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Ko ngā wā kāinga hei whakamāhorahora

Concepts of Neighbourhood:
A Review of the Literature

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Abstract

This literature review has been developed for the Strategic Research Area *Shaping Places: Future Neighbourhoods* as part of National Science Challenge 11 - Building Better Homes, Towns and Cities: Ko ngā wā kāinga hei whakamahorahora. *Shaping places: Future Neighbourhoods* is focused on researching liveable and well-designed neighbourhoods, including houses, which contribute to successful towns and cities. It is seeking to develop our understanding of the principles and processes that create more successful neighbourhoods. This includes both the physical and social structure of neighbourhoods. It is within this context that this literature review was developed. It is therefore designed to offer a frame of reference for subsequent research in to New Zealand's neighbourhood context and to provide an overview of why considering the concept of neighbourhood is important.

The review is structured to read as a narrative, however, relevant references and abstracts have been included in text-boxes throughout the document to ensure the easy use of this review as a tool for those writing subsequent research reports and articles.

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1. How are concepts of neighbourhood defined in the literature?

This section summarises the conceptual definitions of neighbourhoods as defined in urban studies literature and considers how they have emerged and evolved over time[1]. There have been a number of significant literature reviews conducted on concepts of neighbourhood as they are understood in urban planning research. Two examples that provide useful summaries of the history of how concepts of neighbourhood have evolved are from the late 1990s, one by Kallus and Law-Yone (1997) and another by Chaskin (1997). More recent reviews tend to focus on specific aspects within the 'concepts of neighbourhood' field of study, as opposed to providing a generalist overview. A summary of the first two seminal literature reviews are studies is outlined below, subsequent literature reviews which have more specific foci are then identified and discussed. A review by Talen (2017) provides a substantial overview of how planned neighbourhoods have been reviewed and considered in social science as compared to other built environment disciplines. Talen is an influential researcher considering concepts of neighbourhood and has also co-authored a number of research projects subsequently reviewed.

Kallus, R., & Law-Yone, H. (1997). Neighbourhood - The Metamorphosis of an Idea. Journal of Architecture and Planning Research, 14(2), 107-125.
Abstract: "This paper is an attempt at an analysis of the ebb and flow in the structure, interpretation, and use of the concept of "neighborhood", as reflected in the theoretical and professional literature. The analysis identifies eight major themes or motifs which come to the fore under different times and conditions and together form the structure of the neighborhood idea. The results of the analysis show a remarkable diversity and flexibility in the interpretation and use of the concept. Recent developments raise interesting questions as to the relevance and further extensions of this important planning idea."

Kallus and Law-Yone (1997) describe neighbourhoods as 'comprehensive residential systems' which are "crucial to the design and planning of the urban environment" (p. 108). It can also be understood that neighbourhoods have "a discerned urban scale (more than a single less than an entire city), a specific function (housing and related services), and a defined structure (part of a system and a system by itself)" (p. 109).

[1] International literature provides more options here as the NZ literature sourced is very limited in this area.

Kallus and Law-Yone go on denote that the concept of neighbourhoods as a planning idea has emerged and remerged, from the 19th Century onwards, in sync with the continued development of urban growth management methodologies in cities. They go on to argue that an approach to neighbourhoods within this context has subsequently emerged as its own distinct theory; identifying that "beyond the physical neighborhood and its use as an urban unit (its size, structure, form, organization, specific with the city, and so on), lies always a theoretical hypothesis of the neighborhood as an idea – a vision of an ideal neighborhood" (p. 109).

In this context, concepts of neighbourhood have been delineated "within the boundaries of architecture and planning practice and a concomitant set of rules and methods" (p. 108). At its core, the evolution of this theory of neighbourhood within urban planning is connected to socio-spatial understandings where there is a connection made between the physical spaces and built form of an environment and the emotional and physical well-being of residents and the resultant quality of urban life they experience. This also connects the literature on neighbourhoods to the literature on liveability.

Citing predominantly historic or seminal examples, Kallus and Law-Yone group previous neighbourhood literature in to eight themed categories (see figure 1); management, healing, welfare, association, order, participation, identity, and meaning. These themes are also described by Kallus and Law-Yone in terms which denote their significance as individual theories.

The theme *management* refers to the management systems that govern a city and in turn result in a view of neighbourhoods as spatial units. More recent research in to this theme has been characterised by considering "organisational efficiency and proper economic management" (p. 111) at a city scale and attempting to rationalise the relationships between the city and the neighbourhood unit.

Research aligned to the *healing* theme is generally utopic or based on 'humanistic optimism' where the main function of the neighbourhood is to improve liveability or well-being outcomes for residents (p. 112). In this context the neighbourhood is considered to be 'a non-urban realm' or socio-cultural construct as opposed to a socio-spatial one (p. 113). In contrast, the *welfare* theme identified by Kallus and Law-Yone focuses on the neighbourhood as place where "the design of modern residential areas becomes committed to the provision of basic standards of living, related first of all to (minimum) health requirements and physical comfort necessary for the well-being of the individual (p. 113).

The theme of *association* is premised on a human-scaled understanding of neighbourhoods where balance is sought between the needs of individuals or family units and the collective. This relational theme therefore deals with the inherent complexities embedded within the idea that a neighbourhood is symbolic of a place in which humanity comes together.

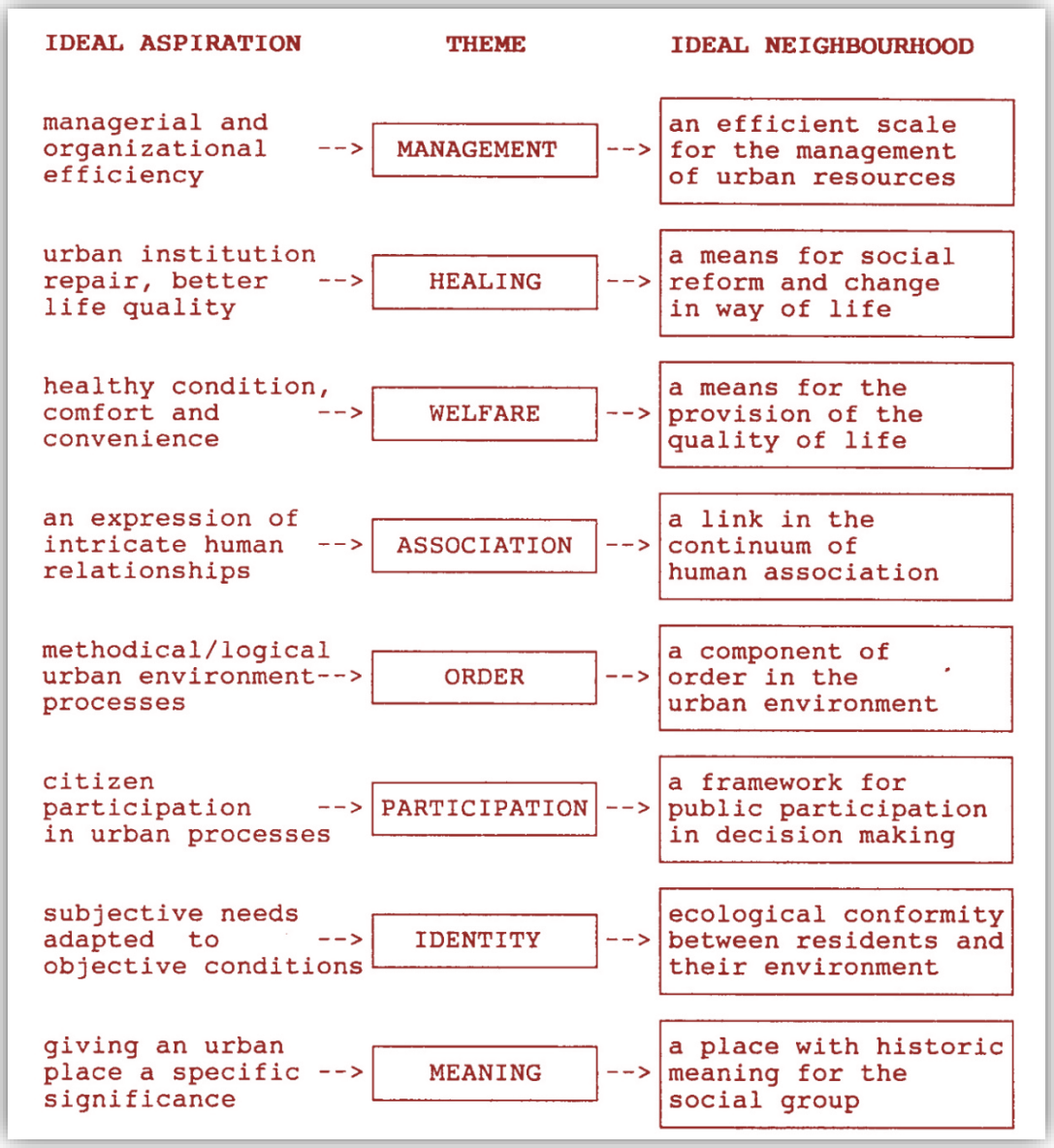

Figure 1: The eight themes or categories of neighbourhood research (Kallus & Law-Yone, 1997, p. 111)

The theme of *order* is closely linked to the complexity inherent in the theme *association*. It is "both a descriptive theory and a prescriptive thinking or doing method" (p. 114) where the

neighbourhood is considered an 'instrument of order' (p. 115). Rather than emphasis being placed on an individual neighbourhood unit, studies that fall in to this category tend to focus on the interrelationships between multiple neighbourhoods and how they collectively form cities.

The *participation* theme is described by Kallus and Law-Yone as "an effort to see the neighborhood not just through the eyes of the planner or the planning institutions, but through the specific needs of its residents" (p. 115). Participatory planning is a large field of literature, a full review of which is beyond the scope of this literature review. However, of interest is the connection established between Kallus and Law-Yone and this body of research which focuses on joint decision-making and citizen-planner partnerships as the foundation of successful neighbourhoods.

The final two themes or theories termed by Kallus and Law-Yone are *identity* and *meaning*. These themes are notably subjective as compared to objective. They expand on the idea that neighbourhoods are both a product of resident perceptions and in turn shape how residents perceive or define themselves. There are a number of recent studies that consider neighbourhoods as a product of resident perceptions (Corrado, Corrado, & Santoro, 2013; De Vos, Van Acker, & Witlox, 2016; Hipp, 2010; Leenen, 2009; Permentier, Bolt, & van Ham, 2011; Saville-Smith, 2008; Sirgy & Cornwell, 2002). Studies that fall under the theme *identity* define neighbourhoods not by their size or spatial borders but by how residents perceive both their daily life needs and lifestyle expectations are being met by the socio-spatial construct of the neighbourhood. The *meaning* theme also "further extends the subjective notion of the neighborhood, as it ties it to the urban lifestyle experience" (p. 117).

Furthermore, implicit in the *identity* theme "is the assumption that an adjustment of a place to residents' needs fosters a closer identification leading to a better quality of life and a greater personal and public satisfaction" (Kallus & Law-Yone, 1997, p. 116). Neighbourhood satisfaction as a concept is embedded in a number of recent urban studies (Corrado et al., 2013; Hipp, 2010; Howley, Scott, & Redmond, 2009; Permentier et al., 2011). It is also a key concept explored in the work of Allen (2016) who frames their research within Sirgy and Cornwell's (2002) satisfaction matrix (see figure 2). Allen also references the work of Yang where neighbourhood satisfaction is defined as "the degree to which people perceive their residential environment as able to meet their needs and further the attainment of their goals" (2008, p. 309).

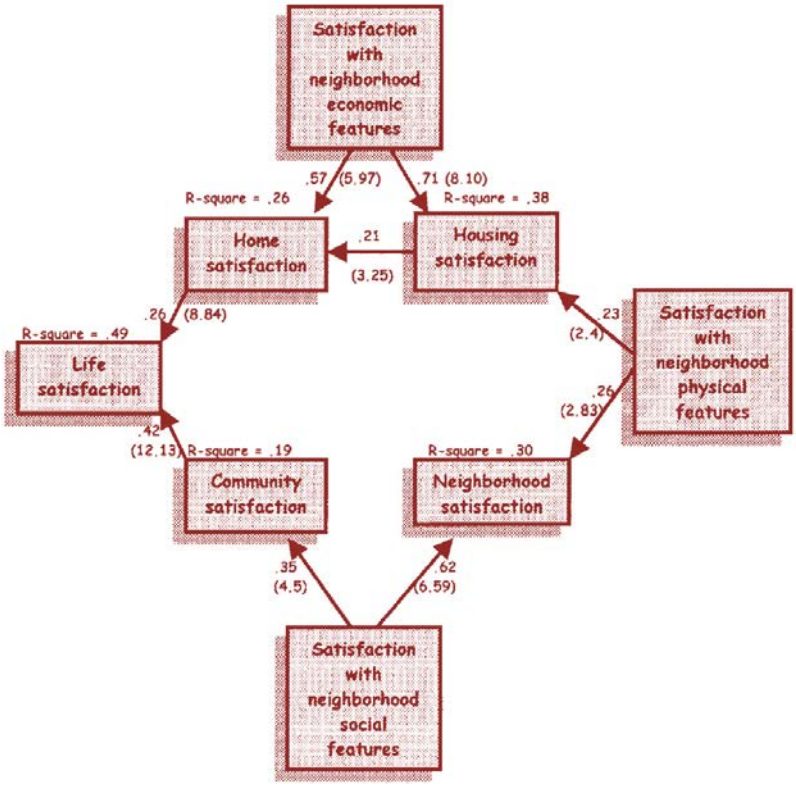

Figure 2: Sirgy and Cornwell's (2002) conceptual model to explain how satisfaction with neighbourhood features affect residents' quality of urban life

Within the eight themes, two terms which are highlighted in Kallus and Law-Yone's research are comfort and convenience (p. 108). The idea that the physical spaces of a neighbourhood are connected to the comfort and convenience of residents is also raised as a significant benefit of intensification offered at a neighbourhood scale in studies by Foord (2010, p. 49), Lau Leby and Hashim (2010, p. 68), and Allen (2017, p. 10).

Kallus and Law-Yone conclude that "the concept of neighborhood is not used just to obtain "objective needs" in the making of the city or the residential area. Rather, this concept is used as a tool which appropriates planning to "subjective needs" as they stem from ideological dispositions" (1997, p. 121). In this context, neighbourhoods are not distinct or rigid ideas, but are instead flexible constructs which adapt to "changing architectural/planning trends and practices" (p. 121). The changing ways that neighbourhoods are viewed architectural/planning fields as compared to in social science research is discussed further by Talen (2017).

Keller, S. (1966). Neighbourhood Concepts in Sociological Perspective. Ekistics, 22(128), 67-76.
Introduction Summary: Both in physical planning and in sociology the term neighbourhood has been widely, variously, and often inconsistently, used. At times, it seems to refer to an area having certain physical properties, at times to a set of human activities or relationships, and then again to an area in which such activities or relationships may, but need not, occur… Before one can properly assess the current state of knowledge of neighbourhoods in modern urban settings, therefore, one must first clarify the various conceptions and assumptions contained within that ambiguous term. The existing confusion is the result of at least three factors: 1) Conceptual ambiguity, particularly the failure to distinguish between three essential, yet separate, elements: that of the neighbour as a special role and relationship, of neighbouring, as a set of socially defined activities, and of neighbourhood, as a delimited area in which neighbouring and other activities involving neighbours may occur; 2) Contradictory evidence based on research whose ambiguous assumptions have been incorporated into ambiguous research tools… 3) The problem of rapid social change which upset the traditional balance between neighbours, neighbouring, and neighbourhoods, and leaves in its wake a residue of incoherent fragments of such neighbourhoods.

The subjective as well as objective ideas of the neighbourhood are also discussed by Keller (1966). Keller considers neighbourhood concepts from a sociological perspective and reviews an assortment of methodologies including neighbourhood assessments, random sample interviews, and questionnaires. On boundaries, Keller comments that "where neighbourhoods are clearly distinguishable by their geographic boundaries or by their distinctive ethnic or social characteristics, there their identification presents no problem. However, where, as is true in rapidly changing urban areas, neither geography nor culture presents a reliable guide, how can one know whether one is dealing with a neighbourhood or not" (1966, p. 71). Keller goes on to identify three alternative ways to consider neighbourhood boundaries; "1) to see how the people themselves identify an area, 2) to see how a given group uses the facilities in an area, and 3) to assess how people feel about an area" (1966, p. 71).

Chaskin, Robert J. 'Perspectives on Neighborhood and Community: A Review of the Literature'. *Social Service Review* 71, no. 4 (1997): 521–47.
Abstract: This article provides a historical-theoretical review of perspectives on neighborhood and community as a social unit, an exploration of the neighborhood as a spatial unit and the problems of boundary construction, and a review of empirical findings on the different experiences of neighborhood by different populations in different contexts. Neighborhoods are recognizable and definable, and they provide at least potential units of identity and action. They are, however, open systems in which membership and commitment is partial and relative, and the delineation of neighborhood boundaries is a negotiated and imperfect process, often driven by political considerations.

In the same year as Kallus and Law-Yone and referencing Keller, Chaskin (1997) developed a literature review of neighbourhood research within the themes of *welfare, participation,* and *identity*. Chaskin grapples with understanding the neighbourhood as a primarily residential "spatial construction denoting a geographical unit" (1997, p. 522), while also acknowledging the inherent possibilities for urban planning in considering that the 'idea' of a neighbourhood has

embedded social meaning and significance to residents. Chaskin also recognises the imprecision of the term *neighbourhood*, but argues it is useful, stating that:

> There is, however, power in the idea of the neighborhood, power that comes not from its precision as a sociological construction but from its nuanced complexity as a vernacular term. Neighborhood is known, if not understood, and in any given case, there is likely to be wide agreement on its existence, if not its parameters (1997, p. 523).

Ultimately, Chaskin identifies three thematic definitions for neighbourhoods from the literature: the neighbourhood as a social unit, as a spatial unit, and as a network of relationships, associations and patterns of use. The social unit is the result of an organic process of neighbourhood differentiation, in which, “an efficient and evolving social organization, driven by natural processes of selection, competition, invasion, and succession, produced distinct residential subsystems” (Chaskin, 1997, p. 525). Chaskin describes it as, “the primary unit in which local ties reside and on which community identity and action is based” (1997, p. 528).

The neighbourhood as spatial unit, despite its name, is not a purely physical concept. It could be described as socio-spatial. It does not have fixed boundaries. Neighborhood boundaries are drawn by individuals: “Every day, people observe and interpret their surroundings and construct mental maps that guide their relationship to space, their choices of movement, and their approaches to social interaction” (Chaskin, 1997, p. 532). The influences at play in constructing these maps include physical elements such as the paths of movement – streets, bus routes, walkways – physical barriers or edges – walls, viaducts, rivers – and generally recognized landmarks. Social and functional elements also play a role, including “the demographics of an area, the presence of major institutions, the perception of safety or danger, and the relative location and functional opportunities presented by different parts of the city….All of these factors inform individuals' interpretation of space and the delineation of boundaries that order the physical world of the city and help guide their action within it” (Chaskin, 1997, p. 532). How residents define their neighbourhood is, in part, a product of who they are their "social and physical position within urban society" (p. 533).

This leads to Chaskin’s third concept of neighbourhood, one of networks: “an individual's neighbour networks and neighbouring behaviour may vary by gender, age, ethnicity, family circumstances, and socioeconomic status. Such networks are also affected by the neighborhood context in which they develop” (1997, p. 537). The sociological concept of neighbouring, or

neighbourliness, has long been raised alongside or within research that is seeking to define neighbourhoods (Guest & Lee, 1984; Higgitt & Memken, 2001). Chaskin concludes by observing:

> Clearly, there is no universal way of delineating the neighborhood as a unit. Rather, neighborhoods must be identified and defined heuristically, guided by specific programmatic aims, informed by a theoretical understanding of neighborhood and a recognition of its complications on the ground, and based on a particular understanding of the meaning and use of neighborhood (as defined by residents, local organizations, government officials, and actors in the private sector) in the particular context in which a program or intervention is to be based (1997, p. 541).

Johnson, D. (2002). Origin of the Neighbourhood Unit. Planning Perspectives, 17(3), 227-245.
Abstract: It is commonly believed that the planning concept of a Neighborhood Unit was the brain-child of Clarence A. Perry as published in 1929. However, the idea was formulated during Chicago's reformist and Progressive milieu in the decade before Europe's new war by the architect William E. Drummond. His theory and terminology were widely exhibited and published during the years 1913–22.

Although published after Chaskin, Johnson (2002) offers a historical account of the evolution of the neighbourhood when considered to be a geographical unit, rather than a socio-spatial concept. Johnson does not consider non-spatial understandings of neighbourhood in his review, and instead concludes that Drummond's "inventive and imaginative concept of a Neighbourhood Unit" (2002, p. 242) was paradigmatic and influential on subsequent theoretical responses to the idea of neighbourhoods. Contributing the view that it is from Drummond's in the 1920s that the term neighbourhood unit, and subsequently neighbourhood, grew in popularity in urban planning. In contrast, in a review of neighbourhood effects literature, Sampson, Morenoff, and Gannon-Rowley (2002) cite Park and Burgess as the founders of a neighbourhood definition in the field of urban sociology. Here a neighbourhood was defined as "a subsection of a larger community—a collection of both people and institutions occupying a spatially defined area influenced by ecological, cultural, and sometimes political forces" (p.445). Similarly, an earlier work by Silver (1985) gives an historical account of neighbourhood planning and considers the evolution of the neighbourhood. Silver concludes that neighbourhood research has a complicated and contradictory evolution from its formative phase (1880-1920), while it developed and matured (1920-1960), through subsequent decades of revision (1960s and 1970s). This work emphasises the idea that neighbourhood is at best a multifarious concept.

Talen, E. "Social Science and the Planned Neighbourhood." Town Planning Review 88, no. 3 (2017): 349-72.
Abstract: The planned neighbourhood has long struggled to find its legitimate position within social science, as scholars have been uncomfortable articulating the connection between its 'social' and 'physical' dimensions. This paper analyses this disconnect, first summarising how planners initially overstated neighbourhood social effects and how social scientists reacted to those claims. It then traces two responses that emerged, one focused on prioritising the concept of neighbourhood as service provider rather than social enabler, and one focused on legitimising neighbourhood social effects through increasingly scientific methodologies. The disjuncture between the social-science view of neighbourhood and the physical, planning view of neighbourhood remains an unresolved issue in neighbourhood discourse.

Focusing on the twentieth-century American experience of planned neighbourhoods, Talen (2017) tracks the connections between how both built environment professionals and social scientists choose to address and conceptualise the 'social' and 'physical' dimensions of neighbourhoods in different ways. Talen considers there to be two distinct ways that the social aspects of the planned neighbourhood have been addressed as "the neighbourhood as an ideal has moved in and out of relevance" (2017, p. 349) over the decades. The first being the neighbourhood "as a service provider first and foremost" (p. 356) and the second "the scientific neighbourhood" (p. 360) combining 'neighbourhood-effects' research to connect both the physical form of neighbourhoods with their effect on the social life experienced in them. Talen concludes:

> The planned neighbourhood was essential in the beginning of the twentieth century, later undermined in light of Louis Wirth's (1938) writings about 'mass society' and cosmopolitanism (which seemed to render small neighbourhood groupings archaic), reinstated as an essential basis of local attachment through Morris Janowitz's 1952 study of neighbourhood-based journalism (Janowitz, 1952), lost again in Mel Webbers's 'community without propinquity' argument (Webber, 1963), elevated by the New Urbanists and their quest for traditional urbanism (Talen, 2000), lambasted by David Harvey for inciting social conformity (Harvey, 2000), rediscovered by biologist David Sloan Wilson (2011) as a basis of communal organisation, and so on. In the most recent turn, it is the social failure of the planned mixed-income neighbourhood that forms the basis of its critique (for example, see Chaskin and Joseph, 2015) (2017, pp. 349-350).

Detailing how the resistance to planned neighbourhoods has been framed in social terms, Talen goes on to identify a number of themes that have emerged from the critique of these neighbourhoods; that "neighbourhoods cause people to retreat from society (Sennett, 1992), neighbourhoods are the means to capital exploitation (Harvey, 2000), neighbourhoods cause segregation (Isaacs, 1948), and neighbourhoods are like valentines (Jacobs, 1961)" (2017, p. 350). It was through considering the critique of planned neighbourhoods that Talen came to recognise

the significance of a body of research that developed definitions of neighbourhood, as a concept, based on personal preferences. Talen argues that neighbourhood definitions also emerged to include 'systems of governance' alongside 'geographic sub-units with measurable effects, behaviours and social meaning' (Kearns and Parkinson, 2001) (2017, p. 350).

Talen also links in concepts such as garden cities as an exemplar planned model that questioned the role of the neighbourhood in the wellbeing of residents, as well as drawing on the conclusions of Catherine Bauer and Lewis Mumford "who embraced neighbourhood as a physical planning ideal because, they believed, civic life did not occur by accident; it needed a compelling form" (2017, p. 354).

Talen is one of the few authors to explicitly comment on the professional divide that sits as an undercurrent to neighbourhood debates. Noting that "following these early twentieth-century neighbourhood proposals, social scientists grew increasingly cautious about the ability of planners – via Perry's neighbourhood unit scheme – to engender social relationships" (2017, p. 353). Also adding that "through the middle decades of the twentieth century, planners continued their quest to give physical form to social relationship via neighbourhood planning, and social scientists faulted them for failing to have a more nuanced understanding of the relationship between planned neighbourhoods and social phenomena" (2017, p. 354). By the 1960s, however, Talen contends that both sociologists and planners had largely moved away from defining the neighbourhood in "physically explicit ways" (2017, p. 355) and by the 1970s "the social meaning of neighbourhood was near to extinction" (p. 355). A shift came in the 1980s, due to "the disillusionment of car-based suburbia and the 'crisis of connection' it was thought to have caused" (p. 355) where a new generation of built environment professionals appeared to be intent on reinvigorating "the communal notions of neighbourhood" (p. 355) and adding them back in to the planning agenda.

More recently, neighbourhood research has been considered in the context of mobility, social-network analytics, spatial syntax, connectedness, neighbourliness, as well as through performance measures (pp. 361-365). For example, 'EcoDistricts, LEED for Neighborhood Development (LEED-ND), and the Sustainability Tools for Assessing & Rating (STAR) Communities' (p. 365). Today, "reconciling the physical and social dimensions of neighbourhood parallels the well-recognised need to balance plan and process… One stresses the value of a tangible vision; the other stresses the value of empowerment and meaningful engagement" (p. 364). Ultimately, Talen concludes:

> Neighbourhoods continue to present themselves in two distinct realms: the physical world of buildings and space, and the social world of interacting humans – the 'morphological disciplines' on one side and the social sciences on the other (Vaughan, 2007). To a large extent this is a reflection of disciplinary and professional differences: social sciences prioritising the human realm; physical planning, with its roots in architecture, prioritising the built realm. The question is whether this creates a healthy plurality of intersecting ideas about neighbourhood, leading to unresolvable but fruitful 'contested concepts' that play a role by enabling discussion (see Gallie, 1955–1956), or whether it blocks advancement and leads to confusion (p. 363).

Després, C. (1991). The Meaning of Home: Literature Review and Directions for Future Research and Theoretical Development *Journal of Architectural and Planning Research, 8*(2), 96-115.
Abstract: This paper reviews mainstream empirical literature on the meaning of home published between 1974 and 1989 - mostly in contemporary North American culture - in disciplines investigating person-environment relationships. It is argued that an important part of this body of literature has defined the meaning of home mostly for traditional households living in single-family detached houses although it is shown that there is a growing concern among recent studies for investigating non-traditional populations and settings. Furthermore, it is argued that the role of material aspects of housing and of societal forces in the production and reproduction of the meaning of home has been neglected. Exemplary studies from other areas of housing research which emphasize these macro/societal-forces are presented. From this critical review, the paper concludes that more integrative theoretical perspectives on environmental meaning need to be adopted to investigate home environments.

Other literature reviews which make interesting theoretical linkages between concepts of neighbourhood and other related urban ideas include a review on the concept of *home* by Després (1991) entitled 'The Meaning of Home: Literature Review and Directions for Future Research and Theoretical Development'. Després' review connects the scale of the dwelling to that of the neighbourhood through the idea that it is the collection of dwellings around a home that also contributes to the 'meanings' or perceptions of the individuals inhabiting it. Després states that "the material character of the home… in terms of its visibility, style, landscaping and maintenance, the characteristics of the neighborhood in which it is located, communicate information about the social identity of the household" (1991, p. 101).

Haurin, D., Dietz, R., & Weinberg, B. (2002). The Impact of Neighborhood Homeownership Rates: A Review of the Theoretical and Empirical Literature: Department of Housing and Urban Development, Ohio State University.
Abstract: Interest in measuring the impact of neighborhood homeownership rates on the residents of a neighborhood and on surrounding neighborhoods is increasing. This topic is part of the growing literature in the social sciences that discusses the theory and measurement of how neighborhoods affect individuals. In this review, we report on the conceptual categorization of the types of neighborhood effects, we review the social science literature that presents theories of how neighborhoods affect the residents or surrounding areas, and we review the empirical literature that measures the size of neighborhood effects. Throughout, we highlight the impact that differences in neighborhood homeownership rates may have on the economic and social outcomes of the residents. We find numerous theories that, when applied to neighborhood homeownership rates, have rich sets of testable predictions. In contrast, we find few empirical studies of the impact of neighborhood homeownership rates. We conclude that little is known about the impact of cross-sectional or intertemporal

variations in neighborhood ownership rates and a substantial amount of additional research is needed. We show that understanding the way in which neighborhood homeownership rates impact behaviors is very important to measuring the impact of public policy. Also, knowing whether neighborhood homeownership effects have a nonlinear impact is important when deciding whether public policy should encourage clusters of homeowners.

Haurin, Dietz, and Weinberg (2002) conducted a review of the theoretical and empirical literature which addressed the impact of neighbourhood homeownership rates on a resident's wellbeing and expectations. The hedonic models reviewed by Haurin et al. are not of particular relevance to the purposes of this review. However, one idea of interest is the notion that not only are neighbourhoods the product of internal neighbourhood effects, created by the built forms and residents that comprise them, but also that there is an interrelationship of effects between neighbourhoods. In other words, where a neighbourhood is considered to be a single geographical unit, individuals that live outside yet visit the neighbourhood can be influenced by it. In turn, those individuals may identify with this neighbourhood. Resulting in multiple physical 'neighbourhoods' being considered part of an individual's socio-cultural understanding of 'neighbourhood' (Haurin et al., 2002, p. 29). It is here that a socio-spatial understanding of neighbourhoods as both places and social constructs becomes invaluable.

Webster, C. (2003). The Nature of the Neighbourhood. Urban Studies, 40(13), 2591–2612.
Summary. This paper considers the order that emerges in cities as individuals exchange and pool rights over resources in pursuit of individual and mutual gain. In his 1937 article *The nature of the firm*, Ronald Coase explained the existence and size of firms in terms of transaction costs. Neighbourhoods are important units of consumption and production and can, like firms, be explained by transaction costs. A theory of the neighbourhood is developed based on transaction costs, property rights and related ideas from the new institutional economics. A neighbourhood is defined as a nexus of contracts and four rules that govern neighbourhood evolution are specified. Normative aspects of the theory are illustrated by examining the organisational order in neighbourhoods, in particular, the pattern of residual claimants in the contracts that underpin neighbourhood dynamics.

Webster considers neighbourhoods from an economics lens and identifies them as "a kind of urban order" (2003, p. 2610) across four scales.

- Micro-neighbourhood Attributes (attributes that are produced and consumed jointly between small numbers of adjacent properties) (p. 2604)
- Meso-neighbourhood Attributes (at the scale of the street) (p. 2605)
- Macro-neighbourhood Attributes (access to urban amenities in the wider neighbourhood) (p. 2606)
- Ubiquitous Neighbourhood Attributes (access to regional urban amenities such as central government services) (p. 2608)

While these are identified from the context of their effects on property values they are useful comparison between other works that also consider a definition of neighbourhood across multiple scales, for example Kearns and Parkinson (2001).

Kearns, A., & Parkinson, M. (2001). The significance of neighbourhood. Urban Studies, 38(12), 2103-2110.
Introduction: The neighbourhood is prominent in contemporary urban policy and research, but why should this be so? And can we be clear as to what 'the neighbourhood' is in any case? In this introductory essay to the Special Issue of Urban Studies, we shall attempt to shed light on these questions. In answer to his own question "Does neighbourhood still matter in a globalised world?" Forrest declares that it does, "but its degree of importance depends on who you are and where you are" (Forrest, 2000, p. 30). The complexity of the neighbourhood and its varying relevance to inhabitants are, in a way, the key to this conundrum: governments and policy-makers are neither able to control global capitalism and its effects, nor at the other end of the scale to direct or manage the fortunes of individual neighbourhoods within their jurisdictions.

Kearns and Parkinson (2001) identify three multi-layered neighbourhood scales; the home area, the locality, and the urban district of region (see figure three). There are not as well delineated as Webster's neighbourhood attributes discussed above.

Scale	Predominant function	Mechanism(s)
Home area	Psycho-social benefits (for example, identity; belonging)	Familiarity Community
Locality	Residential activities Social status and position	Planning Service provision Housing market
Urban district or region	Landscape of social and economic opportunities	Employment connections Leisure interests Social networks

Figure 3: Table of neighbourhood scales (Kearns & Parkinson, 2001, p. 2104)

Lupton, R., & Power, A. (2004). What we know about neighbourhood change: A literature review. Centre for the Analysis of Social Exclusion, London School of Economics and Political Science. London, UK.
Introduction: This full report presents the findings of the literature review of neighbourhood change, along with a full bibliography. It aims to provide a statement about what is known about neighbourhood change in the UK at the present time, to identify gaps in knowledge and to highlight areas that might be usefully developed in further research.

In a review of the literature on neighbourhood change, Lupton and Power (2004) consider the concept of neighbourhood by identifying that "most writers agree that neighbourhoods are both physical and social, with attributes that include environmental, location and infrastructural characteristics, demographic characteristics, social interactive characteristics and the

characteristics of local politics and services" (p. 3). They also identify that research considering the concept of neighbourhoods must also examine the relationships between a variety of neighbourhood attributes in order to respond to the complexity of neighbourhoods as socio-political constructs. Lupton and Power conclude that neighbourhood research needs to:

- Explore and understand processes that occur at different levels, but also examine the connections between levels, determining which characteristics of neighbourhood are driven by local influences and which by wider changes, and the interaction between them.
- Understand which changes are caused by movements of people and which by the changing circumstances of people in situ.
- Look at the impacts on individual outcomes of neighbourhood changes, not just at the differential impacts of different neighbourhoods, measured at a particular moment in time.
- Understand the relationships between change in one neighbourhood and change in another, and how these mechanisms work (2004, p. 5).

Other studies to consider neighbourhood change include Bashir and Flint (2010); Bruch and Mare (2012); Butler and Robson (2001); Clark and Coulter (2015); Delmelle (2017); Hincks (2015); Hochstenbach and van Gent (2015); Kupke, Rossini, and McGreal (2011); and Tunstall (2016).

Sullivan, H., & Taylor, M. (2007). Theories of 'neighbourhood' in urban policy. In I. Smith, E. Lepine, & M. Taylor (Eds.), Disadvantaged by where you live?: Neighbourhood governance in contemporary urban policy. University of Bristol: Policy Press.
Introduction: The concept of 'neighbourhood' has become increasingly powerful in urban policy and academic discourse. This is illustrated in England both by the targeting of policies at neighbourhood level and also by investment in the production and dissemination of meaningful neighbourhood-level data and the dedication of academic centres and think tanks to the study of neighbourhoods. However, the concept itself remains contested, its use accompanied by ongoing debates about definition and constitution as well as any contribution to the achievement of key policy goals.

Continuing in the traditions of Lupton and Power, Sullivan and Taylor (2007) open their chapter on neighbourhood theories by identifying that "the concept of 'neighbourhood' has become increasingly powerful in urban policy and academic discourse" (p. 21). They also reference Kearns and Parkinson (2001) who deny that it is possible to establish a singular or generalisable interpretation of neighbourhood. Sullivan and Taylor go on to comment, "rather, neighbourhoods are complex and multidimensional and dynamic and their construction depends on the nature of the interactions between individuals and their environments" (2007, p. 21). This observation is important to remember when planning the most appropriate methodologies to be used in any study conducted of neighbourhoods. This is outlined further in section two of this literature review.

In considering the complexity of neighbourhoods, Sullivan and Taylor go on to highlight that while the early work of urban planners "considered neighbourhoods as collections of particular physical entities such as schools, shops, health and recreation centres" (2007, p. 23) subsequent work has wisely acknowledged that geographical boundaries and built form features are a significant, but not all-encompassing component of understanding neighbourhoods. They are significant because boundaries and built form features remain "a means of distinguishing between 'community' and 'neighbourhood' as 'a 'community' may not have a geographic border but a neighbourhood does, even if that border is understood differently by different people – or even by the same people in relation to different activities and relationships, and at different stages in their life course" (2007, p. 23) (See also: Lowndes & Sullivan, 2008).

In addition to boundaries and built form features, Sullivan and Taylor suggest that "another key element in neighbourhood definitions is that of neighbourhoods as social constructions, bereft of significance as collections of physical entities until they are imbued with value by citizens" (2007, p. 24). They suggest here a connection to the influential work on Jane Jacobs in the way that the value of neighbourhoods is "contingent upon human attachment and interaction and the utility of available resources to act as vehicles for self and community expression" (Sullivan & Taylor, 2007, p. 25). Also noting that:

> Neighbourhoods are valuable to citizens if these key features provide positive comfort and support, but there is no guarantee that they will. Individuals' relationship with and experience of the neighbourhood is contingent on a variety of factors. The subjective, even dialectical, nature of the neighbourhood experience poses an important dilemma for policy makers who seek to determine what are 'successful' and 'unsuccessful' neighbourhoods (Sullivan & Taylor, 2007, p. 27).

In referencing Chaskin (1997), Sullivan and Taylor comment on the experiential nature of neighbourhoods, identifying that "neighbourhoods are experienced in different ways by individuals depending on a variety of factors including age, gender, ethnicity, social mobility and connectedness (2007, p. 26). This opens up the possibility for studies than involve comparative demographic analysis and multiple realities of how neighbourhoods are both valued and defined within a singular geographic area.

The idea that neighbourhood definitions are affected by ethnicity is a fundamental component in a Los Angeles study by Sastry, Pebley, and Zonta (2002) who found that: "members of all other ethnic groups travel farther to buy groceries than white respondents. Asian and Pacific Islanders

also work and visit their health care providers further from home. Latinos also visit more distant health care providers when absolute distance is considered. African Americans travel farthest to attend religious services" (p. 19). Neither demographic nor ethnographic analysis at this scale has been conducted in New Zealand.

Durose, C., & Richardson, L. (2009). 'Neighbourhood': a site for policy action, governance … and empowerment? In C. Durose, S. Greasley, & L. Richardson (Eds.), Changing local governance, changing citizens. University of Bristol: Policy Press.
Introduction: 'Neighbourhood' is a longstanding concept in public policy, with numerous initiatives and policy directives focusing on 'neighbourhood' being part of the policy agenda from the 1960s onwards. The 'neighbourhood' has re-emerged under New Labour as an organisational anchor for the promotion of planned change, a site for local governance and latterly as a site for encouraging more active citizenship. The concept of 'neighbourhood' has achieved significant normative appeal and resonance in public policy. The new governance and policy spaces created at the neighbourhood level, particularly under the reforms introduced by New Labour, offer unprecedented opportunities to reshape democracy, decision making and the delivery of services. This chapter examines to what extent those opportunities have been used, and used effectively. Neighbourhoods are often the sites where the issues that matter most to people's lives are in sharpest relief. Neighbourhoods are areas where citizens identify with and feel a sense of belonging (CLG, 2007). However, there is no single generalisable definition of neighbourhood and 'top-down' administrative definitions often fail to capture the scale and nuance of citizens' own understandings of their neighbourhoods. This chapter uses Lowndes and Sullivan's (2008) typology of neighbourhood-based working under New Labour as a framework for exploring the different understandings of why neighbourhood working is happening, and how far this matches citizens' needs and preferences. We find that there are several clear gaps between citizens and local government in how the neighbourhood agenda is being operated.

Durose and Richardson (2009) draw on previous primary and applied research conducted by the authors over the last five years to discuss neighbourhood-based working within a highly politicised context. Summarising the literature they consider that "'neighbourhood' is a longstanding concept in public policy, with numerous initiatives and policy directives focusing on 'neighbourhood' being part of the policy agenda from the 1960s onwards (Durose & Richardson, 2009, p. 31). In line with Chaskin (1997), Durose and Richardson consider that neighbourhood is also "a space that citizens identify with" (2009, p. 40), a 'salient' idea because "what people mean by neighbourhood is different for different groups of citizens, who have different relationships to neighbourhoods (p. 40). In turn they add that "it is more appropriate to understand neighbourhoods not as simple spatial or geographical units, but as socially constructed realities" (Durose & Richardson, 2009, p. 43) cautioning that "the dominance of 'economic' and 'political' rationales means that neighbourhoods are defined and implemented at too large a scale, and based on political control rather than people's day-to-day experiences" (p. 43).

The Young Foundation. (2010). How can neighbourhoods be understood and defined? London: The Young Foundation.

Abstract: This is a review of what is and is not known about neighbourhoods and communities. It starts to analyse the characteristics of neighbourhoods, including how they are defined and the role of the local public realm in bringing them together. It sketches some approaches, lessons and issues for community empowerment and governance, and frames questions for the future.

In considering the concept of neighbourhood empowerment, The Young Foundation (2010) reluctantly define neighbourhoods as "ultra-local communities of place" (p. 9) that are intuitively understood by residents. They go on to discuss the difficulties in defining such a concept and comment on divergent approaches (see figure four) to considering neighbourhoods, observing that "two models for understanding neighbourhood currently dominate – one based on top-down administrative geography, the other on mental maps and subjective identifications" (p. 9).

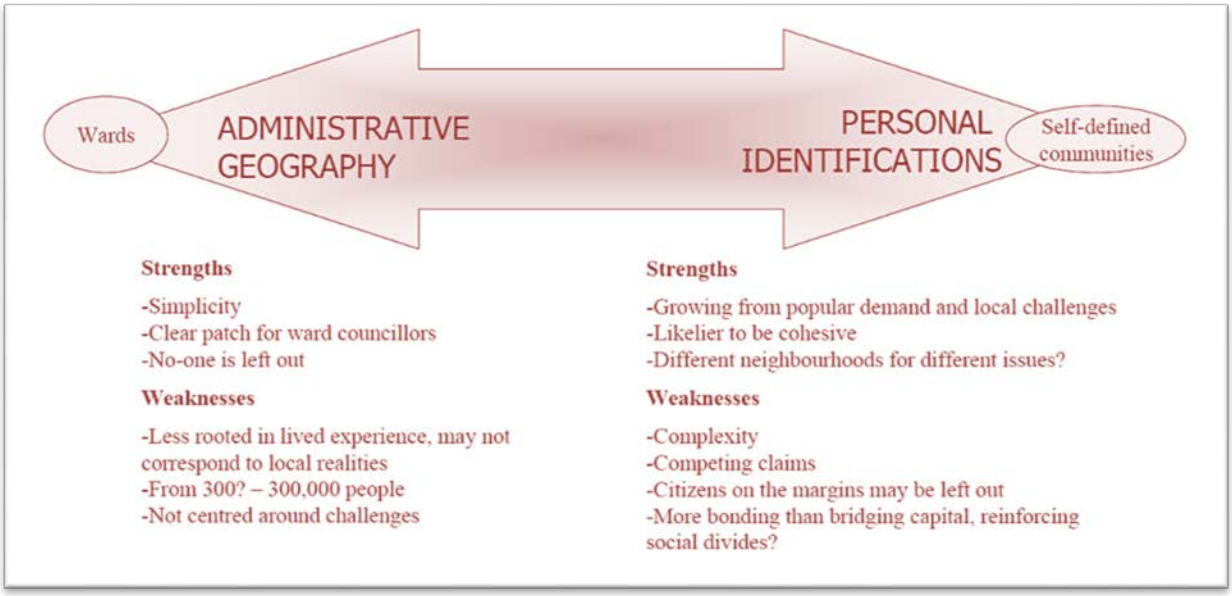

Figure 4: Divergent definitions of neighbourhood (The Young Foundation, 2010, p. 10)

The Young Foundation's literature review also revealed a set of ten attributes of neighbourhoods (see figure five). In addition to these attributes, The Young Foundation also consider urban amenities to be a "frame for our lived experiences of neighbourhood" (2010, p. 18), adding that "schools, health centres, libraries, community centres, leisure centres, faith organisations, transport stops form a network of neighbourhood facilities where people cross paths and the personal can become public. These centres of the local public realm are key neighbourhood assets and building-blocks of local identity" (p. 20). It is in this description that we

see an important connection made between the physical built form of a neighbourhood and the socio-cultural impacts on ideas like connectedness. In discussing urban amenities further, The Young Foundation go on to consider that amenities such as "cafés and pubs are vital settings for informal public life – they are places where people can meet old friends, make new acquaintances, discuss the important issues of the day, and temporarily throw off the weight of the world". This is in line with the recent work of Allen (2016, 2017) who considers urban amenities to be critical to the acceptance by residents of intensification and intrinsically linked to the liveability they experience in their neighbourhoods.

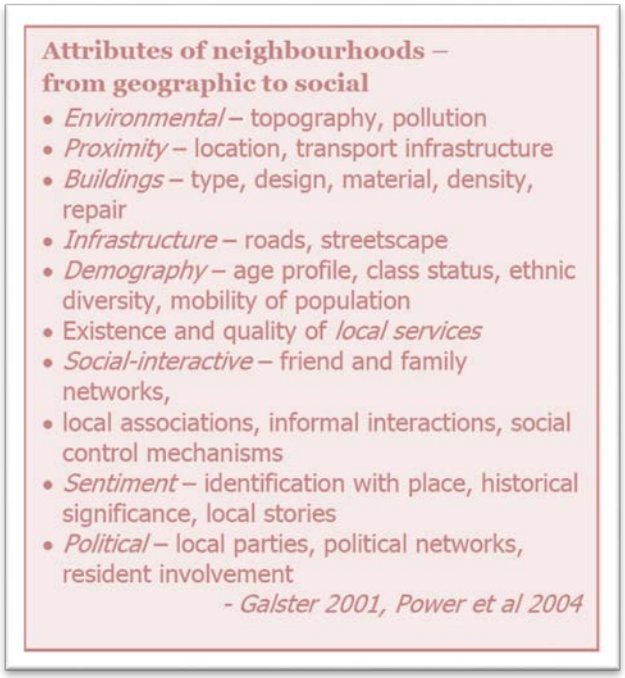

Figure 5: Ten neighbourhood attributes (The Young Foundation, 2010, p. 12)

Talen, E., & Koschinsky, J. (2013). The Walkable Neighborhood: A Literature Review. International Journal of Sustainable Land Use and Urban Planning, 1(1), 42-63.
Abstract: The past decade has seen a surge of interest in the walkable neighborhood, motivated by environmental, health, economic, and communitarian goals. We take stock of this literature by linking together the various strands of research in which the "walkable neighborhood" is a primary concern. We organize the literature into three broad categories: measurement, criticism, and tests of the benefits of walkable neighborhoods. The latter category involves three primary claims. We find that claims about social impacts are the weakest in terms of research support, in part, because there continues to be a problem of self-selection and an inability to assign causality.

A literature review on walkable neighbourhoods produced by Talen and Koschinsky (2013) is a useful summary to conclude this section on. These researchers mark a shift in thinking about neighbourhoods, they avoid the confusion of socio-spatial definitions of neighbourhood and the

socio-cultural benefits that can be studied within them. Instead, Talen and Koschinsky (2013) propose that the walkable neighbourhood "is a physical phenomenon—a bounded place in a given spatial location with selected material properties" (p. 43). They also note that walkable neighbourhoods "should not be confused with the idea of a "successful neighborhood," often defined by a more generalized ability to enhance the well-being of residents (p. 43). Talen and Koschinsky conclude with comments to guide future research, arguing that it should "move beyond assessment of impacts and move toward the subject of implementation" (2013, p. 54).

Mehaffy, M., Porta, S., & Romice, O. (2015). The "neighborhood unit" on trial: a case study in the impacts of urban morphology. Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 8(2), 199-217.

Abstract: The organization of modern city planning into "neighborhood units" – most commonly associated with the Clarence Perry proposal of 1929 – has been enormously influential in the evolution of modern city form, and at the same time has also been the subject of intense controversy and debate that continues to the present day. New issues under debate include social and economic diversity, maintenance of viable pedestrian and public transit modes, viability of internalized community service hubs, and efficient use of energy and natural resources, including greenhouse gas emissions. We trace the history of this controversy up to the present day, and we discuss new developments that may point the way to needed reforms of best practice.

Mehaffy, Porta, and Romice (2015) open by stating that "it may well be that within modern urban planning and design, no single practice has had greater influence – and in some quarters, provoked greater controversy – than the use of the "neighborhood unit" as a standardized increment of urban structure" (p. 199). They go on to identify The roots of neighbourhood unit planning and its Contemporary criticisms and offer a summary of Empirical evidence for the poor performance of the neighbourhood unit as well as Evidence from empirical examples for the feasibility of continuous walkable urbanism. They conclude that "an approach to neighborhood structure "beyond the neighborhood unit – one that provides an appropriately scaled framework on which a more continuous, more spontaneous urban pattern may be formed – is possible, and moreover necessary" (Mehaffy et al., 2015, p. 215).

They add that "the evidence does suggest that a much more optimum balance can indeed be achieved, seamlessly combining an essentially continuous walkable city fabric with the mobility functions afforded by modern transportation systems like arterials and railways" (Mehaffy et al., 2015, p. 215). Mehaffy et al. consider a critical issue to me "one of scale: specifically, the scale of pedestrian mobility must be matched to the scale of vehicular mobility, within an integrated framework for fluid movement and growth (2015, p. 215). They argue for more research in this field of study.

This section has summarised the conceptual definitions of neighbourhoods as defined in urban studies literature and considered how they have emerged and evolved over time. A pattern has emerged whereby research in to neighbourhoods generally fall in to three categories; studies which define neighbourhoods as spatial units, studies that consider neighbourhoods to be a social construct, or studies which consider the concept of neighbourhoods to be a combined socio-spatial response to our evolving understanding of the urban condition. There are studies from each grouping found in different time-periods and thus it is up to the individual researcher to locate their work within these patterns.

2. What methodologies are used to research concepts of neighbourhood?

This section of the literature review has been developed to help researchers consider the research methodologies which have previously been engaged when considering concepts of neighbourhood. As with the previous section, relevant references and abstracts have been included in text-boxes throughout the document to ensure the easy use of this review as a tool for those writing subsequent research reports and articles.

Studies have been grouped as follows: observational and theoretical studies, perception studies, and mapping and GIS studies.

2.1 Observational and theoretical studies to define neighbourhood

Chaskin, R. (1998). Neighborhood as a Unit of Planning and Action: A Heuristic Approach. *Journal of Planning Literature, 13*(1), 11-30.
Abstract: The neighbourhood is increasingly used as an organizational anchor for the promotion of planned social change, but defining neighborhood by programmatic ends in any given case is problematic because it admits a variety of competing choices. There is no universal way of defining the neighborhood as a unit, and selecting and defining target neighbourhoods is a highly political negotiable process. This article suggests a heuristic approach to defining neighborhoods that is guided by explicit programmatic aims, informed by a theoretical understanding of neighbourhood and the elements it may include, and based on descriptive information on local context.

Following his 1997 literature review, Chaskin (1998) surveyed twenty-five community initiatives in the United States, determining the characteristics of the neighbourhoods they served, in terms of population, size, and boundaries. The heuristic approach he developed, for taking action in the absence of any clear definition of neighbourhood, included looking for informal networks of association; functional attributes such as commercial activities and recreational facilities; population diversity and neighbourhood context.

The scales of neighbourhood discussed by Chaskin include the 'face-block' where "two sides of one street between intersecting streets" (1998, p. 23), the 'residential neighbourhood' as framed by local governance and direct participation, and the larger scaled 'institutional neighbourhood' where a formal organisational approach is more likely (p. 23).

Ultimately, Chaskin identifies a process of neighbourhood definition (see figure six) in which programmatic goals and strategies determine the appropriate scale and neighbourhood elements

by which to define a neighbourhood. In turn, these are framed by the socio-cultural context in which researchers are attempting to define a neighbourhood.

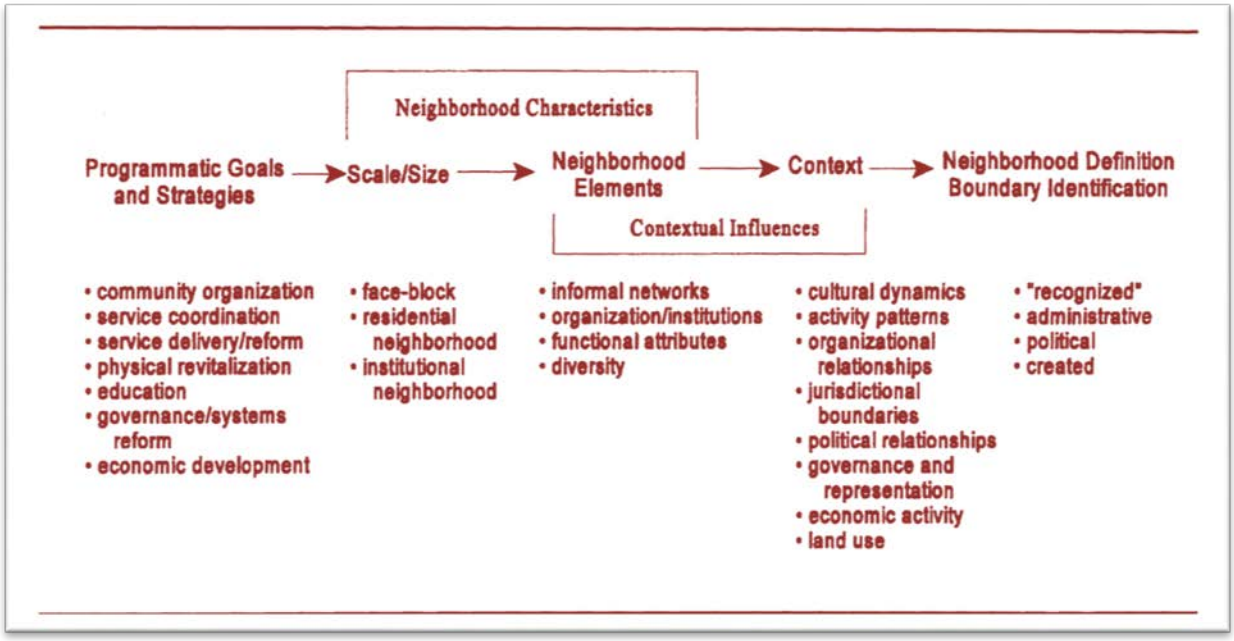

Figure 6: The process of neighbourhood definition (Chaskin, 1998, p. 23)

Song, Y., & Knaap, G.-J. (2007). Quantitative Classification of Neighbourhoods: The Neighbourhoods of New Single-family Homes in the Portland Metropolitan Area. *Journal of Urban Design Journal of Urban Design, 12*(1), 1-24.

Abstract: This paper develops a quantitative method for classifying neighbourhood types and applies the characterization method to the neighbourhoods of new single-family homes in the Portland, Oregon, metropolitan area. The study first measures a set of 21 urban form attributes in neighbourhoods that contain newly constructed single-family homes. Factor analysis is then used to identify a small set of dimensions that capture essential differences in urban form. Finally, these factor scores are used as input to a cluster analysis to identify distinct neighbourhood types. The results demonstrate that most new single-family homes in Portland are built in new suburban neighbourhoods, but a substantial portion of single-family construction is occurring in traditional and neo-traditional urban neighbourhoods.

Song and Knaap (2007) developed a quantitative method for classifying neighbourhood types. They began their study "by identifying and computing 21 attributes of neighbourhood form based on parcel-level data using GIS. Factor analysis was then employed to derive generalized dimensions of neighbourhood characters such as street network design, density, mixed land uses, accessibility to transit, house size and natural environment" (p. 22). Factor analysis also led to cluster analysis which in turn led to the identification of neighbourhood types. The methods involved many calculations and revealed a range of useful knowledge about defining neighbourhoods. For example, computations of distances from such public amenities as stores and bus stops showed that "the neighbourhoods of the majority of single-family homes are

characterized... by residential isolation, automobile orientation and a lack of metro-wide public facilities and concentrated employment centres" (Song & Knaap, 2007, p. 22).

This is a very different approach from the concepts described above by Chaskin, which interweave the physical, the individual and the social. Even Chaskin's spatial concept requires human involvement, while his heuristic approach requires many judgements about what to study. Song and Knaap's method offers the possibility of objective research to delineate neighbourhood in a way that Chaskin denies is possible. At the root of the difference between these two approaches is a different understanding of neighbourhood.

2.2 Surveys and interviews considering revealed preferences and neighbourhood satisfaction

In the absence of clear theoretical definitions, many studies have sought to examine the perceptions of residents of particular localities as a way to understand neighbourhoods. How satisfied residents are with their neighbourhoods and the quality of life residents perceive their neighbourhood environments to deliver them are often an important component of revealed preference surveys.

Guest, A., & Lee, B. (1983). Determinants of Neighborhood Satisfaction: A Metropolitan-Level Analysis. The Sociological Quarterly, 24(2), 287-303.
Introduction: This paper explores the ways that residents of the Seattle metropolitan region define "neighborhood" in the abstract and their own neighborhoods in particular. On the whole, the neighborhood is regarded as a relatively limited unit, both in terms of areal size and functional relevance. Two major dimensions of neighborhood definition are evident. Individuals tend to define neighborhood primarily in terms of either human interaction or pure space, and they also differ in their views on its geographic size and institutional development. The two dimensions of definition are shown to vary with patterns of local activity, social-demographic characteristics, and the physical environment. While only a small proportion of the variation in responses is explained, the results suggest that neighborhood definitions are rational responses to the social and physical position of the respondent within urban society.

Guest and Lee (1983, 1984) were early observers that it is not clear how the territorial divisions of cities coincide with popular conceptions of neighbourhoods, and they asked people what they thought. Guest and Lee identify that "the concept of neighborhood has served as an important tool for the planning and analysis of urban areas" (1984, p. 32) but also consider that "for whatever reason, the neighborhood lingers as a social unit in the minds of most contemporary urbanites" (p. 53).

Their analysis was based on interviews during 1978-79 with 1,642 residents clustered in 20 different geographic areas of the Seattle metropolitan region. Interviewees were asked several questions about their subjective perceptions of their home areas in the metropolis. This is possibly the earliest study to include research on how residents define neighbourhood in general and their own neighbourhoods in particular. They found widely varying locality conceptions but a tendency to, "portray the neighborhood as primarily a spatial or human social rather than institutional unit" (Guest & Lee, 1984, p. 53). The neighbourhood also was regarded as a lower-level social unit than parts of the metropolis.

Lee, B., & Campbell, K. (1997). Common Ground? Urban Neighborhoods as Survey Respondents See Them. *Social Science Quarterly, 78*(4), 922-936.
Introduction: Our research examines how urban residents define "neighborhood" and whether their definitions influence their answers to other survey questions. We use data from a 1988 Nashville, Tennessee, study to tap respondents' abstract neighborhood definitions as well as the symbolic and physical identities they attribute to their own neighborhoods. Territorial meanings predominate among respondents when neighborhood is considered in the abstract, although few definitions are exclusively territorial in nature. At a more concrete level, individuals living near one another often give the same name for their neighborhood of residence but differ markedly in their reports of the area's physical size and complexity. Such differences do not have much impact on answers to vague-referent questions about neighborhood life (i.e., questions in which the concept of neighborhood is left undefined).

Lee and Campbell (1997) note that previous studies found the word neighbourhood to have an 'elastic' meaning. They remark,

> Unlike cities or counties, most neighborhoods are neither formal governmental jurisdictions nor clearly demarcated territorial entities. Instead, they are social constructions with an existence rooted in residents' awareness as well as in particular physical settings. Their ambiguous character is nicely captured by the notion of "quasi-fact," a phenomenon that lies at the juncture of the subjective and objective realms (1997, p. 923).

The literature Lee and Campbell studied suggested to them that urbanites have three conceptions of neighbourhood: demographic, symbolic and physical. They concluded "that most people use the word to refer to a territorial unit, although few of their abstract definitions are solely territorial in nature. For area of residence, agreement on symbolic identity tends to be high: persons living side by side often give the same name to their neighborhood" (1997, p. 934).

In total, Lee and Campbell analysed 994 questionnaires about neighbourhood in order to address their research question: "Does the word "neighborhood" serve as a common frame of reference across individuals and settings, or is it largely an idiosyncratic concept?" (p. 926). In line

with previous research 86.8 percent of their sample considered the 'territorial dimension' where neighbourhood is seen as a spatial unit. However, many definitions were also "imbued with social content and personal relevance as well. For example, 40.5 percent describe the essence of "neighborhood" as being people who live in close proximity, or their friendliness" (p. 926). In addition, 59.1 percent adopted an "egocentric perspective, using themselves or their households as points of orientation and giving answers like "where I live" or "the four or five families nearest ours." (The latter illustration would also be coded "social.") (p. 926). Interestingly, only one respondent in ten (9.9 percent) offered "a structural definition, which resembles Guest and Lee's (1984) institutional dimension and relies on physical structures such as churches, schools, stores, or houses as a grounding for the concept" (p. 926).

Grogan-Kaylor, A. et al. (2006). Predictors of Neighborhood Satisfaction. *Journal of Community Practice, 14*(4), 27-50.

Abstract: Insufficient attention has been devoted to an examination of the factors that predict the level of satisfaction that community residents have with the neighborhoods in which they live. In this paper, we describe a program of research to examine the predictors of neighborhood satisfaction. Data on neighborhoods and individuals in Flint, Michigan were obtained from the 2000 Census and a citywide survey of neighborhood residents. Multilevel models were used to predict the effect of individual and neighborhood-level characteristics. Findings suggested that many factors from the survey predicted residents' satisfaction from their neighborhoods. While neighborhood characteristics derived from the census were statistically related to levels of neighborhood satisfaction, census variables did not add information to a model of neighborhood satisfaction already containing survey variables.

Grogan-Kaylor et al. (2006) investigated neighbourhood satisfaction as perceived by 1,540 residents (with complete data) from Flint, Michigan. Data was collected through a telephone survey of randomly selected residents. The significance of individual subjective factors that affected neighbourhood quality were compared to the effects of objective indicators derived from census data. The research questions were as follows:

- After controlling for individual socio-demographic variables thought to influence satisfaction, to what extent do individual subjective evaluations of neighborhood trust, social support, influence, informal social control, physical environment, activism, or crime affect neighborhood satisfaction?
- Do aggregated subjective evaluations of neighborhood trust, social support, influence, informal social control, physical environment, activism, or crime have additional effects on neighborhood satisfaction beyond individual evaluations?
- After accounting for individual-level and aggregated subjective evaluations of neighborhood physical and social characteristics, do objective neighborhood characteristics have additional significant effects on neighborhood satisfaction? (Grogan-Kaylor et al., 2006, p. 35)

In line with the research of Permentier et al. (2011), Grogan-Kaylor et al. (2006) identified the impacts of both subjective and objective factors on neighbourhood satisfaction. However, unlike Permentier et al. they consider a limitation of their study to be the way that they relied on the use of census divisions to delineate neighbourhood areas. Their findings suggested "that neighborhood levels of crime and the physical condition of neighborhoods are statistically significant predictors of the level of satisfaction with neighborhood experienced by neighborhood residents" (Grogan-Kaylor et al., 2006, p. 45). In so doing their study "contributed to our evolving understanding of the complex and multilevel nature of neighborhood effects on residents" (Grogan-Kaylor et al., 2006, p. 47).

Permentier, M., Bolt, G., & van Ham, M. (2011). Determinants of Neighbourhood Satisfaction and Perception of Neighbourhood Reputation. Urban Studies, 48, 977-996.
Abstract: It has been suggested that the residential mobility behaviour and general well-being of residents of urban neighbourhoods are not only influenced by how residents themselves assess their neighbourhood, but also by how they think other city residents see their neighbourhood: the perceived reputation of the neighbourhood. There is a large body of literature on residents' satisfaction with their neighbourhood, but much less is known about how residents perceive the reputation of their own neighbourhood. Such knowledge might give important clues on how to improve the well-being of residents in deprived neighbourhoods, not only by directly improving the factors that affect their own level of satisfaction, but also by improving the factors that residents think have a negative effect on the reputation of their neighbourhood. This paper examines whether there are differences in the determinants of neighbourhood satisfaction and the perceived reputation of the neighbourhood. Using data from a purpose-designed survey to study neighbourhood reputations in the city of Utrecht, the Netherlands, it is found that subjective assessment of the dwelling and neighbourhood attributes are more important in explaining neighbourhood satisfaction than in explaining perception of reputation. Objective neighbourhood variables are more important in explaining perception of reputation than in explaining neighbourhood satisfaction.

Building on Permentier's (2009) earlier research, Permentier et al. (2011) sought to determine which neighbourhood attributes are most important in predicting neighbourhood satisfaction. As well as being "of great interest to policy-makers" (p. 978), they argue that:

> "a better understanding of the factors that are important in how people see their own neighbourhood and how they think others see their neighbourhood… might give important clues on how to improve the well-being of residents in deprived neighbourhoods, not only by directly improving their own level of satisfaction, but also by improving the factors that residents think have a negative effect on the reputation of their neighbourhood" (p. 979)

Data was gathered from a survey of 1095 residents in 24 different neighbourhoods in the city of Utrecht, The Netherlands (completed in 2006). Neighbourhoods were identified using a telephone survey, where different neighbourhood names (following administrative boundaries)

were tested on city residents to find out which neighbourhoods were most recognisable. On the basis of this survey, Permentier et al. (2011) selected 24 neighbourhoods which varied on aspects such as "housing density, housing stock, socioeconomic composition and ethnic composition" (p. 983). They describe these differences as being "socio-demographically, socio-culturally and socioeconomically" diverse (p. 983).

The study was designed to research neighbourhood reputations and while it did not attempt to define neighbourhoods as they might be perceived by residents, its results are interesting because they show how subjective perceptions and objective variables produce different results that are valuable for different purposes. Permentier et al. (2011) found that "subjective assessments of neighbourhood attributes are more important in explaining neighbourhood satisfaction than perceived reputation. At the same time, objective neighbourhood characteristics contribute more in explaining perceived reputation than neighbourhood satisfaction (p. 993).

Permentier et al. (2011) conclude by arguing "that it is important not only to understand how residents themselves assess their neighbourhood, but also how they think that other city residents assess their neighbourhood" (p. 993) and suggest that "neighbourhood satisfaction and perceived reputation are related concepts" (p. 993). A key factor they identify is that residents "who experience freedom in the choice of their dwelling and neighbourhood are likely to be satisfied with the dwelling and neighbourhood attributes which, in turn, have a positive impact on neighbourhood satisfaction" (p. 993). This finding enables them to argue that "models of residential satisfaction and residential mobility should include choice variables" (p. 994). Interestingly, they also found that "personal and household characteristics have no direct effect on either neighbourhood satisfaction or perceived reputation, with the exception of ethnicity in the perceived reputation model and gender and the presence of children in the satisfaction model" (p. 993). This finding indicates the neighbourhood and housing choices outweigh other factors when it comes to assessing what factors most affect neighbourhood satisfaction.

Clark, W., Deurloo, M., & Dieleman, F. (2006). Residential Mobility and Neighbourhood Outcomes. Housing Studies, 21(3), 323-342. doi: 10.1080/02673030600585946

Abstract: When households move they obviously weigh both the quality of the house and the quality of the neighbourhood in their decision process. But, to the extent that housing quality and neighbourhood quality are inter-twined it is difficult to disentangle the extent to which households are more focused on one or another of these two components of the choice process. This paper uses both cross-tabulations of the neighbourhood choices, and logit models of the actual choices, to examine the relative roles of neighbourhoods and houses in the choice process. The research is focused on the question of the extent to which households trade up in house quality, or neighbourhood quality or both, as outcomes of residential mobility. The research measures neighbourhood quality in both socio-economic and environmental dimensions. The study shows that many

households not only move up in housing quality, but quite consistently also make gains in neighbourhood quality, often independently of gains in housing quality. Not surprisingly, the largest gains in neighbourhood quality are related to households who make the city/suburban transition in their housing moves. The research adds another dimension to the growing and extensive literature on neighbourhoods and their role in residential choice.

A complimentary study to that of Permentier et al. (2011) is by Clark, Deurloo, and Dieleman (2006). They consider two categories of neighbourhood: "(1) neighbourhoods based on socio-economic characteristics; and (2) neighbourhoods based on environmental characteristics like the amount and quality of greenspace" (p. 327) to capture the role of neighbourhoods in the mobility process.

Using data from the Netherlands National Housing Survey (1998 - approximately 70 000 households) Clark et al. (2006) identify that "household mobility is mainly a process about improving dwelling quality and housing consumption" (p. 337). Adding that "the research also shows that neighbourhoods matter in the choice process. Thus, from a policy perspective the research provides a case for paying attention to the physical context of housing creation as well as the dwelling space" (Clark et al., 2006, p. 337). Clark et al. conclude by stating that their research "builds a compelling case for the role of neighbourhood both independently and in combination with the housing career" (2006, p. 340).

Buys, L., & Miller, E. (2012). Residential satisfaction in inner urban higher density Brisbane, Australia: role of dwelling design, neighbourhood and neighbours. *Journal of Environmental Planning and Management, 55*(3), 319-338.

Abstract: Increasing the population density of urban areas is a key policy strategy to sustainably manage growth, but many residents often view higher-density living as an undesirable long-term housing option. Thus, this research explores the predictors of residential satisfaction in inner urban higher-density (IUHD) environments, surveying 636 IUHD residents in Brisbane, Australia about the importance of dwelling design (34 specific attributes, assessing satisfaction with facilities, upkeep, size, cost, design, surroundings, location, climate and environmental management) and neighbourhood (73 specific attributes, assessing satisfaction with noise, odours, pollution, safety, growth, neighbourhood characteristics, facilities). Ordinal regression modelling identified the specific features of the neighbourhood and dwelling that were critical in predicting residential satisfaction: satisfaction with dwelling position, design and facilities, noise, walkability, safety and condition of local area and social contacts (family, friends, and familiar faces) in the neighbourhood. Identifying the factors that influence residential satisfaction in IUHD will assist with both planning and design of such developments, enhancing quality and appeal to help ensure a lower resident turnover rate and facilitate acceptance and uptake of high-density living.

Also complementing the work of Permentier et al. (2011), Buys and Miller (2012; see also Kennedy & Buys, 2010) report on a four-year (2006-2009) High Density Liveability Study conducted by Queensland University of Technology where understanding neighbourhoods is seen as a core idea that underpins neighbourhood satisfaction.

They study surveyed 636 residents from *inner urban higher density* (IUHD) suburbs in Brisbane, Australia. Part of the study also comprised twenty-four face-to-face qualitative interviews with residents living in attached housing typologies in Brisbane. Residents were asked about their overall residential satisfaction, which included a neighbourhood satisfaction component. Neighbourhood satisfaction "was significantly associated with the position of the dwelling and its location with respect to neighbourhood facilities, the quality of outdoor air, reduced noise from emergency service vehicles, as well as satisfaction with the general condition (upkeep/tidiness) of the area and walks" (Buys & Miller, 2012, p. 330).

Importantly, study participants were also asked to define their neighbourhoods. Allen (2016) identifies this as a key point of difference in the work of Buys and Miller (2012) and many other satisfaction and preference studies. The importance of asking interviewees to first define their neighbourhoods, before asking about their neighbourhood satisfaction, is shown to be important because otherwise it is unclear whether they are talking about comparable geographic areas and urban scales or completely diverse ones. Buys and Miller (2012) conclude that:

> overall residential satisfaction in high-density dwellings (defined as both satisfaction with dwelling and satisfaction with neighbourhood) depends on a specific set of dwelling and neighbourhood attributes – primarily dwelling location/position, dwelling design characteristics (i.e. size, storage space, sustainability considerations), neighbourhood noise and the safety of the local area (i.e. social contacts in the neighbourhood, upkeep of area, ability to go for walks) (Buys & Miller, 2012, p. 333).

In turn, neighbourhood satisfaction specifically "was predicted by dwelling attributes (design and locality), noise levels (of both neighbours and the area), and local area characteristics – specifically the general condition/safety of the area and social interactions" (Buys & Miller, 2012, p. 334). Responses to the open-ended questions asked during the survey process also emphasised that residents, when considering what factors affected their neighbourhood satisfaction, were most concerned by heavy traffic, poor public transport links, limited parking, inappropriate land-uses and the need for more open and safe 'green' space – this included a preference for bikeways and additional lighting. Buys and Miller (2012, p. 335) in turn argued that their findings highlighted a critical need for quality, safe outdoor spaces and rebuked the assumption that in IUHD neighbourhoods residents place a higher value on independence and privacy than a sense of community. In their study belonging and knowing or recognising one's neighbours was considered an important component of neighbourhood satisfaction.

De Vos, J., Van Acker, V., & Witlox, F. (2016). Urban sprawl: Neighbourhood dissatisfaction and urban preferences. Some evidence from Flanders. *Urban Geography, 37*(6), 839-862.

Abstract: Early studies suggest that people living in rural neighbourhoods are more satisfied with their residential location than people living in cities. Consequently, most individuals seem to prefer low-density environments to reside in. More recent studies, however, state that rural residents are no more likely to be satisfied with their residential neighbourhood than their urban counterparts. In addition, a considerable, growing part of the population seems to have a clear preference for urban neighbourhoods. The results of our research, conducted in Flanders, Belgium, suggest that urbanites are more satisfied with their neighbourhood than rural residents are. Neighbourhood preferences differ less between urbanites and rural residents. However, there are differences indicating that urbanites have a preference for rural neighbourhoods and rural residents a preference for urban neighbourhoods. In sum, it seems that people, once they have selected their residential location, are not satisfied with the neighbourhood characteristics and tend to develop a preference for a different neighbourhood type. This mismatch can be partly explained by the strongly developed urban sprawl in Flanders, reducing the residential qualities of urban and especially rural environments. Restricting further urban sprawl, with the help of a more active spatial planning policy, seems necessary to increase neighbourhood satisfaction.

De Vos et al. (2016) contextualise their research within the urban intensification debate, just as Buys and Miller (2012) did. However, unlike Buys and Miller, De Vos et al. analyse neighbourhood preferences and neighbourhood satisfaction from the perspective of residents living in both urban and rural neighbourhoods, rather than inner urban higher density ones.

While they report predominantly on neighbourhood satisfaction and preferences in Flanders, their data was gathered from a larger internet survey on mobility, residential location and lifestyles conducted by Van Acker (2010):

> In the first stage, the survey was distributed among staff members and students of the University of Antwerp and the Faculty of Sciences at Ghent University. In order to obtain a more balanced sample, the survey was, in the second stage, also distributed within the greater region of Ghent (including both urban and rural municipalities). In total, 1,878 respondents completed the survey of which 1,597 were retained after data cleaning. Due to the sampling method, respondents with a university degree, and younger people are – compared to the total Flemish population – over-represented (for more information on the data, see, Van Acker, Mokhtarian, & Witlox, 2011, 2014). Although the sample is consequently not representative of the total population of Flanders, it does enable us to analyse relationships among multiple variables. As our sample size is relatively large and sufficiently diverse, coefficients to characterise specific relationships can be estimated with great confidence (De Vos et al., 2016, p. 844).

To measure neighbourhood satisfaction and neighbourhood preferences De Vos et al. asked respondents how satisfied, on a five-point Likert scale from absolutely not satisfied to very satisfied, they were with 19 characteristics of their current neighbourhood (see figure seven). These included:

> social safety (no vandalism or criminality); traffic safety; presence of bike lanes; presence of sidewalks; sufficient parking place; proximity of public transport; proximity of shops; proximity of leisure activities; proximity of family/friends; proximity of workplace; peacefulness; presence of green areas; neatness; appearance of buildings; strong interaction with neighbours; frequent interaction with neighbours; composition of residents according to age; composition of residents according to nationality; and distance between dwellings (De Vos et al., 2016, p. 845).

This research is not an attempt to define neighbourhood, but it is interesting in that it examines both residents' perceptions of their own neighbourhood and of the opposite type. The residents of both types, urban and rural, believe they would be happier living in the other. Their results also suggested "that urbanites are more satisfied with their neighbourhood than rural residents" (De Vos et al., 2016, p. 854). However, the authors caution that their research is quantitative, so they do not know why the residents might feel this way or how their data might be contextualised. As mentioned earlier, the respondents are also not representative for the total population of Flanders.

De Vos et al. offer an alternative explanation for the low residential satisfaction of rural residents, stating that that these residents "might have been forced to live in these neighbourhoods due to budget restraints" as "rising dwelling prices (due to gentrification processes) forced them to live outside the city in order to live in a dwelling of their needs" (2016, p. 855). Ultimately, they conclude that "rural preference has switched into one of urban preference" a notion that may provide an interesting starting point for further research (De Vos et al., 2016, p. 857).

Table 1. Pattern matrix of neighbourhood satisfaction.

How satisfied are you with aspects of your neighbourhood? ↓ / Factor →	Peacefulness and safety	Proximity	Neighbouring	Infrastructure active travel	Residents' composition
Presence of green areas	0.85				
Peacefulness	0.84				
Neatness	0.82				
Social safety	0.62				
Appearance of buildings	0.53				
Traffic safety	0.49			0.38	
Distance between dwellings	0.48				0.29
Sufficient parking place	0.40				
Proximity of leisure activities		0.74			
Proximity of shops		0.73			
Proximity of public transport		0.56			
Proximity of family/friends		0.42			
Proximity of workplace		0.40			
Strong interaction with neighbours			0.83		
Frequent interaction with neighbours			0.82		
Presence of sidewalks				0.74	
Presence of bike lanes				0.71	
Residents' composition (nationality)					0.71
Residents' composition (age)					0.61

Table 2. Pattern matrix of neighbourhood preferences.

Suppose you have to choose a new residential location. Which aspects are important to you? ↓ / Factor →	Accessibility	Peacefulness	Proximity	Safety/ appearance	Residents' composition	Neighbouring
Presence of sidewalks	0.87					
Presence of bike lanes	0.84					
Proximity of public transport	0.36		0.34			
Presence of green areas		0.94				
Peacefulness		0.81				
Proximity of shops			0.74			
Proximity of leisure activities			0.68			
Proximity of family/friends			0.41			
Proximity of workplace			0.36			
Social safety				0.78		
Neatness		0.28		0.53		
Sufficient parking place				0.45		
Traffic safety	0.40			0.42		
Residents' composition (nationality)					0.74	
Residents' composition (age)					0.71	
Distance between dwellings		0.34			0.35	
Frequent interaction with neighbours						0.81
Strong interaction with neighbours						0.71

Figure 7: Pattern matrices of neighbourhood satisfaction and preferences (De Vos et al., 2016, p. 846)

2.3 Mapping and GIS studies to spatially understand neighbourhoods

Coulton, C., Korbin, J., Chan, T., & Su, M. (2001). Mapping Residents' Perceptions of Neighborhood Boundaries: A Methodological Note. *American Journal of Community Psychology, 29*(2), 371-383.
Abstract: Neighborhood influences on children and youth are the subjects of increasing numbers of studies, but there is concern that these investigations may be biased, because they typically rely on census-based units as proxies for neighborhoods. This pilot study tested several methods of defining neighborhood units based on maps drawn by residents, and compared the results with census definitions of neighborhoods. When residents' maps were used to create neighborhood boundary definitions, the resulting units covered different space and produced different social indicator values than did census-defined units. Residents' agreement about their neighborhoods' boundaries differed among the neighborhoods studied. This pilot study suggests that discrepancies between researcher and resident-defined neighborhoods are a possible source of bias in studies of neighborhood effects.

Coulton, Korbin, Chan, and Su (2001) conducted a pilot study among 140 residents of seven census-defined block groups within the City of Cleveland, U.S.A. and asked residents to define their neighbourhoods through a mapping exercise. This study was considered "an experiment in using resident maps to define neighborhoods, undertaken in response to the uncertainty in the field about how to define neighborhood units for research on families and children" (p. 380). In line with earlier research that considered how neighbourhoods affect families and children (Ellen & Turner, 1997; Higgitt & Memken, 2001; Sastry et al., 2002), participants in this study were parents of minor children who were randomly selected as part of a larger study looking at the way neighbourhoods influence child abuse and neglect (Coulton et al., 2001, p. 373). The study focused on inner city areas, and therefore their results may not be generalisable to suburban areas (Coulton et al., 2001, p. 380).

Issues face by Coulton et al. (2001) included that "interviewers had to remind some respondents to draw a completely enclosed perimeter, and in some cases respondents expressed uncertainty about at least one boundary" (p. 374). They also argued that "despite the dissatisfaction with census proxies in research on neighborhood influences, there is no well-established method for using residents' opinions to define neighborhood units for such investigations" (Coulton et al., 2001, p. 372). In response, four methods of drawing neighbourhoods according to residents' perceptions were identified in this study. However, only two were found to be practical:

> The first method built upon the notion of a common area, which is discussed earlier. For each block group the researchers drew the resident defined neighborhood unit, using the portion of the map that was included within the boundaries of 70% of the

> residents' maps. The second method took the average centroid of the residents within each block group and drew around it a circle the size of the average area. The third method, which was considered but rejected, involved identifying the street boundaries used by 70% of the resident maps and then drawing the consensus map, using these streets. This proved to be impractical, because in most block groups there was consensus on only one or two sides of the polygon, making it impossible to draw an enclosed unit, using this method. The fourth method of drawing a neighborhood unit, which was contemplated but discarded, was to use the boundary of the largest map because most of the other maps could be subsumed within it. The largest maps, though, often seemed like outliers and were not reflective of the general opinion in the neighborhood (Coulton et al., 2001, p. 375).

In addition, because there were no existing techniques for analysing residents' neighbourhood maps, a series of measures was developed by the authors that seemed relevant to the purpose of this pilot study (see figure eight). They go on to identify that there is, however, "a tradition within urban sociology and environmental psychology of using residents' maps or boundary definitions to study neighborhood salience and quality" (Coulton et al., 2001, p. 372). Ultimately, the study sought to investigate "whether residents living in spatial proximity to one another share similar neighborhood definitions" (Coulton et al., 2001, p. 372). While consensus among participants was variable (see figure nine) a notable difference came when comparing residents' maps to official maps, with Coulton et al., stating that:

> Even though the average size of residents' maps fairly closely approximated the census tract, most residents' maps incorporated portions of multiple census tracts. Thus, census tracts may be reasonably sized units for representing neighborhoods, but there is no evidence that residents see their neighborhoods according to census geography. The more important question for researchers, though, is whether census geography yields social measures that are similar to the neighborhood reality for residents (2001, p. 381).

As a result, they conclude by suggesting that "defining a neighborhood based on resident perceptions is not a simple proposition, because individuals who live in close proximity can differ markedly from one another in how they define the physical space of their neighborhood (Coulton et al., 2001, p. 381).

Coulton et al. caution that "research that relies on census definitions alone may underestimate neighborhood effects because the real conditions that affect residents are not accurately represented within census boundaries (2001, p. 381) and assert that "researchers should not assume the similarity of resident- and census-defined neighborhoods" (p. 381).

Measure	Individual residents' maps	Consensus among residents within block groups	Comparison of residents' and census geography
Area	Area of each resident's map in square miles	The coefficient of variation (Standard deviation/Mean) among residents' areas	The mean of the differences between square miles of census unit and residents' unit
Perimeter	Additive length of the boundary drawn by each resident	The coefficient of variation (Standard deviation/Mean) among residents' perimeters	The mean of the differences between perimeters of census unit and residents' unit
Centroid	Latitude and longitude at the center of the map drawn by each resident	Mean distance among all resident centroids (in miles)	The mean of the differences between centroids of census unit and residents' unit
Common area	Percent of each resident's map that overlapped the maps of at least 70% of the other residents	Mean percent of common area among all of the residents	Percent of the census unit that overlaps the common area defined by 70% of the residents

Figure 8: Resident map measures (Coulton et al., 2001, p. 374)

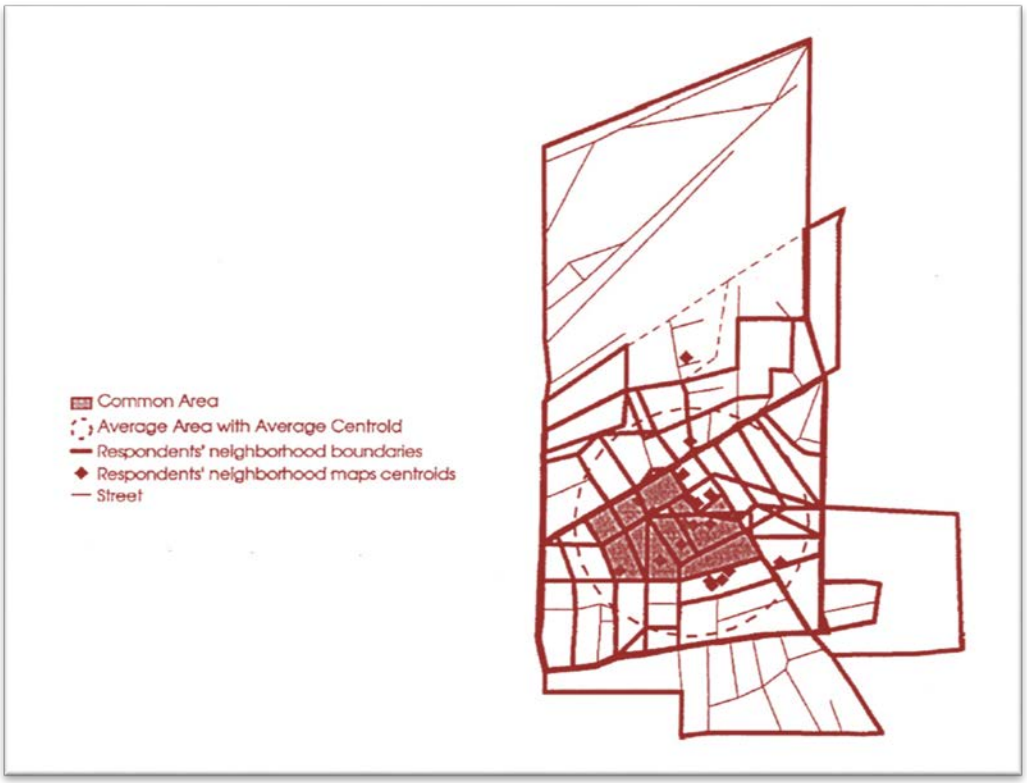

Figure 9: The process of neighbourhood definition (Coulton et al., 2001, p. 378)

Jenks, M., & Dempsey, N. (2007). Defining the neighbourhood: Challenges for empirical research. *Town Planning Review, 78*(2), 152-177.

Abstract: The neighbourhood is often referred to, and used, as a viable, relevant and important setting for empirical research. However, it is an ambiguous term and there is no consensus on its definition. Nor is there agreement on how to identify it spatially. Following a review of existing interpretations of neighbourhood, this paper draws on research which tests two objective methods of neighbourhood delineation. Using mapping exercises, the resulting neighbourhood boundaries are compared with those used by a sample of residents to identify their neighbourhood in six residential areas. The paper then examines the suitability and validity of theory-based definitions of neighbourhood, with particular focus on how far they match neighbourhood boundaries as understood by residents.

Perhaps the most comprehensive study on the subject of defining neighbourhoods; Jenks and Dempsey (2007) being by surveying the literature, observing that "'neighbourhood' is defined as both a district – a physical construct, describing the areas in which people live, and a community – a social construct, describing the people who live there" (p. 155). Adding that "the different uses of the term are repeated in urban design, planning and urban sociological literature, where it is not uncommon for an interchange of physical and social terminology to occur in discussions of 'neighbourhood'" (Jenks & Dempsey, 2007, p. 155).

Then, to test how well objectively defined neighbourhood boundaries correspond to the boundaries identified by residents, Jenks and Dempsey conducted a mapping exercise and comparative analysis:

> This data comes from a national questionnaire which was distributed by post to a total of 4,840 households in the six 'social' neighbourhoods of Sheffield and Oxford with an average response rate of 40 per cent (1,933 questionnaires received) (Jenks & Dempsey, 2007, p. 166).
>
> From primary data collected in the six neighbourhoods, the sample of 105 residents was asked to indicate the area they considered to be their neighbourhood and highlight the boundaries. Each of these neighbourhood boundaries was then mapped (Jenks & Dempsey, 2007, p. 167).
>
> Each case study was required to have a mix of urban layouts, housing types, residential densities and a public transport route within its boundaries. These criteria ensured that a number of elements of urban form and their potential effects on aspects of sustainability could be measured and analysed (Jenks & Dempsey, 2007, p. 164)

In line with the research of Coulton et al. (2001) and Sastry et al. (2002) they found that, "neither an intuitive drawing of boundaries based on physical criteria that 'looks right', nor boundaries drawn from socially derived data such as the census, will necessarily provide a sufficient fit. In all cases a buffer zone will be needed to capture the diversity of residents' own definitions of their neighbourhoods" (Jenks & Dempsey, 2007, p. 173) (see figure ten).

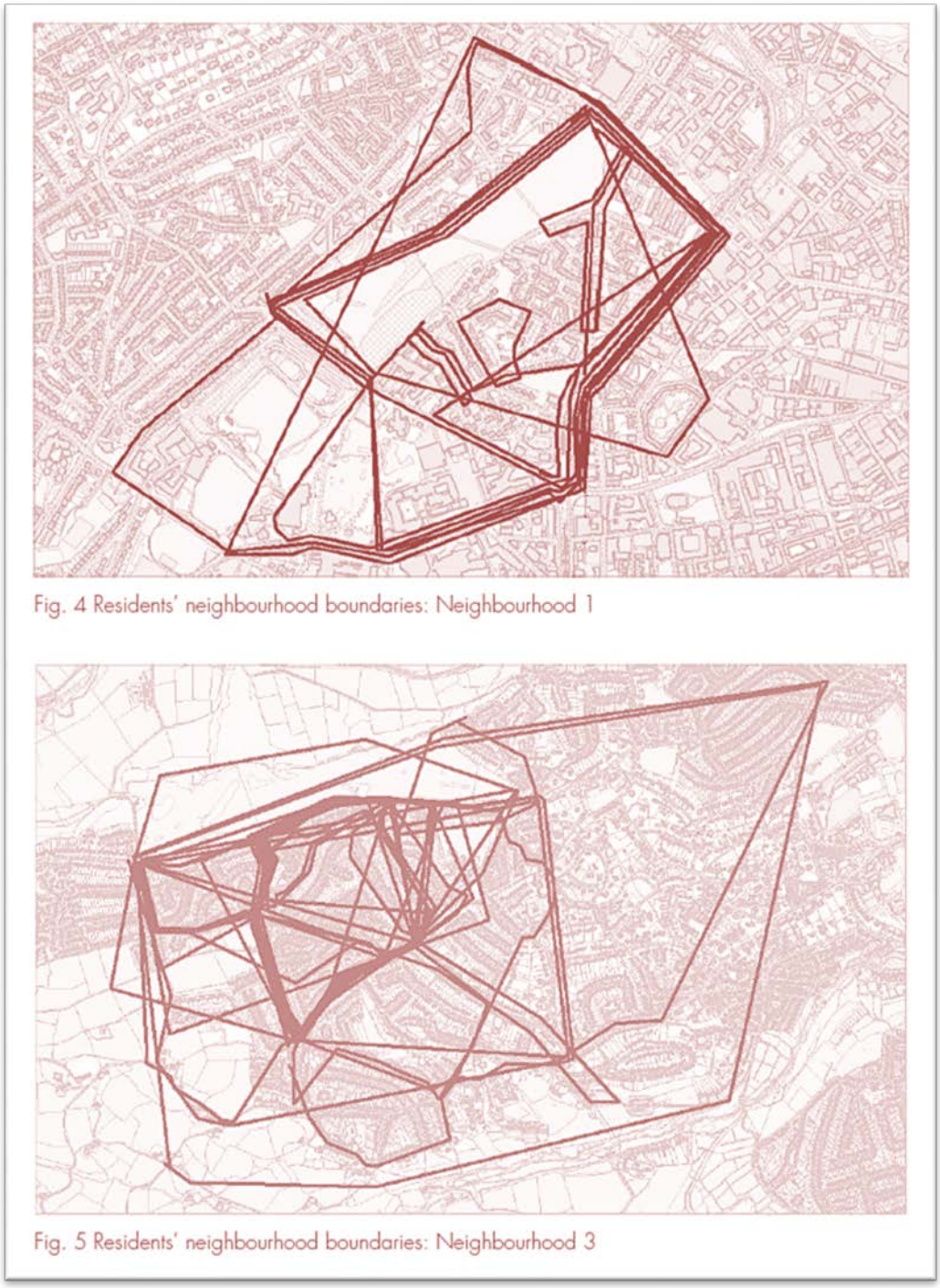

Figure 10: Neighbourhood boundaries identified by residents in two case study neighbourhoods (Jenks & Dempsey, 2007, p. 169)

This may be because of the three 'fames of reference' identified for understanding concepts of neighbourhood (see figure eleven): 'my neighbourhood', 'our neighbourhood', and 'the neighbourhood' (Jenks & Dempsey, 2007, p. 160). These also call in to question the traditional 400 metre circle in which it is argued "key services, including primary school, open space, food shop

and pub, should be accessible" from residents homes (Jenks & Dempsey, 2007, p. 162). Because "residents may consider their neighbourhood to include services and facilities that are further away than the catchment areas proposed in theory and practice" (2007, p. 162) Jenks and Dempsey argue that "such prescribed distances may not therefore correspond to boundaries identified by residents, particularly in largely residential neighbourhoods" (2007, p. 162).

Table 1 A frame of reference for understanding 'neighbourhood'

'My neighbourhood'	Home, family, immediate neighbours
'Our neighbourhood'	'Localised group' defined, for example, by income or ethnicity
'The neighbourhood'	'Has a more fixed referent and usually possesses a name and some sort of reputation known to persons other than the residents'

Source: Suttles (1972).

Figure 11: Frames of reference for understanding neighbourhood (Jenks & Dempsey, 2007, p. 160)

Jenks and Dempsey conclude that "whatever trouble residents may have in identifying their 'neighbourhood', they have less difficulty in identifying what is not considered part of their 'neighbourhood'" (2007, p. 163). They also recommend that:

> The most objective and appropriate way of identifying the boundaries of a neighbourhood is arguably through the selection of a residential/mixed-use area which is bounded by, or enclosed by, physical features such as transport infrastructure including roads and railways, and waterways and other natural borders. This method does not make any assumptions about the neighbourhood to be examined, or apply any criteria such as ensuring that there are services and facilities or open space within its boundaries, which may not be applicable. While this is a suitable method for neighbourhoods which have existing and easily identifiable boundaries, this might not be the case for neighbourhoods in built-up urban areas where such clearly defined physical features are not present. In cases such as these, the researcher might opt for the use of administrative boundaries (based on census output areas or postcodes). However, in both of these cases, a buffer zone of at least 400 metres is necessary to capture the area that residents living in different parts of the neighbourhood consider to be their neighbourhood. While this would require the researcher to examine the built environment within a larger area (i.e. the buffer zone), only those residents living within the smaller delineated area (determined either by administrative boundary or physical boundaries) would be eligible for sampling for empirical methodologies such as household questionnaires and interviews. This is because the area that residents have in mind when answering questions about their neighbourhood may largely and

> to varying degrees include the buffer zone. For researchers undertaking work on neighbourhoods, or planners and practitioners who may need to identify or plan new neighbourhoods, it is not possible to know in advance how a neighbourhood will be defined spatially, which is important especially if there is a need to reflect the views of residents. This research indicates that neither an intuitive drawing of boundaries based on physical criteria that 'looks right', nor boundaries drawn from socially derived data such as the census, will necessarily provide a sufficient fit. In all cases a buffer zone will be needed to capture the diversity of residents' own definitions of their neighbourhoods (2007, pp. 172-173).

This is telling advice for any researcher looking to consider neighbourhoods and confirms the notion that no two neighbourhoods are the same and the way residents conceptualise them are multifarious; they differ in size, nature, and appearance for each resident. While it may not be possible "to apply a meaningful definition of neighbourhood in the practice of empirical research" (2007, p. 173) Jenks and Dempsey show through their research "that it is possible to capture the total area that residents consider to be their neighbourhood by employing objective delineation methods" (2007, pp. 172-173).

Alidoust, A., C. Bosman, G. Holden, H. Shearer, and L. Shutter. "The Spatial Dimensions of Neighbourhood: How Older People Define It." Journal of Urban Design 22, no. 5 (2017): 547-67.

Abstract: This paper seeks to develop our understanding of neighbourhood boundaries, as defined by older people. Using interview and mapping methods, research revealed the significance of three factors – built-form pattern, spatial distribution of the social networks and personal attributes – as contributing to how older people define their neighbourhood boundaries. Research findings highlighted discrepancies between residents' perceived neighbourhood boundaries and the statistical unit used as the neighbourhood proxy in most neighbourhood-related research. The findings suggested that the statistical information about the neighbourhood effects on older people does not necessarily reflect the lived experience of older people in their perceived neighbourhood.

Further research that combines resident interviews with spatial mapping as a way of trying to understand the subjectivity of neighbourhoods was developed by Alidoust, Bosman, Holden, Shearer, and Shutter (2017). This Australian study adopts a qualitative approach to define neighbourhood boundaries by interviewing 54 residents, aged 65 years or over. The interviews were semi-structured and were followed up by a mapping exercise.

The target demographic of over 65's was tied in to the "growing body of research has demonstrated the ways in which a neighbourhood affects older people, especially their health and wellbeing" (Alidoust et al., 2017, p. 554) .

The data was coded "to highlight themes and sub-themes that characterize how participants defined their neighbourhood boundaries. The coding process involved an immersion into the data,

applying both inductive and deductive approaches. This means that the coding process not only focused on testing themes extracted from the literature (deductive approach), but it also allowed new themes to emerge (inductive approach)" (2017, p. 554).

Key findings included that the majority of participants identified nodes as the feature that most defined the boundaries of their neighbourhoods. Alidoust et al. (2017) go on to comment that:

> some participants… referred to the nodes as having social functions which included the places where they socialized with others. Others, particularly those living in conventional suburbs, referred to the nodes as having physical functions, which included the places where they undertook their day-to-day activities such as walking or shopping. The number and spatial distribution of nodes referred to by each participant were also found to be indicative of the size of participants' perceived neighbourhood boundaries. The research here suggested that the function (whether social or physical), number and spatial distribution of the nodes referred to by participants were influenced by some factors, including the built-form pattern in which the participants were living, the spatial distribution of their social networks, and their own social and physical attributes (p. 554).

The researchers ultimately conclude that their findings are in line with the five elements of urban environments introduced by Lynch back in the 1960's which include paths, edges, districts, nodes and landmarks as defining features shaping the edges of perceived neighbourhoods.

Talen, E., & Shah, S. (2007). Neighborhood Evaluation Using GIS: An Exploratory Study. *Environment and Behavior, 39*(5), 583-615.
Abstract: This article presents a new approach to the investigation of resident views of neighborhood using Geographic Information Systems (GIS). GIS, an interactive mapping and analysis tool, allows multiple layers of information about a given place to be represented simultaneously, thus exposing the interactions among layers, and allows the conception of neighborhood to be represented in greater complexity. The results of a study of the neighborhood evaluations of 18 respondents in Urbana, Illinois, in which GIS was used to facilitate neighborhood evaluation, are described and analyzed.

Talen and Shah (2007) were concerned to work beyond the limitations of the Likert scale test, and to involve the respondents in the research: "With the help of a GIS facilitator, residents were able to ask questions, manipulate data, add data, or use more than one data layer to construct the most meaningful representation of different aspects of their neighborhood" (p. 585). However, Talen and Shah failed to contextualise their research and claimed they were offering a new approach to the investigation of resident views of neighbourhood using Geographic Information Systems (GIS) in spite of previous GIS mapping studies by the likes of Coulton et al.

(2001); and Jenks and Dempsey (2007). Their study was also small in scale, having only 18 participants.

The study was, however, interesting because "for those respondents who were able to delineate neighbourhood boundaries, the size of the defined area varied significantly from 10 acres to about 400 acres" (Talen & Shah, 2007, p. 599). This aligns to the finding by Minnery, Knight, Byrne, and Spencer (2009) that neighbourhoods may be best conceptualised by considering their core rather than their peripheries. Talen and Shah continued to describe this phenomenon, stating:

> "the elements used to define neighborhood varied and included physical features such as street pattern and housing type, social aspects ranging from strong friendships to lose ties resulting from similar social levels and lifestyles, individual activity patterns like walking areas, sentiments of place attachment, or characteristics such as common history. These varying perceptions reflect the complexity of neighborhood and reemphasize Bardo's (1984) conception that a neighborhood can serve multiple functions for different people and therefore have multiple meanings (Talen & Shah, 2007, p. 599).

A further interesting methodological feature of the study was the way that conditioned responses were discouraged by restricting the use of the term neighbourhood on the part of the GIS facilitator, "using instead your local area or the area where you feel most comfortable". The responses were recorded by drawing either on existing maps or on a new map put together by the resident. Features and areas were annotated by the resident directly, or dictated to the facilitator (Talen & Shah, 2007, p. 598).

Talen and Shah (2007) also summarised their findings as follows:

- Identification of what is liked and disliked about neighborhood—that is, incorporating the explicit use of neighborhood preference—seemed to be less conducive to GIS representation. This was especially true of disliked elements, which often consisted of personal or non-geographically specific components.
- The geographic realm of neighborhood differed not only by respondent but also by the type of element being associated with conceptions of neighborhood. This was seen in the difference between the widely cast activity area for commercial activities, as opposed to the much more localized area identified for parks and schools. This could indicate that some neighborhood elements have a more localized meaning, while others do not.
- The responses seemed to indicate that scale is an important issue in neighborhood evaluation. Although there was perhaps no clear pattern that emerged, it seemed that the evaluation of neighborhood changed in relation to a "zoomed in" or "zoomed out" perspective of the region. It is unclear whether scale functions as

> cause or effect in the evaluation of neighborhood, only that evaluative aspects were not scale independent (p. 610).

Campbell, E., Henley, J., Elliott, D., & Irwin, K. (2009). Subjective Constructions of Neighborhood Boundaries: Lessons from a Qualitative Study of Four Neighborhoods. Journal of Urban Affairs, 31(4), 461-490.
Abstract: This article explores the boundaries of neighborhoods as subjectively constructed by 37 adolescents and 33 parents across four census-defined block groups in a Western city. We examine the degree of consensus among participants on the spatial boundaries of their neighborhoods, the stability of participants' subjectively constructed neighborhood definitions, and the overlap between subjectively constructed definitions and census block group and tract definitions. Through an analysis of qualitative interviews, we isolate four factors that appear to influence how participants define their neighborhood boundaries: physical and institutional characteristics of the neighborhood, its class, race, and ethnic composition, perceived criminal threats from within and outside the neighborhood, and symbolic neighborhood identities. These factors can operate to facilitate or compromise consensus and stability about neighborhood boundaries and identity. The study findings are exploratory but suggest several avenues for further investigation into how parents and adolescents construct neighborhood boundaries and the possible influences that subjective neighborhood definitions have on families.

Building on the work of Coulton et al., Campbell, Henley, Elliott, and Irwin (2009) open by referencing Chaskin (1997) and find both consensus and dissensus around subjective definitions of neighbourhood boundaries. They suggest that boundary definitions are "shaped by contextual forces and personal experiences" (p. 482).

The study examines subjective neighbourhood boundaries using a cognitive mapping procedure conducted during one- to two-hour face-to-face qualitative interviews with 37 adolescents and 33 parents who live in four census-defined block groups in Denver, Colorado. They consider "the degree of consensus across and stability within resident-defined neighborhoods and the comparative similarity between resident-defined and administratively defined areas" (p. 473).

The interviews were semi structured and "the trained interviewer was guided by a set of focal concerns including neighborhood definition, boundaries, and identity; neighborhood places, organizations and activities; schooling experiences; parenting strategies; and social ties" (p. 474). Coulton et al. describe their mapping process as follows:

> Participants began their interviews by drawing the boundaries of their neighborhoods, as they perceived them, on maps provided by interviewers. Throughout interviews, participants used these "cognitive maps" to locate important activities, locations, and people and to indicate whether participants considered emerging topics (incidents, crime, problems) to be located inside or outside their neighborhoods. Adjustments to the maps were noted to reflect shifts in participants' boundaries throughout the interviews. All interviews were audio recorded, transcribed, and content coded, and analyzed with the aid of an electronic software package designed for the analysis of qualitative data (NVivo, 2006). An initial list of

> topical codes was generated to coincide with the primary concerns of the interview protocol. Additional codes were generated inductively by the researchers, and all interviews were recorded with the full list of coding categories. Each interview was coded by a minimum of two coders. Coding differences were resolved through discussion with the original coders and the project director (2009, p. 475).

By comparing residents' maps to one another and to census tracts and block groups, Coulton et al. "considered three aspects of neighborhood boundaries: boundary consensus across residents, within-participant stability of boundaries, and correspondence of residents' subjective maps with administrative boundaries (2009, p. 475). In analysing several factors that influenced participants' neighbourhood definition, they found that residents "emphasised physical and institutional characteristics, race and class characteristics, fears of crime, and symbolic notions of neighborhood when determining their neighborhoods' boundaries" (Campbell et al., 2009, p. 478). In turn, Campbell et al. concluded boundary definitions by residents were predominantly "shaped by contextual forces and personal experiences" (2009, p. 482).

Minnery, J., Knight, J., Byrne, J., & Spencer, J. (2009). Bounding Neighbourhoods: How Do Residents Do It? Planning Practice & Research Planning Practice & Research, 24(4), 471-493.
Abstract: The 'neighbourhood' holds an iconic position in planning, yet there has been longstanding empirical criticism and debates about both the use and intellectual underpinnings of the concept. Despite this, it continues to provide a focus for local area planning, local policy interventions and urban design approaches, including in new urbanism. Neighbourhoods may be given physical dimensions so the boundaries that distinguish what is within and what is outside each neighbourhood can be defined. This paper asks what we can learn about such localities through a better understanding of how residents themselves actually identify these boundaries. It derives a series of questions that are addressed through analysis of resident perceptions of neighbourhood boundaries in an inner-city fringe suburb in Brisbane, Australia. The research confirmed many previous concerns about defining neighbourhood boundaries and that many residents were uncertain of the physical boundaries of their neighbourhoods.

Minnery et al. (2009) state that "the idea of the 'neighbourhood' has an iconic position in planning" (p. 472) which has shaped both planning theory and planning practice for many decades. While acknowledging its contested history across a range of disciplines, they elect to focus on two key approaches to neighbourhood; *neighbourhood as place* and *neighbourhood as an urban planning technique.* Neighbourhood as place is aligned to the 'spatial unit' approach utilised by Chaskin (1997, 1998), Coulton et al. (2001), and Jenks and Dempsey (2007) and is largely focused on identifying neighbourhood boundaries. This is not to say that the social aspects of neighbourhood are excluded. To clarify this issue Minnery et al. (2009) comment:

> The focus in this paper is on the spatial boundaries of neighbourhoods, which may be associated with some important social features, but the social characteristics are not the basis for our discussion of neighbourhoods and we avoid discussion about 'community' (p. 474).

The second approach to neighbourhood, *neighbourhood as an urban planning technique,* focuses on the idea of neighbourhood units; a "neighbourhood unit is seen as a mechanism for planning the integration of land uses, facilities, movement systems and residents within an area defined by some rational planning metric" (p. 474). In this approach, "boundaries are defined using rational calculable factors such as walking distance or school catchment limits" (p. 474). Minnery et al. (2009) also reference Kallus and Law-Yone (1997) where the neighbourhood is 'an architectural and planning idea' and Jenks and Dempsey (2007) who call this the 'functional neighbourhood'.

Minnery et al. (2009) conducted 516 questionnaires in a master-planned village in Brisbane, Australia; "the survey obtained basic demographic and household information, information on the household's shopping and recreational locations, and some information about peoples' opinions of the area" (p. 477). Of these respondents, 322 then completed a mapping exercise where they were asked the following question alongside an A3 photocopy of a commonly used commercial street directory map (see figure twelve):

> The idea of 'neighbourhood' is important but is sometimes hard to define. We are interested in what you consider to be your neighbourhood. Can you please show us on the map the boundaries of what you consider to be this 'neighbourhood'?

Figure 12: Neighbourhood boundaries digitized from respondents' maps (Minnery et al., 2009, p. 481)

The questionnaire and the mapping exercise were designed to address the following key questions:

- Is the neighbourhood boundary a communal concept over which there is general agreement or is it an imperfect aggregation of individual ideas?
- What shapes and forms do people use to define the boundaries of their neighbourhood?
- What cues are used to define this boundary?
- What can be identified about the relationships between the neighbourhood boundary and the social and demographic characteristics of the residents?
- How do the neighbourhood boundaries relate to the scale assumptions of the neighbourhood unit and new urbanism? (Minnery et al., 2009, p. 475).

A key finding was that:

> Just over one-half (the 51–60 percentile category) of the respondents' neighbourhood areas overlapped in the focal area. In other words, there was 'core' neighbourhood area shared by over one-half of the respondents, despite their lack of agreement on the extent of the boundaries; and this shared core approximated the area defined by the roads and physical boundaries (Minnery et al., 2009, p. 482)

This led Minnery et al. (2009) to conclude that neighbourhoods may be best conceptualised by considering their core rather than their periphery (p. 489), stating that "while boundaries may be important elements of neighbourhoods, they are neither simple nor communally agreed nor easily defined by residents" (p. 490). They also acknowledge that "the notion of a boundary is fundamental to place-based policy interventions (p. 490); herein lies the complication or the disjoint between resident versus planning definitions of neighbourhood. Residents "seem to have a far more nuanced view of neighbourhood boundaries than do planners and other policy-makers" (p. 491). As a result, Minnery et al. (2009) caution that "for planners, the research flags a clear need to be cautious in assuming coherence in the way residents define the boundaries of neighbourhood-based planning interventions" (p. 490). The primary result they identify in their research is that it is in line with "other findings that neighbourhood boundaries are difficult to define, are often based on individual rather than group constructs, and are less related to natural and road cues than planners normally suppose" (Minnery et al., 2009, p. 489).

Delmelle, E. (2016). Mapping the DNA of Urban Neighborhoods: Clustering Longitudinal Sequences of Neighborhood Socioeconomic Change. Annals of the American Association of Geographers, 106(1), 36-56. doi: 10.1080/00045608.2015.1096188

The spatial pattern of longitudinal trends in neighborhood socioeconomic dynamics has long been implied by traditional urban models dating back to the Chicago School; however, empirical studies beyond the mapping of change between two points in time are surprisingly limited. This article introduces a methodology to the study of spatial–temporal patterns of neighborhood socioeconomic change. The approach first involves establishing discrete classes of neighborhoods following a k-means clustering procedure and then applies a sequential pattern mining algorithm to determine the similarity of longitudinal sequences. Sequences are then clustered to derive a typology of neighborhood trajectories. The method is employed in an empirical analysis of neighborhood change from 1970 to 2010 for all census tracts in the cities of Chicago and Los Angeles. In Chicago, this time period was marked by a sustained process of center city revitalization through two distinct upgrading processes, whereas in Los Angles, neighborhood upgrading largely came in the form of suburban upgrading. The spatial structure of neighborhood dynamics in Chicago resembled patterns described by Chicago School theorists, whereas the dynamics of Los Angeles deviated from this ordered regularity. Key Words: cluster analysis, GIS, neighborhood change, sequential pattern analysis.

Within the lens of neighbourhood change research (Somerville, Van Beckhoven, & Van Kempen, 2009; Tunstall, 2016), Delmelle (2016) considers the spatial patterns of neighbourhood

dynamics in Chicago and Los Angeles by conducting a longitudinal study from 1970 to 2010 using "decennial census data as a temporal unit of analysis" (p. 54) and GIS mapping data. Delmelle (2016) offers an innovative "methodological approach to visualizing and summarizing longitudinal trajectories of neighborhood socioeconomic change based on sequential pattern mining techniques" (p. 53) with the aim of classifying "the most common pathways of change and to provide a spatial linkage of where these dynamics occur within the urban environment" (p. 53). This research methodology may be a complementary process to the more subjective based research where residents are asked directly to define their neighbourhoods. It may also assist alongside post-occupancy research, such as the theoretical formula developed by Churchman and Ginosar (1999). A complementary study by Spielman and Logan (2013) uses 'high-resolution disaggregate spatial data' to develop detailed maps and statistical descriptions to summarise the microdata from censuses in a quest to define and understand neighbourhoods.

Lohmann, A., & McMurran, G. (2009). Resident-Defined Neighborhood Mapping: Using GIS to Analyze Phenomenological Neighborhoods. Journal of Prevention & Intervention in the Community, 37(1), 66-81. doi: 10.1080/10852350802498714

Using a natural quasi-experimental pre-test=post-test design, residents in randomly selected homes in a suburb of Los Angeles were surveyed about their perceptions of their neighborhoods with respect to cohesion and sense of community. Responses from the pre-test surveys—administered before the construction of a freeway that would bisect the city—were compared to the responses from the post-test survey six years later, administered two years after completion of the freeway. Respondents living adjacent to the new freeway—residents who experienced a fourfold increase in the average decibel levels in their neighborhoods since the freeway opened—reported both a lower sense of community and smaller neighborhood areas as compared to residents not living adjacent to the freeway and as compared to the results from the pre-test. The analysis of the data incorporated geographic information system (GIS) software to allow for the analysis of phenomenological neighborhoods—neighborhoods as defined by respondents. This Resident-defined Neighborhood Mapping methodology permitted us to analyze neighborhoods as the respondents outlined them, not as they were preconceived by someone outside the neighborhood. It is suggested that this new methodology may prove useful in advancing the field of neighborhood research by detecting neighborhood-level change that traditional methods may miss.

An earlier study which also used a longitudinal study was Lohmann and McMurran (2009). They surveyed randomly selected households in Los Angeles in 1998 and again in 2004 about their perceptions of their neighbourhoods with respect to cohesion and sense of community. Much of this study was intended to be shaped by the fact that the first survey was administered before the construction of a freeway, that would bisect the city, and that the second was administered two years after completion of the freeway. However, the research is also thought-provoking because it "presents a method of assessing neighborhood qualities using resident-defined neighborhood boundaries as opposed to researcher-, census-, or politically-imposed boundaries that may have little relevance and meaning to the residents living in those areas" (Lohmann & McMurran, 2009,

p. 78). The main flaw identified by the study was the idea that neighbourhood research of this nature is “best suited to analyze phenomenological neighborhoods, and not artificially bounded, conceptualized, or defined areas that most often serve as surrogates for the neighborhoods in the research” (Lohmann & McMurran, 2009, p. 79).

3. How are Neighbourhoods defined and referred to in New Zealand literature and urban policy and strategy?

This section provides a summary of the key practical definitions of neighbourhoods from both literature and NZ urban policy and strategy. It also identifies the ways that a neighbourhood development approach has been adopted in NZ urban policy and strategy, alongside comment on if and how research has been used to inform these policies.

Definitions are largely absent from most reports and studies related to neighbourhood in New Zealand. Only Beacon Pathway has attempted to define neighbourhood (Bijoux, Lietz, & Saville-Smith, 2007). They state:

> It is tempting to prescribe neighbourhoods in terms of a local unit consisting of a set number of dwellings but research into neighbourhoods shows that the size and boundary of neighbourhoods varies from society to society. Moreover, the residents who live within local areas self-define neighbourhood boundaries. In some cases, there is a high degree of resident consensus around the boundaries of neighbourhoods, in others the boundaries of neighbourhoods are much more amorphous and ambiguous. What is clear, however, is that neighbourhoods are spatial nodes in which households and dwellings are clustered. Neighbourhoods provide for residential functions and may facilitate non-residential functions through a built environment that allows for the interconnection and mutual use of infrastructure and services among neighbours and neighbouring dwellings. Neighbourhoods include the connecting spaces between individual dwellings, other structures and to the wider city system and are arenas of casual interaction as well as being a key site of the routines of everyday life. The boundaries of neighbourhoods are loosely defined but typically extend beyond a household's directly adjacent neighbours (Bijoux et al., 2007, p. 5; see also Saville-Smith, 2008, p. 34).

This was a paper for UPE7: World Class Cities – Environmental Impacts and Planning Opportunities, January 2007. The paper does not make any specific reference to previous research on the concept of neighbourhood. However, it appears to be influenced by the literature.

For Beacon Pathway and the Foundation for Research, Science and Technology, neighbourhoods have some generic characteristics, but the sustainability of particular neighbourhoods has to be assessed on a case-by-case basis (Saville-Smith, Dwyer, & Warren, 2009). As part of this study Saville-Smith et al. (2009) also claim to have "identified three broad approaches to neighbourhoods over the last century" (p. 5), however this is not supported by any references; the bibliography does not include any theoretical work on neighbourhood concepts.

The three types of definition the authors describe seem to be loosely imitating the categories developed by Chaskin (1997, p. 532), although this work is not cited in their bibliography. They found that none of the definitions they identified "proved entirely satisfactory" (p. 5) and comment:

> The third definition for instance suggests that neighbourhoods only exist if there are positive interactions between and identification with the individuals living within a particular locality. This is clearly not a robust definition of a neighbourhood. Even in localities in which there are deep tensions and conflicts, residents frequently refer to a 'neighbourhood'. Indeed, recent research into residential movement and attachment in New Zealand revealed that while neighbourhood boundaries are somewhat fluid, there are frequently only marginal differences in the neighbourhood boundaries identified by residents irrespective of their sense of attachment or satisfaction with the neighbourhood[2].
>
> Similarly, attempts to define neighbourhoods in terms simply of the activities that are carried out within them, or according to pre-determined spatial size or number of dwellings also tends to be futile. Neighbourhoods are highly dynamic. The functions of and activities carried out in neighbourhoods vary from one neighbourhood to another, from city to city, from time to time, and according to the different social and economic roles of the diversity of people living in them.
>
> In addition, defining neighbourhoods as simply city precincts with no reference to the interrelationships and interactions between people and households fails to capture the way in which neighbourhoods generate an identity of place. Beacon's NSF (Neighbourhood Sustainability Framework) recognises that neighbourhoods have spatial boundaries although these tend to be fluid. It recognises that neighbourhoods are the site of a range of activities, although these may vary over time and between neighbourhoods. The NSF also recognises that neighbourhoods are sites of interaction although the quality of 'neighbouring' may vary. So too may the attachment and sense of identity that people and households have in relation to the neighbourhoods in which they live (Saville-Smith et al., 2009, pp. 5-6).

Poland and Maré (2005) in considering how to define geographic communities for Motu Economic and Public Policy Research advocate for considering rural and urban neighbourhoods in different ways, commenting that "an analysis of a neighbourhood using city data may mean information on rural areas is aggregated with information from the closest city. If this is the case,

[2] Walton, Murray, and Thomas (2008), in a survey of 369 Auckland residents, recognise "that people trade-off elements of their environment against each other for their overall neighbourhood satisfaction" (p. 418)

information about rural communities that may be of interest will be lost amongst information on cities" (p. 11). They don't discuss neighbourhood definitions further.

In a three-part mixed-method study (involving GIS mapping, in-depth interviews with 128 parents of young children (up to 10 years of age) living in Auckland neighbourhoods, and telephone-based surveys with 877 parents/caregivers of young children living in known meshblocks in Waitakere and North Shore Cities) of neighbourhood environments that support families, Witten, Penney, Faalau, and Jensen (2006) found natural and built characteristics of neighbourhoods are valued by parents and/or which supported parenting (pp. 4-5). These included: local streets and shops that were primarily used by local people; cul-de-sacs that provided spaces for children to play and a common site for neighbourly exchanges; access to open outdoor spaces, particularly natural landscapes such as bush, beaches and wetlands; a centrally positioned shopping and service hub or 'village' that catered to most household needs; access to a core set of resources, medical, educational and retail; public spaces that served as community meeting places, such as parks, primary schools and cafés; co-location of child-related facilities; local places that were experienced as pleasant and safe environments for walking; distinct and visible boundaries that enhanced a neighbourhood's identity; a residential locality that was not bisected by main roads. The research also found social characteristics of neighbourhoods that were valued by parents and/or supported parenting, including: neighbourliness; stability and familiarity; safe community meeting places; community events held in local venues; a network of known parents who could be called upon for support; regularly seeing people of the same ethnicity in local places; local schools perceived by parents to be good; participation and strong local identification. Although this study does not attempt definition, the characteristics it uncovers could serve as substitutes for definition. They are particularly useful because they were generated by residents rather than theorists, and because they encompass both spatial and social aspects.

Later work by Carroll, Witten, and Kearns (2011); and Carroll, Witten, Kearns, and Donovan (2015) is not concerned with defining the concept of neighbourhood either, but it is useful in showing how a particular group within the community – children – use and perceive their neighbourhoods. Carroll, Witten, Kearns, and Donovan (2015) use trip diaries, child-led walk-along interviews, and discussion groups to research children's use and experiences of nine suburban and inner-city neighbourhoods in Auckland.

Also focusing on particular groups within the community Ishizawa and Arunachalam (2014) examine the spatial clustering of the four largest ethnic minority groups — Chinese, Indian, Maori

and Samoan — in Auckland using three theoretical models, the immigrant enclave, ethnic community and place stratification models (p. 417). This study seems to use neighbourhood and community interchangeably. It is useful, however, in bringing models of neighbourhood from other disciplines into the New Zealand discourse.

Rather than focusing on demographic or ethnographic groups, Stevenson, Pearce, Blakely, Ivory, and Witten (2009) focus on consider the relationship between neighbourhoods and health. They conduct a literature and find six key themes in linking neighbourhoods and health research in New Zealand (pp. 218-219):

- Neighbourhood context appears to matter.
- Neighbourhood health strongly varies when neighbourhoods are stratified by census-based indices.
- Considerable effort has been made to examine the potential health effects of neighbourhood community resources (e.g. access to greenspace, supermarkets etc.), and this research base is better developed than in most other countries. Similarly, there are important differences between objectively measured indices of access to community resources and local resident's perceptions of their availability.
- Better locational access to neighbourhood health service provision (e.g. general practitioners) tends to improve the utilisation of these services and subsequent health outcomes, although this trend is not consistent for all social and ethnic groups.
- Social connections are based around the people and places (family, schooling, and workmates) that are part of the people's everyday lives.
- Macroeconomic changes and government-led adjustments to the health-care system can have unintended implications for health outcomes and health care at the neighbourhood level.

They conclude that "improving our understanding of the mechanisms linking neighbourhood characteristics to individual-level health status provides considerable potential for improving population-level health outcomes" (Stevenson et al., 2009, p. 220). The same could be said for other areas of neighbourhood research as it overlaps with related urban studies fields.

In policy and strategy in New Zealand (see Appendix One), concepts of neighbourhood are rarely discussed or defined. More commonly, the tern neighbourhood is mentioned. For example in the Auckland Unitary Plan the purpose of the Residential – Single House Zone is identified as being "to maintain and enhance the amenity values of established residential neighbourhoods in a number of locations" (Auckland Council, 2017). The Hamilton Operative District Plan refers to an 'immediate neighbourhood area' (Hamilton City Council, 2016, 4.2-2) when discussing the discouragement of walking and cycling because of the travel distances involved but do not define what this term means. The Kāpiti Medium Density Housing Design Guide also mentions

neighbourhood is passing, commenting that "in order to create safer and friendlier neighbourhoods, it is important to achieve a positive interface between site development and the adjacent street" (Kāpiti Coast District Council, 2015, D1.1-15). Tauranga City Council (2013, Section 14B) define neighbourhood centres as "areas providing opportunities for business, civic, cultural and entertainment uses to service a local neighbourhood" Other terms used across policy and strategy include neighbourhood character, neighbourhood development[3], and neighbourhood networks.

Picking up on the idea of neighbourhood networks it seemed pertinent to also consider how walkable catchments are referred to in NZ urban policy and strategy (see Appendix Two). In line with Australian State Government policies, New Zealand's Ministry for the Environment (2006) consider ped-shed Analysis to be a mapping technique which calculates the population catchment within a five- to 10-minute walk from an activity, node, or urban amenity. In line with this, NZTA (2009) identify four key methods of measuring walkability through desk-top exercises, on-site analysis by pedestrians, modelling based on perceptions surveys, and accessibility assessments based on thematic maps which include primary destinations such as shops, schools and medical services (p. 11). For example, Auckland Council's Research, Investigations and Monitoring Unit (RIMU) (2013) sought to test if an 800-metre radius walkable catchment area was representative of the walking distance for passengers to three train stations in Auckland; passengers arriving at New Lynn, Glen Innes and Mt Albert train stations were surveyed in March 2012. The results from the three train station surveys showed that: "more than 50 per cent of respondents walked further than 800 metres to get to a train station; more than 15 per cent of respondents walked further than 1500 metres to get to a train station; and walking is was the most significant mode of travel for trips less than 2000 metres" (2013).

This research supports that of Ker and Ginn (2003) who conducted modal arrival analysis in five Perth train stations and concluded that "passengers are willing to walk substantially further, at both ends of their journeys, than the conventionally-assumed 400 or 800 m" (p. 79). Similarly, Sandalack et al. (2013), in considering 'neighbourhood type and walkshed size' in Calgary,

[3] In offering a history of neighbourhood planning, Rohe (2009, p. 224) also makes the connection between neighbourhood development and transit-oriented development.

determined that neighbourhood layouts, rather than distances are significant in determining walkshed sizes. They are also "influenced by the presence of major barriers such as collector roads, railway lines and water bodies, and by neighbourhood edge definition" (Sandalack et al., 2013, p. 249). A grid block pattern was found to have the largest walkshed size in Calgary, followed by a warped grid block pattern. The curvilinear block pattern was the least permeable (Sandalack et al., 2013, p. 249). Using these methods in tandem with revealed preference studies may reveal considerable insights in to how neighbourhoods in New Zealand are used and understood spatially, alongside their socio-cultural meanings to and impacts on residents.

It is useful to also draw in some Australian literature, given the proximity: Concepts of neighbourhood are referred to in much greater detail in Australian planning documents (see Appendix Three) than in New Zealand ones. In South East Queensland (Council of Mayors South East Queensland, 2011; Queensland Department of Infrastructure and Planning, 2009) a focus on 'Next Generation Planning' and 'Affordable Living' led to a focus on neighbourhood design and, in particular, designing walkable neighbourhoods (Council of Mayors South East Queensland, 2011, p. 3). The connection between walkability and neighbourhoods are echoed in the planning documents of Perth and Western Australia as well (Western Australian Planning Commission, 2007, 2008, 2010). Five-minute walking circles are a popular descriptor when considering walkable catchments or neighbourhoods (Council of Mayors South East Queensland, 2011; Western Australian Planning Commission, 2015).

Neighbourhood categorisations are more common in Australian planning policy and strategy (Council of Mayors South East Queensland, 2011). The State of Queensland (2016) consider both suburban and neighbourhood locations to range between 30–80 dwellings per hectare (net) or greater (p. 25). They also comment that "there are no absolute rules for the size, shape and design of a neighbourhood" (The State of Queensland, 2016, p. 27)., adding, however, that "the neighbourhood is often defined by how far you want to take a short stroll or cycle, whether it is to visit friends, buy a loaf of bread or go to the local park" (p. 27). In this context, neighbourhoods are also linked in Australian planning documents to concepts of liveability and quality of life (The State of Queensland, 2016, p. 4; Western Australian Planning Commission, 2015).

4. Conclusion

This review found that research in to neighbourhoods generally fell in to three categories; studies which define neighbourhoods as spatial units, studies that consider neighbourhoods to be a social construct, or studies which consider the concept of neighbourhoods to be a combined socio-spatial response to our evolving understanding of the urban condition.

Concepts of neighbourhood have followed a trend from theoretical to empirical studies. Theorists throughout the 1980s and 1990s attempted to create workable theories that defined neighbourhood. They found the term escaped definition. Empirical researchers, from the 1990s to the present day, explored particular places to find phenomena that could be applied generally. Despite a variety of attempts to define neighbourhood it is widely accepted that neighbourhood is an amorphous concept that is variously applied to entire suburbs, to walkable areas or, most often, to an undefined spatial area. Attempting a definition of neighbourhood in New Zealand may be pointless, given the failure of such attempts elsewhere, and the trend away from theoretical definition and towards empirical studies of how neighbourhood is perceived by residents.

In this literature review, key ideas considered alongside concepts of neighbourhood included neighbourhood planning (development, growth, and transit-oriented development), neighbourhood units and boundaries, neighbourhood walkability, neighbourhood (and in some cases residential) satisfaction, and neighbourhood change. The subjective field of neighbourhood perceptions warrants further study, and mixed methods research that combines either interview or survey data with GIS mapping data has grown in popularity. Such studies often contain the comparison of objective with subjective measures to understand the neighbourhood as a socio-spatial unit that has both physical and mental qualities. This also facilitates easier comparison with planning policy and strategy where subjective neighbourhood boundaries may differ from those delineated by local or regional councils. Understanding neighbourhood change within this subjective context is another area that may lend itself to longitudinal mixed methods research.

Appendix 1: References to Neighbourhood in New Zealand Policy and Strategy

Auckland Unitary Plan (2016)	H3 Residential – Single House Zone H3.1. Zone description The purpose of the Residential – Single House Zone is to maintain and enhance the amenity values of established residential neighbourhoods in a number of locations. Business – Neighbourhood Centre Zone H12.1. Zone description The Business – Neighbourhood Centre Zone applies to single corner stores or small shopping strips located in residential neighbourhoods. They provide residents and passers-by with frequent retail and commercial service needs.
The Second Generation Plan for Dunedin (2015)	Objective 15.2.4 Subdivision activities and development maintain or enhance the amenity of the streetscape, and reflect the current or intended future character of the neighbourhood (p.5)
Christchurch District Plan (2015)	Neighbourhood centre means: the Commercial Core Zone at Addington, Aranui, Avonhead, Bishopdale, Bush Inn/Church Corner, Colombo/Beaumont, Cranford, Edgeware, Fendalton, Ferrymead, Halswell, Ilam/Clyde, Merivale, New Brighton, North West Belfast, Parklands, Prestons (emerging), Redcliffs, Richmond, Stanmore/Worcester, Spreydon (Barrington), St Martins, Sumner, Sydenham, Sydenham South, Wairakei/Greers Road, West Spreydon (Lincoln Road), Wigram (emerging), Woolston and Yaldhurst (emerging); the Commercial Local Zone at Beckenham and Wigram; and the Commercial Banks Peninsula Zone at Lyttelton and Akaroa. Neighbourhood plan in relation to the Meadowlands Exemplar Overlay, means a plan covering an area of no less than 8 hectares which identifies the expected residential development for that land. Table 7.5.12.1 Explanation of movement and place categories: Movement function category Explanation b. Minor arterial roads: Roads that provide connections between major arterial roads and the major rural, suburban and industrial areas and commercial centres. Generally, these roads cater for trips of intermediate length. They will generally connect to other minor arterial roads and major arterial roads and to collector roads. Arterial roads provide the most important movement function and as such require the highest degree of movement function protection. They may also define the boundaries of neighbourhood areas. c. Collector roads: Roads that distribute and collect local traffic between neighbourhood areas and the arterial road network. These are of little or no regional significance, except for the loads they place on the arterial road network. They link to the arterial road network and act as local spine roads, and often as bus routes within neighbourhoods, but generally do not contain traffic signals.

	8.2.2.10 Policy - Comprehensive residential development In the Residential New Neighbourhood Zone, encourage comprehensive residential developments that are in accordance with the relevant outline development plan as a means of achieving co-ordinated, sustainable and efficient development outcomes.
Hamilton Partly Operative District Plan (2016)	Relationship between Subdivision Layout and roading design. The predominant form of suburban subdivisions has resulted in a curvilinear street pattern, with a large number of cul-de-sacs and few through streets. This has implications for the integration of suburbs and communities and increases reliance on motor vehicles. Amenity values are reduced for these communities in terms of longer car trips to access services outside the immediate neighbourhood area and the discouragement of walking and cycling because of the travel distances involved (4.2-2). Objective 4.4.1: Opportunities for Subdivision To enable land to be subdivided in a manner which accommodates a wide range of activities while promoting the amenity values of the neighbourhood and maintaining opportunities for future utilisation (4.4-1). 4.1.5 All Residential Zones b) Good standards of amenity create a pleasant and attractive living environment, and in doing so contribute to wider neighbourhood amenity. Residential amenity means the many qualities and attributes that allow people to enjoy living where they do – such as visual attributes, sunlight, good access, low noise levels and safety (4-3).
Choosing Futures: The Community's Vision for the Kāpiti Coast District Community Outcomes (2012)	POLICY 4 - SITING OF ACCESSORY BUILDINGS Avoid or minimise the adverse effects of the location of accessory buildings on the streetscapes of the residential environments. The location of accessory buildings is a significant factor influencing the visual amenity of the street frontage of neighbourhoods. Accessory buildings which are farther forward than the dwelling are more visible to the street. They have the potential to have an adverse visual effect if they are not compatible with the principle building, normally the dwelling. Accessory buildings which are of the same or similar architecture as the principle building will guarantee compatibility and will contribute to maintenance of the visual amenity of the local neighbourhood (C1-4).
Kāpiti Coast Medium Density Housing Guide: Best Practice a Design Guide for Developers, Planners, Architects and Others (2015)	In order to create safer and friendlier neighbourhoods, it is important to achieve a positive interface between site development and the adjacent street. Residences should be oriented to front public spaces, should be located in close proximity to the front boundary and main entrances should be provided directly and conveniently off the street (D1.1-15).

City of Lower Hutt District Plan (2004)	Chapter 4A - General Residential Activity Area Page 47 of 54 Buildings and spaces that are designed and planned in a coherent and integrated manner, contribute positively to the character of the neighbourhood in which they are located.
Porirua City District Plan (1999, updated 2016)	The "amenity" of the Suburban Zone can therefore be seen as a number of interrelated factors which individually may be relatively unimportant in relation to the overall qualities and conditions constituting the amenities of the area. A proposed change in some of those qualities and conditions may affect only a few neighbouring occupiers. Other qualities and conditions may be important or even fundamental to the amenities of that neighbourhood and a proposed change in them may affect appreciably all the persons who enjoy the amenities of the neighbourhood (C3-8). In addition to the existing suburban shopping centres, the proposed development of the Aotea Block is to include a small new Suburban Shopping Centre area in the eastern part of the block, and also a new Aotea Mixed Use Policy Area to the east and south of Aotea College. The latter policy area will include an area of neighbourhood shops but may also include a range of other community facilities such as a nursery, cultural centre and a tertiary institution (C3-14).
Tauranga City Plan (2013)	Residential zones 14A.1.3.1 Policy - Activities in the Residential Zones By providing for a variety of residential activities to establish in Residential Zones while: a) Providing for a scale of home-based businesses, including homestays, that are of an ancillary and secondary nature to the residential activity on the site and do not create off-site effects on the residential neighbourhood, character, amenity and the transport network. 14B.1.3.2 Policy - Density of Development - Medium Density Development in the Suburban Residential Zone While recognising that the primary purpose of the Suburban Residential Zone is for low density independent dwelling units, providing for medium density development considered on a case by case basis to ensure the efficient use of residential land, where: a) The development is planned and implemented as a comprehensively designed development (Suburban Residential Zone – outside of Urban Growth Areas); b) The development addresses the interface with adjacent lower density development, with specific regard to the amenity and character of adjacent development or the interrelationship with the coastal environment where relevant; c) The bulk and scale of buildings is consistent with the specific objectives and policies of the Suburban Residential Zone including any design mitigation provided through the overall development design, including areas of communal open space; d) Development is located within proximity to areas of comparatively higher amenity such as open space, or community focal points such as City, Town, Sub-Regional or Neighbourhood commercial centres;

	e) Development is appropriately located within the transport network with regard to the objectives and policies of the Plan for transportation; f) Adequate services and infrastructure capacity is available or can be provided as part of the development. 14 Residential Zones 8 October 2016 Section 14B Page 4 of 68 Tauranga definitions, commercial centres The consolidation of retail and other business development within a network of these business areas that includes the following components: a) City Centre – the area of the City forming the principal business, civic, cultural and entertainment centre of both the City and Western Bay of Plenty sub-region; b) Sub-Regional Centres – consolidation of comparatively large total floorspace servicing a sub-regional population and providing multi-purpose, mixed retail, business, employment and entertainment opportunities; c) Town Centres – consolidated areas providing a wide range of business opportunities including convenience retail, comparison shopping, entertainment, civic and cultural uses, and located to service a significant local population and generally provide pedestrian orientated main street development; d) Large Format Centres – mixed commercial business areas that service population principally by travel from motor vehicle and are characterized by large floorspace retail tenancies. For the purpose of the Plan these large format centres are comparatively smaller than a sub-regional centre; e) Neighbourhood Centres – areas providing opportunities for business, civic, cultural and entertainment uses to service a local neighbourhood; f) Local Centres – areas providing a comparatively small cluster of convenience retail and other business opportunities to service a local community.
Upper Hutt City Council District Plan (2004)	4.2.2 The amount of land suitable for urban use is influenced by servicing, topographical, ecological and other constraints. The Residential Zone covers the existing residential areas as well as undeveloped land suitable for residential use in the future. Expansion of existing urban areas will be encouraged in appropriate environments with the existing urban areas being the preferred location for higher density development. Council will promote the maintenance of the general character and amenity values of particular neighbourhoods. Upper Hutt District Plan 4/2 4.3.4 To provide for higher density residential development by way of Comprehensive Residential Developments and specific net site area standards around the central business district, neighbourhood centres and major transport nodes Providing a choice of living options involves the provision of more intensive types of residential development as well as traditional forms

	of development in Upper Hutt, which generally comprise standalone dwellings on individual lots. Amended April 2016 (Plan Change 40) 4/4
Wellington Urban Growth Plan: Urban Development and Transport Strategy 2014-2043 (2015)	Our heritage assets, infrastructure networks and neighbourhoods all need to be managed to minimise the risk of damage from natural hazards, such as earthquakes, and the effects of climate change (p.10). Plan for future medium-density areas around key centres in locations that are well-served by public transport, infrastructure, community/recreation facilities and open spaces. The identification of potential medium-density areas will also consider heritage values and existing neighbourhood character (p.59). Open space network in greenfield subdivisions – design the network to ensure new residents have good access to neighbourhood parks and other outdoor recreation opportunities (p.63).

Appendix 2: References to Walkability in New Zealand Policy and Strategy

Auckland Unitary Plan (2016)	H5. Residential – Mixed Housing Urban Zone The Residential – Mixed Housing Urban Zone is a reasonably high-intensity zone enabling a greater intensity of development than previously provided for. Over time, the appearance of neighbourhoods within this zone will change, with development typically up to three storeys in a variety of sizes and forms, including detached dwellings, terrace housing and low-rise apartments. This supports increasing the capacity and choice of housing within neighbourhoods as well as promoting walkable neighbourhoods, fostering a sense of community and increasing the vitality of centres. H6. Residential – Terrace Housing and Apartment Buildings Zone The purpose of the zone is to make efficient use of land and infrastructure, increase the capacity of housing and ensure that residents have convenient access to services, employment, education facilities, retail and entertainment opportunities, public open space and public transport. This will promote walkable neighbourhoods and increase the vitality of centres.
The Dunedin City District Plan (2006)	Specific key aims for Dunedin Central City: Movement • Coordination between necessary road changes and land use activities • Accessibility between precincts without undermining the efficiency of State Highway traffic • Small urban blocks to facilitate walkability • Easily understood layouts and legible routes • Public transport where possible • A range of interconnected networks to maximise the choice and viability of as many modes as possible • Liveable and safe streets focused on pedestrians, and lower vehicle speeds encouraged on city centre streets. Green and blue • A high amenity interface between buildings and open spaces • Parks and reserves within walkable distance of employment and residential areas • Street trees and landscaping along key roads and wherever possible • Low impact solutions to storm water management • Areas of native planting increased and improved to attract bird and insect life (p.17).
Hamilton City Proposed District Plan (2012)	Objective 6.2.3 Design of Suburban Centres in New Growth Areas Safe and accessible environments contributed to by well-designed suburban centres encourages walking and cycling, thereby reducing dependence on the motor vehicle and promoting more sustainable use of land and infrastructure. *Rototuna Suburban Centre Policy 6.2A – 2* The need to provide for the effective movement for all transport modes. The creation of attractive, safe streets which enable walking and cycling is an important outcome. The Suburban Centre is designed to facilitate pedestrian and cycle movements due to the number of people able to live within a 10 minute walk (800 metres) of the core of the Centre and the number of schools surrounding the Centre. The transport network must be designed to safely accommodate all transport modes with no particular mode having dominance over others. Rotokauri Residential Zone Rule 4.1A – 1 The Rotokauri High Density Area is located within the Rotokauri Neighbourhood Centre Concept Plan Area, shown in detail in the Rotokauri Structure Plan (see Rule 9.0). Its

	control mechanisms are intended to facilitate more compact and integrated forms of development such as apartments, townhouses and comprehensive residential developments. This is based on a five minute walking distance measured from the main intersection of the Neighbourhood Centre and will assist in establishing a population catchment immediately around the Neighbourhood Centre, close to retail, employment and educational opportunities and well served by public transport.
Kāpiti Coast district council - medium density housing design guidelines (2007)	D1.1-20 Important to ensure: creation of environments that are safe, interesting and easy to walk and cycle around; maintaining the amenity of primary pedestrian and cycle routes; safety, legibility and comfort for pedestrians and cyclists (p.18).
Kāpiti Coast District Plan (2012)	<u>Medium Density Housing Overlay around town centres</u> The Medium Density Overlay Area is a specifically mapped area within an easy five minute walk of the shops or train station in Paraparaumu, Raumati Beach and Paraparaumu Beach (other areas in future) with specific objectives, policies, rules and standards. (specific area shown on Districtwide and Urban Plan Zone Maps) (minimum site per dwelling unit of 200m², with an average of 250m²) KĀPITI COAST DISTRICT COUNCIL C21- 3 DISTRICT PLAN Therefore, the potential to re-establish "blue and green" corridors, provide open space areas for active and passive recreational purposes, and the opportunity to create a "walkable" residential community.
Porirua City District Plan (1999)	The policy area provides opportunities for medium density residential development within the walkable catchment of Porirua City Centre and Railway Station, in an effort to grow long term sustainability and vitality of the City Centre and provide viable alternatives to private vehicle movements. The purpose of this policy and methods is to cater for different residential market segments and to encourage comprehensively designed medium density residential development in this strategic location while ensuring that it is well designed. C3-13
Wellington Urban Growth Plan: Urban Development and Transport Strategy 2014-2043 (2015)	The plan seeks to deliver the following key outcomes: A compact city To keep Wellington compact, walkable and to minimise the need for new infrastructure, this plan directs future development to existing urban areas with good transport links, infrastructure and community facilities, and to a limited number of new urban areas (p.9). The plan recognises the importance of protecting and enhancing elements that help give Wellington its sense of place – the compact, walkable nature of the city, its suburban villages, its heritage buildings and objects, character areas, and Māori heritage values and sites (p.32).

Appendix 3: References to Neighbourhood and Walkability in Australian Policy and Strategy

South Australia Healthy Connected Communities Creating healthy urban villages for the future (2011)	Key health principles linked to walkable urban villages: a check list Walkable Neighbourhoods Pedestrian and cycling-friendly streets Places people want to go to, such as shops, schools, public transport and open space, will be accessible and connected by footpaths and bikeways. Streetscapes will be vibrant, shaded and provide opportunities for social interaction. Walking and cycling will be attractive and convenient in higher density, mixed-use neighbourhoods – helping to lessen health problems such as obesity and stress. (p.2)
Brisbane City Plan - Schedule 6 Planning scheme policies (Social and health impact assessment) (2014)	1.2 Purpose (1) This planning scheme policy provides the required information for a development application and guidance and advice for satisfying assessment criteria for: (a) the assessment of development that is: (i) likely to generate significant impacts on community wellbeing (ii) is not consistent with the purpose of a zone, zone precinct or Neighbourhood plan; (b) the preparation of a social and health impact assessment and the response to impacts identified in the assessment (p.2).
Moreton Bay Regional Council: Planning Scheme Policy Neighbourhood Design (2017)	5. Neighbourhood Structure The development must have an overarching structure that responds to its surroundings and the matters identified in the site plan. Developments must take advantage of the unique characteristics of their site and also be part of the structure of the town in which they are located. An outline plan shows how to respond to the site characteristics and guides the development of the urban structure. It demonstrates how the neighbourhood will function as part of a wider urban area. The analysis should identify routes to and through the site along desire lines. The aim should be to connect the development in with its surroundings and to provide direct connections through the site, particularly to obvious nodes such as neighbourhood hubs or public transport (p.6).
South Australian Planning Policy Library: Technical Information Sheet 9 – Suburban Neighbourhood Zone (2011)	The Suburban Neighbourhood Zone is intended to be primarily of a residential character but provide scope for development to respond to changing market preferences by accommodating new neighbourhood or local activity centres which service the new and/or existing surrounding residential areas (p.2). The Suburban Neighbourhood Zone will predominantly provide for a range of housing types with a mix of neighbourhood scale retail, education and commercial type land uses. The land uses desired in the zone include: • a variety in housing forms, including affordable housing • education and local community services • local and neighbourhood scale retail • local commercial/office (p.2).

South East Queensland Next Generation Planning: Affordable Living Smart Growth Form-based codes SEQ Place Model (2011)	A focus on designing walkable neighbourhoods (p.3) The SEQ Place Model identifies eight place types in SEQ from the study of well-known locations around the region. Each place type is recognisable by its function, special qualities, and intensity, character and housing forms. These include natural areas, rural areas, rural towns, next generation suburban and urban neighbourhoods, mixed use activity centres and CBDs. While the SEQ Place Model is a useful framework, it is not suggested that all place types will be found in all local governments in SEQ (p.4) The SEQ Place Model is designed to promote a more compact urban form, including increased availability and diversity of housing for people of all income levels, walkable neighbourhoods, attractive mixed use communities, access to transportation choices, reduced car dependency, and protecting our natural landscapes (p.4) 1.5 Next Generation Suburban Neighbourhoods (P4) :Characterised by walkability between a range of housing and a central focus Next Generation Suburban Neighbourhoods (P4) offer housing choice, from detached houses and duplexes to row houses, shop-top housing and even live/work buildings. While detached houses are most common, many detached houses are on smaller lots. Attached housing in these neighbourhoods are often on lots with particular attributes, like corners, lots with rear lane access and locations close to open space, centres or public transport. Non-residential uses in P4 neighbourhoods meet the day-to-day needs of residents. Housing in these places is within easy walking and cycling distance to a wider range of facilities including shops, schools, parks and public transport. Next Generation Suburban Neighbourhoods (P4) are generally low in scale and comprise well landscaped environments. These neighbourhoods provide 15–30 dwellings per hectare, as envisaged by the SEQ Regional Plan for significant greenfield areas. P4 streets are characterised by street trees providing shade and character, and shared use by cars, bikes and pedestrians. They are usually grid-based, making it easy to find your way around. P4 neighbourhoods are mostly located close to Urban Neighbourhoods (P5) and Centres of Activity (P6) where residents can readily access higher order services and facilities. They are always in the Urban Footprint in the SEQ Regional Plan. P4 neighbourhoods are different from many existing suburban areas common throughout SEQ and can be distinguished by their walkability, housing choice and access to public transport, jobs and services. Greenfield and existing areas identified by local governments for urban renewal are most likely to exhibit characteristics that make them suitable for P4 neighbourhoods. It is not expected or intended that all existing suburban areas will transition into P4 neighbourhoods. 1.6 Urban Neighbourhoods (P5) : Higher density, walkable, mixed use neighbourhoods Urban Neighbourhoods may be older suburbs closer to centres or parts of new communities that are planned to achieve this outcome from day one. They have good public transport access and have been developed or redeveloped over time at higher densities and with a greater mix of housing and uses than Next Generation Suburban Neighbourhoods (P4). Detached houses are found in these

	areas, but usually in small pockets and with a more urban setting. These neighbourhoods take different forms, from areas where medium density or low to medium scale buildings are dominant to higher density places with high rise buildings. Urban Neighbourhoods provide greater than 30 dwellings per hectare, and sometimes as many as 100 dwellings per hectare. They are often transit oriented. Higher density Urban Neighbourhoods usually have a number of Next Generation Suburban Neighbourhoods (P4) nearby. Urban Neighbourhoods are characterised by mixed use, providing ready access to a range of shopping, community and other local services and places of employment such as small to medium scale offices. Housing not in a mixed use setting is within easy walking and cycling distance to these other uses and public transport. Urban Neighbourhoods have a sense of enclosure at the street level provided by small building setbacks, with the built form character usually dominant. Their streets are characterised by street trees, which provide shade and character, footpaths for walking and roadways shared by cars and bikes. They are usually grid based and connected in a way that make it easy to find your way around. Urban Neighbourhoods are always in the Urban Footprint in the SEQ Regional Plan and usually near Centres of Activity (P6), CBDs (P7) and Next Generation Suburban Neighbourhoods (P4). 2.0 Neighbourhood (local) scale The creation of walkable mixed use neighbourhoods, in contrast to sprawling, single use residential development, is fundamental to the more sustainable urban form which Next Generation Planning aims to achieve. This means each neighbourhood contains a mix of uses and housing types, organised with a street network, block size, and structure which is appropriate to its place type and maximises its walkability to its key focal points including public transport. 2.2. Neighbourhood structure: Neighbourhood design is fundamental to sustainable, walkable urban form Next Generation Suburban Neighbourhoods (P4) and Urban Neighbourhoods (P5) are designed for walkability using a five minute walking catchment (400 m) around a focal point or centre. This central focus is also a key part of neighbourhoods and can involve a mix of local shops and offices, and/or some community uses, such as library or primary school, and local parks. The mix of non-residential uses depends on the context. For many suburban locations, a small park and bus stop might be all that is expected, while many Urban Neighbourhoods (P5) demonstrate a wider range of amenities. Most parts of the neighbourhood are within a five minute walk of this central focus. Note that in transit orientated development precincts, walking catchments of five, 10 or 15 minutes may be an appropriate structuring tool. All housing is part of a neighbourhood and all neighbourhoods provide a variety of housing types, with the range and balance of this housing reflecting their place type in the SEQ Place Model (see 2.6). The centre of the neighbourhood is located close to or adjacent to an existing (or planned) public transport routes, on the local through street network in accessible and visible locations. This street network connects to nearby centres and larger neighbourhood and town centres. These routes are also efficient public transport routes for buses, light or heavy rail. More specific outcomes for Next generation Suburban and Urban Neighbourhoods are available on pages 66 and 67.

	6.0 Neighbourhood (local) scale Neighbourhoods are the building blocks of Next Generation Neighbourhoods. This module articulates how neighbourhood design - scale, street networks, block size, zoning etc. can be articulated in a QPP planning scheme, in codes, levels of assessment and zoning. 6.1 Neighbourhood Scale Module Overall outcomes or purpose statement Development results in a connected network of walkable neighbourhoods supporting affordable living and smart growth. Performance outcomes 1. Neighbourhood design results in a connected network of walkable neighbourhoods. Neighbourhood street networks provide an easy choice of routes within and surrounding neighbourhoods, and connect to public transport, employment, open space and services. 2. Neighbourhood design supports diverse housing choices through block size, lot design and mix (and zoning and levels of assessment). 3. Neighbourhood design provides for non-residential uses appropriate to place type. Neighbourhoods are focussed around local activity centres, open space, community uses and/or public transport. 4. Neighbourhood design responds to natural systems including topography, drainage and local and regional biodiversity. Orientation of streets and lots support subtropical design.
Queensland State Planning Policy—state interest guideline: Liveable Communities (2016)	Why plan for liveable communities? Liveable communities are those that are vibrant, prosperous, diverse, inclusive, accessible, attractive, healthy and safe. These communities can exist from a neighbourhood level, to a town, city or region and can be established in both in infill and greenfield areas. Creating well-functioning, successful communities in this context requires a long-term commitment to a combination of land use, investment and community development strategies (p.4) Quality urban form increases the quality of life and wellbeing of communities and encourages residents, workers and visitors to the area. Heritage buildings and areas of historical importance may act as a focal point to a precinct or neighbourhood and help to establish or maintain local identity and stimulate community spirit (p.6) The inclusion of a mix of uses within neighbourhoods, where appropriate, will increase vibrancy and encourage a high-quality of life within communities while reducing the distance residents must travel to access a variety of goods and services (p.8) In planning higher-density neighbourhoods, the public domain takes on a more significant role as the outdoor living room of the neighbourhood than in a suburban setting (p.20) suburban and neighbourhood locations: 30–80 dwellings per hectare (net) or greater (p.25) There are no absolute rules for the size, shape and design of a neighbourhood. However, it is at the local level where the sense of ‘neighbourliness’ has the greatest potential to emerge. The neighbourhood is often defined by how far you

	want to take a short stroll or cycle, whether it is to visit friends, buy a loaf of bread or go to the local park. It takes some time for a neighbourhood community to emerge, and respect should be given to the quality of life in existing neighbourhoods where new neighbourhoods are proposed (p.27). Neighbourhood centres Neighbourhood centres provide a limited range of services, including convenience retail, to a cluster of local neighbourhoods. Neighbourhood centres attract frequent trips from within their catchments. They have good local accessibility, particularly by active transport, and act as a focal point and meeting place for the local community. Neighbourhood centres generally serve a catchment population of 10 000–15 000. In addition to those centres a community can also contain small local groups of shop and offices. However, these are small-scale, stand-alone developments rather than centres and are not addressed in the following guidance material (p.28).
The State of Victoria Department of Environment, Land, Water & Planning Reformed Residential Zones (2017)	The Neighbourhood Residential Zone is applied to land that has been identified as having specific neighbourhood, heritage, environmental or landscape character values that distinguish the land from other parts of the municipality or surrounding area (p.1). NEIGHBOURHOOD RESIDENTIAL ZONE Recommendations: • Rename to the Limited Growth Residential Zone • Amend the purpose of the zone • Increase the mandatory maximum building height for a dwelling or residential building from 8 metres to 9 metres, with a maximum of 2 storeys • Allow slightly higher buildings where flood levels apply The recommendations are supported in part, and changes build on the recommendations: • The purpose of the zone has been revised • The mandatory maximum building height has been increased, and specified as a maximum of 2 storeys • A mandatory minimum garden area requirement has been introduced to replace the limit on the number of dwellings on a lot • Neighbourhood, heritage, environment or landscape character objectives must be specified in the schedule to the zone (p.12).
Victoria Understanding Neighbourhood Character (2015)	Neighbourhood character is essentially the combination of the public and private realms. Every property, public place or piece of infrastructure makes a contribution, whether great or small. It is the cumulative impact of all these contributions that establishes neighbourhood character. The key to understanding character is being able to describe how the features of an area come together to give that area its own particular character. Breaking up character into discrete features and characteristics misses out on the relationships between these features and characteristics. Understanding how these relationships physically appear on the ground is usually the most important aspect in establishing the character of the area (p.1). Understanding the relationship between the features and characteristics of a neighbourhood is important to describing the character of the area (p.2).
Western Australia – Liveable Neighbourhoods (2015)	Liveable Neighbourhoods is an operational policy for the design and assessment of structure plans (regional, district and local) and subdivision for new urban (predominantly residential) areas in the metropolitan area and country centres, on greenfield and large urban infill sites (p.1).

	Liveable Neighbourhoods operates as a development control policy, or code, to facilitate the development of sustainable communities (p.5). The design elements of good neighbourhoods: community design, movement network, lot layout, public parkland, urban water management, utilities, activity centres and employment, school (p.7). Trends in neighbourhood design approaches Neighbourhood design has changed. During the 1970s and 1980s, neighbourhoods typically comprised low- density housing on large lots in a curvilinear street layout with a strong street hierarchy and low levels of connectivity with cul-de-sacs off local collector streets. Neighbourhoods were usually planned in cells bounded by arterial roads and were often walled. Most areas were almost exclusively residential. Today there is greater emphasis on social, economic and environmental aspects, with the resulting urban forms in transition. Recent neighbourhood design concepts have been given titles such as transit oriented design, traditional neighbourhood design, greenhouse neighbourhoods and urban villages. In each case the underlying objective is to create Liveable Neighbourhoods that reduce dependency on private vehicles and are more energy and land efficient. In response to this, the emerging planning agenda focuses on the idea of an urban structure based on walkable mixed-use neighbourhoods with interconnected street patterns to facilitate movement and to disperse traffic. Daily needs may be in walking distance of most residents. With good design, more people will actively use local streets, enhancing safety. Local employment opportunities are facilitated in the town structure, providing the community with a firmer economic base and enhancing self-containment of neighbourhoods and towns. Safe, sustainable and attractive neighbourhoods are sought with a strong site-responsive identity supportive of local community. This model promotes better community, employment and environmental sustainability than conventional planning practice (p.14). Neighbourhood and Town Structure Neighbourhood structure should have the following characteristics: • Size and shape generally defined by a five-minute walk from the neighbourhood centre to its perimeter, typically 400m (average residential 22 dwellings per site hectare) to 450m (average residential density 20 dwellings per site hectare); • The centre acts as a community focus with a compatible mix of uses, including retail, which provide for a variety of daily needs and may include community facilities and urban open spaces such as a small square; • To assist retail exposure and accessibility, the centre is located on or at the intersection of relatively busy local streets and is served by public transport; • An interconnected street network focussed on the centre, and with strong links between the neighbourhood centre and its related town centre, providing good accessibility, route choice and detailing to make walking and cycling pleasant, efficient and safe; and • A range of residential densities and variety of housing types that increase towards the neighbourhood centre (p.33).

Western Australia: Planning and Designing for Pedestrians: Guidelines (2011)	5.1.3 Urban Form Plan walkable neighbourhoods near major centres and close to public transport such that walking distances are limited to: • 400 metres or 5 minutes to town or neighbourhood centres • 800 metres or 10 minutes to railway stations (p.66)

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