**Wellington Regional
Land Transport Plan –
Annual Monitoring Report**
2021

Greater
Wellington
Te Pane Matua Taiao

Contents

1. Executive summary

This is the first annual monitoring report (AMR) for the Wellington Region Land Transport Plan 2021 (RLTP). The RLTP sets the direction for transport in the region for the next 10-30 years. It identifies regional priorities, policies, targets and objectives and sets out the transport projects we intend to invest in.

The monitoring framework (for the RLTP) consists of the headline targets which are the main performance indicators. Together with the measures and indicators in the framework, these will track our progress toward the regional programme objectives and outcomes.

The COVID-19 emergency during 2020 and 2021 continues to have a recognisable impact on the transport sector and consequently the measures we monitor. The latest data on deaths and serious injuries (DSI) on our roads shows that serious injuries were significantly less during COVID alert levels 3 & 4 in 2020, the long term trend shows DSI continues to increase.

More recently, public transport patronage has rebounded to 86% of pre-COVID numbers under level 1. Traffic volumes are largely back to pre-COVID levels and this trend is evident in the transport-generated CO_2 emissions for the region.

Table 1 is a summary of the latest results for each headline target and indicator, for most indicators this refers to the 2020/21 financial year. If not, the year will be stated with either calendar year (CY) or financial year (FY). Indicator progress is shown according to short-term and five-year trends.

Table 1: Headline targets and indicator summary

Headline indicator	2030 Target	Result FY2020/21	2019 vs Latest result	5 year trend
Combined mode share for public transport & active travel	39%	34% (FY2020)	⬆ up 4% points	Only 3 yrs of data
Deaths and serious injuries on region's roads	122 DSI	212 DSI (CY2020)	⬆ up by 2%	⬆
Land transport generated carbon emissions	770 kilotonnes	1,242 kilotonnes	⬇ down 0.6%	⬆

Measure	Indicator	Result FY2020/21	2019 vs Latest result	5 year trend
Public transport patronage	Bus and rail boardings (peak times)	19.5 million	⬇ 14.6%	⬇
Public transport journey times and variability	Average travel times on core bus routes	36 mins	⬇ 5%	⬇
Active travel and public transport (PT) journeys to work & education	Combined mode share (Cordon survey)	54%	⬇ 1.4%	⬆
Deaths and serious injuries on regions roads	Percentage of DSI with speed as a factor	21% (CY2020)	⬇ 1%	⬇
Participation in active travel to school	% of students using active travel to journey to school	32% (CY2018)	no trend data	
Cyclist and pedestrian deaths and serious injuries	DSI for pedestrians & cyclists on roads	55 DSI (CY2020)	no change	⬆
Road network resilience	Frequency of unplanned road closures	99 events	⬆ 24%	⬆
	Duration of unplanned road closures	116 hours	⬇ 16%	⬇
The efficiency of the road network on strategic routes	Average travel speeds on selected strategic routes	37 km/hr	no trend data	
Regional freight moved by rail	Annual freight volumes moved by rail	1.45 million tonnes	⬆ 4%	⬆
Transport generated emissions	Transport CO2 emissions (per capita)	2.25 tonnes	⬇ 5%	⬇
	Ambient air quality - Nitrogen dioxide	16.1 µg/m3 (CY2020)	⬇ 5%	⬇
Vehicle fleet composition	% of the private car fleet that are EV and hybrid vehicles	18% of new registrations	⬆ 11 % points	⬆
	% of the bus fleet that are EV and hybrid vehicles	2.4% of vehicles	⬆ 0.2 % points	⬆

2.   Introduction

The AMR reports on the measures used to monitor the performance of activities in the regional programme and how successful they are in delivering the desired regional outcomes. The reporting covers the 2020/21 financial year (FY) for most indicators, with remaining indicators based on the calendar year (CY).

The monitoring framework follows a nationally consistent structure based on the five Ministry of Transport Outcomes (briefly outlined below):

- **Inclusive access** – enabling all people to participate in society with affordable and reliable transport choices
- **Healthy and safe people** – protect people from transport related injuries and make active travel an attractive option
- **Environmental sustainability** – transition to zero carbon emissions with improvements to air and water quality
- **Resilience and security** – to minimise risks from natural and man-made hazards, adapt and recover from disruptive events
- **Economic prosperity** – the efficient movement of people and products

The measures and indicators within the monitoring framework consist of eleven measures and 19 indicators for the Wellington region discussed in section 4. The main performance indicators are the headline targets, they are ambitious and indicate the scale of change we want to make in the ten years to 2030. The targets are based on 2018 results for each indicator.

The headline targets are:

➢ Increase public transport and active mode share by 40 percent

➢ Reduce transport-generated emissions by 35 percent

➢ Reduce road deaths and serious injuries by 40 percent

3. Headline targets

3.1 Active travel and public transport mode share

Target: To increase mode share[1] by 40 percent by 2030

An investment priority for the RLTP is to make walking, cycling and public transport a safe, sustainable and attractive option for more trips throughout the region. By monitoring how often we travel by active travel and public transport, we can determine if we are meeting this headline target. Mode share is monitored using the Household Travel Survey (HTS) results, which measures all types of household travel (travel to work and education, shopping, leisure) by travel mode.

The FY2019/20 results[2] in **Figure 1** below, show:

- combined active and public transport mode share is 34%

- an increase of 4 percentage points since 2019 but no change to public transport mode share

- walking trips have increased by 3 percentage points to 26% and cycling trips increased by 1 to 2%

- it is likely that the 2020 mode share results were affected by COVID-19 (i.e. people travelling less by car and PT for work and leisure).

Figure 1: Combined mode share for public transport and active travel
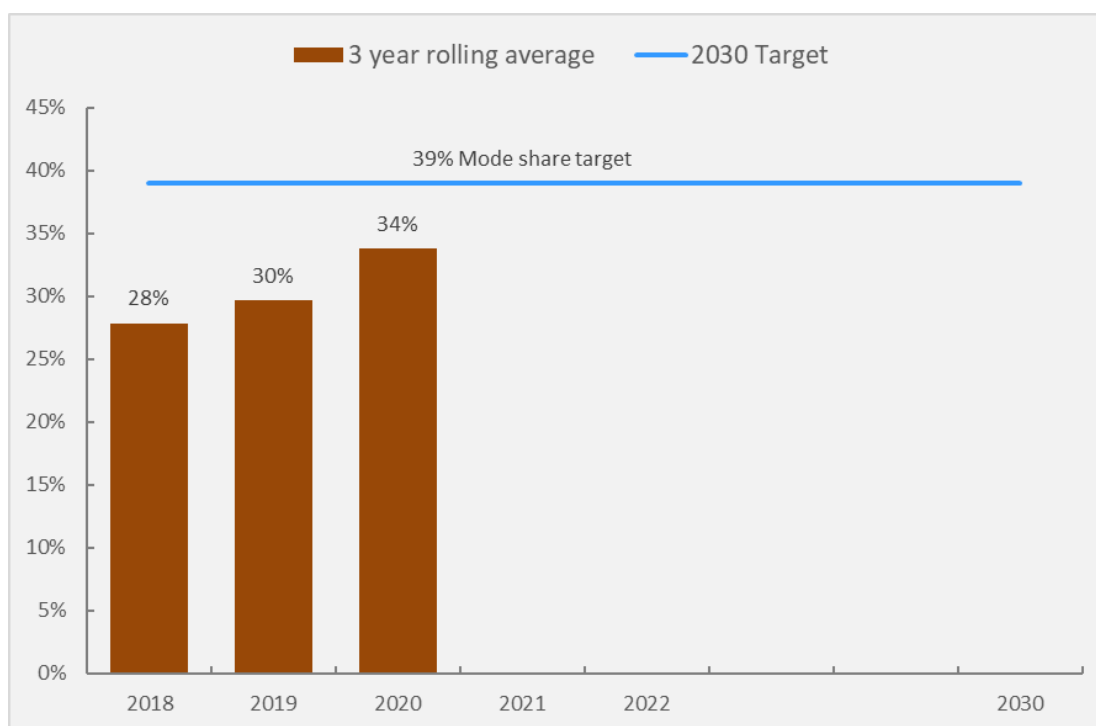
Data source: Household Travel survey, Ministry of Transport

---

[1] Mode share refers to the proportion of trips taken by each transport mode for all household trips e.g. leisure, work, shopping and entertainment. The 2018 HTS result (28%) is the baseline for mode share and 39% is the 2030 target.

[2] The Household travel survey results are reported annually but are a three year rolling average from consecutive surveys. The survey methodology was changed in 2018 from a 7 day to 2 day survey therefore caution should be used in interpreting change from 2018 to 2019. Changes may be due to changes in methodology.

3.2 Road deaths and serious injuries

Target: To reduce deaths and serious injuries (DSI) by 40 percent by 2030

Strategic objective: People can move around the Wellington Region safely.

The second headline target is to reduce deaths and serious injuries (DSI) by 40 percent. There were 204 DSIs in the region in 2018 (results are all CY). The target is reduce this to below 122 DSIs by 2030. The five-year average is used to report on serious road accidents because it smooths out annual fluctuations and reveals long-term trends. This accident data is reported by calendar year.

In **Figure 2,** the CY**2020** DSI data shows:

- 212 deaths and serious injuries, an increase of 2% compared to CY2019 (derived from a five-year rolling average)
- The rolling average result remains high due to the high number of DSIs in CY2017 & 2018
- Annual DSI has dropped for the third consecutive year (green line)
- 2020 annual results were lower than previous years, likely due to COVID-19 restrictions (the lower DSI occurred during April and May 2020).

Figure 2: Deaths and serious injuries on region's roads
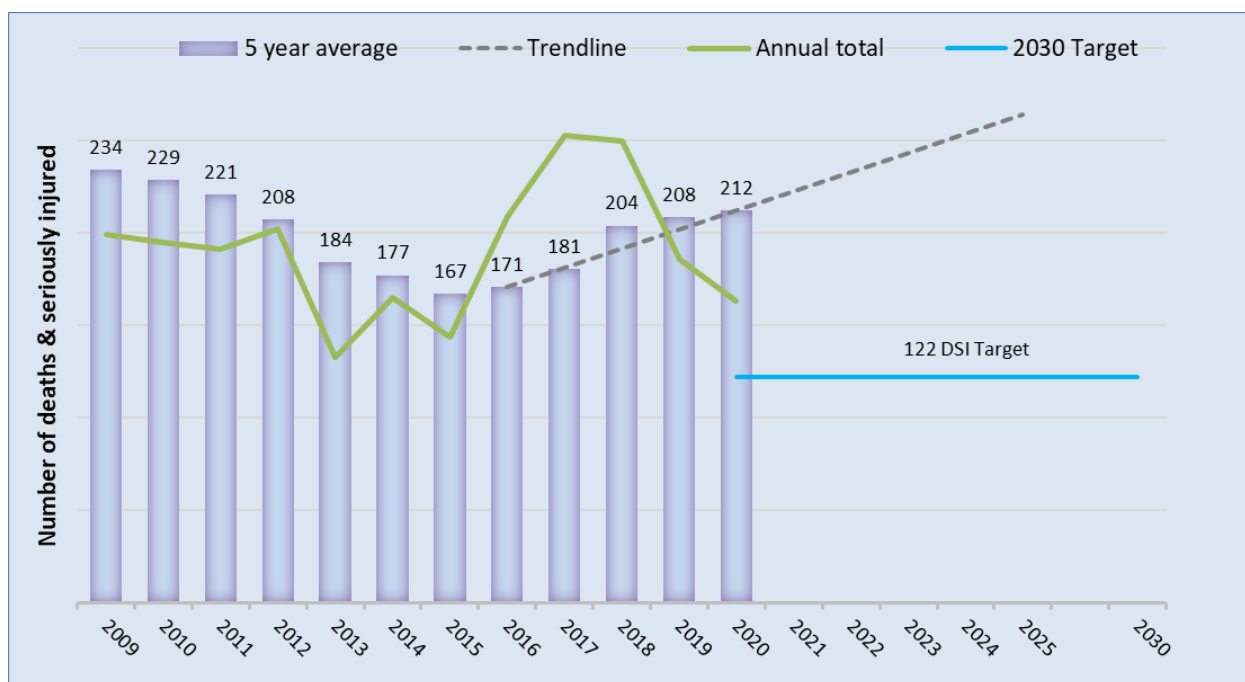
Source: CAS, Waka Kotahi

3.3   Land transport-generated carbon emissions

Target: A 35 percent reduction in transport-generated emissions by 2030

Strategic objective: The impact of transport and travel on the environment is minimised.

Carbon dioxide (CO_2) accounts for the bulk of transport-generated emissions, and is therefore a suitable proxy for overall transport-generated greenhouse gas emissions. By converting the annual regional fuel consumption data (litres of petrol & diesel consumed) to CO_2 emissions[3] we will be able to track our progress toward reducing emissions. The 2030 target is a 35% reduction of the FY2018 result of 1,232 Kilotonnes (kt).

In **Figure 3**, transport generated emission for FY2020/21 show:

- Carbon dioxide emissions were estimated to be 1,242 kilotonnes

- Emissions have decreased by 0.6% compared to FY2019 results

- Emissions have increased by 4% over the last five years – general trend shown by the 5-year trend-line (black dotted line in Figure 3)

- The red line shows emissions per capita. In FY2020/21 these were 2.25 CO_2 tonnes per capita. This a decrease of 3% over five years.

Figure 3: Transport-generated carbon dioxide emissions absolute and per capita
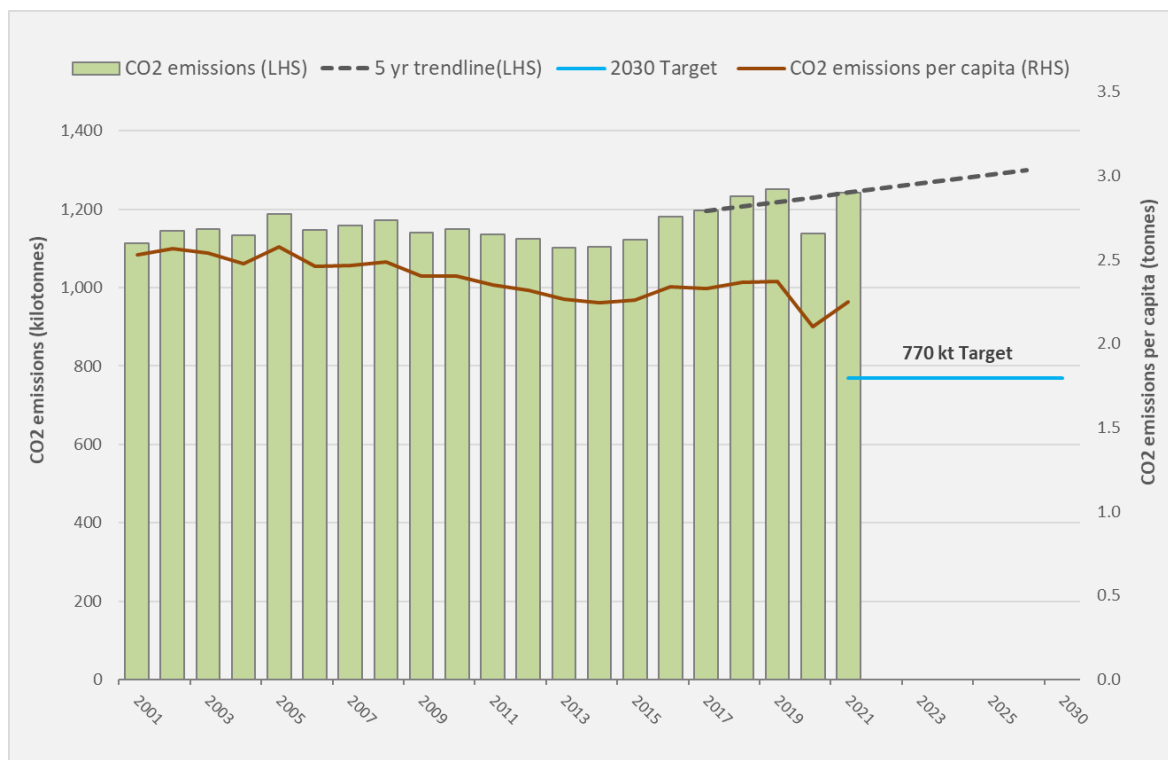
Data source: Fuel supply data from WCC & MCDC

---

[3] Petrol and diesel litres consumed are converted to kilotonnes of Carbon dioxide emissions. Conversion factor: 2.45 for petrol, 2.69 for diesel. MFE: Measuring emissions: a guide for organisations 2020.

Wellington RLTP Annual Monitoring report 2021

4.   Inclusive Access

Measuring: Public transport patronage, journey times on core bus routes, active travel and public transport journeys to work

Indicator	2021 results	Trend	Comment
The number of people boarding bus, train and ferry services during peak and off-peak times	Peak times: 19.5 million boardings Off-peak: 13.6 million boardings	Patronage at peak times is 18% below and for off-peak 27% below 2017 boarding levels.	COVID-19 has had a negative impact on PT patronage
Average travel times on core regional bus routes	AM: 36.0 mins PM: 33.5 mins	Travel times have slowly improved.	
Travel time variability on core regional bus routes	AM: 3.0 mins PM: 3.5 mins	Lateness is slightly more likely in the PM.	
Combined mode share of travel to work trips by walking, cycling & public transport. (Cordon survey)	54% mode share for Wellington City	Slight tilt upward showing mode share is increasing slowly.	COVID-19 had an impact on PT travel

4.1   Access to public transport

Another strategic objective is that people have access to good affordable travel choices and to increase the attractiveness of public transport and services so more people will board our trains, buses and ferries. This indicator monitors annual public transport boardings during peak and off-peak times.

Figure 4 shows the number of people boarding rail, bus and ferry services during the peak and off-peak. Peak time boardings have decreased in the last five years by 18% but have increased by 1.2% in the last year. COVID-19 has had a significant impact on patronage; just prior to the COVID emergency, PT boardings showed 3.6% growth compared to the previous year. The five-year trend line for boardings at peak-times now shows a downward trend, a direct result of the COVID emergency. However, data for FY2020/21 is showing a recovery.

Figure 4: Annual public transport boardings by time of day   Data source: Metlink, GWRC
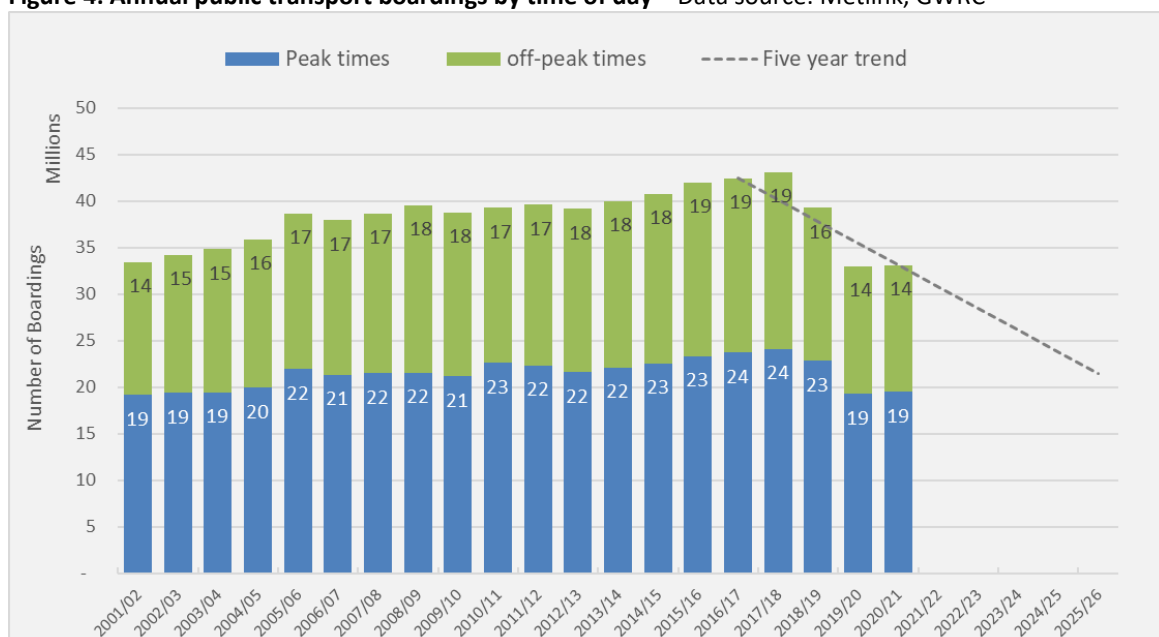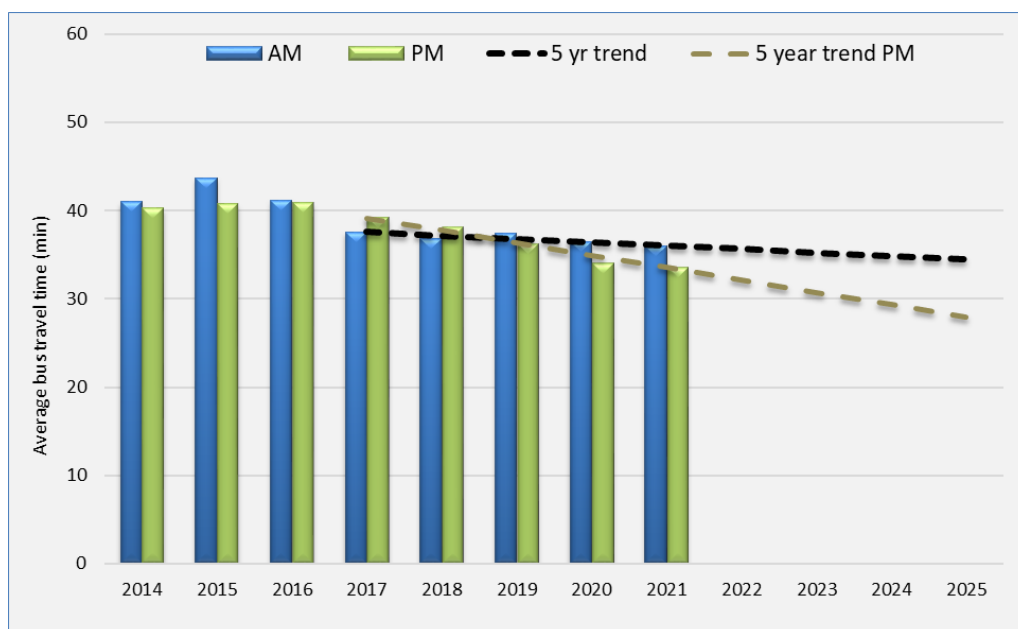
4.2 Bus service travel times and reliability

Improving service reliability by having consistent and competitive journey times makes public transport more attractive and improves accessibility for daily trips. By tracking travel times we can monitor if the services on core routes are reliable and quicker over time.

Figure 5 shows average travel times for journeys on Metlink's core bus routes[4] for morning and afternoon peak times up to FY2021. Results show that:

- Average travel time for AM peak is 36 minutes, an improvement of 1.5 minutes since 2017
- Average travel time for PM peak is 33.5 minutes, an improvement of 5 minutes since 2017
- There is a slight downward trend or reduction in average travel time for morning peak trips and more pronounced downward trend for PM peak times (over the last five years).

Figure 5: Travel times on core bus routes (FY2014 – 2021)


Data source: Metlink, GWRC

The second measure, average lateness, shows the variability of bus travel times and indicates how reliable our bus services are during peak times (on core routes). Figure 6 shows average lateness during AM peak is 3 minutes and PM 3.5 minutes in FY2021. The AM trend line indicates travel time lateness is overall decreasing and during PM peak, slowly increasing with both showing fluctuating results.

---

[4] Core bus routes include routes # 1, 2, 3, 11, 110, 120, 130, 220. Travel times are averaged over one month each year,

**Figure 6: Travel time variability on core routes**
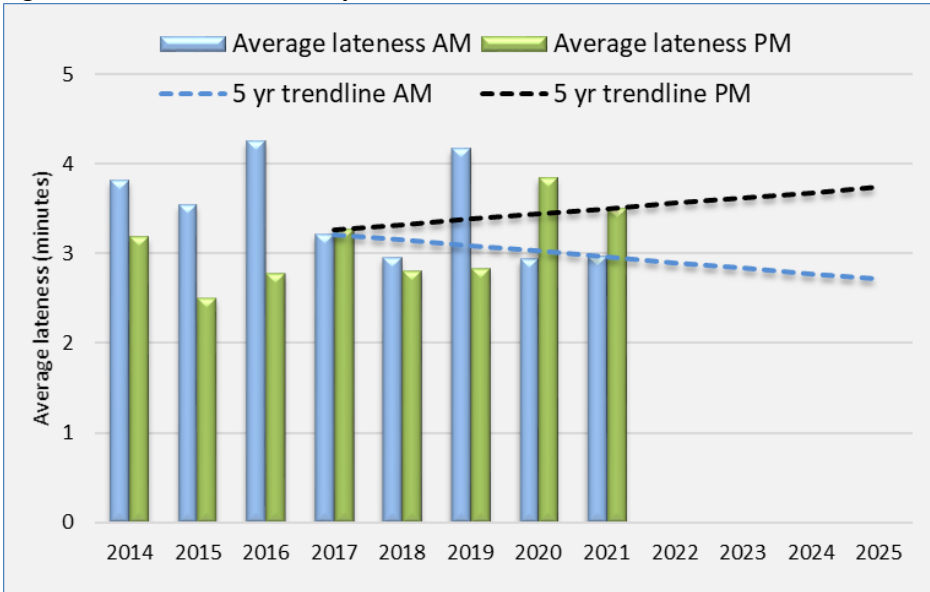
4.3   Mode share for travel – Cordon Survey

The Wellington City CBD cordon survey counts all people by transport mode as they travel inbound into the Wellington CBD during morning peak time (7-9AM). This annual survey takes place over one week in March. A three-year rolling average has been applied to the results to smooth the variability caused by day-to-day fluctuations and the impact of weather.

For the last two years, the survey results have been affected by COVID-19 restrictions which has reduced the number of people travelling to work and in turn the 5-year trendlines.

In **Figure 7** the annual total for combined mode share is shown by the orange line. Blue bars show the three-year rolling average result. The combined mode share in 2021 is 54.4% (rolling average). This is a drop of 1.4% points compared to 2019. The five year trend line indicates the combined mode share is slowly increasing despite the recent drop in mode share.

Figure 7: Public transport pedestrian and cycling mode share - Cordon survey
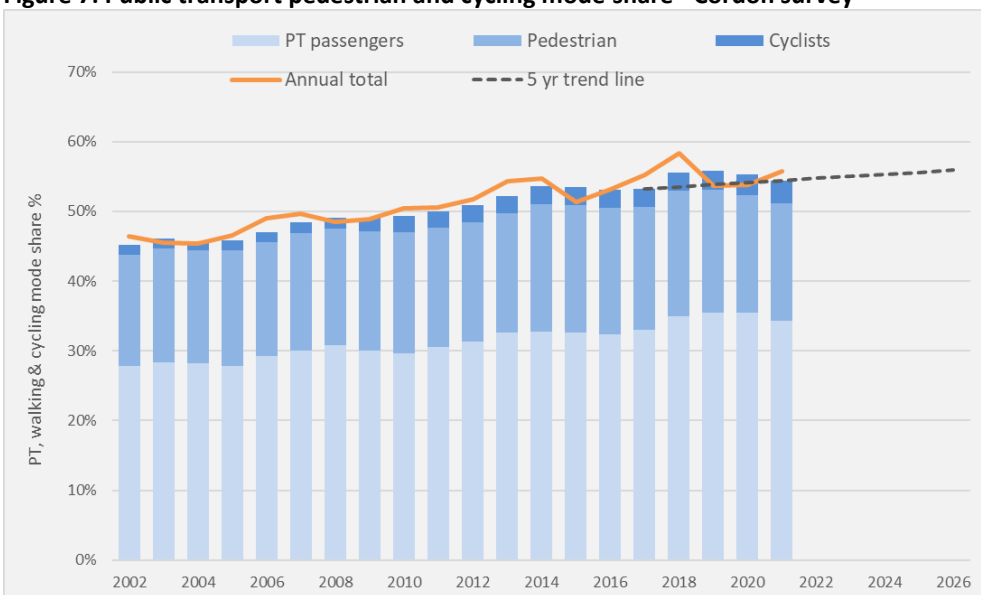
5. Healthy and safe people

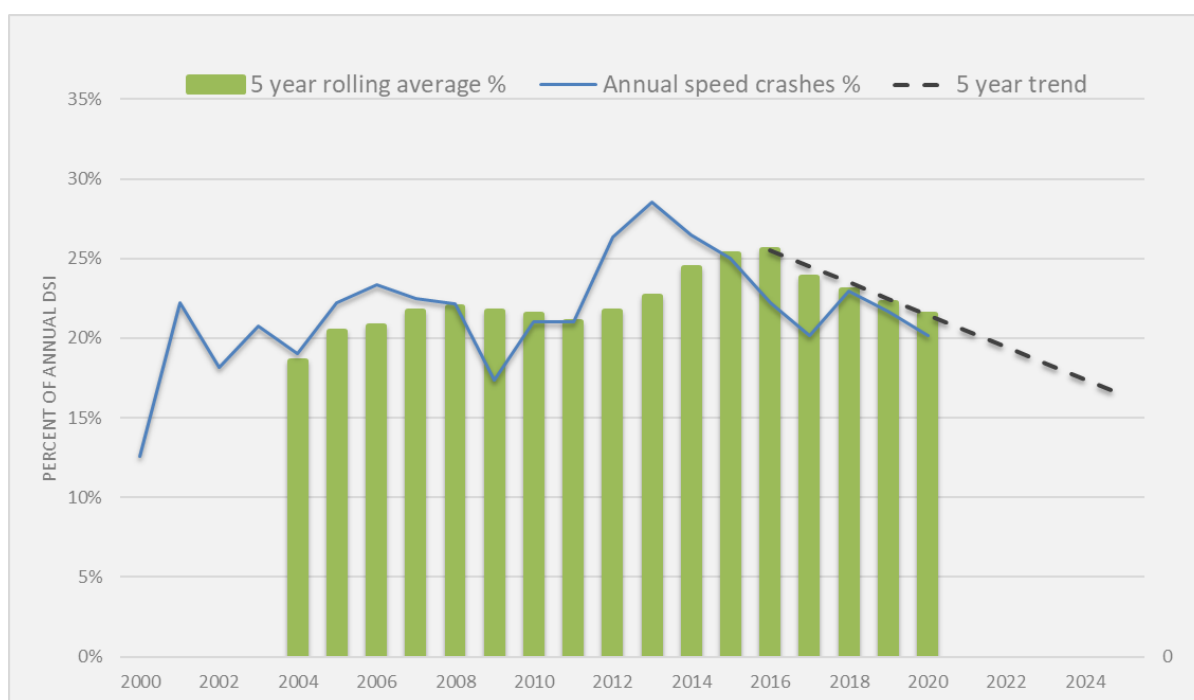Measuring: Deaths and serious injuries from road transport and participation in active travel to school.

Indicator	Latest results	Trend	Comment
Percentage of crashes involving death and serious injury when inappropriate speed is a contributing factor	21% of serious or fatal crashes (2020)	The proportion of speed-related accidents is decreasing.	
Percentage of students cycling, scooting & walking to school by school sector	32% of travel to school is active travel (2018 Census).	No trend yet.	The methodology changed for travel to education in the 2018 Census, so no time series yet.
Number of deaths and serious injuries for pedestrians and cyclists	55 DSI (5 year rolling average, 2020)	5 year trend-line shows DSI increasing.	

5.1 Death and serious injuries when speed is a contributing factor

Improving road safety through the region's investment programme is expected to have a particular emphasis on infrastructure and speed management. Addressing these issues will be critical if the region is to improve its safety performance and contribute to Road to Zero.

Figure 8 shows that speed (travelling too fast for the conditions) contributed to approximately 22-25% of crashes involving death or serious injury in the region over the five years 2016–20. The proportion of speed-related accidents is trending downward (shown by the green bars) meaning less accidents involving speed. Other major causes of serious accidents include use of drugs and alcohol, fatigue and lack of attention.

Figure 8: Proportion of deaths & serious injuries when speed is a contributing factor (2004-2020)
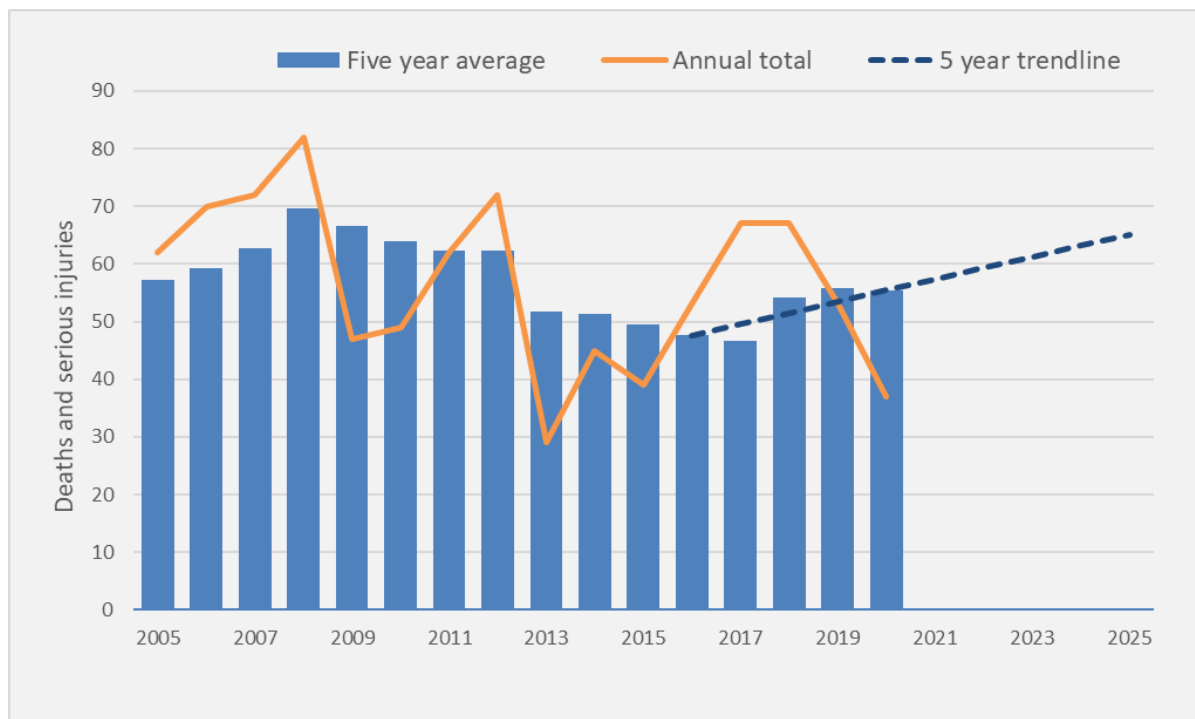

Data source: CAS, Waka Kotahi

5.2   Pedestrian & cyclist deaths and serious injuries

This indicator assesses the safety of the road network for pedestrians and cyclists by monitoring deaths and serious injuries over time. A five-year rolling average is applied to the data to even out fluctuations in the annual results (based on the calendar year).

Figure 9 shows the number of pedestrian and cyclist deaths and serious injuries each year. The five year average (blue bars) for CY2020 is 55 DSI – this is similar to the previous year. The annual results (orange line) have decreased for the second year running. The 5 year trend line shows an upward trend due to the high rates in 2017 and 2018. This trend will reverse if annual results continue to fall as they have done in 2019 and 2020.

Figure 9: Deaths and serious injuries of pedestrians and cyclists on roads

Data source: CAS, Waka Kotahi

5.3   Participation in active travel to school

In March 2022, Waka Kotahi is launching *Te Haerenga o Ngā Tamariki*, a prototype tool to record how students travel to school. This will be timed to coincide with Greater Wellington's Movin'March campaign. Using the regional results from this tool we will monitor how students travel to school, in particular active travel.

This tool will help us understand how students currently travel to school across the region and New Zealand. This initiative aims to help schools develop a picture of issues at the school gate, give students the chance to think more about their mode of travel, and to help promote conversations in the classroom about mode choice, health and sustainability.

6. Resilience and security indicators

Measuring: Road network resilience

Indicator	2021 results	Trend	Comment
The availability of a viable alternative to high-risk and high-impact routes	No results this year.		
The frequency and duration of resolved road closures on major roads	99 road closures, 116 hours of unplanned road closures	Annual increase in unplanned road closures over the last ten years. Decrease in average duration of road closures.	

## 6.1 A resilient road network

Resilience is a priority area for investment in the RLTP. A key objective is to ensure journeys to, from and within the Wellington Region are connected, resilient and reliable. There is no data at this time for the first indicator – availability of alternative routes. The second indicator, monitors unplanned road closures.

Figure 10 shows the duration and frequency of unplanned events on the region's state highways that lead to road closure. These events disrupt the flow of commuter traffic and freight causing delays and test the resilience of the network. The main cause of unplanned road closures are vehicle accidents, flooding and other weather conditions (e.g. strong wind, ice, snow).

The frequency of events has increased since 2010, from 60 to 99 per year, likely due to increased traffic volumes. However the length of time to resolve these events has reduced since 2010. In FY2020/21 the average duration of a road closure was 1.2 hours against an average of 5.4 hours per event in FY2009/10.

The type of road closure event that has a high impact in the region is flooding. Flooding events are the main reason for road closures on State Highway 53 in the Wairarapa; a road closure lasts on average 20 hours (for events from 2010 to 2021).

Figure 10: **The duration and frequency of unplanned road closures on state highways**

Data source: Waka Kotahi

Wellington RLTP Annual Monitoring report 2021
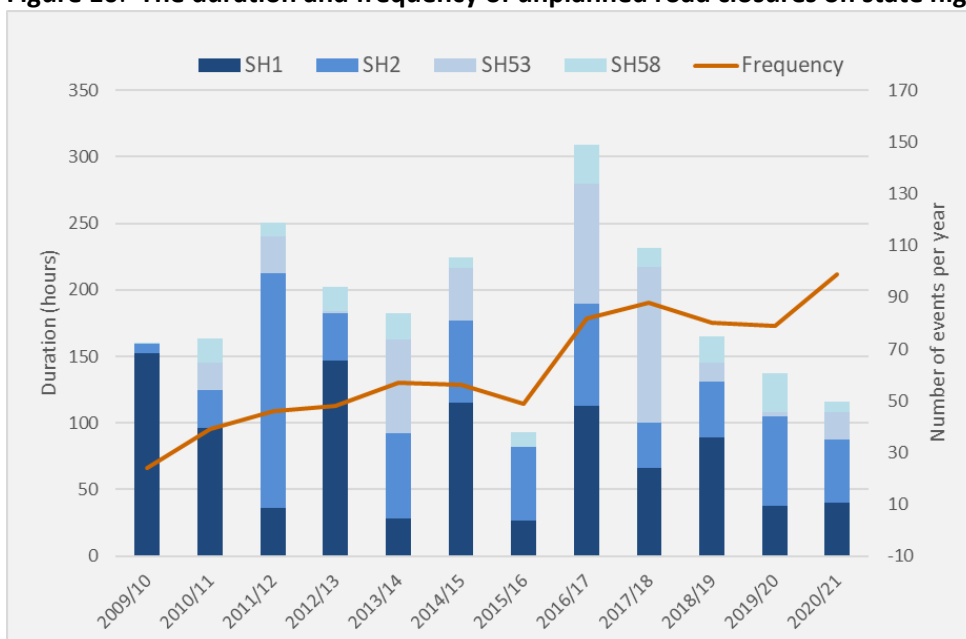
7. Economic prosperity indicators

Measuring: The efficiency of the road network on strategic routes and regional freight moved by rail.

Indicator	2021 results	Trend	Comment
Average travel speeds on selected strategic routes	36.5 km/hr peak times 37 km/hr inter-peak	This is a new data series so no trend.	
Average travel time variability on selected strategic routes.	7 minute variability inbound.	This is a new data series so no trend.	
Annual freight volumes moved by rail	1.47 million tonnes	The movement of freight has increased by 21% over last five years.	

7.1 An efficient road network

A key investment priority is to improve access to key regional destinations, including the port, airport and hospitals for people and freight. Strategic routes comprise state highways and high volume regional roads. These key routes provide access and connectivity for people and goods to key regional destinations.

The efficiency of the road network can be estimated by trends in travel speed at peak travel times. **Figure 11** shows average travel speed for inbound traffic on core routes[5] over three years (2019-2021). In future, with more data, this indicator will use a three year rolling average to monitor travel speeds. The dotted line in **Figure 11** shows the average speed over all routes[6] at AM peak from 2019 to 2021. The three-year rolling average is 35.3km/h for AM (inbound) and for PM (outbound), slightly faster average speed of 36.4 km/h.

Figure 11: Average travel speed on core routes for inbound at peak time travel
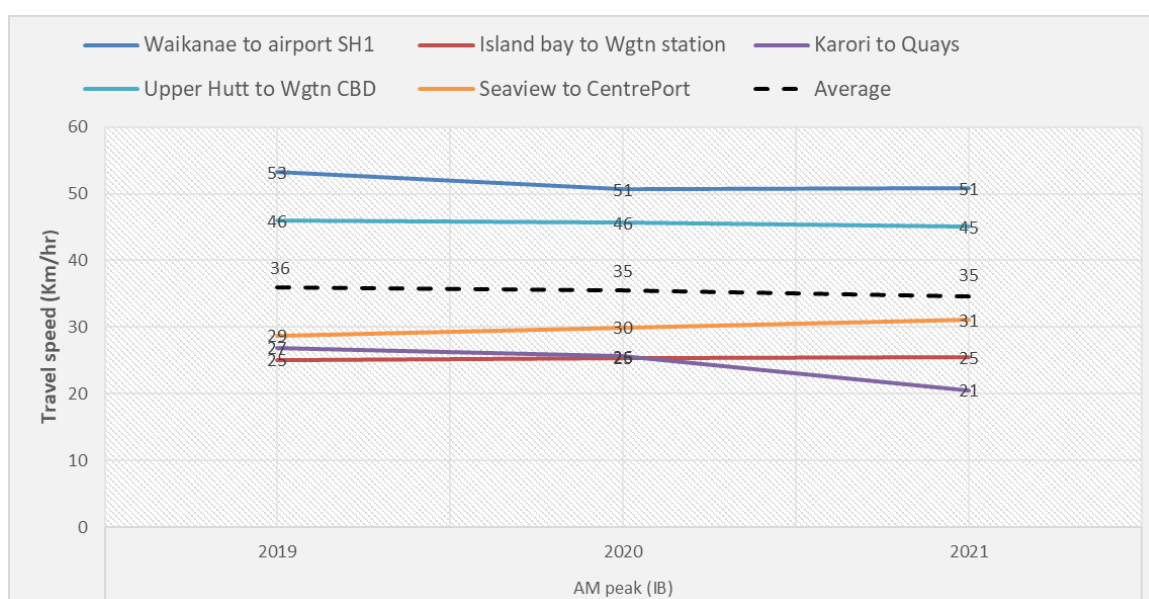
Data source: Traffic Watcher

---

[5] Core routes are: SH1 Waikanae to airport, Island bay to Wellington station, Paremata to Seaview via SH58, Karori to Quays, Upper Hutt to Wellington CBD, Seaview to Centreport.
[6] Except for results for Paremata to Seaview via SH58 due to inconsistencies in the data.

7.2 Regional freight moved by rail

The region relies on road, rail and coastal shipping networks to move freight efficiently. Developing the rail network to increase the volume of freight moved by rail will benefit the regional economy.

The Freight Information Gathering System (FIGS) data provides annual estimates of rail freight volume nationwide. The combined movement of freight by rail inbound and outbound was 1.5 million tonnes in 2020/21 for the Wellington region, shown in **Figure 12**. Compared to 2019, freight volume has increased by 4%, mainly driven by an increase in the volume of freight moved out of the region.

Figure 12: Freight moved by rail in and out of the region
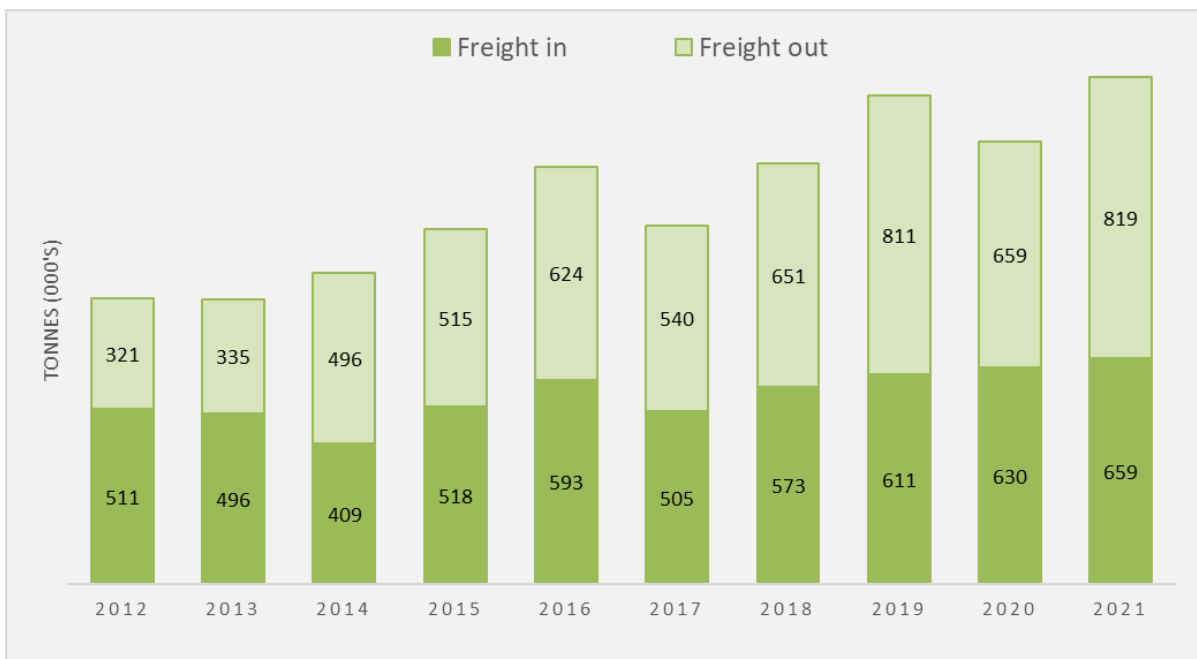
Data source: FIGS, Ministry of Transport

8. Environmental sustainability

Measuring: Transport generated emissions and vehicle fleet composition

| Indicator	2021 results	Trend	Comment
Transport CO₂ emissions (per capita) – see page 3	2.25 tonnes of CO_2 per capita	Current result is 3% below 2017 levels.	COVID-19 has had an impact on household travel.
Ambient air quality - Nitrogen dioxide & black carbon matter	Nitrogen dioxide is 16.1 µg/m³	Nitrogen dioxide has decreased on average by 2.5% each year for the last 5 years.	
Percentage of the private car fleet that are EV and hybrid vehicles	18% of new registrations are hybrid or electric	Registrations have increased from 4% to 18% in the last 5 years.	Refers to light private vehicles.
Percentage of the bus fleet that are EV and hybrid vehicles	2.4% electric or 11 buses up to June 2021	EV buses first introduced in 2018, a small increase since then.	Additional electric buses to join the fleet in 2022.

8.1 Air quality – Nitrogen dioxide

The RLTP advocates for and supports initiatives that contribute to ongoing improvement of the vehicle fleet to reduce greenhouse gas emissions and improve air quality, including uptake of electric vehicles, alternative fuel options and improved fuel efficiency.

Air quality is monitored based on levels of nitrogen dioxide (NO_2), a harmful pollutant arising from vehicle emissions. The data is from Waka Kotahi's national NO_2 monitoring network at multiple sites across the region (except the Wairarapa). The Waka Kotahi sites are mostly along the state highways, but include a small number of local roads.

Figure 13 shows the results from NO_2 monitoring sites. In 2020, NO_2 was on average 16.1 µg/m³, calculated using a five-year moving average (calendar years). Since 2017, levels of NO_2 have decreased, overall there has been a 9% reduction in NO_2 during this time.

**Figure 13: Air quality nitrogen dioxide**
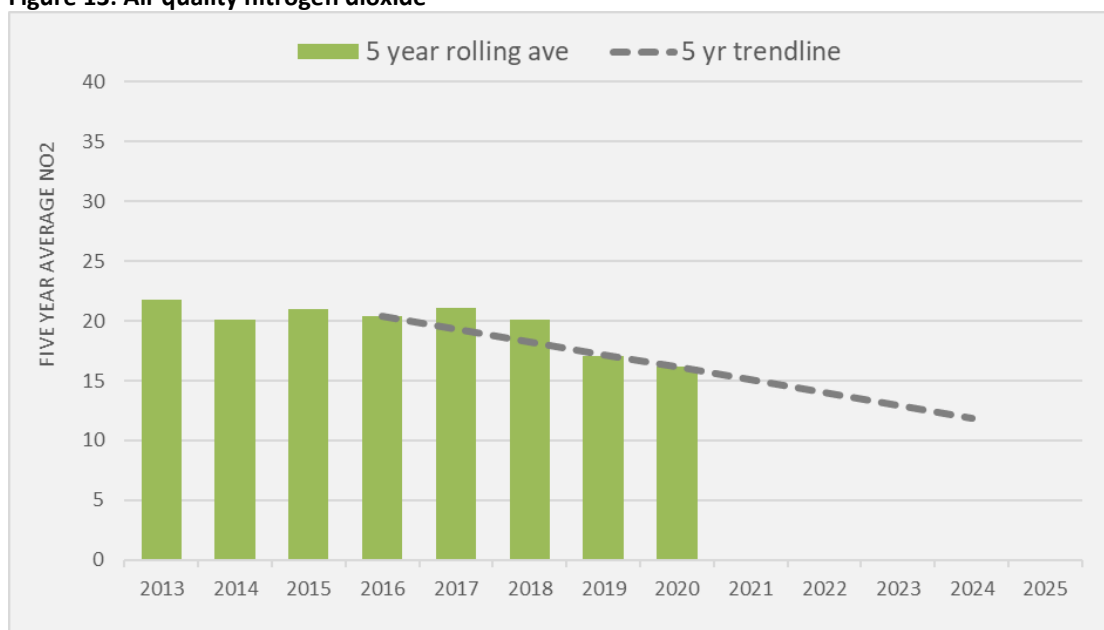
(Data source: GWRC/Waka Kotahi)

8.2   Changes to the vehicle fleet

This indicator monitors the transition from fossil fuel based engines to low-emission vehicles such as electric (EV) and hybrid vehicles.

The uptake in electric and hybrid cars had been gradual to 2019 then uptake doubled in 2020. New registrations of electric and hybrid cars have increased from 4% to 18% in the five years to 2021. Light electric vehicles are approximately 1.4% of the total light vehicle fleet in the region (all registered vehicles).

Figure 14: New registrations for private vehicle fleet by engine type
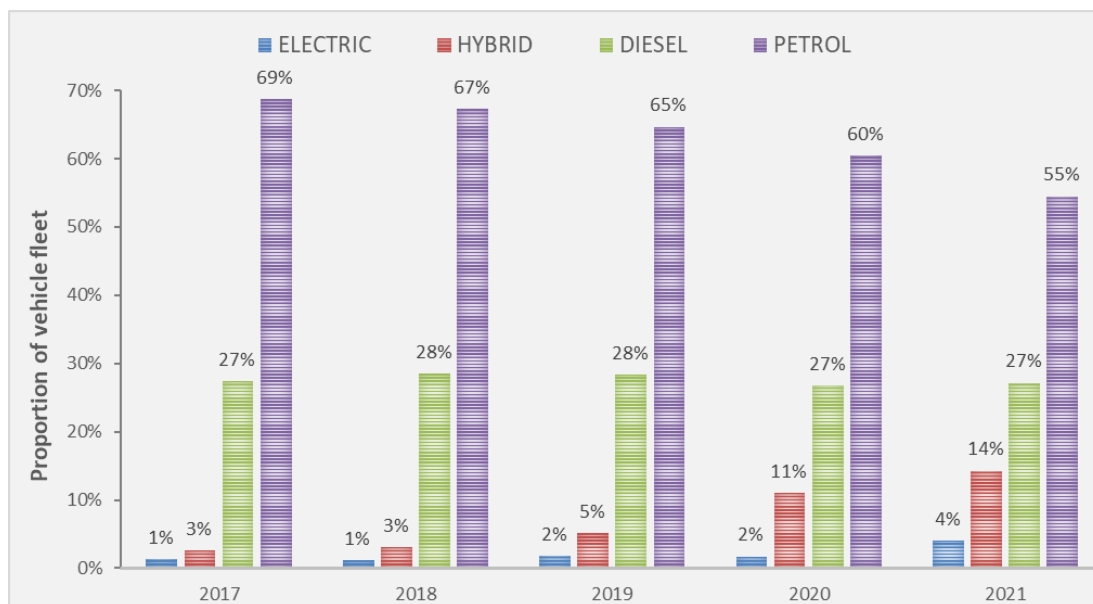
Data source: Waka Kotahi

8.3   Electric bus fleet

In 2021 the regional bus fleet consisted of 11 electric buses, this is 2.4% of the fleet. An additional 111 electric buses will join the fleet by the end of 2023, increasing the proportion of EVs to approximately 24%. The new buses will progressively replace diesel buses in the fleet, reducing the fleet's total carbon emissions.

9.   Reporting on the RLTP Programme 2021-24

Reporting on the RLTP programme is a collaborative effort by RLTP partners primarily to provide regular project information on the progress of the programme. Quarterly reporting will present project highlights, risks and issues, and mitigations. As well, project status information will include the time, scope and cost of projects. The reports will be available on the GWRC website www.gw.govt.nz