

CRASH TRENDS & HIGH-CRASH LOCATIONS

Community Advisory Committee

August 31, 2015

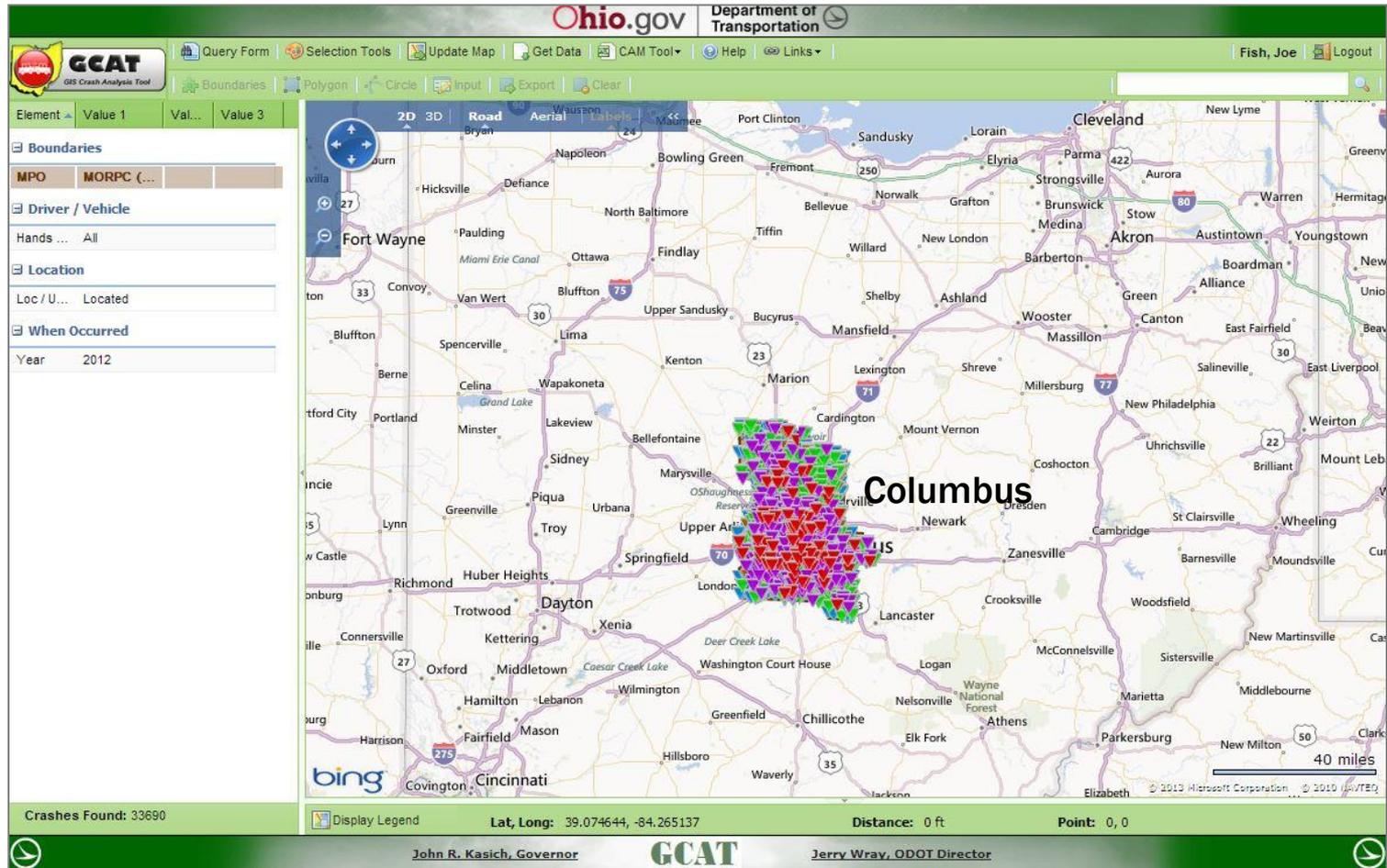


Mid-Ohio Regional
Planning Commission

Purpose of Presentation

- Information only
- No action necessary

Crash Data



Regional Trends (2010-2014)

- Total number of crashes was 1.5% lower in 2014 compared to 2010.
- Still 448 crashes over the last 5 years resulted in at least one fatality.

CRASH TRENDS BY YEAR, 2010 TO 2014

YEAR	CRASH STATISTICS				OCCUPANT STATISTICS					SAFETY METRICS		
	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes	Fatalities	Serious Injuries	Minor Injuries	No Injuries	Total People Involved	Injury Rate	MORPC Severity Index	Fatalities and Serious Injuries per 100,000 population
2010	88	10,029	28,214	38,331	92	994	13,535	83,102	97,723	26.4%	1.55	758
2011	98	9,073	26,905	36,076	104	886	12,250	78,450	91,690	25.4%	1.53	689
2012	97	9,082	27,020	36,199	106	886	12,036	79,876	92,904	25.4%	1.53	687
2013	81	8,771	25,548	34,400	90	882	11,674	75,215	87,861	25.7%	1.54	669
2014	84	9,337	28,334	37,755	91	803	12,369	82,030	95,293	25.0%	1.52	610
5-Year Total	448	46,292	136,021	182,761	483	4,451	61,864	398,673	465,471	25.6%	1.53	3,413
Annual Average	90	9,258	27,204	36,552	97	890	12,373	79,735	93,094	25.6%	1.53	683
Percent Change (2010 to 2014)	-4.5%	-6.9%	0.4%	-1.5%	-1.1%	-19.2%	-8.6%	-1.3%	-2.5%	-5.5%	-1.9%	-19.6%

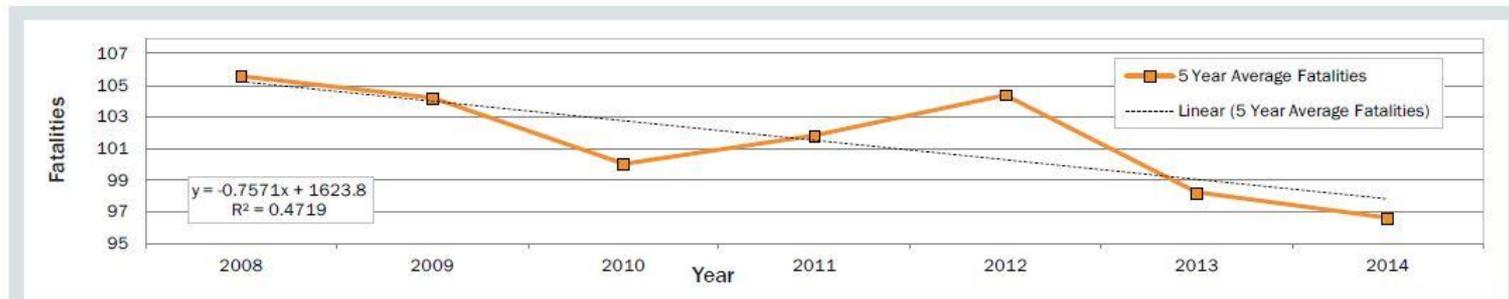
Notes

- Shaded orange cells indicate the year with the highest value for each respective column.
- The Severity Index is calculated by the following formula: $[(12 \times \#FatalCrashes) + (3 \times \#InjuryCrashes) + \#NoInjuryCrashes] / \#TotalCrashes$

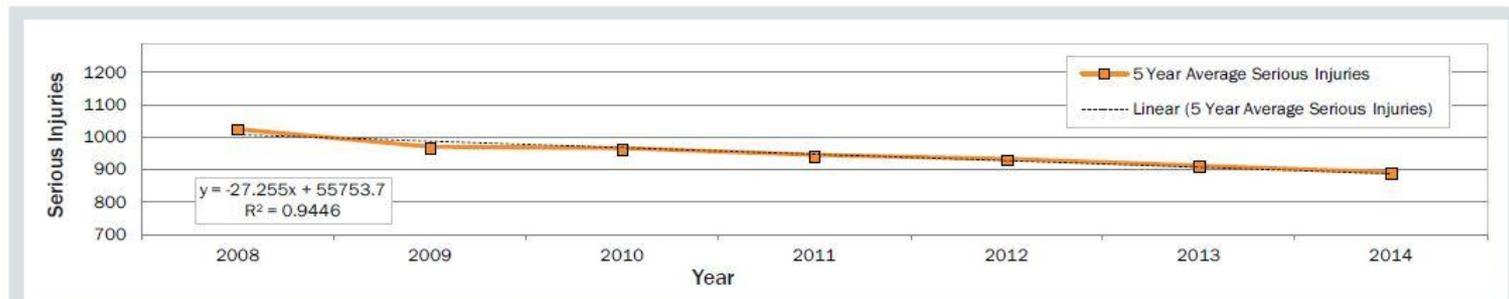
Regional Trends (2010-2014)

Although Vehicle Miles Traveled increased, fatalities and serious injuries decreased.

- Fatality decrease: 3.4% on average
- Serious injury decrease: 7.7% on average



5 YEAR AVERAGE FATALITIES



5 YEAR AVERAGE SERIOUS INJURIES

Crash Types

2010-2014 KEY FACTS:

- With 59,535 crashes, rear-end collisions were most common crash type.
Fortunately, only 1% rear-end crashes resulted in a fatality or serious injury.
- Fixed object, angle, and pedestrian crashes resulted in the largest number of fatal crashes.

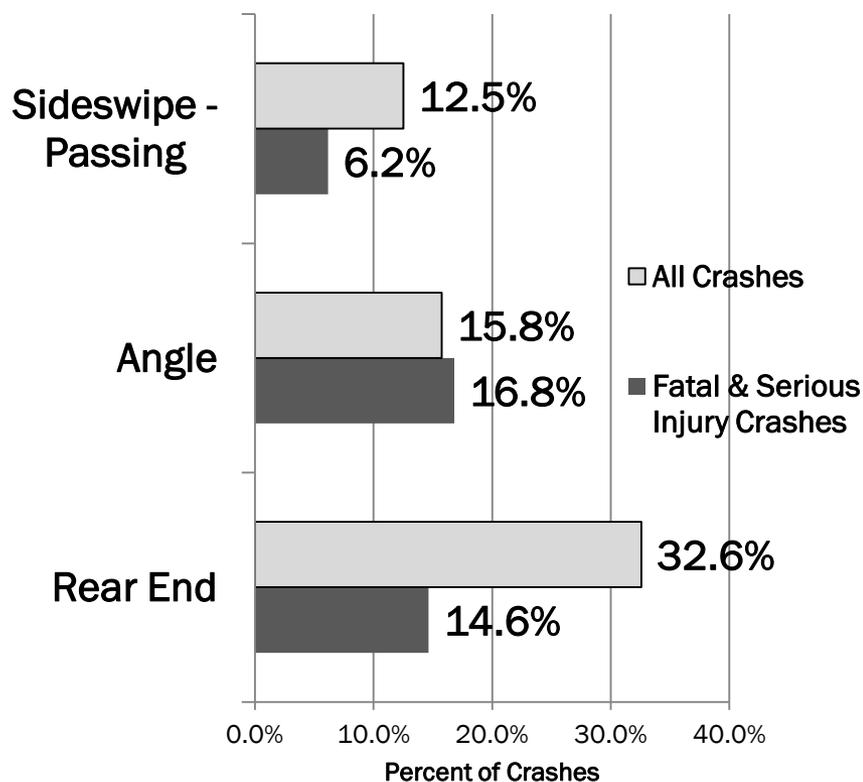
CRASH TYPE BY FREQUENCY AND SEVERITY

CRASH TYPE	TOTAL CRASHES	CRASH SEVERITY				FSI RATE
		Fatal	Serious Injury	Minor Injury	No Injury	
Rear End	59,535	39	569	15,190	43,737	1.0%
Angle	28,787	43	655	8,233	19,856	2.4%
Sideswipe - Passing	22,857	9	247	3,273	19,328	1.1%
Fixed Object	21,361	124	778	5,195	15,264	4.2%
Parked Vehicle	15,410	12	114	1,225	14,059	0.8%
Left Turn	9,607	25	323	3,364	5,895	3.6%
Backing	6,229	2	16	260	5,951	0.3%
Animal	4,687	-	16	279	4,392	0.3%
Sideswipe - Meeting	3,679	32	124	1,042	2,481	4.2%
Other Non-Collision	2,695	3	70	510	2,112	2.7%
Pedestrian	2,590	89	411	1,800	290	19.3%
Pedalcycles	1,360	12	136	965	247	10.9%
Head On	1,344	32	120	563	629	11.3%
Other Object	1,282	2	18	122	1,140	1.6%
Overturning	895	16	95	454	330	12.4%
Unknown	420	7	15	102	296	5.2%
Train	16	-	1	4	11	6.3%
Other Non-Vehicle	6	-	-	3	3	0.0%
Falling From Or In Vehicle	1	1	-	-	-	100.0%

Notes

- Shaded yellow cells indicate the crash type with the highest value for each respective column.
- FSI Rate refers to the percentage of crashes resulting in a fatality or serious injury

Crash Types



CRASH TYPE BY FREQUENCY AND SEVERITY

CRASH TYPE	TOTAL CRASHES	CRASH SEVERITY				FSI RATE
		Fatal	Serious Injury	Minor Injury	No Injury	
Rear End	59,535	39	569	15,190	43,737	1.0%
Angle	28,787	43	655	8,233	19,856	2.4%
Sideswipe - Passing	22,857	9	247	3,273	19,328	1.1%
Fixed Object	21,361	124	778	5,195	15,264	4.2%
Parked Vehicle	15,410	12	114	1,225	14,059	0.8%
Left Turn	9,607	25	323	3,364	5,895	3.6%
Backing	6,229	2	16	260	5,951	0.3%
Animal	4,687	-	16	279	4,392	0.3%
Sideswipe - Meeting	3,679	32	124	1,042	2,481	4.2%
Other Non-Collision	2,695	3	70	510	2,112	2.7%
Pedestrian	2,590	89	411	1,800	290	19.3%
Pedalcycles	1,360	12	136	965	247	10.9%
Head On	1,344	32	120	563	629	11.3%
Other Object	1,282	2	18	122	1,140	1.6%
Overturning	895	16	95	454	330	12.4%
Unknown	420	7	15	102	296	5.2%
Train	16	-	1	4	11	6.3%
Other Non-Vehicle	6	-	-	3	3	0.0%
Falling From Or In Vehicle	1	1	-	-	-	100.0%

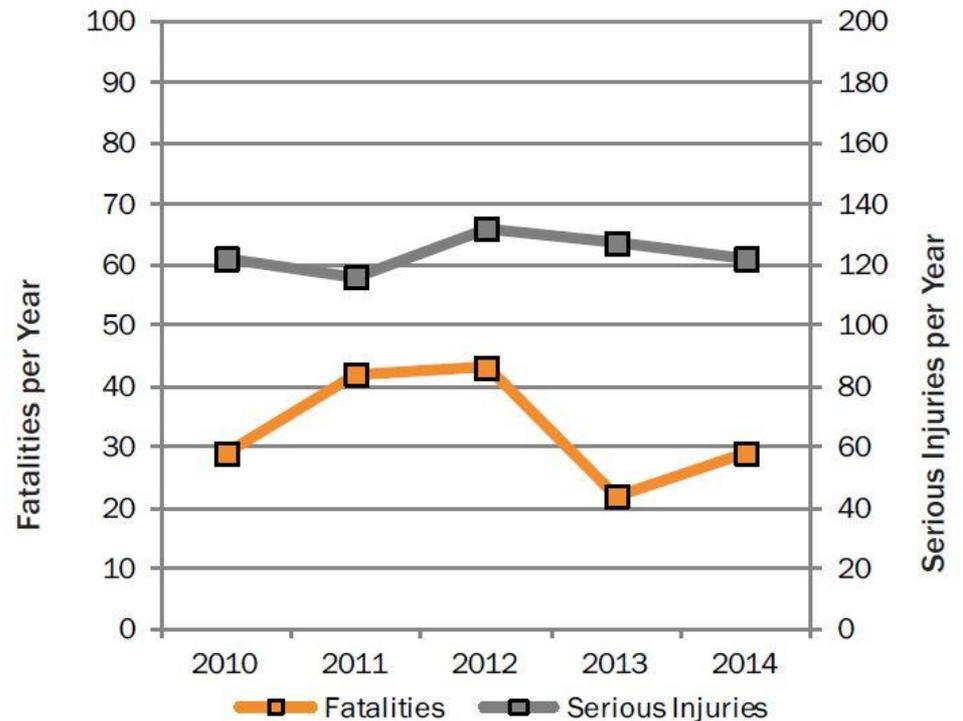
Notes

- Shaded yellow cells indicate the crash type with the highest value for each respective column.
- FSI Rate refers to the percentage of crashes resulting in a fatality or serious injury

Alcohol-related Fatalities & Serious Injuries

2010-2014 KEY FACTS:

- Alcohol was suspected in 35% of all fatal crashes and 14% of serious injury crashes.
- Alcohol-related fatalities and serious injuries did not decrease.

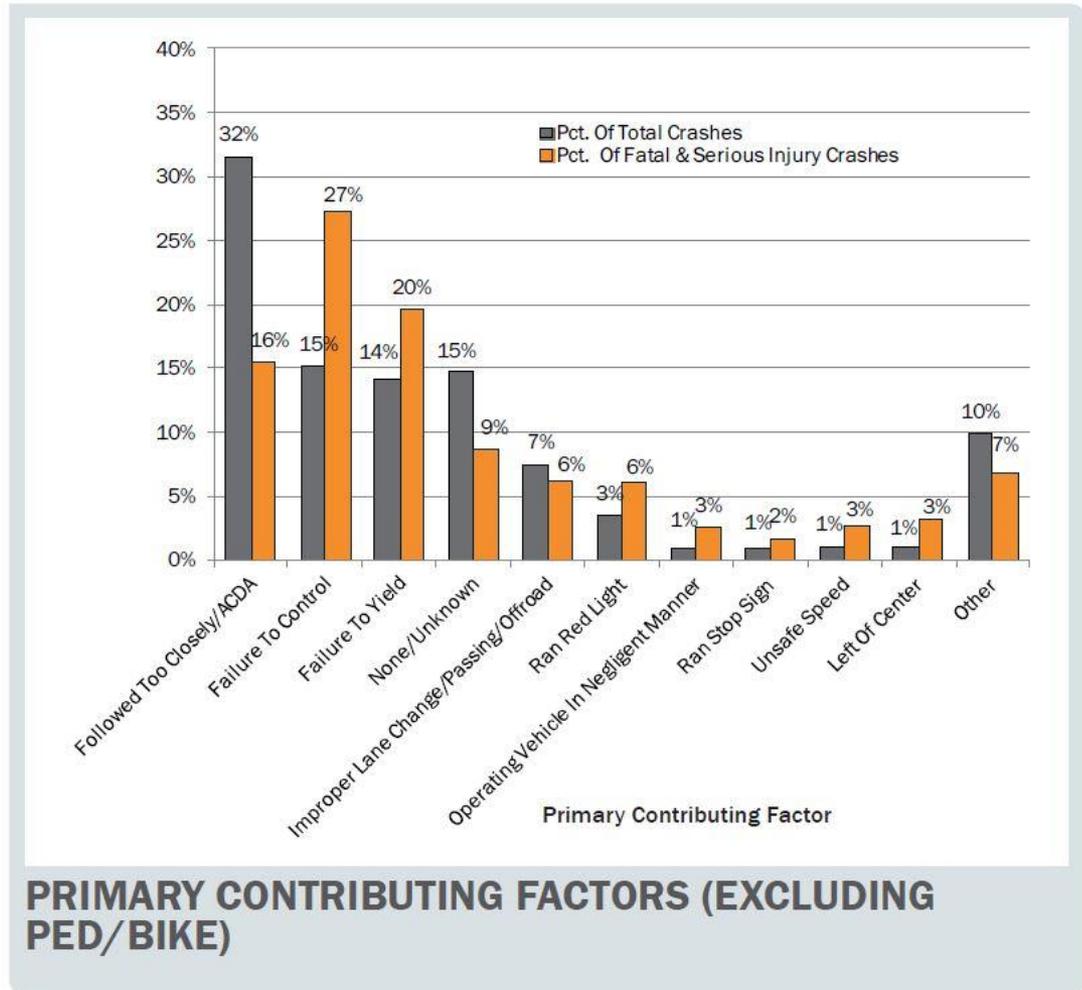


ALCOHOL-RELATED FATALITIES & SERIOUS INJURIES BY YEAR

Contributing Factors

2010-2014 KEY FACTS:

- *Following too closely* was the most common contributing factor (32%).
- *Failure to control* accounted for only 15% of all crashes, but 27% of fatal & serious injury crashes.



Crash Fact Sheets (2010-2014)

REGIONAL CRASH FACT SHEETS 2010 - 2014

JULY 2015

REGIONAL CRASH FACT SHEETS
2010 - 2014

CRASH TYPES

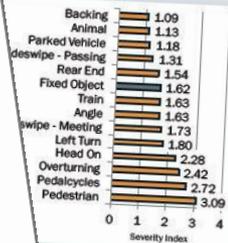
While every crash is unique, they are often categorized according to the circumstances of the crash. Categorizing crashes in this way is an important step, as each crash type indicates a particular problem that may be addressed through a targeted engineering, enforcement, or behavioral countermeasure.

KEY FACTS:

- From 2010 to 2014, there were 59,535 rear-end crashes in Central Ohio, making this the most common crash type. Fortunately, only one percent of rear-end crashes resulted in a fatality or serious injury.
- Although only half as many angle crashes as rear-end crashes occurred, they resulted in many more fatal and serious injury crashes.
- Fixed-object crashes represented the fourth most frequent crash type, but accounted for the largest share of fatal and serious injury crashes (22 percent).
- Close to 19 percent of reported pedestrian crashes and 11 percent of reported bicycle crashes resulted in a fatality or serious injury.

CRASH TYPE BY FREQUENCY AND SEVERITY

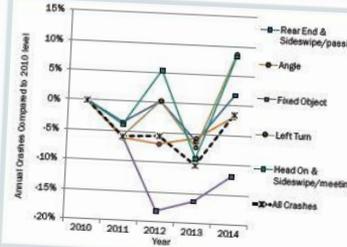
CRASH TYPE	TOTAL CRASHES	CRASH SEVERITY				FSI RATE
		Fatal	Serious Injury	Minor Injury	No Injury	
Rear End	59,535	39	569	15,100	43,737	1.0%
Angle	26,787	43	655	8,233	18,856	2.4%
Sideswipe - Passing	22,867	9	247	3,273	19,328	1.1%
Fixed Object	21,361	124	778	5,185	15,284	4.2%
Parked Vehicle	15,430	12	114	1,225	14,099	0.8%
Left Turn	9,607	25	323	3,384	5,895	3.6%
Backing	4,897	2	18	280	4,382	0.3%
Animal	4,897	2	18	280	4,382	0.3%
Sideswipe - Meeting	3,679	32	124	1,042	2,481	4.2%
Other Non-Collision	2,695	3	70	510	2,112	2.7%
Pedestrian	2,590	89	411	1,800	290	18.3%
Pedicycles	1,360	12	138	965	247	10.8%
Head On	1,344	32	120	563	629	11.3%
Other Object	1,282	2	18	122	1,140	1.6%
Overtaking	895	16	95	454	330	12.4%
Unknown	420	7	15	102	296	5.2%
Train	16	-	1	4	11	6.3%
Other Non-Vehicle	6	-	-	3	3	0.0%
Pulling Over Or In Vehicle	1	1	-	-	-	100.0%



INDEX FOR SELECT PES

It is calculated by the following formula:

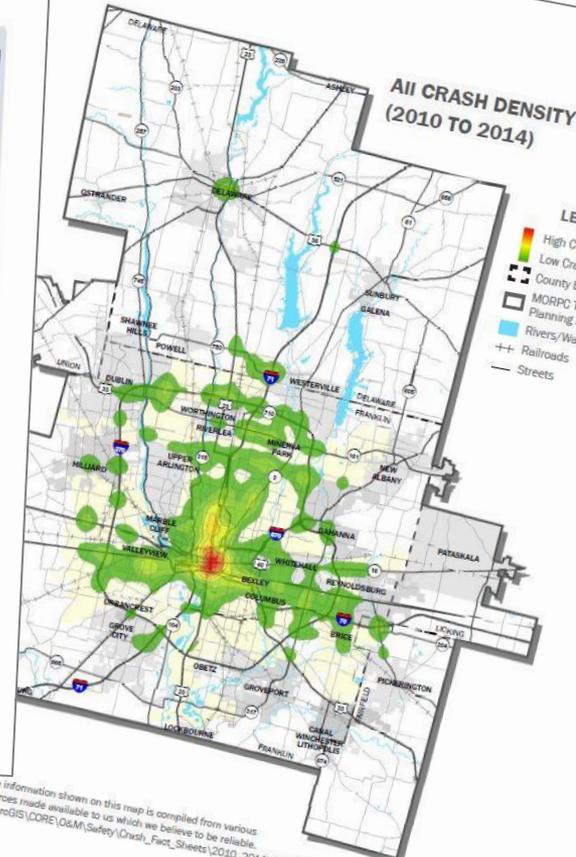
$$\frac{\# \text{Fatal} + \# \text{Serious Injury} + \# \text{Minor Injury}}{\# \text{TotalCrashes}}$$



SELECT CRASH TYPE TRENDS, 2010 - 2014

REGIONAL CRASH FACT SHEETS
2010 - 2014

All CRASH DENSITY (2010 TO 2014)

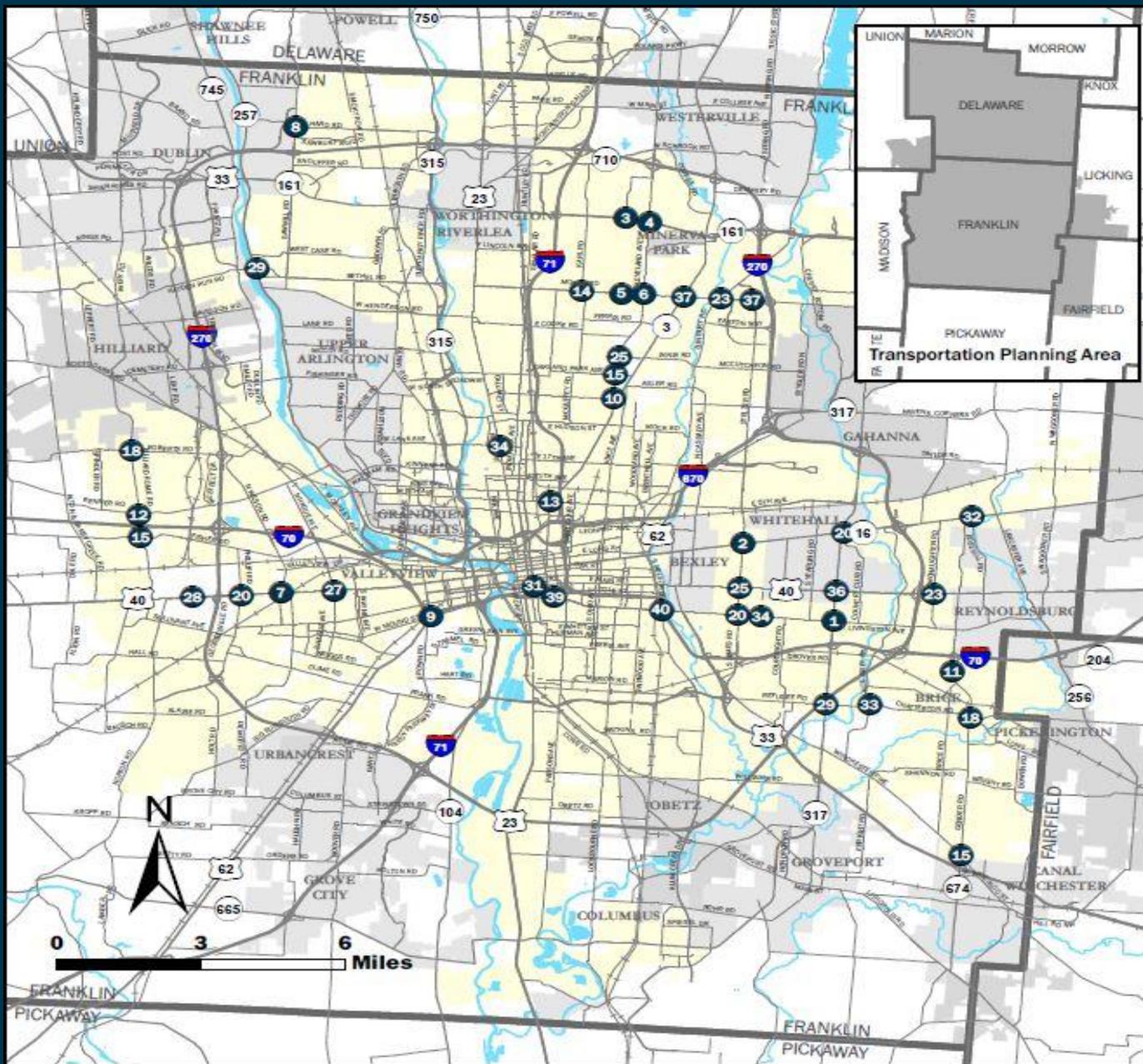


The information shown on this map is compiled from various sources made available to us which we believe to be reliable.
 N:\ArcGIS\CORE\QAM\Safety\Crash_Fact_Sheets\2010_2014\CPS_10_14.mxd

Regional Crash Data Analysis

- Regional Crash Fact Sheets
- Top 40 High Crash Locations
- Top 5 High Crash Intersections by Jurisdiction
- Top Pedestrian & Bicycle High Crash Clusters

Top 40 High Crash Locations 2012-2014



Top 40 High Crash Locations 2012-2014

RANK	LOCATION	JURISDICTION	TOTAL CRASHES (FREQ.)	SEVERITY (EPDO)	CRASH RATE (MEV RATE)	COMMENTS
1	E Livingston Ave @ Hamilton Rd / SR 317	Columbus	152	3.48	3.85	Right turn lanes completed in 2008. Columbus conducted safety study in 2014. Signal backplates on EB/WB approaches will be added fall 2015. Project for improvements is currently in design phase.
2	Broad St / SR 16 @ James Rd	Columbus	165	3.40	3.01	HSP study completed in 2007. Study updated 2010. Signal backplates on EB/WB will be added fall 2015.
3	Dublin Granville Rd / SR 161 @ Maple Canyon Dr	Columbus	152	2.96	3.78	SR 161 corridor timing changes made in 2011. ODOT approved safety funding for a corridor access study. Corridor study is currently underway.
4	Cleveland Ave @ Dublin Granville Rd / SR 161	Columbus	162	2.89	2.95	SR 161 corridor timing changes made in 2011. ODOT approved safety funding for a corridor access study. Corridor study is currently underway. Signal backplates on EB/WB will be added fall 2015.
5	Morse Rd @ Northtowne Blvd / Walford St	Columbus	115	3.29	2.62	Signal retiming in 2014.
6	Cleveland Ave @ Morse Rd	Columbus	250	2.57	4.11	Phase 2 of Morse Rd project completed in 2010, added turn lanes, signal rephasing. Crashes significantly reduced in 2010 and 2011. City continues to monitor this intersection and a safety study is underway.
7	Broad St / US 40 @ N Wilson Rd	ODOT	108	3.15	2.67	PID 93173: includes road widening, access control, signal coordination. Project is scheduled to begin construction in 2019. PID 13034: which establishes a new
8	Hard Rd @ Sawmill Rd	Columbus	114	3.56	2.10	ODOT is developing a project to add a third northbound thru lane from Billingsley to Hard Road (PID 95628). Intersection improvements to be sold with Phase A of Hard Road widening project in 2015.
9	S Central Ave / Harrisburg Pike @ W Mound St	Columbus	89	3.23	2.65	Safety study completed in 2014. Project for improvements is currently in design phase.
10	Cleveland Ave @ Weber Rd	Columbus	84	3.21	2.72	Minor signal timing improvements in 2014.
11	Brice Rd @ Scarborough Blvd / Tussing Rd	Columbus	129	2.66	2.16	LED heads 2009.
12	Hilliard Rome Rd @ Renner Rd	Columbus	150	2.31	2.76	Interchange project at I-270 and Hilliard Rome Rd. w/ Feder Rd/Fisher Rd in 2014.
13	Cleveland Ave / SR 3 @ E 5th Ave	Columbus	95	2.61	3.38	Project currently in design stage. Project has recieved OPWC funding.
14	Karl Rd @ Morse Rd	Columbus	128	2.52	2.52	Signal retiming in 2014.

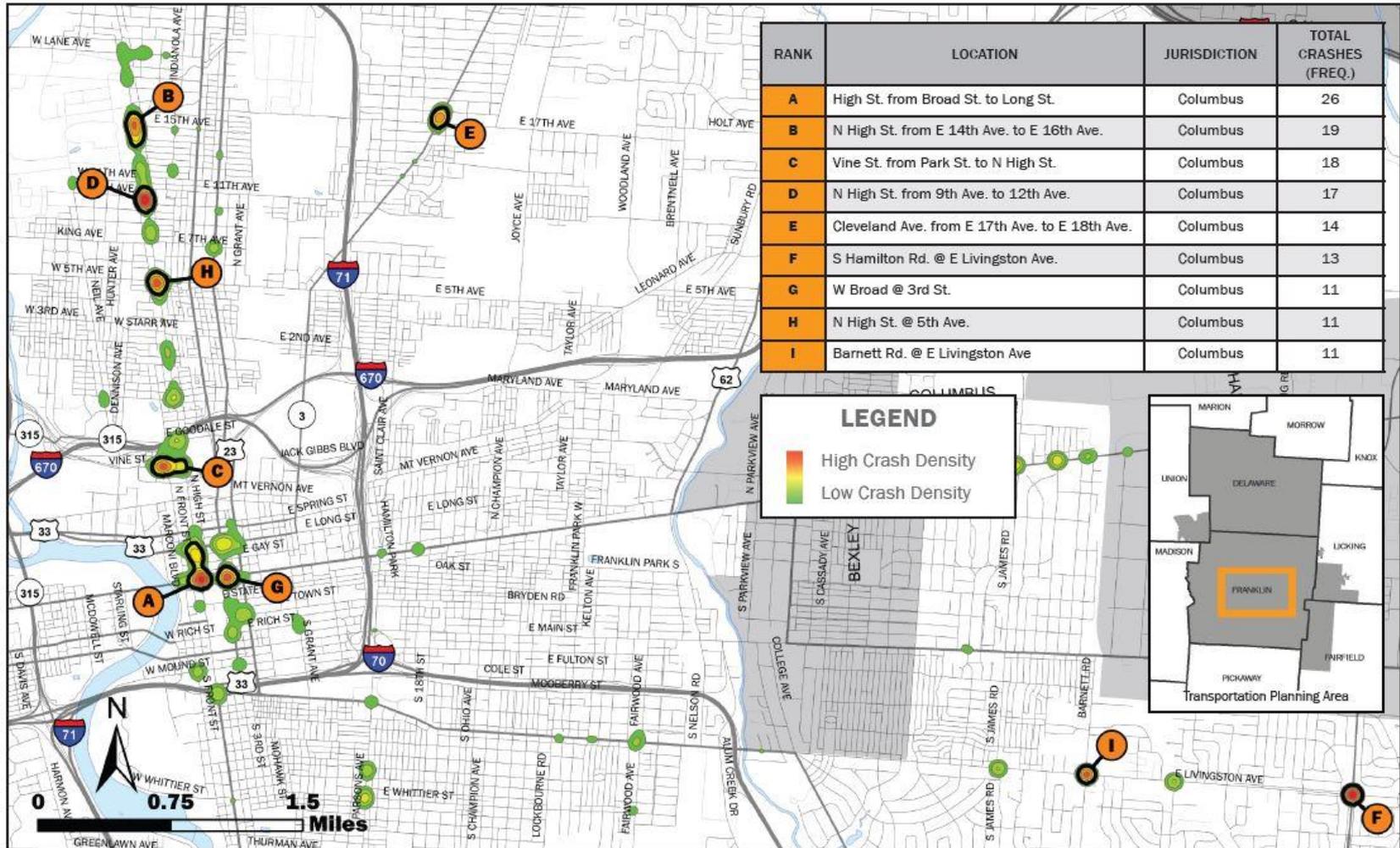


Top Intersections by Jurisdiction 2012-2014

Lists are available for Counties, Cities, and Villages

JURISDICTION	RANK	INTERSECTION	2012 TO 2014				CRASHES BY YEAR		
			Total Crashes	Fatal Crashes	Injury Crashes	EPDO	2012	2013	2014
BEXLEY	1	College Ave @ E Main St	36	0	10	2.13	13	7	16
	2	Pleasant Ridge Ave @ E Main St / US 40	23	0	5	1.79	7	8	8
	3	S Cassady Ave @ E Main St / US 40	19	0	5	2.19	10	3	6
	4	E Main St @ Sheridan Ave	18	0	2	1.65	6	7	5
	5	E Broad St / SR 16 @ N Cassady Ave	18	0	10	2.13	6	4	8
CANAL WINCHESTER	1	Winchester Blvd @ Gender Rd / SR 674	35	0	6	1.62	10	5	20
	2	Gender Rd / SR 674 @ W Waterloo St	19	0	3	1.57	6	5	8
	3	Gender Rd / SR 674 @ Groveport Pike	14	0	2	1.68	3	8	3
	4	Gender Rd @ W Walnut St	9	0	3	2.46	5	1	3
	5	Canal St @ Gender Rd / SR 674	7	0	2	2.04	0	2	5
COLUMBUS	1	Cleveland Ave @ Morse Rd	250	1	62	2.57	72	72	106
	2	Broad St / SR 16 @ James Rd	165	0	51	3.40	56	61	48
	3	Cleveland Ave @ Dublin Granville Rd / SR 161	162	0	45	2.89	50	54	58
	4	Gender Rd @ Refugee Rd	161	0	33	1.94	51	56	54
	5	E Livingston Ave @ Hamilton Rd / SR 317	152	1	42	3.48	53	48	51

Top Pedestrian High-Crash Clusters (2010-2014)



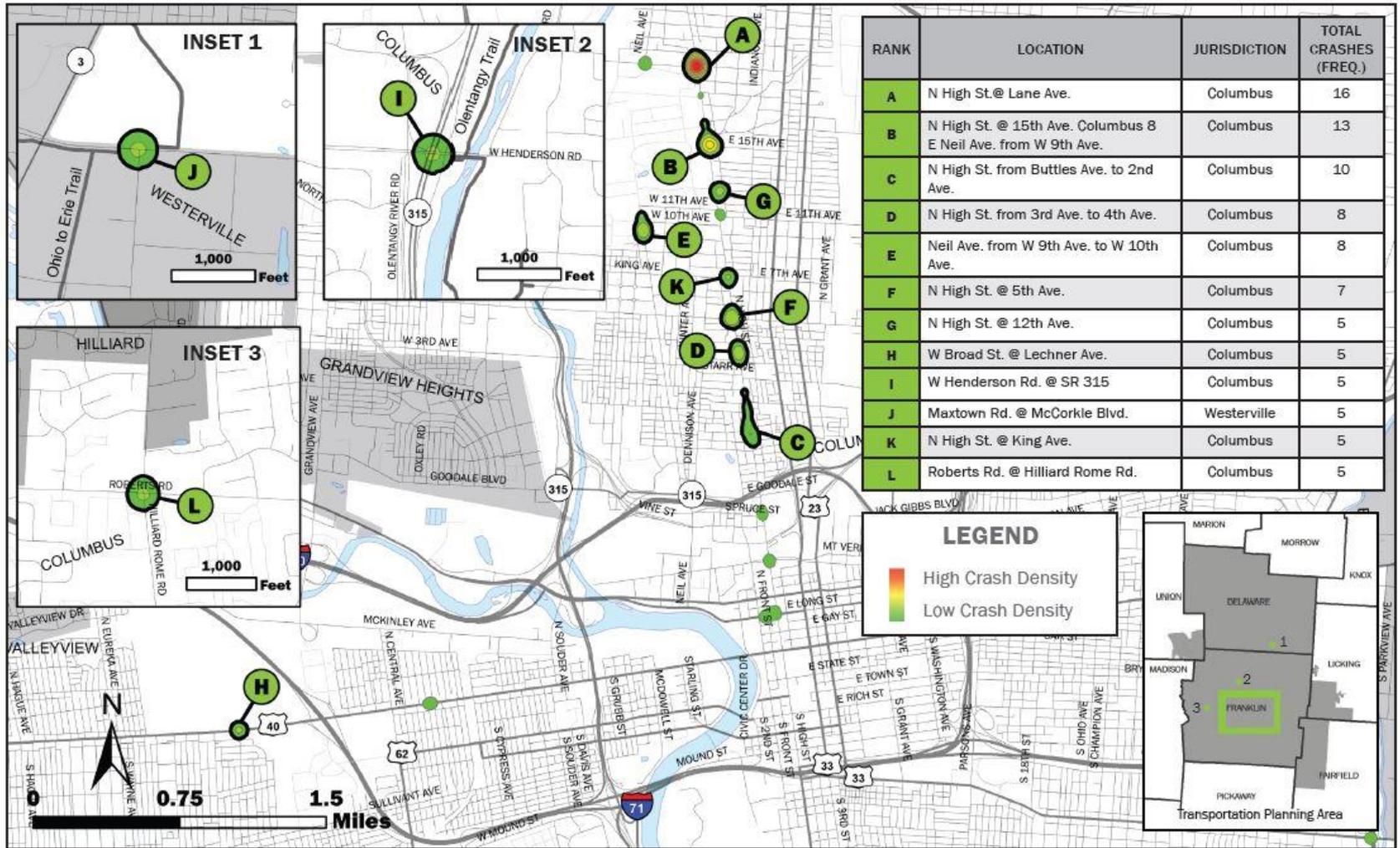
SOURCE: ODPS/ODOT/MORPC

The information shown on this map is compiled from various sources made available to us which we believe to be reliable.

N:\ArcGIS\CORE\O&M\Safety\High_Crash_Locations\2010_2014\PB\Bike_Ped_High_Crash_2010_2014.mxd

7/15/2015

Top Bicycle High-Crash Clusters (2010-2014)



SOURCE: ODPS/ODOT/MORPC

The information shown on this map is compiled from various sources made available to us which we believe to be reliable.

N:\ArcGIS\CORE\O&M\Safety\High_Crash_Locations\2010_2014\PB\Bike_Ped_High_Crash_2010_2014.mxd

7/15/2015



HOME Translate this page Spanish f t g+ v in Instagram Email

morpc Mid-Ohio Regional Planning Commission Member Login

ABOUT MORPC **OUR REGION** **SUSTAINABILITY** **HOUSING** **GOVERNMENT AFFAIRS** **Transportation**

MORPC Home > Transportation > Safety

Safety EXPAND MENU

MORPC collects and analyzes crash data to help plan for safer roads. Regional Crash Fact Sheets cover a variety of crash types and related information on fatal crashes, serious crashes, pedestrians, bicyclists, motorcyclists, truck drivers, public transit, rear-end and work zone crashes, and driver behavior trends.

On an annual basis MORPC analyzes **high-crash locations** >> within our Metropolitan Planning Area. This results in a Top 40 High-Crash Location list as well as a Top 10 Pedestrian and Bicycle Location and Corridor List.

News

www.morpc.org/transportation/safety



Mid-Ohio Regional
Planning Commission

JORDAN WHISLER

jwhisler@morpc.org

111 Liberty Street, Suite 100
Columbus, Ohio 43215

Phone: 614.233.4148

www.morpc.org



Equivalent Property Damage Only Index

$$\text{EPDO Index} = \frac{\sum_{i=0}^n N_{\text{Exp},i} \times \text{Severity Factor}_i}{N_{\text{Exp},\text{total}}}$$

- Where,
 - $N_{\text{obs},i}$ = Observed crash frequency by crash severity
 - Severity Factor_{*i*} = Weighting factor by crash severity
 - *i* = Each crash type
 - $N_{\text{obs},\text{total}}$ = Total observed crash frequency
- Severity types are weighted as follows:
 - Property damage only (PDO): **1.00**
 - Possible/reported injury: **4.63**
 - Visible injury: **6.84**
 - Fatal or Serious injury: **39.22**