

# City Centre to Māngere Light Rail

## Outcomes Framework



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Ministry of Transport  
TE MANATŪ WAKA

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The purpose of the outcomes framework is to set out the basis for determining the strategic fit of proposals prepared by the NZ Transport Agency and NZ Infra in response to the City Centre to Māngere Light Rail Response Requirements Document issued by the Ministry of Transport in July 2019

The outcomes are enduring for the life of the City Centre to Māngere Light Rail project

## Introduction

Auckland's significant future population growth creates opportunities to increase productivity and help improve the prosperity of Auckland and New Zealand. More than 1.6 million people live in Auckland. Over the next 30 years, this could increase by another 720,000 people to reach 2.4 million.

Population growth adds vibrancy, supporting a greater diversity of economic, social and cultural opportunities. These benefits will only be realised if Aucklanders have the ability to access new opportunities in a reliable, affordable and timely manner.

Connectivity and accessibility are the hallmarks of all successful cities. To be successful, Aucklanders need to be able to get where they want to go, more easily, safely and sustainably.

Auckland's success is dependent on how well prosperity is shared across all parts of Auckland. Prosperity is dependent on convenient, affordable, safe and sustainable transport. It is essential for people from all parts of Auckland to have good access to the opportunities that growth creates. To lead successful and enjoyable lives, Aucklanders must be able to reach the things that matter most to them, such as work, school, friends, recreation and healthcare.

Improving access depends on the entire transport system being managed and developed as an integrated whole, across the different networks and different modes. It also depends on a mode shift to public transport.

## Auckland's rapid transit network

Rapid transit forms the backbone of Auckland's public transport network. It needs to play a central role in meeting the travel needs of a fast-growing population, as well as supporting and shaping Auckland's growth and urban form.

Only rapid transit (rail, dedicated busways and light rail) can efficiently move large numbers of people through fast, frequent and high capacity services along corridors segregated from general traffic and not affected by road congestion. This can dramatically increase the number of people able to travel between large parts of Auckland through a fast and reliable option that encourages people out of cars and reduces the impact of congestion on their lives.

Rapid transit improves accessibility and can deliver long-lasting access improvements to areas near rapid transit stations, which improves their attractiveness for redevelopment.

Light rail is an important component of Auckland's future Rapid Transit Network. Cabinet has prioritised progressing the City Centre to Māngere (CC2M) light rail line in the next decade.

## City Centre to Māngere corridor

The City Centre to Māngere corridor is considered to be of national significance because it includes New Zealand's largest and most productive commercial centre (the city centre), the country's primary gateway to the world (Auckland International Airport), and a growing employment centre in the airport and its surrounds.

Around 30 per cent of Auckland's population growth and 36 per cent of its employment growth is expected to occur along the corridor over the next 30 years.

Over the next decade, public transport use in Auckland is projected to grow strongly, increasing the already significant pressure on bus services. Dominion Road is Auckland's second busiest bus corridor (behind the Northern Busway), carrying around 12,500 trips per day. Buses from the central isthmus, the North Shore and the northwest are channelled into a few corridors in the city centre which are constrained for space and turnaround opportunities. There are also frequent intersections and bus stop capacity limits. These constraints will create major challenges in increasing bus services to meet demand.

Improving access to labour markets and education is particularly critical to boosting Auckland's economic productivity and overall prosperity. Businesses need a wide choice of potential employees. Similarly, workers need a wide choice of potential jobs within a reasonable commute time. Light rail has the potential to address social disparities in access found along this corridor.

## ATAP's expectations for the City Centre to Māngere Light Rail

The Auckland Transport Alignment Project (ATAP) recommends transport investment priorities ("the ATAP Package") to reflect the Government's and Auckland Council's shared direction for transport in Auckland.

The update to ATAP in April 2018 identified City Centre to Māngere as a light rail project for the 2018-2028 decade and set out four expectations for the project:

- Alleviate current and forecast bus capacity constraints in the city centre.
- Improve access to growing employment areas, particularly at and around Auckland Airport.
- Unlock significant growth potential along the corridor, especially around Māngere.
- Provide an attractive and reliable "one seat journey" between the city centre and airport for travellers.

While ATAP developed expectations for CC2M light rail, these were not prioritised or weighted. In addition, the expectation regarding the 'one seat' journey to the airport has led to some confusion about the focus of the project, which is not centred on a convenient journey to the airport for passengers. The CC2M light rail line is about an integrated transport and urban development solution with a primary aim of improved access to labour markets, education and social opportunities.

In 2018, NZTA led the preparation of a indicative draft business case for the CC2M line with the support of other agencies including Auckland Transport and Auckland Council. The draft business case identified objectives around capacity and access improvements, and unlocking growth potential along the corridor. The business case was not finalised or approved by the NZTA Board.

Building on ATAP, the NZTA-led business case work and the Auckland Plan 2050<sup>1</sup>, the Ministry of Transport has led a process, working with partner agencies, to develop an outcomes framework to support the next phase of the CC2M light rail project.

## Outcomes framework

The framework contains four outcomes together with evaluation criteria and measures. The framework sits alongside a range of other criteria on which the proposals will be evaluated and which are contained in the Response Requirements Document.

The outcomes and their weightings are:

- Improved access to opportunities through enhancing Auckland's Rapid Transit Network and integration with Auckland's current and future transport network. (40%)
- Optimised environmental quality and embedded sustainable practices. (15%)
- Enabling of quality integrated urban communities, especially around Māngere, Onehunga and Mt Roskill. (30%)
- A high quality service that is attractive to users, with high levels of patronage. (15%)

Notwithstanding the weightings, all outcomes are important and we expect the NZTA and NZ Infra to deliver a balanced proposal which demonstrates how the four outcomes will be met.

## Māori outcomes

The Treaty of Waitangi establishes the unique relationship between the Crown and Māori and is part of the fabric of New Zealand society. The Crown acknowledges that it has an obligation to act in an informed manner when it forms policy or acts in ways that affect Māori interests.

Nineteen mana whenua groups have territorial affiliations and hold customary interests across Auckland. These groups have specific rights and responsibilities in relation to natural resources. In addition, there are urban Māori represented by Māori who migrated to Auckland from other parts of the country and Māori that have no connection to their hapu and iwi.

Successful outcomes for both mana whenua and urban Māori in Auckland can be achieved when we integrate Māori values into planning, decision making and delivery. This provides opportunities for mana whenua to influence placemaking that can reinforce a sense of belonging for generations to come through the expression of their matauranga<sup>2</sup> and pūrākau<sup>3</sup> in urban design.

We expect proposals to consider how to:

- Engage with mana whenua throughout the delivery of the project (noting that there is no community engagement during this proposal development phase).
- Address the socio-economic disparity in terms of public transport access to work and education, specifically for areas with high Māori population.
- Support the Māori economy (e.g. through partnering with Māori businesses, supporting apprenticeships and training for Māori youth).
- Support mana whenua's role as kaitiaki<sup>4</sup>, and how they might work together to ensure sustainability and environmental protection.

<sup>1</sup> Auckland's long-term spatial plan

<sup>2</sup> Maori knowledge and expertise

<sup>3</sup> Traditional stories, history and narratives

<sup>4</sup> Trustee, custodian, guardian

- Reflect New Zealand's bi-culturalism in terms of place making and inclusion (i.e. the urban design/urban development across the city).

## Trade-offs

There will be a number of trade-offs as we move through the proposal development process for the CC2M light rail project, e.g. scheme design versus affordability.

A fundamental trade-off within the outcomes is travel time versus community catchment.

Alignment of the route and location of stations/stops in a town centre compared to alignment along the motorway increases proximity to the service for members of that community. However travel through a residential area may involve a longer journey time and may also require a reduction in speed.

While length of journey is important, reliability is also an important factor.

## Approach to the development of the Outcomes

In April 2019 the Minister of Transport agreed to the development of a set of outcomes for the City Centre to Māngere light rail to provide direction on the next phase of the project.

Both the Government Policy Statement on Land Transport (GPS) for 2018/19 – 2027/28 and the Auckland Transport Alignment Project (ATAP) 2018 signal the importance of a modern rapid transit network for Auckland. The ATAP Package includes light rail projects for the first decade and Cabinet has prioritised progressing the City Centre to Māngere light rail.

Over time, documents have referred to outcomes for CC2M in various ways (e.g. objectives, expectations, and drivers). While different pieces of work have statements that are outcome based, to date, there have been no endorsed outcomes by the New Zealand Government for CC2M.

While ATAP 2018 described four expectations of the CC2M, these expectations were not prioritised or potential trade-offs worked through.

Building on ATAP, this outcomes framework has been developed to give clarity to NZTA and NZ Infra at the outset on how their proposals will be assessed.

A range of criteria are identified for each objective and will assess strategic fit through the evaluation process. The criteria complement other criteria specified within the Response Requirements Document.

## Engagement with ATAP partners

The Ministry has led the development of the outcomes framework, working with ATAP partners throughout the process. This has included seeking guidance from the Auckland Light Rail Steering Group, holding a number of one-to-one discussions with subject matter experts from the various agencies<sup>5</sup>, and holding a workshop with the Steering Group and key technical staff.

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<sup>5</sup> Auckland Council, Auckland Transport, NZTA, HLC, MHUD, Treasury.

## Outcomes and Evaluation Criteria

### Outcome 1: Access and Integration

*Improved access to opportunities through enhancing Auckland's Rapid Transit network and integration with Auckland's current and future transport network.*

The City Centre to Māngere Light Rail Project must improve access to labour markets, education and social activities. Improved commute times and reliability of journeys increases the size of the labour pool that firms can draw upon, therefore enhancing productivity over time. Good access to education also contributes to productivity and quality access to jobs, education and social activities generally improves people's quality of life.

The CC2M Project should maximise the potential to realise economic benefits from existing and expected concentrations of economic activity in the city centre, the airport precinct and along the corridor.

The CC2M Project is part of building out Auckland's Rapid Transit Network. For the Project to improve access for Aucklanders it must integrate with Auckland's current and future transport network, and active transport modes. In this way, it will drive greater access to opportunities for those communities in the corridor and beyond.

Over the next decade, public transport use in Auckland is projected to grow strongly, increasing the already significant pressure on bus services. Alleviating bus capacity constraints in the city centre is essential to the effective functioning of Auckland's transport network and the CC2M Project plays a critical role in this.

The proposals for the CC2M Project need to demonstrate improved access to the labour market, employment areas, education and social and recreational opportunities including:

- Improved access to major and growing employment areas, especially the city centre and Auckland Airport precinct
- Improved travel times for Key Journeys<sup>6</sup>
- Improved access to student positions by public transport
- Increased public transport mode share for students in the corridor
- Improved access to social and recreational facilities.

The proposals for the CC2M Project need to show integration with the current and future transport network by demonstrating:

- Increased public transport patronage across the Auckland network
- Ease of transfer between the proposed light rail and other public transport services
- Alignment with planned investment in active modes of transport
- Responsiveness to and flexibility for network changes
- Increased public transport mode share at network level and in the corridor.

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<sup>6</sup> City Centre to Mt Roskill Town Centre, in each direction; Māngere Town Centre to Auckland Airport, in each direction; Māngere Town Centre to Onehunga Train Station, in each direction; Onehunga Train Station to Mt Roskill Town Centre, in each direction; City Centre to Auckland Airport in each direction; City Centre to Māngere Town Centre, in each direction .

The proposals for the CC2M Project need to demonstrate provision of additional capacity and improved efficiency of the network including:

- Alleviation of current and forecast bus capacity constraints in the city centre
- Increased corridor capacity and utilisation of capacity
- Increased public transport patronage in the corridor
- 
- Increased service frequency.

## Outcome 2: Environment

*Optimised environmental quality and embedded sustainable practices.*

Continued population growth and urban development are likely to increase the severity and intensity of pressure on Auckland's natural environment. The long-lived nature of transport infrastructure necessitates a sustainable approach. This requires environmental impacts to be minimised both during construction and in operation. Opportunities should also be identified to protect and enhance the natural environment where possible.

The CC2M Project will be part of Auckland's low-emissions and low-carbon future. This requires embedding long-term climate change considerations into planning decisions and infrastructure design and delivery.

Proposals for the CC2M Project need to show how natural environmental outcomes will be optimised and sustainable practices embedded including:

- Reduced CO<sub>2</sub> emissions during construction and in operation
- Reduced harmful air pollutants
- Improved quality of run-off into waterways
- Enabled kaitiakitanga outcomes in the management of natural resources
- Positive impacts on the natural environment
- Maintained and improved ecosystems
- Protected physical and visual integrity of natural features and natural landscapes, including volcanic landscapes.

## Outcome 3: Urban and Community

*Enabling of quality integrated urban communities, especially around Māngere, Onehunga and Mt Roskill.*

The City Centre to Māngere corridor is approximately 23 kilometres in length from the city centre through to Auckland Airport. It passes through a wide variety of environments and incorporates diverse communities.

Rapid transit shapes urban form and the CC2M Project is expected to enable high density development along the corridor and support good amenity and liveability for communities, particularly in centres and around stations. Good connectivity to the light rail line is expected to promote more pedestrian-oriented communities that are less car dependent.

The number of people living, working and travelling within the CC2M corridor is expected to grow significantly over the next 30 years with significant housing and business development capacity enabled by the Auckland Unitary Plan. In addition to the city centre, Wynyard Quarter, Dominion Road, Mt Roskill, Onehunga and Māngere (in particular) are expected to undergo a significant amount of housing and business growth. The step change in public transport access through the CC2M line creates an uplift in value resulting in the capacity that is available (and potentially more) being attractive to private investment.

The CC2M corridor contains substantial areas of publicly owned land for which the Government has housing redevelopment plans. The CC2M Project is considered to be one of the keys to unlocking that.

To maximise the benefits of the CC2M Project, it is essential that the transport solution is fully integrated with land use planning and urban development.

Proposals for the CC2M Project need to show how they would enable quality integrated urban communities including:

- Potential for additional enabled capacity within 500 metres and within 1 kilometre of a strategic station location
- Positive visual impact of the light rail infrastructure
- Facilitating transformation of areas around stations while building on local identity
- Incorporation of Te Aranga Māori design principles
- Delivery of quality, safe and active public spaces (including streets and any new public open spaces).

#### Outcome 4: Experience

*A high quality service that is attractive to users, with high levels of patronage.*

There are a number of factors that will contribute to the quality of the CC2M Project customer experience and therefore drive its greater use, contributing to overall public transport mode share. Factors include convenience, timeliness or frequency, accessibility, information services and overall customer service.

Safety is also a critical component of the experience, including a feeling of safety in stations, in vehicles and in access to the stations.

Proposals for the CC2M Project need to show how a high quality, attractive with high levels of patronage will be enabled including:

- Quality passenger experience
- Reliable service
- Operational resilience
- Safety features and standards
- Compliance with applicable accessibility standards.

# City Centre to Māngere (CC2M) Light Rail Outcomes

## ATAP Expectations for the Airport-City Corridor

Alleviate current and forecast bus capacity constraints in the city centre. A substantial increase in public transport capacity and efficiency is required.

Improve access to growing employment areas, particularly at and around Auckland Airport.

Unlock significant growth potential along the corridor, especially around Māngere, Onehunga and Mt Roskill.

Provide an attractive and reliable "one seat journey" between the city centre and airport for travellers.



## Outcomes Framework

### Access and Integration

Improved access to opportunities through enhancing Auckland's Rapid Transit Network and integration with Auckland's current and future transport network



40 %

Improved access to the labour market, and employment areas

- Improved access to major and growing employment areas, especially the city centre and Auckland Airport precinct
- Improved travel times for key journeys

Improved access to education

- Improved access to student positions by public transport
- Increased public transport mode share for students in the corridor

Improved access to social and recreational opportunities

- Improved access to social and recreational facilities

Integrated with the current and future network

- Increased public transport patronage across the Auckland network
- Ease of transfer between the proposed light rail and other public transport services
- Alignment with planned investment in active modes of transport
- Responsiveness to and flexibility for network changes
- Increased public transport mode share at network level and in the corridor

Additional capacity and improved efficiency

- Alleviation of current and forecast bus capacity constraints in the city centre
- Increased corridor capacity and utilisation of capacity
- Increased public transport patronage in the corridor
- Increased service frequency

### Environment

Optimised environmental quality and embedded sustainable practices



15 %

Reduced greenhouse gases

- Reduced CO<sub>2</sub> emissions<sup>1</sup>

Improved air quality

- Reduced harmful air pollutants<sup>1</sup>

Improved water quality

- Improved quality of run-off into waterways<sup>1</sup>

Protected and enhanced natural environment, including outstanding natural features and landscapes

- Enabled kaitiakitanga outcomes in the management of natural resources
- Positive impacts on the natural environment
- Maintained and improved ecosystems
- Protected physical and visual integrity of natural features and landscapes, including volcanic landscapes

### Urban and Community

Enabling of quality integrated urban communities, especially around Māngere, Onehunga and Mt Roskill



30 %

Enabling of growth through intensification

- Potential for additional enabled capacity<sup>2</sup> within 500m and within 1km of a strategic station location

Strengthened quality of urban environment

- Positive visual impact of light rail infrastructure
- Facilitating transformation of areas around stations while building on local identity
- Incorporation of Te Aranga Māori design principles
- Delivery of quality, safe and active public spaces (including streets and any new public open spaces)

### Experience

A high quality service that is attractive to users, with high levels of patronage



15 %

A reliable and resilient service

- Quality passenger experience
- Reliable service
- Operational resilience

Improved safety of travel in Auckland

- Safety features and standards

Access for people of all abilities

- Compliance with accessibility standards

<sup>1</sup> Mandatory requirements

<sup>2</sup> Additional capacity above the existing enabled capacity

*City Centre to Māngere Light Rail Project Outcomes Framework*

*Proactively released by  
the Ministry of Transport*

Project Outcomes:	Evaluation Criteria	Measures	Source of Measure	Explanation of Measure
<i>To provide a transport solution that:</i>	<i>The extent that the option:</i>	<i>As measured by:</i>		
<p><b>Outcome 1</b>  <b>Access and Integration</b>  <i>Improved access to opportunities through enhancing Auckland's Rapid Transit Network and integrating with the current and future transport network</i></p>	<p><b>Criteria 1.1</b>  <b>Access to Employment</b>  <i>Improved access to the labour market, and employment areas</i></p>	<p><i>Improved access to major and growing employment areas, especially the City Centre and Auckland Airport precinct</i></p>	<p><i>Modelled number of residents with access within 45 minutes by public transport to specified Transport Analysis Zones representing these employment areas during morning peak</i></p> <p><i>Modelled number of jobs accessible within 45 minutes by public transport from Transport Analysis Zones along the corridor during morning peak (modelled – MSM)</i></p> <p><i>This measure to be assessed for a range of demographics (e.g. high deprivation)</i></p>	<p><i>Project should improve access to labour at key employment areas and increase access to jobs by public transport</i></p>
	<p><b>Criteria 1.2</b>  <b>Access to Education</b>  <i>Improved access to education</i></p>	<p><i>Improved travel times for key journeys<sup>1</sup></i></p>	<p><i>Vehicle speeds, station dwell times, acceleration/deceleration rates [and walking time from start/end points TBC]</i></p> <p><i>(Quantified analysis)</i></p>	<p><i>Project should demonstrate reductions in maximum travel times on public transport as currently scheduled for the following key journeys:</i></p> <ul style="list-style-type: none"> <li>(i) <i>City Centre to Mt Roskill Town Centre, in each direction</i></li> <li>(ii) <i>Māngere Town Centre to Auckland Airport, in each direction</i></li> <li>(iii) <i>Māngere Town Centre to Onehunga Train Station, in each direction</i></li> <li>(iv) <i>Onehunga Train Station to Mt Roskill Town Centre, in each direction</i></li> <li>(v) <i>City Centre to Auckland Airport, in each direction</i></li> <li>(vi) <i>City Centre to Māngere Town Centre, in each direction.</i></li> </ul>

<sup>1</sup> Criteria also relevant to access to education and social and recreation facilities. Improved travel times a key factor in customer experience.

Project Outcomes:	Evaluation Criteria	Measures	Source of Measure	Explanation of Measure
<i>To provide a transport solution that:</i>	<i>The extent that the option:</i>	<i>As measured by:</i>		
<b>Criteria 1.3</b> <b>Access to Social and Recreation Facilities</b> <i>Improved access to social and recreational opportunities</i>	<i>Improved access to social and recreational facilities</i>		<i>Quantitative assessment of number of major social and recreation facilities located within 500m, and within 1km of stations (from Auckland Council GIS database)</i>	<i>Project should identify station locations that encourage light rail trips for non-work and non-education purposes</i>
	<i>Increased public transport patronage across the Auckland network</i>		<i>Total forecast journeys on public transport across region compared to base (modelled – MSM)</i>	<i>Project should positively contribute to overall use of public transport</i>
	<i>Ease of transfer between the proposed light rail and other public transport services</i>		<i>Estimated time required to transfer at key locations based on distance between transfer points and number of road crossings (quantitative)</i>	<i>Project should enable seamless transfers to maximise benefits and catchment of new rapid transit investment</i>
	<i>Alignment with planned investment in active modes</i>		<i>Assessment of alignment with planned active mode projects, including relationship of stations to planned active mode corridors, and any conflicts between proposal and planned investment in active modes (qualitative)</i>	<i>Project should seek to:</i> <ul style="list-style-type: none"> <li>• Maximise potential catchment by aligning with current and future active mode corridors and providing connections to these</li> <li>• Maximise active mode access to stations (if not in a corridor)</li> <li>• Improve conditions for active mode users along the corridor</li> </ul>
	<i>Responsiveness to and flexibility for network changes</i>		<i>Qualitative assessment of:</i> <ul style="list-style-type: none"> <li>• The project's proposed staging of delivery, and the ability for this to be changed during delivery</li> <li>• Flexibility of planned infrastructure to accommodate changes to service level as required to respond to potential network changes</li> </ul>	<i>Project should be flexible in terms of staging and the ability to scale service levels once in operation, in order to be able to respond to wider network changes</i>
<b>Criteria 1.4</b> <b>Integration</b> <i>Integrated with the current and future network</i>	<i>Increased public transport mode share at network level and in the corridor</i>		<i>Quantitative assessment of:</i> <ul style="list-style-type: none"> <li>• Overall number of public transport trips as share of all trips at peak time (modelled – MSM)</li> <li>• Mode share of corridor and adjacent corridors (modelled – MSM)</li> </ul>	<i>Project should increase overall mode share of public transport within the network.</i> <i>This should include an increased public transport mode share on the project corridor that is not at the expense of public transport mode share on adjacent corridors, so that it is a net increase across all.</i>

Project Outcomes:	Evaluation Criteria	Measures	Source of Measure	Explanation of Measure
To provide a transport solution that:	The extent that the option:	As measured by:		
Outcome 1 Transport	<b>Criteria 1.5</b> <b>Capacity and Efficiency</b> <i>Additional capacity and improved efficiency</i>	Alleviation of current and forecast bus capacity constraints in the city centre	Assessment of supporting bus service operating plans regarding bus volumes entering City Centre during morning peak (quantitative) Combined increase in total public transport capacity to City Centre (modelled – MSM)	Project needs to facilitate a reduction in buses to the City Centre while also resulting in an overall increase in the provision of public transport capacity to the City Centre
		Increased corridor capacity and utilisation of capacity	Comparison of maximum forecast corridor demand compared to planned capacity provision, compared at specified interval years (quantitative)	Project should provide additional capacity to the corridor that is actually utilised. Not worthwhile providing extra capacity that goes unused. Comparison across intervals will also enable assessment of scalability of project.
		Increased public transport patronage in the corridor	Forecast journeys on project service compared to boardings on existing service(s) (modelled – MSM)	Project should increase use of public transport in the corridor
		Increased service frequency	Service operating plan (quantitative)	Service should meet minimum frequency standards expected of Rapid Transit as outlined in Auckland Transport's Regional Public Transport Plan 2018, while maximum proposed frequency should not adversely impact the wider transport network
Outcome 2 Environment	<b>Criteria 2.1</b> <b>Emissions</b> <i>Reduced greenhouse gas emissions</i>	Reduced CO <sub>2</sub> emissions	Construction: quantitative assessment of the amount of embedded carbon in construction materials based on construction plans Operation: quantitative assessment of level of CO <sub>2</sub> emissions based on changes in vehicle kilometres travelled at a network level compared to base level (modelled – MSM)	Project should seek to reduce CO <sub>2</sub> emissions related to construction and result in reduced CO <sub>2</sub> emissions from the network once in operation
	<b>Criteria 2.2</b> <b>Air Quality</b> <i>Improved air quality</i>	Reduced harmful air pollutants	Quantitative assessment of the management of discharge of contaminants to air based on changes in vehicle kilometres travelled at a network level from base level (modelled – MSM) Contaminants assessed as identified in Table E14.3.1 of the Auckland Unitary Plan (Operative): <ul style="list-style-type: none"><li>• particles less than 2.5 microns (PM2.5) and less than 10 microns (PM10)</li><li>• nitrogen dioxide (NO<sub>2</sub>)</li></ul>	Project should improve Auckland's air quality by reducing harmful pollutants that enter the atmosphere

Project Outcomes:	Evaluation Criteria	Measures	Source of Measure	Explanation of Measure
<i>To provide a transport solution that:</i>	<i>The extent that the option:</i>	<i>As measured by:</i>		
	<b>Criteria 2.3</b> <b>Water Pollution</b> <i>Improved water quality</i>	<i>Improved quality of run-off into waterways</i>	<p>Assessment of:</p> <ul style="list-style-type: none"> <li>• Level of key contaminants (Cu, Zn, TSS) based on changes in vehicle kilometres travelled at a network level compared to base</li> <li>• Contaminant level of mode of transport proposed</li> </ul> <p>Construction impacts managed by conditions of consent.</p>	<i>Project should improve the quality of the run-off<sup>2</sup> by reducing harmful pollutants that enter Auckland's waterways.</i>
	<b>Criteria 2.4</b> <b>Natural Environment</b> <i>Protected and enhanced natural environment including outstanding natural features and landscapes</i>	<i>Enabled kaitiakitanga outcomes in the management of natural resources</i>	<i>Analysis of the project's approach to working with mana whenua and fostering enduring relationships as set out in the proposal's Maori Communications and Engagement Plan (Qualitative)</i>	<i>Project's approach to the management of natural resources should enable the practice of kaitiakitanga</i>
		<i>Positive impacts on the natural environment</i>	<i>Analysis of the project's approach to the natural environment including the avoidance of adverse effects (Qualitative)</i>	<i>Project should consider how positive impacts on the natural environment can be made as well as avoiding adverse effects</i>
		<i>Maintained and improved ecosystems</i>	<i>Terrestrial and marine significant ecological areas identified in the Auckland Unitary Plan (Operative) and other important ecosystems (Qualitative)</i>	<i>Project should maintain and seek opportunities to improve ecosystems</i>
		<i>Protected physical and visual integrity of natural features and natural landscapes, including volcanic landscapes</i>	<p>Assessment of the project's approach to protecting the physical and visual integrity of outstanding natural landscapes by:</p> <ul style="list-style-type: none"> <li>• Avoiding adverse effects on the natural characteristics and qualities that contribute to the values of the natural landscape</li> <li>• Maintaining the visual or physical qualities that make the landscape iconic or rare</li> </ul> <p>Assessment of the project's approach to protecting the physical and visual integrity of outstanding natural features by:</p> <ul style="list-style-type: none"> <li>• Avoiding adverse effects on the natural characteristics and qualities that contribute to an outstanding natural feature's values</li> </ul>	<i>Project should protect integrity of outstanding natural features and landscapes</i>

<sup>2</sup> Construction effects will be a consent condition/requirement

Project Outcomes:	Evaluation Criteria	Measures	Source of Measure	Explanation of Measure
<i>To provide a transport solution that:</i>	<i>The extent that the option:</i>	<i>As measured by:</i>		
<b>Outcome 3</b> <b>Urban &amp; Community</b> <i>Enabling of quality integrated urban communities, especially around Māngere, Onehunga and Mt Roskill</i>	<b>Criteria 3.1</b> <b>Land Use</b> <i>Enabling of growth through intensification</i>	Potential for additional enabled capacity within 500m and within 1km of a strategic station location	<ul style="list-style-type: none"> <li>Avoiding adverse effects on mana whenua values associated with an outstanding natural feature (As set out in the Auckland Unitary Plan (Operative) D10.3.1 and D10.3.3)</li> </ul>	
			<p>Analysis of the project's approach to proposed regulatory and non-regulatory interventions around strategic station locations (Qualitative)</p> <p>Auckland Council Land Use Model (quantitative) (Base level: Auckland Unitary Plan capacity 2016)</p> <p>GIS analysis of population within 500m and within 1km of stops (quantitative)</p>	<ul style="list-style-type: none"> <li>Project should increase the number of people with access to rapid transit (population within station catchment or stops along the corridor)</li> <li>Project should maximise the amount of enabled capacity within station catchments (existing enabled capacity within 500m and within 1km of a station)</li> <li>Project should identify opportunities to increase enabled capacity in strategically appropriate locations.</li> <li>Strategic station locations: Dominion Junction, Mt Roskill, Onehunga and Māngere Town Centre.</li> </ul>
		Enabling of redevelopment of major public landholdings along the corridor within 500m and within 1km of a station	<p>Analysis of whether the project would:</p> <ul style="list-style-type: none"> <li>(i) bring forward the redevelopment</li> <li>(ii) increase the scale or intensification of the redevelopment</li> <li>(iii) catalyse previously unplanned development</li> </ul> (Qualitative)	Project should seek to support redevelopment opportunities on public landholdings along the corridor
	<b>Criteria 3.2</b> <b>Quality Urban Environment</b> <i>Strengthened quality of urban environment</i>	Positive visual impact of light rail infrastructure	Visual impact assessments (qualitative)	Project should seek to minimise negative visual impacts, and make a positive visual impact where practicable
		Facilitation of transformation of areas surrounding stations while building on local identity	Extent to which location of stations can catalyse significant improvements to the wellbeing of current and future residents and urban environment (Qualitative)	Project should demonstrate improvements to surrounding areas of key station locations, especially Māngere Town Centre, Onehunga, Mt Roskill Town Centre and Dominion Junction
		Incorporation of Te Aranga Māori design principles	Analysis of the project's consideration of these principles (Qualitative)	Project should demonstrate application of Te Aranga Māori design principles

Project Outcomes:	Evaluation Criteria	Measures	Source of Measure	Explanation of Measure
<i>To provide a transport solution that:</i>	<i>The extent that the option:</i>	<i>As measured by:</i>		
		<i>Delivery of quality, safe and active public open spaces (including streets and any new public open spaces)</i>	<p>Assessment of:</p> <ul style="list-style-type: none"> <li>• Function (experiences the open spaces will provide), configuration (size and layout), and location (in relation to other land use) of public open spaces, including streets. (Qualitative assessment for all spaces)</li> <li>• The amount of new public open space provided (quantitative – m<sup>2</sup>)</li> </ul>	<i>Project should invest in and promote quality public spaces, including streets that are well connected, inclusive and easily accessible to stations</i>
<b>Outcome 4</b> <b>Customer Experience</b> <i>A high quality, attractive and highly patronised service</i>	<b>Criteria 4.1</b> <b>Service Quality</b> <i>A reliable and resilient service</i>	<i>Quality passenger experience</i>	<p>Analysis of the project's overall service quality in relation to the light rail vehicles and at stops and stations including:</p> <ul style="list-style-type: none"> <li>• Information services</li> <li>• Wayfinding and signage</li> <li>• Ticketing</li> <li>• Convenience and comfort</li> <li>• Customer service</li> </ul> ((Qualitative))	<i>Project should demonstrate how all components of the service offering combine to create a world class passenger experience.</i>
		<i>Reliability of service</i>	<p>Assessment of variability in travel time of the service along the route taking into account variables:</p> <ul style="list-style-type: none"> <li>• Level of segregation</li> <li>• Priority at intersections</li> </ul>	<i>Project should demonstrate reliability of travel time</i>
		<i>Operational resilience</i>	<ul style="list-style-type: none"> <li>• Likelihood of disruption</li> <li>• Ability to recover from disruption</li> </ul>	<i>Project should ensure a resilient service that minimises the occurrence of disruptions and can recover quickly</i>
	<b>Criteria 4.2</b> <b>Safety</b> <i>Improved safety of travel in Auckland</i>	<i>Safety features and standards</i>	<p>Sense of safety (personal security):</p> <ul style="list-style-type: none"> <li>• Access to station</li> <li>• In station</li> <li>• In vehicle</li> </ul> ((Qualitative))	<i>Project should result in a sense of safety in and around station and while travelling on the light rail</i>

Project Outcomes:	Evaluation Criteria	Measures	Source of Measure	Explanation of Measure
<i>To provide a transport solution that:</i>	<i>The extent that the option:</i>	<i>As measured by:</i>		
	<b>Criteria 4.3</b> <b>Accessibility</b> <i>Access for people of all abilities</i>	<i>Compliance with applicable Accessibility standards</i>	<i>Qualitative assessment of project plans</i>	<i>Project should ensure all facilities are fully accessible for people with different mobility requirements</i>

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