Toronto Street Safety:
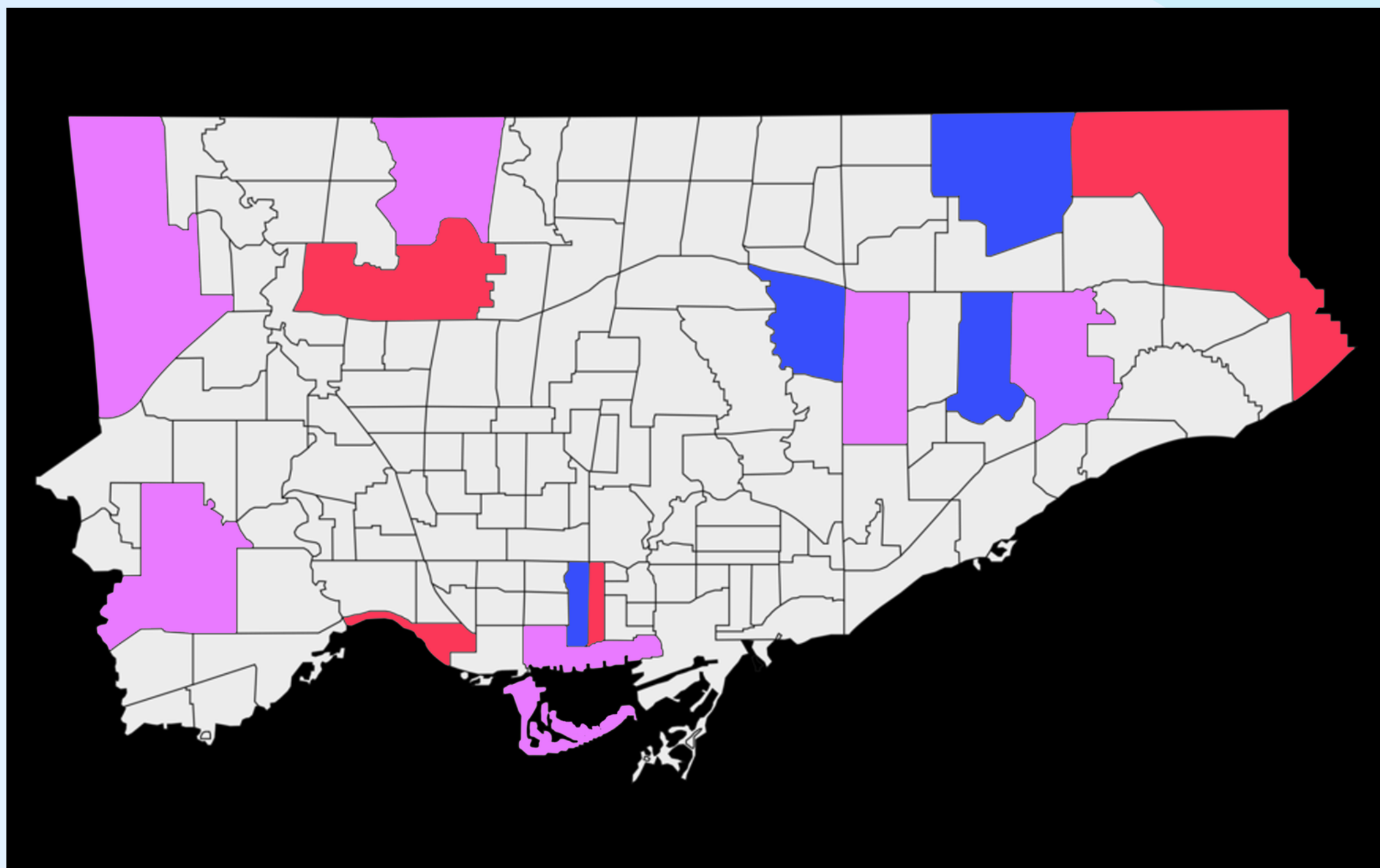## A Retrospective Analysis

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Neighbourhood	Fatalities	Neighbourhood	Accidents
West Humber-Clairville (1)	16	Waterfront Communities (77)	18034
Wexford/Maryvale (119)	13	Wexford/Maryvale (119)	12273
Islington-City Centre West (14)	13	West Humber-Clairville (1)	11925
Woburn (137)	11	Woburn (137)	10785
York University Heights (27)	11	Islington-City Centre West (14)	10624
Rouge (131)	11	Bay Street Corridor (76)	10424
South Parkdale (85)	11	York University Heights (27)	10236
Moss Park (73)	11	Banbury-Don Mills (42)	8804
Downsview-Roding-CFB (26)	10	Milliken (130)	8522
Waterfront Communities (77)	9	Bendale (127)	7559

Table 1: Top 10 neighbourhoods in Toronto by Car Accidents and Car Fatalities. Cells that are top 10 in both categories are in violet. Numbers beside neighbourhoods represent their ranking in each category (Above)

Figure 1: Most dangerous neighbourhoods in Toronto by Car Accidents and Car Fatalities. Neighbourhoods that rank in the top 10 in both are in violet. (Left)
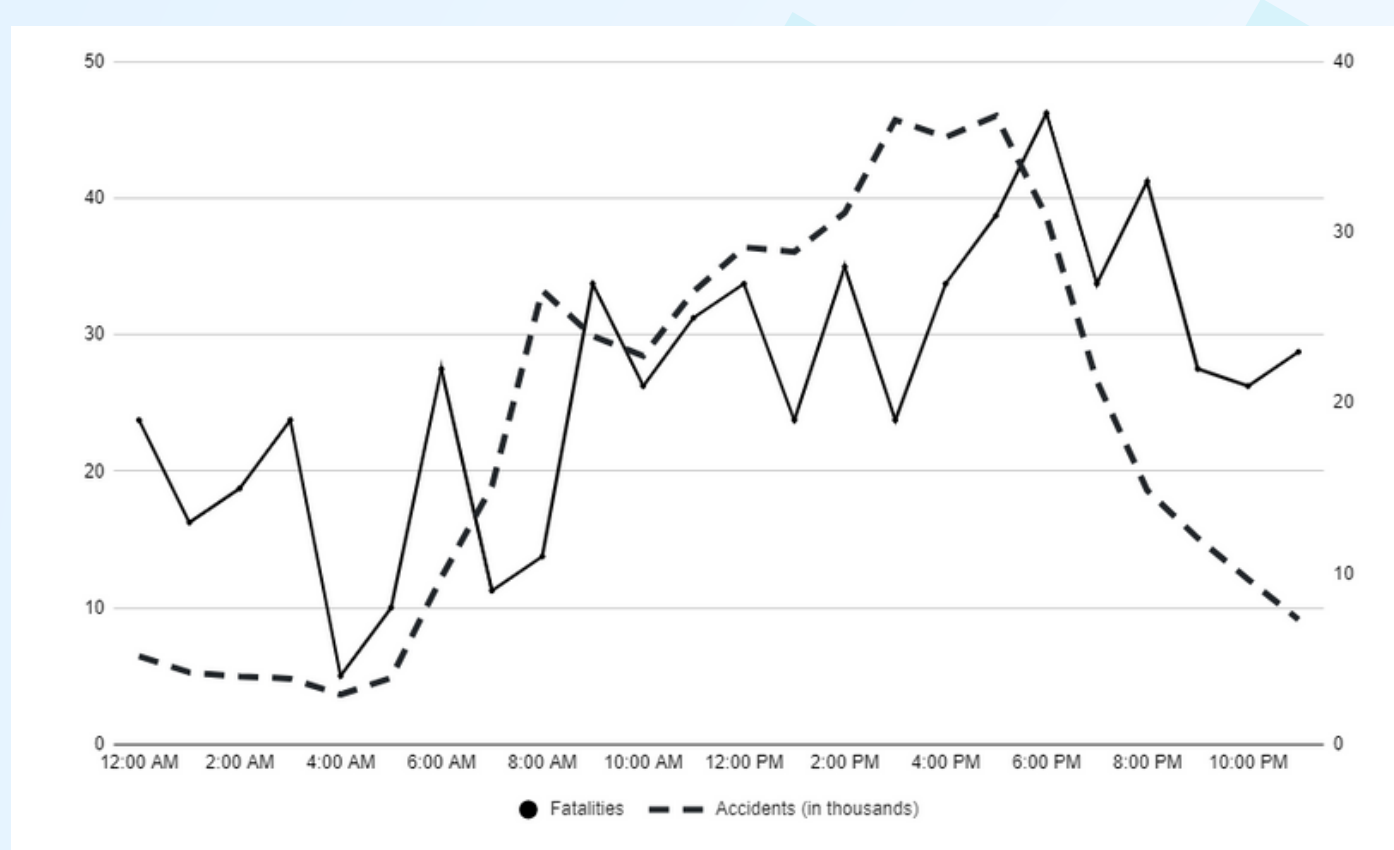

Hourly and Monthly Accident Analysis

Figure 2: Hourly trend of accidents and fatalities from 2010 to 2021. The solid line is the number of fatalities and the dotted line is the accidents.
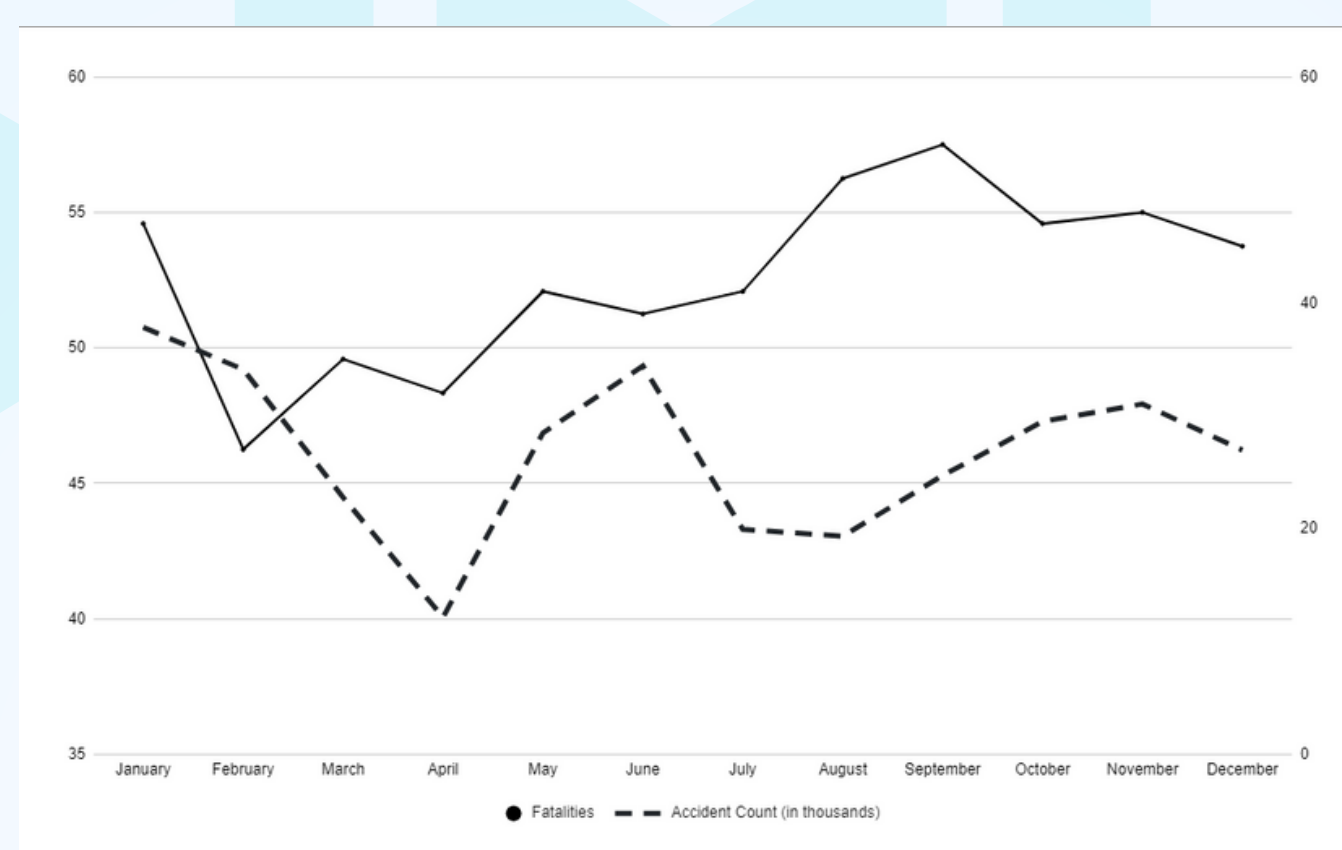

Figure 3: Monthly trend of accidents and fatalities from 2010 to 2021. The solid line is the number of fatalities and the dotted line is the accidents.

Key findings:
- Most accidents occur during the day, peaking during the morning and evening rush hours.
- August to January is the period with the highest fatalities
- Accidents tend to peak between May to June and January to February

This corroborates with our correlation analysis showing a small correlation between daily accidents and weather conditions (precipitation, snowfall and snow on the ground).

In other words,

Bad road conditions caused by inclement weather has posed no significant challenges to Toronto motorists.
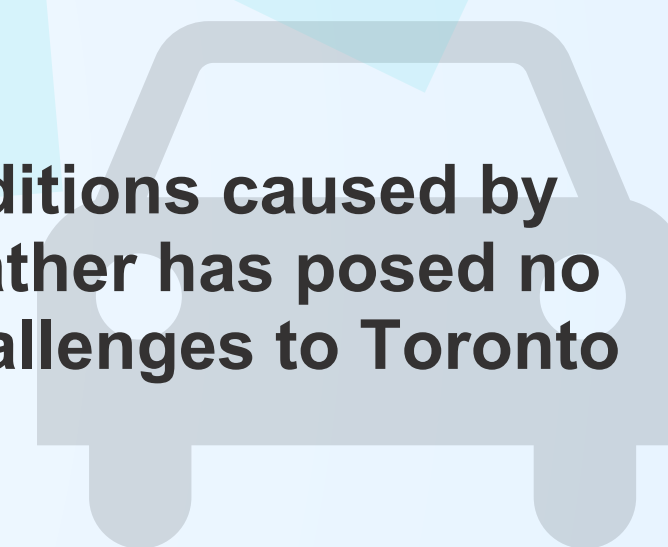
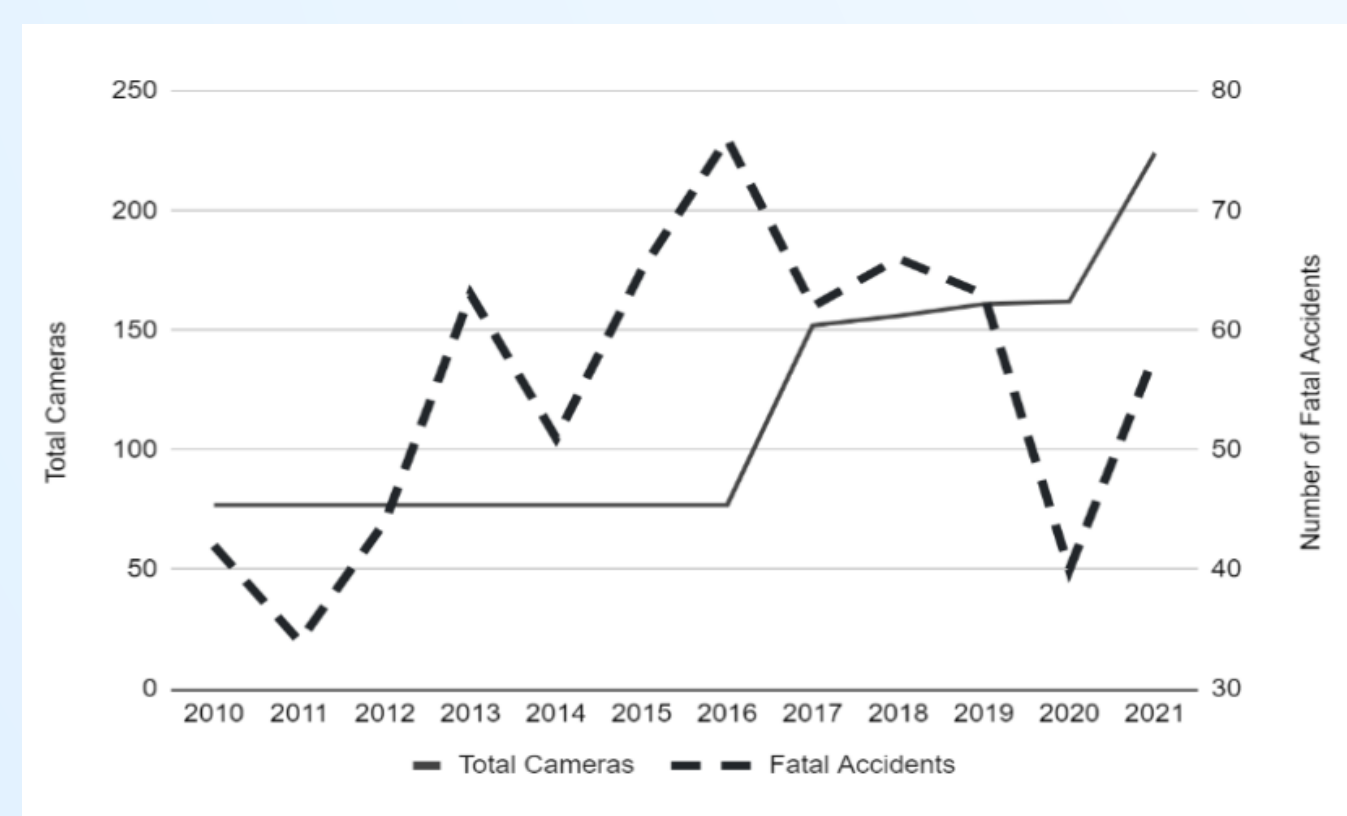## Automated Speed Enforcement and Accident Analysis

Figure 4: Trends in number of automated speed enforcement cameras and fatal motor vehicle accidents
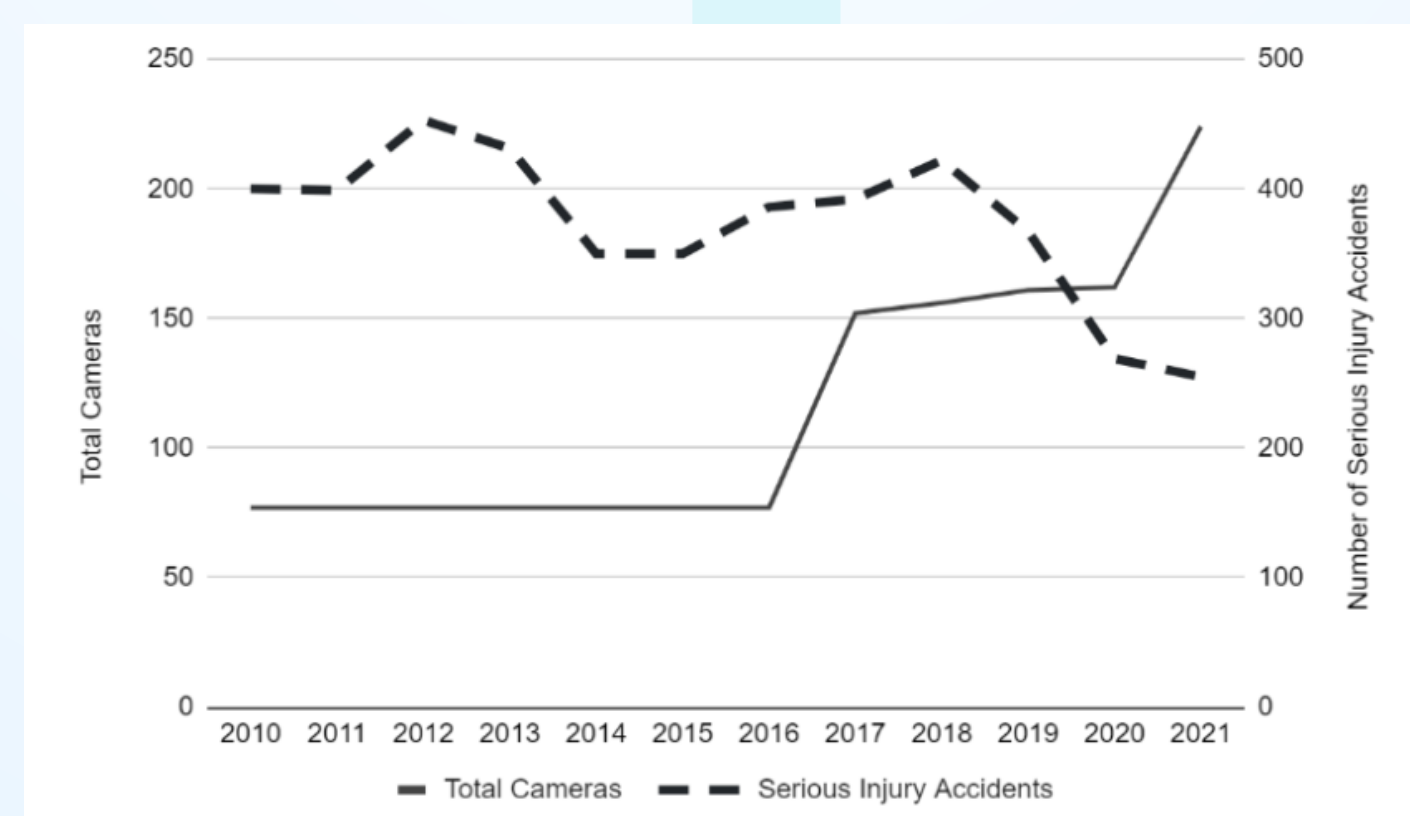

Figure 5: Trends in number of automated speed enforcement cameras and motor vehicle accidents

Key findings:
- Speed cameras increased over the years, subsequently fatal and non-fatal accidents also declined during this period.
- Significant negative correlation between number of cameras and number of accidents.

Automated speeding cameras have been effective so far at making Toronto streets safer.

Policy Recommendations

Given our meta analysis of current solutions other municipal and local governments have employed to address the issues of transportation safety like Vision Zero Policy framworks, in conjunction with our positive findings regarding **Automated Speed Enforcement** (ASE) devices our team has several recommendations:

- increased use of ASE devices with the paramount goal of road safety
- improvment of traffic infrastructure in alignment with a Vision Zero paradigm which recentres the responsibility of road safety to institutions and structures
- Expansion of public transportation systems within the city to adress efficiency and road safety

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References

Toronto Police; KSI Toronto (https://data.torontopolice.on.ca/datasets/TorontoPS::ksit)
Government of Canada; Climate Historical Data (https://climate.weather.gc.ca/historical_data/search_historic_data_e.html)
City of Toronto; Automated Speed Enforcement Charges (https://open.toronto.ca/dataset/automated-speed-enforcement-ase-charges/)