



Establishing the household costs of essential transport

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A Dudding, Ipsos New Zealand

S Beccari, Ipsos New Zealand

J Phillips, Ipsos New Zealand

N Vink, Ipsos New Zealand

K Lindsey, Ipsos New Zealand

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NZ Transport Agency Waka Kotahi
Private Bag 6995, Wellington 6141, New Zealand
Telephone 64 4 894 5400; facsimile 64 4 894 6100
NZTAresearch@nzta.govt.nz
www.nzta.govt.nz

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Keywords: essential transport, essential travel, transport disadvantage, transport poverty

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¹ This research was conducted September 2022-September 2023.

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Abbreviations and acronyms

A	Aktive
AC	Age Concern
ARA	Australasian Railway Association
CAB	Citizens Advice Bureau
CPI	consumers price index
ET	E tū
HES	Household Economic Survey
HTS	Household Travel Survey
NZTA	NZ Transport Agency Waka Kotahi
RWNZ	Rural Women New Zealand
SA	Salvation Army
SC	Spectrum Care
SJS	St Joseph's School

Notes to readers

Significant differences

Significant differences at the 95% confidence interval are shown throughout the report:

- **Green coloured font** has been used to denote percentages that are significantly higher than those recorded for all those answering said question.
- **Red coloured font** has been used to denote percentages that are significantly lower than those recorded for all those answering said question.

Percentages may not always sum to 100% due to rounding and/or where respondents are able to give more than one answer. Sub-sample sizes also influence the maximum margin of error, so a percentage difference between two numbers may be indicated as significant for one answer but not for another where the base size is smaller, thereby increasing the margin of error.

Change in research scope

This research was intended to have five stages:

- Stage 1: Literature review
- Stage 2: Analysis of NZTA Journey Monitor data
- Stage 3: Core agency engagement
- Stage 4: Qualitative research
- Stage 5: Quantitative research.

However, following the fourth stage, the steering group decided to not continue with the fifth quantitative phase. This decision was not a reflection on the work of Ipsos, which had been of a high standard. Rather, it was a consequence of methodological challenges with a pure survey-based approach, given the project scope and available budget, that became apparent as the research proceeded. Any future research on the topic will need to take into account the issues and findings included in this report.

Contents

Please note:

This research was conducted under a previous policy context. For example, the research was developed and/or undertaken under the 2021-24 Government Policy Statement for Land Transport. Consequently, references contained in the report may be to policies, legislation and initiatives that have been concluded and/or repealed. Please consider this in your reading of the report and apply your judgement of the applicability of the findings to the current policy context accordingly.

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Executive summary

The purpose of this research was to identify what aspects of transport² are essential for households, what the financial³ costs of those essential aspects are for different groups, and to what extent essential transport costs are hindering inclusive access. The results of this research will help inform planning and investment decisions about the impacts of changing transport costs, enabling assessment and future tracking of the equity implications of those decisions.

The objectives of the research were to:

- review literature on data relevant to New Zealand to define the range of essential transport needs for vulnerable households and their financial costs
- identify the range of essential costs of transport for vulnerable households in New Zealand, and describe how these affect access to essential services and opportunities
- establish a repeatable methodology and carry out primary research to measure the financial costs of essential transport to vulnerable households at both national and regional levels
- ultimately, inform planning and investment decisions about the impacts of changing transport costs, enabling assessment and future tracking of the equity implications of those decisions.

The research was conducted in four stages.

1. **Stage 1: Literature review:** The aim of the literature review was to learn how essential transport has been defined and measured by others to ensure that the concept of essential transport costs is measured in a systematic and consistent way. Seventy-three sources were reviewed, of which 37 were referenced in this literature review.
2. **Stage 2: Analysis of NZ Transport Agency Waka Kotahi (NZTA) Journey Monitor data:** The aim of this analysis was to determine who has been affected by the financial costs of transport for essential travel from existing Journey Monitor data, which collects the journey purpose of a most recent journey and also of journeys missed. The sample size of this data is 14,369 New Zealand drivers aged 15 and older, of whom 458 didn't take a beneficial journey within the last week because of cost.
3. **Stage 3: Core agency engagement:** The aim of these interviews was to learn from key agencies what they believe to be the key issues and who is most likely to be affected, as well as gathering any other data they might have. We conducted eight one-on-one in-depth interviews with key staff from core agencies to understand their knowledge, perceptions and experiences on the issue, especially the stories/case studies they are hearing around the issues the people they advocate for are having and any other research information they might have.
4. **Stage 4: Qualitative research:**⁴ The aim of the qualitative research was to confirm the definition of *essential travel* and all the different layers of impact its costs have on New Zealanders' lives. Three researchers conducted 10 one-hour in-depth interviews with people impacted by the cost of transport for

² 'Transport' and 'travel' are related terms, sometimes used interchangeably, but they are not the same thing. The ultimate focus of this report is on determining the financial costs of *transport for essential travel*. In this report we have referred to *essential transport* as the mode of transport (such as a car or bus) and *essential travel* as the travel to an essential destination (such as going to a medical appointment).

³ The financial costs are the direct prices to transport users for undertaking travel as opposed to socio-economic costs, which are much broader.

⁴ The Stage 4 qualitative research used the terms *essential transport* and *essential travel* in the ways that respondents described their trips, so this wording has been retained here.

essential travel. One-on-one qualitative interviews allowed us to understand expenditure and a definition of essential travel at a personal level.

A fifth quantitative stage was planned as part of this research project; however, due to methodological difficulties with a pure survey-based approach uncovered in the previous stages, the steering group decided to not proceed with this quantitative research phase. The aim of the quantitative stage was to quantify the cost of essential travel and understand the financial costs of this travel. Potential alternative approaches to surveying were identified.

The following is a summary of the research results at each stage completed.

Stage 1: Literature review

Through the literature review, it was discovered that with the exception of specific COVID-19 related definitions, the term *essential transport* is not widely found in the literature. The concept is challenging to define as it is entirely context dependent. Instead, our literature review explored related concepts like *transport poverty* and *transport disadvantage*. These refer to an inability to access key activities and essential services, which have been referred to in the literature in a variety of ways. In the context of the research requirements, we suggest that *essential transport* can be best defined as 'transport that provides access to things that people need to do'.

Stage 2: Analysis of NZTA Journey Monitor data

In the analysis of NZTA Journey Monitor data, we found that 22% of surveyed New Zealanders (aged 15 years and older) did not take a journey in the last week that would have been beneficial. For 15% of these respondents, the reason was the cost of the journey itself. This equates to 3.2% of the overall population surveyed, i.e., of those aged 15 years or over. The impact of the 'missed' journey (for the 22%) was significant, with 78% saying it affected them/their family, and 25% saying it affected them a great deal. The most common impacts reported were emotional (14%), finances (14%) and missing out on groceries, shopping or food (13%). When asked about affordability, 2% said their most recent journey (of any type) was barely affordable.

Stage 3: Core agency engagement

The core agency engagement research found that essential transport is different to different people, and even to the same people on a different day. It can even differ depending on who you are with (eg, children needing a school run). The concept was not something the agencies had thought about before in this way, and it wasn't a simple concept to get their heads around. This research recognised that there are also bigger life issues affected by a 'missed journey', such as not being able to accept a job or emergency house due to transport costs. These interviews confirmed that the Journey Monitor definition of 'missed journey due to the cost of transport' is not sufficient in terms of essential transport impacts.

Stage 4: Qualitative research

This final piece of qualitative research found that in most instances, respondents were able to define essential travel relative to what is happening in their life, relating to education, employment, medical care and food provision. The impact of not being able to afford transport for essential travel was seen to impact these four areas of their life. Underlying these essential trips is wellbeing, which is the main purpose of the essential trips that are most often reprioritised or not taken. The impact of not being able to afford the transport required to take an essential trip often has an immediate consequence. This can lead to further negative outcomes, stemming indirectly from not being able to make the essential trip. This research also found that due to the limited project scope, available budget and other reasons, including the complex variety of trips, the challenge of deciding what trips are essential and remembering and attributing their costs, it is difficult to directly survey respondents.

Any future research on the costs of essential transport will need to take into account the learning gained from this project, and consider a more complex modelling approach, which could allow for inclusion of socio-economic costs in addition to narrower financial costs.

Abstract

The purpose of this research was to identify what aspects of transport are essential for households, the financial costs of those essential aspects for different groups, and to what extent essential transport costs hinder inclusive access. The research was conducted in four stages.

- **Stage 1: Literature review:** We found that the term *essential transport* is not widely used in the literature and is challenging to define because it is entirely context dependent. For the purposes of this study, we defined essential transport as ‘transport that provides access to things that people need to do’.
- **Stage 2: Analysis of NZ Transport Agency Waka Kotahi Journey Monitor data:** Our analysis of the data revealed that 3.2% of surveyed New Zealand adults did not take a journey in the last week that would have been beneficial because they could not afford the cost of transport.
- **Stage 3: Core agency engagement:** Interviews with core agency staff showed that essential transport is different for different people, and the Journey Monitor definition of ‘missed journey due to the cost of transport’ is not sufficient in terms of essential transport impacts.
- **Stage 4: Qualitative research:** In-depth interviews with New Zealanders impacted by the cost of essential transport showed that it affected four main areas of their life: education, employment, medical care and food provision. Not being able to afford an essential trip often has an immediate consequence and can lead to further negative outcomes.

The results will help inform planning and investment decisions about the equity implications of changing transport costs and provide a basis for potential further research on this topic.

1 Background and introduction

The Transport Outcomes Framework (Ministry of Transport, 2018) has inclusive access as one of the five outcomes of delivering a transport system that improves wellbeing and liveability. To be inclusive, ‘the transport system must be accessible to all people in New Zealand, including those with disabilities, low-income earners, and people of different ages, genders, and ethnicities’ (Ministry of Transport, 2018, p. 4). One aspect of inclusivity is transport affordability, which can be considered as a barrier for some New Zealanders to participating in society (Ministry of Transport, 2018). For this project, NZ Transport Agency Waka Kotahi (NZTA) specifically required answers to the following research questions:

1. What aspects of transport are essential for households?
2. What are the financial costs of those essential aspects for different groups?
3. To what extent are essential transport costs hindering inclusive access?

NZTA appointed Ipsos to undertake a research project addressing a knowledge gap and answer the research objectives of this project.

Transport affordability is commonly cited as a barrier to inclusive access, and transport costs have been increasing recently. In the 2021 calendar year, the prices for private transport supplies and services increased by 21.1%, contributing 1.3% out of a 5.9% consumers price index (CPI) annual increase. Some groups are affected more than others. For example, total inflation impacted many superannuitant households, in part due to increased transport costs (Matthews, 2022).

The objectives of the research were to:

- review literature on data relevant to New Zealand to define the range of essential transport needs for vulnerable households⁵ and their costs
- identify the range of essential costs of transport for vulnerable households in New Zealand, and describe how these impact on access to essential services and opportunities
- establish a repeatable methodology and carry out primary research to measure the financial costs of essential transport to vulnerable households at both national and regional levels
- ultimately, inform planning and investment decisions about the impacts of changing transport costs, enabling assessment and future tracking of the equity implications of those decisions.

The research was conducted in four stages.

1. **Stage 1: Literature review:** The aim of the literature review was to learn how essential transport has been defined and measured by others to ensure that the concept of essential transport costs is measured in a systematic and consistent way. Seventy-three sources were reviewed, of which 37 were referenced in this literature review.
2. **Stage 2: Analysis of NZTA Journey Monitor data:** The aim of this analysis was to determine who has been affected by the financial costs of transport for essential travel from existing Journey Monitor data. The sample size of this data is 14,369 New Zealand drivers aged 15 and older, of whom 458 didn't take a beneficial journey within the last week because of cost.
3. **Stage 3: Core agency engagement:** The aim of these interviews was to learn from key agencies what they believe to be the key issues and who is most likely to be affected, as well as gathering any other data they might have. We conducted eight one-on-one in-depth interviews with key staff from core agencies to understand their knowledge, perceptions and experiences on the issue, especially the

⁵ ‘Vulnerable households’ have not been defined in this research. Defining who is considered vulnerable would have been part of Stage 5 of the research, but Stage 5 was not completed.

stories/case studies they are hearing around the issues the people they advocate for are having and any other research information they might have.

4. **Stage 4: Qualitative research:** The aim of this stage was to confirm the definition of *essential transport* and all the different layers of impact on New Zealanders' lives. Three researchers conducted 10 one-hour in-depth interviews with people impacted by the cost of essential transport. One-on-one qualitative interviews allowed us to understand expenditure and a definition of the cost of transport for essential travel at a personal level.

A fifth quantitative stage was planned as part of this research project; however, due to the difficulties uncovered in the previous stages, the steering group decided to not proceed with this quantitative research phase.

The aim of the quantitative stage was to quantify those who are affected by cost of transport for essential travel and understand the financial costs of this travel. It was also intended to understand how often people are affected by cost of transport for essential travel and to measure the impact for those who are missing out.

Ipsos found in the previous stages of the research that it was unclear which transport costs are essential (impact on material standard of living) and which are discretionary. Although Stats NZ's Household Economic Survey (HES) measures transport costs at the household level, it does not draw any distinction between essential and discretionary travel. There was also insufficient evidence as to what the financial costs of essential transport are for different households, especially for low-income groups. Transport costs can act as a barrier, which will become even more impactful as we seek to decarbonise transport. Knowing essential transport costs in relation to other expenditure, particularly housing and childcare costs, will help in better addressing equity impacts.

There is also an opportunity to assess experiences during COVID-19 lockdown, fluctuating fuel prices (including application of the fuel subsidy), and half-price public transport and the Total Mobility scheme, which provide natural experiments on essential transport needs and costs.

This quantitative data was intended to answer the research questions. Ipsos had recommended to conduct this research via an online survey of a national representative sample that would survey both 'average households' and those who are defined and considered to be 'vulnerable households'. It would also need to use both existing sources (including the HES) and primary research. Ipsos also felt consideration must be given to:

- spatial and socioeconomic aspects
- ability to pay
- relationships to other essential expenditure
- the continuum of essential to non-essential costs
- quality-of-life effects when cost constraints impact on transport needs.

For example, there will be occasional but very essential trips (eg, to hospital) or others where one trip missed may not have an impact, but there could be a cumulative impact (eg, GP visits). There may be other trips that on the surface appear to be non-essential but may in fact be necessary to maintain wellbeing (eg, for social contact, sport, recreation, or artistic and cultural pursuits).

Different groups were considered for this research, including people in work and not in work (work-related travel costs) and families with and without children (families with children are likely to have many additional transport costs associated with taking the children to and from school/childcare, additional trips to the doctor etc).

The research would have also needed to solve the following key methodological problems.

- *Essential transport* and *essential travel* could be interpreted differently by different people. For some, transport or travel undertaken to socialise could also be interpreted as 'essential' if it is undertaken to maintain their mental wellbeing.
- People may find it hard to apportion costs to essential and non-essential transport or travel (eg, filling up the car tank once a week/fortnight, or topping up a Snapper bus card). Also, apportioning becomes more difficult when non-essential transport/travel is combined with essential transport/travel.

2 Literature review overview

2.1 Objectives of the literature review

The aim of the literature review was to learn how essential transport has been defined and measured by others to ensure that the concept of essential transport costs is measured in a systematic and consistent way.

This review looked at the following questions.

- How has *essential transport* been defined by others, in New Zealand and internationally?
- How are transport costs measured/researched in New Zealand and internationally?
- Have essential transport costs been measured in other countries or New Zealand, and if so, how and what can we learn from these measures?
- Are there alternative methods shown in the literature for evaluating what is 'hindering inclusive access'?

In order to understand the best approach for this study, we reviewed 73 studies of essential transport and related concepts to identify common methodologies used in research about essential travel. Thirty-seven sources are referenced in this literature review, while the remaining 36 sources were used for background contextual information.

The literature review was structured to search for approaches by countries of interest. It was not intended to be a full systematic review of available literature, but rather a more time-efficient targeted review of recent information. The literature review parameters were as follows.

- **Dates:** a focus on post-2017 academic sources (2018–2022), but also including background information from pre-2017 sources
- **Journals/Sources:** Google Scholar, ResearchGate, Academia.edu and other academic literature; existing reports, research and information from NZTA, stakeholders, other government organisations and agencies; conversations and email interactions with researchers involved in the field
- **Jurisdictions:** New Zealand, Australia, UK, USA, Spain, Canada, Indonesia, Thailand, Uruguay
- **Target number of articles/documents:** 20–30 sources
- **Search terms used:** essential travel, essential transport, obligatory travel, non-discretionary travel, prohibitive cost of travel, energy poverty, fuel poverty, forced car ownership, transport poverty, transport disadvantage, travel needs, transport needs, travel & poverty, transport & poverty, unmet demand, trips not taken
- **Context:** public and private transport, transport costs
- **Specifics:** survey, quantitative, qualitative.

2.2 Definition of essential transport

2.2.1 Essential transport

It is worth noting that *transport* and *travel* are not the same and have various definitions. In this research:

- *transport* refers to the mode of transport that is used to get to an essential destination (such as a car or bus)
- *travel* means to take a trip or journey to an essential destination (such as going to a medical appointment).

NZTA is aware of this definitional issue and, for the purposes of this report, requested that the ultimate focus be on the costs of transport for essential travel.

We found that the concept of *essential transport* has not been thoroughly explored in the literature and is a challenging one to define. *Essential transport* is context dependent and means different things for different people, with income, life stage, social circumstance, accessibility, needs and local context, among many other reasons, impacting the transport decisions that people make (Kar et al., 2022). Most literature argues that it is difficult to construct a single definitive measure, as concepts like this are socially, temporally and geographically context-specific (Lucas et al., 2016). Ultimately, specifying peoples' transport needs is challenging as it is difficult for people to articulate what is essential for improving their quality of life (Di Ciommo, 2018).

The COVID-19 pandemic has also provided a distinct definition for *essential businesses*, being outlined by the Ministry of Business, Innovation and Employment in March 2020 as necessities such as supermarkets, pharmacies, petrol stations, healthcare, accommodation and public transport (Duncan Cotterill, 2021; NZ Herald, 2020). Essential travel was allowed only for movement between home and these places. In the context of COVID-19, essential transport can be defined as travel for activities that are important for peoples' lives and work and cannot be done from home (Kar et al., 2022). This COVID-specific definition has varied extensively over time and by country and jurisdiction. In itself, this definition is not particularly useful for this research.

On the other hand, *essential destinations* have been defined as those that help fulfil peoples' day-to-day needs, including jobs, schools, food, social services, recreation and social connections (He et al., 2022).

However, in our research, the direct use of the concept *essential transport* was not able to be found other than that described above. Hence, we looked at related concepts.

2.2.2 Transport poverty

One topic that is strongly linked to essential transport is the idea of *transport poverty*.

While the term is often ill-defined in the literature (Titheridge et al., 2014), and internationally, researchers have not agreed on a single, precise definition or measurement (Metta, 2019), there are many definitions broadly referring to households and individuals who 'struggle or are unable to make the journeys that they need' (Gates et al., 2019, p. 4).

The definition of transport poverty is usually based on transport affordability, accessibility and mobility (Metta, 2019). For example, a person who is transport poor is unable to afford transport, has poor availability of public transport, and has difficulty reaching certain key activities or essential services (Gates et al., 2019).

Travel costs may restrict low-income groups' ability to access their desired destinations (Monzon & Lopez, 2020). Allen and Farber (2019) estimate that 40% of all low-income residents in Canada are at risk of transport poverty, or 5% of the overall Canadian population. Sun and Thakuria (2021) estimate that 5% of households in England are in areas of high poverty risk. On the other hand, Lucas et al. (2016) estimate that transport poverty potentially affects between 10% and 90% of all households, depending on the country and definition used. Transport poverty is reported to be affected by a variety of factors, including age, gender, ethnicity, household structure and disability (Mattioli et al., 2017).

2.2.3 Transport disadvantage

A further investigation led to a review of literature on a similar concept – *transport disadvantage* – since it is likely that if you are transport disadvantaged you will be unable to have access to some or all elements of essential transport.

Delbosc and Currie (2010), in a discussion of transport disadvantage in the literature, note that the topic is complex and varied. They argue that, as identified by Dodson et al. (2006), the terminology used in this research area is not consistent, with references to transport exclusion, transport poverty, transport stress, connectivity, transport accessibility, mobility limitations, and a lack of transport equity. In their review they note that transport disadvantage is considered by most to be a multi-dimensional concept, but each researcher lists a different set of contributing factors. Some focus on the contributing characteristics of the transport system and urban form (eg, long travel distances or high transport costs), whereas others focus on the characteristics of transport-disadvantaged people (eg, people without cars or with physical disabilities). Other researchers point out the importance of considering these factors together (Church et al., 2000; Hurni, 2005).

This work alludes to the fact that *transport disadvantage* and *transport poverty* both point to an inability to access key activities and essential services. These essential activities have been defined in the literature in a variety of different ways.

2.2.4 Essential activities

If transport poverty is key to finding a definition of essential transport, it means that we also needed to understand *essential activities*. In general, we found that the definitions refer to destinations that provide ‘the services residents need’ (Abley, 2010, p. 7), or ‘enhance people’s life chances’ (Titheridge et al., 2014, p. 4). Restricted ability to travel to places of work, learning, healthcare and food shopping contributes to social exclusion (Titheridge et al., 2014). Dickerson et al. (2007) state that the ability to travel safely is related to people’s wellbeing and quality of life, allowing them to access places where they can engage in their communities and fulfil social and civic needs. Ultimately, the transport system is essential for the broad human needs of health, employment and social stability (Di Ciommo, 2018).

This suggests that the definition is much more extensive than the traditional use of ‘obligatory or mandatory trips’, which are usually defined as being limited to work, school and shopping (Harding et al., 2016). Furthermore, the use of words like ‘fulfil social and civic needs’ makes it clear that essential activities are likely to be very different for people in different sociodemographic and cultural groups, even in the same city or town.

Looking further at the concept of essential activities, Lucas (2012) constructed a model that shows the relationship between transport disadvantage, social disadvantage, and social exclusion. The model refers to six broad groups of things that people need to access in order to prevent social exclusion. These include life chances, social networks, social capital, goods, services and decision making.

2.2.5 Defining essential transport

Although it was not possible to find literature that used these terms precisely (other than in a COVID-19 context), we have used the literature review to attempt a definition. We suggest that *essential transport* can be best defined as ‘transport that provides access to things that people need to do’.

Next, then, comes the task of working out what people *need* to do.

A review of the literature suggests that there are various reasons for travel that people need to do (it’s possible to call this *essential transport*). These can be grouped into four key groups of activities based on the references shown in Table 2.1. They are:

- Employment and work (current job and new opportunities)
- Education and learning (schools, further education, childcare, before/after-school activities)
- Healthcare (doctors, hospitals, GP visits, hospital, surgery)

- Food and grocery shopping (supermarkets, dairies, petrol stations, convenience stores).

Other activities that may seem non-essential at first glance, such as social interaction and leisure, may in fact be crucial for psychological health (Monzon & Lopez, 2020). More encompassing definitions also include other key activities:

- Social, cultural, and religious activities (including recreation and shopping)
- Sport and leisure
- Government offices
- Other goods/services.

Table 2.1 Summary of the activities that could be considered essential, by study

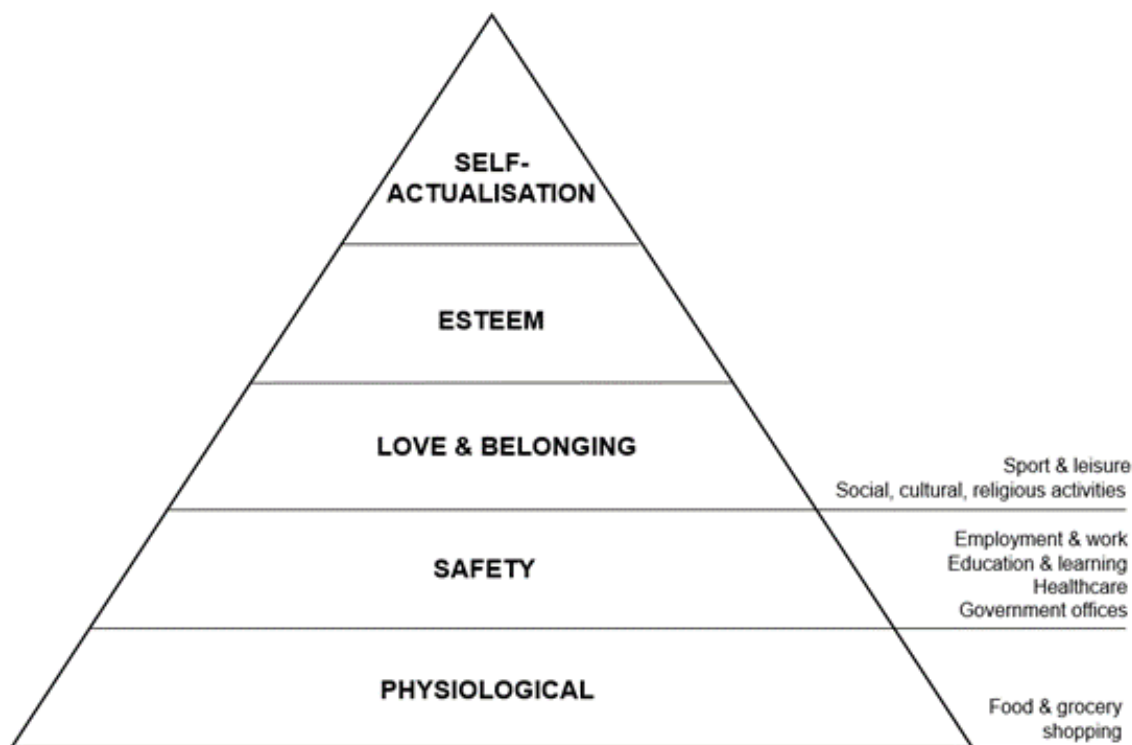
Activity	Social Exclusion Unit, 2003	Rose et al., 2009	Abley, 2010	Weinstein Agrawal et al., 2011	Sustrans, 2012	Titheridge et al., 2014	Sun & Thakuria, 2021
	UK	NZ	NZ	USA	UK	UK	UK
Employment & work	✓	✓	✓	✓	✓	✓	✓
Education & learning	✓	✓	✓	✓	✓	✓	✓
Healthcare	✓		✓	✓	✓	✓	✓
Food & grocery shopping	✓		✓	✓	✓	✓	✓
Social, cultural & religious activities	✓	✓					✓
Sport & leisure	✓	✓					
Government offices				✓			
Other goods/services		✓			✓	✓	✓

While researching previous work done in this area, it was suggested by G. Currie (personal communication, September 22, 2022) that a way of considering a definition of *essential* was to refer to Maslow’s hierarchy of needs in his 1943 paper ‘A Theory of Human Motivation’ (cited in Bozyigit, 2021). The model highlights how, while human needs vary from person to person, they follow a hierarchical order. The most basic human needs are physiological needs, followed by safety, love and belonging, esteem, and finally self-actualisation (see Figure 2.1).

The theory is a classification system intended to reflect the universal needs of society as its base, then proceeding to more acquired emotions. People can be at different levels of the hierarchy, depending on how their needs are met – at different times of their life, or even different times of the day.

In applying this model to issues of transport, a person who is looking to meet their basic physiological needs might view essential transport as a means of getting food only. Someone who is wanting to satisfy safety needs might view essential transport as broader, including elements like healthcare, employment and learning.

Figure 2.1 Maslow’s hierarchy of needs as a way of understanding the activities of essential transport, modified to relate to essential transport (adapted from Uysal et al., 2017, as cited in Bozyiğit, 2021)



We conclude that essential transport is not a concept that is widely (or at all) found in the literature.

Since we have shown that what people need to do is based on perceptions and on many different aspects of peoples’ lives and culture, it is recommended that the best way to get a good understanding of the concept of essential transport in the New Zealand context is to pursue it in more detail in the qualitative and quantitative surveys, which will follow this review.

2.3 Approaches to measuring costs associated with essential transport

2.3.1 General approaches

As essential transport and similar measures are not clearly defined in the literature, there is not a single international agreed-upon approach to measure the associated costs.

According to Lucas et al. (2019), relevant transport data tends to be collected through household travel surveys, yet big data is also increasingly used. Mattioli et al. (2017) also propose that transport affordability should be assessed quantitatively at the household level, but complementary approaches like qualitative methodologies should be developed to focus on within-household variation.

If there is a consensus that transport poverty and affordability should be based on using data on transport expenditure and income (eg, Mattioli et al., 2017), that data needs to be collected. Actual transport expenditure should be calculated as a share of income (Lucas et al., 2016) – for example, the percentage of income that is used to consume transport-related products and services (Hernández, 2017).

On top of measuring income and costs of transport for essential travel, it is also necessary to ascertain which goods compete with transport expenditure – for example, what proportion of household expenditure goes to basic, non-substitutable goods, and what proportion goes to non-essential goods that would not compromise household welfare if forgone (Hernández, 2017).

Once that data is collected, it is necessary to work out what level of expenditure related to income makes someone (or a household) transport poor (or unable to access essential activities).

Sustrans (2012, p. 1) proposes that households that spend 10% or more of their income on transport could be ‘struggling with the costs of car ownership’. Dewita et al. (2018) refers to 15% of a household’s income being an achievable goal for transport affordability.

2.3.2 Approaches in New Zealand

While there is limited information on *essential* transport costs, there are relevant case studies in New Zealand that have measured transport expenditure more generally.

Some approaches to measuring the costs of transport in New Zealand have used simplified techniques. For example, NZTA (2022) conducted research to investigate whether public transport options in New Zealand are as cost effective as they can be, in order to compete with driving. The study compared the cost between public transport journeys and private vehicle journeys across major cities in New Zealand (Auckland, Hamilton, Tauranga, Wellington and Christchurch). Four different measures were analysed, all involving the cost of an average journey to the CBD by:

- public transport
- private vehicle (petrol cost only)
- private vehicle (including petrol and early bird all-day parking costs)
- private vehicle (including petrol, early bird all-day parking, and vehicle running and fixed costs).

In order to convert this data into a measure of ‘inability to access essential activities’, it would be necessary to define those activities and work out which households or people are spending a disproportionate amount of their income on accessing them. As shown in an early study on the value of statistical life in New Zealand (Miller & Guria, 1991), this becomes complex for people without income (eg, unemployed outside the home, retired), but assumptions could overcome it.

Other methodologies in New Zealand have been more complex and used extensive lists. Every year, Stats NZ conducts the Household Economic Survey (HES) to measure the economic wellbeing of New Zealanders via a 20–40-minute interview. The HES also collects detailed expenditure data every three years that includes a one-week household expenditure diary. The 2018/19 HES assessed different aspects of transport in 12 categories, with a total of 102 individual line items for measuring household level expenditure on:

1. Purchase of new motor cars (2)
2. Purchase of second-hand motor cars (2)
3. Purchase of motorcycles (4)
4. Purchase of bicycles (2)
5. Vehicle parts and accessories (28)
6. Petrol (1)
7. Other vehicle fuels and lubricants (11)
8. Vehicle servicing and repairs (25)
9. Other private transport services (17)
10. Rail passenger transport (2)

11. Road passenger transport (7)
12. Domestic air transport (1).

However, the HES does not draw any distinction between essential and discretionary travel when collecting the above data.

Another extensive study run by Stats NZ (2018), in conjunction with the New Zealand Automobile Association (AA), involved developing indexes that can be used to assess household transport cost. Stats NZ uses HES data, as well as census and CPI data, to work out the weights (proportion) and associated transport costs for each index. Overall, there are six indexes with between one and six individual line items for measuring:

1. General driving costs – North Island (6)
2. General driving costs – South Island (6)
3. Metro commuter – Auckland & Wellington (6)
4. Urban public transport commuter – Auckland & Wellington (3)
5. Non-urban public transport commuter – not Auckland & Wellington (1)
6. Cycling (3).

If any of these sources are to be used, in each case the data would need to be converted to a measure of ‘ability to access essential activities’, as described above.

2.3.3 Approaches overseas

There are also useful case studies from outside of New Zealand that use a variety of techniques to measure transport costs.

In the UK, Lucas et al.’s (2019) framework for measuring transport equity proposed a three-step process. The first involves establishing and defining the precise benefit or burden under consideration. There are a multitude of different outcome measures that could be used, like transport expenses, as well as trip frequency, journey distance, or travel time. Lucas et al. (2019) refer to different opportunities and risks, including a person’s ability to reach essential activities. The second step of the measurement process involves determining how to differentiate population groups from each other, such as defining whether this will be done at an individual or household level. And finally, the third step is to work out who should be given the most attention in future policies.

Projects conducted overseas also commonly use transport expenditure surveys. In Australia, Vidyattama et al. (2011) define transport costs as weekly household expenses on transport. They refer to the Australian Household Expenditure Survey, which has 42 individual line items related to expenditure on transport.

These can be grouped into either fixed transport costs (which do not vary depending on travel frequency or distance) or variable transport costs (which vary by travel frequency and distance):

Fixed costs

- Purchase costs of motor vehicles
- Registration
- Insurance
- Driver’s licence
- Driving lessons
- Motor vehicle organisation subscriptions

Variable costs

- Fuel
- Lubricants
- Parking fees
- Road tolls
- Public transport fares

The Australasian Railway Association (ARA, 2015) conducted research into the potential commuter savings in a variety of scenarios. To do so, the research gathered information on car running costs, public transport fares, parking costs and population data (eg, labour force size). The study excluded costs such as toll road fees, non-compulsory car insurance, environmental costs and congestion costs. The scenarios analysed for specific trips were car ownership and car running costs, no car ownership and use of public transport, and car ownership but use of public transport. ARA calculated the average cost each year for each of these scenarios in major cities in Australia and New Zealand.

In Indonesia, Dewita et al. (2018) conducted a study whose approach to measuring transport affordability involved calculating monthly household expenses on daily travel to essential activities. Activities like travel to work, school and shopping were included, while travel for recreation was excluded. The average cost of private transport included all operational costs, such as fuel, parking fees, maintenance costs and insurance, but excluded the outright purchase cost of the vehicle. Public transport costs were calculated as the estimated average monthly household expenses for all public transport modes.

As with the New Zealand examples, if these types of methods are used to collect information on transport costs, they will need to be converted to a measure of 'ability to access essential activities'.

2.3.4 Using existing data

In many countries, including New Zealand, detailed travel survey data is collected on a recurring basis. Given the current state of data analysis techniques (eg, GPS, accurate location finding), it would be possible to get a good estimate of transport costs by using this data carefully. For example, with the detail that is collected (eg, make, model, year of manufacture, fuel type, engine size), it would theoretically be possible to combine this information with trip data to estimate a more accurate cost of actual transport for essential travel to different trip purpose than many other methods. Similarly, public transport costs could be estimated for varying trip purposes (activities).

2.4 Key findings, summary, and recommendations

2.4.1 Key findings and summary

Essential transport is not widely found in the literature (other than a specific COVID-19 definition). The concept is challenging to define as it is entirely context dependent.

Instead, related concepts like *transport poverty* and *transport disadvantage* were explored. These refer to an inability to access key activities and essential services, which have been referred to in the literature in a variety of ways.

The literature tends to refer to four key groups of essential activities and services:

- Employment and work
- Education and learning
- Healthcare
- Food and grocery shopping.

Other models that are more encompassing include:

- Social, cultural, & religious activities
- Sport and leisure
- Government offices
- Other goods/services.

Maslow's hierarchy of needs can be applied to issues of transport. A person who is looking to meet their basic physiological needs might have a more restrictive view of essential transport, while a person who is wanting to satisfy safety needs might view essential transport as broader.

In the context of the research requirements, we suggest that *essential transport* can be best defined as 'transport that provides access to things that people need to do'.

2.4.2 Recommendations for further stages

As *essential transport* has been ill-defined, the costs associated with essential transport have not yet been measured in academic research. However, the measurement of transport costs is a topic that has been explored both in New Zealand and abroad. Referring to these case studies means it would be possible to measure transport costs in a systematic and consistent way. From this review, it was recommended that these definitions, those affected by it and the impact are explored in more detail in the qualitative and quantitative surveys.

Transport costs tend to be researched through quantitative, household transport expenditure surveys, or by using big data such as smart card data. Complementary approaches like qualitative interviews can be used to help with within-household variation. A **transport for essential travel survey** should measure elements around transport expenditure and income to establish a measure of transport affordability. On top of expenditure and income, the survey should determine which goods compete with transport expenditure, both basic, non-substitutable goods and non-essential goods.

Approaches to measuring transport costs vary in terms of complexity. More simplified methods have compared the cost of public vs private transport, whereas complex methodologies have used household expenditure diaries that refer to a multitude of categories and line items.

Based on these findings, we recommend that an initial investigation into using the New Zealand Household Travel Survey to estimate both costs and 'essential trip' types is made (since actual parking costs, kilometres travelled per week, and kilometres travelled for each trip are collected or easily deduced). A small pilot study would rapidly show if it identified the costs required by NZTA. This could be compared with more generic measures such as the HES.

3 NZTA Journey Monitor analysis

3.1 Objectives

NZTA measures the journeys taken by New Zealanders on an ongoing basis in its Journey Monitor research. The Journey Monitor survey is a nationally representative monthly online survey of New Zealand adults aged 15+, with a monthly sample size of about 1,000. Data is weighted each month to match the known sample universe for age and gender based on the 2018 Census. The data analysed for this project was a year's worth of data with a total New Zealand sample size of 14,369. Analysis from Journey Monitor research was undertaken to understand the size and profile of New Zealanders who we think are likely to be in our target population (those vulnerable to the costs of essential transport). This is to help scope the quantitative stage and provide target populations for the qualitative stages.

Analysis was carried out on the following questions.

- Were there any journeys within the last week which would have been beneficial to undertake, but you couldn't?
- When thinking about the most recent instance when you were unable to undertake a beneficial journey:
 - What would have been the purpose of this particular journey? (Answers range from going to work to sport and exercise, shopping etc.)
 - Where were you travelling to?
 - What form(s) of transport would you have taken if you had made this journey?
 - What was the reason you didn't take the journey? (Responses we focused on are those that answered 'Journey would have been too expensive'.)
 - To what extent did not being able to take that journey affect you or your family? (0–10 scale, 0 = 'It did not affect me or my family at all' and 10 = 'It affected me or my family a great deal'.)
 - What is the affordability of the journey just made?

This survey asks about the most recent journey taken. It says, 'By journey we mean travelling from one place to another at least in part along the road or rail network, and using any form/s of land based transport (e.g. car, bus, train, walk, cycle) or ferries.' It's important to note that the Journey Monitor asks about *beneficial journeys* and not *essential travel* per se.

3.2 Overview of findings

3.2.1 Proportion of the population surveyed who have not taken a journey due to cost

The analysis showed that 22% of New Zealanders surveyed (aged 15 years and older) did not take a journey in the last week that would have been beneficial. For 15% of these respondents, the reason was the cost of the journey itself. This equates to 3.2% of the overall surveyed population aged 15 year or older.

Some demographic subgroups are statistically significantly more likely to fit into the latter category (Table 3.1).

Table 3.1 Percentage of respondents who did not take a beneficial journey because it would have been too expensive, by demographic subgroup

Demographic subgroup	Percentage
Student part time (aged 15–34)	6.7%
Live in Northland	6.2%
Of Māori ethnicity	5.6%
Life stage – student (aged 15–34)	5.7%
All rural areas	4.6%
Aged 15–24	5.2%
Annual household income less than \$20,000	5.0%
Employed or self-employed full time with variable hours or shift work	5.2%
Aged 25–49	4.2%
Young family	4.5%

Note: Only differences that are significant to the total sample are shown. A further breakdown of demographics would have been explored in the quantitative phase.

Also of interest was that cost was not the only reason this group representing 3.2% of the overall population surveyed did not take the beneficial journey. For 62% of this group, another reason also stopped them taking it. The most commonly mentioned reasons included the traffic (20%), family responsibilities (20%), bad weather (19%) and the time the journey would have taken (18%).

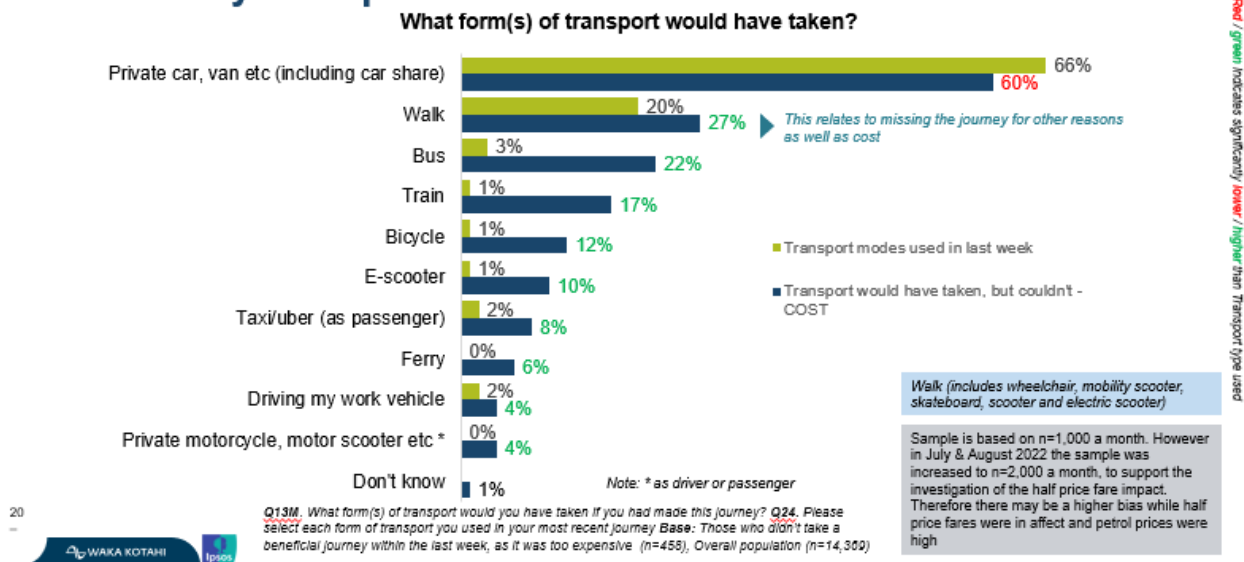
3.2.2 Details of the missed beneficial journey

There were a variety of purposes for perceived beneficial journeys not undertaken, with social (39%), shopping (38%) and work (30%) being the most common. Shopping and work are typically frequent activities, so it makes sense they are impacted most. However, less frequent activities such as personal and medical appointments also feature reasonably highly – despite not usually being daily tasks (17% and 15%, respectively).

The most likely mode of the perceived beneficial journeys not undertaken was dominated by car (60%), but this was the only mode where the missed trip proportion was less than the usual transport mode. Walking was the second most likely mode (27%) but was more likely to be affected by another reason on top of cost. Reported public transport journeys not taken were overrepresented compared to the usual usage. A chart with all modes is shown in Figure 3.1.

Figure 3.1 Forms of transport used in the last week vs forms of transport that would have been taken if journey had not been missed

The most likely mode of missed journeys is a private car / van. Compared to modes used in the last week, cost was more likely to impact other modes



For those for whom cost was the only reason the journey was perceived as 'missed', a private car/van was the most likely mode not taken (Table 3.2).

Table 3.2 Forms of transport that would have been taken if journey had not been missed

What form(s) of transport would you have taken if you had made this journey?	Journey would have been too expensive	Cost only	Cost + other reason	Not Cost
Base, n=	458	173	285	2685
Private car, van etc (including car share)	60%	67%	55%	54%
Walk (includes wheelchair, mobility scooter, skateboard, scooter and electric scooter)	27%	15%	34%	33%
Bus	22%	12%	28%	23%
Train	17%	5%	24%	12%
Bicycle	12%	7%	15%	11%
E-scooter	10%	6%	12%	7%
Taxi/uber (as passenger)	8%	6%	10%	7%
Ferry	6%	4%	8%	5%
Private motorcycle, motor scooter etc (as driver or passenger)	4%	2%	5%	3%
Driving my work vehicle (eg taxi, fleet car, van/truck)	4%	3%	4%	3%
Don't know	1%	2%	1%	1%

3.2.3 Impact of the perceived beneficial journey not taken

The impact of the 'missed' journey was significant, with 78% saying it affected them/their family, with a quarter (25%) saying it affected them a great deal. The most common impacts were emotional (14%), on finances (14%) and missing out on groceries, shopping or food (13%).

When asked about affordability, 2% said their most recent journey (of any type) was barely affordable. The demographic subgroups who were more likely to fit in this category are shown in Table 3.3.

Table 3.3 Percentage of respondents who reported their most recent journey was barely affordable, by demographic subgroup

Demographic subgroup (0–2 score) ^a	Percentage
Live in Northland	3.7%
Live in a rural area (more than 5 km from a town)	4.0%
Of Māori ethnicity	3.5%
Employed or self-employed full time with variable hours or shift work	4.7%
Not working	3.6%
Annual household income less than \$30,000	3.5%
Live in a central city area	3.2%
Flatting or house sharing	3.3%

Note: Only differences that are significant to the total sample are shown. There is potential overlap within the subgroups.

^a Ten-point scale rating where 0 = barely affordable ('I had to scrimp and save or make sacrifices to pay for it') and 10 = totally affordable ('It had no noticeable impact on my available funds')

3.2.4 Recommendations from the NZTA Journey Monitor analysis

This analysis provided an indication of the size of the population who are vulnerable to essential transport costs. It appears to be around 3.2% of surveyed New Zealanders (aged 15+), an important figure in considering the design of the quantitative research. It also provided input into the mix of respondents that should be included in the qualitative stage. This included ensuring a broad mix of transport modes and demographics but focusing on:

- those with lower incomes and/or are unemployed
- younger age groups
- people living in rural locations
- young families
- students
- Māori.

4 Core agency engagement

4.1 Objectives

The purpose of this stage was to:

- provide a view on the issue of essential travel affordability as relevant to each agency's sector and community that would feed into subsequent qualitative interviews and the creation of the quantitative survey
- provide an introduction to potential participants for the next qualitative stage – we hoped that the agencies involved could provide contact details of community members they work with who have experienced cost impact on essential travel
- request any existing data that might inform the desk research.

4.2 Approach

Ipsos conducted eight one-on-one in-depth interviews with key staff from core agencies to understand their knowledge, perceptions and experiences on the issue, especially the stories/case studies they are hearing around the issues the people they advocate for are having, and any other research information they might have. We spoke with representatives from the Citizens Advice Bureau (CAB; Auckland Central and Ōtara branches), Age Concern (AC), Aktive (A), Spectrum Care (SC), St Joseph's School Hastings (SJS), Salvation Army (SA), Rural Women New Zealand (RWNZ) and E tū (ET). Ipsos and NZTA selected the organisations as those that would be likely to be involved with members of the community who would experience issues with the cost of essential transport. We aimed to speak to organisations representing various ages, genders and life stage in order to provide us with a broad view of the topic. Interviews took place via Microsoft Teams and were conducted between 27 September and 31 October 2022.

4.3 Summary of findings

4.3.1 Considerations for defining essential transport

When trying to determine a definition for *essential transport*, agencies were reluctant to reduce options. When pressed, agencies feel that essential transport would be focused on the basics – work, food and health.

'What is essential would be food and health appointments, if you had to, all the "good life" stuff would be deprioritised.' (SC)

'Work definitely comes over school – it's what puts food on the table.' (SJS)

'We are huge advocates for ensuring that physical activity is part of everyone's life... In terms of what we would consider essential, we are going to always advocate for people to have the right to participate and the right to be active.' (A)

For some, taking children to school is an essential but potentially long and expensive journey for people in transitional or emergency housing.

'We have transitional housing, and we have families whose children go to school far away from where they're at and then they have to travel there. ... It's normal, isn't it? You want to keep your kids settled. And then when they get their final house, then they can actually have a look at transitioning

their kids away to another school. Which makes sense, otherwise your kids are going to keep changing schools.' (SA)

Determining essential transport was seen to be a personal choice and different for each person.

'It's really about what is important to you. Do you need to be engaged with nature? Is your religion a big part of your life? If you reduce your life to essentials only you are taking away a lot of joy.' (AC)

'We are goal oriented; we work with our people to determine what they want to do, and we make that happen.' (SC)

Rurally, essential transport could include anything to do with the farm, which is often home and livelihood for people, so the definition from Rural Women New Zealand was broad.

'As food producers farms could be deemed essential service providers, so anything to do with running the farm such as fertiliser, on and off farm livestock transport, farm supplies, these could all be considered essential transport.' (RWNZ)

Some agencies are having to give people advice on what to prioritise as essential and how to cut down on transport.

'If it's \$30 of petrol a week, when you go shopping, take a list, and buy everything. Instead of going to the shop every day, just take one trip a week. Go to church on Sunday and then if you don't have anything good to go to, then just stay home.' (SA)

Agencies felt that what is considered essential transport is fluid and therefore the definition could change daily/weekly/monthly.

'What is essential is not static, it shifts and changes, eg, if you physically cannot reach your feet any longer, travelling to get a pedicure is going to become essential.' (AC)

Some people may not understand what 'essential' means, with E tū cautioning the use of this word in research with their members.

However, it was commonly mentioned that essential needs change on a daily/weekly/monthly basis, so essential transport will too. Different situations will also require different definitions – for example, rurally, essential transport could be anything to do with the farm.

4.3.2 Current and future agency support for transport costs

The agencies whose staff were interviewed assist with essential transport via advocacy, alternatives and providing transport themselves.

They may facilitate transport via 'Information and Support', including:

- referrals to agencies that can provide money or advocacy
- information and support to make transport more affordable (eg, Total Mobility vouchers)
- supporting the application of Lotteries grants to access a vehicle
- providing monetary support (eg, subsidising bus passes, providing money for fuel and parking)
- providing advocacy or lobbying government (eg, Rural Women New Zealand advocating for school bus provision for rural schools, E tū advocating for a living wage)
- providing legislation/policy
- supporting with applications to the Ministry of Social Development to cover transport costs for essential journeys.

In some instances, agencies may provide transport for the community or members, including:

- pick-up and drop-off services/volunteer driving systems
 - 'We have a programme in Ashburton that allows people to be driven in their own car to appointments.'* (AC)
 - 'We did that previously with a van, but it was taking me about 3 hours to pick everyone up.'* (SC)
- community shuttles
 - 'Ōtara used to have a community shuttle that took people to activities, but that stopped due to Covid.'* (CAB)

Some agency employees are using their own private cars to transport clients.

'For example, I've got a mental health case [client]. He's fine, but sometimes he forgets where he's going. I've got to get him to a psychotherapist who's in Ōtara. There's a particular lady who's very experienced and I want the best for him. I'm going to use my car. I'll take him because I want him to get better.' (SA)

Agencies can also be involved in providing alternatives or changing the way things work for their clients or members. This can involve:

- arranging activities within walking distance of a central location
- arranging for buses rather than parent vehicles for school trips
- increasingly bringing activities to the participant (eg, after-school sports events held on school grounds to avoid additional travel for students).

In the future, agencies predict they will need to provide continued or increased support with regard to essential transport. They anticipate a need to help people by providing:

- monetary support
 - 'If there were free buses, then they would try and figure it out and figure out how they could get places. The word "free" would go a long way to getting these people out there.'* (SA)
- more agency support to attend events
- flexibility and options
 - 'It's not just a fix of making fuel prices less or having access to a car. Some people are going to need to want to bike, some people are going to have accessibility needs to be met, some people need different road networks. There's no one thing.'* (A)

Support for people to travel to participate in their communities will have positive flow-on effects.

'It generates jobs, it generates community engagement, belonging ... It's not only about the participants, it's about the whole of the community and the organisations that are within that.' (A)

4.3.3 Perceived barriers to essential travel

Across the discussions with the agencies, barriers to travel were mentioned (Table 4.1). Issues that prevent successful travel interactions include, but are not exclusive to, costs. In some instances, it is hard to separate the barrier from the cost.

Table 4.1 Perceived barriers to essential travel

Barrier	Participant feedback
Irregularity and instability of public transport	<i>'The subsidies have been great, but people are being late to work because of unreliable public transport. It needs to be affordable, accessible and on time.'</i> (ET)
Size and spread of the location lived in	<i>'Auckland is huge, you have to factor in the cost of a couple of buses or trains, our people might only have \$20 a week total for entertainment.'</i> (SC) <i>'Gone are the days in a city this size where you could jump on your bike and whip down to rugby training and back.'</i> (A)
Lack of public transport options in the area lived in	<i>'Half price has technically made it more accessible, but it's still all dependent on where you live and if you have access to public transport in the first place.'</i> (CAB)
The cost of running a vehicle (warrant of fitness, fuel etc)	
The cost of living – not enough money to go around	<i>'We are seeing more middle-income families struggling and people in debt.'</i> (CAB) <i>'Even with the Gold Card it can be beyond people's budget to travel.'</i> (AC)
Lack of infrastructure for active transport, resulting in people being forced to use public transport or a car that they potentially cannot afford, or walking/cycling in unsafe environments	<i>'People's ability to actually travel relatively easily to access facilities using their feet or a bike is pretty constrained by the absence of integrated infrastructure.'</i> (A)
Literacy and numeracy issues	
English as a second language	
Physical and mental disabilities	
Health issues	
Cost of public transport	<i>'Almost all of our people are on a benefit.'</i> (SC)
Not having a driver licence	
Site and transport accessibility (eg, not all buses kneel, some bus stops do not provide shelter)	
Cost of specialist transport	<i>'For participants with disabilities, a mobility taxi required to transport them from where they live to events in another part of Auckland can cost hundreds of dollars.'</i> (A)
Safety concerns – especially for women and girls (eg, taking public transport, adequate lighting in car parks at night)	
Difficulty paying for a car	<i>'To get a car, they've got to get into huge loans with 35% interest rates because they don't have good credit scores to go to the bank, so they go to these financial sharks and then they get into all sorts of problems.'</i> (SA)
Car maintenance costs	
Differing household priorities	<i>'It's what is the priority for the household on THAT DAY. Is it sports? Is it getting Nana to the doctor?'</i> (CAB)
Digital exclusion	<i>'Some families are left out. They can't pay bills online, they can't stay home and access these services, they have to go out to do so.'</i> (CAB)

Barrier	Participant feedback
Ageing	<i>'As we age our ability to drive can diminish (vision, decision making). It's hard to be honest about what is happening.'</i> (AC)
Funding applications	<i>'It's horrendously expensive to mobilise tamariki and rangatahi around Auckland. Decile 1 and 2 schools were having to spend hundreds of dollars to enable their students to participate in physical activity opportunities.'</i> (A)
The quality of the roads	<i>'We've got rural kids walking down roads that are built for and used by logging trucks.'</i> (RWNZ)

4.3.4 Impact of missed essential journeys due to cost

When it comes to the impacts of missed essential journeys due to costs, agencies report impacts across multiple areas of life.

Education

- Agencies cited non-attendance at school/home schooling as an impact of impeded travel due to costs.
 - 'We have kids who don't come to school if it's near the end of their parents' pay cycle. There is no money for fuel, so they are stuck at home.'* (SJS)
- The flow-on effects for not attending school include impeded academic achievement.
 - Families do not always attend their school of choice, which impacts the child's learning and wellbeing as well as the connection between the whānau and the school.
 - The end result of non-attendance is that education becomes deprioritised and devalued, and children miss out/bear the brunt of impeded travel due to costs.
 - 'If you have a repair bill, it can cost a weekly or monthly wage – you push the kids' school shoes to the back.'* (ET)

Physical health

- Agencies saw that clients or members who did not make trips because of transport costs were instead not dealing with issues (financial and/or medical) until they become emergencies, therefore incurring debt and/or major health impacts.
- Aktive saw traditional sports such as rugby, cricket and football starting to struggle to keep participants as the 'home and away' game set up is being affected by the transport system. Teams can have difficulty travelling the distances required to attend games.
- Poor nutrition can also be an outcome of the cost of transport for essential travel, with food often being seen as the 'easiest' place to trim the budget.
 - 'If there is a vehicle related expense, it can impact the budget, and the first thing to be reviewed is food. People make less healthy choices because it is cheaper.'* (ET)
- If transport costs were not an issue, at least one agency felt that there would be significant mental and physical health benefits for the community.
 - 'Increased participation, but also health and wellbeing, sense of belonging, mental health, physical health, we'd have a more engaged community'* (A)

Mental health

- Mental health and wellbeing are also impacted by the cost of transport for essential travel, with agencies reflecting that relying on friends and family for transport is inconsistent and can lead to embarrassment for both parties: one not wanting to ask for help, and one not wanting to decline the request.

- Not being able to provide transport for yourself or family can lead to a loss of self-worth/identity.
'In this country a driver's licence is independence and connection to community, it allows you to decide "Who am I and what is important to me?"' (AC)
- Not being able to afford to travel can also lead to social isolation.
'Boredom and loneliness are issues that we regularly see. Our people would ideally like to be heading out 1–2 times a day, but they can only afford to do so maybe 2 times per week.' (SC)
- Some agencies mentioned the stress that a carer can feel if unable to facilitate transport and access to the activities their clients wish to partake in. This stress may also apply to parents or caregivers who have family members missing out on activities and events.
- Age Concern reported that older people with their own vehicle are, due to costs, increasingly trying to arrange for multiple activities/errands in one trip, leading to stress/anxiety to 'get it all done' in a day.
'People are thinking carefully about how to minimise the cost for themselves.' (AC)

Housing

- CAB reported that they sometimes have clients who have to turn down emergency housing options due to transport and travel issues (ie, they cannot afford to get to the accommodation or have no way of getting to this accommodation).
'If we find a place for someone in West Auckland, often people have no way of getting there so they have to turn it down.' (CAB)

Employment

- E tū reported that members' employment can be impacted by travel costs, resulting in them being late for work or not being able to take up roles due to the travel costs involved.
'The first thing members will talk about is transport – can they afford the parking? Can they catch public transport?' (ET)

Community/Socialising

- The impact on the wider community of the cost of travel can include loose community networks/connections, deemed detrimental by nearly all agencies.
- Not being able to afford to travel can also mean less visibility in public of certain groups of people. This can lead to neglect or 'hidden people' in society.
'Our people struggle with social interaction, and NZ society is not inclusive.' (SC)
- A lack of family involvement in activities can also be a result, with all parties 'missing out' and experiencing varying degrees of distress and embarrassment.
'We have to check the vehicle rego and WOF as well as the parent's licence if they volunteer to take kids to an activity. It's an unpleasant conversation if these are expired and they can't afford it.' (SJS)
'They would probably not take the kids out to places that you would normally take kids to during the weekend, because they're worried about the cost of petrol, so the kids have got to stay at home.' (SA)
- When more participants can attend the community events, the host organisations reported that they as providers are strengthened and more sustainable, and able to offer more.

4.3.5 Key findings from the agency interviews

In many ways, this stage confirmed what we had been learning in other stages. Essential transport is different to different people, and even to the same people on a different day. It can even differ depending on who you are with (eg, children needing a school run). The concept was not something the agencies had thought about before in this way and it wasn't simple to get their heads around. These interviews confirmed

that the Journey Monitor definition of 'missed journey due to the cost of transport' is not sufficient in terms of essential transport impacts. There are also bigger life issues affected, such as not being able to accept a job or emergency house due to transport costs.

5 Qualitative research

5.1 Objectives

The key objectives of this stage were to confirm the definition of essential transport and all the different layers of impact on New Zealanders' lives and feed into a quantitative questionnaire.

5.2 Approach

In order to help us define *essential transport* and understand people's different situations in terms of prioritising travel and activities, missing out on trips, being unable to pay for transport, and the impact that these have on their daily lives, we interviewed 10 people about how they have been affected by the costs of essential transport. One-on-one qualitative in-depth interviews allowed us to understand expenditure and a definition of essential transport at a personal level.

- Three researchers conducted 10 one-hour in-depth interviews with people impacted by the cost of essential transport.
- All participants had not taken a beneficial trip in the past fortnight due to the cost of the trip.
- There were six female participants and four male participants. Four were New Zealand European, three were Māori, two Pasifika, and one British. The participants were living in Timaru, Tauranga, New Plymouth, Waitara, Kaitiāia, Porirua, Auckland and Christchurch. Three interviews were held face to face in Auckland and Wellington. The remainder were held online via Microsoft Teams. Respondents received an incentive/koha of \$100 for taking part.

Note: The results of qualitative research cannot be projected onto the overall population due to sample selection, interviewing methods and sample size.

Recruitment criteria were as follows.

- All respondents have not made a journey that would have been beneficial in the last week.
- The main reason they did not make this beneficial journey was due to cost.
- The sample must include:
 - at least two Māori and two Pasifika respondents, with the remainder from a range of ethnicities
 - a range of household types, including at least two young families
 - at least two carers of some description (eg, caring for children, older people and/or people with special needs or a disability)
 - a range of regions – must include Northland
 - at least two respondents who live rurally
 - at least two students, in tertiary or secondary school, aged over 16 years
 - a range of ages, with at least two respondents aged over 65 years
 - a range of users of different types of transport (public transport, private car, motorbike etc).

5.3 Background and context

All of the people we spoke to experienced challenging financial situations.

This could be due to:

- receiving a benefit as a sole source of income

- having only one income and a large family
- being a student
- being a pensioner.

Income was low and limited in many cases, and this is the basis for the challenges that these households face. Life is often a daily struggle that impacts both physical and mental health.

'I'm trying to deal with my impeded health, the landlord's expectations of care on this house, trying to pay my bills and feed my child and keep her healthy – all on a limited budget. Then you have things like Christmas and birthdays. I'm down to my last 50 cents each week, there's absolutely no savings.'

'Our car needs to be repaired and we've been quoted around \$5–6000 to fix it. So, we are limited to what we can do right now without a car. We have 2 kids at school and I'm at home with 2 pre-schoolers.'

Due to these daily struggles, they may have already determined what is essential or not, and a limited budget can result in a routine hard to disrupt once set in place.

They might not have the 'mental bandwidth' to consider alternative options with regard to transport for essential travel. It adds to the cognitive load, often at a time of stress.

We also spoke to participants who are using a range of transport options to make their essential transport happen, including:

- personal car
- car ride with friends or family
- Uber or taxis
- bike
- walking
- bus.

A personal car is aspirational and a safety net for many – it provides a safe, secure and (often) reliable way of getting where you need to be. In contrast, public transport is often unreliable, unavailable or unsuitable.

Each method of transport comes with its own emotional and physical benefits and limitations for participants, as summarised in Table 5.1.

Table 5.1 Emotional and physical benefits and limitations for each method of transport

HOW	PROS	CONS
Pay friends or family petrol money to take me	<ul style="list-style-type: none"> • Can be 'on demand' • Feel safe/comfortable 	<ul style="list-style-type: none"> • Feel beholden/guilty/embarrassed • No guarantee my friend or family member can take me
Use my car	<ul style="list-style-type: none"> • When I want/how I want 	<ul style="list-style-type: none"> • Costs in petrol, parking and wear and tear
Take a Bus	<ul style="list-style-type: none"> • Social interaction • Can be affordable 	<ul style="list-style-type: none"> • Might not kneel • Might not go where I want to go – may mean multiple trips or a long time • Might not feel safe
Walk	<ul style="list-style-type: none"> • Freedom • Exercise 	<ul style="list-style-type: none"> • Safety • Length of time • Impact on my body
Bike	<ul style="list-style-type: none"> • Freedom • Exercise 	<ul style="list-style-type: none"> • Only able to do it if bike is in working order, I am physically able or environment is bike-able
Ask friends or family to take me (at no financial cost)	<ul style="list-style-type: none"> • Cost effective 	<ul style="list-style-type: none"> • Feel beholden/guilty/embarrassed or indebted
Use a taxi/uber	<ul style="list-style-type: none"> • Timely, comfortable, good for shorter distances 	<ul style="list-style-type: none"> • Expensive, may not be available in my area, may not feel safe

Participants found it easy to recall times in the past year when they couldn't get somewhere they wanted or needed to go due to costs, including:

- attending a funeral
- attending a concert
- attending a medical appointment
- a family trip to the zoo
- visiting family
- attending paid work
- attending school (extracurricular activities).

They were less able to give examples of times in the past year when they did go somewhere they wanted or needed to go *despite* the costs. These trips are either not possible due to no available funds, or funds are 'borrowed' from another part of their limited budget, which can have a detrimental effect on their financial wellbeing. Therefore, trips that need to be taken despite the cost are far less frequent.

5.4 Overview of findings

5.4.1 Perceived definition of essential travel among participants

The ways that participants described *essential travel* can be interpreted as travel that allowed them to meet their basic physiological and safety needs, as defined by Maslow's hierarchy of needs (Figure 5.1).

Figure 5.1 Maslow’s hierarchy of needs (reprinted from Hopper, 2020)



It is important to note that a need can be interpreted as an extreme need (eg, ‘If someone’s life is on the line or if one of my parents were ill, that would be an essential trip’) or it could be about meeting a more basic need such as food (eg, ‘Nutrition is essential, I can’t eat \$10 worth of petrol’).

In this report we have used the terms *essential transport* and *essential travel* depending on the ways that respondents have described their ‘trips’. Their depictions of these trips encompass the who/where/why/how and when rather than just the transport itself.

5.4.2 Impact of missed essential journeys due to cost

In most instances our respondents were able to define essential travel as relative to four areas of their life: education, employment, medical care and food provision. The impact of not being able to afford transport for essential travel in each of these areas is detailed in Figure 5.2.

Figure 5.2 Areas of impact of not being able to afford transport for essential travel



Note: Quotes in this figure are from the interviewees.

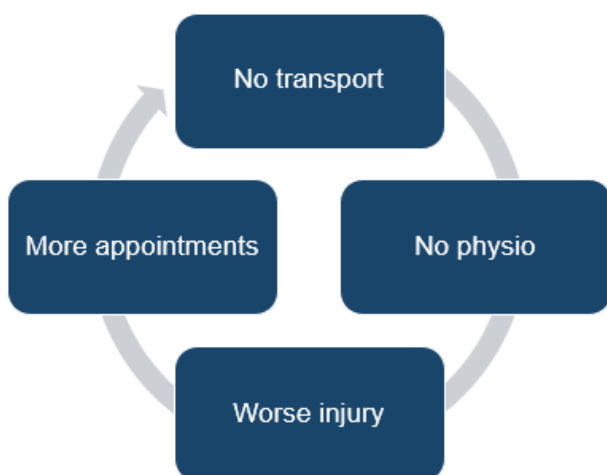
Underlying these essential trips is wellbeing, which is the main purpose of the essential trips that are most often reprioritised or not taken. If people can't afford to make essential trips to visit friends and family either in their community or elsewhere in New Zealand, or can't afford to pursue hobbies and interests, exercise and entertainment opportunities for themselves or their children, they are living a 'smaller' and less fulfilling life.

'I'd love to take the kids to the beach, it's about a 20-minute car ride away, and safer than the local parks. We can't afford the petrol to go there.'

'I need some whānau time, I need some awahi but it's probably \$70 petrol to get there.'

In this research we have also seen the compounding impacts of not being able to afford transport for essential travel. The impact of not being able to afford the transport required to take an essential trip often has an immediate consequence. This can often lead to further negative outcomes, stemming indirectly from not being able to make the essential trip.

Figure 5.3 Example of compounding impacts on one participant



5.4.3 Calculating the costs of essential travel

The cost of transport is complex and requires complex decision making and value assessments. Sometimes respondents were able to identify the exact transport-related costs of their essential trips. Bus trips, taxis and Uber rides made this easy for people to do.

'An Uber to the supermarket is \$14 one way.'

However, sometimes people are not aware of the cost of a public transport trip. They top up their card with an amount and use it until it runs out.

Sometimes the essential trips have to happen within one 'fill up' or amount of petrol. This is usually a monetary amount (eg, \$20 or \$10). For example, a car gets filled with \$20 worth of petrol per week – all trips need to happen with this amount of petrol, so trips are planned around this exact amount of petrol.

Other times, the cost of transport may not be the reason for not taking an essential trip, but the *purpose* of the trip may cost too much. For example, if someone needs to make a trip to hospital to get an antenatal scan, they may be able to afford the Uber to and from the hospital (\$10 each way) but not the scan itself (\$65).

5.4.4 Recommendations from the qualitative research

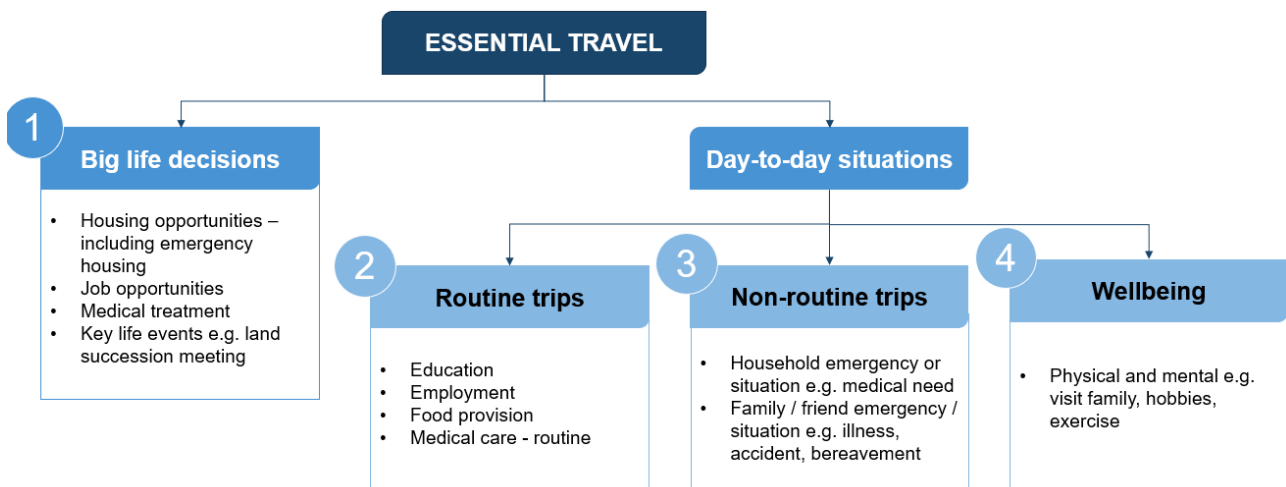
The qualitative research also supported the use of the proposed definition of *essential transport*:

Transport that provides access to things that people need to do.

From these qualitative interviews, we have seen four core essential travel situations (Figure 5.4):

- Big life decisions
- Routine trips
- Non-routine trips
- Wellbeing.

Figure 5.4 Core essential travel situations



Ipsos recommends that any further research in the form of a quantitative survey include all four types of essential travel situations, including wellbeing – a category that is most commonly sacrificed for the other three.

The recommended quantitative approach should also align these four categories with the four areas of life that our respondents identified as being most affected if they can't afford essential transport:

- Education
- Employment
- Medical care
- Food provision.

From the qualitative research it is clear that calculating costs of essential transport will be difficult for respondents because of the complexity of their decision-making processes and because they are not necessarily conscious of the cost of a single trip, especially when the car is involved.

6 Proposed design for the quantitative survey

Due to methodological problems that arose during the previous phases, the steering group decided not to proceed with a quantitative research phase. However, this section briefly outlines the potential approaches that were considered for a quantitative stage to further build on the research conducted so far, and to potentially inform future research efforts.

There are a number of complexities in accurately understanding the travel taken by individuals. The Household Travel Survey (HTS) run by Te Manatū Waka | the Ministry of Transport is a large and complex project that provides the most accurate approach to understanding travel behaviours. This is not something that could easily be replicated in a short online survey. However, the HTS does not establish which trips taken are essential and does not look at the cost of these trips either, so is unable to fill this information gap.

There are also a number of complexities required in accurately understanding the costs individuals and households incur for travel. For example, the cost to run a car is difficult to calculate as there are many components (fuel, registration, maintenance, breakdown costs, insurance etc), let alone attributing that cost to just one trip. In addition, one person could easily use multiple modes in one week, or in one trip, further complicating cost calculations. Stats NZ's HES only collects expenditure on buying vehicles in the last 12 months; repairs and maintenance; licensing and user charges; and petrol/diesel charges. It does not look at the cost per trip, nor does it understand which component of these trips are essential, so again is unable to fill this information gap.

6.1 Considered survey components

This project explored the possibility of using an online survey to look at the respondents' basic usage of transport and which activities were essential, and attempt to assign a rudimentary cost of transport for the essential travel component of an individual's total expenditure. This survey would need to include four types of essential travel – big life decisions, routine trips, non-routine trips, and wellbeing – as well as the four categories that align with Maslow's hierarchy of needs: education, employment, medical care, and food provision.

Such research would need to be carried out at individual respondent level rather than household level based on the available sample sources.

Should this stage have gone ahead, the following key questionnaire components would have been included:

- understanding which activities New Zealanders considered essential
- understanding the proportion of all trips taken that included an essential component
- identifying those who are struggling with costs of transport for essential activities (for profiling)
- understanding the impact of missing trips for essential activities
- calculating cost spent on trips for essential activities.

To calculate the cost spent on trips for essential activities, several options were considered, including:

- asking respondents for their spend per week per transport mode and using the proportion of trips determined to be essential from earlier in the questionnaire to determine an estimated cost of transport for essential activities
- calculating the cost barrier for missed trips – for example, how much money would have been needed to take a bus trip not taken due to cost
- collecting origin and destination GPS locations for the last taken trip to an essential activity and using assumptions (eg, route) and averages (eg, fares, car running costs) to calculate cost

- using demographic cohorts established as those impacted by cost for transport to essential activities to calculate costs via Stats NZ's HES expenditure data.

Each of these approaches to calculating cost had several identified limitations and complexities, and even using a combination of approaches would have resulted in uncertainty around the cost data. For these reasons, it was decided not to carry out this phase. Any future research on this topic will need to take into account the learning gained from this project, and consider a more complex modelling approach, which could allow for inclusion of socio-economic costs in addition to narrower financial costs.

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