



# SMART WORK

IN  
THE  
ACT  
AND  
REGION

ISBN 978-1-74088-423-5

Globalisation and Cities Research Program

University of Canberra

Bruce ACT 2601 Australia

2015

**Lawrence Pratchett**

**Richard Hu**

**Fiona Buick**

**Lucas Carmody**



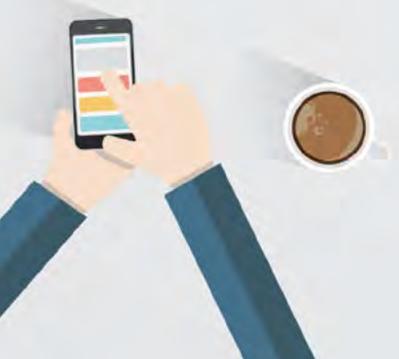
## CONTENTS

---

06	EXECUTIVE SUMMARY
09	INTRODUCTION
11	WHAT IS SMART WORK
13	PRINCIPLES OF SMART WORK
14	COMMONWEALTH GOVERNMENT POLICY
15	ACT GOVERNMENT POLICY
16	METHODS
16	SPATIAL SCALE
16	SMART WORK CLUSTERS
17	SCENARIO ANALYSIS
18	PROFILE OF TELEWORKERS IN THE ACT
20	PROFILE OF TELEWORKERS IN THE ACT PUBLIC SECTOR
23	SMART WORK CLUSTERS



28	<b>SMART WORK HUB SPATIAL ANALYSIS</b>
28	<b>BELCONNEN</b>
29	<b>GUNGAHLIN</b>
30	<b>NORTH CANBERRA</b>
30	<b>SOUTH CANBERRA</b>
31	<b>WODEN</b>
31	<b>WESTON CREEK</b>
32	<b>TUGGERANONG</b>
33	<b>BENEFIT ANALYSIS</b>
33	<b>SCENARIO</b>
34	<b>COMMUTING MILEAGE SAVED</b>
35	<b>COMMUTING TIME SAVED</b>
38	<b>PETROL COST SAVED</b>
41	<b>BENEFIT TO LOCAL ECONOMY</b>
42	<b>RECOMMENDATIONS</b>
42	<b>FOCUS ON GUNGHALIN</b>
42	<b>FOCUS ON THE REGION</b>
42	<b>PUBLIC TRANSPORT/ROAD CORRIDORS</b>
42	<b>SUMMARY</b>
43	<b>BIBLIOGRAPHY</b>
45	<b>ACKNOWLEDGEMENTS</b>



## EXECUTIVE SUMMARY

### SMART WORK

Smart work is working in a way that allows people to be most productive for a given task, and that is most conducive to sustainability.

Smart work spaces are alternate locations where people primarily employed in knowledge industries and services – including public servants - can carry out their duties, without having to commute to their regular office each day. They include home offices, public spaces such as cafés or libraries, and communal work hub spaces.

Smart work builds upon the knowledge economy, and is facilitated by the advancement of the information and communication technology (ICT). The ubiquitous ICT presents a new paradigm of ‘anywhere working’ for knowledge workers.

#### Smart work is underpinned by the following principles:

- *Work no longer has to be a destination*
- *Work that is more flexible in time, space and technology*
- *Work focused on enhanced efficiency and effectiveness*
- *Work that is less reliant on commute*
- *Work led by the tools you need*
- *Work where staff can be most productive and best accomplish their tasks*
- *Trust – collegial and employer-employee*
- *A focus on common objectives over common physical work space*
- *A shift from an organisation- to individual-centric focus*
- *Work that moves out of a silo and into a network*
- *Work that is measured by the creation of ideas rather than hours*
- *Work that is more productive and sustainable*

### SMART WORK IN THE ACT AND REGION

The ACT and region has a strong base for smart work. It has a highly educated workforce, a knowledge-based economy, and higher rates of internet connection and usage compared to other Australian States and Territories.

The average knowledge worker in the ACT and region spends approximately 40 minutes commuting 35 kilometres to work every day.

More and more people are turning to smart work in the ACT. In 2006-2011, the number of smart workers increased by 12 per cent.

The smart worker clusters in the ACT are primarily in the areas of Gungahlin, and to a lesser extent Tuggeranong and Weston Creek. Yass and Queanbeyan in the surrounding region demonstrate a modest degree of concentration of smart workers. The following table lists the top 10 smart worker cluster areas according to location quotient (LQ), which measures the areas’ concentration of smart workers relative to the ACT and region.

Rank	SA2	LQ
1	Crace	2.36
2	Casey	2.06
3	Franklin	1.97
4	Macarthur	1.94
5	Bonner	1.94
6	Palmerston	1.91
7	Holder	1.89
8	Forde	1.86
9	Duffy	1.86
10	Chapman	1.85

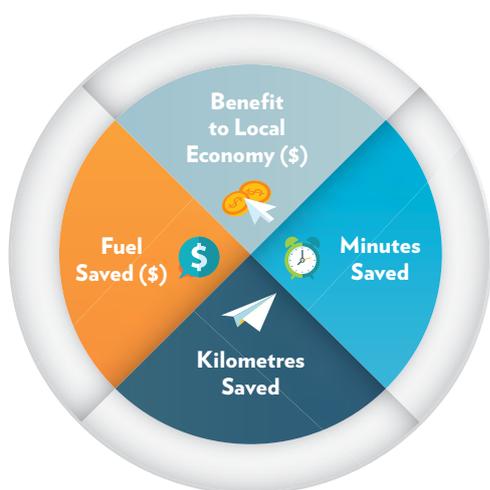
In terms of the numbers of smart workers, Queanbeyan and Yass in the surrounding region demonstrate smart work hub potential, with a significant number of trips to work inside the ACT border originating from these adjacent regions. The following table shows the top 10 smart worker areas measured by the numbers of smart workers in the ACT and region.

Rank	SA2	Numbers
1	Kambah	5,611
2	Queanbeyan West - Jerrabomberra	4,807
3	Queanbeyan Region	4,407
4	Ngunnawal	3,600
5	Queanbeyan	3,198
6	Wanniassa	2,790
7	Yass Region	2,731
8	Nicholls	2,707
9	Gordon (ACT)	2,689
10	Kaleen	2,577

The benefits of smart work are multiple. The table below shows indicative economic benefits of smart work for the top 10 smart worker cluster areas, based on the scenario that 10 per cent of the local areas' commuters were to partake in smart work on a given day.

## STRATEGIC DIRECTIONS OF SMART WORK HUB DEVELOPMENT

- Smart work is a beneficial, logical and marketable proposal for the ACT and region.
- Initial smart work hubs should be located in suburbs identified as having the greatest potential on the basis of the socio-economic and demographic data identified in this report.
- Decisions on the location of potential smart work hubs should consider the strategic benefit to the larger catchment area.
- Smart work hubs should be integrated with, and alongside, public transport and road corridors within the designated areas for greater accessibility of both public and private transport users.



## RECOMMENDATIONS

**Focus on Gungahlin:** Gungahlin displays high potential for a smart work hub. Despite current public transport links to Gungahlin often being lengthy and infrequent, the recent announcement of the Capital Metro Light Rail project may alleviate some of these concerns. This development would provide a quick and easy route for smart workers to access a smart work hub and be linked to rapid bus routes connecting to the stops along the route from Gungahlin to Civic. A smart work hub in Gungahlin would be able to provide an environment which stimulates a high level of professional activity but also supports innovation across all areas of the community.

**Focus on the region:** The Yass and Queanbeyan regions display a strong case for smart work. They are high commuter areas. A smart work hub in Yass would represent a strategic catchment area for smart workers further afield in the region. A smart work hub in Yass would potentially attract users from surrounding towns and villages such as Boorowa, Tumut and Young. A smart work hub would allow regional smart workers to avoid the lengthy and costly daily commute. It would also allow regional smart workers to have a greater presence in their place of residence, providing major boosts for the local area both economically and socially.

**Focus on transport/road corridors:** The specific locations of the smart work hub premises should be integrated with, and alongside, public transport and road corridors within the designated suburbs such as Belconnen and Watson. This would promote convenience and access to the smart hub facilities to people utilising both public and private methods of transport. This would lead to positive flow-on effects in terms of taking vehicles off the road. The positive environmental impacts would add to the evident positive social and economic impacts of the smart work hub development.

### TOP 10 SMART WORKER CLUSTERS



	Minutes Saved	Kilometres Saved	Fuel Saved (\$)	Benefit to Local Economy (\$)
Crace	272	229	48	3,313
Casey	634	599	124	6,693
Franklin	1,292	1,248	259	18,476
Macarthur	447	411	85	5,617
Bonner	666	598	124	6,276
Palmerston	1,859	1,666	346	23,106
Holder	803	653	136	12,354
Forde	1,242	1,023	212	11,586
Duffy	1,112	917	190	15,053
Chapman	985	797	165	13,868





## INTRODUCTION

This report investigates the potential extent and benefits of smart work practices in the ACT and region. The aim is to inform policy and planning for the potential development of smart work hubs in the ACT and region.

In the 'smart' era, our understanding of what drives productivity in the workplace is experiencing a transformation, the likes of which have not been seen since the industrial revolution. As technology has become increasingly embedded into everyday life, the opportunity to re-evaluate the conceptualisation of the 'workplace' and subsequently the potential to shape the physical and digital environment has emerged.

The increased utilisation of technology to facilitate the undertaking of work remotely has major implications not only for business efficiency and effectiveness, but also for urban and regional planning and design. Smart work has great potential to help address the challenges facing today's society created by the commuting between places of residence and work. Issues such as commuting, traffic and pressure on infrastructure, and transport emissions could all be reduced through the utilisation of smart work.

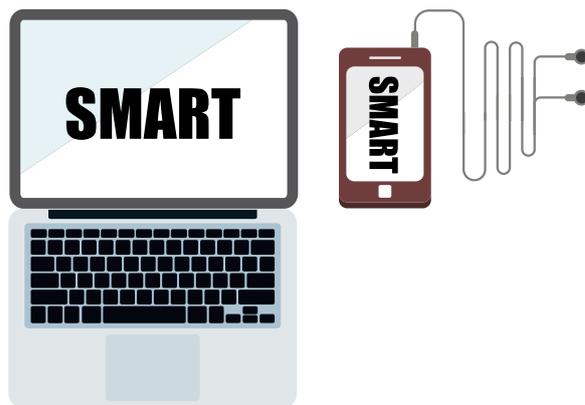
The smart work mode is increasingly made possible by the availability and usage of a range of communications technologies – particularly broadband and Wi-Fi internet - which allow people to work remotely, and communicate with colleagues and clients around the globe. Smart work is a key component of creative communities that offer a balance of work and lifestyle opportunities to attract and retain talented and innovative workers. Such spaces can act as incubators for digitally-based start-ups and other creative industries. There are many potential benefits to be explored, some of which are identified in this report.

Smart work remains an issue of contemporary importance in Australia. The Commonwealth Government aims to double Australia's level of telework by 2020, so that at least 12 per cent of Australian employees report having a telework arrangement with their employers (Department of Communications 2014). This is considered to be central to the attainment of the ability to position Australia as one of the world's leading digital economies.

At an ACT level, smart work is supported by the ACT Government's *Business Development Strategy* (2013) and *Digital Canberra Action Plan* (2014).

The average knowledge worker doesn't have to commute to the infrastructure they need. Most knowledge workers have **all the infrastructure they need in their pocket.**

Smart work arrangements don't just mean working from home. The idea of smart work is **working in a space that allows you to be most productive** for a given task. The time to shift towards smart work is now with the rise of the creative economy and the roll out of the NBN.



## WHAT IS SMART WORK

The notion of smart work has its genesis in teleworking. Teleworking, otherwise referred to as 'telecommuting', 'flexi-work' and 'remote working' (Shieh and Searle 2013), emerged in the 1970s in response to the looming oil crisis and escalating fears regarding the cost of commuting (Bailey and Kurland 2002). Through reducing the need to commute to work, teleworking was originally seen as a remedy to issues such as rising real estate costs, rising oil prices, fractured family structures, increased traffic congestion, and air pollution (Bailey and Kurland 2002).

Certain observable characteristics define telework. Haddon and Brynin (2005) summarise the familiar defining elements of telework as 'technology, location, contractual arrangements and time' (p. 35). Technology is central to telework, with one view of teleworking including that it is any form of substitution of technologies (such as telecommunications and computers) for work-related travel (such as moving the work to the workers instead of moving the workers to work) (Niles 1975; Vega 2003). Location is a defining characteristic for a teleworker, with some focusing on the definition of teleworking as comprising working specifically from home, whilst others emphasise the aspect of remoteness from the office without defining a specific alternative (Alizedah 2012). With regard to contractual employment arrangements, teleworking encapsulates those intentionally and contractually working remotely in order to achieve their goals. Finally, the time characteristic comprises teleworkers working from a location outside of the office for a meaningful period of time. It can also involve working outside of traditional office hours. This 'spill over' could indicate that people might still be working, albeit not at a central point, outside the business hours of 9 am – 5 pm.

Research has also explored the benefits and barriers of undertaking telework. The main benefits include improved productivity, organisational loyalty and belonging, job satisfaction, real estate cost savings, savings of space, transit cost savings, increased flexibility, decreased employee stress, improved employee morale and employee attraction and retention (Brown 2010; Cha and Cha 2014; Kim and Oh 2015). On the other hand, barriers to telework have also been examined, including the lack of managerial knowledge regarding the teleworking style, technological feasibility and limitations, trust, security, costs, concerns regarding employee health and safety, and managerial resistance (Department of Communications 2014; Cha and Cha 2014; Fritz and Narasimhan 1995; Kim and Oh 2015).

The notion of smart work extends the idea of teleworking and situates it in the context of the ever expanding knowledge economy. It is a broad proposition that has the potential to offer a wide range of individuals an alternative to traditional work/travel arrangements. In this report, smart workers are considered to be professionals in knowledge intensive industries who work outside of the office environment, in any location that enables them to be the most productive for a given task. Locations include home offices, public spaces such as cafés or libraries, and communal work hub spaces. Despite the multi-locational nature of smart work, much of the literature focuses on professionals operating from smart work hubs (see, for example, Adamsone, Baltina, Judrupa, Senfelde and Vitola 2013; Buksh and Mouat 2015).

Whilst the literature on smart work is not as expansive as that regarding teleworking, similar benefits and barriers appear to be evident. It is the aim of this research project to identify empirically the perceived benefits of smart working in the current and future working environments to support the planning for potential development of smart work hubs in the ACT and region.



## PRINCIPLES OF SMART WORK

- 1** Work no longer has to be a destination
- 2** Work that is more flexible in time, space and technology
- 3** Work focused on enhanced efficiency and effectiveness
- 4** Work that is less reliant on commute
- 5** Work led by the tools you need
- 6** Work where staff can be most productive and best accomplish their tasks
- 7** Trust – collegial and employer-employee
- 8** A focus on common objectives over common physical work space
- 9** A shift from an organisation- to individual-centric focus
- 10** Work that moves out of a silo and into a network
- 11** Work that is measured by the creation of ideas rather than hours
- 12** Work that is more productive and sustainable



## COMMONWEALTH GOVERNMENT POLICY

### THE DIGITALECONOMY

By delivering reliable, high-speed broadband to all Australian premises, the National Broadband Network will give more employees and employers the confidence to engage in teleworking.

Working to support all Australians realise the full potential of the digital economy.

Helping communities' gain the digital literacy skills needed to effectively participate in the digital economy.

Telework, and the concept that work is something you do, not where you are, is the practice of utilising information and communications technology to stay connected to colleagues, and will create economic, social and environmental benefits.

Provide practical guidance for small businesses and community organisations to establish and enhance their online presence.

*Australian Department of Communications (2014)*

## ACT GOVERNMENT POLICY

### A CLEVER,CONNECTED, CREATIVE CITY

Our citizens and major institutions are ingenious, astute and knowledgeable, providing a solid foundation for our knowledge economy.

Canberra has the highest levels of educational attainment for any city in the country, providing a rich talent pool for our businesses predominantly in the services sector, and specifically in the Knowledge Intensive Professional Services Sector.

Canberra is information rich. High rates of internet connection, smart phone ownership and social media use connect Canberra's cosmopolitan citizens – many of whom have come from interstate or overseas.

Our universities, research organisations and cultural heritage institutions are sources of creativity, discoveries, inventions and ideas that form the basis for new businesses and application in growing enterprises.

Canberra has the capacity to become a truly clean 21st Century city. We are free of heavy industry legacy issues challenging other Australian cities, making us an ideal location for the development, application and use of clean technologies in energy, transport and urban design.

*ACT Business Development Strategy (2013)*



## DIGITAL CANBERRA ACTION PLAN

- Promote additional digital spaces, events and government services (including electronic payment options for parking)
- Partner with industry to champion teleworking and encourage flexible workforces
- Provide business support programs to encourage digital start-ups
- Collaborate with research and regional partners to identify digital opportunities
- Continue to reduce red tape for business including identifying opportunities for government to change internal processes to assist businesses to make the most of the digital economy
- Build job-ready science, technology, engineering and mathematics skills by funding internships for higher education students
- Deliver interactive digital teleconference services for the community
- Support government use of low cost, video conference tools for customer service and community engagement

*Digital Canberra Action Plan (2014)*

## METHODS

This report adopts a quantitative approach. Data has been gathered from the ABS census data on the number of potential smart workers in the ACT and region, which district had the highest concentration, and where these people travelled for work (or whether they worked in their local area).

## SPATIAL SCALE

Geographically, this study covers the ACT and Southern Inland which are made up of 15 areas delimited by Statistical Area Level 3s (SA3s), as classified by the Australian Statistical Geography Standard (ASGS):

### ACT

- Belconnen
- Cotter – Namadgi
- Fyshwick – Pialligo – Hume
- Gungahlin
- North Canberra
- South Canberra
- Tuggeranong
- Weston Creek
- Woden

### Southern Inland Region

- Goulburn – Yass
- Queanbeyan
- Snowy Mountains
- South Coast
- Southern Highlands
- Tumut – Tumbarumba

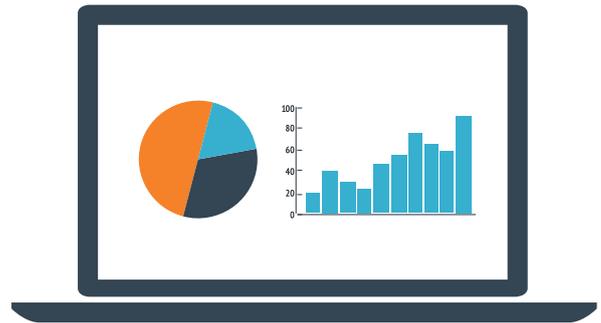
Within the 15 areas, the spatial analysis has been conducted at the local level as defined by the Statistical Area Level 2 (SA2) of the ASGS. Within the ACT and Southern Inland there are 146 SA2s. The purpose of analysing clusters of office commuters at the local level is to identify potential locations for a smart work hub.

Data provided by the Globalisation and Cities Research Program (GCRP) has come from the 2011 Australian Census, and comprises three parts:

1. Place of Usual Residence – those living in given areas across the ACT and region
2. Place of Work – those working in given areas across the ACT and region
3. Living versus working population – to assess the correlation between where smart workers tend to live and work

Each of these parts explores smart workers, who are defined as follows:

- a. People working in highly-skilled occupations, including Managers and Professionals, as defined by the Australian and New Zealand Standard Classification of Occupations (ANZSCO) 2006.
- b. People in the occupations listed above commuting outside of their region (as defined by SA3) to get to work.



## SMART WORK CLUSTERS

Smart work clusters have been identified in the ACT and surrounding region. Smart workers are delineated by managers and professionals who commute outside of their region (as defined by Statistical Area Level 3) to get to work. The purpose of analysing these specific smart work clusters is to identify suitable areas for potential smart work hubs. The location quotient (LQ) technique has been adopted for the spatial analysis. The LQ technique helps identify the concentration of smart workers in SA2s across the ACT and surrounding region, and has been calculated using the following equation:

$$LQ_i = \frac{e_i / e_T}{E_i / E_T}$$

Where:

$e_i$  = smart workers in SA2i

$e_T$  = total population in SA2i

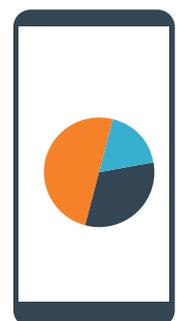
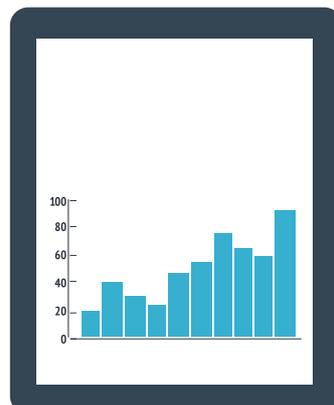
$E_i$  = smart workers in ACT and region

$E_T$  = total population in ACT and region

An LQ of more than 1 denotes an SA2 that has an above average proportion of smart workers, compared to the regional average.

An LQ of 1 denotes an SA2 that has an average proportion of smart workers, compared to the regional average.

An LQ of less than 1 denotes an SA2 that has a below average proportion of smart workers, compared to the regional average.



## SCENARIO ANALYSIS

The scenario analysis makes a number of assumptions which are justified below.

### SCENARIO

The scenario analysis is based on the assumption that 10 per cent of commuting office workers at Managerial and Professional levels, as defined by Australian and New Zealand Standard Classification of Occupations (ANZSCO), adopt the smart work mode. The table below illustrates how the cost-benefit model has been constructed.

Under this scenario, if 10 per cent of the 591 (see highlighted in table above) commuting office workers residing in Bruce and working in North Canberra participated in smart work, then there would be approximately 59 people that do not have to commute on a given day. To understand the potential impact of this assumption, this study looks at four cost-benefits: commuting mileage saved, hours saved, petrol cost saved, and benefit to the local economy.

		SA3		Belconnen			
		SA2	Aranda	Belconnen	Bruce	Charnwood	Cook
Place of Residence (Office Workers)	Belconnen	153	311	350	103	176	
	Cotter - Namadgi	5	3	11	3	4	
	Fyshwick - Pialligo - Hume	49	61	118	19	35	
	Gungahlin	14	27	26	23	15	
	North Canberra	288	343	591	112	328	
Place of Work (Office Workers)	South Canberra	108	157	224	47	168	
	Tuggeranong	17	38	49	11	19	
	Weston Creek	5	7	14	6	5	
	Woden	40	53	86	32	59	
	Total	1,112	2,177	3,075	1,303	1,405	
Outside SA3		526	689	1119	253	629	

### COMMUTING MILEAGE SAVED

Commuting mileage has been calculated from the central location of each place of residence at the Statistical Area Level 2 (SA2) in the ACT and surrounding region to the central employment location in each Statistical Area Level 3 (SA3) in the ACT.

For example, the commute from Bruce to North Canberra (City Hill) is approximately 8 km. Under the scenario mentioned above, each of the 59 people (10 per cent) who participate in smart work would save 16 km on a given day. Therefore, if 10 per cent of Bruce's identified potential smart workers were to take up smart work then collectively mileage saved would be 944 km per day.

### COMMUTING TIME SAVED

Commuting time saved has been calculated from the central location of each place of residence at the Statistical Area Level 2 (SA2) in the ACT and surrounding region to the central employment location in each Statistical Area Level 3 (SA3) in the ACT.

For example, the commute from Bruce to North Canberra (City Hill) is approximately 8km. According to Google Maps, during peak hour, the quickest available route from Bruce to North Canberra would take approximately 12 minutes. Therefore, if 10 per cent of Bruce were to take up smart work, then collectively time saved would be 23.6 hours per day.

### PETROL COSTS SAVED

Petrol costs saved has been calculated from the central location of each place of residence at the Statistical Area Level 2 (SA2) in the ACT and surrounding region to the central employment location in each Statistical Area Level 3 (SA3) in the ACT.

For example, the commute from Bruce to North Canberra (City Hill) is approximately 8km. According to the ABS, average fuel consumption in Australia is approximately 13.7L/100KM of travel (ABS, 2013). Additionally, according to the Australian Institute of Petroleum (2014), the average weekly petrol price

in the ACT in the week ending Sunday, 9th of November 2014 was \$1.516 per litre (AIP, 2014). Therefore, if 10 per cent of Bruce were to take up smart work, then collectively petrol costs saved would be \$196 per day.

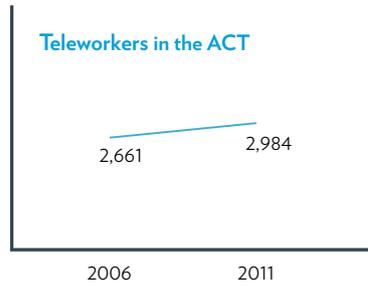
### BENEFIT TO LOCAL ECONOMY

The benefit of the smart work to the local economy has been calculated on the basis of the findings from the Australian Securities and Investments Commission (2012). The study of Australian Spending Habits found on average, people from the ACT spend \$1,536 weekly (approximately \$219 per day), whilst people from NSW spend \$1,265 (approximately \$181 per day).

For example, if 10% of Bruce participates in smart work, then 112 people would be more likely to spend their daily \$219 locally. Therefore, if 10 per cent of Bruce were to take up smart work then collectively the benefit to the local economy would be \$11,542 per day.

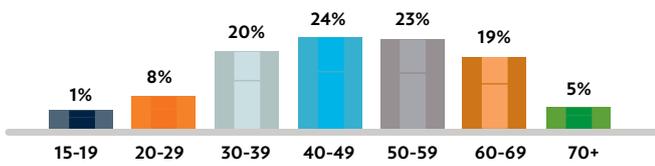
## TELEWORKERS IN THE ACT

The number and proportion of people participating in telework is gradually increasing in the ACT. This is an encouraging trend given the historical lack of awareness and support for flexible working arrangements in the ACT.



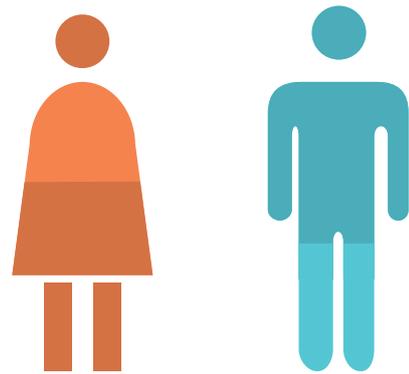
The number of teleworkers in the ACT increased by 12.1% between 2006 and 2011.

### AGE



Nearly half of all teleworkers in the ACT were aged 40-59.

Teleworkers in the Canberra region are most commonly located in areas of NSW close to the ACT border, and in established suburbs of the ACT. Areas with the highest proportions of teleworkers (see figure on next page) tend to be located in established suburbs close to nature reserves.



**56% FEMALES 44% MALES**

More women took up telework than men in the ACT in 2011.

### BY NUMBER

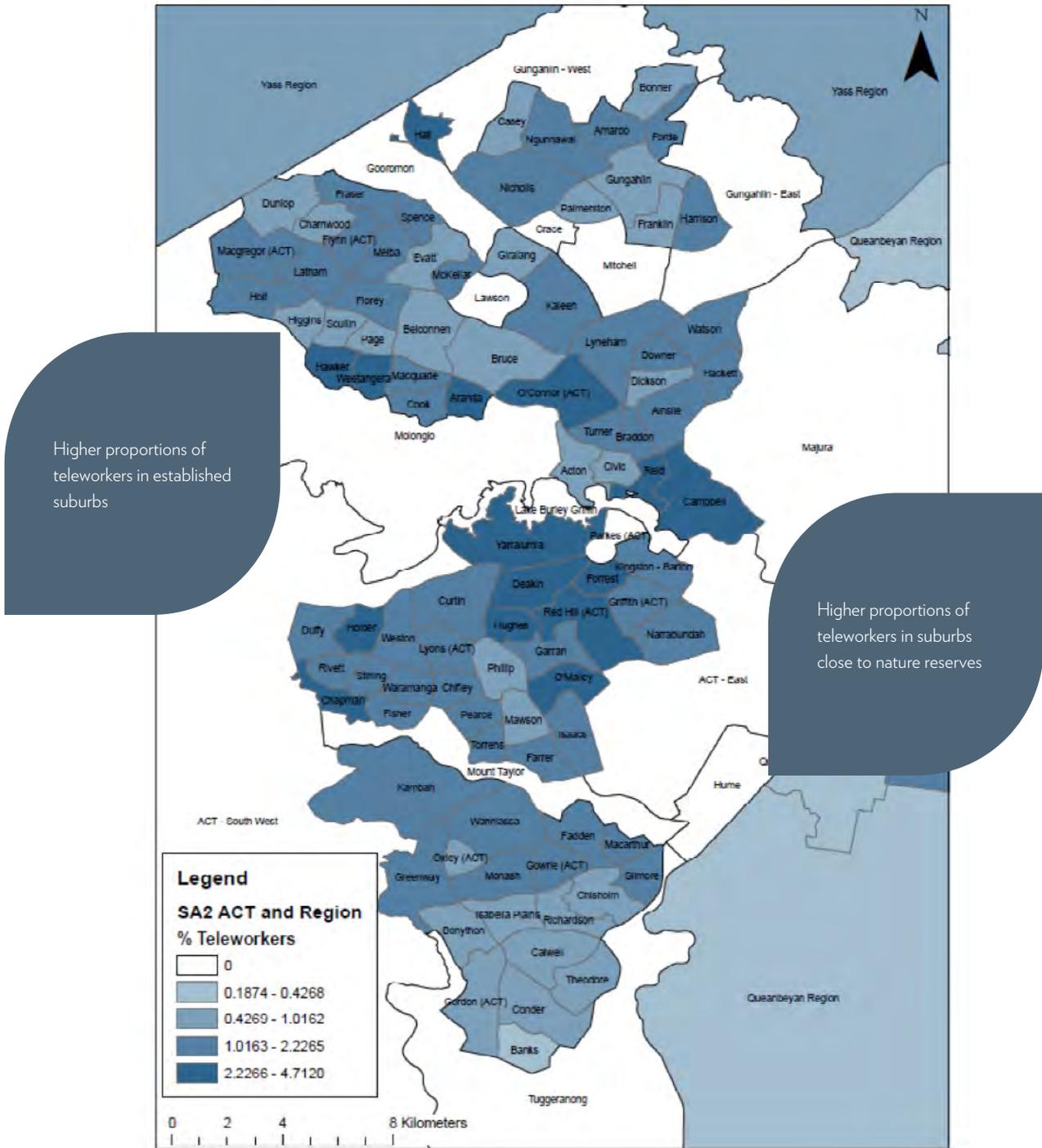
- QUEANBEYAN
- CAMPBELL
- KAMBAH
- YASS YALLEY
- O'CONNOR
- YARRALUMLA
- NARRABUNDAH
- NICHOLLS
- DEAKIN
- WANNIASSA

### TOP 10 AREAS

### BY PERCENTAGE

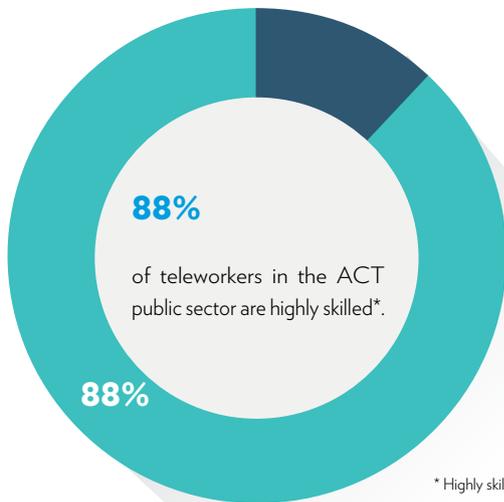
- CAMPBELL
- FORREST
- YARRALUMLA
- DEAKIN
- O'MALLEY
- HALL
- CHAPMAN
- RED HILL
- O'CONNOR
- WEETANGERA

## ACT TELEWORKERS 2011

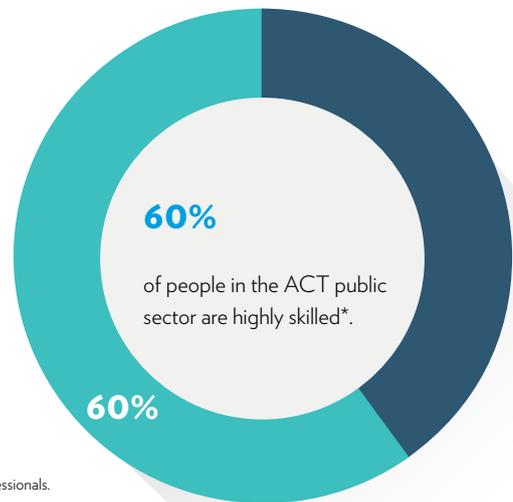


This diagram shows the proportion of people in a given suburb that worked from home on Census day 2011.

## TELEWORKERS IN THE ACT PUBLIC SECTOR

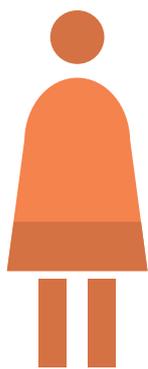


*Teleworkers in the Public Sector*



*Public Sector*

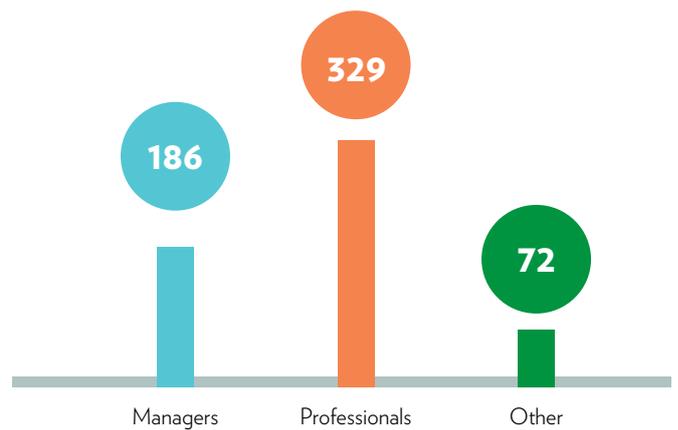
\* Highly skilled refers to managers and professionals.



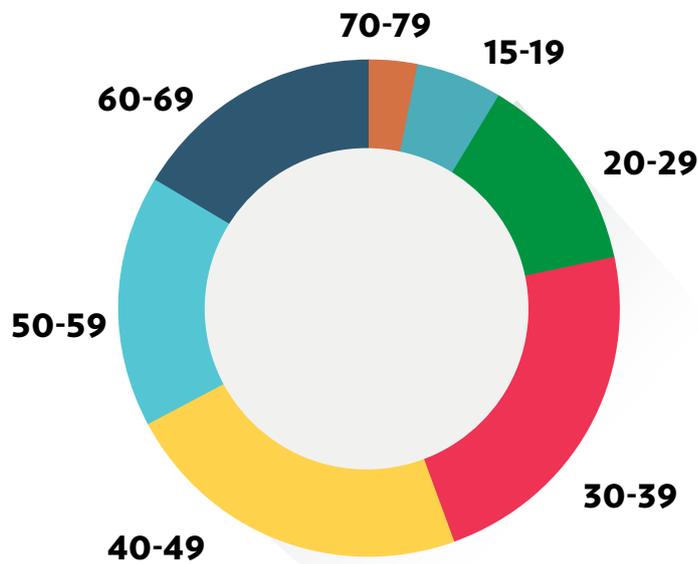
**50% FEMALES**



**50% MALES**



Skilled workers in the ACT public sector are more likely to become teleworkers.



## AGE

Teleworkers in the ACT public sector are predominantly 30-49 years old. Teleworkers in the ACT public sector tend to be younger than the average teleworkers in the ACT.

### BY NUMBER

- KAMBAH
- YASS VALLEY
- QUEANBEYAN
- O'CONNOR
- WATSON
- MAWSON
- AINSLIE
- MCKELLAR
- CURTIN
- ARANDA

### TOP 10 AREAS

The top ten areas for teleworkers in the ACT public sector are mostly found in suburbs close to part of Canberra's nature reserve network, and in the surrounding region.

### BY PERCENTAGE

- CAMPBELL
- FORREST
- ACTON
- HOLDER
- MAWSON
- ARANDA
- STIRLING
- CHAPMAN
- SPENCE
- O'CONNOR

**5,700KM**

in Total Daily Travel Saved by the Top 10 Areas for teleworkers in the ACT public sector

**36KM**

in Average Daily Travel Saved by an average teleworker in the public sector living in the Top 10 Areas





## SMART WORK CLUSTERS

*ACT AND REGION*

### TOP 10 AREAS

#### BY LQ

CRACE

CASEY

FRANKLIN

MACARTHUR

BONNER

PALMERSTON

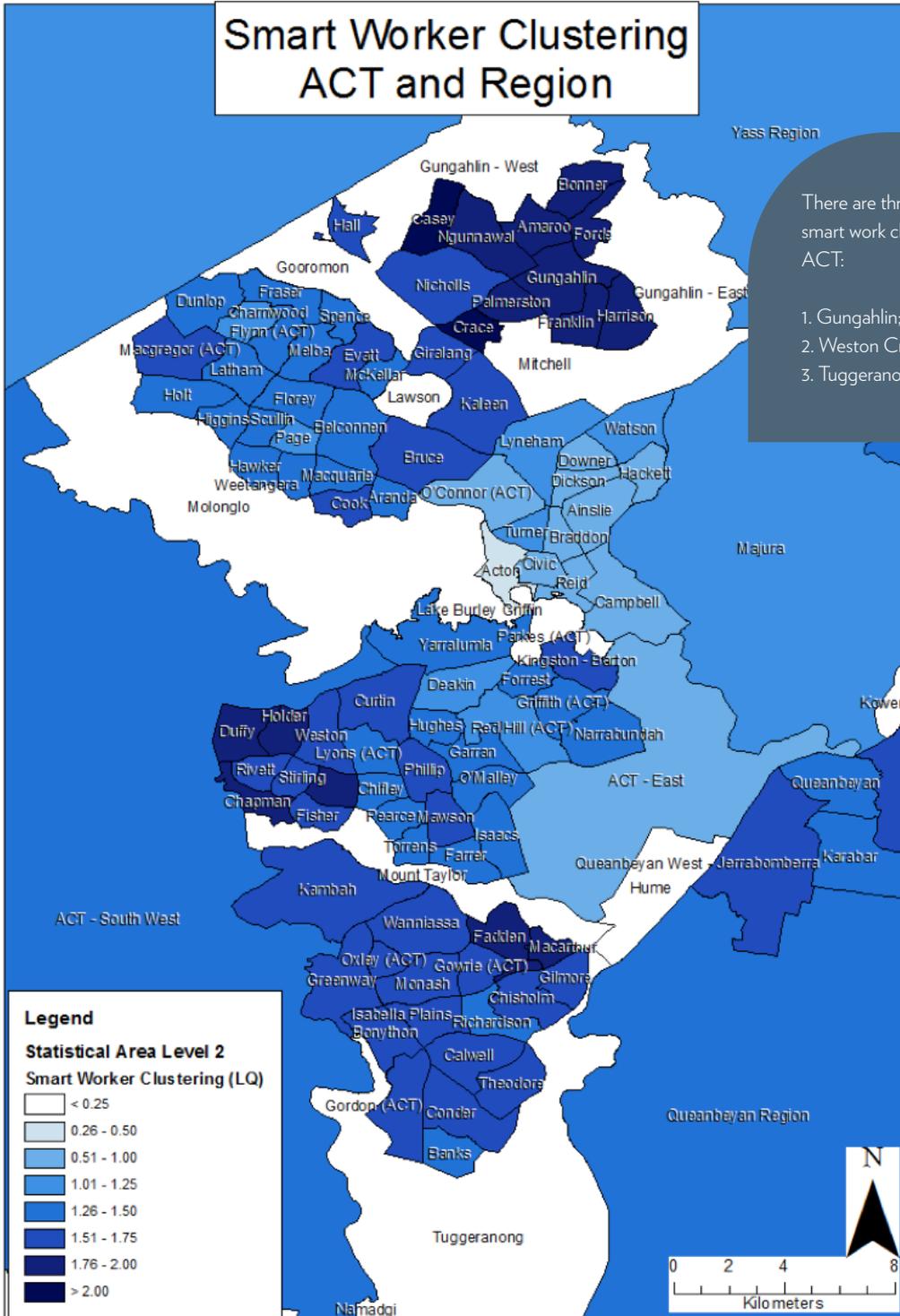
HOLDER

FORDE

DUFFY

CHAPMAN

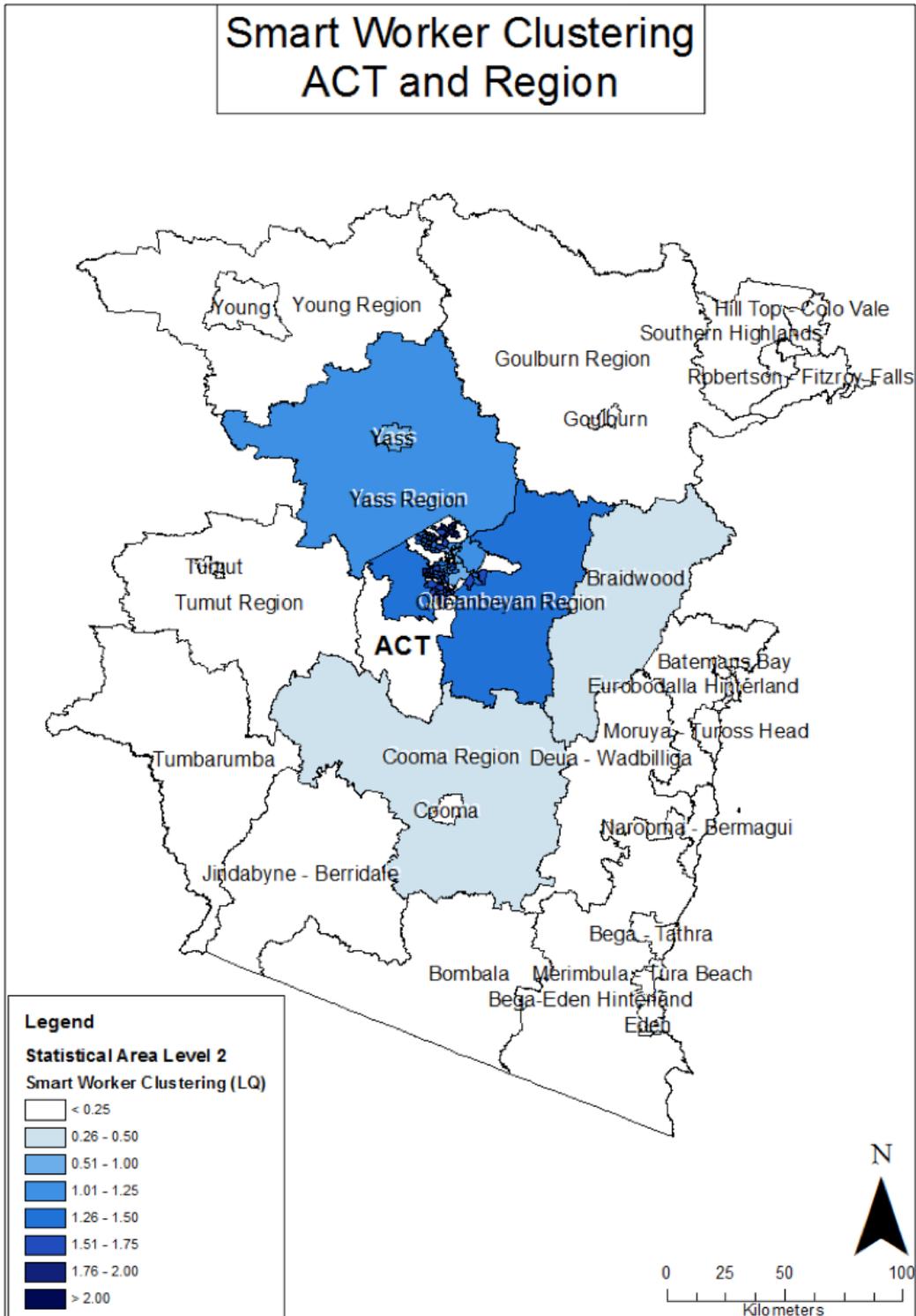
# Smart Worker Clustering ACT and Region



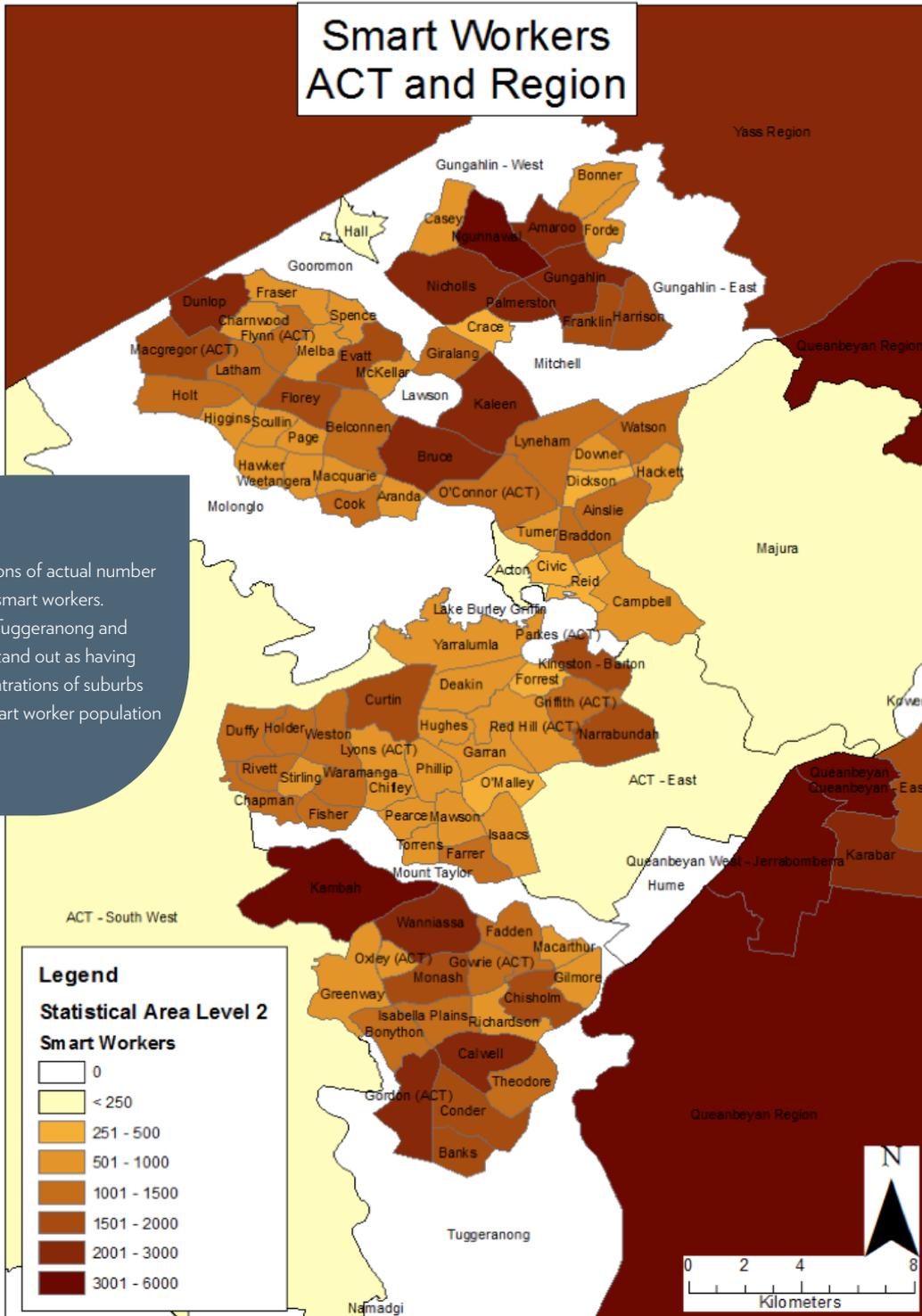
There are three notable smart work clusters in the ACT:

1. Gungahlin;
2. Weston Creek; and
3. Tuggeranong

## Smart Worker Clustering ACT and Region

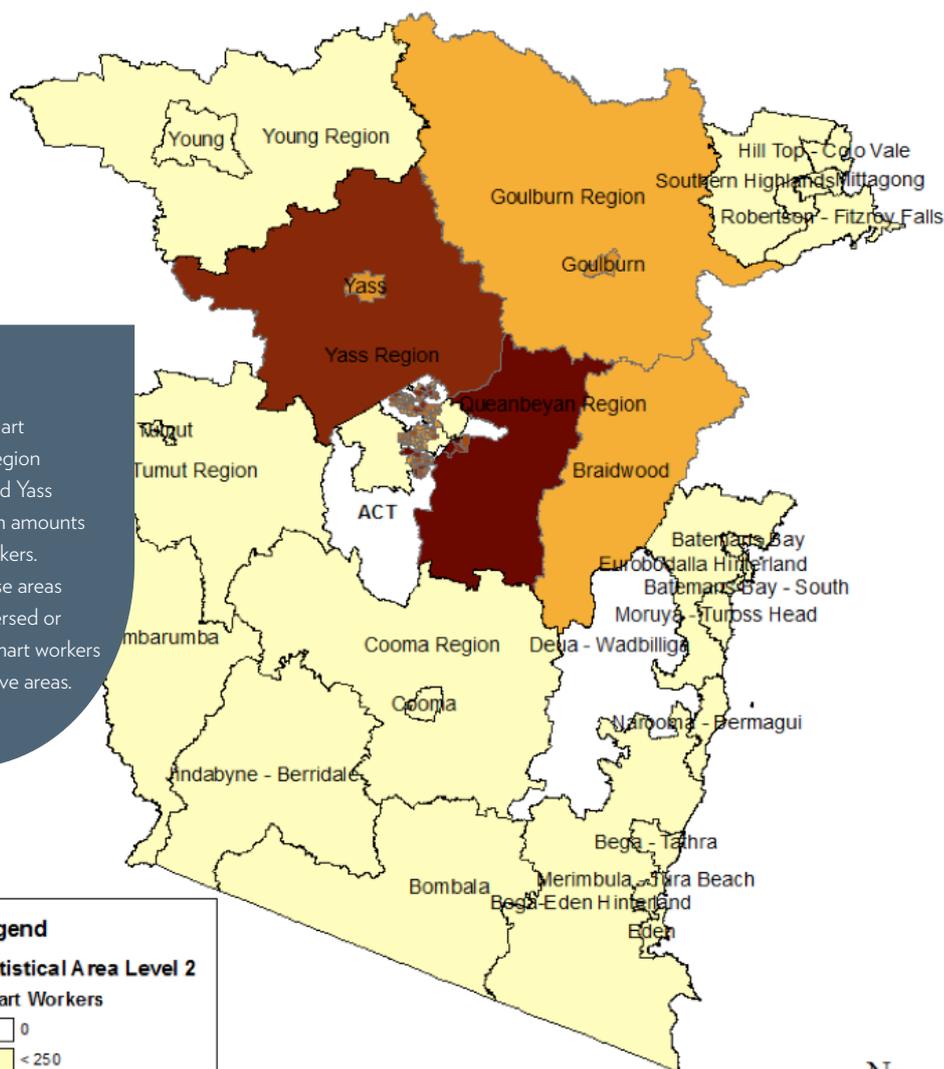


# Smart Workers ACT and Region

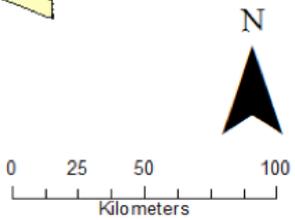
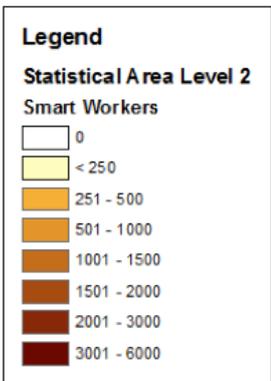


Concentrations of actual number of potential smart workers. Gungahlin, Tuggeranong and Belconnen stand out as having close concentrations of suburbs with high smart worker population densities.

## Smart Workers ACT and Region



Actual numbers of smart workers in the ACT region show Queanbeyan and Yass have moderate to high amounts of potential smart workers. Closer analysis of these areas will suggest how dispersed or concentrated these smart workers are within the respective areas.

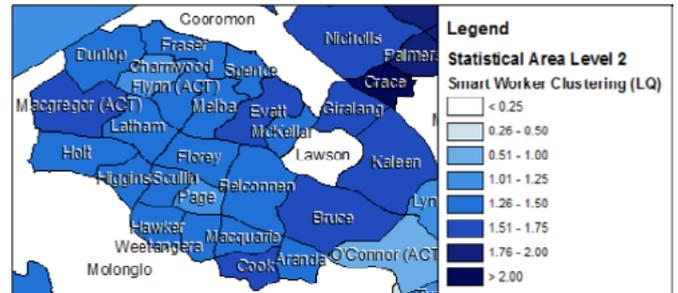


## SMART WORK HUB SPATIAL ANALYSIS

### BELCONNEN

Belconnen, situated in the north west of the ACT, has the largest resident population of the ACT's nine regions. Home to 92,441 people, Belconnen accounts for over a quarter of the ACT resident population. Approximately 29,436 smart workers commute outside of the Belconnen region for work each day.

Each of the 24 local areas in Belconnen had an LQ of more than 1. This indicates that each local area in Belconnen had an above average proportion of smart work commuters when compared to the ACT and surrounding region. Whilst none of the local areas in Belconnen were in the top ten smart worker clusters, the likes of Giralang, Kaleen, Cook and Bruce form a considerable inner arch of smart worker clusters. Additionally, Macgregor, in Belconnen's west, had the fourth highest LQ score in the region, and 42nd highest in the ACT and Southern Inland.

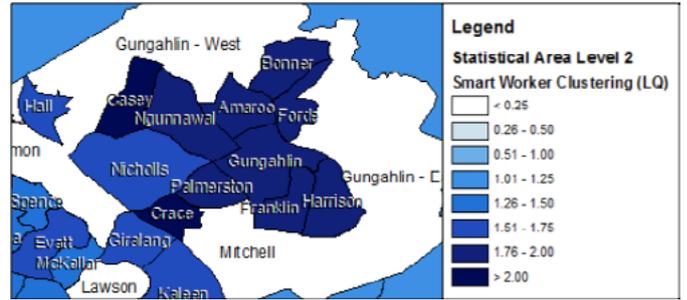


SA3	SA2	Resident Population	Smart Work Commuters	LQ	
ACT	Belconnen	Giralang	3,303	1,172	1.59
		Kaleen	7,312	2,577	1.58
		Cook	2,903	1,022	1.58
		Macgregor	5,504	1,901	1.55
		Bruce	6,390	2,169	1.52
		Evatt	5,412	1,822	1.51
		Aranda	2,483	820	1.48
		Dunlop	7,112	2,335	1.47
		Macquarie	2,556	818	1.44
		Belconnen	4,436	1,389	1.41
		McKellar	2,798	870	1.40
		Spence	2,559	794	1.39
		Latham	3,603	1,113	1.39
		Weetangera	2,608	802	1.38
		Florey	5,040	1,542	1.37
		Fraser	2,121	646	1.37
		Flynn	3,557	1,081	1.36
		Scullin	2,814	847	1.35
		Melba	3,200	960	1.35
		Hawker	2,876	858	1.34
		Higgins	3,093	908	1.32
		Holt	4,814	1,409	1.31
		Charnwood	3,069	818	1.20
		Page	2,878	763	1.19

## GUNGAHLIN

Gungahlin, in the ACT's north, has a resident population of 47,250. Over 40 per cent of the local resident population were smart work commuters.

Gungahlin represents the most significant concentration of smart workers in the ACT and Southern Inland. Of the top 20 smart worker clusters in the ACT and Southern Inland, 11 were located within Gungahlin. Crace had the highest LQ score of any area in the ACT and the Southern Inland region. The new suburbs of Casey, and Franklin were 2nd and 3rd respectively. The older suburbs of Bonner, Palmerston and Forde were also in the top ten ranking 5th, 6th and 8th respectively.



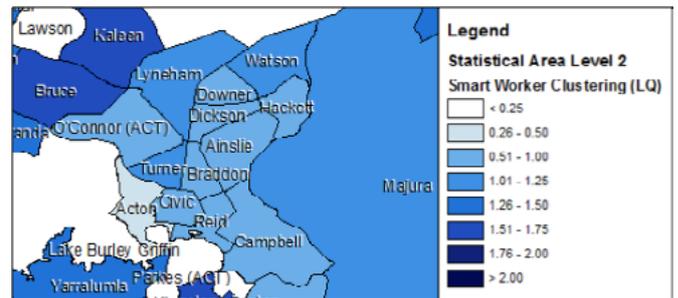
SA3	SA2	Resident Population	Smart Work Commuters	LQ	
ACT	Gungahlin	Crace	562	295	2.36
		Casey	1,490	683	2.06
		Franklin	3,805	1,673	1.97
		Bonner	1,493	644	1.94
		Palmerston	5,681	2,415	1.91
		Forde	2,325	964	1.86
		Harrison	4,440	1,818	1.84
		Ngunnawal	8,983	3,600	1.80
		Gungahlin	5,617	2,221	1.78
		Amaroo	5,570	2,176	1.75
		Nicholls	6,950	2,707	1.75
	Hall	334	116	1.56	



## NORTH CANBERRA

North Canberra has a resident population of 48,029. North Canberra contains 13 local areas, one of which is Canberra's CBD. Only 20 per cent of people in North Canberra were considered smart work commuters. This could be a result of the large number of smart workers travelling within the region to the CBD for work.

Only four local areas in North Canberra had an LQ of 1 or more. This indicates that of the 13 local areas in North Canberra only Turner, Watson, Lyneham, and Braddon had an above or equal average proportion of smart work commuters when compared to the ACT and region.

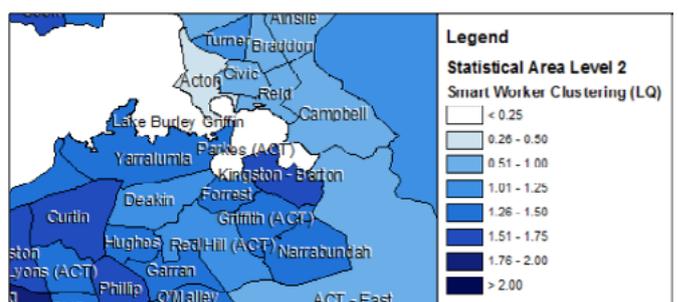


SA3	SA2	Resident Population	Smart Work Commuters	LQ	
ACT	North Canberra	Turner	3,594	850	1.06
		Watson	5,122	1,147	1.01
		Lyneham	4,487	1,003	1.00
		Braddon	4,559	1,014	1.00
		Downer	3,555	761	0.96
		O'Connor (ACT)	5,250	1,100	0.94
		Dickson	2,140	433	0.91
		Ainslie	5,102	1,013	0.89
		Hackett	2,913	567	0.87
		Civic	2,823	475	0.76
		Reid	1,583	263	0.75
		Campbell	4,932	734	0.67
		Acton	1,969	163	0.37

## SOUTH CANBERRA

South Canberra has one of the smallest resident populations of the nine areas within the ACT, with only 24,159. South Canberra has a large working population home to major Commonwealth departments and international embassies primarily in Barton, Parkes, Forrest, and Deakin.

Each of the 7 local areas in South Canberra had an LQ of more than 1. This indicates that each local area in South Canberra had an above average proportion of smart work commuters when compared to the ACT and surrounding region. Whilst each local area had a high LQ score only Kingston - Barton (27th) ranked in the top 50 smart worker clusters in the ACT and surrounding region.

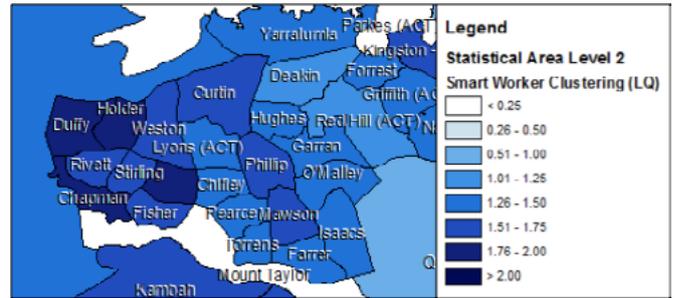


SA3	SA2	Resident Population	Smart Work Commuters	LQ	
ACT	South Canberra	Kingston - Barton	4,163	1,525	1.64
		Griffith (ACT)	3,902	1,229	1.41
		Forrest	1,468	423	1.29
		Narrabundah	5,671	1,600	1.27
		Yarralumla	2,923	823	1.26
		Red Hill (ACT)	3,249	819	1.13
		Deakin	2,783	696	1.12

## WODEN

Woden, in the ACT's south, is home to 32,961 people. Over 10,000 of Woden's resident population are considered smart work commuters. Woden is made up of 12 local areas that extend from Curtin in the north to Farrer and Torrens in the south.

Each of the 12 local areas in Woden had an LQ of more than 1. This indicates that each local area in Woden had an above average proportion of smart work commuters when compared to the ACT and surrounding region. Phillip, in the heart of Woden, had the highest LQ score of 1.74, making it the 19th highest in the ACT and surrounding region. Phillip's neighbours to the north and south, Curtin and Phillip respectively, also had high LQ scores.

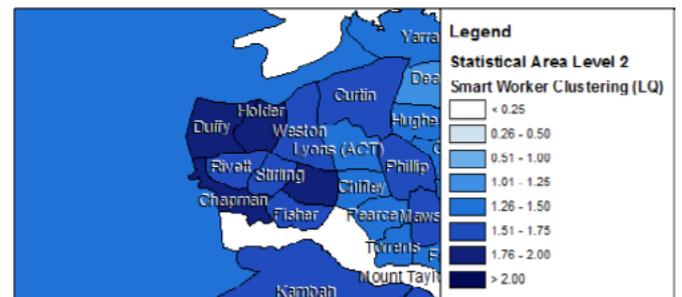


SA3	SA2	Resident Population	Smart Work Commuters	LQ	
ACT	Woden	Phillip	2,084	807	1.74
		Curtin	5,175	1,840	1.60
		Mawson	2,919	984	1.51
		Pearce	2,543	824	1.46
		Isaacs	2,351	752	1.44
		Torrens	2,284	722	1.42
		Chifley	2,488	781	1.41
		Farrer	3,357	1,048	1.40
		Hughes	2,955	899	1.37
		Garran	3,197	970	1.36
		Lyons (ACT)	2,735	826	1.36
		O'Malley	873	257	1.32

## WESTON CREEK

Weston Creek, to the west of the Woden Valley, comprises of eight local areas. Weston Creek has a resident population of 22,745. Approximately 40 per cent of the resident population in Weston Creek are smart workers. Weston Creek has the second largest proportion of smart workers in the ACT and region.

Each of the 8 local areas in Weston Creek had a significant cluster of smart workers. Holder, Duffy and Chapman had the 7th, 9th, and 10th largest LQ score in the ACT and region.

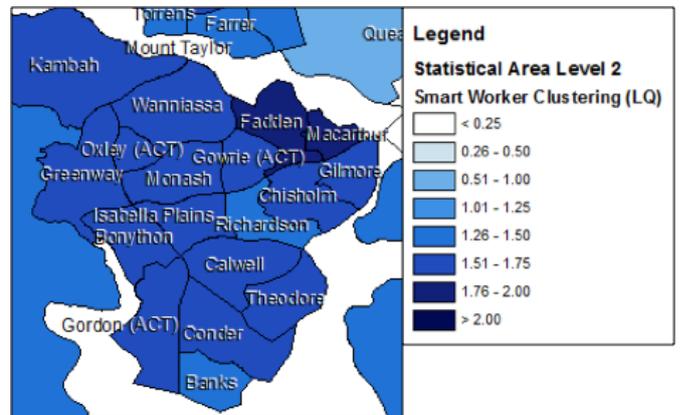


SA3	SA2	Resident Population	Smart Work Commuters	LQ	
ACT	Weston Creek	Holder	2,710	1,138	1.89
		Duffy	3,242	1,340	1.86
		Chapman	2,722	1,121	1.85
		Waramanga	2,596	1,018	1.76
		Fisher	3,014	1,172	1.75
		Stirling	2,085	799	1.72
		Rivett	3,121	1,182	1.70
		Weston	3,255	1,223	1.69

## TUGGERANONG

Tuggeranong, the ACT's most southern district is home to 86,861 people. Within Tuggeranong there are 18 districts, the largest of which is Kambah. Tuggeranong does not have a particularly large proportion of smart workers. However, due to the large resident population in Tuggeranong, it has the largest number of smart workers in the ACT.

Within the Tuggeranong area, Macarthur and Fadden have the highest concentration of smart workers in the Tuggeranong area. Macarthur has the 4<sup>th</sup> highest LQ score in the ACT and region, while neighbouring Fadden has the 12<sup>th</sup> highest.



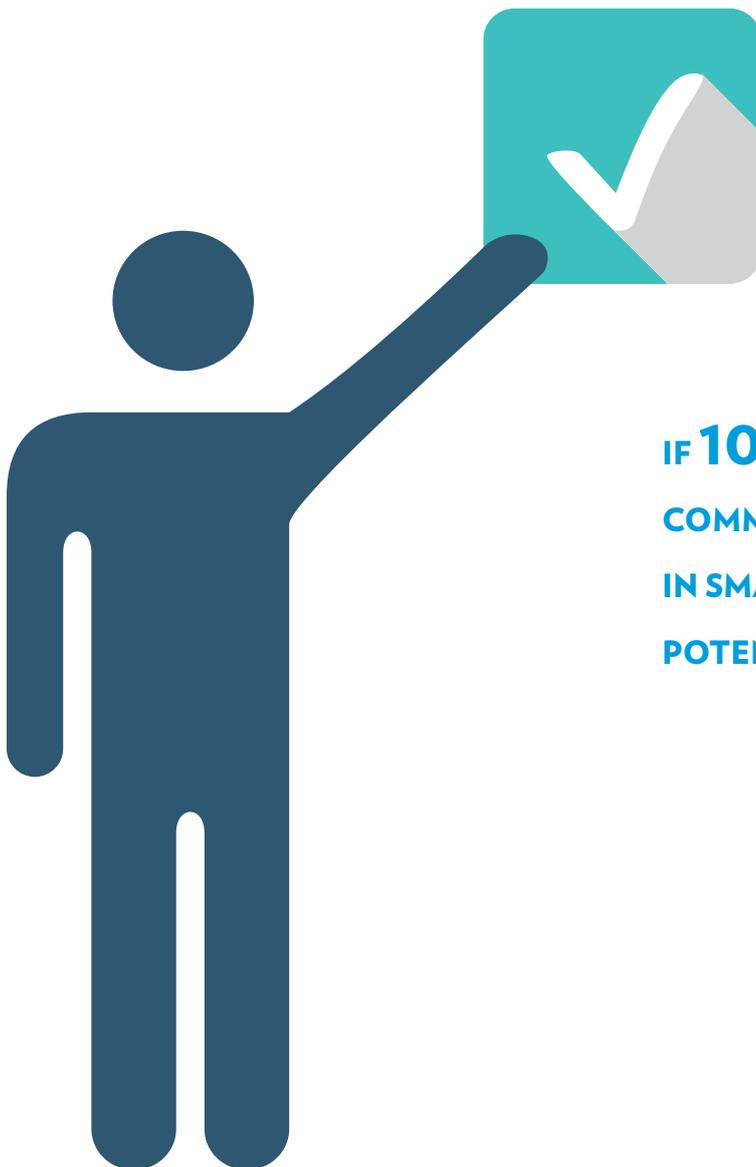
SA3	SA2	Resident Population	Smart Work Commuters	LQ
ACT	Macarthur	1,459	630	1.94
	Fadden	3,082	1,239	1.81
	Gowrie (ACT)	3,070	1,161	1.70
	Calwell	5,832	2,188	1.68
	Chisholm	5,237	1,933	1.66
	Greenway	1,452	528	1.63
	Kambah	15,448	5,611	1.63
	Wanniassa	7,787	2,790	1.61
	Theodore	4,019	1,424	1.59
	Monash	5,423	1,917	1.59
	Bonython	3,837	1,356	1.59
	Oxley (ACT)	1,783	628	1.58
	Gilmore	2,841	990	1.56
	Gordon (ACT)	7,767	2,689	1.55
	Isabella Plains	4,315	1,467	1.53
	Conder	5,316	1,801	1.52
	Banks	5,060	1,632	1.45
	Richardson	3,133	961	1.38

## BENEFIT ANALYSIS

A scenario analysis has been developed in an attempt to get a snap shot of the potential impacts of smart work in the ACT and region. The scenario analysis looks at the potential for smart work in greater detail and depth, to help inform evidence-based policy and decision making. In doing so, the report examines the potential for smart work in the ACT and surrounding region. The scenario analysis makes a number of assumptions, which are justified in the methodology section of this report. To understand the potential impact of the smart work mode, this report looks at four cost-benefits; commuting mileage saved, hours saved, petrol cost saved, and benefit to the local economy.

## SCENARIO

The following analysis is based on the assumption below.



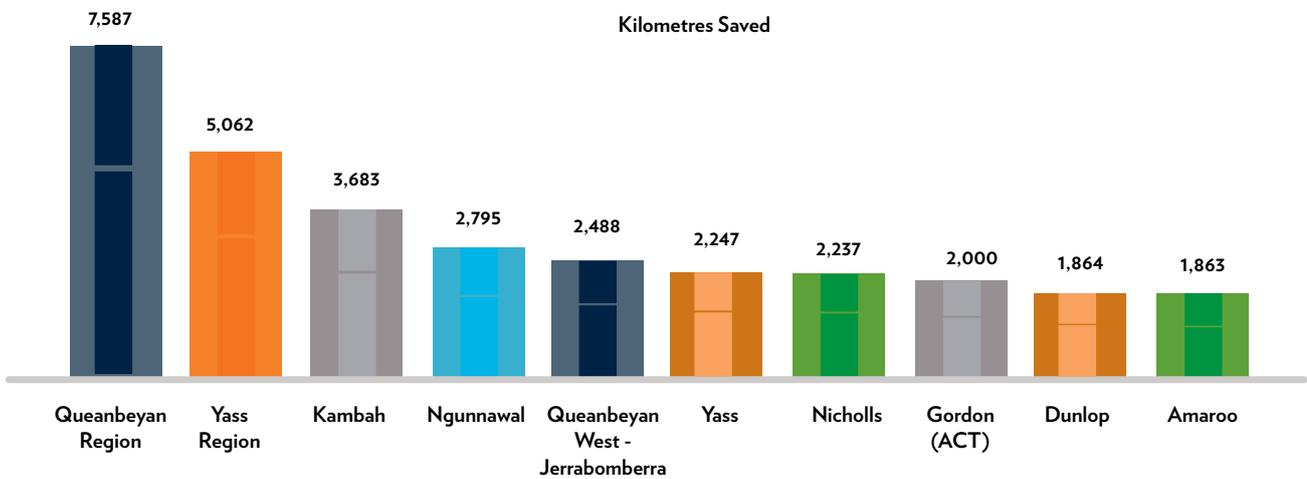
**IF 10% OF A LOCAL AREA'S  
COMMUTERS WERE TO PARTAKE  
IN SMART WORK WHAT ARE THE  
POTENTIAL BENEFITS?**

## COMMUTING MILEAGE SAVED

Commuting mileage has been calculated from the central location of each place of residence at the Statistical Area Level 2 (SA2) in the ACT and surrounding region to the central employment location in each Statistical Area Level 3 (SA3) in the ACT.

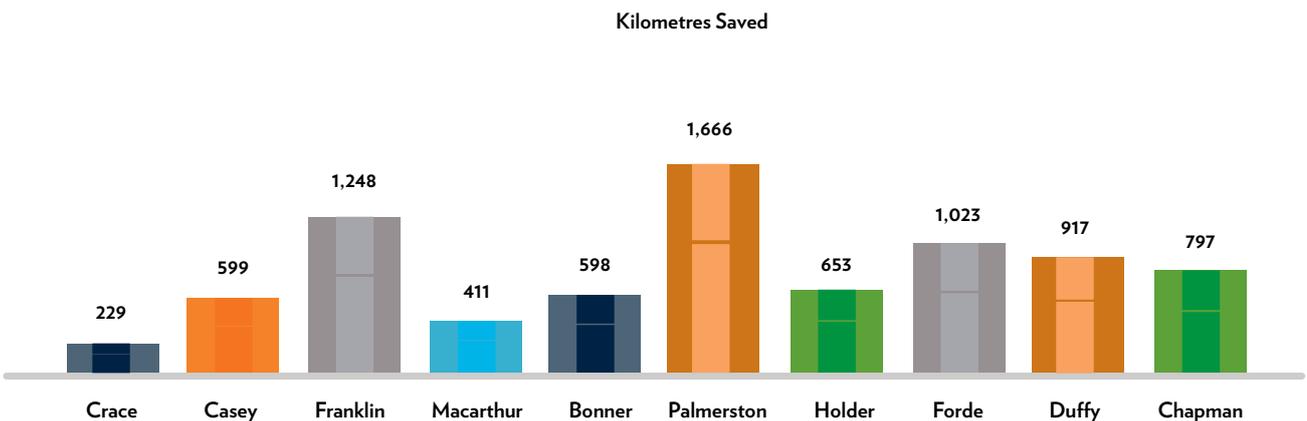
For example, the commute from Bruce to North Canberra (City Hill) is approximately 8km. Under the scenario mentioned above, the 59 people (10%) that would participate in smart work would save 16km on a given day. Therefore, if 10 per cent of Bruce were to take up smart work then the collective mileage saved for Bruce would be 944km per day.

The top 10 local areas that would save the most kilometres in the scenario are illustrated in the figure below. The areas tended to have a large resident population and are located on the outskirts of major employment centres in the ACT.



The top 10 local areas with the highest cluster of smart workers and the potential commuter mileage saved are illustrated in the figure below. This demonstrates the local areas that have the most promising location for a smart work hub and the potential benefit to the local community. The Gungahlin suburbs of Palmerston, Franklin, and Forde would save the most commuter mileage under the scenario. This further establishes the Gungahlin area as an area of high potential for a smart work hub.

## TOP 10 BY SMART WORK CLUSTER



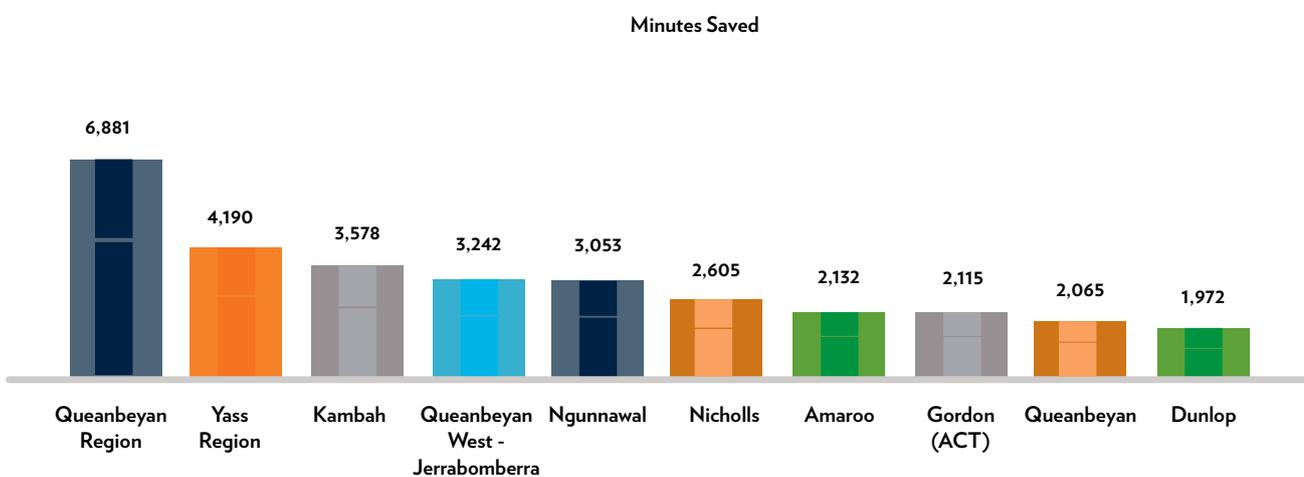
## COMMUTING TIME SAVED

Commuting hours saved has been calculated from the central location of each place of residence at the Statistical Area Level 2 (SA2) in the ACT and surrounding region to the central employment location in each Statistical Area Level 3 (SA3) in the ACT.

For example, the commute from Bruce to North Canberra (City Hill) is approximately 8km. According to Google Maps, during peak hour the quickest available route from Bruce to North Canberra would take approximately 12 minutes. Therefore, if 10 per cent of Bruce were to take up smart work then the collective time saved would be 23.6 hours per day.

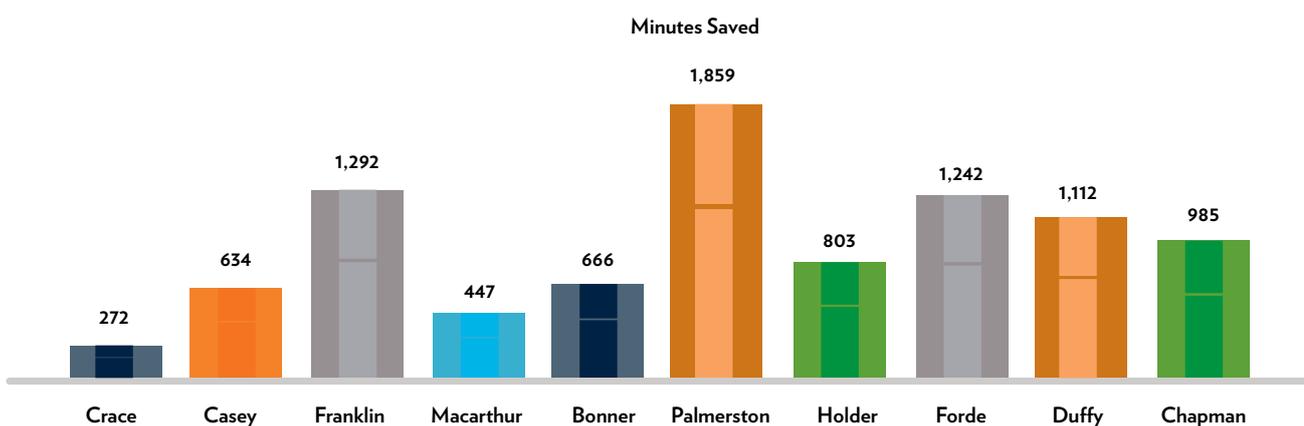
The top 10 local areas that would benefit the most from commuting time saved in the scenario are illustrated in the figure below. This demonstrates that the Queanbeyan and Yass regions, Kambah, Queanbeyan West – Jerrabomberra and Ngunnawal would all benefit considerably from saved commuting time. All 10 areas tend to have a large resident population and are located on the outskirts of major employment centres in the ACT.

## TOP 10 BY COMMUTEING TIME SAVED

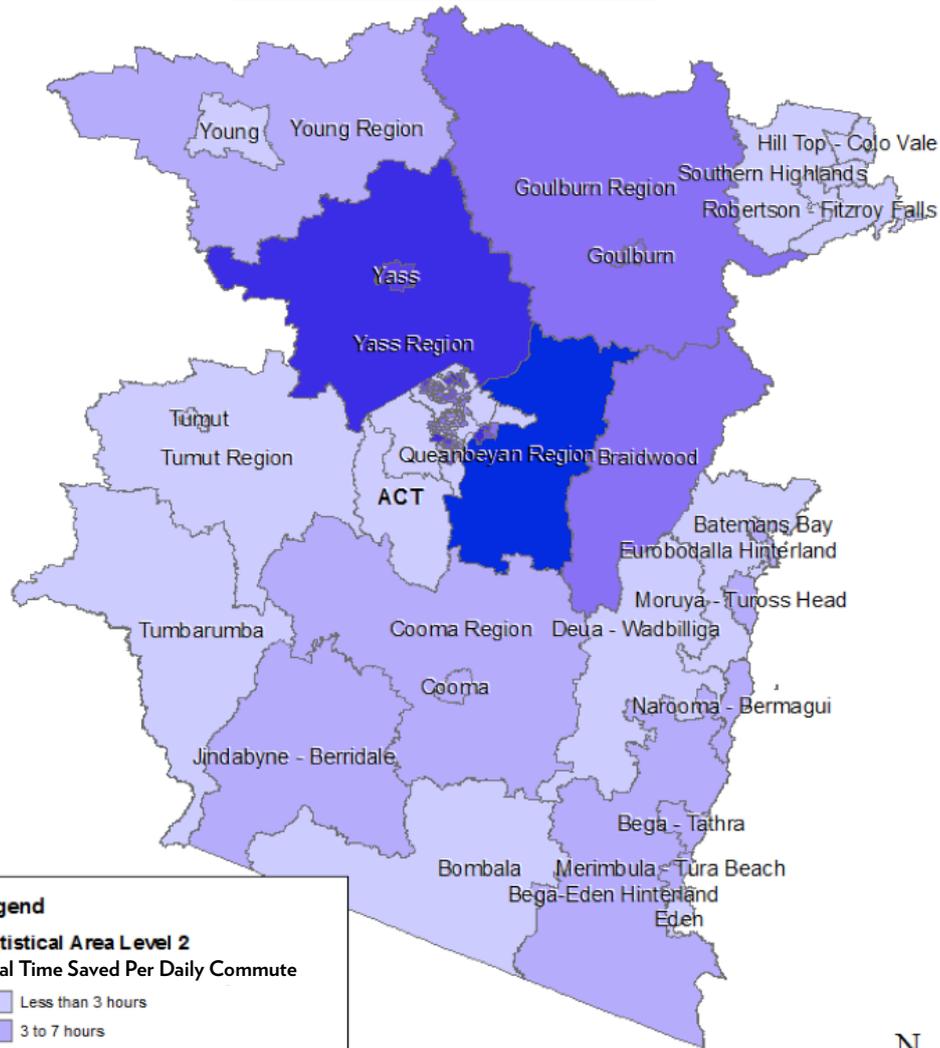


The top 10 local areas with the highest cluster of smart workers and the potential commuter minutes saved are illustrated in the figure below. This demonstrates the local areas that have the most promising location for a smart work hub and the potential benefit to the local community. The Gungahlin suburbs of Palmerston, Franklin, and Forde would save the most commuter minutes under the scenario. This further establishes the Gungahlin area as an area of high potential for a smart work hub.

## TOP 10 BY SMART WORK CLUSTER



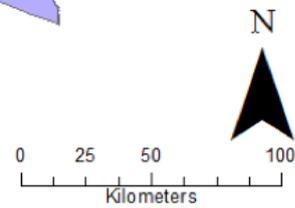
## Smart Work Savings ACT and Region



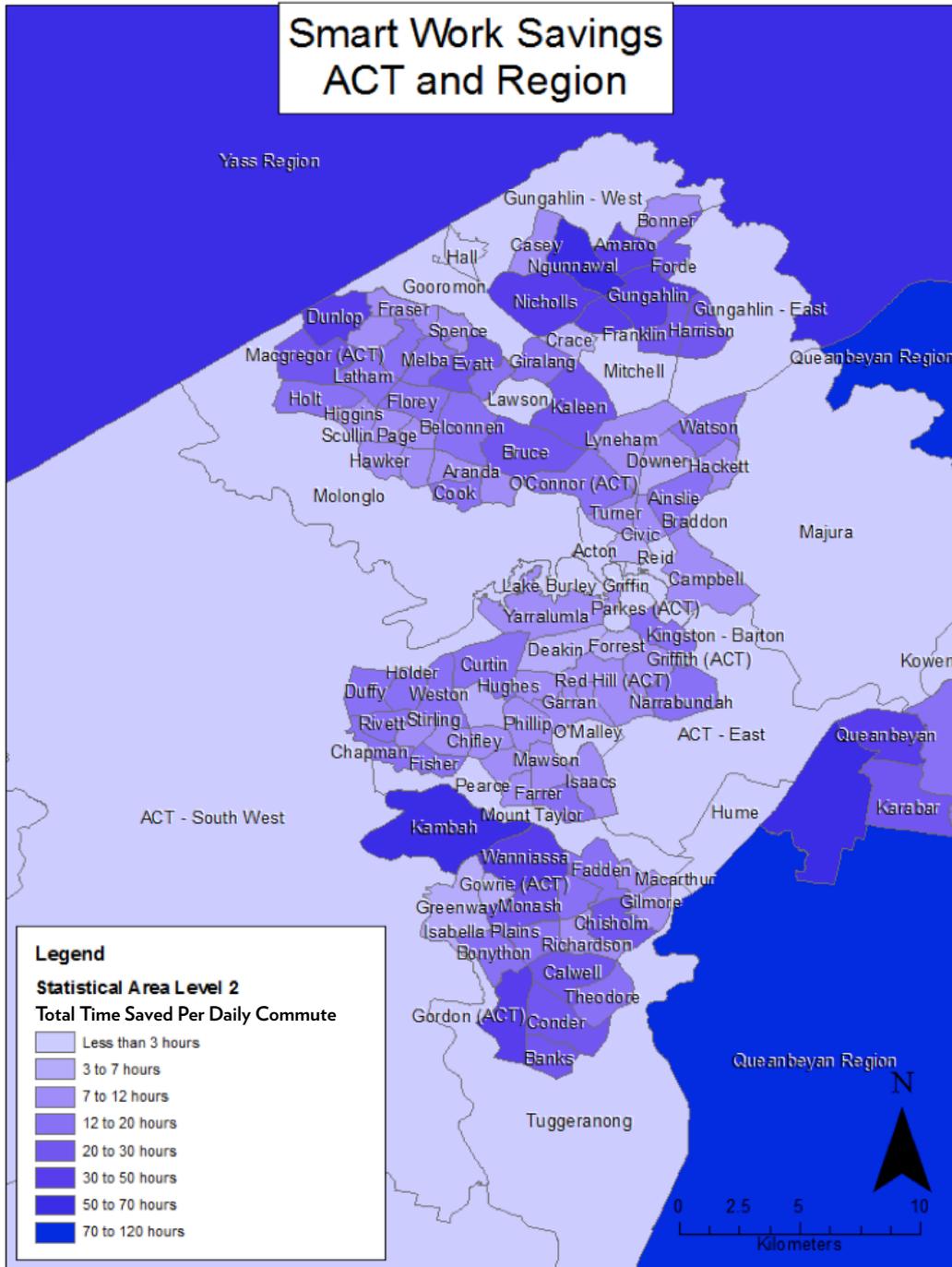
### Legend

#### Statistical Area Level 2 Total Time Saved Per Daily Commute

- Less than 3 hours
- 3 to 7 hours
- 7 to 12 hours
- 12 to 20 hours
- 20 to 30 hours
- 30 to 50 hours
- 50 to 70 hours
- 70 to 120 hours



# Smart Work Savings ACT and Region



## PETROL COST SAVED

Petrol cost saved has been calculated from the central location of each place of residence at the Statistical Area Level 2 (SA2) in the ACT and surrounding region to the central employment location in each Statistical Area Level 3 (SA3) in the ACT.

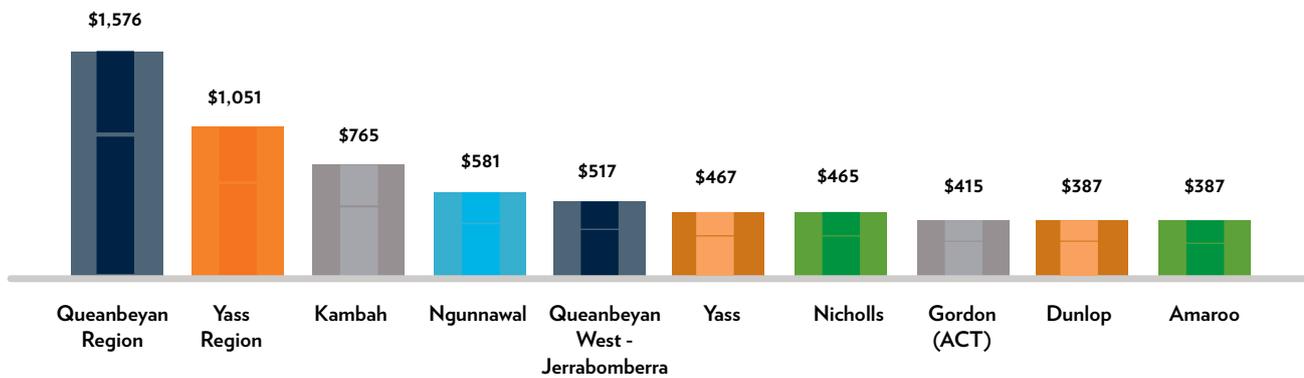
For example, the commute from Bruce to North Canberra (City Hill) is approximately 8km. According to the ABS average fuel consumption in Australia is approximately 0.137 litres per kilometre of travel (ABS 2013). Additionally, according to the Australian Institute of Petroleum (2014), the average weekly

petrol price in the ACT in the week ending Sunday, 9th of November 2014 was \$1.516 per litre. Therefore, if 10 per cent of Bruce were to take up smart work then the collective petrol costs saved for Bruce would be \$196 per day.

The top 10 local areas that would save the most petrol cost in the scenario are illustrated in the figure below. These areas tended to have a large resident population and are located on the outskirts of major employment centres in the ACT.

## TOP 10 BY PETROL COSTS SAVED

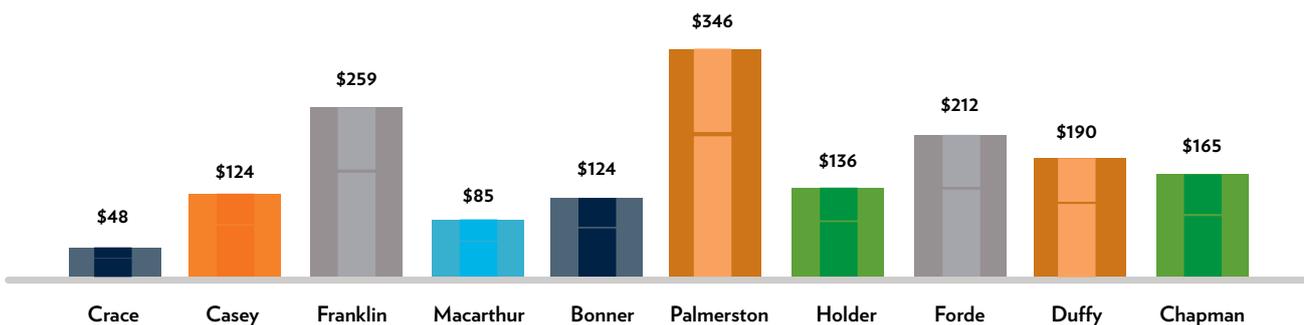
Fuel Saved (\$)



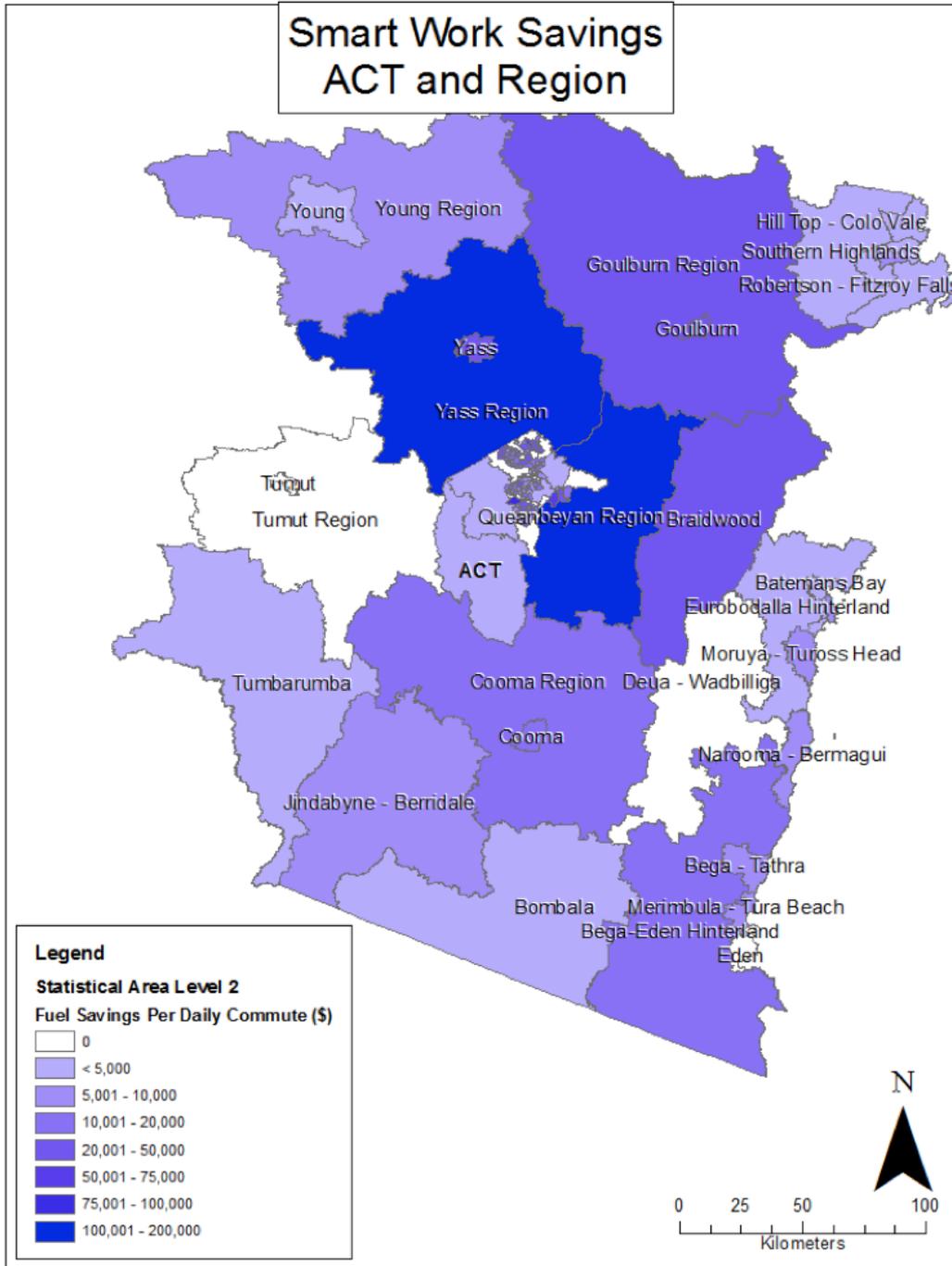
The top 10 local areas with the highest cluster of smart workers and the potential petrol cost saved are illustrated in the figure below. This demonstrates the local areas that have the most promising location for a smart work hub and the potential benefit to the local community. Under the scenario, the Gungahlin suburbs of Palmerston, Franklin, and Forde would save the most petrol cost. This further establishes the Gungahlin area as an area of high potential for a smart work hub.

## TOP 10 BY SMART WORK CLUSTER

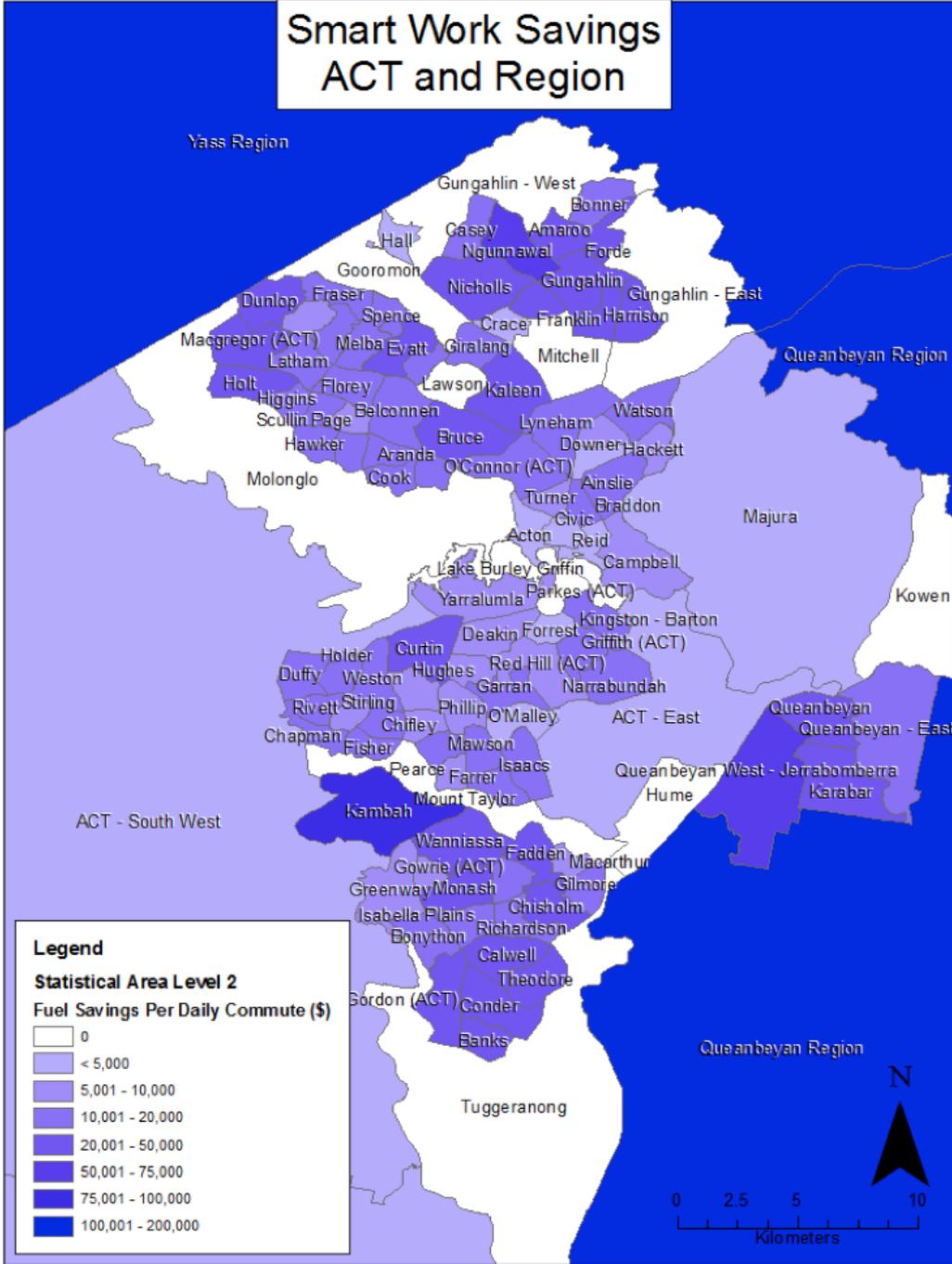
Fuel Saved (\$)



## Smart Work Savings ACT and Region



# Smart Work Savings ACT and Region



## BENEFIT TO LOCAL ECONOMY

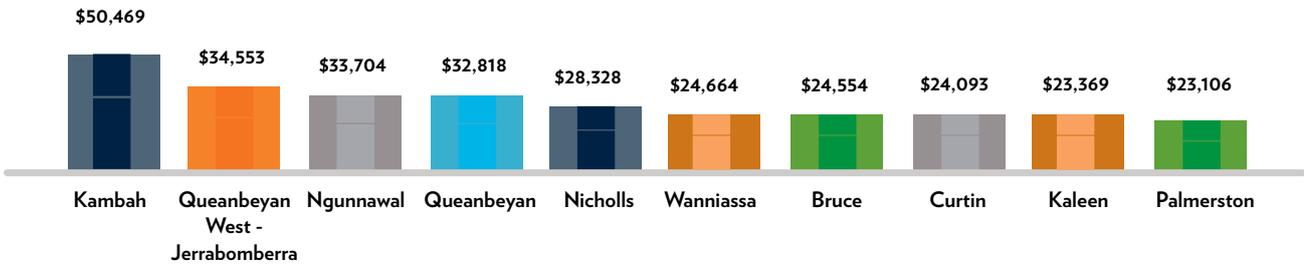
The benefit of smart work to the local economy has been calculated on the basis of the findings from the Australian Securities and Investments Commission (2012). The study of Australian Spending Habits found, on average, people from the ACT spend \$1,536 weekly (approximately \$219 per day), whilst people from NSW spend \$1,265 (approximately \$181 per day).

For example, if 10% of Bruce residents participate in smart work, then 112 people would be more likely to spend their daily savings of \$219 locally. Therefore, if 10 per cent of Bruce were to take up smart work then the collective benefit to the local economy in Bruce would be \$11,542 per day.

The top 10 local areas whose local economy would benefit most in the scenario are illustrated in the figure below. The local areas that would benefit the most economically would be Kambah, Queanbeyan West – Jerrabomberra, Ngunnawal and the Queanbeyan Region. These areas generally have a large resident population.

## TOP 10 BY BENEFIT TO LOCAL ECONOMY

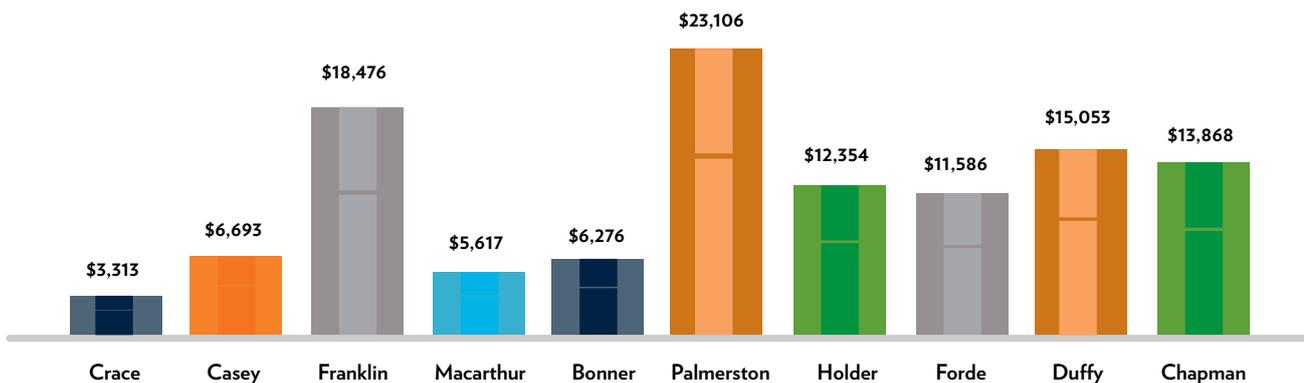
Benefit to Local Economy



The top 10 local areas with the highest cluster of smart workers and the potential benefits to the local economy are illustrated in the figure below. This demonstrates the local areas that have the most promising location for a smart work Hub and the potential benefit to the local community. The Gungahlin suburbs of Palmerston, Franklin, and Forde would benefit the most under the scenario. This further establishes the Gungahlin area as an area of high potential for a smart work hub.

## TOP 10 BY SMART WORK CLUSTER

Benefit to Local Economy



## RECOMMENDATIONS

### FOCUS ON GUNGHALIN

Gungahlin is one of the town centres in North Canberra that demonstrates high potential for a smart work facility. Gungahlin is currently experiencing exponential growth as the demand grows for urban areas with close proximity to the city and, at the same time, offers spacious housing blocks. It is also undergoing technological changes with the traditional copper internet being switched off and replaced by the super-fast NBN. This makes Gungahlin a preferable location for a smart work Hub as it would be able to accommodate modern business practices that require fast and efficient internet services. Its access high speed internet connection, through the NBN, would enable the Gungahlin smart work Hub to facilitate international conference calls and meetings. Despite current public transport links to Gungahlin often being lengthy and infrequent, the recent announcement of the Capital Metro light rail project may alleviate some of these concerns. This development would provide a quick and easy route for smart workers to access a smart work hub and be linked to rapid bus routes connecting to the stops along the route from Gungahlin to Civic. A smart work hub in Gungahlin would also be able to provide an environment which stimulates a high level of professional activity but also supports innovation across all areas of the community.

North Canberra has been identified as the region that would currently best suit a smart work facility. An initial trial of smart work hubs at designated spaces in the suburb(s) of North Canberra (specifically, Gungahlin, Watson and Belconnen) would be useful to introduce workers to a relatively new concept. These areas present a good opportunity for smart work to become an innovative step towards a technology savvy future. As smart work hubs are relatively new in the ACT, it may need a slow transition to encourage people to utilise it to its full potential. This involves creating an environment that is capable of stimulating people to achieve at least the same amount of work they would normally accomplish in their primary employment location, yet doing so in a more efficient and flexible form.

### FOCUS ON THE REGION

The Yass and Queanbeyan regions display a strong case for smart work. They are high commuter areas. A smart work hub in Yass would represent a strategic catchment area for smart workers further afield in the region. A smart work hub in Yass would potentially attract users from surrounding towns and villages such as Boorowa, Tumut and Young. The potential benefits of this scenario have been identified in this report. A smart work Hub would allow regional smart workers to avoid the lengthy and costly daily commute. Smart work would also allow regional smart workers to have a greater presence in their place of residence, providing major boosts for the local area, both economically and socially. Economically, a smart work hub could attract highly skilled professionals to regional areas such as Yass and Queanbeyan. Socially, a smart work hub could serve as a platform for greater community participation.

### PUBLIC TRANSPORT/ROAD CORRIDORS

It is also recommended that the specific locations of the smart work hub premises be integrated with, and alongside, public transport and road corridors within the designated suburbs such as Belconnen and Watson. This would promote convenience and access to the smart work hub facilities to people utilising both public and private methods of transport. This, as outlined above, would lead to positive flow-on effects in terms of taking vehicles off the road. The positive environmental impacts would add to the evident positive social and economic impacts of the development.

### SUMMARY

In summary, the following strategic directions and development principles should be the focus for a smart work hub development rollout in the ACT and region.

1. Smart work is a beneficial, logical and marketable proposal for the ACT and region.
2. Initial smart work hubs should be located in suburbs identified as having the greatest potential on the basis of the socio-economic and demographic data identified in this report.
3. Decisions on the location of potential smart work hubs should consider the strategic benefit to the larger catchment area.
4. Smart work hubs should be integrated with, and alongside, public transport and road corridors within the designated areas for greater accessibility of both public and private transport users

## BIBLIOGRAPHY

- Adamsone, L., Baltina, I., Judrupa, I., Senfelde, M. and Vitola, A. (2013). 'Overview on the Smart Work Centres in Europe', Institute of National and Regional Economy, Riga Technical University, Latvia.
- Australian Institute of Petroleum (2014). New South Wales/ACT Retail Petrol Prices, Week Ending Sunday, 9 November 2014. Accessed 17 November 2014, <http://www.aip.com.au/pricing/retail/ulp/nsw.htm>
- Australian Public Service Commission (2013). 'State of the Service Report- Teleworking'. Accessed 17 November 2014, <http://www.apsc.gov.au/about-the-apsc/parliamentary/state-of-the-service/sosr-2012-13/chapter-nine/teleworking>
- Australian Securities and Investments Commission. (2012). 'Australian Spending Habits'. Accessed 17 November 2014, <https://www.moneysmart.gov.au/managing-your-money/budgeting/spending/australian-spending-habits>
- Alizadeh, T. (2012). 'Teleworkers' Characteristics in Live/Work Communities: Lessons from the United States and Australia', *Journal of Urban Technology*, 19(3), 63-84.
- Alizadeh, T. (2013). 'Planning Implications of Telework: A Policy Analysis of the Sydney Metropolitan Strategy', *Australian Planner*, 50(4), 304-315.
- Bailey, E & Kurland, N. (2002). 'A Review of Telework Research: Findings, New Directions, and Lessons for the Study of Modern Work', *Journal of Organizational Behaviour*, 23(4), pp. 383-400.
- Brown, J. (2010). 'Telecommuting: The Affects and Effects on Non-Telecommuters', Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University, Virginia Polytechnic Institute, Virginia. Accessed 11 November 2014, [http://scholar.lib.vt.edu/theses/available/etd-04012010170021/unrestricted/Brown\\_JMO\\_D\\_2010\\_f1.pdf](http://scholar.lib.vt.edu/theses/available/etd-04012010170021/unrestricted/Brown_JMO_D_2010_f1.pdf)
- Buksh, B. and Mouat, C.M. (2015). 'Activating Smart Work Hubs for Urban Revitalisation: Evidence and Implications of Digital Urbanism for Planning and Policy from South-East Queensland', *Australian Planner*, 52(1), 16-26.
- Cha, K.J. and Cha, J.S. (2014). 'The Common Challenges to the Successful Implementation of Smart Work Program', *International Journal of Multimedia and Ubiquitous Engineering*, 9(2), 127-132.
- Department of Communications (2014). 'Telework', Accessed 28 October 2014, [http://www.telework.gov.au/what\\_is\\_telework](http://www.telework.gov.au/what_is_telework)
- Fritz, M, Higa, K & Narasimhan, S. (1995). 'Toward a telework taxonomy and test for suitability: A synthesis of the literature', *Group Decision and Negotiation*, 4, 311-334.
- Haddon, L., & Brynin, M. (2005). 'The Character of Telework and the Characteristics of Teleworkers', *New Technology, Work and Employment*, 20(1), 34-46.
- Kim, Y.Y. & Oh, S. (2015). 'What Makes Smart Work Successful? Overcoming the Constraints of Time Geography', 48th Hawaii International Conference on System Sciences.
- Nilles, J. M. (1975). 'Telecommunications and Organizational Decentralization', *Communications*, 23(10), 1142-1147.
- RDA. (2013a). 'Digital Work Hub Project', Regional Development Australia - Sunshine Coast. Accessed 12 October 2014. Available: <http://www.rdasunshinecoast.org.au/our-priorities/digital-work-hub-project/>.
- RDA. (2013b). 'RDASI-ACT NBN Readiness - Smart Work Towns Project', Regional Development Australia - Australian Capital Territory. Accessed 12 October 2014, <http://rdaact.org.au/wp-content/uploads/2013/08/Telehub-Final-Report.pdf>.
- RDA. (2013c). 'Regional Smart Work Centres', Regional Development Australia - Australian Capital Territory. Accessed 12 October 2014, <http://rdaact.org.au/blog/2013/08/29/regional-smart-work-centres/>.
- Shieh, A., & Searle, G. (2013). 'Telework and Spatial Trends in Australian Cities: A Critical Review', In SOAC 2013: 6th State of Australian Cities Conference (pp. 1-8), State of Australian Cities Research Network.
- Vega, G. (2003). 'Managing Teleworkers and Telecommuting Strategies', Westport, CT: Praeger.



## **ACKNOWLEDGEMENTS**

The Globalisation and Cities Research Program at the University of Canberra prepared this report through its Smart Work Research Group. We acknowledge the contribution of Robert van Aalst and Liz Veitch from RDA ACT, and Richard Everson from RDA Southern Inland, whose ideas and support contributed to the preparation of this report. We wish to thank the urban and regional students at the University of Canberra, whose work has been incorporated in this report. They are Michael Finch, Adam Murray, Daniel Bell, Emma Butcher, Bridget Ryan, Osia Romeia Da Cruz Salu, Timothy Mahoney, Xin Yuan, and Josh Smith. PhD candidates Sajeda Tuli and Alex Sherrard made useful comments on the draft report.

## GLOBALISATION AND CITIES RESEARCH PROGRAM

The Globalisation and Cities Research Program (GCRP) investigates the economic, social, environmental, political and cultural dynamics and changes of Australia's major cities and regions, through a range of research initiatives. Our research assists policy formulation by various levels of government and business, to improve the competitiveness and sustainability of Australian cities and regions in an increasingly globalised and uncertain world.

Our research seeks to unravel the complexities of globalisation and urbanisation, their contributory and resultant factors, and their associated challenges for policy and planning in Australia's major cities and regions.

GCRP's research is of relevance to all Australian cities and regions, particularly as the nation seeks to position itself to take advantage of the Asian Century. Our research is collaborative in focus, and aims to partner with government and business to inform successful and sustainable urban policy.

Our key research issues include urban policy, governance, planning, urban competitiveness, migration, housing, global cities, and space of flows in cities.

The GCRP is currently working with commonwealth, state and local government agencies as well as the business sector. This work is providing cutting-edge research support for evidence-based policy formulation, to strategically position Australian cities and regions in a globalised and competitive world.

Globalisation and Cities Research Program

E: [gcrp@canberra.edu.au](mailto:gcrp@canberra.edu.au)

T: 02 6206 8632

[www.globalisationandcities.com](http://www.globalisationandcities.com)





**G**LOBALISATION &  
**C**ITIES  
**R**ESearch  
**P**ROGRAM