

# INVESTMENT PERFORMANCE MEASURES: BENEFITS AND MEASURES

Throughout all stages of the transport planning and project delivery process, it is essential to consider how performance will be measured. Under the NZ Transport Agency's Business Case Approach (BCA), early identification of measures for the expected benefits is a key step in planning an investment.

We have developed this list of performance measures to make it easy for us (the Transport Agency and our investment partners) to identify appropriate benefits and performance measures when developing business cases for transport investment.

## When to use the list

- When developing investment proposals following the BCA, the list can be used to select performance measures for benefits that have been identified in the strategic case, possibly at investment logic mapping and benefits mapping workshops.
- The benefits on this list are replicated in [Transport Investment Online \(TIO\)](#) in the activity outline. They determine available results alignment.
- For improvement activities required to have performance measures in TIO, the list can be used to select performance measures for the main benefits of the proposed investment.

## What will the information be used for?

The Transport Agency identifies and quantifies social benefits rising from a proposed investment and accounts for them in the decision process. The information captured will be used for benefits and investment reporting, and it will enable us to see over time the benefits received from land transport investments.

## Outcome classes

The framework is divided into five outcome classes:

- network performance and capability
- safety
- health
- environment
- cost.

The outcome classes are further divided into investment benefits.

## Selecting measures

- If there is an appropriate measure, select it from the list.
- Some measures have no corresponding description, but instead say '*User to describe*'. In this case you will need to develop your own description based on the [investment performance measurement framework](#).
- If there is no suitable measure on the list, you will need to develop your own based on the [investment performance measurement framework](#).

Contact your Transport Agency investment advisor to discuss the suitability of measures and descriptions when developing your own.

Outcome class	Investment benefit	Measure	Description
Network performance and capability	Throughput - increase/maintain	Traffic - throughput	Number of pedestrians, cyclists and motor vehicles by vehicle class
		Traffic - mode share	Number of pedestrians, cyclists and motor vehicles by vehicle class, expressed as percentages
		People - throughput	Number of pedestrians, cyclists, public transport boardings and motor vehicles (excl. public transport) TIMES average number of people per vehicle
		People - mode share	Number of pedestrians, cyclists, public transport boardings and motor vehicles (excl. public transport) TIMES average number of people per vehicle, expressed as percentages
		People - throughput (UCP)	Number of cyclists and pedestrians
		Freight - throughput value	Number of vehicles TIMES average load per vehicle in NZD
		Freight - mode share value	Number of vehicles TIMES average load per vehicle in NZD, expressed as percentages
		Freight - throughput weight	Number of vehicles TIMES average load per vehicle in tonnes
		Freight - mode share weight	Number of vehicles TIMES average load per vehicle in tonnes, expressed as percentages
	Reliability - increase/maintain	Travel time reliability - motor vehicles	Coefficient of variation; standard deviation of travel time DIVIDED BY average minutes travel time (as per Austroads)
		Punctuality - public transport	Percentage of scheduled service trips between 59 seconds before and 4 minutes 59 seconds after the scheduled departure time of selected points
	Travel time - decrease/maintain	Travel time	Average travel time in minutes
		Travel time delay	Difference between average travel time A and average travel time B in minutes per kilometre
	Access - increase/maintain	Spatial coverage - cycle lanes & paths	Percentage completion of the strategic cycle network
		Spatial coverage - public transport - resident population	Number of people living within 500m of a bus stop or 1km from a rail or bus rapid transit station
		Spatial coverage - public transport - employees	Number of employees within 500m of a bus stop or 1km from a rail or bus rapid transit station
		Spatial coverage - freight	Percentage completion of the strategic high productivity motor vehicle freight network
		Temporal availability - public transport	Public transport frequency per hour weighted by percentage of the population living within 500m of a bus stop or 1km from a rail or bus rapid transit station
		Access to key destinations	<i>User to describe</i>
		Social connectedness	<i>User to describe</i>
	Comfort & customer experience - improve/maintain	Network condition - road	Percentage travel on road network classified as smooth as per defined level of service
		Network condition - cycling	Percentage travel on cycle network classified as complying with defined level of service (facility type)
		Ease of getting on/off public transport services	Percentage of low floor and wheelchair accessible services
	Resilience - improve/maintain	Availability of a viable alternative to high-risk and high-impact route	Percentage of high-risk, high-impact routes with a viable alternative
		Temporal availability - road	Number and duration of resolved road closures: urban >=2 hours; rural >=12 hours
		Network redundancy	Appropriate capacity in event of system disruption (including alternative routes, alternative modes, alternative destinations)
		Level of service and risk	<i>User to describe</i>

Outcome class	Investment benefit	Measure	Description
Safety	Safety – improve/maintain (reduce deaths and serious injuries)	Deaths and serious injuries	Number of deaths and serious injuries
		Crashes by severity	Number of crashes by severity
		Personal risk (crash rate)	Average annual fatal and serious injury crashes per 100 million vehicle-kilometres
		Collective risk (crash density)	Average annual fatal and serious injury crashes per kilometre of road section
		Travel speed gap	Difference between safe and appropriate speed, and actual speed (under development)
		Road assessment rating – state highways	KiwiRoad Assessment Programme (KiwiRAP) star rating (for state highways)
		Road assessment rating – roads	Infrastructure risk rating (under development)
Health	Physical health – support	Physical health benefits from active modes	<i>User to describe</i>
	Pollution (NO <sub>2</sub> PM <sub>10</sub> ) – decrease/maintain	Ambient air quality – NO <sub>2</sub>	Concentration of NO <sub>2</sub> in µg/m <sup>3</sup>
		Ambient air quality – PM <sub>10</sub>	Concentration of PM <sub>10</sub> in µg/m <sup>3</sup>
		Water quality	<i>User to describe</i>
Health noise – decrease/maintain	Noise level	Noise level in dB Laeq(24h)	
Environment	Pollution and greenhouse gases – decrease/maintain	Ambient air quality – NO <sub>2</sub>	Concentration of NO <sub>2</sub> in µg/m <sup>3</sup>
		Ambient air quality – PM <sub>10</sub>	Concentration of PM <sub>10</sub> in µg/m <sup>3</sup>
		CO <sub>2</sub> emissions	Tonnes of CO <sub>2</sub> equivalents emitted
		Water quality	<i>User to describe</i>
		Mode shift from single occupancy private vehicle	<i>User to describe</i>
	Environmental noise – decrease/maintain	Noise level	Noise level in dB Laeq(24h)
	Resource consumption – decrease/maintain	Resource consumption	<i>User to describe</i>
	Biodiversity – support	Biodiversity	<i>User to describe</i>
	Community cohesion – support	Social connectedness	<i>User to describe</i>
	Amenity value – increase/maintain	Amenity value – natural environment	<i>User to describe</i>
Amenity value – built environment		<i>User to describe</i>	
Cost	Financial cost of using transport – decrease/maintain	Access to key destinations – pedestrians, cyclists and public transport	<i>User to describe</i>
		People – throughput of pedestrians, cyclists and public transport boardings	Number of pedestrians, cyclists and public transport boardings
		People – mode share of pedestrians, cyclists and public transport	Number of pedestrians, cyclists, public transport boardings, and motor vehicles (excl. public transport) TIMES number of people per vehicle, expressed as percentages
	Pricing – more efficient	<i>User to describe</i>	<i>User to describe</i>