



# Auckland Transport Equity Framework Summary Document

April 2024

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## Executive Summary

The ease and affordability of getting to the places we need to go is a key determinant of quality of life. This means that transport is a key enabler of wellbeing for people living in Tāmaki Makaurau Auckland. However, system analysis and feedback received through customer engagement surveys has provided clear evidence that the current transport system is not meeting the needs of many communities across the region. Some of the most impacted populations are also facing other forms of socio-economic disadvantage, which is exacerbated by inadequate or expensive transport and, at its worst, can lead to transport-induced social exclusion and poverty.

It is this context that the Auckland Transport Equity Framework (ATEF) was commissioned, to help AT identify where inequity exists and provide staff the tools to help address transport inequity with solutions that sit within the organisation's remit.

The ATEF is the result of a comprehensive literature review and stakeholder engagement process that was undertaken to develop a better understanding of transport equity and its manifestation across communities and population groups in Tāmaki Makaurau Auckland. This deep dive into existing insights revealed four key problems that define transport equity:

1. The transport system does not provide effective and/or affordable access to essential services or opportunities for people living in some areas of high socio-economic deprivation.
2. The transport system exposes people living in some areas of high socio-economic deprivation to unacceptable transport-derived harms (e.g., air and noise pollution, safety risk, and severance).
3. The transport system does not consistently provide for the essential physical access needs of all people (particularly people with disabilities, caregivers of young children, and older Aucklanders).
4. The transport system does not consistently provide for the personal safety needs of everyone (particularly higher-risk groups such as women, girls, LGBTQ people, older and younger people, and some minority ethnic groups).

The four key problems can be grouped into two categories, those with a spatial-orientation and those representing a system-wide issue. Problems 1 and 2 are centred on transport network outcomes where communities across the region see a variety of outcomes. Communities that experience poor outcomes for these two problems and face high socio-economic deprivation are often the least able to overcome them. Therefore, solutions to address Problems 1 and 2 should be prioritised in communities identified as facing high socio-economic deprivation. Problems 3 and 4 differ in that the most impacted population groups are relatively evenly dispersed across the region, so system-wide responses are more appropriate.

Identification of these key problems, and understanding their manifestation as spatially-oriented or system-wide issues, enabled the development of five objectives for AT to address transport equity and measures to monitor ongoing progress. The overall result of these various parts of the ATEF is a proposed three-step process for addressing transport system inequities in AT's ongoing works:

1. Identifying problematic inequities – the four key problems discussed above.
2. Responding with the right interventions – a set of objectives to address the four key problems are detailed. This includes a menu of intervention types that sit within AT's remit, and tools for testing the equity impacts of proposed programmes and projects at the local and regional level.
3. Measuring and monitoring progress – indicators to identify concentrations of problematic inequities across the transport system and monitor progress toward achieving solutions for the communities facing them are presented.

A test application of step three was conducted as part of Future Connect 2023's system analysis, and is discussed in Chapter 3. This provides an exemplary case study for other planning and design works across AT to consider and address transport equity in programme development.

The ATEF is Auckland Transport's first attempt at developing a comprehensive, systematic process to identify and address equity issues across Tāmaki Makaurau Auckland's transport system. It is designed to be practically useful, and AT staff are encouraged to apply the three-step process to everyday projects and programmes. The ATEF is a living document. Feedback and contributions are welcome for future iterations.

Overall, ATEF and its proposed three-step process will provide greater guidance and insight for AT and its partners as work continues on improving the transport system in a more equitable manner.



# 1 What is the Auckland Transport Equity Framework?

## Why an equity framework?

Transport is an essential enabler of wellbeing for people living in Tāmaki Makaurau Auckland. The ease and affordability of getting where we need to go can determine whether commuting to a new job opportunity is a realistic prospect, whether we join whānau for a birthday celebration, or even whether we go to school every day, or make it to a regular health check-up.

There is clear evidence that for many Aucklanders the current transport system is not meeting their needs. Many of the most impacted are also facing other forms of socio-economic disadvantage, which is exacerbated by inadequate or expensive transport and, at its worst, can lead to transport-induced social exclusion and poverty.

For example, some people with disabilities can have very limited travel horizons due to physical difficulties with mobility coupled with inadequate walking and public transport facilities. Many young adults do not hold a driver's license or cannot afford to own and operate a car, leaving dependent on infrequent public transport in some areas of Auckland. Some women, girls, people from LGBTQI communities, and some ethnic minority groups limit how much they leave the house and use footpaths and public transport due to personal safety concerns.

These everyday transport challenges can seem foreign to Aucklanders in privileged positions, living in locations with multiple transport options and with adequate financial resources, but there are disparities in lived transport experiences across Auckland's social groups.

This framework presents a systematic way for Auckland Transport (AT) staff to think about transport inequities, pinpoint where they matter most, and respond with the right set of interventions. It also offers a framework for monitoring progress toward a more equitable transport system. The community insights and other findings outlined in this framework represent a first step in developing a better understanding of transport-related inequities in Auckland. Working to address these inequities, where possible within AT's remit, will help ensure a more prosperous and equal Tāmaki Makaurau Auckland in the long-term and helps progress the Social and Economic goals outlined in AT's Sustainability Strategy.

## What do we mean by 'equity'?

The Auckland Plan 2050 states that "adopting an 'equitable' approach means prioritising the most vulnerable groups and communities to achieve more equal outcomes".<sup>1</sup> For AT this means ensuring that the needs of these people are prioritised in planning, designing, and operating the transport system.

Equity is about a fair distribution of the transport system's positive and negative impacts across social groups. A fair distribution does not mean treating every person or every place equally or ensuring that every person or place gets the same level of service or investment but targeting investment and intervention to communities most in need for the purposes of working toward more equal end outcomes.

Approaching the transport system with an equity lens contrasts with traditional transport decision-making that has prioritised utilitarian principles of maximising net benefits for society overall, regardless of the distribution of benefits among social groups. An equitable approach may involve trading off aggregate outcomes to achieve sufficient outcomes for those most in need. For example, a utilitarian approach to prioritising transport investment may involve focusing on the region's most highly-used corridors in the city centre while an equitable approach may involve focusing more attention on some relatively lightly-used corridors in parts of the city where transport outcomes for communities most in need are very poor.

Achieving completely equal transport outcomes among different social groups and places is highly challenging and a possibly unrealistic ambition. Nevertheless, *moving towards* more equal end outcomes and ensuring that the transport system provides sufficient access so that everyone can participate in society are critical goals.

National-level transport policy provides clear guidance on this and establishes 'inclusive access' as one of five overarching outcomes expected from the transport system, defined as: "enabling all people to participate in society through access to social and economic opportunities, such as work, education, and healthcare."<sup>2</sup>

As equity is about focusing on communities of greatest need, it is important to define these social groups. Chapter 2 of the framework provides guidance on identifying those most at risk of transport disadvantage and

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<sup>1</sup> Auckland Council (2018) [Auckland Plan 2050](#), 'Belonging and Participation' outcome, Direction 6.

<sup>2</sup> Ministry of Transport (2018), [A framework for shaping our transport system: transport outcomes and mode neutrality](#)



suggests that many solutions should be concentrated in communities where poor transport outcomes overlap with high socio-economic deprivation.

### **The Auckland Plan 2050, equity and communities most in need**

The Auckland Plan 2050 identifies sharing prosperity with all Aucklanders as one of three key challenges. It aims to focus investment to address disparities and serve 'communities most in need':

*“**Equity** refers to equality of opportunity, enabling all to participate in society in a way that they value. It recognises that some communities are relatively disadvantaged and require different approaches to achieve equality of outcomes...*

*“Actions are equitable when they acknowledge, mitigate, and redress inequitable outcomes by ensuring a fair and appropriate distribution of benefits and disbenefits. Adopting an equitable approach means redistributing various resources to reduce social inequalities where they will have the most impact.”*

*“**Communities most in need** refers to communities who have limited capability to access social and economic resources and opportunities compared to the general population. This restricts their ability to fully participate in society and in activities that have meaning and value to them.*

*“Resources refer to the skills, knowledge, experience, material assets and social networks available to people, while capability refers to their ability to use these resources to achieve positive life outcomes.*

*“Communities most in need experience a combination of linked social, economic and environmental problems including low educational achievement, low incomes, high unemployment, low value skills, social exclusion, poor housing, high crime environments, poor health and family breakdown.*

*“Communities also possess different capabilities to respond to these problems (e.g. supportive family and strong social networks that support individuals). Communities that have a higher risk of exposure to these problems may be less able to make the most of opportunities and achieve positive life outcomes...*

*“Identifying communities in most in need is context-specific and may change in relation to the specific policy, initiative or service being delivered.”<sup>3</sup>*

#### The framework at a glance

The framework involves a three-step process for AT to identify, respond to and measure problematic transport inequities. Each chapter in this document covers one of these three steps. The framework establishes four focus problems, and associated objectives and monitoring indicators. The framework is applicable across all AT's functions but needs to be tailored for relevance to the broad range of activities undertaken across the organisation.

#### Who is the framework for?

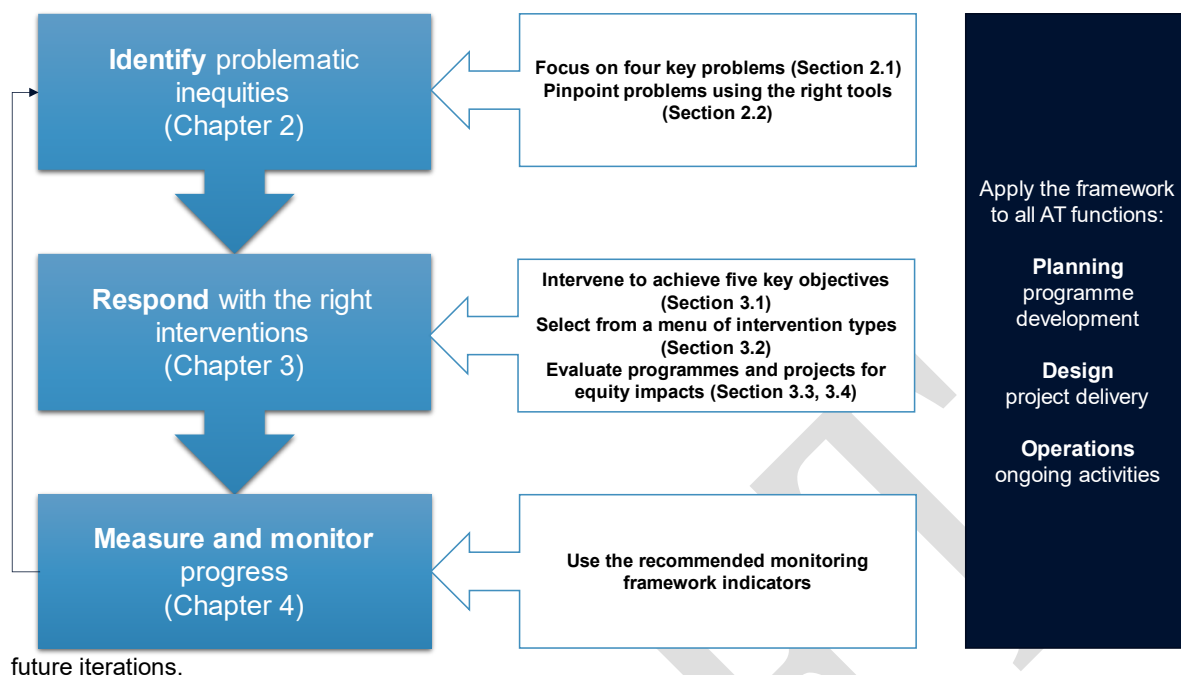
This framework is intended for AT staff and designed to be relevant to the range of ways in which AT influences Auckland's transport and land-use system. For example, it can be used to inform:

- Strategic planning processes such as Future Connect, by providing a systematic approach to identification of where deficiencies on strategic networks impact communities of greatest need,
- Development of multi-year programmes/plans such as the Regional Land Transport Plan or Regional Public Transport Plan, to ensure they do not exacerbate existing inequities among social groups,
- Design of individual projects, to prompt consideration of how design features can meet the transport needs of communities of greatest need,
- Ongoing operations, to identify how public transport operations or asset maintenance programmes can be optimised to better serve communities of greatest need.

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<sup>3</sup> Auckland Council (2021) *Communities of greatest need: practice note*.

The ATEF is designed to be practically useful, and AT staff are encouraged to apply the thinking to their everyday projects and programmes. It is a living document and feedback and contributions are welcome for



future iterations.

Figure 1: The framework at a glance

#### How has the framework been developed?

The framework has been developed by AT's Integrated Network Planning team. Key inputs included engagement with selected groups representing communities of greatest need and a desktop review of relevant research and policy literature. Draft versions of the framework were tested with a cross organisation working group including representatives from Auckland Council.

#### Scope and limitations

Moving toward a more equitable transport system is a complex and long-term challenge and requires further strategic policy work by AT, further engagement with affected groups, ongoing systematic application of this framework and regular updating, to achieve change on the ground. There are several limitations to the scope of this framework. The framework does not provide:

- A detailed collation of all available evidence and research on transport equity issues in Auckland (although it does provide a summary of evidence collated during preparation of this framework)
- Detailed guidance on assessing equity impacts of projects (although it does provide high-level principles and direction on appropriate tools for assessing equity).

## 2 Identifying problematic inequities

Addressing transport inequities requires identifying where and for whom Auckland's transport system is not meeting needs and leading to negative outcomes for people's wellbeing. There is a diversity of individual transport experiences in Auckland but, for AT's purposes, four focus problems and associated communities have been identified for attention. In addition, several analytic tools are highlighted to help practitioners pinpoint problematic inequities.

### Focus on four key problems

Engagement with communities vulnerable to transport disadvantage, and research undertaken in preparation of this framework, highlights four problematic inequities relevant to transport in Auckland.

Problematic inequities are situations of unmet transport need or disproportionate exposure to transport harms among groups at risk of other forms of socio-economic disadvantage. They are situations where transport system failings mean that communities of greatest need: ATEF has identified four key transport equity problems, grouped into two themes based on spatial orientation:

#### Spatially-Oriented Problems

1. The transport system does not provide effective and/or affordable access to essential services or opportunities from some areas of high socio-economic deprivation.
2. The transport system exposes people living in some areas of high socio-economic deprivation to unacceptable transport-derived harms (e.g., air and noise pollution, safety risks, severance).

#### System-Wide Problems

3. The transport system does not consistently provide for the essential physical access needs of all people (particularly people with disabilities, caregivers of young children, and older Aucklanders).
4. The transport system does not consistently provide for the personal safety needs of all people (particularly higher-risk groups such as women, girls, LGBTQI people, older and younger people and some minority ethnic groups).

Two of the focus problems are strongly spatially-oriented (problems 1 and 2), with impacts concentrated among people living in particular areas of Auckland. In contrast, the problems of inadequate access for people with disabilities (problem 3) and exposure to personal safety risk (problem 4) are system-wide issues that impact demographic groups who are relatively evenly dispersed across the region.

Focus locations for the spatially-oriented problems are those parts of Auckland with high levels of socio-economic deprivation (Figure 2). The New Zealand Deprivation Index (NZDep) combines multiple indicators of socio-economic disadvantage to highlight locations with populations most at risk of deprivation. It is a well-established index for identifying communities of greatest need, with spatial data readily available for analysis. NZDep is utilised across council whānau organisations and Central Government, so ATEF's incorporation of the index to identify communities facing high socio-economic deprivation provides interagency alignment.

It is important to note that many *inequalities* in transport outcomes among Aucklanders are not problematic *inequities*. For example, some Auckland locations with socio-economically advantaged populations have relatively poor levels of public transport service. While this is an inequality in a transport system outcome, it is not a problematic inequity as this population can overcome this deficiency and afford private transport alternatives to meet their essential needs. A transport system inequality only becomes a problematic inequity where it combines with socio-economic disadvantage and is resulting in core needs not being met.

The consequences of unmet transport needs involve cascading impacts from first order personal consequences to broader society-wide impacts (Figure 3). For example, where an individual does not have enough money for transport, the first order consequence is a missed trip. The second order impact is a missed social or employment opportunity. Third-order impacts when scaled up across society could involve effects on economic productivity (for example, if people do not take up employment or training opportunities) or public health (for example, if people miss medical appointments due to lack of transport choice).

Figure 2: New Zealand Index of Deprivation (NZDep)2018 in the Auckland Region. High deprivation communities defined as areas ranked in deciles 8,9 or10. Source: [University of Otago](#).

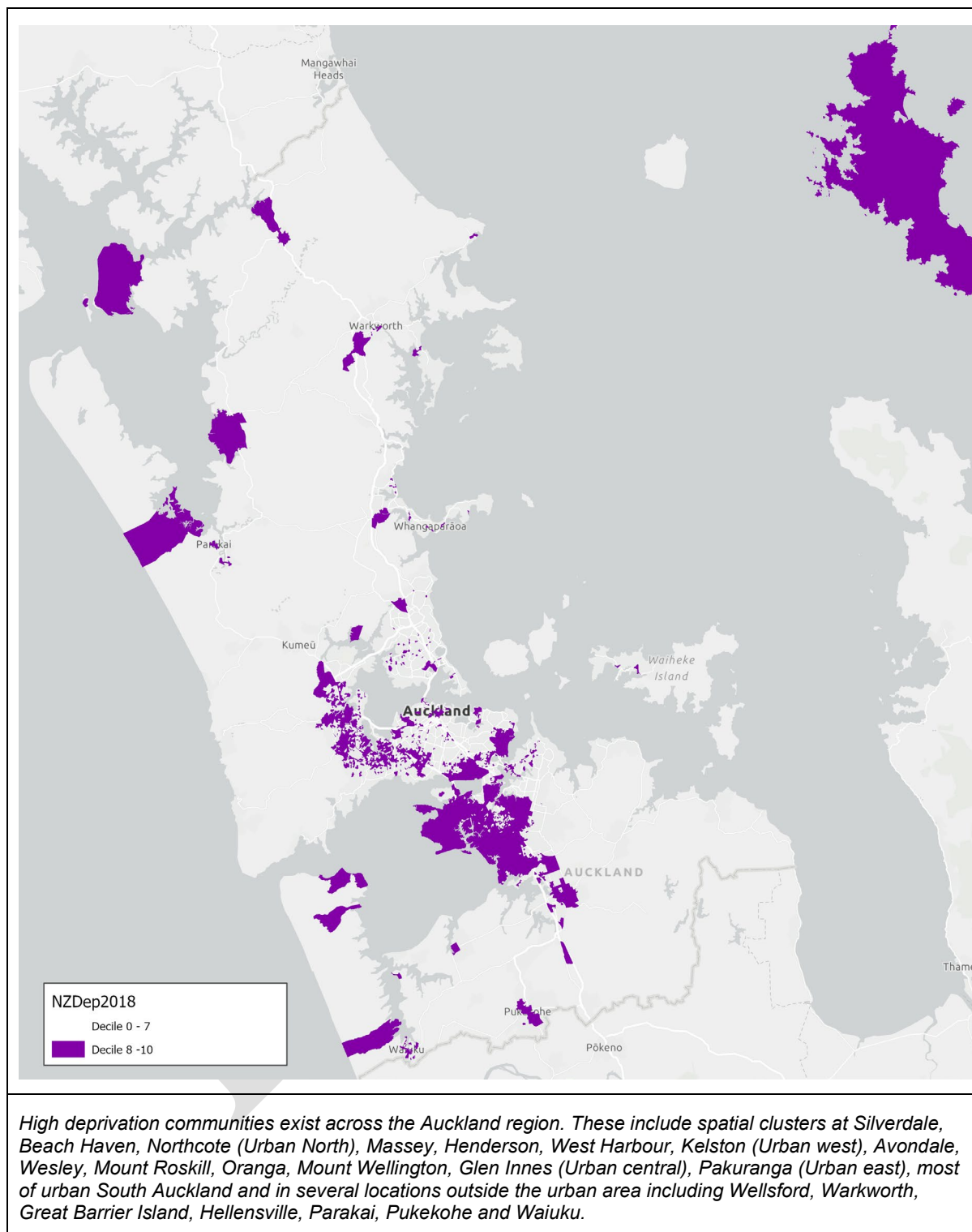
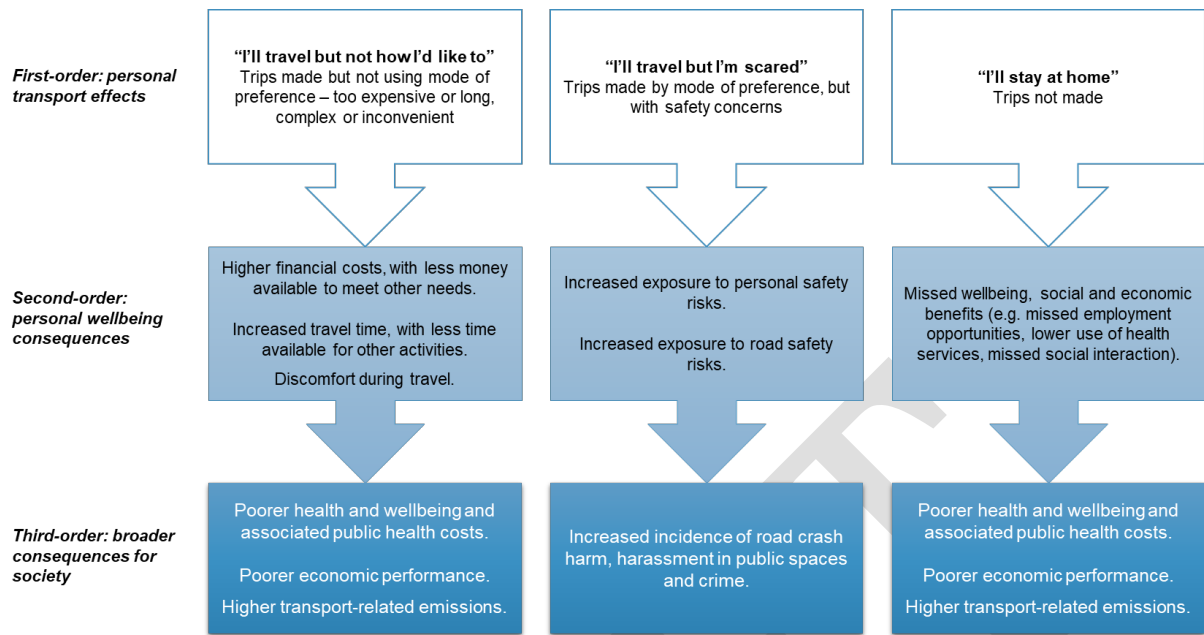




Figure 3: Cascading consequences of unmet transport needs



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Table 1: Four problematic transport inequities in Auckland (with supporting evidence included in Appendix 1).

Focus problem	Causes
<p><b>1. The transport system does not provide effective and / or affordable access to essential services or opportunities for people living in some areas of high socio-economic deprivation</b></p>	<p><b>Specific transport needs</b></p> <p>People living in areas of socio-economic deprivation are more likely to have low incomes, be on benefits, be unemployed and have fewer resources to respond to adversity (educational attainment, quality housing). These populations have specific needs for affordable access to support services and range of socio-economic opportunities, while having lower access to private vehicles.</p> <p><b>Infrastructure and service quality</b></p> <p>Low-cost active transport and PT services do not serve the needs of people living in high-deprivation locations (e.g. poor active transport facilities and spatial coverage, frequency and span of PT service).</p> <p><b>Financial cost</b></p> <p>The financial cost of using the transport system to access opportunities (either via private vehicles or other modes) is unaffordable for people on low incomes.</p> <p><b>Land use/ transport integration</b></p> <p>Many high-deprivation areas are distant from, and not well connected by, PT and active transport to major employment areas and essential services.</p> <p>Higher costs of transport from longer distances to key opportunities counteract lower housing costs in many high-deprivation areas.</p>
<p><b>2. The transport system exposes people living in some areas of high deprivation to unacceptable transport-derived harms (e.g., air and noise pollution, safety risk, and severance).</b></p>	<p><b>Infrastructure quality</b></p> <p>The design of streets and motorways does not always mitigate exposure to air and noise pollution and severance.</p> <p>Design features of road infrastructure do not consistently meet best practice standards for road safety.</p> <p><b>Safe system factors</b></p> <p>Road safety outcomes in high deprivation areas are likely to result from a combination of infrastructure, vehicle, behaviour and enforcement factors. Use of vehicles with lower safety ratings among people living in high deprivation locations may be a contributing factor.</p> <p><b>Transport system dominance of high-harm modes</b></p>



	<p>Auckland's high dependence on motorised vehicles is associated with higher levels of air and noise pollution and traffic severance than would be the case with a more multi-modal system.</p> <p><b>Housing costs and exposure to transport-derived harms</b></p> <p>Transport-derived air and noise pollution and severance are highly localised around major roads and motorways, and Aucklanders in high deprivation locations may face proportionately higher exposure, given lower housing costs in these locations.</p>
<p><b>3. The transport system does not consistently provide for the essential physical access needs of all people (particularly people with disabilities, caregivers of young children and older Aucklanders).</b></p>	<p><b>Specific transport and physical access needs</b></p> <p>People with disabilities are more likely to rely on public transport, walking, taxis and the total mobility scheme due to not being able to drive a private vehicle.</p> <p>People with disabilities, caregivers of young children and older Aucklanders all have special mobility needs requiring higher quality walking infrastructure and accessible features at public transport facilities.</p> <p><b>Infrastructure and service quality</b></p> <p>Public transport operations and facilities, and walking infrastructure does not consistently meet universal design standards.</p>
<p><b>4. The transport system does not consistently provide for the personal safety needs of everyone (particularly high-risk population groups such as women, girls, LGBTQI people, older and younger people and some minority ethnic groups).</b></p>	<p><b>Specific transport needs</b></p> <p>Women, girls, LGBTQI people, older and younger people and some minority ethnic groups face greater vulnerability to harassment and discrimination in public spaces and require features that enhance perceived and actual safety.</p> <p><b>Infrastructure and service quality</b></p> <p>Design and operation of public transport and active transport facilities do not consistently support personal safety (e.g. design not consistent with CPTED guidelines).</p>



## Pinpoint problems using the right tools

This framework highlights four key problematic inequities for focused attention by AT. Across AT's functions of planning, designing and operating most components of Auckland's transport network, there are several tools for understanding for whom and where these four problems are acute. This problem identification step is a critical precursor to effective response and intervention to address problems.

Ideally, problem identification tools need to:

- pinpoint a disparity in transport system performance between selected social groups highlighted by the four focus problems.,
- demonstrate that this disparity is contributing to significant un-met socio-economic needs or unacceptable exposure to harm among communities of greatest need.

This framework highlights four tools that can be used by AT staff for identifying problematic transport inequities:

- user and community engagement
- accessibility audits
- personal safety audits
- spatial data analysis.

### User and community engagement

Gathering information about lived transport experiences directly from communities of greatest need can be a powerful method of revealing the nuance of un-met transport needs – including specific locations or sub-groups facing transport deficiencies. Comparing this information with that gathered from other more advantaged Auckland communities can demonstrate problematic disparities.

User and community engagement can take many forms and involve collecting qualitative and quantitative information from sources including:

- AT's regular customer insights surveys,
- in-depth interviews with representatives of groups at risk of transport disadvantage,
- reference groups,
- surveys.

There is an opportunity for AT to develop a structured data collection process focused on understanding differences in transport experiences and outcomes among advantaged and disadvantaged groups in Auckland. Existing statistical data sources are limited in enabling detailed understanding of unmet transport access needs among priority groups.

#### **Example insights from engagement with communities of greatest need**

Preparation of this framework involved conversations with groups representing various communities at risk of transport disadvantage (e.g. people on low-incomes, people with disabilities, women and young people). This revealed insights about everyday unmet transport needs:

*"Our communities on low incomes are making decisions every day about what to prioritise. Even simple social trips across the city like going to a birthday party that most people would take for granted, might not be possible when funds are low"*

*"Teenagers find public transport expensive and often try and evade paying fares meaning we're always scared of getting kicked off the train"*

*"Many women will avoid poorly lit walking connections at night, even when they are the most direct route. This adds time to our travel, but it's not something that most men need to think about"*

*"There are not great cross-town options for buses. So if I want to get to a library across town with a great children's programme I won't go unless I can afford to throw away half a day"*

*"Taking a pram out in Auckland can be a real hassle – especially when most buses don't lower for the pram and some buses don't fit the width of new prams"*

*"Footpaths can be dangerous places for our older community...there's potholes, uneven surfaces and fast e-scooters that give us a real fright"*



*“Among the young people we support, it’s very common that they will walk very long distances to reach our services as they don’t have the money to top up their hop card and take the bus”*

*“For our recent migrant communities, we hear stories of families on very stretched incomes, even facing homelessness, but owning a personal car is the only realistic way of accessing work and support services.”*

*“There are still too many new footpaths being built with undulations so that cars can travel more easily – but the focus should be on a smooth path for people walking, particularly those with disabilities”*

### **Accessibility audits**

Auditing the accessibility of transport infrastructure and facilities under AT control (for example, public transport stations and stops, footpaths and pedestrian crossings) is an important tool for understanding the extent of accessibility problems facing people with disabilities, caregivers of young children and some elderly Aucklanders.

AT’s Accessibility Action Plan 2022-2024 identifies an accessibility audit programme at public transport facilities as an action (the Plan also identifies a range of other interventions that are referenced in Chapter 3 as part of effective responses to identified problems).

There are existing guidelines and tools including ‘report cards’ for completing public transport accessibility audits that take a ‘whole of journey approach’ assessing the accessibility performance of each link in the journey.<sup>4</sup>

There is an opportunity for AT to take a systematic approach to accessibility audits including:

- Broadening the scope of accessibility audits beyond public transport facilities to also include AT’s pedestrian facilities (e.g. footpaths and pedestrian crossings),
- Establishing an ongoing funded programme to audit all links in the AT network, with a prioritisation framework to focus on critical links first.

### **Personal safety audits**

Alongside accessibility audits, personal safety audits are a useful tool for understanding the extent of deficient infrastructure and facilities from a personal safety perspective. These can complement user research and engagement to pinpoint problem locations.

Crime Prevention through Environmental Design (CPTED) guidance for New Zealand provides a starting framework for auditing the personal safety performance of public spaces.<sup>5</sup>

As with accessibility auditing there is an opportunity for AT to build on this guidance and establish a systematic and prioritised programme for auditing the most critical facilities, services and infrastructure.

### **Spatial data analysis**

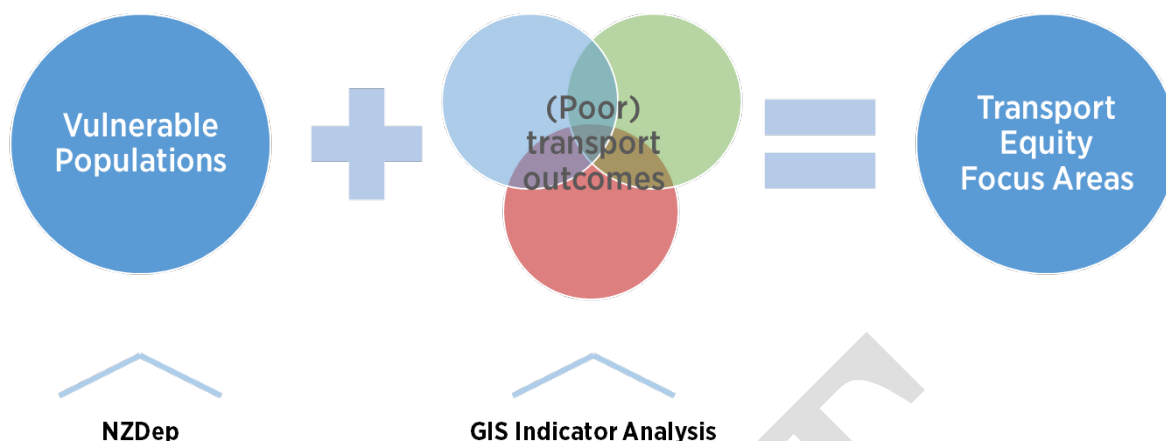
Spatial data analysis using GIS tools can pinpoint locational based transport inequities. This framework focuses attention on areas of high socio-economic deprivation (NZDep2018 deciles 8 through 10). Figure 2 maps Auckland communities in the highest deprivation deciles and these locations can then be overlaid with spatial data on transport system outcomes. This enables the identification of locations where high socio-economic deprivation and poor transport outcomes overlap. Figure 4 visualises the spatial data analysis process.

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<sup>4</sup> O’Fallon, C. (2010) *Auditing public transport accessibility in New Zealand*. NZ Transport Agency research report no.417.

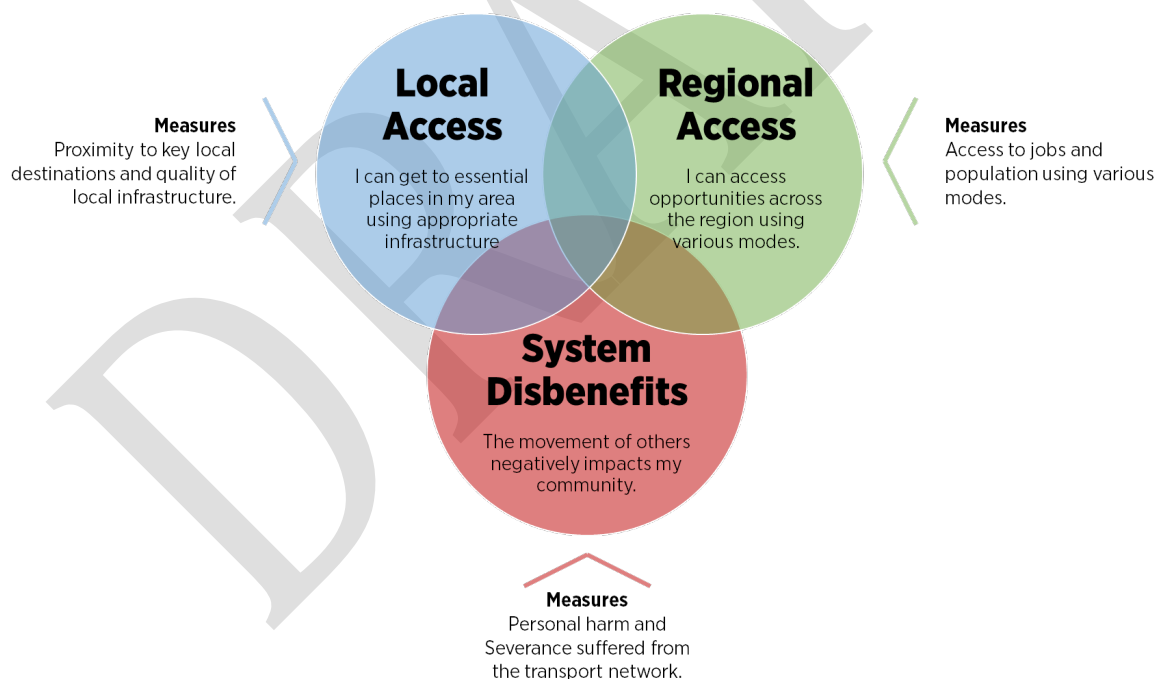
<sup>5</sup> Ministry of Justice (2005), *National Guidelines for Crime Prevention through Environmental Design in New Zealand: Part 2 Implementation Guide*.

Figure 4: Example process of applying spatial analysis to identify locational based transport inequities. Source: Future Connect 2023.



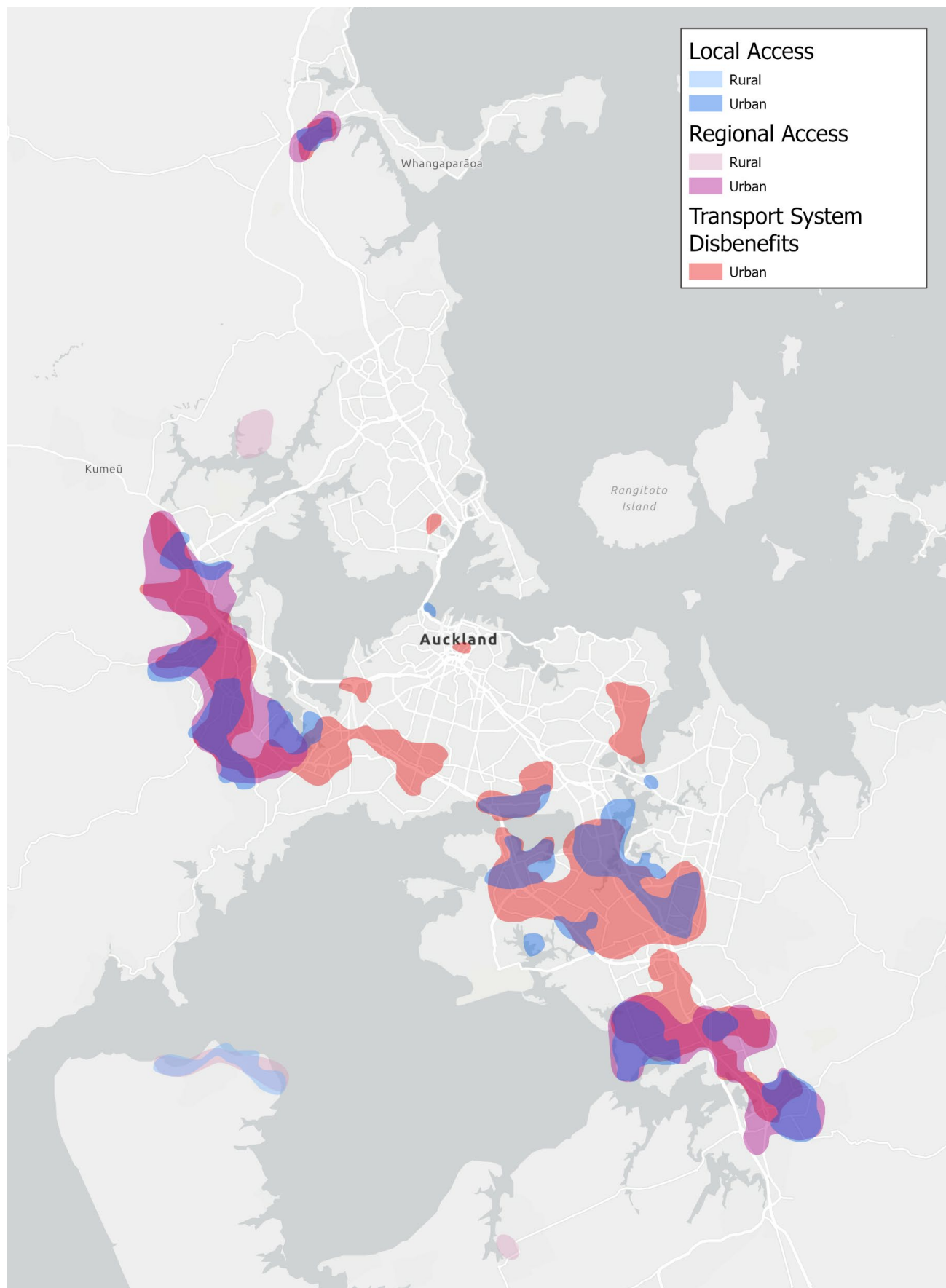
Future Connect 2023, the recent update to Auckland Transport’s Network Plan, provided an opportunity to trial the spatial data analysis suggestions made in this framework. The Future Connect 2023 equity analysis centred on Problems 1 and 2 in Table 1 of this framework, since these two problems were determined to be spatially oriented. Problems 3 and 4 were determined to be out of scope for spatial data analysis since they represent system wide issues, and impact demographic groups that are more or less evenly distributed across the region (e.g. women, girls, LGBTQI people, older and younger people). After determining Problems 1 and 2 would be the focus of Future Connect 2023’s transport equity analysis, these problems were expanded upon by defining three domains of spatially oriented transport equity shown in Figure 5.

Figure 5: The three domains of transport equity investigated by Future Connect 2023



Currently measurable indicators (selected from those documented in Table 4) were identified to analyse and compare community outcomes for the three domains shown in Figure 5. A population weighted ranking was applied to each of the indicators, so that a judgement on outcomes was made based on the average Aucklanders’ experience. The result was identification of communities where high deprivation and poor transport outcomes overlap, as visualised in Figure 6. Future Connect 2023’s analysis provides an exemplary case study of how to identify transport disadvantage that is linked to specific places (and therefore residential populations).

Figure 6: Auckland communities where high deprivation and poor transport outcomes overlap



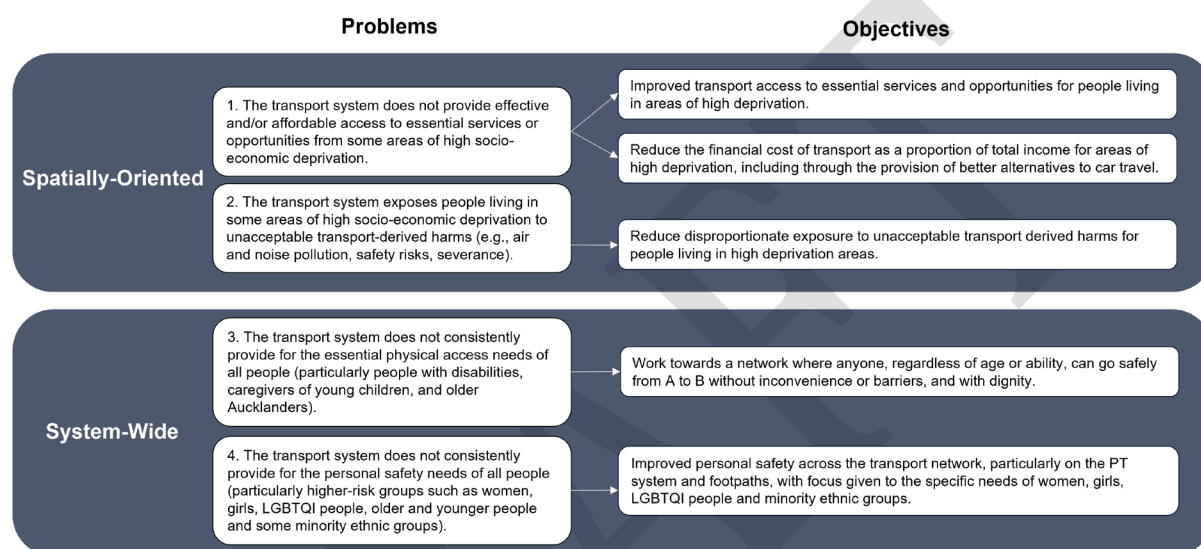
### 3 Respond with the right interventions

Once problematic transport inequities are identified and affected populations and locations pinpointed, AT is able to respond with the right types of interventions. This section confirms a set of objectives relevant to equity issues that can help guide effective intervention. It also provides a menu of intervention types within AT’s remit and reference to tools for testing the equity impacts of proposed programmes and projects.

#### What is Auckland Transport trying to achieve?

Figure 7 lists five objectives that should be front of mind in thinking about responses to the four key problems. These objectives communicate what success looks like for AT in overcoming transport inequities. Each objective ties to one of the four core problems (Section 2.1).

Figure 7: Transport equity problems and associated objectives



#### Relevant types of Auckland Transport-led interventions

There are a range of levers within AT’s remit that can contribute to transport equity objectives:

- At a strategic level, choices on regional-scale programmes, the spatial location of investment and the broad mix of investment across different modes and initiatives will have key impacts on addressing transport inequity problems.
- At a tactical level, there are a range of potential initiatives for immediate action that can result in targeted positive change and testing of different intervention approaches.

There are several broad categories of strategic-level interventions relevant to AT:

- **Invest in inclusive modes:** investing in walking, cycling and public transport provides benefits to a wider range of potential users than investment in improving car-based mobility. A significant portion of the population are unable to drive or face financial stress from dependence on cars. Investment in inclusive modes provides more universally accessible transport choices and lower-cost transport options for those who need them.
- **Invest for universal accessibility:** upgrading street infrastructure (particularly for walking) and public transport vehicles and facilities to meet universal accessibility standards can contribute to overcoming a range of inequities. Meeting universal design standards can mean improved transport outcomes for people with disabilities, caregivers of young children, older people and new migrants with limited English language abilities.
- **Invest for personal safety:** upgrading walking infrastructure (including crossings/intersections), and public transport stations and stops, to meet CEPTD guidance and support personal safety. This can be an important way of supporting access for groups more vulnerable to harassment, violence and discrimination while using the transport system.
- **Invest to minimise transport system harms:** AT’s role in investing in the local road network can be targeted to minimise transport harms, particularly on more vulnerable populations. This can take the form of road-safety investments or improvements around busy roads to mitigate air





and noise pollution (e.g. through tree planting) and severance (e.g. through provision of controlled pedestrian crossings), and targeted to areas with populations facing high deprivation

- Set design standards for accessibility and personal safety:** AT plays an important role in setting design principles and standards for Auckland’s roads, streets and public transport infrastructure. Ensuring universal accessibility and personal security principles are integrated into this guidance is an important mechanism for ensuring new and upgraded infrastructure does not exacerbate existing inequities. AT’s [Transport Design Manual](#) is subject to ongoing updates and these could ensure that user groups such as people with disabilities, women and girls, and younger and older people are explicitly considered, to ensure design standards meet the needs of those more vulnerable to accessibility and personal security problems.
- Optimise operations and maintenance for inclusivity:** a significant proportion of AT’s investment is on ongoing operations and maintenance of existing assets. Optimising these ongoing activities to meet the needs of groups vulnerable to transport disadvantage can be a powerful way of addressing inequities. This could take the form of AT’s public transport operating contracts explicitly including provisions to ensure inclusive customer service behaviours or auditing maintenance schedules, to prevent any spatial inequities in maintenance activity across the region.
- Reform fares, fees and fines:** AT plays a role in setting various financial contributions required to use the transport system including public transport fares and car parking fees. These charges can be barriers to using the transport system and accessing opportunities or can cause significant hardship for people with limited financial resources. There are opportunities to reform these charges to be responsive to differences in peoples’ financial situations, though this would need to be done in conjunction with government, which controls most infringements, and technological changes.
- Manage car parking assets for inclusive access:** AT manages on-street car parking space across Auckland and many off-street facilities. This includes reserving mobility spaces for people with disabilities, setting parking fees and enforcing parking restrictions. AT’s Parking Strategy (Room to Move) and local area parking management plans can contribute to equity objectives by considering the needs of people with disabilities and of groups with fewer resources to access essential needs.
- Influence integrated transport and land-use planning:** AT plays a role in influencing land-use planning decisions, both through its transport infrastructure and service investments and through contributing to land-use decisions as part of the Auckland Council family. Well-integrated transport and land-use planning that supports travel by multiple modes and enables access to key services in jobs within shorter distances will be critical to influencing the future equity of transport outcomes. Past land-use planning and transport infrastructure decisions have contributed to existing inequities.

Table 2 applies these broad intervention types across the five equity objectives, identifying a menu of relevant responses.

Table 2: Types of AT responses to different types of inequities

Objective	Potential Auckland Transport responses
Improve transport access to essential services and opportunities for people living in areas of high deprivation	<p><b>Invest in inclusive modes:</b> invest in spatially targeted infrastructure and service improvements to serve areas of high deprivation:</p> <ul style="list-style-type: none"> <li>Improve local area transport networks, focused on lower-cost modes (footpaths, cycling and micro-mobility facilities)</li> <li>Improve connectivity between high-deprivation areas and key regional destinations (e.g. job clusters and key social services) by lower-cost modes (public transport, cycling)</li> </ul> <p><b>Reform fares and fees to:</b></p> <ul style="list-style-type: none"> <li>be responsive to individual’s different financial situations.</li> <li>communicate availability of concession fares for PT.</li> </ul> <p><b>Manage car parking assets for inclusive access:</b></p> <ul style="list-style-type: none"> <li>set fees and manage everyday operations to ensure parking is not causing financial barriers to accessing essential needs.</li> </ul> <p><b>Influence integrated transport and land-use planning to:</b></p>
Reduce the financial cost of transport as a proportion of total income for people living in areas of high deprivation, including through the provision of better alternatives to car travel.	(This cell is merged with the previous row and contains no additional text)

Objective	Potential Auckland Transport responses
	<ul style="list-style-type: none"> <li>• support concentrating services and jobs in locations that are well connected to public transport, walking and cycling</li> <li>• support locating services and retail to enable short access distances for local residents.</li> </ul>
<p>Reduce disproportionate exposure to unacceptable transport derived harms for people living in high deprivation areas</p>	<p><b>Invest to minimise transport system harms</b></p> <p>Road safety:</p> <ul style="list-style-type: none"> <li>• Orient road safety programmes (infrastructure, education and enforcement) toward social groups and relevant locations with higher exposure to road safety risk.</li> </ul> <p>Air and noise pollution:</p> <ul style="list-style-type: none"> <li>• Plan major road and rail infrastructure to minimise population exposure to noise and air pollution impacts.</li> <li>• Orient investment to mitigate air and noise pollution (e.g. tree planting, noise barriers) to minimise overall population exposure, with particular attention to concentrations of vulnerable groups (e.g. young children)</li> </ul> <p>Severance:</p> <ul style="list-style-type: none"> <li>• Plan major road and rail infrastructure to minimise severance, particularly in locations with concentrations of vulnerable groups (e.g. children, young adults, older people)</li> </ul> <p>Orient investment in infrastructure to mitigate severance (e.g. new pedestrian crossings) caused by existing infrastructure to locations with concentrations of vulnerable groups.</p>
<p>Work towards a network where anyone, regardless of age or ability, can go safely from A to B without inconvenience or barriers, and with dignity.</p>	<p><b>Set design standards for accessibility and personal safety.</b></p> <p><b>Invest for universal accessibility:</b> Upgrade existing and ensure new PT facilities (bus stops, rail stations, passenger information) and vehicles meet universal accessibility standards.</p> <p><b>Optimise operations and maintenance for inclusivity:</b> for example:</p> <ul style="list-style-type: none"> <li>• train AT front-line PT staff about the needs of people with disabilities</li> <li>• set policies to manage conflicts on footpaths and shared paths between people walking and on bikes and micro-mobility vehicles</li> <li>• work with central government funders on reviewing the operation of the Total Mobility Scheme.</li> </ul> <p><b>Manage car parking assets for inclusive access:</b> for example, reviewing provision of mobility parking spaces and time restrictions.</p>
<p>Improve personal safety across the transport network, particularly on the PT system and footpaths, with focus given to the specific needs of women, girls, LGBTQI people and minority ethnic groups.</p>	<p><b>Set design standards for personal safety:</b> upgrade existing and ensure new footpaths and other pedestrian infrastructure meets universal accessibility standards.</p> <p><b>Invest for personal safety:</b> improve PT facilities (bus stops, rail stations and walking connections) to support personal safety and ensure an inclusive, welcoming environment for all, e.g.</p> <ul style="list-style-type: none"> <li>• improved lighting and other CPTED features</li> <li>• public toilet facilities, inclusive of gender diverse people.</li> </ul>

Objective	Potential Auckland Transport responses
	<b>Optimise operations and maintenance for inclusivity:</b> with a focus on personal safety through initiatives such as increased presence of transport officers on train services and at stops and stations.

### Tactical responses

Input from across AT has identified three tactical responses that the organisation can take in working toward more equitable transport outcomes:

- **Embed equity objectives and analysis into major strategic planning and programme development projects underway:** RLTP, RPTP, Future Connect
- **Map spatial distribution of populations at risk of transport inequities** by combining demographic and transport performance data.
- **Develop a data collection programme:** to improve understanding of the Auckland problem and monitor progress. Many existing data sources are deficient and bespoke surveys and other data collection will be valuable.

Table 3 summarises examples of how initiatives to address equity problems are relevant across three broad categories of AT activities.

Table 3: Example responses to transport equity problems across AT functions

Strategic planning and programme development (all modes, system-wide)	Design and delivery of improvement projects (PT, local roads, active modes)	Ongoing maintenance and operations (PT, local roads, active modes, car parking)
<p>Orient investments in system improvements to inclusive modes</p> <p>Target investment to locations serving transport disadvantaged communities</p> <p>Complete social distributional analysis of impacts for programmes and major projects, with particular scrutiny of projects not focused on inclusive modes (e.g. projects aimed at improving car-based mobility).</p>	<p>Establish project community profiles, using socio-economic and demographic variables and identify relevant communities vulnerable to transport disadvantage.</p> <p>Optimise project design to respond to the needs of users groups vulnerable to transport disadvantage.</p> <p>Develop design standards that ensure minimum infrastructure standards that meet the needs of the most vulnerable users.</p>	<p>Improve understanding of user and customer base, with disaggregated analysis using socio-economic and demographic variables.</p> <p>Optimise PT services to meet the needs of transport disadvantaged (e.g. integrating specific group needs into operational contracts).</p> <p>Establish operational standards that ensure minimum levels of operation meeting the needs of transport disadvantaged.</p> <p>Integrate minor infrastructure improvements with ongoing maintenance activities to improve facilities for transport disadvantaged.</p>

### Evaluating programmes and projects for equity impacts

While there are broad categories of intervention types that are likely to be effective in contributing to equity outcomes, AT's major programme, project selection and business case processes could be accompanied by comprehensive evaluation of equity impacts.

At its most simple this means evaluating how benefits and costs are distributed across different social groups (a type of disaggregated analysis). This requires an additional layer of analysis compared with conventional project appraisal techniques (e.g. cost benefit analysis) that focus on aggregate social impacts and generally do not drill down to investigate impacts on specific social groups (e.g. those on low-income vs high-income, Māori vs European or young vs working age people).

A comprehensive disaggregated assessment would consider how project impacts fall across multiple social variables and across multiple impact domains. Disaggregated analysis should identify the distribution of intervention impacts across all groups, not just whether or not groups commonly experiencing transport disadvantage are benefiting from an intervention. To assess the equity of an intervention it is equally important to identify situations where already advantaged groups are receiving undue benefits. The focus problems identified by this framework suggest that analysis could focus on:

- differential access impacts between:
  - people living in high-deprivation locations vs those living in low-deprivation locations.
- differential accessibility impacts between:
  - people with disabilities vs those without.
- differential personal security impacts between:
  - women and girls vs men,
  - younger and older people vs working-age people,
  - LGBTQI and gender diverse people vs straight and cis-gender people,
  - ethnic minority groups vs NZ European ethnic groups.
- differential transport harm impacts between:
  - People living in high-deprivation locations vs those living in low-deprivation locations.

This list of social groups for comparative analysis could be supplemented by various others depending on the focus of the specific project or programme.

The practice of distributional assessment in transport project evaluation is not well established in New Zealand, although guidance is more established in other jurisdictions such as the UK (Figure 8) and recent research has developed methods for applying distributional analysis within existing cost benefit assessment and multi-criteria assessment methods as part of Waka Kotahi’s project evaluation processes.<sup>6</sup>

Figure 8: Illustrative distributional impact appraisal matrix. Source: UK Department for Transport (2022), [Transport Analysis Guidance](#)

Impact	Social groups					
	Children & young people	Older people	Carers	Women	Disabled	BME
Noise	xx					
Air Quality	✓✓					
Accidents	✓	✓✓✓				
Security	✓✓	✓		✓✓		
Severance	x	x	x		x	
Accessibility	✓	x	x	✓	✓	✓

<sup>6</sup> Torshizian, E., Byett, A., Isack, E., Fehling, A., & Maralani M. (2022). *Incorporating distributional impacts in the cost–benefit appraisal framework*. Waka Kotahi NZ Transport Agency research report 700.



## Trade-offs and complementarities: achieving equity and other strategic objectives

There are significant opportunities for initiatives that contribute to equity objectives also contributing to climate change, economic productivity and social wellbeing goals.<sup>7</sup>

These complementarities are noted in *Sustainable Access for a Thriving Future: Auckland's transport emissions reduction pathway* which states 'investing in lowering transport emissions can improve equity across Auckland' and notes that the transformational shift to reducing car travel, improving other transport options and reducing the need to travel through land use planning can both lower emissions and support improved access to groups that are not well served by the current transport system.

Initiatives to address transport equity problems can also contribute to a broad range of social and economic wellbeing goals. For example, investment that improves access for people on low incomes can support improved access to social connections, training and jobs, ultimately contributing to economic productivity and social wellbeing.

While there are clear opportunities for synergies, there are also trade-offs to be highlighted to decision-makers when proposing responses to address transport inequities. Typical trade-offs include:

- **Prioritising intervention and investment among different groups with unmet transport needs:** there are multiple groups facing transport disadvantage in Auckland. Responding to one issue may mean less resource available to responding to others; for example, high investment in achieving universally accessible infrastructure may mean less resource available for improving job access for populations in high-deprivation areas. Key beneficiaries of interventions and remaining unaddressed problems need to be clearly communicated to decision makers in presenting options for intervention.
- **Efficiency vs equity:** economic and public finance frameworks commonly reference tensions between economic efficiency and equity objectives. Economic frameworks are often built around utilitarian concepts that aim to maximise aggregate social welfare. Using an equity lens to consider different sub-groups within society can reveal that what is desirable in the aggregate may not be acceptable for particular sub-groups. Applied to transport planning, economic evaluation procedures for transport projects are based on utilitarian frameworks and benefit cost assessment will focus on aggregate outcomes. Achieving equity objectives may mean not selecting options that achieve the best cost:benefit results but that also achieve outcomes for particular sub-groups.
- **Uptake of sustainable transport choices vs widespread provision:** in transitioning to a more multi-modal transport system and seeking to reduce carbon emissions, there may be trade-offs between improving sustainable transport choices (e.g. PT, cycling and walking facilities) in locations where increased uptake is likely to be highest and ensuring that good levels of transport choice are serving more disadvantaged social groups.

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<sup>7</sup> Curl, A, A Watkins, C McKerchar, D Exeter and A Macmillan (2020) *Social impact assessment of mode shift*. Waka Kotahi NZ Transport Agency research report 666 discusses the interaction between mode shift initiatives and social equity impacts.



## 4 Measure and monitor progress

The framework establishes a set of indicators that can be used to both identify problematic inequities and monitor progress toward achieving objectives. Data sources for measuring social equity impacts of transport are currently under-developed and further collection of new data and ongoing monitoring will be critical to understanding progress.

Table 4 lists a set of indicators relevant to each of the five equity objectives established in the previous section. They include:

- **Indicators for infrastructure or services that AT provides.** AT has a higher degree of control over what is reported by these indicators; for example the spatial extent of the frequent transit network is highly influenced by AT actions. Nevertheless as these are indicators of infrastructure/ service 'outputs' rather than higher-level 'outcomes' they are limited in communicating how transport performance is impacting socio-economic factors.
- **Outcome indicators.** These indicators measure factors that are closer to the end social outcomes that are sought, but are usually the result of multiple factors, only some of which are within AT control. This means that progress against these indicators is more difficult for AT to directly influence. For example, performance against access indicators (such as the number of jobs within a travel time threshold) depends not only on the quality of the transport system but also land use distributions.

For all indicator sets, monitoring performance toward equity objectives involves disaggregated analysis that compares performance between populations in defined spatial areas or between different demographic groups. Table 4 specifies the recommended spatial areas or social groups for analysis.

Where possible, the indicators draw on existing data sources. Nevertheless, there are gaps in current collection of data on social impacts of transport, and particularly data that systematically records the prevalence of unmet transport needs among a range of demographic groups. Some of the recommended indicators will require further data collection processes. These indicators should be supplemented as additional data sources become available.

The indicators can be used for the following purposes:

- **System-level monitoring:** to inform AT's performance monitoring of the Auckland transport system, providing information to key decision makers (the Board) and programme planners.
- **Identifying problems:** to provide quantitative evidence of problems with the current system (complementing tools discussed in section 2.2) that can go on to inform development of programmes and initiatives that respond to these problems. For example, locations with poor access within high deprivation areas can be pinpointed through analysis of the various access to jobs and services indicators.
- **Programme and project planning and design:** to estimate how programmes and individual projects may shift the dial in terms of performance against these indicators. For example, the programme options for the RPTP could be tested for how they perform in increasing the proportion of population in high-deprivation areas for access to high-frequency bus services.



Table 4: Transport equity indicators and associated objectives

Objectives	Indicators for infrastructure or services AT provides (and data source)	Outcome indicators (and data source)	Spatial areas or social groups for comparative analysis
<p>Improved transport access to essential services and opportunities for people living in areas of high deprivation.</p> <p>Reduce the financial cost of transport as a proportion of total income for people living in areas of high deprivation, including through the provision of better alternatives to car travel.</p>	<ul style="list-style-type: none"> <li>Proportion of the population within 800 metres of a Frequent Transit Network bus stop or Rapid Transit Network Station (spatial analysis of AT and Census data)</li> <li>Proportion of the population living within 500 metres of a completed strategic cycle route (spatial analysis of AT and Census data)</li> <li>Proportion of the strategic walking network that meets appropriate standards<sup>8</sup> for crossing infrastructure, distance between crossings and footpath width (AT spatial analysis)</li> <li>Availability of public transport fare discounts for low income groups (AT)</li> </ul>	<ul style="list-style-type: none"> <li>Mode share for journey to work/ education (Census)</li> <li>Access to employment opportunities within 30 minute car trip and 45 minute PT trip (Auckland Transport Model)</li> <li>Access to essential services<sup>9</sup> within 1.5 kilometre / 15 minute walk (AT spatial analysis)</li> <li>Proportion of population not visiting a GP due to transport issues (Ministry of Health, NZ Health Survey)<sup>10</sup></li> <li>Household expenditure on transport as a percentage of income (StatsNZ, Household Economic Survey)<sup>11</sup></li> </ul>	<p>All indicators to be compared across populations within the following spatial areas:</p> <ul style="list-style-type: none"> <li>Populations in high deprivation areas (NZDep deciles 8,9,10) vs</li> <li>Populations in low deprivation areas (NZDep deciles 1,2,3) vs</li> <li>Auckland regional population average.</li> </ul>

<sup>8</sup> Requires definition of 'appropriate standards', consistent with design guidance in AT's Transport Design Manual.

<sup>9</sup> Suggested list of destinations to include as 'essential services' is included in Section 9.7 of the Future Connect 2023 Technical Report.

<sup>10</sup> Current data is only spatially disaggregated to District Health Board level. Comparison of performance between high and low deprivation areas would require additional data collection.

<sup>11</sup> Current data can only be spatially disaggregated to the Auckland region as a whole. Comparison of performance between high and low deprivation areas would require additional data collection.



Objectives	Indicators for infrastructure or services AT provides (and data source)	Outcome indicators (and data source)	Spatial areas or social groups for comparative analysis
<p>Reduce disproportionate exposure to unacceptable transport derived harms for people living in areas of high deprivation.</p>	<ul style="list-style-type: none"> <li>• Proportion of road length for strategic road network with appropriate distance between controlled pedestrian crossings (AT spatial analysis)</li> <li>• Proportion of local roads with speed limits of 40km/h or less (AT spatial analysis)</li> <li>• Kilometres of 4+lane roads relative to population (spatial analysis of AT and Census data)</li> </ul>	<ul style="list-style-type: none"> <li>• Rates of deaths and injuries from road crashes (Waka Kotahi Crash Analysis System)</li> <li>• Exposure to air and noise pollution from major roads (Waka Kotahi)</li> </ul>	<p>All indicators to be compared across populations within the following spatial areas:</p> <ul style="list-style-type: none"> <li>• Populations in high deprivation areas (NZDep2018 deciles 8,9,10, SA1) vs</li> <li>• Populations in low deprivation areas (deciles 1,2,3) vs</li> </ul> <p>Auckland regional population average.</p>
<p>Work towards a network where anyone, regardless of age or ability, can go safely from A to B without inconvenience or barriers, and with dignity.</p>	<ul style="list-style-type: none"> <li>• Proportion of AT bus stops and RTN stations that meet accessible design standards<sup>12</sup> (AT)</li> <li>• Proportion of the strategic walking network that meets accessible design standards (AT)</li> <li>• Proportion of customer information on the PT network that meets accessibility standards (AT)</li> </ul>	<ul style="list-style-type: none"> <li>• Customer satisfaction with accessibility of PT, footpaths and information provision</li> </ul>	<p>Infrastructure indicators to be reported on an Auckland-wide basis.</p> <p>Outcome indicator to be compared between the following social groups and the Auckland population average:</p> <ul style="list-style-type: none"> <li>• people with disabilities</li> <li>• caregivers with young children</li> <li>• older Aucklanders (age 75+).</li> </ul>

<sup>12</sup> Requires definition of 'accessible design standards'.





Objectives	Indicators for infrastructure or services AT provides (and data source)	Outcome indicators (and data source)	Spatial areas or social groups for comparative analysis
<p>Improved personal safety across the transport network, particularly on the PT system and footpaths, with focus given to the specific needs of women, girls, older and younger people, LGBTQI people and minority ethnic groups.</p>	<ul style="list-style-type: none"> <li>PT stations with appropriate personal safety facilities<sup>13</sup> (AT)</li> <li>Bus stops with appropriate personal safety facilities (AT)</li> <li>Proportion of footpaths with appropriate lighting (AT)</li> <li>Proportion of high pedestrian use areas supported with appropriate personal safety facilities (AT)</li> </ul>	<ul style="list-style-type: none"> <li>Customer perception of personal safety on the PT network (AT survey)</li> <li>Customer perception of personal safety when using local footpaths / in key town centre areas</li> <li>Frequency of PT use (AT survey)</li> </ul>	<p>Infrastructure indicators to be reported on an Auckland-wide basis.</p> <p>Outcome indicators to be compared between the following social groups:</p> <ul style="list-style-type: none"> <li>Women and girls vs men</li> <li>older (65+) and younger (10-19 years old) Aucklanders vs working age population</li> <li>LGBTQI and gender diverse people vs Auckland average</li> <li>Ethnic minorities vs NZ European.</li> </ul>

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<sup>13</sup> Requires definition of 'appropriate personal safety facilities' at PT stations, bus stops and on footpaths.



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## 6 Appendix 1: Four problematic transport inequities in Auckland and supporting evidence

Focus problem	Causes	Example reported evidence
<p><b>1. The transport system does not provide effective and / or affordable access to essential services or opportunities for people living in some areas of high socio-economic deprivation</b></p>	<p><b>Specific transport needs</b></p> <p>People living in areas of socio-economic deprivation are more likely to have low incomes, be on benefits, be unemployed and have fewer resources to respond to adversity (educational attainment, quality housing). These populations have specific needs for affordable access to support services and range of socio-economic opportunities, while having lower access to private vehicles.</p> <p><b>Infrastructure and service quality</b></p> <p>Low-cost active transport and PT services do not serve the needs of people living in high-deprivation locations (e.g. poor active transport facilities and spatial coverage, frequency and span of PT service).</p> <p><b>Financial cost</b></p> <p>The financial cost of using the transport system to access opportunities (either via private vehicles or other modes) is unaffordable for people on low incomes.</p> <p><b>Land use/ transport integration</b></p> <p>Many high-deprivation areas are distant from, and not well connected by, PT and active transport to major employment areas and essential services.</p> <p>Higher costs of transport from longer distances to key opportunities counteract lower housing costs in many high-deprivation areas.</p>	<p>Motu (2021) found that people on benefits (proxy for low-income) are less likely to hold a driver's license (41% of Aucklanders age 16+ on a benefit hold a full driver's license vs 71% of population not on a benefit).</p> <p>Ministry of Health (2022) NZ Health Survey 2020/21 finds a greater proportion of people report not seeing a GP due to lack of transport during past 12 months as neighbourhood deprivation increases (prevalence of 5.5% in highest quintile of deprivation vs 0.6% for lowest).</p> <p>AT Model shows access to jobs by car and by PT is lower in areas of higher deprivation (South and West Auckland). Adli, Chowdhury and Shiftan (2019) confirm that job access via PT in Auckland is lower for low-income people.</p> <p>AT (2022) RPTP Customer Insights finds frequent PT use is lower in south Auckland compared with central isthmus local board areas, suggesting PT services are less likely to meet needs for people living in these high-deprivation locations.</p> <p>MRCagney (2020) interviews document challenges for Aucklanders on low incomes accessing essential services, job opportunities, childcare, recreational facilities and groceries. Interviews with focus groups also reveal financial difficulties from car purchase, repairs and associated debt.</p> <p>Blick et al (2018) find that Auckland low-income households pay a higher proportion of their income on fuel (lowest income quartile pay 50% more than highest income, with significant variation by residential location, based on Stats NZ Household Economic Survey).</p> <p>Fergusson et al (2016) study young adult experiences of transport in the Southern Initiative area and find instances of social exclusion and lack of access to opportunity arising from barriers to transport.</p> <p>TRA (2022) interview community service card holders about everyday transport experiences and find people's lives being limited to narrow geographic areas (e.g. Papatoetoe, Otara, Manukau) due to financial barriers to travel.</p>



		<p>Paling (2020) analysis of Census 2018 finds that some areas (but not all) with high deprivation also face higher than average commuting distance (mostly parts of West Auckland, but also parts of South Auckland – e.g. Manurewa, Papakura).</p>
<p><b>2. The transport system exposes people living in some areas of high deprivation to unacceptable transport-derived harms (e.g., air and noise pollution, safety risk, and severance)</b></p>	<p><b>Infrastructure quality</b></p> <p>The design of streets and motorways does not always mitigate exposure to air and noise pollution and severance.</p> <p>Design features of road infrastructure do not consistently meet best practice standards for road safety.</p> <p><b>Safe system factors</b></p> <p>Road safety outcomes in high deprivation areas are likely to result from a combination of infrastructure,</p>	<p>AT (2022) analysis of road crash death and serious injury rates (per population) on Auckland local roads finds higher deprivation local board areas often have relatively higher rates.</p> <p>Hosking et al (2013) find Aucklanders living in more deprived areas have significantly higher risk of road traffic injury.</p> <p>There is limited Auckland-specific research and evidence available on inequitable distribution of pollution and severance, nevertheless, problems of ‘environmental justice’ are well-documented internationally.</p>



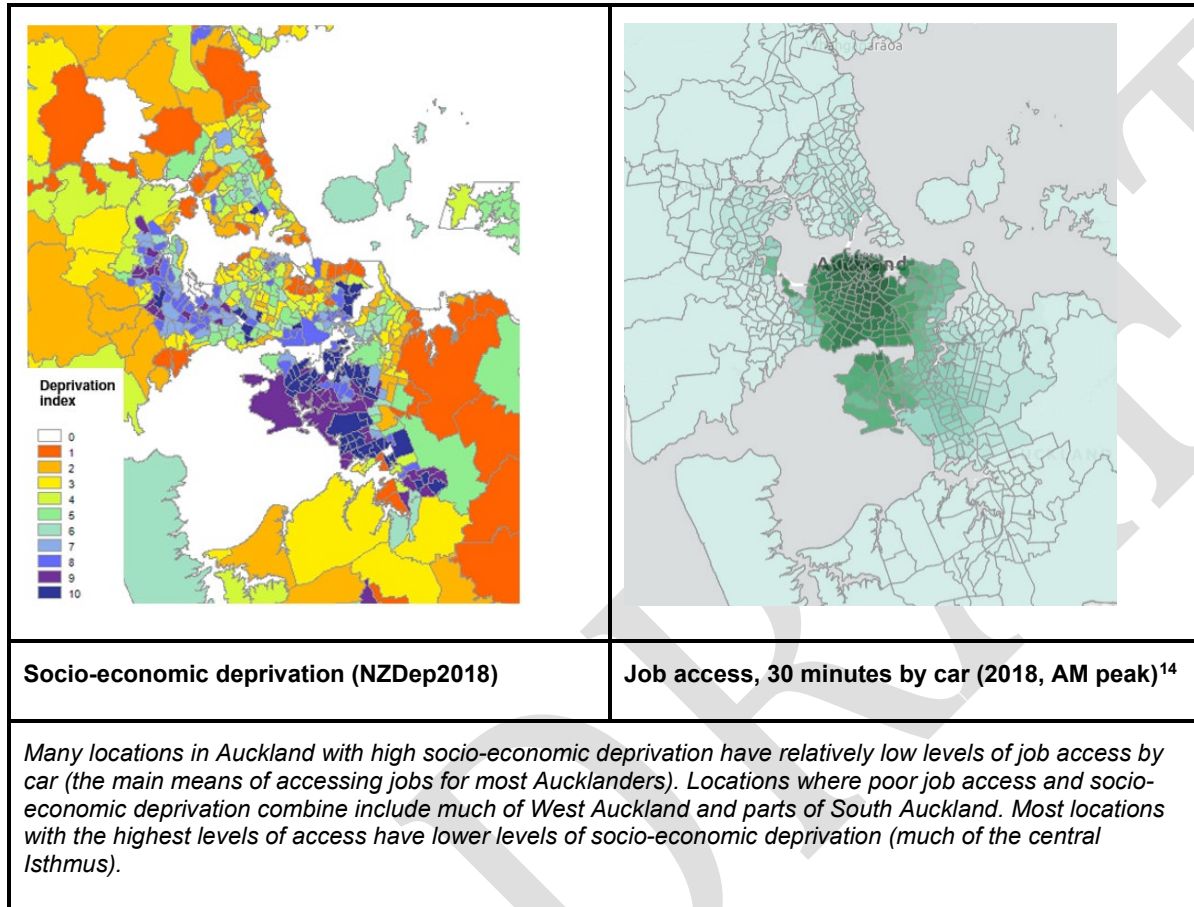
	<p>vehicle, behaviour and enforcement factors. Use of vehicles with lower safety ratings among people living in high deprivation locations may be a contributing factor.</p> <p><b>Transport system dominance of high-harm modes</b></p> <p>Auckland's high dependence on motorised vehicles is associated with higher levels of air and noise pollution and traffic severance than would be the case with a more multi-modal system.</p> <p><b>Housing costs and exposure to transport-derived harms</b></p> <p>Transport-derived air and noise pollution and severance are highly localised around major roads and motorways, and Aucklanders in high deprivation locations may face proportionately higher exposure, given lower housing costs in these locations.</p>	
<p><b>3. The transport system does not consistently provide for the essential physical access needs of all people, particularly people with disabilities, caregivers of young children and older Aucklanders</b></p>	<p><b>Specific transport and physical access needs</b></p> <p>People with disabilities are more likely to rely on public transport, walking, taxis and the total mobility scheme due to not being able to drive a private vehicle.</p> <p>People with disabilities, caregivers of young children and older Aucklanders all have special mobility needs requiring higher quality walking infrastructure and accessible features at public transport facilities.</p> <p><b>Infrastructure and service quality</b></p> <p>Public transport operations and facilities, and walking infrastructure does not consistently meet universal design standards.</p>	<p>Doran et al (2022) survey 15,000 disabled people across NZ and find that people with disabilities face multiple challenges with meeting their transport needs and commonly miss trips for recreational purposes and meeting daily needs. Challenges include some people finding that despite taxi subsidies through the Total Mobility scheme, access is still not affordable, accessibility deficiencies on footpaths and buses and problems with availability of mobility carparking.</p> <p>NZ Human Rights Commission (2005) documents transport problems for people with disabilities across New Zealand.</p> <p>Ministry of Health (2022) NZ Health Survey 2020/21 finds a greater proportion of people with disabilities report not seeing a GP due to lack of transport during past 12 months (prevalence of 7.6% vs 2.4% for total sample: 20,000 – 36,000 disabled people impacted across NZ)</p> <p>Prakash and Ovenden (2022) report that as at December 2021 15,672 Aucklanders age 65+ were registered for the Total Mobility Scheme, providing subsidised taxis for people who cannot use PT. This represents 7% of the total population age 65+.</p> <p>MRCagney (2020) document transport experiences for Auckland teen mothers and reports problems including lack of space for strollers on buses and poor quality footpaths not accommodating strollers.</p>



<p><b>4. The transport system does not consistently provide for the personal safety needs of everyone (particularly high-risk population groups such as women, girls, LGBTQI people, older and younger people and some minority ethnic groups).</b></p>	<p><b>Specific transport needs</b></p> <p>Women, girls, LGBTQI people, older and younger people and some minority ethnic groups face greater vulnerability to harassment and discrimination in public spaces and require features that enhance perceived and actual safety.</p> <p><b>Infrastructure and service quality</b></p> <p>Design and operation of public transport and active transport facilities do not consistently support personal safety (e.g. design not consistent with CPTED guidelines).</p>	<p>MRCagney (2020) reports survey results confirming Auckland women face personal safety concerns while using PT and walking. Interviews with teen mothers document experiences with inadequate street lighting creating concerns and avoided travel on foot after dark.</p> <p>AT (2022) RPTP Customer Insights finds 6% of women disagree that 'PT is safe' (compared with 5% of men).</p> <p>Kennedy (2008) summarises evidence on groups facing personal security concerns while using public transport and find that concerns are most prevalent among younger people (15-19 years old). Older people also commonly report concerns.</p> <p>Veale et al (2019) find Auckland transgender and non-binary people more likely to feel unsafe using PT and cut back on trips due to personal security barriers.</p> <p>Mitchell et al (2007) find Auckland children have preferences for greater use of active modes but are thwarted by road and personal safety concerns.</p> <p>Frater and Kingham (2018) report on experiences of adolescent girls cycling to school in Christchurch and find that personal security concerns, among other factors, contribute to low levels of cycling uptake.</p> <p>Chowdury (2019) surveys people (NZ wide) about perceptions of transferring on public transport services and finds that the factor "perceived safety at stations" was only significant for female riders.</p>

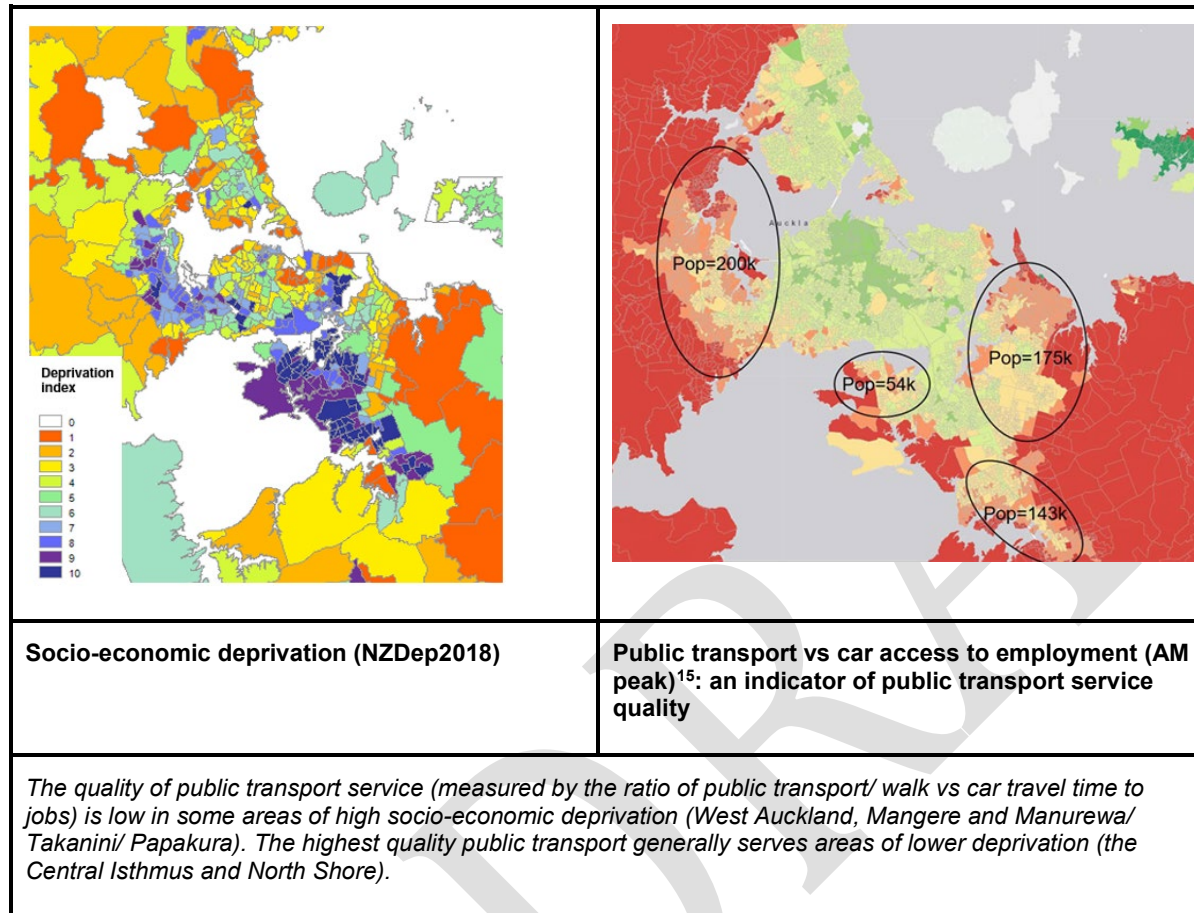
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## 7 Appendix 2: Data illustrating transport inequities in Auckland



<sup>14</sup> Source: Auckland Forecasting Centre, <https://mahere.at.govt.nz/AFCDemandForecasts/>

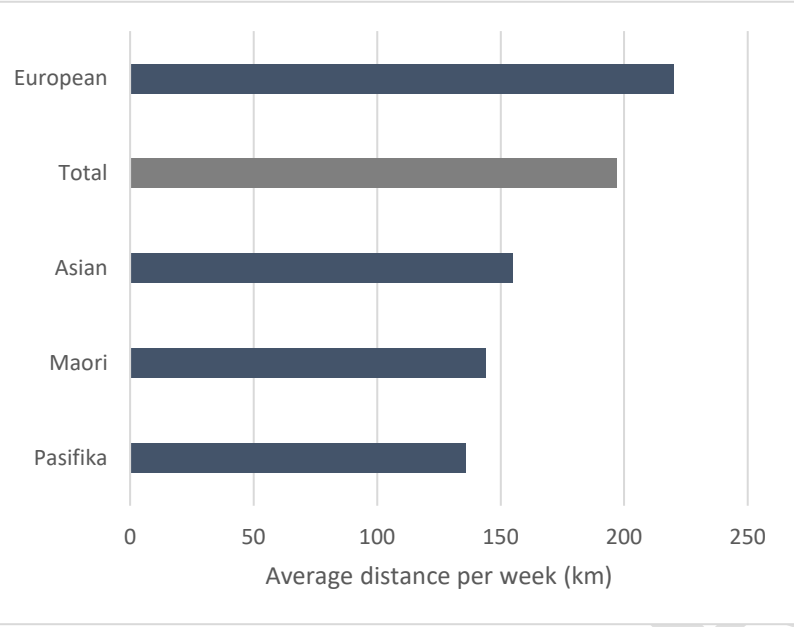
Figure 9: High-quality public transport service is distributed inequitably

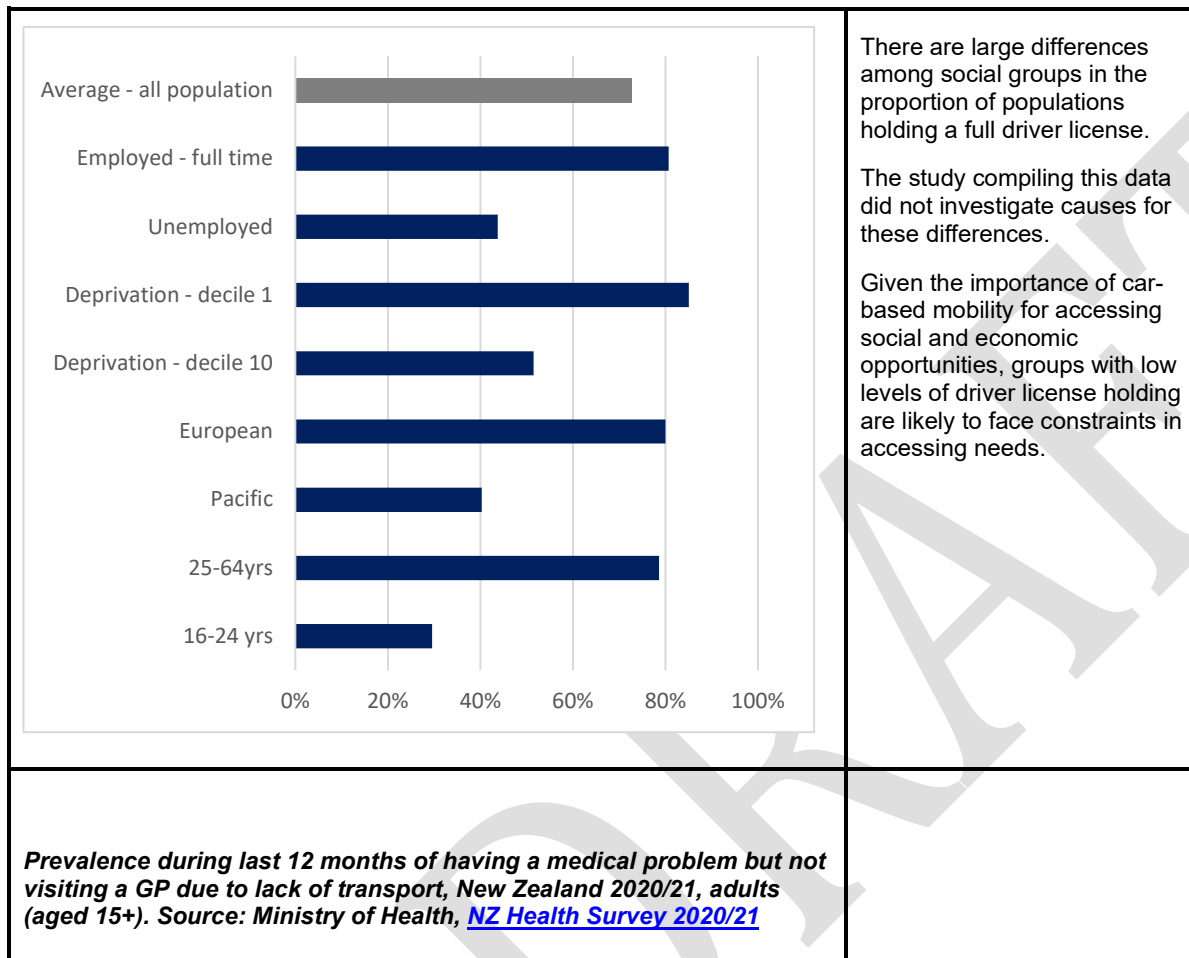


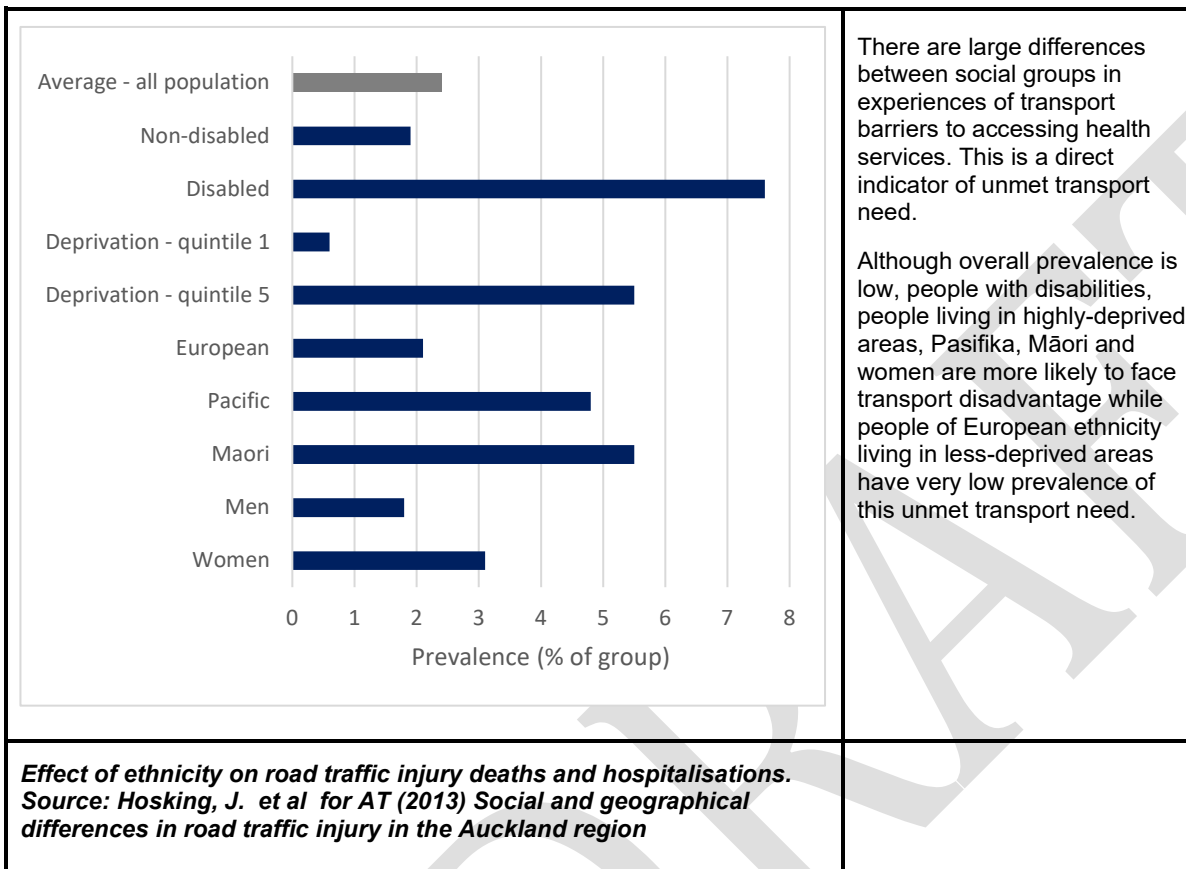
<sup>15</sup> Source: Auckland Transport (2022). *Auckland Region Transport Strategic Case 2021-2031*, page 43.

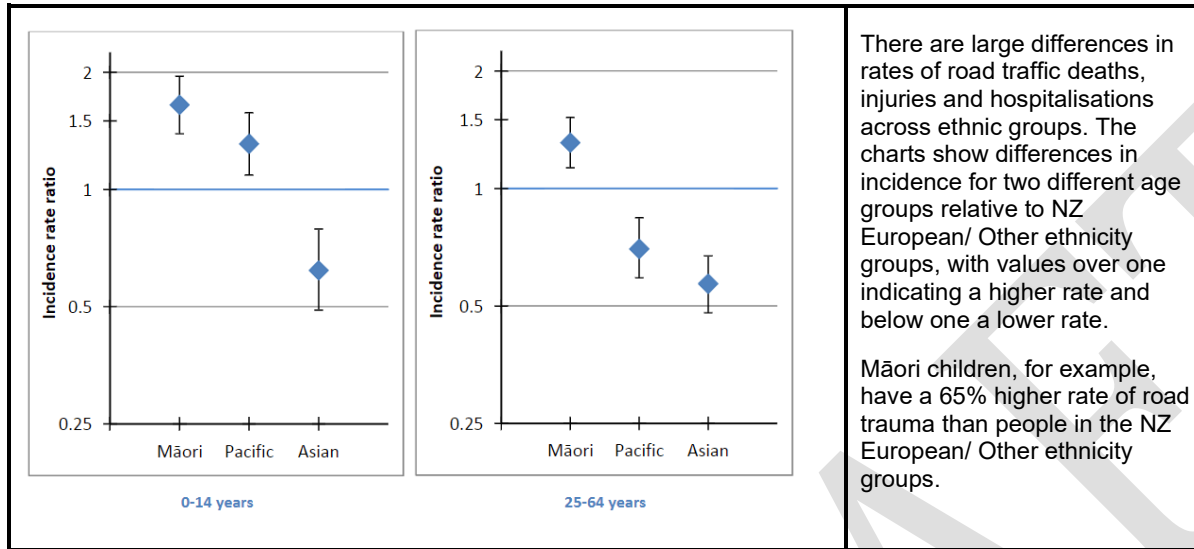




<p><b>Average distance travelled per week, by ethnicity, Auckland. Source: Richard Paling (2020) Analysis of Auckland results of the NZ Household Travel Survey, 1989 - 2018.</b></p>													
 <table border="1"><thead><tr><th>Ethnicity</th><th>Average distance per week (km)</th></tr></thead><tbody><tr><td>European</td><td>220</td></tr><tr><td>Total</td><td>195</td></tr><tr><td>Asian</td><td>155</td></tr><tr><td>Maori</td><td>144</td></tr><tr><td>Pasifika</td><td>136</td></tr></tbody></table>	Ethnicity	Average distance per week (km)	European	220	Total	195	Asian	155	Maori	144	Pasifika	136	<p>People of European ethnicity travel longer average distances than people of other ethnicities. Pasifika people have the lowest average weekly travel distance (136km) and Māori similar (144km). This is much lower than European people (220km).</p> <p>While lower levels of mobility do not necessarily reflect transport disadvantage or unmet transport needs, people from some ethnic groups may be more constrained in their transport behaviours and choices.</p>
Ethnicity	Average distance per week (km)												
European	220												
Total	195												
Asian	155												
Maori	144												
Pasifika	136												
<p><b>Percentage of population group holding a full driver license, New Zealand 2018, people age 16+. Source: Motu, 2021.</b></p>													







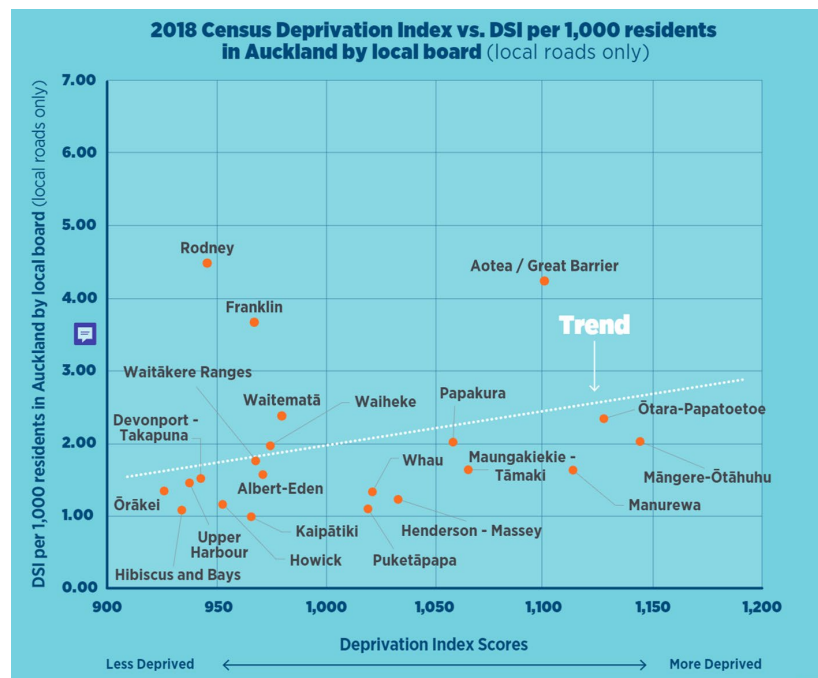
There are large differences in rates of road traffic deaths, injuries and hospitalisations across ethnic groups. The charts show differences in incidence for two different age groups relative to NZ European/ Other ethnicity groups, with values over one indicating a higher rate and below one a lower rate.

Māori children, for example, have a 65% higher rate of road trauma than people in the NZ European/ Other ethnicity groups.

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**NZDep2018 vs. road crash deaths and serious injuries per 1,000 residents in Auckland by local board (local roads only) 16**



Road crash deaths and serious injury rates per local board area increase with socio economic deprivation.

<sup>16</sup> AT analysis based on 2018 Census data of usually-resident population, and road deaths and serious injuries recorded in the Waka Kotahi Crash Analysis System 2017-2021. Note that people involved in a crash in a local board may not be residents of that local board. State Highway data has been excluded as this is likely to reflect higher numbers of non-residents involved in crashes. Note that DSI rates for local boards with small populations may be affected by smaller variations in numbers. Deprivation index scores taken from Auckland Council Research and Evaluation Unit (RIMU).