



Urban Planning for Equitable Food Landscapes: an in-depth case study

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Abstract

Although a nutritious diet is an essential component for health and well-being, the accessibility of nutritious foods is becoming increasingly difficult. More and more Australians experience food insecurity, with escalating living costs often consigning purchases of fresh fruits and vegetables to discretionary expenditure. Food landscape studies worldwide provide evidence to support the links between areas characterised by low-socio economic status, a high prevalence of chronic disease and limited accessibility to affordable nutritious foods.

The Green Papers released this year to inform the development of a National Food Plan and to review the NSW Planning System, provide an ideal climate for urban planning to review its role in the food system. Urban planners are well placed to provide and protect land uses that are conducive to healthy eating behaviours, assisting access to affordable foods. This thesis examines food landscapes in two Local Government Areas in Greater Western Sydney that experience socio-economic disadvantage. A mixed-methods approach was adopted to identify a broad range of challenges to accessing fresh fruits and vegetables. This thesis concludes by identifying how urban planning can better address the most food insecure, thereby supporting better population health.

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
GWS	Greater Western Sydney
HC movement	Healthy Cities movement
HBEP	Healthy Built Environments Program
LEP	Local Environmental Plan
LGA	Local Government Area
NFP	National Food Plan
NSW	New South Wales
PCA	Property Council of Australia
PIS	Project Information Statement
UK	United Kingdom
UNSW	University of New South Wales
US	United States
SEIFA	Socio Economic Index For Areas
WHO	World Health Organization

Glossary

Food Access

This term refers to ‘the capacity to acquire and consume a healthy diet, including ability to buy, transport food: home storage, preparation facilities; knowledge and skills to make appropriate choices and time and mobility to shop for and prepare food’ (NSW CPHN in Nolan 2004, p4).

Food Landscape

This term describes the built environment and its provision of food, which influences a community’s choice in foods to consume. This can include features of the built environment including the availability of supermarkets and the existence of fast food restaurants (Sobal & Wansink 2006, p125).

Food Policy

This term refers to efforts that seek to ‘modify larger institutional, public, legal structures and policies to improve food systems and thereby facilitate healthy eating within a community’ (Raja et al. 2008, p8).

Food Programs

This term refers to ‘focused, often-site specific programs, such as farmer’s markets... which enhance access to healthful foods’ (Raja et al. 2008, p8). Within this thesis, this term includes programs that can be facilitated by local government authorities and/ or independent groups.

Green Retailers

These are ‘retail outlets- multiple food retailers, green grocers, certain smaller independent food stores selling a reasonable variety of fresh fruit and vegetables’ (Wrigley 2002, p2063).

Healthy Built Environment

A healthy built environment is one that is ‘supportive of people’s health as part of everyday living’ (Kent et al. p137).

Healthy Food

The Australian Dietary Guidelines recognise that a variety of foods are needed to meet nutrient requirements to assist good health, particularly foods that are nutrient rich and low in additives and saturated fats. Within the methodology for this thesis, the term ‘healthy food’, has been limited to include fresh fruits, legumes and vegetables (AIHW 2012, p147).

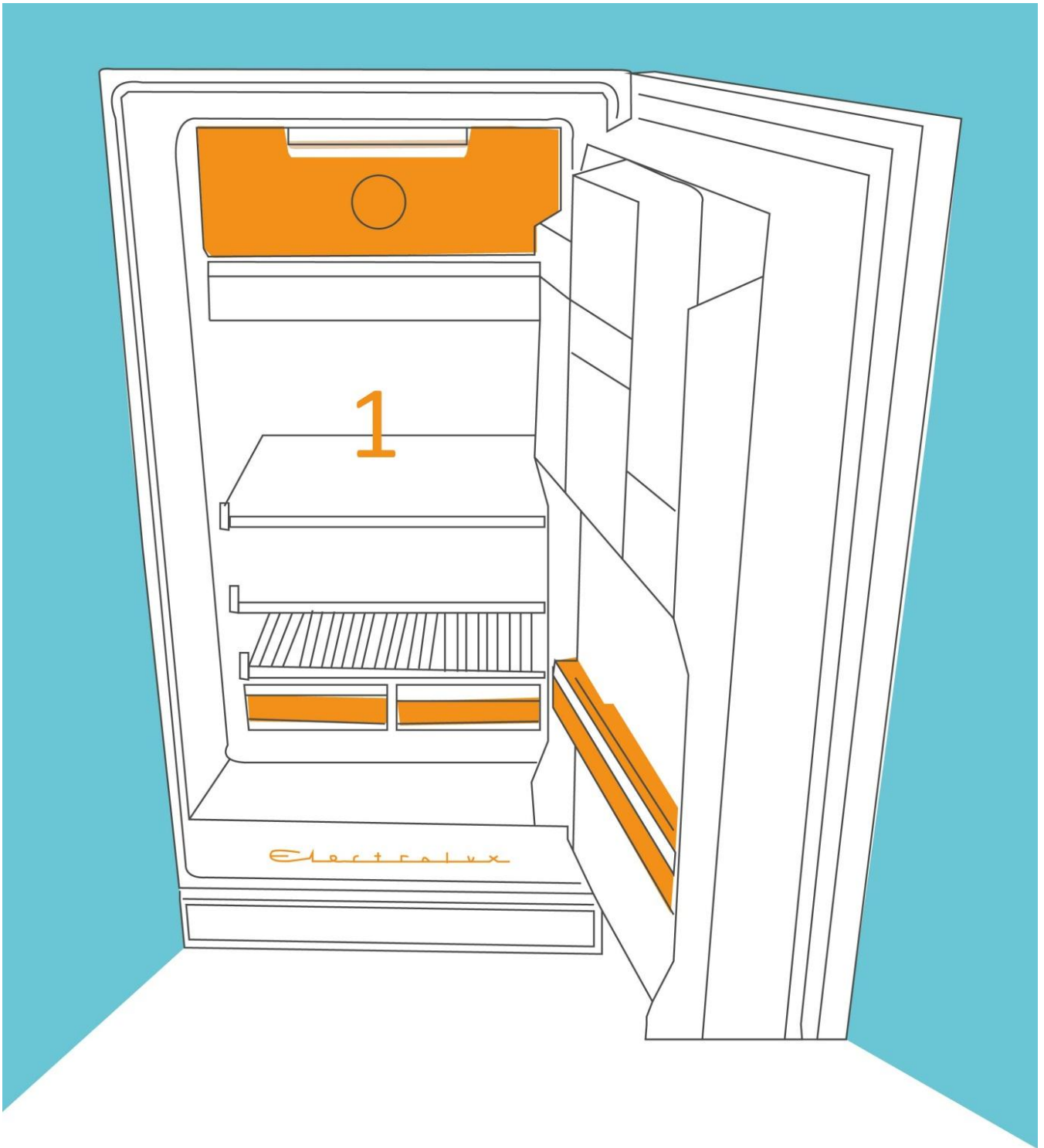
National Food Plan

The Australian Government is developing a Plan as an overarching framework, to ‘establish an integrated approach to food-related policies and programs’ in Australia. This Plan is underpinned by a vision of Australia as a ‘reliable, sustainable, productive and resilient supplier of nutritious and affordable food’ (NFP 2012, p1).

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Chapter 1.0

Urban Planning for Equitable Food Landscapes

Introduction

'Food nourishes us and sustains life itself, yet not everyone has the benefit of accessing foods that are beneficial for good health and wellbeing' (Raja et al. 2008, p1).

Food security studies have demonstrated that for low income households healthy foods, in particular fresh fruits and vegetables, are difficult to access. Limited accessibility to affordable healthy food has, to a large extent, been influenced by the quality of food environments in places where people live, work and play (Raja et al. 2008, p1). An emerging body of research confirms that there is an inextricable link between the quality of food environments, dietary behaviour and the prevalence of diet-related chronic disease (Sobal & Wansink 2006). This prevalence is a serious issue of growing concern both for its fiscal implications for health care, as well as its impact on quality of life (AIHW 2012).

In recent years, there has been a resurgence of interest in community and regional planning in food systems, a topic traditionally overlooked by planning. By systematically examining food quality and availability, urban planners can play a significant role in shaping food landscapes that are conducive to healthy eating (Raja et al. 2008, p1). The prevalence of diet-related chronic disease and the current development of an Australian National Food Plan, makes this discussion of urban planning's role in facilitating healthy food landscapes highly pertinent. Further, the recent review of the New South Wales (NSW) planning system provides a valuable opportunity to guide planning practices to shape equitable food landscapes, to assist those most vulnerable of being food insecure.

This Chapter describes why food insecurity is a relevant issue for Australia, making specific reference to the challenges faced by low income households in the Sydney Metropolitan Region. Further, the Chapter outlines pressures upon the food system, which are detrimental to food supply, and the research problem that this thesis seeks to address.

1.1 Food Insecurity in a Prosperous Country

As a wealthy nation, Australia is considered to be resource rich and economically secure (DAFF 2011). However, an upward shift of disadvantage illustrates a very different Australia for a growing proportion of our society. A review of the most recent Australian Bureau of Statistics (ABS) Consumer Price Index (CPI), as well as government and independent reports reveals a concerning trend. This trend shows that amongst low income households, mounting living costs have consigned the purchases of every-day essentials to discretionary expenditure (Foodbank Australia 2012; QCOSS 2011). This is especially true for the purchase of fresh fruit and vegetables, with the most recent CPI indicating a 5.2% price increase for vegetables since March this year (ABS 2012).

Given the importance of fresh fruits and vegetables to maintain a healthy diet (AIHW 2012), discretionary expenditure on fresh fruits and vegetables raises a number of questions not only about our nation's health burden, but also about food security. Food security can be experienced at national, community, household and individual levels. The United Nations World Food Summit 1996 defines food security as 'when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life' (FAO 2012). This definition includes both physical and economic access to food that meets dietary needs and preferences, shaped by four dimensions:

- **Food availability:** *sufficient quantities of food available on a consistent basis;*
- **Food access:** *having sufficient resources to obtain appropriate foods for a nutritious diet;*
- **Food use:** *appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation; and*
- **Food stability:** *stability of availability and access over time (FAO 2012).*

These four dimensions are integral for food security, and if one does not exist, an individual or community is considered to be food insecure. Food insecurity has been defined as 'limited or uncertain availability of nutritionally adequate and safe foods, of limited or uncertain ability to acquire acceptable foods in socially acceptable ways' (ADA 1998, p377).

Food access has been increasingly recognised as a key determinant of food security (Innes-Hughes et al. 2010, p8). There are a host of economic and environmental barriers to accessing food. These include an individual's social environment, a physical setting such as school or workplace, and the macro environment (Larsen & Story 2009, p57). Access to affordable healthy food and food insecurity have become an increasing concern for policy makers, as national surveys highlight that a growing proportion of the population experience food insecurity (Johnson et al. 2009). Food security is a relevant concern due to widening disparity of lower socio-economic groups, which is compounded by pressures on food production and supply, contributing to the rise of food costs (SFFA 2009).

Socio-Economic Disparity

Research has shown that groups at high risk of food insecurity are those that experience socio-economic disadvantage (Innes-Hughes et al. 2010; Nolan et al. 2004). The notion of socio-economic disadvantage is a relative concept, based on resource and prestige measures. It can be generally defined as access to material and social resources, and the ability to participate in society (p5). Indexes such as the ABS Socio Economic Index for Areas (SEIFA), measure disadvantage relative to other areas in terms of employment, health, education and financial wellbeing (Achikari 2006). This index is commonly adopted in Australia, and is used in this study to identify socio-economic disadvantage.

As discussed above, the affordability of healthful food is burdensome for a growing proportion of society. The Australian charity Foodbank has found an increasing demand on food charities from low income households. Guided by ABS data, low income households in this thesis are defined as family households with an income less than \$600 a week. The Australian Foodbank's survey of 668 charities indicated an 11% increase in the number of people seeking food supplies since 2011, with high demand for 'milk, cereal, fruit and vegetables and other staples' (Foodbank 2012, p18). Further, lower income households have been found to 'spend a greater share of income on essentials like food, rent, electricity and transport', and because the households also 'tend to face a slower income growth' they are less able to meet rising prices (QCOSS 2011, p2).

The Sydney Metropolitan Region has an evident socio-economic divide, with groups experiencing high levels of socio-economic disadvantage residing in Greater Western Sydney (GWS), particularly in the South West (ABS 2006a). A food security survey undertaken within South West Sydney revealed that food insecurity was 'strongly and independently associated with household capacity to save money' (Nolan & et al. 2004, p2). A number of healthy food basket surveys undertaken within Australia reveal that healthy food purchases are more expensive than calorie dense foods. This provides a further disincentive for healthy eating. For case in point, one survey demonstrated that low income families in NSW need to spend on average 56% of their household budget to maintain a healthy diet, compared to 22% for a family on an average income (Innes-Hughes et al. 2010, p9).

With limited financial resources, low income households are known to be less likely to purchase groceries that are consistent with current dietary guidelines (AIHW 2012; Innes-Hughes et al. 2010). The link between purchases of healthy food in disadvantaged areas has been examined by literature describing food availability and access variables. Variables include density of stores, location of food stores, product availability, price and portion size. This literature is explored within Chapter 2.

Agricultural Pressures on Food Production

In addition to the widening disparity of low income households, food security concerns are pertinent as a result of escalating pressure upon agricultural production. The viability of farming is affected by economic, environmental, social and political pressures. This in turn affects the food system, our food supply and subsequently the price of food.

Urban development is a significant pressure on farming, cumulative to climatic change, peak oil, and diminishing natural resources (SFFA 2011). Fringe residential development to accommodate population growth has impacted food production in those areas. This impact has occurred due to conflict between rural residential amenity, and food production. For example, residential complaints to local authorities of odour and noise from neighbouring farms, restrain the operation of farming practices. Restraints on farming can make the agricultural use of land unfeasible (Sinclair 2011).

The Sydney basin is known to comprise a number of important agricultural producers. In 2010 these agricultural industries contributed to approximately 7% of NSW's total value of agricultural production, even though land holding only accounted for 0.2% in the State (p2). However, this valuable agricultural land is on the decline. A survey by Malcolm and Fahd (2008) assessed that the vegetable growing industry in Sydney, as a result of development in the North West and South West Growth Centres, may reduce by more than 50% (Wilkinson 2011, p4).

Retaining agricultural land on the fringe of urban centres has a number of benefits. Benefits include the retention of prime agricultural land, its proximity to Sydney limiting transport costs, which are anticipated to rise in a peak oil future, and further the fresh produce maintains its nutritional quality (SFFA 2009). With reduced agricultural production of fresh fruits and vegetables close to Sydney, further price increases and limited supply can be further expected.

1.2 Urban Planning and Food Landscapes

In recent years, support has grown amongst planning academics and practitioners to relink urban planning with the food system, recognising the implications for food security and population health (Morgan 2009). Urban planners are recognised as being well placed to assist food systems, as they have the ability to regulate and facilitate land uses that support food production (Pothukchi & Kaufman 1999).

I have developed the term 'equitable food landscapes' in this thesis, to describe environments that are conducive to healthy eating. 'Food landscapes' refers to the provision of food in the environment, and 'equity' refers to access to healthy foods for low income households. Adversely, 'inequitable food landscapes' refers to inequality in access to healthy foods. This term assists to describe the ill-defined metaphor of 'food deserts' adopted in literature (Walker et al. 2010; Wrigley 2002).

Planning for equitable food landscapes is a subset of the Healthy Cities (HC) movement, which was a revival of interest in the interrelationship between health and urban planning. The movement was initiated by the United Nation's World Health Organisation (WHO) promoting health across different industry sectors. The WHO defines health as not simply meaning the absence of disease but 'a state of complete physical, mental and social well-being' (Barton 2005b, p344). The HC movement sought to build partnerships between communities and

governments, recognising that urban and transport planning along with changes in social, economic and environmental conditions, can assist population health (Barton 2005a, p283).

1.3 The Research Problem

Marked growth in the urbanisation of Australian centres presents a number of key challenges to improve the productivity, sustainability and liveability of our cities (Hurni 2012, p16). Cities play a vital role in the global economy, and the health and wellbeing of urban populations is now more than ever, recognised as a significant contributor to their success (Kent et al. 2011).

The chronic disease burden is an area of public health requiring attention. Chronic diseases are non-communicable and are the major contributors to the total burden of disease in Australia. Poor dietary choices increase the risk of developing diet-related chronic disease, which includes coronary heart disease, obesity, some forms of cancer and Type 2 diabetes. It is estimated that poor diets costs Australia \$5 billion each year, inclusive of health care, however this figure rises to \$11.6 billion when overweight and obesity are considered (AIHW 2012, p195).

Emerging research has proven that chronic disease is linked to a social gradient. Low income households are particularly at risk, as environmental and economic barriers dissuade them from accessing nutritious foods that are important to maintain good health (Walker et al. 2010). Urban renewal and densification of areas that experience socio-economic disadvantage provide opportunities to assess food landscapes, to improve access to affordable healthy foods. It has been estimated that inadequate fruit and vegetable consumption was responsible for 2.1% of the total burden of disease in Australia in 2003 (p196). The Australian Dietary Guidelines encourage people to eat sufficient quantities of fruits and vegetables to prevent chronic health conditions, as these foods are nutrient rich, relatively low in energy and contain fibre to promote health (AIHW 2012, p147).

The recently released green papers to inform the development of a National Food Plan (NFP), and the review of the NSW planning system provide a forum to identify how urban planning can assist food security at federal, state and local government levels. Stakeholders have identified a number of inadequacies of the NFP which need to be addressed to facilitate equitable food landscapes. Criticisms include insufficient stakeholder consultation, and concern that the Plan will place interests of large businesses ahead of health, equity and food security (Rose & Croft 2012).

Submissions to the NSW Planning System green paper recognise that food system infrastructure needs to a priority in planning policies and programs. Review of the NSW Environmental Planning and Assessment Act (1979) provides an opportunity to set the priority of food systems in NSW planning frameworks (I Sinclair 2012, pers. comm., 20 August; L Millen 2012, pers. comm. 18 September). There are a number of opportunities for urban planners to support the food system and assist access to healthy food. In particular, local government planning is well placed to be involved in a wide variety of efforts to strengthen food systems, to facilitate

healthy eating in their communities. Planning programmatic efforts to promote food security are those that are usually site-specific such as meal programs. Whereas, planning food policy efforts have a broader application, and alter legal structures to improve food systems (Raja et al. 2012, p8).

Problem Statement

The research problem investigated in this thesis is the response urban planning should provide to assist access to affordable healthy food, for groups most vulnerable to food insecurity.

Research Objectives

The aim of this thesis is to investigate access challenges to affordable healthy foods for low income households. This assessment can then be used to highlight urban planning intervention opportunities to improve population health.

The specific aims of this thesis are to:

- Explore literature on the relationship between lower socio-economic status and access to healthy food, in order to determine an appropriate research methodology;
- Select and investigate two case study Local Government Areas, to determine current challenges and opportunities in accessing affordable, healthy foods; and
- Identify how urban planning can be more responsive in assisting access to affordable healthy food for low income households.

Overarching Assumptions

Informed by literature, two assumptions have been adopted to frame the scope of this research.

Assumption 1: Areas that experience socio-economic disadvantage are likely to encounter food insecurity.

Assumption 2: Fresh fruits and vegetables are difficult to access for low income households for varied reasons. Reasons that support my investigation include:

- *Higher prices of fresh foods;*
- *Limited availability of fresh foods in close proximity to their place of work or residence; and*
- *Limited public transport to fresh fruit and vegetable stores for non-car owners.*

Significance of the Research

This thesis will contribute to the understanding of:

- Responsiveness to food security concerns for two local government case studies that experience high socio-economic disadvantage;
- Perceptions and preferences in accessing healthy food for low income households;
- The relationship between food, health, equity and the built environment.

1.4 Thesis Structure

Chapter 1 outlines background information to this study, and states key assumptions, the research problem and objectives, the significance of this research, and the structure of this thesis.

Chapter 2 overviews literature that has informed this thesis, comprising three conceptual frameworks including: healthy built environments, urban planning's role in the food system, and food landscape studies.

Chapter 3 details the methodology undertaken in this thesis. Primary research is a major component of this study, involving five phases which are outlined and described.

Chapter 4 provides a summary of results for the Campbelltown Local Government case study.

Chapter 5 provides a summary of results for the Fairfield Local Government case study.

Chapter 6 synthesises the results from the two case studies in Chapters 4 and 5, drawing upon two emerging themes.

Chapter 7 is the concluding Chapter of this thesis. The Chapter provides recommendations on how urban planning can assist access to affordable healthy food, and details how the objectives of the research were met. Areas for further research are also explored.

Conclusion

This Chapter provided an overview of why food insecurity is a relevant issue for Australia, and the potential for urban planners to facilitate equitable food landscapes. The following Chapter reviews literature on healthy built environments, urban planning and food systems, and food landscape studies.



Chapter 2.0

Food Landscapes

Literature Review

Introduction

The built environment is recognised as a major determinant of population health, with research demonstrating that urban land uses affect our decisions and abilities to maintain good health (Barton 2005a). In response to the growing incidence of diet-related disease in urban areas, studies have investigated the relationship between population health and access to healthy foods. The built environment's provision of food within this research is usually referred to as a 'food landscape' (Sobal & Wansink 2006; Walker et al. 2010).

This Chapter reviews literature on healthy built environments, urban planning and food systems, and the subset of these, food landscapes. The intent of the review is threefold. First to highlight the role built environments play in shaping population health. Second to explore how urban planning can meaningfully support the food system. And third, to review food landscape studies from the international and Australian context. This part of the review aims to identify preferred research methods and directions for the study of food landscapes.

2.1 Key Research Area

The key research area of this review is access to healthy foods. Specifically, how the built environment influences access to healthy foods for low income households. Issues of equity and how low socio-economic areas may be underserved by affordable healthy food outlets, is a critical component to this study. Figure 2.1 illustrates the framework of the literature reviewed.



Figure 2.1: Literature Framework (Author 2012)

2.2 Healthy Built Environments

Increasingly, recognition of the built environment on health has promoted cross-sectoral work between built environment and health disciplines. This work has investigated how the design of built environments can promote population health (Kent et al. 2011; Barton 2005a). Literature can be categorised into three 'domains' which support population health. These domains are physical activity, social cohesion and access to healthy food, all of which address the major risk factors for chronic disease (Kent et al. 2011).

Publications from health agencies drawn upon in this review demonstrate the interconnectedness of health and built environment disciplines. The publications are sourced from government agencies and not-for profit institutions, with notable publications including:

- Australian Institute of Health and Welfare (AIHW)

This year the AIHW released the report 'Australia's Health & Nutrition 2012', a timely publication given the development of a National Food Plan and revision of the Australian Dietary Guidelines. The report details various impacts of the built environment upon dietary behaviour, including food preparation settings and the Australian food supply chain (AIHW 2012).

- The National Preventative Health Taskforce

The Taskforce was an initiative to inform the development of Australia's National Preventative Health Strategy (2009). Their discussion paper 'Australia the Healthiest Country by 2020', recommends that urban environments should be designed to assist greater levels of physical activity, and implemented with infrastructure to promote access to healthy foods (NPHT 2008).

- The National Heart Foundation (NHF)

The Foundation undertakes cardiovascular research and develops health promotion activities, to inform the community about heart disease. A significant publication is their 'Healthy by Design' guidelines to improve population health, promoting physical activity and healthy eating (NHF 2012).

- NSW Department of Health

The NSW Department of Health provides bulletins on health promotion and moderates discussion forums. In December 2011, the symposium 'Community Health and Wellbeing: Prevention is Everyone's Business' was held in Western Sydney, and provided a platform to discuss upcoming healthy planning directions (NSW Health 2011).

2.3 Urban Planning and the Food System

Urban planning for food systems has only recently drawn interest for scholars. Despite the role of urban planning in managing land use, the food system was largely thought of as an agricultural issue, and therefore beyond the agenda of urban planning (Morgan 2009, p341). Food systems can be defined as the ‘chain of activities connecting food production, processing, distribution, consumption, and waste management’ (Pothukuchi & Kaufman 2000, p113). The emerging interest in linking urban planning with food systems has resulted from recognition that the food system affects a host of other sectors relevant to urban planning (Morgan 2009).

Two major United States (US) contributors to literature on urban planning for food systems are Kameshwari Pothukuchi and Jerome Kaufman. These authors advocate for urban planning to be more involved in food systems. Planners they argue are well placed with inter-disciplinary expertise and community-oriented perspectives (Pothukuchi & Kaufman 2000). Encouraged by this work, other contributors to urban planning and food systems have since emerged, further endorsing the role of planning in food production, and the provision of food at a community scale.

The American Planning Association has been another significant contributor to this literature. ‘A Planner’s Guide to Community and Regional Food Planning’ recognises that a key concern is the promotion of healthy eating. Specific to the United States of America, but also relevant to many other developed and developing countries, the foreword notes that national health trends have raised ‘the salience of food and healthy eating as important topics’ (Raja et al. 2008, p1).

Due to the multi-dimensional nature of food systems, contributions have covered different topic areas. A critical message is that urban planning has a significant role to play in shaping environments to support food systems and healthy eating. This includes:

- **Increasing institutional support for community and regional food planning**
(Campbell 2004; Gottlieb & Joshi 2010; Pothukuchi & Kaufman 2009; Raja et al. 2008)
- **Planners undertaking more research of existing food systems**
(Campbell 2004; Pothukuchi & Kaufman 2000; Sinclair et al. 2003)
- **Providing alternative food systems, including local partnerships and additional urban agriculture opportunities**
(Gottlieb & Joshi 2010; Maye et al. 2007; Raja et al. 2008; Steel 2008; Winnie 2008)

Through supporting food systems, urban planning can assist access to healthy foods. Emerging research has demonstrated that a key influence on healthy eating is convenient access and affordability of healthy food (Walker et al. 2010).

2.4 Access to Healthy Food

Within the literature of healthy built environments and urban planning for food systems, is an area of scholarly work that investigates the relationship between socio-economic status and food provision. These studies respond to the growing incidence of diet-related disease in low socio-economic urban areas, to understand how the built environment shapes food provision (Walker et al. 2010; Wrigley 2002).

Studies on access to healthy foods frequently use the expression 'food landscape'. This term include the sum of all available food within a community's environment, accessible for household consumption. Large scale surveys provide evidence that food landscapes facilitate or constrain particular dietary patterns, as influenced by the number, distribution and types of food outlets available (Sobal & Wansink 2006, p125). Further, research suggests that environmental cues can unknowingly influence eating behaviours, described as 'mindless eating'. Consumption norms that are determined by an environment are particularly concerning when there is limited availability of healthy foods (Wansink 2010).

The methods adopted in studies explore varying aspects of food landscapes, including physical distance, mobility, perception, retail density and healthy food costs. Accessibility to food generally refers to 'the capacity to acquire and consume a healthy diet, including ability to buy, transport food, home storage, preparation facilities; knowledge and skills to make appropriate choices and time and mobility to shop for and prepare food' (NSW CPHN in Nolan et al. 2004, p4). Accessibility to food and eating behaviour are highly complex, as a result of the interplay of multiple influences. Larsen et al. (2009, p57) identifies four domains that influence eating behaviours:

- The individual level which includes attitudes and preferences;
- The social environment, including interactions with others and role models in a community;
- The physical environment where food is procured and accessed; and
- Macro environmental influences such as agricultural policy.

These domains are shaped by other factors including financial resources, summarised in Figure 2.4 (overleaf).

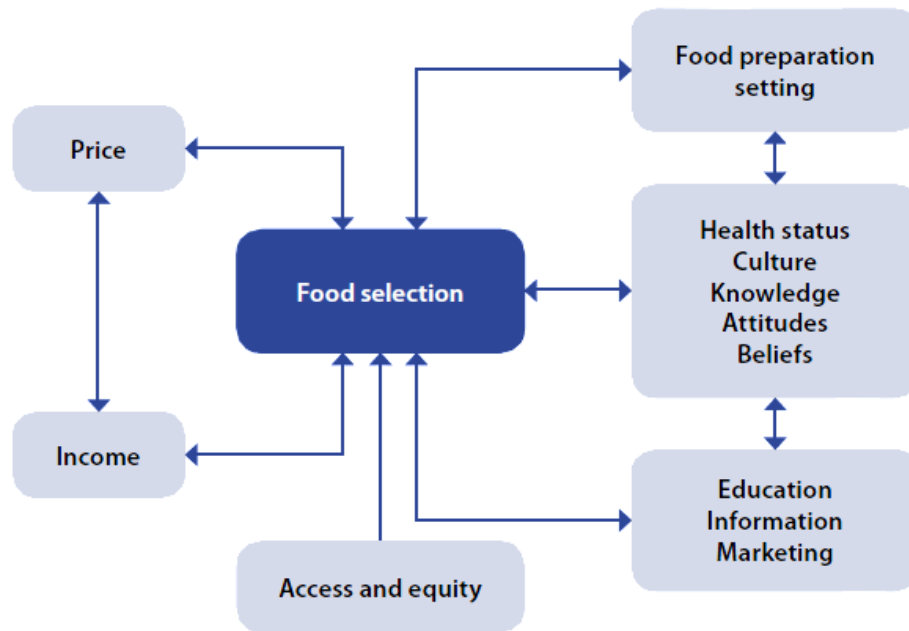


Figure 2.4: Major influences on food selection (AIHW 2012, p92)

The density of stores within a food landscape may also be problematic, as people tend to make food choices based on convenience. Lower socio-economic areas have been found to have a higher density of fast-food restaurants, compared to higher income areas. Maintaining a healthy diet can therefore be difficult to achieve for low-income residents (Walker et al. 2010).

Financial resourcing and consumer disadvantage forms a large part of the literature. Consumer disadvantage is described as existing within and outside a retail context, 'being closely linked to the demographic and socio-economic characteristics of consumers' (Woodliffe 2004, p524). Disadvantaged consumers have been described as those who experience constrained food choice as a function of low income and restricted mobility, particularly in areas that have suffered from out-of centre retail development. Consumers that experience this disadvantage include low income families, those without access to a car or poorly served by public transport, those constrained by caring responsibilities, the elderly, and the disabled (Whelan et al. 2002, p2084).

Since the late 1990s, an extensive number of food landscape studies occurred. A majority of these have taken place within the United Kingdom (UK) and US and increasingly from Canada, parts of Europe, New Zealand and Australia. Food landscape studies in the UK and US were largely motivated in response to public policy addressing population health (Raja et al. 2008; Wrigley 2002). The results of this work show correlation between the limited provision of healthy foods, a high incidence of diet related disease and low socio-economic status. Areas characterised by deprivation and poor accessibility to healthy foods have been referred to by academics and commentators as 'food deserts'. However, despite the popularity of the term, there is no consensus of its precise definition (Walker et al. 2010; Wrigley 2002).

As the majority of literature has adopted the term ‘food deserts’, the next section describes the term and its development, to gain a theoretical understanding of its application.

Making Sense of Food Deserts

In the late 1990s the term ‘food deserts’ was widely adopted in Britain, following policy debates on widening social exclusion. A British government report used the term as a metaphor to explain the nexus between limited green retailing in low economic areas, and a high disease burden. Despite the absence of a precise definition, the term was popularly adopted by public policy makers who drew attention to areas under-served by supermarkets (Wrigley 2002, p2032).

The rapid adoption of the metaphor meant that food deserts were simply assumed to exist, without systematic evidence to document their prevalence and distribution (Cummins & McIntyre 1999). Subsequently, early research on food deserts was inconclusive and ambiguous. This moved the British Government to clarify research priorities, namely to demonstrate a convincing link between diet and access to healthy foods, the need for post intervention studies of diet and health, and the need to understand a household’s and individual’s experience of food retailing. The priorities promoted considerable interest towards research partnerships between the built environment and health disciplines (Wrigley 2002). As evidence supporting the ‘food desert’ nexus emerged, further research of food landscapes in Britain and elsewhere,, has ensured the building of evidence for this area.

Nevertheless, the adoption of the ‘food desert’ metaphor remains contentious. Criticisms of the term in populist articles suggest that it has been overused to justify public policy interventions, without substantiative evidence (Cohen 2012; Kolata 2012). Further, the variety of research methods and inconclusive findings in studies question the existence of food deserts (Kent et al. 2011; Pearson et al. 2005; Walker et al. 2010). Despite these criticisms, this thesis accepts the evidence that supports the existence of food provision inequalities, specifically access to affordable healthy foods in low socio-economic settings. Notably, Australia has experienced different patterns of spatial exclusion to the US and UK. This thesis therefore refers to food inequalities within an Australian context.

Food Landscape Research Methodologies

In the study of food landscapes and access to healthy food, various research methodologies have been employed. Methods have been singularly qualitative, quantitative and mixed. Thirty-one food landscape studies were selected for this review to identify methodologies used. The literature has been sourced from an assortment of Australian and international scholarly journals, and from disciplines including retail analysis, community health, psychology and the built environment. The majority of studies were from the US using large samples of 100 persons or more, random selection techniques and purposive sampling. A large proportion of the US based studies also drew upon ethnicity as a contributory factor for disadvantage.

I have identified eight measurement methods in the literature used to assess access to healthy food. These measures are summarised below.

Qualitative Studies

Qualitative studies comprise the minority of articles reviewed. The importance of qualitative data is stressed in a number of the articles reviewed, as it provides information on preference and behaviour. Measures employed within the articles in this review include:

- **Focus groups**
This method facilitates a planned discussion on food consumption and access to stores (Johnson et al. 2008; Kirkup et al. 2004; Krukowski et al. 2012; Smith et al. 2009; Walker et al. 2012; Whelan et al. 2002).
- **Food diaries**
Diaries are maintained by participants that record food consumption, food purchases, body weight and distance travelled to stores (Cerin et al. 2011; Woodliffe 2004).
- **Interviews**
In-depth interviews are conducted with residents from a food landscape (Gawthorne & Chand 2010; Giskes et al. 2007; Webber et al. 2008; Woodliffe 2004; Zenk et al. 2011).
- **Inventories for measuring perception**
Subjective audits undertaken of available food stores (Freedman & Bell 2009).
- **Questionnaires**
Questionnaires used to collect qualitative responses on perceptions of food access (Gawthorne & Chand 2010; Johnson et al. (2008); Moore et al. 2008; Nolan et al. 2004).

Quantitative Studies

Quantitative studies comprise the majority of articles in this review. This method uses numerical data and spatial mapping to investigate food landscapes. Measures employed within the reviewed articles to assess accessibility include:

- **Body weight, body activity assessment and prevalence of food store type**
Comparison of body weight and the prevalence of calorie dense food stores in an area (Boone-Heinonen et al. 2011; Chaix et al. 2012; Conrad & Capewell 2012; Mehta & Chang 2008; Popkin et al. 2005; Richardson et al. 2012; Zenk 2011).
- **Directories, GIS and census data**
Mapping available stores and travel times to compare with population trends (Block et al. 2004; Burns et al. 2006; Cerin et al. 2011; Johnson et al. 2008; Moore et al. 2008; Nobel 2008; Pearce et al. 2007; Sadler et al. 2011; Zenk et al. 2009; Winkler et al. 2006).
- **Food store assessments and healthy food basket surveys**
This is an audit for the internal environment of a store and includes healthy food basket and shopping behaviour surveys (Burns et al. 2004; Guy 2004; Johnson et al. 2008; QHT 2006; Smith et al. 2009; Williams et al. 2004).

The literature acknowledges that emphasis on these measures often provides an incongruous view of food landscapes. This means that reliance on spatial and population data does not account for perceptions, which importantly shape food behaviour. In particular, the motivations behind an individual accessing one store over another are not taken into account. In most cases, motivations are more insightful than the enumeration of healthy and unhealthy food stores

(Walker et al. 2012). For instance, one limitation identified for quantitative studies has been termed the 'edge effect'. This term critically denotes that defined study areas in quantitative studies do not consider an environment's wider context. This is specific to shopping trends occurring outside a study boundary, a behaviour best identified through qualitative methods (Sadler et al. 2011).

To achieve a balanced approach in studying food landscapes, the literature encourages the use of mixed-methods, that is, using both qualitative and quantitative measures. Mixed methods are beneficial as they provide a realistic view of a food landscape, capturing perceptions relative to the physical accessibility of stores (Walker et al. 2012).

2.5 Key Contributions

A number of qualitative and mixed method studies were selected as key contributions in this review. These studies were selected, as they insightfully demonstrate the value of mixed methods in food landscape studies. Influential articles that have shaped the methodology of this thesis are detailed below.

- **'Access to healthful food among an urban food insecure population: perception versus reality' (Freedman & Bell 2009)**

This US study used an inventory for measuring self-reported perceptions of food access, comparing this with the perceptions of objective assessments of local food landscapes. The results suggest that insecure populations can accurately assess their access to healthful foods. The method used was based on in-store observations using a standard instrument between participating researchers.

- **Outer East Community Food Access Research Project (Johnson et al. 2008)**

This study occurred in the outer eastern region of Melbourne, Australia, to assess the level of food security in the region. The study informed recommendations on strategic approaches and community strategies to improve access to nutritious food for residents. Key methods used included physical mapping of local food outlets, a healthy food basket survey and focus groups. The results showed that food security exists in the region. Key determinants to accessing food were identified as convenience, physical access and economic access.

- **'Inequalities in retail choice: exploring consumer experiences in suburban neighbourhoods' (Kirkup et al. 2004)**

This UK study used focus groups to explore consumer experiences of food store preferences. The results reveal that choice is very different from provision, demonstrating that consumer's circumstances and perceptions influence the number of stores perceived to be available. The study uses a number of focus group exercises to explore perceived and actual choice.

- **‘Qualitative study of influences on food store choice’ (Krukowski et al. 2012)**

This US study used purposive sampling to select the primary household grocery shoppers for a focus group, from a socio-economic disadvantaged area. The group discussed reasons for choosing their primary store. Themes relating to choice that emerged included proximity to home or work, financial considerations, the availability and quality of produce and internal store characteristics.

- **‘Do residents of food deserts express different food buying preferences compared to residents of food oases? A mixed methods analysis’ (Walker et al. 2012)**

This US study used a mixed-methods approach of concept mapping. This allowed participants to identify, list and organise their perceptions of stores according to importance, which was then spatially mapped. Unique statements on food influences were identified.

- **‘Life in a Food Desert’ (Whelan et al. 2002)**

This UK study moderated focus groups in a low socio-economic neighbourhood, to explore individual shopping behaviour, consumption patterns and attitudes towards a healthy diet. The study explores perceived economic and physical constraints to accessing healthy food, and makes reference to the coping strategy theory. This theory recognises that accessibility is a relative concept, and residents adapt to their circumstance. Therefore accessibility problems in a neighbourhood may not be viewed as a problem, but accepted as normal.

These key contributions highlight further research opportunities, explored below.

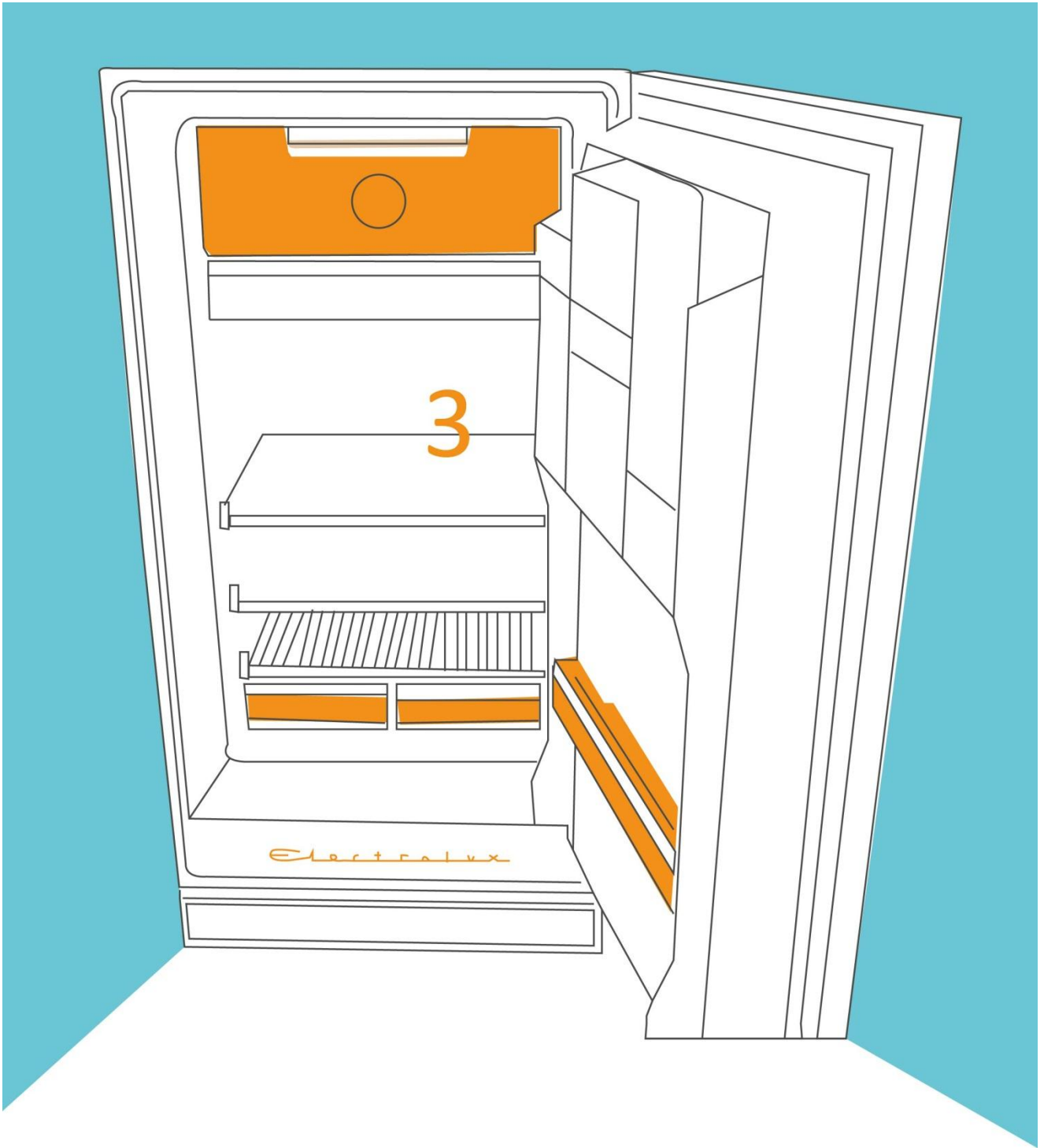
2.6 Opportunities for Further Research

The literature points to a number of opportunities for further research. In the literature there was a notable absence of studies from the Australian context. Studies are mostly from the UK and US, which have experienced different processes of social exclusion in cities compared to Australia. Noted by Winkler et al. (2006) the US has experienced a movement of upper socio-economic segments of society to outer suburban areas, occurring with the initial development of supermarkets. A process termed ‘supermarket redlining’ has been used to explain why quality retailing did not remain in the inner city areas in the US (p307). This is unlike Australian cities, where gentrification has occurred and attracted supermarket development within inner city areas. Also social exclusion in Australia has mostly occurred in outer suburban areas (Baum & Gleeson 2010).

In my review, there were eight studies from Australia, with two based in Sydney. The studies mostly occurred from 2004-2008 indicating a lack of interest in this work in recent years. The limited number of studies provides an opportunity for further research of Australian food landscapes.

Conclusion

This Chapter has provided an overview of food landscape literature. It has highlighted relevant methodological approaches to study food landscapes and has provided meaning to the ambiguous term 'food deserts'. Key studies outlined in this Chapter have informed the methodology of this thesis. Chapter 3, Research Methodology, builds upon these methods and details the primary research undertaken for the in-depth study of two case studies.



Chapter 3.0

Research Methodology

Introduction

This Chapter details my research methodology to study access to affordable healthy foods. The Chapter provides justifications for the methods adopted and a theoretical background to the selection of my two case studies. A mixed-methods approach informed by literature on food landscapes was used. This literature advises varied methodologies to capture the many factors that influence access to food (Johnson et al. 2008; Walker 2012).

This Chapter details five key phases of investigation used for my two case studies in South West Sydney. The phases are outlined by a methodology map, and inform my recommendations on how urban planning can assist access to affordable healthy food.

3.1 Methodology Map

The mixed methods approach I used in this thesis involved qualitative research, quantitative data collection, spatial mapping and preliminary review of policy. These research methods were adopted at separate phases of the research to serve the following functions:

- Provide a theoretical framework for the study;
- Inform the selection of two case study food landscapes;
- Measure food accessibility within the case study food landscapes; and
- Inform recommendations on how urban planning can assist access to affordable healthy food in socio-economically disadvantaged areas.

The five key phases of research undertaken in this study are summarised in Figure 3.1 (overleaf). Each phase is detailed in the following sub-sections of this Chapter.

Methodology

Map >>

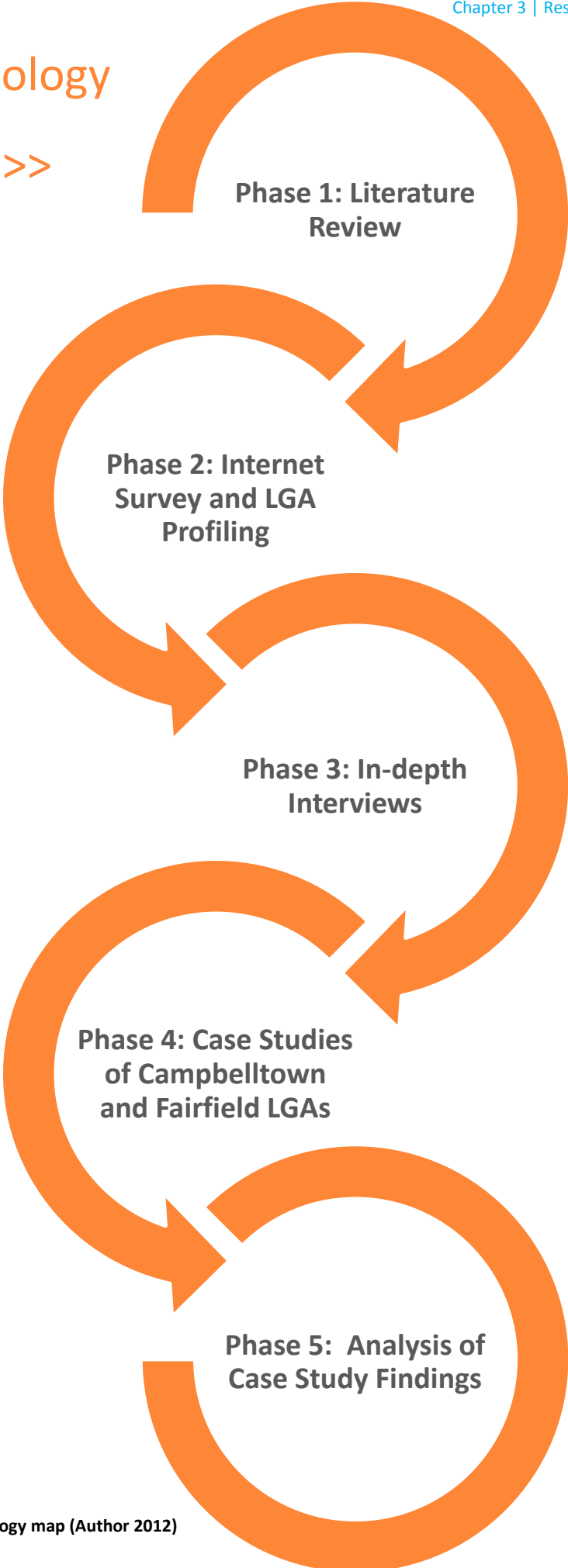


Figure 3.1: Methodology map (Author 2012)

3.2 Literature Review (Phase 1)

As explored within Chapter 2, this first phase of research involved the review of literature pertaining to food landscape studies. Studies included had a particular focus on food landscapes that experience socio-economic disadvantage, commonly referred to as 'food deserts'. The varied contributors to literature on food landscapes provided the theoretical framework for this thesis.

This first study phase involved the largest component of secondary data, collated from scholarly literature, government and non-government publications. The literature contributions are outlined below.

Academic Journals and Books

Academic journals and books were sourced from a number of disciplines in sociology, population health, agriculture, retail and urban planning. Journal articles were the largest contribution to knowledge on the key research area, as they provided critical analysis of food landscapes.

Methods undertaken to source literature included an online journal database search, a Google Scholar search and a UNSW Library search. Each search method is described below.

Online Journal Database Search

To gain a thorough academic understanding of the topic area, a refined search was undertaken using a number of online journal databases through the search provider Sirius. The Scopus database was most successful, yielding a significant number of journal articles in close affinity to the search terms 'obesity', 'food desert', and 'food environments'. These search terms supplied a number of international studies, however they were primarily sourced from the United States. To gain a better indication of food environment studies for the Australian context, the search terms were refined to 'food desert Australia', yielding less results.

Google Scholar Search

This search tool proved useful in accessing a broad number of Australia studies, as well as sourcing references in other studies related to food systems and planning.

University of New South Wales Library Search

To develop a broad understanding of food security and population nutrition, a wild search using the term 'food security' and 'Australian population health' was undertaken using the UNSW Library Catalogue. These search terms provided a successful yield of books that provided commentary on food insecurity, population health and community food initiatives.

Government and Non-Government Publications

Government publications were sourced from federal, NSW and local government websites. These publications were relevant to Greater Western Sydney (GWS), planning policy, population

health and food strategies, which provided an understanding of current policy agendas for food and urban planning in the Sydney Region.

Non-government publications were sourced from a variety of organisations, and included directories, maps, policy submissions, independent reports, and newspaper commentaries. These publications were used for spatial information and more popular ideas on food landscapes.

3.3 Internet Survey and Local Government Area Profiling (Phase 2)

This second phase of research was undertaken to provide a contextual study of Local Government Areas (LGAs) in GWS, to inform the selection of two case study sites. The contextual study involved two parts. First, a preliminary assessment of socio-economic disadvantage for the LGAs was determined using the Australian Bureau of Statistics (ABS 2006) Socio Economic Index for Areas (SEIFA). Second, an internet survey was undertaken to assess the availability of local government food policy and programs for LGAs in GWS.

Greater Western Sydney (GWS) - Study Setting

The GWS region was the focus of the local government food policies and programs internet survey, as this region experiences high socio-economic disadvantage and social exclusion (ABS 2006; Baum et al. 2010; Randolph et al. 2010). A useful indicator to locate disadvantage is household income level, which has been identified as disproportionately low for the GWS region, in particular the south west. This trend is illustrated in Figure 3.3. Income is a significant influence on food expenditure, and therefore low income areas are vulnerable to food insecurity, the focus of this study.

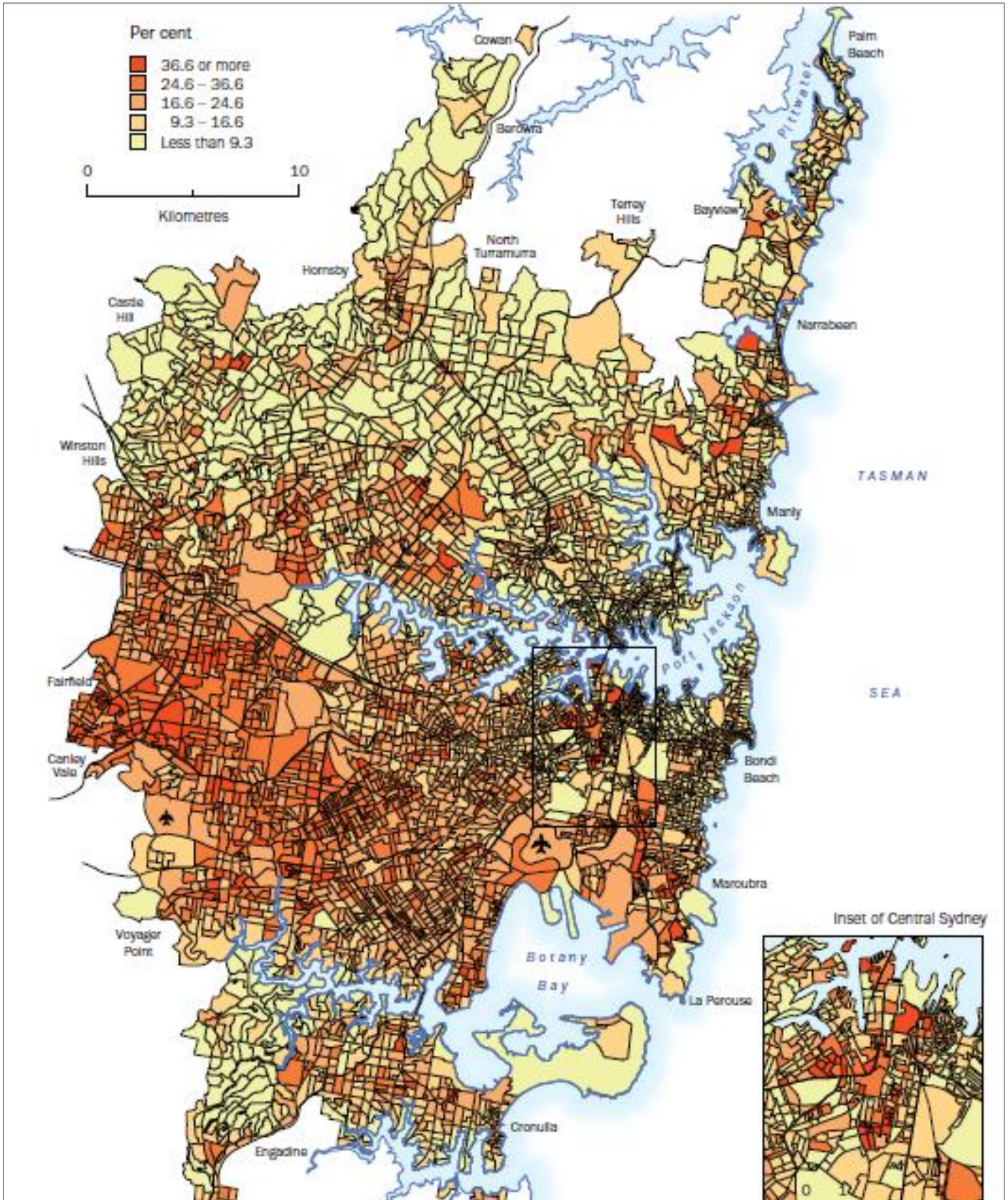


Figure 3.3: Sydney Social Atlas, low income households (ABS 2006a)

Internet Survey

An internet survey was employed for local government food policies and programs in the GWS region. The survey method was exploratory to assess how responsive GWS councils have been in assisting population nutrition, and the priority status of food insecurity to their policy agenda. This approach assumes that most local councils in NSW now make their key policy documents publicly available online.

In the current study, the GWS region is spatially defined to include the western Sydney Sub-Regions, detailed within the Draft 2005 Sydney Sub-Regional Strategy (DOP 2005a). The Sub-Regions include the North West, West Central and South West (Figure 3.3.1).



Figure 3.3.1: GWS Sub-Regions, adapted from the Draft Sydney Sub-Regional Strategy (DOP 2005)

Collectively, the western Sydney Sub-regions comprise 13 LGAs, characterised by urban and rural land uses (DoP 2005a, p12). The internet survey undertaken was a modified version of Noble's (2008) survey method, which was used for the study of food planning in 41 Sydney LGAs. Modifications were made to the survey template so that the method suited the reduced scale of review, only surveying 13 Sydney LGAs. The modifications provided greater scope to include details on the policies and programs found, including the name, year implemented, and whether the program was facilitated (initiated) or endorsed (publicised) by the relevant council. Further, after piloting Noble's survey method, it was discovered that the keyword search provided few relevant results. To address this, a second component to the survey was undertaken.

The survey method comprised two parts. Part one involved an internet keyword search for the terms ‘local food’, ‘food security’, ‘food policy’, and ‘food strategy’. Search results from each key term were notated, and the type of food strategy was identified within the survey template. Part two involved a page navigation search. This search used drop-down menus on council websites to discover available food policies and programs. Information on these programs and policies were noted in the template. The results and internet survey template are attached at Appendix A.

To summarise and order the survey findings, a scale was devised. Categories in the scale ranged from ‘comprehensive’ to ‘no evidence’. Policies and programs that provide objectives to implement food programs for population health were considered favourably in this scale. The scale categories used are defined in Table 3.3.

Table 3.3: Scale of available council food policies and programs in GWS (Author 2012)

Category	Definition
Comprehensive	Thorough investigation of population health trends shown, and endorsement/facilitation of policies and programs for access to healthy food
Moderate	Evidence of policies and programs assisting access to healthy food
Low	Food policies and programs only relate to hygiene standards
No Evidence	No evidence of food policy and programs shown from survey Council

A limitation of this method is that it does not comprehensively capture all available food initiatives within the LGAs. For example, food programs may be facilitated (initiated) by an independent organisation, and council may only endorse (publicise) these programs. Further, websites may not regularly update programs for public knowledge. This may explain why the search of Wollondilly Shire Council’s website showed no evidence.

In an attempt to address this limitation, an online questionnaire was devised for the case study areas to more accurately assess the case study councils’ responsiveness to food security.

3.4 Ethical Considerations

The research undertaken within this thesis involved human participants, namely for in-depth interviews with key informants, and focus group sessions moderated within each case study. For my primary research, ethics approval was granted by the UNSW Built Environment Faculty’s Human Research Advisory Panel. The approval number for my research is 125025. As a requirement of ethics approval, all participants in my study were provided with a Project Information Statement (PIS) and a Consent Form. The former outlined my study’s purpose, why the participants were selected, recompense for participation, and an option to withdraw from my study. The Consent Form required participants to give their permission to be involved, and

to select their preferred level of identification. I have retained all Consent Forms from participants, and I have ensured to maintain anonymity requests. The PIS and Consent form templates used in my study are attached at Appendix B and C.

3.5 In-depth Interviews (Phase 3)

For an improved understanding of Sydney's food landscape, this phase of research involved in-depth interviews with a number of key informants. Informants were selected for their knowledge and contribution to research on socio-economic disparity and food security, retailing and population health relevant to Sydney's context. The informants assisted with identifying current and future trends that affect access to affordable healthy food, and ways in which urban planning can address inequalities.

Permission was granted by the informants to identify their titles and names. The following Table 3.5 details the informants and their experience:

Table 3.5: In-depth interview key informants (Author 2012)

Name	Field	Experience
Adrian Hack	Urban planning and retail analysis	Analyst of retail trends in Sydney, consultant at Hill PDA
Elizabeth Millen	Health, social services and food security	President of Sydney Food Fairness Alliance, and research academic at Sydney Local Health District.
Ian Sinclair	Rural planning	Consultant in rural planning, and undertaking a PHD in preserving agricultural lands and food initiatives for NSW.
Professor Bill Randolph	Social housing policy and urban development	Director of City Futures Research at the University of New South Wales, research in social housing and affordability
Dr Roy Byun	Health research	Epidemiologist at the Centre for Research, Evidence Management and Surveillance (REMS) and Sydney and South Western Sydney Local Health Districts.

The informants assisted with identifying useful literature relevant to food planning in the Australian context, including recently released government reports, independent organisation publications, and prior studies on food landscapes in Sydney. Information attained from key informants has informed the problem setting and recommendations on how urban planning can address food inequities in this thesis.

3.6 Case Studies of Campbelltown and Fairfield LGAs (Phase 4)

This phase of the research involved the in-depth study of food landscapes in Campbelltown and Fairfield LGAs. These LGAs were selected for their relative socio-economic disadvantage within the GWS region. Fairfield LGA was found in my internet survey to provide 'comprehensive' food policies and programs thereby enabling a comparable study to Campbelltown LGA, which was found to provide 'moderate' food policies and programs.

An in-depth study of these LGAs was undertaken using a mixed-methods approach, informed by a food security study facilitated in outer east Melbourne using focus groups and market basket surveys (Johnson et al. 2008). The in-depth study in this thesis involved four components:

- A community profile of the LGA;
- A focus group with residents in the LGA;
- An online council questionnaire concerning the priority of food security;
- A fruit and vegetable accessibility audit of stores identified by the focus groups.

These methods are described in detail below.

Demographic and Contextual Profile

This component involved collating demographic information and maps to form a community profile of the residents within the two case studies. Where available, 2011 ABS census data was used for statistics on age, ethnicity, income and dwelling tenure.

Focus Groups

Focus groups were conducted with residents within the case study LGAs. This method was used to gain an understanding of residents' views on healthy eating, their perception of barriers to accessing healthy food, and how they could be better assisted. The focus group methodology was informed by literature (Johnson et al. 2008; Kirkup et al. 2004; Krukowski et al. 2012).

Food landscape studies emphasise the value of qualitative research (Freedman et al. 2009). Emphasis on spatial trends in food landscape studies is criticised for neglecting the influential factor of motivation on access. So to develop an in-depth understanding of perceived and physical availability of healthy foods, a mixed-methods approach has been used. Qualitative data has been collected through the focus group discussions, and quantitative data has been collected from the fruit and vegetable availability audit and focus group questionnaires. Further, this method has been adopted in response to criticism that there is a lack of community consultation in food policy decisions (SFFA 2011).

Facilitating the focus groups involved considerable organisation, including participant recruitment, follow-up, preparation of the session's activities, moderating the sessions and analysing data. The process required to organise the focus groups was informed by Kruger (1994) 'Focus Groups: a practical guide for applied research'. Each component of organisation is described below.

Recruitment

Focus group participants were recruited through gatekeepers who had access to respondents that met the criteria of living within the case study LGAs (Campbelltown or Fairfield) and identified as being the main grocery shopper for their family. Initially, I attempted to recruit participants through school Parent and Citizen associations at various schools within the two LGAs. This approach sought to establish a gatekeeper and contact for my study, and to provide a convenient location for participation.

Using this method of inquiry, I was successful in securing participants at a public school in Carramar, Fairfield LGA. For this focus group, the school's community liaison officer performed the role of a gatekeeper. My focus group session was held in the school hall, following the parents' group monthly meeting to discuss school matters with the school liaison officer and school principal. Carramar was also selected for study due to its close proximity to Villawood. Villawood was identified in my internet survey as having a population that experiences food insecurity.

For the Campbelltown focus group, a gatekeeper was made available to me through the City Futures Research Centre at UNSW. This contact is an officer of the NSW Housing Airs Bradbury Renewal Project. A concept plan has been finalised for this project, which includes improvements to the local shopping centre (NSW Housing 2012). The gatekeeper in Airs recruited participants for my study through Airs Reach Out Centre. This Centre is church affiliated and provides a number of social assistance programs, including financial aid and cooking skill workshops (C3 Community Services 2012).

Respondents were informed and invited to my study through a flyer (attached at Appendix F) detailing my research, as well as the time and location of the focus group session. Gate keepers were contacted a week prior to the sessions to confirm attendance of participants. And participants were provided with a grocery voucher to recompense them for their time.

Focus Group Activities

Both focus group sessions were tape recorded and involved the activities outlined in Table 3.6. Additional information on the activities is provided in the Moderator's Notes attached at Appendix I.

During the session, participants were provided with the following forms:

- A program sheet outlining the agenda for the session (attached at Appendix G);
- Project Information Statement (attached at Appendix B);
- Consent Form (attached at Appendix C); and
- Questionnaire (attached at Appendix H).

Table 3.6: Focus group activities (Author 2012)

Activity	Description and Purpose
Ice breaker	<p>After the introduction to the session, an ice-breaker was used, asking participants to name their favourite fruit and explain why.</p> <p><i>Purpose:</i> to encourage discussion amongst the participants on the topic of healthy food.</p>
Questionnaire	<p>Participants were asked to complete a short questionnaire individually, which asked about shopping for fresh fruit and vegetable groceries in a usual week.</p> <p><i>Purpose:</i> to quantify trends in food shopping behaviours, distances travelled, and to familiarise the participants with their shopping habits for the group discussion.</p>
Group Discussion	<ul style="list-style-type: none"> - Adapted from Kirkup et al. 2004, a scenario was read about a new neighbour arriving in their neighbourhood. Participants were asked to compile a list of stores that they could suggest to their neighbour for affordable fresh fruits and vegetables. With a car and with no access to a car. - Participants were then asked to identify their two most preferred stores, one as a convenience shop, and another as a main grocery shop. - Following this, participants were asked what limits them to accessing fresh fruits and vegetables, whether they use programs provided by their local council, and what would assist them to buy more fresh fruits and vegetables. <p><i>Purpose:</i> to encourage discussion on challenges and opportunities experienced in accessing healthy food in their LGAs.</p>

Online Council Questionnaire

An online questionnaire was devised for Campbelltown and Fairfield local councils, to provide a more in-depth understanding of the two councils' position on food security, and their responsiveness in planning for food. This was developed using an online survey tool SurveyMonkey™, and was emailed to council staff after initial contact was made to confirm their acceptance to participate.

The questionnaire comprised ten questions about food security, available food policies and programs, and Council agendas to assist access to healthy food. For further detail on the questionnaire, the template is attached at Appendix D. The participating council staff in this questionnaire did not grant consent to be quoted or identified. Due to this anonymity request, the questionnaire results have been coded as Council A and Council B.

Fruit and Vegetable Availability Audit

This research component involved the auditing of stores for the quality, variety, and price of a fixed list of fruits and vegetables. The stores audited were identified by the focus group participants as their preferred 'top-up' and 'main' shopping store for fresh fruit and vegetables.

The audit tool used in this thesis was adapted from a current research project being undertaken by the Healthy Built Environments Program (HBEP) at UNSW. Their research survey tool has been utilised for a community food assessment to investigate the cost of healthy foods.

Currently there is no national Australian survey or NSW survey on the cost of healthy foods (Cancer Council NSW). Food audits and healthy food basket surveys have occurred in a number of food landscape studies, to assess the cost of foods for a typical family. This research method valuably indicates the fiscal cost of healthy food to consumers, which may impede healthy food purchases for low income households.

Modifications were made to the HBEP audit tool for this thesis to limit the audited food items to include fresh fruits and vegetables only. Further, additional fruits and vegetables were added to the availability component of my audit, to provide an approximate measure for the range available. Attached at Appendix J, the audit tool used in this thesis comprises three sections, detailed below.

Cost Survey

This survey was adapted from the Victoria Healthy Food Market Basket tool, providing a list of 11 food items, both fruit and vegetables, to record the product size and least expensive cost (Crawford et al. 2012).

Availability Survey

This survey measures the availability of fruit and vegetable items, using a frequency survey adapted from the NSW Cancer Council Market Basket Survey (Crawford et al. 2012). I have modified the survey for this thesis, expanding the original listing of items to include 46 food items, 30 vegetable and 16 are fruit, to provide an approximate overview of range.

Quality Survey

The quality of fruit and vegetable items was rated using a visual assessment tool developed by the Queensland Healthy Food Access Basket manual and the NSW Cancer Council Market Basket Survey. This includes a visual assessment of quality including age, bruising, mould and being clean (Crawford et al. 2012, p3).

In the audit, for each store a photograph and a description of the store has been provided. Photographs were sourced from Google Images, as personal safety and photographing commercial property were a concern during the audit.

3.7 Analysis of Case Study Findings (Phase 5)

The final methodological phase involved the analysis of case study findings. The results and responses from the first four phases are summarised in Chapters 4 and 5, and discussion of these findings is provided in Chapter 6.

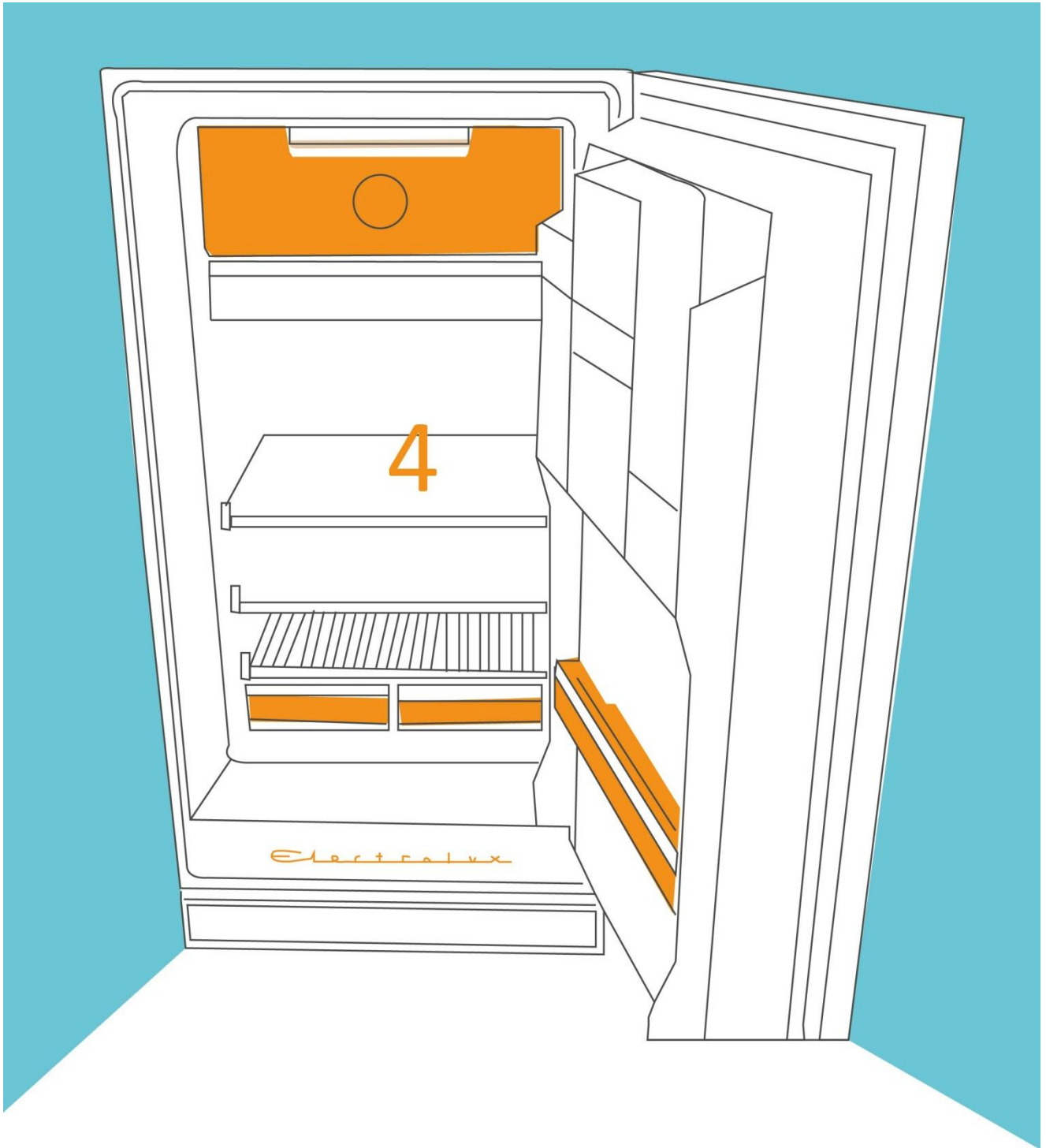
Data analysis in this phase involved the following:

- Transcribing verbatim from tape recordings of the focus group sessions, and reviewing information for emerging themes;

- Identifying key comparisons between local government policy within Campbelltown and Fairfield LGAs; and
- Identifying key comparisons between the availability of fresh fruits and vegetables between the stores audited in the LGAs.

Conclusion

This Chapter has comprehensively detailed the methods adopted for this thesis. The study results from the methods undertaken are explored in the following chapters.



Chapter 4.0
Campbelltown
Case Study LGA

Introduction

To identify opportunities and challenges for residents to access affordable healthy foods, this Chapter examines Campbelltown Local Government Area (LGA) as a case study. This Chapter provides a demographic profile for Campbelltown, the results of the Airds focus group and the fruit and vegetable availability audit

Campbelltown was selected for in-depth study as it exhibits a high level of socio-economic disadvantage, with a recorded 954.5 SEIFA score from the 2006 ABS census data. This score is below the national average of 1005.2 (ABS 2006b). Further, Campbelltown LGA provides an interesting comparison to the second case study, Fairfield LGA. Fairfield, unlike Campbelltown has a publicised healthy communities program, determined from the internet survey of available council food policies and programs.

The results of the internet survey of available council food policies and programs in the GWS Sub-Region are summarised alongside 2006 SEIFA scores in Table 4.0.

Table 4.0: Review of available Council food policies and programs in GWS Sub-Regions (Author 2012)

<i>Sydney Sub-Region</i>	<i>LGA</i>	<i>Urban/ Rural/ Mix</i>	<i>Scale of Healthy Food Policy/ Programs</i>	<i>SEIFA Score (ABS 2006)</i>
North West	Blacktown	Mix	Comprehensive	972.8
	Blue Mountains	Mix	Moderate	1051.0
	Hawkesbury	Mix	Comprehensive	1033.0
	Penrith	Mix	Moderate	1006.0
West Central	Auburn	Urban	Low	922.1
	Bankstown	Urban	Moderate	944.7
	Fairfield	Mix	Comprehensive	876.1
	Holroyd	Urban	Comprehensive	972.4
	Parramatta	Urban	Comprehensive	987.4
South West	Camden	Mix	Moderate	1057.2
	Campbelltown	Mix	Moderate	954.5
	Liverpool	Mix	Moderate	966.4
	Wollondilly	Rural	No online evidence	1044.7

The results from the internet survey demonstrate that the availability of healthy food policies and programs in the GWS Sub-Regions is considerably high, with most LGAs scoring between 'comprehensive' to 'moderate' on my devised scale. As determined by this survey, Campbelltown LGA was found to provide 'moderate' available food policies and programs. This means that there is evidence for policies and programs to assist healthy food, however there lacked objectives for the implementation of the policy and programs.

4.1 Campbelltown LGA

Campbelltown LGA is situated within Sydney's South West Sub-Region and is partly included within the South West Growth Centre (Figure 4.1). A number of suburbs and centres in this region have been ear-marked to accommodate State Government housing and employment targets. Renewal of Campbelltown public housing estates has been identified as an opportunity increase residential density (DOP 2005b). Urban renewal provides a valuable opportunity to assess the existing food landscape, and how to facilitate access improvements to healthy foods. Renewal of local retailing facilities would complement the existing central retail hubs located in Campbelltown's Major Centre.

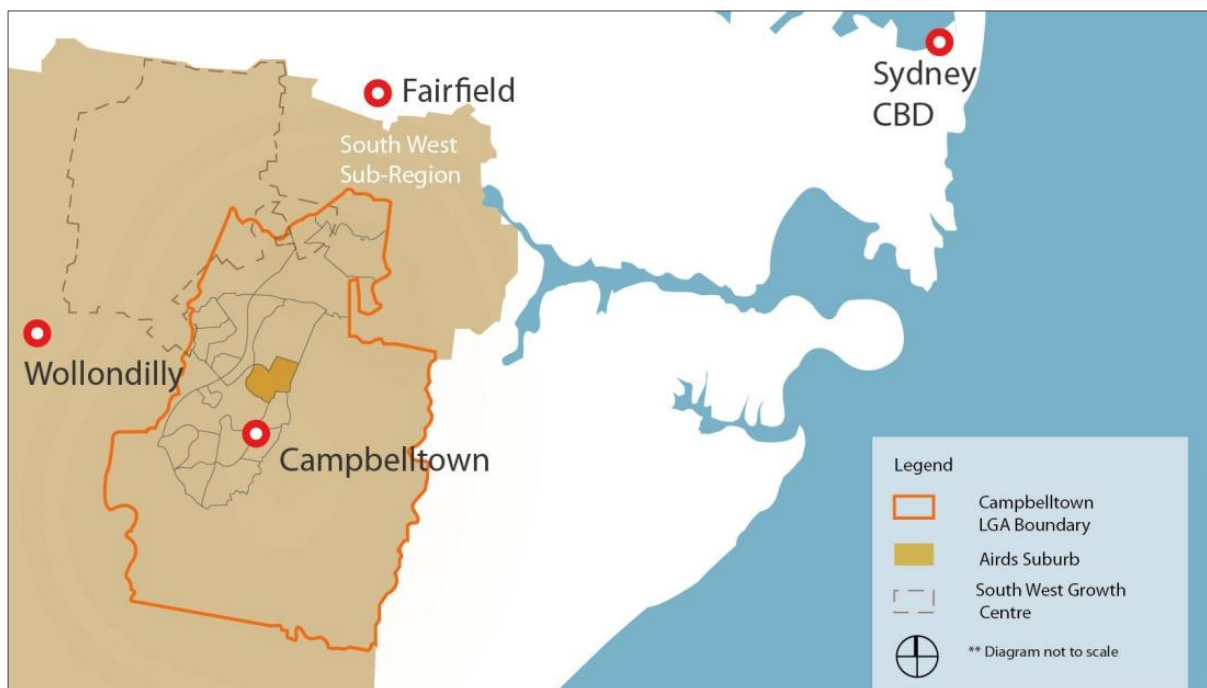


Figure 4.1: Campbelltown LGA and Airs locality adapted from Google Maps and DOP 2005 (Author 2012)

Socio-Demographic Trends

This section explores major socio-demographic trends for Campbelltown LGA, sourced from the ABS census data 2011.

Campbelltown LGA has a young population, with 48.6% of residents comprising couple families with children, 27.5% were couple families without children and 22.3% were one parent families. The incidence of one parent families is 6% higher than the NSW average. Other than Australians, the most prevalent ancestries within the LGA include 22.1% English, 5.9% Irish and 5.0% Scottish.

The majority of residents (42.3%) are paying a mortgage to own their own home, and 24.2% of residents own their home outright. The rental market is considerable, with renting comprising 30.4% of the market, which is second to mortgage repayments. The 2006 ABS census data

records that 40.3% of the rental housing is from a State or Territory Housing Authority and 43.5% from real estate agents (ABS 2006b). Household income levels show that the median weekly household income was \$1,251.00, which is higher than the NSW median recorded at \$1,237. Despite many households earning above \$600.00 per week, the majority of family households earn \$87.00 less than the NSW average. This highlights the prevalence of low income households in the LGA.

4.2 Available Food Policies and Programs in Campbelltown LGA

Internet Survey

Campbelltown was identified within my internet survey as having a 'moderate' availability of food policies and programs. The policies and programs identified within Campbelltown LGA are summarised within the internet survey template Figure 4.2, attached at Appendix A.

The survey of the Campbelltown City Council website outlines that the most relevant food program to encourage access to healthy food is facilitated (initiated) by the not-for-profit organisation Macarthur Sustainability Centre. This program promotes sustainable homes and gardens and is endorsed (publicised) by the Council. Apart from this program, the survey only identified evidence of one council facilitated program and one food policy. The food policy related to education and standards for food safety, and the program was for a home gardening competition with a category for 'best edible garden' (Campbelltown 2012). Therefore the absence of healthy food policies and programs on the website suggest that Council provides little support for access to healthy food.

4.3 Airds Focus Group

Locality and Participants

The focus group component of this research was undertaken within the Campbelltown suburb Airds (Figure 4.3). The selection of this study is detailed in Chapter 3 Research Methodology.



Figure 4.3: Airds Suburb locality (Google Maps 2012a)

The focus group involved 13 participants who were from various ethnic backgrounds, approximately aged between 20-60 years. The flyer I devised to advertise my focus group was circulated amongst Airds Reachout Centre visitors to recruit local participants. However, only three participants identified as being residents of Airds, with the remainder of the participants stating residency in other suburbs, spatially spread throughout Campbelltown LGA illustrated in Figure 4.3.1 (overleaf).

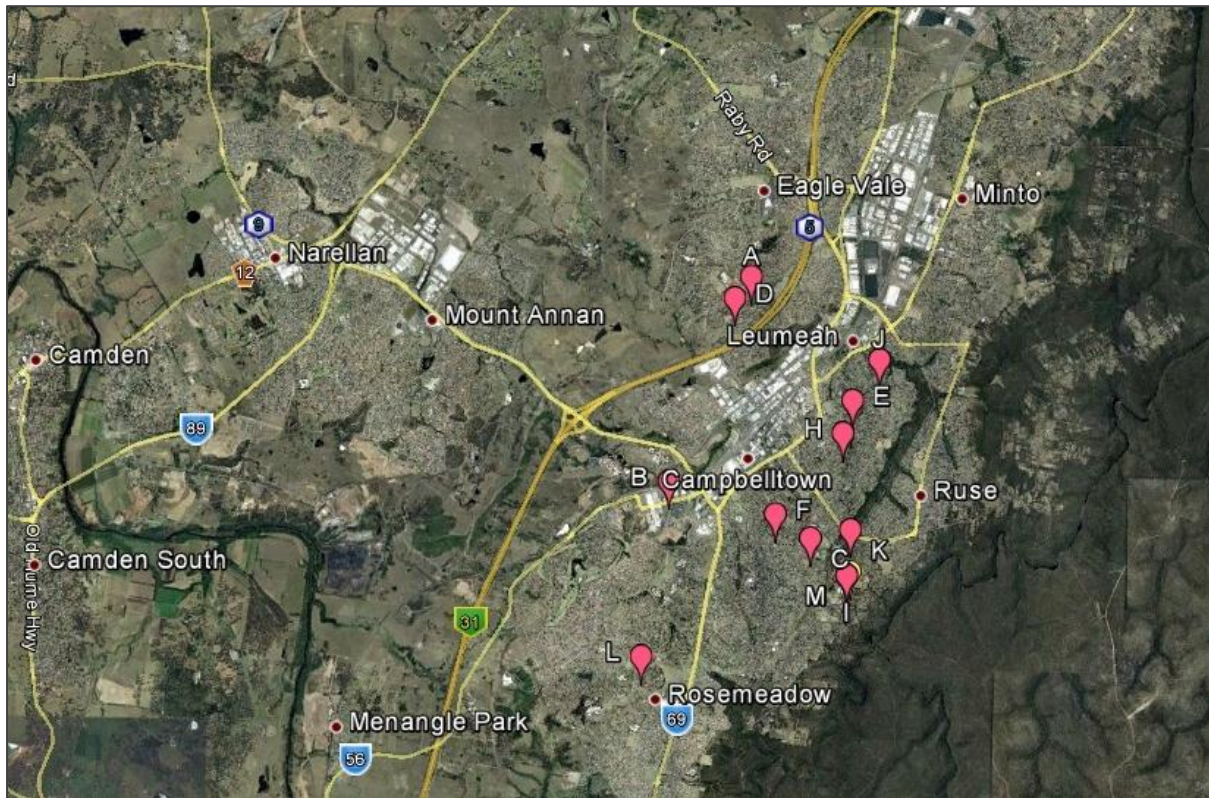


Figure 4.3.1: Airds focus group respondents’ residential addresses (Google Earth 2012)

Airds Focus Group Respondent’s Residential Addresses Legend			
A	Claymore	H	Campbelltown
B	Glenorie Park	I	Airds
C	Bradbury	J	Leumeah
D	Claymore	K	Airds
E	Campbelltown	L	Rosemeadow
F	Campbelltown	M	Airds
G	Invalid Address		

Participant Responses

Participant responses are detailed in two parts, the first involving the participant questionnaire responses, and the second part involving the group discussion responses. The questionnaire was completed by participants before the group discussion.

Part 1 – Participant Questionnaire

Responses to the questionnaire identified that all participants met the criteria for my study. That is, participants identified as being responsible for grocery shopping in their household, and most often shopped for fresh fruits and vegetables at stores within Campbelltown LGA. Key themes from the questionnaire responses are summarised below.

Importance of the Purchase

- Buying fresh fruits and vegetables on a weekly basis was considered ‘important’ for four respondents and ‘very important’ for nine respondents. The respondents identified that health for their families was a key component to the importance of these purchases, listing reasons including ‘nutrition’, ‘healthy lifestyle’, ‘keeping weight in check’ and ‘you need in your diet to live and feel great’. However one respondent recognised that ‘at the moment we like eat fresh fruit and vegetables when we can afford it’.
- Ten of respondents (the majority) identified that they spend between 25-50% of their weekly food bill on fresh fruits and vegetables, and the remainder three respondents spent less than 25%.

Choice of Stores

- Respondents identified that their choice of stores to buy fresh fruits and vegetables was attributed to, in order of importance:
 - i) Ease of travel to the store
 - ii) Quality of product
 - iii) Variety of product and selection of other foods

Transport to Stores

- Six of the respondents (the majority) in a typical week, shopped for fruit and vegetables once, and four respondents shopped three times, and three respondents shopped twice.
- In a typical week seven of the respondents travel by car to purchase fresh fruits and vegetables, two respondents walked, two caught the bus, and one respondent identified that their ‘Dad or partner usually drives me there’.
- Twelve of the respondents identified that for a typical week, travelling to their regular fruit and vegetable store usually takes them 5-15 minutes, and for respondent it takes less than 5 minutes.
- Alternative modes of travel to fresh fruit and vegetable stores included walking for six respondents, catching the bus for one respondent, driving for four respondents, and car-sharing for two respondents.
- For alternative modes of travel, nine respondents identified that the journey usually takes them 5-15 minutes, 15-30 minutes for two respondents, 30-40 minutes for one respondent, and 46 minutes to an hour for the remaining respondent.

In summary, the majority of respondents identified that the purchase of fresh fruits and vegetables is important for nutrition, with purchases mostly comprising 25-50% of their

weekly food bill. Ease of travel was the most important consideration of store choice, and travel by car was the most favoured transport mode. Alternative modes of travel to a ‘usual week’ were identified as having longer journey times for a few participants, requiring more than 5-15 minutes travel time.

Part 2 - Group Discussion Findings and Observations

The group discussion identified nine fresh fruit and vegetable stores that the participants would recommend to a new neighbour. The spatial spread of these stores, indicated in blue, highlights a cluster of stores around the Campbelltown Major Centre (Figure 4.3.2). The pink icons in this figure represent the respondent’s residential addresses.

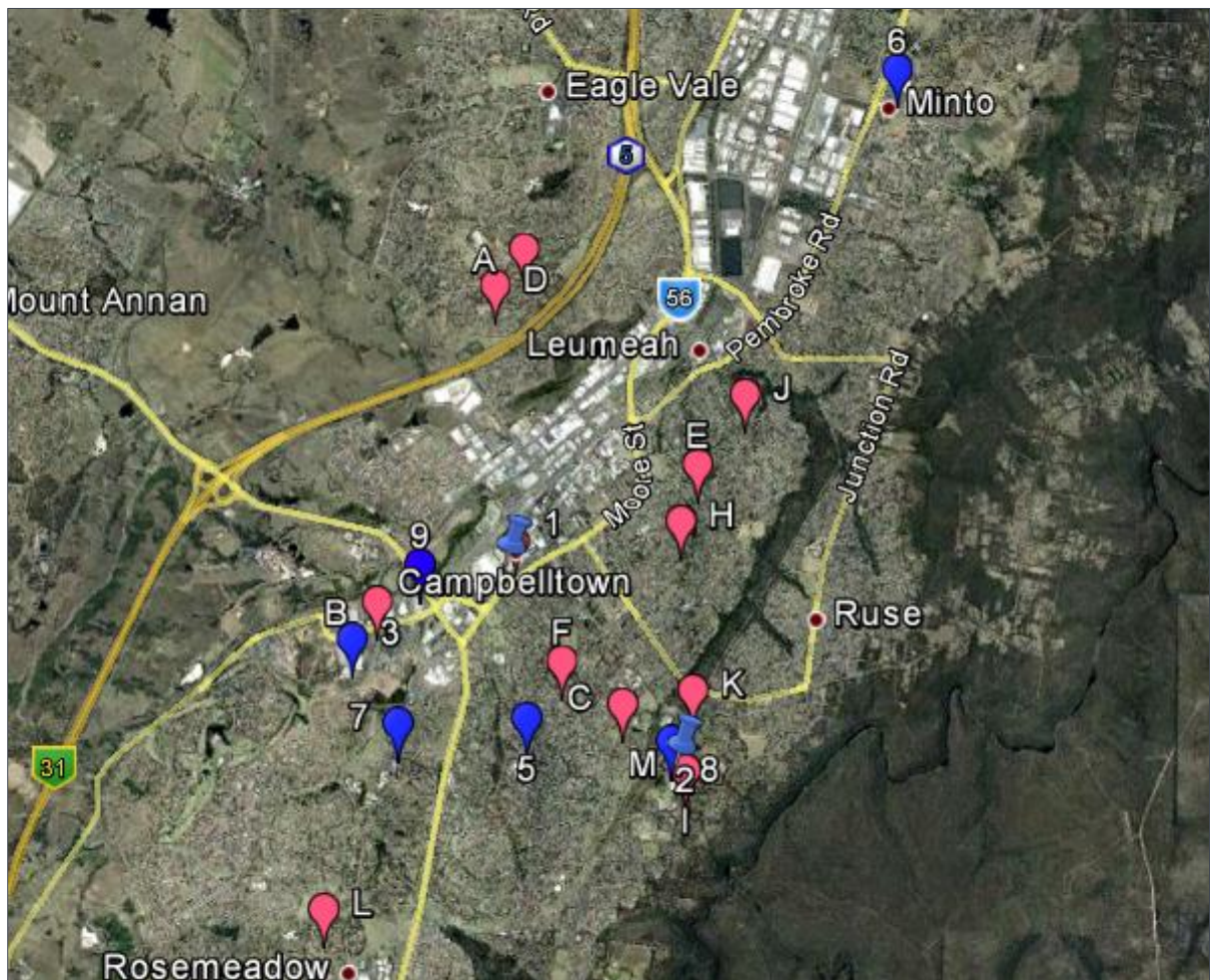



Figure 4.3.2: Airds Focus Group Suggested Stores in Relation to Residential Addresses (Google Earth 2012a)

Airds Focus Group Suggested Stores Legend		
1	Campbelltown Mall	 = Preferred store
2	IGA Airds	
3	Macarthur Square	
4	Warwick Farm Markets	
5	Foodworks Bradbury	
6	Minto Fruit Barn	
7	ALDI Ambervale	
8	Airds Community Central	
9	Country Fresh/ Market Fair	

The participant's justifications for the suggested stores to a 'new neighbour' are summarised within Table 4.3 attached at Appendix K. Responses were recorded for whether the store was accessible without a car, travel distance, any benefits of the store, and whether the store was used for 'main' or 'top-up' shopping.

Review of the responses from this exercise indicates that the respondents valued convenience most highly in their recommendation of fruit and vegetable stores.

The two preferred stores identified from this exercise are:

- **Main Shop: Campbelltown Mall**

This retail destination was favoured as it is accessible without a car, approximately a 5 minute journey, and by public transport services. The Mall was also favoured by the participants as a result of its convenience, indicated by comments including '...choice', '...its central and got everything: post office, bank...', and 'major supermarkets have the delivery service, other stores don't have the service'.

- **Top - up Shop: Airds IGA**

This retail destination was favoured as it is locally convenient, approximately taking 10 minutes walking time and 5 minutes by car. Despite the convenience of the Centre's location, the participant's indicated that there was a poor selection of fresh fruits and vegetables with comments including '...small supply', '...a bit expensive', '...when your desperate' and '...supplement if all else fails'.

Other focus group discussion questions are summarised under each question heading below.

Factors Stopping Purchases of Fresh Fruits and Vegetables

The majority of respondents identified 'quality' and 'price' as key factors that dissuade them from purchasing fresh fruits and vegetables. Further respondents identified the following:

- The difficulty of buying a small quantity of vegetables for a lone person household - 'I don't want it to go to waste';
- The compromised quality of fruits and vegetables grown in other countries;
- Fresh produce is too expensive, 'so people go and buy a burger with a tomato on it for \$6.00... it's cheaper to buy junk food these days' and 'frozen foods... the budget is depleted once it comes to groceries with two kids'; and
- Affordability of produce fluctuates considerably, such as high price of bananas after cyclone Yasi.

Council Healthy Food Programs

There were mixed responses from the participants about the availability of council programs. A couple of respondents were well informed about available healthy food programs, however the majority of the respondents were not aware that any existed, with one respondent stating that there were 'no council programs around here'. Programs that were identified by the respondents were not solely provided by Council, but recognised as being independently provided with a 'link' to Council. Table 4.3.1, attached at Appendix L, lists participant's

responses of programs. An internet search was used to identify the programs listed by the respondents.

As most of the respondents were not aware of available council healthy food programs, the follow-up question to this exercise, which asked how they were influenced by the programs, was irrelevant for a number of participants. For those who were aware of the programs, their comments identified a positive influence on their consumption of fresh fruits and vegetables, which included:

- 'I've used the co-op a few times...good value...but quality isn't too bad, quantity is excellent'.
- In response to Community Change Makers, 'I wouldn't be getting any of my veg intake it if wasn't for them'.
- 'The community has helped me... fruit and veg in our house was pumpkin and carrots. We just get things on special or frozen, that's all we can afford. It doesn't taste that good.'

Factors to Persuade the Purchase of Fresh Fruits and Vegetables

The final discussion question examined what would assist residents to purchase more fresh fruits and vegetables. The responses to this question were mixed and critical. Three key themes were evident from the comments made. These include:

- **Increased government intervention to keep prices affordable and fair**
 - 'You hear on the media that farmers only get a small price for their produce, but it costs a lot more in the shops. It's not fair we pay so much than what the farmer gets, the government should step in'.
- **More effective local government healthy food programs**
 - 'We have lots of local growers, why can't we have a farmers market? We have lots of barren parks for organics, and they are better for us to buy'.
 - 'Councils don't do their own thing, they use other programs'.
 - 'They (Council) had a women's thing advertised a few weeks ago, unorganised and ineffective, I shouldn't have gone'.
- **Better advertisement of available programs**
 - 'Council don't advertise to the local community, I wouldn't know about them, not much word about it'.
 - Flyers in the mail and under the door 'get thrown away with little notice, people don't read them'.
 - 'There are a few things mentioned on 91.3 radio, they do say what is coming up in the local area if you get it. There is a flyer in the Campbelltown near the advertiser building...mentioned in the paper'.
 - 'I didn't know that Campbelltown has a big website, you can find out everything on there you wouldn't know unless you have internet access. And people don't know how to look at the website, I only know because I was being trained how to use it'.

- Local advertisements on television might be more effective.

The responses made within the group discussion reveal an evident lack of knowledge of available programs that assist access to healthy food, provided by Campbelltown Council. The food availability audit in the next section audits the resident's preferred stores identified in this Chapter.

4.4 Fruit and Vegetable Availability Audit

Indicated in the results in Section 4.3, the two most popular stores for fresh fruits and vegetable shopping were Airds IGA for 'top-up' shopping, and Campbelltown Mall for 'main' shopping. These stores were audited to quantitatively capture the quality, price and variety of fresh fruits and vegetables available. The findings of this audit are described in this section.

Main Grocery Shopping - Campbelltown Mall



Figure 4.4: Campbelltown Mall (Google Maps 2010a)

Campbelltown Mall is an air-conditioned, enclosed complex located at 271 Queen Street within Campbelltown's Town Centre, further described within Table 4.4.

Table 4.4: Campbelltown Mall, adapted from PCA (PCA 2011/2012)

Component	Description
Classification	Regional Centre
Description	'A shopping centre that typically incorporates one full line department store, a full line discount department store, one or more supermarkets and approximately 100 specialty shops' (PCA 2011/2012, p iv)
Transport	Bus: alight at the Hurley Street bus stop. Train: in walking distance to Campbelltown station Bike: bike racks located at all mall entrances Parking spaces: 613
Major Tenants (food only)	Woolworths, Coles, Franklins,
Speciality Stores	106

<i>Fresh Fruits and Vegetables Stores</i>	Filled with Fruits and Deli, VNH Supermarket,
<i>Other Food Stores</i>	Al's Shakes & Ice creams, Bakers Delight, Bon Appetit, Café Poco, Deluxe Kebab, Donut King, Dr Candy, Farm Fresh Meats, Joes Meat market, KFC, Sushi hub, Wendy's Gloria Jeans Coffees, Da Vinci Pizza and Pasta, Dahlia's Café and Pizzeria, Campbelltown Fish Market, Healthy temptations, Boost Juice

The fresh fruit and vegetable stores audited in Campbelltown Mall include Woolworths, Coles, Franklins, VN Supermarket and Filled with Fruit and Deli. The results from the audit are summarised in Tables 4.4.1- 4.4.3 attached at Appendix M. Main findings from these tables are provided at the end of this section.

Top-up Grocery Shopping - Airds Shopping Centre



Figure 4.4.1: Airds Shopping Centre (Google Maps 2010b)

Airds Shopping Centre is an open mall located on Riverside Drive, Airds. The Centre was developed by the NSW Department of Housing in 1979 and offers a small number of services and a minimal number of food stores. Airds Shopping Centre is further detailed within Table 4.4.4.

Table 4.4.4: Airds Shopping Centre adapted from PCA (PCA2011/2012)

Component	Description
Classification	Local Shopping Centre
Description	'A local shopping centre comprising a supermarket and approximately 35 specialty shops' (PCA 2011/2012, p iv)
Transport	Bus: Route 884 provided by Busways along Riverside Drive and connects to Campbelltown Town Centre (Busways 2012) Bike: bike path along Riverside Drive Parking spaces: 200
Major Tenants (food only)	IGA
Speciality Stores	16
<i>Fresh Fruits and Vegetables Stores</i>	N/A
<i>Other Food Stores</i>	Bakery, Butcher, Chinese Take Away, General Store, Pizza Shop

The only store that provides fresh fruit and vegetable retailing in Airds Shopping Centre is the IGA supermarket. The results from the audit are summarised in Tables 4.4.5- 4.4.7 attached at Appendix M.

Audit Results

The key findings from the audit of the 'main' and 'top-up' stores are described below.

- Coles and Woolworths had similar prices, and stocked a similar range of produce. There was mostly one variety of each produce item. An exception to this was for popularly purchased items such as apples and lettuce. Organic varieties of produce were also available, however these were more expensive. The majority of the produce was of a moderate to high quality, with limited signs of mould, dirt or bruising. There was no reduction table however there were a number of specials for the supermarkets' branded produce.
- Franklins and IGA supermarkets had similarly low prices, and stocked a similar range of produce. There was a limited variety of produce, and there was evidence of poor quality produce with dirt and bruising evident on a number of items. Quality was particularly poor for items upon the reduction table, which were very inexpensively priced.
- Filled with Fruit and Deli is a specialised store that stocked a large variety of produce, with high to moderate quality. The variety of goods sold at the store included a number of cultural foods, and less common varieties of fruits and vegetables. The prices were most expensive at this store.
- VNH supermarket sold Asian grocery items, with subsidiary fresh produce retail. The fresh produce included a limited number of Asian vegetables and fruits, which appeared to be grown by a small scale farm. The produce was mostly of a poor quality, with evidence of wilting and bruising, however all produce was inexpensively priced.

These findings highlight that the price, range and quality between the stores varied considerably. The most inexpensive produce was often of a poor quality and a common variety. Less common varieties of produce were more expensive, and were limited in availability. The number of green retailer stores within Campbelltown Mall supports the residents' choice of this centre as their preferred 'main' shopping destination. Further, the limited variety and poor quality of produce within the 'top-up' IGA store reaffirms residents' reservations to use this store despite its convenience. Therefore the results demonstrate that the retail food landscape in Campbelltown is varied. Fruit and vegetables can be purchased at a low price at a number of the retailers audited, however variety and quality produce are less expensive.

Conclusion

This Chapter detailed the results of the primary research for the Campbelltown LGA case study. The results for the Fairfield LGA case study are provided in Chapter 5, following a similar framework to this Chapter.



Chapter 5.0

Fairfield

Case Study LGA

Introduction

To identify opportunities and challenges for residents to access affordable healthy foods, this Chapter examines Fairfield Local Government Area (LGA) as a case study.

Fairfield LGA was selected for in-depth study as it exhibits a high level of socio-economic disadvantage, with a recorded 876.1 SEIFA score from the 2006 ABS census data. This score is below the national average of 1005.2 (ABS 2006b). Further, Fairfield LGA has a publicised healthy communities program, determined from the internet survey of available council food policies and programs.

This Chapter provides a demographic profile for Fairfield, the results of the Carramar focus group, and the fruit and vegetable availability audit.

5.1 Fairfield LGA

Fairfield LGA (Figure 5.1) is the largest and most populated LGA within Sydney's West Central Sub-Region (DOP 2005b). Fairfield also has some of the subregion's most affordable housing stock, a benefit for young and lower income families, with the median house price well below the Sydney average. Public transport improvements are proposed to support an increase in residential density along the Liverpool to Parramatta corridor (DOP 2005b). Urban renewal and densification planned for Fairfield provides a valuable opportunity to assess the existing food landscape, and how to improve access to healthy food.



Figure 5.1: Fairfield LGA and Carramar locality adapted from Google Maps and DOP 2005 (Author 2012)

Socio-Demographic Trends

This section explores major socio-demographic trends for Fairfield LGA, sourced from the ABS census data 2011.

Fairfield LGA has a young population with the median age of residents at 36 years and children aged 0-4 making up 20.4% of residents. Of the families in Fairfield, 52.0% were couple families with children, 23.3% were couple families without children and 22.6% were one parent families. The incidence of one parent families was 6.3% higher than the NSW average. Fairfield residents are mostly of South Asian descent, with the ancestries including Vietnamese 14.6% and Chinese 11.7%.

The proportion of Fairfield residents owning their home outright (32.5%), paying a mortgage to own their own home (32.3%), and renting are quite similar (30.8%). The 2006 ABS census data records that 25.5% of rentals are from a State or Territory Housing Authority and 50.5% are from real estate agents (ABS 2006b)

A considerable number of households in Fairfield earn less than \$600.00 a week, which is 4.0% higher than the NSW average. In addition to this, the weekly median income for households is \$412.00 less than the NSW average, highlighting the prevalence of low income households in the LGA.

5.2 Available Food Policies and Programs in Fairfield LGA

Internet Survey

Fairfield was identified by my internet survey as having a 'comprehensive' availability of council food policies and programs. This means that thorough investigation of population health trends were shown in the policies and programs, and the objectives/ endorsement/ facilitation of policies and programs for was evident. The policies and programs identified within Fairfield LGA are summarised within the internet survey template, attached at Appendix A.

The survey of the Fairfield City Council website outlines that there are three sets of programs available to assist population nutrition. The first responds to a community-based study by the South West Area Health Service. In this study 23.3% of people in the suburb Villawood were identified as being food insecure, which rose to 53% for single parent households. To assist food security in Villawood, the following programs were initiated:

- A community Café 2163 provides free weekly meals;
- Villawood Food Action Group fundraises and plans food security projects in Villawood; and
- A Community kitchen to encourage young parents to become more involved with preparing healthy food for local school canteens.

The second is 'Healthy Minds, Healthy Bodies', a joint initiative of Fairfield Council and the Sydney West Area Health Service. This program provides monthly articles to promote fitness and health, however are not regularly updated as the last post was dated for the previous year.

The third is the 'Healthy Fairfield' program. This program is part of a Healthy Communities Initiative and is funded by the Commonwealth Department of Health and Ageing. Its aim is to 'help reduce the prevalence of overweight and obesity... by maximising the number of residents engaged in physical activity and healthy eating programs'. Events provided by the Program include subsidised fitness groups as well as healthy eating information forums. The fitness events are clearly publicised, however there is limited information on the healthy eating programs and events (Fairfield City Council 2012).

This survey highlights that there is little evidence for the implementation of healthy eating programs in Fairfield LGA. The exception to this are the programs implemented in Villawood, however these initiatives are located in that suburb only.

5.3 Carramar Focus Group

Locality and Participants

The focus group component of this research was undertaken within the Fairfield suburb Carramar (Figure 5.3). The selection of this study is detailed in Chapter 3 Research Methodology.

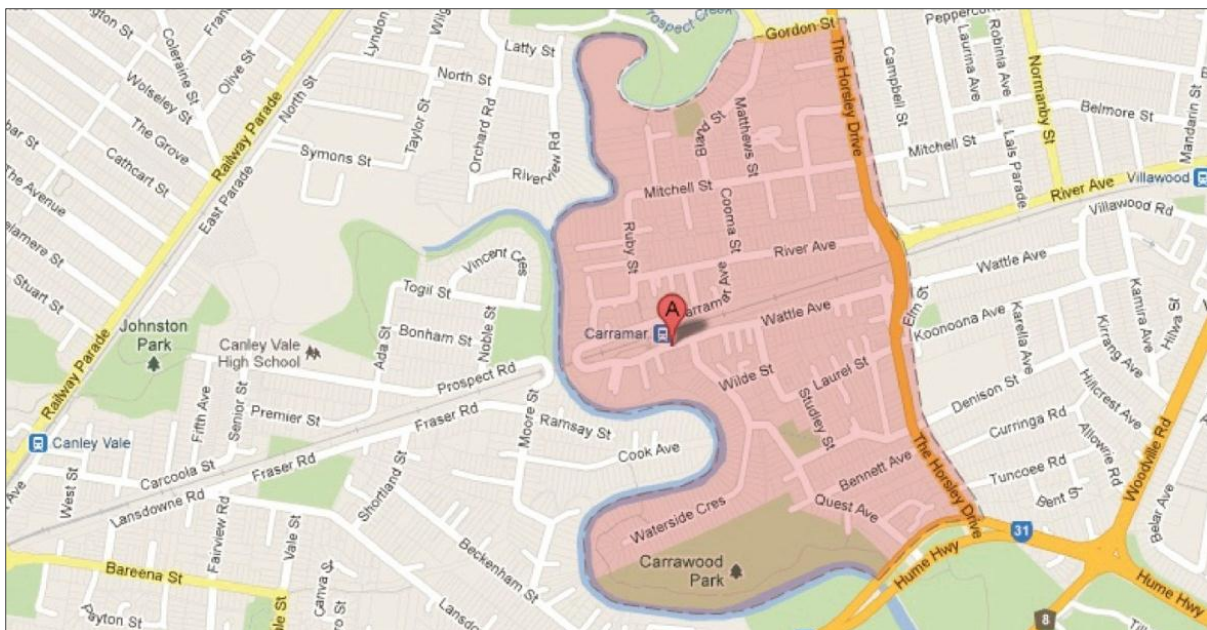


Figure 5.3: Carramar Suburb locality (Google Maps 2010b)

The focus group involved 11 participants who were from various ethnic backgrounds, approximately aged between 25-35 years. The participants were parents of students who attend Carramar Public School, and identified as residing in areas close to Carramar. An exception was for two participants who reside in Guildford and Canley Vale. The spatial spread of participant's residential addresses is illustrated in Figure 5.3.1 (overleaf).

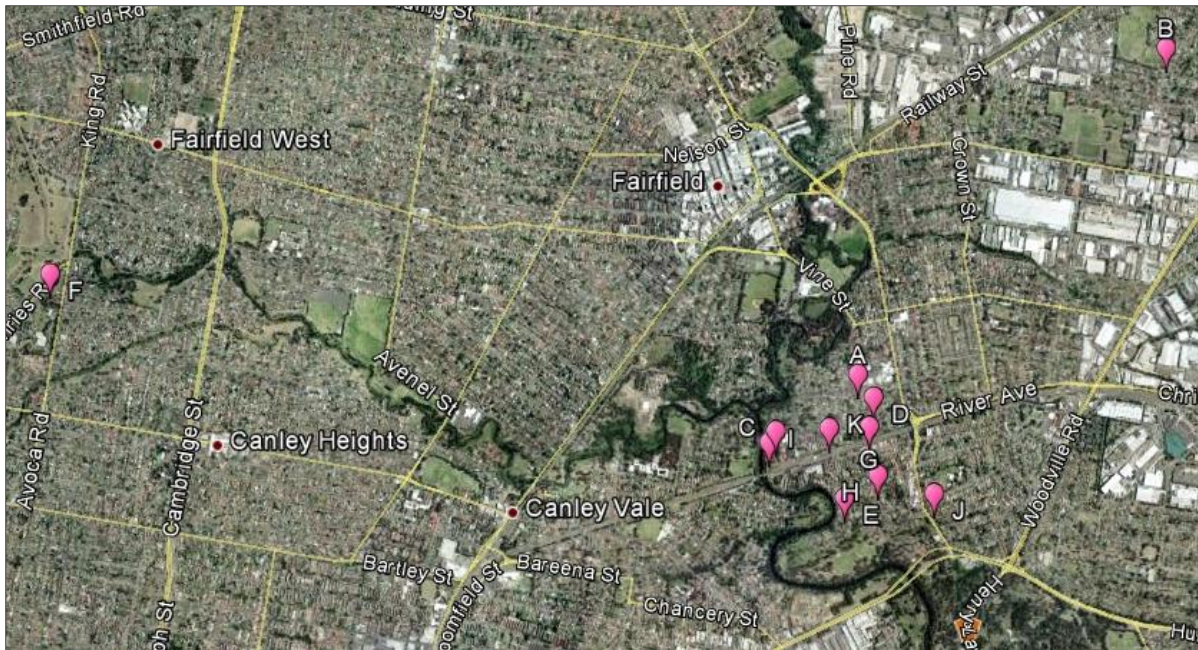


Figure 5.3.1: Carramar focus group respondents' residential addresses (Google Earth 2012)

Carramar Focus Group Respondent's Residential Addresses Legend			
A	Carramar	H	Carramar
B	Guildford	I	Carramar
D	Fairfield East	J	Fairfield
E	Carramar	K	Carramar
F	Canley Vale		
G	Carramar		

Participant Responses

Participant responses are detailed in two parts, the first involving the participant questionnaire responses, and the second part involving the group discussion responses. The questionnaire was completed by participants before the group discussion.

Part 1 – Participant Questionnaire

Responses to the questionnaire identified that the majority of participants met the criteria for my study. That is, participants mostly identified as being responsible for grocery shopping in their household, and most often shopped for fresh fruits and vegetables at stores within Fairfield LGA. Key themes from the questionnaire responses are summarised below.

Importance of the Purchase

- Buying fresh fruits and vegetables on a weekly basis was considered 'important' for one respondent and 'very important' for ten respondents. The respondents identified that nutrition for their children was a key component to the importance of these purchases, listing reasons including 'vitamins', 'it contains much energy', 'for our health' and 'I think it's important to include fruit and veg as a healthy option for my children'.

- Two respondents identified that they spend less than 25% of their weekly food bill on fresh fruits and vegetables, two respondents spent between 25%-50%, and four respondents spent more than 50%.

Choice of Stores

- Respondents identified that their choice of stores to buy fresh fruits and vegetables was attributed to (in order of importance):
 - Ease of travel to the store
 - Affordability, quality of product and variety of product
 - Selection of other foods

Transport to Stores

- In a typical week, eight respondents shopped for fruit and vegetables twice, two respondents shopped three times, and one respondent shopped more than three times.
- In a typical week seven (the majority) respondents travel by car to purchase fresh fruits and vegetables. Two respondents walked, and three respondents caught the train.
- Nine respondents identified that in a typical week, travelling to their regular fruit and vegetable stores usually takes them 5-15 minutes, and less than 30 minutes for two respondents.
- Alternative modes of travel to fresh fruit and vegetable stores included walking for six respondents, catching the bus for two respondents, and catching the train for one respondent.
- For alternative modes of travel, seven respondents identified that the journey usually takes them between 5-15 minutes, between 30-40 minutes for two respondents, and less than 30 minutes for one respondent.

In summary, the majority of respondents identified that their purchases of fresh fruits and vegetables is important for nutrition, with purchases mostly comprising 25-50% of their weekly food bill. Not all participants shopped within Fairfield LGA, and two participants experienced a much longer journey time than others. Ease of travel was the most important consideration of store choice, and travel by car was the most favoured transport mode. Alternative modes of travel to a 'usual week' were identified as having longer journey times for a few participants, however not requiring more than 5-15 minutes travel time.

Part 2 - Group Discussion Findings and Observations

The group discussion identified seven fresh fruit and vegetable stores that the participants would recommend to a new neighbour. The spatial spread of these stores indicated in blue, highlights a cluster of stores in close proximity to Villawood (Figure 5.3.2). The pink icons in this figure represent the respondent's residential addresses.

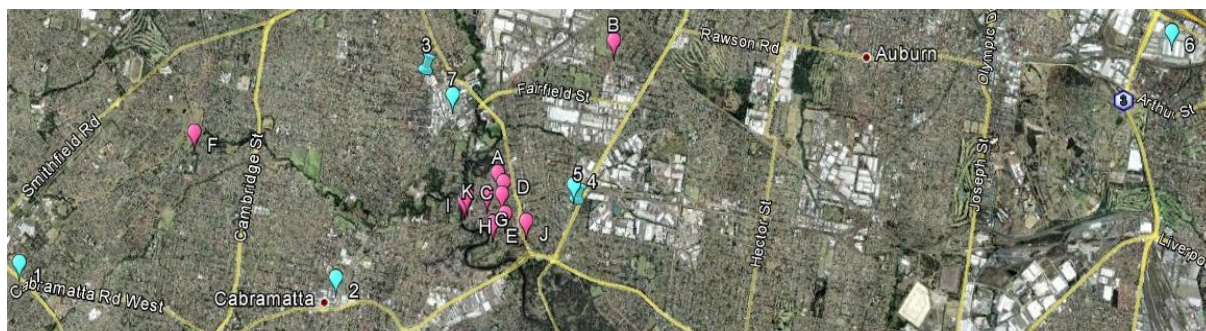


Figure 5.3.2: Carramar focus group suggested stores in relation to residential addresses (Google Earth 2012)

Carramar Focus Group Suggested Stores

Legend

- | | | | |
|---|---------------------------------|---|-----------------------------|
| 1 | Fred's Fruit Market | 5 | Villawood Fruit Market |
| 2 | Woolworths Cabramatta | 6 | Flemington Markets |
| 3 | Fairfield Forum Shopping Centre | 7 | Neeta City Shopping Village |
| 4 | ALDI Villawood | | |



= Preferred store

The participant's justifications for the suggested stores to a 'new neighbour' are summarised within Table 5.3 attached at Appendix K. Responses were recorded for whether the store was accessible without a car, travel distance, any benefits of the store, and whether the store was for main or top-up shopping.

Review of the responses from this exercise indicates that the respondents valued affordability and convenience most highly in their recommendation of fruit and vegetable stores.

The two preferred stores identified from this exercise are:

- **Main Shop: Fairfield Forum Shopping Centre**

This retail destination was favoured as it is accessible without a car, and provides a range of other food stores and services in the same vicinity.

- **Top - up Shop: Villawood Fruit Market**

This retail destination was favoured as it is locally convenient, '5 minutes from the school' and the produce is 'affordable' and there is a great 'variety'.

Other focus group discussion questions are summarised under each question heading below.

Factors Stopping Purchases of Fresh Fruits and Vegetables

The majority of respondents identified 'quality' and 'price' and 'convenience' of the store as key factors that dissuade them from purchasing fresh fruits and vegetables. Further concerns when purchasing fresh fruits and vegetables include personal preference for certain produce types, but when the produce is out of season it is too expensive, and the convenience of the store, and whether 'you can only get there by car'.

Council Healthy Food Programs

The majority of respondents were not aware of council healthy eating programs. The respondents only identified the role of independent retailers that encourage healthy eating, such as specials on healthy food on the internet and local papers, although 'you have to look for it'. One respondent collects healthy lifestyle flyers provided by the pharmacy store at Fairfield Forum, commenting that the flyers are 'really interesting', describing which food and vitamins you should eat.

The only Council program identified by the respondents is a free bus service. This service entitled 'City Connect Council Bus Service', aims to meet Fairfield's need for public transport, and has two services. The first, the Park and Ride Commuter Express services Fairfield and Cabramatta railway stations. The second, the Hail and Ride Community Bus service, operates with the suburbs of Fairfield, Carramar, Villawood, Fairfield Heights and Fairfield Town Centre (Fairfield City Council 2012).

The bus is advertised on street signs, with one respondent describing the service as being 'frequent' with services operating 'in the morning and afternoon three times a week'. However none of the respondents have used the service. Further, as the respondents were not aware and did not use available council programs to access healthy food, the follow-up question to this exercise, which asked how they were influenced by the programs, was irrelevant.

Factors to Persuade the Purchase of Fresh Fruits and Vegetables

The final focus group question examined what would assist residents to purchase more fresh fruits and vegetables. The responses to this question were mixed and critical. Two key themes were evident from the comments made. These include:

- **Increased availability of local fruit and vegetable retailers**
 - 'If there was a fruit shop in Carramar'.
 - 'Something provided closer to where we are'.
 - Support for smaller fruit and vegetable retailers, 'Coles and Woolworths set the price, and take out all the little ones'.
 - A local approach, 'buy bulk through a community group' for a cheaper price.
- **Better advertisement of available programs**
 - 'A community garden in the local area... I just don't know where they are'.
 - 'I didn't realise community gardens are an open thing'.

The responses made within the group discussion reveal an evident lack of knowledge of available programs for access to healthy food, provided by Fairfield Council. Further, the discussion highlighted that access to healthy food was not a concern for them. The food availability audit in the next section audits the resident's preferred stores to access their fresh fruits and vegetables. This audit is to determine whether their access to healthy food is sufficiently provided by their neighbourhood retail food landscape.

5.4 Fruit and Vegetable Availability Audit

As indicated by the results in Section 5.3, the two most popular stores for fresh fruits and vegetable shopping are Villawood Fruit Market within Woodville Shopping Village for ‘top-up’ shopping, and Fairfield Forum for ‘main’ shopping. These stores were audited to quantitatively capture the quality, price and variety of fresh fruits and vegetables available. The findings of this audit are described in this section.

Main Grocery Shopping – Fairfield Forum



Figure 5.4: Fairfield Forum (Google Maps 2010c)

Fairfield Forum shopping complex is an air-conditioned, enclosed mall located at 8-36 Station Street, Fairfield, further described within Table 5.4.

Table 5.4: Fairfield Forum, adapted from PCA (PCA 2011/2012)

Component	Description
Classification	Sub Regional Centre
Description	‘A medium sized shopping centre typically incorporating at least one full line discount department store, a major supermarket and approximately 40 specialty shops’ (PCA 2011/2012, p iii)
Transport	Bus: alight at the Station Street bus stop. Parking spaces: 765
Major Tenants (food only)	Coles
Speciality Stores	39
<i>Fresh Fruits and Vegetables Stores</i>	Fruit Mania
<i>Other Food Stores</i>	Go Vita, Donut King, Euro Deli, Fairfield Meat Markets, Michel’s Patisserie, Mini Hong Kong, Nando’s, Raffael’s Bakery, Red Lea Chickens, Subway, Trung Seafood, Green Valley Spices

The fresh fruit and vegetable stores audited in Fairfield Forum include Coles and Fruit Mania. The results from the audit are summarised in Tables 5.4.1- 5.4.3 attached at Appendix M. Main findings from these tables are provided at the end of this section.

Top-up Grocery Shopping - Airids Shopping Centre



Figure 5.4.1: Woodville Shopping Village (Google Maps 2010d)

Woodville Shopping Village provides neighbourhood retailing, located on Villawood Road, Villawood. The Village is not included within the PCA Shopping Centre Directory, and so descriptions of the vicinity are based on my audit observations.

The Village comprises an outdoor retail area with local strip shops and a stand-alone ALDI supermarket. Strip shops include a variety of small food outlets, discount variety stores and services. The anchor tenants for the Village include the ALDI supermarket and GOLO store. Woodville Shopping Village is further detailed within Table 5.4.4.

Table 5.4.4: Woodville Shopping Village (Author 2012)

Component	Description
Classification	Local Shopping Centre
Transport	Train: alight at Villawood Railway Station Parking spaces: more than 100
Major Tenants (food only)	ALDI
Speciality Stores	More than 20
<i>Fresh Fruits and Vegetables Stores</i>	Villawood Fruit Market
<i>Other Food Stores</i>	Bakery, Halal Butcher, Café, Chinese Take Away, KFC

The fresh fruit and vegetable stores audited in Woodville Shopping Village include ALDI and Villawood Fruit Market. Although ALDI was not identified as a preferred ‘top-up’ shopping store by the Carramar Focus Group, it was included in this audit for the purpose of comparison. The results from the audit are summarised in Tables 5.4.5 - 5.4.7 attached at Appendix M.

Audit Results

The key findings from the audit of the 'main' and 'top-up' stores are described below.

- Coles mostly had one variety of each produce item. An exception to this was for popularly purchased items such as lettuce, carrots, oranges, and herbs. Organic varieties of produce were also available, however these were more expensive. The majority of the produce was of a moderate to high quality, with some signs of wilting and bruising. There was no reduction table however there were a number of specials for the supermarkets' branded produce. There were very few customers within the fresh produce section of the store.
- ALDI had a very limited variety of produce, and a number of the shelves were empty. The produce available mostly included packaged vegetables, and there was evidence of wilting and bruising on a number of the produce items. The price of the fruits and vegetables was moderate, but considering the quality, the produce was not value for money.
- Fruit Mania and Villawood Fruit Barn were similar in price and in the variety of produce they offered. The stores specialised in the retail of fresh fruits and vegetables, as well as selling a number of imported dry goods. The produce ranged from high to low quality. The lowest quality items were on the reduction tables and were very inexpensive. The high quality items were moderately priced. Fruit Mania had the largest range of fresh produce, drawing considerable volumes of customers, which explains the absence of customers in Coles.

These findings highlight similarly for Campbelltown LGA, that the price, range and quality between stores varies considerably. The most inexpensive produce was available at the independent fruit and vegetable retailers which also provided higher quality produce. The popularity of the Fruit Mania store supports the residents' choice of Fairfield Forum as their preferred 'main' shopping destination. Further, the availability of good value and range of fresh produce at Villawood Fruit Barn, identified as a 'top-up' store, explains why the residents felt that they were not underserved by affordable green retailers. My audit of ALDI further confirmed the residents' comments that they preferred not to shop there for fresh fruits and vegetables (Table 5.3, Appendix K).

Conclusion

This Chapter detailed the results of the primary research for the Fairfield LGA case study. Chapter 6, following this Chapter, synthesises the case study results by drawing on emerging themes. This synthesis informs my recommendations on how urban planning can assist access to healthy foods.



Chapter 6.0

Review of Case Study

Findings

Introduction

This Chapter discusses the major research findings of the two case studies, Campbelltown and Fairfield LGAs. The discussion explores two key themes evident in my research findings from the internet survey of council food policies and programs, the online council questionnaire, the focus groups, and the fruit and vegetable availability audit. The first theme explored is the key determinants of purchasing fresh fruits and vegetables. The second theme is residents' perception of local government food programs, and the responsiveness of local governments providing food policies and programs.

A number of differences between the two case studies are also highlighted in the Chapter. These differences have been addressed principally in this Chapter, as the differences suggest residents' food preferences which influence food landscapes.

6.1 Case Study Comparison

The case study sites are similar in location within the GWS region, with young populations and high levels of socio-economic disadvantage. Apart from these similarities, there are notable differences. These are described below.

- **Ethnic composition**

Cultural factors are major influences on food and eating behaviours, as shared beliefs shape perceptions of food, health and illness. In addition, culture is a significant factor in dictating what foods are eaten and how they are prepared (Larsen & Story 2009, p65).

The community profiles of Fairfield and Campbelltown demonstrate dissimilar ethnic compositions. Fairfield residents are mostly of a South Asian descent, with ethnicities other than Australian identified as Vietnamese and Chinese. Conversely, Campbelltown residents are mostly of a western European descent, with ethnicities other than Australian identified as English, Irish and Scottish (ABS 2011).

The ethnic compositions of the LGAs are attributed to early settlement patterns, which were markedly different. Fairfield LGA experienced significant population growth as a result of refugee settlement programs, following the Vietnam War in the late 1970s (Lewins 1985). In subsequent years this Asian community has flourished, changing Fairfield to accommodate Asian cultural goods and services. A large part of the transformation has been the retail environment. This has included growth of a number of independent grocery stores providing culturally appropriate foods (Hage 1997). Fresh fruits and vegetables form a large part of an Asian diet (Liem 1994), which supports the presence of these retailers within the LGA.

Campbelltown experienced significant growth as a result of the Macarthur Growth Centre, and the development of public housing estates (DOP 2005a). The western European ancestry within Campbelltown LGA has similarly influenced the provision of food within this food landscape. British cuisine is unlike Asian cuisine however, as preparation and cooking techniques of vegetables do not require large volumes of fresh produce (Mason 2003).

- **Household composition**

The Carramar focus group within Fairfield mostly comprised parents with young children. These parents meet monthly during work hours, to participate in school events and to provide their opinions on school matters. Attendance to these monthly meetings, and their involvement in the school community could suggest that the parents in this focus group, are financially able to be absent from work during this time. However, my research did not enquire about financial circumstances, and so there is not enough evidence to support this assumption.

Nevertheless, the respondents in this group did provide verbal evidence to suggest that food security was not a concern for them. This lack of concern was evident in their preliminary questions about my study, before the participants filled out questionnaires. Preliminary questions reflected their uncertainty as to why my topic is of relevance to the circumstances of their group. This observation alludes to the unlikelihood that these participants experience food insecurity. However, further information is required to confirm this assumption.

The Airs focus group within Campbelltown comprised participants of varied ages and circumstance. This included lone households, adults with no children, and young families. This session was moderated during work hours similar to the Carramar focus group. The financial circumstances of the respondents are not known. Although a number of the participants implied within the group discussion, that they experience financial hardship. This may implicate to experiences of food insecurity for individuals within this focus group.

- **Council food related policies and programs**

As demonstrated by my online survey of council food policies and programs, Fairfield LGA is far more responsive in addressing access to healthy food than Campbelltown. Residents' perceptions of such policies and programs as opposed to their actual availability, is discussed later in this Chapter.

These differences importantly shape food preferences and the retail environment. In reference to these differences, key themes within my research findings are detailed below.

6.2 Determinants of Purchasing Fresh Fruits and Vegetables (Theme 1)

This first theme relates to the experiences and perceptions of the focus group participants towards purchasing fresh fruits and vegetables. Specifically, this relates to the perceived value of healthy food, convenient access to a store, and the quality and variety of produce available. These are described below.

▪ Perceived value of healthy food

Focus group respondents had common ideas about the importance of healthy food. The majority identified that purchases of fruit and vegetables are 'very important'. Reasons for this importance related to the maintenance of good health and the nutritional quality of these foods benefiting their families. The proportion of their weekly grocery bill spent on fresh fruits and vegetables varied between the groups. Carramar respondents identified spending more than 50% of their weekly grocery bill on fruits and vegetables, and the majority of Airds respondents identified spending between 25 to 50% of their weekly bill.

This finding is much higher than the AIHW estimate of low income household expenditure on weekly fruit and vegetable food items. The AIHW estimates that from 2009-10 the lowest income households spent around 15% on fruits and vegetables (Figure 6.2). It should be noted that the sample size was much larger in the AIHW study than the current study, and therefore should be considered more accurate. However, this does not detract from the finding that the focus group respondents spend a significantly higher amount on fresh fruits and vegetables.

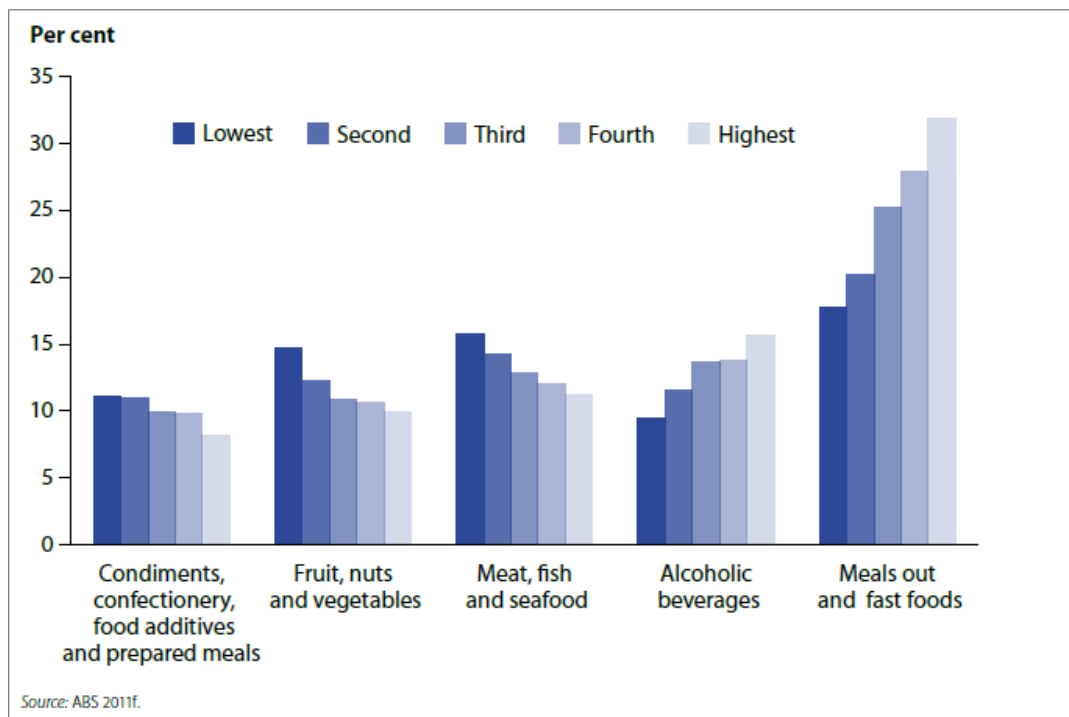


Figure 6.2: Proportion of weekly food expenditure spent on the top five food categories, gross household income quintile, 2009-10 (AIHW 2012, p96)

- **Convenient access to a store**

Focus group respondents identified that the most significant consideration for their choice of fruit and vegetable retailers is the ease of travel.

There were differences in relation to the number of times focus group respondents shop for fruits and vegetables. The Airds respondents were most likely to shop once, with those from Carramar more likely to shop more than once. For one respondent, this was up to three times a week. Transport modes most often used for 'main' shopping were private vehicles, and alternative modes included walking, bus and car sharing. Train travel was not considered a viable option, as for both focus groups the local bus service provides a frequent and direct route to shops. Car was the preferred mode of travel as it reduced travel time, whereas train travel and walking doubled travel time. Car travel was also preferred, as it enabled bulk buying of store specials, and ease of transporting these goods to the respondents' homes.

Convenience as a main consideration in store choice resonated across the focus groups, in the following ways:

- The majority of respondents shopped at stores in close proximity to their homes, as illustrated in Figures 4.3.2 and 5.3.2 in Chapters 4 and 5.
- Choice of 'top-up' shopping stores for fresh fruits and vegetables was justified by the store's proximity and convenience, with little weight given to the quality of produce.
- Choice of 'main' shopping stores for fresh fruits and vegetables was justified by the attraction of an assortment of services and retailing within one location. This convenience reduces the number of trips required to different stores. In addition, public transport serviced these preferred stores well.

- **Quality and variety of produce**

Across the focus groups, quality of produce was rated as the second most important consideration of store choice, followed by variety of produce.

The quality of produce for the respondents referred to value for money. Respondents felt that fruit and vegetable prices were often too expensive. Nevertheless, quality was considered more important than affordability. This was particularly evident in respondents' disapproval of the quality of ALDI supermarket fruits and vegetables. For this reason, ALDI was not selected as a 'main' or 'top-up' store.

This finding is dissimilar to the results of the study by Kirkup et al. (2004). This study demonstrated that perceptions of stores influence the number of stores perceived to be available. Particular stores were rejected by residents if they felt that a store did not cater for their situation or circumstance. This lent to a sense of social exclusion or alienation for the residents. Although in my study, the majority of focus group respondents rejected stores due to preference for quality, rather than affordability. Further, respondents did not indicate a sense of social exclusion when rejecting stores as preferences.

The fruit and vegetable availability audit I conducted of the ten retailers in the case study LGAs, identified similarities in the sale of fresh fruits and vegetables items between stores. These similarities are grouped into three categories according to cost, availability and quality of fruits and vegetables. The categories are described in Table 6.2.

Table 6.2 Similarities in the stores audited (Author 2012)

	Store Category		
	Reduced	Moderate	Niche
Price	Low	Moderate to high	Low to high
Range	Limited variety	Moderate	Extensive
Quality	Poor to moderate, with a reduction table of poor quality goods	Moderate to high quality, and did not have a reduction table of poor quality goods	Moderate to high quality with specialised and imported goods that are culturally appropriate
Stores	Franklins, IGA supermarket, VN Supermarket, ALDI	Woolworths, Coles	Filled with Fruit and Deli, Villawood Fruit, Fruit Mania

The focus group questionnaire revealed that the most frequented stores were the larger supermarket chains in the 'moderate' category. However, as identified by the focus group discussions, respondents preferred 'niche' stores. For example, Carramar respondents identified that local fruit and vegetable retailing in closer proximity to their residential neighbourhood would be greatly beneficial, particularly the availability of smaller scale, independent retailers and community co-operatives.

6.3 Perception and Availability (Theme 2)

This second theme explores the differences between the community's perception and the actual availability of council food policies and programs. This theme is examined in two parts. First, the perception of available food programs and policies, determined from my internet survey and the focus group's responses. Second, the responsiveness of the case study local councils in providing food policies and programs, determined by my online council questionnaire.

▪ Perception

Resident awareness of council food policies and programs was generally poor. Further, across the focus groups, the majority of respondents perceived that council played a limited role in assisting access to healthy food. Many respondents were not aware of council food programs available to them. For example, one respondent expressed surprise at my comment that community gardens are in most cases a public facility.

The majority of food programs identified by respondents were provided by independent organisations. Respondents identified that alternative forms of advertisement should be used to make council programs known. One suggestion for promotion of council food programs was local radio and television advertisements.

My survey of Campbelltown City and Fairfield City council websites identified a limited number of search results relating to food. This finding may contribute to why there is a limited perception of food policies and programs amongst the residents. However, perception on the limited availability of programs may also be a result of other factors, such as an individual's need for food assistance.

- **Councils' provision of food policy and programs**

The online council questionnaires were completed by strategic planning staff at Campbelltown and Fairfield Councils. Their responses provided a very different perspective on the availability of food policies and programs for both LGAs. Findings from the questionnaire are briefly outlined in Table 6.3. Councils have not been identified to respect anonymity requests and therefore have been coded Council A and Council B. Information in this table does not allude to the Council represented. This Table is provided overleaf.

The findings from the questionnaire demonstrate that the councils are progressively providing food policies and programs, recognising the importance of retaining fringe agricultural land for food production, and through the provision of frameworks to support population nutrition. These frameworks include nutritional policies for children and urban renewal to assist walkability to healthy food stores. This progression reveals that the local councils are responding to food security concerns, with a food security study currently being undertaken in Council A, and plans to undertake a study in Council B.

Nonetheless, planning staff acknowledge that healthy food programs are best provided by independent organisations and community groups. The privatisation of these programs is supported by the councils, due to limited local government funding and staff resources. The councils identified that further opportunities are provided in strengthening partnerships with independent providers of healthy food programs. Provision of healthy food and population health is an area of public welfare, and it is interesting that local governments have transferred this area to independent providers.

Opportunities identified to assist access to healthy food, in addition to strengthening partnerships with community organisations, included strengthening partnerships with other government agencies, as well as reviewing agricultural land in LEPs and Development Controls Plans. Similarly for both councils, limitations for the facilitation of assistance to healthy food, was due to a lack of support from the community and a lack of institutional funding for healthy eating infrastructure. Other infrastructure projects were considered to be a higher priority.

Table 6.3 Council online questionnaire findings (Author 2012)

Survey Question/ Issue	Council A	Council B
Has a food security study been undertaken?	Yes- a study is currently being undertaken	Yes – it has informed the LEP to protect agricultural land
Food strategies and policies available	Agricultural land protection policy/ zoning; child services nutrition plan/ policy (most programs are provided by community organisations)	Agricultural land protection policy/ zoning; child services nutrition plan/ policy; community gardens; community kitchen; healthy food fairs/ festivals, healthy food advertising
Do food strategies and policies involve urban planning mechanisms?	Yes- retaining agricultural zones surrounding fringe residential areas; precinct plans for urban renewal to assist walkability; provision of public transport to assist travel to healthy food stores;	Yes- precinct plans for urban renewal to assist walkability to healthy food stores; development approval for use of schools or other sites for farmers' markets
Is there an agenda to review current food policies or programs?	Yes- no formal policy available, however draft recommendations are being devised	No- there is need for greater staffing and financial resourcing
Are there plans for support access to healthy food through urban planning mechanisms?	Yes- through council community initiatives to assist health and well being	Yes- through the Local Environmental Plan (LEP) to retain local food production to support fruit and vegetable agriculture
Opportunities for the LGA to assist access to healthy food	Non-government organisations and community group partnerships; LEP review and Development Control Plans; partnership with government agencies	Non-government organisations and community group partnerships; LEP review and Development Controls Plans; partnership with government agencies; development of strategic planning documents
Challenges in providing assistance to healthy food	A lack of community interest to support healthy food initiatives; other infrastructure for the community is considered more important; a lack of funding; pressure to rezone fringe agricultural lands; lack of support and interest from councillors	Other community infrastructure is considered more important; a lack of funding; concern about on-going maintenance of community gardens; pressure to rezone fringe agricultural land

In summary, the second theme identified the following:

- A disconnect between resident perception and actual availability of food policy and programs. There is clearly an information gap between the community and council. This requires attention if programs are to reach those who need them most. Even if residents do not require assistance in the short term, it is important that the programs are publicised to the community for residents' benefit. Campbelltown respondents recognised a number of limitations in accessing council information. A significant limitation identified was low internet literacy and poor access to computers. Further, residents noted that information flyers in the mail are ineffective, as often the flyers are discarded without being read.
- Barriers to the development of programs to support healthy eating due a lack of funding and priority status of such programs.

- Opportunities to provide additional food programs are identified as shared roles with community and other government agency partnerships. The online survey of available council food policy and programs highlights that already there has been a major shift in the privatisation of nutrition and food services.
- Councils have been responsive to food security concerns through retaining agricultural land for local food production. However the extent of retainment is unknown.

Conclusion

This Chapter has explored emerging themes from the results of the two case studies. The themes indicate that convenience, quality, and value for money are key considerations in store choice for focus group residents. Further, there is a communication gap between the council and residents on the availability of food programs, and healthy food infrastructure is not considered a policy priority by local councils. The synthesis of these themes has informed thesis recommendations. The recommendations provide a framework for urban planners to assist low income households in accessing healthy, affordable food. The following chapter concludes the thesis with these recommendations.



Chapter 7.0
Urban Planning
Opportunities

Introduction

The built environment is recognised as a major determinant of population health. The growing incidence of diet-related disease in urban populations and increasing disparity of low income households indicates a critical time to assess the provision of food within urban environments. Specifically, to assess the availability of affordable healthy foods, such as fresh fruits and vegetables, which are required to maintain good health.

This Chapter outlines how the research objectives were met in this thesis, and opportunities for urban planning to assist access to affordable healthy food. Limitations of this study and further research areas for this topic are also explored.

7.1 Objectives of Research

The intent of the research in this thesis was to meet three objectives. Below is a description of how these objectives were met.

- *Objective 1: Explore literature on the relationship between lower socio-economic status and access to healthy food, in order to determine an appropriate research methodology.*

Literature explored advised a mixed-methods approach to investigate case study food landscapes. This approach was adopted to provide a balanced view of perception and the availability of healthy food programs within the case study areas.

- *Objective 2: Select and investigate two case study Local Government Areas, to determine current challenges and opportunities in accessing affordable, healthy foods.*

Case studies of two LGAs in GWS provided insights of the challenges and opportunities of accessing affordable healthy food. Access challenges were identified from primary research as convenience, value for money, and a lack of knowledge of food assistance and nutrition programs. A significant opportunity identified from the research is improved publication and advertisement of healthy food programs.

- *3: Identify how urban planning can be more responsive in assisting access to affordable healthy food for low income households.*

Literature and key informants interviewed in this study provided insight to how urban planning can assist access to healthy food. Recommendations are provided in following section.

7.2 Urban Planning Opportunities

This thesis has found several ways that urban planners can assist low income households in accessing affordable healthy food. The following is a list of recommendations that address access to affordable healthy foods more generally, informed by key respondents, case study findings and literature.

The recommendations are categorised into two options. The first relates to urban planning interventions to improve food supply. The second is more specific to improve access to affordable healthy food.

Interventions to Improve Food Supply

Interventions to improve food supplies have been drawn from the Sydney Fair Food Alliance (2012) submission to the NSW Planning System Green Paper. These interventions relate to the food system more generally, which affects the supply of healthy food. Interventions include:

- Identify and protect prime agricultural land and conduct a review into the impact of foreign ownership of agricultural land on local food security;
- Provide assistance to local councils to integrate health, wellbeing and sustainability into strategic and land use planning processes;
- Include a specific objective in NSW EP&A Act to address food security;
- Enable local councils to enact rates to incentivise the use of agricultural land for food production and establish targets for urban vegetation;
- Review the classification/ definition of agricultural land in recognition of the value of smaller lot sizes to support a diversified food production in the future; and
- Clarify the definition of 'community garden' and 'urban agriculture' and include them as exempt development within the standard LEP template.

Interventions to Improve Access to Affordable Healthy Food

Urban planning plays a crucial role in providing policies and public programs to support population health. Urban planning interventions to support access to healthy affordable foods include the following:

Programs

Acknowledging that independent organisations play a greater role in the implementation of healthy food programs, urban planning should take responsibility to inform these programs, through studying food landscapes. The healthy food basket tool is one measure that could be adopted by strategic planners to monitor the costs of healthy food, to inform where government intervention is required (Johnson et al. 2009, p30).

Local governments are responsible for the welfare of residents. To assist access to welfare programs therefore, programs to assist access to healthy food, either publicly or independently provided, should be advertised to a greater degree. Social media, regular website updates,

community expositions and festivals provide vibrant and relevant mediums of advertising that could be adopted by planning departments, to promote programs and community nutrition.

Further, nutrition education is an important influence on healthy eating behaviour (Raja et al. 2008). Local councils need to provide additional funding to this area to support healthy food choices in the community. Residents with fiscal burdens would benefit from education programs that provide information on how to prepare budget weekly meal plans. The implementation of Stephanie Alexander Foundation nutrition programs in schools has been proven to assist children's awareness of healthy food (SAKGF 2012). Similar programs could be implemented to inform adults on the benefits of healthy food.

Policies

Food landscapes can be supported through non-traditional planning mechanisms, which includes regulatory frameworks for food systems and zoning for land uses to support health (Raja et al. 2008). The following policy initiatives are specific to my study, and can assist access to healthy food:

- Strengthen bus services to fruit and vegetable retailers;
- Provide incentives for the development of independent green retailers in areas that experience high socio-economic disadvantage. And support flexible mixed use zoning for development of these retailers in residential areas;
- Design Development Control Plans to require residential flat buildings to include independent retailing, which includes the sale of fresh fruits and vegetables;
- Allocate public space for farmers' markets. Stores included within the market should meet a set list of criteria to discourage the sale of value-added goods to retain affordability; and
- Develop planning mechanisms for local councils to limit oversupply of fast food stores (SFFA 2012).

It is important to recognise that a major limitation for these interventions is the lack of local government support for healthy food infrastructure. Responses to the online council questionnaire indicate that other infrastructure is more important to councillors and the public, which restricts funding and subsequent adoption of healthy food programs. The success of the opportunities listed, is therefore subject to council commitment to population nutrition.

7.3 Study Limitations and Further Research

Urban planning for food is a new and large topic area for the NSW planning system. Therefore there are a number of issues relevant to this topic that could not be addressed in this study. Study limitations and areas for further research are detailed below.

Study Limitations

The main limitations in this study were mostly a result of the characteristics and size of the respondent sample. Due to time restraints, a small opportunistic sample of residents was selected in this study. However the case study findings highlight that most respondents within the sample did not align with signs of food insecurity. A number of food landscape studies usually draw upon large sample sizes, generally greater than one hundred persons. These studies reduce bias, and provide representative results.

Time limitations for this study also restricted the amount of data that could be collected and analysed. The case study findings would have been more insightful if additional information was obtained on personal circumstances of respondents such as income, age, and family composition.

Further Research

Further research in this area should be undertaken at a much larger scale, and should use purposeful sampling techniques. Purposeful sampling would assist the selection of low socio-economic residents that experience food insecurity. A key informant for this study suggested that individuals most affected by food insecurity, are the working poor within the private rental market. This is because the demographic difficult to reach.

Difficulty in contacting this group may be a result of varied factors including long working hours, poor proficiency in English, and limited connections to the wider community. A narrow study of this demographic, within areas the experience socio-economic disadvantage would therefore be more insightful of food insecurity burdens (Randolph pers. comms. 23 August 2012).

Another aspect of food security relevant to this topic relates to food affordability. Specifically, the fragility of the food system and subsequent food price fluctuations. For case in point, this study's audit demonstrated that the price of tomatoes was disproportionately high, priced at \$8.00 for the majority of stores. Tomatoes, considered a diet staple and the price increase of this item make purchases inaccessible for low income groups. Pressures on farming and food systems increase the likelihood of food price fluctuations, which pose further access challenges for food insecure populations.

Conclusion

Food is essential for living, and nutrition is essential for well-being. This thesis argues that the review of the NSW planning system and the development of a National Food Plan, provide an ideal forum to discuss food security, population health and the role of urban planning.

Urban planners are well placed to support the food system and the provision of healthy affordable food. The NSW planning system's role in food systems needs to be reviewed. Food landscape studies are a valuable exercise to provide knowledge of the challenges faced by disadvantaged consumers in accessing healthy food. Informed by this knowledge, local government policy and programs can then be tailored to assist the needs of those who are most food insecure.

References

- ABS, Australian Bureau of Statistics (2012) *Consumer Price Index June 2012*, accessed 1 September 2012, <<http://www.abs.gov.au/ausstats/abs@.nsf/mf/6427.0>>.
- ABS, Australian Bureau of Statistics (2011) *LGA Quickstats*, accessed 1 September 2012, <<http://www.abs.gov.au/websitedbs/censushome.nsf/home/quickstats?opendocument&navpos=220>>.
- ABS, Australian Bureau of Statistics (2006a) *Sydney Social Atlas*, accessed 15 May 2012, <<http://www.abs.gov.au/ausstats/abs@.nsf/mf/2030.1/>>.
- ABS, Australian Bureau of Statistics (2006b) *Quickstats*, accessed 1 September 2012, <<http://www.abs.gov.au/websitedbs/censushome.nsf/home/quickstats?opendocument&navpos=220>>.
- Achikari, P. (2006) 'Socio-Economic Disadvantage for Areas: introduction, use and future directions', Australian Bureau of Statistics, accessed 5 May 2012, <http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Seifa_entry_page>.
- ADA, American Dietetics Association (1998) 'Domestic food and nutrition security', *American Dietetics Association*, 98:337-42
- AIHW, Australian Institute of Health and Welfare (2012) *Report on Australia's Food and Nutrition*, accessed 6 August 2012, <<http://www.aihw.gov.au/publication-detail/?id=10737422319>>.
- Auburn City Council (2012) *website*, accessed 25 May 2012, <<http://www.auburn.nsw.gov.au>>.
- Bankstown City Council (2012), *website*, accessed 25 May 2012, <<http://www.bankstown.nsw.gov.au>>.
- Barton, H. (2005a) 'Healthy urban planning: setting the scene', *Built Environment*, 31(4):281-287
- Barton, H. (2005b) 'A health map for urban planners: towards a conceptual model for healthy, sustainable, environments', *Built Environment*, 31(4):359-355
- Baum, S. and B., Gleeson (2010) 'Space and Place: social exclusion in Australia's suburban heartlands', *Urban Policy and Research*, 28(2): 135-159
- Blacktown City Council (2012) *website*, accessed 25 May, <<http://www.blacktown.nsw.gov.au>>.
- Block, J., and R., Scribner et al. (2004) 'Fast food, race/ethnicity, and income: a geographic analysis', *American Journal of Preventative Medicine*, 27(3): 211-217
- Blue Mountains City Council (2012) *website*, accessed 25 May, <<http://www.bmcc.nsw.gov.au>>.
- Boone-Heinonen, J., Gordon-Larsen, P., Kiefe, C., Shikany, J., Lewis, C., and B., Popkin (2011) 'Fast food restaurants and food stores: longitudinal associations with diet in young to middle-aged adults: the CARDIA study', *Arch Intern Med*, 171(13):1162-1170
- Burns, C. (2004) *A Review of the Literature Describing the Link between Poverty, Food Insecurity and Obesity with Specific Reference to Australia*, Vic Health, Centre for Physical Activity and Nutrition Research, accessed 25 August, <http://secondbite.org/sites/default/files/A_review_of_the_literature_describing_the_link_between_poverty_food_insecurity_and_obesity_w.pdf>.
- Burns, C., Gibbon, P., Boak, R., Baundinette, S., and J. Dunbar (2004) 'Food cost and availability

- in a rural setting in Australia', *The International Journal of Rural and Remote Health Research Education Practice and Policy*, 4(311):1-9
- Burns, C., and A., Inglis (2006) 'Measuring food access in Melbourne: access to healthy and fast foods by car, bus and foot in urban municipality of Melbourne', *Health & Place*, (13):877-885
- Busways (2012) *Campbelltown Region*, website, accessed 5 September 2012, <<http://www.busways.com.au/region/campbelltown>>.
- C3 Community Services, *Service Directory*, accessed 20 September 2012, <<http://www.ourcommunity.com.au/directories/listing?id=4449>>.
- Camden City Council (2012) *website*, accessed 25 May, <<http://www.camden.nsw.gov.au>>.
- Campbelltown City Council (2012) *website*, accessed 25 May 2012, <<http://www.campbelltown.nsw.gov.au>>.
- Campbell, M. (2004) 'Building a common table: the role of planning in community food systems', *Journal of Planning Education and Research*, (23):341-355
- Cancer Council NSW (2007) *Healthy Food Basket: cost, availability and quality survey*, Sydney, accessed 20 August 2012, <<http://www.cancercouncil.com.au/576/reduce-risks/eating-moving/food-prices/nsw-healthy-food-basket-2007/?pp=36572>>.
- Cerin, E., Frank, L., Sallis, J., Salens, B., Conway, T., Chapman, J., and K., Glanz (2011) 'From neighbourhood design and food options to residents' weight status', *Appetite*, 56:693-703
- Chaix, B., Bean, K., Daniel, M., Zenk, S., Kestens, Y., Charreire, H., Leal, C., Thomas, F., Weber, C., Oppert, J., Simon, C., Merio, J., and B., Pannier (2012) 'Associations of supermarket characteristics with weight status and body fat: a multilevel analysis of individuals within supermarkets: RECORD study', *Plos One*, 7(4):1-10
- Cohen, A. (2012) 'Are food deserts an urban legend? Study says...' *Next American City*, 18 April, accessed 20 May 2012 <<http://www.americancity.org/daily/entry>>.
- Conrad, D., and S., Capewell (2012), 'Associations between deprivation and rates of childhood obesity in England 2007-2010: an ecological study', *BMJ Open*, 2:1-6
- Crawford, B., Byun, R., Mitchell, E., Jalaudin, B., Thompson, S., and S., Torvaldsen (2012) *A Community Food Assessment: Cost, access, availability, quality and diversity of healthy food in high and low socioeconomic areas of Sydney*, Unpublished project proposal, University of New South Wales and Sydney and South Western Sydney Local Health Districts
- Cummins, S. and S., Macintyre (1999) 'Food deserts: evidence and assumptions in health policy making', *BMJ*, 325:436-438
- DAFF, Department of Agriculture Forestry and Fisheries (2011) *Discussion Paper to Inform the Development of a National Food Plan*, Australian Government, accessed 4 July 2012, <<http://www.daff.gov.au/nationalfoodplan/national-food-plan>>.
- DOP, Department of Planning (2005a) *Draft Sub-Regional Strategy*, NSW State Government, accessed 6 May 2012, <http://www.metrostrategy.nsw.gov.au/Subregions>.
- DOP, Department of Planning (2005b) *Draft South West Sub-Regional Strategy*, NSW State

- Government, accessed 6 May 2012,
<<http://www.metrostrategy.nsw.gov.au/Subregions/SouthWestsubregion/tabid/79/language/en-AU/Default.aspx>>.
- DOP, Department of Planning (2005c) *Draft West Central Sub-Regional Strategy*, NSW State Government, accessed 6 May 2012, <<http://www.metrostrategy.nsw.gov.au/Subregions/WestCentralsubregion/tabid/77/language/en-AU/Default.aspx>>.
- Fairfield City Council (2012) *website*, accessed 25 May 2012,
<<http://www.fairfieldcity.nsw.gov.au/default.asp?iNavCatId=1&iSubCatId=2>>.
- FAO, Food and Agriculture Organisation of the United Nations (2012), website, accessed 10 September 2012, <<http://www.fao.org/wsfs/world-summit/en/>>.
- Foodbank Australia (2012) *End Hunger in Australia*, report, accessed 10 September 2012,
<<http://www.foodbank.org.au/wp-content/uploads/2012/08/End-Hunger-in-Australia.pdf>>.
- Freedman, D., and B., Bell (2009) 'Access to healthful foods among an urban food insecure population: perceptions versus reality', *Journal of Urban Health*, 86(6):825-838
- Gawthorne, R. and S., Chand (2010) 'Evaluation of the Food 4 Life Market Warwick Farm', University of Western Sydney
- Giskes, K., Van Lenthe. F., Brug, J., Mackenbach, J. and G., Turrell (2007) 'Socioeconomic inequalities in food purchasing: the contribution of respondent-perceived and actual (objectively measured) price and availability of foods', *Preventative Medicine*, 45:41-48
- Google Earth (2012) *satellite image*, accessed 20 August 2012
- Google Maps (2010a) *photo*, Airs IGA, accessed 26 September 2012,
<<http://maps.google.com.au/maps?q=airds+iga&aq=0&sugexp=chrome,mod%3D0&um=1&ie=UTF-8&hl=en&sa=N&tab=wl>>
- Google Maps (2010b) *photo*, Campbelltown Mall, accessed 26 September 2012,
<<http://maps.google.com.au/maps?q=airds+iga&aq=0&sugexp=chrome,mod%3D0&um=1&ie=UTF-8&hl=en&sa=N&tab=wl>>
- Google Maps (2010c) *photo*, Woodville Shopping Village, accessed 26 September 2012,
<<http://maps.google.com.au/maps?q=airds+iga&aq=0&sugexp=chrome,mod%3D0&um=1&ie=UTF-8&hl=en&sa=N&tab=wl>>
- Google Maps (2012d) *photo*, Fairfield Forum, accessed 26 September 2012,
<<http://maps.google.com.au/maps?q=airds+iga&aq=0&sugexp=chrome,mod%3D0&um=1&ie=UTF-8&hl=en&sa=N&tab=wl>>.
- Google Maps (2012a) *map*, Airs suburb in NSW, accessed 26 September 2012,
<<http://maps.google.com.au/maps?q=airds%20nsw&sugexp=chrome,mod%3D7&um=1&hl=en&biw=1241&bih=582&ie=UTF-8&sa=N&tab=il>>.
- Google Maps (2012b) *map*, Carramar suburb in NSW, accessed 26 September 2012,
<<http://maps.google.com.au/maps?q=airds+iga&aq=0&sugexp=chrome,mod%3D0&um=1&ie=UTF-8&hl=en&sa=N&tab=wl>>
- Gottlieb, R., and A., Joshi (2010) *Food Justice*, Massachusetts Institute of Technology, Toppan Best-set Premedia Ltd., Sabon
- Guy, C. (2004) 'Neighbourhood retailing and food poverty: a case study in Cardiff', *International*

- Journal of Retail Distribution and Management*, 32(22):577-581
- Hage, G., Johnson, L., Langsworth, M. and M., Symonds (1997) *Home world: space, community & marginality in Sydney's west*, Sydney: PlutoPress
- Hawkesbury City Council (2012) *website*, accessed 25 May, <<http://www.hawkesbury.nsw.gov.au>>.
- Holroyd City Council (2012) *website*, accessed 25 May, <<http://www.holroyd.nsw.gov.au>>.
- Hurni, A. (2012) 'Achieving a national approach to foster healthy cities', *New Planner*, 17(91):16
- Innes-Hughes, C., Bowers, K., King, L., Chapman, K., and B., Eden (2010) *Food Security: The what, who and where to of food security in NSW*, Discussion paper, accessed 25 August 2012, <<http://www.heartfoundation.org.au/SiteCollectionDocuments/Food-Security-Discussion-Paper-2010.pdf>>.
- Johnson, C., Lewis, E., McDonalad, G., and E., Sampimon (2008) *Outer East Community Food Access Research Project*, Outer East Health and Community Support Alliance, Deakin and Monash University, accessed 25 August 2012, <<http://www.oehcsa.org.au/library-resources/access-nutritious-food/outer-east-community-food-access-research-project>>.
- Kent, J., Thompson, S. and B., Jalaudin (2011) *Healthy Built Environments: A review of the literature*, Sydney: Healthy Built Environments Program, City Futures Research Centre, UNSW
- Kirkup, M. De Kervenoael, R., Hallsworth, A., Clarke, I., Jackson, P., and R., Aguila (2004) 'Inequalities in retail choice: exploring consumer experiences in suburban neighbourhoods', *International Journal of Retail Distribution and Management*, 32(11): 511-522
- Kolata, G. (2012) 'Studies question the pairing of food deserts and obesity', *The New York Times*, 17 April, accessed 20 May 2012 <<http://www.nytimes.com/2012/04/18/health/>>.
- Kruger, R. (1994) *Focus Groups: a practical guide for applied research*, 2nd edition, Sage Publications, California
- Krukowski, R., McSweeney, J., and D., West (2012) 'Qualitative study of influences on food store choice', *Appetite*, 59:510-516
- Larsen, K. (2007) *The Health Impacts of Place-Based Interventions in Areas of Concentrated Disadvantage: a review of the literature*, Sydney South West Area Service, Liverpool, accessed 20 August 2012, <http://www.hiaconnect.edu.au/files/Place_Based_Interventions.pdf>.
- Larsen, N., and M., Story (2009) 'A review of environmental influences on food choices', *The Society of Behavioural Medicine*, 38:56-73
- Lewins, F. and J., Ly (1985) *The First Wave: the settlement of Australia's first Vietnamese Refugees*, Sydney, George Allen and Unwin, Australia
- Liverpool City Council (2012) *website*, accessed 25 May, <<http://www.liverpool.nsw.gov.au>>.
- Liem, N. (1994) 'Indochinese cross-cultural communication and adjustment' in *Vietnamese Studies in a Multicultural World*, Melbourne, Brown Prior Anderson, p48
- Mason, L. (2003) 'England' in (ed.) Solomon, E, and Katz, H. (2003) *Encyclopaedia of Food and Culture*, New York, Charles Scribner's Sons, p248-256
- Maye, D., Holloway, L., and M., Kneafsey (2007) *Alternative Food Geographies: Representation and Practice*, Elsevier Ltd., Oxford

- Mehta, N., and V., Chang (2008) 'Weight status and restaurant availability: a multilevel analysis', *Am J Prev Med* :34(2):127-133
- MDSI, Macarthur Diversity Services Initiative (2012) *Macarthur Food Security Project*, website, accessed 29 September 2012, <<http://www.mdsi.org.au/what-we-do/food-security>>.
- Moore, L., Roux, A., and S., Brines (2008) 'Comparing perception based and Geographic Information System (GIS) based characterizations of the local food environment', *Journal of Urban Studies*, 85(2):206-216
- Morgan, K. (2009) 'Feeding the city: the challenge of urban food planning', *International Planning Studies*, 14(4):341-348
- NHF, National Heart Foundation (2012) website, accessed 25 May 2012, <<http://www.heartfoundation.org.au/about-us/Pages/what-we-do.aspx>>
- Noble, M. (2008) *Gastronomic Planning Policy: planning for food in Sydney*, undergraduate thesis, University of New South Wales
- Nolan, M., Rikard-Bell, G., Mohsin, M., and M., Williams (2004) 'Food insecurity in three socially disadvantaged localities in Sydney, Australia', *Health Promotion Journal of Australia*, 17 (3):247-254
- NPHT, National Preventative Health Taskforce (2008) *Australian the Healthiest Country by 2020: A discussion paper*, Australian Government Department of Health and Aging, accessed 29 July 2012, <<http://www.preventativehealth.org.au/internet/preventativehealth/publishing.nsf/Content/discussion-healthiest>>.
- NSW CPHN (2003), NSW Centre for Public Health and Nutrition, *Food Security Options Paper: A planning framework and menu of option and practice interventions*, NSW Department of Health, Sydney, accessed 5 August 2012, <http://sydney.edu.au/science/molecular_bioscience/cphn/pdfs/food_security.pdf>.
- NSW Health (2007) *NSW Public Health Bulletin*, 16(1-12):1-209, accessed 1 August 2012, <<http://www.publish.csiro.au/nid/227.htm>>.
- NSW Health (2011) *Community Health and Wellbeing Through Multi-Sectoral Partnerships: Prevention is Everyone's Business*, 2nd ILSI-CHIP Symposium program presentations, Centre for Health Innovation & Partnership, accessed 27 May 2012, <<http://swahs.elcom.com.au/CHIP/Leaders-Forums/2nd-ILSI-CHIP-Symposium-/default.aspx>>.
- NSW Housing (2012) *Airds Bradbury Renewal Project*, NSW Department of Family and Community Services, accessed 5 August 2012, <<http://www.housing.nsw.gov.au/Changes+to+Social+Housing/Redevelopment/Airds+Bradbury+Renewal+Project.htm>>.
- Parramatta City Council (2012) *website*, accessed 25 May, <<http://www.parracity.gov.au>>.
- Penrith City Council (2012) *website*, accessed 25 May, <<http://www.penrithcity.nsw.gov.au>>.
- PCA, Property Council of Australia (2011-2012) *Directory of Shopping Centres NSW and ACT*, PCA, Sydney
- Pearce, J., Hiscock, R., Blakely, T., and K., Witten (2008) 'The contextual effects of neighbourhood access to supermarkets and convenience stores on individual fruit and vegetable consumption', *Journal of Epidemiology and Community Health*, 62:198-201

- Pearson, T., Russell, J., Campbell, M., and M., Barker (2005) 'Do food deserts influence fruit and vegetable consumption? A cross sectional study', *Appetite*, 45:195-197
- Popkin, B., Duffey, K. and P., Gordon-Larsen (2005) 'Environmental influences on food choice, physical activity and energy balance', *Physiology & Behaviour*, (86):603-613
- Pothukchi, K., and J., Kaufman (1999) 'Placing the food system on the urban agenda: the role of municipal institutions in foods systems planning', *Agriculture and Human Values*, 16: 213-224
- Pothukuchi, K., and J., Kaufman (2000) 'The food system: a stranger to the planning field', *American Planning Association*, 66(2):113-124
- QCOSS, Queensland Council of Social Service (2011) *Cost of Living Update 2011*, accessed 20 July 2012, <<http://www.qcoss.org.au/sites/default/files/QCOSS%20Cost%20of%20Living%20Update%20Dec%202011.pdf>>.
- QHT, Queensland Health Treasury (2006) *The Healthy Food Access Basket (HFAB) Survey*, Queensland Government, accessed 25 August 2012, <<http://www.health.qld.gov.au/ph/documents/hpu/hafb-2010.pdf>>.
- QPHF, Queensland Public Health Forum (2009) *Eat Well Queensland: are we half way there yet? Midpoint Implementation review summary of findings*, Brisbane
- Raja, S., Born, B., and Russell, J. (2008) *A Planners Guide to Community and Regional Food Planning: transforming food environments, facilitating healthy eating*, American Planning Association, Planning Advisory Services, accessed 10 September 2012, <http://phillyfoodjustice.files.wordpress.com/2011/06/2008_apa_planners-guide-to-food-planning.pdf>.
- Randolph, B., Ruming, K., and D., Murray (2010) 'Unpacking social exclusion in Western Sydney: exploring the role of place and tenure', *Geographical Research*, 48(2):197-214
- RBG, Royal Botanical Gardens (2012), *website*, accessed 20 September 2012, <http://www.rbg Syd.nsw.gov.au/education/community_greening>.
- Richardson, A., Boone-Heinonen, J., Popkin, B., and P., Gordon-Larsen (2012) 'Are neighbourhood food resources distributed inequitably by income and race in the USA? Epidemiological findings across the urban spectrum', *BMJ Open*, 2:1-9
- Rose, N., and M., Croft et al. (2012) 'The draft National Food Plan: putting corporate hunger first', *The Conversation*, accessed 17 August 2012, <<http://www.theconversation.edu.au/the-draft-national-food-plan-putting-corporate-hunger-first-8342>>.
- SAKGF, Stephanie Alexander Kitchen Garden Foundation (2012), *website*, accessed 20 August 2012, <<http://www.kitchengardenfoundation.org.au/>>.
- Sadler, R., Gillard, J. and A., Godwin (2011) 'An application of the edge effect in measuring accessibility to multiple food retailer types in Southwestern Ontario, Canada', *international Journal of Health Geographies*, 10 (34): 1-14
- SFFA and FFI, Sydney Fair Food Alliance and Fair Food Illawarra (2009) *Where Has All Our Food Gone: influences on the global food supply*, discussion sheet
- SFFA, Sydney Fair Food Alliance (2011) *National Food Plan Submission Time Inadequate*,

- Department of Agriculture, Fisheries and Forestry, accessed 15 July 2012, <<http://www.daff.gov.au/nationalfoodplan/process-to-develop/green-paper/submissions-received>>.
- SSFA et al., Sydney Fair Food Alliance and Food Fairness Illawarra (2012) *A New Planning System for NSW, Green Paper*, September 2012
- Sinclair, I. (2011) *Submission Paper to Inform the Development of a National Food Plan*, accessed 20 August 2012, <<http://www.daff.gov.au/nationalfoodplan/process-to-develop/green-paper/submissions-received>>.
- Sinclair, I., and Bunker, R., and D., Holloway (2003) 'From the outside looking in: planning and land management in Sydney's fringe', *State of Australian Cities*, University of Western Sydney, Carlton Hotel Parramatta, December, conference paper, accessed 25 May 2012 <<http://www.ruralplanning.com.au/library/papers/soac03.pdf>>.
- Smith, C., Butterfass, J., and R., Richards (2010) 'Environmental influences on food access and resulting shopping and dietary behaviours among homeless Minnesotans living in food deserts', *Agriculture Human Values*, 27:141-161
- Sobal, J., and B., Wansink (2006) 'Kitchenscapes, tablesapes, platescapes and foodscapes: influences of microscale built environments on food intake', *Environment and Behaviour*, 39(1): 1124-142
- Steel, C. (2008) *The Hungry City: how food shapes our lives*, Chatto and Windus, Britain
- TAC, Tharawal Aboriginal Corporation (2012) *Koori Community Kitchen*, website, accessed 29 September 2012, <<http://tacams.com.au/djurali/koori-community-kitchen/>>.
- Walker, R., Keane, C., and J., Burke (2010) 'Disparities and access to healthy food in the United States: a review of food deserts literature', *Health & Place*, (16):876-884
- Walker, R., Block, J. and I., Kawachi (2012) 'Do residents of food deserts express different food buying preferences compared to residents of food oases? a mixed methods analysis', *International Journal of Behavioural Nutrition and Physical Activity*, 9(41)
- Wansink, B. (2010) 'Mindless eating to mindlessly eating better', *Psychology and Behavior*, Elsevier, 100: 454-463
- Webber C., Sobal, J., and J., Dollahite (2010) 'Shopping for fruits and vegetables. Food and retail qualities of importance to low income households at the grocery stall', *Appetite*, 54:297-303
- Whelan, A., Wrigley, N., Warm, D., and E., Cannings (2002) 'Life in a food desert', *Urban Studies*, 39(11): 2083-2100
- Williams, P., Reid, M., and K., Shaw (2004) 'The healthy Food Price Index 1: development of the food basket', *Nutrition and Dietetics*, 61(4): 200-207
- Wilkinson, J. (2011) *Agriculture in the Sydney Region: historical and current perspectives*, NSW Parliamentary Library Research Service e-brief
- Winkler, E., Turrell, G., and C., Patterson (2006) 'Does living in a disadvantaged area mean fewer opportunities to purchase fresh fruits and vegetables in the area? Findings from the Brisbane food study', *Health & Place*, 12:306-319
- Winnie, M. (2008) *Closing the Food Gap: Resetting the Table in the Land of Plenty*, Beacon Press,

Boston

Wollondilly Shire Council (2012) *website*, accessed 25 May,
<<http://www.wollondilly.nsw.gov.au>>.

Woodliffe, L. (2004) 'Rethinking consumer disadvantage: the importance of qualitative research', *International Journal of Retail Distribution and Management*, 32 (11): 523-31

Wrigley, N. (2002) 'Food deserts in British Cities: policy context and research priorities', *Urban Studies*, 39(11): 2029-2040

Zenk, S., and A., Schulz et al. (2009) 'Multilevel correlates of satisfaction with neighbourhood availability of fresh fruits and vegetables', *Behavioural Medicine*, 38:48-59

Zenk, S., Schulz, A., Matthews, S., Odoms-Young, A., Wilbur, J., Wegryzn, L., Gibbs, K., Braunschweig, C., and C., Stokes (2011) 'Activity space environment and dietary and physical activity behaviours: a pilot study', *Health and Place*, 17:1150-1161

Appendix A -

Council Food Program and Policy

Internet Survey Template

Council Website Survey on Available Food Policy and Programs

Central West Sub-Region: Auburn, Bankstown, Fairfield, Holroyd, Parramatta

Part 1 – Keyword Search					
Local Government Area	Auburn		Did the search reveal a local food policy?	YES – see Part 2	
Website Address	www.auburn.nsw.gov.au				
Date Accessed	25/05/2012				
Predominant Land Use	Rural	<input type="checkbox"/>	Issues Covered?	Food Security	<input type="checkbox"/>
	Urban	<input checked="" type="checkbox"/>		Food Access	<input type="checkbox"/>
Mix	<input type="checkbox"/>	Food Affordability		<input type="checkbox"/>	
Keyword search	Food Strategy	<input checked="" type="checkbox"/>		Local Produce	<input type="checkbox"/>
	Local Food	<input type="checkbox"/>		Fresh Food	<input type="checkbox"/>
	Food Policy	<input type="checkbox"/>		Retain Agricultural Land	<input type="checkbox"/>
	Food Security	<input type="checkbox"/>		Community Gardens	<input type="checkbox"/>
			Farmers/ Local Markets	<input type="checkbox"/>	
			Food Hygiene	<input checked="" type="checkbox"/>	
Part 2- Navigation Search					
Name of Policy/ Program		Year	Council Facilitated/ Endorsed	Policy/ Program	
1	Temporary Food Outlet Guidelines	2006	Facilitated	Policy	
Further Comments:					
-Limited evidence of a healthy food access strategy					

Part 1 –Keyword Search					
Local Government Area	Bankstown		Did the search reveal a local food policy?	YES – see Part 2	
Website Address	www.bankstown.nsw.gov.au				
Date Accessed	25/05/2012				
Predominant Land Use	Rural	<input type="checkbox"/>	Issues Covered?	Food Security	<input checked="" type="checkbox"/>
	Urban	<input checked="" type="checkbox"/>		Food Access	<input checked="" type="checkbox"/>
Mix	<input type="checkbox"/>	Food Affordability		<input type="checkbox"/>	
Keyword search	Food Strategy	<input checked="" type="checkbox"/>		Local Produce	<input checked="" type="checkbox"/>
	Local Food	<input type="checkbox"/>		Fresh Food	<input checked="" type="checkbox"/>
	Food Policy	<input type="checkbox"/>		Retain Agricultural Land	<input type="checkbox"/>
	Food Security	<input checked="" type="checkbox"/>		Community Gardens	<input type="checkbox"/>
			Farmers/ Local Markets	<input checked="" type="checkbox"/>	
			Food Hygiene	<input checked="" type="checkbox"/>	
Part 2- Navigation Search					
Name of Policy/ Program		Year	Council Facilitated/ Endorsed	Policy/ Program	
1	Love Food Hate Waste Program -Villawood community kitchens	unknown	Endorsed- Partnership with NSW Government	Policy (social/ environmental)	
2	Bankstown Bites Food Festival -LGA food tour -Celebrity chefs	unknown	Endorsed	Program	
3	Food Regulation Partnership/ hygiene	2008	Facilitated	Policy	

Further Comments:

-The Bankstown Bites is a major event for the LGA held annually, and is contributed to the multicultural demographic of the community more than healthy food accessibility.

Part 1 – Keyword Search

Local Government Area	Fairfield		Did the search reveal a local food policy?	YES – see Part 2
Website Address	www.fairfieldcity.nsw.gov.au			
Date Accessed	25/05/2012		Issues Covered?	Food Security <input checked="" type="checkbox"/> Food Access <input checked="" type="checkbox"/> Food Affordability <input checked="" type="checkbox"/> Local Produce <input type="checkbox"/> Fresh Food <input checked="" type="checkbox"/> Retain Agricultural Land <input type="checkbox"/> Community Gardens <input type="checkbox"/> Farmers/ Local Markets <input type="checkbox"/> Food Hygiene <input checked="" type="checkbox"/>
Predominant Land Use	Rural	<input type="checkbox"/>		
	Urban	<input checked="" type="checkbox"/>		
	Mix	<input type="checkbox"/>		
Keyword search	Food Strategy	<input type="checkbox"/>		
	Local Food	<input checked="" type="checkbox"/>		
	Food Policy	<input checked="" type="checkbox"/>		
	Food Security	<input checked="" type="checkbox"/>		

Part 2- Navigation Search

	Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program
1	<i>Sydney South West Area Health Service Villawood Food Security Study</i> -Community Café 2163 - Community Kitchen -Villawood Food Security Action Group	2004	Endorsed	Program
2	<i>Sydney South West Area Health Service</i> - <i>Healthy Minds, Healthy Bodies</i>	unknown	Endorsed and Facilitated	Program
3	<i>Food Safety in Fairfield City/ hygiene</i>	2008	Facilitated	Policy
4	<i>Councils Code for Mobile Food Vending Vehicles</i>	unknown	Facilitated	Policy
5	<i>Temporary Food Events</i>	unknown	Facilitated	Policy
6	<i>Healthy Fairfield</i> -fitness classes -Bicycle groups -Gyms in parks -Healthy eating information forums	unknown	Facilitated- and funded by Commonwealth Department of Health and Aging	Program

Further Comments:

-The Healthy Fairfield Program provides links to Commonwealth Government websites endorsing healthy food, however many of the programs in the LGA are related to physical exercise. Healthy Lifestyle Department of Health and Aging:

<http://www.health.gov.au/internet/healthyactive/publishing.nsf/Content/healthyweight>

- Many food safety and hygiene policies and standards exist

Part 1 – Keyword Search				
Local Government Area	Holroyd		Did the search reveal a local food policy?	YES – see Part 2
Website Address	www.holroyd.nsw.gov.au			
Date Accessed	25/05/2012			
Predominant Land Use	Rural	<input type="checkbox"/>		
	Urban	<input checked="" type="checkbox"/>		
	Mix	<input type="checkbox"/>		
Keyword search	Food Strategy	<input type="checkbox"/>	Issues Covered?	Food Security <input type="checkbox"/> Food Access <input checked="" type="checkbox"/> Food Affordability <input type="checkbox"/> Local Produce <input checked="" type="checkbox"/> Fresh Food <input type="checkbox"/> Retain Agricultural Land <input checked="" type="checkbox"/> Community Gardens <input checked="" type="checkbox"/> Farmers/ Local Markets <input checked="" type="checkbox"/> Food Hygiene <input checked="" type="checkbox"/>
	Local Food	<input checked="" type="checkbox"/>		
	Food Policy	<input checked="" type="checkbox"/>		
	Food Security	<input checked="" type="checkbox"/>		
Part 2- Navigation Search				
	Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program
1	<i>Social Plan 2010-2012 -A healthy and active community</i>	2010	Facilitated	Policy (social)
2	<i>Mobile Food Vending and Temporary Food Stalls Policy</i>	2009	Facilitated	Policy
3	<i>Nutrition and Food Handling Policy -Children's services</i>	2011	Facilitated	Policy (social)
4	<i>Healthy Holroyd Program</i>	2011	Facilitated- funded by the Federal Government	Policy (Social)
Further Comments: -The Healthy Holroyd Program received funding last year, with programs including free exercise classes, healthy cooking classes, community gardens, fresh food markets and assisting businesses to encourage healthy eating among staff.				

Part 1 – Keyword Search				
Local Government Area	Parramatta		Did the search reveal a local food policy?	YES – see Part 2
Website Address	www.paracity.gov.au			
Date Accessed	25/05/2012			
Predominant Land Use	Rural	<input type="checkbox"/>		
	Urban	<input checked="" type="checkbox"/>		
	Mix	<input type="checkbox"/>		
Keyword search	Food Strategy	<input checked="" type="checkbox"/>	Issues Covered?	Food Security <input type="checkbox"/> Food Access <input checked="" type="checkbox"/> Food Affordability <input checked="" type="checkbox"/> Local Produce <input checked="" type="checkbox"/> Fresh Food <input checked="" type="checkbox"/> Retain Agricultural Land <input type="checkbox"/> Community Gardens <input type="checkbox"/> Farmers/ Local Markets <input checked="" type="checkbox"/> Food Hygiene <input checked="" type="checkbox"/>
	Local Food	<input type="checkbox"/>		
	Food Policy	<input checked="" type="checkbox"/>		
	Food Security	<input checked="" type="checkbox"/>		

Part 2- Navigation Search				
Name of Policy/ Program		Year	Council Facilitated/ Endorsed	Policy/ Program
1	<i>Food Businesses -hygiene and safety</i>	unknown	Facilitated	Policy
2	<i>Parramatta Twenty 25 Strategic Plan</i>	2006	Facilitated	Policy (social/ environmental)
3	<i>Meals on Wheels</i>	unknown	Facilitated	Program
4	<i>Activities on Footpaths, Roads and Public Plazas -hygiene & safety</i>	2005	Facilitated	Policy
5	<i>Draft Parramatta Social Wellbeing Policy -health</i>	unknown	Facilitated	Policy (social)
6	<i>Parramatta Council Health Strategic Partnership with SWAHS</i>	2009-2012	Facilitated	Policy (social)
7	<i>Farmers Markets</i>	unknown	Facilitated	Program
Further Comments: -The partnership between PCC and SWAHS has created a number of programs to promote healthy lifestyles				

North West Sub-Region: Blacktown, Blue Mountains, Hawkesbury, Penrith

Part 1 – Keyword Search						
Local Government Area	Blacktown		Did the search reveal a local food policy?	YES – see Part 2		
Website Address	www.blacktown.nsw.gov.au			Issues Covered?	Food Security	<input type="checkbox"/>
Date Accessed	25/05/2012				Food Access	<input checked="" type="checkbox"/>
Predominant Land Use	Rural	<input type="checkbox"/>			Food Affordability	<input checked="" type="checkbox"/>
	Urban	<input type="checkbox"/>	Local Produce		<input checked="" type="checkbox"/>	
	Mix	<input checked="" type="checkbox"/>	Fresh Food	<input checked="" type="checkbox"/>		
Keyword search	Food Strategy	<input checked="" type="checkbox"/>	Retain Agricultural Land	<input checked="" type="checkbox"/>		
	Local Food	<input checked="" type="checkbox"/>	Community Gardens	<input type="checkbox"/>		
	Food Policy	<input type="checkbox"/>	Farmers/ Local Markets	<input checked="" type="checkbox"/>		
	Food Security	<input checked="" type="checkbox"/>	Food Hygiene	<input type="checkbox"/>		
Part 2- Navigation Search						
Name of Policy/ Program		Year	Council Facilitated/ Endorsed	Policy/ Program		
1	<i>Blacktown City Social Plan -Part B 'Food' -Part C 'Action Plan'</i>	2007	Facilitated	Policy (social)		
2	<i>Eco Active Schools Program</i>	2010	Facilitated	Program (social)		
3	<i>Blacktown City Action Plan 2010-2012</i>	2010	Facilitated	Policy (social)		
4	<i>Blacktown City Festival -Farm gate tour of the Hawkesbury</i>	unknown	Facilitated and community group's involvement endorsed	Program (social)		

5	Environmental Expo	unknown	Facilitated and community group's involvement endorsed	Program (social/ environmental)
Further Comments: - The Council has a Sustainable Living Department which governs social planning needs for the LGA.				

Part 1 – Keyword Search					
Local Government Area	Blue Mountains		Did the search reveal a local food policy?	YES – see Part 2	
Website Address	www.bmcc.nsw.gov.au				
Date Accessed	25/05/2012				
Predominant Land Use	Rural	<input type="checkbox"/>	Issues Covered?	Food Security	<input type="checkbox"/>
	Urban	<input type="checkbox"/>		Food Access	<input checked="" type="checkbox"/>
Mix	<input checked="" type="checkbox"/>	Food Affordability		<input checked="" type="checkbox"/>	
Keyword search	Food Strategy	<input checked="" type="checkbox"/>		Local Produce	<input checked="" type="checkbox"/>
	Local Food	<input type="checkbox"/>		Fresh Food	<input checked="" type="checkbox"/>
	Food Policy	<input type="checkbox"/>	Retain Agricultural Land	<input checked="" type="checkbox"/>	
Food Security	<input checked="" type="checkbox"/>	Community Gardens	<input checked="" type="checkbox"/>		
			Farmers/ Local Markets	<input checked="" type="checkbox"/>	
			Food Hygiene	<input checked="" type="checkbox"/>	
Part 2- Navigation Search					
	Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program	
1	Community Gardens	2011	Facilitated	Policy (social)	
2	TAFE Community Garden course	unknown	Endorsed	Program	
2	Sustainable Blue Mountains 2025 -Social Food Priority	2010	Facilitated	Policy (social)	
3	Local Orders Policy -Food Control/ hygiene	2005	Facilitated	Policy	
4	Food Regulation Partnership/ hygiene	2008	Facilitated	Policy	
Further Comments: -The Community Garden website page provides links to endorsed gardening groups including: Blue Mountains Community Gardens, Blue Mountains Permaculture Institute, Permaculture Blue Mountains, Sustainable Blue Mountains, The Australian City Farms & Community Gardens Network, The Horticultural Therapy Society of NSW.					

Part 1 – Keyword Search					
Local Government Area	Hawkesbury		Did the search reveal a local food policy?	YES – see Part 2	
Website Address	www.hawkesbury.nsw.gov.au				
Date Accessed	25/05/2012				
Predominant Land Use	Rural	<input checked="" type="checkbox"/>	Issues Covered?	Food Security	<input checked="" type="checkbox"/>
	Urban	<input type="checkbox"/>		Food Access	<input checked="" type="checkbox"/>
Mix	<input type="checkbox"/>	Food Affordability		<input type="checkbox"/>	
				Local Produce	<input checked="" type="checkbox"/>
				Fresh Food	<input type="checkbox"/>

Keyword search	Food Strategy Local Food Food Policy Food Security	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>			Retain Agricultural Land Community Gardens Farmers/ Local Markets Food Hygiene	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
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Part 2- Navigation Search

	Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program
1	<i>Hawkesbury Residential Land Strategy</i> <i>-retain agricultural land</i>	2010	Facilitated	Policy (social)
2	<i>Hawkesbury Adopted Management Plan/ hygiene</i>	2011-2012	Facilitated	Policy
2	<i>Hawkesbury Employment Strategy</i>	2008	Facilitated	Policy (social)
3	<i>Living Sustainably in the Hawkesbury</i> <i>-Buy local and seasonal food</i> <i>-Grow your own food</i>	2012	Endorsed- actions for residents	Program (environmental/ social)
4	<i>Hawkesbury Harvest</i> <i>-Farm Gate trail</i> <i>-Markets</i> <i>-Local Produce</i>	2000	Endorsed	Program (social)

Further Comments:

-The Hawkesbury Harvest is a significant component of food strategies for the LGA, independently operated by a community based organisation and has expanded in operations with a business focus.

Part 1 – Keyword Search

Local Government Area	Penrith		Did the search reveal a local food policy?	YES – see Part 2
Website Address	www.penrithcity.nsw.gov.au		Issues Covered?	Food Security Food Access Food Affordability Local Produce Fresh Food Retain Agricultural Land Community Gardens Farmers/ Local Markets Food Hygiene
Date Accessed	25/05/2012			
Predominant Land Use	Rural <input type="checkbox"/> Urban <input type="checkbox"/> Mix <input checked="" type="checkbox"/>			
Keyword search	Food Strategy <input checked="" type="checkbox"/> Local Food <input type="checkbox"/> Food Policy <input type="checkbox"/> Food Security <input checked="" type="checkbox"/>			

Part 2- Navigation Search

	Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program
1	<i>Social Planning Framework</i> <i>-Healthy cooking</i>	2009	Facilitated and community endorsed	Policy (social)
2	<i>Rural Landholders Forum</i>	2011	Endorsed- to protect agricultural land	Program
3	<i>Fair Food Alliance</i> <i>-Panel event</i>	2011	Endorsed	Program
4	Penrith Health Strategy	2010	Facilitated	Policy

	-Breastfeeding			(social)
5	Penrith Food Security Project	2008	Facilitated	Program (social)
6	Penrith Food Project	1994-1997	Facilitated	Program (social)
7	Food Safety Program	Under review	Facilitated	Policy
Further Comments: - Many of the strategies above fall within the Healthy People Program: (http://www.penrithcity.nsw.gov.au/index.asp?id=4287)				

South West Sub-Region: Camden, Campbelltown, Liverpool, Wollondilly

Part 1 – Keyword Search					
Local Government Area	Camden		Did the search reveal a local food policy?	YES – see Part 2	
Website Address	www.camden.nsw.gov.au				
Date Accessed	25/05/2012		Issues Covered?	Food Security <input type="checkbox"/> Food Access <input type="checkbox"/> Food Affordability <input type="checkbox"/> Local Produce <input type="checkbox"/> Fresh Food <input type="checkbox"/> Retain Agricultural Land <input checked="" type="checkbox"/> Community Gardens <input type="checkbox"/> Farmers/ Local Markets <input type="checkbox"/> Food Hygiene <input checked="" type="checkbox"/>	
Predominant Land Use	Rural <input checked="" type="checkbox"/>	Urban <input type="checkbox"/>			Mix <input type="checkbox"/>
Keyword search	Food Strategy <input checked="" type="checkbox"/>	Local Food <input type="checkbox"/>			Food Policy <input checked="" type="checkbox"/>
Part 2- Navigation Search					
	Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program	
1	Mobile Food Vendor and Temporary Food Stalls	2005	Facilitated	Policy	
2	Food Premises Code	2006	Facilitated	Policy	
3	Camden 2040 -key direction healthy environment	2009-2010	Facilitated	Policy (social/ environmental)	
4	Camden Fresh Produce Market	unknown	Facilitated	Program	
Further Comments: -Access to healthy food was not listed as a key priority for the LGA.					

Part 1 – Keyword Search				
Local Government Area	Campbelltown		Did the search reveal a local food policy?	YES – see Part 2
Website Address	www.campbelltown.nsw.gov.au			
Date Accessed	25/05/2012		Issues	Food Security <input type="checkbox"/>

Predominant Land Use	Rural Urban Mix	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	Covered?	Food Access Food Affordability Local Produce Fresh Food Retain Agricultural Land Community Gardens Farmers/ Local Markets Food Hygiene	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
Keyword search	Food Strategy Local Food Food Policy Food Security	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>			
Part 2- Navigation Search					
	Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program	
1	<i>Requirement of Food Premises</i>	unknown	Facilitated	Policy	
2	<i>Garden competition- most edible prize</i>	2012	Facilitated	Program	
3	<i>Macarthur Centre for Sustainable Living -buy local -gardening course</i>	2005	Endorsed	Program	
Further Comments: -The Macarthur Centre for Sustainable Living is a non for profit organisation that provides a number of programs related to healthy food access, and the Council endorses these programs on its website. - Predominantly the website contains food policy related to safety and hygiene practices.					

Part 1 – Keyword Search					
Local Government Area	Liverpool		Did the search reveal a local food policy?	YES – see Part 2	
Website Address	www.liverpool.nsw.gov.au		Issues Covered?	Food Security	<input type="checkbox"/>
Date Accessed	25/05/2012			Food Access	<input checked="" type="checkbox"/>
Predominant Land Use	Rural Urban Mix	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>		Food Affordability	<input checked="" type="checkbox"/>
Keyword search	Food Strategy Local Food Food Policy Food Security	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Local Produce	<input type="checkbox"/>
				Fresh Food	<input checked="" type="checkbox"/>
				Retain Agricultural Land	<input checked="" type="checkbox"/>
				Community Gardens	<input checked="" type="checkbox"/>
				Farmers/ Local Markets	<input type="checkbox"/>
				Food Hygiene	<input checked="" type="checkbox"/>
Part 2- Navigation Search					
	Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program	
1	<i>The Living Streets Program -community gardens</i>	1997	Facilitated- funded by Urban Affairs and Planning	Program	
2	<i>Food Handling and Temporary Food Premises</i>	unknown	Facilitated	Policy	
3	<i>Growing Liverpool 2021 -access to quality food</i>	2011	Facilitated	Policy (social)	
4	<i>Camden Fresh Produce Market</i>	unknown	Facilitated	Program	
Further Comments: -The Growing Liverpool 2021 strategic policy lists a number of actions which includes enabling urban agriculture to occur within the Growth Centre Masterplans,					

-Limited existing policy for healthy food accessibility.

Part 1 – Keyword Search				
Local Government Area	Wollondilly		Did the search reveal a local food policy?	NO
Website Address	www.wollondilly.nsw.gov.au		Issues Covered?	Food Security <input type="checkbox"/> Food Access <input type="checkbox"/> Food Affordability <input type="checkbox"/> Local Produce <input type="checkbox"/> Fresh Food <input type="checkbox"/> Retain Agricultural Land <input type="checkbox"/> Community Gardens <input type="checkbox"/> Farmers/ Local Markets <input type="checkbox"/> Food Hygiene <input type="checkbox"/>
Date Accessed	25/05/2012			
Predominant Land Use	Rural	<input checked="" type="checkbox"/>		
	Urban	<input type="checkbox"/>		
	Mix	<input type="checkbox"/>		
Keyword search	Food Strategy	<input type="checkbox"/>		
	Local Food	<input type="checkbox"/>		
	Food Policy	<input type="checkbox"/>		
	Food Security	<input type="checkbox"/>		
Part 2- Navigation Search				
Name of Policy/ Program	Year	Council Facilitated/ Endorsed	Policy/ Program	
N/A	N/A	N/A	N/A	
Further Comments:				
-No food policies or programs were evident on the website.				

**Appendix B –
Project Information Statements**

- **Council Questionnaire**
- **In-depth Interview**
- **Focus Group**

PROJECT INFORMATION STATEMENT

Date: 06/08/2012

Project Title: *Access to Affordable, Healthy Food for Sydney's Metropolitan Fringe*



BUILT ENVIRONMENT

Approval No.: 125025

Participant selection and purpose of study

You are invited to participate in a study of *access to affordable, healthy food for Sydney's Metropolitan fringe*. You were selected as a possible participant in this study because *you are knowledgeable of planning policy and programs available within a selected LGA, for the purpose of identifying challenges and opportunities for the development of future food policies and programs for the region*.

Description of study

If you decide to participate, we will *undertake an online questionnaire. The questionnaire will include a set of defined questions, designed to provide the researcher with knowledge about available Council food policy and programs, priorities of food security for the Council, and opportunities and challenges for further food policy development. The questionnaire should take no longer than 20 minutes. The expected benefit of this study is to promote discussion about local government involvement in providing healthy food initiatives.* We cannot and do not guarantee or promise that you will receive any benefits from this study.

Confidentiality and disclosure of information

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, or except as required by law. If you give us your permission, we plan to *discuss the results in the final thesis project which will be placed in the UNSW Library after November 2012.*

Recompense to participants

None

Your consent

Your decision whether or not to participate will not prejudice your future relations with The University of New South Wales or other participating organisations.

If you have any questions, please feel free to ask *Emily Salvisberg* ej.salvisberg@gmail.com. If you have any additional questions later, *UNSW Planning Program Director, Mr Peter Williams, (02)9385 2985, p.williams@unsw.edu.au* will be happy to answer them.

Emily Salvisberg

6.08.12

.....
Signature

.....
Please PRINT name

.....
Date

PROJECT INFORMATION STATEMENT

Date: 06/08/2012

Project Title: *Access to Healthy Food in Western Sydney*



Approval No.: 125025

BUILT ENVIRONMENT

Participant selection and purpose of study

You are invited to participate in a study of *access to affordable, healthy food for Sydney's Metropolitan fringe*. You were selected as a possible participant in this study because *as a resident of a selected South West Sydney LGA for this study, you provide valuable insight of how you access your weekly fresh food grocery items*.

Description of study

If you decide to participate, we will *conduct one focus group session, for the duration of no more than one hour. The session will involve a short questionnaire and a group discussion on how you access your weekly fruit and vegetable groceries*. We cannot and do not guarantee or promise that you will receive any benefits from this study.

Confidentiality and disclosure of information

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, or except as required by law. If you give us your permission, we plan to *discuss the results in the final thesis project which will be placed in the UNSW Library after November 2012*.

Recompense to participants

As a participant of this study you will be provided with a food voucher from Woolworths supermarket with a value of \$20.00. During the focus group session refreshments will also be provided.

Your consent

Your decision whether or not to participate will not prejudice your future relations with The University of New South Wales or other participating organisations. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice by completing the statement below and returning this entire form to *Emily Salvisberg*.

If you have any questions, please feel free to ask *Emily Salvisberg, ej.salvisberg@gmail.com*. If you have any additional questions later, *UNSW Planning Program Director, Mr Peter Williams, (02)9385 2985, p.williams@unsw.edu.au* will be happy to answer them.

Emily Salvisberg

REVOCAION OF CONSENT.

Project Title: *Access to Healthy Food in Western Sydney*
(Please send this entire form to the above address.)

I hereby wish to withdraw my consent to participate in this research project. I understand that such withdrawal will not jeopardise my relationship with The University of New South Wales, other participating organisations or other professionals.

.....
Signature

.....
Please PRINT name

.....
Date

PROJECT INFORMATION STATEMENT

Date: 18.09.12

Project Title: *Access to Affordable, Healthy Food For Sydney's Metropolitan Fringe*



BUILT ENVIRONMENT

Approval No.: 125025

Participant selection and purpose of study

You are invited to participate in a study of access to affordable, healthy food for Sydney's metropolitan fringe. You were selected as a possible participant in this study because you are knowledgeable of food environments and equity in Western Sydney.

Description of study

If you decide to participate, we will undertake an interview, for the purpose of enquiring about current and future food supply trends in Western Sydney. It is estimated that the interview will take around 30 minutes in entirety. We cannot and do not guarantee or promise that you will receive any benefits from this study.

Confidentiality and disclosure of information

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission, or except as required by law. If you give us your permission, we plan to *discuss* the results *in the final thesis which will be placed in the UNSW library after November 2012.*

Recompense to participants

None.

Your consent

Your decision whether or not to participate will not prejudice your future relations with The University of New South Wales or other participating organisations. If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without prejudice by completing the statement below and returning this entire form to *Emily Salvisberg, email ej.salvisberg@gmail.com.*

If you have any questions, please feel free to ask *Emily Salvisberg, email ej.salvisberg@gmail.com.* If you have any additional questions later, UNSW Planning Program Director, Mr Peter Williams, (02)9385 2985, p.williams@unsw.edu.au will be happy to answer them.

Emily Salvisberg
18.09.12

Project Title: *Access to Affordable, Healthy Food For Sydney's Metropolitan Fringe*

(Please send this entire form to the above address.)

I hereby wish to withdraw my consent to participate in this research project. I understand that such withdrawal will not jeopardise my relationship with The University of New South Wales, other participating organisations or other professionals.

.....
Signature

.....
Please PRINT name

.....
Date

Appendix C – Participant Project Consent Form

PROJECT CONSENT FORM



Project Title: *Access to Affordable, Healthy Food For Sydney's Metropolitan Fringe*

You are making a decision whether or not to participate in a research project.

This PROJECT CONSENT FORM enables you to indicate your preparedness to participate in the project. By signing this form, your signature indicates that you have decided to participate.

You will be given a PROJECT INFORMATION STATEMENT that explains the project in detail, and that statement includes a revocation clause for you to use if you decide to withdraw your consent at some later stage. The PROJECT INFORMATION STATEMENT is your record of participation in the project.

This PROJECT CONSENT FORM will be retained by the researcher as evidence of your agreement to participate in this project.

Please complete the information in this box.

Please indicate which of the following options you agree to by ticking one of the following options:

- I consent to being quoted and identified
- I consent to being quoted but I do not consent to being identified
- I do not consent to being quoted or identified but am prepared to participate anonymously

.....
Signature of Research Participant

.....
Please PRINT name

.....
Date

Name of researcher: *Emily Salvisberg*

Appendix D –

Online Council Questionnaire

Local Government Questionnaire

Project: Access to Affordable, Healthy Food for Sydney's Metropolitan Fringe

Thank you for participating in my thesis project 'Access to Affordable, Healthy Food for Sydney's Metropolitan Fringe'. This questionnaire is about food security and council policies, programs and initiatives for access to affordable, healthy food.

Information for this questionnaire is provided below:

Ethics

- This study has been approved by the University of New South Wales Ethics, strictly for the purpose of academic research, approval number: 125025.
- The Project Information Form provides details about my study. You are not required to sign this form unless you wish to withdraw from my research.
- The Consent Form provides options as to how you would/ or would not like to be identified in the written component of my study. It is attached to this email.
- Once you have completed this questionnaire, please scan and return a signed copy of the Consent Form.

Questionnaire Instructions

- There are 10 questions in the questionnaire. Please allow 20-30 minutes to complete all questions.
- **Please complete** the online questionnaire supplied at the link below, and return the **Consent Form** to my email: ej.salvisberg@gmail.com, no later than **Friday 20 August 2012**.

THANK YOU FOR YOUR HELP WITH MY RESEARCH

1. Has your Council undertaken a food security study for the LGA?

If so, what year was the most recent study undertaken? Please answer N/A if no study has been undertaken and go to Q4.

- Yes
 No
 N/A

Details:

2. If you have a study, is this food security study publicly available?

If so, where is this study available?

- Yes
 No

Details:

3. Has the food security study informed other Council strategies/ policies/ programs/ initiatives on food for the LGA? If so, please list the name of the strategies/ policies/ programs/ initiatives that have been informed by a food security study.

- Yes
 No

Details:

4. Please select the food strategies/ policies/ programs/ initiatives that are provided in your LGA and supported by Council financially or otherwise. Please answer N/A if there are no existing food strategies/ policies/ programs/ initiatives for your LGA.

- Agricultural lands protection policy/ zoning
 Breast feeding policy
 Child services nutrition plan/ policy
 Community gardens
 Community kitchen
 Community Strategic Plan with objectives for food
 Community transport to healthy food stores
 Edible verge planting policy
 Farmers' markets
 Farm gate tours
 Healthy food fairs/ festivals
 Healthy food advertising

- School kitchen garden
- Subsidised food baskets
- N/A

Other (please specify below):

5. For the food strategies/ policies/ programs/ initiatives listed in question 4, do they involve input from urban planning? If so, please select the urban planning mechanisms utilised from the list below. Please answer N/A if there are no existing urban planning mechanisms in your LGA.

- Floor space ratios to encourage large supermarket development
- Retaining agricultural zones surrounding fringe residential areas
- Precinct plans for urban renewal to assist walkability to healthy food stores
- Provision of public transport to assist travel to healthy food stores
- Development controls to support urban agriculture
- Allocation of public open space for farmers' markets
- Allocation of public open space for community gardens
- Planning bonuses to attract fresh grocery businesses
- Developer contribution plans to support facilities and services for healthy food
- Development approval for use of schools or other sites for farmers' markets
- Planning policy/DCP on edible verge/street planting
- N/A

Other (please specify below):

6. Improved access to healthy food for vulnerable populations has been highlighted as an objective within the issues paper to inform a National Food Plan. In recognition of this Federal policy direction, does Council have an agenda to review current food strategies/ policy/ programs/ initiatives for your LGA? If so, please provide details.

- Yes
- No

Details:

7. Are there future plans for urban planning mechanisms to support access to healthy food in your LGA? If so please provide details below.

- Yes
- No

Details:

8. Local councils across Western Sydney have developed and implemented healthy food strategies/ policies/ programs/ initiatives in diverse ways. Please select the opportunities listed below that could be adopted by your local Council, to support access to healthy food in your LGA.

- Non-government organisations and community group partnerships
- Review of current policy/ programs to meet National or State strategic policy objectives such as the NSW State Plan or Sydney Metropolitan Strategy
- Partnerships with government agencies such as the South Western Local Health District
- Development of a draft comprehensive Local Environmental Plan and Development Control Plans
- Development of strategic planning documents for the LGA

Other (please specify below):

9. Local councils have many statutory responsibilities. Some may be considered to have a higher priority than others. Differing views about your Council's priorities may hinder the development of healthy food strategies/ policies/ programs/ initiatives for your LGA. Please select the challenges listed below that that hinder the development of healthy food provision for your LGA.

- A lack of community interest to support healthy food initiatives
- Other infrastructure for the community is considered more important
- Development pressure from private stakeholders to develop market garden lands
- A lack of funding to facilitate Council food programs
- Concern about on-going maintenance costs for community gardens
- Concern about increased traffic from farmers' markets
- Pressure to rezone fringe agricultural lands for residential development to meet State Government housing targets
- Lack of support from councillors
- Lack of interest from councillors
- Lack of support and interest from senior management at Council

Other (please specify below):

10. Please provide any further comments about the role of your Council in assisting food security for your LGA.

Appendix E -

Built Environment Faculty Fieldwork Form

OHS018

Fieldwork Authorisation Form



UNSW THE UNIVERSITY OF NEW SOUTH WALES

Notification details

Faculty: BUILT ENVIRONMENT

Application by Fieldwork Coordinator/Organiser: EMILY SAUBSBERG

Signature: [Handwritten Signature]

Application approved by Head of Discipline or Program Director: PETER WILLIAMS

Signature:

Fieldwork activities (please attach itinerary)

Describe fieldwork activity/activities: TWO FOCUS GROUPS WILL BE CONDUCTED IN SOUTH WEST SYDNEY, INVOLVING AROUND 20 ADULTS / LOCAL RESIDENTS. (SEE ATTACHED ITINERARY)

Venue/s: * CARRAMAR PRIMARY SCHOOL HALL, THE HORSELEY DR, FAIRFIELD * REACH OUT CENTRE, 1-3 TEESWATER PL, AIRDS, CAMPBELLTOWN

Date/s: * 3/08/12 and * 6/08/12 Departure / Arrival time: * 10:30am - 12am * 8:30am - 11am

Transport Arrangements: VEHICLE - I WILL BE DRIVING, LICENCE NO. 15022665

Fieldwork communications

Contact details during fieldwork: Fieldwork Coordinator/Organiser Mobile: 0402512331

Second Staff name and mobile number (if applicable): N/A

Host site contact name and mobile number (if applicable): N/A

Basic fieldwork checklist (circle applicable response to each item)

Table with 3 columns: Question, Yes, No, and a circled response (Yes, No, or NA).

Appendix F –

Focus Group Invitation Flyers

(Campbelltown and Fairfield)

Small Group Discussion

Project: 'Access to Affordable, Healthy Food for Sydney's Metropolitan Fringe'

July 2012

Dear participant,

As the main grocery shopper for your family, I would like to thank you for accepting my invitation to attend a discussion on how and when you shop for fresh fruits and vegetables.

The discussion will be held at **Carramar Primary school hall**, on **Monday 6 August**, conveniently following your school parent's group meeting. The discussion will begin soon after **9.15 am** and will take at most one hour to complete- during this time light refreshments will be provided.

Since we are talking to a limited number of people, the success and quality of the discussion is based on the cooperation of the people who attend. Your attendance at the session is anticipated, and to thank you for your time you will receive a \$20.00 Coles or Woolworths food voucher.

The discussion you will participate in will involve other members in your parent's group. Collectively, we will be discussing how and where you shop for fresh fruits and vegetables, including how you travel to the shops, and why you choose to shop where you do. Your opinions are very valuable.

This research is strictly for the purpose of my undergraduate honours project, and your identity will be protected, as you will remain anonymous throughout the course of my study.

If for some reason you find you are not able to attend, please contact Michelle Zacherl, the Public Liaison Officer at Carramar Primary School as soon as possible on (02) 9724-1850.

I look forward to meeting you on August 6.

Sincerely,

Emily Salvisberg
UNSW Student
(ej.salvisberg@gmail.com)



Image source:
<http://www.ductchgirlcooking.com>, accessed
1/07/12

Small Group Discussion

Project: 'Access to Affordable, Healthy Food for Sydney's Metropolitan Fringe'

July 2012

Dear participant,

As the main grocery shopper for your family, I would like to thank you for accepting my invitation to attend a discussion on how and when you shop for fresh fruits and vegetables.

The discussion will be held at Airds Reach Out Centre, 1-3 Teeswater Place Airds, on **Friday 3 August**. The discussion will begin soon after **11.00 am** and will take at most one hour to complete- during this time light refreshments will be provided.

Since we are talking to a limited number of people, the success and quality of the discussion is based on the cooperation of the people who attend. Your attendance at the session is anticipated, and to thank you for your time you will receive a \$20.00 Coles or Woolworths food voucher.

The discussion you will participate in will involve other members in the Airds Bradbury Community Reference Group. Collectively, we will be discussing how and where you shop for fresh fruits and vegetables, including how you travel to the shops, and why you choose to shop where you do. Your opinions are very valuable.

This research is strictly for the purpose of my undergraduate honours project, and your identity will be protected, as you will remain anonymous throughout the course of my study.

Please confirm your attendance no later than Monday 30 July by contacting Deborah Follers, the Airds Bradbury Renewal Project Officer, on (02) 4629 3245, or Emily (myself) on 0402512331. If for some reason you find you are not able to attend, please notify us as soon as possible, thank you.

I look forward to meeting you on August 3.

Sincerely,

Emily Salvisberg
UNSW Student
(ej.salvisberg@gmail.com)



Image source:
<http://www.ductchgirlcooking.com>, accessed
1/07/12

Access to Affordable, Healthy Food for Sydney's Metropolitan Fringe

Discussion Information Sheet

The following information has been provided to explain the purpose of my study and the format of our discussion for Monday, August 6.

Project Aim:

The purpose of this research is to identify challenges and opportunities for residents' in South West Sydney to access affordable, healthy food. Healthy food for the purpose of this study is defined as fresh fruit and vegetable produce.

This project more broadly relates to concerns for food security for lower socio-economic areas, which has been highlighted in an issues paper to inform the development of a National Food Plan by the Australian Government.

The information gathered in the discussion will be used in my thesis which forms part of my final coursework, as part of my undergraduate degree in urban planning at the University of New South Wales.

Discussion Format:

As a participant of this study you will be asked questions that relate to how you access fresh produce for your family.

Questions will relate to:

- Where you shop and why;
- How you travel to the store where you buy fresh produce;
- Your priority for your family to eat fresh produce;
- Your thoughts on the affordability of fresh produce; and
- Whether you attend or use community programs to access fresh produce.

You will be asked to answer the questions in the following form:

1. Complete a short questionnaire;
2. Mark your most frequented stores on a map provided; and
3. Participate in a group discussion on challenges and opportunities to access fresh produce.

During the course of the discussion, there will be opportunities to ask any further questions you may have relating to my study.

I look forward to meeting you,

Kind regards,

Emily Salvisberg

Appendix G –

Focus Group Program Sheet

Focus Group Program Sheet

Date: xx/xx/2012

Location: xxxx

Moderator: Emily Salvisberg

Assistant Moderator: Emily Mitchell/ Lucinda Molloy

Community Contact: Renewal Project Officer/ School Liaison Officer

	Activity	Components	Time
2	Arrival and Introduction	<ul style="list-style-type: none">- Welcome greeting- Refreshments available- Consent form and Project Information- Name tag	5 mins
3	Questionnaire	<ul style="list-style-type: none">- Fill in questionnaire	5 mins
4	Group Discussion	<ul style="list-style-type: none">- Your opinions on available fruit and vegetable shops	35 mins
5	Conclusion	<ul style="list-style-type: none">- A food voucher will be provided to thank you for your time- A copy of the final thesis can be obtained from Deborah Follers later this year, or you can request a copy by emailing ej.salvisberg@gmail.com	5 mins

Ground Rules

1. This is a research project and there are no sales involved;
2. For you to be part of this study I need your permission, could you please take the time to fill out the consent form provided;
3. Please speak loudly, and only one person speak at a time;
4. Because we only have a short time together, please give other people in this group an opportunity to answer questions;
5. I will address you by your first name today, but your name will not be identified in my written report, your name will be changed to a code after today's discussion and you are assured of complete confidentiality;
6. To make sure I don't miss any of your comments, I am tape recording today's discussion, this is a standard process for researchers and the tape will be used for the purpose of my research only;
7. You all have a name tag sticker, can you please write your first name in large hand writing, so we know your names.

Appendix H –

Focus Group Participant Questionnaire

Access to Healthy Food in Western Sydney

Focus Group Questionnaire

Instructions:

This questionnaire will ask you how you shop for fresh fruit and vegetables on a weekly basis. Please ask a researcher if you are unsure how to answer a question.

1. Are you responsible for grocery shopping for your household? (please circle)

YES/ NO

2. What is the closest street and cross street to your home address? (i.e. list your street, and a street close by).

Your street:

Cross street:

3. How important is getting fresh fruits and vegetables in your weekly grocery shopping, and why? (please tick and provide a written reason)

- Not important
- Important
- Very important

Why?

4. What percentage of your weekly food bill is on fresh fruits and vegetables? (please tick)

- Less than 25%
- Between 25% to 50%
- More than 50%

5. Do you most often shop for fresh fruit and vegetables at stores within your council area? (Please circle)

YES/ NO

6. What store do you most often visit to buy fresh fruit and vegetables? (please provide details)

(a) Name of store:

(b) Name of Suburb:

(c) Why do you go to this store? (please select the options that apply)

- Easy to travel to
- Affordable
- Quality of fruit and vegetables
- Variety of fruit and vegetables
- Selection of other foods available
- My friends go there
- Other (please specify)

7. In a typical week, how many times do you go shopping for fresh fruit and vegetables? (please tick)

- None
- 1 time
- 2 times
- 3 times
- More than 3 times

8. When you go shopping for fresh fruit and vegetables, how do you usually get there? (please tick 1 option)

- Walk
- Bus
- Community centre organised
- Train
- I drive
- I borrow a car to drive
- I car share with friends/ neighbours
- Other (please specify) ...

**9. For the mode of travel selected above, how long does the journey take you?
(please tick the best option)**

- Less than 5 minutes
- 5 – 15 minutes
- 15 minutes – 30 minutes
- 30 minutes – 45 minutes
- 46 minutes – 1 hour
- More than 1 hour

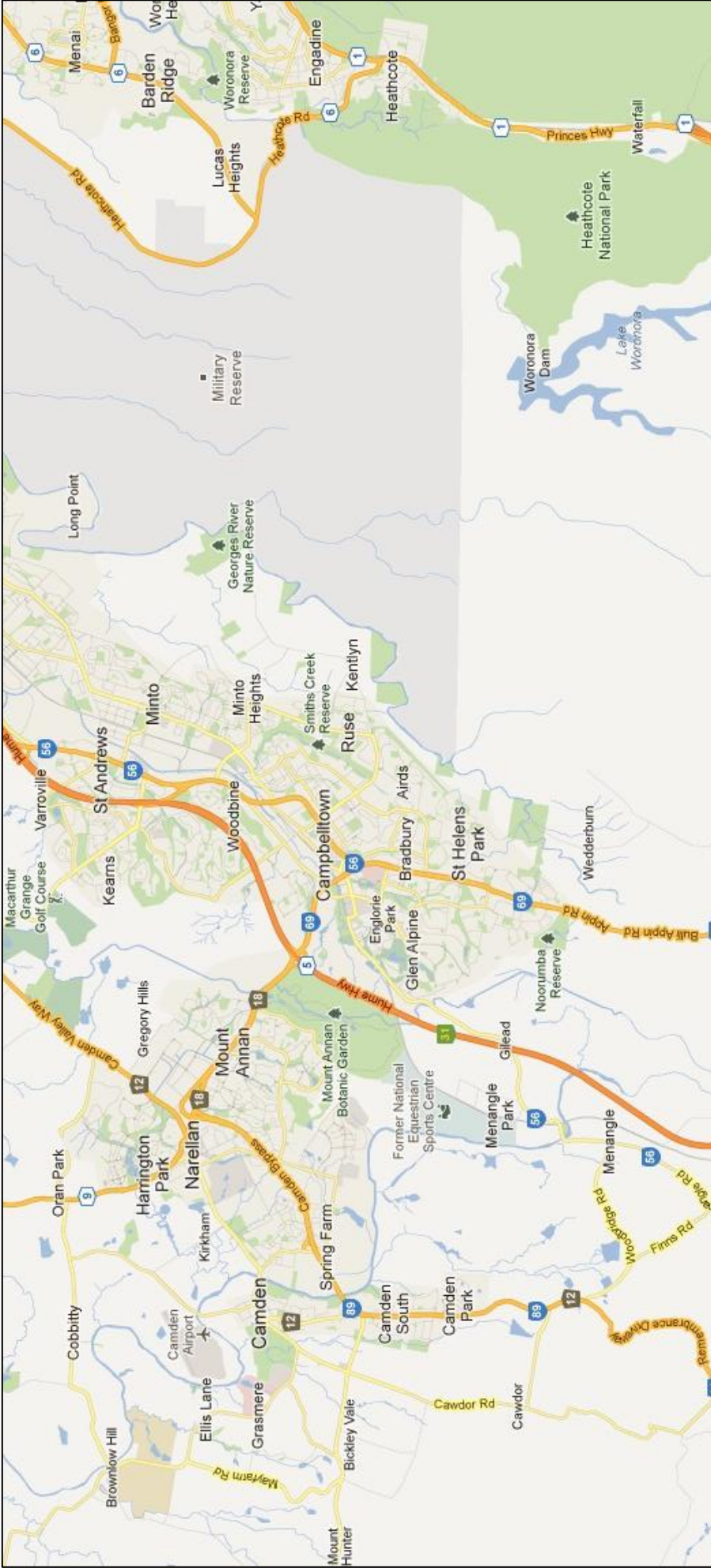
10. Other than the mode of travel selected for question 7, what other ways do you travel to buy fresh fruit and vegetables? (please tick the options that apply)

- Walk
- Bus
- Community Van
- Train
- I drive
- I borrow a car to drive
- I car share with friends/ neighbours
- Other (please specify)...

**11. For the mode of travel selected above, how long does the journey take you?
(please tick the best option)**

- Less than 5 minutes
- 5 – 15 minutes
- 15 minutes – 30 minutes
- 30 minutes – 45 minutes
- 46 minutes – 1 hour
- More than 1 hour

12. A map is provided on the next page. Mark an 'X' on the map, and label the store, where fresh fruits and vegetables are most affordable. You may or may not shop at this store often.



Source: Google Maps 2012

Appendix I –

Focus Group Moderator Sheets

Moderator - Focus Group Activity Sheet

Session/ Activity		Components	Time	Equipment Required
1	Set-up	<ul style="list-style-type: none"> - Sign in at reception 	5 mins	<ul style="list-style-type: none"> - Tape recorder - Fruit platter, water jug and cups - Napkins and rubbish bag - Question sheets + spares - Sticky name tags - Pens for participants - Board/ paper + pens – need to check - Tables and chairs?
2	Introduction	<ul style="list-style-type: none"> - Welcome greeting - Program sheet - Collect permission slip - Name tag - Ice breaker 	5 mins	<ul style="list-style-type: none"> - Name tags - Consent form and project information sheets
3	Questionnaire	<ul style="list-style-type: none"> - Hand out sheet and collect 	5 mins	<ul style="list-style-type: none"> - Tape recorder - Questionnaire - UBD to consult
4	Discussion	<ul style="list-style-type: none"> - Scenario- write answers on a large sheet - Verbal discussion 	35 mins	<ul style="list-style-type: none"> - Tape recorder - Board and pens
5	Conclusion	<ul style="list-style-type: none"> - Thank for time and provide vouchers - Final version of thesis available at centre, or available by email contact. 	5 mins	<ul style="list-style-type: none"> - Food vouchers - Email address available
6	Pack-up	<ul style="list-style-type: none"> - Tidy room - Sign-out 	5 mins	<ul style="list-style-type: none"> - Cleaning cloth - Rubbish bag - Return furniture
			1 hour max	

Welcome Greeting

Hello and welcome to this discussion on access to healthy food in Western Sydney. Thank you for coming along, it is really great to have so many keen people a part of my study.

My name is Emily, and I'm a student from the University of New South Wales in my final year of a degree in town planning. Town planning is similar to a human geography degree.

I am required to write about an issue of town planning that interests me. I have chosen to write about how people in Western Sydney buy their fresh fruits and vegetables, and today's discussion will help me with my research.

So the purpose of my invitation to have you here today, is to help me understand how you get your fresh groceries on a weekly basis, as the main grocery shopper for your family.

My friend XX will also be with us for the next hour, assisting me with note taking notes on your comments, and to tape record the discussion. Tape recording is a standard procedure by researchers to capture information. Today we will address you by your first name, but in my written report you will be given a code, so you will remain anonymous.

Just to give you an idea of what we will do together for the next hour, I will now run you through the program sheet... (Program Sheet)...

First

Individually you will fill in a quick questionnaire that will ask you about your grocery shopping for a usual week, which will take about 5 minutes to fill out. At any time you can ask a question.

Second

We will have a group discussion about local stores that you can buy fresh fruits and vegetables from. I will ask you a number of questions to keep the discussion flowing. There are no right or wrong answers but differing points of view. Please feel free to share your comment even if it is different to what someone else has said.

Third

To wrap I will hand out grocery vouchers to thank you for your time. Before we begin though, let me just run you through some ground rules. These are listed on the bottom of the program sheet.

Okay, as a little bit of an ice breaker, let's start by answering a quick question. We'll go round in a circle, first say your name and tell me your favourite piece of fruit and why. I'll start, my name is Emily and my favourite fruit is strawberries because I love the flavour.

I invite you all to enjoy the light refreshments available today, please help yourselves.

...(Hand out questionnaires)...

Okay, so let's begin with filling out the questionnaire sheet you've just been given. Please ask us any questions you are unsure about, and try and answer most of the questions.

Moderator Discussion Questions

1. The first question for the discussion relates to the scenario I am about to read out to you.

Scenario:

A new family has recently moved into your street. One afternoon a parent from the new family asks you about where you buy your groceries from. The parent of the family is worried about the price of fruits and vegetables, and how far they need to travel to a store where it is more affordable.

We are now going to brain-storm some ideas about which stores you should suggest to the neighbour. Food stores can be a big supermarket, a small grocer, a community food basket service, or fresh food market.

If this neighbour had access to a car, which stores would you suggest to them?:

Store Name	Suburb	Distance (mins)	Reason Why	Initial/Top-up

If this neighbour does not have access to a car, which stores would you suggest to them:

Store Name	Suburb	Distance (mins)	Travel Mode	Reason Why	Initial/Top-up

2. Now let us go through these lists, and work out which store would be used for a main grocery shop, and which store would be for a top-up convenience shop?
3. If you could only select two stores from the list, one for main shopping and one for convenience, which one would you choose? And why? (group discussion)
4. Thinking back to the questionnaire you filled out, on how you get your fresh fruit and vegetable groceries on a weekly basis. What stops you buying fresh fruits and vegetables?

We will go around the group, and maybe if you can think of 2 things that stop you.

5. Are there programs provided by your local council about healthy food?
6. Have these program influenced you? – and how?
7. Now consider, what would help you to buy more fresh fruits and vegetables for your family?

**Appendix J –
Fruit and Vegetable Audit Tool**

Name/ Address of Store:

Date:

PART A: COST SURVEY

Basket item	Product size	Cost
Fruit		
Apples	per 1kg	
Bananas	per 1kg	
Oranges	per 1kg	
Vegetables		
Cabbage	half	
Carrots	Per kg	
Lettuce	whole	
Onions	per 1kg	
Potatoes	per 1kg	
Pumpkin	Per 1kg	
Tomatoes	Per 1kg	

PART B: AVAILABILITY SURVEY

Vegetable	Present	Number of varieties
Broccoli		
Beetroot		
Bok Choy		
Brussels Sprouts		
Cabbage		
Capsicum		
Carrot		
Cauliflower		
Celery		
Cucumber		
Eggplant		
Fenugreek		
Fresh Herbs		
Garlic		
Ginger		
Green Beans		
Leek		
Lettuce		
Mushroom		
Onion		
Parsnip		
Potato		
Pumpkin		
Radish		
Spinach		
Squash		
Sweet Corn		
Sweet Potato		
Tomatoes		
Zucchini		

Audit Guidelines

The guidelines for this Fruit and Vegetable Availability Audit were adopted from the project: *'Planning and Building Healthy Communities: A multidisciplinary longitudinal study of the relationship between the built environment and human health'* (Crawford et al. 2012, pp 7-12)

PART A: Cost Survey

The following guidelines were followed for this task:

- The cheapest brand price in the specified size should be recorded.
- Only regular prices of items were recorded. If the regular price was not listed and staff members do not know, use the price of the item at a benchmark store (large supermarket store).
- If the size of an item differs to what is specified in the form, choose the next closest smaller size. If the smaller size is not available choose the next larger size.
- If an item is not available, record the item as a dash (-)
- Bagged fruit or vegetables prices should not be used unless they are the only type available.

PART B: Availability Survey

The following guidelines were followed for this task:

- There is a list of 16 fruits and 30 vegetables.
- In the "present" column, tick ✓ if the item is available, or cross ✗ if it is unavailable.
- In the "number of varieties" column, the number of available types of this food should be written.

PART C: Quality Survey

The following guidelines were followed for this task:

- Record the price of the cheapest fruit and vegetables and rate their quality in this section.
- For fresh fruit and vegetables, price per kg. Use items sold individually \$/kg, if product is only available per unit price (i.e., lettuce \$1.20 each) weigh one, and write the price per unit and the weight on the form. If there is no scale at the food outlet, describe whether it is a half or a whole item (i.e., half or whole lettuce). If items are not available, record a dash (-) in the price/kg box.
- Rate the quality of the fresh fruit and vegetable items on display based on the proportions of fruit and vegetables that are aged, bruised or mouldy. This is few of the items, half of the items, or all of the items.
- Observe how clean the fruit and vegetables and tick ✓ if the produce appears free of dirt and dust or cross ✗ if they appear dirty or dusty.

Appendix K -

Focus Group Suggested Store Responses

Campbelltown LGA

Table 4.3: Collation of Campbelltown LGA Focus Group participant's responses on fresh fruit and vegetable stores (adapted from PCA 2011/2012)

Key	Store	Address	PCA Classification* / Store Description	Travel Mode	Focus Group Participant Comments	Shopping Type	Response Comments
1	Campbelltown Mall	271 Queen Street, Campbelltown	Regional Shopping Centre/ 6 Major tenants including Woolworths, Coles, Franklins + 106 speciality stores	5 mins by car/ train/ bus	-choice - 'its central and got everything: post office, bank etc.' - 'Major supermarkets have the delivery service, other stores don't have the service'	Main shop	Car and no-car scenario
2	IGA Airds	Shop 1 Riverside Drive, Airds	Neighbourhood Centre + 16 speciality shops	5 mins by car/ 10 mins walking	- Close and convenient - 'Small supply' - 'A bit expensive' - 'when your desperate' - 'Supplement if all else fails'	Top-up	Car and no-car scenario
3	Macarthur Square	200 Gilchrist Drive, Campbelltown	Major Regional/ 8 Major tenants including Woolworths, Coles, + 254 specialty stores	Bus/ car	- 'Macarthur Square is too expensive' - 'I won't shop there'- majority agreement	Main shop/ Top-up	Car and no-car scenario
4	Warwick Farm Markets	707 Smithfield Road, Edensor Park	Market	20 mins by car	- 'Really fresh, organic, great variety' - 'There isn't a great choice of organic in Campbelltown, it's hard to get organic stuff'	Main shop	Car scenario only
5	Foodworks Bradbury	Bradbury Park Shopping Centre, Shop 1A, Jacaranda Ave, Bradbury	Neighbourhood Centre	5 mins by car	-	Top-up	Car scenario only
6	Minto Fruit Barn	42 Ben Lomond Road, Minto	Neighbourhood Centre	Car	'very popular for fruit and veg for a large family buy in bulk'	Top-up	Car scenario only
7	ALDI Ambervale	Woodhouse Drive, Ambervale	Market	Bus/ car	- 'There are 4 ALDIs in the area but can only get there by car'	Main shop	Car and no-car scenario

					- 'ALDIS in Minto taxis won't pick you up from there, you have to cross the road to get picked up'		
8	Airds Community Central	69 Riverside Drive, Airds	Co-op food basket by Community Change Makers	N/A	- 'AB Central do a fruit delivery each week \$5-15/bag from the markets, not top quality but good value for money, delivered straight to door, go Wed or Thurs and delivered Friday' - 'They have really good stuff' 'I wouldn't be getting any of my veg intake if it wasn't for them'	Main shop	- mentioned outside of scenario discussion
9	Country Fresh/ Market Fair	4 Tindall Street, Campbelltown	Neighbourhood Centre	10 mins by car	- 'fruit is fresh, cheap, lots of variety, just opened, huge and can do a combined shop, Woolworths is there too'	Main	- Car scenario only
10	Online Shopping	N/A	Major supermarkets	N/A	- 'It's a lot dearer though'	Main	- No-car scenario only

Fairfield LGA

Table 5.3: Collation of Fairfield LGA Focus Group participant's responses on fresh fruit and vegetable stores (adapted from PCA 2011/2012)

Key	Store	Address	PCA Classification*/ Store Description	Travel Mode	Focus Group Participant Comments	Shopping Type	Response Comments
1	Fred's Warehouse/ Fruit Market	661-667 Smithfield Road, Edensor Park	Stand-a-lone supermarket	5 mins by car	cheap, affordable, fresh, variety, seafood shop, deli, butcher- one stop-shop	Main	Car scenario only
2	Woolworths Cabramatta	Railway Parade and Hugh Street	Cabramatta Commercial Centre/ Neighbourhood Centre/ 1 Major tenant + 8 specialty stores	5 mins by car/ train station close by	Convenience and affordable when things are on special	Main shop	Car and no-car scenario
3	Fairfield Forum	8/36 Station Street,	Sub Regional/ 2	30mins to	- 'need to change trains at	Main	Car and no-car scenario

		Fairfield	Major tenants including Coles + 39 specialty stores	walk/ 15mins by bus	Cabramatta- buses are probably better around 15 minutes'	shop	
4	ALDI Villawood	2 Villawood Road, Villawood	Neighbourhood Centre	5 mins by car	Affordability, questionable quality, products moderate in quality	Top-up	Car scenario only
5	Villawood Fruit Market	2 Villawood Road, Villawood	Neighbourhood Centre	5mins by car from school/ 20mins walking	Affordable and great variety	Top-up/ Main shop	Car and no-car scenario
6	Flemington Markets	Homebush West	Market	20-30 mins by car/ 30-40min by train	- Quality and fresh produce, cheaper than supermarkets - 'Can get the train, but it's a bit of a hike' - 'If you go all that way you're not just going to buy some apples'- buy and share	Main shop	Car and no-car scenario
7	Neeta City Centre	54 Smart Street, Fairfield	Sub Regional/ 3 Major tenants including Woolworths + 53 specialty stores	unknown	N/A	Main	Only mentioned in questionnaire
8	Coles Fairfield West	368 Hamilton Road, Fairfield West	Stand-a-lone store beside an ALDI	15mins by car	New store and good range, affordable, convenient and 'nice chicken shop next door'	Main	Car scenario only

Appendix L -

Airds Focus Group:

Knowledge of Healthy Food Programs

Table 4.3.1 Airds focus group: knowledge of council healthy food programs (Author 2012)

Participant Response	Identified Program
<p>The Airds Bradbury Central centre 'do a fruit delivery every week for \$5.00 - \$15.00 per bag from the markets, not top quality but good value for money. Delivered straight to the door. Go Wed or Thurs and delivered Friday. Now 60 people use the service. They have really good stuff.'</p>	<p>Community Change Makers in partnership with Housing NSW. The programs are located in Airds and include a weekly fruit and veg co-operative for local residents and Men's Shed (Housing NSW 2012).</p>
<p>'Healthy cooking at the Tharawal Aboriginal Centre...what you can do with \$5.00'.</p>	<p>Koori Community Kitchen is a program facilitated in partnership with Tharawal Aboriginal Corporation and the Health Promotion Service South Western Sydney and Sydney Local Health District, NSW Health. 'The kitchen provides a friendly, relaxed environment where people are able to share their knowledge and skills in food preparation, food budgeting, nutrition and healthier choices and connect with the community'. (TAC 2012)</p>
<p>Community Garden Plots by Council 'sometimes in the local rag'.</p>	<p>Unknown</p>
<p>Airds community garden 'just started one, behind the Men's Shed run by Islanders who grow bananas' and 'one at the community centre at Greengate Road'.</p>	<p>Macarthur Diversity Services Initiative Ltd was established as an outreach service of the Liverpool Migrant Resource Centre, and provides a number of programs to assist the settlement of migrants and refugees in the Campbelltown area. Currently the Initiative is undertaking a 'Macarthur Food Security Project', providing training and education programs to the community, and mapping of primary producers in the Macarthur Region. (MDSI 2012)</p>
<p>'Mount Annan Botanical Gardens run a fruit and vegetable thing'.</p>	<p>Community Greening Initiative provided by the Royal Botanical Gardens and Domain Trust. This Initiative is in partnership with Housing NSW to promote communal garden projects in social housing communities, on local Council land, in the grounds of churches, hospitals and schools throughout New South Wales (RBG 2012). Mount Annan Botanical Garden is operated by this Trust and also provides community gardening opportunities.</p>

Appendix M –

Fruit and Vegetable Availability Audit Results

(Campbelltown and Fairfield)

Campbelltown 'Main' Shopping- Campbelltown Mall

Table 4.4.1: Cost survey- Campbelltown Mall (Author 2012)

Store Name	Fruit Item (\$/ quantity)			Vegetable Item (\$/quantity)						
	Apple	Orange	Banana	Tomato	Pumpkin	Potato	Lettuce	Carrot	Onion	Cabbage
Coles	\$2.20/ kg	\$1.98/ kg	\$2.95/ kg	\$7.48/ kg	\$3.95/kg	\$2.48/kg	\$1.98/ each	\$1.30/ kg	\$1.30/kg	\$3.98/ each
Franklins	\$1.45/ kg	\$0.89/ kg	\$3.99/ kg	\$3.50/ kg	\$3.99/kg	\$1.00/kg	\$1.20/ each	\$1.29/ kg	\$1.99/kg	\$4.47/ each
Woolworths	\$1.98/ kg	\$1.15/ kg	\$2.98/ kg	\$8.98/ kg	\$3.98/kg	\$1.16/kg	\$1.99/ each	\$1.98/ kg	\$1.98/kg	\$4.98/ each
VNH Supermarket	-	-	\$2.50/ kg	\$7.50/ kg	-	\$1.90/kg	-	-	\$1.99/kg	\$1.09/ each
Filled with Fruit & Deli	\$3.99/ kg	\$2.99/ kg	\$1.99/ kg	\$8.99/ kg	\$3.99/kg	\$1.50/kg	\$1.50/ each	\$1.98/ kg	\$1.99/kg	\$4.00/ each

Table 4.4.2: Availability survey – Campbelltown Mall (Author 2012)

Store Name	Available (%)		Comments on Variety
	Fruits	Vegetables	
Coles	56	80	- Mostly there was only one variety of each produce item, with an exception for herbs, lettuce, potatoes, onions, tomatoes, carrots apples, oranges, bananas, cabbage, grapes and mushrooms. - Organic varieties and pre-washed/ package produce available with a higher price.
Franklins	50	73	- There was moderate variety for the following produce: apples, oranges, lettuces, potatoes and onions, but limited variety in other produce.
Woolworths	67	90	- Mostly there was only one variety of each produce item, with an exception for herbs, lettuce, potatoes, onions, tomatoes, carrots apples, oranges, bananas, cabbage, grapes and mushrooms. - Organic varieties and pre-washed/ package produce available with a higher price.
VNH Supermarket	13	40	-There were a small number of fruits and vegetables available, mostly of an Asian cuisine variety.
Filled with Fruit & Deli	69	96	-The store had a large number of fresh fruits and vegetable produce available, supplying a number of varieties - The few produce groups not stocked are not in season

Table 4.4.3: Quality Survey – Campbelltown Mall (Author 2012)

Store Name	Fruit Item (cheapest product/ quality)			Vegetable Item (cheapest product/quality)						
	Apple	Orange	Banana	Tomato	Pumpkin	Potato	Lettuce	Carrot	Onion	Cabbage
Coles										
Name	Granny Smith	Navel	Coles	Coles	Kent	Un-brushed	Butter	Coles	Brown	Wombok
Quality	Few	Half	Few	Few	Few	Few	Few	Few	Few	All
Clean	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Franklins										
Name	Red Delicious	Navel	Franklins	Farm Fresh	Kent	Un-brushed	Iceberg	Franklin	Brown	Chinese

Quality	Some	Most	Few	Some	Few	Few	Half	Few	Half	Half
Clean	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Woolworths										
Name	Sundowner	Navel	Woolworths	Woolworths	Kent	Un-brushed	Oakleaf	Woolworths	Brown	Wombok
Quality	Few	Few	Few	Few	Few	Few	Few	Few	Few	Some
Clean	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
VNH Supermarket										
Name	-	-	-	-	-	-	-	-	Brown	Chinese
Quality	-	-	All	Few	-	-	-	-	Few	All
Clean	-	-	Yes	Yes	-	-	-	-	No	Yes
Filled with Fruit & Deli										
Name	Granny Smith	Navel	Unknown	Unknown	Japanese	Unknown	Hydro	Unknown	Brown	Plain
Quality	Few	Few	Half	Few	Few	Few	Few	Few	Few	Few
Clean	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes

Campbelltown 'Top-up' Shopping- Airds IGA

Table 4.4.5: Cost survey – Airds IGA (Author 2012)

Store Name	Fruit Item (\$/ quantity)			Vegetable Item (\$/quantity)						
	Apple	Orange	Banana	Tomato	Pumpkin	Potato	Lettuce	Carrot	Onion	Cabbage
Airds IGA	\$1.79/kg	\$1.89/kg	\$3.49/kg	\$5.99/kg	\$3.49/kg	\$1.99/kg	\$2.89/each	\$1.59/kg	\$1.79/kg	\$3.49/each

Table 4.4.6: Availability survey – Airds IGA (Author 2012)

Store Name	Available (%)		Comments on Variety
	Fruits	Vegetables	
Airds IGA	50	63	- There was moderate variety for the following produce: apples, oranges, lettuces, potatoes and onions, but limited variety in other produce.

Table 4.4.7: Quality survey – Airds IGA (Author 2012)

Store Name	Fruit Item (cheapest product/ quality)			Vegetable Item (cheapest product/quality)						
	Apple	Orange	Banana	Tomato	Pumpkin	Potato	Lettuce	Carrot	Onion	Cabbage
Airds IGA										
Name	Granny Smith	Navel	IGA	Coles	Kent	Un-brushed	Cos	IGA	Brown	Wombok
Quality	Some	All	Few	Few	Some	Few	Most	Few	Most	All
Clean	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes

Fairfield 'Main' Shopping- Fairfield Forum

Table 5.4.1: Cost survey – Fairfield Forum (Author 2012)

Store Name	Fruit Item (\$/ quantity)			Vegetable Item (\$/quantity)						
	Apple	Orange	Banana	Tomato	Pumpkin	Potato	Lettuce	Carrot	Onion	Cabbage
Coles	\$2.40/ kg	\$2.48/ kg	\$2.98/ kg	\$8.98/ kg	\$4.98/kg	\$1.60/kg	\$1.98/ each	\$1.30/ kg	\$1.30/kg	\$3.98/ each
Fruit Mania	\$0.99/ kg	\$0.99/ Kg	\$1.99/ kg	\$3.99/ kg	\$2.29/kg	\$1.29/kg	\$1.49/ each	\$1.29/ kg	\$0.79/kg	\$3.00/ each

Table 5.4.2: Availability survey – Fairfield Forum (Author 2012)

Store Name	Available (%)		Comments on Variety
	Fruits	Vegetables	
Coles	69	60	<ul style="list-style-type: none"> - Mostly there was only one variety of each produce item, with an exception for herbs, lettuce, potatoes, onions, tomatoes, carrots apples, oranges, bananas, cabbage, grapes and mushrooms. - Organic varieties and pre-washed/ package produce available with a higher price.
Fruit Mania	69	93	<ul style="list-style-type: none"> - There was a large variety of fruits and vegetables, with notable ranges including: up to 10 varieties of potato, 7 varieties of fresh herbs, 4 varieties of carrots, and 3 varieties of cabbage. - The store stocked common varieties of produce and diverse ethnic varieties including tropical fruits and Mediterranean legumes.

Table 5.4.3: Quality survey – Fairfield Forum (Author 2012)

Store Name	Fruit Item (cheapest product/ quality)			Vegetable Item (cheapest product/quality)						
	Apple	Orange	Banana	Tomato	Pumpkin	Potato	Lettuce	Carrot	Onion	Cabbage
Coles										
Name	Granny Smith	Navel	Coles	Field Grown	Kent	Coles Carisma	Green Oak	Coles	Brown	Wombok
Quality	Few	Some	Few	Few	Some	Some	Half	Few	Few	Some
Clean	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes
Fruit Mania										
Name	Granny Smith	Navel	-	Roma	Japanese	Brushed	Iceberg	-	Brown	Chinese
Quality	All	Half	Few	Some	Few	Few	Some	Few	Most	Half
Clean	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes

Fairfield 'Top-up' Shopping- Woodville Shopping Village

Table 5.4.5: Cost Survey – Woodville Shopping Village (Author 2012)

Store Name	Fruit Item (\$/ quantity)			Vegetable Item (\$/quantity)						
	Apple	Orange	Banana	Tomato	Pumpkin	Potato	Lettuce	Carrot	Onion	Cabbage
ALDI	\$2.29/ kg	\$1.16/ kg	\$2.49/ kg	\$5.99/ kg	\$3.99/kg	\$2.99/kg	\$1.99/ each	\$1.19/ kg	\$1.49/kg	\$1.50/ each
Villawood Fruit Market	\$1.49/ Kg	\$0.99/ Kg	\$2.99/ Kg	\$3.75/ Kg	\$3.00/ Kg	\$4.99/ Kg	\$1.49/ Kg	\$2.50/ Kg	\$1.49/ Kg	\$0.99/ Kg

Table 5.4.6: Availability Survey – Woodville Shopping Village (Author 2012)

Store Name	Available (%)		Comments on Variety
	Fruits	Vegetables	
ALDI	56	63	- There was a limited variety of fruit and vegetables, with the most common available. - Much of the stock had been sold, and there remained only a few items for some produce types.
Villawood Fruit Market	69	86	- There was a large variety of fruits and vegetables, with notable ranges including: up to 10 varieties of onions and fresh herbs, 4 varieties of mushrooms and 8 varieties of apples.

Table 5.4.7: Quality Survey – Woodville Shopping Village (Author 2012)

Store Name	Fruit Item (cheapest product/ quality)			Vegetable Item (cheapest product/quality)						
	Apple	Orange	Banana	Tomato	Pumpkin	Potato	Lettuce	Carrot	Onion	Cabbage
ALDI										
<i>Name</i>	Sun-downer	Navel	ALDI	ALDI	Butternut	Un-brushed	Mix Salad	ALDI	White	Red
<i>Quality</i>	Some	Fes	Half	Few	Few	Half	Few	Half	Half	Half
<i>Clean</i>	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Villawood Fruit Market										
<i>Name</i>	Fuji	-	-	-	Grey	Un-brushed	Ice Berg	-	Brown	Chinese
<i>Quality</i>	Some	Most	Few	Some	Some	Few	Few	Few	Most	Most
<i>Clean</i>	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes