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UNLOCKING THE POTENTIAL

for working closer to home

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The Bankwest Curtin Economics Centre is the first research organisation of its kind in Western Australia, and draws great strength and credibility from its partnership with Bankwest, Curtin University and the Western Australian government.

The centre brings a unique philosophy to research on the major economic issues facing the state. By bringing together experts from the research, policy and business communities at all stages of the process – from framing and conceptualising research questions, through the conduct of research, to the communication and implementation of research findings – we ensure that our research is relevant, fit for purpose, and makes a genuine difference to the lives of Australians, both in WA and nationally.

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Executive summary

This study examines the barriers to, and opportunities for, increasing the number of people able to work closer to their home in both metropolitan Perth and regional Western Australia (WA).

Three key strands of research have been pursued. First, an analysis of worker commuting and place of employment patterns across WA provides information about current homeworking and commuting patterns. Second, an examination of the governance framework and associated policies is made in order to understand the extent to which they facilitate or create barriers to the success of shared working spaces, telecommuting and home-working. Third, interviews with a sample of managers and users of shared working spaces provides an assessment of the extent to which these emerging work spaces support working closer to home. As concomitant benefits to working closer to home, travel reduction and local neighbourhood vitality in urban and regional settings are assessed. These interviews also inform the study as regards the planning and governance issues which facilitate or hinder the set-up and potential for the growth of these emerging forms of non-traditional working spaces.

This research therefore informs key policy areas of urban and regional planning, employment and transport.

Key findings

Current homeworking and commuting patterns in Western Australia

- In Greater Perth more than one in eight workers are working either at or close to home.
- On average it is estimated that one quarter of workers residing in Greater Perth work within 5kms of home.
- Greater Perth reveals a pattern of 'two cities' with distinct differences in working closer to home between inner suburbs and the middle and outer suburbs.
- There is a large spatial variation - inner city residents and urban fringe residents record a much higher proportion of working close to home.
- The inner city suburbs circling the river have upwards of 20% of people working close to home (within 5kms from home).
- Of those working greater than 5 kilometres from home, those residing in middle and outer suburbs dominate with upwards of 50% of workers leaving their suburb.
- The homeworking rate is higher in the rest of Western Australia than in Greater Perth, standing at 6.0% (14,329 persons). Homeworking is dominated by those employed in Agriculture, forestry and fishing (7,135 persons), followed by those employed in Professional, scientific and technical services (1,009 persons).

Governance and planning for working closer to home

- Homeworking, shared working spaces, telecommuting and co-working spaces do not generally feature as thematic aspects of planning policy in Western Australia.
- Emerging forms of non-traditional working spaces have gained limited policy attention.
- Local planning schemes consistently utilise risk-averse regulation for home business.
- There is generally little consistency in the treatment of homeworking and shared working spaces across jurisdictions or agencies.
- Policy, overall, contains little mention of the nature of employment, and does not reflect the diversity of working space types now possible.

The potential for working closer to home: the role of shared working spaces

- Globally the number of new shared working spaces is experiencing rapid growth. In Western Australia there are now more than 20 such spaces.
- Shared working spaces largely materialise through an ad hoc process that capitalises on redundant sites in the city and in rural and regional towns.
- Most shared working spaces are established opportunistically, outside of usual real estate processes.
- Urban planners were not directly mentioned as major actors who played a role in facilitating shared working spaces. Instead economic or community development officers and local politicians are more proactive in this space.

Key findings (continued)

- Enhancing neighbourhood vitality by attracting shared working spaces suffers from a 'vicious circle' - while some shared working spaces contributed to neighbourhood vitality, pre-existing neighbourhood vitality was considered an essential ingredient to the success of the spaces.
- Neighbourhood vitality was of importance primarily for urban shared working spaces. Regional and rural shared working spaces tended to be utilised by a captive customer base with sustained demand for the services on offer due to the service supply constraints associated with the remote locations.
- In Greater Perth the majority of shared working spaces are currently located in the inner city rather than middle or outer suburbs. As a consequence there is little indication that they currently reduce travel demand; alternatively they are likely to increase demand for travel.
- The interview findings reinforce the planning policy analysis – there is an absence of any significant consideration of non-traditional working spaces within Western Australian policy frameworks. Many shared working spaces are developed, not because of but in spite of any planning regulations or policy instruments.
- Urban planners could be more proactive in identifying vacant and underutilised space suitable for shared working space.
- Efforts by policy makers and planners to attract more shared working spaces should consider the suitability of sites based on the existing amenity and vitality of urban areas. Additionally, there is a need for broader proactive, more flexible and adaptive approaches to managing these types of spaces. An urban policy approach that encompasses urban density, cultural policy and economic development is required in order to facilitate synergies between shared working spaces and their supporting urban contexts.

Introduction

This study examines the barriers to, and opportunities for, increasing the number of people able to work closer to their home in both metropolitan Perth and regional Western Australia (WA). In addition to working from home, the role of local neighbourhood-based 'shared working spaces' to support telecommuting and homeworking is a particular focus. While it is acknowledged that the barriers and opportunities for telecommuting and homeworking are different between metropolitan and regional WA, it remains useful to consider the common range of factors that make working closer to home more achievable.

It is known that working closer to home is important for greater urban self-containment and, thereby, travel reduction. It is also known that diverse working arrangements are critical to attracting and retaining skilled labour in outer metropolitan and rural areas. In this respect it is important to understand what proportion of Western Australia's labour force work either at or from home, or close to home and how this differs spatially and by occupation. Coupled with this, there is a need to examine the current governance framework and policy settings to understand the extent to which they support local neighbourhood based 'shared working spaces', telecommuting and homeworking. Addressing the critical knowledge gap about the barriers to and opportunities for home-working is timely given the high level of public discontent regarding both urban congestion and the location of local employment opportunities in suburban metropolitan Perth and regional Western Australia. International studies (Alexander and Dijst 2012; Choo, Mokhtarian and Salomon, 2005) suggest that an increase in the opportunities for people to work from or closer to home can alleviate these points of discontent. This approach is also consistent with government planning policy, which has long sought to increase urban self-containment.

A systematic literature review on shared telecommuting was conducted at the start of this research. Drawing on academic research literature, this review synthesized existing knowledge on the factors that motivated individuals and businesses to utilise telecommuting centres, the role of workplace policies in facilitating use of telecommuting centres, and the impact of telecommuting on employee wellbeing (Davies, 2016). Overall it was concluded the existing knowledge base underlined the variability of telecommuting's effects on workers' behaviour and wellbeing. Several gaps in knowledge were noted including the relationship between telecommuting centres and the neighbourhood scale context, and the impact on telecommuting in the regional and rural context. Furthermore, it was noted that there was not one type, but rather a variety of forms of telecommuting and teleworking.

The structure of this report is as follows:
Chapter 1 draws on the Australian Bureau of Statistics census and survey data and uses GIS mapping to identify spatial trends in the data and provide an analysis of worker commuting and place of employment patterns across WA thus providing a status report of current home-working and commuting patterns in Western Australia;

Chapter 2 examines the governance framework and planning policies in Western Australia that facilitate or create barriers to the success of shared working spaces, telecommuting and home-working;

Chapter 3 draws on findings from interviews with a sample of managers and users of co-working spaces and Community Resource Centres in metropolitan Perth and regional Western Australia in order to assess their contribution to working closer to home, travel reduction and local neighbourhood vitality in urban and regional settings, as well as the planning and governance issues surrounding these alternative forms of working space.

Current

Homeworking and Commuting Patterns in Western Australia

Current homeworking and commuting patterns in Western Australia

Planners and policymakers have long proclaimed the potential individual and social benefits of working from home or close to home (Allen et al. 2015). Working in the home environment can provide flexibility for care-givers and child-minders who are able to adapt work schedules around their responsibilities. There are productivity gains in saved time from commuting where urban traffic congestion is a major and growing concern for Australian cities (IA, 2015), and this is also the case even where congestion is not an issue. Individuals have also reported increased mental wellbeing from working at home (Bentley et al. 2016). Benefits extend to broader social and economic effects. Increases in home-working, telecommuting and local area commutes have been linked to potential transport system efficiencies, through less congestion, easing of rush hour peaks in demand, and greater scope for walking and cycling trips (Bailey and Kurland 2002). The positives of working close to home however, need to be balanced with various risks to wellbeing. Work life can intrude into home life and increase stress (Dockery and Bawa 2014) and may induce a sense of social isolation.

Given these potential benefits, how feasible are policy efforts to support homeworking or working closer to home in Western Australia? Perth has long been considered a 'car dependent' city. In this chapter the extent to which residents of Western Australia work at home, close to home or further afield is examined.

The commuting behaviour of urban and regional populations provides an insight into where working from or close to home sits within the transport mix and also the land use and economic activity 'mixes'. This research adds a new dimension to previous analysis conducted by Martinus and Biermann (2016) who included a focus on employment self-containment (the proportion of residents who work locally) for Greater Perth. Using six broad planning sub-regions they found that, in four cases, less than 50 per cent of residents worked within the same sub-region. Martinus (2016) elaborated on the occupation of commuters, and the associated mismatches between resident job skills and employment locations, but still at the broad sub-regional level.

In our research we document commuting patterns in WA at the SA2 (Statistical Area Level 2) geographical level in the 2011 Census of Population and Housing (ABS 2011). This is the smallest geographical unit for which individual commuting flows can be extracted from the census[1]. SA2s aim to represent a community that interacts socially and economically, and they generally have a population range of 3,000 to 25,000 persons, and thus represent an appropriate scale with which to consider the potential for working closer to home. Of note is that there is currently no data collected on the extent of telecommuting per se in WA.

[1] A commuting flow was assumed to be between a person's place of usual residence and the place of their main work in the week prior to Census Night. This is not a perfect assumption, as some people may have moved jobs or homes within that week.

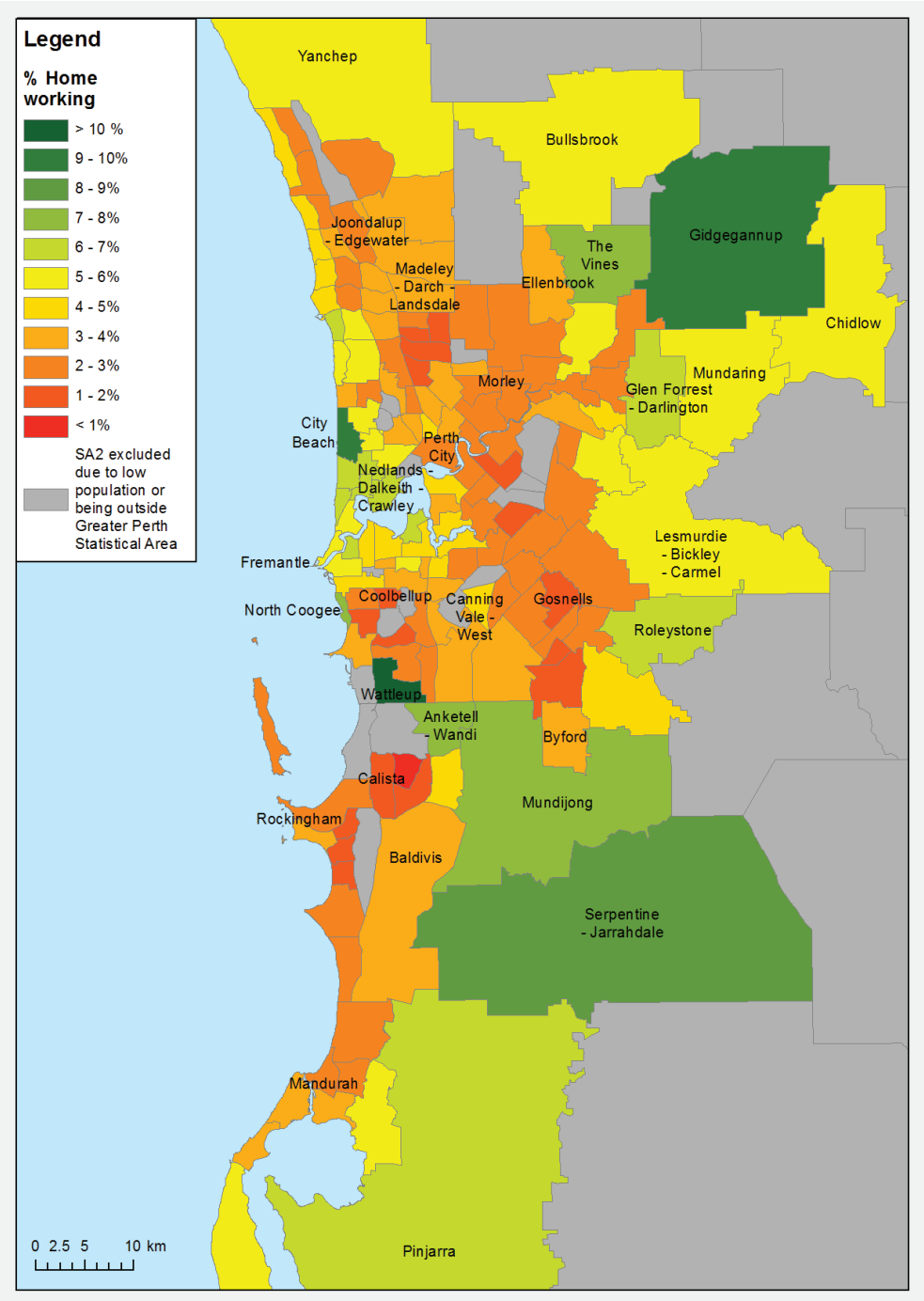
Working at or from home

In Greater Perth the average homeworking[2] rate is 3.4 per cent (29,472 employees out of 857,625). There is some variation in this rate by occupation category, with Clerical and Administrative Workers (6.3%), Managers (5.0%) and Professionals (4.8%) having greatest proportions of homeworkers in their category group as compared to other groups.

Figure 1 provides a spatial overview of homeworking rates for each SA2 in Greater Perth. Rates are highest in the affluent western suburbs where professional occupations dominate (Figure 2) and on the semi-rural fringe where technicians, trades and labourers are the more dominant occupation groups. In this latter category, the classification as homeworkers of people who are constantly travelling in the course of their daily work (e.g. plumbers, bricklayers) is a result of them either starting their working day from home, or using home as their administrative office.

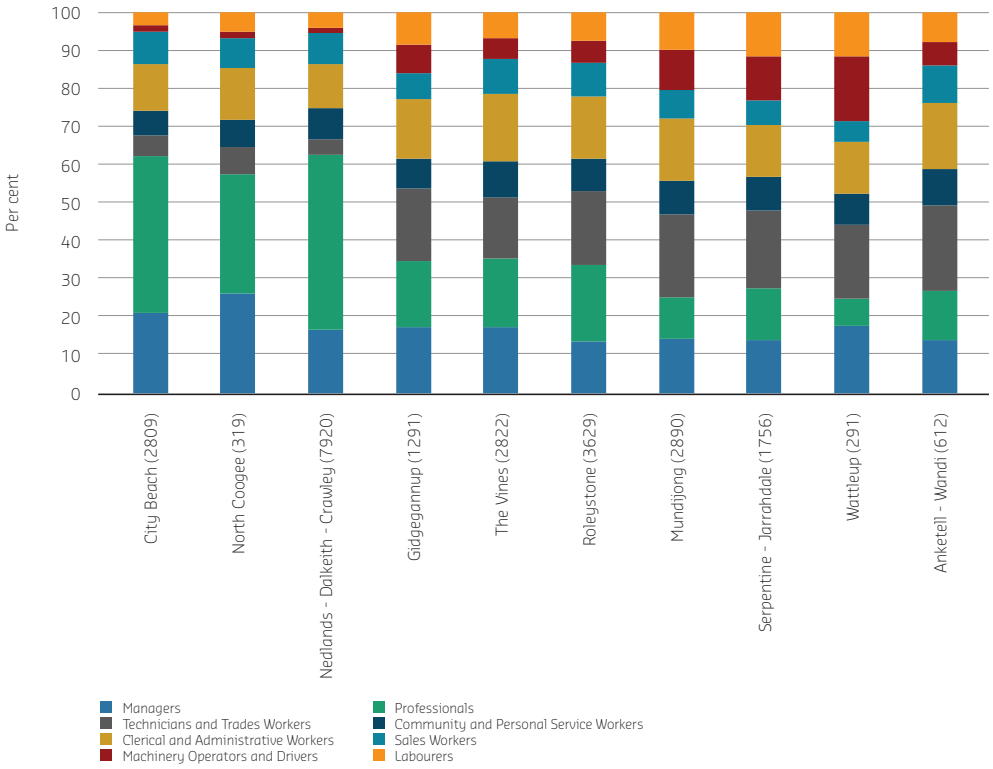
[2] Homeworking was defined as % of employed persons aged 15 years and over who answered "Worked at Home" to the question "How did the person get to work on Tuesday, 9 August 2011?"

Figure 1 Homeworking rates for SA2s (of usual residence) in Greater Perth



Viewed by industry of employment group, 'Agriculture, Forestry and Fishing' has by far the highest proportion of homeworkers within its group (18.3% or 960 persons), followed by 'Professional, Scientific and Technical services' (9.6% or 6,833 persons). Other industry groups with greater than 5.0 per cent homeworking include 'Rental, Hiring and Real Estate Services'; 'Arts and Recreation Services', 'Financial and Insurance Services', 'Other Services', and 'Information Media and Telecommunications'.

Figure 2 Occupations for the SA2s in Greater Perth with the highest rates of homeworking.



Note: The numbers in brackets are the number of employees in each SA2 where an occupation category could be assigned.

In the rest of WA (outside Greater Perth) homeworking rates are higher on average, with 6.0 per cent (14,329 employees out of 237,326) working from home. However, there was considerable variation between SA2s. 25 out of the 26 top SA2s in WA for homeworking[3] were all in the agricultural areas of the southwest, especially the southern Wheatbelt. The top three SA2s were Gnowangerup (23.8% homeworking), Kulin (22.3%) and Kojonup (21.6%). This correlates with ABS employment data for the 'Rest of WA' showing that "Agriculture, Forestry and Fishing" has by far the highest number of people working from home, both in absolute (7,135 persons) and percentage (34%) terms.

Homeworking rates in key regional town SA2s (Table 1) vary, but like most of Greater Perth, are less than 10 per cent of employed residents for that particular SA2. Some of the variation may be due to boundary artefacts relating to the extent to which agricultural land uses fall within the SA2 boundary (for example the Carnarvon SA2 includes plantations along the Gascoyne River, and another regional town SA2 includes viticulturists in Margaret River). Also some of these SA2s only cover the central area of a larger town.

3 Based on place of usual residence, when normalised for population.

Table 1 Homeworking rates in key regional town SA2s

	Number of Homeworking Employees	Homeworking Rate (%)
SA2 Name		
Carnarvon	219	9.4
Margaret River	243	6.7
Esperance	252	4.7
Manjimup	112	4.4
Busselton	401	4.2
Albany	243	4.1
Broome	239	3.8
Narrogin	78	3.9
Geraldton	133	2.5
Bunbury	208	2.5
Port Hedland	50	2.1
Kalgoorlie	135	1.9
Newman	40	1.4
Karratha	153	1.7

Working close to home: Internal commutes in the same SA2

To assess numbers of employees working close to home, commutes within SA2 boundaries were used as a proxy measure. Across Western Australia, the average rate of internal commuting (commutes within the same SA2, but not counting homeworking) was 18.1 per cent (198,559 employees out of 1,094,951).

In the Greater Perth region the rates of internal commuting[4], at 9.6 per cent, are much lower than those for the State as a whole (82,554 employees out of 857,625). The rates of working close to home in the Greater Perth region are shown spatially in Figure 3. Low rates of internal SA2 commuting are the norm in Perth, but some key centres have higher rates. The top ten SA2s for internal commuting rates within the Greater Perth Statistical Area are shown in Table 2. Two patterns are evident - a greater proportion of inner city residents work close to home (again professionals and managers – see Figure 4) as do those living at the urban fringe.

[4] Based on internal commutes within the same SA2, but not counting homeworking. Note that several SA2s with very low rates of internal commutes are very close to regional centres (e.g. Midland, Fremantle, Armadale) and may therefore exhibit only short distance commutes, perhaps not much different from internal commutes.

Figure 3 Rates of working close to home

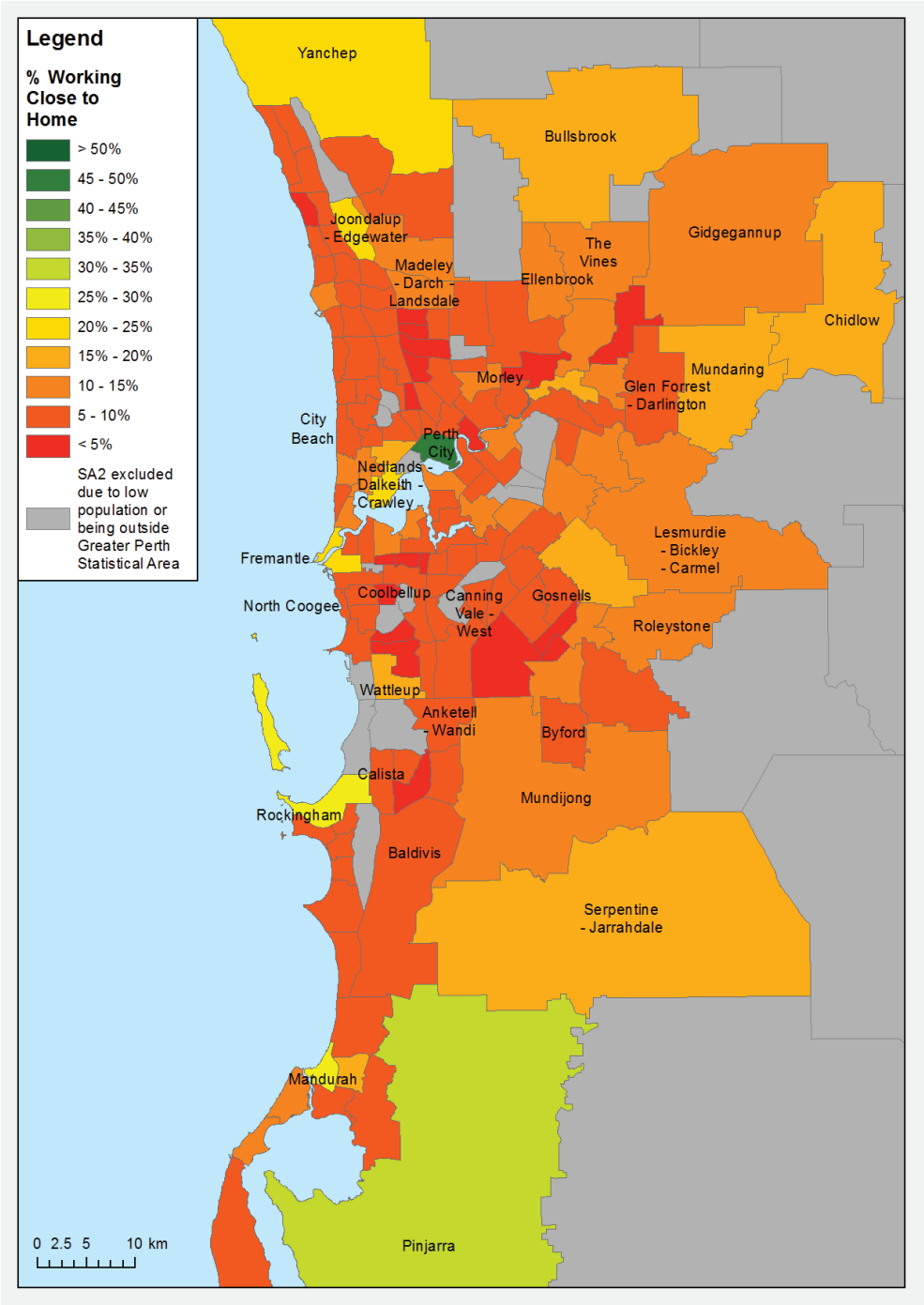
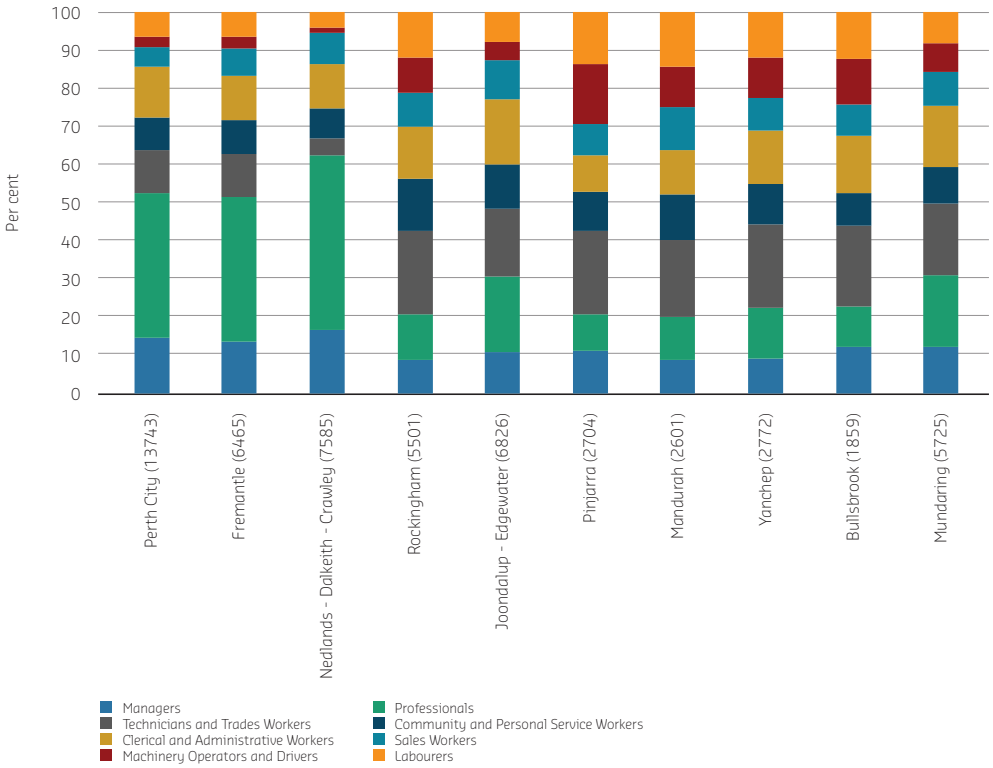


Table 2 The top ten SA2s for internal commuting rates within the Greater Perth

SA2 Name	Number of Internal Commutes	Number of Workers Living in SA2	Internal Commuting Rate (%)
Perth City	6893	14938	46.1
Pinjarra	1051	3194	32.9
Rockingham	1842	6336	29.1
Mandurah	855	3093	27.6
Fremantle	1635	6989	23.4
Nedlands - Dalkeith – Crawley	1639	8039	20.4
Yanchep	649	3199	20.3
Joondalup – Edgewater	1513	7509	20.1
Bullsbrook	428	2153	19.9
Mundaring	1230	6327	19.4

Figure 4 Occupations for SA2s with a high level of internal commuting in Greater Perth



Note: The numbers in brackets are the number of employees in each SA2 where an occupation category could be assigned.

Outside of Greater Perth, the average rate of internal commuting for regional SA2s was 48.9 per cent (116,005 employees out of 237,326).

Commuting beyond the local area

While almost a quarter of workers in Western Australia either work at home or in the same SA2 as they live, the majority of people work in a different SA2 to that in which they live. This section examines commutes between SA2s[5].

For Greater Perth, it is clear that a high proportion of residents commute to locations beyond the SA2 within which they reside – as shown spatially in Figure 5.

The exact length of commutes is difficult to calculate directly from the ABS data, because of the variable size of the SA2s, but some generalisations can be made based on the distance between SA2 centroids. Figure 6a shows the percentage of workers commuting to nearby SA2s, where "nearby" is defined as SA2s whose centroids are within 5km of each other. It shows a clear hotspot immediately around Perth City. Whereas Figure 6b shows the higher proportion of workers residing in the outer and middle suburbs who experience longer commutes. Some caution is needed in relation to the fringe suburbs since this pattern is partly a result of SA2 geography (the outer SA2s are larger so, for some SA2s, there are simply no other SA2s whose centroids are within 5km). However, this finding (Figures 6a and 6b) is further supported by an analysis of actual commuting flows between SA2s, as presented in Figure 7.

5 Commuting flow mapping was performed with software developed by Gulluoglu (2014) and the Quantum GIS Development Team (2015).

Figure 5 Percentage of workers in Greater Perth who live in one SA2, but commute to a different SA2

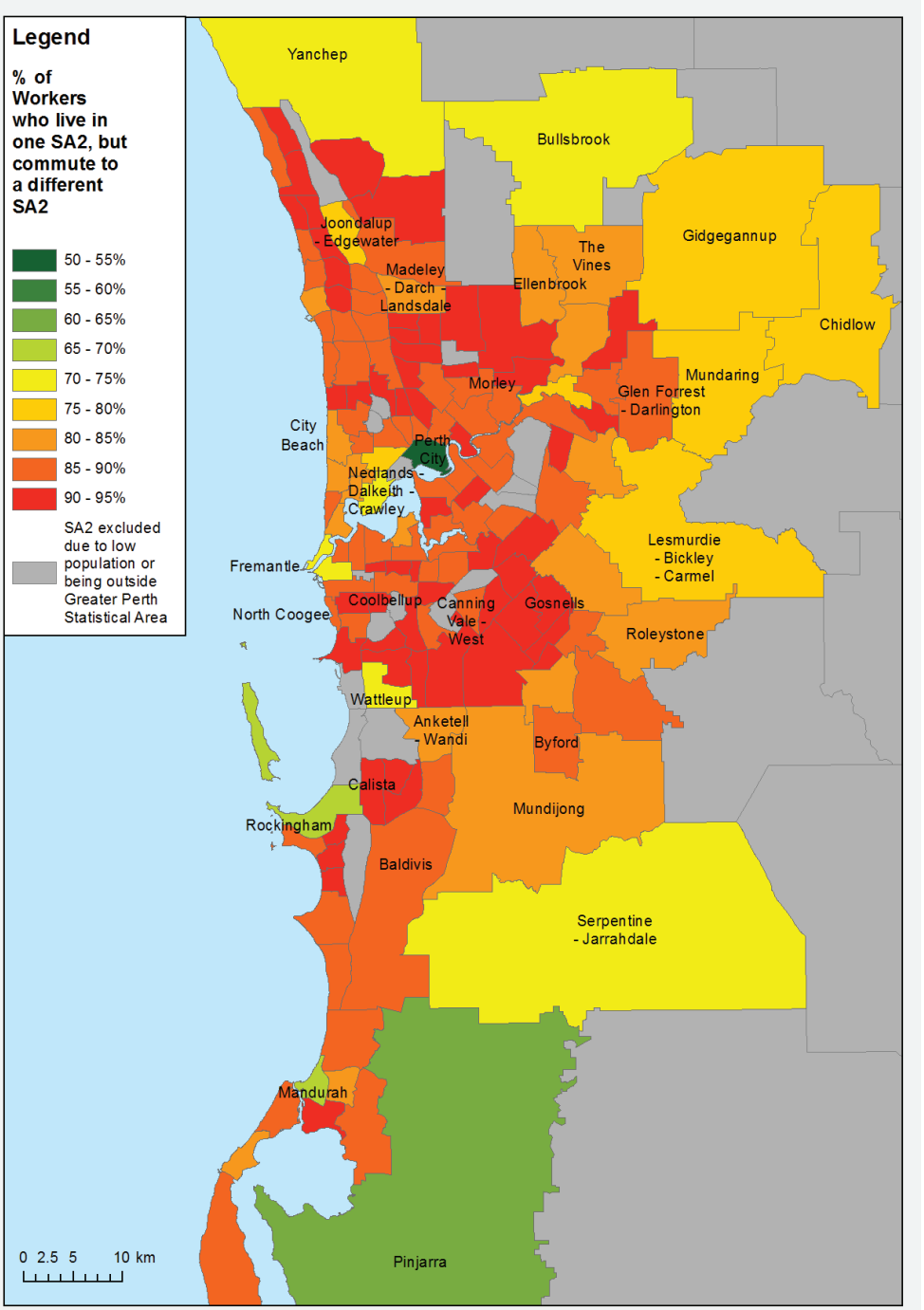


Figure 6 Local and distant workers

Figure 6a (left): Working close to the suburb: Percentage of workers who commute out of each SA2 to a nearby SA2 (nearby defined as SA2 centroids within 5km);
Figure 6b (right): Working beyond the local area: Percentage of workers in each SA2 who commute to a different SA2 whose centroid is more than 5km away from the home SA2 centroid

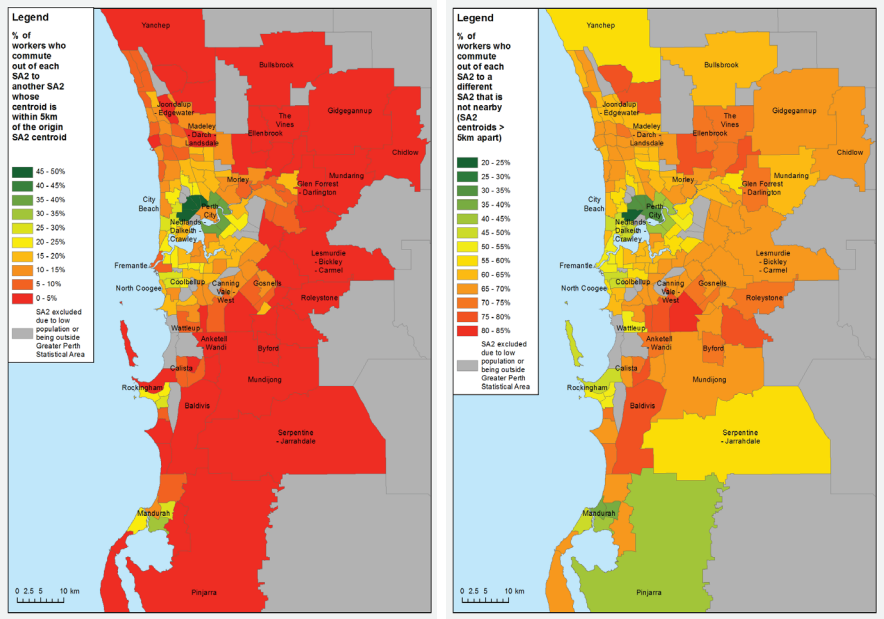
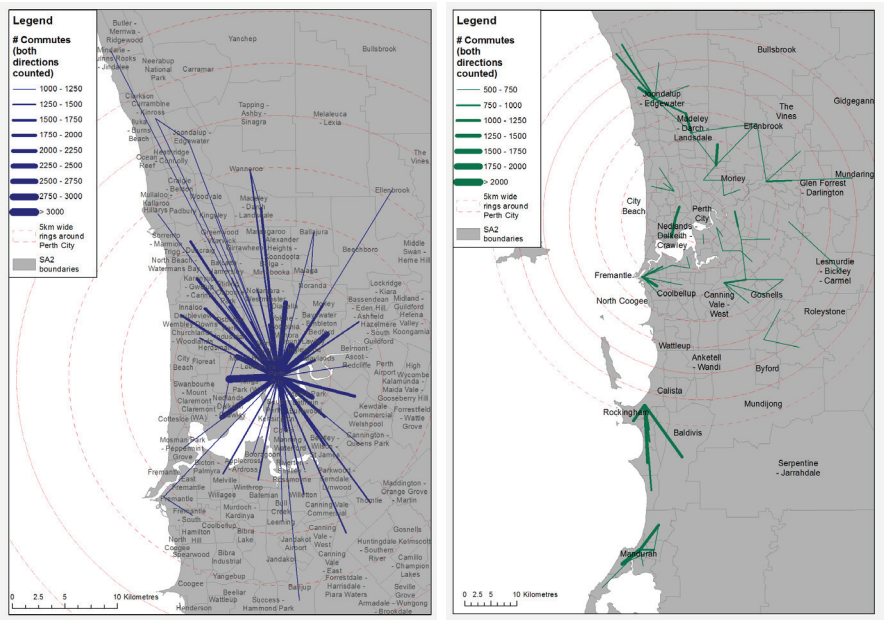


Figure 7 Metropolitan commuter flows

Figure 7a (left): The largest commuting flows (journey to work) between SA2s in Perth;
Figure 7b (right): Gross Commutes between SA2s > 500 and excluding commutes that involve the Perth City SA2



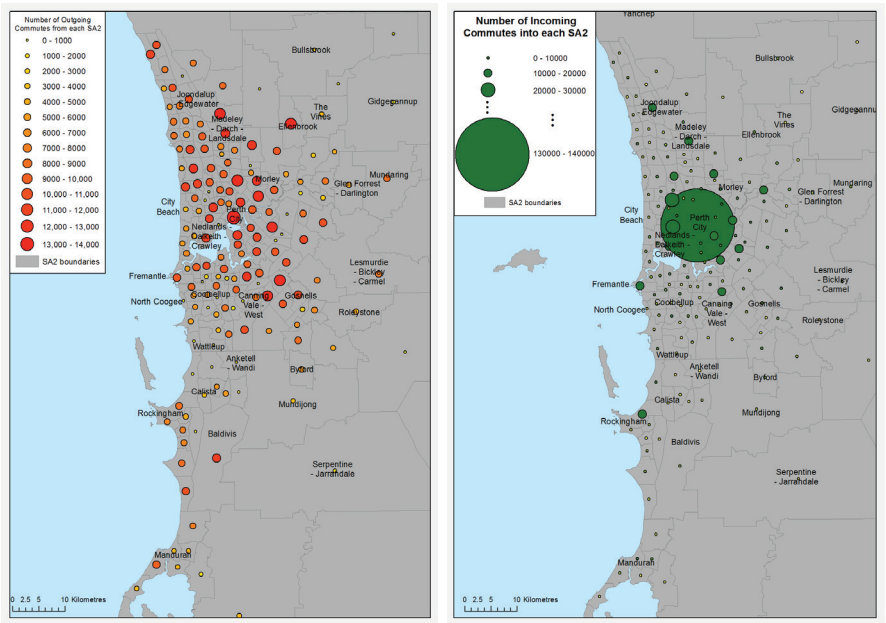
The highest commuting flows involve the SA2s closer to the central city, with half of the trips to or from Perth City involving SA2s whose centroid is within 10.68km of the Perth City centroid (Figure 7a). The number of commutes shown includes both those for "employees living in x, working in y" as well as "employees living in y, working in x". In other words, it shows the gross number of commutes between SA2 pair. Only the larger flows are shown for map readability. The major flows not involving Perth City (Figure 7b) are mainly between nearby SA2s, so there is some spatial correlation of residence and employment.

BITRE (2015) also did an SA2 commuting flow analysis for Australia, but were focussed primarily on calculating average distance and did not provide detailed mapping of the flows. They estimated Perth workers commuted 14.9km on average, while those that specifically worked in the CBD travelled 13.9km. Our results confirm that while the CBD attracts workers from across Greater Perth, the strongest commuting flows to or from the CBD involve the SA2s closest to the CBD.

Figure 8 Outgoing and incoming commutes

Figure 8a (left): Outgoing Commutes (# of journeys to work whose origin is inside the SA2 and whose destination is outside the SA2) as represented by proportional dots at the centroid of each SA2

Figure 8b (right): Incoming Commutes (# of journeys to work whose origin is outside the SA2 and whose destination is inside the SA2) as represented by proportional dots at the centroid of each SA2



The amount of outgoing commutes from SA2s is relatively uniform (Figure 8a). An outgoing commute is defined here as a journey to work, where the origin (place of residence) is inside the SA2 and the destination (i.e. place of work) is in a different SA2. The amount of incoming commutes into each SA2 across Perth has more variety (Figure 8b). The larger circles indicate the main centres of employment. While central Perth City is clearly the largest centre of employment, there are several "second tier" employment centres in its orbit (details in Table 3) which represent the key centres for industry, health and education, and are identified as such in the metropolitan planning documents. In Table 3, the order of magnitude shift between Perth and the rest, and the relative similarity in commute size of all the other centres are both notable.

Table 3 The top ten SA2s for incoming commutes in Greater Perth

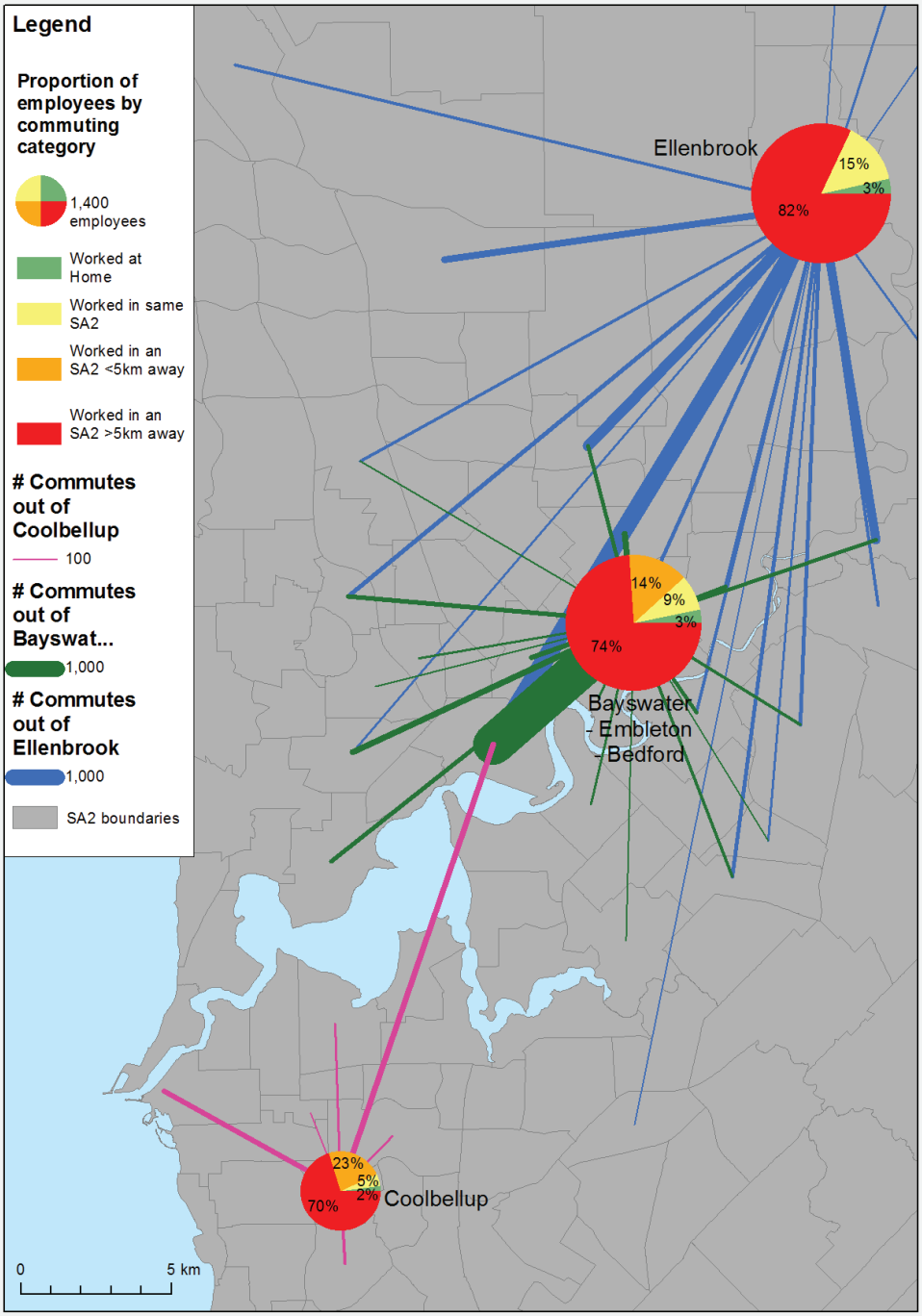
SA2 Name	Number of Incoming Commutes	% of employees residing in Greater Perth
Perth City	132903	15.5
Subiaco - Shenton Park	21974	2.6
Osborne Park Industrial	20865	2.4
Welshpool	17807	2.1
Nedlands - Dalkeith - Crawley	17615	2.1
Fremantle	17379	2.0
Malaga	15322	1.8
Joondalup - Edgewater	14828	1.7
Canning Vale Commercial	14671	1.7
Madeley - Darch - Landsdale	13564	1.6

It is evident that there is some spatial variation between homeworking and commute patterns by location of residence. To highlight this, three case studies were selected representing an inner (Bayswater- Embleton-Bedford), middle (Coolbellup) and outer suburb (Ellenbrook). In all three cases there is an element of homeworking, but it remains a small proportion of the total work locations. Ellenbrook has the highest proportion of employees working either at home or in the same SA2 (18%) while Coolbellup has the lowest (6%).

The largest proportion of commutes are greater than 5 kms - Ellenbrook has the highest proportion, reflecting its distant location and lack of opportunities close by (since there are no other SA2s with centroids within 5km). This is a major concern for urban fringe development. However, a significant proportion of residents do work much closer to home.

In terms of work destinations, Coolbellup residents commute mostly to Perth (381 commutes), Fremantle (326) and some nearby SA2s. Bayswater-Embleton-Bedford residents primarily commute to Perth (2,559 commutes). Ellenbrook commuters also have a significant Perth bound component (1,141 commutes), but this is less than those who work internally in Ellenbrook (1,866) and there are some significant commutes to other centres such as Malaga (666), Midland-Guildford (568) and Madeley-Darch-Landsdale (432). Overall then, there is a strong unidirectional (to Perth) pattern in the inner suburb case, a bi-directional (Perth and regional centre) pattern in the middle suburb case, and a multi directional pattern in the outer suburb case.

Figure 9 Comparison of homeworking and commute patterns in three SA2s in Greater Perth



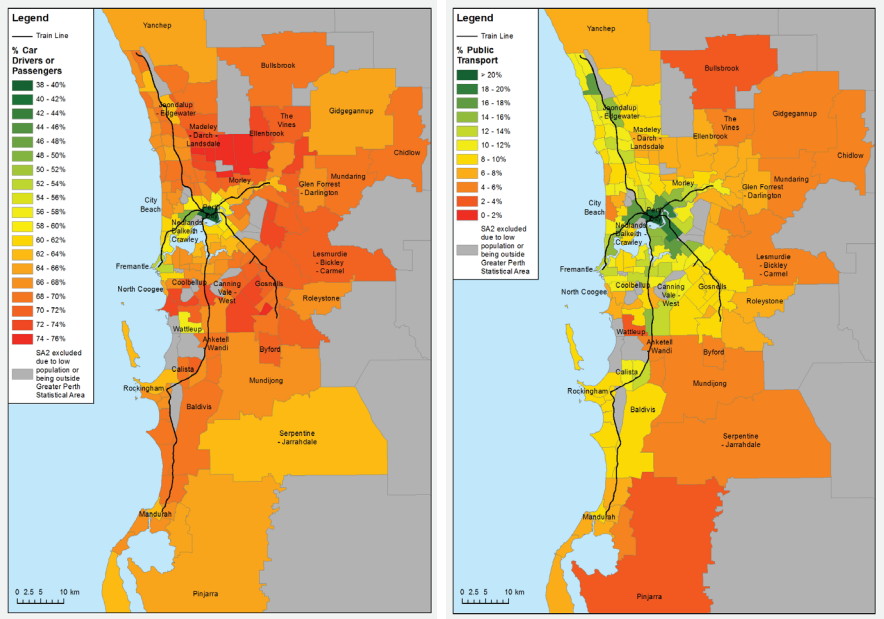
Pie charts show the relative magnitudes of four commuting classes. Lines show commuting flows out of each SA2 to other SA2s, and the line thickness is proportional to the number of commutes between the SA2 pairs. Only commuting paths with a magnitude of 100 commutes or more are shown, both for clarity and to highlight the main flows.

Mode of journey to work

Greater Perth is a car dependent city with 66.9 per cent (573,522 out of 857,625 employees) using a car, or being a passenger in a car, as their single mode of transport for their journey to work. However, there is evidence indicating that Perth residents would like to walk and cycle to work more than they do at present, and that they would like shorter car and public transport commutes (Duncan et al. 2016). Car reliance is highest in those medium-outer suburbs not near train lines (Figure 10a). Being a car passenger was not common, especially in the western suburbs of Perth. In Greater Perth, 10.6 per cent of commutes involved public transport (90,840 out of 857,625). Public transport use is highest in the inner-city areas of Perth and near train lines (Figure 10b). Stand out suburbs in this respect are shown in Table 4. Cycling to work is most popular in the western suburbs of Perth and in Fremantle. Of the 10,928 commutes made by bicycle in WA, 3,302 (30%) of these involve the Perth City SA2. Given that only 14 per cent of all types of commutes in WA involve the Perth City, cycling to/from the city is disproportionately popular. This may reflect the good bicycle paths into the city as well as the higher number of "car free" people in the city.

Figure 10 Car and public transport use across metropolitan Perth

Figure 10a (left): Car reliance is highest in the medium-outer suburbs far from the train lines[6]
Figure 10b (right): Percentage of employees who used public transport as part of their journey to work



6 Based on % of employees residing in each SA2 who drove a car to work, or were a passenger in car for their journeys to work, as their only mode of transport. Actual car use may be higher, because multi-mode journeys have not been counted.

Table 4 SA2s with the highest rates of public transport use for journey to work in Greater Perth

SA2 Name	Public Transport %
Perth City	21.7
Maylands	20.0
Victoria Park - Lathlain - Burswood	19.3
East Victoria Park - Carlisle	18.3
Subiaco - Shenton Park	17.8
Mount Lawley - Inglewood	16.8
Bentley - Wilson - St James	16.6
Wembley - West Leederville - Glendalough	16.1
Clarkson	16.0
Cannington - Queens Park	15.8

As in Greater Perth, the rest of Western Australia is also car dependent with 63.9 per cent (151,733 out of 237,326) using a car, or being a passenger in a car, as their single mode of transport for their journey to work. The car reliance is highest in the urbanised outer areas of the large regional centres of Kalgoorlie, Geraldton, Albany, Port Hedland and Bunbury. Public transport use is lower in the rest of WA (compared with Greater Perth) with 4.84 per cent of commutes involving public transport (11,477 out of 237,326). There were higher rates of public transport use in the mining regions of Pilbara, Goldfields, Collie and Murray, possibly due to BIBO (Bus in Bus Out) mine sites (it is likely that many of these people are also FIFO (Fly in – Fly out), with their cars left at Perth airport or with their families living elsewhere in the state).

The top ten "origin" SA2s for journeys to work involving public transport in the Rest of Western Australia are shown in Table 5.

Table 5 SA2s with the highest rates of public transport use for journey to work in the rest of WA

SA2 Name	Public Transport %
East Pilbara	31.1
Ashburton (WA)	28.1
Roebourne	24.9
Leinster - Leonora	19.0
Meekatharra	18.8
Karratha	11.2
Mukinbudin	8.9
Murray	8.7
Newman	8.6
Collie	8.5

Discussion and conclusion

This section provides a detailed analysis of homeworking and commuting patterns in Greater Perth and the rest of Western Australia. By structuring the investigation using a spectrum of 'working closer to home', looking first at working at home and then extending outwards by looking at those working close to home, within five kilometres of home and beyond five kilometres, it is possible to get a much sharper picture of the extent to which people currently work close to home and also to obtain some key insights into the localities where working closer to home is most prevalent. This analysis assists in providing a more nuanced evidence base to the counter common anecdotes so often heard in the local planning sphere that suggest many people live and work long distances apart (e.g. the anecdote that they live in Rockingham and work in Joondalup). Such anecdotes, or story lines, have the power to influence the mental models driving planning practice and, in so doing, seek greater investment in facilitating long distance travel compared to investment in supporting local travel and the encouragement of locally based employment.

Homeworking does occur in both Greater Perth and in the rest of Western Australia, although rates of homeworking are minor when compared to those for commuting. The rate of homeworking in Greater Perth constitutes on average 3.4 per cent (and 29,472 persons), but this rate is higher among professional, managerial and administrative occupational groups (up to 6.3%). The homeworking rate for the Perth Statistical Division in the 2006 census was 3.8 per cent (23,768 out of 621,692), but there was a significant change in the geographical boundaries of the statistical units between the censuses (the Mandurah/Pinjarra area became part of "Greater Perth" in 2011). Therefore, accurate analysis of homeworking and commuting trends over this period would require a detailed breakdown of these geographical changes. Rates of homeworking are highest in the western suburbs and on the urban fringe (up to 10 per cent of the population in these locations). Outside Greater Perth, the homeworking rate is higher: 6.0 per cent (14,329 persons), with those employed in agriculture, forestry and fishing dominating this group (7,135 persons), followed by those employed in professional, scientific and technical services (1,009 persons).

A higher proportion of people work close to home, rather than at home; 9.6 per cent in Greater Perth (82,554 people). Together, this means that, in Greater Perth, more than one in eight workers are working either at or close to home. The findings illustrate there is a large spatial variation with both inner city residents and urban fringe residents recording a much higher proportion of working close to home (between 19.4% and 46.1%). Commuting beyond the local area is considered at two scales: within five kilometres from 'home' (zone centroid) and more than 5 kilometres from home. In Greater Perth, the former category has 118,377 commuters and the latter 529,534. Of those working within 5 kilometres of home (a distance readily bikeable for a significant proportion of the population), the inner city suburbs circling the river have upwards of 20 per cent of people working within 5 kilometres from home, and in these locations longer distance commuting is also less dominant. Of those working greater than 5 kilometres from home, those residing in middle and outer suburbs dominate with upwards of 50 per cent of workers leaving their suburb. It is in these middle and outer suburbs that greater policy intervention is required to enable more local opportunities for working closer to home, both in terms of land use policy for employment and in investment in local transport to enhance accessibility in local areas.

In terms of commuting flows, Perth City is involved in the largest number of commutes. Half of these Perth City commutes are to or from SA2s whose centroid is less than 10.68 kilometres from the Perth City centroid, but there are also some quite long distance commutes beyond this. Other centres involved in a significant number of commutes include Mandurah, Rockingham, Fremantle, Canning Vale, Joondalup-Edgewater, Malaga, Madeley-Darch-Landsdale (containing the large light industrial suburb of Wangara) and the corridor from Glendalough to Dalkeith. Outgoing commutes by SA2 are relatively uniform whereas, for incoming commutes, Perth City dominates though other second tier centres are also evident. Car driver and passenger continue to be the modes dominating commuter travel but, where railway stations are provided, public transport use is high as it is also in the inner city. Cycling is popular to Perth City, and in the western suburbs and Fremantle.

Overall, there is a pattern of 'two cities' for Greater Perth with distinct differences in working closer to home levels between the inner suburbs and the middle and outer suburbs. For the rest of Western Australia, the findings are less clear, with rates of homeworking and working close from home data influenced by the geographic size of the statistical areas and the domination of certain regions by single industries, such as agriculture and mining. The findings presented in this report suggest that, although central Perth remains the primary destination for commuting trips, there is a not insignificant proportion of workers who work from home or commute to a place of work near where they live. There is clearly potential for transport investment to facilitate non-car based trips for these small distance commutes. Further research on the extent of neighbourhood activation and its relationship to working closer to home in these localities would clearly be usefui.

Governance

and Planning for Work Closer to Home

Governance and planning for working closer to home

This chapter assesses the current regulatory framework around home-based and non-traditional forms of employment spaces. The specific focus is to ascertain whether, and how, existing policy frameworks and policy content can either inhibit or encourage non-traditional working spaces. Of interest is how urban planning policy interprets and regulates employment spaces in Western Australia. This provides one insight into the current state of practice and a snapshot of how planners and policy makers have viewed the nature of employment over recent decades. Of particular interest are policies regarding homeworking and other non-traditional working spaces. As cities become more polycentric and mixed use, and employment itself becomes increasingly diverse and complex, it is pertinent to consider these phenomena.

Non-traditional employment spaces

There is now a wide range of types of workspaces that differ from the traditional notion of an office, factory or commercial building. A typology of 'working spaces' can be identified – distinguished by the degree to which they are in private or public ownership, offer shared space, and by explicit intentions to promote collaborative working (Table 6). Homeworking[7] spaces can be used full-time or part-time. The latter includes people who ordinarily work at a large traditional employer, but who perform some tasks, scheduled workdays or irregular duties at home. There are other "homeworkers" such as market gardeners and farmers who perform almost all their occupational duties at home. Increasingly casualised, flexible, specialist and innovative jobs are diversifying both the nature of employment and its spatial distribution.

Shared workspaces can address many of the reported problems of working from home, such as social isolation, lack of collaboration opportunities, equipment availability, and workplace atmosphere (Davies, 2016). Such spaces, which afford individuals and businesses working spaces at a much different scale to historical forms of commercial or even industrial (e.g. art and craft based activities) real estate, may also contribute to the growth in the sharing economy, and facilitate the culture of start-up enterprises. After the broad popularisation of telephone and internet-based technologies in the 1990s and 2000s, the range of common workplace forms has diversified. In addition to working from home, different forms of shared or informal workplaces have emerged as new workspaces.

Shared workspaces include traditional local libraries, and 'teleworking centres', where communities were typically first able to access the internet, particularly in rural localities. Teleworking centres are now known as 'Community Resource Centres' since they have other services in addition to internet access. In recent years, purpose-created shared workspaces have emerged as a new form of employment space. Here employees or self-employed people work at a shared office that can be closer to home, rather than commuting to a central office space, or working at home. These spaces may be utilised on a part or full time basis, with many offering casual, ad hoc daily leasing arrangements. A new iteration of shared workspaces is seen in the form 'co-worker spaces'. These are similar to shared workspaces but specifically promote the opportunity for developing work collaborations between members. As such, they are often the province of specialised industry groups.

The potential for working closer to home differs by occupation groups, which is most suited to those in the service and knowledge economy.

7 Defined as the act of performing paid employment at home on an occasional, regular, or permanent basis, whether for one employer, or as a self-employed small-business person.

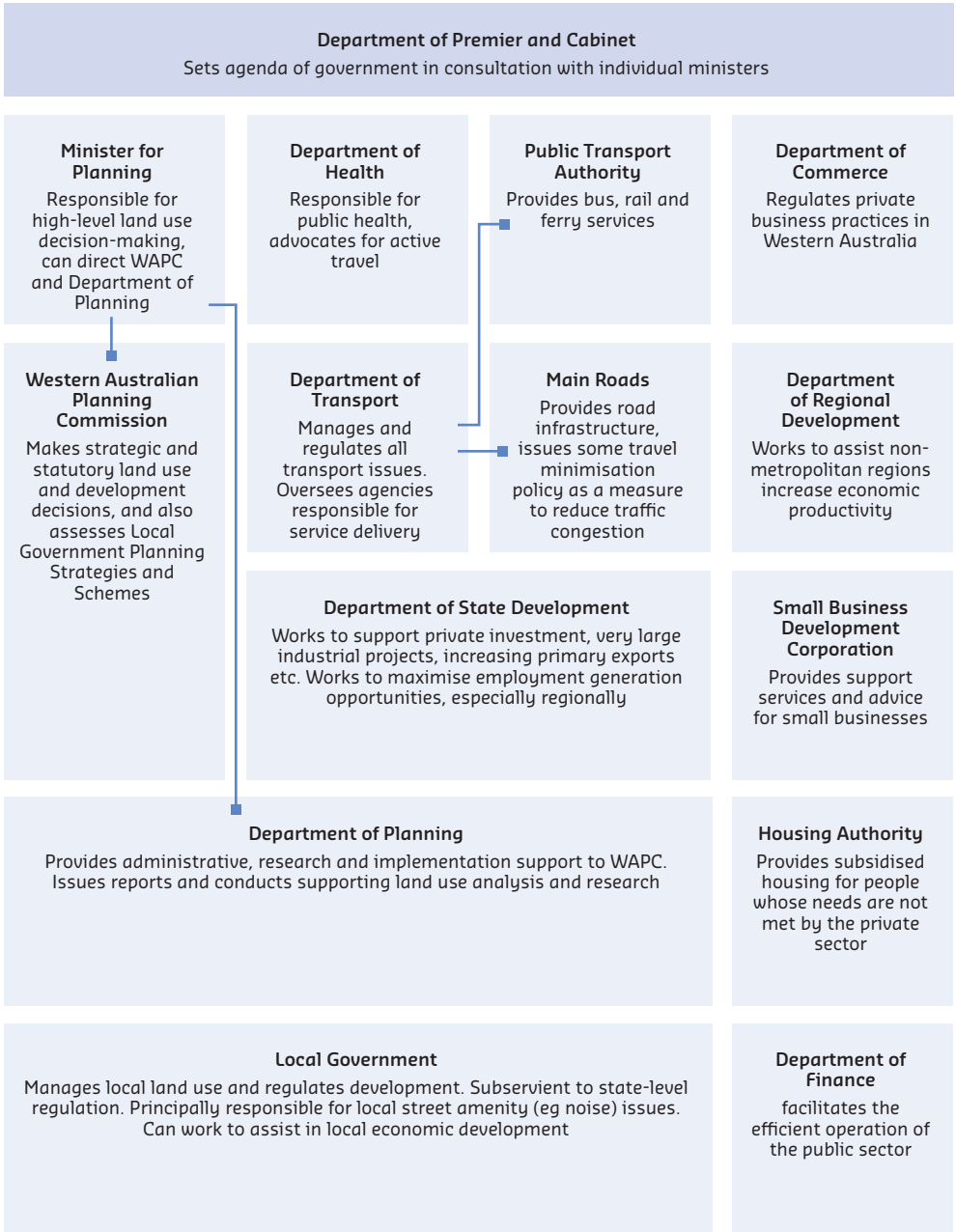
Table 6 Typology of working spaces

		Ownership	Description
#	Type		
1	Homeworking	Private	Work conducted within the residential home. For 100% of the person's employment.
2	Telecommuting	Private	Work conducted within the residential home on a part-time basis with the main location of employment being elsewhere.
3	Homeworking – Administrative office	Private	Work begins and ends at home but main work period is elsewhere (tradespeople), administrative activities are conducted at home.
4	Address Services/ Office proxies	Private (for-profit)	Services that provide a postal, telephone and meeting room address, often in a highly desirable commercial locality, without provision of any fixed office space. These services are typically marketed as a means of gaining credible business contact details without financing large overheads. Provides substitute office services for businesses that do not have formal premises.
5	Libraries, educational campus facilities	Public	Traditional library spaces where people may perform some forms of private work.
6	Informal social spaces	Private, public streets/parks	Cafes, public plazas, wi-fi hot spots - must have wi-fi access. Places not specifically intended as a workplace that are comfortable or desirable to work in.
7	Teleworking Spaces, Community Resources Centres.	Public; Non-profit organisations.	Spaces that provide a variety of community services which can be used, ad hoc, as offices. Often on a free or highly subsidised basis, intended for community benefit. Often in rural or isolated localities. Provide work spaces as well as government services such as Welfare, Healthcare and Banking agencies.
8	Shared Workspaces	Public: Private (for profit); Co-operative; non-profit or informal.	Purpose-built office space provided for workers. Includes business Incubators and University provided spaces. Typically non-profit, and/or with a social/economic mission beyond just owner profit.
9	Co-worker Spaces	Private. For-profit	Alternative form of traditional office space / retailing/ light industry, provision of workspaces, desks or small spaces on short-term basis for the ultimate profit of the owner.
10	Traditional Workspaces	Public; Private.	Traditional office, commercial and retailing spaces.

Regulatory framework

Governance in Western Australia is structured into government department agencies with specific jurisdictions and organisational purposes. Figure 11 shows the landscape of agencies expected to have some potential for policy influence on working closer to home. For example, outside of urban and regional planning other agencies can play a role - Department of State Development and Department of Regional Development could both enact policy to reduce travel through FIFO by encouraging, as a minimum, firms to set up regional offices and house workers locally. Similarly Department of Finance is responsible for public sector office procurement/works – so they could work to decentralise offices.

Figure 11 Governance framework: Potential for influence on working closer to home



Planning policy review

New forms of employment spaces challenge traditional notions of town planning where residential and employment land uses were characteristically segregated. However, land use segregation, long central to planning practice, has been challenged since the turn of the century. New Urbanism, while advocating for higher intensity mixed land use, also stresses the need to incorporate adaptable spaces which can be used by small businesses (Pyatok 2000, Bentley et. al. 1985), and to facilitate creative production (Jacobs 1961). The homeworking and shared workspace phenomena have emerged in this era of contemporary urbanism, and act as a form of disruption to existing workspaces. We examine the extent to which state and local planning policies have responded to changing employment trends and consider how they might facilitate non-traditional forms of employment space.

The geographic focus of this study is Western Australia, with particular attention paid to Greater Perth. The research enquiry involved two steps. First, the institutional and governmental structures regulating employment or issuing policy relevant to homeworking and alternative employment spaces were identified (Figure 11). An overview list of agencies was obtained via www.gov.wa.au and manually parsed for potentially relevant agencies. Second, specific policies from these agencies were identified and qualitatively reviewed using a content analysis method. Data was collated through a web-based search to locate any policy relating to employment, land use regulation, or regional economic development. State government agencies that regulate or influence employment or employment distribution include the Department of Regional Development; Department of State Development; Department of Commerce; the Small Business Development Corporation and Department of Transport.

As a small exploratory study the research resources did not provide for a comprehensive analysis of all policies in all jurisdictions. A purposive sample of Local Governments (LGs) was selected. In Western Australia, Local Governments are principally responsible for regulating residential development and the enforcement of land use controls concerning private dwellings. Five metropolitan and one regional local governments were selected to ensure a geographic mix, an urban/suburban mix, and based on the presence of shared working spaces:

- Perth (central metropolitan, highly urban)
- Vincent (central metropolitan, urban mixed)
- Victoria Park (middle urban – 5km from central city)
- Fremantle (middle suburban sub-regional centre – 15km from city)
- Joondalup (outer suburban sub-regional centre – 40km from city)
- The Shire of Greater Geraldton (regional town)

Policies were analysed using a content analysis method in order to enable a fair and consistent evaluation of documents from a diverse set of regulatory agencies. Each policy was assessed as to whether it would inhibit or support non-traditional work spaces. For homeworking there were two foci: the policy position towards home offices; and the position towards other forms of home working business such as light industry and creative space. For Shared Workspaces there were six foci: the policy position towards mixed use buildings at different spatial locations (major activity centres; neighbourhood activity centres; outside activity centres); the policy position towards shared working spaces/ non-traditional work spaces within and outside activity centres; and the policy position towards cottage industry ("dirty" workspaces) at or close to home. In addition policy linkages across other planning and non-planning agencies were identified. A rating scale was used (Table 7). Policies were also assessed to establish if they referred to supporting research or evidence concerning employment.

Table 7 Policy initiative rating scale

Code	Meaning	Criteria
P	**Prohibited**	Where a policy explicitly forbids an initiative or non-traditional work place
D	**Discouraged**	Where a policy places strong or onerous regulations on an initiative (eg need to obtain special approval; approval is temporary; approval comes with strong conditions; etc.)
R	**Regulated**	Where a policy permits but limits an initiative or scenario, or where routine approval is required
M	**Mentioned**	Where a policy is mentioned in a vague or immeasurable way such that it is difficult to see how it would be operationalised
S	**Supported**	Where a policy encourages an initiative or requires only very minor approval
I	**Incentivised**	Where a policy provides a benefit for an initiative
A	**Absent**	Where a policy does not include any provision or text relating to the initiative

Policy analysis findings – State Government

Policies potentially relevant to employment were identified in four State agencies (Table 8), however only the Department of Planning/WAPC had statutory policies. State Planning Framework Policy 1 (SPP1), as an overarching document, contains several progressive aspirations to diversify employment opportunities closer to residential areas and so minimise travel,

> *"[…] planning should provide for economic development by: i. providing suitable zoned and serviced land for industry, business and other employment and wealth generating activities;……iv. promoting local employment opportunities in order to reduce the time and cost of travel to work;." (DoP/WAPC 2006a, 6)*

While this policy is generally supportive, it does not specifically meet or address any of the assessment criteria regarding either homeworking or shared working spaces. Overall, for State policy, the majority of references to working close to home in current state statutory policy documents are largely incidental - for example, SPP 2.5[8] supports ancillary housing near rural light industry (DoP/WAPC 2012a). Specific goals for reducing travel demand through more flexible employment land use planning are predominantly manifested in activity centre planning (SPP 4.2), where the aim is to create a moderate number of large service and employment centres to alleviate central city travel demand. Policies that could potentially utilize homeworking or teleworking to achieve policy objectives but are not specifically related to employment (see SPPs 3, 3.1, and 5.2 and Development Control Policy 1.6) do not make any reference to atypical working environments. Non-statutory policies provide travel reduction strategies with the aim of regional self-sufficiency (to provide a commensurate jobs to worker ratio across the metropolitan region). Perth and Peel @ 3.5, for example, applies a land release strategy to structure employment growth within traditional industries,

> *"The framework supports a more sustainable city and proposes to […] encourage the distribution of employment across all activity and industrial centres to create the opportunity for people to live closer to where they work."(DoP/WAPC, 2015a, 16)*

The underlying form of land use planning, however, appears not to deviate from conventional land use definitions since the range of non-heavy industrial land use typologies listed by the Department of Planning (2012a, 5) consists of spaces and types specifically allocated to industrial and commercial purposes, which are all segregated from traditional residential land. The policy goal of localising employment does not extend to facilitating planning for non-traditional employment spaces, or hyper-local employment centres. The high incidence of "mention" ratings in more recent policies suggests an awareness of emerging employment forms and trends, though commensurate policy to encourage such measures is absent.

Department of Transport plans, compared longitudinally, reveal a decline in the incidence of land-use oriented travel demand management (TDM) strategies. A "predict and provide" approach is apparent where transport service provision is provided to meet employment trends (Department of Transport 2011; 2016). TDM is undertaken separately from land use planning, focussing on travel behaviours

8 A later version of the policy was released just prior to the publication of this Fact Sheet.

at existing workplaces, such as staggering working hours or using parking as a disincentive, rather than promoting working closer to home as such. Only the Perth Metropolitan Transport Policy 1995 – 2029 (superseded), published prior to the broad popularisation of email, has a detailed tele-access strategy (1994, 86 - 87), dependant on telecommunication to enable homeworking.

The WAPC's Liveable Neighbourhoods policy provides insight into the changing priorities of strategic planners. Four versions of the policy (released in 1997, 2004, 2007 and 2015) were analysed to identify any changes. The policy adopted a sophisticated conception of home-based business and non-traditional workspaces to encourage economic development and reduce travel demand. The 1997 version supports the development of mixed-use residential forms that can convert to accommodate new businesses, and the placement of home businesses in suitable areas, such as residential-industrial area interfaces. Such a policy was counter to the suburban development typical of previous decades (Curtis and Punter 2004). Occasional references to aspirational/hypothetical forms of mixed-use typologies were included. From the 2004 policy onwards, the focus has been on concentrating home-based businesses within or close to neighbourhood centres, arterial roads, industrial areas, or in formal Activity Centres. Additionally, retail centres were seen as having the potential to attract additional non-retail employment (DoP/WAPC, 2004, 117).

The 2015 Draft version of Liveable Neighbourhoods rewords and reorganises much of the earlier versions of the policy but continues to emphasise diverse employment spaces within activity centres (including neighbourhood centres). References to home business spaces beyond activity centres (such as at a residential-industrial interface as suggested by earlier versions), however, are absent. Live-work buildings are mentioned as a hypothetical form (2015b, 68), appearing to illustrate the failure of the development market to supply such atypical structures to any significant degree. The policy is still concerned with providing unique or custom spaces to facilitate such non-traditional employment, rather than enabling the formation of businesses in existing residences. While the 2004 edition mentions that many jobs are becoming more part-time and low paid (126), no versions of the policy explore changing employment typologies and business types, and their consequent land use planning implications.

Table 8A Policy position: State Government (Department of Planning/Western Australian Planning Commission)

Institution	Department of Planning/Western Australian Planning Commission (WAPC)									
Policy	SPP 1 - State Planning Policy Framework	SPP 2.5 – Land Use in Rural Areas	SPP 3: Urban Growth and Settlement	SPP 3.1 - R Codes	SPP 4.2: Activity Centres for Perth & Peel	SPP 5.2: Telecommunications infrastructure	DCP 1.6 Planning for transit oriented development	Directions 2031	Perth and Peel @ 3.5	Economic and Employment Lands Strategy:
Status - Statutory/ Non-Statutory (S/NS))	S	S	S	S	S	S	S	NS	NS	NS
Year policy last updated	2006	2012	2006	2013	2010	2015	2006	2013	2016	2012
Home Working										
Home office	A	A	A	A	A	A	A	M	M	A
Home occupation; business/creative space; light industry; non-office	A	A	A	A	S	A	A	A	A	M
Local Teleworking/Shared Offices										
Mixed use – Activity Centres	A	A	A	A	S	A	A	S	S	M
Mixed use - neighbourhood centres	A	A	A	A	S	A	A	A	M	D
Mixed use buildings - outside Activity centres	A	S	A	A	A	A	A	A	A	A
Shared working spaces - Activity centres	A	A	A	A	M	A	A	A	A	A
Shared working spaces – outside Activity centres	A	A	A	A	A	A	A	A	M	A
Cottage industry	A	A	A	A	S	A	A	A	M	M
Policy Linkages (Yes/No/Incidental – Y/N/I)										
to other planning policies supporting homeworking	N	N	N	N	N	N	N	N	N	N
to other non-planning policies supporting homeworking	N	N	N	N	N	N	N	N	N	N
to homeworking/ teleworking benefits – travel/transport related	N	N	N	N	N	N	N	I	Y	N
to homeworking/ teleworking benefits – other (e.g. health, environment, urbanism, entrepreneurialism)	Y	N	N	N	Y	N	N	N	N	N

Table 8B Policy position: State Government (Other agencies)

Institution	Department of Transport				Dept. of Commerce	Dept. Regional Devt.
Policy	Perth Metro Transport Strategy	Public Transport Plan 2031	Transport @ 3.5 Million – TDM Plan	TravelSmart Workspace Ideas	Teleworking Hints and FAQs	Regional Devt. Strategy
Status - Statutory/ Non-Statutory (S/NS))	NS	NS	NS	NS	NS	NS
Year policy last updated	1994	2011	2016	2015	2013	2015
Home Working						
Home office	S	A	M	S	R	A
Home occupation; business/creative space; light industry; non-office	S	A	A	A	A	A
Local Teleworking/Shared Offices						
Mixed use – Activity Centres	A	A	S	A	A	A
Mixed use - neighbourhood centres	A	A	A	A	A	A
Mixed use buildings - outside Activity centres	S	A	A	A	A	A
Shared working spaces - Activity centres	A	A	A	A	A	A
Shared working spaces – outside Activity centres	A	A	A	A	A	A
Cottage industry	A	A	A	A	A	A
Policy Linkages (Yes/No/Incidental – Y/N/I)						
to other planning policies supporting homeworking	N	N	N	Y	N	N
to other non-planning policies supporting homeworking	N	N	N	N	N	N
to homeworking/ teleworking benefits – travel/transport related	Y	N	I	Y	I	N
to homeworking/ teleworking benefits – other (e.g. health, environment, urbanism, entrepreneurialism)	Y	N	I	Y	I	N

Policy analysis findings – Local Government

Local planning policies manage home businesses, home offices and home occupations through the administration of local planning schemes. Recently, the *Planning and Development Act (LPS) Regulations* (October 2015) (replacing the *Model Scheme Text* of 1967) has eliminated the need for planning approvals for home offices, though the scope is still limited by definitions in the regulations, and home businesses are still subject to council regulation. The definitions of Home Office, Home Business, and Home Occupation have specific meanings under the *Planning and Development (Local Planning Scheme) Regulations* 2016. These definitions essentially permit a household to work from home, but strongly limit the degree to which a business may employ others or conduct business at a residentially-zoned property. This is significant as previously the various local government jurisdictions had individual definitions and corresponding regulations.

Table 9A and 9B illustrates the current regulatory settings surrounding non-traditional employment spaces in the local government jurisdictions selected. This evidence suggests that shared working spaces do not feature conceptually under the local planning schemes reviewed here. Shared work spaces typically fall under conventional land use types. As such, the regulatory frameworks surrounding a shared working space are no different from those for a traditional office. For example, converting a residential dwelling to a shared space would typically require a change of use application, whereas creating a shared working space in an existing office building would not. Local Planning Schemes adopt a consistently risk-averse approach to the regulation of home-based businesses. They appear to provide a response to or a pre-emption of specific problems. For example, suburban councils limit home businesses in anticipation of parking problems. The City of Perth (2009) has specific regulations about having separate residential and commercial entrances for mixed-use buildings – though no rationale for this is provided within the policy.

This generally conservative statutory policy position is broadly unsurprising given that the genesis of formal planning controls is based on mitigating land use conflicts (Taylor 1998). Only one of our sampled local governments (Joondalup) mentioned the productive potential of homeworking as an employment opportunity in its policies.

Non-statutory local government documents (Table 10) had a much greater degree of diversity in relation to shared working spaces. Strategic economic development policies, which are often written under contractual agreements by private consultancy firms, are much more variable in their treatments of technology and contemporary planning concepts. One outcome identified from a local policy was the establishment of a new shared working space (*sixty27*) beyond the central city, triggered by the City of Joondalup's 2013 Digital Strategy. While a few policies do present various positive provisions, there seems to be limited policy consistency as regards unconventional workspaces. There is considerable diversity between local governments, for example, the City of Perth's Economic Development Strategy is a broad guide for decision making:

> *"This strategy guides the delivery of sustained prosperity in Perth's business community. The City will use it as direction for making long-term strategic planning decisions, developing work plans and budgets, and the business community will use it as a source of information, ideas and encouragement. It should be viewed as a flexible and living document that recognises the need for participation and partnerships to achieve the desired outcomes." (2010, 6)*

In contrast, the City of Joondalup's Digital Strategy (2013a, 23) is much more proactive towards non-traditional employment spaces. This strategy sets out a specific list of objectives to be achieved within a range of specific timeframes. For example, Project 1.8 specifically proposes the commissioning of a digital employment facility (Digital City Hub) including space for start-up businesses, a teleworking facility and digital capacity building programs for existing businesses.

Table 9A Statutory policy position: Local Government (Sample)

Institution	Fremantle	Joondalup			Perth				Victoria Park				
Policy	SPP 1 - State Planning Policy Framework	DPS No. 2	LPP Consulting Rooms	LPP Home Business Policy	CPS No. 2	PP 3.4 Home Occupation	PP 3.6 Res. Use in Mixed Use Areas	PP 3.7 Mixed Res/Com Dev	TPS No. 1	LPP2 Home Occupation	LPP3 Non Res in Res	LPP5 Mixed Res/Commer	LPP14 Industrial Uses near Res
Year policy last updated (20xx)	15	16	13	99	16	01	14	09	16	n.d.	n.d.	n.d.	n.d.
Home Working													
Home office	S	A#	A		A#	A	A	A	S	A	A	A	A
Home occupation; business/creative space; light industry; non-office	D	D/R	D/R	D/R	*	R	A	A	D	D	A	A	P
Local Teleworking/Shared Offices													
Mixed use – Activity Centres	S	S	A	A	A	A	A	R	D/R	A	A	A	A
Mixed use - neighbourhood centres	S	S	A	A	A	A	A	A	D	A	R	A	A
Mixed use buildings - outside Activity centres	A	D/R@	D/R@	D/R@	A	A	S	A	P/D/R	D	R	A	A
Shared working spaces - Activity centres	A	A	A	A	A	A	A	A	A	A	A	A	A
Shared working spaces – outside Activity centres	A	A	A	A	A	A	A	A	A	A	A	A	A
Cottage industry	A	A	A	A	A	A	A	A	A	A	A	A	A
Policy Linkages (Yes/No/Incidental – Y/N/I)													
to other planning policies supporting homeworking	N	N	N	N	N	N	N	N	N	N	N	N	N
to other non-planning policies supporting homeworking	N	N	N	N	N	N	N	N	N	N	N	N	N
to homeworking/ teleworking benefits – travel/transport	N	N	I	I	N	N	N	N	N	N	N	N	N
to homeworking/ teleworking benefits – other	N	N	N	N	N	N	N	N	N	N	N	N	N

Permitted under Regulations; @ Requirements specified.

Table 9B Statutory policy position: Local Government (Sample)

Institution	Vincent			Geraldton				
Policy	TPS No. 1	LPP 7.5.9 Home Occupation	LPP 7.5.22 Consulting Rooms	LPS No. 1	LPP Home Based Business	LPP Non Res in Res Zone	LPP Sustain. Res Dev	LPP Regional City
Year policy last updated (20xx)	15	14	n.d.	15	15	16	15	15
Home Working								
Home office	S	S	A	A#	A	A	A	A
Home occupation; business/creative space; light industry; non-office	S	R	A	D	R/D	A	A	A
Local Teleworking/Shared Offices								
Mixed use – Activity Centres	S	A	A	S	A	A	A	A
Mixed use - neighbourhood centres	S	A	A	R	A	A	A	A
Mixed use buildings - outside Activity centres	R	A	A	P	D	R	A	A
Shared working spaces - Activity centres	A	A	A	A	A	A	A	A
Shared working spaces – outside Activity centres	A	A	A	A	D	R	A	A
Cottage industry	A	A	A	A	P	A	A	A
Policy Linkages (Yes/No/Incidental – Y/N/I)								
to other planning policies supporting homeworking	N	N	N	N	N	N	N	N
to other non-planning policies supporting homeworking	N	N	N	N	N	N	N	N
to homeworking/ teleworking benefits – travel/transport	N	N	N	N	N	N	N	N
to homeworking/ teleworking benefits – other	N	N	N	N	N	N	N	N

Permitted under Regulations; @ Requirements specified.

Table 10 Non-statutory policy position: Local Government (Sample)

Institution	Fremantle	Joondalup			Perth	Victoria Park	Vincent
Policy	Econ. Dev. Strat.	Digital Strategy	Joondalup 2022 Strat. Plan	Economic Devt. Strat	Econ. Dev. Strat.	Econ. Strategy	Econ. Devt. Strategy
Year policy last updated	2015	2013	2012	2014	2010	2013	2010
Home Working							
Home office	A	S	A	A	A	S	S
Home occupation; business/creative space; light industry; non-office	A	S	A	A	A	S	S
Local Teleworking/Shared Offices							
Mixed use – Activity Centres	S	A	S	A	A	A	
Mixed use - neighbourhood centres	A	A	A	A	A	A	A
Mixed use buildings - outside Activity centres	A	A	A	A	A	A	A
Shared working spaces - Activity centres	M	S	A	S	A	A	S
Shared working spaces – outside Activity centres	A	S	A	A	A	A	
Cottage industry	A	A	A	A	A	A	
Policy Linkages (Yes/No/Incidental – Y/N/I)							
to other planning policies supporting homeworking	N	Y	N	N	N	N	N
to other non-planning policies supporting homeworking	N	Y	N	N	N	N	N
to homeworking/teleworking benefits – travel/transport	N	Y	I	I	N	N	N
to homeworking/teleworking benefits – other	N	Y	N	N	N	Y	N

Discussion and conclusion

This section provides an analysis of the regulatory and policy environment for working closer to home. State and Local government statutory and non-statutory policies have been reviewed. Understanding this environment provides one piece of a jigsaw identifying the factors necessary to facilitate more opportunities for people to work closer to home. To do so would produce the potential advantages of reduced car dependency, reduced demand for long distance public transport use, increased opportunity for neighbourhood activation, and enhanced social well-being.

Homeworking, shared working spaces, telecommuting and co-working spaces do not generally feature as embedded aspects of planning policy in Western Australia. Instead, the older, more-established concept of residential and employment segregation is far more evident and emerging forms of non-traditional working spaces have gained limited policy attention. In our analysis they only feature as a specific concept in one recent, innovative local government economic development strategy. Local planning schemes consistently utilise risk-averse home business regulation. In other policies there is generally little consistency of approach or of policy linkage towards homeworking and shared working spaces across jurisdictions or agencies. Interestingly, state and local government policy overall contains little mention of the nature of employment, and does not reflect the diversity of working space types now possible.

Supporting policies that facilitate homeworking and non-traditional forms of employment spaces, such as travel-demand management and the mixing of land uses, have been occasional themes in policy across more recent decades notwithstanding the production of a detailed tele-access strategy (Department of Transport 1994) in 1994. The policy to encourage mixed-used development, adopted in SPP 4.2, could provide the space for non-traditional forms of employment. However, reference to travel minimisation strategies are largely absent from more recent policy (Department of Planning 2013) appearing only in the 'knowledge economy' section in the latest Perth and Peel @ 3.5 Million draft (Department of Planning 2016). In this sense, it would appear that concepts surrounding homeworking only find their way into policy references as a result of broader fashions in government.

The policies identified here rarely included supporting evidence or research relating to employment, as exhibited by the proliferation of "Absent" scores in our analysis. Further, while policies are generated from a range of different agencies there is little policy linkage between them. As evidenced by published policies, it appears that town planners view employment as a consequence of commercial and industrial land-uses (and this might be an area for further research). At the most simplistic level of planning, shared working spaces could be viewed as a form of conventional office space, limited to existing commercial zones, which do not pose any potential changes to employment distribution. However, both homeworking and shared working spaces could significantly reorient travel in cities, especially as many new and transforming industries employ people in more diverse and flexible ways, and as production becomes increasingly specialised, distributed, and open to the use of newer technologies (such as 3D printers for example). At present, the regulatory frameworks surrounding unconventional workspaces enforce the prior condition of land use segregation, based largely on traditional assumptions.

Ideally, the governance framework across State Government should incorporate a more integrated approach that promotes the possibility of working closer to home as a central goal. Establishing and prioritising macro travel reduction goals above traditional land regulation processes will be critical if planners aim to use the promotion of non-traditional workspaces as a tool to manage urban congestion. The goals of innovative workspace planning must drive the planning and regulatory systems, rather than merely influencing individual policy provisions in an incoherent, piecemeal fashion.

The potential for homeworking spaces to generate polycentric "urban village" travel destinations across previously mono-cultural suburban areas presents an exciting opportunity for planners. However, as this policy review has identified, managing the perceived and actual amenity impacts of employment spaces on nearby residences will remain critical to the practice of planning. It does seem, particularly in the short and medium term, that the current policy approach to employment distribution will continue to position shared working spaces as nothing more than a variant of traditional office space.

The Potential

for Working Closer to Home:
The Role of Shared Working Spaces

The potential for working closer to home: the role of shared working spaces

The emergence of new types of shared working spaces reflects the growth of collaborative and shared models of economy. The online magazine Deskmag, which highlights the global phenomenon of co-working spaces, is illustrative. Through their annual Global Coworking Survey, they forecast that there will be 10,000 co-working spaces globally by the end of 2016 (Deskmag 2016). Due to the rapid increase of alternative employment spaces globally, there is a need to understand the role of these shared working spaces within broader urban and non-urban contexts. Particular questions include the extent to which these emerging forms of shared working spaces offer the possibility for residents to work closer to home, including supporting those who work mainly at home; and the extent to which these spaces enhance neighbourhood vitality.

Research approach

To develop our knowledge of how shared working spaces can contribute to facilitating working closer to home, case studies of shared working spaces were used to identify and investigate the factors that influence the establishment and viability of shared office space initiatives. Case studies were selected to represent different types of settlements thereby capturing the different contextual factors driving employment and economic development – the inner city area, suburban metropolitan, large regional centre and small rural town. In-depth interviews were undertaken with case study stakeholders who were involved in establishing, working in, or in some way supporting initiatives to develop shared working spaces. The interviews were developed to elicit detailed accounts of the role of planning and governance frameworks, local socio-cultural issues and geographic factors in influencing the nature and success of shared local office spaces. The interviews also provided the researchers with a crucial opportunity to examine how the attitudes of employers influence how home-based employees travel to and use these centres as alternatives to their main workplaces.

Nine interviewees participated in this research project. These interviewees were selected by a purposive sampling technique, drawn from the database of shared working spaces in Western Australia (Appendix 1), followed by a snowball sample process in order to identify managers, users and facilitators of shared working spaces in urban and regional Western Australia. Table 11 summarises the interviews according to the roles and the contexts of the shared workspaces.

Table 11 Description of interviewees

	Interviewee Role	Context
Interviewee #		
1	Co-working Space Facilitator	Inner city area
2	Co-working Space Manager	Inner city area
3	Co-working Space Manager	Inner city area
4	Co-working Space Manager	Suburban metropolitan
5	Co-working Space Manager	Large regional centre
6	Co-working Space Manager	Large regional centre
7	Community Resource Centre Manager	Small rural town
8	Community Resource Centre Manager	Small rural town
9	Community Resource Centre User	Small rural town

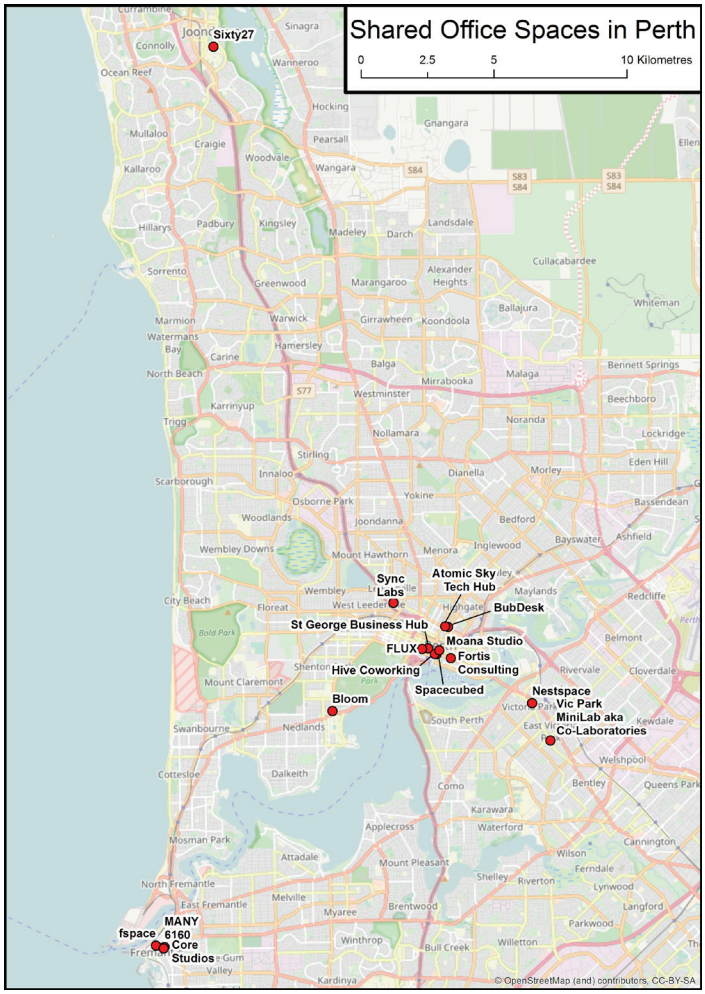
Overview of shared working spaces

This section provides an overview of the shared working spaces included in the study. It begins by describing the physical spaces that these shared working spaces occupy. The section briefly describes the funding arrangements and business models underpinning these shared working spaces. Finally, it concludes with a summary of the types of workers using shared spaces, outlining how these spaces are used and the sets of perceived benefits that they provide for their workers.

Appendix 1 provides a database of shared working spaces (Types 8 + 9 identified in Table 6) in Western Australia at 1st August 2016. The database is a snapshot of formal shared working spaces identified in April 2016; it does not include Community Resource Centres (CRCs), Libraries or other informal working spaces. In total twenty shared working spaces were found.

The database reveals a dominant clustering of shared working spaces in inner-city areas, in proximity to traditional office developments. Figure 12 shows the locations of shared working spaces in the Perth metropolitan region. They are clearly clustered in the inner or near the city centre, and only a small number are located at major suburban centres.

Figure 12 Locations of shared office spaces in the Perth metropolitan area



From the marketing data collected, it is evident that shared working spaces tend to cater for specialised target markets, sectors or demographics. Of interest is that the shared working spaces are located within those suburbs (SA2s) that are subject to the largest inward commuter flows in the 2011 Census data (see section 1 of this report). They are also entirely clustered within Capital City, Strategic Metropolitan and Secondary Centres as defined by *State Planning Strategy 4.2: Activity Centres for Perth and Peel* (WAPC 2010). No shared working spaces exist in the predominantly residential or suburban areas identified during the compilation of the database.

Given the skewed and concentrated clustering of shared working space locations, these spaces may provide little prospect for workers living beyond these areas to work in predominantly residential areas closer to home. Additionally, they may provide an opportunity for people who would otherwise work from home to commute into the central city area, further adding to commuter travel demand rather than reducing it.

In addition to the potential inter-business or inter-user collaborative social dynamics of shared working spaces, many provide specific formal soft or hard infrastructure to support or attract specialist user groups. For example, a shared working space might include a crèche to attract independent working mothers, or a co-working space for a particular industry might provide access to specialist equipment, like a 3D printer. The "Specialisation" column in the Appendix 1 table illustrates the marketing or member specialisation of each shared working space. It is clear that, even within a relatively small market, almost all of the spaces have unique or differentiating attributes to attract customers.

The shared working spaces in this study were located in a wide variety of building types. All but one of the shared working spaces were located within buildings that had been converted from another use into an office space. Buildings that were adapted for reuse included a maternity ward, a shopping centre, and a former bakery. According to the interviewees, the adaptive reuse of these buildings produced unique opportunities that differentiated and increased the marketability of their co-working spaces. For example, the maternity ward was considered appealing to artists due to the novelty and utility of multiple small rooms and labyrinthine layout (Interviewee #1). Features such as a goods elevator in a former shopping centre broadened the marketability of a space by enabling trades-people and artists to transport bulky materials within the building (Interviewee #4).

The interviewees described an ad-hoc process of identifying suitable sites given the non-conventional spaces that most of these shared spaces occupied. The process of identifying suitable shared working spaces was largely opportunistic. Three interviewees, two located in the inner city and one in the regional centre, described going through a process of door knocking to find vacant spaces in buildings that were suitable for a shared working space. In the rural centres, CRCs also occupied buildings that had been repurposed, but these were identified through existing partnerships, usually with local government. The complexities associated with locating suitable existing spaces and then converting older buildings into suitable working spaces resulted in two of the interviewees developing roles as facilitators of shared working spaces (Interviewee #1 and #5).

As well as reporting on the appeal of old buildings and unusual spaces, the location of shared working spaces within older buildings also had adverse outcomes. Uncertainty about the future of these buildings and the consequential short-term lease arrangements resulted in shared working spaces often being considered temporary employment spaces. Interviewee #1 referred to a particular project as a 'meanwhile project', meaning that the co-working space existed while the property owner was waiting for an opportunity to develop or had no immediate plans to do anything with the property. Similarly, Interviewee #7 "a manager from a rural shared working space" described a string of lease arrangements with business owners and subsequent relocations to new sites as buildings were gradually redeveloped thereby indicating the tenuous nature of the shared working space model. Trade-offs were made with poorer quality, and consequently cheaper spaces in some buildings ("You don't get windows for $70 a week" – Interviewee #4), which provided opportunities for start-up business ventures and individual small business members.

The co-working spaces in the metropolitan area were run as private businesses, whereas the co-working space in the regional centre operated on a not-for-profit model and utilised funding from grant bodies to assist with re-adapting the building to provide suitable office space. One manager of a privately owned co-working space was in the process of changing to a not-for-profit organisation in order to seek grant funding. Shared working spaces in the rural towns were not-for-profit organisations subsidised by government funding through the CRC program.

Despite the variety of funding models within the sample of shared working spaces, the ongoing financial viability of the spaces was a consistent theme in the interviews. The managers of privately owned shared working spaces stressed the constant challenge of meeting overheads. Interviewee #2 made reference to a real estate company that had conducted preliminary market research into the financial viability of co-working across Australia and found that only one operation was meeting rent payments. To alleviate the financial risks associated with setting up shared working spaces, most managers of privately operated co-working spaces had engaged in some form of concessionary agreements with landlords, such as peppercorn leases.

The target markets of the case study co-working spaces varied across the different contexts. In urban centres, the co-working spaces were primarily developed to appeal to specific niche markets, whether it be artists, technology workers, or workers with young children. Users of urban co-working spaces were noted by one interviewee (#1) to be primarily small businesses and artists though some employees from larger corporations used co-working spaces as branch offices. Interviewee #3 had expanded their co-working space to occupy multiple floors of a building, each floor catering to a different market segment – technology, mining and creatives. Another interviewee, although they had established the co-working space to appeal to workers from the corporate sector, noted that around 95 per cent of their workers were small business owners, and the remainder were doctoral students. The interviewee noted that corporations:

> *...hadn't come very far along this flexible working journey. They say they have a policy (of flexible working) but actually implementing it is something else (Interviewee #2)*

The proximity of shared working spaces to corporate headquarters seemed to be a key ingredient in the success of attracting workers from the corporate sector to shared working spaces. Although, some spaces were utilised as branch office spaces by employees from overseas corporations, there was no indication that shared working spaces were widely utilised as alternative employment spaces in a way that could reduce travel. One co-working space successfully attracted corporate workers, but did so from corporations occupying the same building space as the co-working space. Interviewee #3 explained why corporations enabled their workers to use a shared office space so close to their own:

> *For most of the corporates – there's a few things – one it is about removing their people from their normal working environment, which normally reinforces hierarchy and things like that. Also it is just a much more interesting space for them to work in – so they are doing an innovation thing, so it fits in with what they're doing... and yeah, they're just looking at how they tap into that energy with the people that use these spaces.*

In the rural and regional context, shared working spaces were primarily designed to provide services and collaborative event spaces for individuals who ran businesses at home. In the major regional centre, the co-working space had broader appeal to a range of users, although managers specifically made efforts to attract knowledge industry workers and social innovators. Services provided by the co-working space were primarily collaborative event or meeting spaces to discuss community capacity building and social innovation; however there were a number of other uses. For example, a co-working space was used as an alternative space for a local school, which used the space as a meeting room (Interviewee #2). In comparison, the shared workspaces in rural towns did not appear to differentiate between market segments and rather provided services for a wide variety of businesses and individuals, such as internet connection, video conferencing, stationery services, photocopying facilities and a range of government services, such as training and licencing, to meet the needs of the surrounding rural areas.

Across the sample, the need for commercial viability was supplemented by a goal to enhance a social or community good. For example, one interviewee stated that their aim was to demonstrate social enterprise and facilitate urban regeneration and hence act as a "model of sustainability" (Interviewee #5). Interviewee #7 considered that the role of CRCs in the rural context was to contribute a social good, rather than perform a primarily economic function: "...we're here to enhance community life not to create competition." However, it is not clear what contribution CRCs made to overall community life, as there was also a winding back of similar functions by the local and state government.

> *Community development is no longer a focal point of the local shire. They no longer have a community development officer, and a lot of shires now contract their local CRC to be their community development officer (Interviewee #7)*

The interviewees considered that shared working spaces provided a range of potential benefits to those using the space. Economic benefits were highlighted in different ways across the various urban and regional shared working spaces. Co-working spaces were seen as incubators for start-ups and small business owners wanting to build a member or customer base:

> *...our dream is for people to move out. They've started their business. They know they can pay their rent. They know they have customers. They can move out. (Interviewee #4)*

In this sense co-working spaces played an intermediary role in a traditional bricks-and-mortar business pathway, allowing individuals and small businesses to trial ideas with less risk:

> *I see retailers say 'I can't wait to open a shop' and two weeks later 'I hate talking to customers. I hate sitting in the shop all day'. So thank goodness you tried it out here rather than a five-year lease and went bankrupt with lawyers' fees and things. This is a great place to fail (Interviewee #4).*

Shared working spaces generated new economic opportunities and relationships for workers. For example, Interviewee #3 noted that the workers using the space traded services between them and Interviewee #4 described how workers networked and pooled resources:

> *If someone upstairs is building fifteen tables for a café, calls on the guy next door and says can I buy some time off you, suddenly you've got a little workforce if you need it.*

A manager from one of the urban co-working spaces noted that there was a high turnover of members. Most interviewees did not identify a difference in the gender of co-working space users, although Interviewee #6 noted, based on a brief review of the membership, that there was a higher proportion of female workers using the co-working space. Interviewee #7 described workshop initiatives, supported through various grant funding opportunities that assisted women's economic independence through developing small business skills.

The use of some of the shared working spaces by individuals caring for young children and transitioning back into work influenced the temporal use of shared working spaces, with Interviewee #6 noting that activity occurred primarily between school start and finish times. However, shared working spaces were reported to be actively used at different times during the day in the inner city, although the busiest periods fell within the conventional nine to five working hours. Interviewee #1 reported that one co-working space was used over the whole 24 hours, whilst Interviewee #3 suggested that their co-working space operated according to a conventional nine to five working day.

Implications for travel

In the 1990s and 2000s it was anticipated that the increased capacity of telecommunications and teleworking would have positive implications for managing travel demand in increasingly congested cities (Department of Transport 1994). The interviews reveal a more complex relationship between travel demand and the new and emerging shared employment spaces. Importantly, there was an indication from some interviewees that shared working spaces were increasingly drawing people away from working at home.

For shared working spaces in the city and secondary urban centres, locating in an area with good public transport access was an important consideration when establishing their businesses. For example Interviewee #1, who had been involved in establishing a number of co-working enterprises, highlighted public transport access as an essential criterion in the business model of all such enterprises as it was attractive to the knowledge and creative industry worker target market. For Interviewee #3, public transport access was part of the package of appeal offered by a central city location. An inner city shared working space manager (Interviewee #4) also reported that their co-working spaces serviced a local catchment of members noting that most people who used their co-working space lived within five to ten kilometres. However, another manager of an urban co-working space (Interviewee #2) suggested that their member-base travelled significant distances across the metropolitan area, largely attracted by the inner city location.

Interviewees were also asked whether the shared working spaces they used or managed provided end-of-trip facilities for bicycle riders, such as bike parking and showers. Although most interviewees from the city considered facilities to support cyclists as desirable, most shared spaces were located in re-adapted buildings, which limited the ability to provide good quality end-of-trip facilities. Bicycles were usually parked in an ad hoc manner, where space was available. Only one interviewee (#2) did not consider end-of-trip facilities as desirable or necessary as the target market of the shared space were workers with young children.

There was a marked difference in the reported travel patterns of workers in regional and rural contexts given the varying distances between workers' homes and their shared working spaces. According to all interviewees from regional and rural centres, all those who utilized their co-working spaces travelled by car. This is not surprising given that such centres serviced much wider catchments and had limited public transport availability. Furthermore, the conditions of traffic congestion and limited parking supply that create an impetus for seeking alternative modes of travel to the car in the central city are less likely to influence decision-making about travel in the regions.

In the regional and rural shared working spaces, some interviewees identified the need to set up other branches in similar spaces across a region in order to create a decentralized network of shared work spaces. The creation of such a network would have implications for travel, as it is likely that overall distances travelled might thereby be reduced. However, although distances required for travel by the existing users may reduce, new users who may be attracted to utilizing such shared working spaces may increase the overall demand for travel.

Overall, it appeared that the provision of shared working spaces increased the amount of daily travel by the members who used them. When asked what their members would be doing if they were not working in their co-working spaces, Interviewees #1, #2 and #4 responded that they would be working at home. The collaborative and social nature of the co-working spaces appealed to members who would usually be working in isolation. This suggests that, in their current guise, shared working spaces generate travel demand and that, if policy makers and planners were to utilise shared working spaces as a means to reduce travel, other policy mechanisms would be required, including a proactive approach to dispersing shared working spaces beyond the inner city and into suburban centres.

Neighbourhood vitality

The Interviewees were asked a series of questions relating to the role of the surrounding neighbourhood contexts and whether this influenced their decision to locate or had an impact on the on-going viability of their shared working spaces. Interviewees from the co-working spaces located in the central city district considered the density of social interaction afforded by the inner cities as essential to the successful functioning of a shared workspace. This view was held strongly by Interviewee #1. For this interviewee, co-working spaces were emblematic of urbanism and the qualities of the city that enabled "connection and exchange". The viability of co-working spaces rested on their relationship with the density and diversity of the surrounding urban area. Co-working spaces reflected a city's ability to bring people together: "to share culture, knowledge, intellect and commerce". When asked if a co-working space would work in the suburbs, the interviewee responded in the negative noting that suburbs do not have the "critical mass" of people for them to work.

> *For me it is almost like a silly superstition. I just need to be able to walk out the door, to go get lunch and to see the bodies around me and to feel like I'm part of something.*

Having a critical mass of people was important to other interviewees when choosing to locate their shared workspace. However getting the right mix of urban intensity of the surrounding area was an issue. Interviewee #2, whose co-working space provided an in-house childcare service, selected a site in a suburb adjacent to the Central Business District in order to be close to corporate headquarters. Their business model catered primarily to corporate workers transitioning back to full-time work and their premises were therefore located within feasible walking distance to allow members to attend meetings in the city when required. However, feedback from potential members suggested that the space was not central enough and that corporations were reluctant to support their workers by renting workspace with convenient child-care support facilities for them. On the other hand, the same interviewee noted that small business owners, who had become the primary users of the workspace, had signalled a preference for areas outside of busy centres with more parking.

Interviewees from the urban co-working spaces also referred to the contribution that co-working spaces made to their local economies. Interviewee #3 considered that neighbouring businesses were more tolerant of any changes to space/buildings because there was a net improvement to the local space through the increased vibrancy and population that the co-working spaces produced. Referring to the businesses that use the space:

> *All the people in here are going to go buy their lunch out there, they're going to bank there, they're going to go to the post office, they're going to go for a drink after work; they're going to go to the cafes. It's good, you know.*

There was less mention made of the neighbourhood context in the regional and rural shared working spaces. When asked whether their co-working space had improved the local area, Interviewee #6 responded in the affirmative, noting improvements such as the street art and greenery that had been added by users of the co-working space to an adjacent laneway.

Planning and governance of shared work spaces

Understanding how planning could facilitate more opportunities to work closer to home was a key objective of this research. Interviewees were asked questions about the role of urban planners, administrators and key actors related to the governance and management of their shared working spaces. Planning controls potentially have an impact on the creation of shared workspaces through regulating the use of land and by setting the conditions for their development. As indicated in section 3.2 above, shared working spaces have a temporary and flexible nature and this could create challenges for a planning system that has evolved to address issues associated with more enduring uses of land and property. Indeed it suggests that planning needs a more flexible and adaptive approach to managing these types of spaces.

The interviewees identified a range of local planning functionaries who have some involvement in the establishment of the shared working spaces. These included economic development officers involved in the regeneration of the urban core of one of the centres (Interviewee #3), local council mayors (Interviewee #1), and community development officers (Interviewee #7). Urban planners were not directly mentioned as major actors who played a role in facilitating shared working spaces. This may have been because, when they set up shared working spaces, the respondents tended to make decisions that avoided the bureaucracy associated with seeking planning approvals. Interviewee #2 described making decisions based on wanting to avoid changing the use of the land, thereby necessitating development assessment and extra bureaucracy.

Interviewees reported on varying degrees of helpfulness from the political and administrative functionaries at the local government level in facilitating the establishment of shared working spaces. Good working relationships with the local shire were considered to be critical to Interviewee #7, referring to opportunities for the Shire to assist by providing lease concessions and identifying suitable locations for offices. For example interviewee #1 noted the distinction between the "aspirational pull from the leaders" in attracting co-working spaces to local areas and then the slow response from administrators as planning progressed. Individuals who were cognisant of the social and economic benefits associated with shared working spaces were considered important catalysts. High profile place activation experts and advocates were cited as examples of such individuals.

Several interviewees noted that building owners played an important role in both establishing and sustaining shared working spaces. Partly, this was due to the flexible and adaptive nature of the shared working space model and their tendency to be located in repurposed buildings. Interviewee #5 noted that it is one thing to find the space, but it is another to get the owner on side and get them to think about allowing their building to be used so that it isn't just a "big tax write off". Several interviewees considered that one role that local government could play was in facilitating conversations and negotiations between landowners and shared working space owners. For example, Interviewee #2 suggested a potential role for local governments was to identify under-utilised office space suitable for shared working spaces within their jurisdiction.

Regulations were commonly raised as a major barrier in establishing a shared working space. Regulations were recognised and followed where practicable. However, as one interviewee noted, regulations were also "outdated, outmoded antiquities of other times" (Interviewee #1), incompatible with a new flexible, adaptive mode of using buildings as co-employment spaces. When regulations inhibited the transformation of unused spaces into new, co-working spaces, a more tactical approach was required. This approach was identified as important to the viability of co-shared spaces, particularly in the city centres or key activity centres (Interviewee #6). The ability to work within the existing regulatory framework often came down to the intervention of an individual or proactive agent within government who was willing to interpret rules and regulations more loosely. For example, Interviewee #3 referred to one local government officer who suggested that they should "just do it and then if there's any problems we'll work it out afterwards" referring to approvals for signage. Planning regulations were also avoided due to the impermanent nature of some shared working space models. One interviewee (#4) when asked whether they were required to get approval prior to opening responded: "we've been very lucky and because it's temporary you can get away with a lot."

As planning and governance are important to mitigating any impacts from conflicting uses of land, the question was asked of the interviewees whether there were conflicts between users of shared working spaces and, if so, how these conflicts were addressed. Issues with the potential to lead to conflict are intrinsic to a shared workspace. In the more creatively focused co-shared spaces, issues related to noise, smell and other impacts from work that were considered part of the character and appeal of the place. Some users of the space had located in the shared spaces to escape issues of conflicting use. Interviewee #4 noted that one member who used cutting machinery moved to the shared working space because they were having issues with noise in an industrial area. Although centrally located, the large space offered by the building allowed the worker to do their activities with little conflict with other users. Overall, the successful management of externalities came down to "someone running it who was safe and sensible". Sometimes management of conflict came down to "common sense" (Interviewee #4) and "respect and communication" (Interviewee #1).

Discussion and conclusion

The collective narratives of shared working space managers, users and facilitators highlights some of the drivers of shared working space development and indicates their potential to contribute to enabling opportunities for working closer to home. The interviews revealed that shared working spaces largely materialise through an ad hoc process that capitalises on redundant sites in the city and in rural and regional towns. Most of the spaces included in this research were established opportunistically, outside of usual real estate processes. This atypical process led to both opportunities for marketing, through highlighting unusual built forms, and also constraints, primarily due to the run down condition of many of the buildings where shared working spaces were located. Users of the metropolitan shared working spaces were typically associated with various knowledge, cultural or technological industries, whereas those from the regional and rural spaces reflected a broader cross-section of the local community.

With regard to the potential role that shared working spaces can play in unlocking the potential to work closer to home, two key findings are relevant. Firstly, the vitality of the neighbourhood context and a critical mass of local population were reported to be key factors in attracting shared working spaces and their members to the inner city and to suburban centres. Although there were some suggestions that shared working spaces contributed to the vitality of the neighbourhood through economic flow-on effects, it was apparent that some pre-existing neighbourhood vitality was considered an essential ingredient to the success of these spaces. This means that any efforts by policy makers and planners to attract more shared working spaces should both consider the suitability of an area based on its existing amenity and vitality, and that a broader urban policy approach encompassing urban density, cultural policy and economic development should be considered to facilitate synergies between shared working spaces and their supporting urban contexts. However, it must be noted that the vitality of the surrounding area was of importance primarily for urban shared working spaces, while regional and rural shared working spaces tended to be utilised by a captive customer base with sustained demand for the services on offer due to the service supply constraints associated with their remote locations.

The second finding was that there was no indication from the interviews that shared working spaces reduce overall travel demand given their current inner city locations. There is therefore a significant difference between current models of shared working spaces and the former teleworking centres, which were underpinned by the aspirational goals of reducing travel. Of concern for planners and policy-makers who see shared working spaces as a policy instrument to better manage travel demand, shared working spaces may actually increase the overall demand for travel since they draw on people seeking to avoid the social isolation that comes from working alone from home.

The findings from the previous sections highlighted the absence of any significant consideration of non-traditional working spaces within Western Australian policy frameworks. The findings from the interviews reinforce this absence and suggest that many shared working spaces are developed, not because of, but in spite of any planning regulations or policy instruments. There is a tendency for shared working space initiators to strategically navigate within regulatory frameworks. Administrators and functionaries play an active role, but they are only some of a series of actors across multiple bureaucratic layers. The ad hoc manner in which shared working spaces are planned, established and operated indicates that planning policy frameworks are currently not flexible enough to address these new and emerging employment spaces.

Summary

and Discussion

Summary and discussion

This research project had a primary interest in the potential for greater numbers of people to work closer to home, including working at home. This focus is consistent with long standing planning policies in Western Australia that aspire to greater urban self-containment (where residents can work close to home). One of the key drivers for such an aspiration has been a desire to achieve travel reduction as a means of reducing traffic congestion. Travel reduction includes a focus on reducing the distances that residents travel, as well as on reducing car use in favour of public transport, cycling, walking and the replacement of travel through telecommunications. More recent planning policy drivers, found in Network City (Western Australian Planning Commission 2004), Directions 2031 (Department of Planning 2011), and Perth at 3.5 million (Department of Planning 2016) have promoted Perth's development as a vibrant polycentric city where suburban centres outside of Perth centre include a greater mix of land uses than simply residential and retail.

The research findings show that, currently, the proportion of people working at home in Greater Perth is 3.4 per cent, with significant variations by occupation group. For the rest of Western Australia the rate of homeworking stands at 6 per cent on average. However, it is estimated that approximately 25 per cent of residents work within 5 kilometres of home. There is a large spatial variation - inner city residents and urban fringe residents record a much higher proportion working close to home. The inner city suburbs circling the river have upwards of 20 per cent of people working close to home (within 5 kilometres from home). There is clearly potential for transport investment to facilitate non-car based trips for these short distance commutes.

Since the broad popularisation of telephone and internet-based technologies in the 1990s and 2000s, the range of common workplace forms has diversified. In addition to working from home, different forms of shared or informal workplaces have emerged. A typology of 'working spaces' has been identified that demonstrates a wide variety of spaces from 'at home', through various informal workspaces, to purpose built shared working spaces, as well as the traditional workspace. Shared working spaces are emerging as a rapidly growing alternative to traditional work spaces.

An examination of the governance framework and associated policies shows that both policy support at the operational level and policy linkage for working closer to home is lacking. This is despite overarching statutory planning policy promoting local employment opportunities in order to reduce the time and cost of travel to work. Homeworking, shared working spaces, telecommuting and co-working spaces do not generally feature as thematic aspects of planning policy in Western Australia. Instead the focus is on traditional land use categories that lack the scope for emerging employment spaces. Policy, overall, contains little mention of the nature of employment, and does not reflect the diversity of working space types now possible. Policies towards working at home consistently utilise risk-averse regulation.

New shared working spaces are emerging in Western Australia. These offer the potential to both support people working at home and enable greater numbers of people to work closer to home. For emerging non-traditional employment spaces, such as shared working spaces, to accommodate greater numbers of people working close to home, a number of key considerations are important.
The clustering of shared working spaces within the inner city suggests that, currently, only members in these spaces who live in in the inner urban sub-region are able to work close to home. To enhance the capacity for shared working spaces to enable working closer to home, and to contribute to reducing travel demand within the Perth region, it is necessary to attract shared working spaces to the middle and outer urban areas. However, a key finding from the interviews was that neighbourhood vitality and a critical mass of people is a necessary component for attracting such members. Critical then, is the need for urban planners to be proactive in identifying appropriate buildings and spaces rather than reactive through development assessment.

A key challenge for policy makers seeking to utilise non-traditional employment spaces as a way of enabling people to work closer to home and managing travel demand is to increase the number of shared working spaces in metropolitan areas away from the inner city. This could be achieved by enhancing the vitality of suburban centres (including by improving public transport accessibility) so that potential employees are attracted to utilise such spaces. Secondly by broadening the appeal of shared working spaces to attract members from a wider range of industries.

The success of shared working spaces appears to depend on a number of factors, including neighbourhood vitality, accessibility of suitable market segments, flexible leasing arrangements, and a good ongoing management approach to mitigate conflict between users and surrounding land uses. A supportive policy and planning framework that encourages shared working spaces would need to integrate a range of urban policy areas, including planning and development, economic development, community development and cultural policy. Currently, there is an absence of planning policy and also direction from local authorities on facilitating shared working spaces. There is also a lack of policy linkages between these policy areas. These are missed opportunities. There are potential benefits that shared working spaces can provide for local authorities. These range from economic development through flow on effects to local businesses to making use of un- or under- utilised office and building spaces.

Appendices

Appendix 1: Database of shared working spaces

Column Name Key

- **FD** – Are Fixed Desks (permanent ongoing lease) available?
- **HD** – Are Hot Desks (casual/daily use) available?
- **FS** – Are Fixed Office Spaces (permanent ongoing lease) available?
- **HS** – Are Hot Spaces (meeting rooms, etc., casual/daily use) available?
- **PT** – Approximate rating of the nearby Public Transport (PT) services: 1= direct access, 2 = good PT area, 3=some PT, 4 = no real PT
- **EOT** – Are End of Trip facilities for cyclists (lockers and showers) available?

Company	Location	FD	HD	FS	HS	PT	EOT	Specialisation	Ownership	Website	Fee
Atomic Sky Tech Hub	Money St, Northbridge	Y	N	N	N	2	Y	Tech	Private	http://www.techhub.io/	$600/month, $99/year member; $660/month FT; $165/month PT
Bloom	St Catherine's College, Crawley	?	?	?	Y	1	?	Young startups, legal, 3D print	Foundation	http://www.bloom.org.au/	$200/month; $20/day
CityHive (Pollinators)	Museum Geraldton	Y	Y	Y	Y	1	Y	N, Yes in future	Member- owned	http://pollinators.org.au/	$500/month; $50/10 hours
Core Studios	William Street, Fremantle	Y	Y	Y	Y	1	?	?	Private	None	Space $25/week, Desk $15/week
Flux Perth	St George's Terrace, Perth	Y	Y	Y	Y	1	?	Business location	Spacecubed	http://www.fluxperth.com/	Flexible packages - pricing by contact only
Fortis Consulting	St George's Terrace, Perth	?	?	?	?	?	?	?	Private - consulting company who rents out extra office spaces	http://www.fortisconsulting.com.au/co-working-packages/co-working-packages	flexible package rates depending on requirements (business leasing out part of the office)
fspace	Market St, Fremantle	?	Y	?	?	1	?	Bus. dev. program	Pty Ltd	http://fspace.me/	$35/day; $320/month PT; $550/ monthFT; 1 – $100 for 4 day passes 2 – $200 for 10 day passes 3 – $300 for 20 day passes
fspace creative coworking	Market St, Fremantle	?	?	?	?	?	?	?	?		
MANY 6160	Kings Square, Fremantle	N	N	Y	N	1		Creative manufacturing	Spacemarket	http://many6160.com/	Artist/studio spaces - individual leases. Also Brunsdon/Spacemarket project
Moana Chambers/ Moana Studio	Hay Street Mall, Perth	Y	N	Y	N	1	N	No	Spacemarket	http://cargocollective.com/moanastudio	Traditional studio-style spaces - individual leases. However Nick Brunsdon key proponent of small and flexible space leases in Perth

Company	Location	FD	HD	FS	HS	PT	EOT	Specialisation	Ownership	Website	Fee
Nest Space	Albany Hwy, Victoria Park	Y	N	Y	Y	1	N	No	Private	http://www.nestspacecolab.com/	$599/month for cubicle office; $49/1.5hrs meeting rooms weekdays; $69 weekends
Spacecubed	St George's Terrace, Perth	Y	Y	N	Y	1	Y	Mentoring	Private	http://www.spacecubed.org/	community 30/month or $300/year; $300/month PT; $500/month FT; $750/month dedicated desks
Sync Labs	Newcastle St, Leederville	Y	Y	?	Y	2	?	Mentoring	Spacemarket	http://synclabs.com.au/	$300/year community; $550/month resident member; $330PT /$450 FT coworking member
Regus	Not specified - office supply company with various locations								Private	http://www.regus.com.au/office-space/australia/perth/?q=Perth,-Australia	
St George Business Hub	St George's Terrace, Perth	N	Y	N	Y	1	N	Free, small business only	St George Bank	https://www.stgeorge.com.au/business/why-choose-us/business-hub	Free
Servcorp Virtual Offices	Virtual offices - no actual coworking space										
Mindspace	Hay St, West Perth		?						Private		$250/year membership + $192/week for small office; $116/week for partitioned office; $63/week for 2 days; $25 virtual office (12 month contracts)
BubDesk	12 Lindsay St Perth, Australia	Y	Y	?	Y	2	N	Working parents	Private	http://bubdesk.com.au	Various packages $200 - $360/month 1 day a week; casual $500; $60/day; $40 for Creche; $1100 package inc boardrooms
Vic Park MiniLab aka Co-Laboratories	874 Albany Hwy, East Victoria Park								not sure if private	https://www.enkel.co	$10/month membership; various (for meeting rooms, learning space, backyard). Hotdesking $35/day; $100/week; $300/month (50% off for members)
Hive Coworking	77 St Georges Terrace, Perth CBD	Y	Y	?	Y	1	Y	Professional	Private	http://www.hivecoworking.com.au/	$29 networker; $37/day; $299/month PT; $599/month FT
Sixty27	35 Kendrew Cres, Joondalup	Y	Y	N	Y	2	N		TAFE/City of Joondalup	http://sixty27.com.au/	Free and member-only desks

Note: This database has been updated and new items added to it from a version initiated by A. Davies in May 2016.

Appendix 2: Interview schedule for workers in shared working spaces

1. Background information

Q: What type of industry do work in?
Q: Are you self-employed? Or do you work for a firm?
Q: Are you employed full time or part-time?
Q: Do you have other types of employment? What type of places do you work in for these other types of employment?

2. Information about the shared working space

Q: Why did you choose to rent space within a shared working space?
Q: What attracted you to choosing this shared working space?
Q: How long have you been renting the work space?
Q: Have you used other shared working spaces?
Q: What are your impressions of the work space now that you have been here for _____?
Q: Describe a typical day-in-life of the co-working space?
Q: What facilities provided by the space are important to your work here?
Q: Do you see yourself still renting space in this shared working space in 6 months? A year?

3. Quality of the neighbourhood context

Q: How important was the quality of the neighbourhood context to informing your decision to work here (and explain aspects of neighbourhood you are considering)?
Q: What facilities (eg....) do you use in the wider neighbourhood?
Q: What types of activities (eg.....) do you access in the neighbourhood?

4. Travel behaviour

Q: How frequently do you come to the shared working space in one typical week?
Q: How do you usually travel to the shared working space?
Q: How long does it take for you to travel to the shared working space?
Q: How important was travel time to your decision to choose this shared working space over others?
Q: How important are the facilities provided by the shared working space (car parking/bike sparking/end of trip facilities) to your overall satisfaction with the space?
Q: Does your work require additional travel, during hours you use the shared working space?

Appendix 3: Interview schedule for managers of shared working spaces

5. Background information

Q: Why did you choose to set up a co-working space?
Q: What type of clientele were you targeting when you set up the shared working space?

6. Information on the history of the space

Q: How long has the space been operating?
Q: What were the major factors that led to you choosing this location?
Q: What work did you need to do to the space to make it functional as a shared working space?

7. Spatial characteristics of the shared working space

Q: What is the overall floorspace (sq. m)
Q: How many workspaces are available?
Q: Is the space owned or leased?
Q: What types of facilities do you provide to workers?
- Desks
- ICT
- Printers/ photocopiers?
- Other? (specify)

Q: What types of facilities and indicate whether any charge (transport-related)
- Parking spaces
- Bicycle parking
- End-of-trip facilities for cyclists

8. Temporal characteristics of the shared working spaces

Q: Describe a typical day-in-life of the shared working space?
Q: What time do most co-workers arrive?
Q: What time do most co-workers depart?
Q: Which types of spaces (if available) are most used (individual offices; open plan desks; board/meeting rooms; café space etc)

9. Current and future demand for workspaces

Q: What are the current rates for shared working spaces?
Q: What is the average number of workers using the spaces?
Q: Are there plans to expand the space or the number?

10. Characteristics of workers

Q: What types of workers use shared working spaces – teleworkers or small business/start ups?
Q: What types of workers use shared working spaces – industry types?
Q: What are the demographic characteristics of co-workers?
Q: How frequently do [different types] of workers use co-working spaces?

11. Characteristics of workers (transport related)

Q: Do you know anything about the travel patterns of co-workers – for example what transport modes do workers use?
Q: How far away are teleworkers places of work?
Q: How far away do workers live (most local/most distant)

12. Quality of the neighbourhood context

Q: How important was the quality of the neighbourhood context to informing your decision to locate here (and explain aspects of neighbourhood you are considering)?
Q: What facilities (eg....) do workers use in the wider neighbourhood?
Q: What types of activities (eg.....) do workers access in the neighbourhood?

13. Planning related issues?

Q: Did you meet with town planners when setting up the space?
Q: Was there any support from the local government setting up the space?
Q: Did you require any planning approval to make the space function as a co-working space?
- Parking
- Space standards
- Green fit-out
- Other?

Glossary

and Technical Notes

Glossary and Technical Notes

Activity Centre

Defined by the Western Australian Planning Commission as, "Activity centres are community focal points. They include activities such as commercial, retail, higher density housing, entertainment, tourism, civic/community, higher education, and medical services. Activity centres vary in size and diversity and are designed to be well-serviced by public transport." (Department of Planning/WAPC, 1998).

Centroid

Geographic centre of a given area, in the case of this report it refers to the centre of an SA2.

Community Resource Centre (CRC)

Spaces that provide a variety of community services which can be used, ad hoc, as offices. Often on a free or highly subsidised basis, intended for community benefit. Often in rural or isolated localities. Provide work spaces as well as government services such as Welfare, Healthcare and Banking agencies.

Co-working space

As with shared working space but here the distinction is that members are encouraged to collaborate with work.

SA2

Statistical Area Level 2 – A geographical unit used in the census, usually smaller than a Local Government area.

Shared working space

Alternative form of traditional office space / retailing / light industry provision of workspaces, desks or small spaces on short-term basis for the ultimate profit of the owner.

Teleworking/telecommuting

Work conducted within the residential home on a part-time basis with the main location of employment being elsewhere.

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Corresponding Author Details

Professor Carey Curtis
Urbanet, School of Built Environment, Curtin University
GPO Box U1987, Perth, WA 6845
Phone: 9266 2061
Fax: 9266 2711
Email: c.curtis@curtin.edu.au

Other Authors

Dr Courtney Babb
Urbanet, School of Built Environment, Curtin University
GPO Box U1987, Bentley, WA 6845
Phone: 9266 7259
Fax: 9266 2711
Email: c.babb@curtin.edu.au

Mr Sam McLeod
Urbanet, School of Built Environment, Curtin University
GPO Box U1987, Bentley, WA 6845
Phone: 9266 2780
Fax: 9266 2711
Email: sam.mcleod@curtin.edu.au

Mr David Robertson
Urbanet, School of Built Environment, Curtin University
GPO Box U1987, Bentley, WA 6845
Phone: 9266 2780
Fax: 9266 2711
Email: david.robertson1@curtin.edu.au

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Contact

Bankwest Curtin Economics Centre (BCEC)
Level 4, Building 408
Curtin University
GPO Box U1987
Perth WA 6845
Tel: +61 8 9266 1744
Email: bcec@curtin.edu.au

bcec.edu.au

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