



WISCONSIN  
UNIVERSITY OF WISCONSIN-MADISON

DATA VISUALIZATION PROJECT

# WISCONSIN CRASH DATA

Arya Bafna  
Rohith Gowda  
Janhavi Gosavi

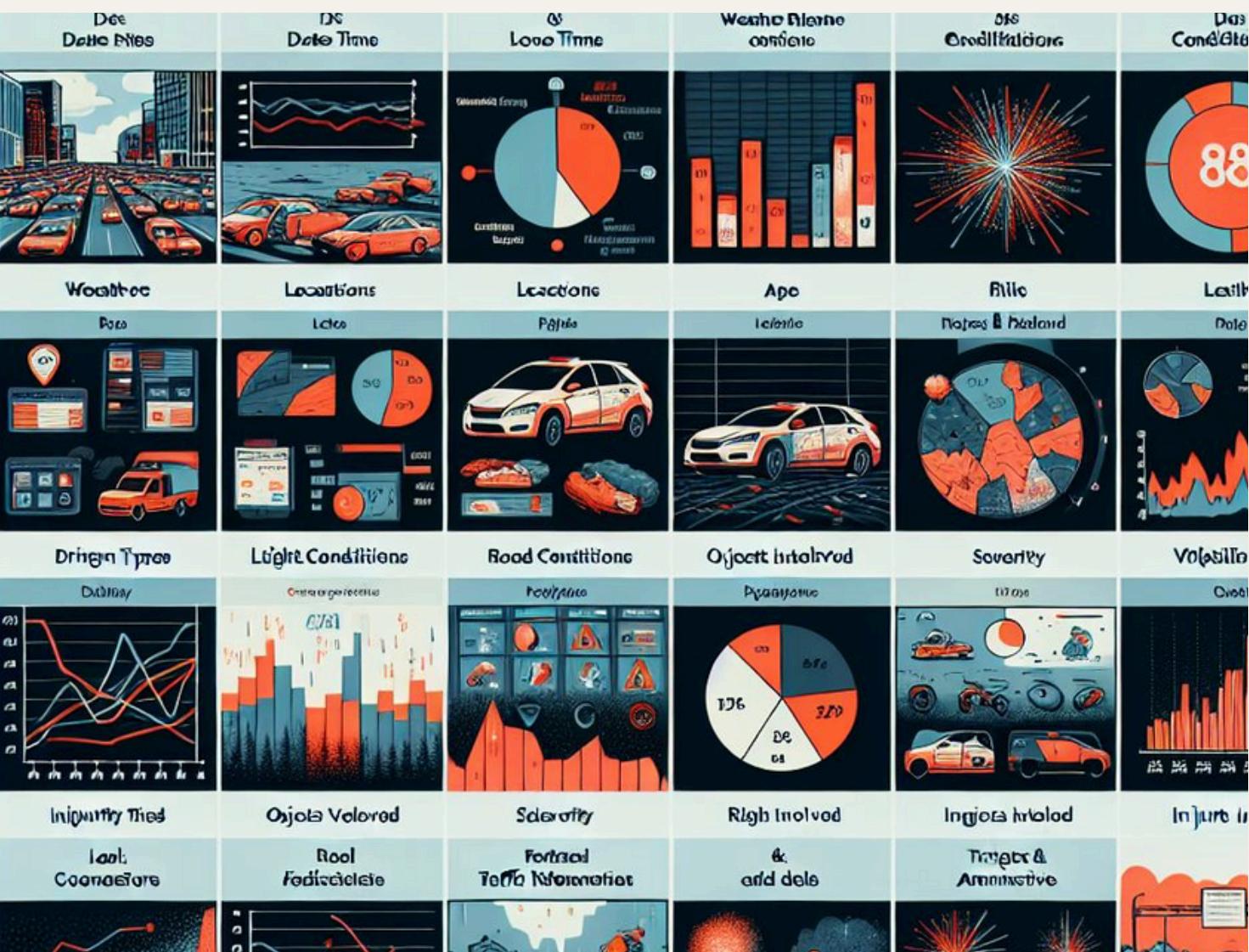


# A brief introduction to the data

Comprehensive traffic incident records from Wisconsin, aiding in identifying patterns, common causes, and high-risk areas.

It includes information on:

- Date
- Time
- Location
- Weather
- Road condition
- Type of collision
- Vehicles involved
- Drivers and passengers



DOCTNMBR	ACCDDATE	NTFYHOUR	REGION	COUNTY	MUNICIPALITY	MUNIUTYPE	ONHWYRP	ONHWYDIR	ONHWY	ONSTR	ATHWY	ATSTR	ATNMBR	INTDIR	INTDIS	ACCDTYPE	MNRCOLL	RLTNRDWY	ACCDLOC	HWYCLASS
1TL0474SGX	10/26/17	12	NC	ADAMS	ADAMS	C		13 N		13		VEGAST		S	25		REAR	ON	N	R STH
1TL0474SHG	2/18/18	9	NC	ADAMS	ADAMS	C		13 N		13		VEGAST		S	17		SSOP	ON	N	R STH
1TL08BLJ3G	9/24/22	17	NC	ADAMS	ADAMS	C		13 N			VEGAST	13		E	1	CURB	NO	ON	I	R CITY
1TL0474SGW	10/26/17	12	NC	ADAMS	ADAMS	C		13 N		13		W SHERMAN ST		S	3		REAR	ON	N	R STH
1TL08BLJ3F	8/9/22	17	NC	ADAMS	ADAMS	C		13 N		13		E SHERMAN ST			0		HEAD	ON	I	R STH
CQL0QN7D9	11/8/19	20	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E SHERMAN ST		N	5		REAR	ON	N	R STH
1TL08BLJ4G	6/6/23	9	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	W SHERMAN	636 N		4		REAR	ON	N	R STH
1TL04D2XVR	8/24/17	11	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	W SHERMAN ST		N	5		REAR	ON	N	R STH
1TL0474SJR	2/16/19	17	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E CAPELLA ST		W	0		REAR	ON	N	R STH
1TL05CPTJP	4/12/17	20	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E CAPELLA ST		N	3		REAR	ON	N	R STH
1TL08BLJ3X	12/9/22	18	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E CAPELLA ST		N	3		REAR	ON	N	R STH
1TL05BGSFF	8/11/18	7	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E RAILROAD ST		S	13		REAR	ON	N	R STH
1TL0474S JL	12/21/18	20	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E CAPELLA ST		N	11		SSS	ON	N	R STH
1TL0474SG0	5/21/17	12	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E RAILROAD ST		S	10		REAR	ON	N	R STH
CQL0R2KRG	8/14/21	8	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E RAILROAD ST		S	9		REAR	ON	N	R STH
CQL0QN7DB	12/18/19	13	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E RAILROAD ST		S	8		REAR	ON	N	R STH
1TL04D2XW7	12/31/20	8	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E RAILROAD ST		S	3		ANGL	ON	N	R STH
1TL0474SMM	10/22/21	15	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E RAILROAD ST			0		SSS	ON	I	R STH
1TL05CPTK9	8/14/19	14	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E RAILROAD ST			0		REAR	ON	I	R STH
1TL08BLJ3N	11/6/22	18	NC	ADAMS	ADAMS	C		13 N		13	S MAIN ST	E ANN ST		S	2		SSS	ON	N	R STH
1TL08BLJ52	1/25/24	16	NC	ADAMS	ADAMS	C		13 N		13		E ANN ST		S	2		ANGL	ON	I	R STH

ACCDSVR – Accident severity will list the worst level of the crash severity to life and property.

- FAT = Fatal accident
- INJ = Injury occurred
- PD = Property damage only

ACCDTYPE – Description of type of crash based on the first harmful event.

- ATTEN = Impact attenuator
- BIKE = Bicycle
- BRPAR = Bridge parapet
- BRPIER = Bridge/pier/abutment
- BRRAIL = Bridge rail
- CULVRT = Culvert
- CURB = Curb
- DEER = Deer
- DITCH = Ditch
- EMBKMT = Embankment
- FENCE = Fence
- FIRE = Fire / Explosion
- GR END = Guardrail end
- GR FAC = Guardrail face
- IMMER = Immersion
- JKNIF = Jackknife
- LTPOLE = Lum light support
- MAILBOX = Mailbox
- MED B = Median barrier
- MVIT\* = Vehicle in transit
- OBNFX = Object not fixed
- SIGN = Overhead sign post
- OTH FX = Other object fixed
- OTH NC = Other non-collision
- OT ANL = Other animal
- OT RDY = Veh trans other rdwy
- OT PST = Other post
- OVRTRN = Overturned vehicle
- PED = Pedestrian
- PKVEH = Parked vehicle
- TFSIGN = Traffic sign
- TF SIG = Traffic signal
- TRAIN = Train
- TREE = Tree
- UNKN = Unknown
- UT PL = Utility Pole

\*MVIT = Motor Vehicle in Transit involves moving vehicles. This field appears blank.

AGE[1,2] – The age of a driver, bicyclist or pedestrian at the time of the crash, generated from birthdate (age=0 if birthdate unknown).

- UNKN = UNKNOWN

MUNICIPALITY – The name of the municipality in which a crash occurred.

MUNIUTYPE – The code which describes the municipality type

- C = City
- T = Town
- V = Village

NTFYHOUR – The one hour range in which the enforcement agency was notified of the crash; listed in minutes.

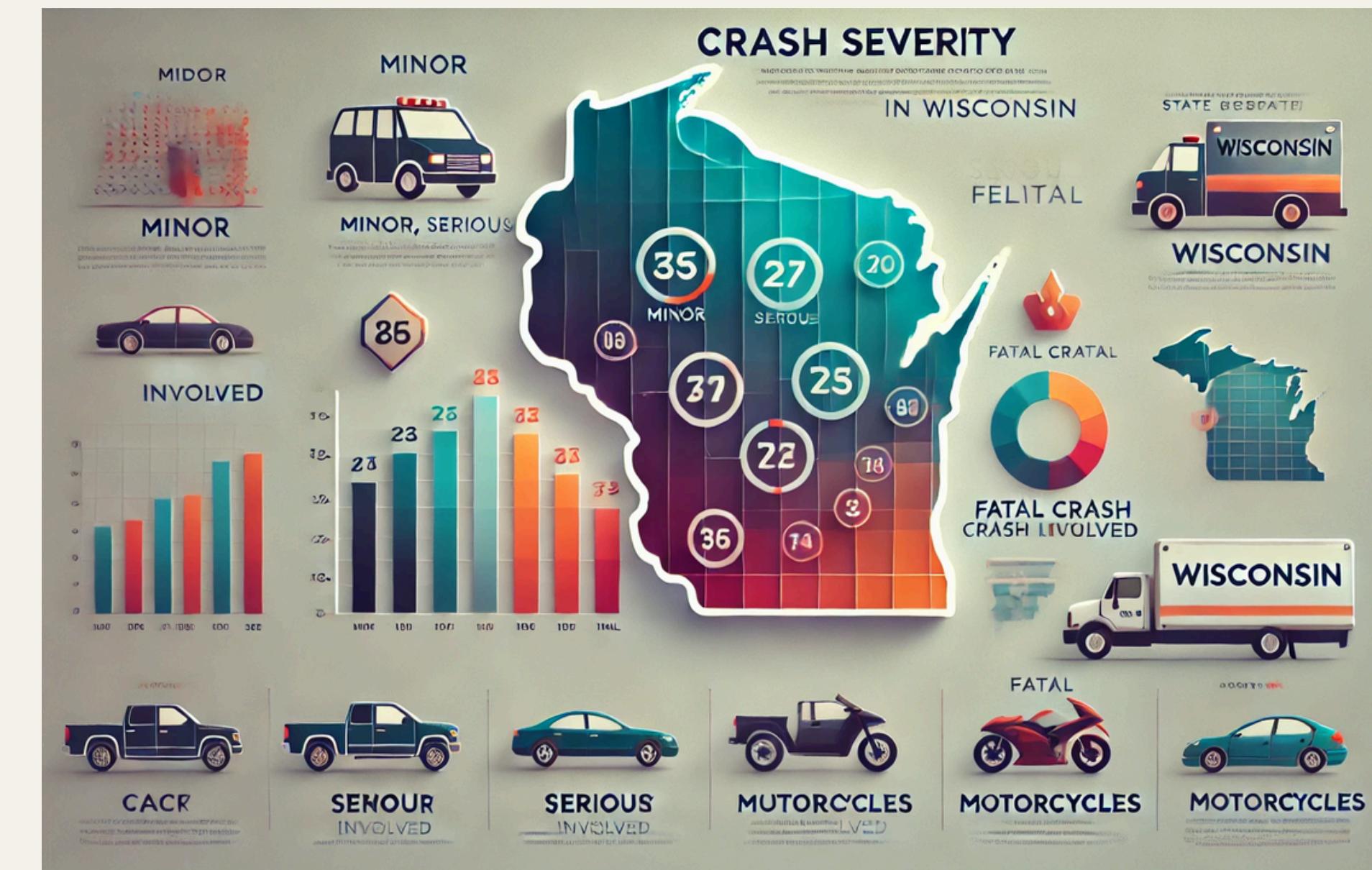
ONHWY – The name of the highway on which the crash took place.

ONHWYDIR – The primary direction of travel on the "on" highway, used in conjunction with RPNMBR and for the total reference point number for a State Trunk Numbered (STN) highway. If the highway is divided, side of the highway where the crash occurred will be listed. This will always be the cardinal direction unless the highway is divided.



# The main purpose/general questions of the project

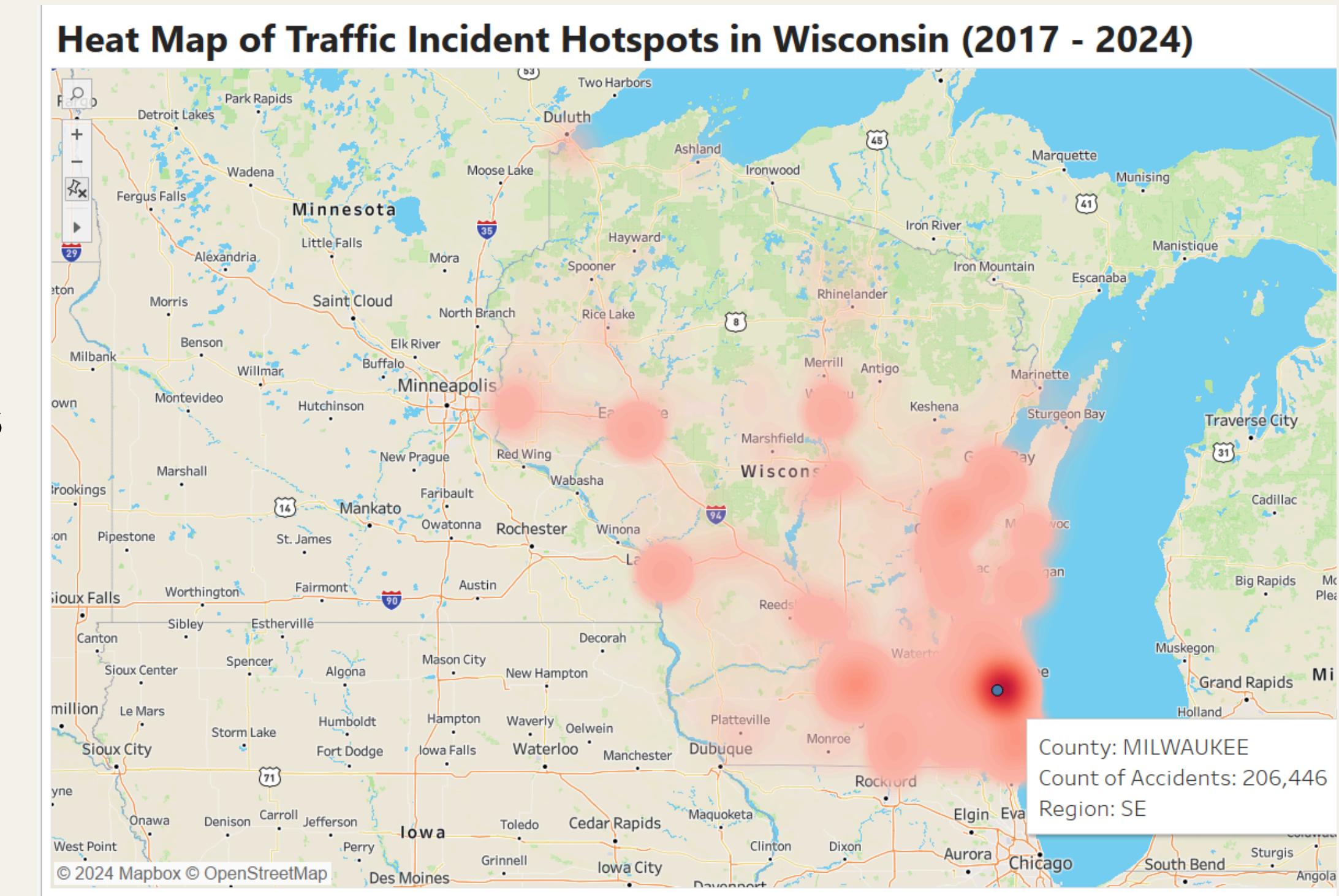
- How does weather and road condition affect the frequency and severity of the incidents?
  - Which locations are the hotspots for the traffic incidents?
  - What are the peak accident months for each region?





# Visualization 1

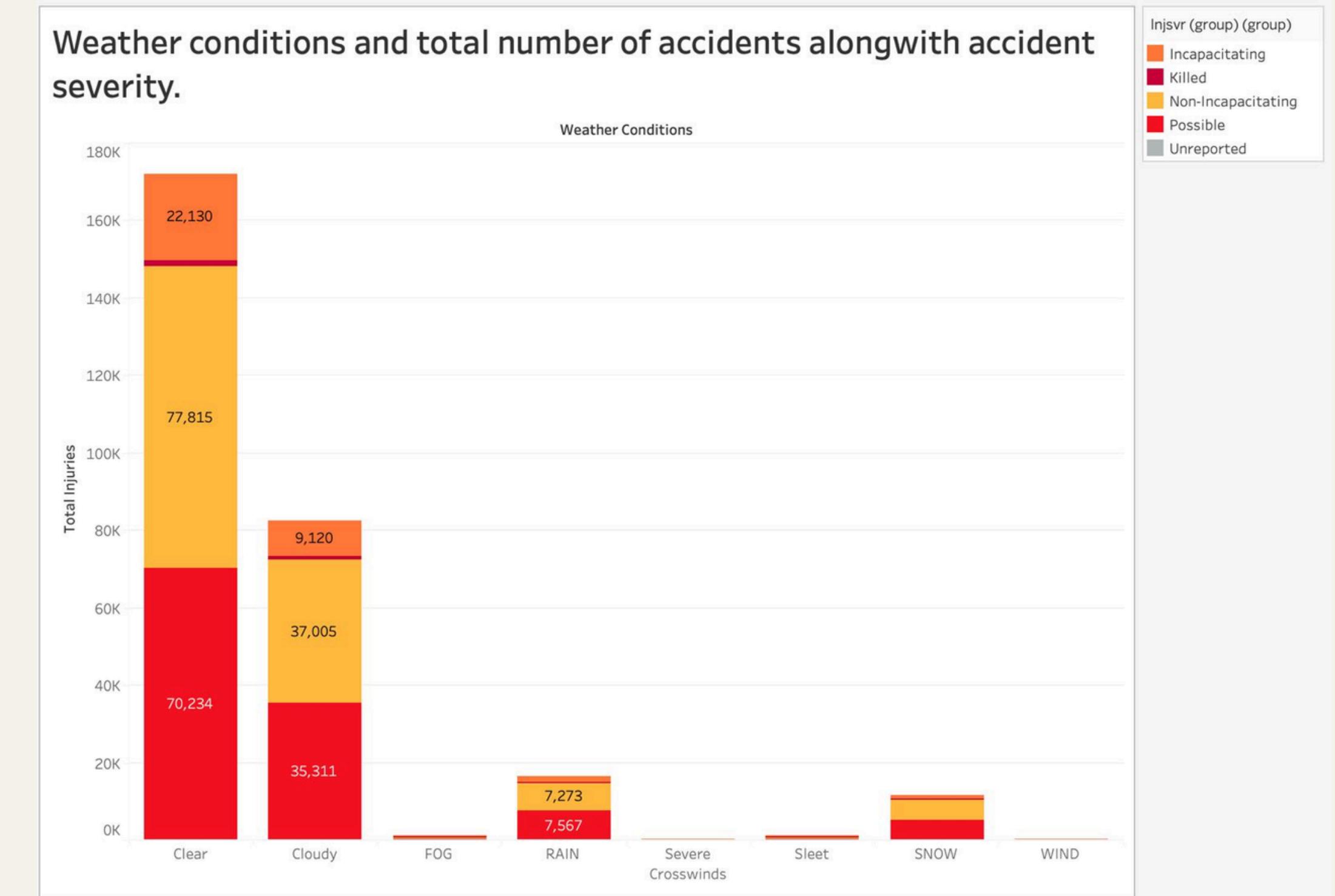
- Heat maps allow for quick identification of regions with the highest concentration of incidents, enabling efficient spotting of patterns and areas of concern





# Visualization 2

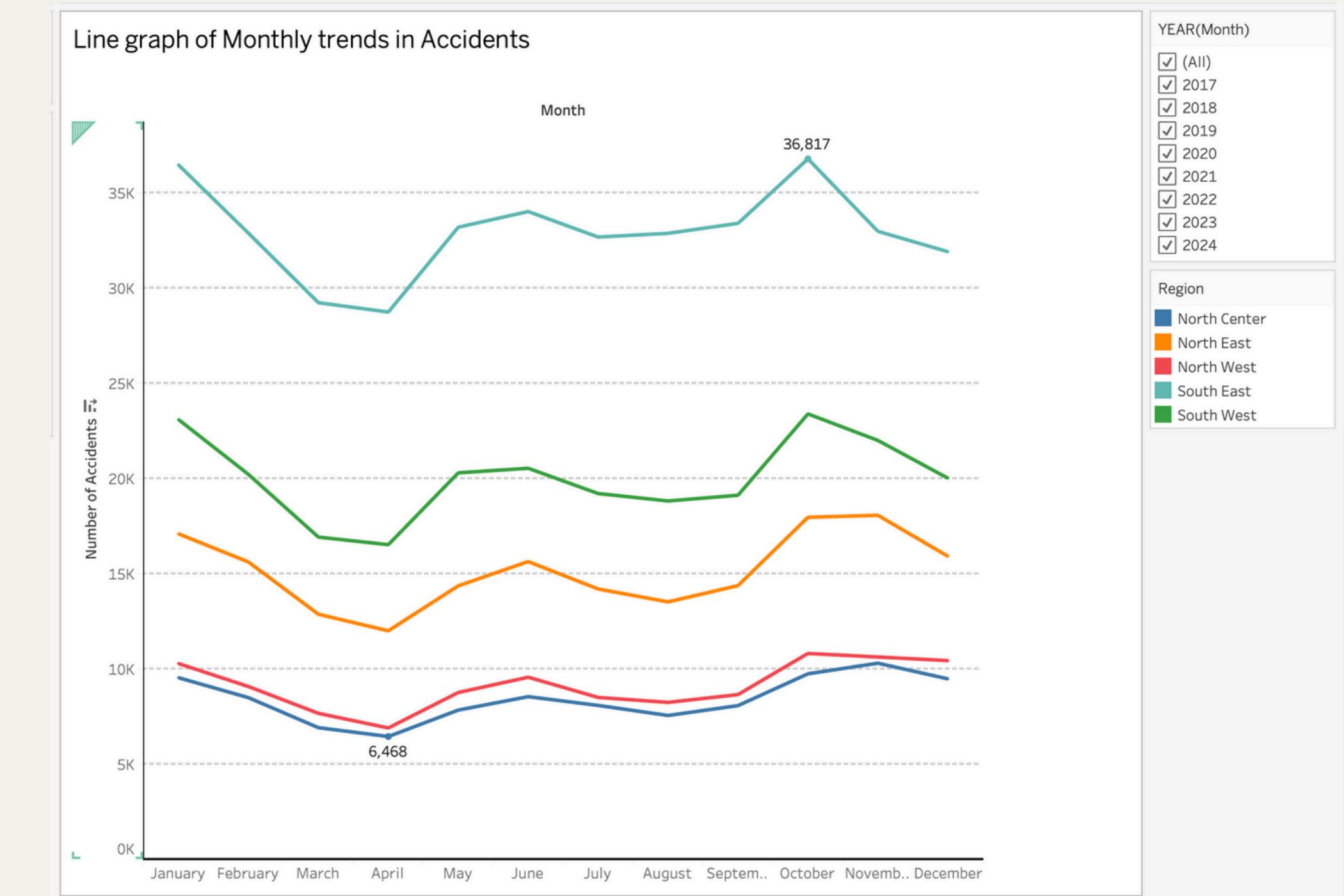
- Stack Bar allows for quick identification of the number of injuries and its severity with respect to the weather conditions of concern, enabling efficient analysis of patterns and weather conditions of concern.





# Visualization 3

- A line graph can show the number of accidents per month over the years. This can help identify seasonal trends and the effectiveness of safety measures over time.





# KEY TAKEAWAYS

- **Visualization 1**

**Weather Conditions and Accident Severity:** Most accidents occur in clear and cloudy weather, indicating that favorable conditions don't necessarily reduce accidents, with human factors likely playing a key role.

- **Visualization 2**

**Heat map of Traffic Incident Hotspots:** Urban areas like Milwaukee and Madison are the primary hotspots for traffic incidents, driven by high traffic density and complex road networks.

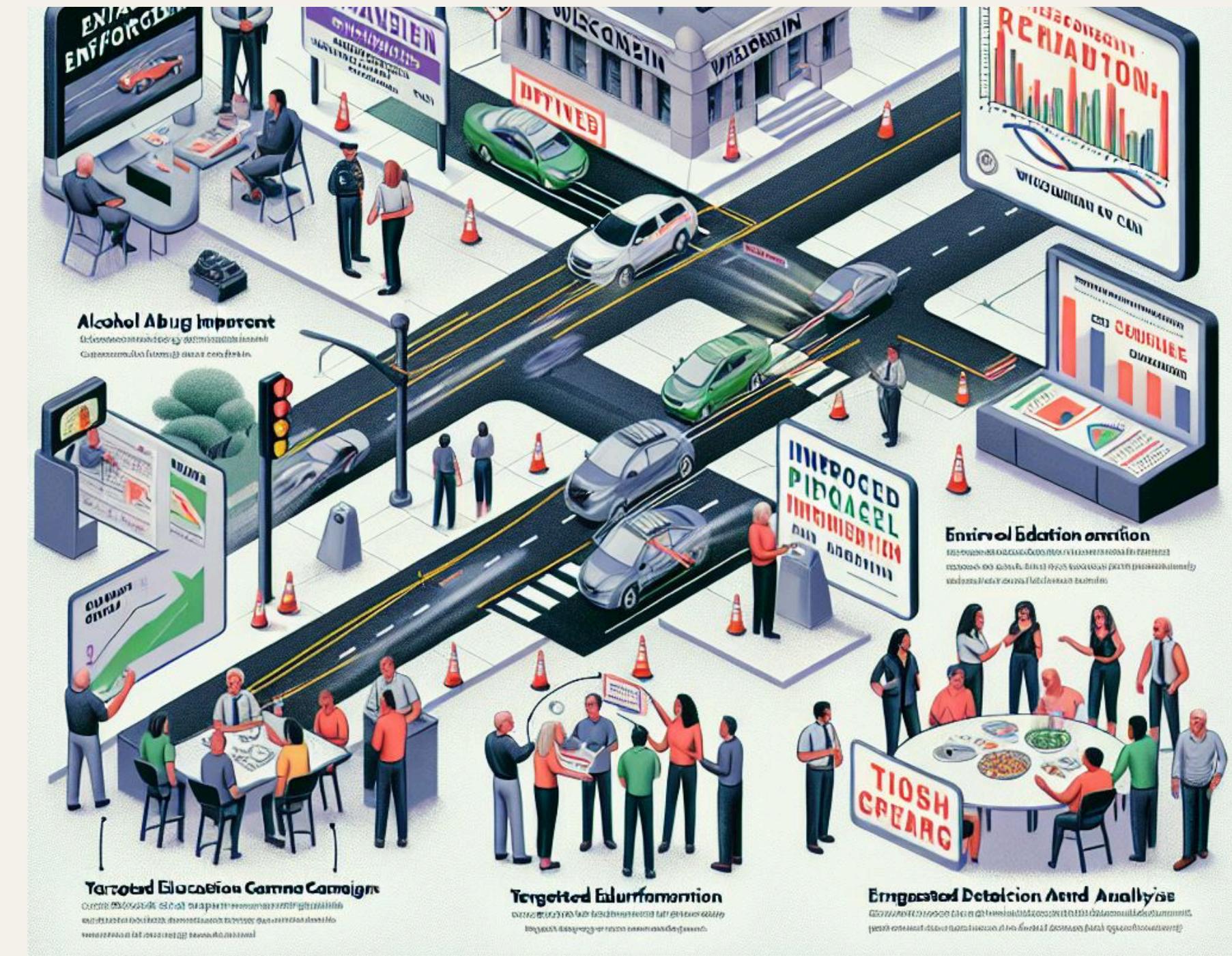
- **Visualization 3**

**Line Graph of Monthly trends in Accident:** The graph shows monthly accident trends, with the North Center peaking at 36,817 mid-year and early months having the lowest counts. The South East has moderate numbers, while North West and South West record the fewest, highlighting seasonal and regional variations.



# Possible Policy Interventions

- Enhanced Traffic Control
- Road Safety Campaigns
- Infrastructure Improvements
- Weather-Related Measures
- Driver Education Programs





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# Citation

Wisconsin Crash Data Request Form, Wisconsin Traffic Operations and Safety Laboratory.

Special Thanks to **Richard Lange**.

Thank you