

# COMMUNITY STREET REVIEW HOW TO GUIDE

## Part 1: Background, Walkability and Planning

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# Contents

<b>1</b>	<b>INTRODUCTION</b>	<b>1</b>
	A Brave New World	1
	How the Guide is Structured	1
	Getting Better	1
	About the Authors	2
	Acknowledgement	3
<b>2</b>	<b>BACKGROUND</b>	<b>5</b>
	Introduction	5
	What is Walkability	5
	Identifying Problems	6
	Assessment Techniques	7
	Introducing Level of Service	9
<b>3</b>	<b>WALKABILITY</b>	<b>11</b>
	Combination Audit and Rating System	11
	Who Uses Community Street Reviews	12
	What a Community Street Review is not	13
<b>4</b>	<b>PLANNING</b>	<b>15</b>
	Introduction	15
	Roles and Responsibilities	15
	Selecting the Day and Time	16
	Selecting the Time of Year	17
	Selecting the CSR Team	17
<b>5</b>	<b>REFERENCES</b>	<b>19</b>

## Tables and Figures

Table 2.1	Reviewing, Auditing and Rating Comparison	7
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## Appendices

Appendix A Glossary

Appendix B Fruin LOS

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# 1 INTRODUCTION

## A Brave New World

- 1.1 Welcome to the brave new world of Walkability. This is a new world with new terms, new procedures and new viewpoints. This new world requires new practitioner tools and this guide is the result of a year long study commissioned by the Health Sponsorship Council to develop a tool that would allow the measurement of the built environment from the perspective of walking. This new tool is a **Community Street Review**. A Community Street Review is a nationally recognised standard for measuring Walkability.

## How the Guide is Structured

- 1.2 The guide is separated into three parts; each part will be of more or less interest depending on the reader's purpose.

1. **Part 1 of the guide provides information about development of Community Streets Reviews and their objective.**
2. Part 2 of the guide provides information about the process of undertaking a Community Street Review.
3. Part 3 of the guide provides the mechanism for assessing the results of a Community Street Review and disseminating results.

- 1.3 Overall the guide is a friendly 'how to', it sometimes includes clichés and informal language to express points of view or describe how something is undertaken or done. It is written to be an easy read and this part, **Part 1 provides information about:**

- **Background: This section includes the background to why Community Street Reviews have been developed, the development of the term Walkability and the different assessment techniques including Reviewing, Auditing and Rating.**
- **Walkability: This section includes all the things that have to be considered when arranging a Community Street Review, including finding the Participants, required materials, information, organising the forms and having a base.**
- **Planning: This section includes all the things that have to be considered before undertaking a Community Street Review. It includes items such as; "why undertake a Community Street Review?" potential User Groups, selecting the day, time and Team.**

- 1.4 There are a number of technical reports prepared as part of this project but these are not required when planning, arranging, undertaking or assessing the results of a Community Street Review. Quotations taken from other references are noted in the text and are *italicised*. Important or especially relevant sections of quotations are **bold**. Specialized terms used in this guide, are noted as nouns and are included in the **Appendix A** Glossary.

## Getting Better

- 1.5 Community Street Reviews facilitate better walking environments by identifying, in a systematic manner, problem areas and potential improvements. In similar vein the Community Street Review methodology is a continual improvement process. It is expected this guide will be modified from time to time to reflect the growing knowledge of Walkability issues; this is the first edition of this guide.

1.6 The current learning on Walkability matters and the measurement of the built environment can be found at:

- [www.landtransport.govt.nz](http://www.landtransport.govt.nz)
- [www.livingstreets.org.nz](http://www.livingstreets.org.nz)

1.7 This guide and the store of previous Community Street Review surveys can be found at [www.levelofservice.com](http://www.levelofservice.com). Further research work on the collection of physical and operational variables is being undertaken to add to the tools available to practitioners in this brave new world.

1.8 If you have suggestions for improving this guide, the Community Street Review methodology or you would like to submit Community Street Review data to the national database please contact:

Tim Hughes  
Senior Engineer, Walking and Cycling Guidelines  
New Zealand Transport Agency  
[Tim.Hughes@nzta.govt.nz](mailto:Tim.Hughes@nzta.govt.nz)

### **About the Authors**

1.9 Community Street Reviews have been developed by 'Living Streets Aotearoa' and 'Abley Transportation Consultants Limited' with funding from Land Transport New Zealand via the HSC (formally the Health Sponsorship Council).

1.10 The HSC is a New Zealand government agency tasked with promoting health and healthy lifestyles. Living Streets Aotearoa is a non profit incorporated society that works to advocate for walking friendly communities throughout New Zealand. Living Street Aotearoa takes a leadership role promoting the social, environmental and economic benefits of walking as a means of transport and recreation. Abley Transportation Consultants Limited is a private consultancy that offers transportation advice to central, regional and local government as well as private clients.

1.11 The authoring team is specifically:

Celia Wade-Brown	President, Living Streets Aotearoa
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1.13 **Living Streets Aotearoa provides training for Community Street Reviews and undertakes Community Street Reviews on behalf of communities, regional and local government.**

## **Acknowledgement**

1.14 The Health Sponsorship Council and authors wish to sincerely thank the people of Wellington who participated in the development of the Community Street Review methodology. We also want to express our sincere thanks to the members of the Steering group who provided valuable feedback and ongoing commentary for the duration of the project.

1.15 The members of the Steering Group included:

Christopher Carroll	Ministry of Health, Wellington
Bruce Conaghan	Manukau City Council, Manukau
Tim Hughes	New Zealand Transport Agency, Christchurch
Glen Koorey	University of Canterbury, Christchurch
Jason Morgan	Sport and Recreation Council of New Zealand (SPARC), Wellington
Brent Skinnon	HSC, Wellington (client officer)

1.16 Finally, the Authors and Steering Group want to thank the Auckland Regional Transport Authority (ARTA) who provided ongoing feedback and technical assistance during the project. Specific thanks go to Tricia Allen and Maude Richard.

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## 2 BACKGROUND

### Introduction

- 2.1 Walking is typically the forgotten mode of transport and few analytical techniques are available to help practitioners identify low standard walking environments.
- 2.2 Providing accessibility to the transport network for all members of a community is vitally important. For most members of the community, severed from easy accessibility i.e. the very young, old, or mobility impaired, walking provides the first, last and often the only mode of transport. Other functions that walking aids includes community involvement, health, recreation, meeting and greeting are all affected by low quality walking environments.
- 2.3 Therefore, being able to identify low quality walking environments using different practioner tools, then taking the steps to prioritise and action improvement in those environments will aid New Zealand towards meeting its overall transport vision. The problem is; what constitutes a low quality walking environment? if it can be identified, how does it compare against other walking environments? Additionally, how can funding be directed towards these low qualities, walking environments in an efficient, auditable, transparent and repeatable process?

### What is Walkability

- 2.4 All technical disciplines have their own terminology and jargon. The technical words associated with walking have to cross professional disciplines e.g. engineering, planning, and health. These words also have to be understood by the community, and many have probably been developed in the community and picked up by practioners. For this reason that words such as 'Walkability' infer a certain meaning but without their correct definition, confusion between these different disciplines can become apparent.
- 2.5 The Land Transport New Zealand draft 'Pedestrian Network Planning and Facilities Design Guide' (PNPFDG) defines '*walking*' and the inclusion of '*...on foot or on small wheels, or assisted by additional aids.*' meaning the definition in terms of a practitioner guide is very community inclusive. This differs from the Oxford University Press Dictionary which only includes "*...to move or go somewhere by putting one foot in front of the other on the ground, but without running*".
- 2.6 '*Walkability*' and '*Walkable*' are words often touted but their definition is less clear. Neither of these words is defined in the Oxford Dictionary although 'walk', 'ability' and 'able' are all described. '*Walkability*' and '*Walkable*' are not defined in the PNPFDG Glossary although '*Walkability*' is referred to in '*Chapter 4 Community Walkability*' and generally defined as "*...the extent to which walking is readily available as a safe, connected, accessible and pleasant mode of transport*". This definition has been copied from the Mayor of London and Transport for London (TfL) '*Making London a Walkable City: The Walking Plan for London*' although other practitioner definitions are also available.
- 2.7 A paper presented to the 2004 USA Transport Research Board AGM (Livi and Clifton 2004) summarised recent work undertaken in describing '*Walkability*'. This paper reviewed other researchers' attempts to define these terms that concluded "*None of them directly explain and define the term*". The paper continues and describes other research approaches including "*...localities of interest regarding how "friendly" they are to pedestrians*". It is the inclusion of "friendliness" that probably correlates with the TfL description and later they mention other research involved with Walkability including "*...some aspects are objective, and therefore easily measurable, but others are subjective*". Livi and Clifton (2004) also mention

other friendliness terms including; “functional”, “safety”, “aesthetic” and “destination” as well as “security”, “comfort” and “convenience”, “continuity”, “system coherence”, and “attractiveness”.

- 2.8 Other references include Seilo (2004) in his thesis project for the Department of Planning, Public Policy and Management and the Graduate School of the University of Oregon, describing “Walkability - is a measure of the urban form and the quality and availability of pedestrian infrastructure contained within a defined area. Pedestrian infrastructure includes amenities developed to promote pedestrian efficiency and safety such [as] sidewalks, trails, [and] pedestrian bridges.” The USA National Centre for Chronic Disease Prevention and Health Promotion (CDC) defines “Walkability is the idea of quantifying the safety and desirability of the walking routes” (CDC 2009). The USA’s Walkable Communities Inc premise is “...Walkable communities put urban environments back on a scale for sustainability of resources (both natural and economic) and lead to more social interaction, physical fitness and diminished crime and other social problems”.
- 2.9 Walkability appears to include an element of measurability as defined by the PNPFDG “the extent to which”, Livi and Clifton (2004) “objective...and subjective”, Seilo (2004) “measure” and CDC (2009) “quantifying”. The USA’s Walkable Communities Inc premise does not mention measuring although they do undertake Walkability Audits (defined later as Walkability Reviews).
- 2.10 The Oxford University Press Dictionary defines ‘ability’ as “the fact that somebody/something is able to do something”. Consequently, ‘Walkability’ must then include some measure of success that something is “walking friendly” although the measuring bases may be simple or complex, subjective or qualitative.
- 2.11 It is also appropriate that the ‘something’ is defined. It appears that the majority of examples refer to the built environment although other examples have been found that refer to people i.e. the walking ability of an individual or walking community. It seems that the built environment and the extent that the environment succeeds in being “walking friendly” is most appropriate for the purpose of this paper when considering New Zealand’s vision for the “transport system”.
- 2.12 Therefore the definition of **Walkability and walkable is: the extent to which the built environment is walking friendly**. This enables the opportunity for a subjective or qualitative assessment against specific criteria. Community Street Reviews contain the criteria to which Walkability is measured.

### Identifying Problems

- 2.13 Typically problems in the road environment are identified through a network of proactive mechanisms such as consultation, measuring safety or efficiency and road controlling authority officer identification. Reactive techniques include measuring safety or efficiency and resident complaint.
- 2.14 Reactive techniques are neither efficient nor able to be planned with certainty when allocating future year funding. Sometimes they are also subject to the idea of ‘who shouts the loudest’. The problem that is the loudest may not necessarily be the most deserving or most efficient use of funds.
- 2.15 Large capital projects are typically excluded from the ‘who shouts the loudest’ process because they involve large sums of money and hence there are well set out processes for managing suitable solutions. This has typically been through using strong economic measures of benefits verses cost. Smaller projects have been difficult to quantify as they have more discretion, walking projects are much

lower cost or may be included in larger projects subject to different rules and procedures.

2.16 After a problem is identified it is typically one of two types, a maintenance issue whereby it is ideally repaired immediately, or it requires further investigation. It is this investigation phase, both reactive as discussed earlier, but also proactive that is the principal subject of this paper.

2.17 The application of proactive measures to improve the existing built environment are increasing in favour and result in performance design where the existing environment is tested against performance measures such as Walkability. These performance design techniques include reviewing, auditing and rating.

**Assessment Techniques**

2.18 There are three broad techniques when assessing the performance of the built environment; these are reviewing, auditing and rating. Walkability can be measured using each of these techniques.

Reviewing: Applies to existing situations and may include audit and rating as well as other assessment tools. Develops options for and assesses how well proposed options improve Walkability qualitatively.

Auditing: Can be applied to existing and proposed designs. Identifies deficiencies against recognised standards and can propose solutions. Ideal for identifying maintenance issues and simple remedies both qualitatively and quantitatively.

Rating: Tool for scoring Walkability for an environment or facility. Can be used on existing or proposed designs, enables a practitioner to compare different walking environments quantitatively.

2.19 The similarities, differences, subjective or qualitative elements of each of these techniques are described in **Table 2.1**. These techniques are not tools; the different tools for undertaking a review, audit or rating are discussed later.

**Table 2.1 Reviewing, Auditing and Rating Comparison**

Performance Design Technique	Procedure	Situation	Identifies Problems	Analyse Deficiency	Proposes Solutions	Undertaken by	Relative Cost	May Require	Example Methodology	Discussion
Reviewing	Qualitative	Existing	Yes	Yes	Yes	Professional	High	Everything below plus: safety records, traffic surveys, more observation	Good practice	Can include other tools such as auditing and/or rating

Performance Design Technique	Procedure	Situation	Identifies Problems	Analyse Deficiency	Proposes Solutions	Undertaken by	Relative Cost	May Require	Example Methodology	Discussion
Auditing	Qualitative and Quantitative	Existing and Proposed	Yes	No	Sometimes	Technician / Advocate / Community	Medium	Everything below plus: camera, and consultation.	<ul style="list-style-type: none"> <li>• LTNZ Safety Audit</li> <li>• Living Streets DIY Community Street Audits</li> </ul>	Can include elements of rating
Rating	Quantitative	Existing and Proposed	Yes	No	No	Technician	Low	Mapping, site visit, incidentals such as pen paper, calculator, level, measuring tape etc	<ul style="list-style-type: none"> <li>• RAMM</li> <li>• Cycle for Science</li> <li>• PERS</li> </ul>	Attempts to infer a level of performance from a qualitative process that is transferred to a quantitative assessment

- 2.20 Reviewing is a technique whereby a whole environment or environment specific element is assessed against performance criteria specific to the problem being considered. Reviewing is typically a very fluid technique that may include the use of various tools, analytical and subjective, qualitative or quantitative. The difference between a review and an audit is that a review develops options for consideration towards implementation, an audit does not.
- 2.21 Reviewing may also include elements of auditing or rating and, because the tools used when undertaking a review are specific to the problem being considered, reviewing is usually undertaken by a professional such as an urban planner, traffic engineer, transport planner etc. Reviews can include such focused reviews as 'Transport Assessments', 'Management Plans', 'Traffic Impact Assessments' and 'Transport Appraisals'.
- 2.22 Auditing can also be applied to a whole environment or environment specific element. The difference between reviewing and auditing is the structure of the applied methodology. Auditing has a significantly stronger methodology than reviewing and consequently there are a number of published audit techniques.
- 2.23 Auditing can include elements of rating although the process is significantly more qualitative than quantitative. Auditing can be applied to existing or proposed designs, identifies deficiencies and may suggest remedies. Audits are ideal for identifying maintenance issues and simple remedies.
- 2.24 Two examples of audit techniques used in New Zealand are:
1. DIY Community Street Audits. Developed by Living Streets, UK, in 2002 and used for "evaluating the quality of public spaces – streets, housing estates, parks and squares – from the viewpoint of the people who use it, rather than those that manage it".

2. Safety Audits. Numerous safety audit techniques are available although the technique used in New Zealand is the 1993 Transit New Zealand Guidance. Safety Audits, as the name suggests focus almost entirely on safety aspects of projects.

2.25 A rating system ensures the inspection and analysis of an environment is structured, in such a way that results can also be used for developing options, assessing them, so that matters dragging down the overall rating may be addressed. Rating or scoring the performance of an environment is fairly common although the application to walking environments is relatively new.

2.26 The most common rating system is the Road Maintenance and Management System (RAMM) used to assess the pavement environment of roads including an inventory of road features. All road controlling authorities in New Zealand use RAMM and consequently will be familiar with rating systems.

2.27 Systems for rating other environments such as cycling facilities are also available, such as the Institution of Highways and Transportation, London "Guidelines for Cycle Audit and Review" and the recently trialled "Cycle for Science" undertaken in Christchurch in December 2004.

#### **Introducing Level of Service**

2.28 Rating the performance of a walking environment was first proposed by Dr. John J. Fruin in his 1971 book 'Pedestrian Planning and Design' published by the Metropolitan Association of Urban Designers and Environmental Planners, New York. Fruin investigated Walkability against pedestrian walking density and flow rates for particular walking purposes, Fruin related this to a particular Level of Service (LOS).

2.29 Level of Service is a qualitative measure describing operational conditions of pedestrian flow. It is based on service measures such as the freedom to choose a desired speed, to bypass others as well as the ability to cross a pedestrian traffic stream, to walk in the reverse direction of a major pedestrian flow, to manoeuvre generally without conflicts and changes in walking speed and the delay experienced by pedestrians at signalised and unsignalised intersections.

2.30 Six Levels of Service are defined, designated 'A' to 'F', where 'A' represents the best operating conditions and 'F' the worst. Safety is not included in the measures that establish service levels. Level of Service definitions for different purposes, as defined by the Highway Capacity Manual (HCM) published by the Transportation Research Board (USA) is included in **Appendix B**.

2.31 The HCM notes, additional to environmental factors that contribute to the walking experience and therefore to perceived Level of Service are the comfort, convenience, safety, security, and economy of the walkway system. Comfort factors include weather protection, climate control, arcades, transit shelters, and other pedestrian amenities. Convenience factors include walking distances, pathway directness, grades, sidewalk ramps, directional signing, directory maps, and other features making pedestrian travel easy and uncomplicated.

2.32 Although Fruin (1971) and the HCM mention other environmental factors they do not attempt to quantify their significance or propose a method for valuing their individual performance. It is the absence of tools for quantifying significance and proposing a method for valuation that has led to a number of Walkability rating systems being developed such as:

- DETR – Encouraging Walking: Advice to local authorities, UK

- Dixon – Bicycle and Pedestrian LOS
- Gallin – Quantifying Pedestrian Friendliness – Guidelines for Assessing Pedestrian Level of Service, Australia.
- Jaskiewicz – Pedestrian LOS based on Trip Quality, USA
- Landis et al – Modelling The Roadside Walking Environment: A Pedestrian Level of Service, USA
- Muraleetharan et al – Evaluation of Pedestrian LOS, Japan
- PEDSAFE – University of Queensland – Lillis and Paarmoradian, Australia
- PERS: Pedestrian Environment Review System – TRL, UK.
- Boulter and Rutherford - Walking Audit Methodology, New Zealand.
- CDC Walkability Audit Tool, USA
- Christchurch City Council Walk a Child to School Day (WCSD) Walkability Rating, New Zealand
- How walkable is your community? – Pedestrian and Bicycle Information Centre, USA
- James Emery - Walking Suitability Assessment Form - UNC School of Public Health, Health Behaviour and Health Education, USA
- Measuring Walkability: Tools and Assessment – City of Kansas, USA

2.33 As can be seen there is a proliferation of walking rating systems of which three are known to have been used in New Zealand, i.e. PERS in 2004, Boulter and Rutherford in 2004 and the CCC WCSD Walkability Rating in 2000.

2.34 Community Street Reviews have been proven through practice to have a significant number of benefits. They provide the standard for measuring Walkability in New Zealand and hence negate the need to apply many of the above techniques.

## 3 WALKABILITY

### Combination Audit and Rating System

- 3.1 The UK 'DIY Community Street Audits' have been extremely successful. The main enhancement to the Community Street Audit methodology is the addition of a rating system. A rating system ensures the inspection and analysis of an environment is structured so results can be used to develop best value solutions rather than reactive responses.
- 3.2 Combining an audit and rating system enables a practitioner to prioritise improvements, to provide a better walking experience, connect walking networks and to aid the highest number of affected users. Further benefits of a rating system are problem environments that are able to be identified analytically and comparisons can be made with other walking environments. Consequently funds can be used wisely where value or benefit/cost is considered greatest.
- 3.3 Community Street Reviews include not only a qualitative consumer audit but also a quantitative rating. This benefits the immediate community and provides practitioners with an asset management tool to prioritise walking schemes.
- 3.4 Community Street Reviews help achieve New Zealand's Walking and Cycling Strategy:
- Focus area one 'Strengthening foundations for effective action' priority action point one "*Encourage action for walking and cycling within an integrated, sustainable approach to land transport*" by providing a tool that can be used as a funding evaluation framework.
  - Focus area one 'Strengthening foundations for effective action' priority action point two "*Expand our knowledge and skills base to address walking...*" by acknowledging a lack of information in assessing Walkability and doing something about it.
  - Focus area one 'Strengthening foundations for effective action' priority action point three "*Encourage collaboration and co-ordination of efforts for walking and cycling*" by providing a tool that can be used by the community, consultant or local authority and encourage inter disciplinary application.
  - Focus area two 'Providing supportive environments and systems' priority action point four "*Encouraging land use, planning and design that supports walking...*" by providing a tool that can be used to audit and rate proposed walking environments.
  - Focus area two 'Providing supportive environments and systems' priority action point five "*provide supportive environments for walking...in existing communities*" by providing a tool that can be used to audit and rate existing walking environments.
  - Focus area three 'Influencing individual travel choices' priority action point six "*Encourage positive attitudes towards and perceptions of walking... as [a] mode of transport*" by engaging with the community through a community street audit that shows people the value decision makers are placing on walking.
  - Focus area three 'Influencing individual travel choices' priority action point seven "*Encourage and support individuals in changing their travel choices*" by engaging with the community through a community street audit that can be linked to active encouragement and support programmes.

- Focus area four 'Improving safety and security' priority action point eight "*Improve road safety for pedestrians...*" by providing a tool that can identify poor safety environments and provide a tool to rectify these environments for the best value.
- Focus area four 'Improving safety and security' priority action point nine "*Address crime and personal security concerns around walking...*" by providing a tool that can identify poor safety environments and provide a tool that can rectify these environments for the best value.

3.5 Community Street Reviews achieve all of the New Zealand walking and cycling strategy priority points that are relevant to walking. Even more impressive is all of the Focus One points are achieved and the Strategy specifically notes that "*Early work in this area will support and inform work across all strategy areas*". Community Street Reviews achieve more of the desired outcomes than the existing Living Streets UK DIY Community Street Audit methodology while retaining the key of a Community Street Audit.

### **Who Uses Community Street Reviews**

3.6 As discussed earlier, if you can measure, you can manage, improve and prioritise. Community Street Reviews provide a way to measure Walkability so different environments can be compared. Community Street Reviews provide guidance on what improvements, to what extent, improvements might enhance an environment.

3.7 Community Street Reviews are intended to:

- Be widely used and adopted as New Zealand good practice.
- Strike a balance between being comprehensive and easy to use.
- Give results that provide better outcomes for users and better value for money over the life of the walking environment.
- Be relevant and applicable to all New Zealand walking environments.
- Be appropriate for the particular assessment being undertaken.

3.8 It is expected Community Street Reviews will be used by various people for different reasons. Below are some reasons why a Community Street Review may be undertaken but in essence it is the ability to measure and compare that makes Community Street Reviews particularly useful. The following list is by no means complete and Community Street Reviews may also be undertaken for activity, interest or community interaction.

- Advocacy Groups can undertake Community Street Reviews in response to a community's concern or initiative to improve a certain street environment. After the Community Street Review, the Advocacy Group would present the results to the road controlling authority, business group or local Councillor to initiate change. The Community Street Review has the advantage of being a nationally recognised tool and the results accepted by those in leadership positions. Also a Community Street Review is structured so results, rather than being solely 'negative', provide an opportunity to identify improvements for enhancing poor walking environments.
- Local Authorities, Regional Councils and Road Controlling Authorities can undertake Community Street Reviews to increase understanding of the Walkability of existing walking networks. After the walking network is mapped, higher level planning can be undertaken whereby strategic Walkability planning decisions can be undertaken such as improving the network to minimum Walkability standards, prioritising funding where

benefits are greatest or improving specific routes where walking demand is greatest.

- Individuals can undertake a Community Street Review to understand why walking improvements are soon to be undertaken in their neighbourhood. The Community Street Review may identify issues that current proposals have not identified and hence initiate change before final decisions are taken to cement physical changes.
- Local Authorities can also undertake Community Street Reviews as part of the consultation or scoping phase for a new project to draw out the community's concerns, issues and potential solutions in a structured and meaningful manner. Again because Community Street Reviews allow comparison between surveys they provide practitioners with the ability to target limited resources to worst or most beneficial areas. In addition Community Street Reviews provide ability to undertake post user surveys, whereby the improvement in any environment can be measured after implementation, thereby measuring the success of change.
- Practitioners can also undertake Community Street Review as part of a pre design phase of a project. This would work in a similar manner that a local authority may undertake a Community Street Review as part of the requirement to consult, rather than consultation taking place post concept, the Community Street Review provides an opportunity to draw out all the issues before 'solutions' are proposed.

#### **What a Community Street Review is not**

- 3.9 As a reminder, Walkability is *“the extent to which the built environment is walking friendly.”* Community Street Reviews are a new tool where a Community Street Audit and numerical rating system are combined to enable Walkability to be measured.
- A Community Street Audit is a technique for assessing Walkability that was developed by Living Streets UK in 2002. Community Street Audits are used for *“evaluating the quality of public spaces – streets, housing estates, parks and squares – from the viewpoint of the people who use it, rather than those that manage it”*.
  - A rating system enables problem environments to be identified analytically and comparisons made with other walking environments. Consequently funds may be used wisely where value or benefit/cost is considered greatest.
- 3.10 Community Street Reviews can be undertaken by anyone and provide a systematic process, whereby a Walkability 'Level of Service' (LOS) or a Walkability score can be derived for the environment being surveyed. Unfortunately Community Street Reviews do not provide all the answers for walking just as a traffic survey will not provide all the answers for vehicles. Most obviously a Community Street Review will not assess legibility or permeability as these are higher strategic walking network issues. A Community Street Review is not an accessibility or mobility audit tool; rather there are other tools and auditing techniques used to consider accessibility and mobility.
- 3.11 Community Street Reviews will not assess benefits or prioritise specific projects however, Community Street Reviews will provide a link in the chain for assessing benefits and priorities. This is because Community Street Reviews provide a way to measure Walkability and assess Level of Service.

- 3.12 Important to remember is that Community Street Reviews measure the quality of the supply. The other side of the equation, demand, is something that can be measured directly through people walking; the linkages between supply and demand and later 'induced walking' are important factors when considering where improvements should be considered. Again these are higher strategic walking network issues and there is no one tool for assessing these issues; rather Community Street Reviews are part of a practitioner's tool box of assessment equipment.
- 3.13 Advice for the assessment of legibility, permeability, quantifying benefits and prioritisation can be obtained from transportation professionals and Land Transport New Zealand.

## 4 PLANNING

### Introduction

- 4.1 There are a number of reasons for undertaking a Community Street Review but regardless of the reason; the procedure is always the same. The planning required for a Community Street Review with few people or with a large number of people will be very similar. The only difference will be the increased logistical support required for a large group when undertaking the survey or if the Community Street Review is being undertaken as part of a consultation project.

### Roles and Responsibilities

- 4.2 A Community Street Review Team is made up of the Team Leader, Deputy Team Leaders, Participants and Helpers. The specific roles are:
- Team Leader – this person takes ownership of the Community Street Review. If required they may appoint Deputy Team Leaders, the Team Leader will organise and liaise with the participants, prepare and disseminate the Community Street Review results. The Team Leader will undertake the Participant Briefing.
  - Deputy Team Leaders – these people liaise between the Team Leader, Participants and Helpers. This role is important if there are more than about 8 participants, as participants then need to split into two or more groups. This is to limit potential congestion and possibly influencing participant's responses. If the Team size is small then this position probably will not exist. Additionally if the Team size is very large there might be more than one Deputy Team Leader.
  - Participants – these people answer the Community Street Review questions and return the Forms to the Team Leader or Deputy Team Leader at the finish of the survey. Participants can include the Team Leader and Deputy Team Leader.
  - Helpers – these people are required to assist Participants to fill out the forms and may or may not be required dependant of the specific User Group.

### Selecting the Routes

- 4.3 Community Street Reviews are undertaken on a pre planned Route that is determined before the CSR is undertaken. Very experienced Team Leaders may be able to undertake a Community Street Review ad hoc but this will not be the norm, and will require experienced Deputy Team Leaders and Participants. The following guidance is recommended best practice and includes the planning phase in detail.
- 4.4 The selected Route will depend on the reasons for undertaking the Community Street Review. A number of reasons for undertaking a Community Street Review are given earlier but to gain the most benefit from the Community Street Review Routes should typically be well in demand.
- 4.5 That said providing for vulnerable members of the community is also critically important, such as providing for a minimum Level of Service, and this too may determine where Routes are selected. Selecting routes between strong walking origins and destinations such as bus terminals or rail stations and nearby homes is a sensible starting point as these have the potential to provide for a large

number of users. Similarly routes surrounding community shopping areas and shopping malls would also provide for a large number of users.

- 4.6 Ultimately it is a goal that the whole network is assessed by a Community Street Review. This would provide practitioners with similar information that they are currently provided for motorised vehicles. In the early days though this goal may seem too audacious and rather, as described, it is best to select routes where walking demand is greatest.
- 4.7 There is no minimum number of Sections per Route although the Routes will probably not contain all Path Lengths and they will not contain all Road Crossings. A typical Route will contain about 8-12 Sections but this is dependant on the time taken for the Participants to assess the Route.

#### **Selecting the Day and Time**

- 4.8 Based on the concept to target the largest number of potential users, Community Street Reviews should be undertaken at a time when the highest numbers of users are walking. Such times are probably the journey to and from work but it is also dependant on the surrounding Land Use and Surrounding Activity. For example the time selected may be when the street environment is influenced by a particularly poor variable such as increased heavy vehicle use or significant vehicle congestion. These are known variables that affect walking Level of Service and these events may not take place during a commuter period but may take place in between commuter periods.
- 4.9 Interestingly practitioners recognise that Level of Service changes throughout the day and consequently Level of Service for motorised vehicles are collected at different times. Three time periods are usually collected which represent the morning peak period journey to work, the afternoon off peak shopping period and the evening peak period journey home. Comparability requires that Level of Service is measured at similar times. Therefore it is recommended that best practice includes Community Street Reviews being undertaken in at least one common period, which is:
- Average Weekday
    - Afternoon Period: 12pm to 2pm
- 4.10 That said, Community Street Reviews can be undertaken at any time but items such as traffic conditions, pedestrian congestion and light will affect walking Level of Service. This is very similar to traffic flows, approach and exit directions affecting motorist Level of Service. Community Street Reviews for one location may be undertaken at different times of the day to understand the influence of different variables. For example a significant influence might be light and Surrounding Activity where a Route could have a high Level of Service during daytime but not at night time, the Route may change characteristics greatly; safety from intimidation or physical attack may be especially prominent and reduce overall Walkability significantly.
- 4.11 Other periods that might be significant when collecting Community Street Review include;
- Average Weekday
    - Morning Period: 8am to 10am
    - Evening Period: 4pm to 6pm
    - Night time Period: anytime when dark
  - Special event days and periods, such as sports events or markets etc.

### **Selecting the Time of Year**

- 4.12 Rather than the time of year being a significant variable it is expected the weather associated with the time of year is expected to be important when trying to compare between Community Street Review locations. This is similar to traffic counts for motorised vehicles varying by season e.g. holiday seasons.
- 4.13 Weather affects the perception a Participant will have of a particular Section. For example heavy rain will probably reduce the number of people using the Section or conversely, partially sunny days are likely to make the area more active. More active areas are likely to increase Walkability although overly active and crowded areas are likely to lessen Walkability.
- 4.14 To enable Community Street Review comparisons between Sections or Routes it is prudent that Community Street Reviews only be undertaken during common weather conditions for the specific season. For example it would not be representative for a Community Street Review to be undertaken on a rainy day in summer, unless rainy days in summer are common.
- 4.15 Often when considering motorised vehicle Level of Service, seasonality is ignored because of the difficulty converting between different seasons and obtaining survey data for a whole year. In this same regard, comparisons between Community Street Reviews should be possible regardless of the seasonality although upon closer inspection, this may need to be considered in more detail.
- 4.16 Probably the main seasonality issue is rainy weather and associated ponding. It must be remembered the purpose of a Community Street Review is not to identify where ponding occurs, rather this is best undertaken by auditing the area on a rainy day. This is a good example of where an audit is quicker, simpler and potentially cheaper to undertake than a Community Street Review. Again specific practitioner tools should be used for specific purposes and in this example; a brave new tool would not be required.

### **Selecting the CSR Team**

- 4.17 The CSR Team will be arranged and motivated by the Team Leader and Deputy Team Leaders. Level of Service is determined for motorised vehicles such as public transport, heavy vehicles, and private motor vehicles. Similarly Walkability can be determined for different walking groups such as the physically able or less physically able, sighted or sight impaired and different ages.
- 4.18 The reason for undertaking the Community Street Review will typically determine what User Group forms the participants. If the Route being considered is required to service a particular User Group it will be more important to measure Walkability for that particular group. It will also be important to consider the User Group with the greatest need including providing for minimum Levels of Service.
- 4.19 Perceptions of Walkability are dependant on individual responses to a number of questions. Through the Community Street Review process a number of influences have been identified that affect how individuals perceive the walking environment. The most important influences found so far include a Participant's age, mobility, sight, and walking experience. Typical responses from participants include:
- Age: - Older people typically rate Sections more harshly than younger people.
  - Mobility: - Less mobile people typically rate Sections more harshly than more mobile people.

- Sight: - Less sighted people typically rate Sections more harshly than more sighted people.
  - Experience: - Less experienced walkers typically rate Sections more harshly than more experienced walkers.
- 4.20 Obviously different users also have different perceptions of Walkability. For example a middle aged, mobile and sighted person that typically drives a car will consider Walkability different to someone that is old, less mobile and sight impaired. The identified and quantified difference between each of these users in different street environments is the subject of ongoing research.
- 4.21 Regardless of these influences, the current thinking for potential User Groups that Walkability and Level of Service can be considered are:
1. Not Impaired – can see, are mobile
  2. Mobility Impaired – can see, are not mobile
  3. Sight Impaired – cannot see, are mobile
  4. Sight and mobility impaired - can not see, are not mobile.
- 4.22 The most obvious imperfection with these User Groups is that variables such as age and experience have already been noted as influencing individual perception. Participants all with similar characteristics, other than the main characteristics such as mobility and sight, are liable to under or over estimate Walkability. For example a group comprising of only able bodied young Participants may produce results that would be seen by an elderly group as unrepresentative. It is therefore important when forming CSR teams that potential influences such as gender; age, activity etc are generalised as much as possible.
- 4.23 There is one other User Group which is a generic User Group or a Group of Participants that have elements of the User Groups described earlier. It is possible to form a generic User Group and undertake a Community Street Review. The problem is that although Participants responses are supposed to be exclusive, when Participants view other Participants having difficulty in a certain situation, such as that experienced by sight impaired or less mobile Participants, their perception of the environment can be influenced greatly. This negates the quality of their response and hence the CSR process. Consequently undertaking Community Street Reviews with a generic User Group has not proved beneficial, rather if a generic Walkability assessment is required it is probably more appropriate to use individual responses from each User Group. More information regarding how this is undertaken is provided in Part 2 of the guide.
- 4.24 It is probable, at least in the first instance, that a number of the initial Community Street Reviews will be undertaken using Participants from User Group 1. Regardless, undertaking Community Street Reviews is important for all members of the community, especially the vulnerable members of the community. Therefore User Groups 2, 3 and 4 should not be excluded in the longer term. The minimum number of Participants that provides a suitable sample size for later analysis is 5; the minimum age for participation is 13.

## 5 References

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# COMMUNITY STREET REVIEW HOW TO GUIDE

Appendix A

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## Glossary

<u>Name</u>	<u>Description</u>
Audit	A methodical examination to both quantitatively and qualitatively identify deficiencies against recognised standards to propose solutions.
Community Street Review	A new tool where a Community Street Audit and numerical rating system are combined to enable Walkability to be measured.
Community Street Review Team	This includes everyone taking part in the Community Street Review, including Team Leaders, Deputy Team Leaders, Helpers and Participants.
Deputy Team Leader	A Community Street Review team member assigned to assist the Team Leader.
Dummy Section	An optional first section of a Community Street Review where results are not recorded, to allow Participants to become familiar with the Community Street Review process.
Engineering Variables	Variables listed on the Community Street Review survey form related to engineering.
Environment Variables	Variables listed on the Community Street Review survey form related to the surrounding environment.
Helper	A Community Street Review Team member assigned to assist sight or mobility impaired Participants.
Legibility	The ease at which an area can be understood and negotiated when travelling from point A to point B.
Level of Service	A qualitative scale based measure describing operational conditions of pedestrian flow.
Mobility Impaired	People who have full vision and are not mobile without aid.
Not Impaired	People who have full vision and are mobile without aid.
Participant	Community Street Review Team members who undertake and complete the Community Street Review.
Participant Briefing	Introduction and explanation of the Community Street Review Survey process to Participants by the Team Leader.
Path Length	A section of footpath that is of a Uniform Environment.
Permeability	The different ways a Participant can get from point A to point B.
Physical Environment	The shape and geometry of the street environment.

<u>Name</u>	<u>Description</u>
Rating	A structured tool for quantitatively comparing Walkability within different environments or facilities.
Review	Combines elements of rating and auditing to quantitatively develop options for improving Walkability.
Road Crossing	A Community Street Review Section that crosses over lanes of a road from one side to the other.
Route	Contains a number of Road Crossing and Path Length Sections for one Community Street Review.
Section	A single Path Length or Road Crossing that makes up part of the route of a Community Street Review.
Section Markers	Markers used to identify the start and end of Sections.
Surrounding Activity	The adjacent land use and potential street activity at the Section location.
Team Leader	The person who has responsibility for planning, arranging, managing and ensuring the Community Street Review is successfully completed.
Traffic Variables	Variables listed on the Community Street Review survey form relating to traffic items.
Uniform Environment	An environment that has consistent longitudinal gradient, adjacent land use, surrounding activity and physical environment.
User Groups	A group of people who meet specific criteria to test identified issues for the Community Street Review.
Vision and Mobility Impaired	People with partial or no vision and are not mobile without aid.
Vision Impaired	People who are mobile but have partial or no vision.
Walkability	The extent to which the built environment is walking friendly
Walking	The act of travelling on foot or on small wheels, or assisted by additional aids.

# COMMUNITY STREET REVIEW HOW TO GUIDE

Appendix B

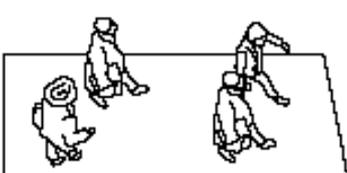
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## HIGHWAY CAPACITY MANUAL (HCM)

Transportation Research Board  
National Research Council, Washington DC, USA

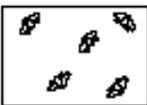
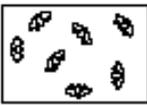
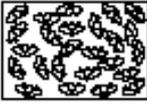
Graphic illustrations and descriptions of walkway Level Of Service (LOS) are shown below. These LOS criteria are based on average flow and do not consider platoons.

EXHIBIT 11-8. PEDESTRIAN WALKWAY LOS

<p><b>LOS A</b> <i>Pedestrian Space</i> &gt; 5.6 m<sup>2</sup>/p <i>Flow Rate</i> ≤ 16 p/min/m</p> <p>At a walkway LOS A, pedestrians move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.</p> <hr style="width: 50%; margin-left: 0;"/>	
<p><b>LOS B</b> <i>Pedestrian Space</i> = 3.7–5.6 m<sup>2</sup>/p <i>Flow Rate</i> = 16–23 p/min/m</p> <p>At LOS B, there is sufficient area for pedestrians to select walking speeds freely, to bypass other pedestrians, and to avoid crossing conflicts. At this level, pedestrians begin to be aware of other pedestrians, and to respond to their presence when selecting a walking path.</p> <hr style="width: 50%; margin-left: 0;"/>	
<p><b>LOS C</b> <i>Pedestrian Space</i> = 2.2–3.7 m<sup>2</sup>/p <i>Flow Rate</i> = 23–33 p/min/m</p> <p>At LOS C, space is sufficient for normal walking speeds, and for bypassing other pedestrians in primarily unidirectional streams. Reverse-direction or crossing movements can cause minor conflicts, and speeds and flow rate are somewhat lower.</p> <hr style="width: 50%; margin-left: 0;"/>	
<p><b>LOS D</b> <i>Pedestrian Space</i> = 1.4–2.2 m<sup>2</sup>/p <i>Flow Rate</i> = 33–49 p/min/m</p> <p>At LOS D, freedom to select individual walking speed and to bypass other pedestrians is restricted. Crossing or reverse-flow movements face a high probability of conflict, requiring frequent changes in speed and position. The LOS provides reasonably fluid flow, but friction and interaction between pedestrians is likely.</p> <hr style="width: 50%; margin-left: 0;"/>	
<p><b>LOS E</b> <i>Pedestrian Space</i> = 0.75–1.4 m<sup>2</sup>/p <i>Flow Rate</i> = 49–75 p/min/m</p> <p>At LOS E, virtually all pedestrians restrict their normal walking speed, frequently adjusting their gait. At the lower range, forward movement is possible only by shuffling. Space is not sufficient for passing slower pedestrians. Cross- or reverse-flow movements are possible only with extreme difficulties. Design volumes approach the limit of walkway capacity, with stoppages and interruptions to flow.</p> <hr style="width: 50%; margin-left: 0;"/>	
<p><b>LOS F</b> <i>Pedestrian Space</i> ≤ 0.75 m<sup>2</sup>/p <i>Flow Rate</i> varies p/min/m</p> <p>At LOS F, all walking speeds are severely restricted, and forward progress is made only by shuffling. There is frequent, unavoidable contact with other pedestrians. Cross- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrian streams.</p>	

LOS descriptions for queuing areas (with standing pedestrians) are based on average pedestrian space, personal comfort, and degrees of internal mobility and are shown below.

EXHIBIT 11-9. QUEUING AREA LOS

<p><b>LOS A</b>  <i>Average Pedestrian Space</i> &gt; 1.2 m<sup>2</sup>/p            Standing and free circulation through the queuing area is possible without disturbing others within the queue.</p>	
<p><b>LOS B</b>  <i>Average Pedestrian Space</i> &gt; 0.9–1.2 m<sup>2</sup>/p            Standing and partially restricted circulation to avoid disturbing others in the queue is possible.</p>	
<p><b>LOS C</b>  <i>Average Pedestrian Space</i> &gt; 0.6–0.9 m<sup>2</sup>/p            Standing and restricted circulation through the queuing area by disturbing others in the queue is possible; this density is within the range of personal comfort.</p>	
<p><b>LOS D</b>  <i>Average Pedestrian Space</i> &gt; 0.3–0.6 m<sup>2</sup>/p            Standing without touching is possible; circulation is severely restricted within the queue and forward movement is only possible as a group; long-term waiting at this density is uncomfortable.</p>	
<p><b>LOS E</b>  <i>Average Pedestrian Space</i> &gt; 0.2–0.3 m<sup>2</sup>/p            Standing in physical contact with others is unavoidable; circulation in the queue is not possible; queuing can only be sustained for a short period without serious discomfort.</p>	
<p><b>LOS F</b>  <i>Average Pedestrian Space</i> ≤ 0.2 m<sup>2</sup>/p            Virtually all persons within the queue are standing in direct physical contact with others; this density is extremely uncomfortable; no movement is possible in the queue; there is potential for panic in large crowds at this density.</p>	