

# Road Safety Outcomes for Māori

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# Te Tiriti o Waitangi

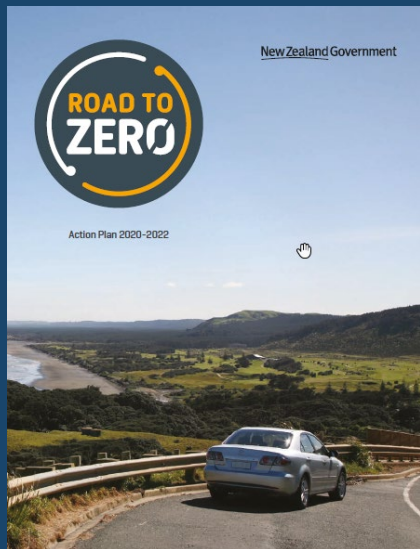


**Kia whakatōmuri te haere whakamua**

I walk backwards into the furture with my eyes fixed on  
my past



# Road to Zero



- Te Manatū Waka
- Road to Zero 2020-2030
  - Provides strategic direction and vision to guide improvements in road safety over 10 years
- Road to Zero Action Plan 2020-2022
  - Focus Area 5; System Management
  - Improve our understanding of road safety outcomes for Māori

# Safe System Approach





# Te Ara Kotahi Our Māori Strategy

## Priority

Support initiatives that improve Māori road safety

## Action

Work with others to obtain and analyse data relating to death and serious injury from road trauma for Māori as a ethnic group





## HE PŪRONGO WHAKAHAUMARU HUARAHĪ MŌ NGĀ IWI MĀORI

Māori road safety outcomes

June 2021



**TE MANATŪ WAKA**  
MINISTRY OF TRANSPORT



NEW ZEALAND  
**POLICE**  
Ngā Pirihimana o Aotearoa



**WAKA KOTAHI**  
NZ TRANSPORT  
AGENCY



New Zealand Government



# The report

Builds on an earlier review of literature and investigation of crash and injury data from several sources to identify current road safety outcomes for Māori

Provides a snapshot of current planned initiatives and processes led by Waka Kotahi that may positively impact on road safety for Māori

Provides an indicative process for how we could address the findings of this report

# Approach

Specific actions we have undertaken have included:

- exploring historic and current demographic, social and economic contexts for Māori
- investigating crash and injury data for Māori and non-Māori from several sources
- considering transport system factors such as access, infrastructure, vehicles, speed and user behaviour
- developing a snapshot of current and planned Māori road safety initiatives across Waka Kotahi.



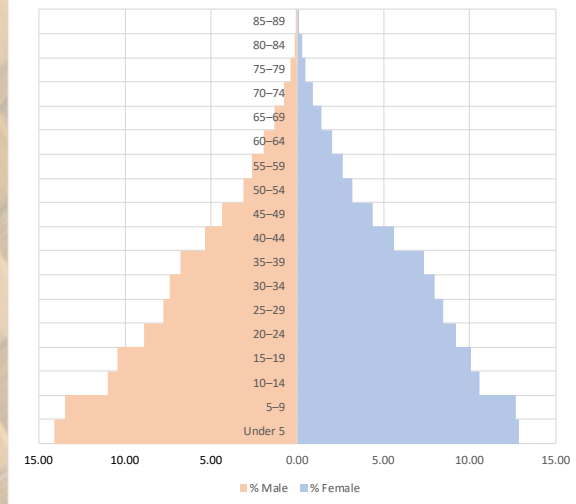
# Sources of Data

- Crash Analysis System (CAS)
- Motor Vehicle Register (MVR)
- The Monash University Accident Centre (MUARC) vehicle crash database
- Tauranga Aotearoa's 2013 Census Data and associated population information
- Midlands Trauma System (MTS) hospitalisation data

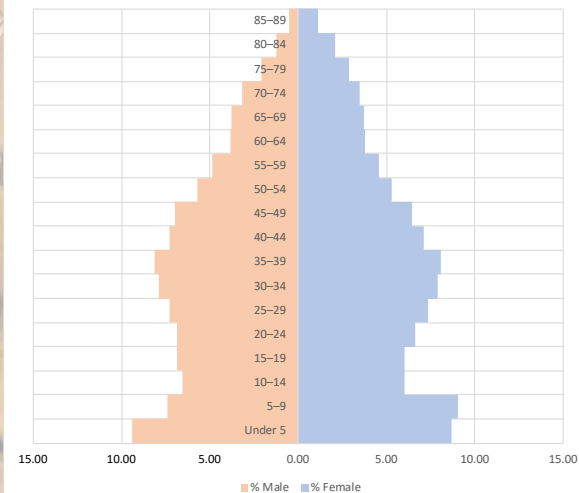
# NZ Population 1997

## Māori vs Non-Māori

1997 Population Distribution by Age Band : Māori



1997 Population Distribution by Age Band : Non-Māori



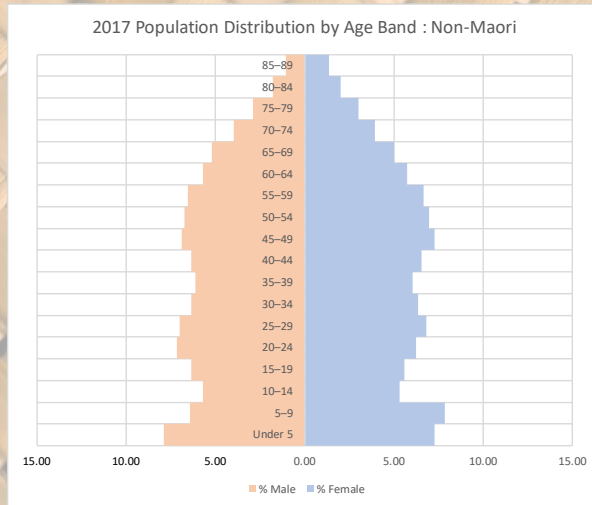
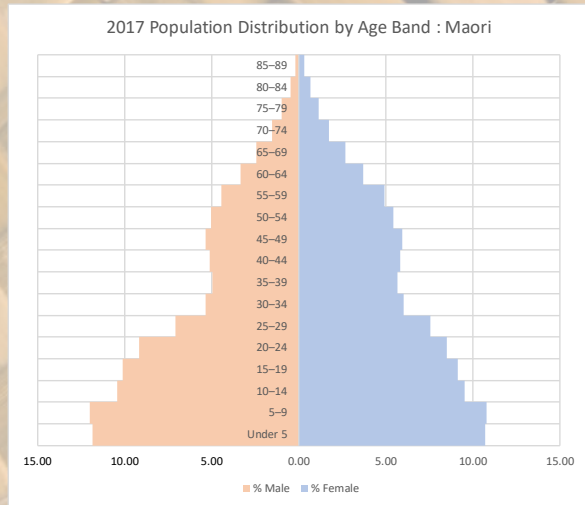
**Age distributions are not uniform**

**Large proportion of Māori population were aged 0-9 years in 1997**



# NZ Population 2017

## Māori vs Non-Māori



**Māori were 15.5% of the population in 2017**

**Age distributions were still not uniform**

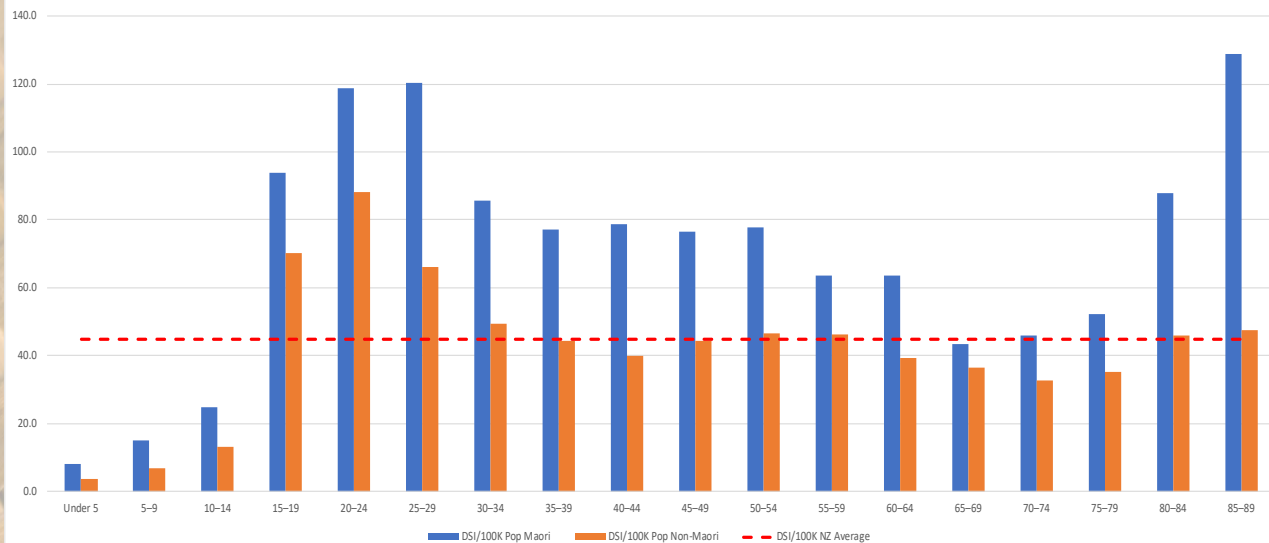
**Note that the large proportion of Māori population aged 0-9 in 1997 was aged 20-29 in 2017**

**In 2017 there was still a large proportion of Māori population aged 0-9 years**

# DSIs 2013 – 2017 per 100,000

## Māori vs Non-Māori

2013-17 Average DSIs per year per 100,000 Population



**NZ average DSIs = 45 / 100,000 population**

**Māori are over-represented in DSIs**

**For ages 15-24 years DSI for both Māori and Non-Māori are well above the average**

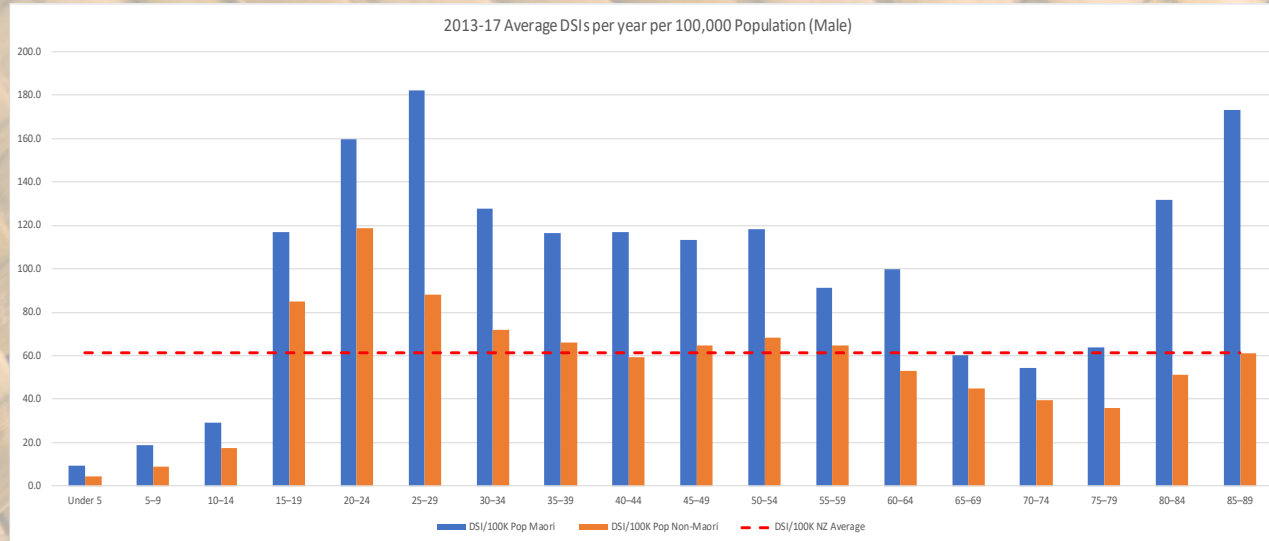
**Māori continue to be over-represented for ages 25-64 years**

**Proportion of Māori fatalities where ethnicity is known has increased**



# Male DSIs 2013 – 2017 per 100,000

## Māori vs Non-Māori



Māori men average DSIs = 87 / 100,000 population, much higher than the NZ male average of 61.5

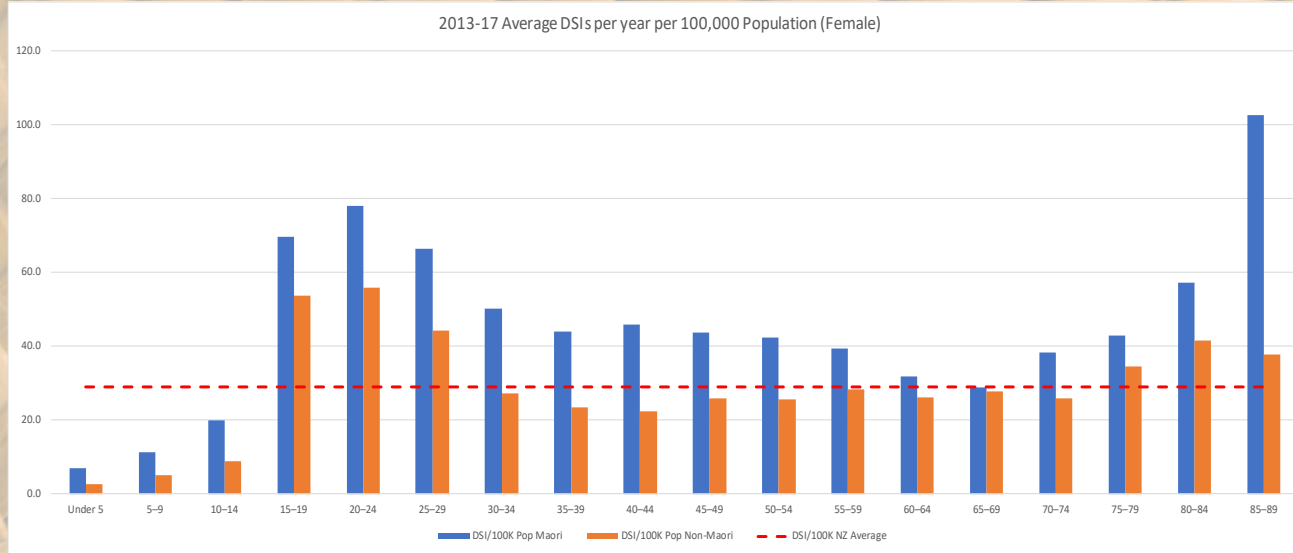
All men aged 15-34 years are significantly over represented in DSIs

Māori men continue to be significantly over represented until aged 64

Highest at-risk group is Māori men 25-29 years. Note increase in rate compared with 20-24 – versus significant decrease for non-Māori

# Female DSIs 2013 – 2017 per 100,000

## Māori vs Non-Māori



**Māori women average  
DSIs = 40.5 / 100,000  
population compared to  
a NZ female average of  
29 / 100,000**

**Less than half the DSI  
rate for Māori men**

**Māori women are also  
over represented in DSI  
from 15-64 years**



# Social Deprivation

Key determinant of road safety outcomes for all New Zealanders

Maori are disproportionately affected because they make up far larger proportions of the population living in those areas.

However road safety outcomes for Māori need to be seen in the context of demographic and safe system (roads, roadsides, speed, vehicles and user factors), patterns, together with authentic engagement to establish the situational and societal context of crashes.

# Socio-economic factors: Rural

Proportion Rural DSIs (2013 - 17) and Population by Deprivation Index : Maori vs Non Maori					
Deprivation Index	Maori		Non-Maori		
	DSIs	Population	DSIs	Population	
1	14%	5%	86%	95%	
2	15%	7%	85%	93%	
3	16%	7%	84%	93%	
4	17%	9%	83%	91%	
5	21%	11%	79%	89%	
6	26%	13%	74%	87%	
7	24%	15%	76%	85%	
8	29%	18%	71%	82%	
9	43%	24%	57%	76%	
10	60%	34%	40%	66%	
Blank	19%	2%	81%	98%	
Total	22%	14%	78%	86%	

**Higher proportions of Māori live in high deprivation areas**

**The proportion of rural DSIs for Māori are higher than the % of the population for Deprivation Indices 8-10**

# Socio-economic factors: Urban

Proportion Urban DSIs (2013 - 17) and Population by Deprivation Index : Maori vs Non Maori					
Deprivation Index	Maori		Non-Maori		
	DSIs	Population	DSIs	Population	
1	8%	5%	92%	95%	
2	12%	7%	88%	93%	
3	12%	7%	88%	93%	
4	15%	9%	85%	91%	
5	17%	11%	83%	89%	
6	16%	13%	84%	87%	
7	19%	15%	81%	85%	
8	23%	18%	77%	82%	
9	30%	24%	70%	76%	
10	39%	34%	61%	66%	
Blank	14%	2%	86%	98%	
Total	21%	14%	79%	86%	

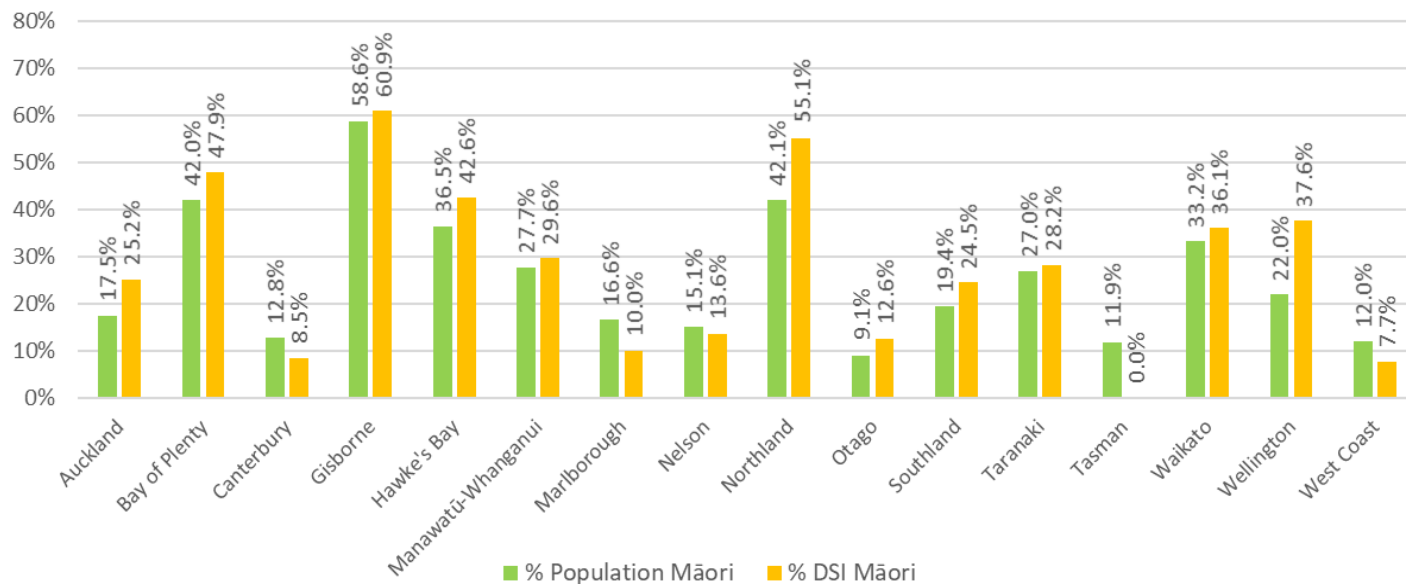
**Higher proportions of Māori live in high deprivation areas**

**The proportion of urban DSIs for Māori is almost the same as the % of population that is Māori regardless of deprivation**



# Socio-economic factors by region

Proportion DSIs and Population by Region: High Deprivation (Index 8-10) Areas



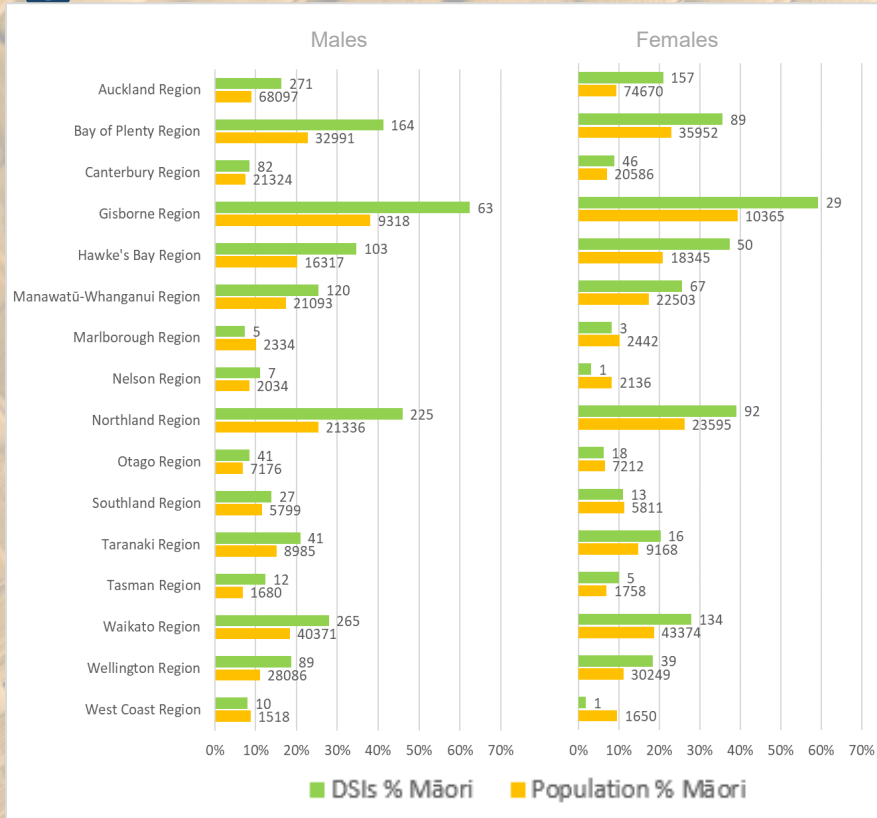
The proportion of Māori DSIs occurring in high deprivation areas (indices 8-10) approximates the proportion of the population that is Māori.

Appears to support the link between social deprivation and road safety outcomes.

There are large variations between regions

# Regional Differences

Large Differences in % Population and % DSIs

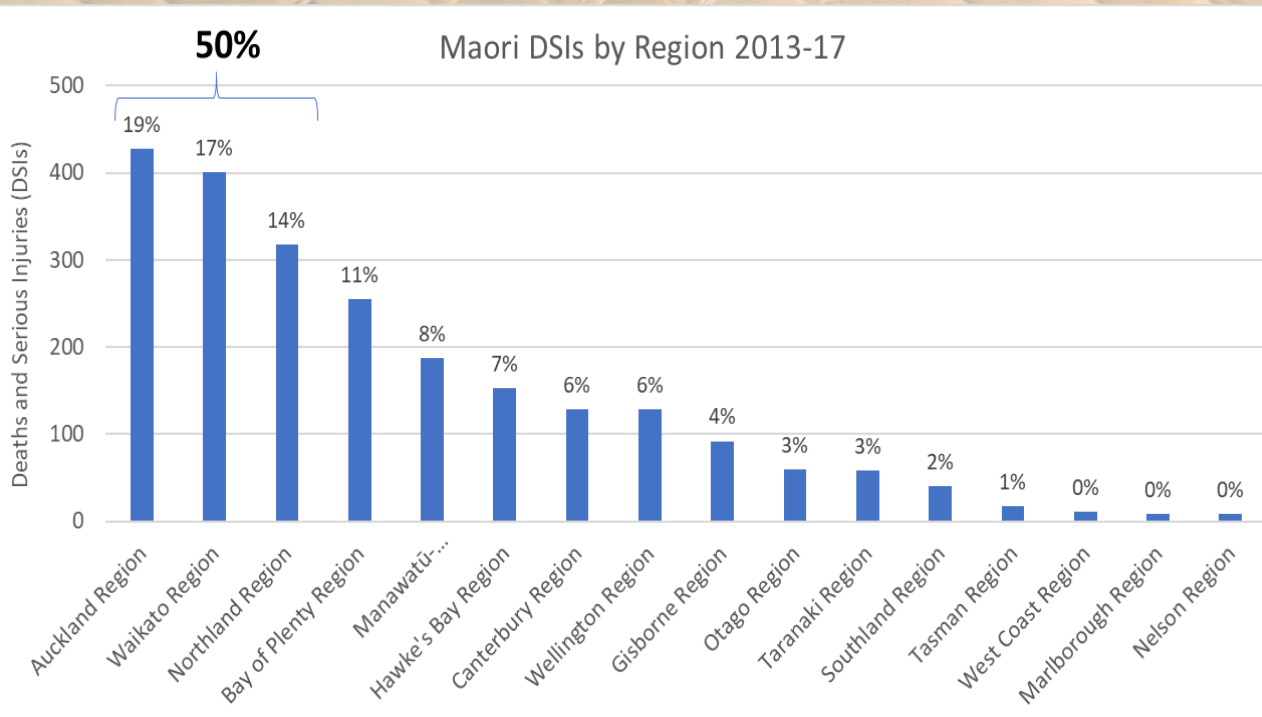


Highest proportional population rates and over-representation in DSIs for Māori men and women are:

- Gisborne
- Northland
- Bay of Plenty
- Waikato

# Regional Differences

Differences in number of DSIs per region



Highest numbers of DSIs for Māori are:

- Auckland
- Waikato
- Northland

These 3 regions combined make up 50% of Māori DSI



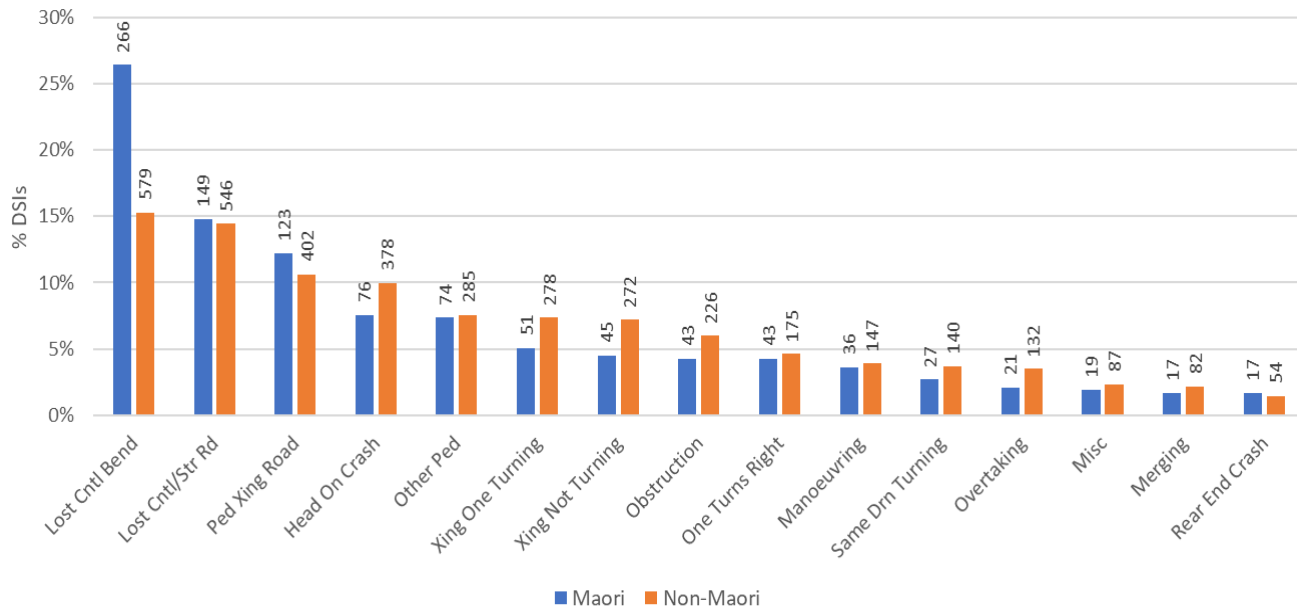
# Urban & Rural Roads

Rate of rural & urban DSIs practically the same proportion for gender and ethnicity

DSIs 2013 - 17 by Gender, Ethnicity and Rural/Urban Split				
Urban/Rural	Urban # DSIs	Rural # DSIs	Total # DSIs	% of DSIs that are Rural
Male Maori	679	846	1525	55.5%
Male Non-Maori	3202	3771	6973	54.1%
Female Maori	327	433	760	57.0%
Female Non-Maori	1792	2124	3916	54.2%
Total	6000	7174	13174	54.5%

# Crash Movements - Urban

% and # of DSIs 2013 - 2017 by Movement Type - Māori and Non-Māori - Urban (5-70kph roads)



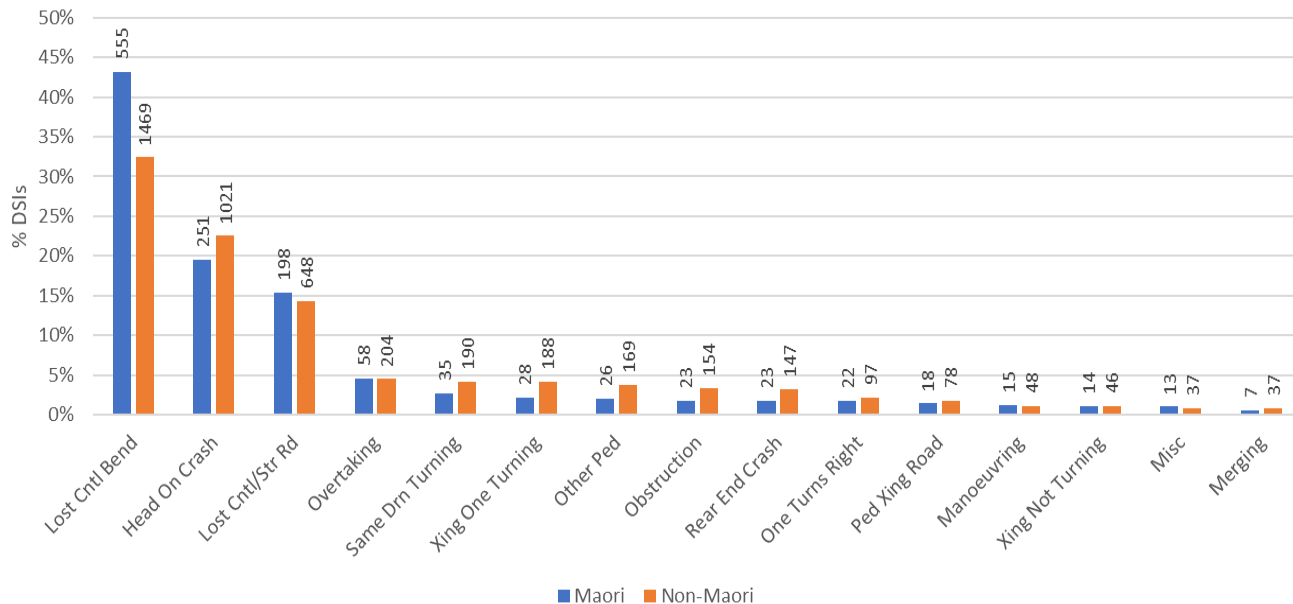
**Most common types of movements resulting in DSI crashes are the same for Māori and non-Māori**

**A 1/3 more Māori DSIs occur as a result of a loss of control on a bend (36%) than for non-Māori (24%)**

**Differences more pronounced for urban roads (defined by 5-70kph speed limits) vs. rural roads (defined by 80-110kph speed limits)**

# Crash Movements - Rural

% and # of DSIs 2013 - 2017 by Movement Type - Māori and Non-Māori - Rural (80-110kph roads)



**Most common types of movements resulting in DSI crashes are the same for Māori and non-Māori**

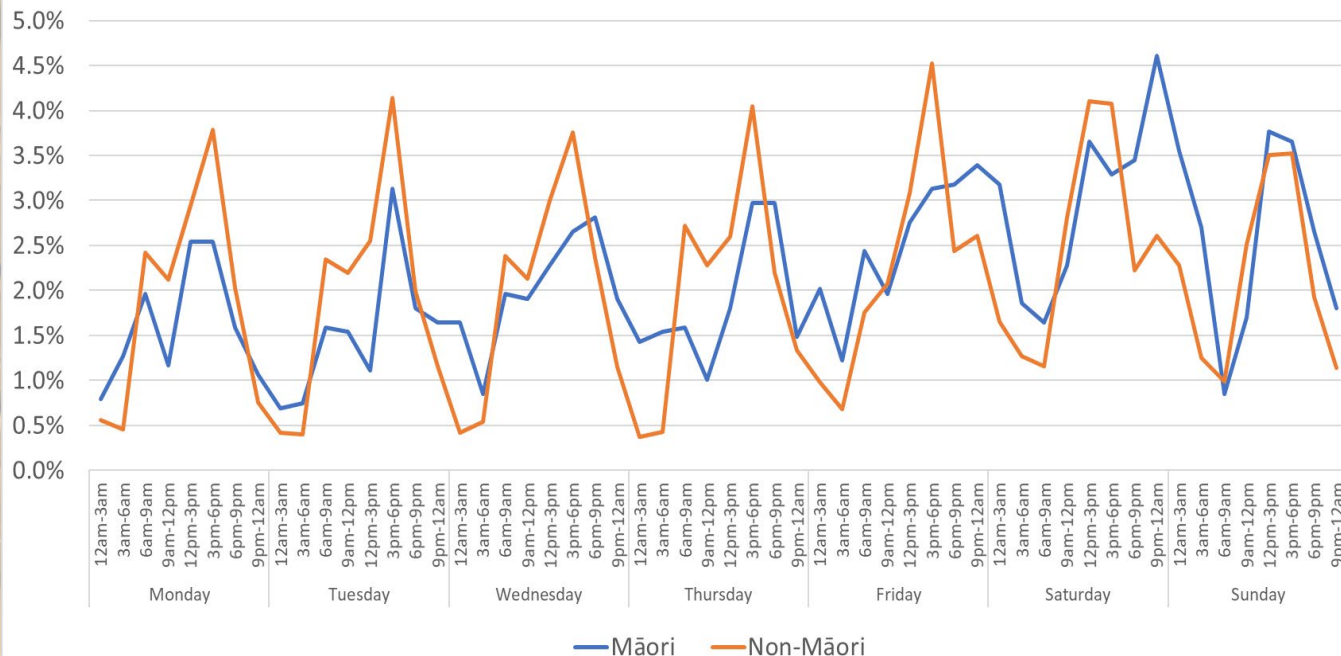
**A 1/3 more Māori DSIs occur as a result of a loss of control on a bend (36%) than for non-Māori (24%)**

**Differences more pronounced for urban roads (defined by 5-70kph speed limits) vs. rural roads (defined by 80-110kph speed limits)**



# Time and Day of Week

% DSIs by Time of Day and Day of Week : 2013 - 2017



**3pm-6pm weekday time-bands have the highest proportion of DSIs for non-Māori**

**Similar 'peaks' for Māori during 3pm-6pm weekday time-bands but 'peaks' and 'troughs' are not as pronounced for Māori**

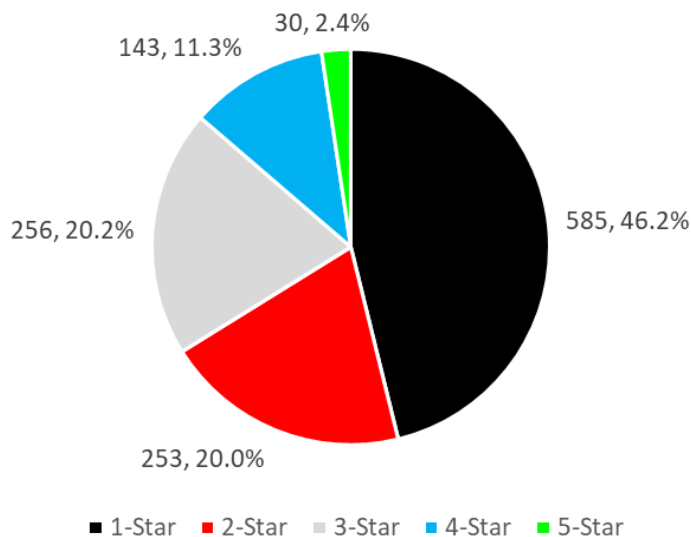
**Saturday nights from 6pm to after midnight show high proportions of DSIs for Māori but not non-Māori**

**DSI proportions almost identical for Māori and non-Māori on Sundays from 6am to midnight.**

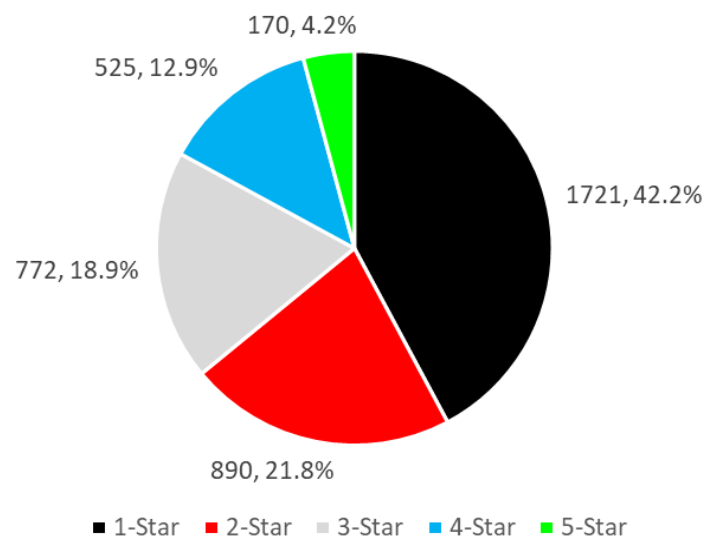
# Light Vehicles

Very little difference between Māori and non Māori

Proportion of DSIs by Used Car Safety Rating for Vehicle Occupants 2013 - 17: Māori



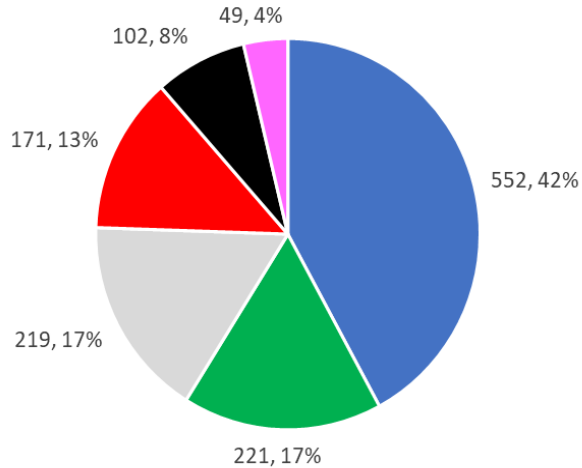
Proportion of DSIs by Used Car Safety Rating for Vehicle Occupants 2013 - 17: Non-Māori



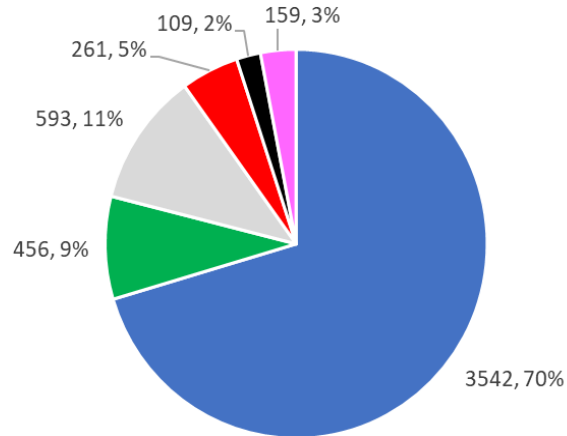
# License Status and Type

Unlicensed drivers and Restricted Licence holders more at-risk

Māori Driver Licence Status and Type: Driver  
DSIs 2013 - 2017



Non-Māori Driver Licence Status and Type: Driver  
DSIs 2013 - 2017



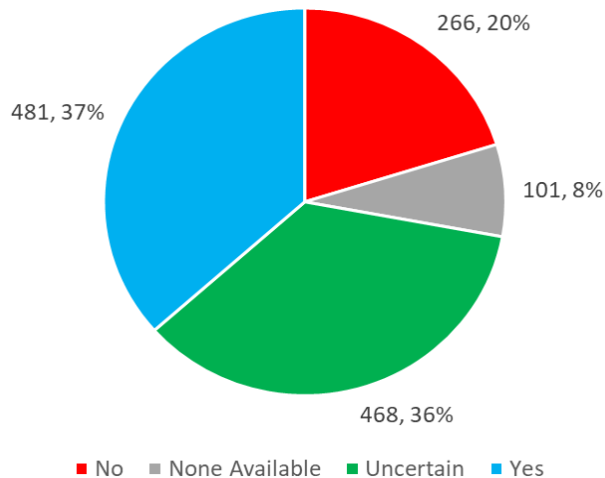
**Māori drivers in DSI crashes have a lower proportion of current full driver licences (42%) than non-Māori (70%) regardless of gender**



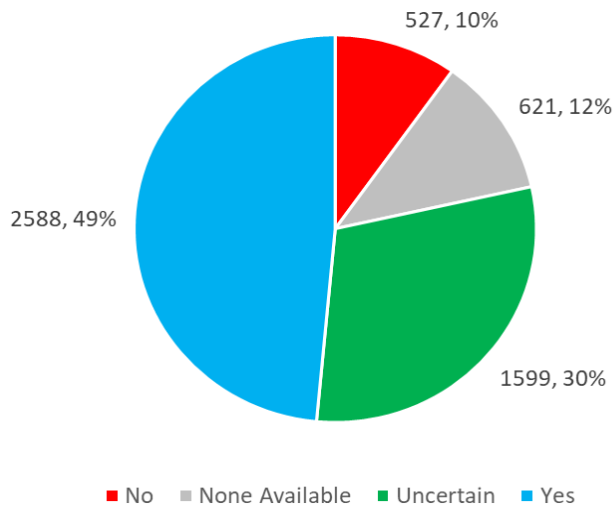
# Restraint use

Wearing a seatbelt increases the chance of surviving a crash by 40%

Driver DSIs 2013 - 2017 - Driver Restraint  
Used: Māori



Driver DSIs 2013 - 2017 - Driver Restraint  
Used: Non-Māori

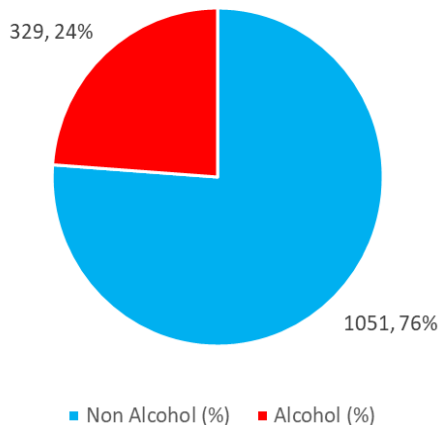


**Māori drivers in DSI  
crashes were less  
likely than non-Māori  
to wear a seatbelt**

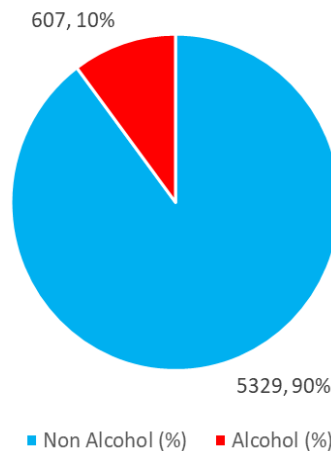
# Impairment

Driving impaired by alcohol increases risk

Proportion of drivers where alcohol intoxication was confirmed in a DSI Injury  
2013-17: Māori



Proportion of drivers where alcohol intoxication was confirmed in a DSI Injury  
2013-17: Non-Māori



**Māori drivers who were killed or seriously injured in a crash had higher (confirmed) rates of alcohol above the legal limit compared to non-Māori drivers**

**24% of Māori drivers seriously injured or killed in crashes had alcohol intoxication confirmed, compared with 10% for non-Māori drivers**

# Next steps

Waka Kotahi along with Manatū Waka and Ngā Pirihimana to partner with Māori communities to;

- Build relationship
- Engage Māori and gather feedback on the report
- Explore opportunities to collaborate
- Support Māori in their aspirations
- Gather feedback and to identify, prioritise and commission further research where necessary or appropriate



# Ngā mihi

Adrienne Duffy