Attachment 1

Fatal crashes involving people walking and cycling update

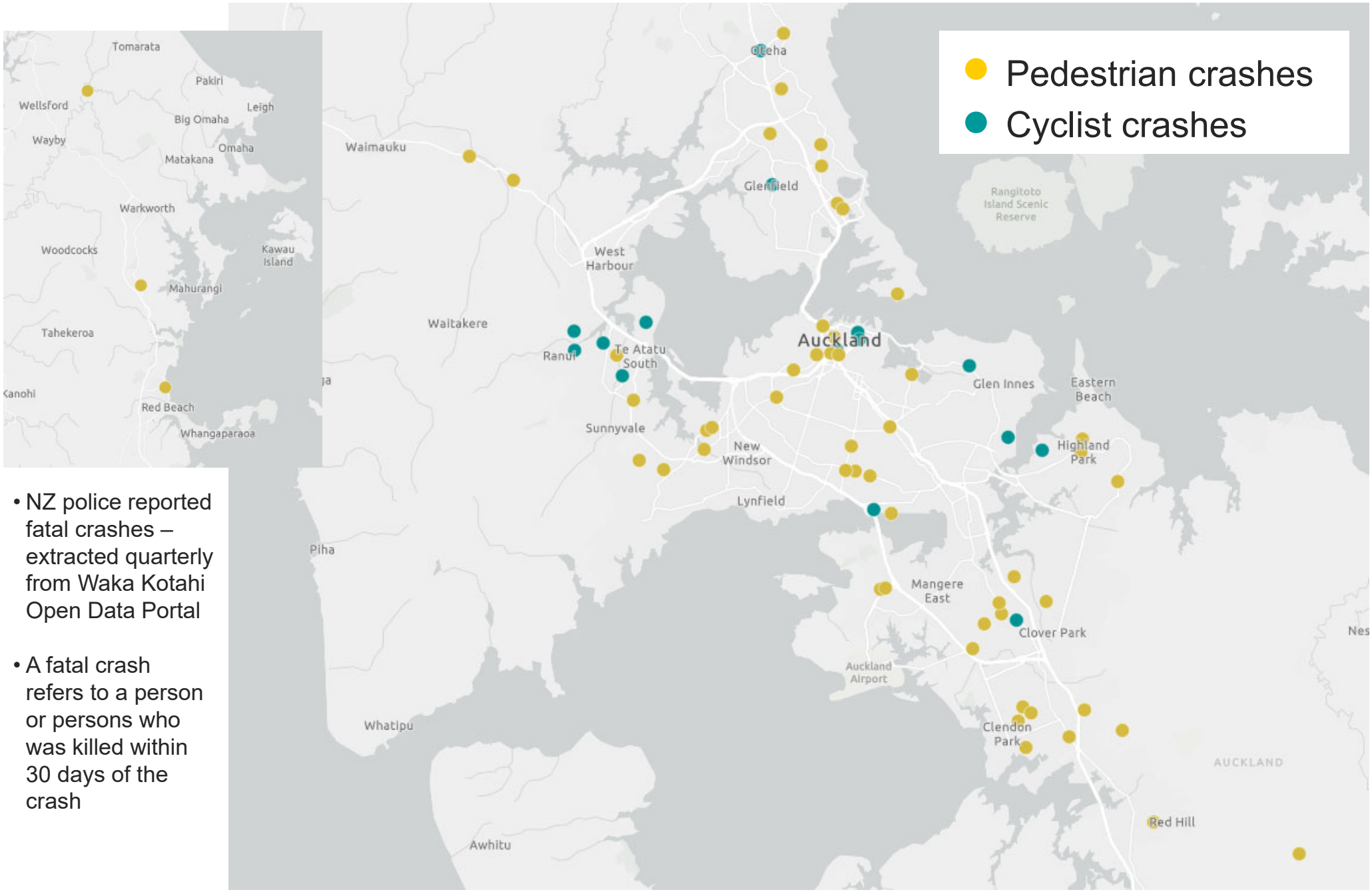
AT Board 9 December 2021

Auckland Transport
An Auckland Council Organisation

Contents of this update

1. Number and location of fatal crashes involving people walking and cycling in recent years
2. Vision Zero and a proactive system response
3. Process of fatal crash investigation
4. Applying a system response lens to recent pedestrian fatal crashes (case studies)
5. How we are creating a Safe System

Location of fatal crashes 2014-2020



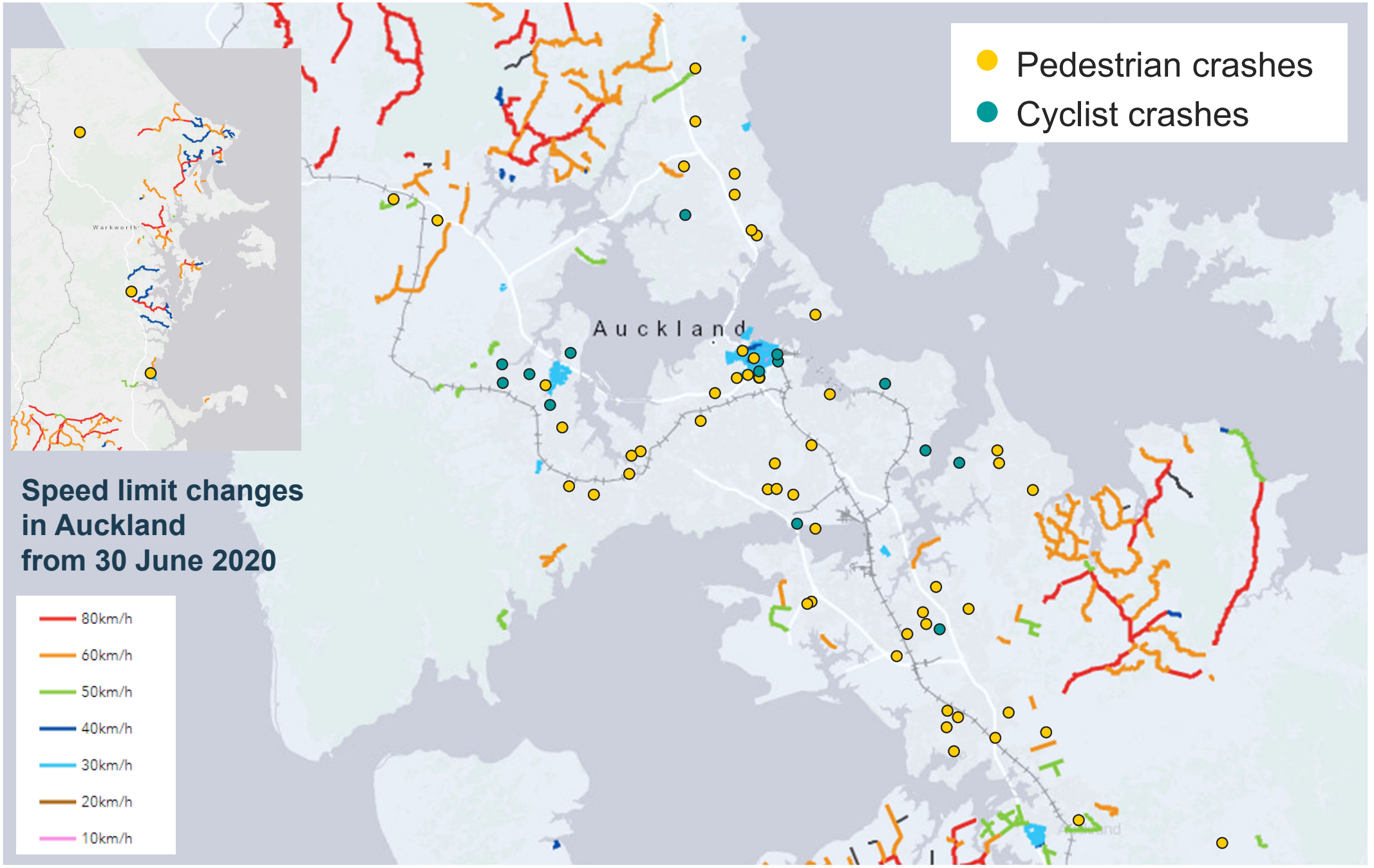
- NZ police reported fatal crashes – extracted quarterly from Waka Kotahi Open Data Portal
- A fatal crash refers to a person or persons who was killed within 30 days of the crash

Number of fatalities 2014-2020

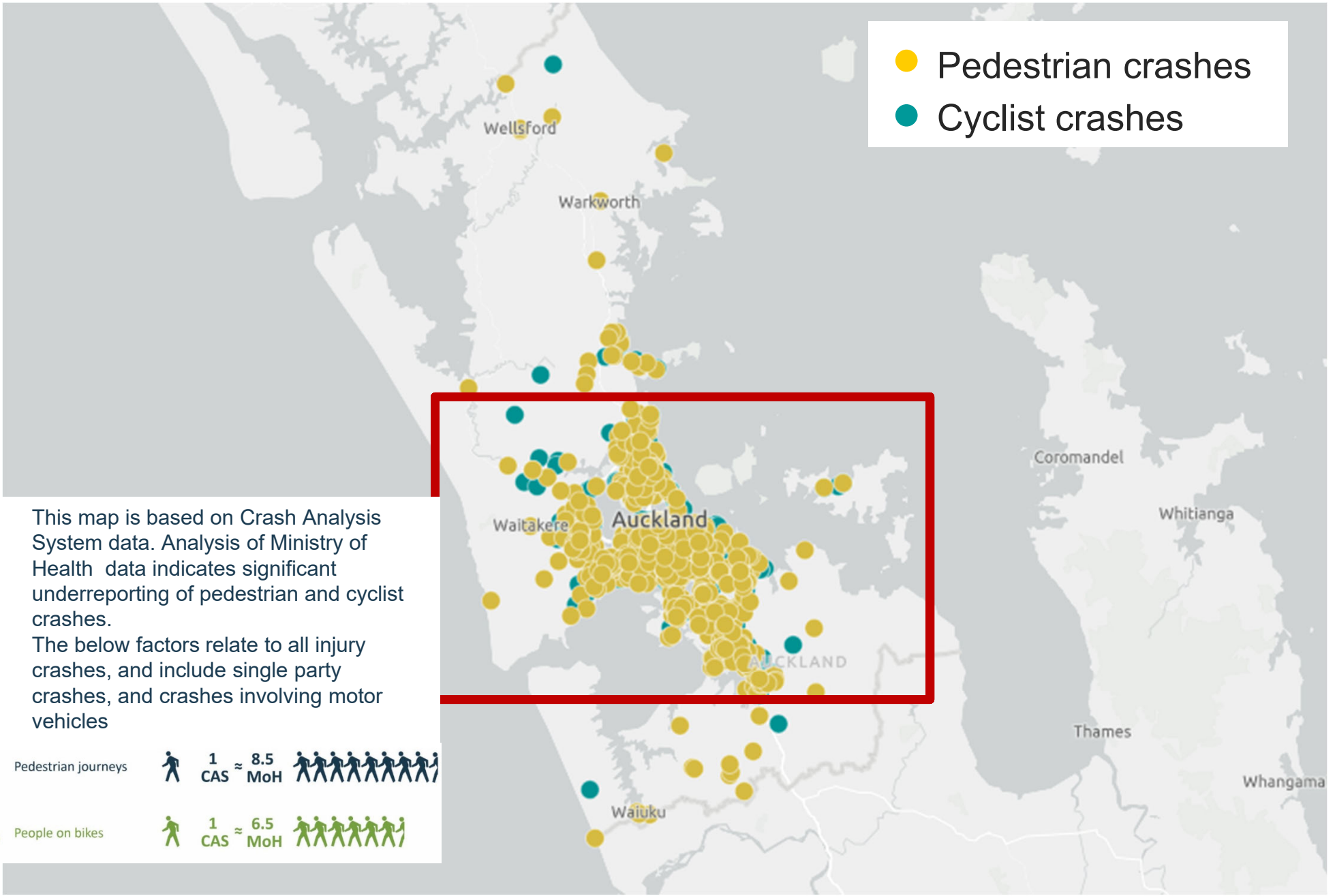
year	pedestrian fatalities	cyclist fatalities
2014	8	2
2015	7	2
2016	6	0
2017	9	2
2018	13	2
2019	5	4
2020	9	3
7 year total	**57**	**15**
As at November 2021	6	3

- Fatalities on AT roads and State Highways
- Source: AT Road Death spreadsheet

Speed limit changes/fatal crash locations 2014-2020



Fatal and serious crash locations 2014-2020 – Auckland region

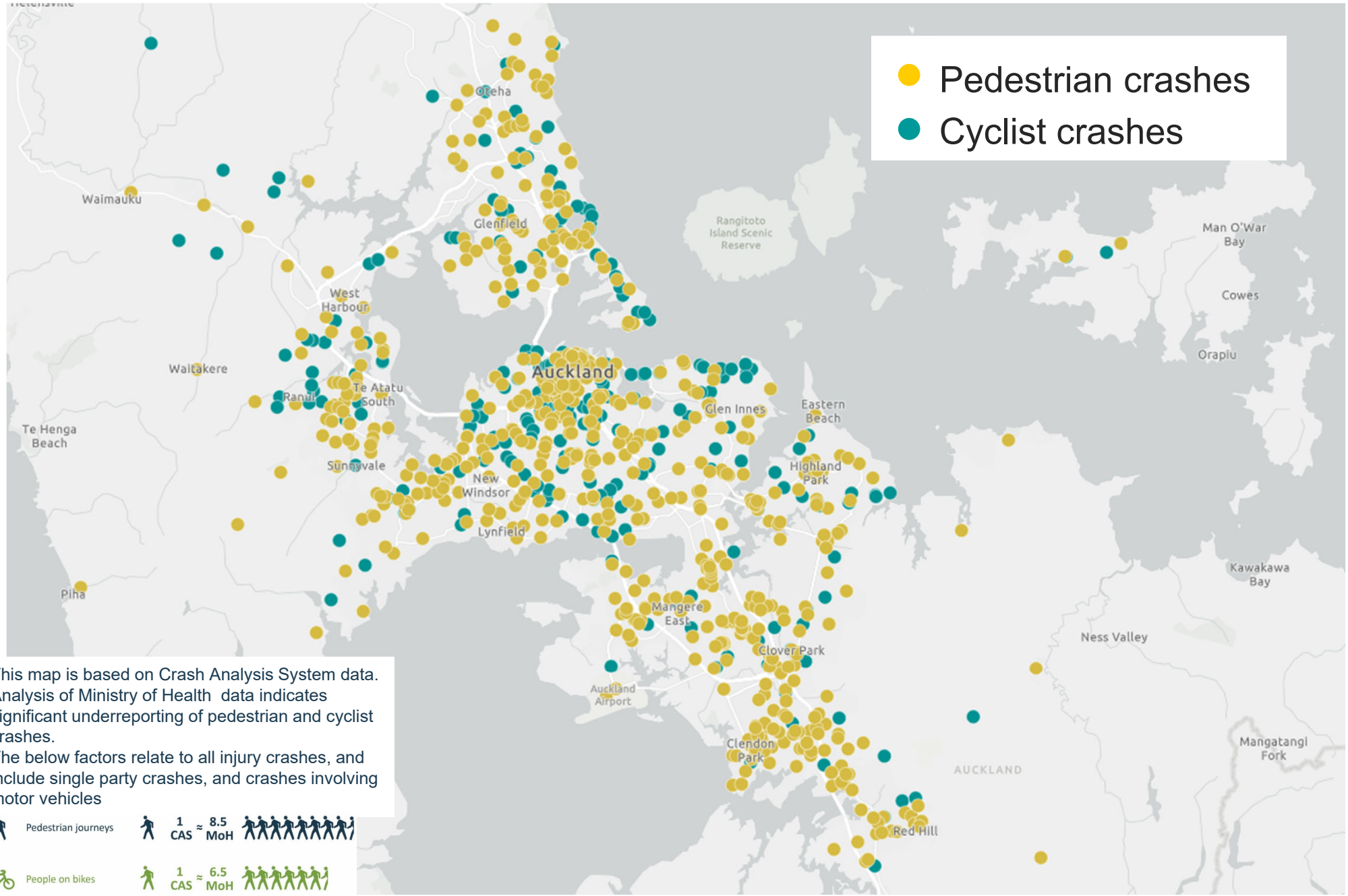


- This map is based on Crash Analysis System data. Analysis of Ministry of Health data indicates significant underreporting of pedestrian and cyclist crashes.
- The below factors relate to all injury crashes, and include single party crashes, and crashes involving motor vehicles

Pedestrian journeys: 1 CAS ≈ 8.5 MoH

People on bikes: 1 CAS ≈ 6.5 MoH

Fatal and serious crash locations 2014-2020 – Urban Auckland



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Vision Zero and a proactive system response

Traditional approach	Vision Zero
Traffic deaths are **INEVITABLE**	Traffic deaths are **PREVENTABLE**
PERFECT human behaviour	Integrate **HUMAN FAILING** in approach
Prevent **CRASHES**	Prevent **FATAL AND SERIOUS INJURY**
INDIVIDUAL responsibility	**SYSTEMS** approach
REACTIVE	**PROACTIVE**
Invest **BASED ON HISTORICAL DSI** locations	Invest **BASED ON RISK**

- Currently, 61% of fatal and serious injury crashes occur at locations where there has been no other injury crash in the past five years*
- Only 24% of fatal and serious injury crashes occur at cluster sites, which are defined as being within a radius of 250m (rural) and 50m (urban) and having two or more high severity crashes or three or more injury crashes in five years.*

Fatal Crash Investigation has an important role identifying issues that may need immediate action. While this is reactive, the AT overall approach to road safety is proactive.

* Road to Zero Action Plan 2020-2022, Ministry of Transport, December 2019

Process of fatal crash investigation

NZ Police investigation

If the police aren't called to a crash, then Auckland Transport aren't necessarily notified that the fatality has occurred.

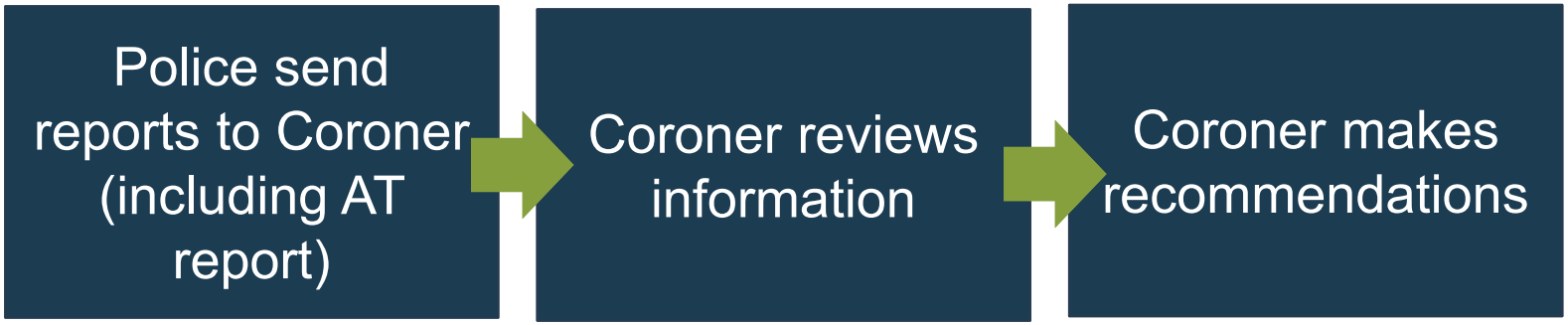
Process of fatal crash investigation

Auckland Transport Road Safety Engineering

- All fatal crashes reported to Auckland Transport – Road Safety Engineering are recorded in a 'Fatal Crash Report' spreadsheet
- Recommendations are recorded and progress on implementation actively tracked by Road Safety Engineering

Process of fatal crash investigation

Coronial investigation



- Coroner recommendations not necessarily transport related if other factors are involved – Police investigate these other factors
- Currently can take 2 years+ before Coroner recommendations are issued.

Process of fatal crash investigation

Auckland Transport Fatal Crash follow up

- Crashes reported to board via safety business report
- Recommendations tracked and implemented by Road Safety Engineering

Recommendations tend to be site specific/reactive

- Currently changes often relate to that site only and immediately surrounding area

Case Study - Clendon Place/Weymouth Road

73-year-old male crossing Clendon Place struck by vehicle turning right – 12 June 2021

Fatal crash investigation underway

Case Study - Clendon Place/Weymouth Road

Identification of systemic risks

These are examples of systemic risks common to these types of intersections. This is not the identification of the most appropriate measures to respond to a one specific fatal crash.

This is a common intersection design in Auckland

Urban KiwiRap collective crash risk rating – Medium High

Case Study - Thomas Road/Jordan Avenue

46-year-old male crossing Thomas Road struck by vehicle travelling south – 9 June 2021

Fatal crash investigation underway

Thomas Road/Jordan Avenue

Identification of systemic risks

These are examples of systemic risks common to these types of intersections. This is not the identification of the most appropriate measures to respond to a one specific fatal crash.

Road not designed to restrict vehicle speeds (long/straight/no speed calming)

Wide roads encourage higher vehicle speeds

No safe crossing facility on Thomas Road for people walking

A 50km/hr speed limit – not survivable for people walking

This is a road with improved cycle facilities in Auckland

Urban KiwiRap collective crash risk rating – Low

System improvements

Programme Business Cases

- **Road Safety PBC: Invest in road safety to achieve at least 60% DSI reduction* in 10 years**

Component	Preferred investment** (21/22-27/28)	Output
Speed management	$193M	1,900 km
High risk intersections	$120M	60 intersections
High risk corridors	$68M	Transforms 34 km
Vulnerable road user and TDM	$35M	Targeted pedestrian, cyclist and motorcyclist infrastructure
Enforcement	$45M	Additional road policing and safety cameras
Education	$22M	Additional co-ordinated education and awareness campaigns
Policy	$8.5M	Co-ordinated policy and regulatory interventions with partners
Other supporting costs	$113M	Includes land acquisition, design/engineering fees, monitoring, maintenance

*Compared to 2017 DSI, as per RLTP Target

- The Walking and Cycling PBCs both have objectives to reduce DSIs on the network.
- The Walking PBC will recommend a programme for walking investment, which will aim to address safety, structural, physical and social barriers for more people to walk more often for their everyday needs.
- The Cycle and Micromobility PBC (currently under review) will recommend a programme for cycle investment over the next 10 years, which will include safe cycle facilities (cycle network development), and complementary initiatives.

System improvements

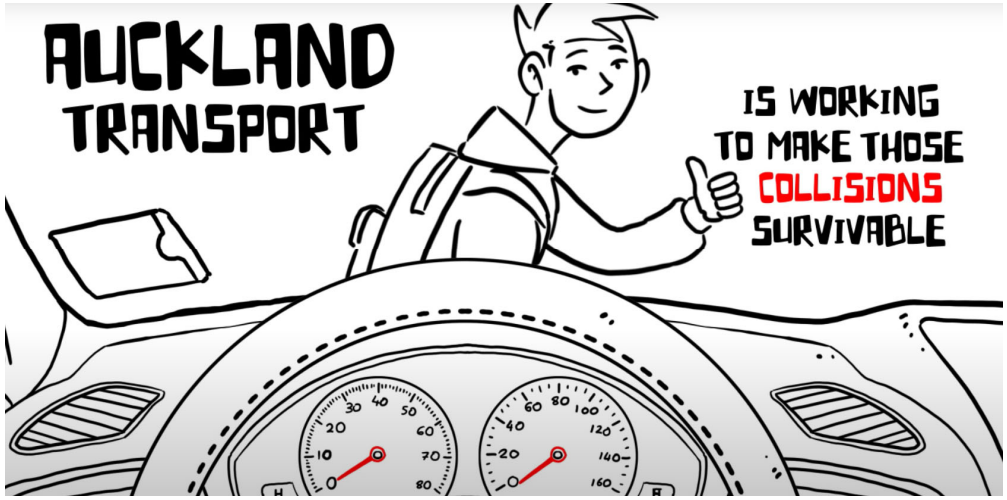
Safe System Assessment Framework

- One of the tools used in preferred option identification. It tests the extent to which project options align with Safe System principles.
- The assessment tests the project options against the existing conditions, helps steer option selection towards safer outcomes
- Work currently underway to embed SSAF in project life cycle, strategic guidance being developed
- Learning module currently under development to educate on how to use SSAF

System improvements

Social media/communication with users

- Education conducted in isolation has been found to provide no safety benefits*
- Education campaigns should be integrated with engineering or enforcement
- Auckland Safe Speeds – good example of communication/social media campaign covering awareness of safe speeds in conjunction with the speed limit changes. This campaign has won awards and is viewed as the 'gold standard' of how to engage with our communities on a sensitive topic of speed limits



*Turner, B., Job, S. and Mitra, S. (2021). Guide for Road Safety Interventions: Evidence of What Works and What Does Not Work. Washington, DC., USA: World Bank

System improvements

Safe Speeds

- **Survivable speeds are fundamental to safe walking and cycling outcomes** which has been reaffirmed by the 3rd Global Ministerial Conference on Road Safety 2020 recommendation for 30km/hr speed limits in urban areas
- AT has a successful Safe Speeds programme with further roads approved by the AT board for consultation in June 2021
- A proposed approach to accelerate safe speed limit setting will be presented to the AT Safety Committee in September 2021

System improvements

Speed and drink driving deterrence

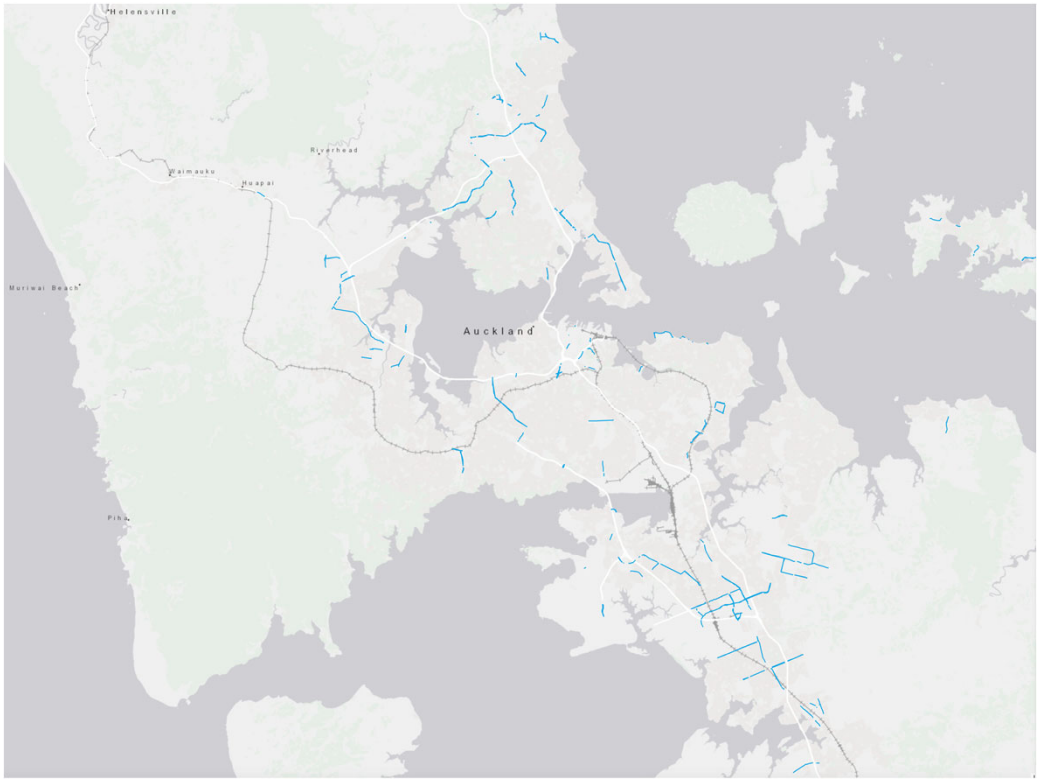
- **Priority 1 & 2 in the Road Safety BIR 2021 management Response**
- **Auckland trial of an evidence based deterrence model**
  - Effectively manage and deploy resources
  - All Tāmaki Makaurau Transport Safety Governance Group partners to contribute
  - Random breath tests, use of covert mobile camera, behaviour change incentives
- **NZ Police to deliver general deterrence model**
  - Dosage: Intensity of enforcement
  - Unpredictability: perceived randomness of enforcement
  - Network coverage: perceived spread of enforcement

System improvements

Minor Cycling Improvements Programme 2021/24

- Programme to improve attractiveness and safety of existing facilities to encourage new riders
- Addition of protection/separators to existing cycle lanes
- Year 1 of proposed programme includes around 17km of cycle lanes

Location of Painted Cycle Lanes



Supporting slides

Vision Zero

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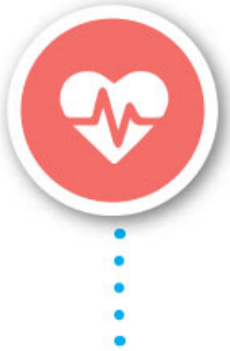
What is Vision Zero? Four principles



Ethics

People shouldn't die or be seriously injured in transport journeys.

Responsibility

System designers are ultimately responsible for the safety level in the entire system - systems, design, maintenance and use. **Everyone** needs to show respect, good judgement and follow the rules. If injury still occurs because of lack of knowledge, acceptance or ability, then **system designers** must take further action to prevent people being killed or seriously injured.

People centered

System designers must accept that people make mistakes and people are vulnerable.[3]

System response

We need to look at the whole system and develop combinations of solutions and all work together to ensure safe outcomes.[4]

How to create a Safe System

People make mistakes.

This means we need to build a more forgiving system that protects people from death and serious injury when they crash.

A Safe System is created when system designers design:

Safe speeds

Safe infrastructure

Safe vehicles

Safe users

A crash that leads to serious injury or death is a system failure, not a road user failure

Survivable speeds central to Vision Zero

speed is a primary factor in crash severity, and the likelihood of a crash occurring

slower speeds = more awareness
as speed increases, drivers must look further ahead for hazards,
and see less of what's in their peripheral vision

View of pedestrian crossing from stopping distance for speed shown

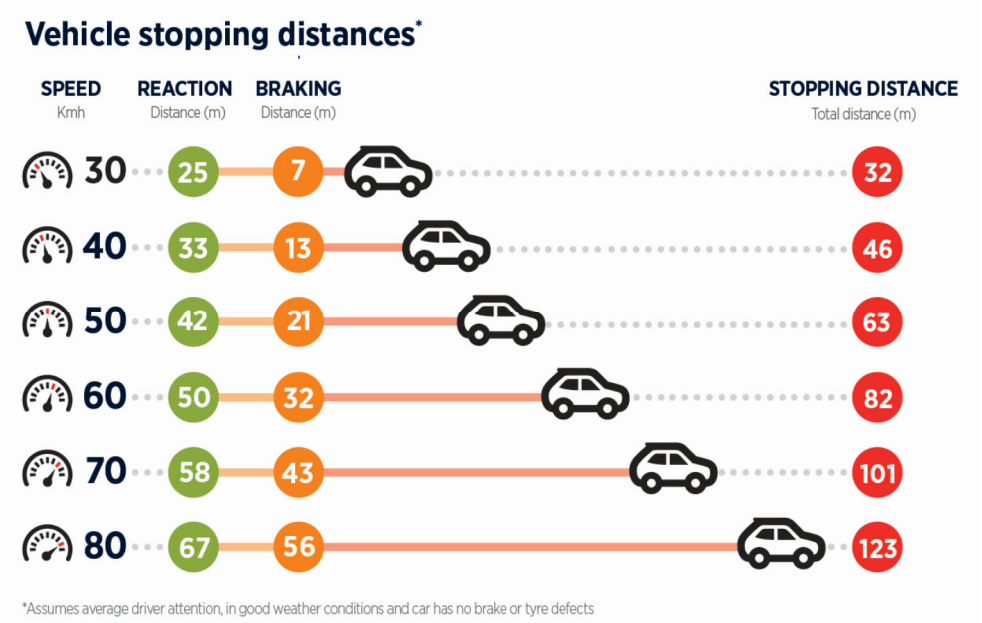
Source: Auckland Transport Urban Streets and Roads Design Guide

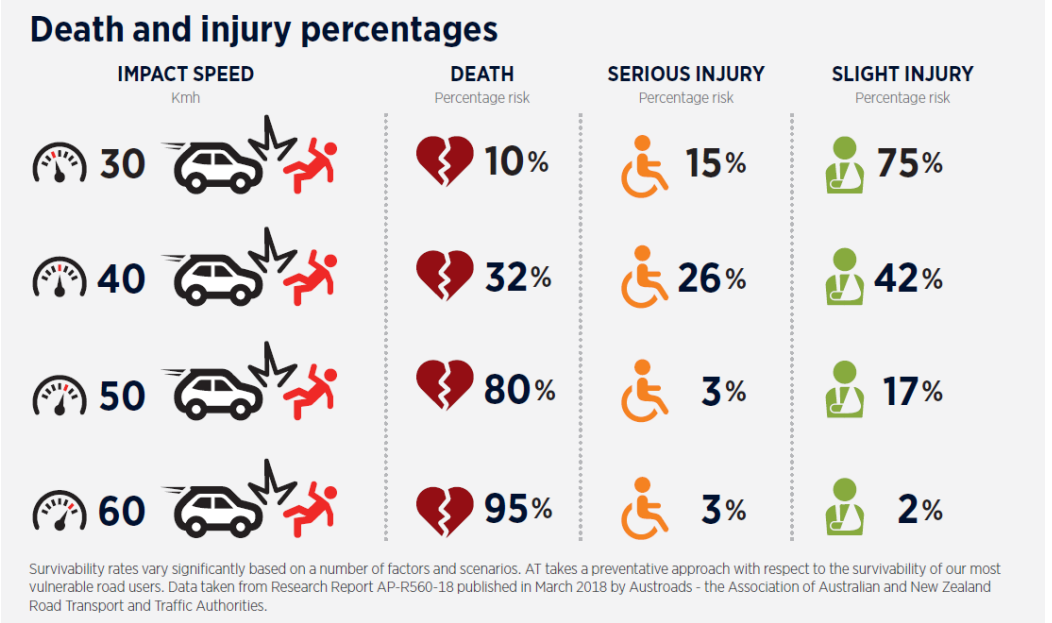
Survivable speeds central to Vision Zero

speed is a primary factor in crash severity, and the likelihood of a crash occurring

slower speeds =
more able to stop
as speed increases, the distance travelled while reacting and stopping increases

slower speeds =
less death and injury
as speed increases, the likelihood of death or serious injury increases **significantly**





Source: Auckland Transport Urban Streets and Roads Design Guide

Safe infrastructure/vehicles/users

Designing streets to reduce risk

- Raised pedestrian crossings
- Allocating space for vulnerable road users
- Designing for slower speeds (traffic calming/visual cues)

Vehicles that protect road users from injury

- Safety features to protect drivers
- Safety features to protect people outside vehicles when a crash occurs

Users that show respect, good judgement and follow rules