



Living Locally

Beveridge North-West

Volume II

Consideration of, precinct structure planning and
20-minute neighbourhoods in greenfield areas

Andrew Butt, Bhavna Middha &
Tiebei Li

Living Locally - Beveridge North-West

Volume II

Consideration of, precinct structure planning and 20-minute neighbourhoods in greenfield areas

May 2020

Authors

Associate Professor Andrew Butt
Dr Bhavna Middha
Dr Tiebei Li

Suggested citation

Butt, A., Middha, B., Li, T. (2020). *Living Locally - Beveridge North-West Volume II Consideration of, precinct structure planning and 20-minute neighbourhoods in greenfield areas*. Centre for Urban Research, School of Global, Urban and Social Studies, RMIT University: Melbourne.

This project is funded by Department of Environment, Land, Water and Planning in collaboration with Resilient Melbourne.

Acknowledgement of Country

We at the Centre for Urban Research and Sustainability & Urban Planning acknowledge the people of the Woi wurrung and Boon wurrung language groups of the eastern Kulin Nation on whose unceded lands we conduct our research, teaching and service. We respectfully acknowledge Ancestors and Elders past, present and emerging who have always been caring for Country. We pay our respects to Country, the lifeworld that sustains us all.

Our research, education and service are already in a relationship with Country and the people of Country, here and in all the places we undertake our business. As mostly non-Indigenous people, we acknowledge our obligation in this relationship: to uphold the ngarn-ga [understanding] of Bundjil and practice respect for community and culture. Though there is much we still need to learn, especially about ourselves, we affirm our dhumbali [commitment] to that work. We hold as central to our business, dhumbali to a shared future with Indigenous peoples everywhere and especially Kulin Country and peoples.

Image Credit: Louisa Bloomer, Kamilaroi

Executive Summary

This report focuses on the Beveridge North West Precinct Structure Plan (PSP) area. The report explores a range of issues associated with the implementation of the principles underpinning the delivery of the Plan Melbourne policies for '20-minute neighbourhoods' and more general strategies for localisation (or living locally) in this area, and in 'greenfield' development areas more generally. The report assesses access, land use, walkability and consequent outcomes for liveability at the site and in a broader metropolitan context.

This report relates to the second part of a project that was undertaken in two parts:

1. The production of a review of empirical literature on urban development, localisation and liveability with an Australian, and particularly Melbourne focus
2. The creation and testing of elements for development as a basis for analysis of the Plan Melbourne 20-minute neighbourhood concept in greenfields development locations, and to consider elements for consideration in planning for them to meet the objectives of the *20-minute neighbourhood* as included in *Plan Melbourne*

Literature Review

The literature review is contained in the accompanying report. The review of the academic literature focussed on Australian examples, while also looking internationally, and included consideration of:

- The notions of the local city within the metropolis; living locally and the policy basis to the 20-minute neighbourhood both in Australia and internationally;
- Key drivers of local activity, including active transport, local destinations and local trip generation, in metropolitan regions and especially at the urban fringe; and,
- Evaluative issues in understanding local living and the way in which policy interventions have an impact on delivering a city of 20-minute neighbourhoods.

The key outcomes of this review were broadly categorised into;

- Regional-scale urban morphological and structural issues – such as where jobs, retailing and services are and how and where travel demand is generated, including how these processes are dynamic, for example the concurrent centralisation and diffusion of work locations and the varied demographics of this process and what it means for travel times, modes and preferences,
- Local design issues focussing on the public realm (particularly greening and permeable urban networks) and broader neighbourhood issues of proximity to services, destination mix and density of housing/population,
- Transport provision and choice as urban infrastructure, particularly the quality (and perceptions of quality) and utility of alternatives to private car ownership and use, making mixed modes work and how the timely provision of services in new residential areas affects short and long-term decisions, and how transport alternatives can support future technological and socio-economic transitions.

Elements for Planning Greenfield 20-Minute Neighbourhoods

The Literature Review Findings were subsequently informed by two workshops; with urban researchers and with planning practitioners. At these, a series of development priority scenarios were tested and discussed, which were later developed further into elements for successful greenfield 20-minute neighbourhoods. The components identified were not focussed on addressing the specific issues of permeability and pedestrian pathways that featured in the 20-Minute Neighbourhood Pilot

Program projects for established neighbourhoods, because the literature suggests that (while important) these features are increasingly evident in the design of new residential areas, however local destinations and social practices of walkability/local living often remain elusive. Consequently, the selected components are:

- Creating a **job rich (sub)regional destination** at Beveridge NW as a basis for enhancing destinations and development within the PSP area,
- Prioritising **higher residential densities** at early stages of development to support local activity centres and local living/active transport practices in the identified areas of the PSP,
- Prioritising **urban greening and shade** infrastructure (shadeways) as a development priority in the public realm, including in activity centres and priority walking/cycling routes,
- Prioritising **public transport and inter-modal transport** options at early stages of the PSP, beyond just design for future bus routes.

Each of these elements includes key characteristics and a series of strengths, weakness and challenges to implementation. They are not intended to be seen as mutually exclusive approaches, but rather would typically offer complementary approaches to moving beyond business-as-usual greenfield residential development.

Living Locally – Implementation Report

The report provides a series of considerations for further research, which includes longitudinal research on sites such as Beveridge NW. These relate to issues of transport and mobility within and beyond the site, patterns of commercial development (retail and non-retail) and job creation, and a range of issues about housing demand and development industry perspectives on an increased housing mix at the metropolitan fringe.

Finally, a series of recommendations are included regarding the content and scope of the PSP with regard to the elements and delivery of a 20-minute neighbourhood. Broadly, the Beveridge NW site offers good support for these elements, however, some crucial issues are identified and discussed in the context of structural elements of the PSP under the current guidelines for their preparation. These recommendations are:

- Developing a contextual analysis for PSP sites that includes scenarios for varied potential roles of the site within the region, sub-region and metropolitan (or peri-metropolitan) region, and consequent responses to planning for the site. Present assumptions about the role of precincts as fundamentally residential areas, and as self-contained for the purposes of active transport, limit scope to consider those elements of the 20-minute neighbourhood that extend beyond active transport for recreational or basic service mobility. Analysis of key issues of local connectedness and a 20-minute neighbourhood suggest a strong emphasis on more heterogenous and complex land use mixes and on inter-modal transport options and modal shifts as elements of behavioural change enabled by service provision and urban design. Hence, contextual analysis should include scope for these changes.
- The objective of a 20-minute neighbourhood should be cross-thematic implementation elements with its own PSP Requirements and Guidelines that include a variety of issues relating to design and density (both public and private realm), economy/employment and infrastructure (social and physical). This suggests that consideration of a range of objective-focussed elements may be suitable for future PSP design.
- As with priorities for activity centre/employment development, priorities for infrastructure staging should explicitly focus on the delivery of a 20-minute neighbourhood through sequencing that seeks to emphasise identified walkable catchments and destination nodes (particular social and recreational infrastructure).
- For more effective delivery of the concepts and elements underpinning a 20-minute neighbourhood, two key sequencing approaches are necessary; a whole-of-government approach to sequencing of services should be a component of PSP processes, extending into areas including public transport provision and planning for government schools, and PSPs should articulate specific priority development locations, such as those areas within walkable catchments of key services and activities.

Introduction

1.1 Project Introduction

This project uses the example of the Beveridge North West Precinct Structure Planning (PSP) site to explore a range of issues associated with the implementation of the principles underpinning the delivery of the Plan Melbourne objectives for '20-minute neighbourhoods' and more general strategies for localisation (or living locally), with a particularly emphasis on access, land use mix, walkability and consequent outcomes for liveability at the site and in a broader metropolitan context.

This project was undertaken in two parts:

1. The production of a review of empirical literature on urban development, localisation and liveability with an Australian, and particularly Melbourne focus
2. The creation and testing of conceptual priorities for development as a basis for analysis of the Plan Melbourne 20-minute neighbourhood concepts in greenfields development locations, and to identify elements for consideration in planning for them to meet the objectives of the 20-minute neighbourhood as included in Plan Melbourne

It is anticipated that this research will align with two aspects of advancing the objectives of the 20-minute neighbourhood – firstly to create engagement between recent research literature on urban walkability, liveability and localisation, and the practitioners and policy-makers who can operationalise this, and secondly to consider the further application of existing research into outcomes for new and proposed urban development.

The example used in this report is the Beveridge North West Precinct Structure Plan (PSP) area. This is an area covering close to 1250 hectares of land between Wallan South, Beveridge Central, the Hume Freeway and Old Sydney Rd (see map) in Melbourne's growing northern metropolitan region growth corridor. The site immediately adjoins existing (recent) residential development to the south, including Mandalay Estate, and has potential access to the Hume Freeway and to the older township of Beveridge via Lithgow St and the freeway underpass. The PSP process at this site was commenced in 2013, and a proposed PSP was released for public review in September 2019.

1.2 Beveridge North West in Context

Melbourne's northern growth corridor is extensive and includes some of the most considerable areas of new inclusion into the Urban Growth Boundary since its inception in 2002. Beveridge along with the corridor between Craigieburn and Wallan have long been characterised as discrete isolated areas of residential development at various densities, with the most evident consolidations being Wallan's growth since the 1990s and new development at Beveridge to the west of the old town. Neither are contiguous with metropolitan Melbourne, yet strong functional relationships for social and economic life are evident.

Today Mitchell Shire has over 45,000 residents (ABS, 2019) and is projected to have over 100,000 within 20 years. The Beveridge NW area will account for up to 50,000 of these new residents. Mitchell Shire is projected to be the fastest growing local government area in Victoria to 2036 (DELWP, 2019). This rapid growth is set against a backdrop of existing social inequality and high levels of vulnerability. There exists the risk of social and geographical isolation and all the associated consequences. While presently unpopulated, the study area is within the Wallan SA2 Census boundaries and in Mitchell Shire. That area is characterised by higher than average population growth rates, a younger population and higher rates of families with children than the metropolitan area overall.

Journey to work results in this region show a pattern of long-distance commuting. In Mitchell the proportion of workers travelling between 30km and 50km and over 50km to work is at 14% and 27% respectively compared to between 2% and 4% of workers for

metropolitan Melbourne. However, there is also a marginally higher level of local work compared to other growth areas. In Wallan SA2 the average daily journey to work in 2016 was 27.8km with most people working in a band of middle and outer northern suburbs (Broadmeadows, Thomastown and other northern ring road localities featured) and a sizable population in central Melbourne (CBD, Docklands and Parkville). Over 85% of workers travelled by car and less than 8% used a train (including close to half using a car and train), less than 1% walked to work (with more working at home). This suggests considerable challenges in a new growth area to localise daily travel. The centre of the Beveridge NW PSP is over 5km from the former (and potential future) Beveridge railway station site and over 8km from the Wallan railway station.

1.2.1 The Beveridge NW PSP

The Beveridge NW PSP proposes over 16,000 dwellings eventually accommodating 45,000-50,000 people. The housing mix proposed includes almost half of all dwellings (over 7000) at an average density of 30 dwellings per hectare¹ within an identified walkable catchment (nominally 1km) of activity centres. The next largest segment of housing type (over 6,000) is proposed to be a General Residential area development outside of the nominated walkable catchment (although with areas probably within a reasonable walkable distance for most residents) at more typical suburban densities averaging 17 dwellings per hectare.

It includes proposals for a range of activities beyond residential development including retail, schools and non-retail commercial uses. Referring to background research for this site, the PSP states that “Ethos Urban concluded that the Southern, Western and Northern local town centres (LTCs) are likely to be the largest town centres and could accommodate up to 9,000m² of retail and commercial floorspace. The Eastern centre is likely to be smaller, accommodating up to 4,700m² of retail and commercial floorspace and would be anchored by a mid-sized supermarket”. The PSP proposes approximately 13,400m² of supermarket floorspace and that about 84% of households will be located within 1km of a supermarket. The PSP report suggests that 65% of the retail spending will occur in the single largest activity centre.

The proposed PSP includes a vision of walkable catchments for local activity centres and high amenity road and path networks for pedestrians and cyclists, including within the large areas proposed for open space, which, in turn, is proposed to form both a recreational destination and a potential network for active mobility. External to the site however, the connectivity to Wallan, Melbourne's north and the metropolitan region more generally is car-focussed and based on accessibility to the Hume Freeway. The PSP nominates considerable areas of open space, most as informal open space with large areas reflecting the existing role of the precinct as a drainage and water reserve. This 'service' open space accounts for 21% of the total area of the plan, while local recreational open space accounts for another 6% of the area. This provides considerable areas of potentially interconnected green space throughout the site. The topography of the site also limits scope for development in some areas (both low-lying drainage areas principally, in the south, and slopes in the north) and various locations at the interface of open space and other identified sensitive sites are protected from development.

¹ Net Developable Area



Figure 1: The Beveridge NW PSP site.

Methods and Processes

A scenario analysis method was used for this report, articulating different concepts, or as we call them 'elements', to create integrated approaches to development that contribute to delivering the 20-minute neighbourhood. They are described separately, but are conceptualised as integrated elements and at the same time are future oriented, gathering experience from different scales and sectors (Hoolohan, McLachlan & Larkin 2019; Johansen 2018). According to Hoolohan, McLachlan and Larkin (2019, p. 1) "by enabling individuals and organisations to ask 'what if...?' questions, scenarios are a systematic method to enable creative planning and explore the processes and actors involved in directing transitions". To develop these ideas multiple relationships between different sectors and domains were explored and articulated as a future-oriented and integrated pathway to a 20-minute neighbourhood. A participatory approach to developing the elements was used at two different stages - initial concept development (Workshop One) and integrated concept development (Workshop Two), an approach that sought to "enhance the authenticity of the narratives" through broader engagement with experts (Hoolohan, McLachlan & Larkin 2019, p. 3).

2.1 Project Inception (site meetings)

Initial discussion about the use of the Beveridge NW site included a scoping meeting which explored the potential approaches to testing 20-minute neighbourhood concept in greenfield sites, followed by a site visit where the notion of conceptualising the elements for development was progressed. The physical relationships between the site and surrounding development in Beveridge and Mandalay were also considered.

2.2 Literature review

The literature review explored various connections and nodes, or points, of connections to everyday living, walkability and the built environment, especially in greenfield suburbs. Broader themes including 'local living' policy frameworks from Australia (such as Melbourne's 20-minute neighbourhoods) and elsewhere were also covered. It was focussed on empirical literature, that which had a research basis. It was conducted as transdisciplinary research to be able generate a small suite of themes (discussed and derived from Workshop One) that were able to portray complexity and the multidimensional nature of connections in planning for a localised, 20-minute development in greenfield suburbs. These were straightforward enough to be used within participatory research in Workshop Two and contribute to the discussion of these concepts or ideas as elements that form integrated scenarios and/or pathways to 20-minute neighbourhoods in greenfield suburbs.

2.3 Workshop One

This exercise involved a range of researchers at RMIT's Centre for Urban Research (in June 2019) to bring together a series of key issues in greenfields localisation strategies. It involved developing of sketching-scenarios for future development trajectories and socio-economic characteristic in the Beveridge NW PSP area along a series of dimensions. It was not a simulation exercise, but a discussion of the following points in connection to everyday living, walkability and access to services.

- Issues of future **on-ground design or urban morphology** (see draft Beveridge NW PSP) were one dimension of the elements developed, including: residential densities, location and role of town and district centres, public transport-ready road networks, walkability and built environment

- Other dimensions for scenario development included **socio-economic and employment characteristics** of residents and workers, daily travel destinations and mode share
- **Sequencing of development** and delivery of service were included to address the issues identified in research regarding delays in provision, consequent barriers to behaviour modification and the nature of activity centre development, recognising that such developments are not static, and not confined to PSP boundaries
- Ideas for likely **regional and metropolitan-scale change** (housing, employment and retailing) were included to facilitate an understanding of broader implications for small areas and neighbourhoods

The **results were used to test resulting elements of policy and practice** for walkability, accessibility and living locally with a broader group of stakeholders in Workshop Two.

2.4 Workshop Two

The Stakeholder Workshop Activity (Workshop Two) was conducted in September 2019 and was designed to test a series of elements for development of the PSP site that emphasise Living Locally and the 20-minute neighbourhood. It included representation from RMIT, Yarra Valley Water, DELWP, Mitchell Shire and the VPA.

As a consequence of the review of literature (particularly Australian and Melbourne-based empirical research), initial stakeholder meetings and the first RMIT workshop, we prepared the basis of a series of four elements that provided an indication of the logics, and limitations of four principles that are central to the 20-minute neighbourhood idea: transport options, urban density, urban greening and local employment.

The workshop activity in September explored these issues through the proposed elements for design and sequencing priorities for development at the Beveridge NW PSP site. Participation in the session involved:

- The participants were asked to read the four ideas forming the proposed elements and the draft literature review;
- The workshop explored the issues and limitations for the progression of each of these ideas for priority in the context of Beveridge NW and Melbourne's northern fringe more generally; and,
- Views were sought on how (and whether) these priorities might be operationalised, what conflicts and synergies may exist, and what policies and mechanisms may offer pathways to achieve these outcomes.

2.4.1 Workshop questions- Some issues and challenges addressed

The discussions at this workshop provided a basis for the design of the elements for design, priorities and sequencing of greenfields development for a 20-minute neighbourhood. Discussion centred around the intersection of residential development markets, priorities for urban transport and regional level employment. Key challenges arising included the nature of housing in this area and the relationship between commercial/retail investment and the sequencing of residential growth. Issues of urban density, housing choice and the future of work were discussed.

There was also discussion on the ways in which these ideas can be operationalised in Precinct Structure Planning and metropolitan strategy implementation.

Elements for a Twenty-Minute Greenfield Neighbourhood

Drawing on the discussions at the inception meeting and the initial workshop, as well as drawing on research outcomes described in the literature, four elements for development priorities were developed and discussed at the second workshop. These were then reframed as elements guiding the possible priorities in design and structure planning, as outlined below. The four elements set out priorities for development, beyond the 'business-as-usual' approaches to greenfields development on Melbourne's fringe each seeking to maximise outcomes for achieving a 20-minute neighbourhood.

The four priority elements are:

1. Prioritising the development of the Beveridge NW PSP site as a **regional employment** hub
2. Establishing the Beveridge NW PSP site as a (both public and active) **transport rich area** from its development inception
3. Using **urban greening** as a priority development strategy to maximise the quality and utility of the area, and
4. Prioritising the early development of **higher density** urban residential areas in those areas proposed in the PSP for this style of development

It is not intended that these ideas are seen as mutually exclusive ideas, but simply that each of the priorities is used as a heuristic for assessing the benefits, possibilities and risks of seeking a 20-minute neighbourhood.

3.1 Concept: Regional Activity Hub for Education and/or Employment

The literature suggests that work and employment are key drivers of local living. The extended work-commutes identified in the study region (especially for higher paid work) are consistent with the experience and research into long-commutes on the fringes of Australian cities. Areas of existing research emphasise the following:

- Localised walkability solutions may not be enough to address broader issues of urban infrastructure, thus urban form and connections as focal points.
- Commuting patterns of female residents with caring responsibilities and limited travel mode options had undesirable impacts on health and social connectedness
- Developing the region as a destination with employment and education as the first infrastructure
- Flexible design for potential non-homogenous populations needs to engage with and address community building for all age and employment groups.

This concept of reimagining Beveridge NW as a regional destination was developed in response to discussions with researchers in our initial workshop reflecting on the paucity of employment outcomes in new urban areas and the following points of discussion:

- The need to recognise destination issues in daily life as a core issue for local-living/20-minute neighbourhoods – recognising that these issues extend beyond recreational and retail trip (for example)
- That the core transport and locational tensions apparent in Australian cities continue to include access to local, high-quality employment, notwithstanding the growing concerns about access to schools and other services
- That there is a need to design for flexibility especially around retail, transport and employment
- That most solutions overlook socio-economic problems as factors of determinants of health and well being

3.1.1 Key characteristics of this concept in creating a 20-minute neighbourhood

In this conceptualisation

- Employment focussed development at a sub-regional scale is the initial focus of development, making this precinct a job-rich area on Melbourne's northern fringe. The location becomes a destination prior to, and during periods of residential development.
- Focusing on creating services like education (universities) or employment hubs to attract residents. Ensuring that infrastructure delivered first.
- Employment hub or regional destination for retail and for other uses – links to proposed transport and logistics opportunities in Beveridge area. Scope for institutional establishment/relocation in advance of residential development.
- This differs from the proposed PSP in that the floor area for commercial development is more expansive and this development is prioritised for early development.

3.1.2 Strengths

The strengths of this concept lie in the fact that providing a regional and local anchor increases the chances of the community not only commuting less but also addressing inequities in the level of employment offered by suburbs and areas other than the CBD. Furthermore, it may help change the demographic that is routinely expected to inhabit the outer fringe. It also increases the chances of existing services being used and strengthened. By providing a regional character to the area, a mixed-use environment can be created that is more than simply the residential area with retail services which is typically seen in most fringe suburbs.

3.1.3 Weaknesses

This implementation of this concept may rely on certain variables like funding and transport. A lack of access to public transport may defeat the purpose of having a popular regional destination, especially if it is an employment and/or educational hub. At the same time, use of private vehicles may lead to land being used for parking, which is a big disincentive. Most of the funding options to-date depend on critical mass to justify their business plans, and funding for this concept will have to rely on future projections. Additionally, other growth areas that do have critical mass and have residents may justify the use of funds more than a regional destination. Not all growth areas can have a large regional destination. While this makes the concept not generalisable, there is scope to use this concept to integrate the employment/education and transport planning for the entire region.

3.1.4 Challenges

Therefore, there are quite a few challenges that may come up in the implementation of a regional destination or hub. These are as follows

- Local employment opportunities are less likely for knowledge economy work that is currently concentrated in inner Melbourne (ABS, 2012) and this concentration appears to be continuing. Simply identifying areas and designating land uses in a region has meant that new jobs have been slow to appear and been out of sync with residents' aims especially for higher value jobs matching new residents' needs and demographic profiles
- Strategies for suburban development seeking local employment opportunities, whether for self-sufficiency, or regional dependence, have been criticised as international evidence shows that policies to achieve such targets do not actually work in practice, especially if simplistic models are used (Martinus & Biermann 2018).
- Smaller towns in networked cities may suffer as people travel to bigger cities for work, as has been the case in Australia
- It may be challenging to predict or visualise what the destination would be that would
- bring business and residential customers, or people can connect with and visit?
- This kind of hub or destination development may require a different and separate funding model to what is mainstream for greenfield suburbs.

3.2 Concept: Establishing a Transport Rich Neighbourhood...First

The literature suggests that accessibility to transport options (active transport and public transport) engender greater levels of use, and that these patterns of use are established early in new residential neighbourhoods. Existing research from Australia and elsewhere emphasises the following:

- That the costs borne by 'forced car ownership' on the urban fringes of Australian cities are considerable, and typically experienced in lower socio-economic communities with poor transport access
- That connectedness in public transport services, or other multi-modal trips including active transport are inhibited by fragmented provision of both physical infrastructure and service quality
- That early delivery of public transport and infrastructure for active transport options reduces dependency on private vehicles, including ownership of multiple vehicles

This concept was developed in response to the range of examples raised in our initial workshop from the following points of discussion:

- The need to consider how links within and between the PSP area, the proximate, established urban areas and potential new infrastructure (such as a re-established Beveridge railway station) could be optimised
- The recognition that early provision and adoption of alternatives to private car transport have longer-term outcomes in decisions about daily mobility and investments in private transport
- The need to consider adaptable design and scope for future transport technologies

3.2.1 Key characteristics of this concept in creating a 20-minute neighbourhood

In this concept transport options, particularly quality, connected public transport options are emphasised, especially connections to key regional centres and the wider metropolitan region. Not only are design features (for example key arterials) developed to accommodate services, but early provision of high quality and frequent services is highlighted.

The spatial characteristics include emphasis on small shops/local businesses, walkable and bike-able networks, connected to train stations/bus networks/local job places (such as Wallan as a node), flexible community centres/libraries (that can be moved/expanded when township expands).

This takes the emphasis of the proposed Beveridge NW PSP on designing for transport enabled corridors, but seeks to ensure, as indicated in the literature, that early delivery of frequent and high quality and direct transport connections (public and active) can alter longer-term habits in travel, meeting the 20-minute neighbourhood objective of being within reach of public transport.

3.2.2 Strengths

The obvious strengths of this concept are easier access to jobs and education as well as connectivity to daily services and recreation. The lower car reliance is predicted to have positive health and wellbeing outcomes and reduce emissions. A large part of infrastructure that is predicted to be provided in Victoria is roads and highways, which a well-integrated and planned mass public transit can substitute. This also allows residents to have good transport options from an early phase of moving in, forming sustainable and healthy travel practices, and indeed this may be the reason people preferably move into the area.

3.2.3 Weaknesses

The main weakness of this concept as a standalone implementation plan is the cost of construction and ongoing expenditure. This cost may not only affect the state and private agencies implementing the project, but also the users that may have to pay more for a specialised service they are getting. Work-in-Kind for GAIC infrastructure (particularly larger infrastructure items) is seen as difficult and too open-ended and risky by developers. The sequencing of transport as a priority may also involve interagency co-ordination at the state level. There also may be certain safety, access and connectivity issues involved with the sparse use of the service.

3.2.4 Challenges

One of the main challenges this concept may need to deal with is enough connectivity, by incorporating different forms of transport, last mile connectivity and equity issues. The other main challenge is to find innovative solutions to the funding problem of rolling out public transport (early) in overall growth areas. This may involve convincing and justifying to the funding agencies based on future projections rather than current need. This is a challenge on its own as other areas that are more developed may have better justification for transport implementation.

3.3 Concept: Greening as Place-Making in 20-minute neighbourhoods

The literature suggests that urban greening and urban shade offer critical health and urban design benefits for new urban development, as well as improving environments in existing urban locations. Key areas of existing research from Australia and elsewhere emphasise the following:

- The development of green infrastructure increases physical activity
- Hard and green shade infrastructure offer benefits for human health and thermal comfort in urban environments
- Both 'wild' and formal green infrastructure offer habitat and biodiversity outcomes, including in the 'novel' habitats of Australian (sub)urban locations
- Integrated blue and green infrastructure management at State, Local and community level presents a positive scenario for addressing climate change as well as urban liveability and wellbeing.

This concept was developed in response to examples and discussions raised in our initial workshop which emphasised a range of research projects focussing on urban greening:

- The need to address urban heat and comfort, including on the metropolitan fringe
- The need to create connected and comfortable greenways and shadeways in the urban environment, for recreation and for daily travel
- The evidence supporting green access and physical/mental health outcomes
- The scope for exemplar green urbanism in areas of higher density and in mixed use areas
- Strong evidence of increasing biodiversity impacts resulting from urbanisation in the Melbourne region

3.3.1 Key characteristics of this concept in creating a 20-minute neighbourhood

Green infrastructure planning and implementation as anchor and placemaking - Use greening/urban (re)wilding as attraction, node and for future development – 20 minutes through connected, shaded and thermally comfortable environments.

In this concept high levels of considered design and investment in green infrastructure is prominent and early in the development process of the Beveridge NW PSP Area. This results in areas of 'wild' and 'formal' greening and the creation of shadeways for active urban mobility and recreation, and areas of urban greening in commercial and activity centres. This creates an identifiable green urbanism for Beveridge NW.

Characteristics: Trees, parks, bike lanes, creek redevelopment, wildlife paths, green and hard shade in built environment.

This is broadly consistent with the Beveridge NW PSP objectives of retaining and enhancing the network of open space at the site, but differs in two ways: first that heavy planting for shade (not just habitat) is undertaken in early stages, and second, that this becomes a principle design function on identified core walking and cycling routes, and in activity centres, not just in undeveloped green space.

3.3.2 Strengths

Greening is predicted to instil a sense of pride and ownership in the communities and be valued by them as an irreplaceable asset. These green spaces are viewed as community and cultural spaces, that provide aesthetic and leisure amenity as well as being destinations to walk to. The concept of greening first that includes shadeways is an important requirement for increasing walkability. Other advantages of well-designed, prioritised and integrated green spaces include reducing heat vulnerability, addressing Urban Heat Island effect and being an overall tool for climate change adaptation and mitigation increasing urban resilience. Inclusion of native flora and fauna helps conserve biodiversity as well as increases awareness and respect for indigenous landscape. This concept is a pathway for achieving the targeted 30% canopy area in the greenfields, while increasing their viability as a coveted place to live and work. More public green space may future proof urban spaces from being built upon, thus dense green public spaces are better than private green spaces.

3.3.3 Weaknesses

Planning and implementation of this concept might have to bear upfront costs for creation as well as maintenance. Sequencing priorities, funding, flexibility, building 'ahead of demand' may not be easy to achieve. For example - Work-in-Kind for GAIC infrastructure (particularly larger infrastructure items) is seen as difficult and too open-ended and risky by developers. The time factor may need to be considered as well, because creating green walkable canopies, green-blue infrastructure that is usable as well as wild takes time to develop. Some projections also claim that green spaces lead to bigger cities, that may not be as walkable. Furthermore, because people value green spaces, there might be an increase in cost per dwelling, which might go against the affordability of housing. Current examples show that although WSUD forms a part of Plan Melbourne, it is not implemented well enough due to fragmentation of decision making, as well as reliance on market-led approaches that dilute the sustainability benefits of water management (Beza, Zeunert & Hanson 2019). There is a fundamental tension between biodiversity and amenity, and rewilding and urban greening, thus natural landscape and aesthetic values may not match. Moreover, what was previously present, indigenous values, demand from people may all shape the nature of greening.

3.3.4 Challenges

One of the main challenges for this concept to be prioritised, besides funding, is its comparison with other social infrastructure. Would people value it over other community facilities and infrastructure? This would be a challenge to overcome in how this concept is implemented. Maintenance and ongoing costs for green areas are quite high, and as communities come to inhabit the suburbs a sense of ownership may be required. This demands further research and careful planning on the part of the implementation agencies. Integrating green spaces in PSP and Master planning may be required that also needs integrated planning at different levels and with varied agencies.

While a careful planning in plant selection is required to accomplish various functions in creating a blue-green landscape, aesthetic values of blue green spaces may also come in tension in the planning, especially where planting for habitat is sought on Melbourne's northern grassy plains.

3.4 Concept: Concentrated development for dense and connected 20-minute neighbourhoods

The literature suggests that dense, connected neighbourhoods with access to key activity locations are more walkable and engender higher levels of activity.

Existing research from Australia and elsewhere emphasises the following:

- The development of viable activity centres for community services, retail and employment as drivers of local engagement
- Residential density and land use complexity as indicators of walkable neighbourhoods
- Adaptability in land use and development to meet changing needs in terms of population size and characteristics

This concept was developed in response to the range of examples raised in our initial workshop from the following points of discussion:

- The need to encourage viable activity centres from initial development stages
- The need to create cultures of connectedness and walkability, with exemplars of dense and walkable neighbourhoods in initial phases of development
- The need to address early provision of commercial and community services while recognising the need to consider flexibility in use and scale in growing communities
- The need to consider a mix of activities in initial phases of development to improve local connection and the viability of the activity centre(s), rather than a solely residential focus for the location
- The Beveridge NW PSP proposes that almost half of all housing is at densities of above 30 dwelling/ha and within a nominated 1km catchment to activity centres– this concept proposes initial sequencing of delivery of these mixed and relatively higher density developments, before consideration of general residential development.

3.4.1 Key characteristics of this element/concept in creating a 20-minute neighbourhood

Concentrated development - Involves developing a very small high density living and retail scenario. Ensure infrastructure delivered first. Ensure activity centre is walkable – 20-minute walking radius.

In this concept both commercial and medium/high density residential development occurs in the initial stages of the urbanisation of the Beveridge NW PSP Area. This creates a viable population size for initial commercial development and activity density and mix to engender viable local activity at a walkable scale in advance of more typical extensive and car-based suburban development.

Characteristics: Establishment of local retail and businesses, walkable and bike-able network, connected to train station/bus networks/local job places (such as Wallan as an activity node), higher density residential development first, flexible community centre/library (that can be moved/expanded when the community expands).

3.4.2 Strengths

As an integrated concept, prioritising and implementing a concentrated development creates more viable infrastructure and a market for using that infrastructure, such as retail, earlier. More employment opportunities, by creating local work, are also predicted. This can reduce the time travelled by car to such destinations and increase walking. The higher and mixed density model is also more walkable than what is generally seen in greenfield developments. It may also be able to support greater housing and socio-economic diversity due to different densities planned. Another advantage predicted, as seen in dense and well used streets and neighbourhoods, is the vibrancy and activity that is promoted.

3.4.3 Weaknesses

While vibrant and walkable neighbourhoods are desired outcomes, higher densities may not be acceptable for all. Therefore, the viability of such an outcome remains a problem; developers have often argued that they cannot sell higher density when there are no amenities yet and paradoxically retailers (especially the anchors) are reluctant to locate to a town centre before there sufficient residents. A new model of development may need to be implemented which may be hard to adapt to or even change for the existing market, development industry and governmental or implementing agencies. A weakness of the current model has been the tension between quality of the development versus the high output and volumes that have been delivered.

3.4.4 Challenges

Integration of higher density with green spaces, and other infrastructure is the main challenge for this concept, primarily in terms of funding and sequencing. It might be difficult to get retailers and/or other services to move into the new town centre as it might not be viable for them when the area is not inhabited with 'critical mass'; and it might be difficult to achieve the higher densities at the beginning.

There are fine grain design features that may become very important to address in the planning stage, which include streetscape design and design quality. These may be useful for marketing the narrative of a concentrated and healthy neighbourhood. Further design requirements may need more research such as designing flexible neighbourhoods for children and adults alike, ageing in place and changing retail requirements.

Lessons for Living Locally

Implementation Report

Each of the elements above is broadly consistent with some of the overall objectives of the Beveridge NW PSP while seeking to identify how the principles and findings of the 20-minute neighbourhood objectives of Plan Melbourne and the broader literature on 'living locally' in Melbourne's fringe areas can be practiced in planning. As discussed, they are not exclusive approaches, but there is apparent tension between aspects of them, and in achieving a pathway to delivery. These issues are discussed below.

4.1 Pathway to 20-minute neighbourhood

The pathway to a 20-minute neighbourhood may lie in an overall strategic plan for development in growth areas. Thus, rather than thinking of just land development, socio economic infrastructural development of the whole region may be a priority. Concentrating government investment in one growth corridor may also help. Concepts and ideas that rest on creating more liveable city rather than individual PSPs may be a better strategy for the future of Greenfield Suburbs. While there are certain concepts above that go better with each other than some others, they all rely on forward planning, future thinking and learning from the outcomes of the current model that has been implemented.

Greening is one of the primary ways to enhance liveability, likeability and attractiveness of the area. It also provides open community spaces, along with green-blue spaces for recreation and walking/biking/exercise. The linkages through green space can be designed as 'green links' and green shade ways and bikeways as 20-minute paths as 'journey'. Green spaces designed as cultural spaces are a way to collaborate with traditional landowners on vision.

Ideas such as attracting different demographics, rather than focusing on getting people that are forced to live in greenfields, through developing a State government planned Medical or Education precinct, may be employed. This may also involve looking at aged care, students and game villages/sports venues. Stakeholders in Workshop Two believed Beveridge is not as far away from location of work and activity as many people think. Developing a blue-green place/natural landscape as amenity/destination may attract a different demographic and generate employment. If residents are expected to work and live in the same area, thought must be given to what specialised high-value jobs can be attracted to regional areas, so these areas remain competitive and productive. This might include policies such as relocating public agencies, regional targeting of university-based research and development spending, boosting services such as schools and hospitals, and providing incentives for innovative private companies to relocate to regional towns. Transport options that efficiently connect this regional destination need to be strategized as part of an integrated transport plan. This regional destination may then support and encourage concentrated development.

Concentrated development focussed on activity centres and 'Cornerstone' town centre projects aimed at delivering growth area residents may vastly improve access to critical services and infrastructure, such as has been planned in the city of Whittlesea. Combined with greening, working with landowners/ developers may be required to develop a new streetscape model. These might need to be supported by train lines and other transit options.

4.2.1 Transport and Movement

Further research may be required to understand the scope and limitations of the following issues:

- The value and scope for bringing bus route planning forward, with frontier bus fleets of smaller short-term buses and routes with emphasis being placed on upfront financing of 'bottleneck' infrastructure such as bridges.

- Understanding the lived experiences and market preferences for densities for walking and cycling (≥ 20 gross dwellings per hectare (Boulange et al. 2018) or ≥ 35 net dwellings per hectare for public transport (Giles-Corti et al. 2008) in these areas.
- The role of greenspace, shade as infrastructure and access to nature and habitat in promoting increased active daily transport, not only as recreational movement
- The outcomes of building stronger integration between public transport (and other 'flexible' transport options such as node-to-node car share) and walking and cycling, which seems to be missing from existing PSPs, generally as this planning typically occurs in the implementation phase, e.g. when a train station or bus interchange is to be built.

4.2.2 Commercial Development

Additional research and practice assessment should be undertaken to consider:

- How the typically staged models of retail centre development from (smaller to larger) affect the longer-run viability of early centres and their uptake (and transition) to non-retail commercial land uses
- How the sequencing and development of staged retail-focussed activity centres affects the viability and market for non-retail land uses
- What barriers exist to reconsidering design element that create less walkable retail spaces (for example front facing surface car parking) and limit opportunities for mixed land uses (for example multiple levels of residential and non-retail commercial land uses, the use of greenspace and shade infrastructure in the public realm, and assessment of the success of those examples that have been developed

4.2.3 Housing Mix on the Fringe

Additional research and practice assessment should be undertaken to consider:

- How the existing housing mix meets demographic patterns and market preferences in fringe areas. The features of Beveridge NW and the area offer a point of enquiry for a longitudinal research piece into new residents
- How the development of higher density development (as identified in the Beveridge NW PSP) within the walkable catchment affects comparative sales and values for this area, both for these units and for conventional units.
- How housing units at higher densities, but with specific market segmentation (such as retiree living) deliver on walkability outcomes purported to be achieved from higher densities.
- How rates of return and land holding costs are affected by reversing typical development patterns to initiate higher density areas first and non-residential development well before typical residential densities.

Most of all, in the example of Beveridge NW and similar locations, a vision or narrative should include scope for concentrated and co-ordinated development that includes more than one of the elements described above and can be strengthened on their basis. A strategy or forward planning based on that narrative can instil trust in developers and buyers alike, while also aligning with the longer-term concept of the PSP. It also requires interim uses of certain spaces (such as temporary and adaptable structures and spaces) and may be able to be done by multi-level and multi-agency co-ordination, but the ephemeral nature of these uses and spaces needs to be a clear element of development and community expectations in the area. For example, Development Victoria taking a lead on neighbourhood centres and supporting small retailers and community services, using GAIC funding for such purposes, may help.

This narrative may also need to involve taking into account who the concentrated development, retailing and local movement is taking actually place. As seen in the literature review, a heterogenous account of how the streets, public spaces and community buildings are used is one of the primary building blocks of a 20-minute neighbourhood. Policy narratives that limit the identity of specific spaces and practices as 'marginalised' or that create retail centres that do not reflect the full community context neglect the increasing heterogeneity of community on Melbourne's fringe.

Conclusions

Recommendations for delivering a 20-minute neighbourhood in Greenfield Sites

This section provides some specific recommendations for the current review of the Precinct Structure Plan Guidelines as they relate to sites like Beveridge NW, reflecting on approaches to using the four conceptual elements to inform that process. As noted, the Beveridge NW area has similarities and some differences to metropolitan fringe development areas. While all PSP areas are unique, this site has particularities including being non-contiguous with the metropolitan area, being adjacent to an historic town, having considerable areas of open space (and varied topography) and being immediately adjacent to a major freeway.

The challenges in this regard for delivering an area of 20-minute neighbourhoods relate not only to internal design, but also to how the area(s) for delivery of this concept are bounded, conceived and implemented. It is likely that significant areas within Beveridge NW will remain undeveloped, or developed with low residential densities, and that delivering a 20-minute neighbourhood should primarily focus on the identified walkable catchments and areas close to key internal (public) transport corridors. Nonetheless, the connectivity of the site to locations like Wallan, Wallan Railway Station, a future Beveridge (or Lockerbie) Railway Station and similar destinations deserve consideration now. Presently, the PSP process for this site, and similar sites, offers limited analysis and planning in this regard.

The sections below follow the existing structure of a PSP under existing guidelines and offer commentary regarding their strengths and challenges in addressing the issues raised in the review of literature and the context provided by Beveridge NW.

5.1 Developing a PSP Strategic Context and Vision

Setting the scene for the specific development precinct allows consideration of a broader context of housing demand, work, travel and infrastructure (social and physical). In the Beveridge NW example this includes the objectives of housing choice and affordability as well as accessible transport and supporting local work. In this regard the Vision and Context offers some recognition of the location and challenges of the PSP area, yet the broader problems of connectivity and the relationship of the site to work, transport and (importantly) the potential role it will play for existing developed areas (Beveridge town and Mandalay for example) is limited. This suggests a role in PSP Guidelines, especially when it is beyond a sequenced metropolitan growth area, for a larger contextual assessment – where will people work, how does the site connect to transport systems? And other factors of a sub-regional nature. While the transport modelling is strongly focussed on modelling the travel and transport role of private vehicles and their impact on volume with and beyond the site, consideration is made of a likely local bus network. For example, the transport task of active modes at Beveridge NW is not considered in this analysis (modal share is presumed to remain constant (GTA Consultants, 2018) notwithstanding the staged delivery of public transport or high amenity active transport routes that may suggest alternative modelling scenarios. The economic (particularly retail) analysis (Ethos Urban, 2019) provides a more regional context and a sub-regional hierarchy of retailing for residential catchments. Consideration of futures for local employment beyond retailing are limited, as are consequences of working populations on retail catchments.

Recommendations: developing a contextual analysis for PSP sites that includes scenarios for varied roles within the region, sub-region and metropolitan (or extra-metropolitan region). Present assumptions about the role of precincts as fundamentally residential areas, and as contained for the purposes of active transport, limit scope to consider those elements of the 20-minute neighbourhood that extend beyond active transport for recreational or basic service mobility. The literature suggests that diverse land uses mixes and inter-modal transport options are important elements of behavioural change and assessments and modelling should incorporate these elements.

5.2 Integrated Precinct Design and the Specific Elements of the PSP

Like most PSPs, the specific elements of the Implementation process of the Beveridge NW PSP are provided as Requirements and Guidelines with different expectations, direction or performance of the aspects of a final development on-site. The requirements and guidelines for specific elements of the Beveridge NW PSP offer a good orientation (where relevant) to local movement and design with neighbourhoods, while the integration of aspects (for example urban greening and shade) with pathways and networks are less apparent as each aspect is (typically) addressed individually. The elements of developing a 20-minute neighbourhood outlined in the literature review and workshop outcomes are largely integrated issues; urban design, economic transition, housing mix, infrastructure sequencing for example. The process of describing and articulating the framework for development will necessarily offer details on locations and themes (or elements such as transport), however many aspects of the 20-minute neighbourhood concept require a clear outcomes-focussed integration of approaches.

Recommendations: The 20-minute neighbourhood principle and policies should be a cross-thematic implementation elements with its own Requirements and Guidelines that include a variety of issues relating to design and density (both public and private realm), economy/employment and infrastructure (social and physical). This suggests consideration of a range of objective-focussed elements may be suitable considerations for future PSP design through design guidance, or a checklist, that emphasises integrated consideration of issues that impact on delivering a 20 minute neighbourhood.

5.3 PSP Infrastructure Planning

The Beveridge NW structure plan offers strong consideration of social and physical infrastructure to support elements of 20-minute neighbourhood with regard to social spaces (including active open spaces), road and path network design, and public transport capacity. Each of these elements offers requirements and guidelines that are generally supporting of local access to schools, recreational spaces and other facilities, and to the design of a pathway network that has the potential to be used as an active transport network for recreation and local commuter use. However, evidence from similar sites in the existing research literature suggests barriers to active and public transport use extending beyond design issues to those of urban mix, density and sequencing of infrastructure and service delivery.

Recommendations: As with priorities for activity centre/employment development, priorities for infrastructure staging should explicitly focus on the delivery of a 20-minute neighbourhood through sequencing that seeks to focus on identified walkable catchments and destination nodes (particularly social and recreational infrastructure).

5.4 Staging the Development through the PSP

The staging of development and service provision in PSP processes is largely curtailed by the nature of development returns, industry priorities and the delivery of services (such as schools and public transport) by government. The application of GAIC funds, as well as the budgets of other sectors is considerable in this regard. The Beveridge NW PSP, consistent with other PSP examples articulates an agenda for development staging that seeks the early delivery of facilities, utilities and an internal transport network, and the sequencing of development that “should have regard to” the proximity of services, infrastructure and facilities. It does not explicitly seek the development of particular areas, despite identifying walkable catchments and a hierarchy of activity centres. While this is consistent with market-led processes of greenfield development, the research suggests it does not result in walkable, accessible 20-minute neighbourhoods. Moreover, the inability of the PSP process to articulate a vision for the delivery of services and infrastructure at a whole-of-government level, this limits key aspects of a successful 20-minute

neighbourhood from being realised in a timely way.

Recommendations: To more effectively deliver the concepts and elements underpinning a 20-minute neighbourhood, two key sequencing approaches are necessary; a whole-of-government approach to sequencing of services should be a component of PSP processes, extending into areas including public transport provision and planning for government schools, and PSPs should articulate specific priority development locations, such as those areas within walkable catchments of key services and activities.

References

- ABS (2019) 3218.0 - *Regional Population Growth, Australia, 2018-19*, Australian Bureau of Statistics, Canberra
- Beza, BB, Zeunert, J & Hanson, F 2019, 'The role of WSUD in contributing to sustainable urban settings', in A Sharma, T Garner & D Begbie (eds), *Approaches to Water Sensitive Urban Design*, Elsevier, pp. 367-80.
- DEWLP (2017), *Plan Melbourne*, The State of Victoria, Department of Environment, Land, Water and Planning, Melbourne, Victoria
- DELWP (2019) *Victoria in Future: Population Projections 2016-2056*, The State of Victoria, Department of Environment, Land, Water and Planning, Melbourne, Victoria
- Ethos Urban (2019) *Beveridge North West PSP: Economic Assessment*, Ethos Urban, Melbourne
- GTA Consultants (2018) *Beveridge North West PSP: Strategic Transport Modelling Assessment*, GTA Consultants (Vic), Melbourne
- Hoolohan, C, McLachlan, C & Larkin, A 2019, "Aha'moments in the water-energy-food nexus: A new morphological scenario method to accelerate sustainable transformation', *Technological Forecasting and Social Change*, vol. 148, p. 119712.
- VPA (2019) *Beveridge North West Precinct Structure Plan*, The State of Victoria, Victorian Planning Authority, Melbourne, Victoria



Further Information

Centre for Urban Research
RMIT City campus
Building 8, Level 11
124 La Trobe Street
Melbourne VIC, 3000
Australia

T: +61 3 9925 0917

E: cur@rmit.edu.au

www.cur.org.au

Acknowledgment of Country

RMIT University acknowledges the Wurundjeri people of the Kulin Nations as the traditional owners of the land on which the University stands. RMIT University respectfully recognises Elders both past and present. We also acknowledge the traditional custodians of lands across Australia where we conduct business, their Elders, Ancestors, cultures and heritage.