

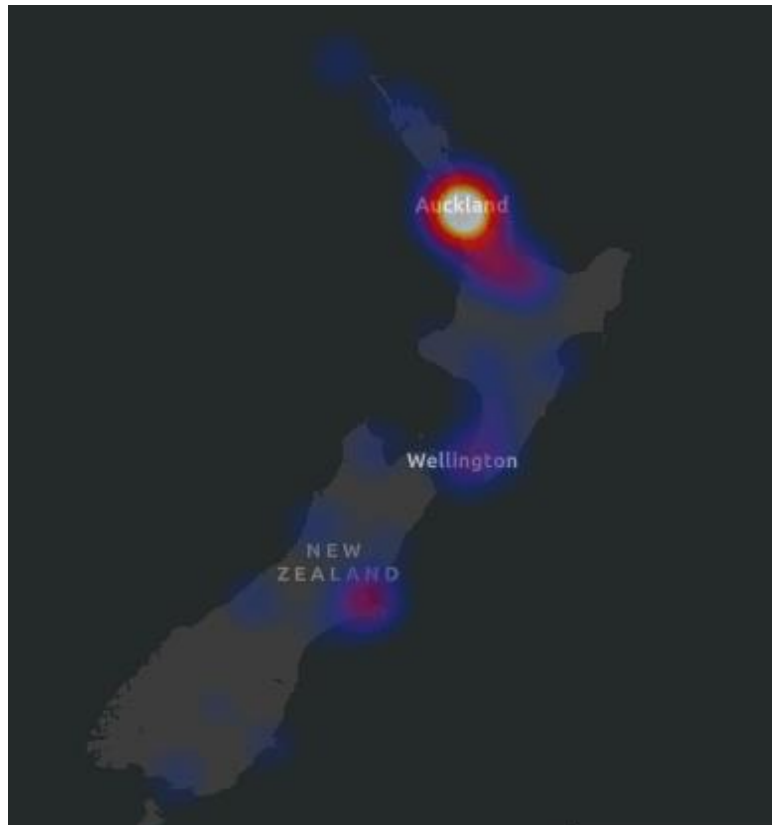
New Zealand traffic crash analysis (2000 – 2018)

This report is written by **Haoran Zeng** for personal practice purpose, data source from NZ transport agency (Crash Analysis System <https://www.nzta.govt.nz/safety/safety-resources/crash-analysis-system>). This report mainly focus on traffic crashes occurred in Auckland region analysed by using different approaches.

Nationalwise Crash Analysis

The graph below shows number of crashes occurred nationalwise from 2000-2018. There are **674321** crashes in total. **242191** crashes occurred in Auckland region, **70101** occurred in Waikato,

68352 occurred in Canterbury.



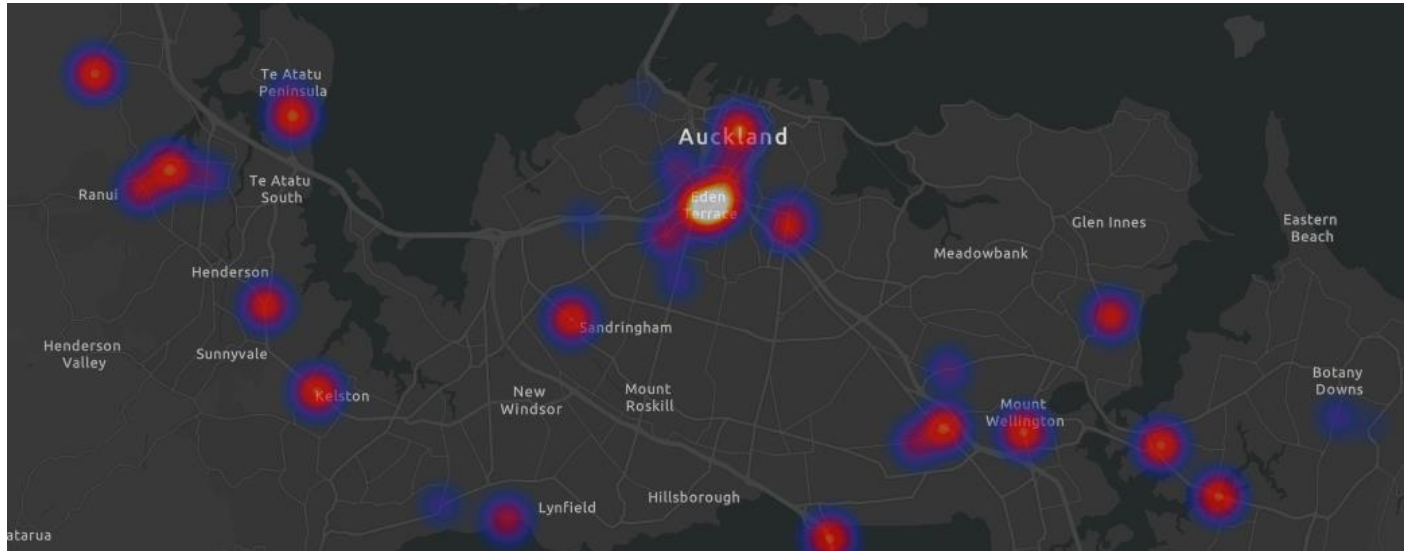
The table below shows the crashes which people got injured or lost their lives occurred in different region. There are 62673 minor injuries, 9841 serious injuries and fatal injuries occurred in Auckland region which indicates **1.53%** fatal injury rate. However there are over 1300 fatal injuries in Waikato makes **4.4%** fatal injury rate.

regionDesc	minorInjur	seriousInj	fatalCount
Auckland	62673	9841	1126
Canterbury	24947	5958	811
Waikato	24166	5923	1386
Wellington	17251	3516	371
Otago	15548	3854	321
Manawatu/Wanganui	12060	3149	613
Bay of Plenty	10917	2874	585
Northland	9113	2456	518
Hawkes Bay	8245	2064	355
Southland	7460	1866	209
Nelson/Marlborough	6215	1605	229
Taranaki	5507	1227	221
Gisborne	2286	564	95
West Coast	2235	707	151
Total	208623	45604	6991

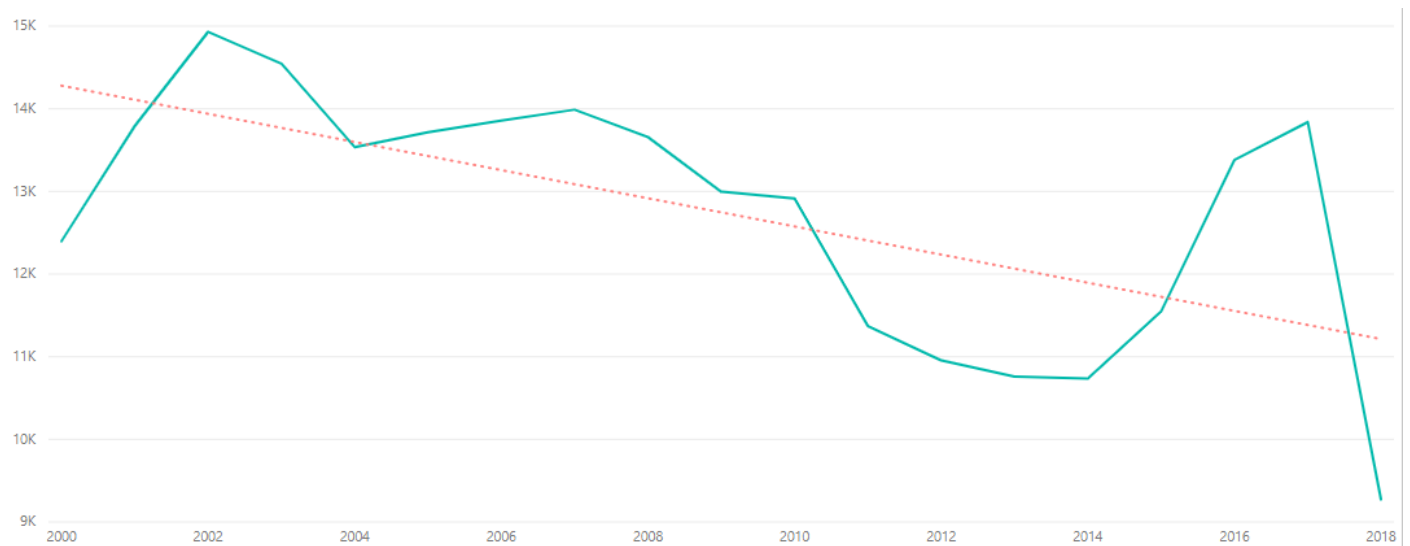
Auckland Region Crash Analysis

If we look at the Auckland region (North Shore not included), we can clearly see most of the crashes happened at Eden Terrace area, crashes also happen frequently at other different main roads.

According to our data, there are **27741** crashes occurred at **SH 1N** (approximately **11.45%** of all Auckland crashes). **Great South Road** and **SH 16** are both approximately **3.26%** of all Auckland crashes.

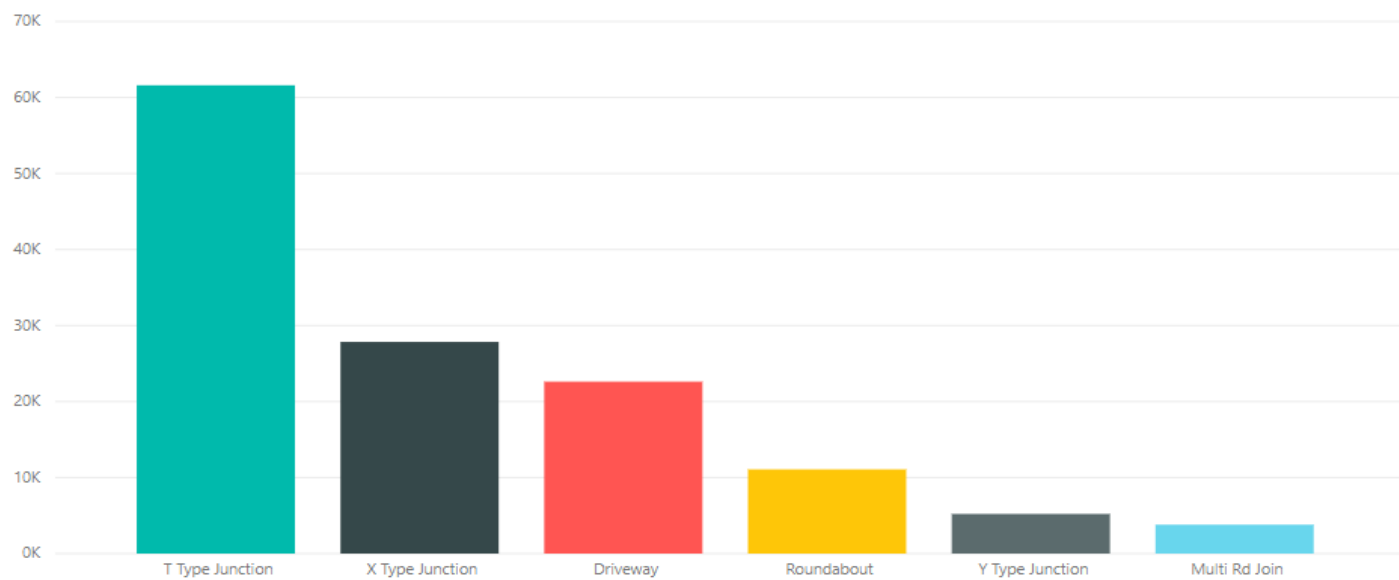


The timeseries plot of crashes in Auckland indicates the number of crashes has a decreasing trend over the years. But at year 2017 there are 13840 crashes occurred in Auckland which is unusual.

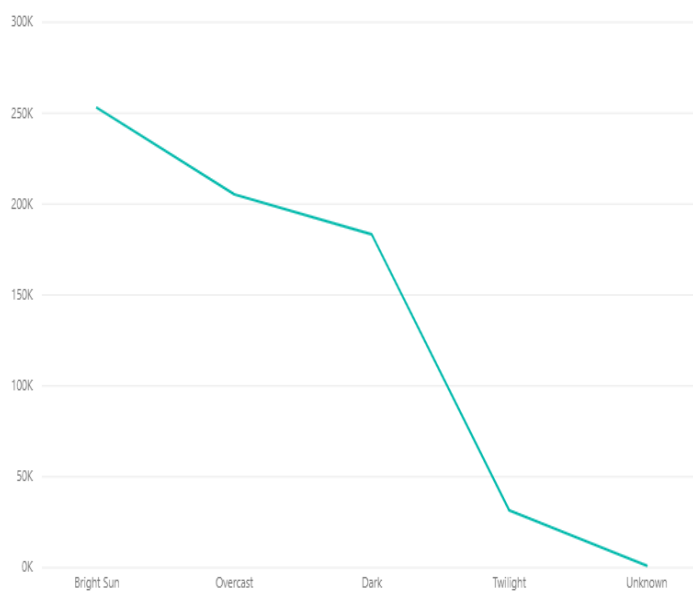


Number of crashes at different junction types

The diagram below indicates 46.61% crashes occurred at T type junction in Auckland, 21.07% crashes occurred at X type junction. Only about 2.88% of them happened at Multi Rd join (Please note the unknown junction type are removed from the diagram).



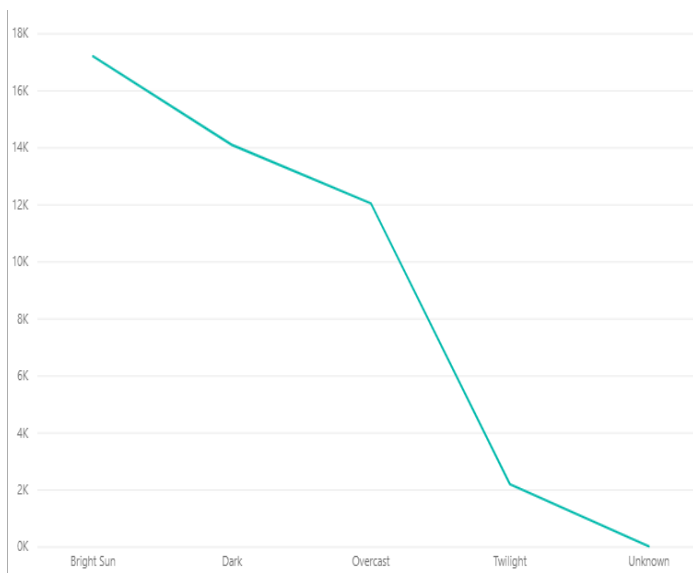
Injury analysis under different light conditions



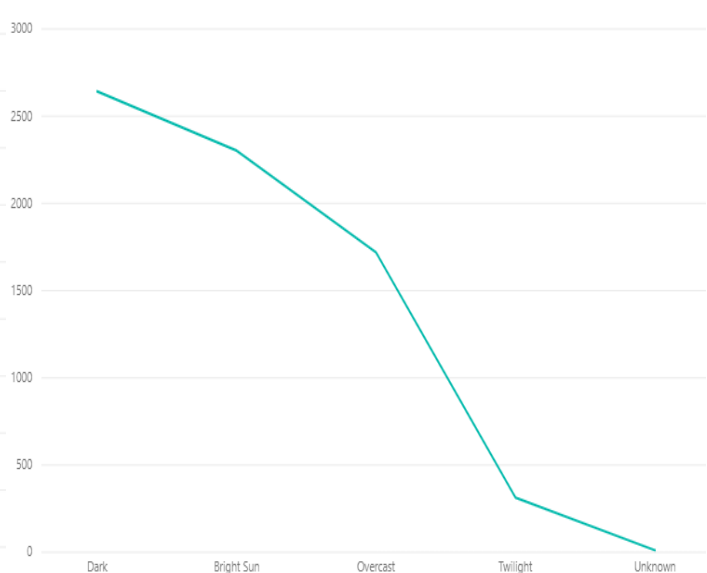
(General crashes under light conditions)



(Minor injuries under light conditions)



(Series injuries under light conditions)



(Fatal injuries under light conditions)

The diagrams above indicate general crashes, crashes with minor injuries, crashes with series injuries are more likely to happen under bright sun condition. For crashes with fatal injuries, they are more likely to happen under dark light condition.

Analysis by vehicle type

It is easy to notice SUVs crash increased rapidly after year 2004, there were only few SUVs crash before 2004.

Compare to SUVs crashes, other vehicle types(bicycles, bus, etc.) stays reasonably stable.

