

Investment performance measurement: List of benefits and measures

Introduction	<p>This section contains a list of performance measures for land transport investments.</p> <p>The purpose of the list is to make it easy for people to identify appropriate benefits and performance measures when using the business case approach</p>
When to use the list	<p>This list of performance measures is to be used:</p> <ol style="list-style-type: none">1. In the Business Case Approach, the list can be used to select performance measures for benefits that have been identified in investment logic mapping and benefits mapping workshops.2. This benefits on this list are replicated in TIO in the activity outline which determine available results alignment3. 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	<p>NZ Transport Agency's Business Case Approach (BCA) 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. It will enable the Agency to have an enduring view of the benefits received from land transport investment.</p>
Selecting measures	<p>To make it easier to measure investment performance, the Transport Agency has developed a framework for investment performance measurement.</p> <p>The framework is divided into 5 outcome classes:</p> <ul style="list-style-type: none">• network performance and capability• safety• health• environment• cost <p>The outcome classes are further divided into investment benefits to make it easier to select measures. There are three different options for identifying appropriate investment performance measures:</p> <ol style="list-style-type: none">1. The appropriate measure(s) may be selected from the list2. The appropriate measure appears in the list, but there is no corresponding description, i.e. "user to describe" appears in the Description column. In this case, the user i.e. the Approved Organisation or the NZ Transport Agency (state highways) will need to develop their own description based on the investment performance measurement framework (see https://www.pikb.co.nz/home/monitor-investment-performance/nzta-investment-monitoring-overview/framework-for-investment-performance-measurement/).3. No suitable measure appears in the list. The Approved Organisation or NZ Transport Agency (state highways) already has a suitable measure in mind, or wishes to develop their own, based on the investment performance measurement framework (see https://www.pikb.co.nz/home/monitor-investment-performance/nzta-investment-monitoring-overview/framework-for-investment-performance-measurement/). <p>Contact Transport Agency to discuss the suitability of measures and descriptions when developing your own.</p>

OUTCOME CLASS	Investment benefit	Measure	Description	
Network performance & 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	
	Availability & 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	
		Temporal availability - road	Number of resolved road closures Urban >=2 hours. Rural >=12 hours	
		Access to key destinations	<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	The number of journeys impacted by unplanned events	The number of unplanned closures and the number of pedestrians, cyclists, and motor vehicles by vehicle class affected by road closures annually	
		The number of instances where road access is lost	The number of unplanned road closures and the number of pedestrians, cyclists, and motor vehicles by vehicle class affected by closures where there was no viable detour	
	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)	
Health	Physical health - support	Physical health benefits from active modes	<i>User to describe</i>	
	Pollution (No2 PM10)- decrease/maintain	Ambient air quality - NO2	Concentration of NO2 in µg/m ³	
		Ambient air quality - PM10	Concentration of PM10 in µg/m ³	
		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 - NO2	Concentration of NO2 in µg/m ³	
		Ambient air quality - PM10	Concentration of PM10 in µg/m ³	
		CO2 emissions	Tonnes of CO2 equivalents emitted	
		Water quality	<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>	