

Transport Indicators – FINAL

Version control

This document provides Version 6b of the Transport indicators.

Version	Details	Date
1.	Initial draft developed based on the workshops held in October/November 2018	19 December 2018
2.	Revised based on feedback received on the Version 1 indicators, as well as additional engagement with Waka Kotahi NZ Transport Agency, Civil Aviation Authority (CAA), Maritime NZ (MNZ), local governments, and relevant data owners (including Ministry for the Environment, Stats NZ, ACC and Ministry of Health)	8 April 2019
3.	Revised based on feedback received on the Version 2	21 May 2019
4.	Revised to reflect structure and phrasing of the GPS 2018 measures document	1 July 2019
5.	Revised based on feedback received on the Version 4, and alignment to the finalised GPS 2018 measures	11 September 2019
6a.	Revised based on updates on data availability for 2018/19 reporting and alignment to the reporting work	13 December 2019
6b.	Revised based on updates on data availability for 2018/19 reporting and alignment to the reporting work	2 March 2020

Introduction

There are a total of 36 Transport Indicators, with between four and nine indicators for each of the five transport outcomes. The indicators are designed to be read together as a set. The indicators have been developed based on engagement with internal and external stakeholders, and desk research of international and national research, technical papers, and reports.

Types of indicators

To assist with the reading of this document, the following icons have been used to depict which modes the specific indicator is available to report on:

	Walking (may include other active modes such as scooters and skateboards, depending on the data source)
	Cycling (includes e-bikes)
	Road transport
	Rail transport
	Maritime
	Aviation

Data availability

Given the existing data and research gaps, the indicators will be introduced in stages based on data availability. 31 of the indicators will be available to report on in 2018/19 (for at least some modes). The remaining indicators will be able to be reported on in 2019/20 (for at least some modes). However, note that not all indicators will be able to be reported for all modes from this date, some require significant work and a likely reporting date is not yet available. More detail about when different indicators will be available for reporting is provided in the tables on the next page.

Additional indicators

This list is based on the best available information as of March 2020. This is the first time the Ministry has attempted to report on the performance of the transport system as a whole and, as a result, this is a somewhat iterative process. While indicators will be largely kept the same year-on-year to allow for analysis of trends over time, there may be some changes to the indicators, for example, additional indicators may be added as new indicators are developed and as new data sources become available (e.g. through changes in technology).

Collated indicators

A summary of the indicators, and what mode/s they relate to is provided below. More detail about the indicators, including definitions and data sources, are provided in the rest of the document.

A tick (✓) indicates that that indicator is able to be reported on for the 2018/19 financial year. Where a date is listed, this is the first year that this indicator will be available for reporting. Note that in several cases, data for different modes will become available different years. Indicators are colour coded in the table below to reflect this (noting that these colour codings have changed since earlier versions of the Transport Indicators):

	Indicators currently reported elsewhere
	Indicators being developed this year
	Indicators that require further work

	Indicator	Associated outcome	Walking	Cycling	Road	Rail	Maritime	Aviation
1.	Household spending on transport (% of income)	Inclusive access 3.1	-	✓	✓	✓	-	-
2.	People unable to make a beneficial transport journey	Inclusive access 3.5	✓	✓	✓	✓	-	-
3.	Rural households without access to a motor vehicle	Inclusive access 3.4	-	-	✓	-	-	-
4.	Population with access to frequent public transport services	Inclusive access 3.2	-	-	✓	✓	-	-
5.	Access to jobs	Inclusive access 3.3	✓	✓	✓	✓	-	-
6.	Availability of viable alternative routes	Resilience and security 4.5	-	-	2019/20	-	-	-
7.	Contribution of transport and freight movements to New Zealand GDP	Economic prosperity 2.1	-	-	✓	✓	✓	✓
8.	Exposure to elevated concentrations of air pollution from the transport system	Healthy and safe people 1.6	-	-	2019/20	TBC	TBC	TBC
9.	Exposure to elevated levels of noise from the transport system	Healthy and safe people 1.7	-	-	✓	TBC	TBC	2019/20
10.	Farm expenditure on freight	Economic prosperity 2.9	-	-	✓	✓	✓	✓
11.	Vehicle fleet composition	Environmental sustainability 5.3	-	-	✓	TBC	TBC	TBC
12.	Freight carried domestically (local and regional)	Economic prosperity 2.5	-	-	✓	✓	✓	✓
13.	Freight imports and exports	Economic prosperity 2.4	-	-	-	-	✓	✓
14.	Freight productivity / utilisations	Economic prosperity 2.8	-	-	✓	✓	✓	TBC
15.	Travel time reliability for freight transportation	Economic prosperity 2.6	-	-	2019/20	✓	TBC	TBC
16.	Greenhouse gases emitted from the NZ transport system	Environmental sustainability 5.2	-	-	✓	✓	✓	✓
17.	Harmful emissions from fuel combustion	Healthy and safe people 1.5	-	-	✓	✓	✓	✓
18.	Load efficiency	Economic prosperity 2.7	-	-	2020/21	TBC	✓	TBC
19.	Marine oil spills in NZ waters	Environmental sustainability 5.1	-	-	-	-	✓	-
20.	Mode share of short trips	Environmental sustainability 5.4	✓	✓	✓	✓	-	-
21.	Operator risk profile	Resilience and security 4.3	-	-	TBC	TBC	2019/20	2019/20
22.	Outages on routes with no viable alternative	Resilience and security 4.8	-	-	TBC	TBC	TBC	TBC
23.	Passengers arriving and departing NZ	Economic prosperity 2.2	-	-	-	-	✓	✓
24.	Perceived personal safety while using the transport system	Resilience and security 4.2	✓	✓	✓	✓	TBC	✓
25.	Perceived safety of walking and cycling	Inclusive access 3.8	✓	✓	-	-	-	-
26.	Perception of public transport	Inclusive access 3.7	-	-	✓	✓	-	-
27.	Preparation for loss of traditional transport options	Resilience and security 4.6	✓	✓	✓	✓	-	-
28.	Response capability	Resilience and security 4.4	-	-	✓	✓	✓	TBC
29.	Security incidents	Resilience and security 4.1	-	-	TBC	TBC	✓	✓
30.	Susceptibility to coastal inundation with sea level rise	Resilience and security 4.7	-	-	2019/20	2019/20	TBC	TBC
31.	Time spent travelling by active modes	Healthy and safe people 1.4	✓	✓	-	-	-	-
32.	Transport-related deaths	Healthy and safe people 1.1	✓	✓	✓	✓	✓	✓
33.	Transport-related serious injuries	Healthy and safe people 1.2	✓	✓	✓	✓	✓	✓
34.	Transport-sector work injuries	Healthy and safe people 1.3	-	-	✓	✓	✓	✓
35.	Travel time reliability on priority tourist routes	Economic prosperity 2.3	-	-	2019/20	✓	-	TBC
36.	Unmet need for GP services due to a lack of transport	Inclusive access 3.6	✓	✓	✓	✓	-	-

Research and data gaps

The table below summarises indicators in the table above that require further work (i.e. those coloured red), plus other potential indicators that have been identified but where no data source currently exists and/or has been identified (denotes with *). These data, information and research gaps are identified as recommended initiatives¹ in the *Transport Evidence Base Strategy*² (as per the table below) and will be delivered on via the associated work programme currently under development.

Indicator	Associated outcome	Relevant mode/s ³	Recommended initiatives as per the Transport Evidence Base Strategy
1. Access for people with disabilities and/or limited mobility*	Inclusive access	All modes	R2.3 + Research Strategy
2. Exposure to elevated concentrations of air pollution from the transport system	Healthy and safe people 1.6	Rail, maritime, aviation	R11.1 / R10.1 + Research Strategy
3. Exposure to elevated levels of noise from the transport system	Healthy and safe people 1.7	Maritime	R11.1 / R11.2 / R10.1 + Research Strategy
4. Fleet composition	Environmental sustainability 5.3	Rail, maritime, aviation	R1.3 / R1.7 / R1.10 + Research Strategy
5. Freight carried domestically (local and regional)	Economic prosperity 2.6	Aviation	R3.10 + Research Strategy
6. Freight productivity / utilisations	Economic prosperity 2.9	Aviation	R3.10 / R3.2 + Research Strategy
7. Freight travel time reliability	Economic prosperity 2.7	Maritime and aviation	R3.2 + Research Strategy
8. Impact of the transport system on biodiversity*	Environmental sustainability	All modes	R11.2 + R11.7 + Research Strategy
9. Integration of land use and transport planning*	Inclusive access	All modes	R5.2 + Research Strategy
10. Load efficiency	Economic prosperity 2.8	Rail and aviation	R1.12 / R1.3 + Research Strategy
11. Network vulnerability*	Resilience and security	All modes	R11.10 / R5.1 + Research Strategy
12. Operator risk profile	Resilience and security 4.3	Road, rail	R5.1 + Research Strategy
13. Outages on routes with no viable alternative	Resilience and security 4.8	Maritime, aviation	R5.1 + Research Strategy
14. Perceived personal safety while using the transport system	Inclusive access 3.7	Maritime	R5.1 + Research Strategy
15. Regional connectivity	Economic prosperity	All modes	R1.14 + R3.2 + R3.10
16. Response capability	Resilience and security 4.4	Aviation	R5.1 + Research Strategy
17. Security incidents	Resilience and security 4.1	Road, rail	R5.1 + Research Strategy
18. Susceptibility to coastal inundation with sea level rise	Resilience and security 4.7	Maritime, aviation	R5.1 / R11.10 + Research Strategy
19. Tourist volumes and flows within New Zealand*	Economic prosperity	All modes	R1.15 + Research Strategy
20. Transport-related water pollution (including contaminants from the roading network, and sewage and waste from sea-going vessels)*	Environmental sustainability	All modes	R11.5 / R11.9 + Research Strategy
21. Reliability of travel times for transport users*	Inclusive access	All modes	R2.4 / R4.19 + Research Strategy
22. Travel time reliability on priority tourist routes	Economic prosperity 2.4	Aviation	R1.12 + Research Strategy
23. Utilisation of key movement corridors for people and freight*	Economic prosperity	All modes	R3.6 + Research Strategy
24. Walkability in urban centres*	Inclusive access	All modes	R3.6 + Research Strategy

Some national-level security data is confidential and therefore inappropriate to be included (and reported on) as part of the Transport Outcomes Framework reporting; these data will be monitored through other mechanisms to assist decision making.

¹ <https://www.transport.govt.nz/assets/Uploads/Research/Documents/78c3678af6/Transport-Domain-Plan-full-list-of-recommended-initiatives.pdf>

² <https://www.transport.govt.nz/mot-resources/transport-evidence-base-strategy/>

³ Noting that some of these indicators are already available for some modes. Modes listed in this column are those where there is currently a data/information gap.

Outcome 1: Healthy and safe people

Protecting people from transport-related injuries and harmful pollution, and making active travel an attractive option.

Theme	Proposed indicator	Specifications / definitions	Reporting requirements	Data source/s and responsible agency	Notes / limitations
Public safety: Ensuring that people arrive safely at their destinations	1.1 Transport-related deaths 	The reporting matrixes are different across modes. - Road deaths are defined as when an injury/injuries resulted in death within 30 days of when the crash happened. The dataset includes 1) motor vehicle crashes that occur on a public road and are attributable directly or indirectly to a motor vehicle or its load, and 2) (from 2014 onwards) cyclist crashes including when a motor vehicle is not involved. - Rail deaths are defined as deaths that occurred on the rail corridor involving a rail vehicle. Rail deaths can include suicides. Data can be segmented by rail corridor user types. - Maritime sector deaths are those that occurred in the marine environment. Data can be segmented by sectors: commercial and recreational. - Aviation sector deaths are injuries which result in death within 30 days of the incident and must involve an aviation aircraft. Data can be segmented by sectors: public air transport, other commercial operations, and non-commercial operations.	- Number of deaths to be reported as: total, per 100,000 population, and per distance travelled (where available). - To be segmented by mode and corridor user type/sector (if relevant/ available). - To be reported by region (where available).	- Crash Analysis System (CAS) maintained by NZ Transport Agency. - Rail Information System (RIS) maintained by NZ Transport Agency. - Maritime safety statistics maintained by MINZ. - Aviation safety statistics maintained by CAA.	CAS does not include: - Pedestrian deaths when a motor vehicle was not involved (although it is assumed there are few pedestrian deaths that do not include a motor vehicle) - Off-road activities.
	1.2 Transport-related serious injuries 	The reporting matrixes are different across modes. - Road serious injuries include fractures, concussions, internal injuries, crushing, severe cuts, lacerations, severe general shock necessitating medical treatment, and any other injury requiring admittance or detention in hospital. - Rail and maritime sector serious injuries are 'notifiable injuries' as defined in the Health and Safety at Work Act (HSWA) 2015. Rail serious injuries can include attempted suicides. - Aviation sector serious injuries are those that requires hospitalisation for more than 48 hours, or results in a fracture of any bone, or involved lacerations which cause severe haemorrhage, nerve, muscle, or tendon damage, or involves injury to an internal organ, or involves second or third degree burns, or any burns affecting more than 5% of the body surface, or involves verified exposure to infectious substances or injurious radiation.	As for transport-related deaths above.	As for transport-related deaths above.	As for transport-related deaths above. Maritime sector serious injuries does not include: recreational incidents due to a lack of reliable data.
Workplace safety: Ensuring that people who work in the transport sector are protected from work-related injuries	1.3 Transport-sector work injuries 	Work-related injury claims are those made to ACC for work-related injuries. The injury can be either due to an accident event or have happened by gradual process related to the person's work. Only accepted claims are included. Claims identified as self-harm are excluded.	To be segmented by: - Mode (land transport, rail transport, water transport, air and space transport) - Severity (fatal, more than a week off work, less than a week off work).	ACC claims for work-related injuries for the transport industry (based on Australian and New Zealand Standard Industrial Classification 2006).	-
Active travel: Improving physical and mental health through	1.4 Time spent travelling by active modes 	Cycling or walking on a public footpath or road (i.e. does not include walking/cycling off-road e.g. mountain biking). National estimates of number of hours spent walking and cycling per person, per year are based on trip legs made during the survey period. A trip leg refers to a single leg of a journey, between any two stops, with no stops or changes in travel mode.	To be segmented by age, gender, ethnicity, and region (where available).	Calculated based on the Household Travel Survey (HTS) managed by MOT. Data will be reported on a 3-year rolling average.	This is a sub-set of the mode share indicator being used for Transport Outcomes Framework. Mode share by distance travelled is included in the environmental outcome, but a specific indicator of time spent engaged in active travel modes is included here because of the focus on public health benefits.

physically active travel						
Air and noise pollution: Protecting people from exposure to harmful pollution from the transport system	1.5 Harmful emissions from fuel combustion 	National estimate of carbon dioxide (CO ₂), nitrogen oxide (NO _x), non-methane volatile organic compounds (NMVOC _x) and sulphur dioxide (SO ₂) emissions (kilotonnes).	Amount of each pollutant type segmented by mode (on-road motor vehicle, rail, shipping, aviation, or other.	National air emission inventory managed by Ministry for the Environment.	Note there are limitations associated with this indicator, e.g. time lag in reporting given the complexity of the method (2015 results were published in 2018).	
	1.6 Exposure to elevated concentrations of air pollution from the transport system 	Elevated concentrations of air pollution (and how this is attributed to road transport) needs to be further defined but will likely be based on existing standards (e.g. national ambient air quality guidelines and standards, or those from the World Health Organisation). Currently this measure is limited to road transport but is expected to be extended over time to include rail. At this time, land transport related air pollution does not include dust from unsealed roads.	To be segmented by mode and region and reported as: • Absolute number of people • Percentage of total New Zealand population.	NZ Transport Agency is currently developing the vehicle emissions mapping tool which will be able to report on the number of people exposed to elevated concentrations of road transport-related air pollution by 2019/20. This model is expected to eventually be able to report on rail as well.		
	1.7 Exposure to elevated levels of noise from the transport system 	The assessment and reporting matrixes are different across modes. “High noise” is defined as >=64 LA eq (Equivalence continuous sound level). Currently this measure is limited to road transport on national, regional and arterial roads.	To be segmented by region and reported as: • Absolute number of people • Percentage of total New Zealand population.	NZ Transport Agency’s land transport noise pollution model (developed in 2018/19). This model is expected to eventually be able to also report on rail. MOT is currently working to develop an equivalent aviation measure based on airport noise contour maps. This will be available for the 2019/20 year.		

Outcome 2: Economic prosperity

Supporting economic activity via local, regional, and international connections, with efficient movements of people and products.

Theme	Proposed indicator	Specifications / definitions	Reporting requirements	Data source/s and responsible agency	Notes / limitations
Contribution to the economy: Contributing to economic development through transport and freight sector activities	2.1 Contribution of transport and freight movements ton NZ GDP 	To be reported as dollar amount and percentage of total GDP.	To be segmented by region and industry (‘road transport’, ‘rail, water, air, and other transport’, and ‘postal, courier transport support, and warehousing services’).	National Accounts (Industry Production and Investment) managed by Stats NZ.	-
	2.2 Passenger's arriving and departing NZ 	Number of people arriving and departing NZ.	To be segmented by mode (air and sea cruise) and location.	International Travel and Migration data managed by Stats NZ.	-
	2.3 Travel time reliability on priority tourist routes 	The reporting matrixes are different across modes. - NZTA is developing a measure of “predictability of travel times on priority routes for freight and tourism” (as for 2.6 below). - Rail measure is reported as the percentage of scenic trains arriving on time (i.e. within 30 minutes of scheduled arrival).	To be segmented by mode and region (where available).	Road measure under development by NZ Transport Agency, expected to be available for reporting in 2019/20. This measure is expected to eventually be able to report on rail as well. Rail data maintained and reported by KiwiRail.	-
Movement of freight:	2.4 Freight imports and exports 	To be reported as dollar amount and gross weight in tonnes.	To be segmented by mode (air and sea).	Import and export statistics from Overseas Cargo Statistics (OSC) managed by Stats NZ.	-

Supporting economic activity through local, regional and international freight connections	2.5 Freight carried domestically (local and regional) 	The reporting matrixes are different across modes. - To be reported as gross weight in tonnes, dollar amount and distance travelled (where available). - Maritime freight to be measured as number of full containers moved coastally (in standardised twenty-food equivalent units/TEU).	To be segmented by mode: - Road - Rail – to be segmented by movement - Maritime – to be segmented by port - Aviation	Road measure based on the National Freight Demand Study managed by MOT. Rail and maritime data based on FIGS. Aviation data is maintained by CAA. Does not capture light freight (e.g. courier) or bulk freight moved coastally. The National Freight Demand Study is not updated every year. Currently available data sources do not provide all the metrics specified here. More work will be required in future to fill these data gaps.	Aviation data includes freight transport domestically on non-passenger flights; it does not include freight transported domestically in the belly hold of passenger flights.
	2.6 Travel time reliability for freight transportation 	The reporting matrixes are different across modes. - NZ Transport Agency is developing a measure of “predictability of travel times on priority routes for freight and tourism” for land transport (as for 2.4 above). - Rail measure is reported as the percentage of freight train arrived on time (i.e. within 30 minutes of scheduled arrival).	To be segmented by mode and region (where available).	Road measure under development by NZ Transport Agency, expected to be available for reporting in 2019/20. Rail data maintained and reported by KiwiRail.	-
	2.7 Load efficiency 	The reporting matrixes are different across modes. - NZ Transport Agency is currently developing an equivalent road indicator which should be available early 2020 (based on weight-right data to inform load efficiency of heavy vehicles). - Maritime measure is reported as number of empty containers (in TEU) discharged.	Maritime data to be segmented by ports	Maritime data available from FIGS managed by MOT.	-
	2.8 Freight productivity / utilisation 	The reporting matrixes are different across modes. - Maritime based freight utilisation measured by ship rate - Road-based freight utilisation measured to be developed (e.g. vehicle kilometres travelled per heavy vehicle - Rail-based freight utilisation measured to be developed (e.g. average daily number of freight trains	Maritime data to be segmented by ports	Maritime data available from FIGS managed by MOT.	-
	2.9 Farm expenditure on freight 	Total expenditure on freight and percentage out of total operational cost spent on freight (including road, rail, maritime and aviation).	-	Agriculture analysis, based on National Accounts (Industry Production and Investment) managed by Stats NZ.	This indicator is proposed as a proxy for freight cost in general.

Outcome 3: Inclusive access

Enabling all people to participate in society through access to social and economic opportunities, such as work, education, and healthcare.

Theme	Proposed indicator	Specifications / definitions	Reporting requirements	Data source/s and responsible agency	Notes / limitations
Access: Providing viable transport options for people to access work, education, and healthcare; and to	3.1 Household spending on transport (% of income)  	Percentage of household income spent on transport (including 'private transport supplies and services', 'vehicles purchase', and 'passenger transport services').	To be segmented by equivalised household income, households with/without Māori, and households with/without a superannuitant, and region.	The 'Household Living-Cost Price Indexes' (HLPIs) generated by Stats NZ. Expenditure patterns are based on information from the Household Economic Survey, triangulated with other sources.	The purpose of this indicator is to track the affordability of transportation for people with highest levels of deprivation.
	3.2 Population with access to frequent public transport services 	As per NZ Transport Agency output class measure: <i>Proportion of the population that is within 500 metres walking distance (isochrones using footpaths, rather than 'as the crow flies') of a frequent bus-stop or ferry terminal, or within 1 km of a frequent rapid transit stop (mainly trains, but also includes grade-separated bus ways). Frequent means scheduled every 15</i>	As per NZ Transport Agency output class measure. Currently only available for Auckland, Wellington and Christchurch but to be expanded to the other metropolitan and high growth urban areas. In future, this	Existing NZ Transport Agency output class reporting.	-

participate in society		<i>minutes (or 30 minutes for ferry) during the morning peak Monday to Friday (7am-9am).</i>		measure may be developed further to provide more nuanced reporting, for example, by different levels of frequency (e.g. 5-10 minutes; 15 minutes) and/or to cover a wider time period (e.g. 7am to 7pm 7 days per week).		
	3.3 Access to jobs 	Percentage of jobs accessible within a reasonable travel time during weekday morning peak. "Reasonable time" is defined as:	45 minutes public transport (includes walking to/from stop and transfers as well as transit) 45 minutes walk 45 minutes cycle (door to door – note that this is mapped for a confident cyclist who is willing to cycle on the road) 30 minutes drive time (equivalent to 45 minutes for other modes to account for approximately 15 minutes to find a carpark and get to/from parked car to destination).	To be reported by mode and by region	Development by NZ Transport Agency in 2018/19.	-
	3.4 Rural households without access to a motor vehicle 	Percentage of rural households without access to a motor vehicle, based on the Census question "How many motor vehicles (not counting motorbikes) do the people who live here have available for their use?"		To be segmented by region.	NZ Census from Stats NZ.	This is included as an indicator of access given the reduced access to public transport services in rural areas. Data are only collected every 5 years so the potential of using an alternative data source will be examined.
	3.5 People unable to make a beneficial transport journey 	Percentage of people surveyed that reported they were unable to take a journey that would have beneficial to them in the last week because:	- journey would have been too expensive - journey would have taken too long - no suitable transport option available.	To be segmented by age, gender, ethnicity, trip purpose and region (where available).	NZ Transport Agency's Customer Experience and Behaviour Journey Monitor Survey.	-
Barriers to access: Reducing barriers for people to access social and economic opportunities and essential services	3.6 Unmet need for GP services due to a lack of transport 	Percentage of children aged 0–14 years and adults aged 15+ years who had a medical problem but did not visit a GP due to a lack of transport in the past 12 months.		To be reported as percentage of total population, per survey year (separately for adults and children). To be segmented by region, age, gender, ethnicity, deprivation), using 3-year pooled figures.	New Zealand Health Survey, managed by the Ministry of Health.	-
	3.7 Perception of public transport 	Self-reported response to: "Thinking about public transport in your local area, based on your experiences or perceptions, do you strongly disagree, disagree, neither, agree, strongly agree with the following: public transport is:	- affordable? - easy to get to? - frequent i.e. comes often? - reliable i.e. comes on time?	To be segmented by age, gender, ethnicity and region (Auckland, Hamilton, Tauranga, Hutt, Porirua, Wellington, Christchurch, Dunedin) where data are available.	Quality of Life Survey, funded by local governments.	-
	3.8 Perceived safety of walking and cycling 	As per survey questions:	% agreed they don't feel safe walking in the day % agreed they don't feel safe walking in the dark % agreed they don't feel safe walking because of how people drive % agreed it has become more safe to cycle on the road % agreed they don't feel safe cycling because of how people drive % agreed they don't feel safe cycling in the dark	To be segmented by mode and by age, gender and region (where available).	Understanding Attitudes and Perceptions of Cycling and Walking (annual survey commissioned by NZ Transport Agency and undertaken by The Research Agency).	-
Perceptions: Improving public transport and active travel modes, so that they are perceived as good options						

Outcome 4: Resilience and security

Minimising and managing the risks from natural and human-made hazards, anticipating and adapting to emerging threats, and recovering effectively from disruptive events.

Theme	Proposed indicator	Specifications / definitions	Reporting requirements	Data source/s and responsible agency	Notes / limitations
Security: Ensuring that transport users are protected from security risks	4.1 Security incidents 	Number of incidents detected and reported. For maritime this includes incidents reported by ports and offshore industry bodies, where the incidents meet the threshold as defined in the Maritime Security Act. For aviation this includes three types of possible event: - in-flight security incidents involving offences against the Aviation Crimes Act 1972 for aircraft which have been screened by the Aviation Security Service - airside security incidents involving offences against the Aviation Crimes Act 1972 at security designed aerodromes where the Aviation Security Service operates - airside incidents involving the introduction of dangerous goods into aircraft screened by the Aviation Security Service.	To be segmented by mode.	Maritime incidents are monitored and reported by MNZ. Aviation incidents are monitored and reported by CAA.	-
	4.2 Perceived personal safety while using the transport system 	The assessment and reporting matrixes are different across modes. - For land transport and ferries, this refers to the percentage of respondents who self-reported feeling safe on their most recent journey: <i>Journey is defined as 'travelling from one place to another at least in part along the road or rail network, and using any form/s of land based transport (e.g. car, bus, train, walk, cycle or ferries). Now thinking about any risks to your personal safety (such as attacks or abuse) during this journey, did you feel...? (unsafe/ safe based on a 0-10 scale with 6+ indicating 'safe').</i> - For aviation, this refers to percentage of respondents who self-reported feeling 'safe and secure' or 'very safe and secure' or 'extremely safe and secure' to the question: <i>'Overall how safe and secure did you feel on your most recent flight?'</i> Note that this only includes travellers who live in New Zealand.	To be segmented by mode. For land transport, to be further segmented by mode (bus, train, ferry, taxi/ride-share passenger), gender, age and ethnicity from 2019/20 (where available).	Land transport (including ferries): NZ Transport Agency's Customer Experience and Behaviour Journey Monitor Survey. Aviation: Feel Safe survey, managed by CAA & Avsec.	-
Risk assessment 	4.3 Operator risk profile 	The assessment and reporting matrixes are different across modes. For aviation and maritime, operation risk profile data are collected and maintained by CAA and MNZ respectively. More work required to determine the appropriate matrixes for reporting from 2019/20.	To be segmented by mode.	The Maritime Operator Safety System (MOSS) is maintained by MNZ. It is based on Maritime Rules made under the Maritime Transport Act 1994. Equivalent aviation data is maintained by CAA.	-
Readiness to respond: Ensuring that the transport sector has the capability and options to respond to disruptive events	4.4 Response capability 	The assessment and reporting matrixes are different across modes. - Road: National average score and specific items that captures the role of transport in emergency response and management. - Maritime: Number of elements scored amber or green in the Response Capability Matrix assessed every six months over five elements: Maritime Incident Response Team, Marine Pollution Response Service, Search and Rescue, Security, and Response Coordination.	To be segmented by mode.	- Road: National Capability Assessment, conducted periodically (i.e. in 2012 and 2015) by Ministry of Civil Defence & Emergency Management. - Maritime: Response Capability Matrix, managed by MNZ.	National Capability Assessment is only undertaken periodically, and date for next assessment has not been determined.
	4.5 Availability of viable alternative routes 	NZ Transport Agency are currently developing a measure of percentage of routes of most economic and social importance that have viable alternative routes. Viable alternative routes are currently defined by NZTA as one which: - Is unlikely to be affected by the same or related event that disrupts the availability of the original route, and - Is available to all vehicle types likely to be diverted to the alternative route, and	To be developed.	Currently under development by NZ Transport Agency and should be available for 2019/20 (roads only).	-

		- Has the capacity to carry the volume of traffic diverted from the original route, and - The additional travel time for 85% of disrupted trips is no more than 20 minutes where original trip time is up to 40 minutes 50% of original trip time where original trip time is 40-300 minutes 2.5 hours where the original trip time is less than 5 hours	Segmentation to be developed but likely to require a locational modifier to take into account likelihood of disruption and response options.	- A new survey to be undertaken by NZ Transport Agency. Originally this was planned for 2019/20 but may not be available until 2020/21. - Data from the annual Disaster Preparedness Survey commissioned by the Ministry of Civil Defence & Emergency Management will be used in the interim.	-
	4.6 Preparation for loss of traditional transport options. 	Percentage of people that report they are prepared for loss of traditional transport options to access social and economic opportunities.			
	4.7 Susceptibility to coastal inundation with sea level rise 	Length of state highway and local roads and rail at a specific height above mean high water springs (i.e. the highest level that spring tides reach on the average over a period of time). Specific height to be determined.	To be developed.	To be developed by NZ Transport Agency and LGNZ. Expected to be able to be reported from 2019/20.	-
	4.8 Outages on routes with no viable alternative 	Outages on routes of most economic and social importance where there were no viable alternative routes. Exact specifications are still to be defined.	To be developed.	To be developed by NZ Transport Agency. Date available for reporting to be confirmed.	-
Responding to disruptions					

Outcome 5: Environmental sustainability

Transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality.

Theme	Proposed indicator	Specifications / definitions	Reporting requirements	Data source/s and responsible agency	Notes / limitations
Water quality: Protecting NZ's marine environment	5.1 Marine oil spills in NZ waters 	Volume of spills and number of incidents and. Oil spills are categorised into a three-tier response system: - Tier 1: Oil spills responded to and resolved by the operator. The level of response is expected to consist of a timely 'first strike' and includes the capacity for MNZ to assist if there is an escalation to a Tier 2 or Tier 3 response. - Tier 2: Oil spills beyond the capability of the operator acting alone. Response is led and resolved by the local regional council. - Tier 3: Oil spills are generally more complex, of longer duration and impact, and beyond the response capability of the regional council. - Tier undeclared: Small incidents that do not require a response i.e. oil spills disperse naturally.	- Volume of spills - Number of incidents to be segmented using the three-tier response system.	Incidents are reported directly by operators or via regional councils. Data is maintained by MNZ.	Note the data may be slightly different from previous reporting by MNZ due to use of different data processing approach.
	5.2. Greenhouse gases emitted from the NZ transport system   	National estimate of greenhouse gases (kilotonnes) emitted from the NZ transport system, based on carbon dioxide equivalent emissions (CO ₂ -e).	Amount of emission segmented by mode (road, rail, domestic marine, domestic aviation, and other transport)	New Zealand's Greenhouse Gas Inventory, managed by Ministry for the Environment.	Note there are limitations associated with this indicator, e.g. time lag in reporting given the complexity of the method (2015 results were published in 2018). Emissions from international transport have been excluded since this is outside of NZ jurisdiction.
Air quality/ climate change: Supporting NZ's transition to net zero carbon emissions	5.3 Vehicle fleet compositions 	Number and percentage of (1) light vehicles and (2) heavy vehicles that are:	- To be reported as total number of vehicles, and as percentage of total light/heavy vehicle fleet. - To be reported as total VKT, and as percentage of total	Based on fleet statistics published by MOT. In future this is also expected to include equivalent indicators for rail, maritime and aviation.	-
		- Petrol - Diesel - EV - Other/ not known			

		Number and percentage of VKT by (1) light vehicles and (2) heavy vehicles that are: • Petrol • Diesel • Pure EV	VKT by light/ heavy vehicle fleet.		
	5.4 Mode share of short trips 	Percentage of travel using a particular mode, to be reported by distance travelled for short trip legs, that is: • Less than 2kms distance • 2-5 kms distance	To be segmented by age, gender, ethnicity, and region where data are available.	Calculated based on the Household Travel Survey (HTS) managed by MOT. Data will be reported on a 3-year rolling average from 2015/16 to 17/18.	This is a sub-set of the mode share measure being used for Transport Outcomes Framework. It is these short trips that we are hoping to see a move away from using a motor vehicle to using more active modes (which has positive environmental outcomes as well as public health benefits)