



Identifying and valuing the economic benefits of 20-minute neighbourhoods

Higher density mixed use and walkability dimensions

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Placemaking Economics Group

About Us

The Placemaking Economics Group is situated within the School of Economics, Finance and Marketing (EFM), RMIT University. The group is committed to providing insight into spatial decision-making and policy development through an economic and social lens. In particular, our research focuses on developing a deeper understanding of the benefits of the public and private assets that attract households to live, work, play and learn in particular locations. As a group of academics, we continue to forge strong relationships with external stakeholders.

<https://sites.rmit.edu.au/placemakingeconomicsgroup/>

Report Authors

Dr Sveta Angelopoulos

Dr Angelopoulos is an applied economist and lecturer in the school of Economics, Finance and Marketing. Her PhD focused on the spatial distribution of creativity and diversity across Australian regions. This is now being extended into a housing, household and policy environment, with a continued focus on spatial modelling. Her research contributes to a field that is becoming increasingly relevant to policy makers seeking to improve the competitive advantage of regions.

Associate Professor Jonathan Boymal

Dr Boymal is an applied economist, specialising in the areas of housing and urban economics, cultural economics, population economics, evaluation, economic psychology, health economics, cost-benefit analysis, and technology diffusion. He has published papers in leading journals and has undertaken commercial policy research for the Victorian and Federal Government, as well as refereed publications in these areas.

Associate Professor Ashton de Silva

Dr de Silva is an applied economist/econometrician specialising in the analysis of the housing sector, household credit & financial markets, regional (including cultural) economies as well as government policy. He has published papers in leading international and domestic academic journals. Ashton has a strong record of engagement which includes conducting research in partnership with industry as well as being commissioned by private- and public-sector entities to lead specialised investigations.

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1 Executive Summary

The evidence on place quality and economic outcomes is compelling. Better neighbourhoods mean better business. There are wide-ranging economic benefits associated with higher density neighbourhoods and the associated improvements in walkability that come from more effective residential density, land-use mix (access and diversity), street connectivity and safety.

Creating places where Metropolitan Melbourne's growing population can live, in a safe, attractive and affordable local area with access to most of what they need for everyday life within a 20-minute walk, cycle or public transport trip is a State government priority.

Five performance indicators of enhanced prosperity and growth associated with higher density walkable neighbourhoods were identified from the literature: local income and employment; property values and rental income; retail trade; agglomeration economies and; public expenditure savings.

Despite the critical importance of making the connection between quality places and economic health, a review of current practices in Australia found no well-established, objective methodologies for evaluating the economic impact of multi-function urban design. The tendency to favour accounting metrics associated with more easily quantifiable benefits means that current investment appraisal methods may not help support the type of development and quality of life that people would like to see in their neighbourhoods.

Shifting the traditional geographic focus of valuing economic benefits from the metropolitan area to the neighbourhood level is challenging. Rather than relying on a single method, the literature suggests that it is important to use 'holistic' methods to both quantitatively and qualitatively assess place quality in order to capture the complexity of the qualities of the built environment and the multiplicity of benefits and value that its improvement can generate. There are jurisdictions around the world that have developed these approaches to valuing placemaking.



2 Introduction

Well-designed buildings, spaces and places contribute to a wide diversity of values and benefits that range from direct, tangible, financial benefits to indirect, intangible, long-term values such as improved public health and reduced levels of crime. The evidence on place quality and economic outcomes is also compelling. Better neighbourhoods mean better business. Quality places attract more people and more activity, thus strengthening communities, the businesses that serve them and the neighbourhood's economy as a whole.

A review of the literature indicates that studies have recently examined aspects of neighbourhood design and their economic value, including: greenness and open space provision; street layout; permeability; architectural design and streetscape improvements. There is also an emerging literature on the impact of the built environment on larger process of economic development and regeneration, public spending including healthcare and social care costs¹ and the interdependency of business, talent and place.

Despite the critical importance of making the connection between quality places and economic health, a review of current practices in Australia found no well-established, objective methodologies for evaluating the economic impact of multi-function urban design.

Melbourne has been described as having a monocentric structure, with health, education, and employment disproportionately focused in the CBD. With a growing and diverse population, this is increasingly having a negative impact upon individuals and society more broadly, including long commutes and limited access to services.

It has proven difficult to quantify the potential benefits that may be realised through the development of high-density neighbourhoods and improving walkability. As there is no accepted framework that facilitates the capture of the benefits, they are rarely included in business cases or cost benefit analysis for new projects. This can result in an undervalued appraisal of the projects and potentially, to an inadequately informed

investment decision. The tendency to favour metrics associated with more easily quantifiable benefits means that current investment appraisal methods may not help support the type of development and quality of life that people would like to see in their neighbourhoods.

Being able to quantify and communicate the value of investment in public and private space is crucial for several reasons. It would ensure that improvements sought by residents are captured in decision-making processes alongside other investment objectives to properly account for their importance. Furthermore, although stakeholders may support the broader notion of placemaking, they can also be concerned with potential negative impacts – such as reduced parking – of projects they would otherwise view favourably if benefits could be quantified².

2.1 What does a good quality neighbourhood look like?

Planning quality sustainable neighbourhoods that contribute to vital local economies requires the ability to adapt to the changing needs of a diverse array of lifestyles, incomes and generations. This is accomplished through an appropriate mix of land uses, housing types and a walkable design that meets the daily needs of residents and creates a better quality of life.

Quality neighbourhoods have the following features³:

- A neighbourhood centre that serves as a gathering space and hub of activity. It should have engaging activities that make residents feel safe and welcome.
- A carefully-planned mixture of housing types including large, small and attached dwellings in various densities should be available to accommodate a wide range of income levels, and stage-of life requirements. Housing should provide sufficient density and diversity to support commercial activity within the neighbourhood centre.

- A well- connected network of streets both within a neighbourhood and between neighbourhoods that allows for traffic of all modes to move freely with multiple alternative routes. Well-designed footpaths, bikeways, trails and public transportation, help reinforce the importance of access and connectivity within a quality neighbourhood.

The essentials of what makes a place desirable and how places can be shaped to add value are well established. 20-minute neighbourhood principles provide an important framework that can be used to stem the urban sprawl and benefit people, families, communities and governments.

A myriad of links between these elements of urban design and economic, social/cultural and environmental outcomes have long been acknowledged in the literature⁴. Section 4 will identify the economic benefits of design elements including connectivity, density, mixed use and a high quality public realm.



3 Policy Context

Plan Melbourne 2017-2050 sets out the key opportunities and challenges facing Melbourne as it continues to grow over the next 30 years⁵. The vision articulated is that Melbourne continues to be a global city of opportunity and choice. To achieve these aims, not only does Melbourne need to remain liveable but it also needs to be sustainable and accessible. Growth needs to be managed in the city and suburbs to meet the city's future environmental, population, housing, and employment needs. Plan Melbourne outlines how the government intends to manage, adapt to and harness change for the social economic and environmental benefit of future generations of Victorians

Key to the strategy is the concept of living locally in 20-minute neighbourhoods⁶. Creating places where Melbourne's growing population can live, in a safe and attractive local area with access to most of what they need for everyday life within a 20-minute walk, cycle or public transport trip is a State government priority.

3.1 Living Locally- 20-minute Neighbourhoods

The relevant policy directions and associated policies in Plan Melbourne are:

Policy direction 5.1: Create a city of 20-minute neighbourhoods

- Policy 5.1.1: Create mixed-use neighbourhoods at varying densities
- Policy 5.1.2: Support a network of vibrant neighbourhood activity centres

Policy direction 5.2: Create neighbourhoods that support safe communities and healthy lifestyles

- Policy 5.2.1: Improve neighbourhoods to enable walking and cycling as a part of daily life

Policy direction 3.3: Improve local travel options to support 20-minute neighbourhoods

- Policy 3.3.1: Create pedestrian-friendly neighbourhoods
- Policy 3.3.2: Create a network of cycling links for local trips
- Policy 3.3.3: Improve local transport choices
- Policy 3.3.4: Locate schools and other regional facilities near existing public transport and provide safe walking and cycling routes and drop-off zones

3.2 Recent Recommendations

The Victorian Department of Environment, Land, Water and Planning has made several recommendations as a result of the pilot program established to test and evaluate the practical delivery of 20-minute neighbourhoods⁷.

- Review the Victoria Planning Provisions to strengthen 20-minute neighbourhood policies
- Develop guidelines, resources and evidence to support implementation
- Embed an approach to delivering 20-minute neighbourhoods in infrastructure projects
- Improve planning of Neighbourhood Activity Centres
- Monitor neighbourhood liveability — measure the impact of planning on public health and wellbeing
- Investigate a process to streamline approval of innovative development that delivers a 20-minute neighbourhood — ‘Green light initiative’



4 Economic benefits related to 20-minute neighbourhoods

There are wide-ranging economic benefits associated with higher density neighbourhoods and the associated improvements in walkability that come from more effective residential density, land-use mix (access and diversity), street connectivity and safety.

Five performance indicators of enhanced prosperity and growth associated with higher density, walkable neighbourhoods were identified from the literature:



4.1 Higher local income and employment

Higher density and walkable neighbourhoods can generate increased employment opportunities and increased income per worker. The latter reflects the share of the productivity gains that fall to a worker's income as a result of the additional output that is produced in the area and the enhanced productivity of workers. The physical form of the environment also contributes to human health, with data supporting a relationship between urban density and active travel^{8,9,10,11}.

“increased employment opportunities and increased income per worker”

More opportunities for physical activity have been shown to improve physical, social and mental health¹². One Australian study¹³ reports that healthy workers are almost three times more productive than their unhealthy colleagues, who take up to nine times the amount of sick leave each year. The study also found that the least healthy workers logged only 49 effective hours each month, compared to the healthiest workers who clocked up 143 effective hours, almost three times the amount.

Recent research has drawn the correlation between obesity and heart disease and increased use and reliance on car travel, based on the sedentary nature of car travel¹⁴.

The research showed that each additional hour spent in a car per day was associated with a 6% increase in the likelihood of obesity while each additional hour spent walking per day was associated with a 4% decrease in the change of obesity.

Higher-density mixed use neighbourhoods also result in a higher disposable income through a reduction in the use of cars and public transport, health related expenditure and energy consumption.

Economic productivity is constrained when people lack basic mobility. Urban sprawl results in a spatial mismatch between employment centers and housing, which makes it difficult for unskilled and low-skilled workers to access jobs. By increasing vulnerable workers' access to jobs, unemployment falls and productivity increases.

A recent study¹⁵ that aggregated the results of more than a hundred recent studies, found that increasing urban density by just one percent raises wages by four percent, reduces per capita energy use by seven percent and car use by seven per cent.

Importantly, well designed neighbourhoods are also highly adaptable and contribute to economic success over time. They extend useful economic life by delaying the loss of vitality and functionality and increase diversity and duration of use for public space.



4.2 Property Values

Residents value living in neighbourhoods with more desirable amenities. Human activity in places with good form creates interest and vibrancy, making the place desirable^{16,17}. That value should be reflected in higher land prices and hence higher house values. Hence a common way to measure resident benefits is to measure increases in home prices.

As a result, high density, mixed use development helps promote a strong return on investment (ROI)^{18,19,20,21}. The ROI is often higher and more sustained over the longer term than traditional suburban development.

“One study showed that housing purchasers pay a 15.5% premium”

One study showed that housing purchasers pay a 15.5% premium for a set of six 20-minute neighbourhood characteristics, including mixed land use, greater street connectivity greater density²². Another study found that apartment properties with high Walk Scores (a walkability index based on the presence of amenities within walking distance) were associated with a 6 percent increase in market value, while office and retail properties saw a 54 percent increase²³.

Of course, rising residential property values may not always be considered desirable outcomes in every context, particularly if certain prospective purchasers or renters are being priced out of the market resulting in less diversity of the resident population.

In the commercial sector, value uplift is driven by enhanced retail viability and reduced vacancy growth²⁴. An urban design study of three regional office markets in England²⁵ found that good urban design adds value by increasing the economic viability of development through: producing high returns on investments (good rental returns and enhanced capital values); responding to occupier demand; helping to deliver more lettable area (higher densities); reducing management, maintenance, energy and security costs; contributing to more contented and productive workforces; supporting the ‘life giving’ mixed-use elements in developments; creating an urban regeneration and place marketing dividend; differentiating places and raising their prestige and; opening up investment opportunities, raising confidence in development opportunities and attracting grant monies.



4.3 Retail trade

Higher density, walkable neighbourhoods can boost local retail sales by increasing the accessibility of retail businesses to shoppers. To amplify the positive effects of accessibility on retail sales, there is an additional role for public realm interventions to encourage potential customers to linger for a longer duration, include: functional improvements such as providing benches, tables and chairs and wayfinding signage, reducing noise and increasing shade; and urban design enhancements such as distinctive paving, landscaping, pedestrian-scale street lighting²⁶.

Business owners may be apprehensive of changes to streets that are perceived to benefit pedestrians and cyclists while reducing convenience for drivers based on a belief that providing easy access for motorists along with ample, nearby parking is critical to their store's success²⁷.

“Pedestrians have been shown to spend more than people who arrive at a retail destination by car”

These concerns, however, are not generally supported by the literature. Pedestrians have been shown to spend more than people who arrive at a retail destination by car²⁸. Studies show that high street walking, cycling and public realm improvements increase retail sales by up to 30% and over a month, people who walk to retail areas spend up to 40% more than those who drive²⁹. A Hong Kong study estimated that the pedestrianisation of a two-way street retail area led to an approximately 17% increase in retail sales on average³⁰. Using sales tax receipts to compare retail activity before and after street redesigns, the New York City's Department of Transportation has estimated that transforming an underused parking area in a pedestrian plaza in Brooklyn has led to a dramatic increase of 172% in retail sales³¹.

Indeed, multiple surveys conducted in dense urban shopping areas indicate that after these types of changes are implemented businesses often become supporters of further enhancements to the public realm³².



4.4 Agglomeration Economies - the competitive advantages of bringing people and businesses closer together

Quality places are important in development of business and entrepreneurial opportunities which are achieved through a critical mass of assets and skills, presence of other talented people and a high-quality public realm³³. It is now generally accepted that aggregating firms and jobs in highly concentrated and connected locations delivers productivity benefits. Workers and businesses are more productive in large and dense urban environments. On average, doubling urban density increases productivity by 2%–6%³⁴. This correlation is particularly strong for knowledge-based industries.

“On average, doubling urban density increases productivity by 2%–6%”

Agglomeration improves efficiency through: economies of scale; efficient networking; reduced supplier costs; potential for specialisation where similar businesses locate close to one another and; enhancing competitiveness through differentiation. Improvements in total value added per hour translates in higher profits and wages.

The evidence, however, does not indicate that these interactions need be at a walking scale, and the geographic scope of agglomeration benefits, while covering short distances, is larger than the scale of many neighbourhoods³⁵.



4.5 Stronger Local Economies through Public Expenditure Savings

Higher density mixed use neighbourhoods provide substantial savings in infrastructure provision for government. This includes capital, maintenance and replacement costs for infrastructure such as roads, sewers, electricity and communication systems, and basic community services such as health care facilities, schools and public transport. The value of the savings from urban infill development compared to greenfield development has been put as high as \$80,000 per dwelling³⁶.

“The value of the savings from urban infill development compared to greenfield development has been put as high as \$80,000 per dwelling”

These savings can flow back to the local economy - reimbursed directly to residents via lower rates or used by local authorities to further enhance public spaces and add value. The physical form of the environment also contributes to resident health, with benefits to government from reduced health and aged care costs³⁷.



5 Current approaches to capturing economic benefits of investments in 20-minute neighbourhoods

There is wide support for conducting rigorous planning and assessment processes before committing to infrastructure expenditure. This view has been reinforced in recent years by the role of Infrastructure Australia and the Public Infrastructure Inquiry undertaken by the Productivity Commission in 2014.

Application of rigorous cost benefit analysis (CBA) is generally required by government processes relating to business case preparation, regulatory impact assessments and evaluation of strategic planning options. In many cases this requirement is mandated. While there is no explicit requirement to carry out a CBA for planning scheme amendments, it is important that the disciplines of CBA are kept in mind.

5.1 Appraising net community benefit via CBA

CBA is used to assist decision making that is consistent with 'efficiency' in the allocation of resources in areas where, for one reason or another, market forces do not guarantee an appropriate outcome. CBA probes whether a policy initiative or project will provide a net community benefit, taking into account that the resources deployed in implementing the initiative or project have alternative productive uses. Using CBA as an analytical tool means that costs and benefits are, as far as possible, expressed in monetary terms and hence are directly comparable with one another.

It is important not to confuse CBA with 'economic impact assessment'. Economic impact assessment looks at the initial and flow on effects of a government policy or project on jobs and business activity in a region, State or nation. The value created as a result of this business stimulation is not the key issue, rather the multiplier effects which are generated.

The Australian source of benchmarks to reach a monetary value for benefits relating to transport projects are the Australian Transport Assessment and Planning (ATAP) guidelines. The ATAP Guidelines are an infrastructure planning and decision-support framework applied to transport. They outline best practice for transport planning and assessment in Australia. They are endorsed by all Australian jurisdictions and are published by the Transport and Infrastructure Council. They are closely aligned with the Infrastructure Australia Assessment Framework³⁸.

5.2 The barriers to quantifying and capturing economic benefits of public realm investment

The (monetary) dollar value of the expected wider economic benefits of higher density and walkable neighbourhoods is crucial in terms of providing an economic justification for investments in 20-minute neighbourhoods. The reliance to date on qualitative evidence of neighbour-level economic benefits, however, means the value of place-making is often ignored in business cases and CBAs. This often results in unfavourable or undervalued assessments of projects that improve walkability and/or the public realm. There is currently no accepted framework that allows all neighbourhood-level economic benefits to be captured and included in business cases and CBAs. Reasons for this include:

- The economic impacts of investment in the public realm are often long-term.
- The quality of the public realm is often influenced by interrelated processes, making it difficult to isolate the impact of different variables.
- Context specific interventions require context specific input parameters, and generalised input parameters (for example, those included in the ATAP guidelines) may potentially limit the reliability of results³⁹.

- Existing methodologies incorporate conservative quantification measures of benefits. For example, the World Health Organisation's HEAT tools for walking and cycling only consider mortality reductions when calculating health benefits⁴⁰.
- Judgements about improvements are subjective and reliant on the opinion of local stakeholders.
- The extent and timing of value uplift cannot be made independently of estimating the core user and economic benefits of placemaking, therefore, the value uplift estimates would be dependent on these benefits and not independent of them. The only way the value uplift valuations would be independent is if the core user and economic benefits value forecasts were transferred in from some comparable external sources.

Correcting for the acknowledged economic benefits of higher density, walkable neighbourhoods requires an appropriate framework and parameter values to allow these benefits to be captured in a robust and consistent manner.



6 Case Studies – methods to assess place quality

Shifting the geographic focus of valuing economic benefits of infrastructure investment from the metropolitan area to the neighbourhood level is challenging. Rather than relying on a single method, the literature suggests that it is important to use 'holistic' methods to assess place quality, in order to capture the complexity of the qualities of the built environment and the multiplicity of benefits and value that its improvement can generate.

6.1 VURT

There are jurisdictions around the world that have developed approaches to valuing placemaking in CBA. Most notable among these is the Valuing Urban Realm Toolkit (VURT), developed by Transport for London (TfL) for use in the United Kingdom, to provide objective, evidence-based justifications for investment in the public realm⁴¹. The VURT helps to refocus assessors of streetscape quality on the attributes that matter to how people use public realm, rather than on how public realm is designed. It captures public realm user benefits that are additional benefits to those captured by other economic evaluation tools

VURT is based on audits derived from criteria and seven-point quality scale of the Pedestrian Environment Review System (PERS) also developed in the UK by Transport Research Laboratory. PERS is a tool designed to measure the design quality of the pedestrian environment⁴². PERS scores the way a street works as a link, facilitating pedestrian movement from A to B, and as a place relating to staying and spending time in. It provides a multi-criteria system for rating the quality of the public realm. The outcomes of the PERS are used in VURT to assign a monetary value to expected changes in the quality of the streetscape proposed that will be achieved if implemented.

The VURT and PERS tools show the potential for analytical tools to be used across planning, design and management activities undertaken with respect to streets and public spaces. Such tools could:

- help quantify benefits for business case processes
- be applied as a tool for project evaluators and decision-makers.

6.2 Movement and Place Framework

The Victorian Department of Transport have developed a Movement and Place framework⁴³. Module 1 defines the functions of each link in the transport network and Module 2 looks at how well links perform toward their aspirational functions and meet user requirements.

The performance of the transport network is considered under four themes: movement, place, road safety and environment. Under place, a safety and comfort score measures whether the environment offers a sense of safety and comfort to pedestrians and therefore supports on-street activity.

The Movement and Place framework could be used in a similar way to VURT if it incorporated an economic value in place considerations.



7 Case Study – Yarraville pop up park

The Yarraville Pop Up Park was an initiative that facilitated public open space in the context of an entertainment district that included restaurants and the Sun Theatre.

The Pop-Up Park was introduced in 2012, as a temporary three-month summer event. The Council undertook a traffic assessment which modelled existing and proposed conditions, identifying that there would be no discernible impact on traffic associated with the temporary closure. Furthermore, adjacent traders were consulted to garner support and a subsequent report was presented to the Council⁴⁴.

Tree planting and potted planting were integrated to create an appealing and flexible space. Temporary furniture was also included through the involvement of adjacent traders.

A survey and residents and traders indicated strong public support for the Pop-Up Park to become permanent due to the success of the trials and the attraction it provided to Yarraville⁴⁵. A report was presented to the Council seeking endorsement of the permanent installation and was subsequently adopted, with the park installed in 2014.

8 Key Issues and Next Steps

The evidence on place quality and economic outcomes is compelling. To achieve a better approach to government planning and decision making for investment in high-density, mixed use neighbourhoods, a number of approaches are suggested. When considering the range of benefits associated with higher density and walkability interventions identified in this report, it is important to recognise that there are likely to be a range of stakeholders using a variety of metrics for success.

An appreciation of these differences will enable agencies and local governments to identify what levels of community engagement and engagement methods should be utilised.

While DEWLP has identified some key imperatives for change (such as population growth and locational disadvantage associated with low-density development including poor access to services, amenities and job opportunities), the narrative can be further strengthened by indicating how liveability may deteriorate if these issues are not addressed.

Identified problems will of course take on varying degrees of importance in different areas. Neighbourhoods vary substantially in their history, demographic profile, character, and needs of local residents and workers. Neighbourhood engagement, use and experience by residents and workers will vary across place. A neighbourhood business as usual estimate of engagement, use and experience would support an accurate estimate of the expected dollar benefits from a suite of interventions in a particular neighbourhood.

It is the qualitative and quantitative costs under the business as usual case that will both inform the key benefits that can be realised from tackling these problems successfully and assist in justifying interventions. This document forms part of an evidence base for offering place-based interventions as a research-informed solution to problems in particular neighbourhoods. Moving forward, a focus on neighbourhood-specific challenges will assist in the development of a transparent selection and prioritisation process for targeted interventions.

9 Recommendations Moving Forward

Formulation of a guide identifying the foundations of good form needed for quality-built environments and placemaking, specifically focusing on:

- Streets, building and blocks and depending on the location – how they interact to support local economies
- Identifying neighbourhood and housing characteristics that supports the changing nature of our population and our aging population.
- Identify quality characteristics and key components of good form in varying neighbourhoods.
- Identify the importance of good connections within and between neighbourhoods and regions to support local economies.



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