About 29% of the serious injury crashes occurred in the dark on lighted roadways.

Lighting	Crashes	Percent
Daylight	105	64.4%
Darkness	57	35.0%
Evening Twilight (dusk 30 minutes before suns...	1	0.6%
All	163	100%

Light Condition	Crashes	Percent
Daylight	98	60.1%
Dark - roadway lighted	47	28.8%
Dark - roadway not lighted	8	4.9%
Dusk	7	4.3%
Dawn	3	1.8%
All	163	100%

Work Zone Related

Only 2 of the 163 serious injury crashes were related to work zones: one was related to construction, and the other related to maintenance.

Drivers

More than half (65.6%) of the drivers in the serious injury crashes were male. Most drivers in their serious injury crashes were in their 30s (19.2%) and 40s (19.6%).

Driver Age - 5 year Bins	Female	Male	Not reported	Total
= 14	0	1	0	1
= 15	0	1	0	1
= 16	2	3	0	5
= 17	1	2	0	3
= 18	2	4	0	6
= 19	1	3	0	4
= 20	4	4	0	8
>= 21 and <= 24	7	14	0	21
>= 25 and <= 29	11	13	0	24
>= 30 and <= 34	10	22	0	32
>= 35 and <= 39	3	21	0	24
>= 40 and <= 44	4	26	0	30
>= 45 and <= 49	6	21	0	27
>= 50 and <= 54	6	11	0	17
>= 55 and <= 59	3	7	0	10
>= 60 and <= 64	5	12	0	17
>= 65 and <= 69	4	10	0	14
>= 70 and <= 74	5	8	0	13
>= 75 and <= 79	2	5	0	7
>= 80 and <= 84	0	1	0	1
>= 85 and <= 89	3	2	1	6
Unknown	0	0	20	20
Total	79	191	21	291

Driver Age - 5 year Bins	Female	Male	Not reported	Total
= 14	0.0%	0.3%	0.0%	0.3%
= 15	0.0%	0.3%	0.0%	0.3%
= 16	0.7%	1.0%	0.0%	1.7%
= 17	0.3%	0.7%	0.0%	1.0%
= 18	0.7%	1.4%	0.0%	2.1%
= 19	0.3%	1.0%	0.0%	1.4%
= 20	1.4%	1.4%	0.0%	2.7%
>= 21 and <= 24	2.4%	4.8%	0.0%	7.2%
>= 25 and <= 29	3.8%	4.5%	0.0%	8.2%
>= 30 and <= 34	3.4%	7.6%	0.0%	11.0%
>= 35 and <= 39	1.0%	7.2%	0.0%	8.2%
>= 40 and <= 44	1.4%	8.9%	0.0%	10.3%
>= 45 and <= 49	2.1%	7.2%	0.0%	9.3%
>= 50 and <= 54	2.1%	3.8%	0.0%	5.8%
>= 55 and <= 59	1.0%	2.4%	0.0%	3.4%
>= 60 and <= 64	1.7%	4.1%	0.0%	5.8%
>= 65 and <= 69	1.4%	3.4%	0.0%	4.8%
>= 70 and <= 74	1.7%	2.7%	0.0%	4.5%
>= 75 and <= 79	0.7%	1.7%	0.0%	2.4%
>= 80 and <= 84	0.0%	0.3%	0.0%	0.3%
>= 85 and <= 89	1.0%	0.7%	0.3%	2.1%
Unknown	0.0%	0.0%	6.9%	6.9%
Total	27.1%	65.6%	7.2%	100%

The vast majority (86.9%) of drivers in serious injury crashes were licensed in Iowa.

Driver's License State	Drivers	Percent
Iowa	252	86.9%
Not reported	20	6.9%
California	2	0.7%
Illinois	2	0.7%
Kansas	2	0.7%
Missouri	2	0.7%
Montana	2	0.7%
Minnesota	2	0.7%
Georgia	1	0.3%
Tennessee	1	0.3%
Colorado	1	0.3%
Florida	1	0.3%
South Dakota	1	0.3%
Texas	1	0.3%
All	290	100%

Most (69.1%) of the drivers involved in serious injury crashes were reported to be in normal conditions. About 13% of drivers were in an unknown conditions, and about 5% of drivers were under the influence of alcohol.

Driver Condition	Drivers	Percent
Apparently normal	201	69.1%
Unknown	39	13.4%
Under the influence of alcohol	15	5.2%
Other	9	3.1%
Medical condition (seizure, reaction)	8	2.7%
Not reported	8	2.7%
Emotional (e.g., depressed, angry)	4	1.4%
Under the influence of drugs/meds	4	1.4%
Physical impairment	2	0.7%
Illness/fainted	1	0.3%
All	291	100%

The majority (84.9%) of the drivers involved in serious injury crashes did not have their vision obscured. About 10% of drivers had unknown obstructions with their vision.

Vision Obscured	Drivers	Percent
Not obscured	247	84.9%
Unknown	29	10.0%
Not reported	8	2.7%
Other	4	1.4%
Moving vehicle(s)	1	0.3%
Blinded by sun or headlights	1	0.3%
Fog/smoke/dust	1	0.3%
All	291	100%

More than half (62.2%) of the drivers involved in the serious injury crashes were not distracted. About 27% of drivers had an unknown distraction.

Driver Distraction	Drivers	Percent
Not distracted	181	62.2%
Unknown	79	27.1%
Not applicable/no driver	8	2.7%
Other distraction: Looked but did not see	8	2.7%
Other distraction: Inattentive/lost in thoug...	4	1.4%
Electronic: Other activity with electronic d...	3	1.0%
Other distraction inside vehicle	2	0.7%
Distraction outside vehicle	2	0.7%
Electronic: Adjusting devices (radio, climat...	1	0.3%
Other distraction: Passenger	1	0.3%
Other distraction: Eating or drinking relate...	1	0.3%
Not reported	1	0.3%
All	291	100%

About 41% of the drivers involved in the serious injury crashes did not have any improper action. The most common contributing driver circumstances to the serious injury crashes was losing control (11.7%).

Contributing Circumstance - Driver	Drivers	Percent
No improper action	119	40.9%
Lost control	34	11.7%
Unknown	26	8.9%
Other	15	5.2%
Exceeded authorized speed	14	4.8%
FTYROW: Making left turn	13	4.5%
Operating vehicle in an reckless, erratic, ca...	11	3.8%
Ran traffic signal	10	3.4%
Followed too close	10	3.4%
Driving too fast for conditions	8	2.7%
Made improper turn	6	2.1%
Ran stop sign	6	2.1%
FTYROW: From stop sign	4	1.4%
Traveling wrong way/on wrong side	2	0.7%
Aggressive driving/road rage	2	0.7%
Improper or erratic lane changing	1	0.3%
Starting or backing improperly	1	0.3%
FTYROW: From driveway	1	0.3%
Operator inexperience	1	0.3%
FTYROW: Other FTYROW	1	0.3%
Driving less than the posted speed limit	1	0.3%
Traveling on prohibited traffic way	1	0.3%
Failed to keep in proper lane	1	0.3%
Swerved to avoid: vehicle, object, non-motori...	1	0.3%
Passing: Through/around barrier	1	0.3%
FTYROW: From yield sign	1	0.3%
All	291	100%

Vehicles and Occupants

The majority (89.0%) of vehicles involved in the serious injury crashes were passenger cars (32.3%), sport utility vehicles (SUVs) (25.8%), four-tire light trucks (pick up) (15.8%), and motorcycles (15.1%).

Vehicle Configuration	Vehicles	Percent
Passenger car	94	32.3%
Sport utility vehicle	75	25.8%
Four-tire light truck (pick-up)	46	15.8%
Motorcycle	44	15.1%
Tractor/semi-trailer	8	2.7%
Passenger van (seats < 9)	7	2.4%
Cargo/panel van	6	2.1%
Single-unit truck (>= 3 axles)	3	1.0%
Single-unit truck (2-axle/6-tire)	2	0.7%
Unknown	2	0.7%
Passenger van (seats 9 - 15)	1	0.3%
Other heavy truck (> 10000 lbs) (cannot class...	1	0.3%
3-wheeled - unenclosed	1	0.3%
Moped	1	0.3%
All	291	100%

More than half (61.9%) of the vehicles in the serious injury crashes were moving straight. About 13% of the vehicles were turning left.

Vehicle Action	Vehicles	Percent
Movement essentially straight	180	61.9%
Turning left	39	13.4%
Slowing/stopping (deceleration)	14	4.8%
Stopped in traffic	12	4.1%
Turning right	7	2.4%
Legally Parked	7	2.4%
Negotiating a curve	7	2.4%
Changing lanes	4	1.4%
Other	4	1.4%
Overtaking/passing	3	1.0%
Leaving traffic lane	3	1.0%
Entering traffic lane (merging)	2	0.7%
Accelerating in road	2	0.7%
Not reported	2	0.7%
Unknown	2	0.7%
Backing	1	0.3%
Illegally Parked/Unattended	1	0.3%
Starting in road	1	0.3%
All	291	100%

Most vehicles (86.6%) in the serious injury crashes did not have any defects. About 10% of the vehicles had unknown defects.

Vehicle Defect	Vehicles	Percent
None	252	86.6%
Unknown	28	9.6%
Not Reported	5	1.7%
Brake system	2	0.7%
Tail lights	2	0.7%
Wheels	1	0.3%
Other	1	0.3%
All	291	100%

Males accounted for more than half (68.6%) of the serious injuries. The group with the most serious injuries was males in their 30s (14.9%).

Age Bin	Female	Male	Not Reported	Serious Injuries
Under 20	5	13	0	18
20 and < 30	14	20	0	34
30 and < 40	11	26	0	37
40 and < 50	11	24	0	35
50 and < 60	2	17	0	19
60 and < 70	5	14	0	19
70 and < 80	3	5	0	8
80 and < 90	3	1	1	5
All	54	120	1	175
Age Bin	Female	Male	Not Reported	Serious Injuries
Under 20	2.9%	7.4%	0.0%	10.3%
20 and < 30	8.0%	11.4%	0.0%	19.4%
30 and < 40	6.3%	14.9%	0.0%	21.1%
40 and < 50	6.3%	13.7%	0.0%	20.0%
50 and < 60	1.1%	9.7%	0.0%	10.9%
60 and < 70	2.9%	8.0%	0.0%	10.9%
70 and < 80	1.7%	2.9%	0.0%	4.6%
80 and < 90	1.7%	0.6%	0.6%	2.9%
All	30.9%	68.6%	0.6%	100%

Of the 175 serious injuries, about 37% had used should and lap belts and 29% did not use any occupant protection.

Occupant Protection	Persons	Percent
Shoulder and lap belt used	64	36.6%
None used	50	28.6%
Unknown	28	16.0%
Not reported	20	11.4%
Helmet (DOT compliant)	5	2.9%
Not applicable	5	2.9%
Child safety seat (forward-facing)	1	0.6%
Helmet (other)	1	0.6%
Other	1	0.6%
All	175	100%

Major Causes

About 10% of serious injury crashes was from losing control. Other major causes included unknown (9.2%), failure to yield the right of way when making a left turn (8.6%), exceeding the authorized speed (6.7%), operating the vehicle recklessly (6.7%), and running the traffic signal (6.1%).

Major Cause	Crashes	Percent
Lost control	17	10.4%
Unknown	15	9.2%
FTYROW: Making left turn	14	8.6%
Exceeded authorized speed	11	6.7%
Operating vehicle in an reckless/erratic/careless manner	11	6.7%
Ran traffic signal	10	6.1%
Driving too fast for conditions	8	4.9%
Ran off road - right	7	4.3%
Ran stop sign	6	3.7%
Other: No improper action	6	3.7%
Followed too close	6	3.7%
Other	6	3.7%
FTYROW: From stop sign	5	3.1%
Made improper turn	5	3.1%
Ran off road - left	4	2.5%
Traveling wrong way or on wrong side of road	3	1.8%
Driver Distraction: Other interior distraction	3	1.8%
Aggressive driving/road rage	2	1.2%
Driver Distraction: Other electronic device use	2	1.2%
Driver Distraction: Inattentive/lost in thought	2	1.2%
Ran off road - straight	2	1.2%
Failed to yield to emergency vehicle	2	1.2%
Crossed centerline (undivided)	2	1.2%
Swerving/Evasive Action	2	1.2%
FTYROW: At uncontrolled intersection	1	0.6%
FTYROW: From parked position	1	0.6%
FTYROW: Other	1	0.6%
Equipment failure	1	0.6%
Operator inexperience	1	0.6%
FTYROW: From yield sign	1	0.6%
FTYROW: From driveway	1	0.6%
FTYROW: To pedestrian	1	0.6%
Improper or erratic lane changing	1	0.6%
Passing: Through/around barrier	1	0.6%
Driver Distraction: Passenger	1	0.6%
Traveling on prohibited traffic way	1	0.6%
All	163	100%

About 36% of the serious injury crashes were single vehicle non-collisions, about 20% were broadside front to side collisions, and about 17% were rear end front to rear collisions.

Manner of Crash Collision	Crashes	Percent
Non-collision (single vehicle)	59	36.2%
Broadside (front to side)	32	19.6%
Rear-end (front to rear)	28	17.2%
Head-on (front to front)	16	9.8%
Other	12	7.4%
Angle (oncoming left turn)	9	5.5%
Sideswipe (same direction)	6	3.7%
Sideswipe (opposite direction)	1	0.6%
All	163	100

The majority (84.9%) of the vehicles in serious injury crashes did not strike any fixed objects. Of the vehicles that did, commonly struck objects included the curb/island/raised median (3.4%), utility pole/light support (2.7%), ditch (2.1%), and concrete traffic barrier (2.1%).

Fixed Object Struck	Vehicles	Percent
None (no fixed object struck)	247	84.9%
Curb/island/raised median	10	3.4%
Utility pole/light support	8	2.7%
Ditch	6	2.1%
Concrete traffic barrier (median or right sid...	6	2.1%
Tree	5	1.7%
Embankment	2	0.7%
Ground	1	0.3%
Guardrail - face	1	0.3%
Other fixed object	1	0.3%
Other traffic barrier	1	0.3%
Landscape/shrubbery	1	0.3%
Fence	1	0.3%
Building	1	0.3%
All	291	100%

The majority (85.9%) of the serious injury crashes did not involve any drugs or alcohol. Alcohol, drugs, or medications were related to about 14% of the serious injury crashes.

Drug/Alcohol Related	Crashes	Percent
None Indicated	140	85.9%
Alcohol (Statutory)	9	5.5%
Drug	8	4.9%
Under Influence of Alcohol/Drugs/Medications	6	3.7%
All	163	100%

Non-Motorized Fatal and Serious Injury Crashes Characteristics

Location

In 2023, there were 28 non-motorized fatal and serious injury crashes within the Des Moines Area MPO planning area, of which 8 were fatal crashes and 20 were serious injury crashes. There were 8 non-motorized fatalities and 21 non-motorized serious injuries.

The majority of the non-motorist fatal and serious injury crashes involved pedestrians (82.1%) and pedalcyclists (14.3%).

Non-Motorist Type	Crashes	Percent
Pedestrian	23	82.1%
Pedalcyclist (bicycle/tricycle/unicycle/pedal...	4	14.3%
Other non-motorist	1	3.6%
All	28	100%

Most (82.1%) of the non-motorized fatal and serious injury crashes occurred on the roadway, about 7% occurred roadside, and about 7% occurred outside the trafficway.

Location of First Harmful Event	Crashes	Percent
On roadway	23	82.1%
Roadside	2	7.1%
Outside trafficway	2	7.1%
Shoulder	1	3.6%
All	28	100%

About half (53.6%) of the non-motorized fatality and serious injury crashes occurred on municipal roads, about 18% on US routes, and about 14% on Interstates.

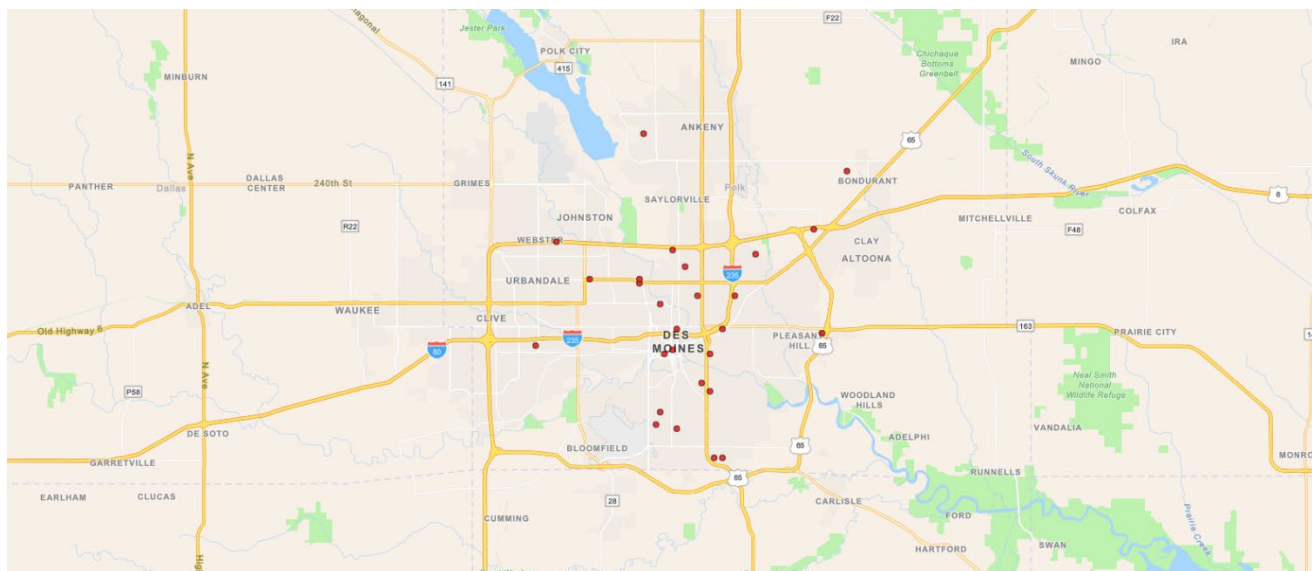
Road Classification	Crashes	Percent
Municipal Road	15	53.6%
US Route	5	17.9%
Interstate	4	14.3%
Iowa Route	2	7.1%
Secondary Road	2	7.1%
All	28	100%

Most (71.0%) of the non-motorized fatal and non-serious injury crashes occurred where there were no junctions or special road features. About 18% of non-motorized fatal and non-serious injury crashes occurred at four-way intersections.

Roadway Junction/Feature	Crashes	Percent
Feature: Non-junction/no special feature	20	71.4%
Intersection: Four-way intersection	5	17.9%
Intersection: T-intersection	1	3.6%
Intersection: Y-intersection	1	3.6%
Feature: Other non-intersection	1	3.6%
All	28	100%

Figure 5 shows the non-motorized fatal and serious injury crashes within the Des Moines metropolitan area.

Figure 3 Non-motorized Fatal and Serious Injury Crashes Around the Des Moines Metro Area



Date and Time

About half (46.4%) of non-motorized fatal and serious injury crashes occurred during the months of September (17.9%), July (14.3%), and November (14.3%).

Month	Crashes	Percent
January	3	10.7%
February	0	0.0%
March	3	10.7%
April	0	0.0%
May	3	10.7%
June	2	7.1%
July	4	14.3%
August	3	10.7%
September	5	17.9%
October	1	3.6%
November	4	14.3%
December	0	0.0%
All	28	100%

By day of the week and time of the day, the non-motorized fatal and serious injury crashes occurred mostly on Tuesdays (21.4%) and Wednesdays (17.9%) and mostly between 8 PM and 10 PM (28.6%), 4 AM to 6 AM (14.3%), 2 PM to 4 PM (14.3%), and 6 PM to 8 PM (14.3%).

	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Total
Sunday	0	0	0	0	0	0	0	0	0	1	2	1	4
Monday	0	0	3	0	0	0	0	0	0	0	1	0	4
Tuesday	0	0	0	1	1	0	1	1	0	1	1	0	6
Wednesday	0	0	0	0	0	0	1	1	2	1	0	0	5
Thursday	0	0	1	0	0	0	0	1	0	1	1	0	4
Friday	0	0	0	0	0	0	0	0	1	0	2	0	3
Saturday	0	0	0	0	0	0	0	1	0	0	1	0	2
Total	0	0	4	1	1	0	2	4	3	4	8	1	28
	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Percent
Sunday	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	7.1%	3.6%	14.3%
Monday	0.0%	0.0%	10.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	0.0%	14.3%
Tuesday	0.0%	0.0%	0.0%	3.6%	3.6%	0.0%	3.6%	3.6%	0.0%	3.6%	3.6%	0.0%	21.4%
Wednesday	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	3.6%	7.1%	3.6%	0.0%	0.0%	17.9%
Thursday	0.0%	0.0%	3.6%	0.0%	0.0%	0.0%	0.0%	3.6%	0.0%	3.6%	3.6%	0.0%	14.3%
Friday	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	0.0%	7.1%	0.0%	10.7%
Saturday	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.6%	0.0%	0.0%	3.6%	0.0%	7.1%
Total	0.0%	0.0%	14.3%	3.6%	3.6%	0.0%	7.1%	14.3%	10.7%	14.3%	28.6%	3.6%	100%

Road Conditions

The vast majority of the vehicles in the non-motorized fatal and serious injury crashes traveled along straight roads (88.6%) and on level roads (82.9%).

Horizontal Alignment	Vehicles	Percent
Straight	31	88.6%
Traversing curve to right	2	5.7%
Not reported	1	2.9%
Unknown	1	2.9%
All	35	100%

Vertical Alignment	Vehicles	Percent
Level	29	82.9%
Traversing downhill	2	5.7%
At crest	1	2.9%
Traversing uphill	1	2.9%
Not reported	1	2.9%
Unknown	1	2.9%
All	35	100%

About 40% of the vehicles in non-motorized fatal and serious injury crashes traveled where the speed limit was between 30 and 40 miles per hour.

Speed Limit	Vehicles	Percent
25 MPH	5	14.3%
30 MPH	6	17.1%
35 MPH	8	22.9%
40 MPH	1	2.9%
45 MPH	5	14.3%
55 MPH	1	2.9%
60 MPH	1	2.9%
65 MPH	6	17.1%
Unknown	2	5.7%
All	35	100%

Most (85.7%) of the vehicles in the non-motorized fatal and serious injury crashes traveled where there were no traffic controls present.

Traffic Control	Vehicles	Percent
No controls present	30	85.7%
Traffic signals	2	5.7%
Other	2	5.7%
Not reported	1	2.9%
All	35	100%

Road circumstances were not a contributing factor in almost all (96.4%) of the non-motorized fatal and serious injury crashes.

Contributing Circumstance - Road	Crashes	Percent
None apparent	27	96.4%
Surface condition (e.g., wet, icy)	1	3.6%
All	28	100%

Environmental Conditions

Almost all (92.9%) of the non-motorized fatal and serious injury crashes did not have an apparent contributing environmental circumstance.

Contributing Circumstance - Environment	Crashes	Percent
None apparent	26	92.9%
Non-motorist action	1	3.6%
Glare	1	3.6%
All	28	100%

Almost all (92.9%) of the non-motorized fatal and serious injury crashes occurred in clear weather conditions.

Weather Conditions	Crashes	Percent
Clear	26	92.9%
Cloudy	1	3.6%
Rain	1	3.6%
All	28	100%

Almost all (89.3%) of the non-motorized fatal and serious injury crashes occurred on dry surface conditions with the remaining crashes on wet (7.1%) and snowy (3.6%) surface conditions.

Surface Conditions	Crashes	Percent
Dry	25	89.3%
Wet	2	7.1%
Snow	1	3.6%
All	28	100%

Slightly more than half (53.6%) of the non-motorized fatal and serious injury crashes occurred in darkness. More than half (57.1%) of the crashes occurred in the dark: about 39% in the dark on lighted roadways and about 18% in the dark on not lighted roadways. Slightly more than a third (35.7%) of crashes occurred in daylight.

Lighting	Crashes	Percent
Darkness	15	53.6%
Daylight	13	46.4%
All	28	100%

Light Condition	Crashes	Percent
Dark - roadway lighted	11	39.3%
Daylight	10	35.7%
Dark - roadway not lighted	5	17.9%
Dusk	2	7.1%
All	28	100%

Work Zone Related

None of the 28 non-motorized fatal and serious injury crashes was related to work zones.

Drivers and Non-Motorists

Of the drivers involved in non-motorized fatal and serious injury crashes, 60% were male and about 23% were female. The largest groups of drivers were between the ages of 35 and 39 (8.6%), 45 and 49 (8.6%), and 65 and 69 (8.6%).

Driver Age - 5 year Bins	Female	Male	Not Reported	Total
= 18	1	0	0	1
= 19	1	1	0	2
>= 21 and <= 24	0	2	0	2
>= 25 and <= 29	1	2	0	3
>= 30 and <= 34	0	1	0	1
>= 35 and <= 39	0	3	0	3
>= 40 and <= 44	0	1	0	1
>= 45 and <= 49	1	3	0	4
>= 50 and <= 54	0	1	0	1
>= 60 and <= 64	2	2	0	4
>= 65 and <= 69	1	3	0	4
>= 70 and <= 74	1	2	0	3
Unknown	0	0	6	6
Total	8	21	6	35

Driver Age - 5 year Bins	Female	Male	Not Reported	Total
= 18	2.9%	0.0%	0.0%	2.9%
= 19	2.9%	2.9%	0.0%	5.7%
>= 21 and <= 24	0.0%	5.7%	0.0%	5.7%
>= 25 and <= 29	2.9%	5.7%	0.0%	8.6%
>= 30 and <= 34	0.0%	2.9%	0.0%	2.9%
>= 35 and <= 39	0.0%	8.6%	0.0%	8.6%
>= 40 and <= 44	0.0%	2.9%	0.0%	2.9%
>= 45 and <= 49	2.9%	8.6%	0.0%	11.4%
>= 50 and <= 54	0.0%	2.9%	0.0%	2.9%
>= 60 and <= 64	5.7%	5.7%	0.0%	11.4%
>= 65 and <= 69	2.9%	8.6%	0.0%	11.4%
>= 70 and <= 74	2.9%	5.7%	0.0%	8.6%
Unknown	0.0%	0.0%	17.1%	17.1%
Total	22.9%	60.0%	17.1%	100%

The majority (80%) of drivers involved in the non-motorized fatal and serious injury crashes were licensed in Iowa.

Driver's License State	Drivers	Percent
Iowa	28	80.0%
Michigan	1	2.9%
Not reported	6	17.1%
All	35	100%

The majority (74.3%) of drivers involved in the non-motorized fatal and serious injury crashes appeared to be in normal conditions.

Driver Condition	Drivers	Percent
Apparently normal	26	74.3%
Unknown	4	11.4%
Emotional (e.g., depressed, angry)	1	2.9%
Under the influence of alcohol	1	2.9%
Under the influence of drugs/meds	1	2.9%
Not reported	1	2.9%
Other	1	2.9%
All	35	100%

The majority (77.1%) of the drivers in the fatal and serious injury crashes did not have their vision obscured.

Vision Obscured	Drivers	Percent
Not obscured	27	77.1%
Unknown	6	17.1%
Not reported	1	2.9%
Other	1	2.9%
All	35	100%

More than half (60.0%) of drivers in the non-motorized fatal and serious injury crashes were not distracted and about 20% had an unknown distraction.

Driver Distraction	Drivers	Percent
Not distracted	21	60.0%
Unknown	7	20.0%
Not applicable/no driver	2	5.7%
Other distraction: Looked but did not see	2	5.7%
Electronic: Other activity with electronic d...	2	5.7%
Other distraction: Inattentive/lost in thoug...	1	2.9%
All	35	100%

About 40% of the drivers involved in the non-motorized fatal and serious injury crashes had no improper actions that contributed to the crash. About 40% of the non-motorized fatal and serious injury crashes had unknown or other contributing driver circumstances.

Contributing Circumstance - Driver	Drivers	Percent
No improper action	14	40.0%
Unknown	7	20.0%
Other	7	20.0%
Made improper turn	2	5.7%
Followed too close	1	2.9%
FTYROW: Other FTYROW	1	2.9%
Lost control	1	2.9%
Operating vehicle in an reckless, erratic, ca...	1	2.9%
Failed to yield to emergency vehicle	1	2.9%
All	35	100%

Males accounted for all the non-motorist fatalities and about 67% of the serious injuries. Of note, males in their 50s and 60s accounted for the largest group of non-motorized serious injuries.

Age Bin	Female	Male	Non-motorist Fatalities
20 and < 30	0	2	2
30 and < 40	0	1	1
40 and < 50	0	2	2
50 and < 60	0	1	1
60 and < 70	0	1	1
All	0	7	7
Age Bin	Female	Male	Non-motorist Fatalities
20 and < 30	0.0%	28.6%	28.6%
30 and < 40	0.0%	14.3%	14.3%
40 and < 50	0.0%	28.6%	28.6%
50 and < 60	0.0%	14.3%	14.3%
60 and < 70	0.0%	14.3%	14.3%
All	0.0%	100.0%	100.0%

Age Bin	Female	Male	Non-motorist Serious Injuries
Under 20	2	2	4
20 and < 30	0	1	1
30 and < 40	2	2	4
40 and < 50	2	1	3
50 and < 60	0	4	4
60 and < 70	1	4	5
All	7	14	21
Age Bin	Female	Male	Non-motorist Serious Injuries
Under 20	9.5%	9.5%	19.0%
20 and < 30	0.0%	4.8%	4.8%
30 and < 40	9.5%	9.5%	19.0%
40 and < 50	9.5%	4.8%	14.3%
50 and < 60	0.0%	19.0%	19.0%
60 and < 70	4.8%	19.0%	23.8%
All	33.3%	66.7%	100.0%

Non-motorist contributing circumstances were mostly (85.7%) not reported. Non-motorist contributing circumstances include darting/dashing (2.9%), failure to yield right-of-way (2.9%), improper crossing (2.9%), improper exit/entry from trafficway (2.9%), and not visible to driver because of dark clothing (2.9%).

Contributing Circumstance – Non-Motorist	Crashes	Percent
Blank	30	85.7%
Darting/dashing	1	2.9%
Failure to yield right-of-way	1	2.9%
Improper crossing	1	2.9%
Improper exit/entry from trafficway	1	2.9%
Not visible (dark clothing)	1	2.9%
All	35	100%

Vehicles

The majority (82.9%) of the vehicles involved in the non-motorized fatal and serious injury crashes were passenger cars (31.4%), sport utility vehicles (SUVs) (25.7%), and four-tire light trucks (pick ups) (25.7%).

Vehicle Configuration	Vehicles	Percent
Passenger car	11	31.4%
Four-tire light truck (pick-up)	9	25.7%
Sport utility vehicle	9	25.7%
Passenger van (seats < 9)	1	2.9%
Cargo/panel van	1	2.9%
Single-unit truck (2-axle/6-tire)	1	2.9%
Tractor/semi-trailer	1	2.9%
Motorcycle	1	2.9%
Unknown	1	2.9%
All	35	100%

More than half (62.9%) of the vehicles in the non-motorized fatal and serious injury crashes were moving straight, about 9% were turning left, and about 9% were stopped in traffic.

Vehicle Action	Vehicles	Percent
Movement essentially straight	22	62.9%
Turning left	3	8.6%
Stopped in traffic	3	8.6%
Legally Parked	2	5.7%
Not reported	2	5.7%
Turning right	1	2.9%
Changing lanes	1	2.9%
Leaving traffic lane	1	2.9%
All	35	100%

Most vehicles (80.0%) in the non-motorized fatal and serious injury crashes did not have any vehicle defects.

Vehicle Defect	Vehicles	Percent
None	28	80.0%
Unknown	4	11.4%
Other tire defect	1	2.9%
Not Reported	1	2.9%
Other	1	2.9%
All	35	100%

Major Causes

Most (71.4%) of the non-motorized fatal and serious injury crashes were the result of no improper action (28.6%), unknown cause (25.0%), or other causes (17.9%).

Major Cause	Crashes	Percent
Other: No improper action	8	28.6%
Unknown	7	25.0%
Other	5	17.9%
FTYROW: Other	1	3.6%
Operating vehicle in an reckless/erratic/care...	1	3.6%
Driver Distraction: Other electronic device ...	1	3.6%
Driver Distraction: Inattentive/lost in thou...	1	3.6%
Failed to yield to emergency vehicle	1	3.6%
FTYROW: To pedestrian	1	3.6%
Followed too close	1	3.6%
Made improper turn	1	3.6%
All	28	100%

Almost all (82.1%) of the non-motorized fatal and serious injury crashes were single vehicle, non-collisions. About 11% of the crashes were rear-end crashes.

Manner of Crash Collision	Crashes	Percent
Non-collision (single vehicle)	23	82.1%
Rear-end (front to rear)	3	10.7%
Sideswipe (same direction)	1	3.6%
Other	1	3.6%
All	28	100%

Almost all (89.3%) of the non-motorized fatal and serious injury crashes were not drug or alcohol related. About 7% were drug related and about 4% were alcohol related.

Drug/Alcohol Related	Crashes	Percent
None Indicated	25	89.3%
Drug	2	7.1%
Alcohol (Statutory)	1	3.6%
All	28	100%




Ever mindful of future generations,

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political boundaries**

to achieve social, economic, and
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A white silhouette of a city skyline is positioned at the bottom of the page, spanning the width of the text area.

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