



City Wellbeing ■ City Futures Research Centre

Planning and Building Healthy Communities

An Australian Research Council Linkage Project conducted by the Healthy Built Environments Program within the City Futures Research Centre (University of New South Wales) with partners UrbanGrowth NSW, the Heart Foundation (NSW) and the South Western Sydney Local Health District (NSW Health).

HEALTHY NEIGHBOURHOOD AUDIT for NEW ROUSE HILL

DATA REPORT

City Futures Research Centre ■ University of New South Wales

February 2016

A Note about some organisational changes during the course of this Project.

During the course of this Project:

- The Healthy Built Environments Program (HBEP) became known as the City Wellbeing Program (both located within the City Futures Research Centre).
- NSW Landcom was re-constituted as UrbanGrowth NSW.
- Sydney South West Area Health Service became the South Western Sydney Local Health District (SSWLHD).

The original ARC Project arrangements were with these earlier entities.

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Acknowledgement and appreciation is also expressed to the residents of each study area who participated in the research by way of interview and/or a workshop.

CONTENTS

1. Project Overview
2. Audit Methodology
3. Approach to Reporting
4. Site Description
5. Relationship of the Site to the Broader Locality
6. Audit Particulars
7. Land Use
 - Residential density and types of housing
 - Retail and commercial development
 - Recreational facilities and spaces
 - Institutional/services
 - Community facilities and uses
 - Future development
8. Use of Public Space
9. Food Access
 - Commercial shops
 - Community Gardens
 - Farmers' Markets
10. Street Network
 - Amenities and Shading
 - The Walking Environment
 - The Cycling Environment
 - Public Transport
 - Pedestrian Safety
 - Safety at Night
 - Universal Access
11. Social Interaction
12. Overall Analysis
13. Recommendations for Improvement
14. References
15. Appendices
 - A. List of restaurants, fresh food and takeaway stores in the Town Centre
 - B. Market Basket & Farmers Market Survey Tools
 - Market Basket Survey tool
 - Farmers' Market Survey tool
 - Farmers' Market Customer Questionnaire
 - Farmers' Market Stallholder Questionnaire
 - C. Scoring of footpaths
 - D. List of disabled street lights, as at 23 January 2013

LIST OF MAPS, FIGURES, and TABLES

Maps:

1. Site boundaries of The New Rouse Hill
2. The New Rouse Hill Master Plan
3. The New Rouse Hill in regional context
4. Aerial view of The New Rouse Hill, highlighting the site of the future North West Rail Link
5. Indicative map of recreational, community, institutional and retail facilities in the regional surrounding The New Rouse Hill
6. Commercial and food access in The New Rouse Hill
7. The New Rouse Hill street network
8. Tree coverage in The New Rouse Hill
9. Street furniture and amenities in The New Rouse Hill
10. Footpath ratings in The New Rouse Hill
11. Detail: footpaths in the Southern Precinct
12. Detail: footpaths in the Eastern Precinct
13. Walking and Cycling Guide published by Rouse Hill Town Centre
14. Cycling infrastructure in The New Rouse Hill
15. Traffic calming and pedestrian crossings in The New Rouse Hill
16. Street lights in The New Rouse Hill

Figures:

1. Motivating factors for customers from Castle Hill Farmers' & Fine Food Market
2. Factors identified to be very important for customers from Castle Hill Farmers' & Fine Food Market
3. Motivating factors for stallholders from Castle Hill Farmers' & Fine Food Market
4. Factors identified to be very important for stallholders from Castle Hill Farmers' & Fine Food Market

Tables:

1. Timeline of planning and development milestones
2. Supermarket prices, and quality and variety of produce – Rouse Hill
3. Crops in The New Rouse Hill community gardens, as at 24 January 2012
4. Farmers' market produce prices, Rouse Hill
5. Demographic characteristics and shopping behaviours of customers from Castle Hill Farmers' & Fine Food Market
6. Main reasons that customers attended Castle Hill Farmers' & Fine Food Market
7. Demographic characteristics and business practices of stallholders from Rouse Hill Organic Food & Farmers' Market and Castle Hill Farmers' & Fine Food Market
8. Main reasons that stallholders attended Rouse Hill Organic Food & Farmers' Market and Castle Hill Organic Food & Farmers' Market

1. PROJECT OVERVIEW.

This Audit Report has been prepared as part of an ARC Linkage funded project entitled *Planning and Building Healthy Communities: A multidisciplinary study of the relationship between the built environment and health*. The aim of the project is to explore and further understand the role of the built environment in facilitating physical activity, social interaction and access to fresh fruits and vegetables.

Physical inactivity, social isolation and poor nutrition are three of the key risk factors for chronic diseases such as diabetes, heart disease, depression and some cancers. Contemporary research indicates that town planning characterised by segregated land uses, disconnected streets, low residential densities, limited public transport and opportunities for local employment, promotes motor vehicle dependency and discourages physical activity and healthy food choices, with resultant negative contributions to the community's physical and mental health.

Conversely, a built environment characterised by mixed uses, connectivity of both streets and transport networks, and a diverse array of densities and infrastructure that is designed to facilitate active transport such as cycling and walking, encourages physical activity and allows access to a diversity of goods and services, including healthy food. In turn, these qualities result in positive contributions to physical and mental health, the latter associated with feeling safe and socially connected within the neighbourhood.

The research is being undertaken in four diverse neighbourhoods in NSW – Victoria Park (located in inner urban South East Sydney), Rouse Hill (suburban north west), Airds Bradbury (suburban south west) and Renwick (in the Southern Highlands of NSW, about 100km from Sydney).

The project is being led by the Healthy Built Environments Program at the University of NSW, and the project partners are UrbanGrowth NSW (formerly Landcom), the National Heart Foundation and the South Western Sydney Local Health District.

2. AUDIT METHODOLOGY.

In order to examine each case study site in relation to its effectiveness in supporting good physical and mental health, a Healthy Neighbourhood Audit Instrument was developed.

The instrument was designed to examine the critical determinants of health in the built environment, as identified in existing healthy built environments literature. The tool allows for an assessment and exploration of the context and design of each neighbourhood, through mapping of land uses and key features, infrastructure and design elements. It also records detailed environmental observations such as the use of, and movement through, different spaces, perceptions of safety, and the availability of different types of food – both traditional (such as supermarkets) and alternative (such as community gardens).

Audits were conducted during the week and on weekends, in daylight and at night. This enabled accommodation of the impact of temporal context. Each audit was primarily undertaken on foot, and complemented by additional windshield observations and use of existing Geographical Information Systems (GIS) data. The audits were completed by a team of interdisciplinary auditors, incorporating skills from their experience in urban planning, GIS and public health.

Data was collected on land uses, street networks and infrastructure and entered into a GIS application on an iPad on-site. Data from detailed observations were recorded via note taking on a paper copy of the Healthy Neighbourhood Audit Instrument. Each site was also recorded photographically in detail.

3. APPROACH TO REPORTING.

This record is intended as a tool to inform further explorations of human behaviour within the built environment. It enables a detailed understanding of each study site.

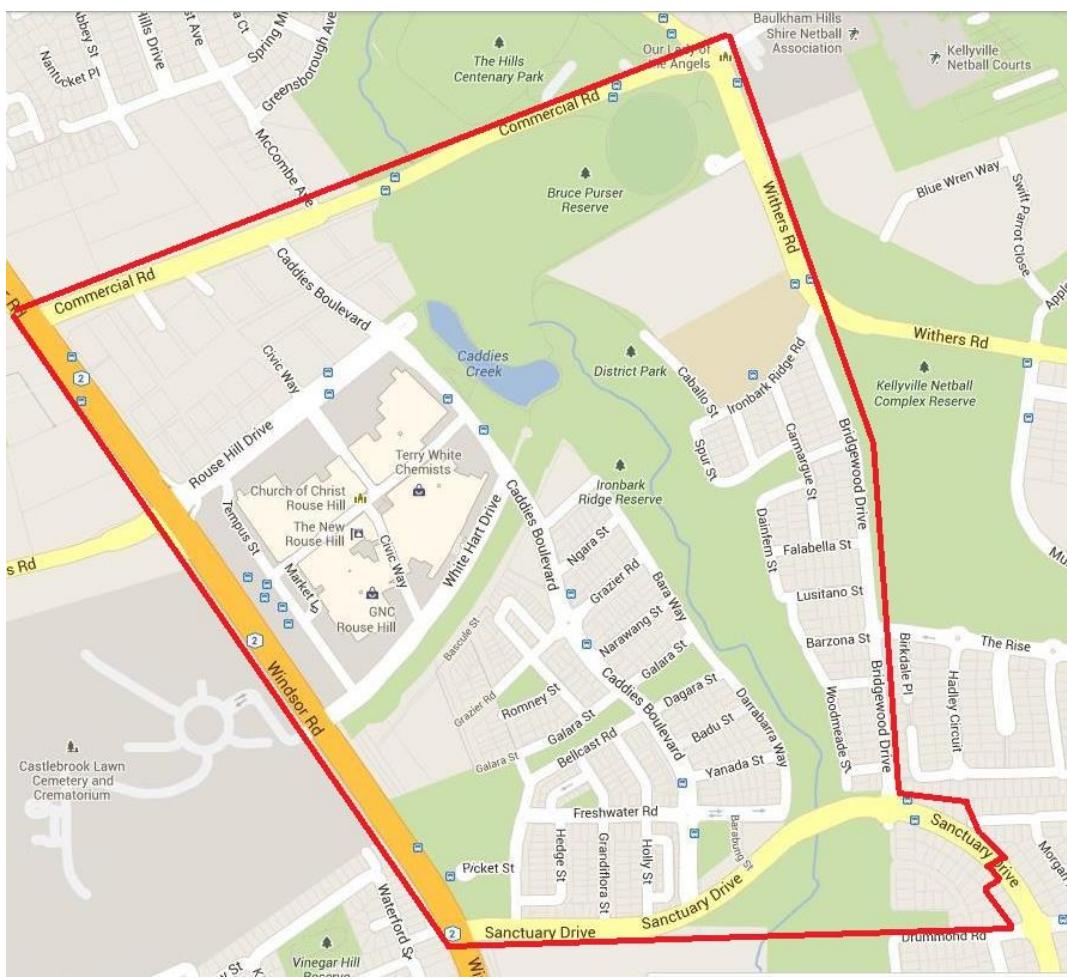
The information presented in this report is a record of the site as observed by the auditors at the time of the audit. The data collected is detailed and rich. It is the culmination of over 20 hours of observations, assessments and mapping. Representing this data in a way that is useful, yet reflective of its depth and diversity, presents a substantial challenge. There is a need to present a meaningful assessment of the health-related elements of each environment, yet also an obligation to acknowledge the complexity of each site. This complexity relates to a number of factors. Firstly, built environments are dynamic. Each case study site is currently experiencing some form of development and as such the physical features and land uses recorded in this report are a snapshot of the environment mapped and perceived at a certain time. Secondly, the subjectivity of the auditors must be acknowledged. The Audit Instrument was designed to encourage the auditors to experience and immerse themselves within the case study sites. However, the auditors' experience of the site cannot be divorced from their position as an outside observer. Each variable reported is open to varying degrees of interpretation. Thirdly, the auditors were trained to consider how the site supported people of all ages and abilities, and therefore each element of the built environment was assessed in relation to how the most vulnerable and least able groups of society would use and experience it. In sections, auditors were also asked to reflect on how the site might support people of different sexual orientations, genders, religions and cultural backgrounds. These reflections were inevitably informed by the auditors' own attributes, genders, values and life experiences, again contributing to the complexity of data gathered using the audit tool. To simply map and quantify each built environment element would ignore these various elements of complexity. Indeed, such quantification would misrepresent the different spaces within each site as falsely homogeneous.

In light of this complexity, different formats have been used to report different variables. This flexibility has enabled a clear demonstration of the depth and diversity of data collected, allowing a consistent picture to be painted of each site in its unique and dynamic context. We consider this flexibility a prerequisite for accuracy in reporting of the results of studies that acknowledge both subjective and objective interpretations. The record is therefore presented here as a combination of maps, photographs and descriptive text. It comprises observations (such as the presence and type of certain physical features), subjective assessments of the quality of physical elements (such as the level of maintenance), and subjective observations based on auditor perceptions and feelings (such as sense of safety). A comprehensive rationale for the choice of format in the context of each specific variable is presented throughout the report.

4. SITE DESCRIPTION.

The New Rouse Hill is a master planned neighbourhood located in the suburb of Rouse Hill (part of the Baulkham Hills Shire Council local government area), in the suburban north west of Sydney – approximately 40 kilometres from the Sydney Central Business District (CBD). The neighbourhood is bounded to the north by Commercial Road, to the west by Windsor Road, to the south by Sanctuary Drive, and to the east by Bridgewood Drive (illustrated below on Map 1). The site is approximately 122 hectares in size. Thirty two hectares of the site has been dedicated as open green space, with up to 1800 residential dwellings (housing around 4500 residents) and 200,000 m² of retail and commercial space planned for the remainder of the development.

The development is a joint venture between Lend Lease and GPT (General Property Trust) Group, in partnership with UrbanGrowth NSW and the NSW Land and Property Management Authority. Lend Lease is the master developer of the site.



Planning History and Context

The North West Sector, in which The New Rouse Hill site resides, was identified as an area for Sydney's urban expansion in The Sydney Region Outline Plan in 1968. Following this, The New Rouse Hill site, owned by the (then) Department of Planning and originally referred to as the Rouse Hill Regional Centre, was identified as a major emerging centre and area for Sydney's future expansion by the NSW Government in the 1980s. In 1991, Blacktown City Council and Baulkham Hills Shire Council undertook the rezoning of approximately 1500 hectares of land, to be developed as part of

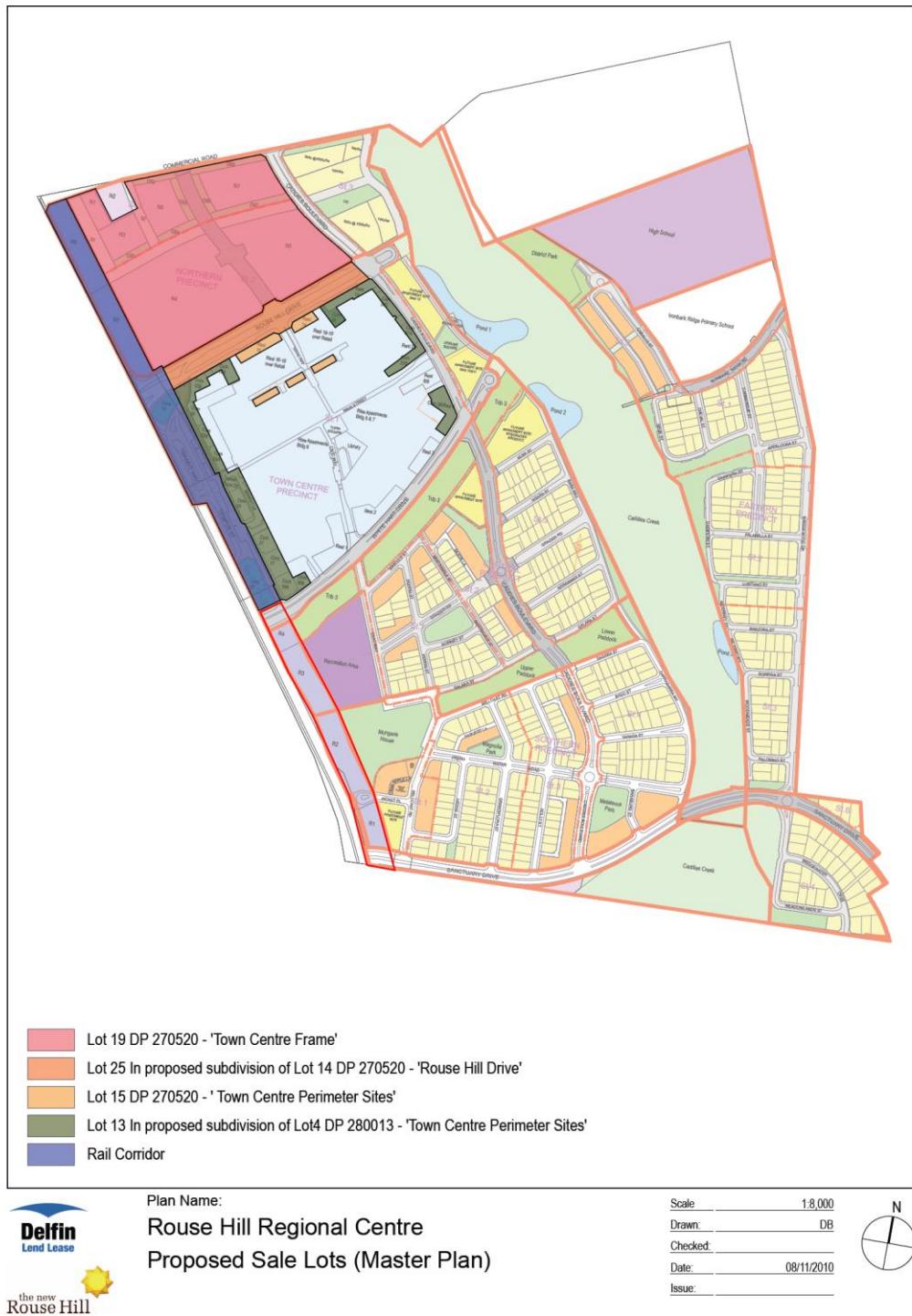
the North West Sector. Planning and development of the area was then delayed until such time as the population reached the level necessary to ensure financial viability for the development (Driscoll, 2007). Table 1 below provides a timeline of key development milestones.

1980s	Site purchased by the NSW government
1987	Regional Environmental Study completed for the North West Sector
1991	Local Environmental Plans accommodating the rezoning of the North West Sector approved
1993	Initial stages of development within the North West Sector underway
1998	Studies commissioned by the NSW Government and Baulkham Hills Shire Council
2001	Rezoning plan for The Rouse Hill Town Centre approved; Landcom engaged to assist the NSW Government with the development
2002	Expression of Interest put out to the general development industry for The New Rouse Hill
2003	Lend Lease and GPT selected as preferred tenderer
2006	Development started at the Town Centre site; development and opening of Ironbark Ridge Public School, Playdays Preschool and Long Day Care Centre
2007	Rouse Hill Town Centre open to the public
2008	Vinegar Hill Memorial Library open to the public

Table 1: Timeline of planning and development milestones.

The goal of the government and developers in regard to The New Rouse Hill was to deliver a sustainable regional centre from the beginning, through the early provision of retail and services and incorporation of environmentally sustainable design elements in the neighbourhood structure, housing design, and water and energy systems. Included in this was a focus on providing a pedestrian friendly environment (Mendel, 2007).

The New Rouse Hill Master Plan, shown below, divides the site into precincts. At the time of the audits, the Town Centre Precinct, the Southern Precinct and the Eastern Precinct were still undergoing construction works, but were well developed. Work had not yet started in the Central Precinct or the Northern Precinct.

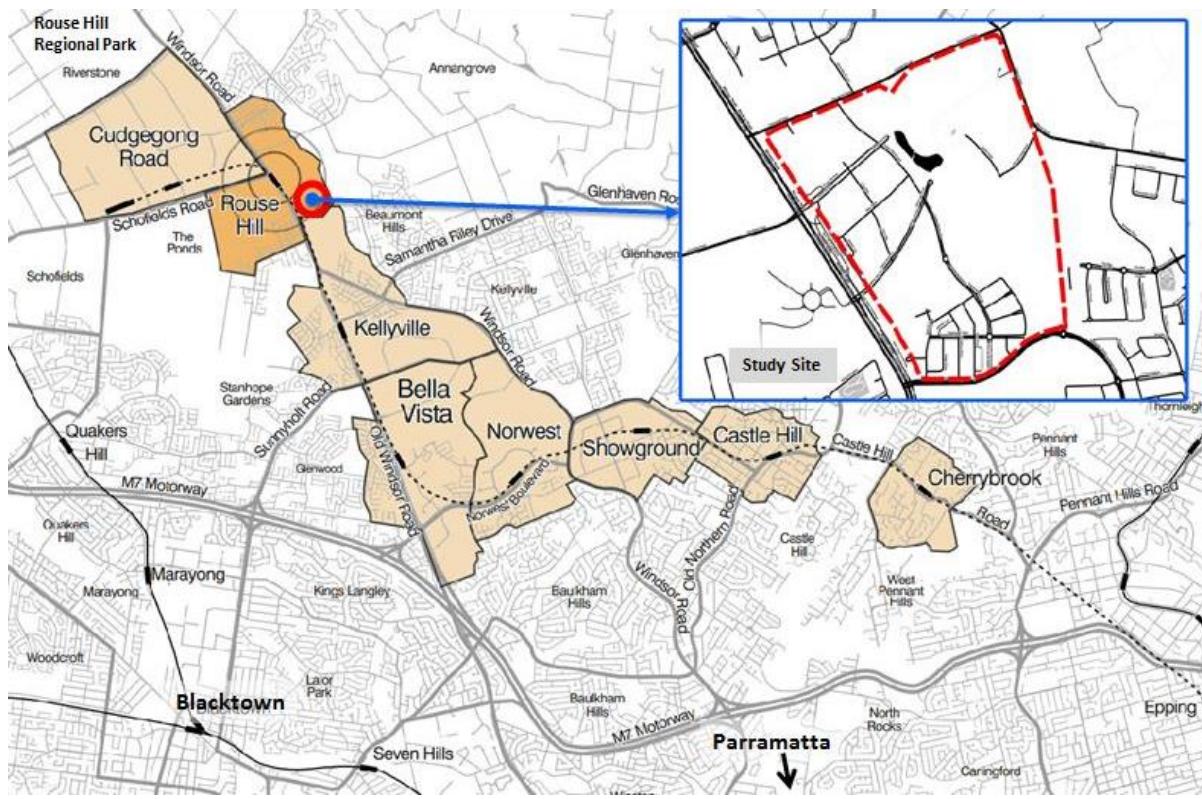


Map 2: The New Rouse Hill Master Plan

5. RELATIONSHIP OF THE SITE TO THE BROADER LOCALITY.

The audit instrument provides for the consideration of how the site relates to the broader area in terms of access, transport, and use of shops and services. The auditors were asked to identify public transport nodes surrounding the site, and the relationship between those nodes and public transport services within the site, as well as take note of the location and accessibility of key services, shops and destinations surrounding the site.

As illustrated on Maps 3 and 4 below, the site is located within the Hills District, which provides significant access to shops and services and public transport. While residents in the neighbourhood are already well served by the Rouse Hill Town Centre, the trading zone and shopping centre in Castle Hill and Norwest Business Park in Bella Vista are important employment and retail/service nodes in the region, while Blacktown and Kellyville also have large shopping centres.



Map 3: The New Rouse Hill in regional context (also showing the future North West Rail Link)

In terms of accessibility, there is a major bus interchange at the Rouse Hill Town Centre that connects the area to surrounding centres via the T-way on Windsor Road (e.g. Castle Hill, Blacktown, Parramatta, Westmead). From observations made by the auditors, residents seem to mainly access the Town Centre by car, however, it is also easily accessible by bus, bicycle or by walking, and significant bicycle parking and storage facilities have been provided at the bus interchange (described further in Section 11). The North West Rail Link, which is currently under construction, is expected to be operational in 2019. This line will link Rouse Hill to Epping and Chatswood, via Kellyville, Bella Vista and Castle Hill. The route of the rail link is shown on Map 3 above. The site of the new station in the Rouse Hill Town Centre is highlighted on Map 4 below.



Map 4: Aerial view of The New Rouse Hill, highlighting the site of the future North West Rail Link

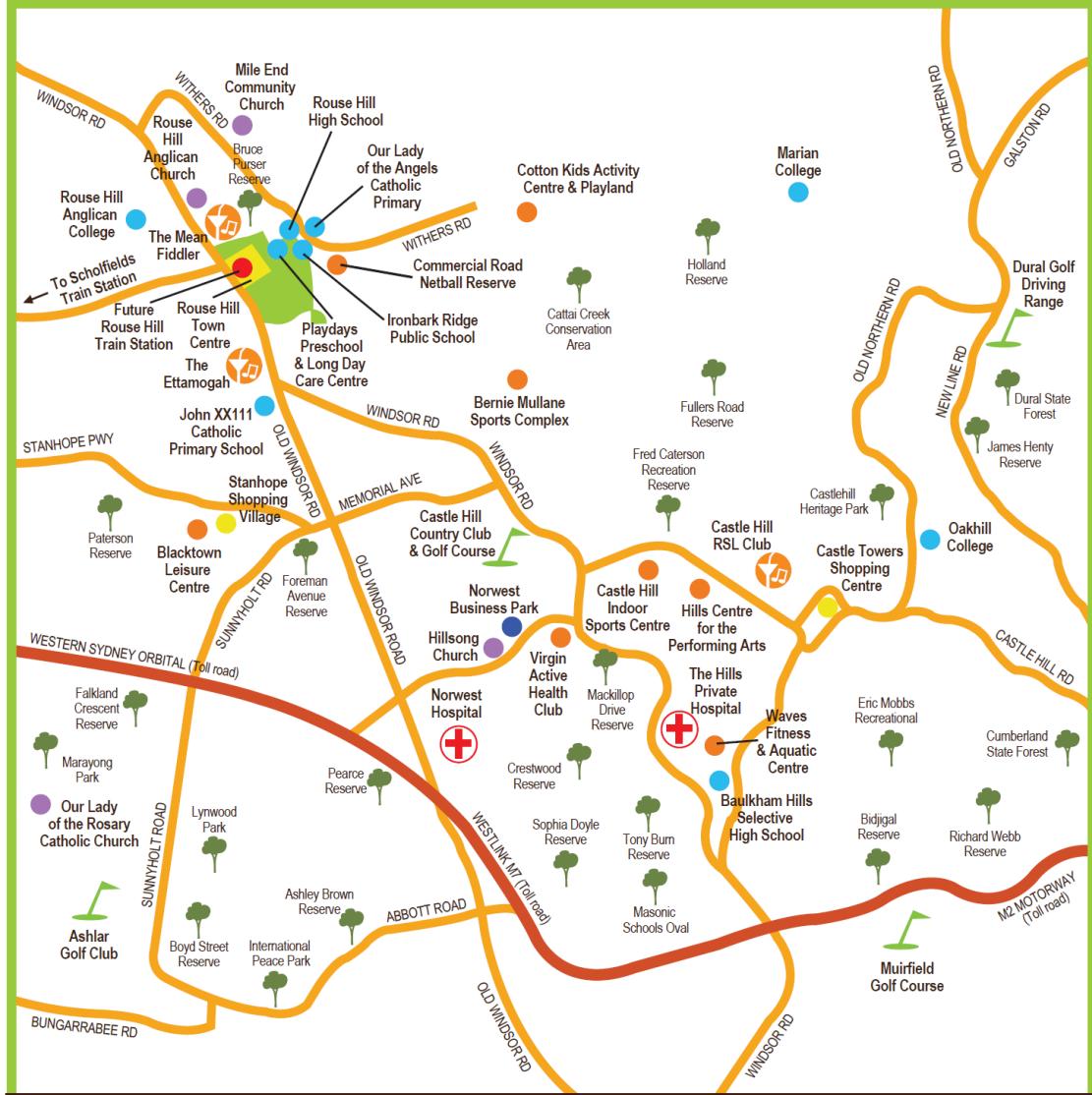
Map 5, sourced from the [Our Rouse community website](#), illustrates the key recreational, community, institutional and retail facilities located within Rouse Hill and the surrounding suburbs, including Castle Hill, Kellyville and Blacktown. The indicative location of parks, reserves, churches, childcare facilities, sports centres, pubs, schools, shopping and commercial centres, golf courses, hospitals and gyms are shown on the map.

the new Rouse Hill



The New Rouse Hill Sales and Information Centre

Open 7 days
12 Belcast Road (Cnr Sanctuary Drive and Windsor Road)
Rouse Hill NSW 2155
UBD Ref 129 D15
1800 200 902 thenewrousehill.com.au



Legend:

- | | | | |
|-----------------------------------|--|--|---------------------------|
| [Green square] The New Rouse Hill | [Purple circle] Churches | [Yellow circle] Clubs & Pubs | [Red cross] Hospitals |
| [Yellow circle] Shopping Centres | [Orange circle] Recreation/Health/ Fitness Centres | [Red circle] Future Rouse Hill Train Station | [Green tree] Golf Courses |
| [Blue circle] Schools & Childcare | [Blue circle] Norwest Business Park | [Green tree] Parks & Reserves | [North arrow] |

This flyer is for representative purposes only and is not to scale. Customers are advised to conduct their own research into amenities and facilities in the Rouse Hill area.

Lend Lease

Map 5: Indicative map of recreational, community, institutional and retail facilities in the region surrounding The New Rouse Hill

6. AUDIT PARTICULARS.

The site was assessed on the following dates:

DATE AND TIMES	HOURS	WEATHER AND SPECIAL CONDITIONS
Tuesday 24 January 2012, 9am – 3pm	6	Around 22 degrees, overcast, rain in the afternoon. Undertaken during school holidays.
Friday 25 May 2012, 9.30am – 3pm	5.3	Overcast, cool (around 18 degrees)
Friday 22 June 2012, 9 – 11.30am	2.3	Around 16 degrees, overcast, very strong winds
Tuesday 30 August 2012, 9.30am – 1pm	3.3	Sunny, around 20 degrees, strong winds
Wednesday 23 January 2013, 8 – 9.50pm	1.5	Cool and overcast, around 23 degrees. Undertaken during school holidays.
Saturday 29 June 2013, 2 – 3.30pm	1.5	Overcast, constant rain (quite heavy at times), around 14 degrees. Audit was conducted after several days of heavy rainfall in the area, leaving most outdoor recreation areas very soggy and muddy. The audit was conducted at the start of the school holidays.
TOTAL:	20 hours and 30 minutes	

7. LAND USE.

▪ Residential density and types of housing

The dominant land use throughout the site is low to medium density residential – predominantly two-storey housing, with some one-storey housing, as well as some townhouses and apartments in the Town Centre. The neighbourhood is generally characterised by large houses on small lots (i.e. small backyards). Large swathes of the site are still under construction, with future uses noted as residential. The images below show the different types of residential development in the neighbourhood.



Townhouses overlooking Magnolia Park; Harvest Lane – a rear lane (images taken 24.01.12)



One storey detached housing on Grandiflora Street; two storey detached housing on Belcast Road (images taken 24.01.12)



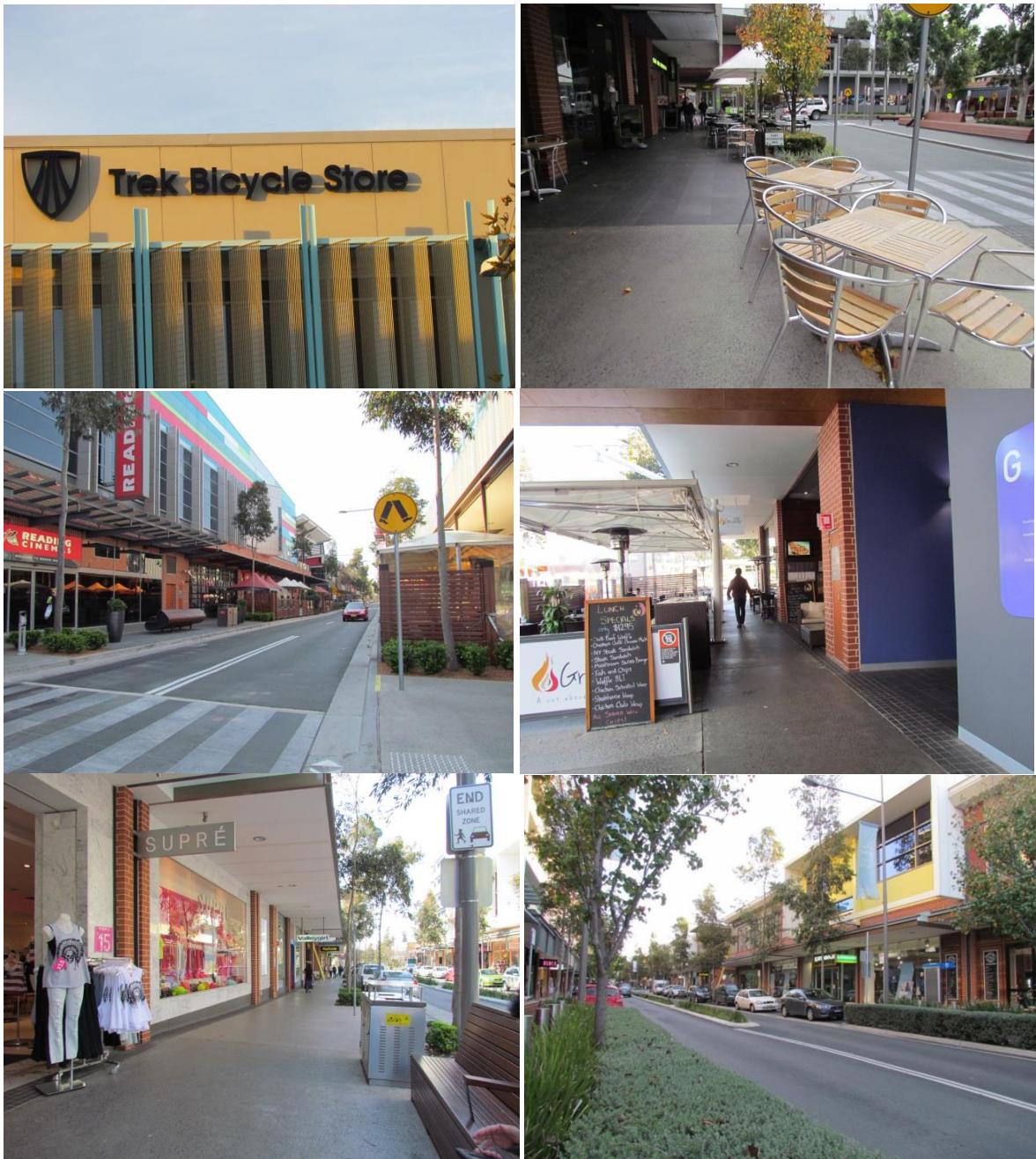
Townhouses on Caddies Boulevard (image taken 24.01.12)



Apartments in the Town Centre (images taken 30.08.12)

- **Retail and commercial development**

The neighbourhood is well served by retail and commercial outlets. The Rouse Hill Town Centre has over 230 specialty stores, including fresh food, homewares, clothing, restaurants and entertainment, and a bicycle store.



Retail and commercial development in the Town Centre (images taken 03.06.11, 22.06.12, 30.08.12)

During each audit undertaken in the day time, a high volume of people were observed in the town centre. During the night audit on 23 January 2013, a significant number of people were again seen in the town centre – sitting in the Town Square, eating at restaurants and visiting the cinema.



Meze Me Café (images taken 29.06.13)

On Saturday 29 June 2013, the Mungerie House café was very busy – it appeared to be at capacity, and there were a significant number of cars parked next to the café.

The auditors observed that the retail elements of the site were extremely popular and successful. The Town Centre in particular is evidently a thriving hub of activity not just for the neighbourhood, but for the wider region.

- **Recreational facilities and spaces**

The development includes significant open space, with a number of different types of recreational facilities and spaces across the neighbourhood. The Caddies Creek Riparian Corridor (see image below) runs through the site, north to south, and links many of the green spaces together – including Ironbark Ridge Reserve, the District Park and the Leisure Square.



Caddies Creek Riparian Corridor, near Darrabarra Way (image taken 24.01.12)

There are also a number of small parks throughout the site, such as Magnolia Park, Melaleuca Park, the children's playground near Mungerie House and the Secret Garden in the Town Centre. The images below provide an illustration of the different types of spaces, and the amenities included in each space.



Seating in Magnolia Park (image taken 24.01.12)

Magnolia Park, as shown above, is a small passive park, overlooked by a line of townhouses. It includes seating, landscaping and design elements, a swale and small green lawn. This pocket park is located in the Southern Precinct of the site, and is bounded by Freshwater Road, Grandiflora Street and Harvest Lane. During the audits, Magnolia Park was not highly utilised. On the night of Wednesday 23 January 2013, two young boys were seen kicking a ball in the park. On the occasions

of the other audits, the park was empty. This can possibly be attributed to the time of day and weather conditions (linked to the lack of shelter provided within the park).

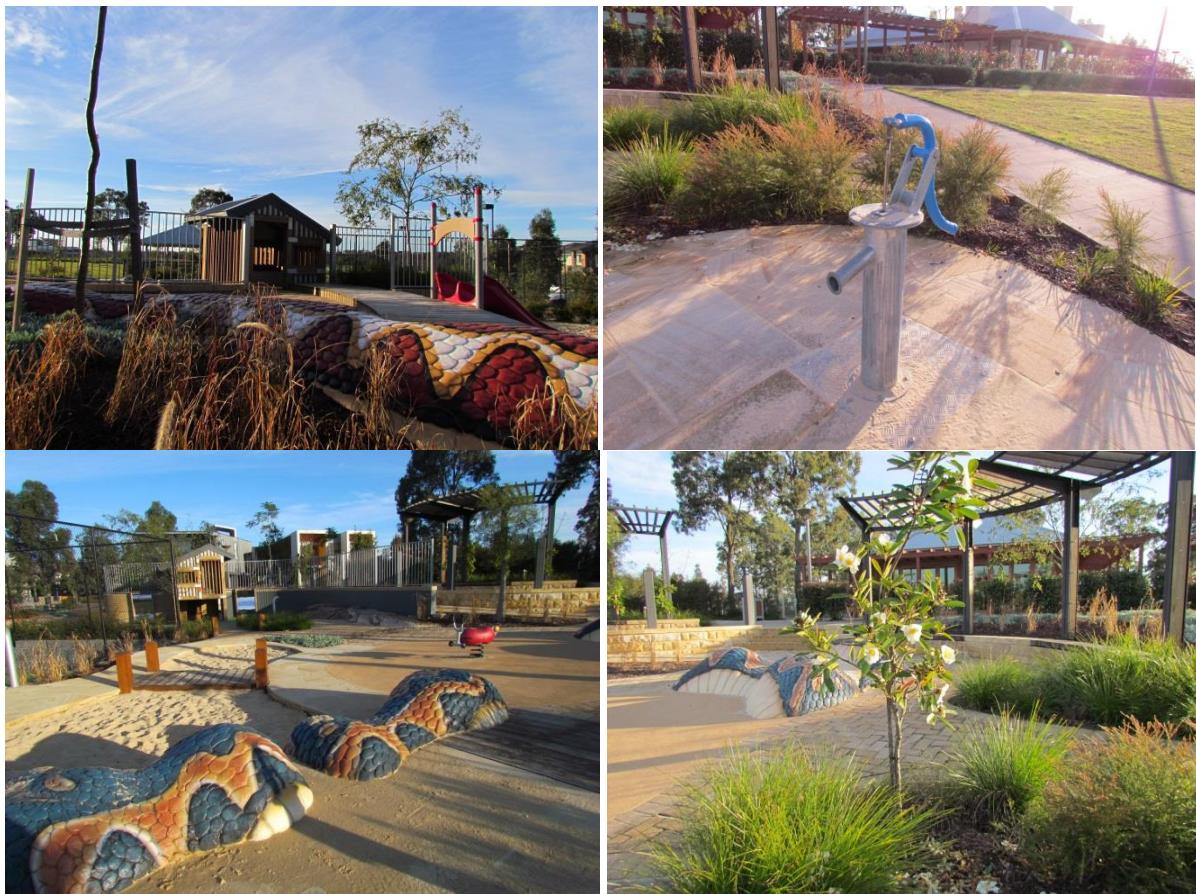


Seating and BBQ facilities, and children's play equipment in Melaleuca Park (images taken 24.01.12)

Melaleuca Park, as seen above, is sited in the Southern Precinct and is bounded by Freshwater Road, Caddies Boulevard and Barabung Street. The park includes BBQ facilities, seating and shelter, as well as children's play equipment and green space with mature trees. During the audits, Melaleuca Park was observed to be fairly well utilised. Small groups of people were seen using the playground equipment during the day time and at night. On the weekend audit, when it was raining, no one was seen at the park. The auditors did not observe usage of the BBQ facilities at any time.

The children's playground near Mungerie House, off Bellcast Road, has been designed to cater for children with a range of abilities. The park offers different sensory experiences – such as scented flora with different textures, a water pump and sand. The park also features accessible pathways and play equipment. The audits revealed this park to be extremely popular, with groups of parents, grandparents and young children seen using the equipment and seating during each site visit. The playground is located next to a hub of community facilities (including the Mungerie Community Room, tennis courts, basketball courts, pool, Information Centre and community garden) and the Meze Me café, which may account in some way for its higher utilisation in comparison to other parks in the neighbourhood.





Children's playground near Mungerie House (images taken 24.01.12 and 3.06.11)

The different features of the Leisure Square, located opposite the Town Centre off Caddies Boulevard, have been documented extensively below. The Square has a large waterfront area with benches, lighting and rubbish bins, and with a wide path able to accommodate a large number of pedestrians and cyclists. A shared path for pedestrians and cyclists circles the area, and links it to the District Park located in the Eastern Precinct. There is also a viewing platform located off the shared path. During the audit on 24 January 2012, a group of teenage girls were seen feeding ducks in the Square. On 25 May 2012 and during the night audit on 23 January 2013, a few people were observed walking through the Square, but on Saturday 29 June 2013, the Square was empty, which can easily be attributed to the wet weather conditions. Overall, the auditors did not observe a high level of activity within the Leisure Square.





The Leisure Square (images taken 24.01.12)



The Leisure Square (images taken 25.05.12)



The Leisure Square (images taken 29.06.13)

The District Park, located in the Eastern Precinct, can be accessed via the Leisure Square or Caballo Street. At the time of the audit, the park was not fully completed. The park has a number of features (shown above), including bicycle parking, BBQ facilities, shelter, public toilets and an amphitheatre. The shelter includes signage with information about the history and biodiversity of the area. Surveillance cameras have been installed in the shelter. The District Park was not in use during the audits.



BBQ facilities, benches and shading in the District Park (image taken 24.01.12)



Amphitheatre in District Park (images taken 25.05.12)

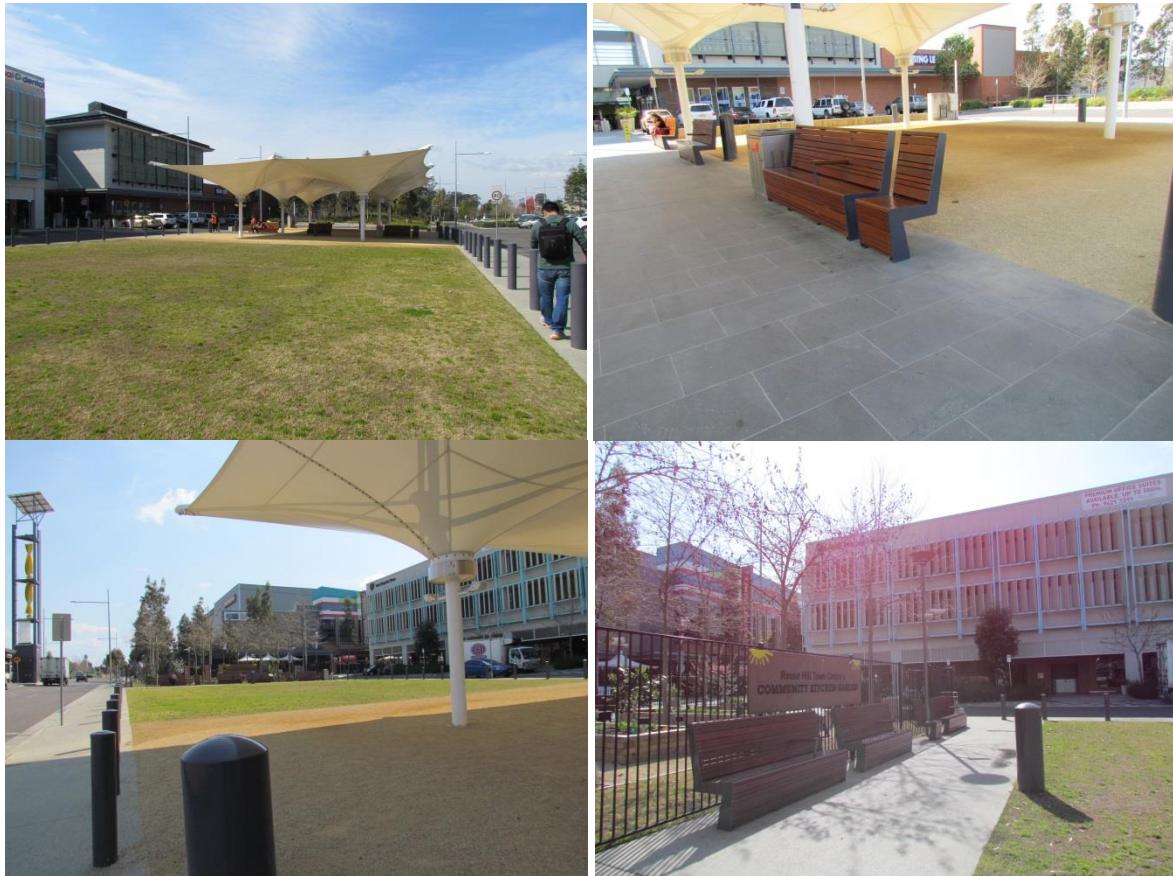


Small green space on Ironbark Ridge Road, near corner of Bridgewood Drive (image taken 25.05.12)



Small green space with seating on Ironbark Ridge Road across from the primary school (image taken 25.05.12)

The two small green spaces pictured above are located across from the Ironbark Ridge Public School on Ironbark Ridge Road. The spaces are landscaped and provide seating for parents waiting to collect their children from school. During a number of site visits, the auditors observed parents mingling with their children in these spaces just after school had ended.



Green space in the Town Centre, near the Transit Way (images taken 30.08.12)

The green space pictured above is the site of the Rouse Hill Town Centre's Community Kitchen Garden. Shelter, seating and rubbish bins are provided in the space; and it is monitored by surveillance cameras. The space also appears to have capacity to host community events. A small number of people were observed using the seating under the shelter during the day time audits.



'The Secret Garden' – rooftop green space in the Town Centre (images taken 03.06.11)

The Secret Garden is a rooftop green space in the Town Centre, which is landscaped and has shelter, bins and seating. The space has been designed to allow patrons of the Centre to escape from the shops and relax in a quiet, passive green area. Two people were observed using the Garden during one of the day time audits.

- **Institutional/services**

There are two schools in the neighbourhood – Ironbark Ridge Public School (for primary education) and Rouse Hill High School. These schools are located in the north -east corner of the site, bounded by Withers Road, Ironbark Ridge Road and Caballo Street. A preschool and child-care centre, Playdays Preschool and Long Day Care Centre, is located next to the primary school on Ironbark Ridge Road.

A number of services are located within the Town Centre, including Australia Post; a Department of Human Services centre (i.e. Medicare and Centrelink); Disability Employment Service; Pregnancy and Parenting Wellbeing Centre; Vinegar Hill Memorial Library and Community Centre; and a number of banks and financial services (i.e. Westpac, Commonwealth Bank, ANZ Bank, Aussie Home Loans, Community First Credit Union, GE Money, NAB, SCU, St George and Sydney Credit Union). There is also a medical and dental centre; physiotherapist; pharmacy; and a number of optometrists.

▪ Community facilities and uses

There are a number of community facilities in the neighbourhood, including a Visitor Information Centre, tennis court, basketball court, pool, community room and Library and Community Centre. These facilities are described below.



Mungerie House – Visitor Information Centre (image taken 24.01.12)

The Visitor Information Centre is located in Mungerie House, in the Southern Precinct off Peppin Street. The Centre provides information services to residents as well as visitors to the area on local accommodation, tourist attractions, food services and entertainment. It also provides information and opportunities to learn about the history of the area, and an exhibition space and meeting room.



Community basketball court, pool and the Mungerie Community Room (images taken 03.06.11)



Community tennis court (image taken 29.06.13)

The community basketball court, tennis court, pool and Mungerie Community Room are co-located with the Mungerie Visitor Information Centre, as well as the Our Rouse Community Garden (described further in Section 10). From observations made by the auditors during all of the audits - in the day, at night and on the weekend – these facilities are well utilised. On Saturday 29 June 2013, the auditors observed a party being set up in the Mungerie Community Room. During the night audit on Wednesday 23 January 2013, several people were observed using the tennis courts and swimming pool. On Tuesday 24 January 2012, the swimming pool was again in use.



The Town Square during the day and at night (images taken 30.08.12 and 23.01.13)

The Town Square, located in the heart of the Town Centre at the junction of Main Street and Civic Way, is a paved and landscaped area with seating, shade structures and trees, sculptures, a water feature and lighting. The Square is monitored by surveillance cameras. The Square is a very busy area, with pedestrians and patrons of the shopping centre constantly walking through and utilising the seating, both during the day and in the evening.



The Vinegar Hill Library and Community Centre (image taken 03.06.11)

The Vinegar Hill Library and Community Centre is located on the corner of Main Street and Civic Way in the Town Centre, adjacent to the Town Square. The Library and Community Centre has a Hills Shire Council One Stop Shop, where residents can pay rates, register pets, make planning enquiries and lodge development applications, as well as make venue bookings. In addition to borrowing of books, the Library and Community Centre also provides meeting rooms, computer access, photocopy services, workshops and seminars, and activities for children.

- **Future development**

During the audits, much of the site was still under development, and there was a considerable amount of vacant land. The majority of this vacant land will be developed as residential, with some parts dedicated as open space.



From left to right: vacant land in the Southern Precinct; the future Central Precinct (images taken 24.01.12)

The images above show a block of land in the Southern Precinct, bounded by Caddies Boulevard, Badu Street and Yanada Street, awaiting construction; and the view from Mungerie House in the Southern Precinct towards the Town Centre, showing the vacant land dedicated as the future Central Precinct.



Future apartment sites on Bellcast Road and in the Town Centre (images taken 24.01.12; 22.06.12)

Some of the landscaped areas of the site are also dedicated as future development sites, as shown above. These areas are clearly signposted.

8. USE OF PUBLIC SPACE.

The auditors were asked to take note of the number of people present in the locality at the time of the audit, and pay particular attention to specific spaces that seemed to be popular for different demographics. They were also asked to consider the form and style of residential, institutional and commercial buildings in the neighbourhood, and particularly note if the built form provides opportunities for passive surveillance, through allowing people to overlook the street; encourages pedestrian activity; and relates to the human scale.

In the residential areas of The New Rouse Hill, from the street it is possible to see windows and balconies, and fences, where they exist, are generally low (as illustrated in the images below). Therefore there are good opportunities for passive surveillance. Streets are wide and open and allow for good and consistent sightlines throughout the site – however this is occasionally interrupted by vegetation in the swales located in the centre of the roads. The Town Centre is heavily populated, with apartments overlooking the main street.



Windows and balconies visible from the street on Freshwater Road and Main Street (images taken 24.01.12; 30.08.12)

In the developed areas of the site, the buildings and their uses do encourage pedestrian activity. The front yards are well maintained and the street vista is visually appealing. Housing in the residential areas and buildings in the Town Centre all relate quite well to the human scale. Houses are of modern design and appealing to look at (though one auditor felt that streets which have buildings of the same design/colour are a little boring), and the houses are set back from the street with low fences or open yards. The vacant land between the residential areas (and particularly the Southern Precinct) does not encourage pedestrian activity. However, this will change when the site is further developed.

It is quite easy to identify land uses from the facades of buildings. While residential apartments in the town centre are difficult to see from close up, they are quite evident when seen from a distance. The residential properties outside the Town Centre have traditional elements such as pitched roofs, front yards, driveways and letterboxes, which make them easily recognisable. Across the site, signage makes it easy to identify community and institutional facilities, and commercial and retail outlets.

The auditors felt that they were not able to adequately glean which areas were popular with certain demographics through the limited number of site visits undertaken. While it was obvious that the Town Centre was popular across all age groups, and the playground near Mungerie House was very popular with young children accompanied by parents and grandparents, it was not as easy to determine patronage of other areas. As noted in the descriptions of land uses above, often the auditors did not see any people using the open spaces across the site, and this could be attributed to the time of day and weather conditions, and the fact that the auditors were in constant movement rather than sitting in one space and observing it over the course of the day. When groups of people were seen in open and public spaces, and using community facilities, there were no common features to indicate that certain spaces were more popular with certain age groups than other groups.

9. FOOD ACCESS.

The audit included an assessment of local sources of food. In addition, a separate study led by project partner South Western Sydney Local Health District was undertaken in order to investigate access to - as well as availability, quality and diversity of - healthy food in the case study sites, and the 20 highest and lowest socioeconomic areas in NSW (according to the Index of Relative Socioeconomic Disadvantage for postal areas). Overall, 100 supermarkets and 20 farmers' markets were assessed across NSW. A description of the methodology and results for the assessment of supermarkets is provided in this section, while the outcomes of the farmers' markets element of the study are detailed further below.

The supermarket tool was a market basket survey (provided at Appendix B). This involved collecting information on the cost of 44 staple food items, together with availability of 30 fresh fruits and vegetables, and the quality and cleanliness of 10 varieties of fresh fruit and vegetables. Food costs were recorded using the Victorian Healthy Food Basket Survey (Palermo and Wilson, 2007), while the availability and quality of fresh fruit and vegetables was assessed using the Queensland Healthy Food Access Basket (Queensland Health, 2002). The two major Australian supermarket chain stores, a large discount supermarket chain and independent grocery stores were included in the survey. Boutique grocery stores, butchers, greengrocers and online supermarkets were excluded from the study.

The food assessment tools were pilot tested and data collectors underwent training to ensure accurate and consistent ratings. The market basket survey was completed within a two week period during October 2012. This minimised the potential for seasonal variation in the price and quality of foods, especially fruits and vegetables.

Data was analysed using SAS Enterprise Guide 5.1. Significance testing of the differences between basket costs, quality and quantity were conducted using non parametric methods.

- **Commercial shops**

There is a sufficient mix of retail to serve the local community – including medical, financial and other services (detailed in Section 7 above), specialty shops, cinema, restaurants and food court, supermarkets, produce, fish shop, bakeries and so on, as illustrated on Map 6 above. Apart from the small Meze Me café near Mungerie House, all of the retail is centralised in the Town Centre. A full list of restaurants, fresh food and takeaway stores in the Town Centre is provided at Appendix A.

During visits to the site, the auditors found that the general price of a meal in the food court was around \$10 (for example, for a sandwich/pide) and around \$3 for a beverage (as at 24.01.12). In the Meze Me café a main meal cost around \$30 for dinner and \$16 for lunch (as at 24.01.12).



Map 6: Commercial and food access in The New Rouse Hill



Meze Me café near Mungerie House; restaurant in the Town Centre (images taken 24.01.12; 30.08.12)

As shown in Table 2 below, on average a healthy food basket was more expensive in high SES Sydney suburbs than in low SES Sydney suburbs, with a difference of \$17, while the average variety of produce was higher in high SES suburbs. The mean quality of produce was lower only by one point in low SES suburbs. The mean cost of a healthy food basket in the Rouse Hill Town Centre was slightly higher than the Rouse Hill surrounding area and the low SES Sydney suburbs, but lower than the mean cost for the high SES suburbs. The mean cost of a fruit and vegetable basket sat exactly in between the cost of a basket in the low SES suburbs and high SES suburbs. The variety of produce was much greater than that of low SES suburbs, and also higher than the average produce variety in high SES suburbs, as well as in the surrounding area. The mean produce quality score for Rouse Hill was consistent with the ratings for the surrounding area and high SES Sydney suburbs, and only very slightly higher than low SES suburbs.

Food measure	Rouse Hill Town Centre	Rouse Hill surrounding area	High SES Sydney suburbs	Low SES Sydney suburbs
Cost of healthy food basket (mean)	\$181	\$178	\$194	\$177
Cost of fruit and vegetable basket (mean)	\$25	\$25	\$27	\$23
Produce variety (mean)	66	58	55	49
Produce quality score (mean)	42	42	42	41

Table 2: Supermarket prices, and quality and variety of produce - Rouse Hill

- **Community Gardens**



Community garden at Mungerie House (images taken 24.01.12)



Community garden in the Town Centre, in between Market Street and Tempus Street (images taken 24.01.12; 30.08.12)

There is one community garden located near Mungerie House (the Our Rouse Community Garden), and another in the Town Centre. The Rouse Hill Town Centre's Community Kitchen Garden is a part of Stephanie Alexander's Kitchen Garden Program.

The crops observed in each garden on 24 January 2012 are detailed in Table 2 below. While the auditors did not see any people using the gardens during any of the audits, they did note that the gardens seemed to be flourishing and looked well cared for.

OUR ROUSE COMMUNITY GARDEN	RHTC COMMUNITY KITCHEN GARDEN
Chilli	Basil
Cucumber	Tomato
Leek	Cucumber
Tomato	Olive
Basil	Mint
Carrot	Oregano
Rocket	Cabbage
Beetroot	Silver beet
Beans	Spring onion
Silver beet	Thyme
Lemongrass	Coriander
Curry plant	Grapefruit
Chives	Lemon
Oregano	Plum
Rosemary	Vietnamese mint
Thyme	
Mint	

Table 3: Crops in The New Rouse Hill community gardens, as at 24 January 2012

- **Farmers' Markets**

There are two farmers' markets accessible to residents of The New Rouse Hill. The details of these markets are provided below.

Rouse Hill Organic Food and Farmers' Market

Market Square, corner of Market Lane and Tempus Street, Rouse Hill, 2155, every Saturday, 8:00 am to 1:00 pm

Stocks: a full range of certified organic fruit and vegetables, farm fresh produce and artisan gourmet goods, plants, flowers, toys, sustainable eco-friendly goods, fair trade crafts, and homewares.

Located centrally in the site, accessible by walking, cycling or driving.

Castle Hill Farmers' and Fine Food Market

Castle Hill Showground, Showground Road, Castle Hill, 2154, second and fourth Saturday of the month, 8.00am to 12.00pm

Stocks: seasonal fruit and vegetables, duck, wine, eggs, preserves, spices, herbs, tea and coffee, bacon and pork, beef, bread, spreads, pasta, juices, seafood, olive oils and gourmet confectionary.

Distance from the site: around 9 km from the site, inaccessible by walking (approx. 2 hours), approximately 12 minute drive, 35 minute bus trip (e.g. from Rouse Hill Town Centre 610 route to the corner of Tuckwell and Gilbert Roads in Castle Hill, walk 400 metres to the Showground).

The farmers' market tool in the Community Food Assessment focused on assessing available produce and the factors that motivate customers and stallholders to attend the markets. The research team developed a checklist to assess the cost, availability and visual quality of fresh fruit and vegetables (see Appendix B). Diversity of produce, availability of gourmet items, and the presence of locally grown and/or organic food were also recorded. A short questionnaire was undertaken to assess customer and stallholder perceptions of the farmers' markets, including the importance of buying local, fresh, high quality and/or organic produce, as well as building relationships and supporting a community event (see Appendix B). Overall, 20 farmers' markets across Sydney were assessed, including the Rouse Hill Organic Food and Farmers' Market, and the Castle Hill Farmers' and Fine Food Market.

The food assessment tools were pilot tested and data collectors underwent training to ensure accurate and consistent ratings. The farmers' market research was undertaken from February to April 2013. Data was analysed using SAS Enterprise Guide 5.1. Significance testing of the differences between costs, quality and quantity were conducted using non parametric methods.

Produce	Rouse Hill Organic Food and Farmers' Market		Castle Hill Farmers' and Fine Food Market		All farmers' markets	
	Mean no. per stall	\$ (per kg)	Mean no. per stall	\$ (per kg)	Mean no. per stall	\$ (per kg)
Apples	2.3	4.97	3.0	5.50	2.5	5.65
Pears	1.5	6.00	2.0	5.67	1.6	5.48
Oranges	2.0	4.50	1.0	4.50	1.1	3.46
Peaches	1.0	4.80	1.5	3.40	1.3	6.36
Plums	1.0	5.57	2.0	4.00	1.3	6.01
Beans	1.0	11.97	1.0	8.50	1.0	6.52
Broccoli	1.0	9.65	-	-	1.0	5.62
Cabbage	1.0	4.95 each	1.67	3.25 each	1.9	3.92 each
Cucumber	1.0	4.27	-	-	1.3	5.76
Lettuce	1.7	2.10 each	1.0	2.33 each	1.7	1.08 each
Onion	2.0	3.45	2.0	3.00	2.0	3.57
Potato	3.0	3.65	6.0	3.50	3.9	3.84
Pumpkin	2.0	No price	1.5	2.25	2.4	3.05
Tomatoes	1.5	7.43	2.33	4.00	2.3	6.27

Table 4: Farmers' markets produce prices, Rouse Hill

Table 4 details the cost and variety of fruit and vegetables by item for the Rouse Hill Organic Food and Farmers' Market and the Castle Hill Farmers' & Fine Food Market, as well as the mean cost and variety from all farmers' markets included in the study.

On the date that the Rouse Hill Organic Food and Farmers' Market was assessed, no customers were in attendance due to poor weather, and therefore the research team were unable to complete any customer surveys. However in Table 5 below, the results from customer surveys at the Castle Hill Farmers' & Fine Food Market are shown, along with the combined results from all surveyed farmers' markets.

Characteristics	Castle Hill Farmers' & Fine Food Market	Total Farmers' Markets
Age (years)		
Mean	51	50
Range	29-72	18-89
Gender		
Female	19 (59%)	397 (63%)
Male	13 (41%)	236 (37%)
Country of Birth		
Australia	20 (63%)	403 (64%)
Other	12 (37%)	230 (36%)
Language spoken at home		
English	26 (81%)	600 (95%)
Other	6 (19%)	32 (5%)
Distance travelled (km)		
Mean	8.6	10.0
Range	2-32	0.1 – 192
Method of travel		
Drove	31 (97%)	498 (79%)
Walked	1 (3%)	99 (16%)
Caught public transport	0 (0%)	26 (4%)

Cycled	0 (0%)	7 (1%)
Other	0 (0%)	2 (0%)
Frequency of shopping for food		
Very frequently (>1/week)	16 (50%)	411 (65%)
Frequently (1/week)	16 (50%)	182 (29%)
Occasionally (1-2/month)	0 (0%)	31 (5%)
Never	0 (0%)	8 (1%)
Frequency of shopping at farmers' markets		
Weekly	2 (10%)	237 (38%)
Fortnightly	11 (34%)	164 (26%)
Monthly	16 (50%)	188 (30%)
Never / First visit	3 (6%)	43 (7%)
Amount spent per visit at farmers' markets		
Less than \$50	11 (34%)	221 (38%)
Between \$50 and \$99	7 (22%)	223 (38%)
Between \$100 and \$149	5 (16%)	94 (16%)
More than \$150	7 (22%)	47 (8%)
Unknown	2 (6%)	
Total	32	633

Table 5: Demographic characteristics and shopping behaviours of customers from Castle Hill Farmers' and Fine Food Market

Thirty-two people participated in the customer survey. The mean age of participants was 51, and the majority were women. The mean distance travelled to the market was 8.6km, and 97% of participants accessed the markets by driving a car. The majority of people surveyed (50%) shopped at farmers' markets on a monthly basis, with 34% shopping on a fortnightly basis, and 10% on a weekly basis.

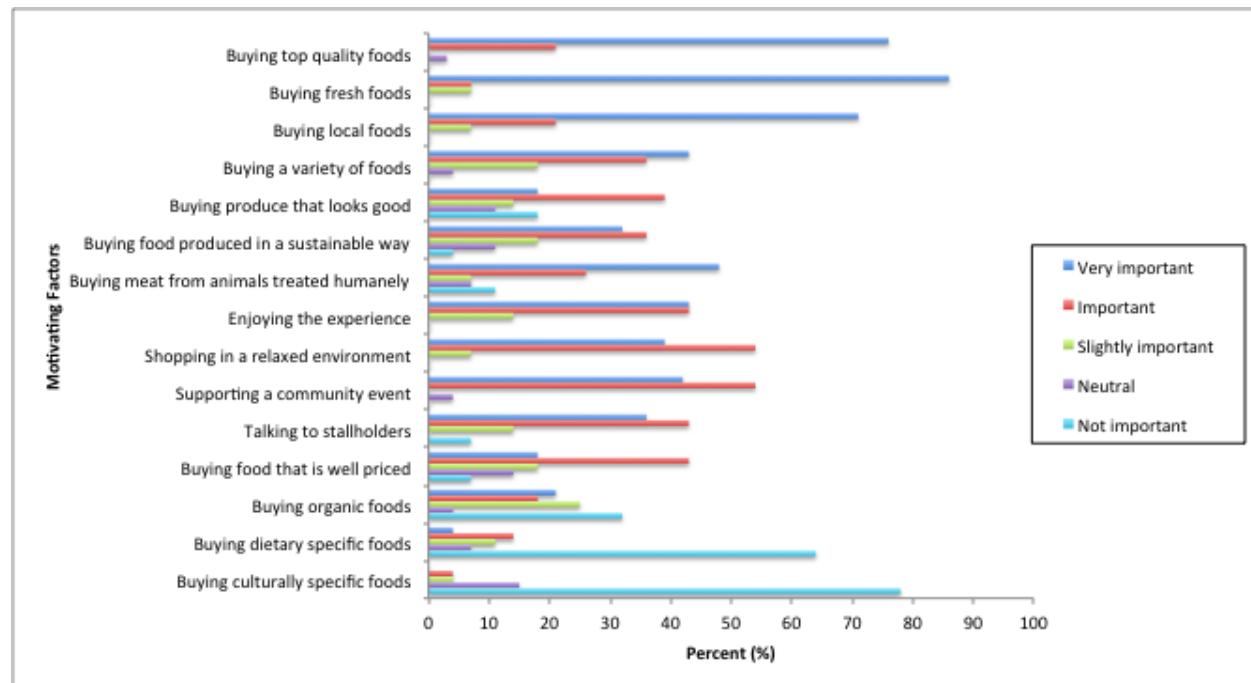


Figure 1: Motivating factors for customers from Castle Hill Farmers' & Fine Food Market

Figure 1 above illustrates the motivating factors for customers in attending the farmers' market. 'Buying fresh foods' was the most important factor, followed closely by 'buying top quality foods' and 'buying local foods'. 'Shopping in a relaxed environment' and 'supporting a community event' were also important to many people. Conversely, 'buying dietary specific foods' and 'buying culturally specific foods' were not important to customers in terms of their reasons for attending the farmers' market.

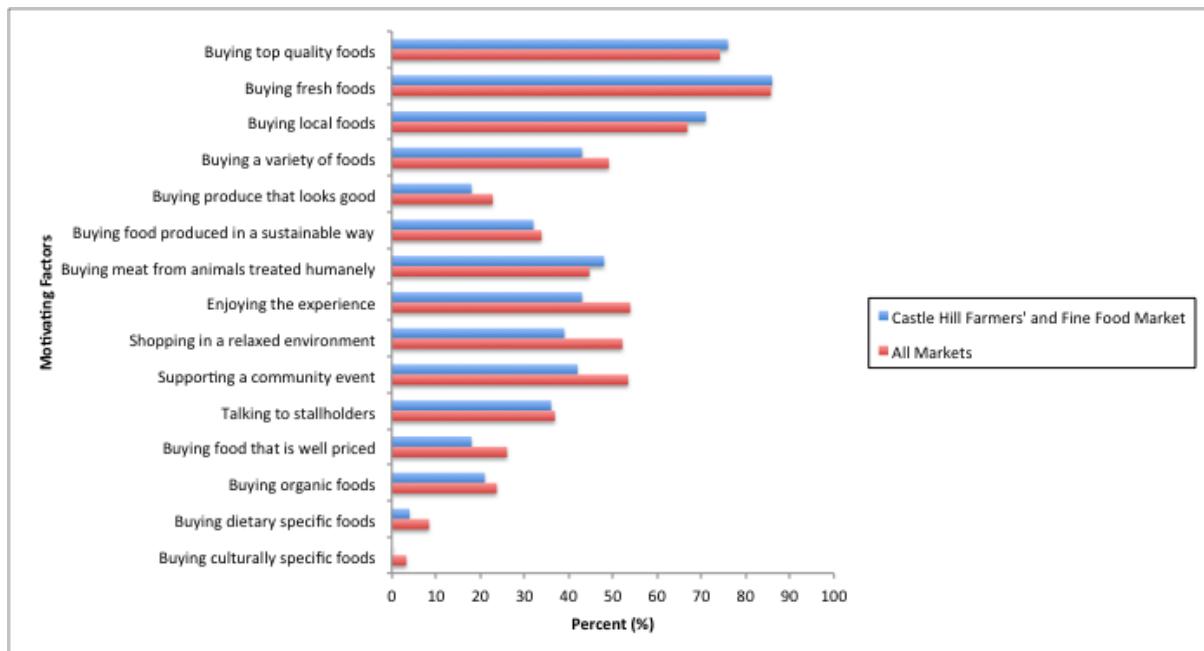


Figure 2: Factors identified to be very important for customers from Castle Hill Farmers' & Fine Food Market

Figure 2 shows that the motivating factors deemed to be most important for customers at the Castle Hill Farmers' & Fine Food Market are largely consistent with those rated as most important at all of the assessed markets. The core reasons for market attendance are summarised in Table 6 below, with quotes from customers relating to each reason.

Reason for Market Attendance	Customer Quotes
To buy fresh fruit and vegetables, picked on or the day prior to the market	"I came here to buy fresh fruit and vegetables" "I want to stock up on fruit and vegetables" "To buy fresh fruit and vegetables and what is in season"
To buy fresh bread, dairy products, meat, poultry, fish and eggs	"I needed eggs. The best are here" "I want to purchase eggs, plants, muesli and pastries"
To buy high quality produce	"The quality is guaranteed"
To support local farmers and producers	"I want to support local growers and buy fresh produce"
Community event	"I like the community feel. It's not a supermarket, it's people based"

Table 6: Main reasons that customers attended Castle Hill Farmers' & Fine Food Market

The results from the stallholder surveys are summarised below. Responses from stallholders at the Rouse Hill Organic Food & Farmers' Market and Castle Hill Farmers' & Fine Food Market are detailed, as well as the combined responses from all of the surveyed farmers' markets.

Characteristics	Rouse Hill Organic Food & Farmers' Market	Castle Hill Farmers' & Fine Food Market	All Markets
Age (years)			
Mean	40	51	45
Range	18 - 55	42 - 64	18 - 76
Gender			
Female	1 (25%)	5 (56%)	68 (52%)
Male	3 (75%)	4 (44%)	63 (48%)
Distance travelled (km)			
Mean	24.8	38.0	82.0
Range	5 - 40	4.5 - 130	0.2 – 550
Number of markets attended (per fortnight)			
Mean	3	5	5
Range	2 - 4	1 - 10	0 - 60
Length of time trading at farmers' markets (years)			
Mean	0.2	4.9	4.0
Range	0 – 0.5	0.8 - 10	0.1 - 15
Type of Stall *			
Fruit and vegetables	2 (50%)	8 (89%)	35 (21%)
Poultry, meat and alternatives	1 (25%)	1 (11%)	26 (16%)
Breads and cereals	0 (0%)	2 (22%)	26 (16%)
Gourmet produce items	0 (0%)	5 (56%)	24 (15%)
Nuts and legumes	0 (0%)	0 (0%)	18 (11%)
Takeaway food and drinks	2 (50%)	1 (11%)	14 (9%)
Dairy products	0 (0%)	2 (22%)	11 (7%)
Special dietary items	0 (0%)	1 (11%)	9 (6%)
Source of produce *			
Own farm or property	1 (25%)	4 (44%)	55 (26%)
Within local area	2 (50%)	3 (67%)	41 (20%)
Within state	3 (75%)	4 (44%)	57 (27%)
Interstate	2 (50%)	3 (67%)	31 (15%)
Overseas	1 (25%)	3 (67%)	25 (12%)
Number of people employed in business			
Mean	2	4	7
Range	0 - 7	1 - 15	0 – 200
Sales figures per farmers' market			
Less than \$300	3 (75%)	0 (0%)	19 (18%)
Between \$300 and \$699	0 (0%)	2 (22%)	31 (29%)
Between \$700 and \$1000	0 (0%)	0 (0%)	12 (11%)
More than \$1000	1 (25%)	3 (33%)	45 (42%)
Unknown		4 (44%)	

* Some respondents provided more than one category of response. For consistency, all figures are presented as a percentage of the total number of responses given.

Table 7: Demographic characteristics and business practices of stallholders from Rouse Hill Organic Food & Farmers' Market and Castle Hill Farmers' & Fine Food Market

Figure 3 shows how important various factors are in motivating stallholders at the Castle Hill Farmers' & Fine Food Market to sell their products at the farmers' markets. 'Providing customers with information' was the most important reason, followed by 'Building relationships with customers', 'Marketing the business' and the 'Relaxed, friendly environment'. 'Selling foods directly to customers' was another key motivating factor. 'Selling foods for different cultural groups' was not an important factor for stallholders at this market.

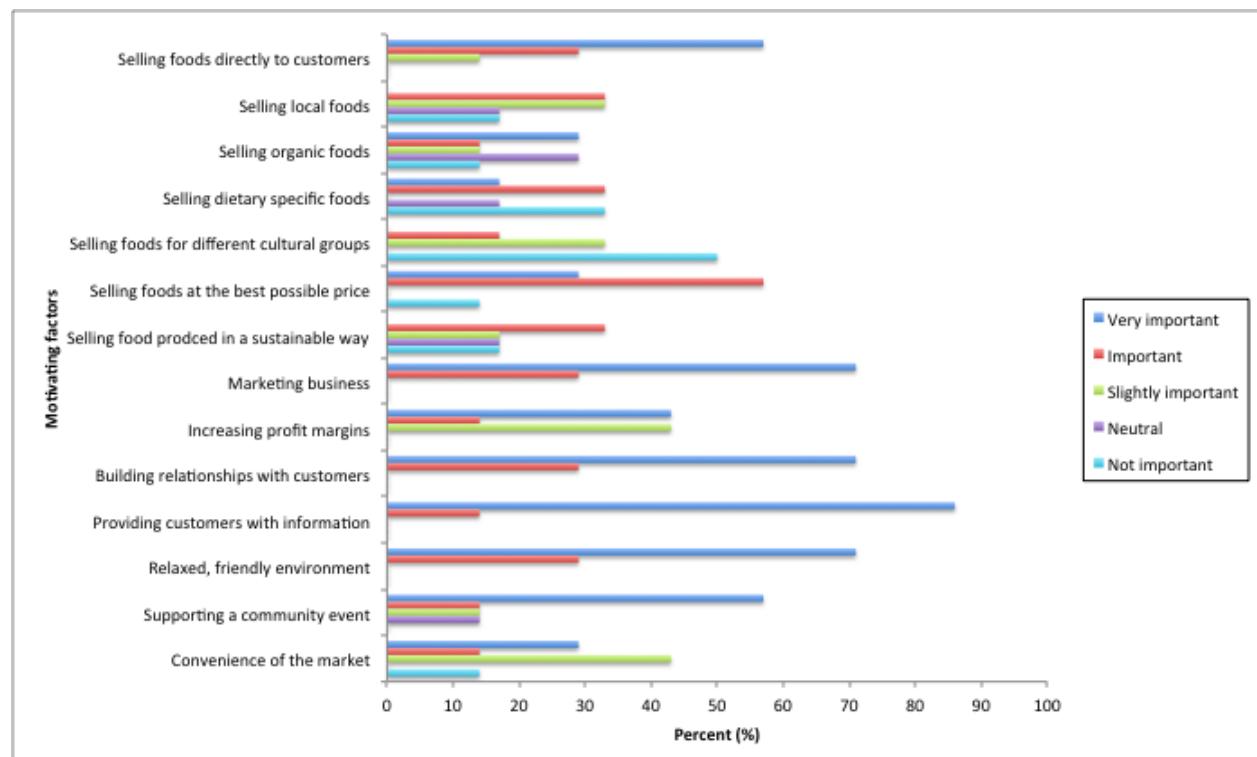


Figure 3: Motivating factors for stallholders from Castle Hill Farmers' & Fine Food Market

Figure 4 shows that the reasons deemed to be 'very important' for stallholders at the Castle Hill Farmers' & Fine Food Market were largely consistent with those for all markets. However, 'Selling food produced in a sustainable way' was far less important for stallholders at Castle Hill than all markets, and 'Selling local foods' and 'Selling foods for different cultural groups' was also not very important in Castle Hill, in comparison to the other markets.

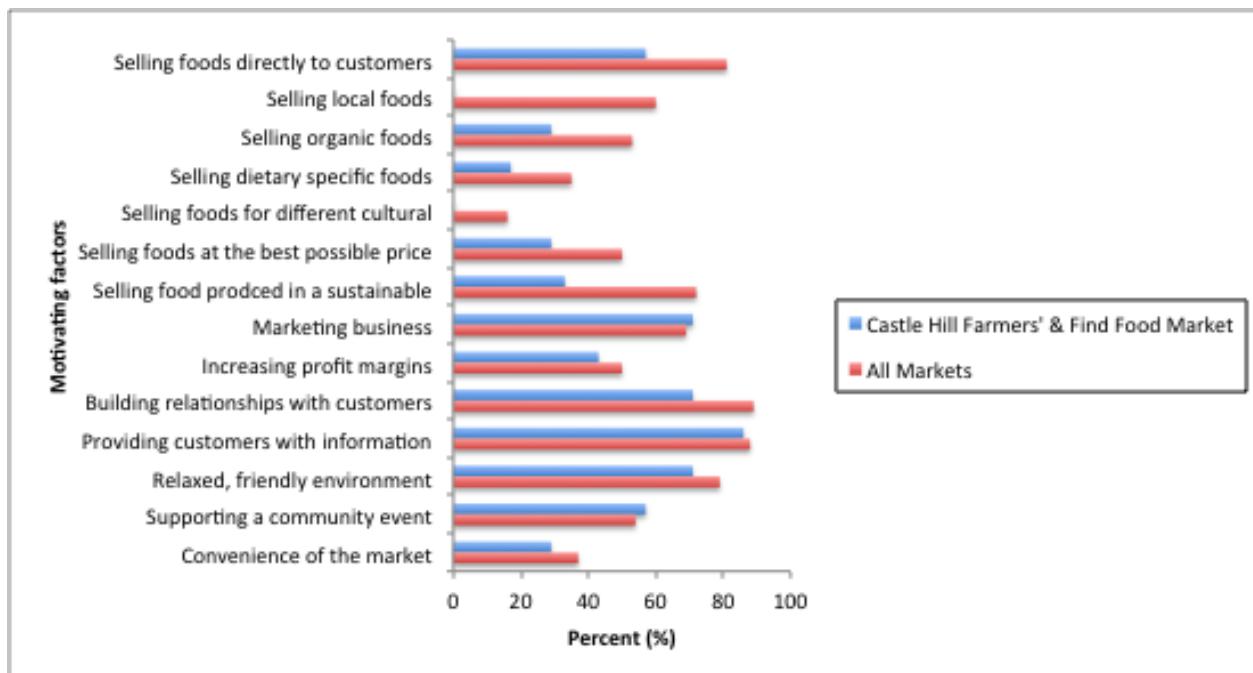


Figure 4: Factors identified to be very important for stallholders from Castle Hill Farmers' & Fine Food Market

Table 8 provides a summary of the key motivating factors for stallholders at the Castle Hill and Rouse Hill markets, with supporting quotes.

Motivating Factor	Quote
Building relationships with customers	"I come to the markets to deal directly with customers and have total control over my product" (Stallholder, Castle Hill Farmers' & Fine Food Market) "I come to this market to build relationships and sell my product to customers" (Stallholder, Rouse Hill Organic Food & Farmers' Market)
Selling local foods	"I supply produce to the local areas" (Stallholder, Castle Hill Farmers' & Fine Food Market)
Marketing business and generating profits	'I want to promote and sell my product. To make money" (Stallholder, Castle Hill Farmers' & Fine Food Market) "I come here to generate cash flow and introduce my products to the market" (Stallholder, Castle Hill Farmers' & Fine Food Market)

Table 8: Main reasons that stallholders attended Rouse Hill Organic Food & Farmers' Market and Castle Hill Organic Food & Farmers' Market

10. STREET NETWORK.

The auditors were asked to assess:

- How the streets throughout the entire site area balance the needs of all users, and determine if one user is privileged over others;
- What the amenity of the street is like (e.g. in relation to air quality/pollution, noise pollution, quality of drainage, odours, pools of still water etc.); and
- How well the street network connects with residential, recreational, commercial and institutional areas and the modes of transport accommodated in the neighbourhood.

The street network is illustrated in Map 7 and the images below. The map shows the hierarchy of major roads and local streets, posted speed limits, parking restrictions and public transport stops.



Map 7: The New Rouse Hill street network

The major roads within the neighbourhood are Caddies Boulevard, Sanctuary Drive, Freshwater Road, White Hart Drive and Rouse Hill Drive. The surrounding local streets easily connect to the major roads, and particularly Caddies Boulevard, which connects the Southern Precinct to the Town Centre. The Town Centre itself is bisected north to south by Civic Way and east to west by Main Street.



From left to right: Freshwater Road and Caddies Boulevard (images taken 24.01.12 and 25.05.12)

Vegetated swales (ditches that have been designed to temporarily hold water and allow it to gradually permeate into the soil in line with the principles of Water Sensitive Urban Design) have been incorporated into the design of many of the roads throughout the neighbourhood. As shown below, the swales are primarily located in the median strip, but also, as in the case of Appaloosa Street, adjacent to the footpath.



From left to right: Carmague Street and Appaloosa Street (images taken 25.05.12)



Swale on Rouse Hill Drive (images taken 30.08.12)

From the experience of the auditors as they walked around the site, in the residential precincts of the neighbourhood, the car is prioritised over the pedestrian and cyclist – however, there are a number of shared pathways provided on main roads, and significant effort has been made to

provide a pleasant walking environment as well as opportunities for recreational walking and cycling (i.e. in the Leisure Square and District Park). There are ample opportunities for cyclists to ride to and park at the Town Centre (and lots of pedestrian crossings), and though street parking is provided it is limited and speed limits are slow. In the Town Centre, the pedestrian is prioritised over other users. There are continuous pedestrian-only pathways passing through the four quadrants of the Centre, which connect to the pedestrian crossings provided on Main Street and Civic Way. While Main Street and Civic Way are shared with cars and cyclists, signage and landscaping clearly demonstrate to other users that the streets through the Town Centre are heavily used by pedestrians, and that motor vehicles must pass through slowly and carefully.



Main Street in the Town Centre (images taken 24.01.12 and 30.08.12)



Examples of car parking in and around the Town Centre. From left to right: Rouse Hill Drive and Main Street (images taken 30.08.12)

While connectivity and quality of footpaths and shading across the whole site is impacted by construction and the fact that much of the site is still to be developed, the amenity of the streets is of very good quality, with a lack of air and noise pollution, and absence of foul odours. Drainage does suffer in some areas due to construction works, but overall the site is very pleasant and well maintained.

Overall, the different uses within the site are well connected, and any obstructions to connectivity can be attributed to the stage of development. Residents in the Southern Precinct would be able to drive, walk, cycle or catch a bus to the Town Centre, and a number of parks and community facilities are within easy walking distance. Residents in the Eastern Precinct would have to take a more circuitous route in driving to the Town Centre due to the obstruction of the undeveloped Central Precinct; however, the trip would still be an easy one. Walking and cycling from the Eastern Precinct

to commercial, recreational and institutional sites is also highly achievable, however, there does not appear to be a bus route from this part of the neighbourhood to other areas.

The different elements of the street network, such as street furniture and amenities, walking and cycling infrastructure, safety features and public transport are described further below.

- **Amenities and Shading**

The auditors were asked to map and document street lights; benches and seating; shade structures and awnings; trees, gardens and plants; telephone booths; bubblers or drinking fountains; public toilets; rubbish bins; flagpoles or banners; community noticeboards; public art; dog litter bags and bins; post boxes; and any other amenities.

Map 8 below shows tree coverage across the site. While some of these trees are yet to reach the level of maturity required to provide shade, the presence of street trees and landscaping is consistent and abundant throughout the neighbourhood.



Map 8: Tree coverage in The New Rouse Hill

The following map provides an illustration of the different street furniture and amenities provided across the site. (Please note that street lights have been documented separately and are shown on Map 16 in the Safety at Night section further below).



Map 9: Street furniture and amenities in The New Rouse Hill

As the map and images below show, rubbish bins and benches have been provided in generous proportions in the Town Centre and larger parks. While some benches show signs of wear and tear, they are generally of high quality and have been well maintained.



Benches, rubbish bins and signage on Civic Way; seating in a small green space on White Hart Drive (images taken 22.06.12)



Street furniture in the Leisure Square (images taken 25.05.12)

Apart from the toilets located in the shopping centre, the only public toilet facilities are in the District Park. These toilets, shown below, provide universal access, and are of a high standard in terms of cleanliness, maintenance and accessibility via a flat paved pathway.



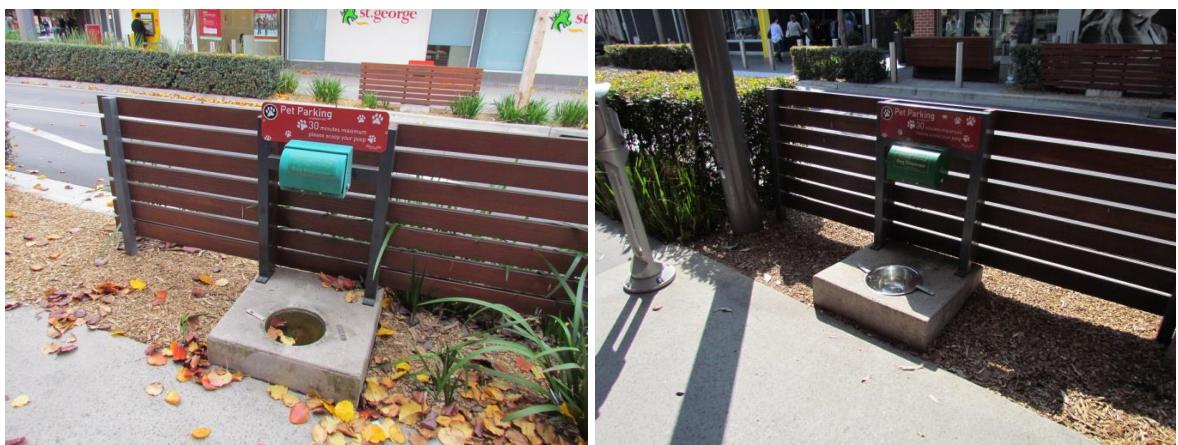
Public toilets in District Park in the Eastern Precinct (image taken 24.01.12)

BBQ facilities can be found at the District Park and Melaleuca Park, along with drinking fountains. These facilities are located under shelter, alongside seating and tables as shown below. During the audits, the facilities seemed to be in good condition.



Image on top left: BBQ facilities, benches and shelter at Melaleuca Park; remainder of images: Amenities and shading in the District Park (images taken 25.05.12; 24.01.12)

The Town Centre features two pet parking stations, at which a person can tether their pet next to a water source for 30 minutes at a time. The stations also provide dog litter bags.



Pet parking stations in the Town Centre (images taken on 22.06.12; 30.08.12)

A number of additional design features, such as sculptures, signage and landscaping, are also present in the Town Centre. The images below provide examples of the different design elements in the site.



Amenities and landscaping in the Town Centre (images taken 30.08.12)

▪ The Walking Environment

The auditors were required to map footpaths and signalised and painted pedestrian crossings across the neighbourhood, as well as conduct an assessment of the quality of each footpath in terms of safety and accessibility. Pedestrian crossings are discussed further in the section on *Pedestrian Safety* below.

The maps and images below provide an illustration of this assessment of the walking environment. As each footpath in the case study site was mapped, it was given a qualitative assessment of 'Good', 'Average' or 'Poor'. The assessment was based on the following variables: the material, quality and gradient of the footpath; the buffer between the footpath and the street; visibility along the footpath; connectivity; and quality of shading. An explanation of the scores accorded to each variable is provided at Appendix F. 'Good' footpaths are indicated in green; 'Average' footpaths are indicated in yellow; and 'Poor' footpaths are indicated in red.



Map 10: Footpath ratings in The New Rouse Hill

As shown in Map 10 above, the majority of the footpaths in Rouse Hill were given a rating of 'Good', with a small but significant percentage classified as 'Average'. None of the footpaths were given a 'Poor' rating. (i.e. n=35 rated as average, n=88 rated as good; around 28% rated as average, 71% rated as good).



Map 11: Detail - footpaths in the Southern Precinct (bounded by Belcast Road, Sanctuary Drive and Darrabarra Way).

The rating of footpaths in the Southern Precinct is shown above in greater detail. Examples of good and average footpaths in this Precinct are illustrated and described below, as well as an example of a shared pathway.



Example of an 'average' footpath: Darrabarra Way (image taken 21.01.12)

As the image above shows, there was a significant amount of construction occurring along Darrabarra Way at the time of the audit. There were no street trees, and no shading was present along the footpaths. There was no buffer between the footpath and the street on the left side, and only a nature strip provided on the right side (as shown above). The type and quality of the footpath material, visibility, and the connectivity of the footpaths to the larger footpath network, were good. The 'average' rating was largely a result of the stage of development, and the construction activities. However, shading along this street needs to be improved.



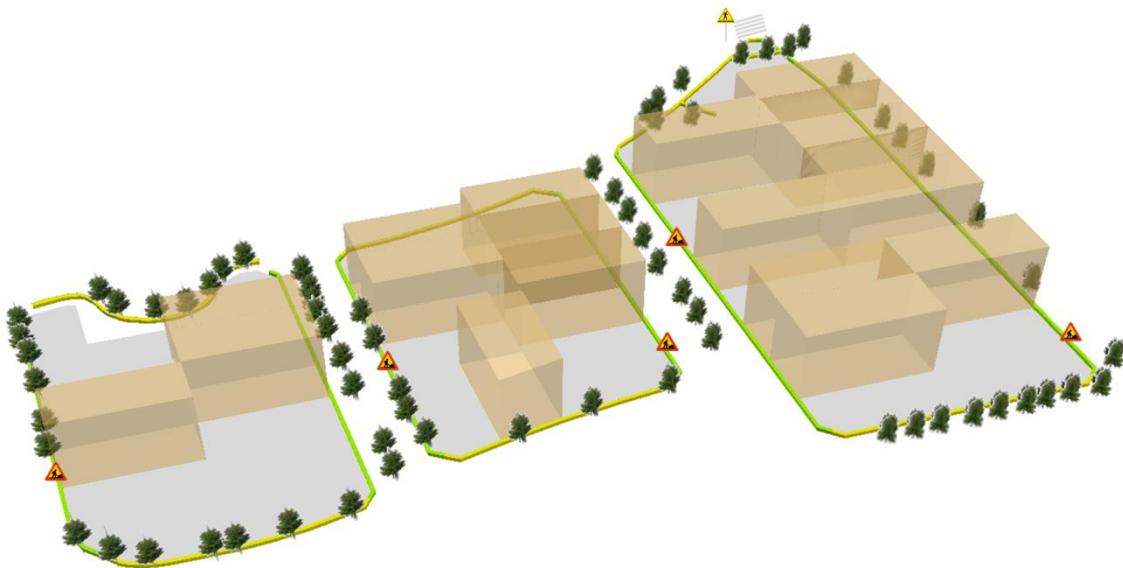
Example of a 'good' footpath: Hedge Street (images taken 21.01.12; 25.05.12)

As the images above show, the footpaths along Hedge Street were of high quality in terms of material, gradient, connectivity, and visibility. Street trees were present, and provided a buffer between the footpath and the street, along with the nature strips running along both sides.



Example of a shared pathway: Caddies Boulevard (image taken 25.05.12)

The shared pathway shown above, along Caddies Boulevard, is 2.5 metres in width, predominately flat, continuous and with good visibility. The quality of the concrete at the time of the audit was good, and the street trees planted in the nature strip provided a buffer between the path and the street. The trees only provided an average level of shading, however this can be expected to change as they grow. The path was given a rating of 'Good' overall.



Map 12: Detail - footpaths in the Eastern Precinct (bounded by Ironbark Ridge Road, Bridgewood Drive, Appaloosa Street and Spur Street)

Map 12 shows the ratings of footpaths in the Eastern Precinct in greater detail. Again, examples of good and average footpaths in this Precinct are illustrated and described below.



Example of an 'average' footpath: Appaloosa Street (images taken 25.05.12)

Appaloosa Street, shown above, was found to be accessible and continuous, with concrete of good quality, a moderate gradient, good visibility and no obstructions. The path was a standard width of 1.2 metres, with a swale and nature strip acting as a buffer between the path and the street. The shading along this path was rated as poor. The overall rating for the path was 'average'.



Example of a 'good' footpath: Caballo Street (image taken 25.05.12)

As illustrated above, the shading along Caballo Street was quite good in comparison to other streets. The quality and continuity of the path was good, the trees and plantings in the nature strip acted as a buffer between the path and the street and, although at times overgrown vegetation caused obstructions, visibility was generally good. The path was 1.5 metres in width and had a moderate gradient.

Overall, the auditors determined that the footpaths in the case study site were of high quality. They were predominantly made of concrete; well maintained; flat; free of obstructions; and continuous. Where obstructions or degraded surfaces existed, they could largely be attributed to construction activities (as shown in the image below).



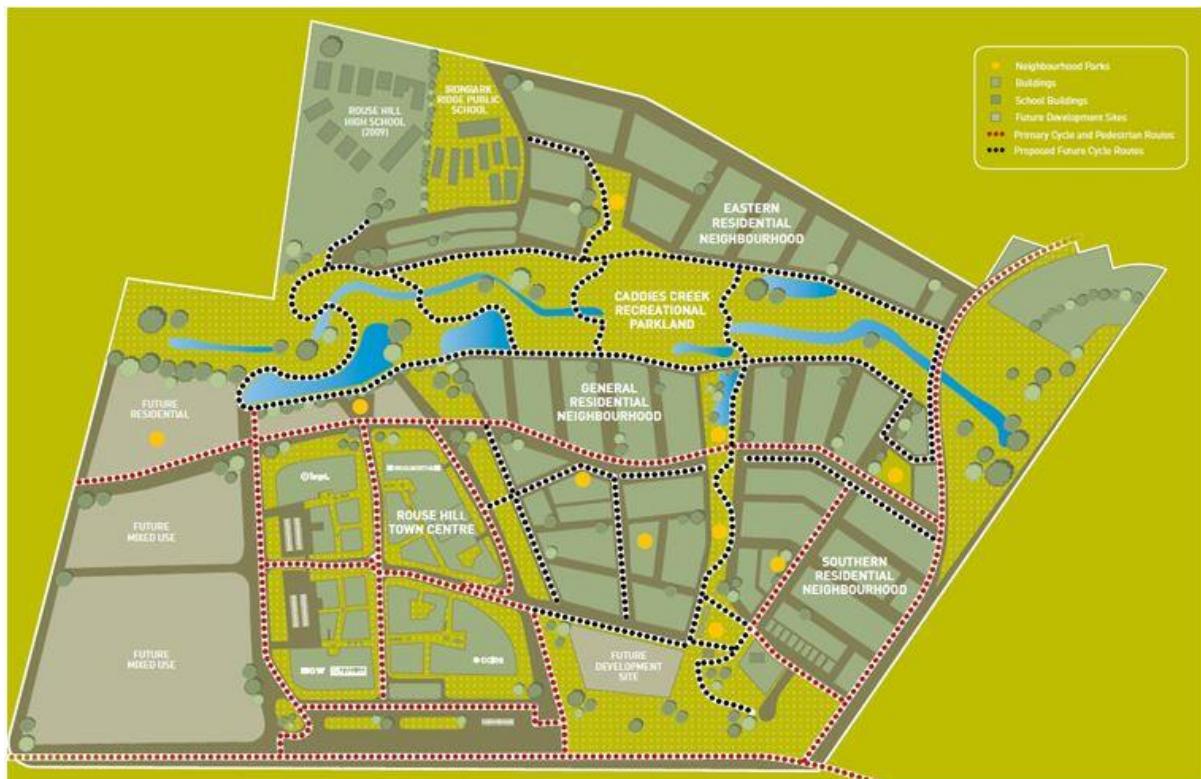
Example of construction-afflicted path – Barabung Way (image taken 25.05.12)

However, the quality of shading across the site was typically poor. Significant numbers of street trees have been planted, but the majority of these have not achieved the level of growth necessary to provide shade, and there is an absence of other types of shading. Even paths which received the highest rating, such as Hedge Street and Caballo Street above, did not provide adequate shading.

In terms of overall walkability through the neighbourhood, as noted above, the built form in the residential areas and in the Town Centre provides good opportunities for passive surveillance. Streets are wide and open and allow for good and consistent sightlines throughout the site. The auditors observed that there are always lots of families walking about, car speeds are generally low, the facilities are well maintained and any signs of physical disorder are minimal. The entire site projects the image of affluence and being well cared for. The front yards are well maintained and the street vista is visually appealing. In the developed areas of the site, the buildings and their uses, supported by the footpath network, do certainly seem to encourage pedestrian activity. In addition, the shared pathways in the recreational areas connect well to the residential footpath network, allowing for residents to be physically active, either by walking, running or cycling. The auditors also found that the street trees, landscaping, street furniture and public art provided across the site contribute to the village feel of the Town Centre and neighbourhood, which may further facilitate walking.

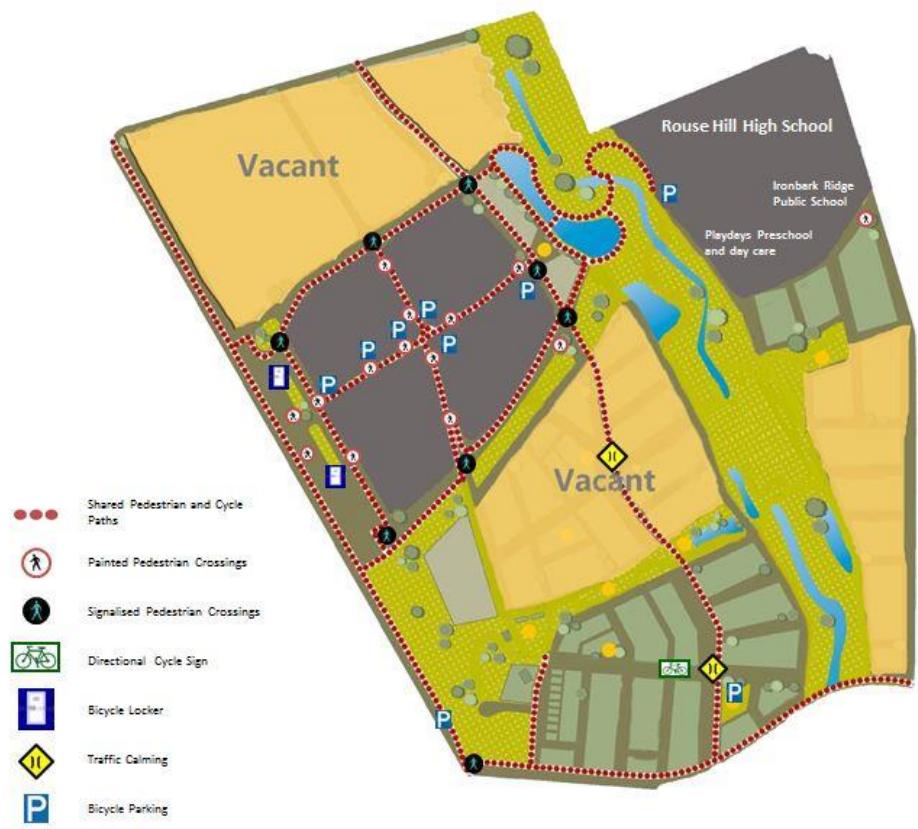
▪ The Cycling Environment

The Audit Instrument provided for the collection of data relating to cycling – including recreational cycling lanes, utilitarian cycling lanes, showers and changing facilities, bicycle storage and parking, types of obstructions along cycle lanes, and connectivity of cycle lanes. Map 13 below was produced by the Rouse Hill Town Centre. It illustrates primary existing and proposed cycle and pedestrian routes throughout the neighbourhood (note that ‘routes’ does not necessarily indicate the existence of dedicated cycle ways or shared pathways, and may refer to local roads).



Map 13: Walking and Cycling Guide, published through the Rouse Hill Town Centre

Map 14 shows the cycling environment in the neighbourhood, as observed and mapped by the auditors.



Map 14: Cycling infrastructure in The New Rouse Hill

At the time of the audits, there were no dedicated cycle-only lanes in The New Rouse Hill. However, shared pathways have been provided along Caddies Boulevard, Windsor Road, White Hart Drive, Rouse Hill Drive, Sanctuary Drive, Belcast Road, Tempus Street and parts of Civic Way and Main Street. Images and descriptions of some of these pathways are provided below.



Shared pathway on Civic Way (images taken 22.06.12)

The pathway along Civic Way is of high quality – around 3.5 metres in width, flat and continuous, with good visibility. Vegetation, car parking and other elements such as bicycle parking act as buffers between the path and the street. Shading was rated as poor to average. At the time of the audit,

much of the pathway was free of obstructions; however, outdoor seating at the junction of Civic Way and Main Street did encroach on the space. The auditors felt that it was likely cyclists would need to dismount as they entered the Town Centre proper, due to heavy pedestrian traffic. Overall, the path was given a rating of 'Good'.



Shared pathway on Rouse Hill Drive (images taken 30.08.12)

Along Rouse Hill Drive, the concrete of the shared pathway was of good quality, ranging from 3.4-3.5 metres in width, flat and with vegetation and car parking spaces acting as buffers between the path and the street. There were no obstructions along the path, which was continuous and accessible, with good visibility. Trees and vegetation provided poor-average shading. The path was given an overall 'Good' rating.



Shared path leading from Leisure Square through to District Park (images taken 25.05.12)

The shared pathways through the Leisure Square ranged from 1.8 to 2.3 metres in width. The concrete was of consistently high quality, and the connectivity and continuity of the pathways was also good. The gradient of the paths ranged from flat to steep, and visibility was also variable – with clear sightlines in some areas and obstructions in others (due largely to curvature of the path). Shading was typically absent or poor.



From left to right: Shared pathways on Caddies Boulevard and White Hart Drive (images taken 25.05.12)

The attributes of the shared pathway along Caddies Boulevard were described in the section above (*The Walking Environment*). The path along White Hart Drive, pictured above at right, ranged from 1.7 to 2.3 metres in width. The path was predominantly flat, well maintained and continuous. Vegetation, including trees, provided a buffer between the path and the street as well as a level of shade, although the shading was rated as poor overall. Clear passage along the path was obstructed by a bus stop. The pathway received a rating of 'Good' overall.

In addition to the shared pathways, signage indicating use of the roadway by cyclists has been provided on other streets such as Freshwater Road, as shown below.



Signage on Freshwater Road (image taken 24.01.12)

Ample bicycle parking and storage facilities are provided across the site – in the Town Centre particularly, but also in recreational areas. Some images of parking and storage facilities are shown

below. According to the Green Travel Coordinator, there is parking for 300 bicycles in racks and 16 bike lockers (provided by the RTA) in the Town Centre (Wiblin, 2010).



From left to right: Bicycle parking on Civic Way in the Town Centre and at District Park (images taken 22.06.12; 25.05.12)



Bicycle storage on Tempus Street (images taken 30.08.12)



Bicycle parking on Tempus Street (images 30.08.12)

End of trip facilities – including showers and hairdryers - are reported as available in the Town Centre, however, the auditors were not able to observe these elements.

Overall, the auditors found the cycling infrastructure provided throughout the neighbourhood to be highly supportive of cycling activities, both for recreational and utilitarian purposes.

- **Public Transport**

Use of active transport modes and public transport services is facilitated through the walking and cycling infrastructure described in the sections above, and is also heavily promoted on all websites and materials linked to the neighbourhood (i.e. [Rouse Hill Town Centre](#), [Our Rouse Community website](#), [The New Rouse Hill](#) sales website; and see the Walking and Cycling Guide provided at Appendix G), as well as, for example, through the signage illustrated below.



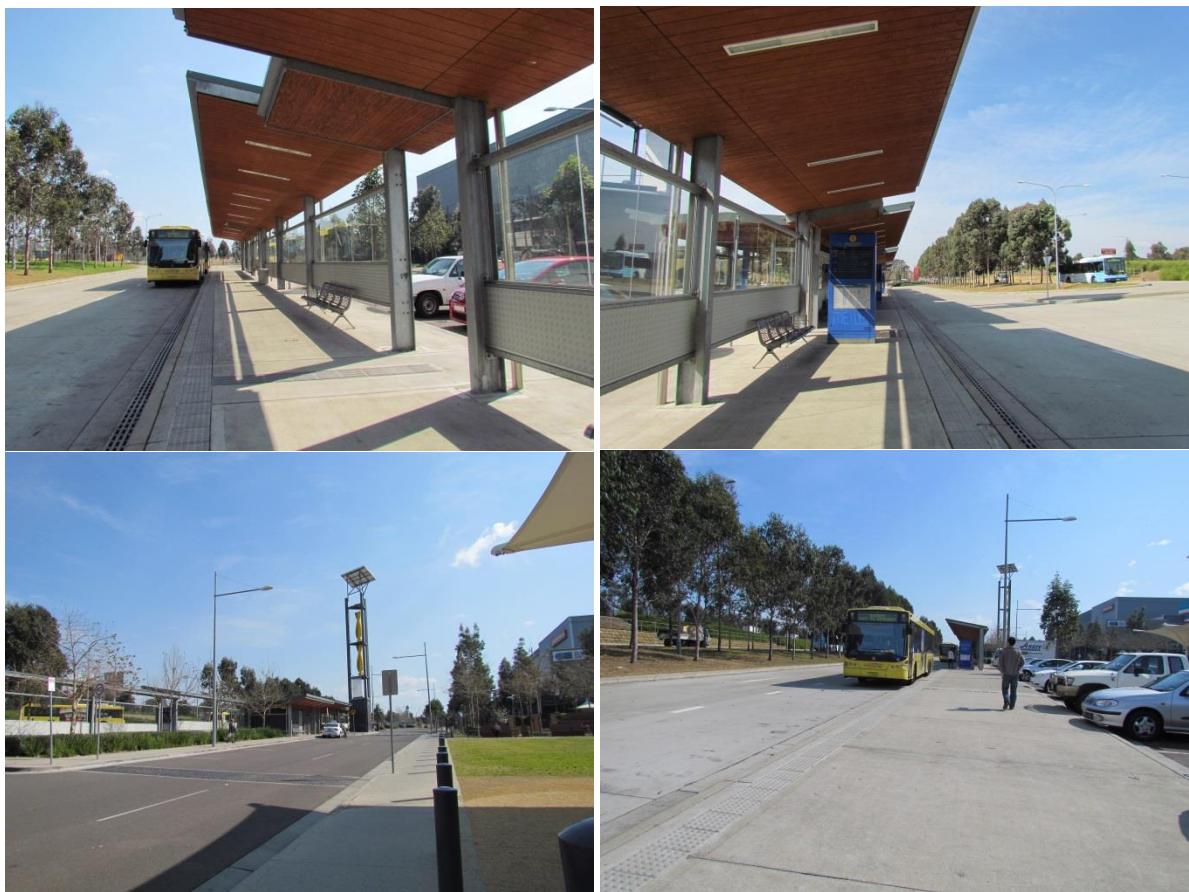
Signage promoting active transport in the Town Centre (image taken 30.08.12)

The creation of a travel plan for the Rouse Hill Town Centre was a condition of development consent (Wiblin, 2010). The goal of the travel plan is to promote and facilitate travel to and from the Town Centre for employees, customers and residents, via active and sustainable means (Wiblin, 2010). Key elements of the travel plan include:

- A Green Travel Coordinator – responsible for creating a Walking and Cycling Guide (provided at Appendix G), Transport Access Guide, and Green Travel Club; and
- The Green Travel Club, which was launched in February 2008.

The aim of the Green Travel Club is to engage and educate staff of the Town Centre on alternative modes of transport. Membership is free, and all new employees are invited to join. Members have access to an online ride share database (linking drivers with passengers for car share); showers and bicycle parking; information on travel and safety tips; and events and competitions. Residents of The New Rouse Hill are also able to join the Club. The Green Travel Coordinator collects data from members of the Club on travel behaviour. As of May 2010, around 1,000 out of 3,000 employees at the Town Centre were members of the Club, as well as 300 residents (Wiblin, 2010).

The transit interchange, through which currently only buses operate, is illustrated below. This interchange will be the site of the train station expected to be delivered in 2019, as described in Section 5. In the meantime, bus services from the interchange travel via the T-way (rapid bus-only lane) to Parramatta and Blacktown. The bus services also connect residents to Castle Hill and the Sydney CBD.



Transit interchange on Tempus Street (images taken 30.08.12)

The interchange provides seating and shelter – including an enclosed room - for patrons waiting for the bus. Service schedules, route maps and displays of real time data announcing the next service to arrive are posted on large signs. As noted, bike storage lockers and parking are co-located with the bus interchange. The interchange is highly accessible via cycling and walking. The auditors found the facility to be well-maintained, with fairly high amenity in terms of shelter and seating. Lighting of the area was also found to be adequate; however, the auditors felt that natural surveillance may be inhibited late at night when patronage of the bus services is limited, due to the slightly removed nature of the interchange from the more populated areas of the Town Centre. The areas of the Centre closest to the interchange – the Community Garden and adjacent green space – would not be populated at night, and the closest stores would also be empty at that time.

Other bus stops throughout the neighbourhood are shown below. The bus stop on Caddies Boulevard is an example of a stop without any shelter or amenities. At the time of the audits, this bus stop was located in an undeveloped area of the site. Users of this stop would therefore be isolated, and opportunities for natural surveillance would be limited to people walking or driving past.



Bus stop on Caddies Boulevard, in between Ngara Street and Grazier Road (image taken 25.05.12)

The bus stops below, on Caddies Boulevard and Rouse Hill Drive, were rated highly in terms of provision of shelter, seating, and provision of a service schedule. However, while both bus stops were located close to the Town Centre, again, natural surveillance would be limited outside of work and shopping hours to people walking and driving past.



Bus stop and timetable for services on Caddies Boulevard (images taken 25.05.12)



Bus stop on Rouse Hill Drive (images taken 30.08.12)

The image below shows a bus stop on Windsor Road, near Sanctuary Drive, which was photographed during the night audit on 23 January 2013. The image illustrates the quality of lighting at public transport stops, which the auditors determined to high. The level of light would allow for a person's face to be identified at a distance of 15 metres, and would contribute to feelings of safety.

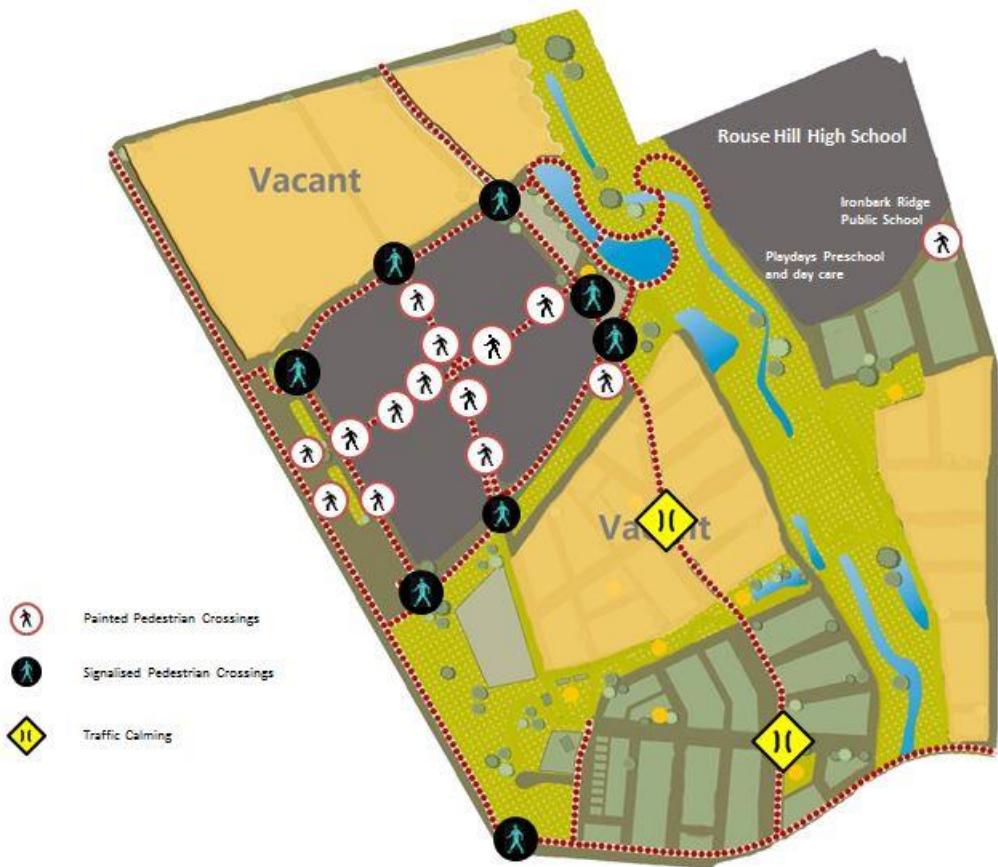


Bus stop on Windsor Road at night (image taken 23.01.13)

Overall, the public transport infrastructure in the neighbourhood is of high quality and interacts well with walking and cycling infrastructure, particularly in the Town Centre.

▪ Pedestrian Safety

The auditors were asked to map and assess elements contributing to pedestrian safety, including pedestrian crossings; traffic calming infrastructure such as speed bumps, chicanes, landscaping and designated share zones; surveillance cameras; natural surveillance; street lighting; and sightlines. Surveillance cameras and lighting are addressed further below.



Map 15: Traffic calming and pedestrian crossings in The New Rouse Hill

Map 15 above shows the location of painted and signalised pedestrian crossings across the neighbourhood, as well as some traffic calming elements. The traffic calming symbols on the map indicate the location of two roundabouts. In addition to the roundabouts, the swales located in the middle of major roads and some local roads also informally act as a kind of traffic calming, through making the roads seem narrower and necessitating cautious turning in and out of streets due to obstruction of sightlines. It should be noted that the vegetation in the swales needs to be managed to ensure that obstruction of sightlines does not impinge on road safety. The majority of pedestrian crossings are located within the Town Centre (examples shown below) – an area that places priority on virtually unrestricted pedestrian movement. This is also supported by signage indicating designated shared zones, as illustrated in the images below.



Pedestrian crossings in the Town Centre (images taken 30.08.12)



Signage indicating designated share zones at junction of Civic Way and Main Street (image taken 22.06.12)

Pedestrians in the Town Centre are also encouraged to ensure their own safety in the shared zones by exercising caution, as illustrated in the signage below.



Pedestrian safety signage at junction of Civic Way and Main Street (image taken 22.06.12)

Outside of the Town Centre, there is only one painted pedestrian crossing. This is located in the Eastern Precinct, on Ironbark Ridge Road, outside the primary school (shown below). There are no pedestrian crossings in the Southern Precinct.



Pedestrian crossing on Ironbark Ridge Road (image taken 25.05.12)

From the auditors' experience, the pedestrian environment across the neighbourhood has a generally high level of safety. The Town Centre in particular is a safe and enabling environment for pedestrians. At the moment, traffic levels in the residential areas of the site are low, and it was not difficult to cross the road at any point during the audits. However, as the site continues to develop, traffic can be expected to increase, and it may be necessary to install new pedestrian crossings along the busier roads, such as Caddies Boulevard.

▪ Safety at Night

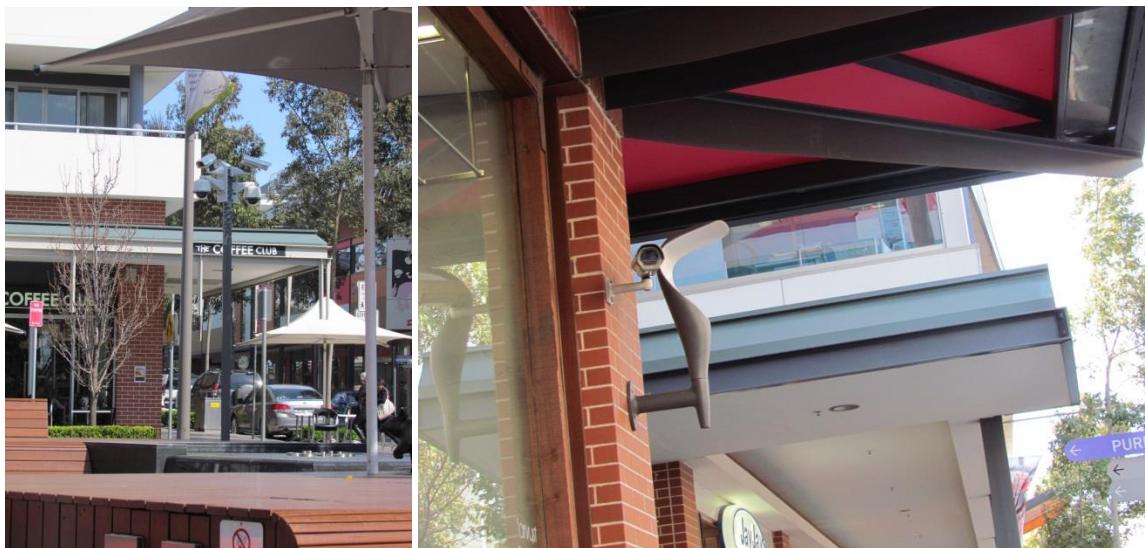
The audit instrument provided for the collection of data relating to surveillance and lighting. Map 16 illustrates the presence of street lights across the neighbourhood, as at 23 January 2013. Disabled or damaged street lights are represented by a red star. Appendix H provides a list of all of the disabled street lights mapped during the night audit.



Map 16: Street lights in The New Rouse Hill

During the audit undertaken after dark on 23 January 2013, the auditors observed that the site was very well lit, and it would be possible in most areas to see a person's face from 15 metres away. The only areas that were not well lit were the Leisure Square and Caddies Creek Riparian Corridor. Street lights were present in the Leisure Square; however they were either disabled or not turned on. Two men were seen walking from the Town Centre through the unlit Leisure Square during the audit, and it was not possible for the auditors to discern their features.

There are a number of surveillance cameras in the Town Centre and particularly the Town Square. These cameras are located in highly visible positions (as shown in the images below), and may act as a deterrent to undesirable behaviour, and contribute to feelings of safety of patrons of the Centre. The auditors also noted that surveillance cameras have been installed in the shelter in District Park.



Surveillance cameras in the Town Square/Town Centre (images taken 30.08.12)

Overall, the auditors perceived there to be a high level of safety in the neighbourhood at night. Apart from the unlit Leisure Square and Caddies Creek Riparian Corridor, where feelings of safety would be diminished if travelling alone, the neighbourhood was well lit. Opportunities for passive surveillance, as described in Section 8 of this report, are good in the well developed areas of the site, and contribute to feelings of safety. However, the auditors believe that feelings of safety would be diminished for pedestrians passing through the Central Precinct and parts of the Eastern Precinct, where development is yet to commence or is only partially underway. Perceptions of safety are further explored in the section on *Social Interaction* below.

▪ Universal Access

The auditors were required to assess whether movement around the neighbourhood is accessible for all – for example, people with limited mobility or parents with prams – with particular consideration for the placement of crossings; gradient and alignment of kerb ramps; level changes; audio-tactile facilities (i.e. at signalised pedestrian crossings); tactile paving; markings, signals and signage; sightlines at crossing points; provision of medians and refuge islands; and speed limits.

As outlined in the section above on *Walkability*, in which footpaths were given a rating that was partially based on the accessibility of the pathway, the majority of paths in the neighbourhood were considered at the time of the audits to be of good quality. The images below illustrate how the walking environment in The New Rouse Hill supports universal access, as well as highlighting some elements of the physical infrastructure that may inhibit movement for the mobility impaired.

The two images below of kerb ramps on Badu Street and Holly Street are representative of the majority of kerb ramps and crossing environments in the neighbourhood. The gradient and alignment of the kerb ramps was typically found to be of high quality, and sightlines were also generally good. During the audits, vehicle speeds on these local streets were low, and the auditors believed that people with limited mobility or parents with prams could cross these roads quite comfortably.



Images illustrating kerb ramps: corner of Caddies Boulevard and Badu St; corner of Holly St and Freshwater Rd (images taken 24.01.12)

On major roads like Caddies Boulevard, vegetated swales like the one shown below would prevent pedestrians from crossing. The swales do not have sections through which pedestrians may pass through, and this may have been a deliberate action on the part of the designers to deter attempts to cross this busy road. However, refuge islands have been provided in certain locations to enable crossing (as shown below on the right). Overall, the auditors believed that Caddies Boulevard is not an easy or comfortable road to cross for pedestrians with or without limited mobility, and the addition of new crossing infrastructure should be considered, particularly as the site continues to develop and traffic flows increase.



Vegetated swale and refuge island at different points on Caddies Boulevard (images taken 25.05.12)

The image below shows a crossing on Bridgewood Drive in the Eastern Precinct, near the Ironbark Ridge Public School. This road, though local, would experience periods of heavy traffic flow due to its proximity to the school. The kerb ramps at the crossing have a gentle gradient and are well aligned. The width of the ramp would accommodate a parent with a pram well.



Example of kerb ramp and crossing on Bridgewood Drive (images taken 25.05.12)

The images below illustrate a typical signalised pedestrian crossing in The New Rouse Hill. While the crossing does have the audio-tactile facilities in the form of push-buttons, there is no tactile paving provided.



Typical signalised pedestrian crossing, on White Hart Drive (images taken 22.06.12)

The images shown below provide an example of a pathway presenting issues for people with limited mobility. In the first two images, vegetation is encroaching on the pathway, causing sightlines to be compromised, and presenting an overhead obstruction in the first image, and a trip hazard in the second image. The third image shows an example of a trip hazard as a result of construction activities.



Example of a pathway presenting issues for mobility (White Hart Drive) (image taken 22.06.12)



Example of a trip hazard on Spur Street (image taken 25.05.12)

Two ramps have been provided in the green space between the Town Centre and Caddie Creek Riparian Corridor. The first, shown below on the left, allows pedestrians and cyclists to access the Leisure Square, and particularly connect to the cycle paths provided in this space, from the junction of Caddies Boulevard and White Hart Drive. This path is quite steep, and would not be suitable for all people of limited mobility. However, another ramp (shown below on the right) is provided a little further along, which has a gentle gradient and links pedestrians of limited mobility and parents with prams from the Leisure Square to Caddies Boulevard.



Two ramps at different locations providing access from the Town Centre and Caddies Boulevard to the Leisure Square (images taken 25.05.12)

The images below show some other examples of universal access design in the Town Centre and the Leisure Square. The auditors noted that the tactile paving provided at the stairs leading from White Hart Drive to the Leisure Square was degraded and in need of repair (as at 22.06.12).



Lift access to the Town Centre from White Hart Drive; tactile paving and railings on stairs leading to Town Centre from White Hart Drive (images taken 22.06.12)



Damaged tactile paving at stairs leading down to the Leisure Square from White Hart Drive (image taken 25.05.12)



Tactile surfaces on stairs at Caddies Creek waterfront in the Leisure Square (image taken 25.05.12)

Some additional signs of universal access are provided below: disabled parking spaces on Bellcast Road, providing access to the community facilities, Meze Me café and the children's playground designed to cater for children of a range of abilities; and the toilet facilities in the District Park.



Disabled car parking spaces on Belcast Road (image taken 24.01.12)



Disabled public toilet facilities in District Park (images taken 25.05.12)

Overall, the auditors felt that parts of the neighbourhood had been designed with consideration for people of limited mobility, but not the entire neighbourhood. There are examples of excellent inclusive design, such as the children's playground off Bellcast Road, and the ramp leading from the Leisure Square to Caddies Boulevard, however, the walking environment needs to be improved, particularly in regard to provision of crossings on busy roads like Caddies Boulevard, provision of tactile paving at signalised crossings, and maintenance of pathways to remove trip hazards and obstructions.

11. SOCIAL INTERACTION.

The auditors were asked to consider feelings of safety in each of the residential, recreational, institutional and commercial areas of the site. This included regard for safety for people of different genders, sexual orientations, cultures and religions. In addition, observations in relation to signs of social inclusion; physical manifestations of culture; and psychological, emotional and spiritual belonging were required.

The auditors observed that the neighbourhood feels very safe during the day, in the residential areas and also in the Town Centre. There were always a number of families walking around, car speeds were generally low, the facilities were well maintained and any signs of physical disorder were minimal (as shown in the images below). The entire site projects the image of affluence and being well cared for. There are also surveillance cameras evident in the Town Centre and in some of the recreational spaces.



Damaged property in the Leisure Square (image taken 24.01.12)



Graffiti and rubbish in the amphitheatre in District Park (images taken 24.01.12; 25.05.12)

The auditors did not perceive a gendered presence in the neighbourhood during the audits. They felt that the factors noted above and particularly the family friendly elements of the neighbourhood, contributed to a feeling of safety for women and men.

There were no overt signs of religious diversity or support for people of different sexual orientations within the neighbourhood. However, there were signs of social inclusion and cultural diversity – for example, the children's playground near Mungerie House, which was designed for children with a

range of abilities; and the community gardens, which featured a range of crops favoured by people from different cultural backgrounds, and which may provide an opportunity for social interaction and cultural exchange.

There are a number of signs relating to the history – environmental and cultural – of the site (i.e. facts on the pavement on Main Street; fact boards in District Park), which may contribute to feelings of belonging in the locality.



Historical fact on Main Street; information on different elements of the site displayed in District Park (images taken 22.06.12, 24.01.12)

Although the auditors did not see any groups of people congregating in public spaces with a formal common purpose, they did note that many mothers, fathers and grandparents with children were seen congregating in playgrounds and recreational areas during the day. During the weekend audit (Saturday 29 June 2013) a group of people were observed setting up an event in the Mungerie Community Room. It is possible that the Community Centre also provides a forum for different groups to form and meet, however, the auditors did not see any evidence of this.

12. OVERALL ANALYSIS.

This section of the Audit Report provides a qualitative assessment of the overall availability and quality of distinct elements of the built environment in each neighbourhood. The purpose is to highlight the ways in which the built environment in each locality may or may not support healthy behaviours in everyday life. Each item has been given a rating out of five stars, with accompanying explanatory comments.

The auditors found The New Rouse Hill to be a very pleasant, welcoming and safe neighbourhood. The area is well designed, having the Town Centre as the focus of the development. There is good connectivity from the Town Centre, by bus, to other regional town centres and to the city. The residential areas are all modern, with well-maintained gardens, good quality streets and footpaths. Effort has been made to provide different forms of housing to accommodate different needs (i.e. apartments and terraces), though the majority of housing is still detached on blocks of significant size. The area is very aesthetically pleasing – significant numbers of street trees, landscaping and street furniture have been provided and recreational areas are very attractive, with a range of different designs utilised (i.e. lighting, art, seating, sculpture, points of interest for children). Pathways in the area are well connected, with several shared paths that allow for residents to be physically active, either by walking, running or cycling. Bicycle storage at the bus interchange allows for residents to incorporate physical activity in their transport to work. The Town Centre has a wide variety of shops and services, and makes it easy for residents to access healthy food. There does not seem to be any perception of insecurity in the area. This area is a healthy built environment, though still car dominated. One of the auditors commented that they would live in The New Rouse Hill, as long the commute to work was not prohibitive. Another commented that they would live in the neighbourhood because it is peaceful, aesthetically pleasing, easy to get around, and there is opportunity to walk and cycle for transport, and easy access to all the shops and services you need in daily life.

13. RECOMMENDATIONS FOR IMPROVEMENT.

- Reduce traffic speeds along Caddies Boulevard and incorporate more pedestrian crossings.
- Provide shaded playgrounds for children.
- Structurally separated cycle lanes on main roads.
- Wider footpaths in residential areas.
- Improved maintenance of street trees to lessen obstructions and enhance sightlines.
- Improve accessibility for people with disabilities – e.g. streets in the Town Centre are very cluttered; some footpaths in residential areas are too narrow and have too many obstructions; and crossing of busy roads like Caddies Boulevard has not been enabled.

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Appendix A: LIST OF FOOD STORES IN THE ROUSE HILL TOWN CENTRE

FRESH FOOD	TAKEAWAY	RESTAURANTS/CAFES
Baker's Choice	Asakaze	Caffe Cherry Beans
Bush's Fresh Meats	Boost Juice	Coco Cubano
Coles	Curry Bizarre	Fancy Fillings
Harvest Market	Donut King	Gloria Jeans
Lenard's (poultry)	Fusion Berry	Grand Lotus
Martelli's Fruit Market	Golden Tower	Griddle
Nuts Galore	Hero Sushi Box	Grill'd
Peters Meats	KFC	Lusso Italian Restaurant
Red Lea Chickens	McDonalds	Lusso Tapas
Costi's Fishmarket	Mrs Fields	Mad Mex
Woolworths	Muffin Break	Michel's Patisserie
	Oporto	Nando's
	Orient Express	Oliver Brown
	Regali Dolci	Sushi Bay
	Sahara Grill	Tequila's on Main
	Subway	Thai Splendid
	Wrapalicious	The Coffee Club
	Xquisito	The Coffee Emporium
	Yogurtland	Theobroma Chocolate Lounge
		Wok On Inn

Appendix B: MARKET BASKET & FARMERS MARKET SURVEY TOOLS

(1) Market basket survey (supermarkets).

INSTRUCTION GUIDE

PART A: COST SURVEY

Victorian Healthy Food Basket, Developed by Monash University, Department of Nutrition & Dietetics

Introduction

The Victorian Healthy Food Basket meets the nutritional requirements of the four family types described below for two weeks, providing greater than 80% of the nutrient reference values (NRVs) for nutrients and at least 95% of energy requirements.

The four family types include:

- i) Typical family – 2 adults and 2 children (44 year old male, 44 year old female, 18 year old female and 8 year old male).
- ii) Single parent family – 44 year old female, 18 year old female and 8 year old male.
- iii) Elderly pensioner – 71 year old female.
- iv) Single adult – Adult male > 31 years

The Victorian Healthy Food Basket is designed to collect information on the **cost, availability** and **accessibility** of a healthy basket of foods from a store that has all the food groups in the basket. **Collection of data from stores that have less than 40 of the 44 items in the basket is not recommended.** This will allow accurate comparisons of data to be made.

Guidelines

Information for the healthy food basket survey must be collected during a period of time where prices will not be inflated. Avoid school holidays, public holidays, long weekends and other events may influence the price of food (for example, natural disasters such as the cyclones of north Queensland in 2006 that inflated banana prices).

Make sure to collect the data for your area within a **4-week period** to improve the reliability of the data. Record the date of your data collection.

Obtain a list of ALL the supermarkets in the Local Government Area (LGA). This can be obtained from the LGA (usually Environmental Health Team) or from the Yellow Pages.

Choose a large chain supermarket (e.g. Coles, Safeway, Bi-Lo, IGA) in your desired area as the benchmark store. This store should have ALL 44 items contained in the basket and be a store that is generally accessible and reasonably priced. You will also need to survey other smaller or independent stores (e.g. IGA, FoodWorks).

When collecting information abide by the following points.

- **Record the prices of all the food items in the healthy food basket using the 'Healthy Food Basket form'.** Choose the product in the stated size. The **cheapest brand price** in the specified size should be recorded.
- DO NOT include **generic brands** (e.g. Black and Gold, Homebrand etc) unless they are the only brand available for that particular product and it must be recorded that the brand was generic.
- DO NOT include **special prices**, only record regular prices of items. If the regular price is not listed and staff members cannot tell you, use the price of the item at your benchmark 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. **You MUST record both the size and price of the item if an alternative size for an item is chosen.**
- Where a **brand name** is specified, use only that brand of product. If the specified brand is not

- available, (eg. Premium biscuits or Weet-Bix) choose the closest alternative (eg. Salada biscuits or Vita Brits).
- If an item is not available, record the item as ‘missing’.

Meats:

- Deli products** can be used if they are the cheapest product.
- Meat prices should be recorded per kg** unless otherwise specified. Bulk meat prices per kg should not be recorded. If the type of meat specified is not available (eg. regular mince, lean) choose the closest type of meat to what is specified.
- Ham (in this survey) is a lean, pink meat which is able to be sliced or shaved. Canned ham and shaped luncheon meat is not an acceptable substitute. Ham can be obtained from the deli or packaged in the refrigerator section.

Fruit and vegetables:

- Fruit and vegetables should be recorded per kg** unless otherwise specified. Bagged fruit or vegetables prices should not be used unless they are the only type available.

Non-core foods:

- Polyunsaturated margarines should not be confused with monounsaturated margarines such as those made from canola and olive oils. Polyunsaturated margarines include Nuttelex, Eta, Meadow Lea

PART B: AVAILABILITY SURVEY

The availability component of the survey has been adapted from the NSW Cancer Council Market Basket Survey Tool.

This section is a survey of the **availability of fruit and vegetables**. For this task, there is a list of 30 fruits and 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.

For example, a supermarket has the following apples: Granny Smith, Fuji and Pink ladies.

Fruit/Vegetable	Present	Number of varieties
Apples	✓	3

If broccoli is unavailable:

Broccoli	✗
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PART C: QUALITY SURVEY

This quality assessment tool has been developed using the Queensland Healthy Food Basket (QFAB) and the NSW Cancer Council Market Basket Survey. This measure involves a **visual assessment of age, bruising and mouldiness of 10 common fruit and vegetables** displayed. Additionally, whether the fruit is **clean** or not will be recorded.

The ten varieties of fruits and vegetables that will be assessed are:

Fruit: **Apples, oranges and bananas**

Vegetables: **Tomato, potato, pumpkin, cabbage, lettuce, carrots and onions**

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, write “N/A” 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. Record items (tick) as ‘**all good**’ if no ageing, bruising or mouldiness is seen. If three quarters or more are free from ageing, bruising or mouldiness, then record ‘**most**’. Use the definitions to record if ‘**half**’, ‘**some**’ or ‘**few**’ are free from ageing, bruising or mould. If the item scores ‘**some**’ or ‘**few**’, then identify the **next cheapest type of that item which is of a better quality** (i.e., a score of “all”, “most” or “half”).

Finally, look at how clean the fruit and vegetables are. Mark ‘yes’ (Y) if the produce appears free or dirt and dust or mark ‘No’ (N) if they appear dirty or dusty.

For example, if the cheapest apples are Granny Smith apples, however the apples on display are very aged, only “some” are good and they appear dirty or dusty:

Product	Price per kg	Unit weight (if applicable)	Quality Assessment (tick box) Please give an overall rating on the quality of fruits and vegetables based on their age, bruising or mould.					Clean (tick box) Please give a rating of how clean the items are.	
			All	Most	Half	Some	Few	Yes	No
Granny Smith Apples	\$3.49					✓			✓

Another column needs to be completed with the next cheapest type of apple until at least “half” of the displayed apples are good. For example, if the next cheapest apples were Fuji apples (priced at \$4.20 per kg), in which “half” were good and they were clean and free from dirt and dust:

Product	Price per kg	Unit weight (if applicable)	Quality Assessment (tick box) Please give an overall rating on the quality of fruits and vegetables based on their age, bruising or mould.					Clean (tick box) Please give a rating of how clean the items are.	
			All	Most	Half	Some	Few	Yes	No
Granny Smith Apples	\$3.49					✓		✓	
Fuji Apples	\$4.20				✓			✓	

PART D: PRODUCT PLACEMENT AT CHECKOUT

This section is a survey of the number and types of products on display at the checkout, as a measure of the products available in the high-traffic, high-visibility areas of supermarkets. For this task, there is a list of common items. 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/drink should be written. Please list any additional items in the section at the bottom of the table.

For example, if a supermarket has the following chocolate bars at the checkout: Mars Bar, Kit-Kat, Snickers Bar:

Fruit/Vegetable	Present	Number of varieties	Name (as appropriate)
Chocolate	✓	3	Mars Bar, Kit-Kat and Snickers Bar

If water is not available at the checkout:

Water	✗		
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Cover sheet: MARKET BASKET SURVEY DATA COLLECTION

Name of Supermarket:

Address:

Survey completed by:

Date:

PART A: COST SURVEY

Basket item	Product size	Cost
Cereal group		
White bread	650g	
Wholemeal bread	650g	
Crumpets (rounds)	300g	
Weet-bix	750g	
Instant oats	500g	
Pasta	500g	
White rice	1kg	
Instant noodles	85g	
Premium biscuits	250g	
Fruit		
Tinned fruit salad, natural juice	450g	
Sultanas	375g	
Orange juice (100%) NAS	2L	
Apples	per 1kg	* (as per Quality Assessment)
Oranges	per 1kg	* (as per Quality Assessment)
Bananas	per 1kg	* (as per Quality Assessment)
Vegetables, legumes		
Frozen peas	per 1kg	
Tinned tomatoes	400g	
Tinned beetroot	450g	
Tinned corn kernels	440g	
Tinned baked beans	420g	
Tomatoes	per 1kg	* (as per Quality Assessment)
Potatoes	per 1kg	* (as per Quality Assessment)
Pumpkin	per 1kg	* (as per Quality Assessment)
Cabbage	half	* (as per Quality Assessment)
Lettuce	whole	* (as per Quality Assessment)
Carrots	per 1kg	* (as per Quality Assessment)
Onions	per 1kg	* (as per Quality Assessment)
Meat and alternatives		
Fresh bacon, shortcut, rindless	per 1kg	
Fresh ham	per 1kg	
Beef mince, regular	per 1kg	
Lamb chops, forequarter	per 1kg	
Chicken fillets, skin off	per 1kg	
Sausages, thin beef	per 1kg	
Tinned tuna (unsat.oil)	425g	
Tinned salmon, pink (water)	210g	
Large eggs (min 50g, caged)	700g dozen	
Dairy		
Fresh full cream milk	1L	
Fresh reduced fat milk	2L	
Reduced fat flavoured yoghurt	1kg tub	
Full fat long life milk	1L	
Cheese, block	500g	
Non-core foods		
Polyunsaturated margarine	500g	
White sugar	1kg	
Canola oil	750ml	
Unhealthy Items		
Mars bar	53g	
Coca Cola	600ml	

PART B: AVAILABILITY SURVEY

Vegetable	Present	Number of varieties
Broccoli		
Cabbage		
Capsicum		
Carrot		
Cauliflower		
Cucumber		
Green beans		
Lettuce		
Mushroom		
Onion		
Potato		
Pumpkin		
Sweet corn		
Sweet Potato		
Tomato		
Fruit	Present	Number of varieties
Apple		
Banana		
Grape		
Kiwi fruit		
Mango		
Orange		
Mandarin		
Cherries		
Pawpaw		
Peach		
Pear		
Pineapple		
Rock melon		
Strawberry		
Watermelon		

PART C: QUALITY SURVEY

Cheapest Product	Price per kg	Unit weight (if applicable)	Quality Assessment (tick box) Please give an overall rating on the quality of fruits and vegetables based on their age, bruising or mould.					Clean (tick box) Please give a rating of how clean the items are.	
			All	Most	Half	Some	Few	Yes	No
Apples									
Oranges									
Bananas									
Tomatoes									
Potato									
Pumpkin									
Cabbage (half)									
Lettuce (whole)									
Carrots									
Onions									

Key (Quality)

Good: None of the characteristics listed below are present

Aged: Softness, discolouration, wilting, limpness, skin wrinkling (generally still edible)

Key (Clean)

Yes: Free from dirt or dust

No: Dirt or dust visible on skin

PART D: PRODUCT PLACEMENT at CHECKOUT.

Products	Aisle 1	Aisle 2	Aisle 3	Aisle 3	Aisle 4	Aisle 5	Aisle 6	Aisle 7
Lollies								
Chocolate								
Chewing gum								
Crisps and salty snacks								
Sweet biscuits								
Savoury biscuits								
Cakes and pastries								
Fruit								
Vegetables								
Breads and cereals								
Dairy products								
Lean meats, poultry, eggs								
Nuts and seeds								
Other (e.g., batteries, razors, magazines)								
Drinks								
Water								
Juice								
Soft drinks								
Diet soft drinks								
Energy drinks								
Flavoured milk								
Other:								

(2) **Farmers Market Produce Survey.**

Farmers Market Produce Survey: Cover Sheet

Name of Farmers Market: _____

Address: _____

Survey completed by: _____

Date: _____

FRUIT AND VEGETABLE STALLS: STANDARD ITEMS

Stall Name: _____

Suburbs produce sourced or grown: _____

Organic certification (if available): _____

Direct from farm or wholesale: _____

Product	No. of varieties	Cheapest variety (loose items)		Quality 1, 2, 3, 4 or 5	Clean? Y or N	Comments
		Name	Price			
Fruit						
Apple						
Apricot						
Avocado						
Banana						
Blueberry						
Cantaloupe (Rockmelon)						
Grape						
Honeydew melon						
Lime						
Mango						
Nectarine						
Orange						
Papaya (PawPaw)						
Peach						
Pear						
Plum						
Pineapple						
Strawberry						
Watermelon						
Other fruits:						
Vegetable						
Asparagus						
Beans (green)						
Broccoli						
Cabbage						
Capsicum						
Carrot						
Cauliflower						
Celery						
Corn						
Cucumber						
Eggplant / Aubergine						
Lettuce (round)						
Mushroom (button)						
Onion						
Potato						
Pumpkin						
Sweet Potato						
Tomato						
Zucchini						
Other vegetables:						

Quality scores: very low / very poor = 1; low / poor = 2; medium / acceptable = 3; high / good = 4; very high/very good = 5

FRUIT AND VEGETABLE STALLS: STANDARD ITEMS

Stall Name: _____

Suburbs produce sourced or grown: _____

Organic certification (if available): _____

Direct from farm or wholesale: _____

Product	No. of varieties	Cheapest variety (loose items)		Quality 1, 2, 3, 4 or 5	Clean? Y or N	Comments
		Name	Price			
Fruit						
Apple						
Apricot						
Avocado						
Banana						
Blueberry						
Cantaloupe (Rockmelon)						
Grape						
Honeydew melon						
Lime						
Mango						
Nectarine						
Orange						
Papaya (PawPaw)						
Peach						
Pear						
Plum						
Pineapple						
Strawberry						
Watermelon						
Other fruits:						
Vegetable						
Asparagus						
Beans (green)						
Broccoli						
Cabbage						
Capsicum						
Carrot						
Cauliflower						
Celery						
Corn						
Cucumber						
Eggplant / Aubergine						
Lettuce (round)						
Mushroom (button)						
Onion						
Potato						
Pumpkin						
Sweet Potato						
Tomato						
Zucchini						
Other vegetables:						

Quality scores: very low / very poor = 1; low / poor = 2; medium / acceptable = 3; high / good = 4; very high/very good =5

Stall Information	Stall Name:	Stall Name:	Stall Name:
Suburb product sourced or grown			
Organic certification visible			
Direct from farmer			
Wholesale			
Produce Items			
Meat, Seafood and Eggs			
Chicken			
Lamb			
Beef			
Pork			
Bacon / ham			
Mince			
Sausages			
Game meat			
Fresh fish			
Smoked fish			
Eggs			
Other:			
Dairy Products			
Milk			
Yoghurt			
Cheese			
Other:			
Bakery Items			
Bread			
Cakes / Muffins			
Other:			
Gourmet foods and special dietary items			
Pre-prepared food			
Gluten free / yeast free			
Sugar free			
Other :			
Other items			
Nuts			
Grains and pulses			
Oils			
Jam, honey, condiments			
Chocolates / confectionary			
Beverages			
Take away food, coffee or drinks			
Additional items:			
Other:			

(3) **Farmers Market Customer Survey.**

FARMERS' MARKET SURVEY: QUESTIONNAIRE FOR CUSTOMERS

ADMINISTRATION

1. Name of farmers' market
2. Date
3. Gender
4. How was the survey completed?

DEMOGRAPHICS

5. In which suburb do you live? []
6. What language do you mainly speak at home? English
 Other (Please specify)
7. In which country were you born? Australia
 Other (Please specify)
8. How many people live with you? Adults
Children (<16 years old)
9. How far did you travel to get to the market today? []
10. How did you get to the market today? (Answer in km) I drove
 I caught public transport
 I rode my bicycle
 I walked
 Other (Please specify)
11. In what year were you born? []

SHOPPING BEHAVIOURS

12. In general, how frequently have you shopped for food over the past month? Very frequently (> 1 per week)
 Frequently (every week)
 Occasionally (1 or 2 per month)
 Never
13. In general, how many times have you shopped for food at farmers' markets over the past month? Very frequently (weekly)
 Frequently (2 per month)
 Occasionally (1 per month)
 Never

If "Never, go to Question 16. Otherwise, go to Question 14.

14. In general, how much do you spend at farmers' markets each time you visit?

- Less than \$50
- Between \$50 and \$99
- Between \$100 and \$149
- More than \$150

ATTITUDES AND PERCEPTIONS TOWARD FARMERS' MARKETS

15. How important are these factors in your decision to shop at farmers' markets?

Factors	Very important	Important	Slightly important	Neutral	Not important
Buying 'top' quality fruit and vegetables					
Buying fruit and vegetables that are fresh					
Buying a variety of different types of fruit and vegetables					
Buying fruit and vegetables that look 'good' (i.e., clean, shiny)					
Buying food that is well priced					
Buying locally grown / made foods to support local people and producers					
Buying organic foods					
Buying foods specific to my culture					
Buying special dietary foods (i.e., gluten free foods)					
Buying food that has been grown or produced in a sustainable way					
Purchasing meat from animals treated humanely					
Talking to the stallholders to find out more about the food I buy					
Enjoying the experience of shopping at farmers' markets (i.e., building relationships with stallholders)					
Shopping in a relaxed and friendly environment					
Supporting a community event					
The convenience of the market (i.e., location and time)					

Other factors (please specify)

16. What is your main reason for coming to the farmers' market today?

17. How do you think this market could be improved?

END OF SURVEY

(4) **Farmers Market Stallholder Survey.**

FARMERS' MARKET SURVEY: QUESTIONNAIRE FOR STALLHOLDERS

ADMINISTRATION

1. Name of farmers' market	
2. Date	
3. Name of stall	
4. Organic certification?	
5. Gender	
6. How was the survey completed	In person

DEMOGRAPHICS

7. In which suburb is your farm or warehouse?		
8. How many people are employed at your farm or warehouse?		
9. What type of produce do you sell at the farmers' market?		
<input type="checkbox"/> Fruit or vegetables	<input type="checkbox"/> Meat, seafood or eggs	<input type="checkbox"/> Dairy products
<input type="checkbox"/> Bread, cereal or baked goods	<input type="checkbox"/> Nuts, dried fruit or confectionary	<input type="checkbox"/> Gourmet or pre-prepared foods
<input type="checkbox"/> Special dietary items (i.e., gluten free)	<input type="checkbox"/> Take away food and drinks	<input type="checkbox"/> Coffee and hot drinks
10. From where are you products or ingredients sourced?		
<input type="checkbox"/> My own farm or property	<input type="checkbox"/> Sydney Basin	<input type="checkbox"/> Producers in NSW
<input type="checkbox"/> Imported from interstate	<input type="checkbox"/> Imported from overseas	
11. Do you find it difficult to source local produce?		
<input type="checkbox"/> Always	<input type="checkbox"/> Sometimes	<input type="checkbox"/> Not usually
<input type="checkbox"/> Never	<input type="checkbox"/> N/A, as I grow my own produce	
12. How long have you been trading at this market?		
13. How many markets do you go to per fortnight?		
14. How far do you travel to get to this market?		
15. In general, what is your average sales figure per day?		
<input type="checkbox"/> Less than \$300	<input type="checkbox"/> Between \$300 and \$699	<input type="checkbox"/> Between \$700 and \$1000
<input type="checkbox"/> More than \$1000		
16. In which year were you born?		

ATTITUDES AND PERCEPTIONS TOWARD FARMERS' MARKETS

17. How important are these factors in your decision to sell your produce at farmers' markets?

Factors	Very important	Important	Slightly Important	Neutral	Not important
Selling my produce directly to consumers					
Selling local produce and reducing food miles					
Selling organic or produce free of chemicals					
Selling dietary specific foods (i.e., gluten free foods)					
Selling foods for different cultural groups					
Selling foods at the best possible price					
Selling food that has been grown or produced in a sustainable way					
Marketing my business					
Increasing my profit margins					
Building a relationship with customers					
Providing customers with information about the produce at my stall					
Selling my produce in a relaxed, friendly atmosphere					
Supporting a community event					
The convenience of the market (i.e., location and time)					

Other factors (please specify)

18. Considering these factors, what is the main reason you sell your produce at farmers' markets?

19. How do you think this market could be improved?

END OF SURVEY

Appendix C: SCORING SYSTEM FOR GIS ANALYSIS OF WALKABILITY

Category	Observed condition	Score **
1. Material of Footpath	Dirt	1
	Paving	2
	Concrete & Bitumen	3
2. Quality of footpaths	Poor	1
	Average	2
	Good	3
3. Gradient of footpaths	Steep	1
	Moderate	2
	Flat	3
4. Buffer between footpath and street	Yes	1
	No buffer	0
5. Visibility along footpath	Poor	1
	Average	2
	Good	3
6. Connectivity	Continuous	1
	Abrupt end	0
7. Quality of shading of footpaths	Poor	1
	Average	2
	Good	3
8. Width*	Width ≤ 2 m	1
	2m < Width < 4m	2
	Width ≥ 4m	3

* The width ranges from 1.2 m to 9.1 m. A method named “Natural Breaks (Jenks)” is used to divide the width into three categories. A brief description of Natural Breaks can be found here ([http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?topicname=natural_breaks_\(jenks\)](http://webhelp.esri.com/arcgisdesktop/9.2/index.cfm?topicname=natural_breaks_(jenks)))

** The minimum score for each footpath is: $(1+1+1+0+1+0+1+1)/8 = 6/8 = 0.75$

The maximum score for each footpath is: $(3+3+3+1+3+1+3+3)/8 = 20/8 = 2.5$

Score	Rate	Colour
0.75 – 1.3	1 (poor)	RED
1.3-1.9	2 (Average)	YELLOW
1.9-2.5	3 (Good)	GREEN

Appendix D: DISABLED/DAMAGED STREET LIGHTS IN THE NEW ROUSE HILL AS AT 23.1.13

POLE NUMBER	LOCATION	NATURE OF DAMAGE
783668 (48A)	Bellcast Road (corner of Grandiflora)	Light out
784378	Corner of Holly Street	Light out
783667 (49)	Grandiflora Street	Light out
783658 (55A)	Hedge Street	Light out
783660 (56A)	Hedge Street	Light out
783661 (56)	Hedge Street	Light out
779959	Hedge Street (corner of Bellcast Road)	Light out
784386 (19A)	Holly Street	Light out
780896	Sanctuary Drive	Light out
780834	Caddies Boulevard	Light out
780851	Caddies Boulevard	Light out
811937	Darrabarra Way	Light out
811919	Darrabarra Way	Light out
811920	Darrabarra Way	Light out
811923	Freshwater Drive	Light out
783672	Bellcast Road	Light out
772962	Windsor Road (near Sanctuary Drive bus stop)	Light out
780858	Caddies Boulevard	Light out
780862	Caddies Boulevard	Light out
779811	Caddies Boulevard near Main Street	Light out
No number	Civic Way (in between Main Street and Rouse Hill Drive)	Light out
No number	Civic Way (in between Main Street and Rouse Hill Drive)	Light out
No number	Civic Way (in between Main Street and Rouse Hill Drive)	Light out
No number	Civic Way (in between Main Street and Rouse Hill Drive)	Light out
780071 SL CP 8808	Tempus Street (corner of Transit Way)	Light out
277440	Windsor Road near Transit Way	Light out
780069	Transit Way	Light out
774313	Windsor Road looking onto Transit Way	Light out
781818	Transit Way	Light out
816099	Appaloosa Street (corner of Bridgewood Drive)	Light out
816086	Spur Street (corner of Chaval Street)	Light out
816085	Spur Street	Light out