



Providing for walking

Research into guidance and policy

NZ Transport Agency



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Quality Assurance Information

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Executive Summary

Walking has a range of public health benefits. As a means of transport, walking integrates physical activity into everyday life, and reduces the time spent being sedentary which has consequent health benefits including reduced obesity, cardiovascular diseases, cancer and improved mental health. Walking also has a range of benefits to the environment producing no air pollution, noise pollution or greenhouse gases.

The NZ Transport Agency has developed guidance for Road Controlling Authorities (RCAs) to help them plan, design, and prioritise improvements for walking. The guidance is intended to ensure that urban development takes the needs of pedestrians into account. The two key documents produced by the NZ Transport Agency to assist RCAs to plan the walking environment are the Pedestrian Planning and Design Guide (PPDG) – published in 2009; and, RTS 14 – Guidelines for blind and vision impaired pedestrians 3rd Edition – published in 2015.

The NZ Transport Agency also plays a critical role in providing funding assistance to local authorities to deliver their regional land transport plans. The key documents that set out the funding policies and practices are: the Government Policy Statement on Land Transport, the Investment Assessment Framework; and the Economic Evaluation Manual.

For the funding policy and design guidance to be effective, it must be up-to-date and applied by relevant authorities in their planning, design, improvement and maintenance decisions. This research project sought to understand the suitability of these documents and how well they are applied by the practitioner through eight research questions. This involved technical review of the relevant documents and industry engagement through online surveys and case studies.

Overall, NZ is well placed in terms of the strategic direction, policy and planning and design guidance that exists to provide for walking. It will take some time for the recent change to government direction and policy to be evident in the built environment. There are also some gaps and weaknesses in funding processes and translating guidance into good practice delivery that can be improved.

Good base line information needs to be established to be able to quantify how we are actually doing with regard to the volume, frequency, safety and people's experience of walking. The Ministry of Transport and Statistics NZ 'enduring questions' may help with this, but NZ Transport Agency also needs to take a lead role in this area. Policy is providing direction for creating more walkable environments and public sector funding is available to support this. Reviewing and auditing projects before and after implementation could be done better to ensure design aspects such as tactile pavers are provided as per the guidance. The contracting industry will need some support in this area through clearer installation guidance and potentially training.

The existing planning and design guidance in NZ is reasonably current and is recognised internationally as best practice. This research has provided good insight into the use of NZ Transport Agency pedestrian planning and design guidance and identified gaps in the guidance. Industry feedback confirmed the gaps identified in the guidance document review. Most of the gaps are related to guidance that can be updated to reflect best practice or more recent policy direction. Some new content is required. It was found that there is both NZ and international guidance that could help to address the gaps. Allocating the priority of the gaps is problematic as there is no high-level pedestrian environment study to guide this, as was available when developing the online cycle planning and design guidance. The parallel work on barriers to walking may assist with this aspect.

The research has also provided insight into how policy and funding influence the expenditure on both new and existing pedestrian facilities. Industry feedback also confirmed aspects highlighted in the policy and funding document review. Overall the engagement confirmed the need for a single point of guidance for how all the documents referred to in this review relate to each other, and how they are applied to pedestrian facilities; a level of service framework for pedestrian facilities; and a tool to estimate future pedestrian demand of new facilities to assist in the economic evaluation (or remove the requirement for economic evaluation of some treatments). The provision of guidance on how a strategic pedestrian network is defined in the GPS, and what is required from local authorities was identified. A range of areas for improvement were identified as outlined in the recommendations.

The research has identified 27 recommendations that would enhance the provision for walking. Most of the recommendations can be led by the NZ Transport Agency, some will require cross sector collaboration.

Measuring success

1. Develop a method to better understand the quantum of walking and quality of the walking environment
2. Establish baseline data
3. Establish keyperformance indicators to measure against
4. Develop a home for the data

Guidance

5. Combine PPDG and RTS14 into one on-line guidance resource
6. Develop the Walking Network Guidance (WNG) structure to guide content development
7. Develop programme of guidance improvements/development based on the gaps identified in this review
8. Update the Speed Management Guide to strengthen consideration of pedestrian safety and comfort
9. Audit a sample of local authority guidance (e.g. Codes of Practice) for consistency with PPDG and RTS14
10. Review the need to retain RTS series and consider integrating these into appropriate existing guidance
11. Address other NZ Transport Agency guidance as identified in this review when the opportunity arises
12. Pursue opportunities to embed pedestrian design principles in all NZ Transport Agency documents

Awareness, training and cross sector engagement

13. Develop a TGSi design and installation guidance note for designers and contractors who install TGSIs.
14. Consider when awareness of the guidance should be raised (now or after updated guidance?)
15. Increase awareness through industry forums, publications and other means
16. Consider industry training based on new format and content (timing)
17. Engage with the NZ Property Council re: 'walkability' in land development
18. Engage with NZ Planning Institute re: supporting walkability through land use planning and District Plans
19. Engage with the disability sector re planning and design aspects not already covered in the guidance

Funding

20. Develop a single point of funding guidance, and demonstrate how the various processes fit together
21. Provide more support for local authorities through the funding process
22. Establish special funding projects (similar to the model communities' concept)
23. Provide funding case studies
24. Review the Economic Evaluation Manual and update as necessary to ensure it fully reflects the Government's direction and does not result in adverse outcomes for walking and cycling
25. Establish standard BCRs for intervention types (as is happening in road safety)
26. Provide guidance to define a strategic pedestrian network
27. Develop a pedestrian level of service framework to inform investment

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1. Introduction

The NZ Transport Agency has developed guidance for Road Controlling Authorities (RCAs) to help them plan, design, and prioritise improvements for walking. The guidance is intended to ensure that urban development takes the needs of pedestrians into account. The two key documents produced by NZ Transport Agency to assist RCAs to plan the walking environment are:

- The Pedestrian and Planning Design Guide (PPDG) – published in 2009; and,
- RTS 14 – Guidelines for blind and vision impaired pedestrians 3rd Edition – published in 2015.

The NZ Transport Agency also plays a critical role in providing funding assistance to local authorities to deliver their regional land transport plans. The key documents that set out the funding policies and practices are:

- The Government Policy Statement on Land Transport,
- Investment Assessment Framework; and,
- Economic Evaluation Manual.

For the funding policy and design guidance to be effective, it must be up-to-date and applied by relevant authorities in their planning, design, improvement and maintenance decisions. This research project sought to understand the suitability of these documents and how well they are applied by the practitioner. A parallel NZ Transport Agency project is researching non-guidance related barriers to walking and will contribute to the wider research objectives outlined below.

1.1 Research questions

The research aims to contribute to further encourage walking as a mode choice and better integrate it into the transport system. The eight research questions outlined in **Figure 1.1** are designed to help identify where improvements are needed to achieve the wider NZ Transport Agency research objectives.



Figure 1.1 Research objectives and questions

1.2 Context

Overall it is difficult to define how 'well' NZ is providing for walking. The last 'state of the nation' type study undertaken by the NZ Transport Agency with regard to pedestrian activity was the New Zealand Pedestrian Profile (NZTA, 2000). This profile aimed to make visible the extent and importance of pedestrian activity and injury in New Zealand. Its focus was on walking as a transport mode, and it aimed to provide an accessible overview to those who plan communities and manage roads. Although there has been no recent similar study, insights can be gained from other sources as discussed below to provide context for why providing for walking is important. It is also important to consider how planning and designing for walking fits into transport and land use planning, this is also discussed below.

Figure 1.2 illustrates some of the aspects that are related to walkable environments.



Figure 1.2 Some of the aspects that contribute to walkable environments

Benefits of walking

Walking has a range of public health benefits. As a means of transport, walking integrates physical activity into everyday life, and reduces the time spent being sedentary which has consequent health benefits including reduced obesity, cardiovascular diseases and cancer and improved mental health. Walking also has a range of benefits to the environment producing no air pollution, noise pollution or greenhouse gases (EHINZ, 2017). A recent study (Briggs et al, 2016) estimated that road transport was responsible for 650 deaths in 2012 as a result of traffic crashes, air pollution and noise pollution, however 40 deaths were avoided through active transport (walking and cycling).

Transport and land use planning

Creating walkable environments is not only influenced by best practice guidance. Wider transport and land use planning decision can impact on the outcomes with regard to walking. Both transport and land use are fundamental enablers to help achieve integrated economic, social and environmental outcomes. How we set up our communities from a spatial and street network perspective, for example, can mean that we isolate people in areas poorly accessible by walking and/or public transport. Decisions on land use need to ensure there is travel choice available to people, this requires integrated planning at national, regional and local levels and between both public and private sectors. The historical focus on travel time savings for motor vehicles may have at times overridden aspects such as the safety of pedestrians or a 'sense of place'.

Walking in New Zealand

Walking is not well measured in NZ however the New Zealand Household Travel Survey (NZHTS), an ongoing survey of household travel conducted for the Ministry of Transport, can provide an insight into how walking fits into the transport system. The NZHTS is carried out each year, with people in over 2,000 households throughout New Zealand being invited to participate in the survey by recording all their travel over a seven-day period. A 'trip leg' refers to a single leg of a journey, between any two stops. For example, driving to a friend's place with a stop at the shop on the way, counts as two trip legs. Similarly, walking to the bus stop, catching a bus to town and walking from the bus stop to work is three trip legs. **Figure 1.3** shows the preliminary results for the data captured between 2015-2017 (5,703 people), this indicates that walking is the third highest in both the share of total travel time and the share of trip legs.

a) Share of total travel time

b) Share of trip legs

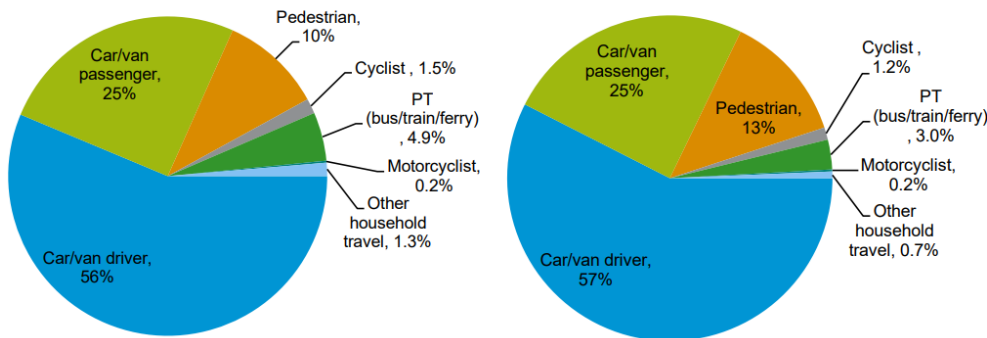


Figure 1.3 Overall mode share (2015-2017)

The distribution of mode share varies by age group as shown in **Figure 1.4**. It is clear that the percentage of time spent walking is highest amongst young people (24 years and younger) and over the age of 65 years.

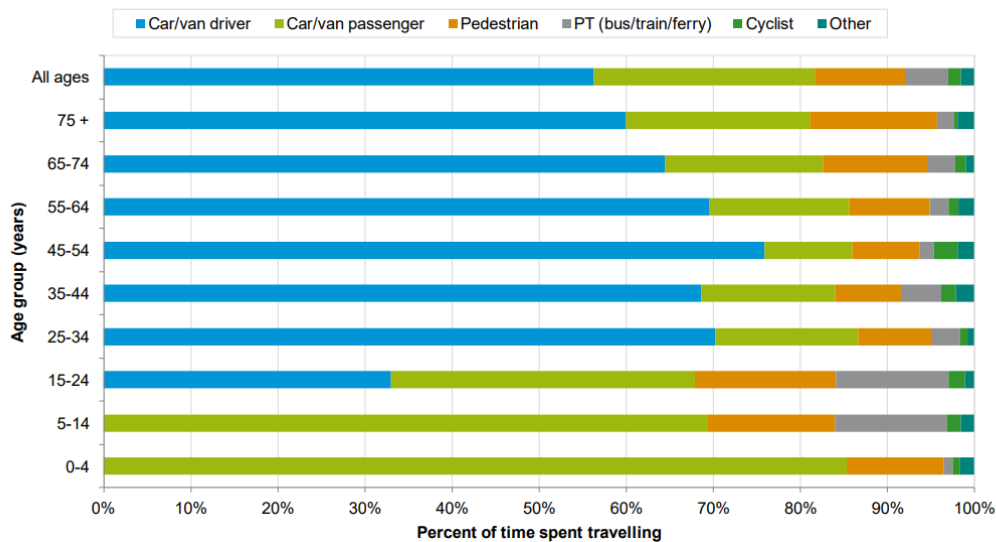


Figure 1.4 Mode share (% of total time spent travelling) by age (2015-2017)

Safety

The Ministry of Transport review how pedestrian deaths and injuries occur, and this is considered useful from a context perspective. The most recent fact sheet on pedestrian safety (MoT, 2017) states that walking has the second lowest risk of death or injury based on time travelled on New Zealand roads (after bus passengers). Between 2012 and 2016, of all reported crashes that resulted in injury of pedestrians approximately half were the primary responsibility of the pedestrian whilst the other half were caused by the driver. The most frequent pedestrian factors contributing to a fatal crash are shown in **Figure 1.5**. How these relate to the built environment and therefore any guidance deficiency is currently unknown.

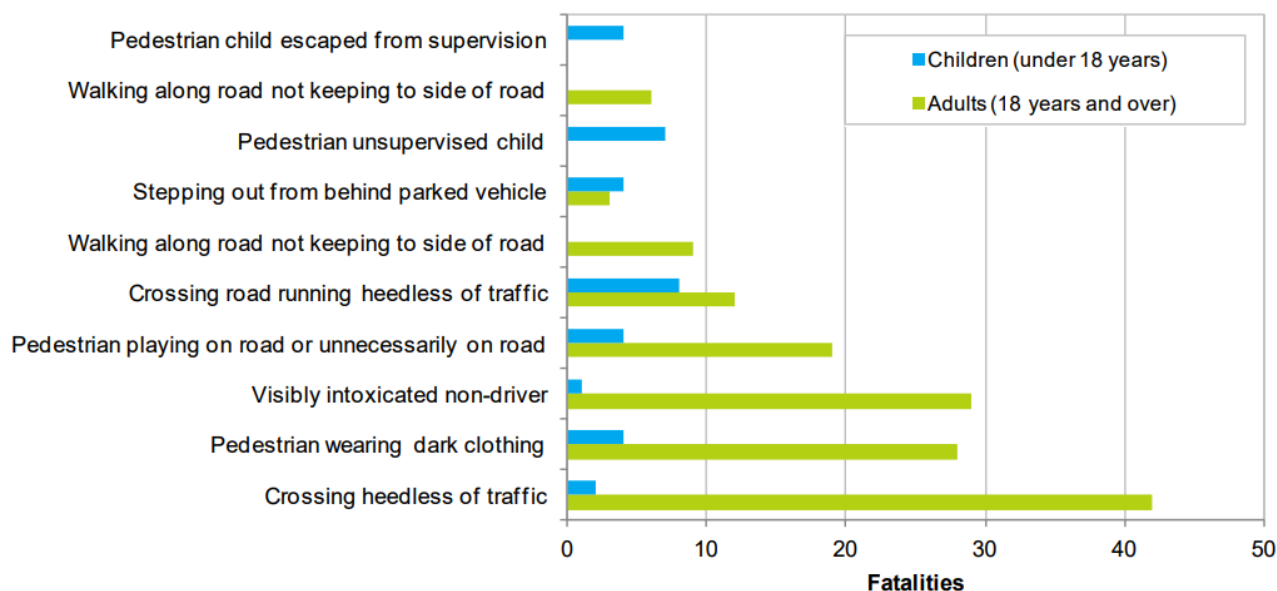


Figure 1.5 Ten most frequent pedestrian factors contributing to a fatal crash (MOT, 2017)

Other research (Opus, 2010) examined the quantum and causes of non-motor vehicle injuries to pedestrians through a structured interview survey. In summary the research concluded: 'Pedestrians sustaining injuries in locations away from the road network (e.g. in parks) were excluded, as the emphasis was on the role of road and footpath features. The highest proportion of trips and falls (34%) was sustained while stepping over a kerb. A further 18% were caused by irregularities in the path or road surface. Two main issues were identified from the study, these were: people tripped and fell more often on poorly maintained surfaces as opposed to poorly designed areas; and, the severity of the injuries is directly related to the surface. The study recommended improving the definition of kerbing in key pedestrian areas and improving the maintenance regime of footpaths and roads used by pedestrians, e.g. crossings. The study also found that it is necessary to instigate research to provide improved data and analysis tools to prioritise such countermeasures vis-a-vis other uses of road safety funds and improved data for input into such analysis tools. Further, a national guide is needed for pedestrian road safety audits and inspections covering both motor vehicle and non-motor vehicle risk.'

The way forward

Walking as a mode of transport has not had much attention in recent years. This may be having adverse impacts on creating walkable communities. Cycling on the other hand has received increased funding and guidance updates in response to recommendations from a cycling safety panel (Cycling Safety Panel, 2014). The guidance for both cycle planning and design was reviewed, updated and transferred from existing documents to an on-line guidance portal called the Cycling Network Guidance (CNG). The same approach could be taken for pedestrian guidance and the two portals would then be able to link to each other and other relevant guidance such as the Speed Management Guide. This linkage is important given the increase in cycle infrastructure that has resulted in use of separated cycleways and shared paths; both of these types of facilities have a pedestrian interaction.

1.3 Research structure

The research comprised of five elements to answer the eight research questions. The extent to which these elements address the research questions is illustrated in **Table 1.1**.

Research elements:

- New Zealand guidance review
- Guidance industry engagement
- Funding policy and procedures review
- Funding policy and procedures industry engagement
- Four case studies with local authorities

Table 1.1 Elements to answer the research questions

Research question	NZ guidance review	Guidance industry engagement	Funding policy and procedures review	Funding industry engagement	Local Authority case studies
1 – Guidance awareness		✓			✓
2 - Who is using guidance		✓			✓
3 - Use of the guidance		✓			✓
4 – Any guidance gaps	✓	✓			✓
5 – Any constraints	✓	✓	✓		✓
6 – How much being spent				✓	
7 – What affects spending			✓	✓	
8 – How would changes affect investment and levels of service			✓	✓	

These elements contributed to the gap identification and analysis. The identification of these gaps is intended to inform a forward work programme to increase investment in pedestrian facilities, and to improve the design quality. The final element of research was to review international guidance and practices to identify where there are examples of best practice that may inform a revision of New Zealand guidance or procedures. Two Project Liaison Group (PLC) workshops, made up of NZ Transport Agency and Abley staff, were held through the course of the project.

1.4 Report contents

This report is structured as follows:

- Chapter 2 describes the review of NZ Legislation, pedestrian planning and design guidance and AS/NZ Standards.
- Chapter 3 summarises the planning and design guidance industry engagement.
- Chapter 4 describes the review of funding policy and procedures.
- Chapter 5 summarises the funding policy and procedures industry engagement.
- Chapter 6 summarises the four local authority case studies.
- Chapter 7 sets out the gap analysis summary.
- Chapter 8 sets out the identification of international guidance that may help address any identified gaps.
- Chapter 9 outlines the conclusions and recommendations.
- Chapter 10 provides the recommendations.

2. New Zealand Guidance Review

2.1 Introduction

This section of the report provides the results of the review of existing New Zealand and Austroads guidance that relates to planning and designing for walking. Two NZ Transport Agency documents, namely the Pedestrian Planning and Design Guide (PPDG) and Road and Traffic Standard 14 – Guideline for facilities for blind and vision impaired pedestrians (RTS14) are considered the core pedestrian guidance documents.

The NZ guidance review is aimed at answering research questions 4 and 5; the industry engagement and case studies will also assist in answering these questions.

- Question 4 - Are there any technical planning and design guidance gaps in the PPDG and RTS14 guides?
- Question 5 - Is the use of the guides constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?

In the first instance NZ legislation and policy was reviewed as this sets the scene for assessing if the use of the core documents is constrained by legislation. Other NZ Transport Agency guidance documents, NZ standards and Austroads guides were then reviewed to understand their relationship and alignment with the core documents. Where potential to improve or better align these other documents was identified this was noted as a recommendation. Any relevant research is referenced throughout the review. Funding policy is reviewed in Chapter 4 given the strong link to the funding research questions.

Local authorities (LA) and road controlling authorities (RCAs) also have the power to enact bylaws for areas within their responsibility. These bylaws are specific to each authority and can impact on pedestrian safety or mobility in on and off-road environments within the RCA or LAs control. The scope of this review does not include a review of bylaws.

The documents reviewed are shown in **Figure 2.1**.

Legislation	NZTA pedestrian guidance	Other NZTA guidance	AS/NZ Standards	Austroads
<ul style="list-style-type: none"> • Land Transport Act • Land Transport Management Act • Road User Rule • Traffic Control Devices Rule 	<ul style="list-style-type: none"> • PPDG • RTS 14 	<ul style="list-style-type: none"> • TCD Manual • Bridging the Gap • State Highway Control Manual • Road Safety Audit Procedures • NAP Guidelines • Speed Management Guide 	<ul style="list-style-type: none"> • AS/NZS 4121:2001 • AS1428.4.1:2009 • NZS 4404:2010 	<ul style="list-style-type: none"> • Guide to Traffic Management • Guide to Road Design • Guide to Road Safety

Figure 2.1 Documents reviewed

2.2 New Zealand Legislation

Legislation is reviewed in terms of the relationship between the current guidance and rules, not whether laws should be changed to address aspects such as giving higher priority to pedestrians. The key transport legislation relating to walking is contained within the following Acts and Rules:

- Land Transport Act 1998 and amendments
- Land Transport Management Act 2003 and amendments
- Land Transport (Road User Rule) 2004 and amendments
- Land Transport (Traffic Control Devices Rule) 2004 and amendments

Other acts that are relevant to walking are listed below, these are not reviewed in detail however it is acknowledged that they have a bearing on pedestrian access and the built environment:

- New Zealand Public Health and Disability Act 2000
- Resource Management Act 1991
- Building Act 1991
- Building Regulations Act (includes the Building Code)
- Human Rights Act 1993
- Local Government Act 1974
- Walking Access Act 2008

The **Land Transport Act** sets out the framework for how the land transport system is used. It sets out the primary responsibilities of users of the land transport system, driver and motor vehicle licensing, and offences, penalties and enforcement powers. Interestingly, this Act does not define a pedestrian (however different types of vehicles are defined). The Act includes clauses setting out how pedestrians, as road users, should behave or can be directed to behave in certain circumstances for example, by enforcement officers.

The **Land Transport Management Act** (LTMA) established the legislation giving delegated power to the NZ Transport Agency to manage the land transport system on behalf of the government. The aim of the Act is, 'to contribute to an effective, efficient, and safe land transport system in the public interest'. The Act makes provision for funding and policy direction to be guided by the National Land Transport Programme (NLTP) and Government Policy Statement (GPS). The Act is not about users or vehicles and as such there is no mention of 'pedestrians', however it sets out the overall management of transport in New Zealand.

The **Road User Rule** (RUR) outlines requirements for road users including pedestrians. It defines how road users should interact, for example, it defines that when a green walking human figure is displayed at traffic lights then drivers must give way to pedestrians. The RUR requires that a driver must not drive a motor vehicle along a footpath (except for a moped / motorcycle in the course of delivering newspapers or printed material). There are also clear rules around pedestrian crossing use and driver expectations. The RUR sets up the framework for many of the rules in the Traffic Control Devices Rule that are then translated in the Traffic Control Devices Manual.

The **Traffic Control Devices Rule** (TCD) is the legislative framework that specifies the requirements for traffic control devices on New Zealand roads and the functions and responsibilities of road controlling authorities in providing these devices. It states, 'The objective of the rule is to contribute to a safe and efficient road network by ensuring that traffic is controlled by means of traffic control devices that are safe, appropriate, effective and uniform and are applied in a consistent manner.'

Both the RUR and TCD Rules define a pedestrian and footpaths as described below.

'Pedestrian:

(a) means a person on foot on a road; and

(b) includes a person in or on any contrivance equipped with wheels or revolving runners that is not a vehicle.'

'Footpath means a path or way principally designed for, and used by, pedestrians; and includes a footbridge.'

Legislation – summary

The key transport legislation appears to set a good framework for walking. The key requirement when planning or designing for walking within existing legislation is to meet the criteria set out in the relevant government policy (refer to Chapter 4). The PPDG and RTS14 are not referred to in the legislation. This is not a concern as legislation does not generally reference external guidance.

The Ministry of Transport are investigating options for amendments to several give-way related road user rules. This investigation will inform policy advice regarding potential rule changes, including giving pedestrians right-of-way over turning traffic when crossing side roads (Turner et al, 2016). This would require design guidance to be updated. Investigation into the rule related to use of the footpath by cyclists is also being reviewed (Ward and Mackie, 2016). No decision on any change to legislation has been made at this time.

2.3 Core Pedestrian Guidance documents

Pedestrian Planning Design Guide

Overview

The PPDG is recognised internationally as a best practice guidance document. However, it was last published in 2009 so is now almost 10 years old. A summary of the material contained in the guide is presented in **Table 2.1**. The document is currently available as a hard copy and on-line as PDF documents. Users can download the guide as one document or individual chapters. There is reference to the 2003 version of RTS14.

Table 2.1 Existing PPDG structure and content

Chapters	Section Name	Description of Content
	Glossary	Provides a brief explanation of the terminology used within the PPDG document.
1	Introduction	Provides an overview of the background, purpose and methodology of preparing the PPDG and outlines the structure of the document.
2	The Planning and Policy Context	The planning and policy context introduces the concept of what is a pedestrian and gives an overview of the planning environment for pedestrian planning and design.
3-6	The Principles of Pedestrian Network Planning	This section of the guide provides a description of: <ul style="list-style-type: none"> – Pedestrian characteristics, preferences and activity – Community walkability – Approaches to providing for pedestrians – Overview of the components of the pedestrian network including the transport hierarchy, pedestrian precincts and shared zones.
7-13	The Pedestrian Network Planning Process	This section provides details on: <ul style="list-style-type: none"> – The planning approach including development of area wide plans to plan and prioritise investment in walking – Tools and processes available to assess the demand for walking and how to involve the local community – How to measure walkability – How to prioritise schemes and measures – How to implement projects that provide for pedestrians.
14-18	The Design of the Pedestrian Network	This section provides design guidance with design criteria, dimensions and where appropriate cross sections or standard details for the following types of facilities: <ul style="list-style-type: none"> – Footpaths – Crossings – Guiding pedestrians – Lighting the network – Maintenance
19-20	Post Design Issues	This section is focused on monitoring pedestrian activity and marketing to make the best use of new and existing facilities.
A1-5	Appendices	<ul style="list-style-type: none"> • Characteristics of pedestrians • Sign face design details • Issues to address in District Plans • References

Review findings

Appendix A outlines the gaps identified in the PPDG, the key gaps are discussed below.

The existing policy section of the document relates to the strategies and policy direction that was relevant at the time of publication. The document sets out which pieces of legislation relate to transport. It sets out the purpose of the guide but does not give specific detail with regards to the status of the document in relation to legislation or rules.

The policy section highlights that there are many policies and plans relevant to walking that should be considered. The policies referred to are shown in **Figure 2.2**. Acknowledging the number of policies included in the PPDG, there is potential for them to not be aligned or not referred to due to project time and budget constraints.

Local Strategies	Regional Strategies	Non Transport Strategies
<ul style="list-style-type: none"> • Local transport strategies • Local walking strategic plans • Neighbourhood accessibility plans • Road safety strategies and plans • Safety management systems • District and city plans • Long-term council community plans • Asset management plans • Codes of practice • Design guides • Open space access plans • Travel demand management strategies 	<ul style="list-style-type: none"> • Regional land transport strategy • Regional walking strategy • Regional road safety plan • Regional growth strategy • Regional policy statement • Regional travel demand management strategy (under the regional and transport strategy) 	<ul style="list-style-type: none"> • Health • Tourism • Heritage • Environmental protection • Urban design and form • Planning and development • Regeneration • Social inclusion • Recreation • Economic development • Injury prevention • Disability access

Figure 2.2 Pedestrian related policies and strategies (as per PPDG Planning and Policy Context Chapter)

The policy section is focused on the vision and desired outcomes set out in the then current, 'Getting There – On Foot, By Bicycle' walking and cycling strategy published by the Ministry of Transport in 2005. The vision of the strategy was, 'A New Zealand where people from all sectors of the community walk and cycle for transport and enjoyment.' (MoT, 2005). As such, the focus of the policy section was to encourage Local Authorities to develop their own walking and cycling strategies.

Under revisions to the Land Transport Management Act, Regional Land Transport Strategies have been replaced by new format Regional Land Transport Plans, this needs to be reflected in the PPDG.

Many authorities did prepare walking and cycling strategies. A review of these documents was undertaken as part of two research projects. Land Transport Research Report 274 (Macbeth et al, 2005) reviewed existing walking and cycling strategies and found that only one third of councils had a strategy at that time. The good practice walking strategies highlighted in the research were for the Auckland and Wellington regions, Hamilton city and Christchurch city. Further research three years later (ViaStrada, 2008) found that two thirds of local authorities had developed walking and cycling strategies. The research identified that most of the actions in the strategies had not been implemented. The strategy development was linked to the funding structure of that period. Specifically, that if schemes were included in the overarching plan and contributed to the total estimated increase in pedestrian and cycle use, funding was easier to obtain than meeting some of the more onerous Economic Evaluation Manual procedures.

The existing PPDG has nine primary characteristics of a walkable community (compared to five for cycle routes):

- Connected
- Legible
- Comfortable
- Convenient
- Pleasant
- Safe
- Secure

- Universal
- Accessible

These characteristics are robust but not necessarily easy to remember. Refining the characteristics may improve alignment and the opportunity for practitioners to easily recall the basic design principles.

Enhancing the planning section of the document with practical advice on how the guidance can be incorporated into local policies would provide a more useful outcome and encourage more people to refer to the section.

There is currently no direct reference to road safety or legislation except for some analysis and discussion on pedestrian injuries and fatalities caused by motor vehicles. A useful update to the guide would be to add a section on the Safe Systems approach, Speed Management Guide, and road safety improvements that have the most positive impact on pedestrian safety. In particular, the issue of school zones where safe and appropriate speed limit is applied during school zone hours needs to be discussed, acknowledging the current urban school zone speed limit of 40km/hour may need to be revisited to align with the principles of the Speed Management Guide.

Some context around how pedestrian injuries occur could be useful from a context perspective, this is compiled annually by the Ministry of Transport (MOT, 2017). There is detailed discussion around trips and falls that needs to be updated to reflect more recent research (Firth and Thomas, 2011).

The One Network Road Classification (ONRC) and development of Network Operating Frameworks and Plans (NOFs and NOPS) also needs to be outlined in the planning material.

The definitions provided within PPDG are consistent with the definitions within legislation as discussed earlier.

The design section provides good standard details but could be improved by adding design details for elements such as accommodating pedestrians within car parks. Good practice is evolving and the guidance needs updating to reflect this, for example, the design and implementation of shared spaces, shared paths, pedestrian countdown timers and safety of slip lane arrangements. Shared space streets are becoming more common, even in smaller towns (Figure 2.3). Pedestrian interaction with separated cycleways at bus stops and crossings is covered within the CNG so this needs to be referenced in the pedestrian guidance.



Figure 2.3 Example of shared space street in small regional town (Kaiapoi)

There needs to be a section relating to overall street design, as currently pedestrian design sections are limited to 'footpaths' and 'crossings'. Consideration of the entire street and how this functions for people walking is required, this links to road space allocation issues, Network Operation Plans (NOPS) and urban design. Guidance for temporary, transitional and trial projects also needs to be included.

The railway crossings section can be updated to reflect the recent guidance developed by NZ Transport Agency and KiwiRail.

The post-implementation section lacks detail and could provide more guidance and case studies. The prioritisation and funding guidance needs to be updated to reflect the GPS and business case approach. There is a need for guidance on pedestrian levels of service. Technology has also advanced which means that more tools are available to monitor and

collect data on pedestrian activity, and updates to the guidance should reflect this change. Valuing walking is also an area where recent work could be referenced in the PPDG, such as Valuing the Public Realm toolkit (Boffa Miskell, 2017).

There are links to several other resources available on the PPDG webpage. These are listed in [Table 2.2](#) along with commentary on the relevancy and status of each resource. The Austrorads' Australasian Pedestrian Facility Selection tool and updated RTS14 should be referenced within the PPDG. The value of non-motorised user reviews and community street reviews need to be considered and if valuable, incorporated in the online guidance as appropriate.

Table 2.2 Additional resources provided alongside PPDG (on the website)

Name of procedure	Status	Comment
Pedestrian crossing facility calculation tool and guidelines for the selection of pedestrian facilities	Version 1.2 2007	Superseded by the Australasian Pedestrian Facility Selection Tool
Non-motorised user review procedures	Interim guideline – for trial and comment, 2006	No change to status since 2006
Community street reviews	Provided on a separate webpage www.levelofservice.com	Some work to refine process is underway in Auckland (Gascoigne and Burdett, 2018)
RTS14 – Guidelines for facilities for blind and vision impaired pedestrians	2007 draft	Superseded by most recent version published in 2015

Conclusion

Overall, the PPDG is still relevant, and the pedestrian design section content is likely to require minimal amendments but can include additional information to reflect recent design developments. The policy section is out of date and although the planning section provides useful information, it is likely that it is not referred to as much as the design section.

Incorporating the content of the PPDG into an online resource similar to the NZ Transport Agency Cycling Network Guidance (CNG) would make the material easier to access and allow cross referencing however this is subject to a content specific search function given it is part of the wider NZ Transport Agency website.

The gaps identified are outlined in more detail in [Appendix A](#). The key gaps identified from the review are listed below:

- Reformat the PPDG into an online resource including updated structure, relevant links between sections, links to other resources and updated photographs.
- Ensure definitions in the PPDG are consistent with other standards and policies and include more recently used terms such as One Network Road Classification and Network Operating Plans.
- Update policy section to reflect current Government Policy Statement and policy context including Safer Journey Strategy and the Safe Systems approach, health policies and legislative framework for walking.
- Widen the explanation of footpath users and their needs to include for example; children on bicycles, the elderly, mobility scooters and double prams.
- Update pedestrian activity data and crash statistics.
- Update urban form section to reflect 'place' and revise criteria for walkable communities.
- Add section on street design (including transitional projects) to promote an integrated approach.
- Link to Australasian Pedestrian Facility Selection Tool and update any guidance relating to crossing types.
- Update guidance for shared zones, shared use paths, railway level crossings and slip lane treatments.
- Identify best practice Pedestrian Level of Service tool.
- Update prioritisation and funding guidance for pedestrian facilities including reference to the business case process.
- Link to guidance on universal design and planning and designing for people with disabilities including RTS14 content.
- Update guidance on how to measure and monitor pedestrian activity.

RTS14 – Guideline for facilities for blind and vision impaired pedestrians

Overview

Road and Traffic Standard 14 (RTS14) was most recently published in 2015 and provides guidance that specifies the design, installation and performance standards of pedestrian facilities for people with disabilities, especially for those who are blind or have low vision. As well as pedestrian facility design guidance it details the use of two features; tactile ground surface indicators (TGSI) and audible tactile traffic signals (ATTS).

The use of the document is not compulsory in New Zealand at present but is a means of compliance with *NZS 4121 2001 Design for Access and Mobility – buildings and associated facilities*. It was envisaged that RCAs will adopt the guideline as part of their safety management systems. The document was developed as a result of initial representation from the Blind Foundation. Therefore, it is focused on provision for blind and visually impaired users. In principle, the design guidance is inclusive but is not necessarily explicit on how to design to accommodate other types of disabilities.

RTS14 has a slightly different structure to the PPDG reflecting the technical specification content of the document. The structure of RTS14 is shown in **Table 2.3**. It is available online on the NZ Transport Agency website as a PDF download.

Table 2.3 RTS14 Structure

Section	Section	Description of Content
1	Document Information	Purpose Development Content Status Referenced Documents Glossary
2	Installation Priority	Application and priority Tactile Ground Surface Indicators Audible Tactile Traffic Signals
3	Understand Blindness and Visual Impairment	Background Orientation General Walking Environment Crossing Roads Detection of Road Crossing Points
4	Pedestrian Facility Design Information	Universal Design Principles Key Design Principles Continuous Accessible Path of Travel Obstacles Kerb Crossings at Road Crossing Point Kerb Ramps Typical Design of Kerb Ramps Road Crossing Points at Corners and Intersections Intersection Radius Intersection Radius Design Mitigation Measures.
5	Tactile Ground Surface Indicators	Outlines all design requirements for the installation of TGSIs
6	Audible Tactile Traffic Signals	Outlines all design requirements for the installation of tactile indicators at traffic signals

Review findings

Appendix A outlines the gaps identified in the RTS14. These are discussed below. The principles of the PPDG are echoed in RTS14 and throughout the document the reader is directed to the PPDG for more information.

The document is difficult to use unless a full PDF is downloaded and the search function is used to find particular content. Transferring the content to an online portal such as the Cycling Network Guidance (CNG) would allow easier navigation and better linkages between different aspects of the guidance and other guidance documents. However, it would still need to be available as a digital (for example as a .pdf file) download for users such as contractors who are onsite installing tactile pavers.

The guidance provides best practice examples, where kerb radii permit suitable placement of tactile paving. In practice, the kerb radius is often dictated by swept path requirements for vehicles which restricts the opportunity to provide tactile paving according to best practice. A positive aspect of the guidance is that it provides both a standard detail and a photograph of arrangement used in practice. An example of this is shown in **Figure 2.4**.

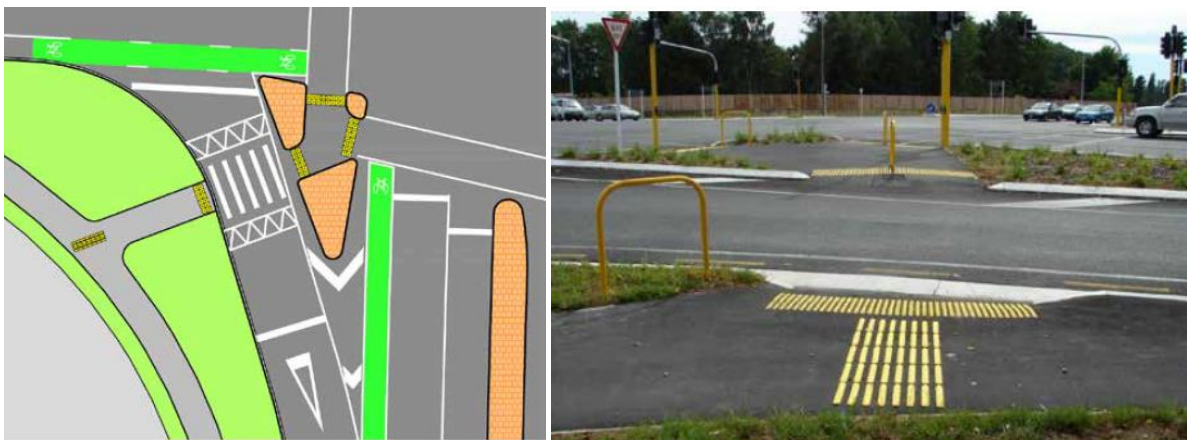


Figure 2.4 Example of TGSI placement (reproduced from RTS14)

Anecdotally, there is still a lack of understanding within the industry of why tactile paving is required and what its purpose is. Training and education would assist in filling in knowledge gaps and instil better practice in the planning and design of schemes. Enhancing available audit tools and ensuring that tactile paving provision is considered in the early stages of planning would also assist in maximising the number of positive design outcomes.

Visual contrast is a vital design element for people with visual impairment but is a cause of much debate in larger urban design schemes. Compromises have been developed with stainless steel tactile paving being used. This review is an opportunity to investigate international case studies on how this matter has been overcome and if there are any useful learnings that could be implemented in New Zealand. A discussion of design of shared spaces is included within the current RTS14 document however the design and implementation of shared spaces in New Zealand has developed since the latest version of the document was published.

Conclusion

Integrating RTS14 content into the potential PPDG online guidance has merit as this would further embed inclusive design in policy and streamline sources of information for users. However, it would still need to be available as a digital (for example as a .pdf file) download for users such as contractors who are onsite installing tactile pavers.

The key gaps identified in the review of RTS14 are outlined below with a detailed table in Appendix A:

- Review the existing bus stop tactile paving arrangements
- Clarify guidance around retrofitting tactile pavers into existing streetscape
- Expand guidance on installation and maintenance implications of different types of TGSI.
- Consider whether the two types of TGSI currently available in New Zealand adequately provide for all design circumstances.

Traffic Control Devices Manual

Overview

The Traffic Control Devices (TCD) Manual provides guidance on industry best practice including, where necessary, practice mandated in law in relation to the use of traffic control devices. The manual, which is still under development, comprises 15 documents and is being developed by the NZ Transport Agency under the guidance of a working group of practitioners. The manual is available on the NZ Transport Agency website with parts downloaded as PDF documents. The parts of the manual are outlined in **Table 2.4**. Parts 4 and 5, providing guidance at and between intersections respectively are currently being developed. As such, they cannot be included in the review. The Manual of Traffic Signs and Markings (MOTSAM) Part 1: Signs and Part 2: Markings therefore still provides guidance for general use of traffic control devices at and between intersections.

The pedestrian elements of each of the published sections of the TCD Manual are outlined in **Table 2.4**.

Table 2.4 TCD Manual structure (as defined on the website)

Part	Title	Status	Reference to PPDG	Pedestrian content
	Sign specifications	Published	No	The sign manual includes details for 16 pedestrian specific signs. The signs provide for shared use facilities, pedestrian routes and temporary traffic management signs for when pedestrian routes are re-routed.
	Traffic signal specifications	Planned	No	Assume this is P43 Specification for Traffic Signals that is predominately related to signal components. References RTS14
	Marking Specifications	Under consideration	n/a	Refer to MOTSAM Part 2 Markings
1	General requirements for signs	Published	Yes	Various guidance relating to TCD rule requirements.
2	Direction, service and general guidance signs	Published	Yes	No standard directional signs exist for pedestrians. Various guidance relates to pedestrians.
3	Advertising signs	Published	Yes	Guidance states that advertising signs should not reduce footpath width to less than 2m
4	Traffic control devices for general use - at intersections	Planned	n/a	These two parts will provide important content for providing for pedestrians.
5	Traffic control devices for general use - between intersections	Planned	n/a	
6	Speed Management	Published	n/a	It is assumed this has been replaced by the Speed Management Guide.
7	Will be the existing Part 13 - parking	n/a	n/a	n/a
8	Code of practice for temporary traffic management	Published as COPTTM		TMPs need to consider footpath users. A detailed review of COPTTM is not part of this review. A separate review is underway by NZ Transport Agency and this should be considering pedestrians.
9	Level crossings	Published	No	Includes pedestrian level crossing design requirements however a more recent guidance document has been developed by NZ Transport Agency and KiwiRail should be referenced here

Part	Title	Status	Reference to PPDG	Pedestrian content
10	Motorways and expressways	Published as MOTSAM Part 3	No	Also known as MOTSAM Part III. Guidance limited to signs directing pedestrians to emergency telephones.
13	Parking control – will be renumbered to part 7	Published	No	Various references to consider pedestrians when designing and implementing car parking.
14	Template and designs		n/a	Does not seem to exist.
	Definitions	Published	No	Pedestrian has same definition as in law but it includes a note to readers that a pedestrian does not include a person on a mobility device or a wheeled recreational device although these users may use a footpath, this contradicts the definition in legislation
	References	Published	No	Also refers to old version of RTS14.
	MOTSAM Part 2 Markings	Published	Yes	Includes pedestrian crossing markings. References 2007 LTNZ version of PPDG.

Some parts of the TCD Manual and MOTSAM already refer to PPDG. Parts 4 and 5 of the TCD Manual that are under development should include more detailed guidance on designing for pedestrians at and between intersections. It will be important to refer to and be consistent with the PPDG and RTS14.

Conclusion

The review highlighted the following improvements could be made to the TCD Manual:

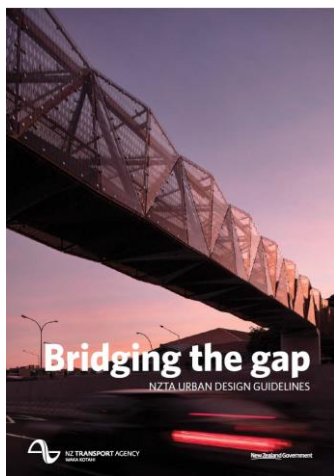
- Ensure Parts 4 and 5 of the manual which are currently under development are consistent with and reference the PPDG, and RTS14 guidance.
- Modify or clarify the definition of pedestrian within the Definitions part of the manual so as not to contradict the PPDG definition.
- Ensure the TCD Manual contents reference the pedestrian and cycle level crossing guidance (Turner et al, 2017) developed to supplement Part 9.

Bridging the Gap

Overview

The NZ Transport Agency published 'Bridging the gap – NZTA Urban Design Guidelines' in 2013. Within the document the NZ Transport Agency committed to good urban design and contributing to a sense of place by ensuring transport solutions meet quality urban design principles.

The purpose of the document is to provide guidance for NZ Transport Agency project managers and consultants responsible for the planning, design and implementation of NZ Transport Agency projects. The structure of the guide is shown in **Figure 2.5**. The structure aligns well with the PPDG structure. It is currently available as a hard copy or an online pdf version on the NZ Transport Agency website.



- 1**
SECTION 1: POLICY
 Presents the policy underpinning urban design within the NZTA, including statutory requirements.
- 2**
SECTION 2: URBAN DESIGN REQUIREMENTS AND PROCESS
 Sets out the NZTA's urban design requirements and outlines how urban design must be addressed and integrated with other activities throughout the process of planning, designing, implementing and maintaining highway projects.
- 3**
SECTION 3: URBAN DESIGN PRINCIPLES
 Describes 10 key principles of urban design for transport projects. The purpose of these principles is to guide decision-making on fundamental rather than detailed aspects of transport projects.
- 4**
SECTION 4: DESIGN OF HIGHWAYS
 Supplements the high level design principles of section 3 by providing detailed guidance on specific components of transport projects such as highway structures, noise barriers, pedestrian and cycle facilities and highway furniture.

Figure 2.5 Bridging the gap format

The guidance focusses on highways schemes due to its purpose and as such does not cover other types of schemes that are likely to be implemented by local authorities such as shared spaces, road space allocation in local areas or pedestrianisation of streets.

The guideline briefly summarises the documents outlined in **Figure 2.6** in light grey and directly references the documents highlighted in dark grey.

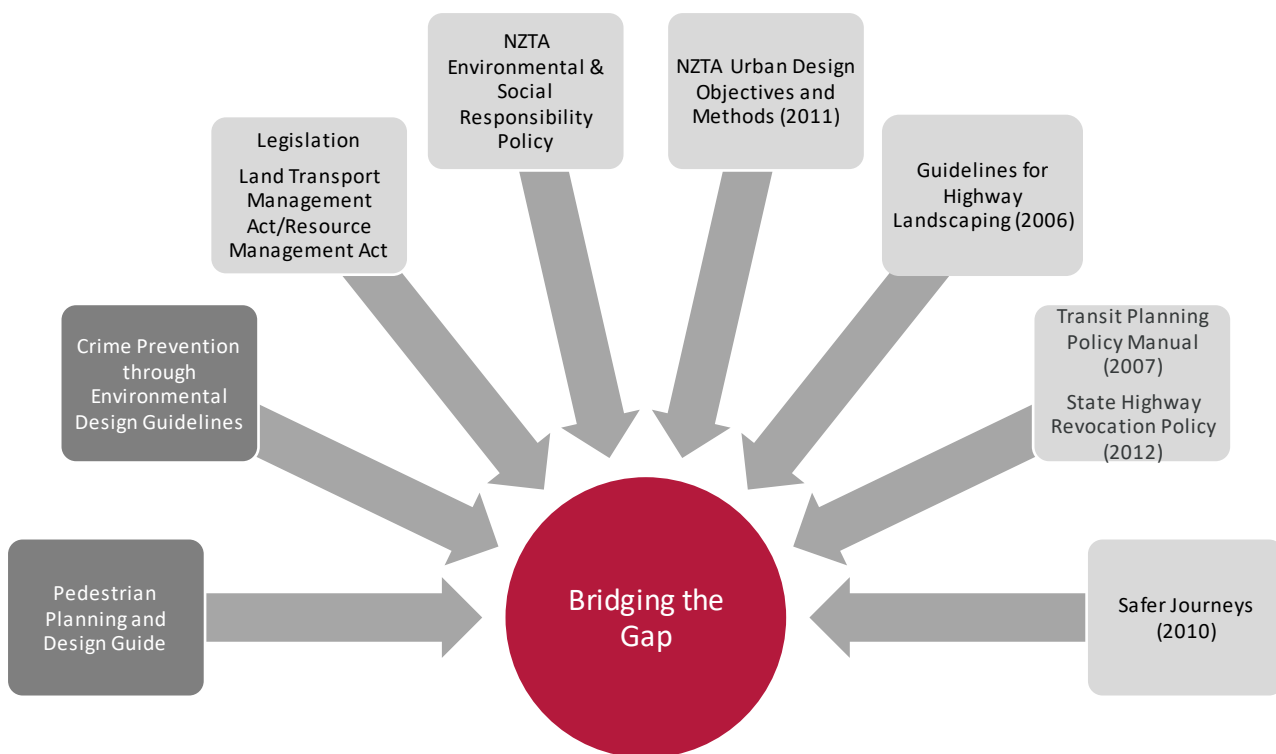


Figure 2.6 Bridging the gap reference documents

The needs of pedestrians are generally well considered within the document with some of the key considerations focused on reducing severance and providing for the most vulnerable pedestrians. The guide includes a whole section on supporting walking and cycling including highlighting design issues for pedestrian paths and crossings. The document directly references the PPDG and states that it '*should inform any State Highway project*'. The guide also expands on the principles outlined in the PPDG that directly influence urban design including the planning and design of pedestrian paths and crossings.

The document currently lacks a discussion on the requirements of people with disabilities and the concept of universal design. As such it does not reference RTS14, NZS 4121:2001, NZS 1428.4.1:2009 or key principles such as 'accessible paths of travel', or the requirements for visually contrasting materials and tactile paving. The document would also benefit from providing urban design teams with methods of how to audit a scheme for people with disabilities and how to engage with key stakeholders in the design process.

Chapter 4.5 covers pedestrian paths and states that "*As a rough guide, pedestrian footpaths should have a clear width (ie clear of obstructions such as vegetation, street furniture, sign posts or light columns) of no less than 1.8m. Near major pedestrian generators such as schools or parks, the minimum clear movement width should be 2.4m.*". This is generally aligned with the PPDG except the PPDG acknowledges a minimum of 1.5m.

Bridging the Gap mentions the safety audit process and indicates that non-motorised user audits should be used if a safety audit, 'fails to address pedestrians and cyclists'.

In addition, the document includes an Urban Design and Landscaping Framework (UDLF) that provides the basis for review through the project stages. A review template provides the opportunity for a qualitative review of the design including transport specific and related principles including:

- integrating transport and land uses;
- integrating all modes of movements;
- supporting community cohesion;
- maintaining local connectivity; and
- creating positive road users' experience.

However, it is not known if these assessments are used for all State Highway projects and how well these address pedestrian issues. It is also not known how often a non-motorised user audit is carried out after a safety audit has been completed and whether these have provided the opportunity to address any concerns that may have been identified.

Conclusions

Bridging the Gap provides comprehensive guidance of how to incorporate urban design into NZ Transport Agency controlled schemes.

The review highlighted the following improvements could be made to Bridging the Gap:

- Add reference to the principles of universal design and the needs of disabled users. This should include specific reference to relevant guidance such as RTS14 (or its successor) and relevant NZ Standards.
- Clarify use of non-motorised user audits and road safety audits (with relevant references). There is also an opportunity to build on and expand the scope of the document to create a national urban design manual for all schemes, not just NZ Transport Agency projects. This would require expanding the content to include a wider range of scheme types such as shared spaces, pedestrianisation, and road space reallocation. This is outside the scope of this research project.

State Highway Control Manual

Overview

The State Highway Control Manual was published in 2013 by NZ Transport Agency and is available both in print and online as a PDF on the NZ Transport Agency website. The document sets out the legislative powers and policies for managing and operating the state highways of New Zealand. The guide is aimed at NZ Transport Agency staff, consultants, local authorities and other agencies who have any involvement in the management of state highways.

Pedestrian planning and policy review

The document sets out regulations that result from the powers outlined in the Transport Act which have a direct impact on provision of pedestrians. These include the marking of pedestrian crossings and permitting school patrols. The manual does not reference the PPDG or RTS14.

Pedestrian design review

The manual is focused on the management of state highways rather than design but it includes design guidance for pedestrian crossings, rest areas and motorway service centres. The manual refers to *NZS 4404: Code of Practice for Urban Land Subdivision Guidelines* for the design and detailing of pedestrian footpaths but does not refer to the PPDG. The manual has a good focus on safety including providing for people who have left their vehicle and need to walk to facilities. There is consideration of lighting and pedestrian circulation requirements. The manual also references the TCD Manual and MOTSAM Part 2 to provide detail on how to design and implement pedestrian crossings. The manual also states that, 'New or upgraded pedestrian crossings shall comply with AS/NZS 1158.4:2009 *Lighting for roads and public spaces – Lighting of pedestrian crossings*.'

The manual lacks guidance on the provision of mobility car parks or references to how they should be designed to meet the criteria set out in *AS/NZS 4121:2001*. The manual does not reference any design standards in terms of providing tactile paving. It is acknowledged that on rural sections of state highway the use of tactile paving may be limited but as the manual also serves as guidance for urban sections of state highway, it should reference the standards and guidance for correct placement of tactile indicators.

The manual includes a requirement for pedestrian paths to be between 900mm to 1.8m depending on expected pedestrian volumes which is inconsistent with the PPDG which states a 1.5m minimum width so that mobility impaired are catered for.

Conclusion

The review highlighted the following improvements could be made to the State Highway Control Manual:

- The key improvement would be to reference the PPDG and RTS14 as the manual currently refers to NZS4404 only. Ideally the manual should also reference Bridging the Gap and NZS 4121:2001.
- Ensure guidance on the widths of pedestrian paths is consistent with the PPDG.
- Guidance or reference to mobility parking requirements in rest areas and service centre car parks and how these should be located and designed should be included.
- Diagrams to illustrate desired pedestrian layouts for rest areas/service centres would also be useful.

NZ Transport Agency Road Safety Audit Procedures

Overview

The Road Safety Audit Procedures for Projects (RSA) document was published by the NZ Transport Agency in 2013 as an interim publication. It is available as a complete PDF document on the NZ Transport Agency website. It states, 'A road safety audit is intended to help deliver a safe road system and is not a review of compliance with standards.' Hence the guideline does not reference any other guidelines or standards such as the PPDG or RTS14. Instead, the RSA process relies on an appropriately skilled and experienced road safety audit team to undertake the audits.

Road safety audits are best practice in transport projects and usually a requirement in road controlling authority's project processes for both existing roads and new roads to be vested in Council.

The document sets out what the scope of a safety audit is and how they contribute to achieving the Safer Journeys Road Safety Strategy. It outlines the types of projects that may be road safety audited, and the four stages when these audits should be undertaken including at concept stage, scheme design, detailed design and pre or post-construction.

Content review

The document states that road safety audits include pedestrian safety considerations but do not and should not act as a pedestrian design review. Key safe system considerations regarding pedestrians are provided throughout the document.

Safety aspects to be considered during an audit are listed in the high-level checklists supplied in an appendix. A checklist is provided for each of the four audit stages and includes consideration of vulnerable road users (pedestrians and cyclists) at each stage. The document directs the reader to more specialised checklists available in other publications including the Federal Highway Administration (FHWA) publication '*Pedestrian road safety audit guidelines and prompt lists*'.

The guideline does not include consideration of mobility impaired users during the road safety audit and this is considered a key weakness particularly as pedestrian audits (which would include details such as the correct installation of tactile paving) are rarely undertaken.

Conclusions

The review highlighted the following improvements could be made to the guidelines:

- Include consideration of mobility impaired users in the RSA checklists.
- Update road safety audit training to highlight the safety considerations of pedestrians and mobility impaired users.
- Replace FHWA pedestrian audit reference, preferably providing local NZ context.
- Consider whether separate pedestrian audit tools have merit and should be recommended or mandated for certain projects.

Neighbourhood Accessibility Plan Guidelines

Overview

The Neighbourhood Accessibility Plan (NAP) guidance was developed by the NZ Transport Agency and published in 2009. The process built upon Safer Routes to School programmes and was rebranded as 'Neighbourhood Accessibility Planning'. There is a suite of documents available on the NZ Transport Agency website informing professionals and providing supporting resources to undertake a NAP. The key documents referred to in this review are 'Information for local authorities planning on starting projects' and 'Guidelines for co-ordinators'.

The documents were published in the same year as the PPDG and as such do not reference it. In comparison, the PPDG does refer to the NAP guidelines. Although there is not a direct reference to RTS14, the guidelines encourage the participation of disabled people within the process and identify tactile paving as a measure that could be included in a NAP.

Pedestrian planning and policy review

The overall objective of neighbourhood accessibility planning, as defined in the guidance, is for local authorities and other relevant agencies to involve community groups in:

- identifying cyclist, pedestrian and shared mode user safety and access problems (including perceived barriers); and
- developing and implementing strategies (based on engineering, including environmental improvement, education, enforcement, promotion and policy) to address identified problems.

A fundamental component of a NAP is to engage with the local community to create awareness and maximise collaboration to deliver the best outcomes. A summary of the process is shown in **Figure 2.7**. The overarching aim of these projects is to encourage community ownership. The guidance documents set out a timeframe for completion of a NAP and what the requirements are for local authorities. The estimated time for completing a NAP is two years with most of the time allocation focused on investigation and developing actions plans (approximately 14 months).

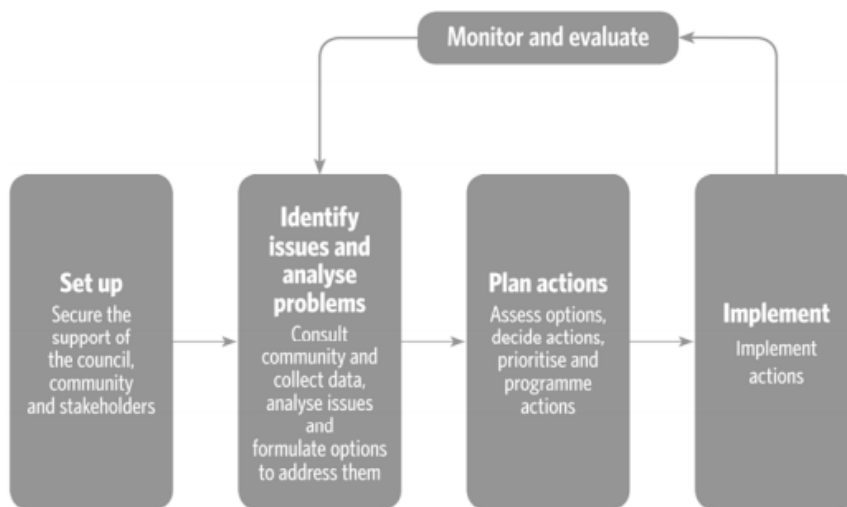


Figure 2.7 Overview of the NAP process

Pilot programmes were undertaken and the outcomes of one project is provided. The guidance is written positively to encourage local authorities to use the process to solicit more community engagement than a typical transport scheme. The investigation stage involved gathering both qualitative and quantitative data to inform the decision-making process which often included Community Street Reviews. This had a dual outcome of identifying specific issues along corridors within the area and contributing to community buy in. The process resulted in the development of an agreed action plan which included education, enforcement and engineering actions.

The NAP guidelines and associated resources provide a comprehensive package and step by step instructions for the development of plans. The presence of NZ Transport Agency in the development of NAPs was also a positive enhancement to encourage the uptake of the plans. However, the comprehensive approach did not attract a significant uptake of the process.

Conclusions

The NAP process created a framework to encourage long-term community participation and community buy in to identify improvements for a specific area with existing pedestrian and cycle safety concerns or high volumes of pedestrian and cycle activity. The review makes the following recommendations:

- Evaluate if the NAP process is still being used, and whether if it is a useful tool and/or could be streamlined;
- If so, then update the guidance to reference the PPDG, RTS14 and other relevant documents.

Speed Management Guide

The New Zealand Speed Management Guide (NZ Transport Agency, 2016a) was developed as a part of the New Zealand Safer Journeys Action Plan 2013-2015. The Guide includes a Speed Management Framework that enables road authorities to determine safe and appropriate speeds in a nationally consistent manner (Durdin et al., 2016).

The New Zealand Speed Management Framework considers the Safe System principles and recognises that speeds should reflect the function, design, safety and use of each road. However safe and appropriate speeds are not fully Safe System compliant speeds (Durdin et al. 2016), which would be considered to be safe for all road users. Also, speed can not only contribute to safety but also feeling comfortable walking in that environment, the speed management guide needs to reflect this. Volume 2 of the guide provides a toolbox on how to implement treatments and activities. The guide mentions comfort for drivers and cyclists but not pedestrians. The concept of ‘survivable speeds’ needs to be fully embedded within the guide.

The review makes the following recommendations:

- Review the Speed Management Guide to ensure that pedestrian aspects are covered from both a safety and comfort perspective – particularly urban roads in neighbourhoods, town centres and school zones where walking should be prioritised.

2.4 NZ and Australian Standards

The NZ Standards referred to within this document were established under the Standards Act 1998. The Standards Act does not establish the standards themselves as legislative documents. Instead the Standards are tools used to comply with statutory obligations of other Acts. The most relevant Acts associated with pedestrian and inclusive transport design are:

- Building Act 1991
- Building Regulations 1992 (includes the Building Code)
- Resource Management Act 1991
- Human Rights Act 1993
- Local Government Act 1974.

A prosecution could be brought against a defendant who does not comply with the Standard, both defence and prosecution would have to prove what is fair and reasonable. In terms of pedestrian design, this is most likely to apply to schemes or buildings that have not provided safe and/or adequate access to facilities for people with disabilities. Often, if poor design or access has been identified, the matter can be resolved during the design and construction phase and not result in a case being brought against an organisation.

NZS 4121:2001 Design for Access and Mobility - Buildings and Associated Facilities (NZS 4121)

NZS 4121 was published in 2001 and the purpose of the Standard is, 'to provide guidance for those who are responsible for making buildings and facilities accessible and fully usable by people who have disabilities'. It states that, 'reasonable and adequate provision is made for people with disabilities'. Further to this, 'what amounts to 'reasonable and adequate provision' in respect of access is a matter to be decided in the design of each building having regard to the need to assist and encourage people with disabilities to become socially and financially independent'.

The Standard refers to AS1428:4:1 1992 and RTS14. Both publications have been updated since the publication of the Standard. It does not reference the PPDG. The key design elements incorporated in the Standard are related to access, design and quantity of accessible car parking required. The requirements for the number of accessible car parks has been widely adopted in local district plan parking requirements, however the design and location of these spaces is often not implemented as per NZS4121.

AS/NZS 1428.4.1:2009 Design for Access and Mobility (a means to assist the orientation of people with vision impairment – Tactile ground surface indicators (NZS 1428.4.1))

NZS1428.4.1 sets out requirements for the design and application of tactile indicators for new building work in the internal and external built environment. However, it states that in New Zealand the standard applies in buildings and related areas and refers the reader to the PPDG and RTS14 for the design of pedestrian facilities and the application of tactile ground surface indicators on public roads and paths in New Zealand. Echoing this statement, RTS14 identifies that some solutions and examples provided within NZ1428 are inconsistent with good design practice and should not be implemented in New Zealand.

The key recommendation from this review is to consider whether NZS1428.4.1 should remain as a NZ standard or whether the standard could be discontinued with the parts that are still applicable incorporated into RTS14.

NZS 4404:2010 Land development and subdivision infrastructure (NZS4404)

NZS4404 was published in 2010 and is intended as a guide that can be adopted by local authorities for greenfield, infill and brownfield redevelopment projects. The overall structure of the guide is to provide a step by step process from the planning stages of developing a subdivision to construction. It is a comprehensive guidance document which references the PPDG, and Austroads guides. The document has only one reference to the provision of tactile paving at pedestrian kerb crossings and it does not refer to inclusive design or RTS14.

The guide provides a detailed overview of the types of roads that may be located within a subdivision and the expected requirements for lanes up to collector roads. General pedestrian design considerations are integrated well within the existing advice. The document also identifies the need to define a sense of place which by default is a pedestrian friendly concept. The road design standards include details regarding how pedestrians should be accommodated within the road cross section, for example on footpaths or shared with the movement lane depending on the link and place type of the road.

The review of NZS4404 identified that the standard could include the following references when it is next updated:

- Include reference to inclusive design and relevant standards such as RTS14.
- Include reference to the PPDG and Austroads Pedestrian Crossing Facility Selection Tool to identify appropriate pedestrian crossings within subdivisions.

2.5 Austroads guidance

Austroads guidance covers the design, construction, maintenance and operation of the road network in Australia and New Zealand. The guides have historically been purchased individually or as a set, however they are now able to be downloaded for free from the Austroads website.

Historically, the Austroads Guide to Traffic Engineering Practice Part 13: Pedestrians contained the majority of the advice regarding planning and designing for pedestrians. However, the current suite of Austroads guides is arranged by domain area and hence pedestrian issues are provided throughout the suite of guides. Of the 10 current Austroads guide series, the Guide to Traffic Management (AGTM) series, the Guide to Road Design (AGRD) series and the Guide to Road Safety (AGRS) series are the most relevant to this research as they contain advice and guidance on pedestrian issues.

Following publication of the new structure of the Austroads guides, a 'Cycling Aspects of Austroads Guides' document was prepared to assist practitioners in the planning, design, construction and management of cycling facilities. This document refers the reader to the relevant guidance from the AGTM, AGRD and AGRS series. No such document exists for pedestrian planning and design aspects of Austroads.

An Austroads project is due to commence in late 2018 to identify and fill gaps in the guidance regarding planning and designing for pedestrians. In 2013, an Austroads research report (Guide Information for Pedestrian Facilities, 2013) identified the location of the various pedestrian guidance within the Austroads guides as summarised below (Figure 2.8) and discussed in the following sections. However, as the Austroads guides are subject to continual review, some details relating to providing for walking may have changed since publication of the research in 2013.

Table 2.2: General pedestrian topics in Austroads Guides

Pedestrian topic	Guide	Part
General	Road Design	Part 4
Pedestrian design parameters	Road Design	Part 6A
Implications for design	Traffic Management	Part 7, section 3.8.2
Geometric requirements	Road Design	Part 6A
Features of facilities	Traffic Management	Part 5 Table 3.2
Surface treatments	Road Design	Part 6A
Driveways and footpaths	Traffic Management Traffic Management	Part 7, sections 3.5.3 and 3.8.2 Part 11
Access to buildings	Traffic Management	Part 7, section 3.8.2
Joint pedestrian/cycle facilities	Traffic Management	Part 5
Road crossings	Traffic Management	Parts 5 and 6
Pedestrian guidance measures	Traffic Management Traffic Management	Part 10 Part 6 Table 3.3
Access to public transport	Traffic Management	Part 5 Table 3.2
Pedestrians at roundabouts	Traffic Management Road Design	Parts 6 and 8 Part 4B
Pedestrians at rail crossings	Traffic Management	Part 6
Shared zones	Traffic Management Traffic Management	Parts 6, 7 section 3.6.2 Part 8
Parking and pedestrians	Traffic Management	Part 11

Figure 2.8 General pedestrian topics in Austroads guides

Austrroads Guide to Traffic Management

The AGTM series contains 13 parts covering traffic management guidance for practitioners involved in traffic engineering, road design, town planning and road safety. An overview of the guidance within the AGTM that directly relates to pedestrians is provided in **Table 2.5**.

Table 2.5 Pedestrian elements of ATGM

Part	Publication date	Reference to Pedestrians
Part 1 Introduction to Traffic Management	2015	References pedestrians as road users.
Part 2 Traffic Theory	2015	References pedestrians crossing a road as a factor in traffic theory.
Part 3 Traffic Studies and Analysis	2017	Advice on designing and conducting pedestrian surveys, the levels of service advice does not consider levels of service for pedestrians.
Part 4 Network Management	2016	Includes a summary of considerations for pedestrian networks and crossings, including discussion of different pedestrian characteristics
Part 5 Road Management	2017	Road space requirements for different road users (including pedestrians) is provided, including general facilities in the road environment, pathways and crossing facilities.
Part 6 Intersections, Interchanges and Crossings	2017	Pedestrian needs at roundabouts, signalised intersections and mid-block crossings is provided, and also a section on pedestrian crossing facilities including general, traffic controlled, and shared space treatments.
Part 7 Traffic Management in Activity Centres	2015	References pedestrians throughout, discusses pedestrian streets, and considerations to design for pedestrians in activity centres. It also usefully includes a table referencing relevant material on pedestrian issues within other parts of the guide and other Austrroads guides.
Part 8 Local Area Traffic Management	2016	Design information and examples of a range of schemes and treatments to reduce traffic volumes and speeds on local streets and improve amenity and safety for residents, particularly pedestrians and cyclists.
Part 9 Traffic Operations	2016	The focus of pedestrian content is around the design of traffic signals to accommodate pedestrians.
Part 10 Traffic Control and Communication Devices	2016	Pedestrian design considerations including principles of good wayfinding, temporary traffic management treatment, how to mark crossings and manage pedestrian demand at crossings. It includes how older users and people with disabilities should be catered for.
Part 11 Parking	2017	The guide provides details on pedestrian treatment in car parks and pedestrian routes to and from parking areas. There is also a dedicated section on how to cater for people with disabilities.
Part 12 Traffic Impacts of Developments	2016	Guidance on the design and management of different land use developments including the need to accommodate pedestrian activity.
Part 13 Road Environment Safety	2017	Pedestrians are considered throughout the document which has a focus on implementing the Safe System approach. This includes advice such as separating vehicular and pedestrian traffic and outlining the role of road design and traffic management in providing roadside safety.

The guide provides a comprehensive overview of all elements of traffic management supported by research evidence. The needs of older people and people with disabilities are well covered within the documents. Detail on TSGIs is not included. The guides cross reference each other where required so when using the guides there is a strong chance that a user will need to refer to multiple guides.

Austrroads Guide to Road Design

The AGRD series provides detailed guidelines on the design of all components of a road network and is divided into 8 parts. An overview of the AGRD parts that directly relate to pedestrians is provided in **Table 2.6**, noting that parts 5, 7 and 8 are not relevant to this research as they are concerned with drainage, and investigation and design stages of projects.

Table 2.6 Pedestrian elements of AGRD

Part	Publication date	Reference to Pedestrians
Part 1 Introduction to Road Design	2015	References pedestrians as road users.
Part 2 Design Considerations	2015	Providing for pedestrians in design. Pedestrian activity and road functional use and the influence on design.
Part 3 Geometric Design	2016	Numerous references to considering / catering for pedestrians when designing roads and roadsides.
Part 4 Intersections and Crossings – General	2017	Includes pedestrian factors to consider when designing intersections and a chapter detailing pedestrian crossing treatments.
Part 4A Unsignalised and Signalised Intersections – General	2017	Includes sight distance requirements for pedestrians at intersections and crossings and other pedestrian considerations when designing intersections.
Part 4B Roundabouts	2015	Includes a chapter on treatments for pedestrians and cyclists at roundabouts.
Part 4C Interchanges	2015	Includes consideration of pedestrian facilities at interchanges.
Part 6 Roadside Design, Safety and Barriers	2010	Includes roads safety barriers for pedestrians.
Part 6A Paths for Walking and Cycling	2017	This part provides guidance specifically on planning and design paths for walking and cycling.
Part 6B Roadside Environment	2015	Pedestrians considered throughout the document.

Austrroads Guide to Road Safety

The AGRS covers road safety management in general and gives little attention to pedestrian issues particularly in the parts that have not been updated in the last 10 years. It is understood that a project to update the AGRS is due to commence soon, it is not known if this will include pedestrian guidance. An overview of the AGRS parts that directly relate to pedestrians is provided in **Table 2.7**.

Table 2.7 Pedestrian elements of AGRS

Part	Publication date	Reference to Pedestrians
Part 1 Road Safety Overview	2013	Minimal reference to pedestrians
Part 2 Road Safety Strategy and Evaluation	2013	Mentions consideration of pedestrians throughout the document.
Part 3 Speed Limits and Speed Management	2009	Mentions pedestrians in relation to setting speed limits in shared spaces.

Part	Publication date	Reference to Pedestrians
Part 4 Local Government and Community Road Safety	2009	High level and brief consideration of pedestrians in terms of the role of local government in road safety policies and programmes.
Part 5 Road Safety for Rural and Remote Areas	2006	Reference to pedestrians in terms of involvement in crashes in rural and remote areas.
Part 6 Road Safety Audit	2009	Outlines the road safety audit process including wide coverage of pedestrian issues when auditing schemes.
Part 7 Road Network Crash Risk Assessment and Management	2006	Minimal reference to pedestrians.
Part 8 Treatment of Crash Locations	2015	Consideration of pedestrian crashes is integrated throughout the document.
Part 9 Roadside Hazard Management	2008	Very brief mention of pedestrians in relation to roadside hazards.

The Guide Information for Pedestrian Facilities (Austroads, 2013) report also identified where the Austroads guides reference the PPDG. The research found that:

“Reference to the NZ Pedestrian Planning and Design Guide is included in several Parts of the GTM as follows:

- *GTM (Part 5), Table 3.1: Road space requirements for general traffic use – pedestrian space.*
- *GTM (Part 6), Table 3.3: Issues for different road user categories – issues and treatments for pedestrians; Table 8.1: Benefits of treatments – treatments, benefits and considerations for different categories of crossing facilities.*
- *GTM (Part 7), Section 3.3.1: managing travel demand and travel behaviour change.*

Substantial reference is made to the NZ Guide in Austroads GRD Part 6A with regard to the planning and design of footpaths, in terms of physical requirements (space, clearances, dimensions). “

Guide Information for Pedestrian Facilities (2013) also compared the contents of the PPDG with the Austroads guides to identify any gaps in the Austroads guides. It found that: *“While the majority of the NZ Guide content is reflected in the Austroads Guides, omissions or lack of detail are noted in the following areas:*

- *pedestrian requirements and characteristics in terms of space, density and speeds*
- *the vulnerability of pedestrians to serious injury in traffic, and the extent of pedestrian injuries and deaths*
- *walkability issues – assessing the walking environment from the pedestrian and community perspective*
- *determining practical levels of service for pedestrians at various facilities*
- *developing and implementing walking strategies and plans, including community involvement*
- *promotion and encouragement of walking activity*
- *signposting of off-road pedestrian paths and routes*
- *maintenance of pedestrian facilities.”*

The scope of Guide Information for Pedestrian Facilities (2013) did not include identifying gaps in the PPDG guidance.

Conclusions

The Austroads guides provide a comprehensive overview of all elements of traffic management and road design. The needs of pedestrians including older people and people with disabilities are generally well covered within the documents although multiple parts of the guidance may need to be referred to. Given the Austroads guidance will be reviewed for pedestrian content in the near future, it is not possible to draw any conclusion as to whether this guidance will be useful to the NZ context.

2.6 Conclusion

The NZ guidance review was aimed at helping to answer research questions 4 and 5 as discussed below.

Question 4 - Are there any technical planning and design guidance gaps in the PPDG and RTS14 guides?

The review of the PPDG and RTS14 identified areas where content can be updated, many of which can be achieved as a n update to the existing guidance documents.

Overall, the **PPDG** is still relevant but has some gaps as discussed below, refer to Appendix A for the full gap list.

Since its publication in 2007 the policy environment has changed and there has been increased use of treatments such as shared space streets and shared use paths. There is reference to RTS14, albeit the 2003 version. In principle, the guidance is inclusive but is not explicit on how it provides for the 1 in 4 New Zealanders with a disability, e.g. how design can be inclusive for people with disability issues.

The policy section is out of date and although the planning section provides useful information, it is likely that it is not referred to as much as the design section. The policy section relies heavily on councils producing a walking and cycling strategy, which is now not critical under the policy framework.

Enhancing the planning section of the document with practical advice on how the guidance can be incorporated into local policies would provide a more practical outcome and encourage more people to refer to the section. Reference to Safe Systems, the Speed Management Guide, the ONRC and NOPs is required. Further development of a 'level of service' for pedestrians is likely to be required. The Austroads Pedestrian Facility Selection Tool should be referenced in the guide.

The design section includes shared zones guidance, an assessment of how well these facilities have worked is required and some further guidance to support the findings is required. Referring to international experiences may also be useful for development of guidance for these street treatments. Likewise, shared use paths are more common, so further guidance to reflect any operational issues should be included in the guidance. The design section provides good standard details but could be improved by adding design details for elements such as accommodating pedestrians within off-street car parks. There needs to be a section relating to overall street design, as currently pedestrian design sections are limited to 'footpaths' and 'crossings'.

The post-implementation section lacks detail and could provide more guidance on monitoring. Technology has also advanced which means that more tools are available to monitor and collect data on pedestrian activity, and updates to the guidance should reflect this change.

The prioritisation section is an area where further work could be undertaken to develop tools to assist local authorities and RCAs to prioritise investment in pedestrian infrastructure.

There are several audit procedures available as resources on the NZ Transport Agency PPDG web page but most still have a draft or interim status and are not generally used during project development compared to road safety audits. Design for pedestrian movement is included in most transport schemes, an audit of these schemes is particularly important within the early stages of the process so that pedestrian provision including accommodating people with disabilities are considered from the outset.

Rather than developing multiple processes, it could be useful to develop a consolidated review procedure that meets the needs of all pedestrians, including people with disabilities. This would be accompanied by appropriate training.

Overall, **RTS14** is still relevant but has some gaps as discussed below, refer to Appendix A for the full gap list

The structure of the RTS14 reflects the technical specification flavour of the document, and it references the PPDG in a number of locations. The document was developed as a result of initial representation from the Blind Foundation, therefore it is focused on provision for blind and visually impaired users.

Integrating RTS14 content into the potential PPDG online guidance has merit as this would further embed inclusive design in policy and streamline sources of information for users. However, it would still need to be available as PDF download for users such as contractors who are onsite installing TGSIs.

The guidance provides best practice examples where kerb radii permit suitable placement of tactile paving. Diagrams illustrate the layouts for these small radii however in practice the kerb radius is often dictated by swept path requirements for large vehicles (if these are the design vehicle). This can restrict the opportunity to provide TGSIs according to this best practice for new and retrofit scenarios. Advice is required when these instances occur.

Anecdotally, there is still a lack of understanding within the industry of why tactile paving is required and what the purpose is. Training and education would assist in filling in knowledge gaps and instil better practice in the planning and design of schemes. The guide seeks that practitioners consult their local Blind Foundation representative. Where this is not feasible another mechanism that allows independent review of layouts should be considered. Enhancing available audit tools and ensuring that tactile paving provision is considered in the early stages of planning would also assist in the development of best practice design outcomes.

The design of shared spaces is included in the guidelines, this used the Auckland shared spaces as the testing ground. An assessment of how well these have worked is required to ensure the guidance is robust. Referring to international experiences may also be useful for the development of guidance for these street treatments. Likewise, many more shared pedestrian and cyclist signalised crossings have been developed since 2015. Assessment of the use of the green tactile pavers for the cycle crossing is required to ensure this guidance is robust. Consideration of whether the two types of tactile paving currently available in New Zealand adequately provide for all design circumstances is also required.

Question 5 - Is the use of the guides constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?

In short, not significantly, based on the desktop review. The summary discussion below outlines the conclusion with respect to legislation and other guidance and also identifies where some other NZ Transport Agency guidance could be improved to provide consistency. The industry survey and case studies will better inform this question as local processes may be more influential than the national level guidance reviewed in this chapter.

NZ Legislation

The key requirement within existing legislation is to meet the criteria set out in the Government Policy Statement. Without any changes to legislation, the only way to add 'more teeth' to existing and future pedestrian guidance documents and audits is to add a requirement to use the existing GPS and funding documents. The current GPS document makes strong provision for pedestrian planning and funding but this may not always be the case. Therefore, the inclusion of the use of pedestrian guidance through this mechanism cannot always be guaranteed. As road safety audits are now completed on most schemes, higher or more focussed consideration of pedestrians through this audit process may improve walking environment outcomes.

NZ Standards and Guidance

The review represents only a selection of policies and guidance documents that refer to or have an impact on pedestrian planning and design. Legislation clearly sets out that the GPS is the core document that sets government policy and funding criteria. As such, it is the primary policy that determines the priorities and funding levels for pedestrian infrastructure. After that, it is not always clear how often these documents are used by other professionals, which documents must be referred to and what weighting should be placed on achieving the objectives of non-statutory documents. To access all of the guidance documents, the audience must visit several websites and/or keep hard copies up to date. Developing a web portal providing a one-stop clearing house would assist in reducing the risk of relevant documents being overlooked and ensure up to date guidance and standards are applied.

Austrroads guides

The Austrroads guides will soon be reviewed in a similar way to this review and this is likely to result in updates to the guides. The situation with the current guides is much like the NZ guidance whereby increased use of shared space streets, shared use paths and shared pedestrian/cycle signalised crossings is not well reflected in the guidance. A 2013 review highlighted that aspects such as pedestrian level of service required development. At this stage the Austrroads guidance is unlikely to provide any guidance above and beyond what exists in NZ guidance.

NZ Transport Agency Guidance

The NZ Transport Agency has a range of other guidance documents that can influence pedestrian environment outcomes. The main guidance is the Traffic Control Devices Manual and MOTSAM. These include minimal pedestrian signs and markings but do provide the opportunity to develop tailored way finding strategies by referring to the PPDG. Chapters 4 and 5 of the TCD Manual are under development (these will replace MOTSAM Parts 1 and 2) and are likely to include more detailed guidance on designing for pedestrians at and between intersections. It is assumed these will refer to and be consistent with the PPDG.

The following additional NZ Transport Agency documents were reviewed for their relationship with the PPDG and RTS14.

- **Bridging the Gap (2013)** – Refers to PPDG and is generally consistent, except for the minimum clear width of footpaths. Does not reference RTS14. This guide should be referenced in PPDG. Some minor improvements recommended.
- **Road Safety Audit Procedures (2013)** – Does not refer to PPDG or RTS14, this could be helpful in the checklists. This guide should be referenced in PPDG. Some minor improvements recommended.
- **State Highway Control Manual (2015)** - Does not refer to PPDG or RTS14, it should do this instead of referring to NZS4404. This guide should be referenced in PPDG. Some minor improvements recommended.
- **Speed Management Guide (2016)** - Does not refer to PPDG or RTS14, probably not critical but this guide should be referenced in PPDG.
- **Neighbourhood Accessibility Plan guidance (NAP)** - Does not refer to PPDG or RTS14. This guide is referenced in the PPDG. Uncertain as to whether the guidance is being used and whether NAPs are still being developed.

3. Guidance Industry Engagement

3.1 Introduction

To help inform research on the use of pedestrian guidance, policy and planning tools that influence pedestrian travel in New Zealand, engagement with the industry was undertaken through an on-line survey. The engagement process was aimed at helping to answer the following research questions:

- Question 1 - How widespread is awareness of the pedestrian planning design guide and RTS14 amongst RCAs and other stakeholders such as developers and designers?
- Question 2 – Who is using the pedestrian planning and design guide and RTS14?
- Question 3 - How is the guide and RTS14 being used for planning or other processes?
- Question 4 - Are there any technical planning and design guidance gaps in the PPDG and RTS14 guides?
- Question 5 - Is the use of the guides constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?

The on-line survey was distributed to a range of people from the following industry groups:

- Engineering NZ Transportation Group
- Urban Design Forum
- Active Modes Infrastructure Group (part of the Road Controlling Authority (RCA) Forum)
- Shared Footpaths Working Group (part of the Road Controlling Authority (RCA) Forum)
- Traffinz
- Mayoral Forum
- NZ Transport Agency staff and various email distribution lists held by the agency

The survey was also sent to the NZ Property Council however they chose not to circulate this to their members. This meant there was lack of land developer feedback. This prompted a targeted engagement exercise discussed in Section 3.3.

A total of 236 responses were received. The questions and the full results are outlined in **Appendix B**.

3.2 Key findings

The survey results were useful in answering the research questions and provided insight into other matters that the PLG agreed would be useful to understand. The key findings are discussed below.

Respondents – sector and role

The consultant sector represented the majority of respondents (42%) closely followed by Local Authority staff representing 36% of responses. Of the remainder, 11% of responses were from 'Other' groups which included disability and elderly advocacy groups and urban design/landscape design consultants. The remaining 10% of responses were received from the Central Government sector.

Transport planning (23%) was the most common role, next were transport design (16%), urban design (12%) and safety (10%). The other roles represented included policy, project management, asset management, regulatory, education and governance.

18 respondents were from the advocacy, disability or health sectors, and from the general public (two people with an interest in this topic).

Awareness and use of the guide

There was a **reasonably high awareness of the PPDG** (72% of respondents) particularly in the planning and design sectors, both transport and urban design. Awareness by RCA (local authority and NZ Transport Agency) respondents was high at 78%. Developer awareness is harder to gauge but as they generally use designers this may not be an issue.

Based on the survey the **awareness of RTS14 is quite low overall** in the planning and design sectors (40% of respondents). Awareness of RCA respondents was higher at 63% but this is still not ideal. Transport planners and designers have a higher awareness than urban designers. Again, developer awareness is harder to gauge but as they generally use designers this may not be an issue, unless they predominately use urban designers who are less aware of the guidance.

The 32% of survey respondents that use the PPDG more frequently (daily, at least once a week or once a month) are predominately those in transport design or safety roles. 55% of regular users were consultants and 39% from local authorities. Only 5% of the respondents who are aware of the PPDG never use it, the majority use it at least once a year.

The 22% of survey respondents that use RTS14 more frequently (daily, at least once a week or once a month) are predominately those in transport design or safety roles. 58% of regular users were consultants and 38% from local authorities. 13% of respondents who are aware of RTS14 never use the guide, almost half (49%) refer to it at least once a year.

The majority indicated that the PPDG is used most for the design of pedestrian infrastructure and road design projects. The other more frequently cited uses are referencing best practice in reports, to inform safety audits, planning pedestrian networks, consenting and to inform peer reviews.

The majority of respondents indicated that RTS14 is used most for the design of pedestrian infrastructure and road design projects. The other more frequently cited uses are referencing best practice in reports, to inform safety audits, planning pedestrian networks, consenting, to inform peer reviews and because it is required as part of local guidance.

It was also determined that of the 28% of the respondents who were not aware of the PPDG in their role, 84% indicated that it would be useful. Likewise, of the 34% of respondents who were not aware of RTS14, 76% indicated that it would be useful.

Several respondents suggested that the PPDG and RTS14 guidance be combined.

Guidance gaps

26% of the respondents provided useful insight into what may be missing from the PPDG and 19% of the respondents provided useful insight into what may be missing from the RTS14. This feedback was reviewed and added to the gap register in Appendix A as appropriate. It was found the majority of the gaps had also been identified in the guidance review outlined in the previous chapter.

The common themes were guidance gaps for shared spaces/routes and other areas where pedestrians and cyclists interact. The need to update guidance to reflect new research and provide more guidance on inclusive design was also mentioned. Only a small proportion of respondents stated that there was guidance that they disregarded because it was not considered best practice.

Barriers to use of the guidance

The respondents cited the most significant barriers to implementing the PPDG guidance were cost and conflict with other outcomes/disciplines. The other matters raised as key issues were funding frameworks, local policies not supporting walking and existing RMA processes.

The respondents cited the most significant barriers to implementing the RTS14 guidance were that contractors do not install correctly; layouts have been designed incorrectly; lack of organisation's direction/policy on the use of tactile pavers; and differing RCA guidance on where/how to use them.

Comments from some respondents outlined some other barriers but these seem to be related to overall pedestrian environment outcomes, rather than being guidance issues. Some of these are outlined below:

- The key policy barriers to implementation were identified as lack of legislation, misalignment of existing policies and lack of support and understanding of pedestrian design from politicians, professionals and developers.
- There was support to prioritise pedestrians within strategic and local policy and give weighting to the policy so that it is easier to implement.
- Pedestrian delay at intersections and crossing busy roads safely is a common concern and was considered a barrier to promoting walking.
- Be more inclusive of people with a wider range of disabilities and include the projections for an aging population within pedestrian planning and design.

Engaging with the disability sector as part of developing policy and projects

Most of the survey respondents (70%) reported they do consult with the disability sector as part of developing policies and projects. The most frequently consulted user groups were identified (in order of highest frequency);

- Disability Advisory Group;
- Blind Foundation;
- Council operated reference group/advisory group;
- One to one/stakeholder groups; and
- Local disability advocacy groups (unspecified).

The most common ways for local councils to engage with the disability sector appeared to be either through regular stakeholder meetings or on a scheme by scheme basis including completing site audits, inviting representatives to scheme workshops and general consultations. Engagement was also identified through university research.

The disability sector appears to be engaged with during scheme consultation. User groups are also consulted when local councils are developing policies at key stages during projects.

Innovations and other ways to make the urban environment more walkable

When asked about trials or implementing any innovations relating to pedestrian environments, a total of 176 respondents (74%) completed this question. Several authorities introduced innovations that are either new in the New Zealand context or within the local region. An overview of the innovations is outlined in Appendix B.

A total of 99 respondents (42%) provided feedback on other ways to make the urban environment more walkable and these are outlined in Appendix B in the following groupings: legislation, policy and planning, design; and tools and audits.

3.3 Disability, advocacy and health sector feedback

The online survey also provided very useful feedback from the sector not directly involved in the planning and design of pedestrian environments, but who are often consulted with on transport projects.

- 10 of the 238 responses to the stakeholder survey were identified as being from the disability and advocacy sectors. This included representatives from NZ Stroke Foundation, Blind Foundation, Alzheimer's NZ, CCS Disability, Living Streets and Cycling Action Network.
- 4 out of 10 respondents are aware of the PPDG. The barriers to implementing the PPDG were identified as local policy and strategies that do not support walking as a priority.
- 5 out of 10 respondents are aware of RTS14. A range of responses were identified in relation to the barriers to implementing RTS14 correctly.

Key messages from these respondents included:

- Legislation is required as the guidance is not always followed.
- There is a lack of commitment and enforcement of guidance by local authorities and government.
- Pedestrians need to be prioritised over other modes.
- Design guidance needs to consider pedestrians and cyclists and how to minimise conflict between these two groups.

References to several documents were provided by one respondent as follows:

The Kiwi Transport Survey 2015 (TDG, 2015) for CCS Disability Action:

The purpose of this work was to provide evidence linking disability, transport and participation and to compare the needs of people to the decision-making processes of transport professionals. There is no formal requirement for Road Controlling Authorities in New Zealand and transport planning organisations to consider access and mobility generally, or the needs of people with disabilities in particular. The survey was therefore aimed at answering some key questions, the question most relevant to this current review was “Do transport professionals consider that the industry delivers accessible transport?”

The survey of professionals suggested “that industry people do not believe that they deliver accessible transport. Fewer than half consider that pedestrian design standards, for example, accommodate all people likely to use the facilities. However, over 80% of respondents stated that they try to consider the needs of all people in their work.”

As a whole, results of the Kiwi Transport Survey 2015 “suggest that transport is not as accessible as it could be, a fact reported by people who use transport and acknowledged by professionals tasked with its design and delivery. It is therefore recommended that while the industry continues to advance ‘best practice’ in terms of accessible built environments, issues of access for people with disability should be tackled through cross-sector initiatives at local, regional and national levels. Involvement by health, social service, transport and non-government sectors (including community groups and advocates) is encouraged, to deliver real change so that every New Zealander can live a meaningful life.

Updating guidance will align well with the some of the recommendations of the Kiwi Transport Survey.

The Transport Domain Plan (MoT and Statistics NZ, 2014)

The Transport Domain Plan sets out to establish an understanding of the baseline information that the government sector needs in order to make evidence based policies and decisions about transport. To achieve this goal, the Transport Domain Plan assessed the information needs that exist in relation to transport, conducted a stocktake of existing sources of data and information, completed a gap analysis and made recommendations about the actions required to improve the quality, relevance and access to transport data and information.

The Transport Domain Plan uses the concept of “enduring questions” to capture the information that is needed to inform decision making. The 2014 Plan defined the following questions that are relevant to this research:

- *How, when and in what numbers do people travel to, from and within New Zealand, for what purposes, what are the origins and destinations of their journeys, and how are these things changing, including modally, temporally and spatially?*
- *How accessible is transport, who experiences barriers to access or use, what are those barriers and how are these things changing, including modally, temporally, demographically, and spatially?*

The updated 2016 Plan defined that the following were high priority actions, these will be very useful in the filling any gaps with respect to baseline information on walking:

- *R2.4 Establish baseline information on ‘accessibility’*
- *R2.7 Gather additional information on the reasons why people don’t travel – to be combined with R2.8*
- *R2.8 E Gather additional information on people’s attitudes, preferences and perceptions about transport – to be combined with R2.7*
- *R2.13 Gather additional information about pedestrian and active mode person travel*

3.4 Engagement with developers

To supplement the industry engagement the on-line survey was distributed to five selected developers and a consultant who works for developers. A total of 3 responses were received. Two respondents were developers and one was the consultant who undertakes work on behalf of developers. There were significant challenges encouraging feedback from this sector in comparison to the other user groups. As there was a small number of responses, the results cannot be considered statistically significant, however a summary of the key findings is provided below.

The development community appear to use the PPDG, RTS14, local guidance and relevant district plans. All of the respondents were aware of the PPDG but only referred to it once a year or less frequently. The PPDG is used by the development sector to plan and design pedestrian and roading infrastructure and no feedback was provided in terms of missing guidance. The key barrier to implementing the guidance was cost, and the length of the document was seen to be prohibitive.

Only 2 out of 3 of respondents were aware of RTS14 and it is referred to as required for projects. RTS14 is used for designing pedestrian infrastructure and supervising construction. No feedback was provided regarding missing guidance. The barriers to implementing RTS14 identified included:

- lack of organisational direction/policy on the use of tactile pavers,
- layout has not been designed correctly; and,
- contractors do not install correctly.

One respondent regularly consults with the Barrier Free Trust.

Innovative landscape features were identified as innovations relating to the pedestrian environment. The other ways suggested for making the urban environment more walkable were:

- greater collaboration between specialist consultants e.g. landscape architects, traffic engineers, civil engineers, urban designers; and,
- good lighting.

The only barrier identified was the divergence of opinion between councils and developers regarding what merits a walkable environment.

3.5 Conclusion

The industry engagement aimed at answering research questions 1 to 5 as outlined below.

Question 1 - How widespread is awareness of the pedestrian planning design guide and RTS14 amongst RCAs and other stakeholders such as developers and designers?

Based on the survey there is a reasonably high awareness of the PPDG (72% of respondents), particularly in the planning and design sectors, both transport and urban design. Awareness of RCA respondents was high at 78%. Developer awareness is harder to gauge but as they generally use designers this may not be an issue.

Based on the survey the awareness of RTS14 is quite low overall in the planning and design sectors (40% of respondents). Awareness of RCA respondents was higher at 63% but this is still not ideal. Transport planners and designers have a higher awareness than urban designers. Again, developer awareness is harder to gauge but as they use designers this may not be an issue, unless they predominately use urban designers who are less aware of the guidance.

Question 2 – Who is using the pedestrian planning and design guide and RTS14?

The 32% of survey respondents that use the PPDG more frequently (daily, at least once a week or once a month) are predominately those in transport design or safety roles. 55% of regular users were consultants and 39% local authority. Only 5% of the respondents who are aware of the PPDG never use it, the majority use it at least once a year.

The 22% of survey respondents that use RTS14 more frequently (daily, at least once a week or once a month) are predominately those in transport design or safety roles. 58% of regular users were consultants and 38% local authority. 13% of respondents who are aware of RTS14 never use the guide, almost half (49%) refer to it at least once a year.

Question 3 - How is the guide and RTS14 being used for planning or other processes?

The majority indicated that the PPDG is used most for the design of pedestrian infrastructure and road design projects. The other more frequently cited uses are referencing best practice in reports, to inform safety audits, planning pedestrian networks, consenting and to inform peer reviews.

The majority indicated that RTS14 is used most for the design of pedestrian infrastructure and road design projects. The other more frequently cited uses are referencing best practice in reports, to inform safety audits, planning pedestrian networks consenting, to inform peer reviews and because it is required as part of local guidance.

Question 4 - Are there any technical planning and design guidance gaps in the PPDG and RTS14 guides?

26% of the respondents provided useful insight into what may be missing from the PPDG. This feedback was reviewed and added to the gap register in Appendix A as appropriate.

19% of the respondents provided useful insight into what may be missing from the RTS14. This feedback was reviewed and added to the gap register in Appendix A as appropriate.

Question 5 - Is the use of the guides constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?

The respondents cited the most significant barriers to implementing the PPDG guidance were cost and conflict with other outcomes/disciplines. The other matters raised as key issues were funding frameworks, local policies not supporting walking and existing RMA processes.

The respondents cited the most significant barriers to implementing the RTS14 guidance were that contractors do not install correctly; layouts are designed incorrectly; lack of organisation's direction/policy on the use of tactile pavers; and differing RCA guidance on where/how to use them.

4. Funding Policy and Procedures Review

4.1 Introduction

This section of the report describes the review of the NZ Transport Agency funding policy and procedures related to investing in pedestrian facilities. The reviewed looked at the Government Policy Statement on Land Transport, Investment Assessment Framework, Economic Evaluation Manual, the NZ Transport Agency Knowledge Base and funding categories.

The review is aimed at answering research questions 5, 7 and 8. Industry engagement and case studies will also assist in answering these questions.

- Question 5 – Is the use of the guide constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?
- Question 7 – How have NLTF criteria or policies affected the levels of spending?
- Question 8 – How would changes in NLTF criteria or policies affect investment and footpath levels of service or other relevant infrastructure?

4.2 Government Policy Statement on Land Transport

The Government Policy Statement on Land Transport¹ (GPS) sets the Government's strategy for investing the National Land Transport Fund (NLTF) of \$3 billion, and \$1 billion of local government investment each year. The Land Transport Management Act requires the Minister of Transport to issue a GPS. The GPS is released every six years but sets the strategy for 10 years. It must be reviewed every 3 years in line with the election cycle, although the government can make amendments outside this cycle.

The GPS signals what the Government wants to achieve for local roads, state highways, public transport, walking and cycling, safety promotion and system management, and is designed to inform the development of the National Land Transport Programme (NLTP) and Regional Land Transport Plans (RLTP), both also on a three-year cycle. It does not specify which projects are to be delivered.

The GPS describes the government's strategic direction through objectives and long, medium and short-term results. It defines the activity classes for investment, determines the funding level and range for each activity class and describes how the funding will be raised.

The GPS 2018 – 2028 took effect on 1 July 2018. Since there are strategic differences between the GPS 2018 and the previous GPS 2015 – 2025² both have been reviewed below.

Government Policy Statement on Land Transport 2018/19 – 2027/28

The GPS 2018 was released in early May 2018 for public feedback and was published as final on 28 June 2018. It is indicated that there is expected to be a second stage GPS released in 2019.

The four strategic priorities of the GPS 2018 are:

- safety (key priority),
- access (key priority),
- environment (supporting priority); and,
- value for money (supporting priority).

The objectives of the GPS 2018 are to achieve a land transport system that:

- is a safe system, free of death and serious injury,

¹ <https://www.transport.govt.nz/assets/Uploads/Our-Work/Documents/Government-Policy-Statement-on-land-transport-2018.pdf>

² <https://www.transport.govt.nz/multi-modal/keystrategiesandplans/gpsonlandtransportfunding/previous-government-policy-statements/gps2015/>

- provides increased access to economic and social activities,
- enables transport choice and access,
- is resilient,
- delivers the right infrastructure and service to the right level at the best cost; and,
- reduces greenhouse gas emissions, as well as adverse effects on the local environment and public health.

The **safety strategic priority** considers that past investment has focussed on providing for efficiency (including promoting vehicle movement) over safety, particularly the safety of people walking and cycling. It notes that further investment in cycleways and footpaths would support safe and healthy options for pedestrians and cyclists. The GPS notes that a new road safety strategy is anticipated within the next 18 months, which may be an opportunity to reinforce this point.

The GPS supports investment in State highways and local roads that reduce the risk to vulnerable users (pedestrians, cyclists and mobility impaired) by providing segregated facilities, markings, speed management, raised platforms, traffic signals and pedestrian facilities.

When explicitly discussing walking and cycling safety, the GPS notes that improving safety is a key part of improving accessibility and the uptake of walking and cycling as a preferred mode of transport. Investment in these modes is considered to include maintenance of infrastructure, education and promotional activities to encourage mode choice.

The **access strategic priority** is a new priority focusing on a transport system with the ability to connect with people, goods and services. It includes physical mobility, land-use planning / systems and telecommunications via virtual access. It is about improving people's ability to connect without having to travel in a single occupant vehicle. This may include consideration of demand management which encourages all modes aside from private vehicular travel. The GPS discusses creating liveable cities, which generally means cities where people have good travel choice and live in close (walking) proximity to the places they need to visit for employment, shopping and recreation. The GPS also seeks to provide inviting public spaces that are attractive for walking and other activities. The GPS acknowledges that most trips currently must be made by the private motor vehicle resulting in congestion, high travel costs and emissions. It seeks more efficient, sustainable and affordable travel through a mode shift to walking, cycling and public transport from private motor vehicle travel, and commits to investigate regulatory barriers to the uptake and delivery of public transport, walking and cycling.

The **environment strategic priority** identifies the role of a mode shift towards walking and cycling, along with better integration of land use and transport planning, as levers to achieve a reduction in emissions. It also acknowledges that there are health benefits of walking and cycling for heart disease, obesity and diabetes.

The **value for money priority** acknowledges that the current economic evaluation process tends to overstate the benefits of new road capacity and understate the benefits of walking, cycling and public transport. There is a commitment to investigate the evaluation process to ensure that it aligns with the strategic direction of the GPS to encourage investment in these modes. It is expected that this will be reflected in the second stage GPS 2018 - 2028.

The GPS also includes three themes to influence how the desired results are achieved, specifically:

- a mode neutral approach to transport planning and investment decisions,
- integrating land use and transport planning and delivery, and
- incorporating technology and innovation into the design and delivery of land transport investment.

The mode neutral theme seeks to consider all modes of transport when identifying transport solutions, while also giving greater funding priority to active modes due to past underinvestment. It also seeks to remove barriers to investing in any of the modes. While it is called neutral it appears to be readjusting the previous priorities away from infrastructure improvements for vehicles to investment in walking, cycling and public transport.

The activity classes are largely the same as the GPS 2015, with the addition of two new classes called *Rapid transit*, and *Transitional rail*. The walking and cycling activity class appears unchanged, aside from the word *capacity* being removed from the definition. **Table 4.8** contains the funding bands for the walking and cycling activity class for the next three years.

Table 4.8 GPS 2018 walking and cycling funding bands

Funding bands	2018/19 (\$m)	2019/20 (\$m)	2020/21 (\$m)
Upper	\$95	\$120	\$145
Lower	\$60	\$80	\$95

The upper funding band has a significant increase compared to the GPS 2015 of \$109m from \$36m to \$145m and the lower bands were increased as a result of submissions on the draft GPS 2018. At the same time, the forecast funding for State highway improvements has significantly decreased.

Government Policy Statement on Land Transport 2015/16 – 2024/25

The overall strategic direction of the GPS 2015 is to drive improved performance from the land transport system by focussing on economic growth and productivity, road safety, and value for money.

This direction was informed by the Government’s national policy priorities, specifically:

- building a more competitive and productive economy,
- rebuilding Christchurch,
- delivering better public services within tight financial constraints, and
- responsibly managing the Government’s finance.

The GPS 2015 includes six objectives for the transport system; such that it:

- 1) addresses current and future demand for access to economic and social opportunities,
- 2) provides appropriate transport choices,
- 3) is resilient,
- 4) is a safe system, increasingly free of death and serious injury,
- 5) mitigates the effects of land transport on the environment, and
- 6) delivers the right infrastructure and services to the right level at the best cost.

The second objective appears to be relevant to investment in pedestrian facilities. However, when describing the desired results, it only refers to public transport and cycling and does not identify walking as a transport choice. This focus has the potential to have a trickle-down effect and constrain the level of investment in pedestrian facilities.

The fifth objective would also seem to be an opportunity to consider the positive benefit of pedestrian travel over vehicle travel from an environmental and health point of view. However, the results focus on mitigating the effects of new projects, rather than considering alternative proposals that may achieve environmental benefits through uptake of sustainable modes or that have a smaller direct impact on the environment.

Where the GPS 2015 explicitly talks about walking (and cycling), it is described as a secondary outcome from investment that supports vehicular travel, as per the extract below:

“There is a walking component in the vast majority of trips made on the network, and cyclists share road space with other modes. Much of the investment in walking and cycling is integrated with the delivery of roading investment. Targeted investment for walking and cycling under GPS 2015 will allow ongoing progress to be made on improving existing transport networks, with dedicated cycling networks in our main metropolitan centres. Most walking and cycling occurs on local roads, therefore investment is made jointly with local government.”

GPS 2015 supplements this investment from the Fund with Crown appropriations to advance investment in cycling on local roads and State highways (the Urban Cycleway Programme).”

The priority of the GPS 2015 is to provide infrastructure that supports a growing economy, such as the RoNS programme and bridge strengthening for freight vehicles. Investment in pedestrian facilities is strategically minor in the outcomes sought. Walking is often discussed alongside cycling, although even then comes as a secondary priority to cycling in terms of strategic significance and investment levels.

The GPS 2015 identifies ten activity classes for investment. The most relevant to pedestrian facilities is the walking and cycling improvements activity class. The activity class provides for, “Investment in walking and cycling that improves capacity and service levels, including promotional activities (e.g. a new cycleway).”

The long-term results from the activity class do not seek or directly acknowledge the benefits of pedestrian travel, rather the desired outcomes are:

- to increased safe cycling through improvement of cycle networks,
- to support economic growth and productivity through the provision of better access to markets, employment and business areas,
- a reduction in deaths and serious injuries, and
- mitigation of adverse environmental effects.

Similarly, the short and medium term results fail to identify walking and focus on cycling only, as demonstrated by the following outcomes:

- extension of the dedicated cycle networks in main urban areas,
- improved suburban routes for cyclists,
- improved linkages to the NZ cycle trails,
- progress the Safer Journeys Action Plan,
- improve the transparency of road safety related investment, and
- improve transparency of investment in mitigating environmental effects, including climate change.

In comparison to other activity classes, the funding made available for walking and cycling is modest, peaking at an upper range of \$36m in 2017/18 as shown in **Table 4.1**. By comparison, State highway improvements peak at \$1,500m, and public transport at \$420m. It should be noted that an amendment to the GPS was approved in April 2017 to increase the funding range for the activity class with an additional \$65m to support the Government’s cycling and tourism objectives.

Table 4.1 GPS 2015 walking and cycle funding bands

Funding bands	2015/16 (\$m)	2016/17 (\$m)	2017/18 (\$m)
Upper	\$33	\$34	\$36
Lower	\$15	\$15	\$16

Investment in pedestrian networks may also come indirectly from State highway and local road improvement activity classes, for example a new State highway project will likely come with improved footpaths, bridges or pedestrian connections of some kind, however, this is not acknowledged in the anticipated results or reporting.

Conclusion

The GPS 2018 provides for a significant increase in strategic priority in walking, cycling and public transport by considering the benefits that can be realised for efficiency, safety, environmental impact, and the impact on urban form. This increase in priority is reflected in the significant increase in the funding allocated to the walking and cycling activity class. The GPS also commits to removing barriers to investment in walking and cycling.

The GPS 2018 has taken a significant step forward in encouraging walking as a mode choice, and will likely lead to much greater investment in pedestrian networks. By comparison, the GPS 2015 has potentially constrained the level of investment in pedestrian facilities by giving it a relatively low priority, and a low level of funding.

4.3 Investment Assessment Framework

The Investment Assessment Framework (IAF) is a NZ Transport Agency document that determines the process and criteria for making investment decisions from the NLTF. Every investment proposal must be assessed against the IAF criteria before it can be included in an RLTP or the NLTP, and it must be part of a business case that has been through a series of gateway approvals.

The IAF also articulates the qualifying activities for each of the activity classes listed in the GPS. There is a dedicated activity class for walking (and cycling) improvements, however, walking improvements can also be provided through multi-modal local or state highway improvement projects. For example, the IAF describes a project where road improvements in Wanaka were designed to slow traffic and enhance economic and social opportunities for tourism based on active modes. More discussion on the activity classes is included in section 4.5.

Similar to the GPS, the IAF has an existing 2015 – 2018 document, and a 2018 – 2021 version that was finalised on 30 June 2018. Both documents, referred to as IAF 2015 and IAF 2018 respectively, have been reviewed considering their effect on investment in pedestrian facilities.

Investment Assessment Framework 2018 – 2021

The IAF 2018 has two criteria that a proposal is assessed against:

- 1) *Results alignment*: tests the significance of the case for change against the results desired in the GPS. A proposal is assessed as either Low, Medium, High, Very High against safety, access-thriving regions, access-liveable cities and environment. The rating scale is similar to the Strategic Fit in the IAF 2015.
- 2) *Cost – benefit appraisal*: is an economic assessment that tests the value of the proposal, and is based on the processes in the Economic Evaluation Manual which is described in section 4.4. A proposal is assessed based on its benefit cost ratio (BCR) as either Low (1 - 2.9), Medium (3 – 4.9), High (5 – 9.9), or Very High (10+). This is the same as IAF 2015, aside from the additional Very High assessment. The evaluation process has been simplified for safety projects to encourage further investment, and is a process that could be considered for walking projects.

The effectiveness criteria in the IAF 2015 has been removed from the assessment process.

A priority order score from 1 - 8 is given to a proposal by combining the results alignment and cost-benefit appraisal scores. A proposal with a priority score closer to one is more likely to be included in the NLTP as a funded activity. In this regard, a pedestrian facility proposal competes for funding against all other proposals.

There is a low cost - low risk programme approach that allows programmes of less than \$1m to be assessed through a streamlined process and is available to walking and cycling proposals.

The walking and cycling activity class is for any activity that is not otherwise part of a road improvement or public transport activity (which would be funded from another activity class). The activity class provides for new improvements and improvements to existing assets or services. The maintenance and renewal of State highway walking and cycling improvements is funded from the state highway maintenance activity class, and the maintenance and renewal of pedestrian facilities on local roads has historically been funded entirely by local authorities, but is now allowed for through a newly created activity class, discussed in section 4.5.

The IAF 2018 criteria for results alignment provides a much broader consideration of walking benefits, including consideration of environmental (mode shift) factors, resilience risk, regional economic development, consideration of social opportunities, consideration of disabled or young pedestrians, support for land use integration and multi modal plans, access to house priority areas, support increase of uptake for children walking to school or links at a multi modal interchange.

The IAF 2018 states that in the absence of a defined level of service framework for walking the default is the Pedestrian Planning and Design Guide along with the Austroads Level of Service tool and NZ Transport Agency Research Report 452 Walking Predictability. It also refers to the Community Street Review for assessing existing situations.

The results alignment for walking and cycling improvements are assessed against:

- Safety: a safe transport system free of death and serious injury
- Access: to opportunities, enables transport choice and access, and is resilient – thriving regions
- Access: to opportunities, enables transport choice and access, and is resilient – liveable cities, and
- Environment: reduce adverse effects on the climate, local environment and public health.

The criteria for each of these priorities are relatively generic and allows an argument to be made for an assessment score. For example, to score a *High* a proposal needs to enable a significant modal shift from the private motor vehicle to active modes, however, to score a *Very high* the proposal needs to have a very high safety risk or address a critical missing link in a strategic network or multi-modal interchange. It is noted that there is no guidance on what constitutes a strategic network, or how it should be defined.

Investment Assessment Framework 2015 – 2018

The IAF 2015, which was used the development of the NLTP 2015, assesses projects on Strategic fit, effectiveness and efficiency. The Strategic fit assessment is now called Results alignment in the IAF 2018 and the effectiveness criteria has been removed. The BCR ranges are Low (1-3), Medium (3-5) and High (>5), but there is no Very high assessment as provided in the IAF 2018.

The criteria for assessing the strategic fit in the IAF 2015 is similar to the IAF 2018 criteria for results alignment, however, it does not include consideration of environmental (mode shift) factors, resilience risk, regional economic development, consideration of social opportunities, consideration of disabled or young pedestrians, support for land use integration and multi modal plans, access to house priority areas, support increase of uptake for children walking to school or links at a multi modal interchange.

The IAF 2015 is much more limited in the consideration of the benefits of walking, and has likely constrained the level of investment in the pedestrian network.

Conclusion

Similar to the GPS 2018, there has been a significant improvement in the IAF 2018 over the IAF 2015. There is greater consideration of the positive strategic benefits that investing in pedestrian facilities may be able to achieve. It is likely that the results alignment criteria will make it easier for road controlling authorities to justify investment in pedestrian facilities.

4.4 Economic Evaluation Manual

The Economic Evaluation Manual (EEM) is a NZ Transport Agency document that defines the procedures to evaluate the economic efficiency of an investment proposal, and generally results in a benefit-cost ratio (BCR). The procedures apply to NZ Transport Agency proposals, as well as any approved organisation (such as a local authority). The assessment procedures relate to the Investment Assessment Framework as described in the previous section.

The benefit-cost ratio is fundamentally driven by travel time cost savings, vehicle operating cost savings and crash cost savings. These three factors strongly promote the most safe and efficient outcome for vehicular traffic. This is useful when comparing vehicle-based projects, however, could have a detrimental effect on the walking and cycling outcomes.

A pedestrian focused project that seeks to provide a safe and efficient opportunity for pedestrians to cross a road will generally result in a longer travel time and higher operating costs for vehicles. These disbenefits to vehicular traffic will generally outweigh the benefit to pedestrians, where the volumes are often lower. A positive BCR would rely on a significant improvement in the crash rate to overcome the vehicular efficiency disbenefits. Furthermore, some connections do not exhibit significant pedestrian crash records because it is so unattractive or unsafe to walk there.

The result is the EEM supports vehicle improvements over walking improvements, and will continue to impact the walkability of our communities without a fundamental change in the benefit-cost method or at least specific provisions being made for walking improvements. As it stands, the EEM is a barrier for road controlling authorities attempting to improve walking facilities and requires a review to determine how this priority imbalance can be resolved.

The issue described above also applies to vehicle speeds. Lower vehicle speeds can provide a safer and more pedestrian friendly environment, however, lowering vehicle speeds results in longer travel times and will contribute to a low or negative BCR unless there is a significant crash problem. Under the current system projects that seek to improve walkability will struggle to attract funding with a low BCR. The EEM needs to align to the Government's strong policy direction in speed management to achieve a reduction in deaths and serious injuries (and to reduce harm to people walking and cycling).

It is recommended that the EEM is reviewed to ensure that it encourages proposals that lower vehicle speeds in line with the Speed Management Guide and provides better support for people walking and cycling.

Assessment process

The guidance states that it is envisaged that a programme business case is completed for a proposal, or the proposal is part of a programme business case before the economic evaluation is undertaken. It is likely that many investment proposals for pedestrian facilities do not justify the effort required to develop a programme business case, unless it is packaged together with other works.

The EEM provides a simplified procedure (SP11) for assessing walking and cycling facilities for proposals that are less than \$5m undiscounted capital cost and that do not include a signalised crossing over a road. The reason for this exclusion is that a signalised crossing will have an impact on vehicular travel times, which requires modelling of the full transport impacts and therefore requires the full economic procedure. This relates to the discussion above about the strong bias towards the impact on vehicles over other modes in the BCR calculation. In all likelihood, the majority of dedicated walking proposals are likely to be under this \$5m limit, and will be able to utilise the simplified procedure.

The simplified procedure requires several inputs that a practitioner must find before undertaking an assessment, including:

- historic maintenance costs for the do-minimum, including annual and periodic maintenance,
- a cost estimate, and annual and periodic maintenance forecasts (for all options),
- pedestrian per annum growth rate,
- analysis of the crash record for 5 years (also vehicle speeds, speed limit and speed after the option is implemented), and
- an estimate of future pedestrian demand.

It is considered that these data requirements are reasonable in most situations, and should be able to be completed by a competent practitioner. The eight worksheets may look overwhelming for a first-time user, however, they are relatively easy to follow. Perhaps the most difficult part is estimating and justifying the future pedestrian demand where historic data is not readily available. A specific worksheet is provided to calculate this for cycling facilities, but not for pedestrian facilities.

Another difference between walking and cycling is the benefit factors that are available for different types of cycle facilities. A higher relative attractiveness factor is given to facilities with greater separation from parking, traffic and with cycle markings. A similar approach could be applied for pedestrian facilities to encourage a higher level of service through a higher benefit cost ratio. It could encourage wider footpaths, better lighting and more frequent crossing points.

Walking and cycling projects are considered to potentially provide the following benefits, although the simplified procedures do not consider all these benefits and they are unable to be added in:

- travel time cost savings,
- vehicle operating cost savings,
- crash cost savings,
- other external benefits,
- mode change benefits,
- walking and cycling benefits,
- walking and cycling cost savings, and
- journey time reliability benefits.

Section 4.5.4 of the EEM refers to the Pedestrian Planning and Design Guide for design guidance, although it refers to the Land Transport NZ version rather than the NZ Transport Agency version.

Conclusion

It is considered that the guidance and the simplified procedure provides clear advice and process to undertake an economic assessment of a pedestrian facilities. However, the EEM has a relatively strong bias towards encouraging vehicular improvements over other modes, including pedestrians. This is potentially constraining investment in providing more walkable communities.

The review has identified some minor areas for improvement to be consistent with the guidance provided for cycling facilities, and a recommendation that a detailed review is carried out to identify how barriers to investing in pedestrian improvements can be removed, and to ensure that the EEM is fully aligned to the Government's direction to implement the speed management framework.

4.5 Pedestrian funding

The Planning and Investment Knowledge Base³ describes all activity classes, and work categories from where a proposal may be funded. The primary work category for new walking proposals is Work category 451.

Work category 451: Walking facilities provides funding for the construction/implementation of new or improved walking facilities (over \$1M), such as; footpaths, pedestrian crossings, signage, kerb realignment, pedestrian shelters, overbridges/underpasses, pedestrian railway crossings, and any associated markings/lighting/traffic signals.

To qualify for Work category 451: Walking facilities, the proposal must:

- form part of a transport network,
- integrate walking and cycling with other transport modes,
- be identified either specifically or generically within a supported Strategic Case or Programme Business case, or equivalent,
- induce higher numbers of pedestrians and cyclists (or reduce the rate of decline), and
- improve safety for pedestrians and cyclists.

Historically, the maintenance and renewal of pedestrian facilities were fully funded by local authorities, however, in response to the changes in the GPS 2018 the NZ Transport Agency is offering funding assistance through a newly formed work category, WC 125 footpath maintenance. The work category includes renewals for the NLTP 2018, but may be separated from maintenance in future NLTP's. The work category provides funding for the following activities:

- footpath patching and pothole repairs,
- maintenance of associated facilities including signs, lighting, and handrails/guard rails, and
- footpath renewals, such as resurfacing or reconstruction.

It is expected that Council Activity Management Plans will determine the level of service and will frame the scope of a funding request. The NZ Transport Agency has indicatively allocated \$120M to the work category.

Walking facilities may also be funded as part of a multi-modal project on a local road or state highway through the following work categories:

- WC 322: Replacement of bridges and structures
- WC 323: New roads
- WC 324: Road improvements – within the existing or widened road reserve. It allows for intersection improvements, and for footpath reinstatement (but not improvements); and,
- WC 341: Low cost, low risk roading improvements – must be under \$1M and must comply with the requirements of WC 451: Walking facilities.

The planning of pedestrian networks may be funded from the investment management activity class which provides for transport planning, activity management planning and programme business case development.

Funding applications are made through Transport Investment Online, however, proposals must be included in a RLTP and the NLTP to be eligible for funding. Approved organisations are eligible for a funding assistance for this work category that is in line with their usual funding assistance rate, generally around 51%.

The Pedestrian Planning and Design Guide is referred to in the Walking and cycling activity class overview, along with the Austroad LoS Tool, Community Street Review and NZ Transport Agency Research Report 452 Predicting Walkability.

Conclusion

The structure of the work categories from a pedestrian investment point of view makes sense for new dedicated facilities. The new work category will provide improved visibility for the NZ Transport Agency on the level of investment into the

³ <https://www.nzta.govt.nz/planning-and-investment/planning-and-investment-knowledge-base/>

maintenance and renewal of footpaths and associated assets, and will likely encourage more investment in pedestrian facilities by local authorities.

4.6 Opportunities for improvement

Overall, the funding process and policy guidance is considered to be satisfactory, and has been significantly improved through recent documents. To further improve the guidance, this review identified the following opportunities that may make the process easier for practitioners to obtain funding for pedestrian facilities:

- Update the Economic Evaluation Manual to ensure it supports projects that encourage walking and cycling including lower vehicle speeds particularly urban roads in neighbourhoods, town centres and school zones where walking should be prioritised,
- A single point of guidance for how all the documents referred to in this review relate to each other, and how they are applied to pedestrian facilities (also identified in the design guidance review),
- A level of service framework for pedestrian facilities (also identified in the design guidance review),
- A tool to estimate future pedestrian demand of new facilities to assist in the economic evaluation,
- A relative attractiveness factor within the economic evaluation process to encourage higher level of service facilities, this may be tied to the level of service framework, and
- Guidance for how a strategic pedestrian network is defined in the GPS, and what is required from local authorities.

These opportunities were further explored through industry engagement to understand whether these are issues to them, and what other barrier or gaps exist that may impede further investment in pedestrian facilities.

4.7 Conclusion

The guidance review was aimed at helping to answer research questions 5, 7 and 8 as discussed below.

Question 5 - Is the use of the guide (PPDG) constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?

No. The PPDG is referred to in all the reviewed documents, aside from the GPS which operates at a much high level of policy and is not concerned with design issues or guidance. Therefore, the use of the guidance is encouraged through the funding process.

Question 7 - How have NLTF criteria or policies affected the levels of spending?

Historically, pedestrian facilities appear to have been considered secondary to almost all the other modes in terms of strategic importance, and funding allocation. However, this imbalance has been improved through the GPS 2018 and IAF 2018. These documents have significantly raised the profile of walking, and better considers the range of benefits that walking can contribute to the transport system, the performance of a city and the health and wellbeing of the individual. These improvements will likely increase the level of investment in pedestrian facilities. The full effect will have to be monitored in the years following the implementation of the GPS 2018.

The EEM has a relatively strong bias towards encouraging vehicular improvements over other modes, including pedestrians. This is potentially constraining investment in providing more walkable communities, and requires a detailed review to identify how the imbalance can be resolved.

Question 8 - How would changes in NLTF criteria or policies affect investment and footpath levels of service or other relevant infrastructure?

Two major changes have recently occurred. The first is the increased government priority for walking in the GPS and IAF. The second is the new funding activity class for local road footpath maintenance and renewals. However, these changes were relatively late in the Council process of developing their Long Term Plan and Regional Land Transport Plans. The benefits of these changes are therefore unlikely to be fully felt until after the next funding cycle.

5. Funding Policy and Procedures Industry Engagement

5.1 Introduction

Following the review of the funding policy and procedures, a survey was prepared to better understand the user's perspective of the policies and procedures addressing investment in pedestrian facilities.

The engagement is aimed at answering research questions 6, 7 and 8. Industry engagement and case studies will also assist in answering these questions.

- Question 6 – How much has been spent on footpath maintenance and renewals by RCAs, by year, for the last three years?
- Question 7 – How have NLTF criteria or policies affected the levels of spending?
- Question 8 – How would changes in NLTF criteria or policies affect investment and footpath levels of service or other relevant infrastructure?

The survey was designed as an online survey and was sent to local authority representatives and consultants by email and as an item in the Road Efficiency Group (REG) E-newsletter.

The survey was undertaken in June 2018, received 52 responses and included 33 questions, broken into six sections covering:

- the impact of strategy,
- how maintenance and renewal programmes are developed,
- asset/ activity management issues,
- the difficulties of funding processes,
- the difficulties of assessment processes; and,
- further questions delving into more technical aspects such as investment in new facilities, management of recreational facilities, pedestrian data, and historic investment levels.

Composition of respondents

The majority of survey respondents (79%) work for a local authority, and the remaining 21% work for a consultancy.

The respondents worked across a range of disciplines, but were predominantly in asset management, governance/management or transportation planning roles.

Flexibility was built into the survey to allow respondents to opt out of the final section of questions if they did not work in a technical field. This also helped address potential survey fatigue due to the length of the survey and resulted in varying numbers of responses to each question. Given the nature of the questions, which are primarily aimed at understanding local authority investment in pedestrian facilities, it is likely that there was a greater drop off from the consultants rather than local government representatives.

5.2 Key findings

The full engagement results are included in Appendix C, and the key findings from the engagement feedback are summarised by the following points:

- The national strategy and policy direction is satisfactory and recent improvements are expected to positively influence the level of investment in pedestrian facilities, however, there is inconsistency and gaps with local level pedestrian strategy and policy.
- While strategy is important, the level of funding allocation is much more important and a greater incentive for more investment. The recent NZ Transport Agency funding decision to support maintenance and renewals was appreciated, however, the timing was very late in the LTP/NLTP process and did not allow local authorities to take full advantage of it.
- There is a wide range in practices between local authorities when it comes to assessing the condition of assets, setting intervention levels, prioritising maintenance, and monitoring the performance and quality of the pedestrian network.
- Over half of the respondents find the funding process a barrier, and almost two thirds said the guidance documentation needs improving. Many of the requests for improvements were to the NZ Transport Agency's Economic Evaluation Manual and Investment Assessment Framework, and to provide national guidance to assist the understanding of funding expectations.
- A key issue raised was the difficulty in providing evidence of the suppressed/latent demand for pedestrian facilities to justify the investment. There was a wide range of methods available to do this, and also requests for exemptions or standard BCRs for pedestrian facilities.

5.3 Opportunities for improvement

The following opportunities for improvement identified in the funding policy and procedures guidance review were also supported by the feedback through the industry engagement:

- A single point of guidance for how all the documents referred to in this review relate to each other, and how they are applied to pedestrian facilities,
- A level of service framework for pedestrian facilities,
- A tool to estimate future pedestrian demand of new facilities to assist in the economic evaluation (or remove the requirement to justify it); and,
- Guidance for how a strategic pedestrian network is defined in the GPS, and what is required from local authorities.

The industry engagement identified the following additional areas for improvement:

- Promote a trickle down of the increased pedestrian policy priority from the GPS into regional and local authority policy and guidance.
- Give more recognition to walking, so that it has the same status as other modes.
- Provide more support for local authorities through the funding process
- Pedestrian data collection (counts, level of service) is nationally inconsistent and missing in a lot of areas. Further support and guidance for better data collection and management may promote a better understanding of pedestrian demands and improve asset management processes.
- Achieving a positive BCR that surpasses the funding requirements is difficult to achieve, and is an area for possible improvement. Comments identified that the EEM focused too much on vehicle travel time savings for pedestrian facilities to be able to get a positive BCR. It was identified that the simplified procedures seemed to provide for cycling better than walking (and that procedures should be provided for the modes separately), and that the EEM focused too much on the quantitative benefits, rather than the qualitative benefits pedestrian facilities can provide. Respondents requested either an exemption from the requirement to provide a BCR, or a standard BCR for a type of pedestrian facility (such as all signal controlled pedestrian crossing points achieve a BCR of 4 regardless of the impact on general traffic given the safety and efficiency benefits for pedestrians).
- Establish special funding projects (similar to the model communities' concept) to put walking projects on the same footing as cycling projects in terms of show case projects, this was a suggestion that emerged from a PLG workshop.

- Provide funding case studies so that local authorities have a resource that illustrates how processes have been applied and the outcomes achieved.
- The feedback through the engagement found that there was a wide range of procedures in asset management, maintenance and renewals. This issue was outside the scope of the research questions and was therefore not looked at in detail, however, consideration should be given to whether guidance is required in this area.

5.4 Conclusion

The industry engagement was aimed at helping to answer research questions 6, 7 and 8.

Question 6 - How much has been spent on footpath maintenance and renewals by RCAs, by year, for the last three years?

Ten councils submitted their maintenance and renewal expenditure. Auckland Transport (AT) expenditure was much higher than the other councils (as expected), the averages are therefore demonstrated with and without AT expenditure below.

	2015/16	2016/17	2017/18
Maintenance average (with AT)	\$ 463,417	\$ 418,315	\$ 447,702
Maintenance average (without AT)	\$ 275,429	\$ 264,725	\$ 261,632
Renewals average (with AT)	\$ 2,199,882	\$ 2,073,056	\$ 2,276,166
Renewals average (without AT)	\$ 510,109	\$ 369,582	\$ 386,963

Question 7 - How have NLTF criteria or policies affected the levels of spending?

Most of the respondents believe that the GPS has an influence on investment in pedestrian facilities. However, comments indicate that providing additional funding will be a more effective method to encourage more investment, and that some councils have good strategies in place regardless of the GPS. Respondents also said that the increased pedestrian priority in the GPS 2018 will have a positive impact on investment levels.

Question 8 - How would changes in NLTF criteria or policies affect investment and footpath levels of service or other relevant infrastructure?

Timing of changes are important. While the recent changes were appreciated, local authorities were not given sufficient time to reflect these properly in their investment programmes. Comments were also made that the changes in the GPS need to flow down into regional and local level documents to have greater effect. This will also take time. Comments were made that walking as a mode of transport needs to be given greater recognition, and not seen as secondary to new roads or other modes (including cycling).

The feedback also found that there was a wide range of procedures in asset management, maintenance and renewals. This issue was outside the scope of the research questions and was therefore not looked at in detail, however, consideration should be given to whether guidance is required in this area.

6. Case Studies

6.1 Introduction

The guidance review of pedestrian planning and design documents focussed on national guidance. However, the industry engagement revealed that many local authorities are using locally produced guidance in preference or in conjunction with the national guidance.

This part of the research involved engaging directly with selected road controlling authorities to understand the effectiveness of the NZ Transport Agency resources in funding, planning, designing and maintaining pedestrian facilities in the local context. A key aim of this process was to understand how the local policies reference and align with the PPDG and RTS14 and where there are differences in applied approaches.

The case studies are aimed at answering research questions 1,2,3,4 and 5 along with information from the guidance review and industry engagement.

- Question 1 – How widespread is awareness of the pedestrian planning design guide and RTS14 amongst RCAs and other stakeholders such as developers and designers?
- Question 2 – Who is using the pedestrian planning and design guide and RTS14?
- Question 3 - How is the guide and RTS14 being used for planning or other processes?
- Question 4 - Are there any technical planning and design guidance gaps in the PPDG and RTS14 guides?
- Question 5 - Is the use of the guides constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?

Prior to engaging with the council staff, the relevant policies and strategies that are likely to influence the planning and design of pedestrian facilities were reviewed, and informed the interview process. The outcomes of the review included the following detail for each case study:

- Summary of the document purpose and objectives.
- If and how the document references the PPDG and RTS14.
- Identification of pedestrian specific policies and rules.
- Highlighting where other policies reference walking supporting good design outcomes.

An example of the policies, strategies and legislation reviewed is presented in **Figure 6.1**.



Figure 6.1 Example of strategy and policy review (Hamilton case study)

The following four road controlling authorities were selected to participate in this exercise:

- Auckland Transport – largest road controlling authority in the country.
- Hamilton City Council – recognised to be at the forefront of planning for people with disabilities.
- Tauranga City Council – experiencing high growth, home to a major port and has a high proportion of older residents.
- Selwyn District Council – rural authority that has experienced rapid residential and commercial growth since the Canterbury earthquakes.

6.2 Findings

The findings from each case study are reported in **Appendix D**. The best practice identified from each case study is outlined in **Table 6.**

Table 6.1 Best practice identified from the case studies

Road controlling authority	Best practice
Auckland Transport	<ul style="list-style-type: none"> • Development of the Roads and Streets Framework which includes people, space and modal priority. • Update of technical guidance as a living document to reflect changes in design principles.
Hamilton City Council	<ul style="list-style-type: none"> • Availability of a dedicated disability advisor within Council and proactive partnership working with local disability advocacy groups resulting in development of policy and engineering solutions to help people with disabilities to “have equity of access and participate fully in community and civic life in Hamilton”. • Availability of policy documents in an accessible format on the website. • Clear documents, strategies and policies on the website and development of a regional technical specification manual assists with transparent and simple design outcomes for new infrastructure. • Innovative design and development of the ‘Kirsty kerb’ (also known as kassel kerbs) for bus stops. • Pedestrian and cycle access is included in the landscaping section of the Integrated Transport Strategy as well as providing a comprehensive transport section of the document with a strong pedestrian design mandate. • Implementation of pedestrian monitoring through joint working with advocacy groups.
Tauranga City Council	<ul style="list-style-type: none"> • The council is recognised for its commitment to promoting walking and cycling to schools. New walking routes have been funded through maintenance schemes to deliver good outcomes for local communities. • The education team undertake regular monitoring of walking in schools which helps to inform other projects. • The council provides mobility scooter training catering for the needs of more vulnerable residents.
Selwyn District Council	<ul style="list-style-type: none"> • Unlike many regional authorities, the council has an urban design team focused on developing design guides and improving urban design across the district. • District plan requirements for subdivisions encourage the design of permeable pedestrian networks. For example, in the Farringdon subdivision a wide pedestrian accessway through a large block shortens walking routes to the shopping area.

The key learnings identified from each case study is outlined in are shown in **Table 6.2**.

Table 6.2 Key learnings from the case studies

Road controlling authority	Key learnings
Auckland Transport	<ul style="list-style-type: none"> • Lack of a high-level walking strategy is seen as a challenge to increasing prominence of pedestrians in planning and design of facilities. • Crucial to work with developers, councillors and council staff to raise awareness as to why it is important to improve facilities for pedestrians and outline the design solutions that are available. • Further information on the use of directional paving would be useful for staff and external designers. • The current pedestrian road rules do not assist in prioritising pedestrian safety, a review of the current framework and assessment of how giving priority to pedestrians would change the transport dynamic.
Hamilton City Council	<ul style="list-style-type: none"> • Council has a desire to incorporate a new type of tactile paving arrangement at bus stops to reduce similarity to a standard kerb crossing • Lack of progress in improving the pedestrian environment due to lack of funding/political commitment within political cycles. • Include provisions in district plans but do not be too specific to limit innovation.
Tauranga City Council	<ul style="list-style-type: none"> • Work with developers, councillors and council staff to raise awareness as to why it is important to improve facilities for pedestrians and the design solutions that are available. • Provide consistent messaging from all areas of NZ Transport Agency for planning and funding for walking. • Need to have consistent messaging and relevant tools to measure and assess pedestrian level of service.
Selwyn District Council	<ul style="list-style-type: none"> • Good practice guidance developed by the council sets out positive policies for walking but lacks the legislative requirements so can often be disregarded in resource consent applications. • The 'Code of Practice' is referenced in the District Plan and could provide improved pedestrian outcomes but would need to be updated to achieve this. • Council experiences challenges on the appropriate Level of Service for pedestrians – research and advice from NZTA would assist in planning and delivering a network that is appropriate for the area.

6.3 Discussion

District Plans were found to be inconsistent in terms of objectives and rules for walking and often lack the rules to ensure that a good pedestrian design outcome is achieved. There are some councils producing guidance documents and District Plans to incorporate 'place' and movement when applying transport design criteria. However, there are still some issues challenging the perceived need for walking facilities both internally and externally within the local authorities.

The presence of council staff who are passionate about providing walking facilities and an accessible environment is reflected in the policies and schemes that are implemented in each individual authority. Support is required for those at this level through training, awareness, and funding.

The case studies identified some gaps in the PPDG and RTS14 as outlined below:

- The lack of a Level of Service framework for pedestrians.
- Updated guidance on whether a high-level walking strategy is required, or how planning for walking should be provided at the local level would be beneficial.
- The existing bus stop tactile design does not meet user needs and some councils are exploring the use of Kassel/Kirsty kerbs and alternative arrangements.

- Tactile provision at cycle facilities needs to be improved.
- Advice on separation between pedestrians and cyclists.
- More detailed advice on the use of directional paving would also be appreciated.

The interviews with council staff identified the key challenges in planning and implementing good pedestrian outcomes are a lack of political commitment and funding (depending on political environment) and gaining good design outcomes as part of new developments. The opportunity to work with developers, council staff and councillors was identified as a way to raise awareness of the importance of providing for pedestrians, and will improve the process of planning and designing for pedestrians in the future.

6.4 Conclusion

The case studies contribute to answering research questions 1, 2, 3, 4 and 5 as outlined below.

Question 1 – How widespread is awareness of the pedestrian planning design guide and RTS14 amongst RCAs and other stakeholders such as developers and designers?

Roading engineers and developers are often aware of the guides but this does not always translate into regular use of the guides.

Question 2 – Who is using the pedestrian planning and design guide and RTS14?

Anecdotal evidence from the interviews indicate that it is more likely to be transport planners using the guides within councils, rather than planners or engineers. The councils who participated in the survey indicated that the relevant district plan and 'Infrastructure Design Specification' or equivalent documents are the preferred 'go to' design documents for council staff and developers.

Question 3 - How is the guide and RTS14 being used for planning or other processes?

The anecdotal evidence from councils is that the PPDG and RTS14 are used infrequently by council staff. Although it is noted that many of the local guidance documents do refer to the national guidance or replicate similar principles.

Question 4 - Are there any technical planning and design guidance gaps in the PPDG and RTS14 guides?

The lack of a Level of Service framework for pedestrians was highlighted as a gap. Guidance on whether a high-level walking strategy is required or how planning for walking should be provided at the local level would be beneficial. The key design elements that were identified as gaps were the existing bus stop tactile design not meeting user needs and tactile provision at cycle facilities needs to be improved, particularly separation between pedestrians and cyclists. More detailed information on the use of directional paving would also be appreciated.

Question 5 - Is the use of the guides constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?

Good execution of the pedestrian design principles is limited by the status as guidance at a local level. District Plans often lack the rules to enforce the design principles contained in local and national guidance documents.

7. Gap Analysis

7.1 Introduction

The full list of PPDG and RTS14 gaps identified from the document reviews, industry engagement and case studies are contained in **Appendix A**.

The gap types and identified actions to address the gap are shown in **Table 7.1**.

Table 7.1 Gap assessment criteria

Type of Gap	Identified Actions
<ul style="list-style-type: none"> • Lack of clarity • Inconsistency • Overly onerous requirement • No guidance exists • Out of date guidance/policy • Research question • Formatting 	<ul style="list-style-type: none"> • Requires amendment to guidance. • Requires new guidance to be added or developed • Requires NZ research • Requires approved trial • Requires use of international research (discussed in Chapter 8) • Other action

The gaps have not been prioritised at this stage.

7.2 The PPDG gaps

There were 43 gaps identified in the PPDG. **Figure 7.1** shows the number of actions to address the gaps, noting that some gaps require more than one action.

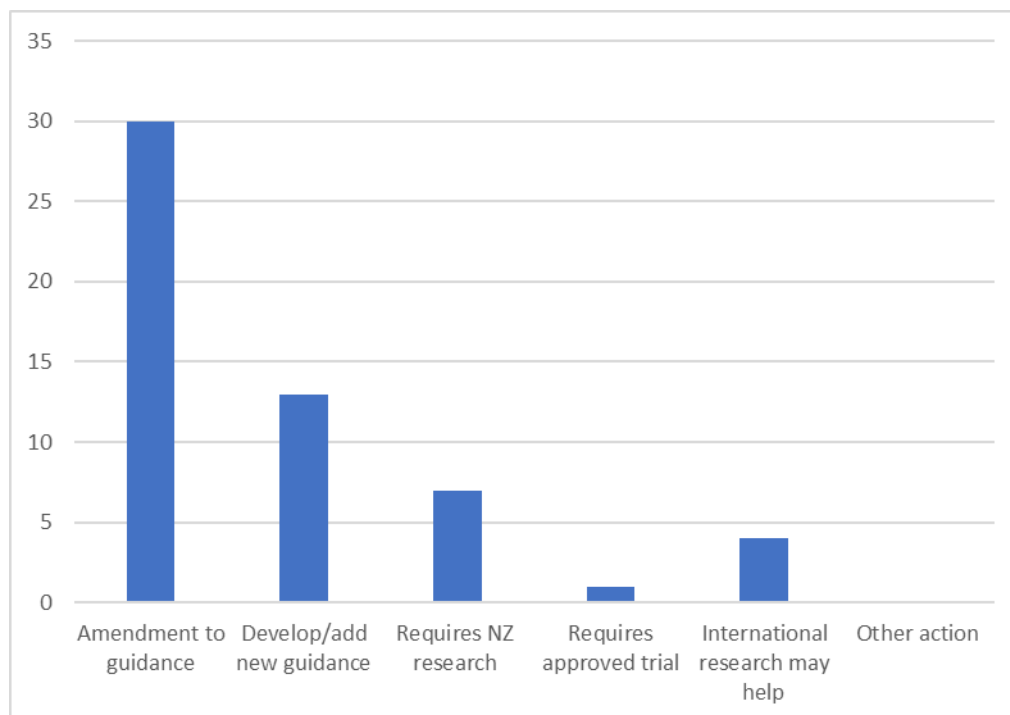


Figure 7.1 PPDG – action types required to address the gaps

7.3 RTS14 gaps

There were 19 gaps identified in RTS14. **Figure 7.12** shows the number of actions to address the gaps, noting that some gaps require more than one action.

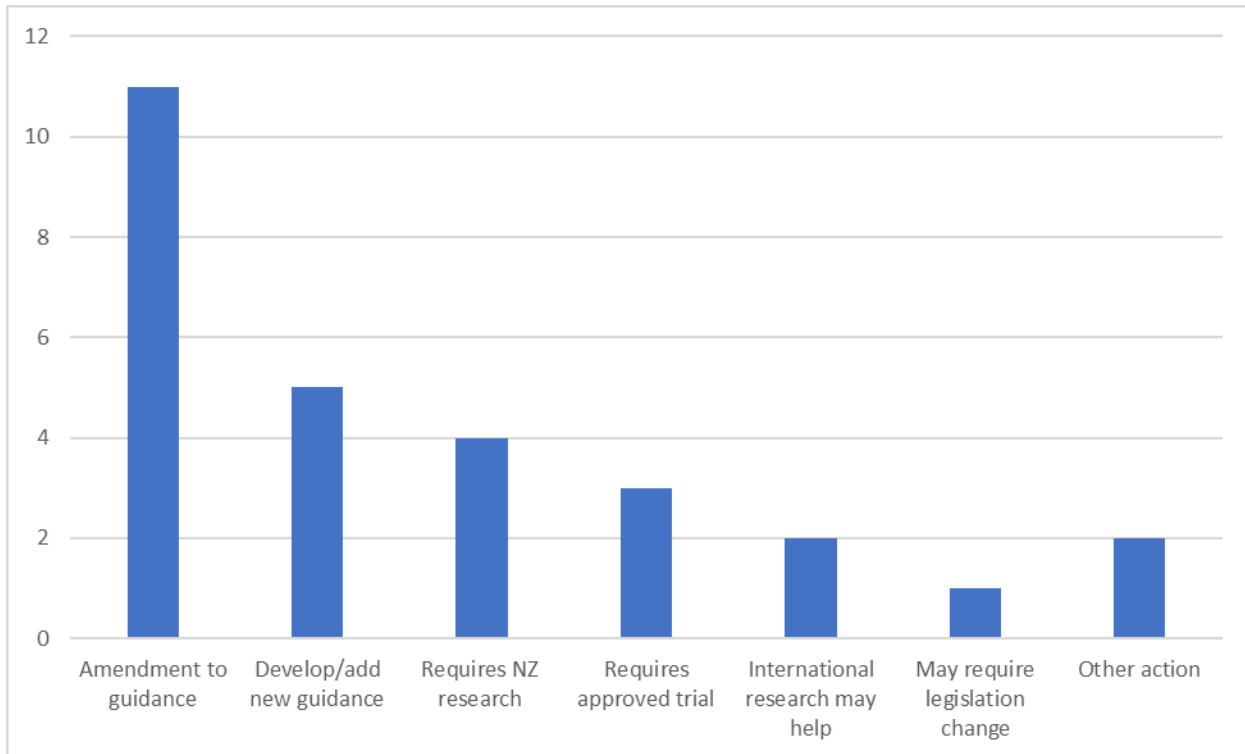


Figure 7.2 RTS14 – action types required to address the gaps

8. International Guidance Opportunities

8.1 Introduction

Based on the outcomes of the guidance review and gap analysis, several issues have been identified that may benefit from following international best practice. This involved identifying international examples of guidance documents or procedures that may inform the future development of New Zealand guidance, but did not critically analyse the documents or undertake an in-depth comparison against New Zealand examples.

This section of the research does not specifically address any of the research questions, but is expected to inform the next steps in the development of updated New Zealand guidance.

The issues identified that may be informed by international guidance include, from the PPDG:

- Providing for pedestrians in shared spaces,
- Providing for pedestrians (and particularly visually impaired) on shared paths,
- Guidance and tools to assess and audit the pedestrian network,
- Guidance and tools to monitor and survey the pedestrian network; and,
- Pedestrian level of service metrics.

And from RTS14:

- The use of TGSI's for a growing range of uses; and
- The use of green TGSI's for cycle facilities.

8.2 Opportunities for the PPDG

Table 8.1 outlines the international guidance that may present opportunities to address the gaps identified in the PPDG.

Table 8.1 PPDG content opportunities

PPDG gaps	References / research	Comments
Street design		
The PPDG needs more context around street design rather than just footpaths and crossings	Transport for London, 2017, Healthy Streets for London and Guide to the Healthy Streets Indicators	The Healthy Streets Approach is the system of policies and strategies to help Londoners use cars less and walk, cycle and use public transport more. These guides outline a new approach where streets are re-examined in terms of 10 health related indicators, both physical and mental health. This was recently introduced to NZ practitioners and could be very useful to reference in relation to pedestrian planning and design.
Shared spaces		
Shared space/zones guidance is out of date with policy, and use of shared zones in NZ	Creating better streets: inclusive and accessible places (Reviewing Shared Space), Chartered Institution of Highways & Transportation (CIHT), January 2018.	The review examined 11 English shared space schemes (pedestrian prioritised streets, informal streets and enhanced streets – the recommended terms to replace shared space). It assessed the schemes against five areas; inclusive environment (based on the Equality Act 2010), ease of movement, safety and public health, quality of place and economic benefit. It found the schemes performed well for ease of movement and quality of place, however, there remain concerns regarding inclusive environment. The safety effects were generally neutral, and economic benefit was positive or neutral. The review recommends (selected): <ul style="list-style-type: none"> • Government should move forward with its work on inclusive mobility and undertake research into the needs of people using the public realm, including how their needs differ due to visual impairment and other disabilities.

PPDG gaps	References / research	Comments
		<ul style="list-style-type: none"> Government should give priority to the production of updated guidance on tactile paving to address the practical difficulties faced by designers when creating streetscape improvements that meet the needs of visually impaired people. This should expressly consider the best means of identifying defined crossing points and enabling people to find their way, particularly within level-surface streets. <p>The review provides useful context for developing New Zealand shared space guidance.</p>
	Local Transport Note 1/11 Shared Space, Department for Transport (UK), October 2011.	The note provides guidance for shared spaces, primarily on High Streets, and places emphasis on stakeholder engagement and inclusive design. The note is based on a programme of research, and further develops previous guidance. The main chapters of the note covers understanding shared space, user needs and behaviour, scheme development, general design considerations, and detailed design. While it is called a note, it provides over 40 pages of specific guidance for shared spaces and is referenced widely across other pieces of guidance and research. It provides a useful starting point for the development on New Zealand guidance.
	Shared Space, Shared Surfaces and Home Zones from a Universal Design Approach for the Urban Environment in Ireland, TrinityHaus (on behalf of the (Irish) National Disability Authority), 2012.	This report contains an extensive (200+ page) review of design approaches and literature from the Netherlands, Germany, Denmark, Sweden, the UK, Japan, New Zealand, Australia and the United States. While it focuses on recommendations for Ireland, there are a wide range of lessons and recommendations that could be applied to New Zealand guidance.
	Technical direction: Design and implementation of shared zones including parking, NSW Roads and Maritime Services, February 2016.	The technical note provides guidance for design principles, traffic signs, traffic calming, streets furniture, providing for mobility and vision impaired, kerb design, parking, road safety audits, stakeholder engagement and approval processes (which is by the RMS and not delegated to councils). This guidance is similar, but more comprehensive, to the Main Roads Western Australia Planning and designing for pedestrians: guidelines, 2011 which also provides design criteria for shared spaces although predominantly from an engineering point of view and not from the user point of view or quality of space.
	Austroads	Austroads guides were checked for shared space design guidance. While shared space was referenced in the Guide to Traffic Management (Part 5,6,7,8) specific design guidance is not provided or relatively weak.

Comment: One of the key messages through many of the documents reviewed was that shared spaces should be designed for their specific environment, and do not necessarily follow a rigid design process that standard transport projects may usually follow. However, there is a wide range of literature that can be used to help inform design guidance for New Zealand including those referenced above. It should be noted when undertaking further research that shared zones have many different names around the world, including; Shared Spaces, Shared Surfaces, Home Zones, Woonwerf, Wohstrasse, Naked Junctions, Naked Streets, Shared Streets, Civilised Streets, Shared Zones, Liveable Streets, Living Alley, and Living Streets. Furthermore, while Scandinavian countries are generally at the forefront of urban design and shared spaces, it appears they have developed little design guidance. Other European countries appear to have design guidance or research, however, in their native language.

Shared paths

Shared use path guidance is out of date (particularly providing for the	Local Transport Note 1/12 Shared Use Routes for Pedestrian and Cyclists, Department for	This is a comprehensive guide that provides underlying principles, site assessment, general and detailed design considerations, stakeholder engagement and post implementation information. Blind and partially sighted people are referenced occasionally throughout the document, however, there is no comprehensive section dedicated to considerations
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PPDG gaps	References / research	Comments
visually impaired)	Transport UK, September 2012.	or standards. Although, the document has been developed to comply with the duties of the Equality Act 2010. It is a useful starting point for guidance, but may require more specific guidance for the visually impaired.
	Shared Path Audit Guidelines, VicRoads, September 2012.	While the guide is for audit purposes, it highlights some of the key design criteria for a safe shared path, and may be used to help inform the development of New Zealand guidance. *This is also relevant to providing guidance on audit processes on pedestrian networks, as discussed below.
	Design Manual, Washington State Department of Transport, July 2012.	Provides relatively comprehensive design guidance from an engineering point of view for shared paths, however does not consider users or urban design outcomes in detail.

Comment: The review struggled to find comprehensive guides that provided both design guidance, as well as comprehensive consideration of vulnerable users and urban design outcomes.

Some design guidance can also be found in Austroads Guide to Road Design Part 6A Paths for Walking and Cycling, but it also suffers from the above problem.

Assessing and auditing the pedestrian network

Guidance on appropriate tools to assess/audit the pedestrian network	Pedestrian Environment Review System (PERS), Transport for London/TRL Software, 2000's.	PERS is a walking audit tool defined as 'a systematic process designed to assess the quality of the pedestrian environment within a framework that promotes objectivity'. The system contains a check sheet for onsite audits, and software to analyse the data. Transport for London requires that this system is used to assess new developments. The system can be used for links, crossings, routes, public transport waiting areas, interchange spaces and public spaces. The scoring system contains qualitative and quantitative factors that are scored and can be weighted. The output of the review process includes five stages of results. The content of the software itself was not obtained or reviewed. TRL Software also provide a cycling and freight modules as part of Streetaudit services.
	Pedestrian Road Safety Audit Guidelines and Prompts Lists, U.S Department of Transport Federal Highway Administration, July 2007.	This is a comprehensive guide focused on pedestrian road safety audits. It also contains a lot of background information on the basic principles of pedestrian safety. It outlines the road safety audit procedure and provides detailed checklists for a pedestrian audit and identifies the factors that should be considered at each stage of audit (planning, design, construction and post-construction). It provides a good starting point for further guidance.
	Evaluating the capability of walkability audit tools for assessing sidewalks, Article in Sustainable Cities and Society, January 2018.	The research reviewed ten pedestrian audit procedures/tools (nine from the United States and one from Perth, Australia). The research found that only a few tools adequately address disability issues, safety and attractiveness and makes some recommendations to address this. The paper is a useful starting point for developing a pedestrian audit procedure in New Zealand.

Comments: Most of the tools/procedures found came out of the US from the early-mid 2000's. They provide a useful starting point, however, may not cover the full range of issues and considerations that would be expected today (the non-engineering aspects). However, there is enough guidance and literature to build a New Zealand system following further technical review of existing literature.

Pedestrian monitoring

Guidance on pedestrian surveys and	Measuring Walking – A Guide for Councils,	The guide provides information on what, when, where and how to measure pedestrians. It assesses a range of methodologies and recommends when they can be used. It also contains some case
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PPDG gaps	References / research	Comments
monitoring is out of date	Victoria Walks, September 2013.	studies. Some of the information is specific to Victoria, Australia, however the guide also contains information that maybe relevant to New Zealand.
	Pedestrian Comfort Guidance document – Transport for London, 2010.	The guide has been developed to help assess the impact of new developments, and to assess existing environments to identify improvements to make it more comfortable for the user. The process considers user behaviour, impact of street furniture, overcrowding, user perceptions and assessing crossings. The guide has an accompanying spreadsheet to record the data and calculate the results (this must be requested from Transport for London). *This process is also relevant to level of service metrics discussed below.
	Bicycle and pedestrian data collection manual, Minnesota Department of Transport, January 2017.	The manual builds upon the 2013 Federal Highway Administration Traffic Monitoring Guide and the 2014 National Cooperative Highway Research Program Report 797 Guidebook on Pedestrian and Bicycle Data Collection. It provides guidance on counting techniques/methodologies, site selection and calculation and analytical techniques. The Guidebook on Pedestrian and Bicycle Volume Data Collection contains a comprehensive assessment of 14 types of existing and emerging counting technologies/methods.

Comment: The documents reviewed appear to be specific to their location, or are generic and struggle to demonstrate clear value. There needs to be a specific purpose for the monitoring and survey guidance (and use of the data) to ensure that it is useful.

Level of service metrics		
Lack of level of service metrics	Multimodal level of service analysis for urban streets, NCHRP report 616, Transportation Research Board, Washington DC, USA, 2008.	This research report is frequently referenced in other pieces of work. It contains a method for calculating pedestrian level of service based on pedestrian density factors, and a range of factors that represent separation between pedestrians and vehicular traffic, traffic speeds, and the presence of physical barriers. The method is very complex and requires a strong mathematics background, and therefore may not be frequently used by practitioners.
	Quality/Level of Service Handbook, State of Florida Department of Transportation, 2009.	The Florida Department of Transport built upon the Highway Capacity Manual (HCM) and developed their own pedestrian level of service model. It is based on the existence of a sidewalk, lateral separation of pedestrians from vehicles, vehicle volumes and vehicle speeds. The model was based on user experience interviews and surveys. The methodology is complex and requires a strong mathematics background and may not be frequently used by practitioners.
	Research Report AP-R475-15 Level of Service Metrics (for Network Operations Planning), Austroads, 2015.	The research report developed a level of service framework for all modes based on a literature review, consultation and application through case studies. Pedestrian level of service is broken into five 'needs'; mobility, safety, access, information and amenity. Each of these needs have a range of measures attributed to them, such as trip hazards under the safety need. The measures are rated from A-F based on an assessment by a practitioner. In comparison to the above approaches, this is a relatively user-friendly approach.
	Guidelines for assessing pedestrian level of service, Main Roads Western Australia, May 2006.	The technical note identifies the key categories (physical characteristics, location factors, user factors) and factors (such as access, path width and surface quality) for pedestrian level of service. It establishes the method of assessment for each factor and outlines the assessment process with seven steps. An assessment matrix is provided which provides a scoring and weighting system to establish an overall score and level of ranking from A - F.

PPDG gaps	References / research	Comments
	Determining the most suitable pedestrian level of service method for Dhaka City, Bangladesh, through a synthesis of measurements, Transportation Research Record journal, January 2015.	This study reviewed the HCM, Florida DoT, and MainRoads methods discussed above along with the trip quality method and Tan Dandan method developed for use in China. The study used each of the approaches to assess the LoS method and compared the results against user perception surveys. The study found that the MainRoads method was best suited to determine the service quality of Dhaka City walkways. It also best aligned to the factors that users identified as having an impact on level of service.

Comment: The review found that a significant amount of research has been undertaken into pedestrian level of service, primarily in the USA, Australia and in developing countries such as Bangladesh. The USA methods are generally more quantitative, whereas the Australian examples are more qualitative. This high-level review concludes that there is a comprehensive level of international literature that could assist in developing a pedestrian level of service framework in New Zealand.

8.3 Opportunities for RTS14

Table 8.2 outlines the international guidance that may present opportunities to address the gaps identified in RTS14.

Table 8.2 RTS14 content opportunities

RTS14 gaps	References / research	Comments
Limited range of TGSIs for growing uses	None	None
Review the use and impact of TGSIs for cycle facilities	Tactile Paving Survey – Report number HSL2005/07, Health & Safety Laboratory, 2005.	This research paper did not specifically look at green tactile pavers, however, it reviewed the installation of tactile pavers at 48 locations across three U.K cities. It found that 58% of installations had one of more problems, and 12.5% were the wrong colour. It found that a lack of contrast was the common mistake, and that colour choices appear to have been chosen for aesthetic reasons to make them blend in (rather than the actual purpose to contrast). The paper does not provide specific guidance applicable to NZ but provides useful examples of poor installation.
	Interim changes to the Guidance on the use Tactile Paving Surfaces, Department for Transport (UK), August 2015.	In 2015 the UK government consulted on changing the requirement for red blister surface at a controlled crossing, to a contrast requirement rather than a colour requirement. “ <i>The tactile surface used to indicate the presence of a controlled crossing should provide a contrast ratio of at least 50% to the surrounding paving in both wet and dry daylight conditions and when illuminated by the adjacent street lighting at night.</i> ” It appears that a much wider programme of research into tactile paving is underway (or planned), but this change was one of three that were seen to be able to be made in the interim. However, it is not yet clear what the outcomes of the consultation were. It is noted that the red requirement for a controlled crossing is the only specific colour requirement in the Guidance on the use of Tactile Paving Surfaces, Department of Environment, Transport Regions, 2007.

Comments: No recent literature was found testing the use of green tactiles. The use of green tactiles appears to be limited to Australia, China and Hong Kong. Literature indicates that contrast is the most important factor, and that there are many examples of poor installation and a lack of global consistency. Further research is required, or specific NZ case studies, to determine a way forward for the use of alternative colours.

8.4 Summary

This process identified a wide range of international guidance and procedures that may inform the development of additional New Zealand guidance. It is recommended that these documents are reviewed in depth when the relevant gap is progressed to identify their appropriateness in the New Zealand context.

9. Conclusions

9.1 Overall conclusions

Overall, NZ is well placed in terms of the strategic direction, policy and planning and design guidance that exists to provide for walking. It will take some time for the recent change to government direction and policy to be evident in the built environment. There are also some gaps and weaknesses in funding processes and translating guidance into good practice delivery that can be improved.

Good baseline information needs to be established to be able to quantify how we are actually doing with regard to the volume, frequency, safety and people’s experience of walking. The Ministry of Transport and Statistics NZ ‘enduring questions’ may help with this, but NZ Transport Agency also needs to take a lead role in this area. Policy is providing direction for creating more walkable environments and public sector funding is available to support this. Reviewing and auditing projects before and after implementation could be done better to ensure design aspects such as tactile pavers are provided as per the guidance. The contracting industry will need some support in this area through clearer installation guidance and potentially training.

The existing planning and design guidance in NZ is reasonably current and is recognised internationally as best practice. This research has provided good insight into the use of NZ Transport Agency pedestrian planning and design guidance and identified gaps in the guidance. Industry feedback confirmed the gaps identified in the guidance document review. Most of the gaps are related to guidance that can be updated to reflect best practice or more recent policy direction. Some new content is required. It was found that there is both New Zealand and international guidance that could help to address the gaps. Allocating the priority of the gaps is problematic as there is no high-level pedestrian environment study to guide this, as was available when developing the revised cycle planning and design guidance. The parallel work on barriers to walking may guide this.

The research has also provided insight into how policy and funding influence the expenditure on both new and existing pedestrian facilities. Industry feedback on this also confirmed aspects highlighted in the policy and funding document review. Overall the engagement confirmed the need for a single point of guidance for how all the documents referred to in this review relate to each other, and how they are applied to pedestrian facilities, a level of service framework for pedestrian facilities, and a tool to estimate future pedestrian demand of new facilities to assist in the economic evaluation (or remove the requirement to justify it). The provision of guidance on how a strategic pedestrian network is defined in the GPS, and what is required from local authorities was identified. A range of areas for improvement were identified as outlined in the recommendations.

There are many aspects that contribute to good walkable environments, **Figure 9.1** illustrates some of these aspects. This research has touched on some aspects however is acknowledged work is required across many sectors to develop truly walkable environments that cater for everyone.



Figure 9.1 Some of the aspects that contribute to walkable environments

9.2 The research questions

The research provided answers to the research questions as outlined below.

Question 1

How widespread is awareness of the pedestrian planning design guide and RTS14 amongst RCAs and other stakeholders such as developers and designers?

Based on the survey there is a **reasonably high awareness of the PPDG** (72% of respondents), particularly in the planning and design sectors, including transport planners and urban designers. Awareness of RCA respondents was high at 78%. Developer awareness is harder to gauge but as they generally use designers this may not be an issue.

Based on the survey the **awareness of RTS14 is quite low overall** in the planning and design sectors (40% of respondents). Awareness of RCA respondents was higher at 63% but this is still not ideal. Transport planners and designers have a higher awareness than urban designers. Again, developer awareness is harder to gauge but as they use designers this may not be an issue, unless they predominately use urban designers who are less aware of the guidance.

Awareness of the guides does not always translate into regular use of the guides.

Question 2

Who is using the pedestrian planning and design guide and RTS14?

The 32% of survey respondents that use the PPDG more frequently (daily, at least once a week or once a month) are predominately those in **transport design or safety roles**. 55% of regular users were consultants and 39% from local authorities. Only 5% of the respondents who are aware of the PPDG never use it, the majority use it at least once a year.

The 22% of survey respondents that use RTS14 more frequently (daily, at least once a week or once a month) are predominately those in **transport design or safety roles**. 58% of regular users were consultants and 38% from local authorities. 13% of respondents who are aware of RTS14 never use the guide, almost half (49%) refer to it at least once a year.

The councils who participated in the case studies indicated that the relevant District Plan and 'Infrastructure Design Specification' or equivalent documents are the preferred 'go to' design documents for council staff and developers.

Question 3

How is the guide and RTS14 being used for planning or other processes?

The majority of industry survey respondents indicated that the **PPDG is used most for the design of pedestrian infrastructure and road design projects**. The other more frequently cited uses are referencing best practice in reports, to inform safety audits, planning pedestrian networks, consenting and to inform peer reviews.

The majority of industry survey respondents indicated that RTS14 is used most for the design of pedestrian infrastructure and road design projects. The other more frequently cited uses are referencing best practice in reports, to inform safety audits, planning pedestrian networks consenting, to inform peer reviews and because it is required as part of local guidance.

Question 4

Are there any technical planning and design guidance gaps in the PPDG and RTS14 guides?

Yes. The review of the PPDG and RTS14 and the industry engagement identified there are planning and design gaps, these are outlined in Appendix A.

There were 43 gaps identified in the PPDG and 19 in RTS14. There are a range of actions required to address the gaps, noting that some gaps require more than one action. The actions include amendment of, or addition to, the existing guidance, research, trials, adopting international guidance or a change of legislation.

26% of the industry survey respondents provided useful insight into what may be missing from the PPDG. 19% of the industry survey respondents provided useful insight into what may be missing from the RTS14. This feedback was reviewed and added to the gap register in Appendix A as appropriate.

Question 5

Is the use of the guides constrained by any legislation, land use planning processes, or other guidance and tools that may overlap or contradict it?

Yes.

The industry survey respondents cited the most significant barriers to implementing the PPDG guidance were cost and conflict with other outcomes/disciplines. The other matters raised as key issues were funding frameworks, local policies not supporting walking and existing RMA processes.

The industry survey respondents cited the most significant barriers to implementing the RTS14 guidance were that contractors do not install correctly; layout has been designed incorrectly; lack of organisations direction/policy on the use of tactile pavers; and differing RCA guidance on where/how to use them.

Satisfactory execution of the pedestrian planning and design principles is potentially limited by the status as guidance at a local level. District plans often lack the rules to enforce the design principles contained in local and national guidance documents.

The PPDG is referred to in all the reviewed documents, aside from the GPS which operates at a much high level of policy and is not concerned with design issues or guidance. Therefore, the use of the guidance is encouraged through the funding process.

Question 6

How much has been spent on footpath maintenance and renewals by RCAs, by year, for the last three years?

Ten councils submitted their maintenance and renewal expenditure. Auckland Transport (AT) expenditure was much higher than the other councils (as expected), the averages are therefore demonstrated with and without AT expenditure below. The table illustrates that renewals expenditure exceeds maintenance expenditure by a magnitude of 2 – 4 times.

	2015/16	2016/17	2017/18
Maintenance average (with AT)	\$ 463,417	\$ 418,315	\$ 447,702
Maintenance average (without AT)	\$ 275,429	\$ 264,725	\$ 261,632
Renewals average (with AT)	\$ 2,199,882	\$ 2,073,056	\$ 2,276,166
Renewals average (without AT)	\$ 510,109	\$ 369,582	\$ 386,963

Question 7

How have NLTF criteria or policies affected the levels of spending?

Historically, pedestrian facilities appear to have been considered secondary to almost all the other modes in terms of strategic importance, and funding allocation. However, this imbalance has been improved through the GPS 2018 and IAF 2018. These documents have significantly raised the profile of walking, and better consider the range of benefits that walking can contribute to the transport system, the performance of a city and the health and wellbeing of the individual. These improvements will likely increase the level of investment in pedestrian facilities. The full effect will have to be monitored in the years following the implementation of the GPS 2018.

The EEM has a relatively strong bias towards encouraging vehicular improvements over other modes, including pedestrians. This is potentially constraining investment in providing more walkable communities, and requires a detailed review to identify how the imbalance can be resolved.

Most of the respondents through the industry engagement believe that the **GPS has an influence on investment in pedestrian facilities**. However, comments indicate that providing additional funding will be a more effective method to encourage more investment, and that some councils have good strategies in place regardless of the GPS. Respondents also said that the increased pedestrian priority in the GPS 2018 will have a positive impact on investment levels.

Question 8

How would changes in NLTF criteria or policies affect investment and footpath levels of service or other relevant infrastructure?

Two major changes have recently occurred. The first is the increased government priority for walking in the GPS 2018 and IAF 2018. The second is the new funding activity class for local road footpath maintenance and renewals. However, these changes occurred relatively late in the Council process of updating their most recent Long Term Plans and Regional Land Transport Plans. The benefits of these changes are therefore unlikely to be fully felt until after the next funding cycle.

Timing of changes are important. While the recent changes were appreciated, local authorities were not given sufficient time to reflect these properly in their investment programmes. Comments from the industry engagement suggested that the changes in the GPS need to flow down to regional and local level documents to have greater effect and this will take time. Comments were made that walking as a mode of transport needs to be given greater recognition, and not seen as secondary to new roads or other modes (including cycling).

9.3 Other learnings and considerations

Other NZ Transport Agency documents

The research identified that other NZ Transport Agency documents could be improved to ensure consistent pedestrian guidance as outlined below.

The review highlighted the following improvements could be made to the **TCD Manual**:

- Ensure Parts 4 and 5 of the manual which are currently under development are consistent with and reference the PPDG, and RTS14 guidance.
- Modify or clarify the definition of pedestrian within the Definitions part of the manual so as not to contradict the PPDG definition.
- Ensure the TCD Manual contents reference the pedestrian and cycle level crossing guidance (Turner et al, 2017) developed to supplement Part 9.

The review highlighted the following improvements could be made to **Bridging the Gap**:

- Add reference to the principles of universal design and the needs of disabled users. This should include specific reference to relevant guidance such as RTS14 (or its successor) and relevant NZ Standards.
- Clarify use of non-motorised user audits and road safety audits (with relevant references). There is also an opportunity to build on and expand the scope of the document to create a national urban design manual for all schemes, not just NZ Transport Agency projects. This would require expanding the content to include a wider range of scheme types such as shared spaces, pedestrianisation, and road space reallocation.

The review highlighted the following improvements could be made to **Neighbourhood Accessibility Plan (NAP)** guidance:

- Evaluate if the NAP process is still being used and if it is a useful tool and whether it could be streamlined;
- If so, then update the guidance to reference the PPDG, RTS14 and other relevant documents.

The review highlighted the following improvements could be made to the **State Highway Control Manual**:

- The key improvement would be to reference the PPDG and RTS14 as the manual currently refers to NZS4404 only. Ideally the manual should also reference Bridging the Gap and NZS 4121:2001.
- Ensure guidance on the widths of pedestrian paths is consistent with the PPDG.
- Guidance or reference to mobility parking requirements in rest areas and service centre car parks and how these should be located and designed should be included.
- Diagrams to illustrate desired pedestrian layouts for rest areas/service centres would also be useful.

The review highlighted the following improvements could be made to the **Road Safety Audit Procedures**:

- Include consideration of mobility impaired users in the RSA checklists.
- Update road safety audit training to highlight the safety considerations of pedestrians and mobility impaired users.
- Replace FHWA pedestrian audit reference, preferably providing local NZ context.
- Consider whether separate pedestrian audit tools have merit and should be recommended or mandated for certain projects.

The review identified that the **Speed Management Guide** needs to be reviewed to ensure that the safe and appropriate speeds are aligned with pedestrian safety and comfort outcomes.

Other guidance

The review of NZS4404 identified that the standard could include the following references when it is next updated:

- Include reference to inclusive design and relevant standards such as RTS14.
- Include reference to the PPDG and Austroads Pedestrian Crossing Facility Selection Tool to identify appropriate pedestrian crossings within subdivisions.

10. Recommendations

The research has identified a range of recommendations that would enhance the provision for walking. Most of the recommendations can be led by the NZ Transport Agency, some will require cross sector collaboration.

Measuring success

1. Develop a method to better understand the quantum of walking and quality of the walking environment
2. Establish baseline data
3. Establish keyperformance indicators to measure against
4. Develop a home for the data

Guidance

5. Combine PPDG and RTS14 into one on-line guidance resource
6. Develop the Walking Network Guidance (WNG) structure to guide content development
7. Develop programme of guidance improvements/development based on the gaps identified in this review
8. Update the Speed Management Guide to strengthen consideration of pedestrian safety and comfort
9. Audit a sample of local authority guidance (e.g. Codes of Practice) for consistency with PPDG and RTS14
10. Review the need to retain RTS series and consider integrating these into appropriate existing guidance
11. Address other NZ Transport Agency guidance as identified in this review when the opportunity arises
12. Pursue opportunities to embed pedestrian design principles in all NZ Transport Agency documents

Awareness, training and cross sector engagement

13. Develop a TGSi design and installation guidance note for designers and contractors who install TGSIs.
14. Consider when awareness of the guidance should be raised (now or after updated guidance?)
15. Increase awareness through industry forums, publications and other means
16. Consider industry training based on new format and content (timing)
17. Engage with the NZ Property Council re: 'walkability' in land development
18. Engage with NZ Planning Institute re: supporting walkability through land use planning and District Plans
19. Engage with the disability sector re planning and design aspects not already covered in the guidance

Funding

20. Develop a single point of funding guidance, and demonstrates how the various processes fit together
21. Provide more support for local authorities through the funding process
22. Establish special funding projects (similar to the model communities' concept)
23. Provide funding case studies
24. Review the Economic Evaluation Manual and update as necessary to ensure it fully reflects the Government's direction and does not result in adverse outcomes for walking and cycling

- 25. Establish standard BCRs for intervention types (as is happening in road safety)
- 26. Provide guidance to define a strategic pedestrian network
- 27. Develop a pedestrian level of service framework to inform investment

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Appendix A - PPDG and RTS14 Gaps



Gap No.	Source	Page	Section	Type of gap	Gap name	Description of gap	Comment	Requires international literature to identify best approach	Amendment to current document	Requires new guidance to be developed/added	Requires NZ research project	Requires approved trial	Other action	Identified as a gap through the survey (including survey ID number)
PPDG-1	Literature review and online survey	n/a	General	Formatting	Reformat PPDG into an online resource	Reformat into similar resource as Cycle Network Guidance, including updated structure, relevant links to other resources/documents and updated photographs			Yes					181. It needs to be updated (e.g. photos showing best practice). 130. Needs updating in terms of user requirements - link to other guidance and best practice that have been updated (or in process of being updated). Shared space design, shared paths, shared surfaces, intersecting with cycling lanes, bus stops.
PPDG-2	Literature review	v	Glossary	Inconsistency	Misalignment of definitions with other documents and some definitions missing	It would be desirable for the definitions to align with other documents and newer terms included	Newer terms include ONRC and NOPs		Yes					
PPDG-3	Literature review and online survey	1.1 + 2.1-5	Introduction and Planning and policy	Out of date guidance	Purpose of this guide is out of date	Update to reflect Government Policy Statement (previously referenced national walking and cycling strategy) and current policy context.	Policy context should include Safe System approach, health policies, legislative framework for walking.		Yes					55. Reference latest version of RTS14 125. The guidance needs to be updated to take into account the new government direction, our new strategic context, evolving safety strategy, changes in technology and international best practice, recent research, likely regulatory changes regarding use of footpaths, etc., as well as using 'customer' (communities and individuals) insights to interpret what various users need/want in relation to access via walking and how these needs interact/impact on each other. It doesn't need to incorporate all of this in detail but the world has changed in the last 10 years and while some of the guide will still be relevant - changes in attitude, behaviour and technology should influence planning and design. 183. PPDG lacks an appreciation of urban design and Vision Zero 228. Embed Vision Zero principles
PPDG-4	Literature review	2.9-10	Planning and policy	Lack of clarity	A lack of clarity in how policies interact with design requirements	Guide refers to all of the other policies LAs need to consider but not how they interact with meeting the design requirements within PPDG.	Provide a clearer link between the planning/policy section and design section of the guidance.		Possibly					
PPDG-5	Literature review and online survey	3-2	Principles	Out of date guidance	Guide does not reflect all users on the footpath	Widen discussion to include other footpath users including small children cycling legally on the footpath, needs of the elderly, mobility scooters and double prams.	Also potentially add diagrams showing space requirements for variety of footpath users.		Yes					55. Reflect greater variety of wheeled devices using pedestrian infrastructure (incl. e-devices) 101. Maybe more on needs of elderly 134. Haven't looked at the guide for a while but it should reflect an aging population, e.g. Providing seats in each cbd block for use by the elderly and any one else
PPDG-6	Literature review	3.4	Principles	Out of date guidance	Walking speeds are based on old data	Walking speeds refer to US research.	Useful to understand NZ walking speeds in research study				Minor study			
PPDG-7	Literature review and online survey	3.6-11	Principles	Out of date guidance	Pedestrian activity data, walking trips and crash statistics are out of date	These sections need to be updated to reflect up to date data and research including CAS system changes, aging population, how walking supports public transport.	Including Pedestrian activity overview, Journey time and distance, Who walks, where and why, Why people don't walk, Pedestrian motor vehicle crash profile, Falls - slips, trips and stumbles, Pedestrians on small wheels		Yes					216. Are you aware of the deterioration in the quality of the data in the Crash Analysis System (CAS) in regard to walking and cycling through the 2016 - 2017 years which will impact on the ability of practitioners to mitigate existing problems? http://roadtoll-nz.blogspot.co.nz/2018/05/bicycle-and-pedestrian-crashes.html 134. Haven't looked at the guide for a while but it should reflect an aging population, e.g. Providing seats in each cbd block for use by the elderly and any one else 199. Integration with public transport
PPDG-8	Literature review	NEW	Principles	Out of date guidance	Lack of emphasis in the principles of visual contrast	Emphasise visual contrast in principles section linking to RTS14 guidance.				Yes				
PPDG-9	Literature review and online survey	4.2-3	Principles	Out of date guidance	Guide does not reflect 'sense of place' or refer to Bridging the Gap	Update urban form section to include place and movement concepts and to refer to urban design outcomes including 'Bridging the Gap' document.			Yes					6. I think that it would be better to have a document that considered street design in a holistic way rather than separating out "pedestrians" and "vehicles". We design street environments for a variety of different users and always need to consider how these groups interact

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PPDG-10	Literature review	4.2	Principles	Lack of clarity	Too many design characteristics to be memorable	Nine characteristics for walkable communities are listed. Suggest the criteria could be simplified.			Yes					
PPDG-10	Literature review	4.3	Principles	Inconsistency	Mode speeds are too high	Average speeds of different modes are high and may overestimate distances travelled.	Replace with more appropriate speeds or provide a range of speeds and distances travelled.		Yes					
PPDG-11	Literature review and online survey	4.4	Principles	Lack of clarity	Strengthen CPTED considerations	Update if necessary and include information on CPTED audits.			Yes					160. More detail on CPTED audits and requirements. When and when not to light walkways fitting facilities into tight locations designing for pedestrians where there is no footpath or space to fit a footpath (retrofit improvements)
PPDG-12	Literature review and online survey	5.1	Principles	Out of date guidance	Road user hierarchy is out of date	Update to include ways of identifying a road user hierarchy, for example NOPs.			Yes					101. it is one size fits all with little regard to hierarchy or constraints. e.g. AT wanting kessel kerbs at ALL bus stops plus need info on capacity limits of shared paths
PPDG-13	Literature review	5.3	Principles	Lack of clarity	Lack of guidance on accommodating pedestrians within new developments (outside the road corridor).	In particular, guidance is needed on how to design for pedestrians in off-street car parking areas.				Yes	Possibly			
PPDG-14	Literature review and online survey	5.5.3	Principles	Out of date guidance	The shared zones guidance is out of date with policy and use of shared zones in NZ	Update guidance on shared zones to reflect the latest RTS14, interaction/use by cyclists and link to CNG guidance where relevant. Could also include lessons learnt from implementation of shared zones in NZ.			Yes					6. I think that it would be better to have a document that considered street design in a holistic way rather than separating out "pedestrians" and "vehicles". We design street environments for a variety of different users and always need to consider how these groups interact 47. update the guideline to a later version to include new research findings within in pedestrian planning and design area as well as maybe having information about how walking interact with cycling while planning and design? 133. Pedestrian and shared space 231. Best practice and examples of shared space - including design, community engagement, and driver use/education
PPDG-15	Literature review and online survey	5.5.4	Principles	Out of date guidance	Guidance is out of date for town centre urban upgrades	Update to reflect streetscape and urban design guidance for town centre upgrades.	This is probably wider as it is really about road space allocation. Could collect case studies in later stages to give depth to the section, and develop sample cross sections		Yes					
PPDG-16	Literature review and online survey	6.4.4	Principles	Out of date guidance	Shared use path guidance is out of date	Update to current guidance including reference to RTS14 and CNG.	Some work has been undertaken about how to provide for visually impaired pedestrians on shared use path routes. Lots of trials and some adoption of standards like green surface tactiles on cycle crossings. Need to review how the trials have worked and what is best practice that we should be promoting.	Possibly	Yes		Yes			196. An update version with some guidance around shared paths (with cyclists) and reference to new mobility aids
PPDG-17	Literature review	6.5	Principles	Out of date guidance	The guide does not refer to the Austroads Pedestrian facilities selection tool	Link to Austroads Pedestrian Crossing Facilities selection tool and update any guidance that has changed regarding crossing types.			Yes					116. Yes, when one form of crossing treatment is favoured over another. Relies a lot on judgement without any guidance 161. I think the pedestrian warrants need to be referred to in some way, even though we have moved away from purely numerical assessment of appropriateness of pedestrian facilities
PPDG-18	Literature review	7.2-4	Process	Out of date guidance	The guide is out of date with reference to Neighbourhood Accessibility Plans and other community walking plans.	Review if Neighbourhood Accessibility Plans and Community walking plans still have value. Include reference to business case approach for identifying and funding schemes.			Yes					
PPDG-19	Literature review	New	Process	Lack of clarity	Guidance on appropriate tools to assess the pedestrian network	Guidance is required on recommended audit method/tools to assess the pedestrian environment / networks or which existing tools should be promoted.		Yes	Yes		Possibly			126. Methods of auditing the quality of the pedestrian network i.e. PERS Pedestrian Environment Review System used by Transport for London. The importance of getting the urban structure right first and foremost to facilitate walkable catchments & communities
PPDG-20	Literature review	12.1	Process	Out of date guidance	Prioritisation process is out of date	Very limited information currently available on prioritisation methods.	Update guidance to include prioritisation methods.		Yes					

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PPDG-21	Literature review	13.6	Process	Out of date guidance	Funding process and opportunities guidance is out of date	Update guidance on funding of pedestrian facilities.			Yes					
PPDG-22	Literature review and online survey	15.16	Design	Out of date guidance	Guidance on the safety of slip lane treatments is now out of date	Update guidance on relative safety of slip lane treatments	Opportunity to incorporate Auckland Transport research		Yes		Possibly			55. Updated guidance on relative safety of slip-lane treatments (ref AkId Trpt research)
PPDG-23	Literature review	15.13 and 15.16	Design	Out of date guidance	Countdown timers for signalised crossings is not included.	Guidance on the use and implementation of pedestrian countdown timers	NZTA RR428 may be a good reference.			Yes				
PPDG-24	Literature review and online survey	19	Post-design	Out of date guidance	Guidance on pedestrian surveys and monitoring is out of date.	Add guidance on new ways of measuring and monitoring pedestrian activity through technology.		Possibly	Yes					192. This paper argued for a database where pre and post pedestrian count information is stored but nothing has eventuated from this http://www.nzta.govt.nz/assets/resources/research/reports/436/docs/436.pdf . Something like this would be useful, as we really don't know have good information about walking or potential increases in walking generated by new facilities
PPDG-25	Literature review and online survey	n/a	Missing	Lack of guidance	Lack of level of service metric for pedestrians	Pedestrian level of service metrics would be useful to ensure consistent quality and assessment processes		Yes			Possibly			60. Level of service metrics 131. Relevant Level of Service criteria 182. LoS/QoS tool for pedestrians 186. Quantitative analysis, e.g. calculating Level of Service for footpaths taking into account width, gradient etc. (delay at crossing is already in the guide)
PPDG-26	Literature review and online survey	n/a	Missing	Inconsistency	There is a lack of emphasis on planning and designing for people with disabilities and universal design principles	The needs of people with visual and physical impairments should be provided. Universal design principles should be included and links to relevant documents such as NZ standards, RTS14 and Bridging the Gap.			Yes					6. I think that it would be better to have a document that considered street design in a holistic way rather than separating out "pedestrians" and "vehicles". We design street environments for a variety of different users and always need to consider how these groups interact 55. Reference latest version of RTS14 95. Does not reflect the diversity of the disabled population and the way that the built environment can be designed to improve their ability to move around their community safely and with dignity 130. More guidance for those who have impairments including cognitive impairments (including brain injury). I.e. colour contrast, complexity/logic, expectations, tactile discrimination, road crossings, priority etc
PPDG-27	Literature review and online survey	n/a	Missing	No guidance exists	Limited design checks or audits consider pedestrian needs	Pedestrian design considerations should be reviewed during design and construction stage of projects.	Road safety audits should consider all users including pedestrians but this is not always done, or other road users needs take precedence.			Yes	Yes	Yes	Education / training and update Road Safety Audit procedures	115. Resolving practical construction issues, such as drainage, conflicts with vehicle crossings/ driveways, topological issues 192. There is also no chapter on evaluation or building of information about walking to inform future projects
PPDG-28	Guidance review and Online survey	6.8	Design	Lack of clarity	A lack of guidance for requirements at railway crossings	Current guidance can be supplemented by referring to the latest NZTA and KiwiRail guidance	Opportunity to clarify guidance		Yes					18. More details of railway interface 29. Need for reference to railway level crossings 132. Rail crossings - making the actual track crossing pavement / rubber mats safer
PPDG-29	Guidance review and Online survey	n/a	Design	No guidance exists	Need greater consideration of the impact of cycle facilities at crossing points	Separated cycle facilities at crossing points and bus stops	Opportunity to provide guidance or link to CNG guidance that considers this.		Yes				Link to CNG	39. The impact of cycle facilities at crossing points

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PPDG-30	Online survey	n/a	Design	No guidance exists	A lack of guidance for the proximity of pedestrian crossings to driveways	Guidance regarding proximity of pedestrian crossing points to driveways	Opportunity to provide more guidance			Yes				25. Guidance regarding proximity of pedestrian crossing points to driveways etc
PPDG-31	Online survey	n/a	Design	Lack of clarity	A lack of guidance on minimum safety railing height for cyclists	A lack of quantifying requirements (e.g. minimum safety railing height for cyclists)	Opportunity to provide guidance - probably within CNG.		Yes				Link to CNG	45. Quantifying requirements (e.g. minimum safety railing height for cyclists)
PPDG-32	Online survey	n/a	Planning and policy	Lack of clarity	Pedestrians are often considered last or the lowest compared to other modes	Priority of pedestrians does not reflect that they are highly vulnerable compared to other modes, and should therefore be given greater consideration	Emphasis the importance of pedestrians in the manual, and lobby Councils to provide more priority in their planning documents and road hierarchy		Yes				Largely a Council issue. NZTA could encourage reconsideration of priorities	123. Recently had an issue where cyclist safety was put over pedestrian safety as the pedestrian island that was appropriate for improving children safety narrowed the road so much that cyclist safety was an issue. Due to the relative level of guidance/standards, cyclist safety was became the important factor. We will likely use sharrows at the narrowing to address the cyclist safety so children safety is of a higher priority. Design guidance is also a little woolly 228. Consider pedestrians the most important road user, given that they are the most vulnerable user 183. PPDG is overly engineering orientated. Roads are for vehicles and pedestrians are second class. E.g.: Only if there are not too few or not too many pedestrians then a pedestrian crossing might be considered.
PPDG-33	Online survey	n/a	Planning and policy	Lack of clarity	Lack of guidance on integrating land use and transport	Perception that the PPDG does not provide guidance on integrating transport and land use	Provide more emphasis, or more guidance. Encourage local authorities to consider these issues.		Yes				Largely a Council (local and regional) issue. NZTA could encourage reconsideration of integrated planning.	132. More public transport integration Housing and place-making aspects. Mix with more urban design elements 139. Walking in context with integrated land use planning to provide walkable access to most needs (in urban areas), to reduce trip distances, increase walking and reduce private vehicles trips, as well as integration with the rest of the transport system, e.g. public transport
PPDG-34	Online survey	n/a	n/a	No guidance exists	Lack of guidance on the maintenance of footpaths	A lack of guidance on the maintenance of footpaths and how to prioritise maintenance.	Provide more guidance on maintenance now that NZTA is providing funding, or provide links to other guidance		Possibly	Possibly				132. Any advice regarding maintenance of footpaths now that NLTF can fund this
PPDG-35	Online survey	n/a	Design	Lack of clarity	A lack of guidance for managing off road path approaches to a road crossing	A lack of guidance for managing off road path approaches to a road crossing	Opportunity to provide more guidance			Yes				150. Dealing with separated (off road) path approaches to road crossings
PPDG-36	Online survey	n/a	Planning	No guidance exists	There is no design envelope for a pedestrian	A "design envelope" for the average pedestrian	There is already a 'Physical space required' section however this is only widths, provide further details.		Yes	Possibly	Possibly			158. Would be useful to have a "design envelope" for average pedestrian. Define the height above which a change in elevation on the ground will be noticeable and therefore avoidable
PPDG-37	Online survey	n/a	Design	No guidance exists	A lack of guidance for how to delineate between footpaths and adjacent cycleways	A lack of guidance for how to delineate between footpaths and adjacent cycleways	Opportunity to provide guidance			Yes				158. Guidance on delineation between footpaths and adjacent cycleways. 181. Gap particularly around interaction with protected/separated cycle infrastructure priority treatments for pedestrians across side streets
PPDG-39	Online survey	n/a	n/a	No guidance exists	Guidance for peri-urban locations	A lack of guidance for providing for pedestrians in peri-urban areas				Yes				169. Peri-urban locations, often state highways approaching cities where small pockets of housing exist that lack footpaths in immediate area or links to the urban boundary. Typically these areas have higher speed limits. Egmont Village is a good example
PPDG-40	Online survey	n/a	Planning	Lack of clarity	Assessing latent demand for pedestrian activity	Assessing latent demand for pedestrian activity is considered difficult and rarely done in practice.	Opportunity to provide more guidance			Yes				192. Low on specifics and using it seems to go in the too-hard basket frequently as a result. A classic example is the reference to assessing latent demand is quite difficult to translate into practice

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PPDG-41	Online survey	9.1	Planning	Lack of clarity	Community engagement guidance is not always appropriate	Update guidance to include community engagement approaches for smaller projects	Opportunity to provide more guidance on communications		Yes					192. The recommendations about community engagement are often too intense to follow for the majority of projects and/or don't align to recent funding (i.e. no recent funding in the safe school travel plan eem category)
PPDG-42	Online survey	6.4.3 and 14.1	Principles	Lack of guidance	More detail on driveway treatments	More detail on driveway treatments to accommodate pedestrians on the footpath would be useful			Yes					160. More detail on good driveway treatments. Need to consider road crossfall and shape, kerb height, driveway gradient off the back of the footpath and width of the footpath
PPDG-43	Project liaison group	n/a	n/a	Lack of guidance	How to plan and design temporary / transitional pedestrian projects	It would be useful to include how to set up, monitor and evaluate temporary or transitional projects as these become more common.	Could include lessons learnt or case study examples from around NZ.			Yes				

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PPDG-1	Literature review and online survey	n/a	General	Formatting	Reformat PPDG into an online resource	Reformat into similar resource as Cycle Network Guidance, including updated structure, relevant links to other resources/documents and updated photographs			Yes					181. It needs to be updated (e.g. photos showing best practice). 130. Needs updating in terms of user requirements - link to other guidance and best practice that have been updated (or in process of being updated). Shared space design, shared paths, shared surfaces, intersecting with cycling lanes, bus stops.
PPDG-2	Literature review	v	Glossary	Inconsistency	Misalignment of definitions with other documents and some definitions missing	It would be desirable for the definitions to align with other documents and newer terms included	Newer terms include ONRC and NOPs		Yes					
PPDG-3	Literature review and online survey	1.1 + 2.1-5	Introduction and Planning and policy	Out of date guidance	Purpose of this guide is out of date	Update to reflect Government Policy Statement (previously referenced national walking and cycling strategy) and current policy context.	Policy context should include Safe System approach, health policies, legislative framework for walking.		Yes					55. Reference latest version of RTS14 125. The guidance needs to be updated to take into account the new government direction, our new strategic context, evolving safety strategy, changes in technology and international best practice, recent research, likely regulatory changes regarding use of footpaths, etc., as well as using 'customer' (communities and individuals) insights to interpret what various users need/want in relation to access via walking and how these needs interact/impact on each other. It doesn't need to incorporate all of this in detail but the world has changed in the last 10 years and while some of the guide will still be relevant - changes in attitude, behaviour and technology should influence planning and design. 183. PPDG lacks an appreciation of urban design and Vision Zero 228. Embed Vision Zero principles
PPDG-4	Literature review	2.9-10	Planning and policy	Lack of clarity	A lack of clarity in how policies interact with design requirements	Guide refers to all of the other policies LAs need to consider but not how they interact with meeting the design requirements within PPDG.	Provide a clearer link between the planning/policy section and design section of the guidance.		Possibly					
PPDG-5	Literature review and online survey	3-2	Principles	Out of date guidance	Guide does not reflect all users on the footpath	Widen discussion to include other footpath users including small children cycling legally on the footpath, needs of the elderly, mobility scooters and double prams.	Also potentially add diagrams showing space requirements for variety of footpath users.		Yes					55. Reflect greater variety of wheeled devices using pedestrian infrastructure (incl. e-devices) 101. Maybe more on needs of elderly 134. Haven't looked at the guide for a while but it should reflect an aging population, e.g. Providing seats in each cbd block for use by the elderly and any one else
PPDG-6	Literature review	3.4	Principles	Out of date guidance	Walking speeds are based on old data	Walking speeds refer to US research.	Useful to understand NZ walking speeds in research study				Minor study			
PPDG-7	Literature review and online survey	3.6-11	Principles	Out of date guidance	Pedestrian activity data, walking trips and crash statistics are out of date	These sections need to be updated to reflect up to date data and research including CAS system changes, aging population, how walking supports public transport.	Including Pedestrian activity overview, Journey time and distance, Who walks, where and why, Why people don't walk, Pedestrian motor vehicle crash profile, Falls - slips, trips and stumbles, Pedestrians on small wheels		Yes					216. Are you aware of the deterioration in the quality of the data in the Crash Analysis System (CAS) in regard to walking and cycling through the 2016 - 2017 years which will impact on the ability of practitioners to mitigate existing problems? http://roadtoll-nz.blogspot.co.nz/2018/05/bicycle-and-pedestrian-crashes.html 134. Haven't looked at the guide for a while but it should reflect an aging population, e.g. Providing seats in each cbd block for use by the elderly and any one else 199. Integration with public transport
PPDG-8	Literature review	NEW	Principles	Out of date guidance	Lack of emphasis in the principles of visual contrast	Emphasise visual contrast in principles section linking to RTS14 guidance.				Yes				
PPDG-9	Literature review and online survey	4.2-3	Principles	Out of date guidance	Guide does not reflect 'sense of place' or refer to Bridging the Gap	Update urban form section to include place and movement concepts and to refer to urban design outcomes including 'Bridging the Gap' document.			Yes					6. I think that it would be better to have a document that considered street design in a holistic way rather than separating out "pedestrians" and "vehicles". We design street environments for a variety of different users and always need to consider how these groups interact

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PPDG-10	Literature review	4.2	Principles	Lack of clarity	Too many design characteristics to be memorable	Nine characteristics for walkable communities are listed. Suggest the criteria could be simplified.			Yes					
PPDG-10	Literature review	4.3	Principles	Inconsistency	Mode speeds are too high	Average speeds of different modes are high and may overestimate distances travelled.	Replace with more appropriate speeds or provide a range of speeds and distances travelled.		Yes					
PPDG-11	Literature review and online survey	4.4	Principles	Lack of clarity	Strengthen CPTED considerations	Update if necessary and include information on CPTED audits.			Yes					160. More detail on CPTED audits and requirements. When and when not to light walkways fitting facilities into tight locations designing for pedestrians where there is no footpath or space to fit a footpath (retrofit improvements)
PPDG-12	Literature review and online survey	5.1	Principles	Out of date guidance	Road user hierarchy is out of date	Update to include ways of identifying a road user hierarchy, for example NOPs.			Yes					101. it is one size fits all with little regard to hierarchy or constraints. e.g. AT wanting kessel kerbs at ALL bus stops plus need info on capacity limits of shared paths
PPDG-13	Literature review	5.3	Principles	Lack of clarity	Lack of guidance on accommodating pedestrians within new developments (outside the road corridor).	In particular, guidance is needed on how to design for pedestrians in off-street car parking areas.				Yes	Possibly			
PPDG-14	Literature review and online survey	5.5.3	Principles	Out of date guidance	The shared zones guidance is out of date with policy and use of shared zones in NZ	Update guidance on shared zones to reflect the latest RTS14, interaction/use by cyclists and link to CNG guidance where relevant. Could also include lessons learnt from implementation of shared zones in NZ.			Yes					6. I think that it would be better to have a document that considered street design in a holistic way rather than separating out "pedestrians" and "vehicles". We design street environments for a variety of different users and always need to consider how these groups interact 47. update the guideline to a later version to include new research findings within in pedestrian planning and design area as well as maybe having information about how walking interact with cycling while planning and design? 133. Pedestrian and shared space 231. Best practice and examples of shared space - including design, community engagement, and driver use/education
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PPDG-16	Literature review and online survey	6.4.4	Principles	Out of date guidance	Shared use path guidance is out of date	Update to current guidance including reference to RTS14 and CNG.	Some work has been undertaken about how to provide for visually impaired pedestrians on shared use path routes. Lots of trials and some adoption of standards like green surface tactiles on cycle crossings. Need to review how the trials have worked and what is best practice that we should be promoting.	Possibly	Yes		Yes			196. An update version with some guidance around shared paths (with cyclists) and reference to new mobility aids
PPDG-17	Literature review	6.5	Principles	Out of date guidance	The guide does not refer to the Austroads Pedestrian facilities selection tool	Link to Austroads Pedestrian Crossing Facilities selection tool and update any guidance that has changed regarding crossing types.			Yes					116. Yes, when one form of crossing treatment is favoured over another. Relies a lot on judgement without any guidance 161. I think the pedestrian warrants need to be referred to in some way, even though we have moved away from purely numerical assessment of appropriateness of pedestrian facilities
PPDG-18	Literature review	7.2-4	Process	Out of date guidance	The guide is out of date with reference to Neighbourhood Accessibility Plans and other community walking plans.	Review if Neighbourhood Accessibility Plans and Community walking plans still have value. Include reference to business case approach for identifying and funding schemes.			Yes					
PPDG-19	Literature review	New	Process	Lack of clarity	Guidance on appropriate tools to assess the pedestrian network	Guidance is required on recommended audit method/tools to assess the pedestrian environment / networks or which existing tools should be promoted.		Yes		Yes	Possibly			126. Methods of auditing the quality of the pedestrian network i.e. PERS Pedestrian Environment Review System used by Transport for London. The importance of getting the urban structure right first and foremost to facilitate walkable catchments & communities
PPDG-20	Literature review	12.1	Process	Out of date guidance	Prioritisation process is out of date	Very limited information currently available on prioritisation methods.	Update guidance to include prioritisation methods.		Yes					

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PPDG-22	Literature review and online survey	15.16	Design	Out of date guidance	Guidance on the safety of slip lane treatments is now out of date	Update guidance on relative safety of slip lane treatments	Opportunity to incorporate Auckland Transport research		Yes		Possibly			55. Updated guidance on relative safety of slip-lane treatments (ref AkId Trpt research)
PPDG-23	Literature review	15.13 and 15.16	Design	Out of date guidance	Countdown timers for signalised crossings is not included.	Guidance on the use and implementation of pedestrian countdown timers	NZTA RR428 may be a good reference.			Yes				
PPDG-24	Literature review and online survey	19	Post-design	Out of date guidance	Guidance on pedestrian surveys and monitoring is out of date.	Add guidance on new ways of measuring and monitoring pedestrian activity through technology.		Possibly	Yes					192. This paper argued for a database where pre and post pedestrian count information is stored but nothing has eventuated from this http://www.nzta.govt.nz/assets/resources/research/reports/436/docs/436.pdf . Something like this would be useful, as we really don't know have good information about walking or potential increases in walking generated by new facilities
PPDG-25	Literature review and online survey	n/a	Missing	Lack of guidance	Lack of level of service metric for pedestrians	Pedestrian level of service metrics would be useful to ensure consistent quality and assessment processes		Yes			Possibly			60. Level of service metrics 131. Relevant Level of Service criteria 182. LoS/QoS tool for pedestrians 186. Quantitative analysis, e.g. calculating Level of Service for footpaths taking into account width, gradient etc. (delay at crossing is already in the guide)
PPDG-26	Literature review and online survey	n/a	Missing	Inconsistency	There is a lack of emphasis on planning and designing for people with disabilities and universal design principles	The needs of people with visual and physical impairments should be provided. Universal design principles should be included and links to relevant documents such as NZ standards, RTS14 and Bridging the Gap.			Yes					6. I think that it would be better to have a document that considered street design in a holistic way rather than separating out "pedestrians" and "vehicles". We design street environments for a variety of different users and always need to consider how these groups interact 55. Reference latest version of RTS14 95. Does not reflect the diversity of the disabled population and the way that the built environment can be designed to improve their ability to move around their community safely and with dignity 130. More guidance for those who have impairments including cognitive impairments (including brain injury). I.e. colour contrast, complexity/logic, expectations, tactile discrimination, road crossings, priority etc
PPDG-27	Literature review and online survey	n/a	Missing	No guidance exists	Limited design checks or audits consider pedestrian needs	Pedestrian design considerations should be reviewed during design and construction stage of projects.	Road safety audits should consider all users including pedestrians but this is not always done, or other road users needs take precedence.			Yes	Yes	Yes	Education / training and update Road Safety Audit procedures	115. Resolving practical construction issues, such as drainage, conflicts with vehicle crossings/ driveways, topological issues 192. There is also no chapter on evaluation or building of information about walking to inform future projects
PPDG-28	Guidance review and Online survey	6.8	Design	Lack of clarity	A lack of guidance for requirements at railway crossings	Current guidance can be supplemented by referring to the latest NZTA and KiwiRail guidance	Opportunity to clarify guidance		Yes					18. More details of railway interface 29. Need for reference to railway level crossings 132. Rail crossings - making the actual track crossing pavement / rubber mats safer
PPDG-29	Guidance review and Online survey	n/a	Design	No guidance exists	Need greater consideration of the impact of cycle facilities at crossing points	Separated cycle facilities at crossing points and bus stops	Opportunity to provide guidance or link to CNG guidance that considers this.		Yes				Link to CNG	39. The impact of cycle facilities at crossing points

Gap No.	Source	Page	Section	Type of gap	Gap name	Description of gap	Comment	Requires international literature to identify best approach	Amendment to current document	Requires new guidance to be developed/added	Requires NZ research project	Requires approved trial	Other action	Identified as a gap through the survey (including survey ID number)
PPDG-30	Online survey	n/a	Design	No guidance exists	A lack of guidance for the proximity of pedestrian crossings to driveways	Guidance regarding proximity of pedestrian crossing points to driveways	Opportunity to provide more guidance			Yes				25. Guidance regarding proximity of pedestrian crossing points to driveways etc
PPDG-31	Online survey	n/a	Design	Lack of clarity	A lack of guidance on minimum safety railing height for cyclists	A lack of quantifying requirements (e.g. minimum safety railing height for cyclists)	Opportunity to provide guidance - probably within CNG.		Yes				Link to CNG	45. Quantifying requirements (e.g. minimum safety railing height for cyclists)
PPDG-32	Online survey	n/a	Planning and policy	Lack of clarity	Pedestrians are often considered last or the lowest compared to other modes	Priority of pedestrians does not reflect that they are highly vulnerable compared to other modes, and should therefore be given greater consideration	Emphasis the importance of pedestrians in the manual, and lobby Councils to provide more priority in their planning documents and road hierarchy		Yes				Largely a Council issue. NZTA could encourage reconsideration of priorities	123. Recently had an issue where cyclist safety was put over pedestrian safety as the pedestrian island that was appropriate for improving children safety narrowed the road so much that cyclist safety was an issue. Due to the relative level of guidance/standards, cyclist safety was became the important factor. We will likely use sharrows at the narrowing to address the cyclist safety so children safety is of a higher priority. Design guidance is also a little woolly 228. Consider pedestrians the most important road user, given that they are the most vulnerable user 183. PPDG is overly engineering orientated. Roads are for vehicles and pedestrians are second class. E.g.: Only if there are not too few or not too many pedestrians then a pedestrian crossing might be considered.
PPDG-33	Online survey	n/a	Planning and policy	Lack of clarity	Lack of guidance on integrating land use and transport	Perception that the PPDG does not provide guidance on integrating transport and land use	Provide more emphasis, or more guidance. Encourage local authorities to consider these issues.		Yes				Largely a Council (local and regional) issue. NZTA could encourage reconsideration of integrated planning.	132. More public transport integration Housing and place-making aspects. Mix with more urban design elements 139. Walking in context with integrated land use planning to provide walkable access to most needs (in urban areas), to reduce trip distances, increase walking and reduce private vehicles trips, as well as integration with the rest of the transport system, e.g. public transport
PPDG-34	Online survey	n/a	n/a	No guidance exists	Lack of guidance on the maintenance of footpaths	A lack of guidance on the maintenance of footpaths and how to prioritise maintenance.	Provide more guidance on maintenance now that NZTA is providing funding, or provide links to other guidance		Possibly	Possibly				132. Any advice regarding maintenance of footpaths now that NLTF can fund this
PPDG-35	Online survey	n/a	Design	Lack of clarity	A lack of guidance for managing off road path approaches to a road crossing	A lack of guidance for managing off road path approaches to a road crossing	Opportunity to provide more guidance			Yes				150. Dealing with separated (off road) path approaches to road crossings
PPDG-36	Online survey	n/a	Planning	No guidance exists	There is no design envelope for a pedestrian	A "design envelope" for the average pedestrian	There is already a 'Physical space required' section however this is only widths, provide further details.		Yes	Possibly	Possibly			158. Would be useful to have a "design envelope" for average pedestrian. Define the height above which a change in elevation on the ground will be noticeable and therefore avoidable
PPDG-37	Online survey	n/a	Design	No guidance exists	A lack of guidance for how to delineate between footpaths and adjacent cycleways	A lack of guidance for how to delineate between footpaths and adjacent cycleways	Opportunity to provide guidance			Yes				158. Guidance on delineation between footpaths and adjacent cycleways. 181. Gap particularly around interaction with protected/separated cycle infrastructure priority treatments for pedestrians across side streets
PPDG-39	Online survey	n/a	n/a	No guidance exists	Guidance for peri-urban locations	A lack of guidance for providing for pedestrians in peri-urban areas				Yes				169. Peri-urban locations, often state highways approaching cities where small pockets of housing exist that lack footpaths in immediate area or links to the urban boundary. Typically these areas have higher speed limits. Egmont Village is a good example
PPDG-40	Online survey	n/a	Planning	Lack of clarity	Assessing latent demand for pedestrian activity	Assessing latent demand for pedestrian activity is considered difficult and rarely done in practice.	Opportunity to provide more guidance			Yes				192. Low on specifics and using it seems to go in the too-hard basket frequently as a result. A classic example is the reference to assessing latent demand is quite difficult to translate into practice

Gap No.	Source	Page	Section	Type of gap	Gap name	Description of gap	Comment	Requires international literature to identify best approach	Amendment to current document	Requires new guidance to be developed/added	Requires NZ research project	Requires approved trial	Other action	Identified as a gap through the survey (including survey ID number)
PPDG-41	Online survey	9.1	Planning	Lack of clarity	Community engagement guidance is not always appropriate	Update guidance to include community engagement approaches for smaller projects	Opportunity to provide more guidance on communications		Yes					192. The recommendations about community engagement are often too intense to follow for the majority of projects and/or don't align to recent funding (i.e. no recent funding in the safe school travel plan eem category)
PPDG-42	Online survey	6.4.3 and 14.1	Principles	Lack of guidance	More detail on driveway treatments	More detail on driveway treatments to accommodate pedestrians on the footpath would be useful			Yes					160. More detail on good driveway treatments. Need to consider road crossfall and shape, kerb height, driveway gradient off the back of the footpath and width of the footpath
PPDG-43	Project liaison group	n/a	n/a	Lack of guidance	How to plan and design temporary / transitional pedestrian projects	It would be useful to include how to set up, monitor and evaluate temporary or transitional projects as these become more common.	Could include lessons learnt or case study examples from around NZ.			Yes				

Appendix B – Guidance Industry Engagement Survey Results



Stakeholder Survey Results

Prepared for: NZ Transport Agency
Job Number: NZTA -J109
Issue Date: 2 August 2018
Prepared by: Tracy Fleming, Senior Transportation Engineer
Reviewed by: Jeanette Ward, Associate

Introduction

To help inform research on the use of pedestrian guidance, policy and planning tools that influence pedestrian travel in New Zealand, an on-line survey was distributed to a range of professionals including planners, transportation planners and engineers, urban designers. A total of 236 responses were received.

The groups through which the survey was distributed were:

- Engineering NZ Transportation Group
- Urban Design Forum
- Active Modes Infrastructure Group
- Shared Footpaths Working Group
- Traffinz
- Mayoral Forum
- NZ Transport Agency staff and various email distribution lists held by the agency

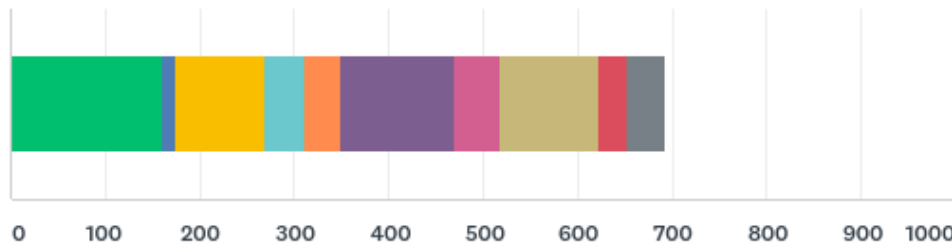
The key messages were:

- The key policy barriers to implementation were identified as lack of legislation, misalignment of existing policies and lack of support and understanding of pedestrian design from politicians, professionals and developers.
- There was some support to prioritise pedestrians within strategic and local policy and give weighting to the policy so that it is easier to implement.
- Respondents suggested that the guidance be combined and to create a one-stop shop to make a simple to use framework.
- The need to update guidance to reflect new research and design to provide more guidance on pedestrian and inclusive design for shared spaces/routes and other areas where pedestrians and pedestrians and cyclists interact.
- Pedestrian delay at intersections and crossing busy roads safely is a common concern and barrier to promoting walking.
- Only a small proportion of respondents stated that there was guidance that they disregarded because it wasn't considered best practice.
- Be more inclusive of people with a wider range of disabilities and include the projections for an aging population within pedestrian planning and design.
- Existing funding mechanisms and lack of priority of pedestrian infrastructure were identified as challenges to developing schemes.
- The cost of providing tactile paving was considered as prohibitive by some respondents.

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Question 1 – What are the key guidance documents that you refer to when planning and designing roads, streets or path networks for walking?

Almost 70% of respondents refer to the Pedestrian Planning and Design Guide and 40% refer to RTS14. A total of 50% of people referred to local guidance. The Austroads guides were used by 43% of respondents, with a further 20% referencing the Austroads Pedestrian Facility Selection Tool.



- NZ Transport Agency Pedestrian planning and design guide (2009)
- NZ Transport Agency Neighbourhood accessibility plans (NAP) guidelines for co-
- NZ Transport Agency Guidelines for facilities for blind and vision impaired pedest
- NZ Transport Agency Speed Management Guide (2016) Local guidance (such as C
- Bridging the Gap: NZ Transport Agency Urban Design Guidelines (2013)
- Local guidance (such as Code of Practice)
- Austroads Pedestrian Facility Selection Tool
- Austroads Guides
- International guidance (If so please specify below as to what guidance)
- Other (please specify below)

Several respondents (17%) reported using other international or local guidance. The most popular international documents referenced were:

- NACTO Guidelines (Global Street Design, Urban Bikeway Design, Urban Street Design)
- Manual for Streets UK.

In addition, pedestrian specific guidance and planning documents for streetscape/living streets developed by Transport for London and the Western Australian government were referenced.

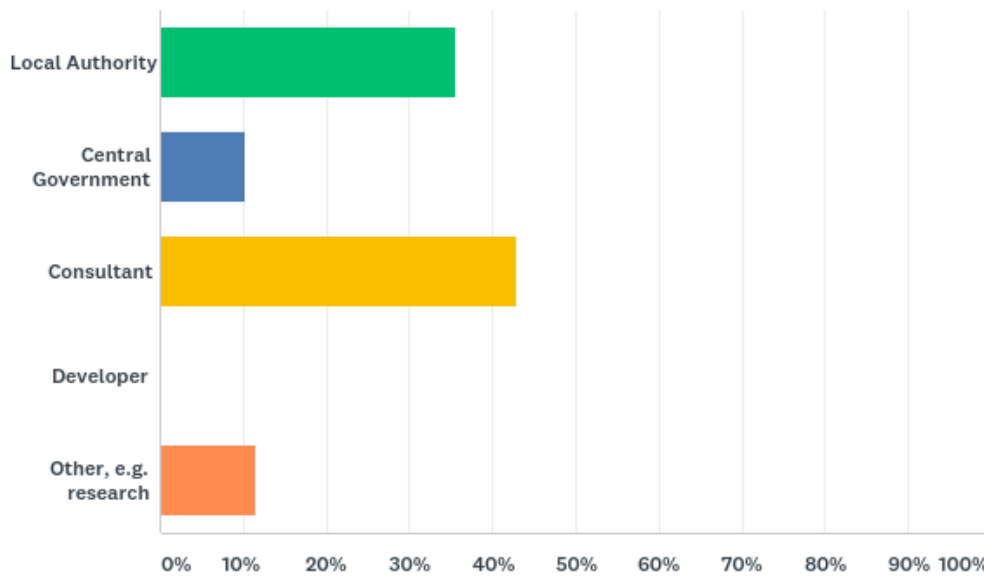
In terms of other guidance used locally, the most popular reference documents were:

- Auckland Transport Code of Practice (ATCOP);
- Auckland Transport: Roads and Streets Framework; and
- Auckland Transport: Transport Design Manual.

Other guidance recorded as being used included Christchurch documentation and Hobsonville Point specific guidelines.

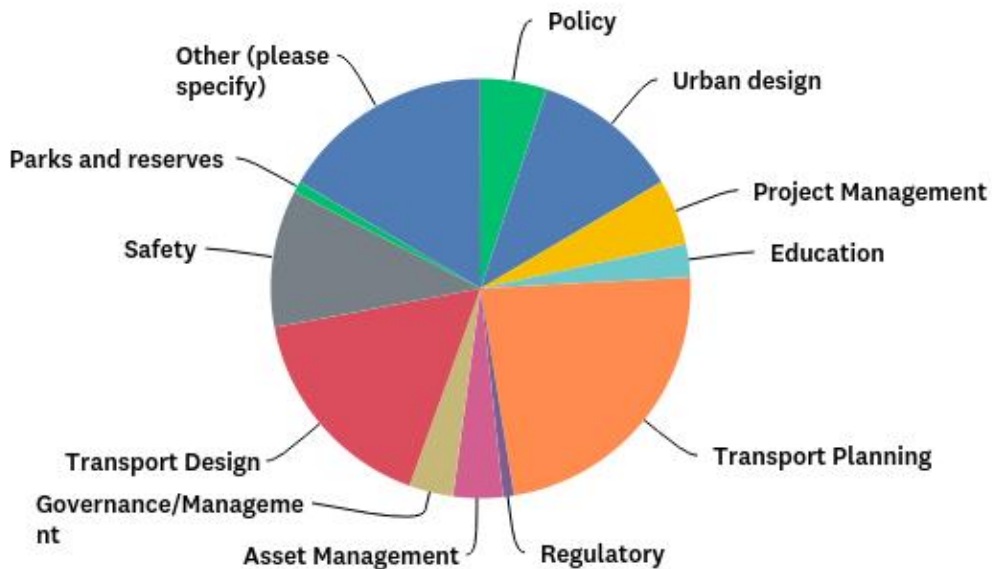
Question 2 - Please select the type of organisation you represent.

The consultant sector represented the majority (42%) closely followed by Local Authority of staff representing 36% of responses. Of the remainder, 11% of responses were from 'Other' groups which included disability and elderly advocacy groups and urban design/landscape design consultants. The remaining 10% of responses were received from the Central Government sector.



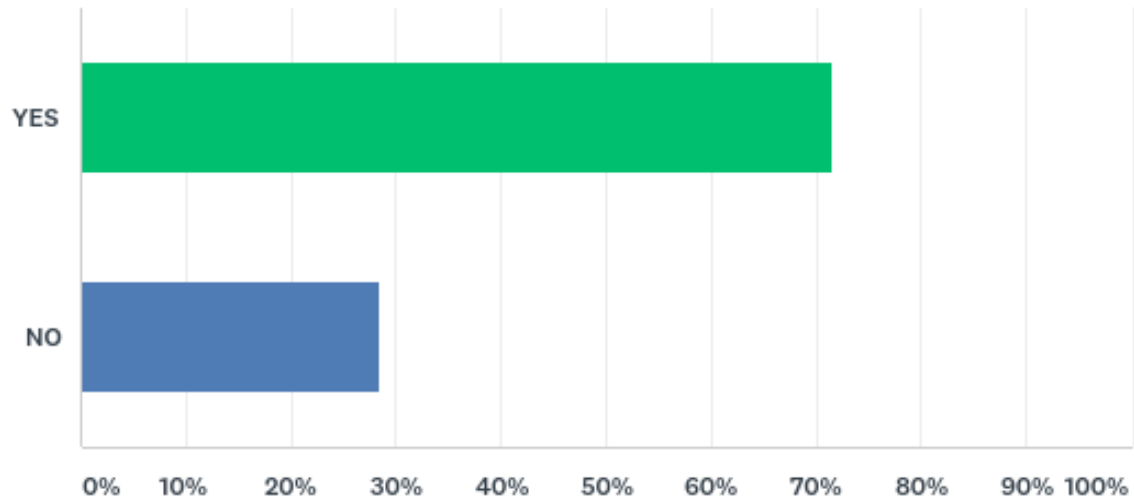
Question 3 - Please select the type of role you generally work in.

Transport planning (23%) was the most common role, next were transport design (16%), urban design (12%) and safety (10%). The other roles represented included policy, project management, asset management, regulatory, education and governance were also represented.



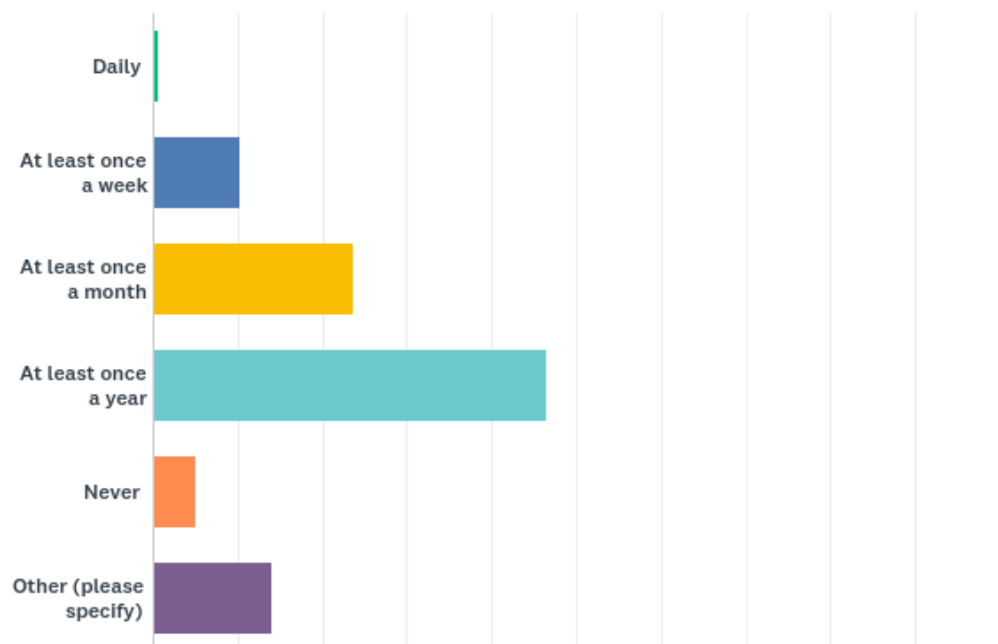
Question 4 - Are you aware of the NZ Transport Agency Pedestrian Planning and Design Guide (PPDG)?

The majority (72%) of respondents were aware of the Pedestrian planning and design guide. Only 28% indicated that they were not aware of the guide.



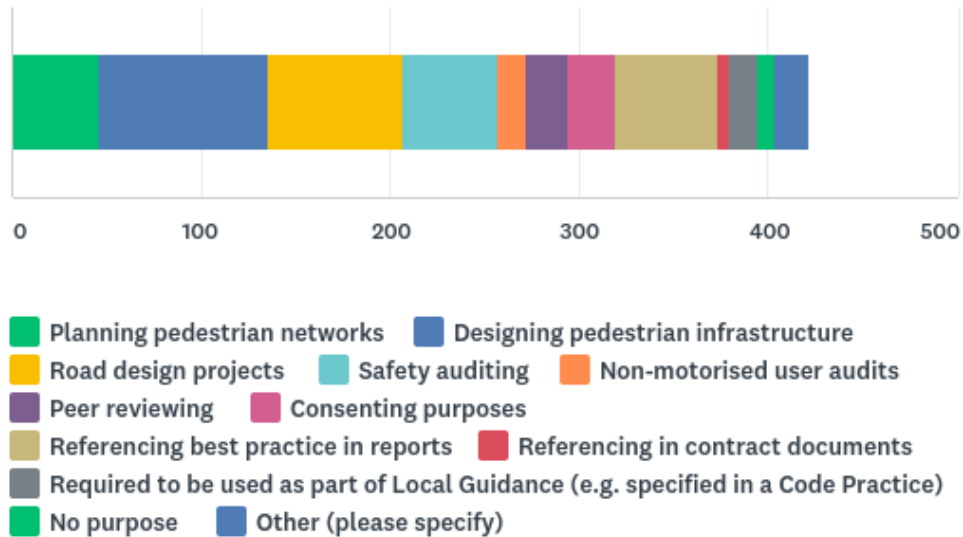
Question 5 - How regularly do you refer to the PPDG in your role?

Almost half (46%) of respondents who are aware of the PPDG refer to it at least once a year and 5% never using the guide. The majority of the 14% of 'other' responses ranged from less than a year to every few months depending on project requirements. Of the remainder, 10% reference the guide once a week and 23% at least once a month.



Question 6 - For what purposes do you use the PPDG?

The majority indicated that the guide is used most for the design of pedestrian infrastructure and road design projects. The other more frequent cited uses are referencing best practice in reports, to inform safety audits, planning pedestrian networks, consenting and to inform peer reviews.



Question 7 - Do you think there is any guidance missing in the PPDG? Please describe any gaps.

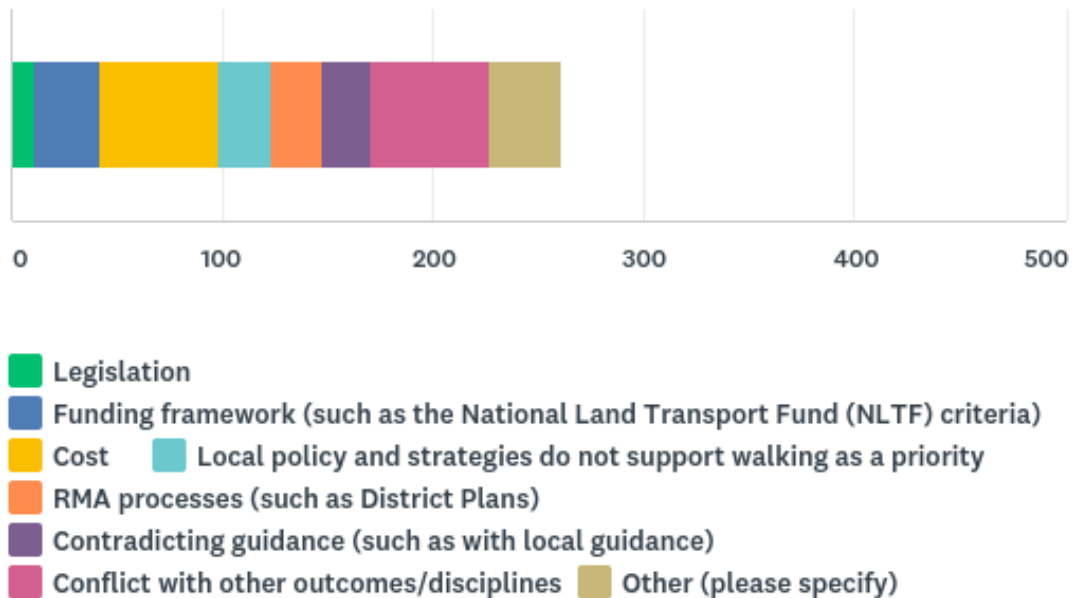
In total, 26% of the respondents completed the question providing useful insight into what may be missing from the PPDG.

The comments also highlighted suggestions to provide more guidance or include new material on the following topics.

- Guidance on the priority/weighting of pedestrians – needs to evidence/process to use when arguing for pedestrian priority in scheme planning and design.
- Add more detail in the characteristics section including consideration of the elderly and providing a ‘design envelope’ for the average pedestrian.
- Integration with public transport – add a section with planning and principles and associated designs plus review the ‘kassel kerbs’ at bus stops (adopted by AT).
- Audits – provide better guidance on walkability assessment.
- Level of Service section needs to provide better guidance and methods (including assessment of gradients) and refer to international case studies such as PERS.
- Provide advice on peri-urban locations where standards required may not be as comprehensive or require more detailed consideration.
- Shared spaces – needs to be updated to reflect changes and best practice for shared space, shared paths, shared surfaces and visual contrast
- Pedestrians and cyclists – how and when to segregate pedestrians, how to best manage shared space.
- Rail crossings – include rail crossing details within the guide (currently in RTS14) including using rubber tactile mats at crossing interfaces.
- Update the slip lane design to incorporate the results of research of relative safety conducted by TPRT in Auckland.

Q8 - Do you encounter any barriers when implementing guidance within the PPDG?

The most significant barriers to implementing the guidance was cost and conflict with other outcomes/disciplines. The other matters raised as key issues were funding frameworks, local policies not supporting walking and existing RMA processes.

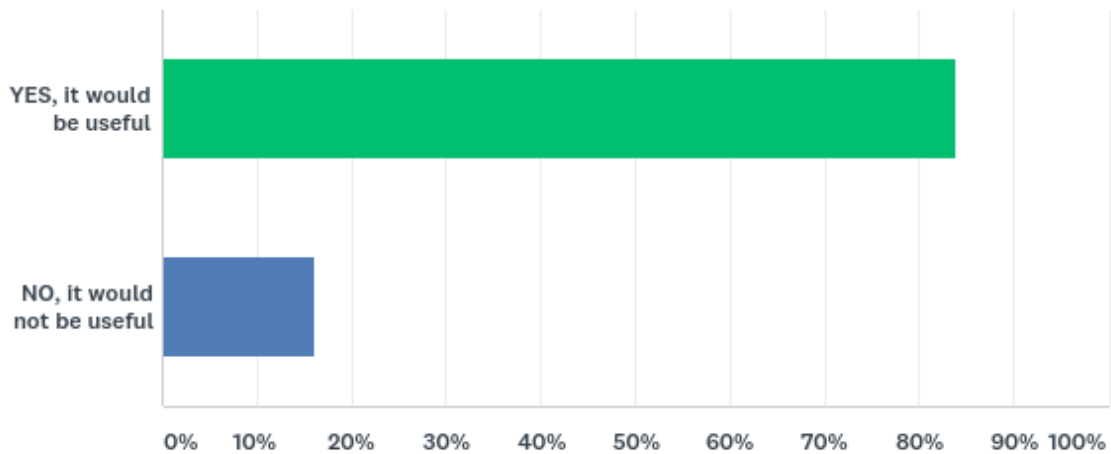


The 'Other' category also identified barriers as outlined below (noting some of these are guidance gaps rather than barriers).

- Lack of focus on pedestrian planning and importance placed on designing for vehicles both by colleagues and the public when consulting on schemes.
- Historical and planned cross sections can limit the opportunities to implement the guidance particularly when managing competing demands in larger schemes.
- Lack of including of urban design principles including 'sense of place' and the CPTED audit principles could be strengthened within the PPDG.
- Design outcomes in the PPDG are ideal and are not required - working with RMA planners and developers in these cases makes it difficult to achieve the desired outcomes. It was suggested that some elements of the guidance should be mandatory to improve implementation.
- Some LAs have excessive requirements in semi-rural locations and make implementation a challenge.
- Research and design standards have progressed in terms of pedestrian and cycle shared space and design practice. The guide needs to be updated and reflect how good Level of Service can be provided for both users.
- Consideration of e-mobility devices and other e-vehicles.

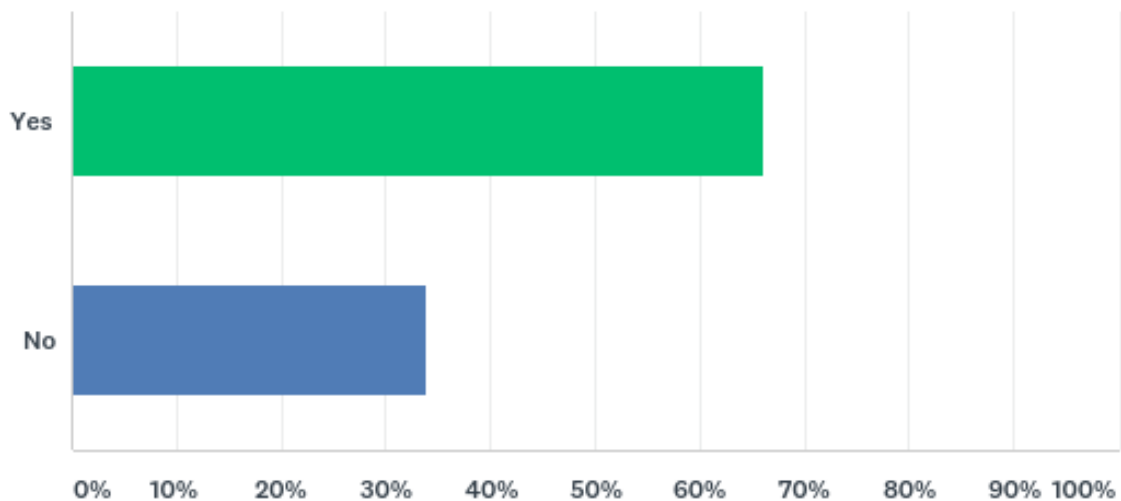
Question 9 - Please briefly browse the PPDG here. Based on your brief assessment, would this document be useful in your role?

Of the 28% of the respondents who were not aware of the PPDG in their role, 84% indicated that it would be useful.



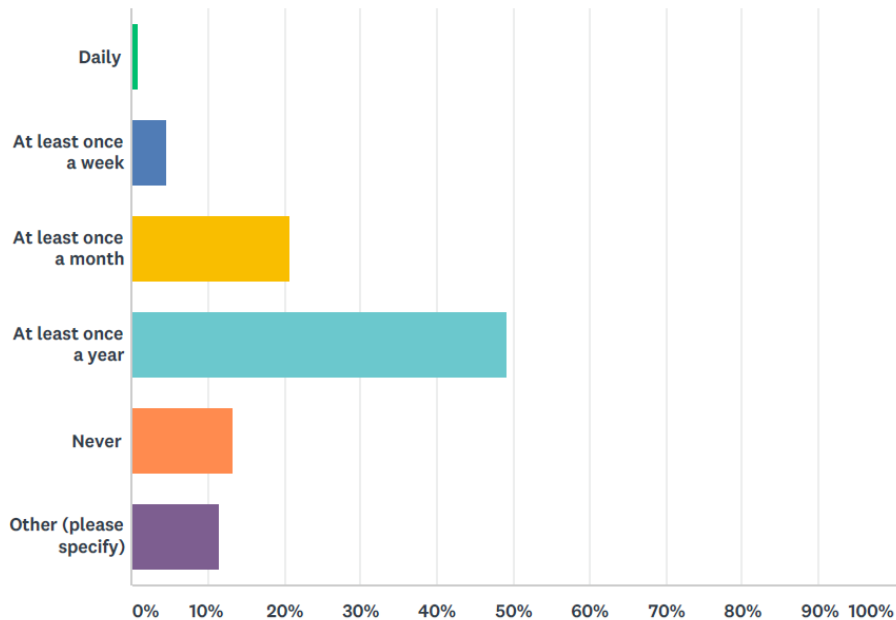
Question 10 - Are you aware of the NZ Transport Agency - Guidelines for facilities for blind and vision impaired pedestrians (RTS14)?

The results of the survey show that 66% of people are aware of the RTS14 guidelines with 34% indicating they were not aware.



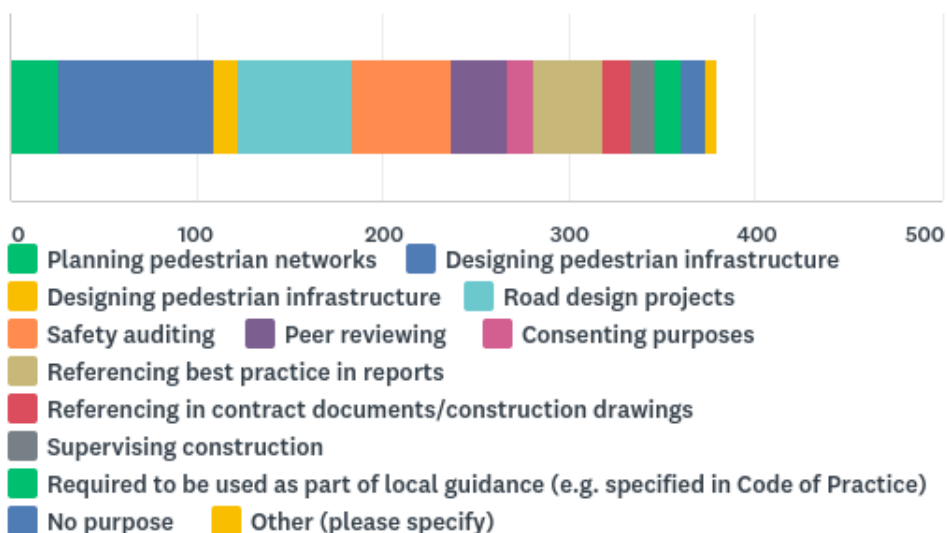
Question 11 - How regularly do you refer to RTS14 in your role?

Almost half (49%) of respondents who are aware of RTS14 refer to it at least once a year and 13% never using the guide. The majority of the 11% of 'other' responses indicated that they used the guide on a project specific basis as required, depending on project requirements. Of the remainder, 5% reference the guide once a week and 21% at least once a month.



Question 12 - For what purpose do you use RTS14 for?

For this question, respondents could tick more than one box, so the percentages are not reported for this question. The majority indicated that RTS14 is used most for the design of pedestrian infrastructure and road design projects. The other more frequent cited uses are referencing best practice in reports, to inform safety audits, planning pedestrian networks consenting, to inform peer reviews and because it is required as part of local guidance,



Question 13 - Do you think there is any guidance missing in RTS14?

In total, 19% of the respondents (44 people) completed the question providing useful insight into what may be missing from the RTS14. The comments included suggestions to incorporate RTS14 into the PPDG and consider legislation to make the implementation of the guide mandatory which should help to maintain a national consistency. Often local guideline or installation not aligned to RTS14. It was also suggested that a review the 'kassel kerbs' at bus stops (adopted by AT) should be completed.

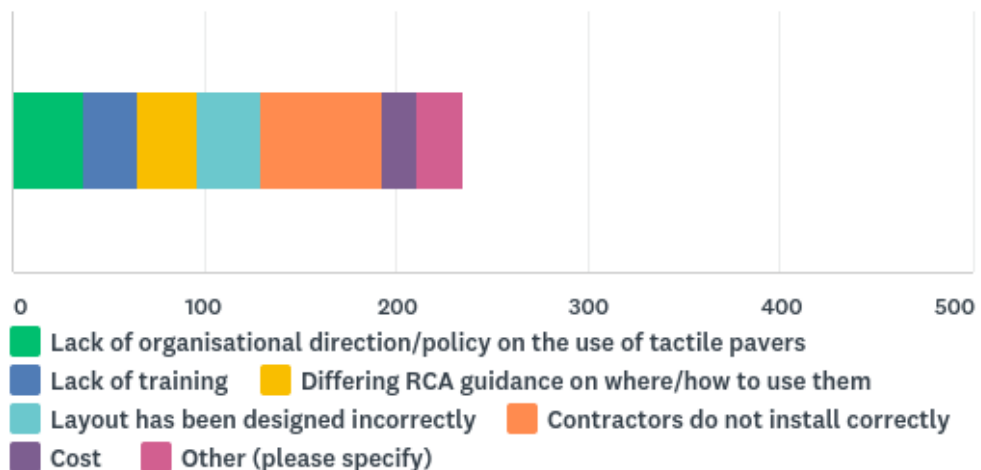
Other missing elements identified were:

- More guidance on design detail on where pedestrians and cyclists share space and shared paths including crossings providing guidance and evidence on the use of green contrast on the warning tactile.
- Needs better guidance on when to and when not to use all warning and directional paving and consider adding information on what tactile paving products are available within the NZ market. Cost of installation can be prohibitive.
- Consider developing designs with tight radii.
- Guidance on how pedestrians and cars mix where there are no footpaths for rural areas and shared space.
- A section showing the most common mistakes to stop them happening.

Question 14 - Do you encounter any barriers to implementing RTS14 correctly?

For this question, respondents could tick more than one box, so the percentages are not reported for this question. The barriers with the highest response rates were:

- Contractors do not install correctly;
- Layout has been designed incorrectly;
- Lack of organisations direction/policy on the use of tactile pavers; and
- Differing RCA guidance on where/how to use them.

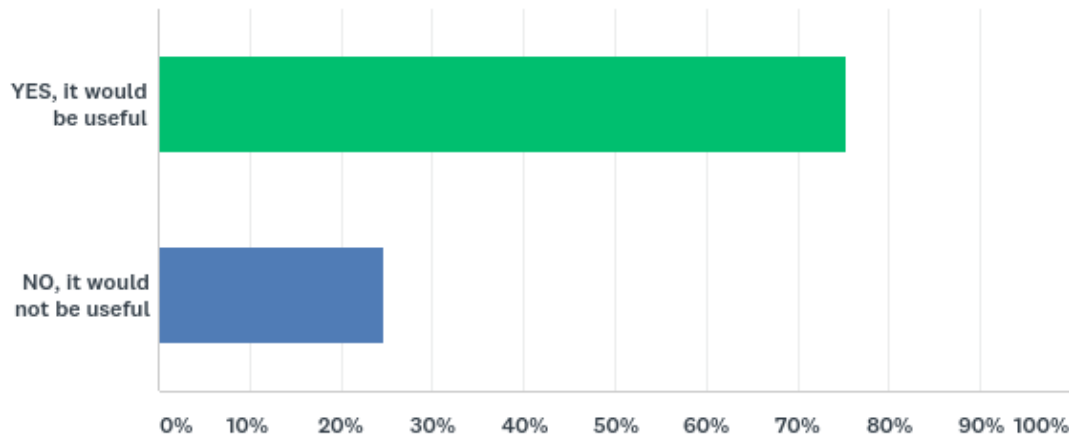


Comments identified other key barriers as being:

- Lack of acceptance within their authority and lack of understanding.
- Pedestrian design and tactile provision is often not considered until the final stages of a design which makes it difficult to meet the design standards.
- Retrofitting tactile paving and meeting other standards restricts installation as per requirements.
- The guidelines are not inclusive of others with disabilities and can cause significant issues for those users.

Question 15 - Please briefly browse through RTS 14 here. Based on your brief assessment, would this document be useful in your role?

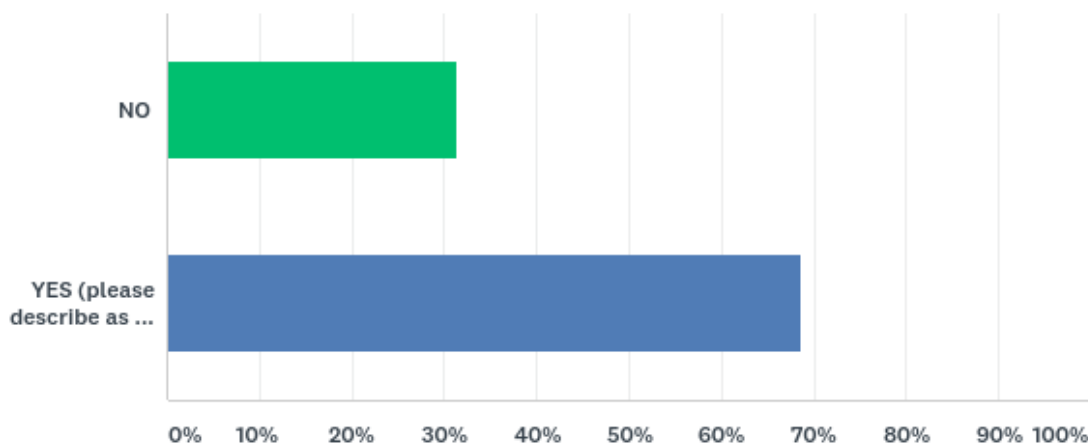
Of the 34% of respondents who were not aware of RTS14, 76% indicated that it would be useful.



Question 16 - Do you or your organisation engage with the disability sector as part of developing policy and projects?

Most of respondents (70%) reported they do consult with the disability sector as part of developing policies and projects. The most frequently consulted user groups were identified (in order of highest frequency);

- Disability Advisory Group;
- Blind Foundation;
- Councilor operated reference group/advisory group;
- One to one/stakeholder groups; and
- Local disability advocacy groups (unspecified).



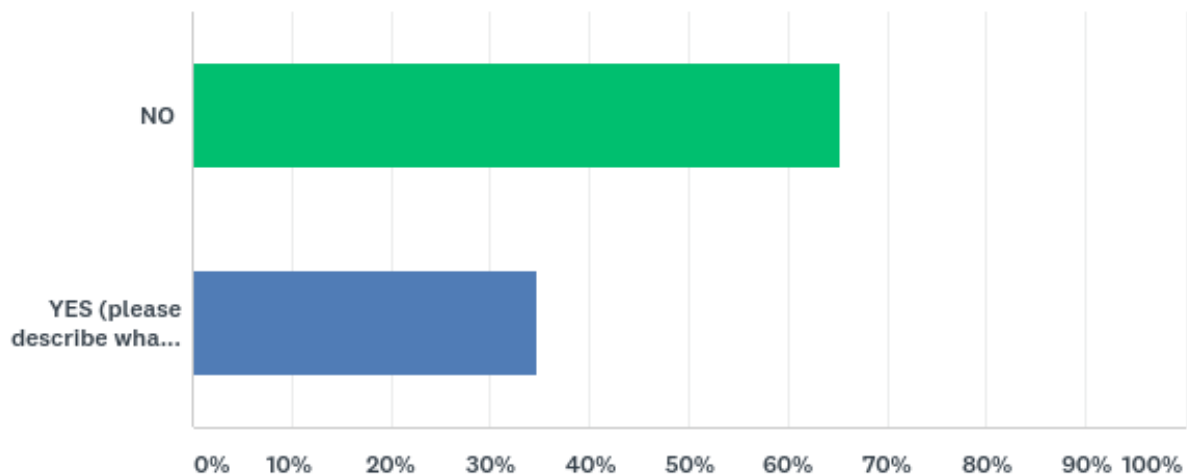
The most common ways for local councils to engage with the disability sector appeared to be either through regular stakeholder meetings or on a scheme by scheme basis including completing site audits, inviting representatives to scheme workshops and general consultations. Engagement was also identified through university research.

The disability sector appears to be engaged with during scheme consultation. User groups are also consulted when local councils are developing policies at key stages during projects.

Question 17 - Have you trialed or implemented any innovations relating to pedestrian environments?

A total of 176 respondents (74%) completed this question. Several authorities introduced innovations that are either new in the New Zealand context or within the local region. An overview of the innovations is shown below.

- Developed an audit tool to assess outdoor fall risk
- Applied PERS methodology for audits.
- Created a checklist for businesses and public space design (including consideration of people with dementia)
- Use of virtual reality to trial design of walking and cycling projects.
- Developed toolkits for home zones.
- Innovations with traffic signals trialing puffins or adapting existing signalised crossings to increase pedestrian crossing times at different times of day to improve pedestrian safety
- Removal of driveways on collectors – relocated to rear garaging or lane access.
- Trialing of shared space markings in shared spaces or on shared use routes provide delineation for blind and visually impaired users.
- Kirsty Kerbs - designed kerbs at bus stops to better enable buses to use their disabled facilities.
- Mobility aid user pedestrian counts at key locations.
- Use of temporary furniture/planting to create more pedestrian friendly spaces.



An interesting response referenced, ‘Using plastic, individual tactiles trialed on a speed table in Nelson CBD (closer to the council building), when implementing about installing tactiles into about 36 speed tables in the CBD in 2004/2005. Later, we decided to replace the plastic tactiles due to safety issues and concerns’.

Question 18 - Are there other ways that you are making your urban environment more walkable?

A total of 99 respondents (42%) completed this question. The responses have been summarised into the following topics: legislation, policy and planning, design; and tools and audits. The responses were a mix of what people were doing and suggestions as outlined below.

Legislation, policy and planning

- Increase the prominence of walking with local authorities.
- Prioritise design process with pedestrians first (reintroduce the transport hierarchy).
- Include planning that reflects the forecast ageing population and increased percentage of population with a disability.
- Improve land use planning policies including promotion of high density mixed use development and master plans with joint thinking that incorporate pedestrian planning and design.
- Change the NZ road rules to allocate smaller waste collection trucks (would need a change in refuse bin stock).
- Change pedestrian right of way legislation.
- Tackle footpath parking.
- Instill better working relationships between local councils and disability advocacy groups.
- Improve connectivity and pedestrian route planning.
- Increase priority of quality of journey.
- Filling in the gaps in the pedestrian network.
- Lower speed limits.
- Ensure all bus stops leave a gap of 1.3m on the footpath.
- Enhance policies to add more pedestrian refuges on arterials and collectors.
- Better lighting guidance.

Design

- Planted swales on off road facilities to make a more attractive environment.
- Wider footpaths.
- Good planning and design of landscaping/planting.
- Creating pleasant and attractive walking environments in semi-urban environments.
- Reduced street clutter.
- Provide street shades.
- Implement raised zebras and side road crossing treatments.
- Inclusive design for people with dementia.

Tools/Audits

- Audit every project for active modes.
- Always consider the needs of able bodies and impaired pedestrians.
- Use CPTED principles.
- Improve reporting of poor situations.
- Better monitoring of pedestrian activity.
- Include pedestrian and tactile provision.
- Include pedestrian design review in road safety audits.
- Create walkability maps.

Question 19 - Can you see any barriers to creating more walkable environments?

A total of 126 respondents (53%) completed this question. The key barriers have been summarised into the following topics: legislation, policy and planning, funding, design, and culture.

Legislation, policy and planning

- Lack of enforcement of rules.
- Lack of strategic direction and no designated accountable team.
- Competition for road space and conflicting objectives.
- Lack of legislation facilitating requiring pedestrian priority.
- Existing land use planning is car dominated.
- Lack of data.
- Resistance to district plan changes.
- Liquor licensing legislation requires outdoor areas to be adjacent to the building contrary to PPDG and RTS14.
- Lack of connectivity to public transport.

Funding

- Lack of funding dedicated footpaths and maintenance.
- Cost of providing pedestrian infrastructure.
- Funding linked to DSI makes it difficult to justify pedestrian schemes.
- Relationship between councils and NZ Transport Agency funding teams.
- Construction costs.
- Existing funding structure is focused on cars (EEM)

Design

- Pedestrian waiting times at signals.
- Lack of weather protection.
- There was a reiteration of the physical challenges and design of shared use that makes it difficult to implement good pedestrian design solutions.
- Resistance to pedestrian prioritisation in schemes.
- Obstruction of desire lines.
- Conflicts between pedestrians, bikes and mobility scooters.
- Safety on walkways.
- Traffic speeds.

Culture

- New Zealand car culture/community acceptance - challenging development of good pedestrian design if the needs of cars are negatively affected.
- 'Invisibility' - lack of understanding from politicians, professionals and developers of pedestrian needs and why it is important.

Appendix C - Policy and Funding Industry Engagement Survey Results



Funding policy and procedures survey results

Prepared for: NZ Transport Agency Project Liaison Group

Job Number: NZ Transport Agency-J109

Revision: 0.1

Issue Date: 18 July 2018

Prepared by: Stephen Carruthers

Reviewed by: Dave Smith

1. Background

Following the literature review of the funding policy and procedures, a survey was prepared to better understand the user's perspective of the policies and procedures addressing investment in pedestrian facilities. The survey was designed as an online SurveyMonkey survey and was sent to local authority representatives and consultants as a direct email linking to the website and as an E-newsletter to the Road Efficiency Group (REG) with a link to the website.

The survey was undertaken in June 2018, received 52 responses and included 33 questions, broken into six sections covering:

- the impact of strategy,
- how maintenance and renewal programmes are developed,
- asset / activity management issues,
- the difficulties of funding processes,
- the difficulties of assessment processes; and,
- further questions delving into more technical aspects such as investment in new facilities, management of recreational facilities, pedestrian data, and historic investment levels.

Composition of respondents

The majority of survey respondents (79%) work for a local authority, and the remaining 21% work for a consultancy.

The respondents worked across a range of disciplines, but were predominantly in asset management, governance/management or transportation planning roles.

Flexibility was built into the survey to allow respondents to opt out of the final section of questions if they did not work in a technical field. This also helped address potential survey fatigue due to the length of the survey and resulted in varying numbers of responses to each question. Therefore, the percentage of respondents are referred to for each question, as the specific number is not comparable between questions or topics. Given the nature of the questions, which are primarily aimed at understanding local authority investment in pedestrian facilities, it is likely that there was a greater drop off from the consultants rather than local government representatives.

2. Summary of key messages

The key findings from the survey are as follows:

- The national strategy and policy direction is satisfactory and recent improvements are expected to positively influence the level of investment in pedestrian facilities, however, there is inconsistency and gaps with local level pedestrian strategy and policy.
- While strategy is important, the level of funding allocation is much more important and a greater incentive for more investment. The recent NZ Transport Agency funding decision to support maintenance and renewals was appreciated, however, the timing was very late in the LTP/NLTP process and did not allow local authorities to take full advantage of it.
- There is a wide range in practices between local authorities when it comes to assessing the condition of assets, setting intervention levels, prioritising maintenance, and monitoring the performance and quality of the pedestrian network.
- Over half of the respondents find the funding process a barrier, and almost two thirds said the guidance documentation needs improving. Many of the requests for improvements were to the NZ Transport Agency's Economic Evaluation Manual and Investment Assessment Framework, and to provide national guidance to assist the understanding of funding expectations.
- A key issue raised was the difficulty in providing evidence of the suppressed/latent demand for pedestrian facilities to justify the investment. There was a wide range of methods available to do this, and also requests for exemptions or standard BCRs for pedestrian facilities.

3. Survey results

3.1 Strategy

This section aimed to understand the impact of the GPS on investment in pedestrian facilities, what local walking strategies exist and whether any further strategy or policy is required to encourage investment in pedestrian facilities.

A majority (84%) of respondents believe that the GPS has an influence on investment in pedestrian facilities. However, comments indicate that providing additional funding will be a more effective method to encourage more investment, and that some councils have good strategies in place regardless of the GPS. Further to this, 93% of respondents say that the increased pedestrian priority in the 2018 GPS will have a positive impact on investment levels.

While there is an appropriate national policy, there is a low level of local walking strategy or policy:

- 24% of respondents have a walking strategy or policy that influences investment in pedestrian facilities.
- 10% of respondents have a walking strategy or policy that does not influence investment in pedestrian facilities.
- 36% of respondents have no strategy or policy.
- 19% of respondents have no strategy but believe it is satisfactorily covered in their asset management plan.
- The remaining 11% are covered in other strategic documents such as network plans, programme business case, sustainable framework, and footpath asset management strategy.

However, the comments indicate that several councils are planning to develop a strategy in the future.

Participants were asked whether organisations had an identified strategic walking/pedestrian network. This is important because it contributes to achieving a Very High strategic fit when assessing a project under the NZ Transport Agency's Investment Assessment Framework. The results displayed in **Figure 3.1** illustrate that only a small proportion has an established strategic network. Several of those that selected *partially*, said that their council had one in development.

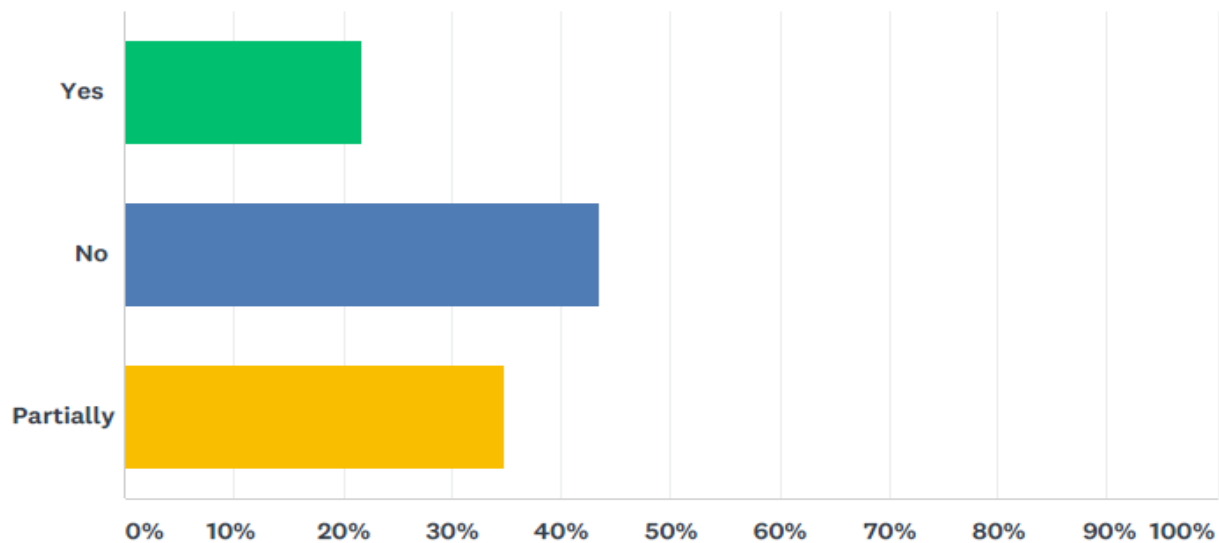


Figure 3.1 Organisations with a strategic walking/pedestrian network

When asked whether any additional strategy or policy is required, responses included:

- There should be a legislative requirement to create a Strategic Transport Policy that states the direction, rather than relying on the RLTP/NLTP process to ‘demonstrate’ direction through a budget setting exercise.
- Strategies need to link to disability strategies, as facilities are often not providing for mobility scooters.
- Give recognition that footpaths have the same status as roads, but more importantly, quality of design and construction improves usage. The design and construction of walking facilities are more likely to influence whether they are used than the quality and design of roads.
- There is a need to consider walking catchments within land use planning to encourage walking over motor vehicle use.
- Financial assistance needs to be combined with genuine support not theoretical assistance that is bound up with layers of bureaucratic hurdles.
- The increased priority for pedestrians needs to flow down into documents that are used more, such as the Regional Public Transport Plan having reference to pedestrian facilities.
- Need to be able to fund growth related projects and not be required to demonstrate demand when there are no current users because current situation is too dangerous.
- Land use plans must provide foundation for better land-use transport integration. Currently, land use plans do not consider walkable catchment metrics in their land use planning, resulting in car dominated subdivisions.
- Specific strategy and policy to look at pedestrian movement through urban areas, with targeted outcomes of improved safety, access connectivity, reduced emissions through reduced single occupancy vehicles, improved wellness through connected active modes.
- Apply the Roads and Streets Framework and Transport Design Manual.
- Better alignment of maintenance funding, and funding policy.

3.2 Maintenance and renewal programmes

This section aimed to understand how maintenance and renewal programmes are developed and funded, and the impact of the new NZ Transport Agency maintenance funding assistance on level of service.

Figure 3.2 illustrates the key drivers/prompts for investment in maintenance and renewal of pedestrian facilities. It shows that safety, customers complaints and level of service are the key drivers of maintenance and renewal investment (although, as seen later many organisations do not have an established level of service), and that strategies, community street reviews and business cases have lesser influence. Identified gaps in the network could be included alongside level of service to be the largest measurable driver for investment.

Other drivers identified by respondents included; alignment with carriageway pavement renewals, town centre renewal, coordination with utility upgrades and by direction of a community board. Note that respondents were able to select more than one driver.

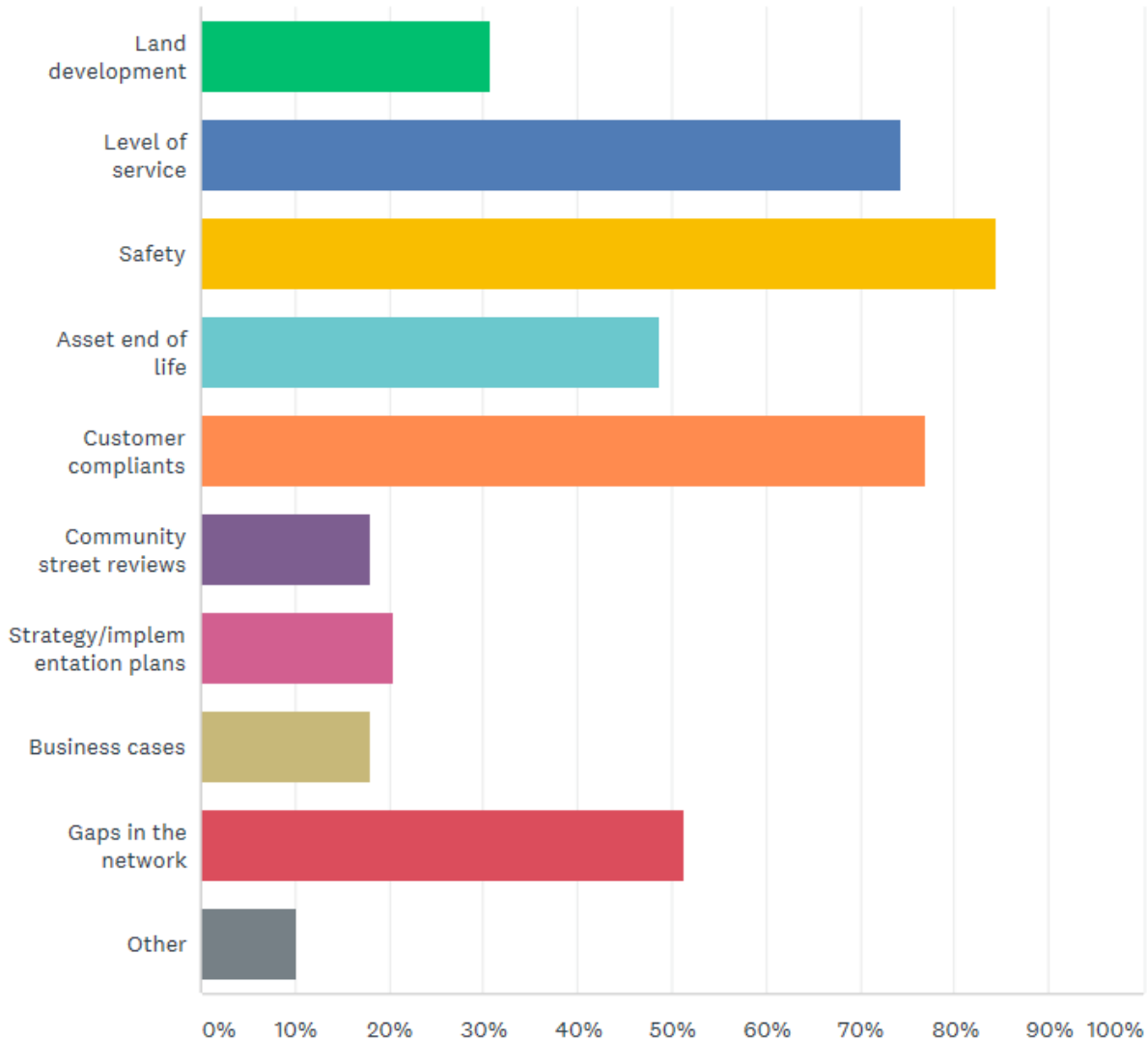


Figure 3.2 Key drivers for investment in maintenance and renewals

Three quarters of respondents were aware that the NZ Transport Agency now provides funding support for maintenance and renewals of pedestrian facilities, with 62% considering that this funding support will result in more investment in pedestrian facilities, 10% expecting those savings to be passed onto other modes, and 5% considering the savings would be given back to reduce rate increases. A comment was received stating that pedestrian facilities are often a low priority for councils and are dropped from Council's Long Term Plan when there is pressure on the budget, or rate increases.

In addressing what impact the funding support would have on level of service, 65% of respondents thought it would result in better level of service, and 22% said it would result in the same level of service.

When asked how council prioritises the maintenance of footpaths under the current policy settings, responses received include:

- On a reactive basis through customer and inspection complaints.

- Appears to be ad-hoc without clear direction of the quality or level of services required.
- Asset condition assessment survey/criteria.
- Based on personal injuries (safety risk).
- Level of service.
- When roads are renewed.
- Coordination with land development.
- Fault based inventory.
- Lack of footpath > footpath condition > footpath width.
- Level of service – such as trip hazard, maintained under ONRC contract.
- Based on historical spend.
- Monitoring of footpath shape.
- Safety issues are dealt with immediately.
- Prioritised off historic maintenance, shape age and condition.
- Footpaths are condition rated 1 – 5 every three years. Those rated 4 or 5 are considered for renewal up to available funding level.
- Maintenance contract based on level of service.

3.3 Asset / activity management

This section aims to understand how councils manage their assets, and the information that they collect.

Figure 3.3 illustrates the characteristics that are contained within asset/activity management plans. It shows that there is a good coverage of the quantity and quality of the asset, and that level of service and financial forecasts are addressed in most asset/activity management plans. However, targets and measures, performance against level of services/targets, identification and management of risks and public perception of the asset are generally only addressed in about half of asset/activity management plans.

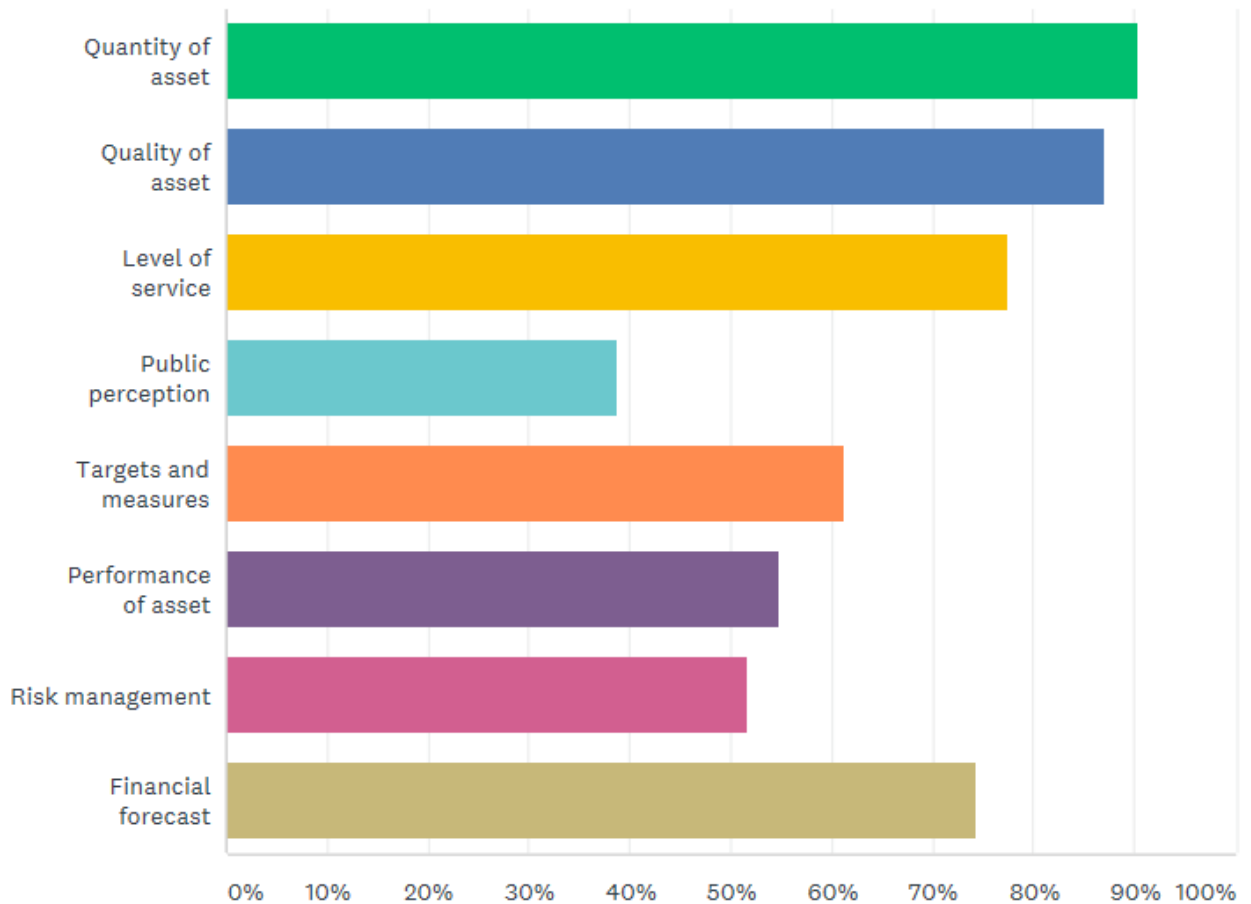


Figure 3.3 Characteristics included in asset/activity management plans

The majority (91%) of respondents are using RAMM to store and manage footpath data. For the most part, the data includes inventory and condition information, as well as valuation data.

Survey participants were asked to describe their asset condition rating process, and found that there was a range of methods, with responses including:

- Annual condition rating surveys, complying with a set of standards describing condition profiles against which the footpaths are to be rated.
- Condition assessment survey.
- New (automated) process.
- Visual condition rating based on 5-point scale.
- Our footpaths are condition assessed using the RoadRoid roughness smart phone app.
- Uses both RAMM (modified) criteria but relies more on experienced maintenance staff making visual annual assessments over the network.
- The condition of all footpaths was measured in 2016 and recorded through previous maintenance contracts. Council’s footpath condition rating system uses three criteria to prioritise repair or replacement needs: (i) Displacement (safety against tripping). (ii) Cracked and settled. (iii) Discretionary (based on other factors such as usage, ponding potential, width etc.).
- Condition is rated on age and condition, cracking, potholes etc. and scored. Condition is also measured on the shape for the path, e.g. cross-fall and driveway shapes that less-able people struggle with. These are multiplied together to get overall assessment that goes into a priority matrix along with other known issues for renewal or improvements.
- Five levels from excellent to very poor and 10% are rated by random selection by independent assessors each year.

- Subjective judgement.

When respondents were asked whether Council regularly monitors the performance / quality of the pedestrian network, 50% said yes and 50% said no. Again, there was a wide range of methods, with responses including:

- Customer satisfaction surveys and/or complaints.
- Part of the maintenance contract – field validations.
- Newly implemented regionwide automated survey.
- Maintained through maintenance contracts that monitor and report failures. In-house MSQA also monitor the network. Requests for service from the public. District wide condition surveys are carried out using RoadRoid roughness meter.
- Annual survey of physical condition.
- Survey 10% of the network annually.
- Survey 20% of the network annually.
- RAMM rating of footpath.
- Three yearly condition rating.
- Full visual assessment every 3 years, officers and contractor monthly audits of percentage of asset stock, officer review of customer service requests.
- Maintenance contractor does condition assessment when doing inspections for maintenance. Maintenance contract requires that all footpaths are inspected at least 1x year. Annual condition assessments are compiled, and used for annual reporting, and programming of renewal sites for the following year.
- We monitor the condition of the asset but from a quality/accessibility/performance point of view we do not monitor.

The survey concluded that 70% of respondents have an intervention level for undertaking maintenance and/or renewal repairs. However, there is a wide range of intervention standards, with responses including:

- Interventions have historically been driven by customer complaints. The new contracts transfer responsibility to the contractor based on the agreed performance standards.
- Condition and site assessment surveys.
- Rating of 1 to 5, isolated 4 and 5's go to the contractor under the maintenance contract with guidelines as to when it becomes a renewal.
- Ratings when surveyed.
- The intervention level for the repair of concrete footpath has been set at a 10 mm lip, settled to a stage where the path is uneven, unsafe or the footpath is ponding water. Footpath renewals are defined as the replacement of continuous sections exceeding 20m in length and include major upgrading works.
- 10mm trip hazard 3 months to fix, 20mm trip hazard 1 week, all trip hazards should be under 10mm.

Respondents were asked how Council measures pedestrian levels of service. 41% of respondents said *no*, 41% said *yes* based on a council standard and 18% based on another standard. Respondents replied that their level of service is based on:

- Proportion of footpaths in very poor condition, also customer satisfaction with footpaths in their local area and with footpaths generally.
- We have a customer satisfaction survey and would have other indicators such as counts and potentially delay on key routes (see the VURT trial).
- Residents surveys 85% satisfaction.
- Only just completed the first comprehensive survey and still defining LoS.
- Defects over length.
- Condition rating assessment.
- Minimum requirement of at least a footpath on one side in urban areas. 98% footpath to be better than class 5 (poor condition).

- Modelling LoS.

Only 12% of respondents conduct regular pedestrian surveys, 54% survey only for a specific purpose (such as a project) and the remaining 34% do not collect any data on pedestrian flows.

The survey included a question to understand whether organisations collect data on the pedestrian experience. 44% of responses said yes through a regular survey, 22% through specific purposes/projects and 34% said *no*.

The majority (86%) of respondents consider that footpaths in recreational areas are not managed in the same way as roadside footpaths, and that in general recreational footpaths are managed by council’s parks/reserves team. In Auckland, they are managed by Auckland Council (community facilities), as opposed to Auckland Transport. It was also noted that recreational paths are generally built to different specifications (and level of service), they can be unsealed and don’t have gradient and crossing details. They are also not necessarily kept to the same asset management rigour, and in some cases are managed under a different contract. In some cases, there is also a lower scrutiny over budget approvals with the majority of responses indicating that funding of recreational paths is from parks/reserves teams, with a only a few responses indicating they are funded from transport budgets.

3.4 Funding processes

This section seeks to understand the hurdles, barriers and required improvements experienced by Local Authorities with respect to the existing funding guidance documents.

Respondents identified that the availability of funding is the largest hurdle in the funding process, over the assessment processes, as shown in **Figure 3.4** below.

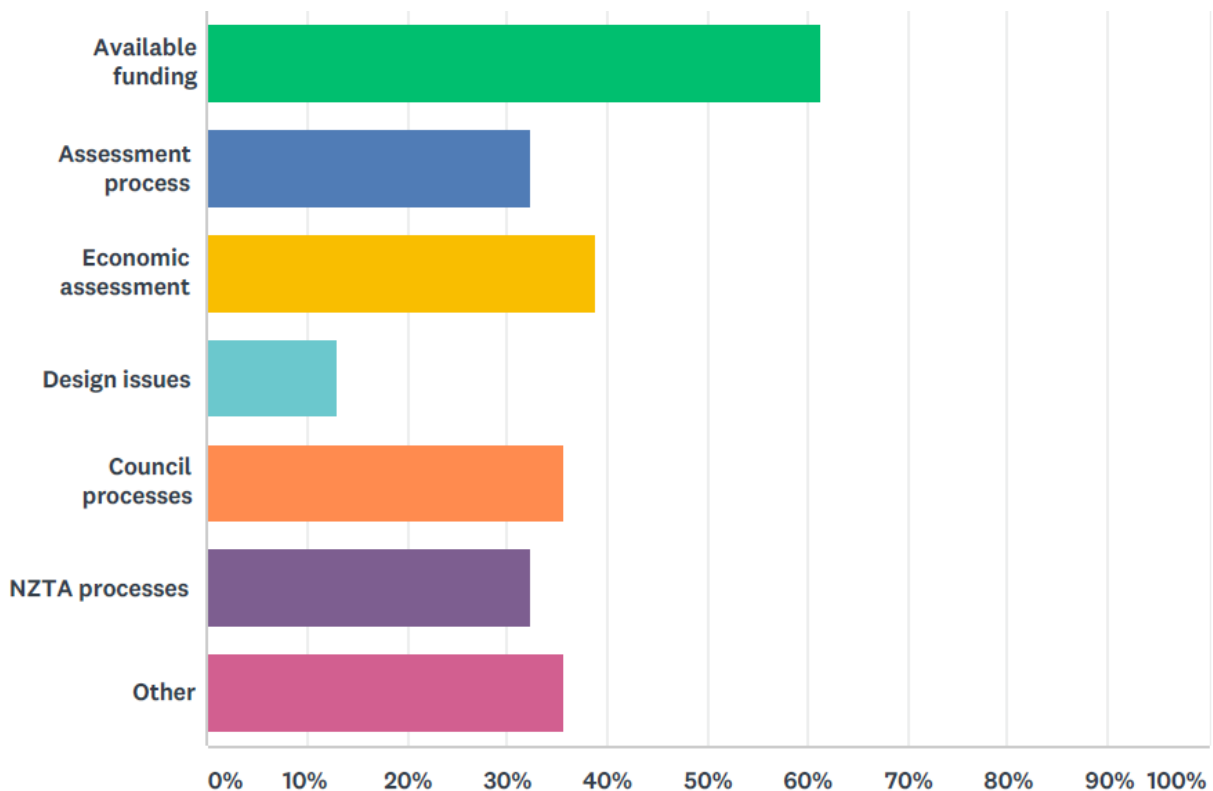


Figure 3.4 Key hurdles in the funding application process

The respondents that selected ‘other’ included the following explanatory comments:

- Timing. Timing of the change to the walking funding, came at a time when we could not take advantage of it.
- No alignment between LTP process and NZ Transport Agency funding process. This is a general problem. Economics assessment for active modes is difficult as evidence is hard to obtain before investment. Often people don't use active modes because it's not safe. There is no method to measure the 'non users'. So, the evidence-based approach is flawed. Also converting health benefits into \$ is something councils cannot come up with. NZ Transport Agency needs to provide more sophisticated tools and training for evidence gathering that is needed to obtain funding.
- Availability of local share of funding, and skill shortage for good pedestrian design.
- Matching funding with other projects e.g. kern and channel and street improvements.
- Proof of a problem. Or more to the point, proof of latent demand.
- Competing needs for capital upgrades.
- Performance standards to know what NZ Transport Agency are expecting from their investment in footpaths. And making an NPV work to justify renewal, especially where pedestrians are older, and the condition of the footpath is much more sensitive to user abilities than roads, so making NPV less realistic against LOS outcomes. NPV might need to consider LOS thus being a b/c and a lot of paperwork for a footpath renewal.

Participants were asked whether any of the existing funding guidance documents (specifically the Investment Assessment Framework (IAF), Economic Evaluation Manual (EEM), Knowledge Base, activity class descriptions) need improving. The majority (69%) of respondents considered that improvements were required, and made the following comments:

- No clear guidance under any of the funding guidance document. All of the above need to be updated.
- Focus on the fact that walking is an essential part of the transport corridor and how people move. There needs to be stronger linkages to the health system and benefits should be derived from human health objectives rather than pure 'movement' objectives.
- Recognition of the value of walking (ref to VURT investigations) in the EEM for instance.
- Especially the IAF needs simplification.
- EEM manual is mainly used by consultants working for councils - not often used by staff as too difficult. Activity class descriptions need improvement - better examples, updated. Search engine in knowledgebase isn't great.
- EEM is actually very good but the Simplified Procedures spreadsheets for walking and cycling still work better for cycling projects and make it difficult to value travel time benefits for pedestrians.
- We need to understand better what pedestrian facilities are eligible for funding.
- New footpath projects less than \$1 million are classed as Low-cost low-risk projects by NZ Transport Agency. When bid was being prepared the GPS had a different focus but there is no opportunity to change this initial bid with the new GPS.
- Need to recognise that Councils go through an extensive decision making and consultation process before investing in new footpaths - the NZ Transport Agency process should automatically approve Council applications and not make the process a barrier.
- A simple assessment template for NZ Transport Agency funding would be good.
- Our asset maintenance standards and guidance for footpaths is antiquated and severely lacking relevance.
- Split the combined Maintenance and Renewal Funding Category into two separate Maintenance and Renewals Funding Categories. This will ensure that it is consistent with the other NZ Transport Agency Maintenance and Renewals Funding Categories, Asset Management and Accounting Practices.
- Specific to pedestrian footpath maintenance (IAF) - very unclear.
- Estimating number of users and possible suppressed demand is currently problematic.
- More weighting on pedestrian factors.

Approximately half (52%) of respondents said that the funding process is a barrier to investing in pedestrian facilities. Comments from those respondents included:

- The process puts up hurdles. The benefits of walking not recognised in the BCR. Many of the benefits of walking are quality based rather than quantitative and this needs to be accounted for in the funding process.

- It is geared towards high use or urban modelling and has not historically differentiated, by way of an example, a high-risk area may not have high pedestrian counts.
- Where the EEM has been weighted towards reducing vehicle delay it has had the effect of not favouring walking provision.
- In the past, the lack of subsidy for pedestrian facilities discouraged investment, and the fact that subsidy was available as part of a road-centered renewals project created a perverse incentive to replace footpaths in line with carriageway renewals instead of based on footpath need.
- Often difficult to justify funding other than for minor works, although it is getting better.
- It was a barrier this year because of the timing of the decision to fund pedestrian facilities. This decision from government was way too late in the LTP development cycle and so could not go through the full consultative process. As a result, some last minute arbitrary decisions had to be made.
- Difficulty in getting funding for new facilities.
- The Low-Cost-Low-Risk or Minor Improvement Projects process is better, but funding is constrained.
- A key issue for my district is affordability of on-going maintenance and renewals of footpaths (very low rating base), which has hampered the development of a strategy and policy to better support greater access to more active modal choices.
- Footpaths are generally at the lower end of infrastructure priority and if Council want rate savings then new footpaths are the first to be removed.
- Difficult to get pedestrian projects to stack up financially. Projects that go ahead are based on intangibles or 3rd party interests.

3.5 Assessment processes

This section seeks to understand the difficulties experienced by Council's with the assessment processes using the Economic Evaluation Manual and Investment Assessment Framework.

Only 21% of respondents said that they experienced no difficulties, 30% said it was not applicable to them, while the remaining 48% said that they experienced some level of difficulty. The comments received elaborating on these difficulties included:

- Getting BCR's under 1 due to vehicle travel time savings.
- There should be no BCR approach to active modes as the 'non-users' cannot be measured. People that won't bike or walk before a good facility is in place.
- It is not actually difficult, but the tasks have been "captured" by people (mainly but not entirely consultants) whose self-interest is served by making the process seem complicated and technical. The simplified procedures could be much more simplified - users should only be inputting information about the specific project, not looking up conversion factors and constants. The opportunity provided by the business case approach for "more thinking, less writing" has been entirely missed and business cases have become yet another jargon-filled paper-fest.
- For minor spend, there is quite a lot required for new projects, for low cost low risk, the process is good.
- Timaru District is also not considered a major urban centre and unable to achieve a BCR.
- Instead we utilise the low cost/low risk work category for improvements which bypasses this for projects up to \$1m.
- It doesn't always fit the Council's future planning.

When asked what economic procedure respondents use to assess a project, only one respondent uses the NZ Transport Agency's full EEM procedures, whereas 44% use the EEM Simplified Procedures (SP11). Only 13% use their own council procedures with the remaining 41% stated *other* or *not applicable* to them. The following comments were made on the economic process:

- Needs to be a specific walking one as cycling and walking offer different benefits.
- I can't find an example of a benefit for walking that isn't captured in SP11 - but note that most of our consultants miss the opportunity to include travel time benefits to pedestrians, although this has been an allowed benefit since I think 2016.
- There isn't currently a lot of reliable demand models to assess impact on demand of improved facilities.

Participants were asked how pedestrian demands are estimated (as required for a BCR) and the responses ranged widely, indicating a gap in guidance in this area. Comments elaborating on the respondent's methods included:

- Public feedback.
- Observation/survey.
- Accidents.
- The Abley model.
- Catchment analysis, projects and surveys.
- Consultants (with the suspicion that the numbers are made up).
- Based on other projects.
- Our key driver is Level of Service, not demand.
- It is about build it and they will come.
- With great difficulty, thumb suck.
- Level of development.
- I haven't, needs modelling which I understand is difficult.
- It is very difficult, it must link to land use and density, plus has to allow for the different types of users, its not just about commuting.
- A guess based on surrounding facilities, e.g. schools.
- I do not know, but if I was undertaking the work I would do a comprehensive access and circulation study within and adjacent to the study area.
- Networkwide condition assessment.
- Pedestrian flow assessments.

Respondents were asked an open to question to seek feedback as to how the assessment process could be improved to assist in investing in footpaths and pedestrian facilities, and responses included:

- SP11 was developed for cycling not walking. SP11 all about travel time savings. Walking needs to have its own separate assessment process. Deterring walking also needs to be factored into the process. People who could be walking if it was made safe. The barrier effect i.e. safety is not factored into BCR's. Top priority streets (as per the Mega maps) which is based on crash data and DSI do not tend to be residential streets, so these streets are harder to get funding because of this.
- We don't have clear guidance on how walking will be considered.
- Ensure it captures all effects including mobility and connection points with the network.
- Look at future surrounding context, key attractors and desire lines.
- Crossing facilities should have their own simplified procedure which is based on travel time savings vs waiting for a gap in the traffic - this is relatively easy math's but hasn't been integrated into simplified procedures. SP11 needs to be completely rethought from a user perspective, with the aim to make it an assessment tool to be used early and often by those who know most about the project, to maximise benefits, rather than a specialist task farmed out to consultants to meet a funding requirement.
- Nominate BCR's for some types of improvements.
- We are happy with the assessment process it is relatively simple for us as we do not have huge demand growth.
- Council has developed its own assessment and ranking process. Simply identify the gap and rank H, M, L across every township.
- Possibly could use check list if don't have demand e.g. school route, vulnerable users, attractors, reduced distance on desire lines.
- Councils have been assessing what footpaths to invest in for years. Not all councils are the same and there are varying LOS. NZ Transport Agency will find it difficult to standardise an assessment process.
- Greatly simplify - does an urban route have the same or better pedestrian facilities (quality and directness) as the roading network. No - build it. Although a priority system to determine which routes are needed first would be useful.
- Just match council funding without any drama.
- Develop a willingness to pay framework and include in large capital works projects.

- Simpler assessment process. Acknowledge that walking is the most accessible transport mode, and even if only a few people use it they could be disabled so still require a high LOS. Have an option that links to shared spaces so walking on the road shared with cars and cycles is a viable option for difficult sites and very low demand sites but to give some pedestrian treatment e.g. traffic calming some validity for pedestrian LOS improvements.
- Base the investment on level of strategic significance, anticipated level of future demand, resulting benefits to related activities and services.
- No nationally consistent level of service or classification exists for public transport or walking and cycling, although these are in development. Difficult to ensure local drivers for investment match national drivers, and that councils plan and request funding for projects in accordance with those drivers. Guidance on how to proceed in the interim in the absence of a level of service or classification would be appreciated.
- Develop and supply nationally consistent policies, frameworks, tools and systems.
- Better information about pedestrian demand and facility use.
- More quantitative justifications.

3.6 Investment levels

Ten councils provided their investment data in maintenance and renewals for the past three years between 2015/16 – 17/18. **Figure 3.5** and **Figure 3.6** illustrates that Auckland Transport investment levels in maintenance and renewals (respectively) are much higher than any other Local Authority that responded. There is no clear trend over the three-year period for all councils, with some increasing, decreasing or maintaining a consistent level of investment over the three years.

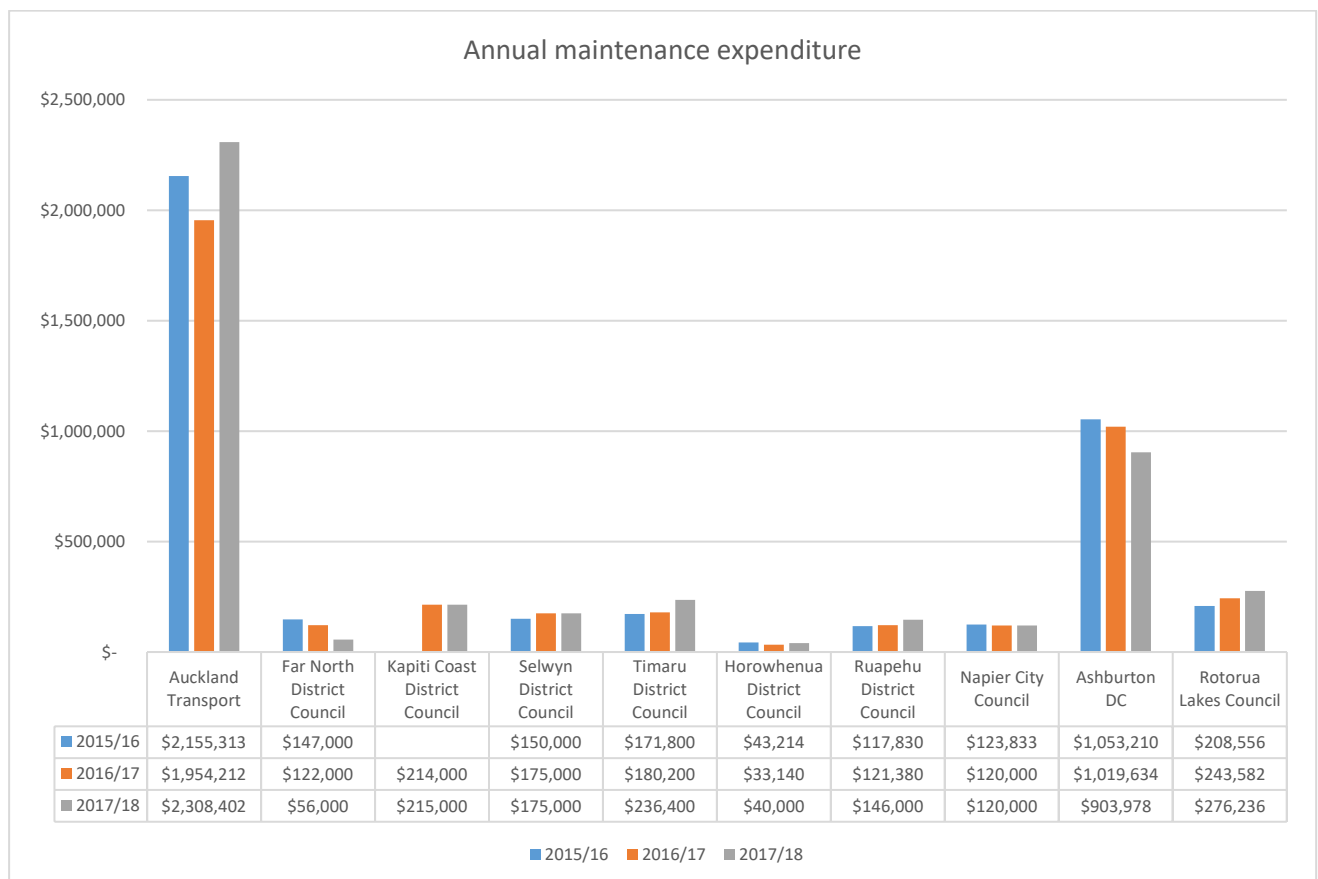


Figure 3.5 Local authority annual maintenance expenditure

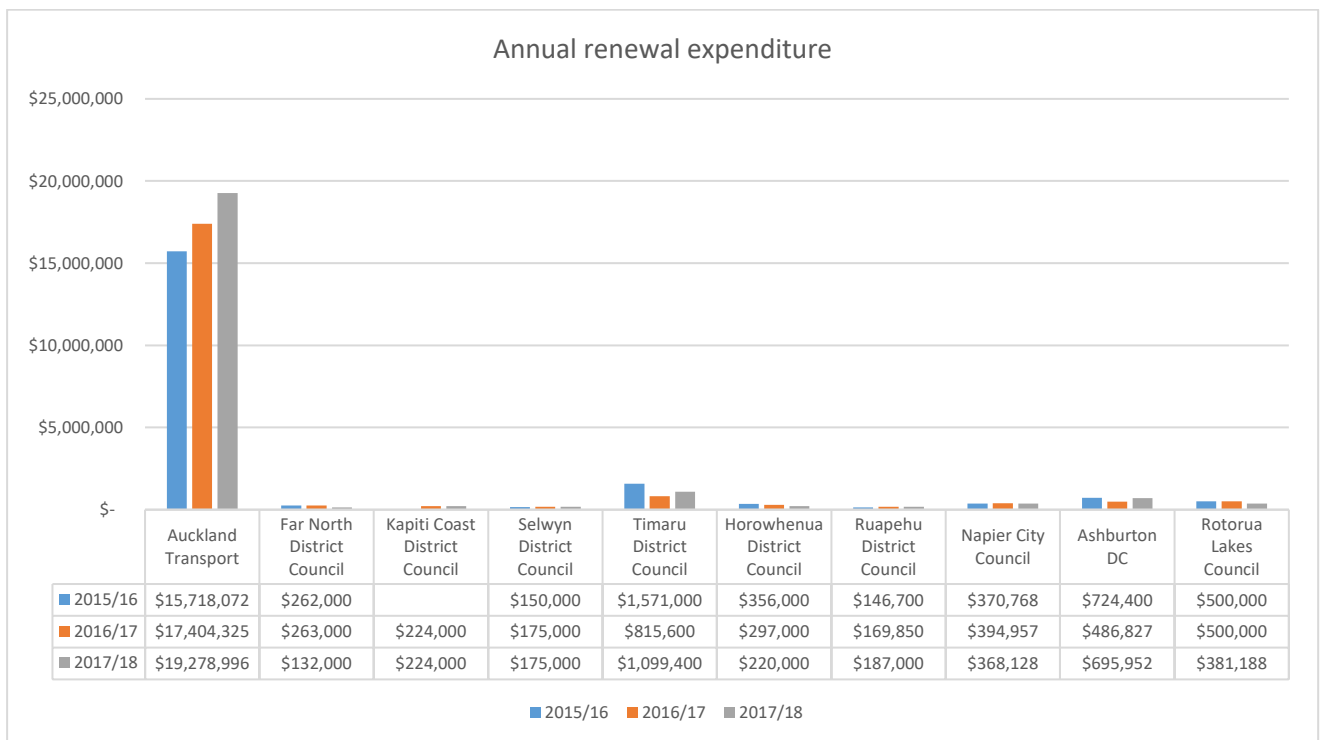


Figure 3.6 Local authority annual renewal expenditure

3.7 New facilities

Respondents were asked what the key drivers/prompts for investment in new pedestrian facilities are for their organisation. Figure 3.7 shows that *land development*, *identified gaps in the networks* and *safety* are the key drivers.

It is noted that this question is similar to the question about key drivers for investment in maintenance and renewals discussed earlier in section 3.2. The difference is that land development is a much greater driver for investment in new facilities, whereas level of service and customer complaints are greater drivers for investment in maintenance and renewals. Safety is a strong driver for both types of investment.

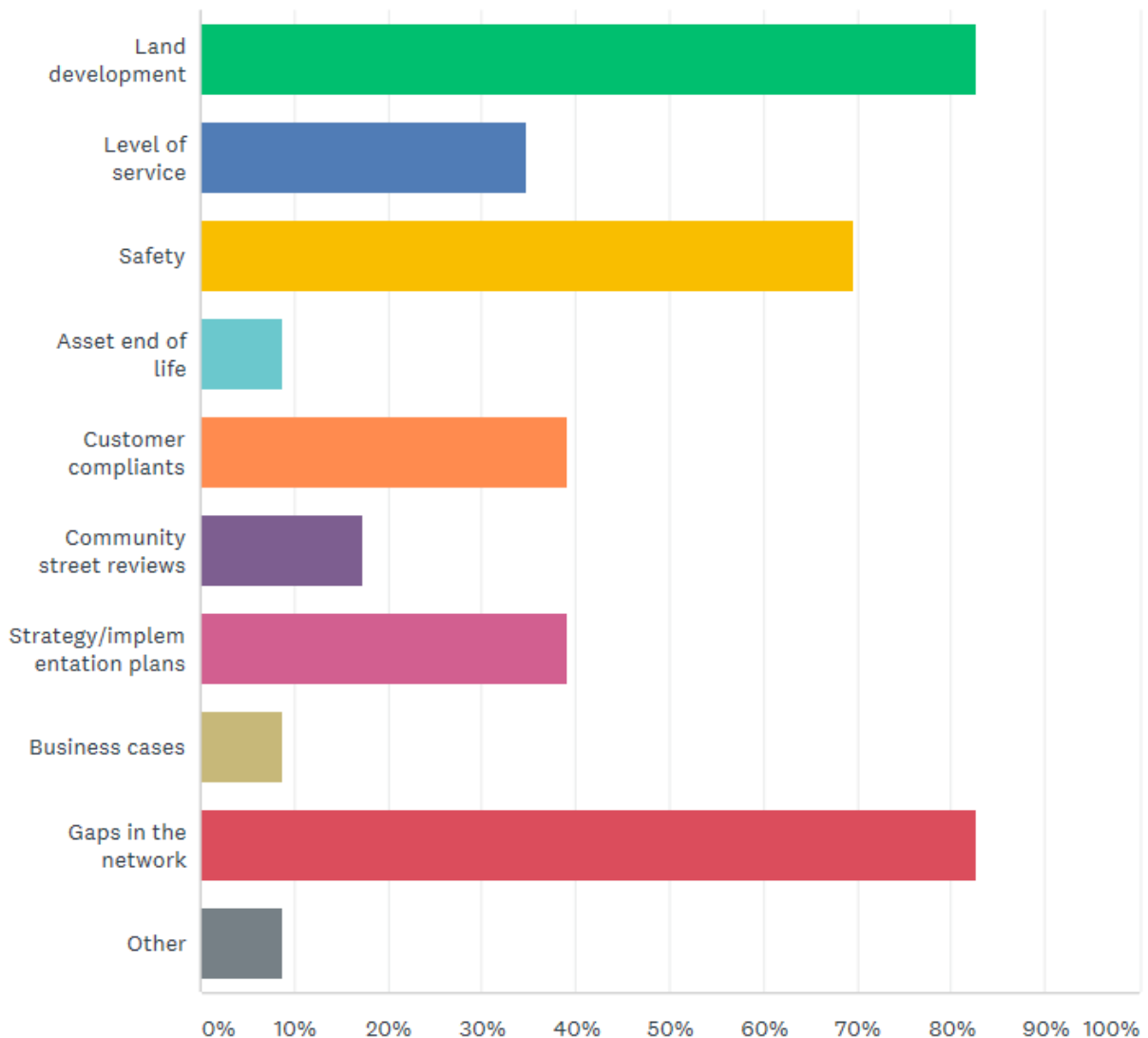


Figure 3.7 Key drivers for investment in new pedestrian facilities

Participants were asked what key drivers determine the level of investment in new facilities, with 40% of respondents stating the level of available council funding as the key driver, and no respondent considering that NZ Transport Agency funding availability was an issue. A minority (26%) of respondents considered that political influence played a role, as did the level of priority for pedestrian facilities compared to other transport infrastructure projects.

Respondents also provided feedback as to the key hurdles in developing and receiving funding for new pedestrian facilities. The comments received included:

- These projects can be a lot of work to justify for relatively small money.
- NZ Transport Agency subsidy eligibility.
- Staff resourcing to do the work involved in the whole process.
- As part of LCLR programme it's relatively easy. As part of improvement funding process, it would be too difficult to justify time and effort.
- Lack of a comprehensive way of identifying priority routes for pedestrians - including but not limited to lack of data.
- Council/engineer perceived community buy in for better pedestrian facilities.

- Business case.
- Poor timing. This is the same issues as for maintenance and renewal.
- Funding.
- I would guess ignorance / apathy of council officers not knowing how to apply / or they couldn't be bothered to apply for funding. Negative perception towards pedestrians.
- Getting local funding share.
- Recognition that it is as important, if not more, than roading.
- NZ Transport Agency processes.
- Competing for road space and resources to develop proposals especially in complicated sites.
- Inadequate understanding and experience.
- Allocation of council funds.
- Economic evaluation process.

3.8 Closing comments

Finally, respondents were provided with the opportunity to provide any additional comments, with responses including:

- Make it mandatory to have competent, quality walking routes as part of the transport network rather than justifying benefits.
- Set up so further benefits rather than just pedestrian related benefits are considered, need to consider benefits holistically.
- It was great that footpath maintenance and renewal attract FAR.
- Incentivise the funding from NZ Transport Agency such that the level of importance and application (existing/anticipated demand levels, strategic and local connectivity are also reflected). Apply Universal Design standards for all pedestrian networks servicing public buildings initially and then expand out based on demand. Land-use considerations must be fully integrated to receive funding. This should require strict adherence to globally accepted walkable catchments metrics such as those described in LEED and Auckland Transport's Roads and Streets Framework policies.
- Thank you for WC121, it will help us a lot, we need to do further work to develop our asset info to make good investment decisions.

Appendix D - Case Studies



HAMILTON CASE STUDY

Overview

Hamilton, the fourth most populous city in New Zealand, is located in the Waikato region with a population of 141,612 (2013 census) an increase of 9.3% since the 2006 census. Hamilton has experienced significant growth in recent years, with much of the new residential developments located to the north of the city centre.

In terms of transport infrastructure, Hamilton is the meeting point for State Highways resulting in these roads dominating the entry points into the city. The presence of the Waikato River running from the north to the south-east also creates significant barriers for pedestrians primarily at river crossings and roundabouts crossing the State Highways. Access to the Hamilton Gardens is a prime example of a key destination for both residents and tourists. The main exit to the gardens is off SH1 to the south of the city via a large roundabout. Previously, the pedestrian facility crosses four lanes of traffic across the state highway via a central pedestrian refuge and there was no tactile paving provision. This facility has now been replaced with a 4m wide underpass providing excellent pedestrian and cycle access.

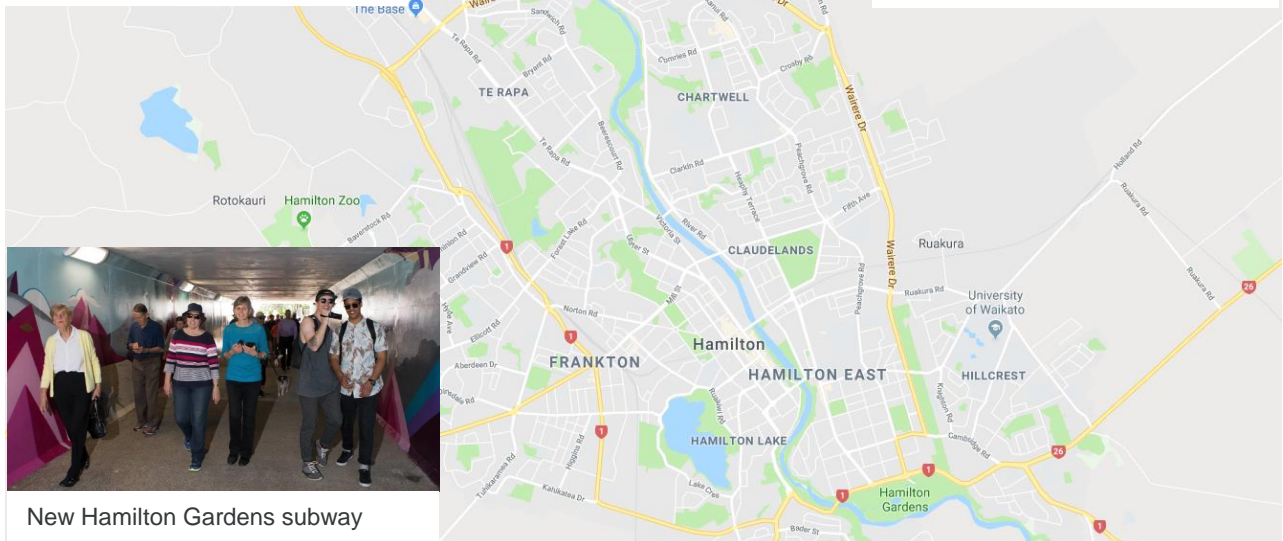
Currently 7% of people walk / jog to work in Hamilton. The flat topography and relatively compact nature of the city lends itself to walking and cycling and this proportion could be increased. The key existing detractors to achieving growth are likely to be the heavy traffic flows along the strategic road network and lack of consistent facilities. The Council operates several schemes to encourage walking including: school travel planning; walking school buses; happy feet (a pre-school programme); 'Walk to Work Day' and 'Car Free Day'. Plans are in place to enhance the resource available for workplace travel planning going forward.



Previous pedestrian access to the Hamilton Gardens across SH1



Pedestrian priority and shared zone in the city centre.



New Hamilton Gardens subway

Feedback from Council Staff

The Council has a dedicated disability advisor and a strong, active working relationship with local disability advocacy groups which provides a good foundation for better design outcomes. The council operates a system whereby consents are reviewed by the City Development Team, which is located in the same office space as the City Transport Unit. The two teams have a good working relationship which in part is fostered by the proximity and results in good transport reviews of consent applications. There are still challenges to getting good pedestrian design outcomes and historically these have been achieved on a piecemeal basis. The recent change in national policy and local politics has seen an increase in priority for pedestrians and increased funding, which will see the development of appropriate pedestrian infrastructure on a larger scale.

Planning Framework

The Hamilton Integrated Transport Strategy ‘Access Hamilton Strategy’ identifies the objective, *Transport Choices for Everyone*,

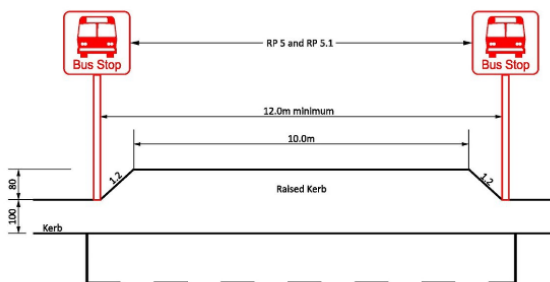
The document includes pedestrian considerations throughout as well as pedestrian and cycle specific projects. Road bridges have been identified as specific problems for pedestrians and cyclists and it is noted that clip-on bridges are included as projects within the action plan. The strategy is built around six core objectives and sets out the plan for sustainable, economic, safe, accessible and integrated transport planning for Hamilton until 2040. It refers to RTS14 but not specifically the PPDG.

The Hamilton District Plan (2017) offers a set of rules and policies on transport corridor networks. It also clearly states that transport considerations are included within other sections of the document assisting good adherence to rules including utilities and subdivision design.

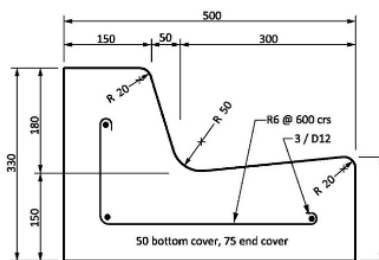
The District Plan update also included provisions for the principles set out in the Access Hamilton Strategy and to align with NZS4404. Ultimately this resulted in consideration of land use, movement and ‘sense of place’ in transport designs. The updated plan gives some legislative framework to ensuring that the principles in the Access Hamilton Strategy must be considered in new development.

The transport section of the District Plan is focused on the ‘transport corridor network’ and aims to ‘operate and maintain a safe, efficient and responsive transport network’. A key part of this is the adoption of a transport hierarchy plan recognising function and sense of space. It sets out the function through the traditional road classification system using One Network Road Classification (ONRC) principles within the description of the function of each type of road. The hierarchy then sets out requirements based on the expected land use. The needs of pedestrians are considered within the District plan text. The ten-year plan 2018 to 2028 is likely to be formally adopted by the end of June 2018. The draft document places an emphasis on providing transport choice and requested feedback on where pedestrian, cycle and public transport investment should be focused.

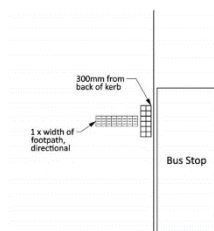
The Infrastructure Technical Specifications (ITS) reference the PPDG and RTS14 in addition to other relevant guidelines. The ITS is a regional document providing consistent design standards for development across the district. The document has a sound transport base including referencing the transport corridor hierarchy defined in the District Plan. It also includes good urban design principles with the inclusion of sense of place. A review of the pedestrian facility design in pedestrian traffic islands contained in the ITS are well written and align with the PPDG. The maximum setback for pedestrian islands is 100mm in the Hamilton specification compared to 300mm in RTS14. A key innovation is the use of the ‘Kassel kerb’ or locally known ‘kirsty kerb’ at bus stops. The design is shown in the diagrams below. The guidance sets out the use of tactile pavers aligned with the current RTS14 guidelines. The Kassel kerbs were developed in Germany to assist easier operation of low floor buses at bus stops.



ACCESSIBLE RAISED BUS STOPS
(BUS CAGE ROAD MARKED)



ACCESSIBLE BUS STOP
KERB DETAIL



BUS STOPS

The disability policy (updated 2016) aims to ‘provide all people with equity of opportunity and access’. The policy references relevant legislation and local policies but not PPDG or RTS14. The key policy principles to achieve the desired outcome are culture and communication (good awareness of issues from elected members and staff and provision of information in accessible formats). Council plans are inclusive and involve advocacy groups in the preparation of policies. The final policy is to remove barriers and increase access. The policy is supported by an action plan which is updated annually. The implementation of the policy is monitored by the in-house Disability Advisor.

The Hamilton traffic bylaw sets out the legislative framework for the adoption of pedestrian malls, shared zones and mobility parking spaces within Hamilton. The policy provides a comprehensive register of pedestrian and cycle facilities adopted under the bylaw.

Hamilton City Council has carried out Community Street Review audits and provided in-house training to staff to raise awareness of pedestrian planning and design issues. The council is also working with advocacy groups to monitor and evaluate pedestrian improvements.

Pedestrian Monitoring Case Study



Some pedestrian improvements were undertaken at the Peachgrove Road roundabout to the east of the central city as the area was not considered pedestrian friendly. A scheme was developed to upgrade the pedestrian crossings with raised zebra crossings on two arms and mid-block signalised intersections installed on one arm. A report commissioned by CCS Hamilton provided insight on the use of the facilities.

Before and after surveys showed that the number of people crossing at the designated crossing increased. Although a small proportion of users used a mobility aid, the number of people crossing at a formal crossing point increased after the crossing improvements indicating that providing facilities would encourage more use.

Best Practice

- Availability of a dedicated disability advisor within Council and proactive partnership working with local disability advocacy groups resulting in development of policy and engineering solutions to help people with disabilities to “have equity of access and participate fully in community and civic life in Hamilton”.
- Availability of policy documents in an accessible format on the website.
- Clear documents, strategies and policies on the website and development of a regional technical specification manual assists with transparent and simple design outcomes for new infrastructure.
- Innovative design and development of the ‘Kirsty kerb’ for bus stops.
- Pedestrian and cycle access is included in the landscaping section of the ITS as well as providing a comprehensive transport section of the document with a strong pedestrian design mandate.
- Implementation of pedestrian monitoring through joint working with advocacy groups.

Key Learnings

- Council has a desire to incorporate a new type of tactile paving arrangement at bus stops to reduce similarity to a standard kerb crossing
- Lack of progress in improving the pedestrian environment due to lack of funding/political commitment within political cycles.
- Include provisions in district plans but do not be too specific to limit innovation.

SELWYN DISTRICT CASE STUDY

Overview

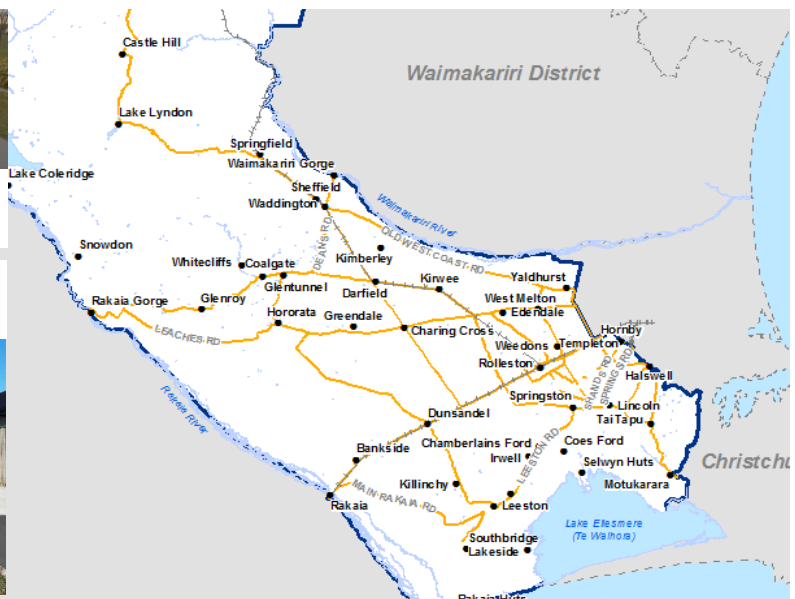
The Selwyn District covers a land area of 6,420km² with a current total population of 59,000 with a 32.6% increase occurring between the 2006 and 2013 census. Projections produced by Selwyn District Council estimate that population will increase to over 100,000 in the next 30 years. The largest centre is Rolleston with around 25,000 residents. Lincoln, Prebbleton and West Melton closer to Christchurch have also experienced significant residential growth along with several smaller more rural townships like Darfield. The district experienced accelerated commercial and residential growth since the Canterbury earthquakes occurred in 2011.

The transport network within Selwyn is dominated by the State Highway network and key local arterial routes to and from Christchurch. The major roading project within the district is the extension of the Christchurch Southern Motorway and four-laning of Main South Road on the existing alignment of State Highway 1 to Rolleston. State highways travel through the centre of many of the rural townships. The larger urban centres of Rolleston, Lincoln, Prebbleton and West Melton have seen the development of new subdivisions with planned walking and cycling infrastructure within these new areas. The Little River walking and cycling Rail Trail is the primary commuter and recreational route in the eastern area and passes through existing townships and some of the new subdivisions. Walking is a minor mode of transport within the district with only 4% of people walking or jogging to work. Historic subdivision development resulted in the development of infrastructure often with a footpath on one side of the road on lower classified local streets. New district plan rules have enabled the development of improved infrastructure like the Faringdon example below that creates specific links.



Tennyson Street approach to Rolleston town centre

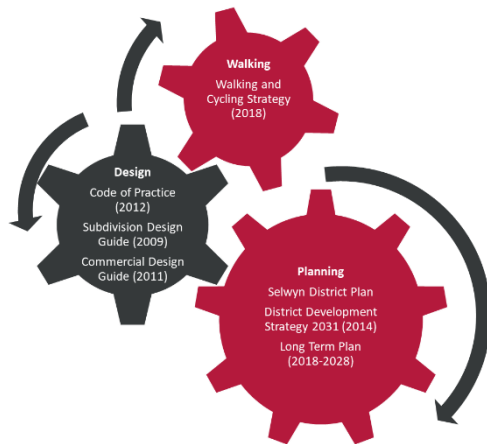
Pedestrian cut through – Faringdon subdivision



Feedback from Council Staff

The Council is proactive providing for walking and cycling have allocated more funding to providing more pedestrian infrastructure across all townships. The challenge comes for both Council and developers with limited funding and road reserve space when making decisions on where two footpaths are required. Evidence and research providing advice on when two paths are required or when one path would be sufficient in would be appreciated based on the classification of the roads. Shared space, signage and design requirements for shared use routes have also been challenging when implemented in the district. Shared spaces have typically not been designed as envisaged by Council by developers and it would be useful to provide more tools and guidance on how to best develop shared space/use routes in residential developments to avoid overly narrow streets. The Councils 2018 'Long Term Plan' and 'Walking and Cycling Strategy' sets out how pedestrian and cycling improvements, including shared use routes will be provided with dedicated funding streams. The subdivision and commercial urban design guides developed by Council make provision for walking and cycling but as they are only guides the principles are not always adopted by developers and cannot be enforced easily within the District Plan. Council are in the process of undertaking a District Plan review and will be undertaking a review of the Code of Practice and the Traffic and Parking Bylaw to improve this.

Planning Framework



The Selwyn Code of Practice (COP) was updated in 2012 and set to be updated shortly in conjunction with the District Plan review. The roading chapter (Chapter 8) references the PPDG and NZS 4121:2001 but not RTS14. Walking is prominent within objectives set out in the document, and innovative design is also encouraged to promote alternatives to motor vehicle use particularly for short trips. Design considerations include providing pedestrian paths and connecting these when designing cul-de-sacs to improve permeability.

Four categories of local roads exist where walking and cycling are featured within low speed environments. It is noted that the shared path width is 2.5m in the document but indicates that the formed width should be widened where, 'lots of people are expected to use the facility' e.g. outside retail shopping area. The COP requires tactile warning pavers to be provided at all public footpaths and cut downs on collector and arterial roads but not on local roads.

An update of the COP could incorporate recent design innovations and thinking including developing standard details for pedestrian facilities referencing the PPDG and RTS14. Selwyn District Council also produced urban design guides for subdivisions and commercial areas in 2009 and 2011 respectively. Both guides include a strong emphasis on good pedestrian design including only developing residential blocks with an 800m perimeter and creating people orientated space within commercial areas.

The Selwyn District Plan references that consents will be assessed using *the most recent 'Engineering Code of Practice' where appropriate*. Provision for walking is included in nine of the township objectives and rules and the physical resources rules for rural areas. There is a strong emphasis on promoting walking as shown within one of the core objectives. Outline Development Plans are included in the District Plan that show how transport networks are to be laid out in new "greenfield" areas, including for walking and cycling. The plan sets a requirement to improve permeability within subdivisions by stipulating a maximum walking distance to local facilities and bus services. However, the road and transport rules do not have specific pedestrian design requirements other than to provide safe designs and to comply with the requirements for accessible car parking. The District Development Strategy was developed in part to manage the district's contribution to the region's earthquake recovery plan and to provide a framework for sustainable growth until 2031. The walking focus is to 'improve accessibility between townships and adjoining districts'.

The Council has adopted an updated Walking and Cycling strategy and Action Plan in June 2018 which aims to see, 'A Selwyn where more people walk and cycle safely for transportation and enjoyment'. A key focus of the strategy is to develop a network of cycleways introducing shared use routes between townships costing around \$12.5million over the next 20 years. The Long-Term Plan allocates \$400,000 per year to footpath extensions in townships to help deliver the outcomes of the walking and cycling strategy. It also allocates \$5 million investment into cycleways in the Long-Term Plan which will include provision for walking.

Best Practice

- Unlike many regional authorities, the council has an urban design team focused on developing design guides and improving urban design across the district.
- District plan requirements for subdivisions encourage the design of permeable pedestrian networks. For example, in the Farrington subdivision a wide pedestrian accessway through a large block shortens walking routes to the shopping area.

Key Learnings

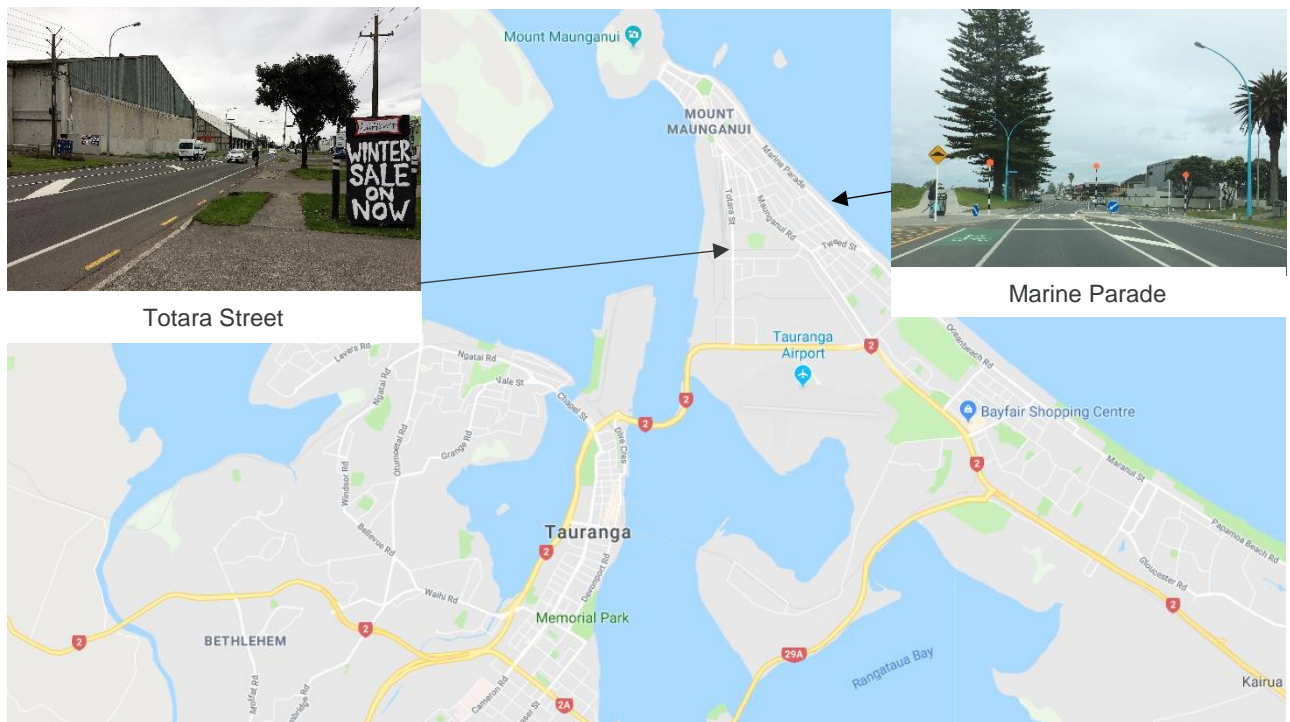
- Good practice guidance developed by the council sets out positive policies for walking but lacks the legislative requirements so can often be disregarded in resource consent applications.
- The 'Code of Practice' is referenced in the District Plan and could provide improved pedestrian outcomes but would need to be updated to achieve this.
- Council experiences challenges on the appropriate Level of Service for pedestrians – research and advice from NZTA would assist in planning and delivering a network that is appropriate for the area.

TAURANGA CASE STUDY

Overview

Tauranga is located on the eastern coast of the Bay of Plenty (North Island) and is home to 114,789 people (2013 census) with 10.5% growth since the 2006 census was conducted. The population is set to increase to approximately 160,000 residents by 2033. Over 20% of the population is aged 14 and under, and almost 20% is 65 or over, with the proportion of over 65s rapidly increasing. It is one of the smallest local authorities in land area but sixth largest in terms of population. Urban growth areas are planned within the city. These include South west (Tauriko West) and East (Te Tumu). Te Tumu also includes planning for a new town centre and Tauriko West includes for expansion of the adjacent commercial and industrial area.

The Port of Tauranga is located on 'both sides of the harbour bridge and is the largest export port in NZ so good transport links for heavy vehicles are critical, including rail freight, which bisects key roads such as Totara Street and State Highway 2. Tauranga and Mount Manganui are also popular tourist destinations with regular cruise ships docking on the Mount side of the city. The city's transport network is dominated by the presence of two harbour bridges providing access between the city and Mount Manganui/Papamoa. State Highway 2 and 29A are controlled by NZ Transport Agency. Although walking within the Mount Manganui township and the city centre is attractive, the key transport corridors are car dominated and crossing roads can be extremely difficult for pedestrians. An example of a car dominated environment is Totara Street (above). The example of Marine Parade shows how pedestrians are accommodated in a busy but more attractive environment. Currently 3% of people walk to work in Tauranga and the city supports local community operated walking school buses.

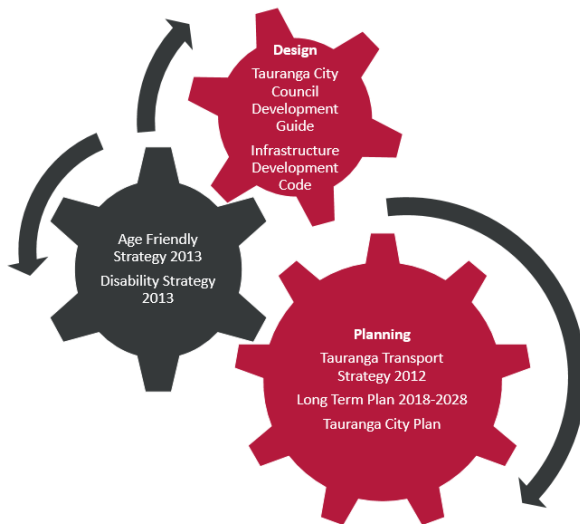


Feedback from Council Staff

There are still many challenges and delays to implementing pedestrian safety improvements on busy transport corridors because schemes are delayed due to councillor or community feedback. Even with evidence, there appears to be a lack of understanding and desire to provide improved facilities particularly if it reduces level of service for vehicles. Council has historically struggled to fund walking schemes through NZ Transport Agency. The proposed approach to provide evidence to support the economic justification has always been challenging. The draft IAF suggests that level of service should be a measure using ONRC or the existing Austroads level of service. TCC staff indicated that the agreed Network Operating Plan could provide a proxy. Going forward TCC is looking to take a more holistic approach to pedestrian projects through the multi modal projects on key routes, as part of amenity upgrades and in existing centres.

Planning Framework

The Tauranga Transport Strategy identifies the objective to make Tauranga, *a place that is easy and safe to move around*, similar to the aim of the disability strategy which states the aim that, *'People are able to move about the city easily and safely without being limited by the environment'*. The latter provides an inclusive aim without being onerous.



The City Plan rules only have a direct reference to the pedestrian safety in car parks. Giving more prominence to walking should assist in encouraging higher quality environments. The Development Code states that pedestrians should be considered within the design process but could be strengthened and linked to the PPDG to provide more clarity on expected details.

The Development Guide includes the principles of a continuous path of travel, covered walkways and design elements to encourage pedestrian surveillance embedded within the design principles. The challenge appears to be achieving developer buy-in to implement some of the key pedestrian features. The worked example in the Development Guide could provide greater detail with regards to walking routes and the document should reference the Pedestrian Planning Design Guide and RTS14. Although council produced an urban design policy in 2006, the policy is outdated and is not a current focus of council strategies but should be revisited in the review of the Infrastructure Development Code.

The Age Friendly Strategy and Disability Strategy have been developed to acknowledge the needs of people with a disability (projected to be 1 in 5 people) and for the increasing age in population. Maintaining physical activity and independent travel options is vital. It is also important to acknowledge the working partnership with Bay of Plenty Regional Council /Western Bay District Council/NZ Transport Agency/Smart Growth and the Ministry of Education. Feedback highlighted the fact that funding for pedestrian schemes through NZ Transport Agency has not always been consistent. Overall pedestrians could be emphasised more across plans and policies. The need to provide access to buses and good pedestrian infrastructure has been highlighted and would require the adoption/update of the draft bus stop guidelines as either a separate document or combined as part of the existing strategies. It is recognised that more could be done for walking in the city, particularly to provide a high-quality and safe environment for the local community. Tauranga City Councils immediate plans include the tasks outlined below:

- Developing a robust multi-modal transport model using more reliable data from household surveys
- The transport provisions in our infrastructure development code are currently being overhauled with a much greater emphasis on walking, cycling and urban design.
- Council recognise the need to prioritise pedestrians and are looking to develop a walking strategy in the next three years.

Best Practice

- The council is recognised for its commitment to promoting walking and cycling to schools. New walking routes have been funded through maintenance schemes to deliver good outcomes for local communities.
- The education team undertake regular monitoring of walking in schools which helps to inform other projects.
- The council provides mobility scooter training catering for the needs of more vulnerable residents.

Key Learnings

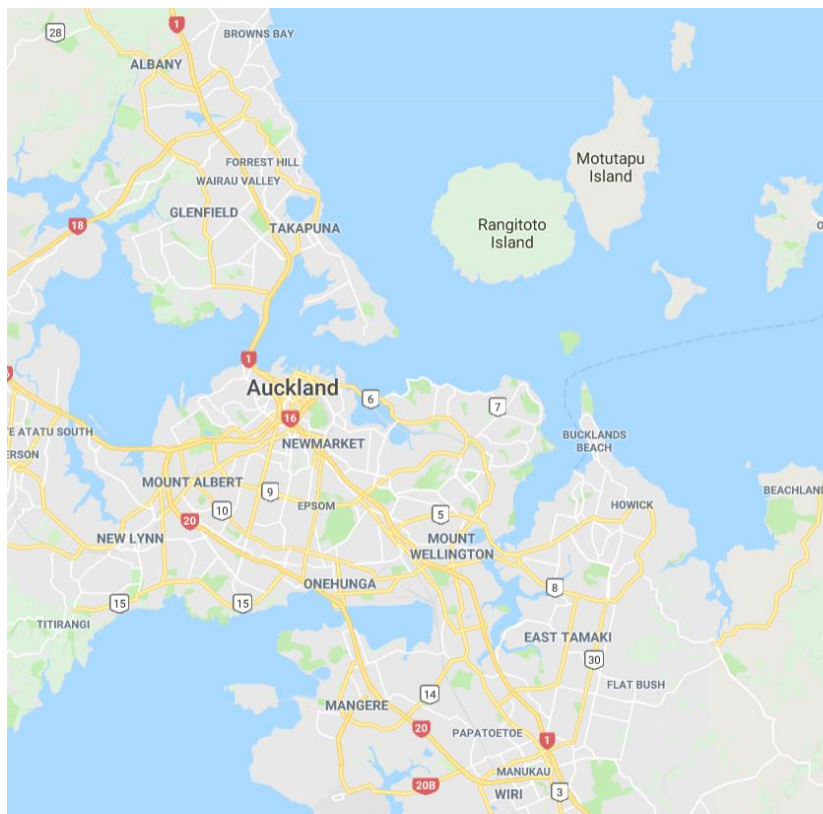
- Work with developers' councillors and council staff to raise awareness as to why it is important to improve facilities for pedestrians and the design solutions that are available.
- Provide consistent messaging from all areas of NZ Transport Agency for planning and funding for walking.
- Need to have consistent messaging and relevant tools to measure and assess pedestrian level of service.

AUCKLAND CASE STUDY

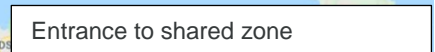
Overview

Auckland is the largest city in New Zealand being home to almost 1.5 million people (2013 census) with an 8.5% increase since the 2006 census. Only 4% of the total population walked or jogged to work. The creation of a 'super city' for Auckland has seen the formation of Auckland Council and Auckland Transport (AT). Auckland Council produces the long-term planning strategies and the Unitary Plan which determines the rules for development in Auckland. AT is responsible for maintaining and operating the transport system in Auckland excluding state highways. They prepare plans that meet the aspirations set out in the strategies developed by Auckland Council.

The geographical spread of the city requires a range of transportation options including passenger ferries and the harbour bridge crossing to provide access to the North Shore. The Auckland CBD is relatively compact and densely populated whilst the Auckland region has expanded to cater for the growing residential demand at lower densities. This has created a transport network where many people travel further to access every day activities, usually by car and frequently on the extensive, busy motorway network. Pedestrians experience significant delays crossing roads within the CBD, on major arterials and at motorway interchanges.



Signalised pedestrian crossing – central city



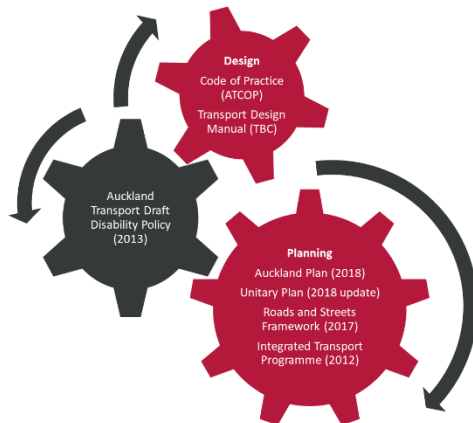
Entrance to shared zone



Feedback from Auckland Transport Staff

The lack of a walking strategy was highlighted as one of the issues that contributes to the lack of prominence of walking within the region. The development of the Roads and Streets Framework and the soon to be published Transport Design Manual have incorporated land use planning movement principles which increase the prominence of pedestrian planning and design, and execution of the desired outcomes by internal staff and developers could be improved. There are also challenges to ensure that good pedestrian planning is included in new subdivisions. As an authority AT are currently trying to address the challenge of how to provide separation between pedestrians and cyclists. There are also challenges with the installation of tactile paving particularly in relation to the use of directional paving. Driveway design is also a challenge where frequently the outcomes do not meet design standards.

Planning Framework



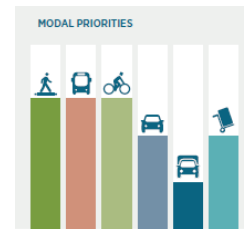
The Auckland Plan sets out the spatial framework for the next 30 years and the Integrated Transport Programme (ITP) was developed by Auckland Transport in association with the NZ Transport Agency to deliver the transport system improvements envisaged within this time frame. An updated Auckland Plan has recently been consulted on to plan for the period up to 2050 (the plan will be finalised in August 2018). The desired transport outcome of the updated long-term strategy is, ‘Aucklanders will be more easily able to get to where they want to go and will have choices about how they get around’.

It is anticipated that the ITP will be updated to reflect the revised outcomes. The current ITP (2012-2041) sets up a framework of developing a ‘one system approach’. Pedestrians are explicitly and extensively referred to throughout the document and within the context of the aims of creating an integrated network.

A key aim is that a system, ‘Provides access for pedestrians to employment areas, education facilities, local shops, community facilities and open space’. There is a clear focus on providing safe pedestrian crossings at intersections and mid-block locations by introducing low cost measures which improve the use of the existing network. The plan also provides funding to undertake education campaigns for walking. It is anticipated that the new GPS direction could result in an increase in pedestrian priority within the ITP when it is updated.

The Unitary Plan sets out the rules for what can be developed within the Auckland region. The transport section (E27) sets out the transport rules for the road network, which are inclusive of pedestrians. It refers to NZA4121:2001 and the need to meet the New Zealand building code for disability parking spaces but does not currently reference the Pedestrian Planning and Design Guide or RTS14.

The Roads and Streets Framework published last year incorporates place, spaces and modal priority. The framework aims to incorporate urban design principles and move away from traditional transport planning models to maximise the planning and design of the transport network. The six key principles are: determine street type; confirm network status; identify demand profile; establish modal priority; identify conflicts and opportunities; identify tools to mitigate impact and design, implement and monitor. The priority for pedestrians is emphasised (shown right) and the guide provides typical layouts and cross sections to assist designers and developers.



The Auckland Transport Code of Practice (ATCOP) was developed in 2013 and provides infrastructure design specifications for transport designs undertaken within the Auckland region. Chapter 12 sets out the design standards for footpaths and pedestrian facilities. The guide references RTS14 and AS/NZS1428:4 for tactile paving provision and refers to the Pedestrian Planning and Design Guide for other design features such as pedestrian crossings. The Transport Design Manual is currently being developed and will supersede ATCOP. AT are proposing that the pedestrian design improvements within the manual will include removal of slip lanes and an emphasis on reducing traffic speeds and crossing distances at pedestrian crossing facilities. The minimum footpath width will also be set at 1.8m.

Best Practice

- Development of the Roads and Streets Framework which includes people, space and modal priority.
- Update of technical guidance as a living document to reflect changes in design principles.

Key Learnings

- Lack of a high-level walking strategy is seen as a challenge to increasing prominence of pedestrians in planning and design of facilities.
- Crucial to work with developers, councillors and council staff to raise awareness as to why it is important to improve facilities for pedestrians and outline the design solutions that are available.
- Further information on the use of directional paving would be useful for staff and external designers.
- The current pedestrian road rules do not assist in prioritising pedestrian safety, a review of the current framework and assessment of how giving priority to pedestrians would change the transport dynamic.

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