



City Wellbeing Program ■ City Futures Research Centre

Planning and Building Healthy Communities.

A multi-disciplinary study of the relationship between the built environment and human health.

This report comprises research funded by an Australian Research Council Grant No. LP100100804. The research was conducted within the City Wellbeing Program (City Futures Research Centre UNSW) with partners UrbanGrowth NSW, the Heart Foundation (NSW) and the South Western Sydney Local Health District (NSW Health).

STUDY AREA FINDINGS

for

NEW ROUSE HILL

City Futures Research Centre ■ University of New South Wales
September 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.

ACKNOWLEDGEMENTS

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Chief Investigators: Susan Thompson, Bill Randolph and Bruce Judd (UNSW)

Partner Investigator: Bin Jalaludin (South Western Sydney Local Health District)

Senior Researcher: Emily Mitchell (City Wellbeing Program, UNSW)

Research Assistants: Roy Byun (South Western Sydney Local Health District); Belinda Crawford (South Western Sydney Local Health District); Sarah Judd (Research Assistant, City Futures Research Centre); Linda Kennedy (Student, Faculty of the Built Environment, UNSW); Jennifer Kent (Senior Research Associate, HBEP); Ben Mitchell (field work assistance); Greg Paine (Research Assistant, City Wellbeing Program, UNSW); Ji Yuan Yu (PhD student, Faculty of the Built Environment, UNSW)

Research Project Steering Committee: Michelle Daley and Julie-Anne Mitchell (Heart Foundation); Bin Jalaludin and Roy Byun (SW Sydney LHD); Bill Randolph and Bruce Judd (UNSW); Stuart Gibb (UrbanGrowth, NSW). Chair: Susan Thompson (UNSW)

This Report prepared by: Dr. Greg Paine, Ms Emily Mitchell and Professor Susan Thompson (City Wellbeing Program, UNSW)

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EXECUTIVE SUMMARY: *Planning and Building Healthy Communities – New Rouse Hill.*

The *Planning and Building Healthy Communities* Study explores how our built environments impact, positively and negatively, on major risk factors for contemporary chronic diseases such as diabetes, respiratory and heart conditions, some cancers, and depression; the so-called 'lifestyle diseases'. Using multi-disciplinary perspectives in the gathering and review of data four newly-developing residential areas are examined as case-studies. This report focuses on New Rouse Hill.

The New Rouse Hill is a significant urban achievement, comprising a major regional shopping centre (with a range of fresh food outlets) plus surrounding suburb with schools and extensive recreation facilities under the vision of a 'city in a garden'. Although there has been no conscious attention to residents' health there are obvious health co-benefits from its focus on environmental matters (eg. promotion of 'green' travel and establishment of extensive riparian areas to achieve energy and water conservation objectives); the provision of extensive open spaces, pedestrian and cycle paths and active recreation facilities as part of the community title; and the close proximity of the Town Centre with the residential area.

However the extent to which participants avail themselves of these attributes is variable. Levels of physical activity and incidental social interaction are low; and disturbingly similar to the more conventional low-density, car-orientated suburbs that have led to current concerns about 'lifestyle' diseases (even though high levels of satisfaction about New Rouse Hill are expressed by participants). Car use is high, only 60% achieve recommended levels of physical activity, and there is a lingering desire for a greater ability to meet people - all features risking future health issues.

This may be a passing phase: many participants are still establishing themselves. When participants were asked about what they needed to keep healthy responses were more about their behaviour than about any deficiencies in the built environment. It suggests a need for health-orientated interventions to be less about the provision of facilities and more about management, raising awareness of existing facilities, and encouraging use. The Study suggests:

- (i) a need to improve the detail of some elements of the overall structural layout and management. Eg. more direct rather than circuitous walking and cycling paths to the Town Centre, design of residential streets as 'complete streets' to address safety concerns about cycling, better connections to existing and proposed regional cycling and walking routes, attention to rules and management relating to the community title recreation facilities, and infilling the vacant areas surrounding the Town Centre to increase visitation by walking and by creating a more dynamic and inviting local destination.
- (ii) using the existing single-ownership arrangements of the Town Centre, the 'Green Travel Coordinator' position, the social interaction potentials of the Community Title system, and the imminent establishment of the North West Rail Link to better engage with the residential population to generate a major change in travel patterns and other health-inducing behaviours. Eg. drawing on the key role of schools and churches by encouraging access by walking, making walking to the Town Centre with a shopping trolley 'trendy', starting an evening walking group, a *Crime Prevention Through Environmental Design* audit to resolve lingering safety concerns.

STUDY OVERVIEW – background and findings.

The Planning and Building Healthy Communities Study.

This Study appraises the impacts the shape of the built environment can have on human health, based on in-depth location-specific research in four case-study areas. The Study follows from an extensive review of the literature undertaken in 2011 by the Healthy Built Environment Program (now the City Wellbeing Program) within the City Futures Research Centre, and sought more local-specific information relating to, in particular, physical activity, social interaction and nutrition as key risk factors for contemporary chronic diseases such as diabetes, respiratory and heart conditions, some cancers, and depression.

The case-studies comprised different metropolitan and urban fringe areas in Sydney: Airds Bradbury, Renwick, New Rouse Hill and Victoria Park. All areas are currently undergoing development, and incorporate healthy planning interventions to various degrees. UrbanGrowth NSW (formerly Landcom) is a key facilitator in the development of each area.

The Study was conducted between 2011 and 2015 for the project partners: UrbanGrowth NSW, the National Heart Foundation, and the South Western Sydney Local Health District (SWSLHD). It comprised detailed audit observations, in-depth semi-structured interviews with 20 residents of each area, and a subsequent focus group. Specific tools were designed for each of these stages, with the design of the interview questions also drawing on similar work in other locations in Australia in order to allow the potential for possible later comparisons. The SWSLHD supplied demographic data, and the Study also drew on a SWSLHD survey of the food environment of Sydney conducted at the same time.

All the tools developed for the Study can be utilised as models for future similar studies elsewhere.

The analysis of findings and the write-up report for each Study area uses a series of questions related to a set of Indicators as to what constitutes a healthy built environment, prepared by the City Wellbeing Program in a separate project. This will allow for consistent comparative on-going appraisals of the four Study areas, and for potential comparison from similar studies elsewhere.

The Study was funded through an Australian Research Council grant and by monetary and in-kind contributions by the Project partners. It addresses National Research Area Priority 2: Promoting and Managing Good Health. The project partners are key players within the fields of health and the built environment. This ensured a multi-disciplinary perspective in its aims and in the gathering and review of data. It also allows the Study, through its conclusions and recommendations, to directly influence the shape and management of existing and future built environments to achieve health-related outcomes.

This Report conveys the Study findings for New Rouse Hill. An additional Summation report brings together the findings from all four areas and details conclusions and recommendations applicable to the design of future built environments generally.

The Study findings for New Rouse Hill.

I think Rouse Hill is very good, kind of overall. I think they could spend a little bit more effort. Then they could really get what they intended from the area, if they just put a few more systems in place or stuff like that, to regulate things really. That's about it. Then they could get it to the stage where everything's as it was intended to be in the beginning. I don't think it would be too hard for them to achieve their initial goal of what they wanted for Rouse Hill.

1. The New Rouse Hill is a significant urban achievement, establishing within about five years one of Australia's largest regional shopping centres plus a surrounding suburb with schools and extensive recreation facilities under the vision of a 'city in a garden'. A key focus has been on environmental matters (energy and water conservation, riparian management, and 'green' travel). There has been no conscious attention to residents' health. However there are obvious co-benefits from the environmental features (eg. the green travel initiative); there are extensive walking and cycling paths, and active recreation facilities as part of the community title, and the close proximity of the Town Centre with the residential area is conducive to active transport and incidental social interaction.
2. However the extent to which the Study participants avail themselves of these attributes is variable. Levels of physical activity and incidental social interaction are low. In this sense, New Rouse Hill is similar to the type of outer-urban, low-density, car-orientated dormitory suburb that results in lifestyles that are comfortable (there are high levels of satisfaction expressed by participants), but which have led to current concerns about an epidemic of 'lifestyle' diseases. Participants currently present as healthy. However there is a risk that future health issues will arise as a result of their lifestyles. Car use is high, and only 12 out of 20 participants (60%) achieve recommended levels of physical activity. Participants also indicate some desire for a greater ability to meet people.
3. This may be a passing phase. Many participants are still establishing houses, gardens and social contacts at the same time as commuting. Time to make changes to perhaps previously-established lifestyle habits is limited. When participants were asked to nominate the things they should be doing, and needed, to keep healthy their responses were more about their own personal behaviours than about any deficiencies in the built environment. This suggests that any health-orientated interventions will need to be less about the actual physical provision of facilities and more about raising the awareness of existing facilities and encouraging use.
4. Here the Study suggests:
 - (iii) there is room to improve in detail some elements of the overall structural layout of New Rouse Hill, both in terms of its physical shape and in terms of its management.
 - (iv) there are opportunities to engage with the residential population further in respect to encouraging different, healthier ways to use the built environment of New Rouse Hill.

5. In particular an increase in the use of 'active' transport (walking and cycling) to access facilities within the local area would appear to be a good way to make some significant gains in levels of physical activity, as well as potentially achieving a co-benefit of increased incidental social interaction as more people use the streets (which currently are very quiet).
6. Two features of the development of New Rouse Hill can assist:
 - (i) the development process is not yet complete. The potential of the North West Rail Link to generate a major change in travel patterns should be used as an opportunity to increase local walking and cycling. 'active' transport modes. The infill of the periphery of the Town Centre will change the 'no-man's land' feel of this area and has the potential to provide 'activation' opportunities and hence increased destinations to walk and cycle to (consistent with the 'city in a park' vision). The completion of links in walking and cycling tracks within the wider local area will increase the variety of destinations and length of routes and hence time taken in active exercise.
 - (ii) the particular ownership and governance arrangements. The Community Title arrangement provides the opportunity for direct access in local governance, adoption of targeted policies relating to health, and for social interactions. The single ownership and management of the Town Centre can permit explicit management policies that assist health outcomes. Existing dedicated positions tasked with community development and 'green travel' can assist in implementing behavioural change initiatives.
7. Examples of specific actions include:
 - drawing on the key role that schools, and to some extent churches, play in New Rouse Hill by encouraging people to walk there as an essential component of the experience.
 - 'outside the box' initiatives such as giving all households a shopping trolley to encourage more people to walk to the Town Centre; starting an evening walking group.
 - rectifying gaps between local and regional walking and cycling routes, and the promotion of scenic walking and cycling destinations.
 - less circuitous links across the Caddies Creek open space, to promote active transport, plus an associated campaign to 'leave the car at home'.
 - a *Crime Prevention Through Environmental Design* audit with a commitment to action any deficiencies, to resolve lingering safety concerns by residents.
 - active establishment of the Community Associations to facilitate resolution of outstanding management issues with the community recreation facilities.
8. The Study suggests participants are knowledgeable about and have excellent access to fresh foods. There is still the potential to draw on a stated interest by participants to grow more of their own foods by re-invigorating the existing community garden spaces, which in turn can assist social interaction; and to promote the sourcing of foods direct from farms in the region.

A summary of findings and responses based on the three key domains and seven specific actions of healthy built environments (refer section 1.1 of the Report) follows.

Physical Activity
“Getting people active”

Facilitating “active transport”

Facilitating recreational physical activity

Description

Personal mobility levels are high. But although scale, topography and T-way facilitates active transport the propensity to use these modes is highly variable -some use them a lot; others very little, defaulting to their car. A perception that one needs to use the car to carry home shopping. The T-way only caters for some work destinations.

The traditional street layout, but with reduced dimensions, has not increased feelings of safety for cyclists, even with low traffic volumes (frequency of driveway crossings and narrow carriageways are of concern).

Centre drainage swales inhibit walking. The central open space seen by some as an obstacle due to circuitous routes and some safety concerns.

“Management” of facilities contributes - not knowing if time-slots are available for tennis court or doctor means people use a car to reduce any wasted time.

Use of Parklea Markets and other surrounding facilities encourages car use (quick to drive to, too far to walk or cycle).

Response

The imminent North West Rail should assist the active transport viability. To maximise this, the directness, comfort and safety of linking walkways, footpaths and cycleways should be reviewed and upgraded if necessary (consider particularly the central open space routes).

Use the Town Centre Green Travel Coordinator position to actively promote walking for all internal trips in New Rouse Hill. Include associated “management” of facilities, and “aids” like personal shopping trolleys.

Consider managing internal roads as “complete streets”, and as an early trial area for a 40 (or 30) km/h speed limit.

Description

There is good provision of a variety of recreation facilities. Usage is then largely dependent on individuals’ actions.

Propensity to use community-title tennis court hindered by not being able to book time-slots (the community room system cited as a better model), and use of other facilities may be hindered for older children and teenagers by rules relating to key-access.

Access to the neighbouring oval area not direct/obvious.

Some suggestions of a need for more organised exercise groups/classes.

Cycle path system currently disjointed and incomplete and frequency of driveway crossings and narrow carriageways cited as a safety concern on roadways. Cycle path along Windsor Road often subject to broken glass litter.

There are different opinions as to whether there is sufficient variety and length of walking routes within and extending beyond the estate to encourage walking for recreation.

Response

Resolve management issues about access to community title recreation.

Determine whether comment about need for organised exercise groups/classes is due to a lack of these facilities or lack of knowledge/publicity of classes that do exist (either at the private gym or at the community centre) – and action accordingly.

Opening of swimming pool on eastern side of estate will assist greater physical activity by residents there.

Ensure future stages of development results in well-connected, interesting and legible walking and cycling routes, and increase awareness of cycling and walking routes in the area.

Social Interaction
“Connecting and strengthening communities”

**Facilitating incidental
n’hood interaction**

Making community spaces

Build for crime prevention

<p style="text-align: center;">Description</p> <p>Interaction with neighbours is low, but respondents are generally happy with this; but unclear whether this will lead to future health problems (or whether sufficient interaction is gained through other ways). That said, there is also some desire for additional ways to meet people. Pedestrian and other activity in residential streets is low, though more so within the open space areas, and there appears to be a reasonable propensity for residents using the Town Centre to run into people they know.</p>	<p style="text-align: center;">Description</p> <p>Residential streets are quiet with low or no apparent informal surveillance. “Open” design of Town Centre is well-liked. There is a good range of formal community spaces & facilities. Playground areas and library cited as important. Opening of swimming pool on eastern side should create an additional community space. Various governance and social etiquette issues cited – use of pool area, booking of tennis courts, anti-social behaviour in the central open space (and concerns by external parties about potential restrictions in the Town Centre public space policies).</p>	<p style="text-align: center;">Description</p> <p>Feelings of personal safety and security is high, but with important exceptions:</p> <ul style="list-style-type: none"> ▪ rumours of house break-ins. ▪ the lake and amphitheatre in the central open space have become teenage haunts, making others uncomfortable. ▪ the Town Centre acts as a regional meeting place for some groups, requiring past police presence; a recent stabbing brawl was nearby. These issues may increase with the new rail link. <p>Residential streets have low pedestrian volumes and low apparent informal surveillance. Street lighting is considered adequate, but only just.</p>
<p style="text-align: center;">Response</p> <p>A successful “active transport” strategy will assist in increasing pedestrian volumes in streets and hence potential for incidental interactions. Opening of the swimming pool on eastern side should create an additional potential for interaction there.</p>	<p style="text-align: center;">Response</p> <p>Design street frontages in future precincts to increase street activity/interactions (eg. direct verandahs, courts and shop fronts to the streets). Implement community title governance system to allow management and etiquette issues to be dealt with. Design subsequent stages of Town Centre to include potential for more informal (less controlled) uses. Consider possible usefulness of a men’s shed or workshop as an additional social space.</p>	<p style="text-align: center;">Response</p> <p>Conduct a <i>Crime Prevention Through Environmental Design</i> audit, with an commitment to act on deficiencies. A successful “active transport” strategy will assist to increase pedestrian volumes and hence feelings of security. Design street frontages of new development to maximise casual surveillance potential. Engage with youth population and provide “things to do”. Consider a Town Centre police station as part of the new rail interchange.</p>

Nutrition
“Providing healthy food options”

**Facilitating access to
healthy food**

**Promote responsible food
advertising**

Description

High personal mobility levels and a large choice (shops in the Town Centre, the Town Centre farmers’ market, Parklea Markets, and nearby farm shop) means access to fresh food sources is high.

There is a high level of awareness of the importance of healthy eating, including some querying of the “freshness” of supermarket and Parklea Markets foods.

Limited potential to grow own foods given small yard areas.

Some interest in a community garden, though the existing garden at Mungerie House appears to be in limbo and is not listed as a Community Association facility.

The purpose and permitted use of the Town Centre “kitchen garden” is unclear.

Description

There is a wide variety of food premises within the Town Centre. Although the fresh food shops are located down arcades off the main streets, there is no particular over-presence or advertising of non-healthy foods.

The supermarkets have good promotion of fresh foods as part of current marketing strategies.

The opportunity to use community gardens to promote fresh foods and responsible diet is not really utilised – the community garden at Mungerie House appears to be in limbo, and the purpose and permitted use of the Town Centre “kitchen garden” is unclear.

Response

Use the single-ownership and management structure of the Town Centre to ensure continued and perhaps expanded provision and emphasis on healthy food through explicit leasing and promotion policies. Dovetail such promotions with associated “active transport” strategies encouraging walking and cycling to the Town Centre.

It would be worthwhile:

- for the Community Association to re-invigorate the community garden at Mungerie House.
- to re-design the Town Centre “kitchen garden” to be more inviting and “legible.”

Promote the use of local farmers markets and regional farm-based food sources.

Response

Use the single-ownership and management structure of the Town Centre to promote healthy food via leasing policies which:

- ensure visual prominence of healthy food shops and reduce relative prominence of other food shops.
- exclude “fast food” take-away food shops on the future development lands surrounding the Town Centre.
- do not allow over-prominent advertising of non-healthy (energy-dense-nutrient-poor (EDNP)) food.

To assist the presence of healthy foods it would be worthwhile to re-invigorate the community garden at Mungerie House and re-design the Town Centre “kitchen garden” to be more inviting and “legible.”

1. INTRODUCTION.

1.1 Background.

The improvement of human health has always been an intrinsic part of urban planning: providing clean water, disposing of wastes, controlling pollutants, and ensuring fresh air and sunshine. We now have a range of solutions to address these needs. However these responses have not kept pace with other health issues now becoming apparent – the chronic so-called ‘lifestyle’ diseases such as diabetes, various respiratory and heart conditions, depression, and some cancers; and which are estimated to cost the Australian nation some \$22.3 billion annually. Obesity, physical inactivity, increased stress, social isolation and poor nutrition have all been identified as key risk factors.

In turn, the shape of our built environments can have significant direct and indirect impacts on these contributing factors – and thus on our propensity to incur these new health risks.

A review of the research literature relating to these health and built environment relationships was conducted in 2011 by the City Wellbeing Program within the City Futures Research Centre in the Faculty of the Built Environment at the University of New South Wales.¹ The review identified three key domains in which the built environment can be either beneficial and detrimental to our health and well-being:

- (i) Getting people active (physical activity) - to reduce obesity, the risk of heart disease, some cancers and depression.
- (ii) Connecting and strengthening communities (social interaction) - to reduce risk of mental illness particularly depression.
- (iii) Providing healthy food options (nutrition) - to reduce obesity and risk of heart disease and some cancers.

The review also identified seven specific necessary actions within these three domains relating to necessary features that need to be embedded within our built environments (Table 1.1).

The *Planning and Building Healthy Communities* study explores these health and built environment relationships in more depth via focused appraisals of four different metropolitan and urban fringe areas in Sydney:

- Airs Bradbury
- Renwick
- New Rouse Hill
- Victoria Park.

¹ Kent, J., Thompson, S.M. and Jalaludin, B. (2011) *Healthy Built Environments: A review of the literature* (Sydney: Healthy Built Environments Program, City Futures Research Centre, UNSW).

Table 1.1: The basis of a healthy built environment – key domains and actions.

Key Domain	Specific Actions
Getting People Active. The built environment can get people active by facilitating both utilitarian physical activity ('active transport') and recreational physical activity.	Facilitate utilitarian physical activity. Increasing the accessibility of destinations via active transport modes (i.e. walking, cycling, public transport), and ensuring the experience of walking, cycling and public transport is of high quality will assist the use of these modes relative to more sedentary car travel.
	Facilitate recreational physical activity. Providing facilities for formal and informal, and individual and group physical recreation in public spaces and via commercial and non-commercial organisations will assist in increasing overall levels of physical activity.
Connecting and Strengthening Communities. The built environment can connect people and strengthen communities – and thus support psychological health by fostering feelings of belonging and restoration – by facilitating incidental neighbourhood social interactions, by making community spaces, and by building for crime prevention.	Facilitate incidental neighbourhood interaction. Ensuring public spaces are 'friendly' (busy, comfortable, safe and open to all) and with clear expectations as to appropriate behavior included in the design of public spaces (eg. via the provision of facilities and signage) will assist in encouraging positive incidental interactions between individuals and groups.
	Make community spaces. Providing explicit and well-designed (accessible, comfortable, safe) spaces open to all will allow for gatherings and other activities by the community as a whole and as particular interest groups; similarly, access to natural green environments will extend the notion of community to include the restorative effect of wider nature.
	Build for crime prevention. Designing the built environment to discourage crime and feel safe (while still facilitating social interactions) will assist an overall sense of belonging, caring and community commitment.
Providing healthy food options. The built environment can provide healthy food options by facilitating access to healthy food, and by responsible food advertising.	Facilitate access to healthy food. Ensuring supermarkets, green grocers and farmers' markets are accessible relative to fast food outlets, pubs and convenience stores (eg. through zoning and land use regulation, and subsidized spaces) will promote the consumption of healthy foods and discourage purchase of unhealthy alternatives.
	Promote responsible food advertising. Marketing, advertising and promoting the visibility of healthy foods (eg. near schools and other community locations, and relative to unhealthy foods) will have positive influences on consumption habits.

All areas are currently undergoing development, and incorporate healthy planning interventions to various degrees (Table 1.2). A key facilitator in the development of each area is UrbanGrowth NSW (formerly Landcom), the property development instrumentality of the State government.

The Study was conducted between 2011 and 2015. The Project partners were:

- the City Futures Research Centre (Faculty of Built Environment, University of New South Wales).
- UrbanGrowth NSW.
- the National Heart Foundation (NSW division).
- the South Western Sydney Local Health District (SWSLHD) (NSW Health).

Table 1.2: The four Study Areas and their characteristics.

	Description	Current stage of development.
Airds Bradbury.	<p>Existing suburban fringe location, south-west Sydney.</p> <p>Low density public housing estate of some 1500 dwellings, to be 'renewed' to (i) include private housing (reducing the overall proportion of public housing), (ii) upgrade the public domain including the local shopping centre and open spaces, and (iii) provide additional community services and facilities.</p> <p>Close collaboration between UrbanGrowth NSW and State agencies to promote equitable health outcomes via social programs and a re-structuring of the built environment.</p>	<p>Implementation of new community facilities and social services for existing residents. Demolition of some existing housing and re-location of residents. Completion of new aged housing units. Sale of first private housing lots towards the end of this Study.</p>
Renwick.	<p>Southern Highlands, adjacent to a township detached from the metropolitan area.</p> <p>New low density residential estate comprising 600 dwellings and an associated local commercial centre. Specific attention to integration with the existing town urban area.</p> <p>Explicit collaboration with the National Heart Foundation, and incorporation of its <i>Healthy by Design</i> guidelines in the master planning.</p>	<p>First stage of housing lots completed, including construction of dwellings and establishment of residents. Design of some open space areas developed, with construction underway towards the end of this Study. Needs study for new community facilities commenced.</p>
New Rouse Hill.	<p>Suburban fringe location, part of a metropolitan growth corridor, north-west Sydney.</p> <p>Large, comprehensive master planned development area incorporating a major regional mixed-use Town Centre, low and medium, density residential, schools and community facilities.</p> <p>No explicit inclusion of healthy design principles, but with health co-benefits from its emphasis on environmental outcomes, community development, and incorporation of recreation facilities to assist initial marketing.</p>	<p>Town Centre, bus transit way, primary and high schools, childcare centre, and community-title social and recreation facilities including public open spaces established. First stages of housing lots completed, including construction of dwellings and establishment of residents.</p>
Victoria Park.	<p>Inner-urban Sydney, part of the major Green Square precinct urban redevelopment.</p> <p>High density, master planned residential development of some 2,500 dwellings on former industrial land. Incorporates new local parks, some local retail, and a branch library.</p> <p>No explicit inclusion of healthy planning principles, but with health co-benefits from its emphasis on environmental outcomes and community development.</p>	<p>Public open spaces and local community centre and library established. Most housing stages completed, with only some high-rise developments waiting completion. Major neighbourhood retail centre opened during course of this Study.</p>

By working with these key players within the fields of health and the built environment the study aimed to:

- (i) ensure a multi-disciplinary perspective in its aims and the gathering and review of data, and

- (ii) directly influence the shape and management of existing and future built environments to achieve health-related outcomes.

The study was funded through an Australian Research Council (ARC) grant and by monetary and/or in-kind contributions by the project partners. In this regard the study addresses National Research Area Priority 2: Promoting and Managing Good Health, and is consistent with the objectives of the National Preventative Health Task Force.

This Report conveys the Study findings for New Rouse Hill.

1.2 The aim and focus of the Study.

The aim of the Study is to:

- (i) better understand what makes up a healthy built environment by researching how diverse residential neighbourhoods with a range of design features, housing densities, land uses, open space and access to transport, and in different metropolitan and fringe localities support human physical and mental health.
- (ii) assist the future development of an urban environment within each of the four study areas that will promote good health and consequently reduce the individual, social and monetary costs of chronic disease.
- (iii) draw lessons that can then be applied within our built environments generally.

The Study focused on the following research questions:

1. What features of the development make it easy/difficult for residents to be physically active in their everyday lives?
2. What features of the development make it easy/difficult for residents to access healthy food, public transport, community facilities and services which are linked to good health outcomes?
3. What features of the development make it easy/difficult for residents to be mentally healthy?

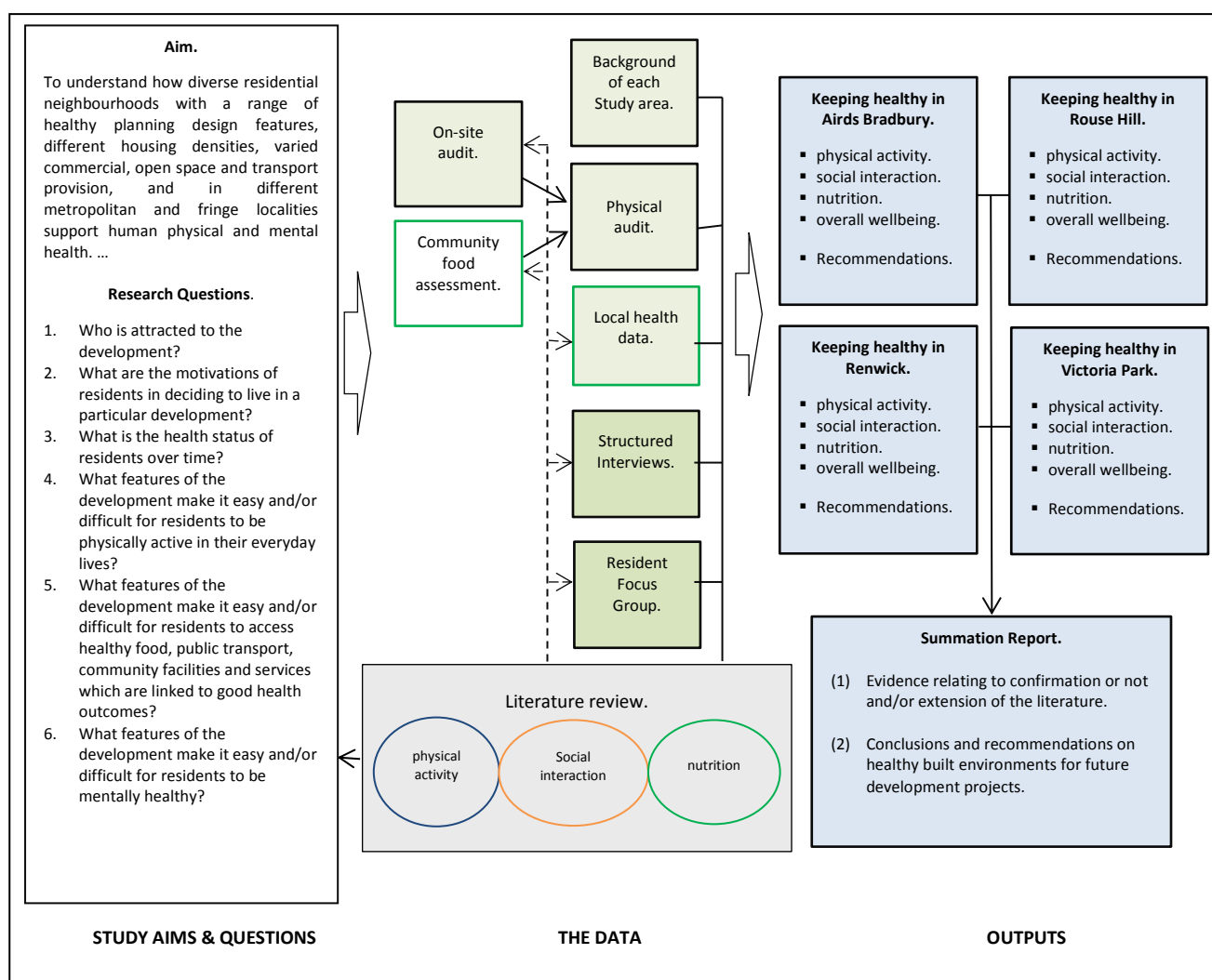
The Study used mixed quantitative and qualitative research methods, with an emphasis on the latter, to gather a 'rich picture' of data. Data collection comprised:

- on-site audits of the physical environment of each study area.
- in-depth semi-structured interviews with residents.
- a follow-up focus group with residents to explore the health and built environment relationships within each study area in more detail.

The Study also utilised where applicable a concurrent study conducted by the South Western Sydney Local Health District (with the City Wellbeing program) of the food environment within various localities in Sydney.

A 'map' of the aims, data sources and reporting outcomes of the study is at Figure 1.3.

Figure 1.3: Study Map.



Limitations due to the on-going development of each Study Area.

It was initially intended the study would include longitudinal appraisals of each Study Area. However this was not possible given the time-frame of the study and the current and on-going nature of the actual development of each Study Area (Table 1.2). As such the findings must necessarily comprise a 'snapshot' of the conditions of the time of the study. However the study as subsequently designed and conducted has also sought to address this particular constraint by:

- structuring the key findings and conclusions around a set of healthy built environment indicators prepared by HBEP in a separate project for the NSW Ministry of Health. This will allow future appraisals of the health of the communities within the four study areas to be similarly structured and thus permit comparison over time.
- structuring the focus group within each study area to add a temporal element to the discussion by asking participants to establish a desired 'future' that would be conducive to their health as they saw it, to then compare that vision with the current situation, and then discuss what that community needed to get there (or if already existing, what assisted this).

1.3 The determinants of our health - some background.

Our health is a result of an extensive range of factors and influences. These tend to be grouped and prioritized in different ways depending on the particular orientation of a project or intended audience. The following grouping and allocation of relative influence provides a useful summary, as applicable to this Study:

- personal behaviour – 40%
- family genetics – 30%
- environmental and social – 20%
- medical care – 10%.²

The following observations are also applicable:

- (i) these factors are not necessarily separate from each other, but also interact. For example, over time environmental factors such as contaminants can influence genetics; and genetics combined with environmental and social factors can influence personal behaviour.
- (ii) the determinants we can influence – personal behaviour, medical care, and environmental and social factors – account for some 70% of factors. Importantly, actual medical interventions account for only 10%, emphasizing the need to prioritise attention to personal behavior and to environmental and social factors – the so-called ‘primary health care’ actions.
- (iii) environmental and social determinants include the ways in which we design, build, manage (govern), use and interact with our built environments; thus the reason and importance of this Study.
- (iv) critically, personal behavior accounts for the largest single influence (40%) of all determinants.

Various models have been developed to illustrate these factors and the ways in which they interrelate. The ‘Social Model of Health’ (Figure 1.4)³ developed in 1991 for example is based around the idea of there being various layers of influence on the health of individuals (shown centred in the diagram) who have their own individual causal factors. The first layer relates to personal behavior and ways of living; the next relates to social and community influences; and the third layer is about structural factors like housing, employment conditions, and access to services and infrastructure. A subsequent ‘Health Map’⁴ (Figure 1.5) developed in 2006 is based on this earlier ‘Social Model of Health’, but now includes wider economic and environmental (both built and natural environments) factors.

² As presented to the Walk21 XV International Conference on Walking and Liveable Communities, Sydney October 2014, by Tyler Norris: *Every Body walk: A vision becomes a movement*. Originally sourced from YMCA of the USA: *Pioneering Healthier Communities. YMCA Activate America/Lessons Learned*, 2002. http://www.tylenorris.com/pubs/YMCA_PHC.pdf.

³ Dahlgren, G. and Whitehead, M. (1991) *Policies and strategies to promote social equity in health*. Institute for Future Studies. Stockholm.

⁴ Barton, H. and Grant, M. (2006) ‘A health map for the local human habitat.’ *The Journal for the Royal Society for the Promotion of Health*, 126 (6). pp. 252-253. (<http://eprints.uwe.ac.uk/7863>).

Figure 1.4: The Social Model of Health (1991).

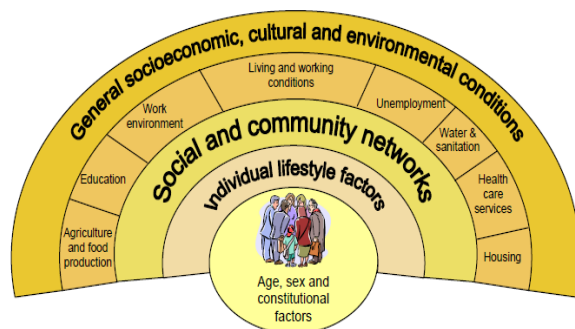
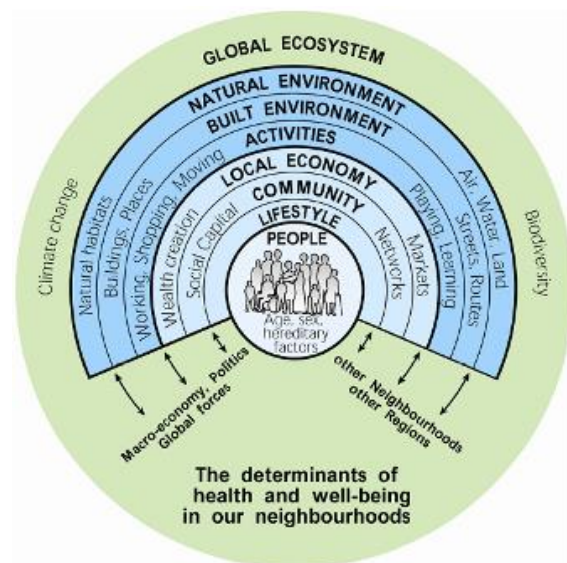


Figure 1.5: The Health Map (2006).



The concept of ‘healthy built environments’ – and the conduct of this Study – is centred around the relationships between these social, environmental and personal behavior determinants. They have informed not only the methodology and design of the Study but also the subsequent lessons and recommendations from the Study conclusions.

Of similar importance are then the various factors that act to influence actual personal behaviour. Again, the ways in which we act, adopt and respond to particular information and knowledge about matters is subject to numerous influences. For the purposes of this Study background reference has been made to the following particular grouping of five factors, derived from the ‘5 Doors’ Model of Behaviour Change (Figure 1.6)⁵:

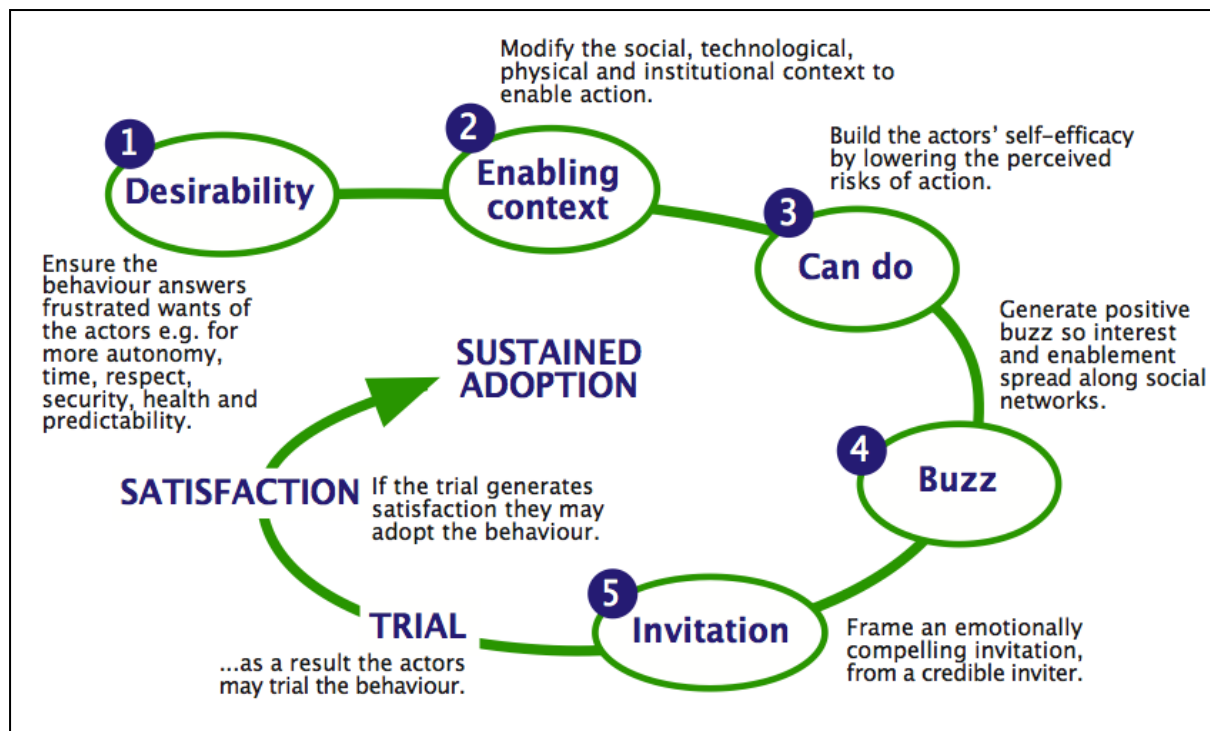
1. A specific orientation to what people want and need. The new behaviour must meet a desire.
2. An environment that enables the new behaviour sought. Changes (physical or social or institutional) to the existing environment may be necessary.
3. Assistance, through information and/or other means, to give people confidence that they know what to do, and can do it with minimum risk.
4. Making individuals feel that undertaking the change is not just a personal effort but part of a larger social conversation. The change sought must therefore become part of the underlying ‘buzz’ of the community.
5. Giving individuals further confidence by having a recognized leader, someone they can emulate, actually inviting them to join that larger movement.

Importantly, raising individuals’ knowledge or awareness about something comprises only part of one of the enabling factors of change, or ‘doors’ (Door 3). The other part of this door is that any

⁵ This Model was developed by Les Robinson based on research on the factors that influence and determine personal behaviour and on Robinson’s own experiences in developing behaviour change programs through his consultancy *Enabling Change*. Refer: http://www.enablingchange.com.au/enabling_change_theory.pdf.

information given must be targeted and be specific to individuals' needs if it is to be of influence. Further, as the model also illustrates, any behaviour change process needs to factor in a trial and error period, and so will not necessarily be immediate.

Figure 1.6: The '5 Doors' Model of Behaviour Change'.



1.4 Relationship of this Report with the other reports for this Study.

This report is one of five (5) reports relating to the Study overall.

Four Study Area reports.

Separate reports, of which this is one, have been prepared for each of the four Study Areas. They include recommendations relating to features identified as important for the health of residents in that Area and which should be maintained, and for improvements to rectify any deficiencies.

Each report includes a separately-bound addendum comprising the Healthy Neighbourhood Audit of that Area. This audit appraises the physical features and the access to food characteristics of each Area from the perspective of the health of its residents (refer Section 3.2).

A Summation report.

The fifth report comprises a summation of the overall study findings and recommendations on healthy built environments, drawn from the understandings arising from the four Study Areas. These recommendations can be applied to future development projects in general.

Other reports.

In addition, the City Wellbeing Program has published various papers relating to the study design, process and findings. Papers published to date are listed on the City Wellbeing Program website, and in Appendix 1.⁶ Future published papers will be listed on the City Wellbeing Program website.

1.5 Relationship with other work by the Project partners.

Each of the Project partners is involved in work that addresses the relationship between human health and the ways in which we plan and manage our built environments. In particular:

- NSW Health is active in promoting healthy built environments and in submitting related comment and advice on development proposals, and has published a set of guidelines to assist:
Healthy Urban Development Checklist. A guide for health services when commenting on development policies, plans and proposals. (2009)
- The Heart Foundation is active in promoting healthy built environments and active living more generally, and maintains a website of reference material, guidelines and checklists for healthy urban design responses, including case-studies:
<http://www.heartfoundation.org.au>
The Foundation has also published its own set of guidelines:
Healthy By Design: a planners' guide to environments for active living. (2004)
- UrbanGrowth NSW (then as Landcom) has adopted a 'healthy places and healthy people' policy. The policy provides for the integration into its design and development processes of considerations and actions to promote the health of the residents and other occupants of its developments. The policy is published as a brochure:
Healthy development. How Landcom plans for healthy places and healthy people. (2010).
http://www.landcom.com.au/downloads/uploaded/Healthy%20Development%20Brochure_d089_648e.pdf
The brochure makes specific reference to the partnership with this Project, and to its emphasis on healthy by design considerations in the development of Airds Bradbury and Renwick.

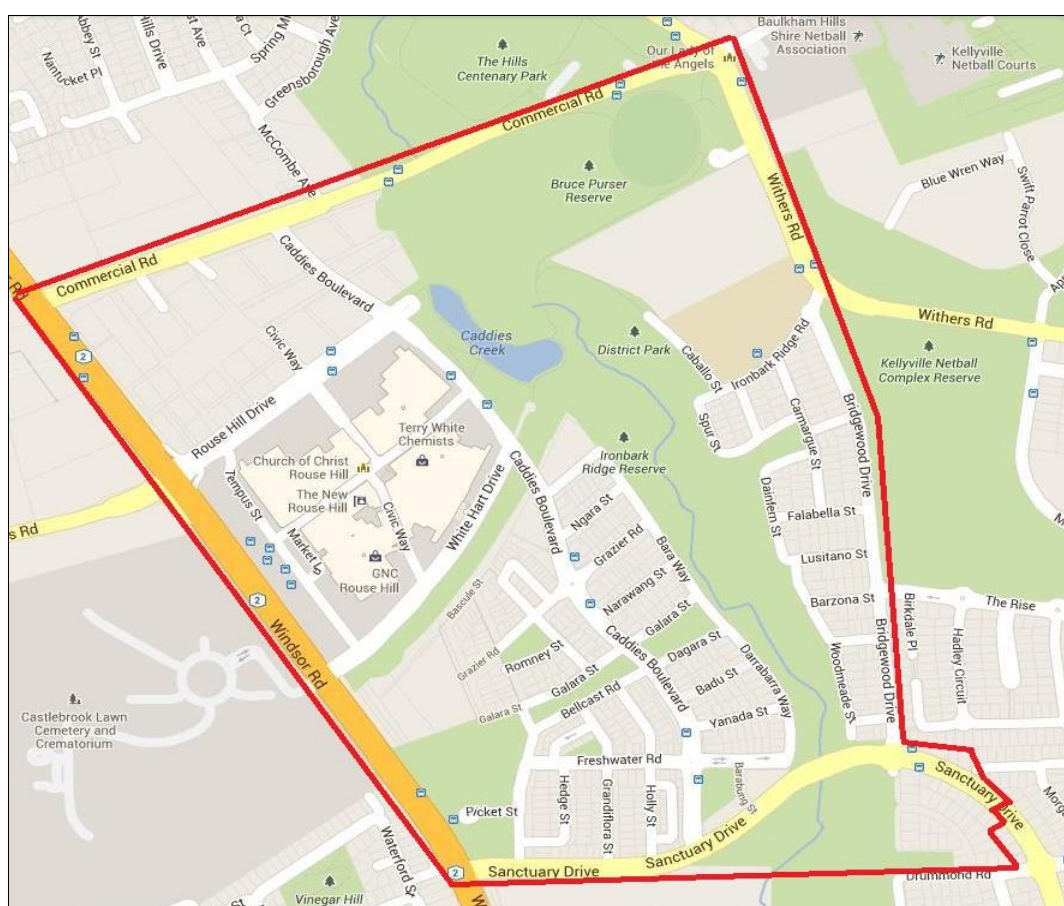
⁶ For Papers listed on the City Wellbeing Program website, refer: <https://www.be.unsw.edu.au/city-futures/city-wellbeing/about>.

2. THE NEW ROUSE HILL – a description.

2.1 Location and history of development.

The Study Area comprises the whole of the master-planned development area known as The New Rouse Hill located in the North-West Growth Sector of the Sydney metropolitan area, plus an adjacent area of Council land to the north-east of the development area comprising a sports oval and associated facilities (Figure 2.1). It is located approximately 40 kilometres from the Sydney Central Business District within parts of the existing suburbs of Rouse Hill and Beaumont Hills. The local government area is The Hills Shire.

Figure 2.1: The New Rouse Hill Study area.



The New Rouse Hill comprises approximately 122 hectares and has two principle components: the Rouse Hill Town Centre, a recently established regional shopping and commercial centre that also includes residential apartments; and a residential area intended to include both low and medium density housing and which also includes a primary school and high school, child care centre, community facilities, and open space including a central linear park along a riparian corridor (Figure 2.2).

Figure 2.2: Concept plan for The New Rouse Hill.



On completion, New Rouse Hill will comprise up to 1800 dwellings (about 4500 residents), 200,000 square metres of retail and commercial space, and 32 hectares of open space. It is bounded to the west by New Windsor Road and the associated Bus Transit Way ('T-way') to Parramatta. The Town Centre will also include a station on the North West Rail Link, currently under construction, linking the North-West Growth Sector to Epping and Chatswood.

The site was identified as a major centre for the North West Growth Sector and purchased by the NSW Government in the 1980s for this purpose. Development was delayed until the surrounding population reached the level necessary to ensure financial viability. The land was rezoned in 2001, and Landcom sought expressions of interest from the private sector in 2002 to undertake construction. Lend Lease was selected as the master developer in conjunction with GPT (General Property Trust) as responsible for the development and on-going management of the Town Centre.

The intention was to deliver a sustainable regional centre through the up-front provision of retail and services and incorporation of environmentally sustainable design elements in the neighbourhood structure, housing design, and water and energy systems. The Ironbark Ridge Public School and adjacent preschool and long day care centre were opened in 2006, the Town Centre in 2007, and the Vinegar Hill Memorial Library in 2008. The residential area is divided into a number of precincts, which are being progressively developed. At the time of the Project, the Southern and Eastern Precincts were becoming well-established. Work had not started in the Central and Northern Precincts which includes medium to higher density residential development and additional commercial development.

The broader locality includes a number of commercial and retail centres and recreation facilities, including Castle Hill, the Norwest Business Park, Blacktown and Kellyville.

The development approval and subsequent contractual arrangement between Landcom and Lend Lease and GPT included a substantial monetary contribution to public transport infrastructure and the preparation and implementation of a \$3 million Travel Demand Management Program to encourage 'active transport' (public transport, walking and cycling) in New Rouse Hill and in the adjacent Landcom-sponsored residential development of The Ponds. A 5-year Green Travel Plan was prepared by consultants PBAI. It establishes targets for future travel mode shares and identifies potential initiatives to assist in meeting those targets, though also recognising that flexibility was required in order to respond to actual travel behaviours and patterns as the areas developed. The Program overall was approved by the NSW Department of Planning as being consistent with the development approval and a dedicated Green Travel Coordinator position.

The development of New Rouse Hill does not explicitly include any healthy built environment objectives. However beneficial health outcomes are apparent as co-benefits from some of the environmentally sustainable design elements that are included (eg. the Green Travel Plan with its emphasis on 'active transport', and the extensive open space areas designed in conjunction with riparian area management) and from the inclusion of an extensive range of active recreation facilities under the Community Title arrangements as a way of assisting the early marketability of the estate. Here it is noted that the Rouse Hill Town Centre, largely as a result of the Green Travel Plan, is listed as a positive 'case study' example by the NSW Premier's Council for Active Living.⁷

It is curious however that although the neighbouring residential area of The Ponds, also developed through Landcom, is being promoted as offering a 'healthy living' lifestyle as part of its marketing (Figure 2.3), this approach is not being applied to The New Rouse Hill.

2.2 The Study participants.

The Study included 20 residents of New Rouse Hill by way of an interview, and invitation to a subsequent focus group (see Section 3). A summary of the demographic characteristics of the participants are included in Table 2.1. Those participants who also attended the Focus Group are marked with an * (one Focus Group attendee did not participate in the earlier interviews).

2.3 The 'visibility' of the Project in New Rouse Hill.

Initial recruitment of potential interview participants comprised a flyer distributed throughout the neighbourhood via letterbox drop (Attachment 2) and via an on-going entry on the home-page of The New Rouse Hill website ('Our Rouse') maintained by Lend Lease. Similar advice was also given in various of the on-line community newsletters ('Our Community') on the 'Our Rouse' website, the last in the Winter 2014 edition. Liaison in this regard was through the Community Title/Place Manager Communities position established within Lend Lease.

⁷ See: http://www.pcal.nsw.gov.au/case_studies/rouse_hill.

Subsequent recruitment comprised additional letterbox drops in newer parts of the estate, and by study officers directly approaching people in the street and in the public open spaces.

Study officers also approached the Rouse Hill Town Centre to request an entry on their Facebook page, however Centre management appeared ambivalent about this and it did not occur.

Table 2.1: Demographic characteristics of the Study participants.

	Age	Gender	Occupation	Level of education	Household characteristic #	Current health status ##
1	18-21	F	Student	Tertiary degree	At-home student	Average
2	22-34	M	Hospitality	Tertiary degree	Children	Average
3	22-34	F	Professional	Post-graduate	Couple	Very good
4	22-34	F	Student	Post-graduate	At-home student	Good
5	22-34	F	Business owner	Post-graduate	Couple	Good
6	22-34	F	Director	Post-graduate	Children	Good
7	22-34	F	Professional	Post-graduate	Children	Good
8	35-44	M	Professional	Tertiary degree	Children	Good
9	35-44	F	Professional	Tertiary degree	Children	Good
10	35-44	F	At home parent	Tertiary degree	Children	Good
11	35-44	F	Manager	Post-graduate	Single	Average
12	35-44	F	Professional	Tertiary degree	Children	Good
13	35-44	M	Professional	Diploma	Children	Average
14	35-44	M	Trade	TAFE	Children	Poor
15	45-54	M	Professional	Yr. 10		Very good
16	45-54	F	Clerical	TAFE	Children	Average
17	45-54	F	Professional	TAFE	Children	Very good
18	55-64	M	Manager	Yr. 12	Couple	Good
19	55-64	F	Retired	Post-graduate	Couple	Good
20	55-64	F	Retired (manager)	Yr. 12	Single	Good

Where known. Participants were not explicitly asked about the household in which they lived. The entries here are from advices and understandings obtained during the interview and/or focus group.

As advised by the participant, as either poor, average, good, or very good.

Figure 2.3: Press release: The Ponds, 20 February, 2014.

Health conscious buyers flock to The Ponds



A new buyer trend is fast gaining traction in Sydney's fastest growing suburb – health conscious purchasers are flocking to buy in The Ponds.

Over 60 per cent of purchasers at The Ponds have young families or are about to start one, with a significant percent purchasing due to the healthy lifestyle The Ponds represents with its extensive wide open spaces and outdoor facilities. Edible gardens are starting to appear throughout the suburb as residents embrace a health conscious lifestyle.

Jey Mahendra, Development Director for The Ponds said, 'The Ponds is now six years old. We have consciously built significant infrastructure at The Ponds including an 80 hectare nature reserve, six ponds, several playgrounds, many kilometres of cycle and walk paths, extensive sports facilities including a football oval and tennis courts to promote an active lifestyle. The master planned community was meticulously designed to ensure the community could capitalise on the green spaces. Every week it is pleasing to see many families making use of the recreational facilities.'

Health coach Annmarie Davies moved into The Ponds in 2008 with her husband and three young children and has never looked back. She said, 'The Ponds is the epitome of healthy living. The wide open spaces and outdoor facilities on our doorstep have provided the perfect living environment for the family. Most days my children use the cycle paths and parks to entertain themselves. I have also established an edible garden – everything can be eaten in it. The family loves nurturing it and eating the delicious produce from it. I'm also now running edible gardening classes for other residents. It is great to see gardens popping up across the suburb which complement the beautiful healthy natural environment.'

3. THE RESEARCH PROCESS – methodology.

3.1 Introduction – the difficulties of measuring place-based health relationships, and the approach of this Study.⁸

Despite the many studies in the area of healthy built environments there are lingering difficulties and much debate about how research can best be conducted in this inter-disciplinary area. The issues are not just practical in terms of ‘joining’ the often disparate traditions of research in the built environment and health/medical fields, there are also often deep philosophical differences in built environment and health/medical scholarship. There are a number of issues, including how to:

- measure the invariably intricate rather than singular relationships people have with the environments in which they inhabit, and characterised by diversity, complexity and messiness. The intricacy of the urban planning process itself is a further complicating factor.
- ‘isolate’ for deeper appraisal those relationships and behaviours that might have a direct impact on individuals’ health.
- meet the often quite different demands in respect to trustworthiness of data between the necessarily different contributory disciplines in such cross-disciplinary investigations.

Most studies seeking to understand the relationship between physical place and human interaction rely, necessarily, on detailed ‘social science’ observations of the everyday actions of people in familiar and ordinary places. However, when seeking to utilise the findings from these real-world settings within the medical discipline it is not possible to isolate variables in the double-blind procedures typical of research in the scientific laboratory. Further, it is arguable that even if it were possible to isolate variables of interest, the resultant simple ‘proofs’ that result would not lead to understandings of the people-place relationships under investigation that are sufficiently in-depth and comprehensive.

To address these issues this Study collected a mix of varied qualitative and quantitative data, in the manner of a ‘triangulation’ – an approach whereby researchers ‘make use of multiple and different sources, methods, investigators, and theories to provide corroborating evidence.’⁹ To assist rigour the Study gave particular attention to the design of the data collection tools. This included:

- a new explicit ‘audit’ instrument for the conduct of on-site observations of each Study area.
- an in-depth semi-structured interview, with questions based on both similar surveys used elsewhere in Australia to allow for future comparisons and on matters explicit to this Study.
- a purpose-designed follow-up focus group to obtain greater clarity on the data collected from the on-site observations and the interviews, and to ‘give voice’ to how the participants themselves see their neighbourhood as contributing to their current and future health.

⁸ The content of this section draws on a paper ([Planning and Building Healthy Communities](#)) presented by the City Wellbeing Program to the 2013 State of Australian Cities (SOAC) Conference.

⁹ Refer: *Qualitative Inquiry and research Design: Choosing among Five Traditions* (3rd edition). J.W. Creswell. Sage Publications, California, 2013 (p. 251).

Each of these three data-collection methodologies comprise a Study outcome in themselves, and are able to be used:

- in any future studies within the case-study areas, to enable consistent longitudinal appraisals, and
- as models for similar studies within other localities.

3.2 Auditing the environment of New Rouse Hill.

The Study audited the physical environment of each Study Area and assessed the potential impact of the physical features observed on residents' health.

Where relevant, the study also draws on a survey (the *Community Food Assessment*) of the availability, type and quality of foods within selected Sydney locations undertaken by Project partner South Western Sydney Local Health District in 2012 (and assisted by Study officers from the City Wellbeing Program).

(i) Auditing the physical environment.

The design of the neighbourhood audit.¹⁰

Studies of the built environment and health relationship have utilised a number of tools, including accelerometers, user questionnaires and surveys, walkability assessments and site audits. Most tend to explore the influence of neighbourhood design on utilitarian and/or leisure time physical activity; some have been developed to assess social and food environments. However few methods explore the impact on health of the make-up of a neighbourhood in its entirety; in particular by embracing all three of the key domains identified in the literature review conducted by the City Wellbeing Program in 2011 (and subsequently leading to this study): physical activity, social interaction, and access to healthy food.

The Study purposely sought to obtain just such a comprehensive 'overall' view of the physical environment of each of the case-study areas and developed a specific Healthy Neighbourhood Audit Instrument to assist. The Instrument establishes a process of 'systematic observation' to ensure consistent examination of the critical built environment determinants of health within each study area. Sources included existing similar audit tools and checklists (often relating to walkability), the principles relating to crime prevention through environmental design (CPTED), and new work developed by the Study officers. An initial design was re-worked after testing in the field to allow for better efficiency in data collection and for the incorporation of complementary GIS data. Auditors were trained in the audit process prior to commencing field work. A copy of the Healthy Neighbourhood Audit Instrument is at Attachment (3).

¹⁰ This section draws on a paper (A Methodology to Understand How Environments Support Health) by S. Thompson and E. Mitchell in *Urban Design and Planning*, Volume 168 Issue DP4, 2015 (pp. 174-184).

The audit process:

- (i) maps land uses and key features, infrastructure and design elements, and
- (ii) records detailed environmental observations including peoples' use and movement through different spaces, perceptions of safety, and the availability of different types of food.

Information was sourced from:

- existing data of physical features, infrastructure and facilities and the like, including physical maps, GIS databases and aerial photographs.
- direct observation and use by the Study officers of the localities under study.
- published and verbal advices on the history of development of each locality.

The on-site observation work was conducted during the week and on weekends and in daylight and at night to give a good cross-section of observations. Note was taken of physical features (such as the road, footpath and cycle network, the presence of shopping and other facilities, open space areas and facilities, community gardens, the availability of food shops, and overall built form), social activities (such as the number of people using certain places, the types of activities they were involved in, whether they were in groups, and general demeanour), and of the auditor's own perceptions about overall amenity and ambience (such as noise, shade, the presence of dogs, feelings of safety, presence of litter, overall upkeep and maintenance). Each audit was primarily undertaken on foot, complemented by additional windshield observations and use of existing Geographical Information Systems (GIS) data.

Data relating to land uses, street networks and infrastructure was entered into a GIS application on an iPad on-site. Detailed observations were recorded on paper copies of the Instrument. Each site was also recorded in detail with photographs. The focus of the night audits was on the quality and maintenance of lighting infrastructure, and perceptions of safety. The weekend audits captured any variations in activity or behaviour not observed on weekdays. The result is a data set that is detailed and rich and the result of, generally, over 20 hours of observations, assessments and mapping.

The final section of the Instrument provides for the auditors to record any recommendations for improvements in the neighbourhood, any additional observations, thoughts and reflections, and a concluding summary of how the neighbourhood supports healthy living. This section included an overall 'report card' where 22 items were given a rating out of five relating to how the auditors as a group considered they supported healthy behaviours in everyday life. However, this assessment has not been carried through into the final Healthy Neighbourhood Audit Report on the basis of concerns that such qualitative 'scoring' was reductionist and unrealistic in being able to represent the complexity of most of the matters being assessed.

The design development and initial trial of the Instrument also revealed some fundamental difficulties in the intended audit process itself, and in presenting the collected data in a way that is both accessible and reflects its depth and diversity. The following notes describe the main issues and the ways in which they have been addressed in the final design and use of the Instrument.

- (i) Built environments are dynamic and each study area is experiencing some form of development. As such the features recorded are a snapshot of the environment as mapped and perceived at a certain time. The standardisation of the Instrument does however facilitate consistent re-appraisals at different future times.
- (ii) There is a need to embrace both objective and subjective responses to the study area. The Instrument encourages the auditors to experience and immerse themselves within each area. For example, the Instrument requires auditors to reflect on how the site might support people of different sexual orientations, genders, religions and cultural backgrounds; and assess each built environment element in relation to how the most vulnerable and least able groups of society would use and experience it. However auditors will always be to an extent an 'outside observer' and reflections are inevitably informed by the auditors' own attributes and experiences. Each variable reported on is open to varying degrees of interpretation. To assist robustness in this regard the audits were completed by a team of interdisciplinary auditors, with skills and experience in urban planning, GIS and public health; the auditors were trained to consider how the site supported people of all ages and abilities; and individual reflections were discussed by the group on-site.
- (iii) To simply map and quantify each built environment element would ignore these complexities and risks misrepresenting different spaces within each site as homogeneous. Further, assessments required both subjective and objective interpretations. To address, the Instrument adopts different formats to report different variables:
 - a combination of maps, photographs and descriptive text, including mapping of the data in ArcGIS which then also allows for presentation in encompassing 'birds-eye' views.
 - 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).
 - subjective observations based on auditor perceptions and feelings (such as sense of safety).

The audit results are collated into a Healthy Neighbourhood Audit Report for each Study Area.

Undertaking the neighbourhood audit in New Rouse Hill.

The audit was undertaken over five (5) weekdays at different times including one evening visit, and one visit on a Saturday. The visits were in the months of January (2 visits), May, June (2 visits) and August. The weather conditions were correspondingly varied, and the visits were also varied between school holiday and non-school holiday periods. Total visitation time was 20½ hours.

The design of the community food assessment.

The community food assessment comprised:

- (i) a 'market basket' survey of the cost, quality and variety of fresh food available in supermarkets completed within a two week period in October 2012 to minimise the potential

for seasonal variation. The supermarkets surveyed included Coles, Woolworths, IGA and Aldi where applicable for each location. Boutique grocery stores, butchers, greengrocers and online supermarkets were excluded because they were unlikely to stock all products in the market basket survey. A total of 100 supermarkets were surveyed across the highest and lowest socio-economic (SES) areas of Sydney.

- (ii) a survey of the cost, quality and variety of foods available at farmers' markets in Sydney. This survey also included interviews with stallholders and patrons to determine reasons for using farmers' markets, and the source of produce on sale. A total of 18 markets were surveyed in various locations between February and April 2013. They comprised small and large private markets, community-run markets and farmer/ producer-run markets. 640 customer and 140 stallholder interviews undertaken.

The market basket survey collected information on the cost of 44 staple food items, the availability of 30 fresh fruits and vegetables, and the quality and cleanliness of 10 varieties of fresh fruit and vegetables. The selection of products was based on the protocol used in the *Victorian Healthy Food Basket*. This protocol represents commonly available and popular food choices selected to meet 95% of the energy requirements of four different types of families ('typical family' (two adults and two children), 'single parent family' (adult female and two children), 'elderly pensioner' and 'single adult' for a period of two weeks; and include the core food groups (fruits and vegetables, breads and cereals, meat and alternatives and dairy) and one non-core food group (extra food items). The availability of fruit and vegetables was assessed using a frequency survey adapted from the *NSW Cancer Council Market Basket Survey*. The quality of fruit and vegetables was rated using a visual assessment tool developed from the *Queensland Healthy Food Access Basket* and the *NSW Cancer Council Market Basket Survey*. It included a visual assessment of quality based on evidence of age, bruising and mould, and cleanliness. The number and types of products on display in the high-traffic, high-visibility areas at the ends of aisles and closest to checkouts was also surveyed. These products were then divided into core and non-core food groups according to the *Australian Guide to Healthy Eating*.¹¹

The farmers' market survey used the same methods as in the market basket survey of supermarkets to assess quality of produce, over 10 items. All products available for sale were noted on a standard checklist to measure availability and diversity. Locally grown produce was also recorded. The cost of produce based on 1 kilogram of each item was recorded. The surveys of stallholders and patrons were standardised in a questionnaire.

The food assessment tools for both the market basket and farmers' market surveys were pilot tested and data collectors underwent training to ensure accurate and consistent ratings.

Detailed information on the design and results of the community food assessment are available in separately published papers.¹²

¹¹ Refer: *Victorian Healthy Food Basket Survey* (Palermo and Wilson, 2007), and the *Queensland Healthy Food Access Basket* (Queensland Health, 2002).

¹² Refer: (i) Crawford, B., Byun R., Mitchell E., Kennedy L., Torvaldsen S., Thompson S. & Jalaludin B. (2013) *Cost, availability and quality of food in high and low socioeconomic areas of Sydney*, poster presentation at the Public Health Association of Australia Annual Conference, Melbourne, September 2013; (ii) Crawford, B., Byun,

Undertaking the community food assessment In New Rouse Hill.

For New Rouse Hill the market basket survey it comprised seven (7) stores, being two (2) supermarkets each from the two major supermarket chain stores, one (1) discount supermarket chain store and two (2) independent grocery stores.

The farmers' market research was undertaken between February and April 2013. In the New Rouse Hill area the (fortnightly) Castle Hill Farmers and Fine Food Market and the (weekly) Rouse Hill Organic and Farmers Market were surveyed, with 32 customer and 9 stallholder interviews in Castle Hill and 4 stallholder interviews in New Rouse Hill undertaken. Management policies in the Rouse Hill Town Centre do not permit approaches to individuals given it is privately-owned space.

3.2 Seeking the views and experiences of the residents of New Rouse Hill.

The Study sought the views and experiences of the residents of New Rouse Hill via:

- (i) one-on-one semi-structured interviews with 20 residents, and following this
- (ii) a focus group to which those who had already undertaken an interview were invited.¹³

(i) The interview.

The interview design.

The interviews comprised a structured set of questions with set answer choices plus various opportunities to include additional observations (Attachment (4)). The questions explored the different ways participants use and make sense of their environments, and everyday behaviours that contribute to their health and wellbeing.

The questions covered five separate topic areas (Table 3.1). The questions were established in a collaborative process involving all Study officers and Project partners. To assist future comparative assessments between this Study and studies of other locations in Australia a number of questions were adapted from existing similar questionnaires, including:

R., Mitchell, E., Torvaldsen, S., Thompson, S. & Jalaludin, B. (2013) *Seasonal fresh food and a sense of place: Exploring farmers' markets in Sydney*, Public Health Association of Australian Annual Conference, Melbourne, September 2013; (iii) Thompson, S., Mitchell, E. & Crawford, B. (2013) *Planning and Building Healthy Communities*. 6th State of Australian Cities Conference. Sydney, November 2013; (iv) Crawford, B., Byun, R., Mitchell, E., Thompson, S., Torvaldsen, S. & Jalaludin, B. (2013) *Healthy Food and a Sense of Place: Attitudes and Perceptions of Customers and Stallholders toward Farmers' Markets in Sydney*. Report to Farmers' Market Managers and Stallholders. Sydney and South Western Sydney Local Health Districts and UNSW.

¹³ The Study received approval from the Built Environment Human Research Ethics Advisory Panel (Faculty of the Built Environment, University of New South Wales) variously on:

- 3rd October 2012, amended 29 May 2013 (re Airds Bradbury, New Rouse Hill and Victoria Park) (Ref. 125073).
- 29th May 2013 (re Renwick) (Ref. 135036).
- 11th June 2014 (re all four Study areas) (Ref. 145057).

- the *Neighbourhood Physical Activity Questionnaire* developed for the Western Australian Residential Environment Study (RESIDE) undertaken by the University of Western Australia for the WA Department of Planning, the WA Water Corporation, and the Heart Foundation to investigate the impact of urban design on health over a five-year period 2003-08.¹⁴
- the 5-year *Neighbourhood Health and Wellbeing Survey* commenced in 2011 of the residential estate of Selandra Rise in Melbourne by RMIT for VicHealth, the (Victorian) Growth Areas Authority, the City of Casey, the Planning Institute of Australia, and Stockland (the development company).¹⁵
- the *Green Square Snapshot Survey* conducted within the redevelopment area of Green Square (and within which the Study Area of Victoria Park is located) by the City Futures Research Centre, University of New South Wales in 2013).¹⁶
- the *NSW Adult Population Health Survey* conducted by the NSW Ministry of Health in 2011.¹⁷

Additional questions were developed to cover other topic areas. Completion of the interview design was undertaken after the neighbourhood audits and food assessments so that understandings from those components could assist in developing the interview questions.

Table 3.1: Schedule of interview question topics.

Section	Question Topics
Your Neighbourhood	<ul style="list-style-type: none"> • Features of the environment generally that are important to keep healthy. • Level of satisfaction with services, infrastructure and other elements of the Study Area neighbourhood.
Being Active	<ul style="list-style-type: none"> • Utilitarian and recreational physical activities. • Settings in which people engage in physical activities. • Modes of transport used to access sports facilities, green and open spaces and other relevant localities.
Your Community	<ul style="list-style-type: none"> • Relationships between neighbours and the larger community. • Perceptions and rating of 'social capital'. • Level of interaction between neighbours. • Places for socialisation and chance meetings. • Levels of engagement in social and community activities.
Your Food	<ul style="list-style-type: none"> • Frequency of fresh fruit and vegetable purchases. • Modes of transport used to access food sources. • Levels of engagement with alternative food sources such as farmers' markets, community gardens and private edible gardens.
Your Health	<ul style="list-style-type: none"> • Assessment and rating of personal physical and mental health. • Changes in health status since moving to current location. • Basic demographic data.

Recruitment and conduct of the interviews.

A structured interview was conducted with 20 residents, either face-to-face or by telephone. The interviews were conducted between August 2013 and October 2014. Participants were given a \$20

¹⁴ Refer: <http://www.sph.uwa.edu.au/research/cbeh/projects/reside>

¹⁵ Refer: <https://www.planning.org.au/viccontent/selandra-rise>

¹⁶ Refer: https://cityfutures.be.unsw.edu.au/publications/?pub_type=Research+Reports&search=green+square

¹⁷ Refer: <http://www.health.nsw.gov.au/surveys/adult/Pages/default.aspx>

gift voucher to recompense their time. Generally the interviews took between 25 and 40 minutes. Three interviewees lived in the Rouse Hill Town Centre; the interviewees from the residential part of The New Rouse Hill came from both sides of the central riparian open space.

Initial recruitment comprised an initial flyer distributed throughout the neighbourhood via letterbox drop and via an on-going entry on the home-page of the The New Rouse Hill website initiated by UrbanGrowth NSW. Liaison in this regard was through the Community Development Facilitator position established with Lend Lease.

Interviewees were also asked at the time to nominate other residents they knew who might also like to participate in the Study. There was only a limited number of additional recruitments by this process.

The initial recruitment yielded less than half the number of residents sought. Additional letter box drops and contact with both the local day care centre and the local primary school parents and teachers group did not yield any further participants. Achievement of the targeted number of interviews subsequently relied on the Study officers approaching likely participants in local streets and open spaces on two separate days (a week day and a Saturday). This process was undertaken only within the residential area of New Rouse Hill. Project officers were not permitted by the centre management to similarly approach people within the Town Centre unless space was rented to establish a temporary booth to avoid, it was said, potential annoyance to Centre patrons. This option was not pursued because it was considered to have limited efficacy given the Town Centre has a regional catchment, meaning a high proportion of people approached would likely not be from within the Study Area.

(ii) The focus group.

The focus group design.

In addition to follow-up comments on the results of the interviews, the focus group sought to:

- (i) minimise the risk that the resultant advices might merely repeat those already obtained in the interviews, by maximising the opportunity for the participants to inform the Project about *their* experiences.
- (ii) seek advice on specific matters not able to be adequately covered in the interview structure; such as the *interconnections* between participants' health and the places they use everyday, and features of built environments that have a *therapeutic affect* on health and wellbeing and for which there is as yet little evidence in the literature.
- (iii) address the limitation that the Project could not comprise a longitudinal study as originally sought by incorporating a temporal element where participants were asked to vision and discuss future needs and desires.

The focus group was structured around four questions. The participants were asked to write their answers on notation cards which could then be displayed, and were initially given three notation cards for each question, with additional cards available for additional answers. The cards were of different colours for each question. Although participants were reminded that the main focus of the

Study was about the connection between the built environment and health, it was also advised that other health-related matters they wished to include in their answers would be equally accepted.

The first two questions were about participants' own health behaviours, as determined by them:

- (1) What are the things I *do* (now) to keep healthy.
- (2) What are the things I *should be doing* (but do not do) to keep healthy.

The subsequent two questions sought advice on matters that currently assist and could in the future assist their actions and aspirations:

- (3) What is *helping* me to keep healthy, now.
- (4) What I *need* to keep healthy.

The completed cards were progressively displayed on a white-board (Figure 3.1), ordered as follows:

The things I do (now) to keep healthy.	<i>What is helping me to keep healthy, now.</i>	<i>What I need to keep healthy.</i>	The things I should be doing (but do not do) to keep healthy.
--	---	-------------------------------------	---

The two focus group facilitators then convened a discussion prompted by the entries on the notation cards and from their knowledge of The New Rouse Hill obtained from the audits and interviews. The discussion was electronically recorded with the permission of the participants. Discussion prompts included questions such as:

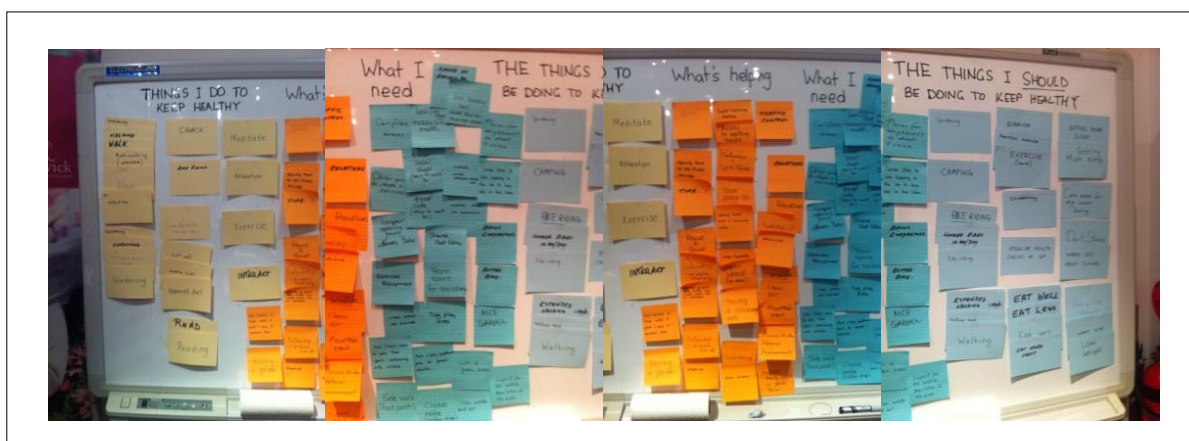
- *Are there any common features amongst the things that are 'helping to keep us healthy'?*
- *Are there any common features amongst the things that 'we need but do not have to keep healthy'?*
- *Do you have any suggestions for obtaining the things that 'we need but do not have to keep healthy'?*
- *Can you tell us more about ?*

As the discussion progressed relevant notation cards with similar entries were grouped. When it was felt that the discussion was nearing completion, a final question was asked:

- *When you sit back and look at all we have here, how would you summarise what we have and what we need in Airds Bradbury to keep healthy?*

The completed cards provide a key word summary of participants' health concerns, aspirations and experiences able to be transferred into an easy-to-read table (see Table 4.6) as part of the analysis stage. The transcript provided more detailed and in-depth information.

Figure 3.1: The display of participants' completed comments cards at the Focus Group.¹⁸



Recruitment and conduct of the focus group.

The focus group was held on Thursday 30th October 2014 at a meeting room within the local council managed Vinegar Hill Community Centre located in the Rouse Hill Town Centre. It started at 6.30 pm and finished at approximately 8.30 pm. The chosen day and time was made after an initial mail or email contact with prospective participants as to their preferences, given the Project officers were conscious that many residents had long commutes during the week and also commitments with children. Refreshments were provided for dinner, and participants were also given a \$50 gift voucher to recompense their time.

Prospective participants comprised those residents who had earlier undertaken the interview and had agreed at that time to be advised of the subsequent focus group.

There were six participants. One participant comprised the son of an interviewee who could not make the focus group due to work commitments. One person who indicated they would attend subsequent did not, due to a last-minute work commitment.

The participants provided a reasonable demographic cross-section. There was one student, aged 22; three, in variously the 22-34 and 35-44 age groups, were currently employed; two of those working had children; two were retired; one lived in the Town Centre; and two had been living in New Rouse Hill since it was first established (and in a sense considered themselves as 'pioneers'). In addition, three were born overseas (in Asia) and had lived and/or worked there for various lengths of time before immigrating; another had lived and worked in Asia before moving back to Australia.

3.4 How the Study findings are structured.

The varied data sources – the physical audit of the neighbourhood, the community food audit, the survey interviews, and the focus group discussion – generated an extensive and rich data set about

¹⁸ This illustration is from the focus group held with Renwick residents.

the healthy built environment characteristics of each study area. When considered together they also provide a similar informative appraisal about healthy built environments in general.

For the purposes of generating the findings, conclusions and recommendations (Sections 4, 5 and 6) the analysis of this data is structured around:

- (i) the three domains and seven key actions relating to healthy built environments identified in the earlier review of literature (see Table 1.1).
- (ii) a series of 34 questions relating to each of these key actions. These questions are drawn from a set of Indicators of what would constitute a healthy built environment developed by the HBEP in a separate exercise. The 34 questions are shown in Table 3.2. An explanation of the reasoning behind each question is included in the relevant component in Section 4.¹⁹
- (iii) a more 'overview' appraisal of the healthy built environment characteristics of The New Rouse Hill and the needs and aspirations of the Study participants sourced primarily from their comments and advices given in the semi-structured interviews and in the broader-ranging focus group discussion. This more wide-ranging appraisal extends the specific discussion on the matters relevant to three domains and seven key actions into a more general understanding of participant well-being. In particular it takes advantage of the more open questions asked at the focus group about what participants themselves considered as necessary for their health, without being necessarily confined to built environment matters.

This structure provides a convenient way to order the extensive data. It also allows future appraisals of the contribution of the built environment of New Rouse Hill to the health of its residents to be similarly structured, thus permitting comparison over time.

Two notes about the presentation of data.

(1) Comparisons of numerical data.

Where reference is made to the number of participants engaging in certain activities or the like, the actual number relative to the total number of participants is stated rather than a percentage due to the sample size for each study area (20 participants) (though sometimes a percentage is also given if it is considered to assist understanding).

To assist understanding it has been useful to compare some behaviours of the study participants with the larger population (either NSW or the Sydney metropolitan area). This larger data is sourced from more extensive quantitative studies of that population and is invariably expressed as percentages. Where a comparison is made between the Study data and the larger population data this is also expressed as a percentage.

(2) Participant comments.

The reporting of findings includes comments made by participants in the interviews and the focus group. Where necessary to give context for comments made in the focus group, the initial question or prompt made by the focus group facilitator is also given, and is written in *italics*.

¹⁹ Refer: <https://cityfutures.be.unsw.edu.au/research/programs/city-wellbeing/>

Table 3.2: Keeping healthy in New Rouse Hill: domains, actions and associated questions.

PHYSICAL ACTIVITY: Getting people active.		SOCIAL INTERACTION: Connecting & strengthening communities.			NUTRITION: Providing healthy food options.	
Facilitating utilitarian physical activity.	Facilitating recreational physical activity.	Facilitating incidental neighbourhood interaction.	Making community spaces.	Building for crime prevention.	Facilitating access to healthy food.	Promote responsible food advertising.
1. Do participants achieve the recommended hours of physical activity per week?		17. Do participants interact with other residents?			27. Is fresh healthy food available to participants?	
2. Do participants engage in active transport modes?	11. Do participants walk for recreational physical activity?	18. Does the design of common areas in buildings foster incidental person-to-person contact?	21. Are there formal public and semi-public spaces accessible to the community at large?	26. Is use of public space for active transport and for incidental and organised physical activity and social interaction facilitated by low actual or perceived threats to security?	28. Are the shops selling fresh healthy food accessible?	33. Might eating habits be adversely affected by local advertising?
3. Do participants use public transport?	12. Is walking viable for recreational physical activity (convenient, comfortable, & safe)?	19. Does the design of building frontages foster incidental person-to-person contact?	22. Is the design of formal public and semi-public space inviting to the community at large?		29. Is there a relative over-abundance of EDNP food shops?*	34. Is the presence of healthy food options visible?
4. Is public transport viable (convenient, comfortable, safe & affordable)?	13. Do participants cycle for recreational physical activity?	20. Does the design of public space foster incidental person-to-person contact?	23. Can participants be involved in the broader design and governance of their community spaces?		30. Do participants have an ability to grow healthy food?	
5. Do participants walk (or cycle) as a means of transport?	14. Is cycling viable for recreational physical activity (convenient, comfortable, & safe)?		24. Does new development include a 'Welcome' program to initiate on-going social interaction?		31. Can (farmed) healthy food be sourced (fresh) close to participants?	
6. Is walking viable for 'active transport' (convenient, comfortable, & safe)?	15. Does public open space provide for recreational physical activity?		25. Does the design and governance of public and private space allow contact with nature?		32. Is there a diversity of sources available for the sale or other distribution of healthy food (eg. markets, co-ops, food trucks)?	
7. Do participants cycle as a means of transport?	16. Are other facilities available (by either public or private providers) for recreational physical activity?					
8. Is cycling viable for 'active transport' (convenient, comfortable, & safe)?						
9. Do participants use stairs?						
10. Is use of stairs viable (convenient, comfortable)?						
Summation.		Summation.			Summation.	

* EDNP = Energy Dense, Nutrient Poor.

4. KEEPING HEALTHY IN THE NEW ROUSE HILL – our findings.

4.1 Physical activity – getting people active.

It is recommended adults achieve 2½ - 5 hours moderate or 1¼ - 2½ hours vigorous physical activity (or combination) each week.

Australia's Physical Activity & Sedentary Behaviour Guidelines.

- In 2013 29% of Australians ranked as obese, compared to 16% in 1980.

Australian Health Survey, 2013 (ABS).

- In 2011-12 26% of trips under 1 km (ie. within 15 min. walk time) in Sydney were made by car.

NSW Bureau of Transport Statistics.

Q. 1. Do participants achieve the recommended number of hours of physical activity per week?

The Australian *Physical Activity & Sedentary Behaviour Guidelines* recommend that people aged 18 to 64 years achieve 2½ - 5 hours moderate physical activity or 1¼ - 2½ hours vigorous physical activity (or combination) each week.

No - only 12 out of 20 participants (60%) achieve recommended levels of physical activity.

Participants were asked to estimate the number of hours per week they spent walking and cycling (for both transport and recreation) and undertaking moderate and vigorous physical exercise. As shown in Table 4.1 only 12 participants (60%) achieve the recommended minimum number of hours.

Of those who do achieve the recommended minimum:

- all also generally achieve the higher recommended number of hours.
- six participants achieve the recommended minimum via vigorous recreation activity alone. These participants also undertake additional moderate activity and so in total achieve more than the recommended minimum.
- four participants achieved the recommended hours through a combination of moderate activities only (ie. with no vigorous activity).

Seven out of 20 participants (35%) nominated only two or less hours spent on physical activity per week. Of these one participant (who also noted that physical exercise was not particularly part of his cultural background) did not nominate any time spent on physical activity, and two nominated only one hour in total.

Overall, the figures suggest that residents are not currently availing themselves of the existing substantial attributes and facilities within New Rouse Hill that can facilitate physical activity. The implications are further discussed in the following sections.

Table 4.1: Time spent on physical activity (both for transport and recreation), and hindrances to additional activity.

	No. of hours spent on different activities.						TOTAL hrs: Moderate activity. Target: 2½ - 5 hrs / week # *	TOTAL hrs: Vigorous activity. Target: 1¼ - 2½ hrs/week *	Target achieved?	Type of recreation activity. moderate / vigorous	Participant comment on hindrances to more physical activity.
	'Active' transport.		Recreational activity.								
	Walking.	Cycling.	Walking.	Cycling.	Other moderate activity.	Other vigorous activity.					
1	1						1.3	0	×		Time (left after commute). Carrying shopping. Don't like cycling.
2			0.3				0	0	×		Happy with driving – time efficient, otherwise busy – no reason to walk. Carrying shopping. Kids too young to cycle.
3							2.6	1	✓	garden/gym	Don't own bike, but would like to. Some busy, noisy roads.
4	0.6				2	1	2.4	1.5	✓	tennis/treadmill	Time. Not interested in/roads not conducive to cycling.
5	0.3		0.6		1.5	1.5	12	1.5	✓	Gym	Lack of train to facilitate/encourage public transport use.
6	2	4		6		1.5	1.5		×		Driving more convenient. Carrying shopping. Will get a bike when kids are older.
7			1.5				1.5		×		Time (for walking).
8			1.5				6.5	2	✓	home activity/gym	Time (for walking). Some areas without footpaths. Been meaning to get a bike.
9	1		3.5		2	2	2	2.5	✓	swim + yoga	Carrying shopping. Need to drive to work. Time (for walking, cycling). Get bored with existing walking tracks. Bikes stolen.
10			2			2.5	9		✓	swim	Just don't walk, and route to Town Centre indirect. Cycling not practical with 2 year old.
11	1.6			0.5	7		1.5	5	✓	gym + oval activity	Trips are generally outside area, therefore drive.
12				1.5		5	2	0.3	×	Jog	Time (for walking, cycling). Laziness.
13	1.3		0.6			0.3	5		✓	garden	Carrying shopping. Hope to get a bike. Reduced walking after seeing a snake.
14	0.6		3.5		1		4		✓	garden + tennis	Time (for walking). Laziness. Lighting level and roads under construction hinder walking. Not interested in cycling.
15	2		1		1		6		✓		Don't cycle due to recent back surgery.
16	3		3				1		×		Work not near public transport – so drive. Walking not practical with 2 kids going to day-care. Time (for walking). Not confident cycling.
17			1				2.2	3	✓	gym	Work too far, but walk to shops. Cycle track too close to main road-unpleasant. Some walking tracks too isolated-feel unsafe.
18	0.2		2			3	2		×		Carrying shopping. Feel unsafe in unbuilt areas. Not personally comfortable walking past peoples' houses for leisure. Don't cycle.
19	2						6	0.6	✓	yoga/jog	(Nil)
20	1	0.5	2	0.3	2	0.6	1		×	garden + tennis	Destinations too close-not worth cycling. Time (young kids, housework). Sometimes too hot to walk.
	13 (70%) walk for transport	2 (10%) cycle for transport	13 (70%) walk for recreation	4 (20%) cycle for recreation	7 (35%) engage in moderate recreation	9 (45%) engage in vigorous recreation	12 out of 20 (60%) achieve recommended hours of physical activity				

For the purposes of this Study total moderate activity comprises walking and cycling (as both transport and recreation) plus other moderate recreation activity.

* The 'targeted' number of hours is the amount of activity each week recommended for adults aged 18-64 years by *Australia's Physical Activity & Sedentary Behaviour Guidelines* (either all moderate or all vigorous, or in combination)

Q.2. Do participants engage in active transport modes?

The relative number of trips by ‘active transport’ indicates levels of non-sedentary means of transport (such as by motor vehicle). It is also important to distinguish between types of ‘active transport’ as some are more conducive to physical activity than others – hence the subsequent questions about public transport, walking and cycling.

There is a low use of active transport.

Participants were asked to estimate their relative use of different transport modes for all trips taken in a usual week (Table 4.2).

- all participants use the car for at least some trips per week.
- overall, car use dominates travel mode. Of the 20 participants:
 - 15 (75%) use the car for 50% or more of trips
 - 11 (55%) use the car for 80% or more of trips
 - nine (45%) use the car for 90% or more of trips.
- only 8 out of 20 participants (40%) use public transport for any trip and of these only 4 use public transport for half or more of weekly trips.
- only nine out of 20 participants (45%) walk for any trip, and of these only three walk for half or more of their total weekly trips.

There is considerable skewing of a propensity to use one mode or another, meaning that the figures relating to the *average* use of all modes for the total number of trips taken by all participants (second last row in Table 4.2) do not give an accurate picture of overall travel behaviour. For example the very low use of the car by some participants disguises the very high use by the majority of participants, and the average figure for trips by walking disguises the fact that 11 participants (55%) do not walk at all for transport.

There are four main reasons cited for the high frequency of motor car use:

- the journey to work – characterised by a lack of viable public transport alternatives, which may in the future be alleviated with the opening of the North-West Rail Link.
- a lack of time to use other modes – due to other travel pressures such as shopping, child care.
- to avoid carrying shopping – 14 participants (70%) said they used their car to access their main food shops, with only six participants (30%) walking.
- a general predisposition (‘culture’) to use the car because of its ease and convenience.

In relation to how participants access their main food shops (which are generally in the Town Centre):

- All participants who lived in the Town Centre (three participants) walked, as would be expected.
- Of the remaining 16 participants (which excludes one participant who indicated they did not do any food shopping for their household), 13 used their car, two walked, and one varied between walking and using the car.

The following focus group discussion is indicative of the predisposition to car use.

So why do you drive or why don't you walk?

I don't know, I should have. I don't know, I have no excuse..

Is it a habit? Is it just something.....that feels comfortable driving?

Yeah I think so.

You jog though.

Yeah when it's convenient for me.

You're just not - walking's not a thing?

No. If I'm exercising, I'm exercising. If I'm getting somewhere, I guess I'm driving. It's a mental thing for me.

So what would help you to walk?

I don't know.

Is it not cool?

Um, I guess so. I don't know why I don't walk.

Table 4.2: **Relative mode of travel in a usual week.**

Participant	Relative use of each travel mode (%)			
	Car	Public transport	Bicycle	Walking
1	20	80		
2	100			
3	10	90		
4	95	2		3
5	10		90	
6	100			
7	100			
8	5	90		5
9	100			
10	50			50
11	100			
12	50	50		
13	95	2.5		2.5
14	10			90
15	50			50
16	100			
17	95			5
18	60	10		30
19	80		5	15
20	80	20		
Total trips using this mode (%). *	65.5%	17.3%	4.7%	12.5%
Participants using this mode (%). #	20 (100%)	8 (40%)	2 (10%)	9 (45%)

* Percentage of all trips undertaken which use this mode of transport (total of all entries in this column ÷ 20).

Percentage of participants who use this mode of transport for at least some trips (number of entries in this column ÷ 20) (total across the Table exceeds 100 because some participants use multiple modes).

Nevertheless, and as also suggested in the (boxed) conversation above, targets for physical exercise are achieved by 12 out of 20 participants (60%), indicating that they are engaged in other forms of physical activity that will compensate for their reduced levels of active transport (Table 4.1). That said:

- 8 out of 20 participants (40%) do not achieve recommended levels of physical activity, and greater use of active transport modes could assist.
- active transport modes , particularly use of public transport and walking can assist social interaction. If active transport use is low, particularly where preference is given to the more socially isolated private vehicle, a corresponding reduction in the overall number and diversity of incidental social interactions would also be expected.
- while the close proximity of services will facilitate access by walking for those participants who live in the Town Centre, it also means that the distances are short and as such are not by themselves likely to allow achievement of recommended activity levels.

Part of the tender requirements for the development of The New Rouse Hill included a contribution to public transport infrastructure and the preparation and implementation of management practices that would encourage use of active transport. Although the objective at the time was to promote energy-efficient travel in line with the overall environmental objectives of the development there are obvious co-benefits in relation to improvements in personal health. The proposals in this regard in the successful tender include:

- construction of a bus transit station at the Town Centre, on the Parramatta-Rouse Hill T-Way.
- development of the Town Centre to include residential apartments, giving residents easy walking access to facilities.
- an integrated network of foot and cycle paths within the adjacent residential area, and relating also to the Windsor-Parramatta cycle path along New Windsor Road.
- lockers and/or racks for 150 bicycles in the Town Centre.
- showers for employees in the Town Centre.
- the development of a Green Travel Plan, with a nominated Green Travel Coordinator, by General Property Trust (GPT) as owner/managers of the Town Centre.

The Green Travel Plan includes:

- a target for 20% single vehicle trip mode shift to alternative forms by 2017.
- establishing a Green Travel Club where members commit to take an alternative mode of transport other than a car to and/or from the Town Centre at least one day per week. In December 2009 the Club had 1005 members, comprising 33% of Town Centre staff. Members have access to an online ride share data base, showers and secure bicycle parking.
- a *Walking and Cycling Guide to New Rouse Hill*, and a *Transport Access Guide*.

The Green Travel Coordinator role is currently undertaken by GPT's Community Engagement Manager. The Green Travel Club is limited to Town Centre employees. As such it does not relate to the Study participants or other residents unless they are also employed at the Town Centre. The Study did not analyse the success or otherwise of the Green Travel Plan; it is however noted that the initial commitments to active transport within the tendering process, and the existence of the Plan and of a dedicated Green Travel Coordinator provides an opportunity to further facilitate and promote active transport normally available.²⁰

Q.3. Do participants use public transport?

The relative number of public transport trips indicates levels of active rather than sedentary means of transport. Public transport is regarded as active transport because it generally involves a greater degree of walking than car use.

There is a low use of public transport.

As indicated in Table 4.2, only 8 participants (40%) use public transport for any trip and of these only four use public transport for half or more of weekly trips. Only 17.3% of all trips undertaken by the participants were made by public transport.

Q.4. Is public transport viable (convenient, comfortable, safe and affordable)?

Satisfactory access to public transport can encourage usage, and other associated active travel modes (often also provided there are accommodating facilities such as bus shelters and bicycle racks). In addition, public transport can facilitate access to destinations further afield than can be achieved by walking or cycling.

Only if use of the bus routes is practical. The new rail line should improve future viability.

Participants were asked about their level of satisfaction with their access to public transport. 17 out of 20 participants (85%) indicated they were either 'somewhat' satisfied or 'strongly' satisfied, with 12 out of 20 (60%) being strongly satisfied.

These levels of satisfaction are consistent with marketing material which links public transport accessibility with the promoted 'lifestyle' of New Rouse Hill:²¹

Public transport to local destinations and to Sydney is effortless for residents living at The New Rouse Hill.

Located alongside Rouse Hill Town Centre is the Transit Interchange, incorporating the T-Way bus station. The dedicated T-way connects The New Rouse Hill to Parramatta and Blacktown via a rapid bus-only lane, with connecting services to Castle Hill and Sydney.

The Bullet Bus also connects The New Rouse Hill to the Sydney CBD.

²⁰ Background information on the Green Travel Plan sourced from: <http://www.gpt.com.au/News-Media/Case-Studies/An-Inside-Out-Shopping-Centre#sthash.wVK2vXWs.dpuf>

²¹ http://www.thenewrousehill.com.au/Content.aspx?urlkey=rh_lifestyle

The future North West Rail Link will connect to Sydney via Chatswood, North Ryde, Macquarie Park, Macquarie University and Epping. The future Rouse Hill station will be conveniently located a short walk from home for residents of The New Rouse Hill.

However these factors have not translated into any significant use of public transport. as Table 4.2 indicates and noted above this does not necessarily translate to people using this mode of active travel. This is even though 17 out of 20 participants (85%) indicated that the ability to catch public transport was important to their health (with 13 (65%) indicating it was 'very' important, and only one (5%) indicating it was unimportant).

Currently, public transport options are restricted to buses – certain local bus routes plus the T-Way to Parramatta which acts like a light rail system (but with buses), and a direct bus to the Sydney city centre. Given the distances and spread-out land uses in the region and lack of associated networked public transport the low use of public transport is understandable.

It may be that completion of the North-West Rail Link which will give direct connection with the major employment areas at Norwest Business Park and other localities, including the City via interchange with the existing Northern line will assist the viability of public transport for existing trips; and may encourage changes in overall travel patterns to now use destinations accessible by rail. The possibility of this is indicated in a number of comments by participants expressing frustration as to traffic congestion on the existing major roads in the region during peak periods.

The focus in this Project on encouraging public transport use is to promote associated walking or cycling to and from the railway stations and any other public transport connections. In this regard, and given the current 'cultural' predisposition by many participants to use their car, there may well be the need for concurrent marketing and awareness campaigns timed with the opening of the North-West Rail Link aimed at encouraging residents to walk or cycle to the new station at the Town Centre (or at nearby Kellyville). In addition, there may also be a need for some associated footpath and cycle path amendments, particularly more direct footpath crossings of the central open space area.

Focus Group comment on public transport.

Even though we don't have trains I think the public transport system here is pretty good. The buses are pretty quick into the city.

Mm.

Ah, except in the middle of the day.

Yeah, you're right. It's good for business people.

Two and a half hours it took me once to get into the city on the bus.

Wow.

Because you come up here and you get on the bus to go to the city and guess where it goes first?

Castle Hill?

No it goes back up into the older part of Rouse Hill and then winds its way back down and around through Beaumont Hills and Kellyville.

It took me half an hour to get to Castle Hill.

I've done it too, yeah exactly. You're like, wow I could have been here in five minutes.

That's right [laughs].

Interview comments on public transport.

- Travel time to work is improving over last 5 years (especially public transport) but is still too long.
- I don't use public transport – I have a home office.
- Lack of train services – will be good to have it in the area.
- Use public transport – a little bit dissatisfied with it. Not convenient to go to work – travel times are too long.
- Transport services are becoming very crowded – but the infrastructure seems to be meeting the need – I'm hoping this continues.

Q.5. Do participants walk (or cycle) as a means of transport?

The relative number of trips by walking or cycling indicates levels of active rather than sedentary means of transport. Emphasis tends to be on walking, but similar health benefits arise if people cycle for otherwise walkable trips.

There is a low use of walking for transport.

The number and length of trips undertaken by walking or cycling for transport purposes is low (Table 4.2):

- only nine participants (45%) walk for any trip, and of these only three walk for 50% or more of weekly trips.
- only two participants cycle for transport, and of these one participant cycles for only 5% of weekly trips.
- even when walking and cycling are added together, only 10 out of 20 participants (50%) engage in these active transport modes.

There is however an apparent discrepancy in respect to walking for transport between the advice in Table 4.1 (about physical activity) and Table 4.2 (about transport modes). When asked about the actual number of hours spent in active exercise (either as transport or recreation) an additional five participants indicated they walked for transport compared to when they were asked explicitly about their usual modes of transport each week. The result is a total of 14 out of 20 participants (70%) who walk for transport (Table 4.1), and which could be said to be a reasonable proportion.

By way of explanation, all but one of these additional persons used public transport. The difference is likely to be as a result of them nominating the time spent walking to or from the public transport stop, but not separately identifying this as a 'trip' on the basis of being ancillary to the primary public transport trip.

Overall, the total number of hours spent walking by individual participants is quite low, meaning they need to engage in other physical activities in order to achieve minimum recommended hours (Table 4.1).

Q.6. Is walking viable for 'active transport' (convenient, comfortable, safe)?

The grouping, layout and travel distance between land uses, particularly destinations accessed daily influence the quantity and quality of walking, and therefore propensity to walk.

Yes – for local neighbourhood trips.

Participants were asked to rate 'how easy and pleasant it is to walk in your neighbourhood'.

Satisfaction ratings are very high: all participants are satisfied, with 16 out of 20 participants (80%) 'strongly' satisfied and four participants (20%) 'somewhat' satisfied. This would be expected given:

- the area is new, with the provision of footpaths and cycle paths an integral part of the development.
- as the Audit demonstrates, the overall quality of footpaths is high.
- overall distances between the residential areas and likely destinations (the Town Centre, T-way, school, and community facilities at Mungerie House) are short or moderate.
- participants report a generally high level of feelings of safety.

This accords with the marketing material for the residential components of the estate which lists walking for transport to schools and to the forthcoming railway station with a promoted New Rouse Hill 'lifestyle' (though curiously this material does not mention walking as a way to access the existing Town Centre bus station which is in the same location as the future railway station):²²

Imagine waving goodbye to your kids as they walk safely to school with their friends who live next door. Children living at The New Rouse Hill can walk to Ironbark Ridge Primary School and the new Rouse Hill High School that opened for Term 1, 2009. ...

...The future Rouse Hill station will be conveniently located a short walk from home for residents of The New Rouse Hill.

On this basis it could be concluded that walking for active transport is viable. However this has not translated to actual high levels of walking for transport. The reasons are likely to be similar as those which have led to the high use of the car for transport (refer Q. 2), being:

- there is a lack of viable public transport alternatives for the journey to work, which may in the future be alleviated with the opening of the North-West Rail Link.
- a lack of time to use other modes, due to other travel pressures for shopping, child care, and taking children to and from school, etc.
- to avoid having to carry shopping, with 14 out of 20 participants (70%) indicating they used their car to access their main food shops (with only six participants (30%) walking).
- a general predisposition or 'culture' to use the car because of ease and convenience.

When initially considering the tendency for participants to use the car for shopping trips even though the distance to the Town Centre is not great, it was thought that this might reflect a propensity to undertake one large family-sized shop per week or the like, meaning a large volume of

²² http://www.thenewrousehill.com.au/Content.aspx?urlkey=rh_lifestyle

purchases to carry. However this was not supported by responses when participants were asked about the number of times they shopped for fresh fruit and vegetables per week. The frequency was quite evenly distributed between once per week (20%), twice (30%), three times (25%) and more than three times (20%). Some further inquiry may be worthwhile to determine the actual reason for the high propensity to use the car for shopping (which is mainly done locally), whether the size of goods to be carried is an issue, and whether residents could be encouraged to walk more.

As part of this the focus group briefly explored the potential of people using personal shopping trolleys to carry their shopping in, as a way to facilitate more walking to the Town Centre:

I've got one [laughs]. My daughters bought it for me because they said it's cool, it's not a nana trolley because it's got something cool on it.
They're coming back into fashion aren't they?
Yeah.
Do you see people with shopping trolleys in Rouse Hill?
They are, yeah.
I've got one too, I take mine. Because I live here [in the Town Centre], so in actual fact it's a real problem if you've got no trolley. Because you've got to take it up the lift and then you've got to take it back down the lift and all the way back to the shops. It's actually much harder than if you were in the car park. So it's much easier to take your own shopping trolley and not have to do the...
It makes sense, yes.
...shopping trolley's the thing.

Associated comment in relation to this discussion also appeared to confirm a habitual or 'cultural' disposition to the favouring of car use:

That's walkable for you, isn't it?
Yes I had to walk my son to school once. It was walking kids to school day. But usually I drive there.
Do you drive when you go to your church, or just to take the kids to school?
Yeah to school and to church as well, we actually do drive. You can actually walk there too. Yeah, it's easier [to drive].
What would it take you to walk?
No reason I guess, just habit, that's all I'm saying. It's just normal, yeah.
What would it take to break your habit?
Change of mindset I think, yeah.
Another thing would be, it depends on what your wife wants to wear to church. If she wants to wear high heels...
That's true, yeah.
If it's hot weather...you don't want to arrive in church all hot and sweaty either.
Yeah, that's right.
But there's lots of other times that you can walk.

However, comment in the interviews and discussion in the focus group also points to an additional explanation for the low propensity to walk generally in Rouse Hill for transport purposes – that cumulatively the overall ambience of the area does not encourage the degree of walking that it

could, and should, and notwithstanding that distances are relatively short and the quality of walking infrastructure is high. Two components in this regard have been identified.

The first relates to the current stage of overall construction, and include:

- the current undeveloped staged components adjacent to and surrounding the Town Centre generating a feeling of a 'no-man's land' of low amenity that needs to be traversed by pedestrians walking between the residential area and the Town Centre.
- uneven footpath paving caused by the roots of growing, recently-planted trees and by periodic excavation work associated with on-going building work.
- current construction barricading still limiting direct access through some of the open space areas in the eastern part of the estate.

Again, some of these concerns are illustrated by two sets of discussion in the Focus Group.

I remember I think you said in the interview, that you didn't always feel comfortable walking round the streets either, is that correct?

The way from the Rouse Hill Town Centre back to my home, because those days you don't have street lamps. But now they've got them so it's okay. At first there weren't any so it was quite scary, because especially you never know if somebody's hiding in the bush and just jump on you. [Laughter].

So are you walking more now that there's some more lighting?

Yes, I just realised, yeah I think only two or three weeks ago, or a month ago yeah I think. So it's safe now.

The footpaths are starting to be quite bad. It's where the trees are...

Uprooting them, that kind of thing, yeah.

The tree roots are growing and some of them have risen like this much, and that's bad. It's bad when you're pushing a pram, it's bad when you're walking, if you're not paying attention, because you trip, which I have done. It would be bad to cycle on.

Mm.

The other thing that's bad is when they're building places and they cut sections out of the footpath. I don't know why they need to do that, surely - but anyway, that's a development thing. Then they temporarily fill it but they do a really bad job and it's chunk, chunk, chunk. At the moment that's all along Caddies Boulevard. So on one side you've got where they're building and you've all chunks out of the footpath. On the other side you've got where all the tree roots are growing up. So both sides of the road, the footpaths are in need of repair and it's not good.

Positively, these concerns should either be rectified as a matter of course as construction work is progressively completed, and/or can be rectified with additional attention to how future construction work is designed and managed.

The second component is more fundamental to the overall structural design of the estate:

- a general feeling of separation between the eastern and western parts of the estate (and importantly the eastern area and the primary destinations of the Town Centre, T-way interchange and the future railway station) generated by the central open space area. Although there are connecting paths, these tend not to be designed as direct 'transport' routes but rather are curvilinear in a more 'recreational' sense.

- as noted in the Audit, the central drainage swales in some of the larger roads (constructed in accordance with Water Sensitive Urban Design principles) inhibit direct pedestrian crossings, and the overall experience of the auditors was that in the residential precincts the car was prioritised over the pedestrian and cyclist.
- there is an apparent lack of connection to areas outside the estate and which could comprise potential travel destinations. An example of this, relating to access to adjacent nearby sporting facilities was raised in the focus group:

There's no oval at all around here?

Not that I know of.

Further up into old Rouse Hill, there is.

Whereabouts in old Rouse Hill?

Behind Ironbark Public School, yeah.

Yeah down Withers Road there's...

Oh yeah, it's kind of hard to get down that without driving though. It's not a very...

There's an oval up - yeah just off Commercial Road and Withers Road.

I just can't see myself kind of walking that way. It just - the road, there's no footpath or anything.

Okay, no, that's not the best way to go. The best way would be to walk down here, go down to the lake across the bridge and there's a pathway that goes...

That's right.

...up the hill. On one side is the school and on the other side is the oval.

That's where my bike track took me when I got lost. Yeah so that's where I ended up. I saw the oval.

It might be nice if there was like some signage or something on the footpath so you know...

Here also an additional potential structural issue should be noted. Although the Audit assessed the quality of the pedestrian environment across the neighbourhood as generally high, it was also noted that while the current low volume of vehicular traffic means it is not difficult to cross the larger roads this may change as development increases. It may be necessary in the future to install new pedestrian crossings along the busier roads, such as Caddies Boulevard.

Interview comments on barriers to walking for transport.

- Can't carry heavy loads, so stopped walking to the shops.
- Carrying capacity! If I'm going somewhere that is accessible by walking, then I will walk. If I need to carry big loads, I will take the car.
- I sometimes walk to the shops if I force myself to. But I am not a big shops person, and need to drive to bring home the shopping.
- For larger shopping purchases I use the car.

- I work at Norwest, so cannot walk there.
- Not really – work is too far away. I walk to the shops because they are super close!
- Walk to the shops for small purchases. Too far to go to other places.

- No reason to walk – everything is at home (I work from home); the shops are 10 minutes away and would mean having to carry purchases; with taking kids to school it's more time-efficient to go by car so I can then get back to work (at home).
- Driving is more convenient – no access by walking to work, and it's easier to drive for shopping, when having to carry it home.
- Most of the places I go are outside the neighbourhood. If I go to the shops, it's usually on the way home from somewhere else, so I'm already driving.
- No – just laziness.
- I usually have the kids with me – one in a pram, the other one walking. There's no direct route to work on public transport – it takes too long, and is not practical with dropping the kids off at daycare.

- No [I don't walk] - magpies!
- The route to the Town Centre is not very direct at present so I only walk there occasionally. I will probably walk there more when they open up more direct routes.
- The amount of traffic is starting to get busier, though not that bad. I suggest some speed humps could be put in – there are some speeding cars.

- At night – I don't want to walk home from work because it's very dark and isolated where it's still under construction on Caddies Boulevard – I don't feel it's safe. I get my husband to meet me.
- I feel a bit unsafe at times in the unbuilt-on areas next to the Town Centre.

Q.7. Do participants cycle as a means of transport?

Relative number of trips by cycling indicates levels of active rather than sedentary means of transport.

No.

There is almost no use of the bicycle for transport (Table 4.2):

- only two participants use a bicycle for transport.
- for one person it is their primary transport mode, for the other it is only used occasionally.

It was however common for participants to indicate that they would like to do more cycling in the future, particularly as their children became older. Although this comment is probably more orientated to cycling for recreation (refer Q.13 and Q.14) it is possible that this interest could also be encouraged to include cycling for transport, including to and from the new railway station for the North-West Rail Link.

Q.8. Is cycling viable for 'active transport' (convenient, comfortable, safe)?

The grouping, layout and travel distance between land uses, particularly destinations accessed daily influence the quantity and quality of cycling, and therefore the propensity to cycle.

Yes – for local neighbourhood trips.

The Audit found that in terms of infrastructure provision New Rouse Hill was highly supportive of cycling activities, with the only suggestion being that structurally separated cycle lanes be considered on main roads to increase safety and amenity for cyclists. The cycle routes traversing the central open space corridor and linking the eastern and western parts of the estate are shared with the walking routes, and as commented above in relation to walking for transport are curvilinear suggesting they were designed more with 'recreation' rather than 'transport' activities in mind; though it is likely this in itself would not be a barrier to cycling for transport (as different to walking for transport) given overall distances are short.

However, this supportive infrastructure has not generated any particular level of usage of cycling for transport.

The low use of cycling for the journey to work is understandable on the basis that most participants need to use their car for this destination. The low use of public transport for the journey to work also means there is no associated opportunity to cycle to a bus stop. This may change when the forthcoming North-West Rail Link opens.

Further, and as indicated in interview comments and perhaps associated with the 'culture' giving preference to car use, many participants indicate they do not have a history or affinity with cycling.

In addition, and notwithstanding the assessment of the auditors, participants who do cycle did nominate a number of concerns with respect to the nature of the cycling environment. Some of this relates to maintenance (similar to earlier comment in respect to walking) and some is more fundamental in terms of the overall design and layout of the residential streets and associated narrow allotment frontages resulting in a high number of driveway crossings that need to be watched:

... we have some footpaths that are really particularly bad, in terms of not being level. I've got a friend who went riding a bike and came down from just on the footpath, on the cycle path, and actually got a really badly sprained, strained wrist, tendons, ligaments, whatever it is, just because of the bump going along the footpath. You've got to be really aware of where you're riding to avoid sort of...

But it's interesting you also say that you don't find the residential streets safe for cycling because...

Well there'd be, like in terms of cycling, because you've got more streets, so going down and up and gutters and stuff, and then you've got cars potentially backing out and you've got dogs potentially living there, I don't know if they are or not. But it's more of an issue for cycling around a residential housing area, than it is for a proper main street cycle track up the main drag. Yeah ...

Interview comments on barriers to cycling for transport.

- Not a bicycle lover.
- Don't own a bike – would like to! (2 comments)
- Don't have a bike – have been meaning to get one and would like to try it.
- I don't currently have a bike – but am hoping to get one!
- Time
- I used to cycle when I home-schooled my son and had more time. I want to get going again. I will do a lot more cycling when I give up my job later in the year, and we get our bicycles in order again.
- Don't have a bike. Would be interested in joining a morning bike group when I have more time.
- Haven't got a bike, not really interested.
- Do not/cannot ride
- Have had recent back surgery.
- Our children are not cycle age – maybe will cycle when they're older.
- Don't have a bike – plan to get one when kids are older.
- It's not practical with a two year old.
- Not interested in cycling – the cycleways are disjointed, and you still have to cross streets, so I don't consider it to be safe.
- I've never tried it, so am hesitant. I'm not confident because it's been a long time since I rode a bike. Also, I don't have a bike.
- Work is too far away.
- Destinations are too close – it's not worth it. Also I don't want to cycle in work clothes.
- I cycle for exercise, so trips to the shops aren't far enough. I also wouldn't be able to fit much stuff on my bike.

Q.9. Do participants use stairs?

Using the stairs rather than a lift or escalator provides an opportunity for incidental physical activity.

Yes.

Participants were not asked about their use of stairs and so there is no data to answer this question.

That said, most single dwellings in Rouse Hill are double storey (given limited allotment sizes) and so use of internal stairs would be obligatory. The situation in respect to other parts of the built environment is different – see below.

Q.10. Is use of stairs viable?

The visibility of, and ease of accessibility, convenience and comfort of stairs increases the propensity to use them.

Yes.

Most single dwellings in Rouse Hill are double storey and so use of internal stairs is obligatory.

In the Town Centre most shops are at ground level. The Council library and community centre are on upper levels, however the stair access is very prominent, wide and visible (with the lifts relatively hidden). Stair access to the basement carparks is also relatively visible, being located adjacent to the lifts and with reasonable width.

Future residential development is to include multi-storey buildings. Visible and easy-to use stairs to at least the lower levels should be considered in their design.

The new railway station at the Town Centre is to be above ground. Similarly, visible and easy-to-use stairs should be included in the design.

Q. 11. Do participants walk for recreational physical activity?

Recreation walking (either leisurely or vigorously) is a good way to achieve required minimum hours of physical activity to maintain health.

Yes.

Walking for recreation was undertaken by 14 out of 20 (70%) participants. Although this overall figure is the same as for the number of people who walk a means of transport (see Q. 5) only 10 participants said that they walked for both transport and recreation.

The total number of hours spent walking for recreation by all participants is one-third higher than the total time spent walking for transport. That said, the total amount of time each person spends walking for recreation in a week is generally quite low, though varies between individuals. Further:

- only two participants achieve the minimum recommended hours of moderate physical activity by walking alone.
- of all participants who walk for recreation, only nine (45%) achieved the minimum recommended total number of hours spent in all activity

These relatively low figures relating to actual time spent walking tend to be inconsistent with participant responses when asked to rate their view on the importance of 'being able to walk around the local area' to their health. 17 out of 20 participants (85%) indicated it was important, with 12 participants (60%) indicating it was 'very' important. Only two participants (10%) indicated it was not important, with one being neutral.

The Study did not distinguish between moderate and vigorous walking. All walking is classed as moderate physical activity.

Q. 12. Is walking viable for recreational physical activity (convenient, comfortable & safe)?

The provision of comfortable, safe, convenient and attractive routes can encourage the propensity to walk (either leisurely or vigorously) for recreational physical activity.

Yes.

Participants were asked to rate 'how easy and pleasant it is to walk in your neighbourhood' (whether for recreation or transport). Satisfaction ratings are very high: all participants express satisfaction, 16 out of 20 participants (80%) 'strongly' satisfied and four participants (20%) 'somewhat' satisfied. This would be expected given:

- the area is new, with the provision of footpaths and cycle paths an integral part of the development.
- as the Audit identified, the quality of walking infrastructure is high.
- distances are short or moderate.
- participants also report generally high levels of feelings of security when in public areas.

As such, it could be concluded that walking for recreation is viable, and the relatively high proportion of participants who walk for recreation (14 out of 20, or 70%) would confirm this.

Nevertheless, it would be worthwhile to investigate actions aimed at increasing the amount of time spent walking for recreation as a way of increasing levels of physical activity which, overall, are still low. Comment by participants tend to suggest that while walking for recreation for some is a pleasant experience there is a wider lingering ambivalence about actually getting out and walking for any meaningful distance (or time). This is notwithstanding that a high proportion of participants also cited walking as important to their health (Q.11).

Interview comments on walking for recreation:

- I just don't walk – I don't really think about it. I'm also busy gardening, doing house-work, cooking, looking after the kids. I used to have a dog but not now.
- Time (7 comments)
- Laziness
- I try to walk more days than not. This will increase when I give up work later in the year.
- I just don't do it.
- I do other activities for recreation and prefer higher intensity activities for exercise.
- I have young kids, and too much housework.

- Some main roads that are very busy and loud – I try to avoid those roads.
- The boredom of the walk. In England, everything is open to you. Here you are restricted in where you can go. And there is nothing to look at. We want to look at things – so will often put the dog in the car and drive to the Sydney Water Lakes area to walk.
- I encountered two brown snakes once on a walk near Caddies Creek and am now too scared to walk there.
- There is a very busy road next to the cycling and walking paths, so it's not very pleasant. Another walking track is a bit isolated, so I don't feel safe walking by myself. No happy medium!
- Would like to but not comfortable walking past people's homes – for my own 'personal' reasons.

- Poor weather.
- No [I don't walk] – magpies!
- Sometimes the heat stops me from walking.

- It's pleasant to walk on the occasions I have walked.
- No barriers – it's beautiful out here.

The following focus group discussion elaborates on a number of these interview comments:

- that there are pleasant and interesting places in and around New Rouse Hill to walk.
- however, there is limited variety just in new Rouse Hill itself, and there needs to be greater awareness of other locations.
- there is a degree of lethargy about walking, and a consequent need for an initial personal effort to start walking.

For me it's kind of the footpaths and the creek and that you can take all these different paths. You kind of have no excuse because you can just go outside your door and start jogging along the paths and wander round some nice little places and then loop back around.

How long would that take you, to do the loop?

Depends on what mood I'm in or what direction.

Because in some of the interviews people have said, well yeah it's a really nice place to go for a walk. They didn't talk about jogging, but going for a walk with dogs and kids and so on. But after you've done it two or three times, you've seen it all and it gets a bit boring. So now they're putting the dogs in the car and driving somewhere else. Which isn't really what it was all about. But you're quite content with the way things are?

I am. Well, no matter where you live, it's eventually going to become a bit repetitive. But I think there's enough - there's not like there's just one route or two routes, there's at least three or four different ways you can go. I just like to kind of get lost and then - until I run into somewhere where I know where I am, and then work my way back.

If you want a bit of a real change of scenery, you go across the road and go for a walk through Castlebrook Cemetery, that's really quite good. It's quite interesting, it's a good place to walk.

Is it easy to cross the road?

Yeah there's pedestrian lights. You might have to wait for a bit, but that's okay, you get across eventually. There's lots of different ways to walk around this place.

You can head out up into Beaumont Hills, or you can head further up into Rouse Hill. Or you can cross over and, as I said, go up the cemetery, or head down and explore up through Kellyville Ridge. You can go a lot of places.

Maybe the people who gave me the feedback have not been exploratory enough in themselves and in searching out possibilities ...

Yeah. Or it depends on how they're - like if they just want to go out and go for a little stroll, okay. But if you want to go out and go for a good, fast, long walk there's endless opportunities and ways to go. Yeah so you don't get bored.

Yeah. I think Rouse Hill, more than other suburbs, has that kind of truth about it, that you can go all these different ways.

If I go for a walk I tend to go up the main road, just because I think it's safer. Windsor Road, yeah.

You're happy to walk along Windsor Road?

Not overly, but because I don't sort of live round the houses, then I don't really know that area so much. Venture down, it's really nice. We're very friendly!

I probably should really but yeah it's just not what I've tended to do.

No, why don't you feel comfortable in the other areas?

I guess - well I haven't really been, so I wouldn't say that I don't feel comfortable but...

Just worried about getting lost?

Well no, not overly worried about that. But just, I guess, it's got the sort of - I guess the reason is that, when I cycle, I don't cycle around the houses because that's people backing of driveways, all that sort of stuff. So I cycle up and down Windsor Road. So then I've just sort of - when I've gone for a walk, I've tended to do the same thing and head for the same known, oh yeah that's where I can go. It's not the greatest place to walk and I probably would be better off, as you say, walking around the houses, because walking's different from cycling. But it's just not what I've done, yeah.

An additional structural issue should also be noted. Although the Audit assessed the quality of the pedestrian environment across the neighbourhood as generally high, it was also noted that while the current low volume of vehicular traffic means it is not difficult to cross the larger roads this may change as development increases. It may be necessary in the future to install new pedestrian crossings along the busier roads, such as Caddies Boulevard.

Q. 13. Do participants cycle for recreational physical activity?

Recreation cycling (either leisurely or vigorously) is a good way to achieve required minimum hours of physical activity to maintain health.
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Few people cycle for recreation.

Only five out of 20 participants (25%) said they cycled for recreation (Table 4.1). This is three more than the number of participants who cycled for transport (both of whom also cycled for recreation).

Only one participant met the minimum recommended number of hours spent in moderate activity by cycling. Generally the total individual amount of time spent cycling per week is quite low (two participants cited only 20 minutes), and one participant who cycled for recreation did not achieve the minimum recommended number of hours spent in all physical activity.

As was found when discussing participants' interest in cycling for transportation, there appears to be no particular familiarity with or 'culture' relating to cycling. However, a number of participants did also indicate they would like to do more cycling in the future, particularly as their children became older. Potentially, this could be applicable to both cycling for recreation and cycling for transport.

The Study did not distinguish between moderate and vigorous cycling. All cycling is classed as moderate physical activity.

Q. 14. Is cycling viable for recreational physical activity (convenient, comfortable & safe)?

The provision of comfortable, safe, convenient and attractive routes can encourage the propensity to cycle (either leisurely or actively) for recreational physical activity.

Yes.

Participants were asked to rate 'how easy and pleasant it is to bicycle in your neighbourhood' (whether for recreation or transport). 14 participants (70%) indicated a degree of satisfaction: six participants (30%) were strongly satisfied, and eight participants (40%) were somewhat satisfied. There were no expressions of dissatisfaction: the remaining participants were either neutral or answered 'do not know', reflecting the low propensity to cycle in any case.

The Audit found that in terms of infrastructure New Rouse Hill was highly supportive of cycling, with the only suggestion being that separated cycle lanes be considered on main roads to increase safety and amenity (there is already a separate cycle way along Windsor Road, adjacent to the estate).

However, this has not generated any particular level of usage of cycling for recreation (Q. 13). Similar to responses made in respect to cycling for transport, the low propensity to cycle for recreation appears to be principally related to low personal histories and affinity with cycling, and to constraints arising from current stages in the family life cycle.

Interview comments on cycling for recreation:

- Not a bicycle lover.
- Don't own a bike – would like to!
- Don't have a bike – have been meaning to get one and would like to try it.
- Time (2)
- Our bikes were stolen and we haven't got them back together again yet.
- Haven't got a bike, not really interested.
- Have had recent back surgery.
- Do not/cannot ride.

- Our children are not cycle age – maybe will cycle when they're older.
- Don't have a bike – plan to get one when kids are older.
- The age of my children.

- Not interested in cycling – the cycleways are disjointed, and you still have to cross streets, so I don't consider it to be safe.
- I've never tried it, so am hesitant. I'm not confident because it's been a long time since I rode a bike. Also, I don't have a bike.
- The cycling path is next to a main road. Would want a connected, segregated cycle way.

In addition, and notwithstanding the assessment of the auditors, participants who do cycle did nominate a number of concerns with respect to the cycling environment. The following comment from the focus group is applicable to cycling in general (ie. for transport and for recreation):

... we have some footpaths that are really particularly bad, in terms of not being level. I've got a friend who went riding a bike and came down from just on the footpath, on the cycle path, and actually got a really badly sprained, strained wrist, tendons, ligaments, whatever it is, just because of the bump going along the footpath. You've got to be really aware of where you're riding to avoid sort of...

But it's interesting you also say that you don't find the residential streets safe for cycling because...

Well there'd be, like in terms of cycling, because you've got more streets, so going down and up and gutters and stuff, and then you've got cars potentially backing out and you've got dogs potentially living there, I don't know if they are or not. But it's more of an issue for cycling around a residential housing area, than it is for a proper main street cycle track up the main drag. Yeah ... The streets are not the widest in the residential part. I don't cycle on the roads, I only cycle on the footpaths or the cycle tracks...

The following further focus group conversation is explicit to cycling for recreation:

When I cycle, I don't cycle around the houses because there's people backing out of driveways, all that sort of stuff. So I cycle up and down Windsor Road.

I mean the footpaths are okay but if you were pushing your stroller, like I am often with the grandkids, and someone was cycling near you, that would be a problem. Whereas out on Windsor Road there is a shared cycle and walking track.

Yeah that's right.

I mean you could cycle in the creek area along the walk path there.

Is that a cycleway as well?

Yeah.

I've cycled - I did that once and came down, back down on Windsor Road and then in. Then there was, like the cycle track went in left. So I went, oh yes, I'll go this way for a change, and it was sort of down through residential. It just ended.

Petered out and I didn't know where I was. Then I ended up managing to come back down near the lake and across the lake and come back.

It was only because I could see the big buildings here, that I knew where I was. I ended up at the top of the hill because I was so lost I went, well at least if I get up high I might be able to see where I am, to figure out which direction I was in. It was hopeless, I wasn't happy at all. Hence I just go backwards and forwards down the main street now.

I'll give you a guided tour one day!

Yeah. Well, the cycle track just ended, like it didn't keep moving, it just came to a dead end. I'm like, what do I do now?

I think [it might now] - how long ago was that?

Female: It was probably a year ago or so.

There's still a few places like that though, where it does just come to an end.

But I imagine there's plans to continue it through.

It's going to be extended, yeah, I think so, I hope so. There's meant to be a whole new track.

Then the other thing I wanted to say back on the clean environment and relating to the footpaths, is that there's often, on that cycleway down Windsor Road, lots of glass where people have thrown out glass bottles and stuff, smashed, yep.

Yeah.

Often not cleaned up for ages and it gets just worse and worse and worse. Last year - actually it was after there was some charity cycle ride that they went down Windsor Road - I think the council must have got so many complaints, because then the weekend after that they were then cleaning it all up. It's like, oh just that much too late weren't they. But yeah it's pretty sad that they don't - that one it happens and then they don't clean it up regularly and it gets really bad.

Q. 15. Does public open space provide for recreational physical activity?

An important function of public open space is to provide facilities for both vigorous and less-vigorous recreational physical activity, especially for those activity modes which require spatial area and/or dedication of particular facilities and/or groups or teams.

Yes, in part.

Within the residential area of New Rouse Hill there are extensive open space areas with a diversity of functions and facilities, ranging from small and large playgrounds, walking and cycle tracks, BBQs, an amphitheatre, a large water feature, and riparian conservation area. These areas are available to the public at large. As an example of this accessibility Study officers found, when approaching

people in and around the playgrounds for potential interviews, that many users were from outside the New Rouse Hill estate Study area.

Although available for walking, running and jogging and other personal 'active' physical activity, these open space areas do not provide for any 'structured' recreational physical activity. There are for instance no public exercise stations or equipment, and no public sporting facilities.

That said (and as discussed under Q.16):

- various active physical recreation facilities are available to residents as Community Title facilities.
- there are other public Council owned and maintained active physical recreation facilities in the immediate area surrounding the estate, including sporting fields and netball courts immediately adjacent to the north-east of the estate.

Q. 16. Are other facilities available (by either public or private providers) for recreational physical activity?

Some recreational physical activities will not be able to be provided within public spaces at the neighbourhood scale (e.g. sporting ovals, larger parklands, trails) – but still need to be accessible to invite use. Private spaces (e.g. indoor gymnasiums, yoga studios) if accessible (distance, operating hours, provision of child care etc.) allow additional opportunities for recreational physical activity.

Yes.

There is an extensive range of recreational facilities available in New Rouse Hill:

- two privately-operated gyms in the Town Centre (one open 24 hours).
- a variety of active recreation classes held in the various meeting rooms in the Council-managed Community Centre in the Town Centre.
- various facilities are available to 'owners, occupiers, residents and their guests' under the Community Title arrangements for the residential components of the estate. These comprise a swimming pool, tennis court, mixed use ball court and gym in the Mungerie House area, and an additional swimming pool in the eastern residential area. The access arrangements for these facilities are shown in the Table below. Security Access Tags are available to owners and residents over 16 years of age.

Facility	Hours of availability	Access arrangements
Tennis court	7.00 am – 8.00 pm	Security Access Tag. No booking.
Mixed Use Court	7.00 am – 8.00 pm	Open access. No booking.
Gym	6.00 am – 10.00 pm	Security Access Tag.
Swimming pool	6.00 am – 10.00 pm	Security Access Tag.

Only minimal comment was made by participants about these facilities, with most being about the management arrangements in respect to the Community Title facilities. The swimming pool in the eastern precinct was not operational at the time of the interviews and focus group, but was open at the time of completing this Report. One participant indicated in the interviews that they would likely take up swimming for exercise when the pool opened.

The only comment about a possible lack of recreation activities was made by one participant in the focus group who listed number of desired facilities when asked about the 'things I need to be healthy, but do not currently have': a badminton court, a soccer field, and running oval. The comment is of interest given, as further discussion in the focus group at the time confirmed, various oval facilities do in fact exist in Council-managed reserve land adjacent to the north-east corner of the estate. The issue was that the participant was not aware of its existence given these facilities are somewhat hidden, although one is directly connected with the estate via a joint walking and cycling path. The lack of realisation of the existence of these facilities suggests some need to ensure better knowledge of available facilities generally, and perhaps better 'way-finding' in the locality overall.

The reference to a badminton court obviously relates to a personal interest. An internet search indicates that there are badminton courts and player competitions in the wider local area that could be accessed – though would require access to private transport. It may be of use to investigate whether this would be a useful additional facility to provide given it would cater for the youth demographic of the population, and would be relatively maintenance free and self-managing. It might also be able to be incorporated within the existing informal ball court at Mungerie House.

Focus group comment about availability of active recreation facilities.

Some of the other things raised here are about extra facilities – a badminton court, no soccer field or running oval. There's no oval at all around here?

Not that I know of.

Further up into old Rouse Hill, there is.

Whereabouts in old Rouse Hill?

Behind Ironbark Public School, yeah.

Yeah down Withers Road there's...

Oh yeah, it's kind of hard to get down that without driving though. It's not a very...I just can't see myself kind of walking that way. It just - the road, there's no footpath or anything.

Okay, no, that's not the best way to go. The best way would be to walk down here, go down to the lake across the bridge and there's a pathway that goes up the hill.

That's where my bike track took me when I got lost. Yeah so that's where I ended up. I saw the oval.

It might be nice if there was like some signage or something on the footpath so you know...

That's a good point. Sometimes there are facilities there, but there's no direct way to get there?.

Yeah.

Yeah.

Well that's not really the centre of the community. It's kind of on the main...

On the edge.

Well I've never known of a route to get there, there's no kind of obvious route to get there. Because you drive past there on the kind of main road and there's just...it's like a gravelly kind of road as well and there's no footpaths on either side. So I wouldn't...

Not being aware of that footpath...

You can see it from the lights because at night they turn on the lights.

You can see it but you don't know how to get there?

Yeah.

The management issues raised by participants related to:

- (i) a lack of booking arrangements for the tennis court, with no way of knowing whether the courts are available until one goes there. It was suggested that, as a result:
 - people are less likely to take advantage of the facility because tennis can only be played as a group and it was potentially embarrassing to make an arrangement with someone only to arrive and find the court already occupied.
 - potential patrons are then more likely to drive to the court rather than walk so that if it was already being used they could return home quicker.

My other point that I just wanted to remember to mention is, that I'd like to play tennis on the tennis courts, but there's no way to actually book it or organise it.

Yeah it's just a case of...

So the concept of - and so you just go down there and see if it's free, if it happens to be free or not when you arrive. Which is fine, except for the concept that I wouldn't - I can't play tennis by myself. So I have to organise someone else to come and say, do you want to come over and play tennis with me and invite them to play tennis. We get all dressed up with our tennis stuff and head down there and then find that the court is already being used. You go, oh sorry about that.

And there's somebody else waiting in front of you. Well I mean - so I'm not game, I just haven't ever done it. Because I don't know if it's going to be a problem or not.

It is free a lot but like yeah.

Yeah but like the time I would do it, would be the time I turn up there and it'd be like, oh no sorry. It's just too daggy to invite someone over to go, oh no it didn't work.

Weekdays in the middle of the day it's pretty free...

Not on weekends.

So do you need a swipe card to get into it?

Yeah.

But it's all the people in the houses, as well as all the people in the units, have access. So how do I know when someone else is going to be there?

Yeah, when I was up there I saw a couple of people and their young child turn up in a car and walk off with their rackets to the court. I thought, why are they driving, where have they come from, come from out further away?

Well I have to drive, well I probably would drive to go from here to there.

Well especially if you don't know if it's free or not because otherwise you've got to walk back again

Yeah.

You've got.

10, 15 minutes walking there, 10, 15 minutes walking back.

Yeah, well that could be the exercise.

Yeah [laughs].

It's the only tennis court and it's right on the periphery of the estate.

So if you were in the far corner, and if you had kids, you might drive, rather than walk. I'd walk ...

- (ii) the etiquette of users of the swimming pool, combined with a lack of governance arrangements to deal with any issues (as discussed under Q. 23). As an example, participants in the focus group raised an incident where a group of children had brought their dog into the pool.

There's a couple of other incidents ... There was once when there was actually a dog inside the swimming pool. It was a really hot day and I guess the kids decided to bring their dog... Bring their dog to the pool, great. ...for a swim in the swimming pool, with everybody else in the pool as well. So I don't know what was happening then.

So what happened then? Did people say, oh you really shouldn't have a dog?

No dogs.

Yeah because there's a sign that says there's no pets allowed. But, because there's quite a large group of people who's gone there with their dog and they've just decided to do exactly that. So I don't know, I wasn't swimming at the time, but I was just in the - I was having a birthday party in the house where you've got social events. The guests was just looking at this dog and was just wondering, what the heck is happening here, why is the dog swimming in the pool? Oh my gosh.

In addition, the Study audits also note a number of matters that should be addressed:

- (i) the scale of some of the Community Title facilities provided – in particular the size of each swimming pool and of the gym – are quite small. Although this was not raised as an issue by the participants, this may be because the overall number of residents, and hence potential usage, is at present relatively small. Additional detached housing and medium-rise higher density housing areas are still being developed. A number of the higher density buildings were being marketed at the time of preparing this Report and the marketing material made reference to the ability to use the existing Community Title facilities. It may be prudent to assess whether these facilities may need to be expanded to cater for this increase in population.
- (ii) the multi-purpose handball court in the Mungerie House area was padlocked at the time of a subsequent visit to the estate by Study officers, and which coincided with children leaving schools in the afternoon and potentially using this facility. There was no notice giving an explanation of the padlocking, or when the facility would be open.
- (iii) the 'operational guidelines' for the Community Title facilities state that persons under 16 years of age 'should be' accompanied by an adult. Further, Security Access Tags are only available to owners and residents over 16 years of age. This age limit may generate issues in the future as the age of children on the estate increases. High school students in particular would be capable of using the facilities without 'adult' (which is not defined in the guidelines) supervision even though they are under 16 years of age. The potential for this was alluded to in a further Focus Group comment regarding the swimming pool:

That's the other thing, because they haven't got the pass to use the facilities. So some - it's usually the younger generation, I don't know, you know 14 or 15 years old - and they just want to be, I guess, smart or whatever. They try to climb over the glass fence to get into the swimming pool, because you can't get in unless you've got a pass. So this glass is quite fragile so I was really concerned that it might break under their weight. Yeah so there was quite a few of these things.

Summation – Physical activity.

- (i) Only 12 out of 20 participants (60%) achieve recommended minimum number of hours of physical activity per week. These activity levels are only marginally better than the NSW average of 54% (for adults aged 16 years and older).²³
- (ii) This is the case even though there are high levels of personal mobility and access to recreation facilities (whether public, private or part of the community title system), and the quality of the general walking and cycling environment in New Rouse Hill itself is high. Further, and unique to a development such as New Rouse Hill, there is also a Green Travel Plan of actions to encourage 'active travel' and a dedicated Green Travel Coordinator tasked with its implementation.
- (iii) Personal travel is overwhelmingly undertaken by car rather than by 'active travel' modes. This is mainly due to:
 - inadequate access to employment by public transport (notwithstanding the T-way system).
 - a culture that emphasises car use for its perceived comfort and convenience.A lack of direct access across the central open space areas may also reduce the propensity to walk for transport (as different walking for recreation).
- (iv) Where participants do achieve the recommended minimum hours of physical activity per week this is made up of a combination of activities, mainly through 'moderate' exercise. There is a risk, when nominating moderate exercise that there will be under-estimates in the amount of time cited, and in the degree of exertion and hence cardiovascular efficacy.
- (v) Although levels of walking for recreation are reasonably high, with 14 out of 20 participants (70%) engaged, there is also an apparent ambivalence to this activity and total amounts of time individuals spend walking for recreation are generally low.
- (vi) Levels of cycling for either transport or recreation are very low even though cycling infrastructure is generally good. Although there is only a limited knowledge or 'culture' around cycling participants also cite a high level of potential interest in cycling in the future that should be drawn on as a way to increase overall levels of physical activity.
- (vii) There are different opinions as to whether there is sufficient variety and length of recreation walking and cycling routes extending beyond the estate.
- (viii) Although the roads within the residential component of the estate would appear to facilitate walking and cycling, the traditional street layout but with reduced dimensions has resulted in concerns about safety for cyclists, and the centre drainage swales can reduce feelings of accessibility for walkers. It may be that alternative models of 'complete streets' should be pursued.

²³ NSW Ministry of Health (2013): *NSW Healthy Eating and Active Living Strategy 2013-2018*.

- (ix) Substantial components of the development of the estate are yet to be completed. Combined, and with targeted action, they present an opportunity to encourage a significant change in travel mode:
- the directness, comfort and safety of walking and cycling routes to the proposed Rouse Hill station should be reviewed and upgraded if necessary in conjunction with the opening of the North-West Rail Link, combined with a promotional campaign to walk or cycle rather than drive to the station. This to include a more direct 'active travel' walking route across the central open space area.
 - the future mixed use development surrounding the Town Centre can be designed and managed to explicitly be attractive to walking (with shade and other weather shelter), including providing additional destinations for recreation walking by establishing an interesting range of street front activities.
 - the new internal street network for the future higher density precincts can be modelled on 'complete streets' principles, prioritising walking and cycling. Lessons from this can then be applied in the future to existing components of the local road network.
 - completion of the local network of walking and cycling routes can ensure that current gaps are completed, in particular to link with facilities and other destinations external to the estate.
- (x) These physical infrastructure changes can then be combined with a renewed campaign to encourage their use for active travel and recreation purposes, utilising the Green Travel Coordinator position.
- (xi) Various issues regarding the management of the recreation facilities provided as part of the Community Title need to be resolved:
- implementation of an ability to book the tennis courts.
 - the ability to address any inappropriate use of the swimming pools.
 - use of facilities by persons under 16 years without the necessity for adult supervision.
- (xii) Although open space areas include play equipment for children they do not include public exercise stations for older children or adults. Further, it would be worthwhile to determine whether various comment about the need for organised exercise groups/classes is due to a lack of these facilities or a lack of knowledge and publicity of groups/classes that do exist (either at the private gyms or at the community centre). Action can then be taken to:
- install public exercise stations if demand is likely.
 - provide organised exercise groups/classes, via either commercial and/or community providers.
 - ensure management of open space areas allows such organised groups or classes.

4.2 Social interaction – connecting and strengthening communities.

“Getting to know neighbours, volunteering, and being involved in local activities are great ways to feel connected. Feeling part of our community enhances our sense of belonging and security.”

Australian Unity Wellbeing Index.

- At least 6 Australians die from suicide every day, and 20% of adults will experience a mental illness in any year.

Black Dog Institute (Australia).

- In the last 6 months, 7% of adults did not converse with someone, 43% did not attend a social event, and 40% did not meet anyone new.

Newspoll (survey of isolation, Nov. 2013).

Q. 17. Do participants interact with other residents?

Interaction with others on either a planned or incidental way is critical in supporting mental health and wellbeing. The ways in which the built environment is designed and managed is able to support or hinder such levels of social interaction.

Visible social interaction is ‘scattered’; however residents have a high level of satisfaction with their level of social interaction.

Participants were asked to rate their level of satisfaction with the number of people they know in the area, and with the opportunities they had to meet people. Satisfaction levels appear to be reasonably high:

- 14 out of 20 (70%) participants were either ‘strongly’ or ‘somewhat’ satisfied with the opportunities they have to meet people in the neighbourhood, with 2 participants (10%) indicating they were somewhat dissatisfied and 4 participants (20%) neutral.
- 15 out of 20 (75%) participants were either ‘strongly’ or ‘somewhat’ satisfied with the number of people they know in the neighbourhood. There were no expressions of dissatisfaction with this (the remaining 5 participants being neutral).
- 15 out of 20 (75%) participants were satisfied with the level of interaction they currently have with their neighbours, with five participants (25%) being not satisfied.
- satisfaction levels in respect to the number of friends participants had in the neighbourhood were slightly lower overall with 10 out of 20 (50%) participants being either ‘strongly’ or ‘somewhat’ satisfied, and the remainder being either neutral or ‘somewhat’ dissatisfied.

Broadly, these figures are consistent with the level of importance for their own health that participants place on the ‘ability to meet with friends and neighbours in your local area’:

- 17 out of 20 participants (85%) rate it as either 'important' or 'very important'.
- only three participants thought it was unimportant.

That said, there is substantial variation in the ways in which participants interact with others:

- 19 out of 20 participants (95%) speak with their neighbours occasionally, however only one resident considered any of their neighbours as close friends and no participants regularly socialise with their neighbours.
- only 8 out of 20 participants (40%) visited a neighbour in the last week, well below the NSW average of 61.8%.
- however, 17 out of 20 participants (85%) ran into friends or acquaintances when shopping in the local area, which is slightly higher than the NSW average of 82%.
- 12 out of 20 participants (60%) were 'active' in some measure ('very', 'somewhat' and 'a little') in a local organisation, church or club.

The Audit noted small groups of people within some of the open space areas such as the playgrounds, the main water feature and at the public school when school at finished in the afternoon. However a feature of the residential portions of the estate is a distinct lack of people within the streets. When residents were sighted it was mainly when they were getting into or out of cars or, less frequently, when working within their front gardens. That said however, when asked to nominate the location where they most socialised with their neighbours, 'the street' was nominated more than twice as many times as the next most frequent location, being the 'local shops'²⁴:

Your/their home	- 5 nominations
The street	- 16
Town square	- 1
Local shops	- 8
Local café/restaurant	- 3
Park	- 2
Bushland	- 0
Community centre	- 1
School or child care	- 1
Other	- 5 (with the library, the lifts and post box areas of the apartment buildings, and the community pool and tennis court nominated)

Considered together, this advice from participants that contact with neighbours was most common on the street and the Audit observation that there were few people on the streets at any one time, may suggest that any such contact tends to be fleeting. This may also be suggested by participant responses when asked to nominate the things that may limit their ability to socialise with their neighbours, with 'time' being overwhelmingly mentioned²⁵:

²⁴ Note that participants could nominate more than one location.

²⁵ Note that participants could nominate more than one reason.

Not enough time	- 16 nominations
Language difficulties	- 2
Health reasons	- 0
Financial reasons	- 0
Don't feel welcome	- 4
Not interested	- 4
Other	- 4 (with nominated reasons being: a lack of shared meeting spaces in the apartment buildings (2); a lack of persons in a similar age-group; and satisfaction with existing other social contacts).

Overall, the responses suggest a number of concurrent characteristics in respect to the actual level of social interactions in New Rouse Hill and in relation to participants' satisfaction with this. The question relating to 'not enough time' included the additional qualifier 'due to other commitments (eg. family, work)'. As such the nomination of a lack of time for additional social interaction could suggest a number of scenarios each depending on individual circumstance and perhaps also subject to change as those circumstances change over time:

- On the one hand it could be an expression of frustration. But follow-up comment by various participants also suggests an acceptance of the situation given an understanding that many residents are new to the area and must juggle settling in to their new homes, establishing gardens and getting used to work commutes and schooling and other arrangements with children; and, as such, that this situation may change as the suburb 'matures'. Here it will be useful to ensure there are sufficient avenues to ensure both formal and incidental social interactions can occur. As assessed in the subsequent questions the Study found that the existing built environment is generally positive in this regard.
- It could also indicate that any lack of time available to get to know immediate neighbours is due in part to time spent on other social interactions: within family groupings, with established circles of friends, and with existing other social groupings. Here for example 12 out of the 20 participants (60%) cite they are active to some degree with a local organisation, church or club.

Both of these possible scenarios would lead to the overall high levels of satisfaction that participants express in respect to their social interactions. However, at the same time participants also indicate some lingering frustrations that need noting:

- When asked whether they are satisfied with the number of opportunities to meet people in the neighbourhood, the number of friends they have in the neighbourhood and the number of people they know in the neighbourhood the 'neutral' scores (neither satisfied or dissatisfied) are quite high even though there are also high overall levels of satisfaction (Table 4.5).
- When asked to nominate the things they should be doing to keep healthy but are not doing, focus group participants included a number of matters that possibly relate to socialisation such as having more relaxation time, not spending as much time on the computer and watching TV, going outside more. This socialisation connection is more obvious when

participants were then asked about the things they needed to keep healthy but do not currently have access to. Here matters such as more community events, more library activities, and a social network club were cited. (Table 4.6).

As part of the Community Title arrangements new residents are given the Security Access Tags required to access the common facilities, and presumably advice as to appropriate use arrangements. Use of these facilities would then establish the opportunity for individual residents to have incidental social contact with other residents. However there was little mention of this by participants, which may suggest a low overall use of these facilities. Further, and as discussed under Q. 23, slow establishment of the formal Community title governance arrangements also limits the potential for these to act as venues for social interaction.

Interview comment on levels of social interaction.

- I would like some more interaction with my neighbours. But most are new to the area and are fairly busy – everyone is trying to get their house and garden in order, not focussing on the social aspect right now.
- I live in an apartment block – we only really cross paths when in the lift. It's a bit difficult to socialise.
- I sometimes meet with neighbours at the library.
- There is a lack of suitable times to mingle – I'm usually at work, and then everyone's busy at night.
- I just moved here 9 months ago, I'm still trying to work out a level of interaction with my neighbours that they will be comfortable with, to not impose. But I have two sets of neighbours who we were close friends with previously – which is why we moved here.
- You just do your own thing really.
- There are no other people in my age bracket/at the same stage of life as me living here.
- I interact a lot with my nuclear family – don't have a need to socialise with neighbours.
- Living in flats – security measures mean that you can't just go and knock on a neighbour's door – you can only stick on your level.
- Sometimes interact with neighbours in the building/lifts.
- Everyone has just moved in over the last year – only just getting past the 'hello' stage.
- Interact with neighbours when I see them in their front yard/driveway.
- We only see each other when either going out or coming home.
- It depends on whether you have something in common with a person, it also depends if your neighbours reach out or keep to themselves.
- There are opportunities to meet people at the library. I'm slowly getting to know more people in the area (I previously lived in the inner city so my friends are now far away).
- Only new to the area so do not have many friends – that's the problem.
- There are lots of people renting around us – so people don't always reach out then, and it makes it tricky to meet and become friends.

Q. 18. Does the design of common areas in buildings foster incidental person-to-person contact?

The design of common areas can foster incidental person-to-person contact. Residents, shoppers, commuters, workers and tourists can be invited to sit and linger with others provided there are seating arrangements and a certain level of activity to engage their interests.

Not really.

Currently, this consideration is only applicable to the multi-unit residential buildings in the Town Centre. In the future it will also be applicable to the additional multi-unit multi-storey residential buildings to be constructed on the periphery of the Town Centre and on other sites in the residential area, and to any possible future commercial buildings in the Town Centre.

Although New Rouse Hill appears to provide sufficient opportunity for people to make incidental contact in other locations (see subsequent questions) the fostering of interactions between neighbours within buildings is still important.

Comment pointing out limitations in this regard were made by participants who lived in the Town Centre – that security arrangements did not allow access between floors and as such inhibited ease of contact and visitation between residents. The following comments have also been made in response to the interview surveys:

Comment made in the interviews about social interaction in residential buildings.

- I live in an apartment block – we only really cross paths when in the lift. It's a bit difficult to socialise.
- Living in flats – security measures mean that you can't just go and knock on a neighbour's door – you can only stick on your level.
- Sometimes interact with neighbours in the building/lifts.

Q. 19. Does the design of building frontages foster incidental person-to-person contact?

The design of building frontages can foster incidental person-to-person contact. Residents, shoppers, commuters, workers and tourists can be invited to sit and linger with others provided there are seating arrangements and a certain level of activity to engage their interests.

Yes, where applicable.

Within the Rouse Hill Town Centre the inclusion of 'active' street frontages to buildings is an inherent part of the design, and there are a number of outdoor footpath seating areas associated with adjacent food premises.

Within the residential areas the design of frontages to foster incidental contact is less noticeable. However this is likely to be due more to the general lack of people being on the street or outside and around their dwellings than a specific design inadequacy. The Audit concluded that the design of

dwelling makes a positive contribution to a general feeling of passive surveillance (with consequent enhanced levels of perceived safety for people using the streets) given the orientation of windows and front entry and porch areas towards the street. This can then also lead to increased levels of incidental social interaction.

A specific opportunity exists in relation to the design of future infill development around the periphery of the Town Centre to include 'active' street frontages in order to ensure these peripheral streets generate an interest and vitality that will encourage active transport (walking and cycling) to the Town Centre from the residential areas – with consequent opportunities for social interaction and passive security surveillance.

Q. 20. Does the design of public space foster incidental person-to-person contact?

The design of public space can foster incidental person-to-person contact. Residents, shoppers, commuters, workers and tourists can be invited to sit and linger with others provided there are seating arrangements and a certain level of activity to engage their interests.

Yes.

The overall design of public streets and open space areas, and the inclusion of facilities is assessed as being positive to the fostering of incidental social interactions:

- the public spaces are in generally conducive to walking and cycling.
- open space areas in the residential areas include seating, playgrounds, and picnic facilities (BBQ's and table and benches).
- dwellings fronting public streets are generally designed to include 'active' frontages.
- the Town Centre similarly includes a number of open spaces with seating and other facilities that encouraging lingering, and most circulation areas include active frontages.

The Audit also noted that the neighbourhood feels safe during the day, there was always a number of families walking around, car speeds were low (improving amenity for walkability and lingering), and facilities were well-designed with minimal signs of physical disorder.

In addition, the development of the Town Centre includes space dedicated to the local council for a branch library and for community meeting rooms. The library includes specific activities that support the potential for social interactions, a feature that was mentioned by some participants who utilise these activities.

However, although the Town Centre spaces are busy, the spaces within the residential parts of the estate tend to have few people in them at any particular points in time, thus limiting the potential of their design features to foster interaction. A comment made in the focus group (see boxed text) about recreational walking around the residential streets checking out latest developments and as a result also making contact with fellow residents was an isolated comment. It suggests the need to ensure, within the continued development of the sites peripheral to the Town Centre, an attractive environment with additional destinations that will stimulate walking – and this incidental social interactions.

Comment in the focus group about interactions when walking for recreational purposes:

Well in my perspective I think it it's fairly safe in this suburb to walk.

Yeah.

...another brand new house, it's either already been built or it's in the construction. So when we go out for walks we like to comment on those different designs and different design of the landscaping's quite interesting.

Oh yeah.

New playground, they've opened or whatever, it's like find something new.

How about the streets which have already been built and been there for a while, do you find them just as interesting to walk along?

That's just two or three years ago, I think, it's still new I guess.

They still do their gardens

... everybody's garden keeps changing too, that's the thing that I find.

Yeah the garden, landscaping, is quite interesting.

We've been here five and a half years, so we're one of the very early residents. But just the ones who've been here for a while, you think, oh gosh they've dug up that bit and planted something else.

Yeah it's not boring.

Yeah and we learn something, other's design, to make our garden more pretty.

Do you talk to people in their front yards when you're walking by?

Yeah.

We do, yeah.

They always say hi, definitely.

Q. 21. Are there formal public and semi-public spaces accessible to the community at large?

Perceived accessibility of neighbourhood destinations may increase use and thus promote physical activity; reduce vehicular trips and increase neighbourhood cohesion and safety.

Yes, though with some questioning about the impact of regulations in the Town Centre.

The open space areas in the residential part of the estate are open, accessible and available to all. (This is distinct from the specific formal recreation and other facilities provided under Community Title and for which access is only available to owners, residents and guests).

Participants were asked to rate their level of satisfaction about the *number* of parks in the neighbourhood, and about the availability of community centres (though in respect to community centre the question did not distinguish between the Council-managed community centre in the Town Centre and the Mungerie Community Room which is part of the Community Title facilities).

- 18 out of 20 (90%) participants indicated they were either 'strongly' satisfied or 'somewhat' satisfied with the number of parks, (with one participant each being 'somewhat' dissatisfied, and neutral).
- The level of satisfaction with community centres was more varied. Only 10 out of 20 participants (50%) expressed any level of satisfaction; with three (15%) expressing

dissatisfaction, five (25%) being neutral, and two (10%) indicating they 'did not know'. One of the participants who advised they 'did not know' also commented: 'There are no community centres at the moment, so can't say if satisfied or not'.

The comments about community centres deserve attention in that they suggest a lack of knowledge about existing facilities in the neighbourhood that should be addressed. Part of the development of the Town Centre included the dedication of space to the local Council for the establishment of a community centre and branch library. These are located together (on different levels) adjacent to the main Town Centre open space area and are open to all. The community centre provides six different sized rooms for hire to any group and is open for long hours, from 7.00am to 11.00pm Sunday to Thursday, and 7.00am to 12.00pm Friday and Saturday. The library opening hours are less, being 9.30am to 6.00pm Monday to Friday, 9.30am to 5.00pm Saturday, and 1.00pm to 5.00pm Sundays.

Interview comment about open spaces:

- Playground equipment is very basic – should be improved.
- The quality of parks is very good for our kids.
- The quality of the parks – they appear to be designed more for aesthetics rather than function or being good for kids. There is very little play equipment in the main park (some more in smaller parks) – the kids get bored with the single swing in a few minutes.
- The parks are 'quite open' – they have undesirable people (rowdy teenagers) sometimes.
- Some of the parks are still being constructed.
- Parks are unsafe in terms of risk – in respect to the equipment, the flooding/ponding of drainage areas (fill up to knee-high), concrete stepping stones are dangerous for children.

The Audit observed that:

- all open spaces areas are highly accessible to residents, whether by walking, cycling or by car. While some areas in the eastern precinct are still enclosed by construction barricades, other access is available to other spaces nearby, and this restriction is in any case temporary.
- the Town Centre public space areas are well used by all patrons, who come from a region-wide catchment.
- there were no perceived barriers to any particular groups whether by gender, sexual orientation, religion or whether persons were there as a group or as an individual. It was considered that many elements in the open space areas were family-friendly (playgrounds, BBQs, picnic shelters) and as such contributed to an overall feeling of inclusion and safety. Although the auditors did not see any groups of people congregating in public spaces for a formal common purpose, they did note indications of social inclusion and cultural diversity at children's playgrounds (mothers, fathers and grandparents all potentially in attendance with children), at the playground near Mungerie House (designed for children with a range of abilities), and at the community gardens (which include a range of plants potentially relating to different cultural backgrounds). In turn this provides opportunities for social interaction and cultural exchange.

- all open space areas, and associated toilet facilities, are designed for universal access. However some aspects of the walking environment need to be improved for those with mobility limitations, particularly in regard to provision of crossings on busy roads like Caddies Boulevard, provision of tactile paving at signalised crossings, reduction of clutter on some footpaths, and maintenance of pathways to remove trip hazards and obstructions.

From their experiences in approaching users of the open space areas in the residential area, particularly the childrens' playground near Mungerie House, the study officers also found that a high proportion of users were from locations other than New Rouse Hill and were visiting because of the higher standard of facilities. This can also increase opportunities for social interaction for New Rouse Hill residents.

The public areas within the Town Centre are also open, accessible and available to all, though with a potential limitation. Although appearing as public open space managed by the local Council the Town Centre spaces are owned and managed by the shopping centre owner (GPT). Management of these areas is in accordance with a formal *Publicly Accessible Areas Management Policy* signed off by both GPT and the local Council.²⁶ The provisions of the Policy have been the subject of some external commentary and centred around the broader issue of 'privatisation' of public space generally, with possible adverse impacts on overall levels of accessibility and control of certain types of patrons and groups and/or behaviour, and the confusion that may result about what is acceptable (allowable) behaviour when what appears to be public space is in fact private. In addition, in New Rouse Hill, it is also not clear where the boundaries lie between the various public spaces managed by the Town Centre, the local Council, and as part of the adjacent transport interchange (which will include the future railway station).²⁷

No comments in this regard were made by the Study participants. It is likely that they are not aware of the actual ownership status of the public areas in the Town Centre, but also that their behaviour is also not contrary to the terms of the management policy.

That said, the Study officers themselves did experience to a degree the concerns that have been raised in commentary about the Policy. When Study officers approached the Centre management on a courtesy basis (because at that time it was not realised that the open spaces were not standard 'public' open space) to advise an intention to approach patrons to ask whether they would be willing to undertake the Study interview, they were advised that this would not be allowed unless a formal stall was established on space specifically hired for the purpose (at a rate that was unrealistic for the

²⁶ See: <http://www.rhtc.com.au/Upload/RouseHillTownCentre/Media/PDF/RHTC-Publicly-Accessible-Areas-Mgt-Plan.pdf>

²⁷ See, for example: Abbasalipour, S. (2011) *Blurring the Boundaries. The interface of shopping centres and surrounding urban public space*. (http://soac.fbe.unsw.edu.au/2011/papers/SOAC2011_0115_final.pdf) and Farrelly, E. (2007) *Expect new censorship, if our privates enter the public domain*. (<http://www.smh.com.au/news/opinion/expect-new-censorship-if-our-privates-enter-the-public-domain/2007/06/05/1180809518066.html?page=fullpage>). The conditions of development approval for the Town Centre master plan included a requirement for a specific management policy for the public spaces. As such this policy needs to be endorsed by the local Council. The resultant *Publicly Accessible Areas Management Policy* was developed by GPT in consultation with NSW Police and the NSW Council for Civil Liberties, and was placed on public exhibition before adoption. It was adopted in 2007 and reviewed in 2011.

Project). In addition, the auditors were also questioned by Centre security when undertaking audit observations, and discouraged from taking photos.

Q. 22. Is the design of formal public and semi-public space inviting to the community at large?

The design of spaces can support psychological health by fostering feelings of belonging.

Yes, with some concerns about overall management.

The quality of public spaces within both the residential and Town Centre areas of New Rouse Hill are of a high order and as such should be inviting to users. Facilities provided differ from area to area but overall comprise playground facilities, seating, paved pedestrian and cycle pathways, picnic shelters and BBQ's, toilets, and an amphitheatre area.

Participants were asked to rate their level of satisfaction about the *quality* of parks in the neighbourhood.

- 17 out of 20 (85%) participants indicated they were either 'strongly' satisfied or 'somewhat' satisfied with the quality of parks (with one participant each being neutral or somewhat dissatisfied; and another advising they either did not know or did not use the parks).

The Audit concluded that the open space areas were well used, by a variety of people and with no obvious emphasis or orientation or attempt to exclude any particular group. All open space areas and associated toilet facilities are designed for universal access. Where limitations were identified relating to users with mobility limitations, these were mainly in the public streets rather than dedicated open space areas (see Q. 21). The Audit did also note that the amphitheatre area was subject to graffiti, and subsequent visits to New Rouse Hill at the time of preparing this Report noted there were often large amounts of litter in some of the bushland areas.

The spaces in the Council-managed Community Centre in the Town Centre were observed to be well-used by a variety of groups engaged in both active and passive activities at the time of the Focus Group which was also held there. Some participants advised that they used the Council Library and that they had met new people there.

Participant comment about using the Council library:

- There are opportunities to meet people at the library. I'm slowly getting to know more people in the area (I previously lived in the inner city so my friends are now far away).
- I sometimes meet with neighbours at the library.

Both the Audit observations and comment by participants noted that some areas of the central open space corridor, being the ornamental lake area adjacent to the Town Centre and the nearby amphitheatre, become uninviting to general users at certain times at night because they get taken over by particular users, generally younger age groups, who engage in behaviour that is, variously,

threatening or off-putting to others. Similarly, there has also been a history of groups from outside the locality using the Town Centre as a gathering place on Thursday nights and which has led to the need for a police presence, though this may have now been resolved (see also Q.26).

It may be appropriate to carry out an audit of the management policies and practices of the publicly accessible areas of both the residential and open space areas of the estate (managed by the local Council) and the Town Centre (managed by GPT in reference to the *Publicly Accessible Areas Management Policy*) to assess in further detail any impact in relation to achieving a healthy built environment. Specific matters would include:

- (i) the need for a youth 'gathering place' within New Rouse Hill, and whether there is adequate 'acceptance' of this population group in the Town Centre.
- (ii) the maturing of the Town Centre as a regional community focus, and encouragement of its further development as a common destination and attractor for casual activity by residents in conjunction with walking and cycling active transport modes.

Q. 23. Can participants be involved in the broader design and governance of their community spaces?

Participation can facilitate orderly social interactions through removing ambiguity in expectations and creating behavioural norms in the broader governance of the community. Group membership and participation is associated with improved personal health.

Yes, though with current limitations in relation to Community Title and Town Centre spaces.

The residential component of New Rouse Hill is under a Community Title system meaning that owners of dwellings also own on a collective shared basis various components of the public areas of the estate. In New Rouse Hill this includes certain recreation facilities and the Mungerie House community room; and the Community Title arrangements are divided into smaller precincts corresponding to the various stages of the overall development and to the distinction between the residential component of the Town Centre and the residential area of the broader estate.²⁸

²⁸ Community Title provides for collective shared ownership of facilities and infrastructure components of, generally large, residential estates. In New Rouse Hill this comprises various recreation facilities and the Mungerie House community room. Under Community Title, common areas are managed via a "Community Association" in which each owner can participate. Many Associations engage professional outside assistance (the "management agent") to undertake day-to-day management and organisation of required meetings, etc. Community Title arrangements are made under the (NSW) *Community Land Development Act 1989* and *Community Land Management Act 1989*. Large Community Title developments are likely to be divided into smaller "precincts" and/or "neighbourhoods", each with their own additional association. Advice to New Rouse Hill residents about Community Title in general as well as their particular scheme is available at: http://www.thenewrousehill.com.au/RouseHill/contentimages/general/pdf_community.pdf

As such, the Community Title system can provide a readily accessible way in which residents can engage in the design and governance of their immediate locality. Advice to this effect is included in material explaining the New Rouse Hill Community Title arrangements to residents:

[Community Title] enables residents to enjoy a greater range and better quality of services and facilities than they would in other traditional new developments or established suburbs. Importantly, it empowers residents with a higher level of input into how their community is managed and maintained.²⁹

However, only one of these Precincts had a separate Association incorporated at the time of the Study; meaning that these potential benefits are currently missing.

No specific questions about the management and broader governance arrangements of the estate were asked in the interviews. One comment by an interview participant raised the following concern:

- After living here for 4 years, fees are still not being paid to the Body Corporate. This means that the community has no say in how the community facilities are maintained, which is becoming a problem.

Participants in the focus group raised similar issues, prompted by comment made about inappropriate management and usage of the Mungerie House community facilities and the lack of access to a management arrangement able to address these.

Focus Group comment about Community Title management arrangements:

There's a couple of other incidents which I had when I was using, I guess, Mungerie House for social activities for kids birthday. There was once when there was actually a dog inside a swimming pool. So that was two years ago, it was a really hot day and I guess the kids decided to bring their dog... Bring their dog to the pool, great. ...for a swim in the swimming pool, with everybody else in the pool as well.

So what happened then? Did people say, oh you really shouldn't have a dog?

Yeah because there's a sign that says there's no pets allowed. But, because there's quite a large group of people who's gone there with their dog and they've just decided to do exactly that. So I don't know, I wasn't swimming at the time, I was having a birthday party in the house where you've got social events. The guests was just looking at this dog and was just wondering, what the heck is happening here, why is the dog swimming in the pool? Oh my gosh. Yeah and then there would be people climbing across the glass, which is really dangerous.

That's the other thing, because they haven't got the pass to use the facilities. So some - it's usually the younger generation, I don't know, you know 14 or 15 years old - and they just want to be, I guess, smart or whatever. They try to climb over the glass fence to get into the swimming pool, because you can't get in unless you've got a pass. So this glass is quite fragile so I was really concerned that it might break under their weight. Yeah so there was quite a few of these things.

There was one incident - this was a different social event again - when a couple of teenagers decided that they wanted to get a free meal. They came into this four or five year old kid birthday party and said, oh can we get some lunch or whatever. So you've got to deal with all these things when you use the social community - but it's kind of unexpected as well, yeah.

²⁹ See: http://www.thenewrousehill.com.au/RouseHill/contentimages/general/pdf_community.pdf

Is there some sort of governance mechanism where you can work these issues out or...?

There's none really, no.

Yeah.

I guess it's a flaw in the community system, where everyone, who's a part of the community, is able to use the facilities etc. You get incidents, like these, where you get kind of crashes. But also occasionally, sadly, even the ones from the community who are using the facility, so either they or their guests, don't use the facilities appropriately. Either do damage or mess or whatever. There doesn't seem to be any way of dealing with that.

So there's no supervising person from the community title?

Not that anyone's aware of.

There's a so called person that is meant to look after the facilities, like some sort of a thingy. So, as yet, we don't have a body corporate or anything.

No.

So, until that happens, I guess it's...

I'd say don't hold your breath, because we do and it doesn't help.

Some of these things are really about social etiquette as well.

Yeah.

I've had the same thing with the dog in the swimming pool before. But it wasn't in the pool, it was just in the pool area. But it's not meant to be dogs in there and it's a small area anyway there's no reason to bring a dog there and just leash it up. Why would you do that? My mum said something at the time and there's no - they just said, oh well we've got the dog here now. There's no way to try to escalate it. Yeah, there's no one you can call upon to enforce the rules.

There's a gap there?

Yeah there is a gap there and sometimes it's a bit awkward, yeah. There's been a few pool incidents I think. When people aren't behaving in the right way and all that sort of thing. You're never quite sure what to say or do, yeah.

Mostly it's good but yeah you do get the odd one where people don't act in appropriate ways.

Would be nice to have somebody to kind of back you up sort of thing. Some body that can actually enforce something.

Yeah, it would be good. But how do you go about that, like who would pay for it and all that sort of thing.

Community facilities are great in theory until somebody...

Breaks the system.

Yeah.

Back at the beginning of this conversation there was comment about some unruly kids. Do you think they were local and their parents were around?

It's hard to say.

They could have - their friends could be living in the community and then they've come along. Or they could have found out there's this fantastic swimming pool, we can just get in for free by just jumping over the glass. You know that sort of thing happens. I don't think it's safe and I think they should be more wise about it.

So a bit similar to what we were saying about the community garden and the swimming pool and the tennis court as well. They're all good ideas and been designed with good intention. But falls down because there's just that lack of organisation in order to help it work for you, so that you can actually use them, and in the way that they're meant to be used by the people.

Yeah I think they were very kind of trusting when they did it, that things would organise themselves and that people would use things responsibly and everything. So they built all these lovely things, which works great in theory and that, but they're very trusting of everyone to...

Doing the right thing.

... work it out and do the right thing and that. It doesn't always end up that way. Most of the time it does and it's great. But then there's those occasions where it doesn't.

In addition to the Community Title management arrangements applying to the communal facilities, participants can also be involved in the broader local government arrangements applying to their area by engagement with their local Council, in this case, The Hills Shire Council. Particular local matters this would apply to would be the management of the public open space areas and roadways within the residential part of the estate, similar parks and roadways and broader recreation facilities in the larger locality, the local community centre and library, and also any issues with the *Publicly Accessible Areas Management Policy* applying to the Town Centre and which includes sign-off by the local Council.

It is relevant here to also include observations about the governance arrangements as applying to New Rouse Hill arising from the experiences of the Study officers themselves. Here there are a number of matters became apparent:

- (i) It was not always obvious to the Study officers which agency was responsible for the management of certain areas, in particular the roadways and the general publicly-accessible open spaces in the residential part of the estate – the local Council (as a visual assessment of the locality might suggest) or the Community Title Association? Similar questions arise relating to the Town Centre and transport interchange area. Given there was no obvious point of contact in respect to the Community Title Association, contact was made with the local Council though detailed advices were not received by the time this report was prepared. Similar confusion may well arise for residents when wishing to raise issues relating to these two important aspects of the public infrastructure of the estate.
- (ii) Further, a search of the 'Our Rouse' website indicates that management of the public areas in the residential part of the estate is divided between three different contracted private firms – one each for 'community management', 'facilities management' and 'security', but with no further elaboration as to their function or on what basis they can or should be contacted by residents.³⁰
- (iii) The Study officers had planned to approach patrons of the Town Centre in the streets and the main square on the assumption, based on visual appearance, they were public streets like any other. It only became apparent these were privately-owned in the same nature as the enclosed part of the shopping centre as a result of a courtesy call to the Town Centre management. The Study officers were then referred to the *Publicly Accessible Areas Management Policy* and which meant that the intended activity could only be carried out if specific space was leased – at a fee that was unrealistic for the Project.
- (iv) Similarly, during the audit on 30 August 2012, of which the Town Centre was the focus, the auditors approached staff in the Information Centre to show identification and inform them of the research activities to take place. Centre staff expressed concern about photographs being taken of patrons. The researchers assured the staff that the focus would be on taking photographs of physical elements of the Town Centre, and agreed to limit taking of photos to the more public areas of the Centre (i.e. Main Street, Civic Way and the Town Square).
- (v) As part of the recruitment of potential interviewees Study officers also approached the managing agent to request mention of the Study at a meeting of the sole constituted Precinct Association and/or via the Precinct chair on the basis that they may know of local residents interested in undertaking an interview. Although the initial response from the managing

³⁰ See: <https://www.ourrouse.com.au/Quick-Links/default.aspx>

agent was positive nothing further was heard, possibly because the agent also advised they themselves were having difficulties getting sufficient response from Association members to arrange suitable meeting times even to discuss Association business.

Q. 24. Does new development include a 'Welcome' program to initiate on-going social interaction?

Awareness initiatives can be as simple as proper placement of signage or a more developed 'welcoming program' creates an awareness of community events, locations of social and cultural programs, etc. to encourage feelings of community connection.

Yes, though with some questioning about its effectiveness.

The 'welcome' program appears to be via a dedicated website ('Our Rouse'³¹) that includes various information and links to other organisations and websites including the local Council that would be useful to new residents, plus an on-line newsletter ('Our Community'); and 'Meet Your Neighbour' gatherings. There does not appear to be a personalised 'welcome' program. At the time of preparing this Report the last posted newsletter was one year previously (though was itself Issue No.15). It is not known how regular the 'Meet Your Neighbour' gatherings are held.

The program is managed through a specific position (Community Title/Place Manager Communities) within Lend Lease. This position is also responsible for maintaining the website and preparing the newsletter. The position does not appear to be dedicated solely to New Rouse Hill, but to be responsible also for similar work throughout New South Wales and the ACT.

A comment about the efficacy of these arrangements (as separate to that made in respect to the governance of facilities, see Q.23) was raised in the focus group, prompted by discussion about the way in which early residents had established the community garden pots at Mungerie House as a way of stimulating some community interaction, but which had now tended to fall into disuse. The discussion suggests some frustration with current arrangements, though it is not known how widely held this may be amongst other residents.

³¹ See <https://www.ourrouse.com.au>

Focus group comment about the “Welcome” program:

We used to have a newsletter we'd see occasionally and I haven't seen that for quite some time, I don't think, either.

I think there's stuff online.

Oh okay. Obviously I'm not on whatever the email is I guess.

No it's like - you don't get emails or anything but if you go onto the website sometimes there's stuff on there.

Because that's where I used to see information about the [community] garden and that sort of stuff, in the newsletter, when we used to get it. But not for about 12 months I don't think.

Yeah and I haven't actually been on the website for a good while so I don't even know if it's being updated or not. But it used to have updates about what was happening and all the rest of it.

Have you been on that at all?

No, I wasn't aware of it, mum and dad probably know about it.

I didn't even know there was one.

They always send us email about social gathering at meet the neighbours, I don't know whether you guys get that.

Oh occasionally yeah.

Yeah, because it's every few months.

But it's always at a time - it's always on a weeknight and it's too early because people have to take the time to get home from the city and all that sort of stuff. Yeah but anyway, that's another issue.

Q. 25. Does the design and governance of public and private space allow contact with nature?

Providing opportunities for contact with nature (green features as well as water amenities) can also support psychological health by fostering feelings of restoration.

Yes.

New Rouse Hill is well served in this regard, with approximately one-quarter of the total area reserved for open space, including the central riparian corridor along Caddies Creek. Other elements include the formalised water feature and ponds adjacent to the Town Centre, the program of tree planting and drainage swales within the residential area. In addition, the design of the Town Centre intentionally includes the main public circulation areas being open to the sky.

However, although participants report a high level of satisfaction with the number and quality of parks, this seems to be more in relation to the more formalised ‘open space’ aspects of the development, including the establishment of playground and other facilities, rather than a comment on the presence of actual natural features. Here, comment often tends to suggest some element of discomfort with these features, though they could be considered relatively minor and easily resolved:

- being put off walking in the Caddies Creek area after coming across a snake there (a similar comment made in the focus group included the additional observation that there had since been more clearing and development meaning the area was now less likely to contain snakes).
- being concerned about possible flooding after seeing the water level rise in the water features, which double as detention basins.

- overhanging vegetation in the streets hindering visibility for pedestrians and drivers, and also contributing to some feelings of insecurity at night when going to and from the Town Centre.

The Audit also noted that the design of the drainage swales in the centre of some streets and which attempt to imitate natural watercourses with stones and vegetation can hinder pedestrian access across the streets.

That said, there was also favourable comment made about the overall green, tree-ed, open and 'less crowded' aspect of the residential parts of the estate, particularly when compared to other new surrounding suburbs. Interestingly, critical comment in this regard was made about the nearby The Ponds residential estate which is also being developed by UrbanGrowth NSW and promoted for its 'health' aspects including its retention of natural features (see Figure 2.1).

Consistent with the above comments, positive comment was also made in respect to the design of the Town Centre, with its intentional green and open air feel.

Interview comment about contact with nature in New Rouse Hill:

- Plant life in the median strip is an obstruction for drivers.
- The quality of the parks – they appear to be designed more for aesthetics rather than function or being good for kids.
- There are problems with overgrown vegetation – obstructing pedestrian and driver vision.
- Parks are unsafe in terms of risk – in respect to the equipment, the flooding/ponding of drainage areas (fill up to knee-high), concrete stepping stones are dangerous for children.
- I encountered two brown snakes once on a walk near Caddies Creek and am now too scared to walk there.

Focus group discussion on the open feel of New Rouse Hill:

One comment here that Rouse Hill is less crowded than The Ponds, where there are rows and rows of houses.

Yes I wrote that....when you compare - I guess because there's no gardens, there's no trees to cover up all the houses. So it just looks quite dense.

So going back to the health aspects, is there a connection there?

It's more like a mental thing, a mental connection. It's more like, how do you feel mentally rather than a physical thing.

Because when you live out in the suburbs you're expecting to live with less people I suppose, so you've got more space to yourself. But when you get out in the morning and you happen to live on the top of The Ponds, on the hill or whatever, and you're looking down and see all these massive rows of houses, I'm not sure that you're going to feel mentally healthy about it. Versus here, where this is just a few houses and you're off to the main road sort of thing. That's why I wrote that.

It's not very crowded as the other shopping centres, like Parramatta or Castle Hill.

I think it's because it's open.

Like it's not a shopping mall all under the one roof.... That helps you feel like...you're out in the [open air].

Yeah, I never seen this before.

I was going to say, it also feels less crowded because you've got like the centre kind of courtyard area and stuff like that.

There's areas that are - and the playgrounds and stuff like that, which not every square foot of the shopping centre is being used for shops. It kind of gives that community sense as well, because they've got areas for just play and areas just to sit and relax and things.

A final comment is worth noting – that on a visit to the estate at the time of preparing this Report and subsequent to the Audit it was noted that there was a substantial amount of litter within the areas of natural vegetation within the riparian open space area and thence along the path leading to the adjacent oval and sports facilities next to the High School; and which detracted from the ‘natural’ experience.

Q. 26. Is use of public space for active transport and for incidental and organised physical activity and social interaction facilitated by low actual or perceived threats to security?

Fostering a sense of belonging, caring and commitment also involves increasing a perception of safety. People will not interact within, or feel part of, a community that they perceive to be unsafe. Actual and perceived levels of security can inhibit or promote choices to actively travel, engage in recreational physical activity and/or engage in social interaction.

Yes, though with some concerns that should be monitored.

Participants considered New Rouse Hill as a safe place to live and felt secure, with only few exceptions. Comment was made in the focus group that an earlier concern about inadequate levels of street lighting in the yet-to-be-developed areas around the Town Centre had been resolved.

- 17 out of 20 (85%) participants indicated they were satisfied with levels of safety from threat of crime (seven (35%) were ‘strongly’ satisfied, and ten (50%) ‘somewhat’ satisfied). Two participants (10%) indicated they were ‘somewhat’ dissatisfied.
- 18 out of 20 (90%) participants agreed that New Rouse Hill had a reputation as a safe place to live (four participants (20%) ‘strongly’ agreed, and 14 (70%) ‘agreed’).
- 17 out of 20 (85%) participants felt safe when walking in the street after dark (seven (35%) ‘strongly’ agreed, and ten (50%) ‘agreed’).

The exceptions mentioned were:

- (i) the amphitheatre area behind the high school has become a hang-out for teenagers, has been vandalised (since repaired) and covered in graffiti, and there is the suggestion of drug dealing. Combined this generates feelings of insecurity for others and consequent avoidance of the area, which is of particular issue because this area is also located on one of the main paths that cross the central open space area.
- (ii) the Town Centre, in its role as a regional meeting place, has in the past been the subject of disturbances on weekends and at night, apparently largely perpetuated by visitors from outside the immediate neighbourhood. A response was a large police presence, which may have resolved the issue.
- (iii) during the Study, and just prior to the final interviews and the focus group there was a brawl, apparently arranged on Facebook, at Leisure Square adjacent to the Town Centre and at which two people were stabbed. Although participants commented that this is something that could have happened anywhere, they also advised that they now thought about security more than previously.

Interview comments on safety:

- In regard to safety – there have been no issues with us, but we heard of a few break-ins of neighbours' houses. And there was the recent incident at the Town Centre.
- Groups of teenagers hang around the amphitheatre area. There is some drug-taking, graffiti, and a 'pack mentality', making it unpleasant for others. I take my dogs when I walk around, so it's okay for me.
- Safety is okay, but quite dark near my home (street lights do not light up in front of my house).
- People who aren't part of the community use the facilities (e.g. the pool). Because it's a nice place to hang out, it doesn't always attract the right crowd (e.g. kids using drugs). How do you make sure the facilities are used by people with the right norms and values – so it doesn't spoil it for everyone else.

The Audit assessed feelings of general safety in the estate. This included considering security for people of different genders, sexual orientations, cultures and religions. The Audit concluded that both the residential neighbourhood and the Town Centre feels very safe during both day and night, except for at night along the unlit pathways through the central open space area (Leisure Square and the Caddies Creek Riparian Corridor) and in those parts of the Central Precinct adjacent to the Town Centre where development is yet to commence or is only partially underway, where feeling of security would be diminished if travelling alone. The amphitheatre area mentioned above is also located in this central open space area. The Audit noted that, overall:

- there were always some people about walking around.
- there are good opportunities for passive surveillance in the residential areas from adjacent windows and balconies, and fences, where they exist, are generally low.
- streets are wide and open and allow for good and consistent sightlines.
- car speeds are generally low.
- facilities were well maintained and any signs of physical disorder minimal with the whole estate projecting an image of affluence and of being well cared for.
- there are also surveillance cameras evident in the Town Centre and in some of the recreational spaces.

An indication of the mixed nature of participant feelings about security is given in the following discussion from the focus group (next page).

* Considerations of safety from the perspective of risk of accident is dealt with in the other sections of this report dealing with the viability of utilitarian and recreational physical activity.

Focus group discussion about current levels of security:

The only thing recently was the stabbing so now my mum at least, she doesn't walk home from work at night where she used to. So that's kind of thrown her off a bit.

She works in the town centre?

Yeah so it's like a five, 10 minute walk to our house.

But she's not keen to do that anymore.

No, not at night.

There was a recent stabling incident, I guess. The people don't actually live in this place, they live somewhere else and they come in and sort it out.

Yeah but there's often a load of kids here, especially on a Thursday with the late night shopping and stuff. I think that's because it's a gathering place.

Yeah. That's maybe one disadvantage of living so close to the shops, a shopping precinct. is that, it's not just your neighbours who are there, it's other people, and sometimes those people aren't too nice.

In the town centre?

In the town centre. To such an extent that there used to be, up until about six months ago, a really strong police presence. They used to have riot squad and whatever, always here on a Thursday night. I'd always look at them going, wow what are they expecting or what has happened or what is happening or are they expecting to happen? There was actually such a strong police presence. But that sort of hasn't been so much in obviousness for about the last six months and then the stabbing happened. So you sort of go, well I wonder if it's going to come back now. I've been watching with interest to see whether they decide to come back. So obviously there is something about the antisocial elements that are attracted to the area, particularly on a Thursday night is the issue. So that was just to follow up on what you were saying. I guess it just indicates that an area can be as nice as you like, but it doesn't make it immune to antisocial behaviour.

Okay, I think it's because the town centre's kind of so popular, especially amongst the youth, it's kind of seen as like a cool place to hang out. Then they can shop late on a Thursday and then go and hang out in the park or whatever until late at night, take some trolleys with them on the way...

Do you all feel comfortable using the area where the trolley throwing occurs. Or do you avoid it?

No.

Yeah, I'd only...I've never been there of an evening.

I'm not really comfortable going - sometimes we go for a walk around the block here, of a night. Not - like in dark, going past there I wouldn't do it by myself.

I'm still uneasy doing it even with someone with me, yeah of a night...

In the day I think it's alright.

Yeah daytime's fine. Because I know that - like you can't see if they're down under - beside the hill or whatever. You can't see whether they're there or not and how many of them there are.

It is lit isn't it?

But still it's a hill. Like it goes down like that to the lake so you don't know how many of them are there or who's there.

I've never been there at night and I probably wouldn't to be honest. Daytime's fine, always there [then].

So what age group are they?

I'd say under 18, generally.

They weren't locals were they?

No but there were so many people there and some of them must have been locals. Because I actually drove past as - like I drove to pick up Mum because it's late on a Thursday night and there's so many kids and that. So she doesn't like walking past there. On the way there was tonnes of them around. Then on the way back the ambulance was there, the police was there and I saw somebody on the ground with blood and stuff.

Yeah, very scary.

Yeah. The other things [in New Rouse Hill] I'm quite happy with, yeah. But maybe once the train station is built up and more and more people coming to this shopping centre and train station is a lot more - it's not as safe as before.

That's right, that's what I think too.

That's common, because you can't avoid it I think.

Yeah, that's the downside of the train station.

Summation – Social interaction.

- (i) Participants overwhelmingly express satisfaction with living in New Rouse Hill. Almost all would be sad to leave, and any day-to-day matters which are of concern appear to be minor.
- (ii) That said there also appears to be a hidden complexity to social interactions, the final characteristics of which are yet to be resolved:
 - the community is in an establishment phase, though also past the more embryonic or ‘pioneering’ phase mentioned by one longer-term participant. Interactions characterising that phase (eg. the start of a community garden, a neighbourhood watch) appear to have now lapsed.
 - there appears to be a reasonable propensity for residents to run into people they know at the Town Centre. Interaction with neighbours is low, but participants are generally happy with this, apparently on the basis that most residents seem to be spending their time establishing their new houses, gardens and other routines.
 - that said, there is also a stated desire for additional ways to meet people. School, the church and for some the library currently address this need.
 - generally, the residential streets are very quiet with low vehicle and pedestrian volumes. This part of the estate presents as a traditional ‘dormitory’ suburb, with consequent low levels of incidental social interaction.
 - although perceived levels of personal safety and security are high, there are important exceptions including rumours of break-ins, parts of the central open space near to the Town Centre becoming a haunt that is then threatening to others and the site of local minor crime, and a past history of a police presence being needed in the Town Centre on Thursday nights to deal with groups congregating.
- (iii) While the design of the built environment is generally conducive to incidental interaction, actual interaction would seem to be limited by the low propensity to walk and cycle for transport and recreation. Similar to the summation discussion on physical activity, there are substantial opportunities to address this in subsequent stages of the development, via:
 - an increase in use of active transport modes when the North-West Rail Link opens.
 - the creation of additional destinations as part of new mixed use developments surrounding the Town Centre.
 - better resolved and integrated routes for walking and cycling for recreation.
- (iv) Implementation of the Community Title governance arrangements will assist social interaction and well-being by providing:
 - an on-going means to resolve the various governance and social etiquette issues that arise in such communities (currently use of the pool area, booking of tennis courts, maintenance of vegetation and footpaths areas), and
 - a venue itself, through Precinct Association meetings and need for decision-making, for formal and incidental social interaction.

- (v) An audit of the various governance arrangements applying to both the residential area and the town Centre from the point of view of impact (positive and negative) on social interaction and well-being (and other healthy built environment considerations).
- (vi) In any area it is not uncommon for there to be issues arising from the need for the youth population to seek out meeting areas 'of their own'. Currently this is the somewhat isolated amphitheatre. Specific engagement with that population may point to alternative and less isolated locations. This may also require a review of Town Centre management practices if they are nominated as a hindrance in use of the Town Centre by this age group.
- (vii) The future railway station at the Town Centre will likely (beneficially) increase the regional role of the Town Centre and hence use by others. A *Crime Prevention Through Environmental Design* (CPTED) audit of the proposed transit area and adjacent area may be of use in potentially thwarting any recurrence of past anti-social activity arising from the role of the Town Centre as meeting place.
- (viii) The availability of time once the commute to work and then family matters are dealt with has been mentioned as limiting the ability to engage in formal and incidental social interactions (as well as physical activity). The management of opening hours of Town Centre facilities generally (including the presence of a 24 hour gym), of the Community Title facilities, and of the Council-managed Community Centre appear to recognise this need. It may be that the opening hours of the Council-managed library will need to be similarly extended to address the needs of residents and benefit its potential role of the Town Centre as a major regional centre. This could also facilitate use of the library as an alternate meeting place for youth to meet and which is supervised, but in an 'adult' way.

4.3 Nutrition – providing healthy food options.

It is recommended that adults consume 2 serves of fruit and 5 serves of cooked vegetables daily.

*National Health and Medical Research Council
(Australia)*

- Number of adults eating recommended servings of:
 - vegetables – 6.8%.
 - fruit - 54%.
- 35% of daily total energy comes from foods with little nutritional value, and also high in saturated fats, sugars, salt and/or alcohol.

Australian Health Survey, 2013 (ABS).

Q. 27. Is fresh healthy food available?

The built environment can be shaped to support or inhibit the sale and marketing of healthy eating options through zoning and land use regulation of the extent to which it provides space for retail and other food uses. A greater diversity of such space will then assist in providing variety in food options – to fulfill different needs in food type, affordability, cultural preference.

Yes.

There is no issue with the availability of fresh healthy food, with a wide variety of sources available both within the Town Centre and in the surrounding area. Residents have a high level of personal mobility and the Town Centre is itself easily accessible.

- the Town Centre includes the two major supermarket chains, as well as separate chain and individually operated stores selling meat, chicken, seafood and fruit and vegetables.
- a weekly farmers' market operates at the Town Centre.
- another, larger farmers' market operates fortnightly at Castle Hill which is about a 12-minute drive or 35-minute bus trip.
- the surrounding area includes the Parklea Markets, a large undercover retailing area which includes fresh foods; a nearby farm shop; and the possibility of other on-farm produce (pick-your-own, or stalls) in the wider region.

The Community Food Assessment indicates that Rouse Hill ranks highly when compared to a Sydney average in respect to the cost, variety and quality of fresh foods (Table 4.3):³²

- the mean cost of a healthy food basket in the Rouse Hill Town Centre was slightly higher compared to both the immediate surrounding area and Sydney suburbs with a low socio-economic status (SES), but was lower than the mean cost for higher SES suburbs.

³² As shown in Table 4.3 the Community Food Assessment found that on average, a healthy food basket was \$17 more expensive in higher SES Sydney suburbs than in low SES Sydney suburbs; the average variety of produce was higher in higher SES suburbs; and there was virtually no difference in produce quality.

- the mean cost of a fruit and vegetable basket was exactly in between the cost of a basket in low SES and high SES suburbs.
- the variety of produce available in Rouse Hill was higher than in other areas.
- the mean score for quality of produce in Rouse Hill was similar to other areas across Sydney.

Table 4.3: A comparison of supermarket prices, quality and variety of fresh produce.

	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

That said, the participants exhibited a wide range of attitudes to shopping preferences, assessment of quality from different retail sources, and of prices they were willing to pay, as illustrated in discussion in the focus group (see boxed text).

Generally however there appears to be a high level of satisfaction with the availability of fresh foods, confirming the wide range of choice available adequately caters for the different preferences apparent. Ten out of 20 participants (50%) cited a supermarket as their most frequent source of fresh foods, four participants (20%) cited individual fruit and vegetable shops, and four participants (20%) cited other locations, mainly Parklea Markets. One participant shopped equally between the supermarkets and the individual fruit and vegetable shops. No-one indicated farmers' markets as their principal source of fresh foods.

Focus group discussion on the availability and quality of fresh food:

Are there sufficient other shops in the town centre? For the good stuff?

Well there are two fresh produce shops outside of the supermarkets.

There are two butchers outside of the supermarkets. There are two fresh chicken shops outside of the supermarkets. There's...

There's Subway, which might be - some of them, selectively. There's some sushi shops, two of them.

But I still think there's not enough of the seafood stuff.

Oh there's a seafood shop too.

How about the markets? In the interviews a lot of people seemed to go to Parklea, some people go to the weekly markets here.

The fresh food, gourmet farmers things yeah.

I wasn't that impressed with that.

I find that the supermarket and, I guess, a fruit market next to the supermarket, they do a pretty good shop. So I've never had to go to Parklea. I find that the quality at Parklea's not always that...fantastic, yeah.

I think you pay for what you get at Parklea.

That's right yeah and it's not really much cheaper isn't it?

Sorry, cheaper...?

At Parklea versus what you get at the fruit market at Rouse Hill, in terms of pricing.

So the quality is - what, more about the quality at Parklea.

Certainly the one at Rouse Hill's a lot better - this is what I've found - versus Parklea and I never go to Parklea after that.

Where else do you do your shopping?

Mainly in the supermarket - not supermarket, the two fresh fruit veggie shops outside the supermarket.

Okay, in the town centre.

Yeah and sometimes they go to the Parklea market on weekend, yeah.

There's an Aldi up the road as well.

What about Castle Hill?

Oh yeah, we go to Castle Hill for some Chinese grocery shop.

Q. 28. Are the shops selling fresh healthy food accessible?

The placement and relative accessibility of supermarkets, green grocers, and farmers markets can promote or hinder consumption of healthy foods.

Yes.

There is no apparent issue with the accessibility of fresh food shops. The Town Centre is well supplied with supermarkets and other shops, and is itself highly accessible via all transport modes.

All (100%) participants were either strongly satisfied or somewhat satisfied with their access to fresh food shops in their neighbourhood, with 16 out of 20 participants (80%) advising they were 'strongly' satisfied. Specific comments from the interviews included:

- the shopping centre has everything.
- once the neighbourhood has been completely developed, it will be easier to access fresh food and other facilities.

Project participants were also asked about how long it took them to travel to their most frequent place for fresh food shopping. Eight participants (40%) said it took less than 5 minutes, with 11 participants (55%) saying it took between 5 and 15 minutes.

Q. 29. Is there a relative over-abundance of shops selling energy-dense, nutrient-poor (EDNP) foods?³³

The placement and relative accessibility of fast food outlets, pubs and convenience stores may entice consumers away from or even prevent consumers from purchasing healthier alternatives.

No.

Within New Rouse Hill retail and commercial land uses are only permitted within the Town Centre (except for the small local café in the Mungerie House precinct in the residential area). The Town Centre comprises a single-ownership and managed shopping centre. As such the quantity and range of food (and other) shops and their relative layout is determined by the centre management in accordance with its commercial and marketing objectives.

There does not appear to be any particular obvious attention to making healthy foods more prevalent or visible relative to EDNP foods. However the impact of this is probably neutral, given:

- individual fresh food shops are quite visible and are grouped around the entrances to the two supermarkets, which in themselves are principal attractors.
- as is now current practice in supermarket floor layout, the two supermarkets tend to give visual and locational prominence to their fresh food sections.
- although there are a large number of restaurant-type food outlets clustered along High Street and therefore quite visible, the food outlets that are most likely to comprise EDNP foods are mostly (not all - there are also some stalls in the main corridors) grouped in a separate 'food terrace' away from the supermarket entrances.
- the food terrace itself is designed such that all food outlets and accompanying signage are of the small scale and have similar visibility, without any visual dominance of any one food type.
- the Town Centre includes two initiatives that promote fresh foods (and as such healthy eating): the Community Kitchen Garden and the weekly Farmers' Market. Both are located on the main pedestrian access between the shopping area of the Town Centre and the T-way bus transit station (with the Kitchen Garden being opposite the cinema complex). (These

³³ Food that has both high levels of energy (energy-dense) and low levels of nutrients (nutrient-poor) (EDNP in abbreviation) are regarded as being essentially unhealthy, leading to poor dietary outcomes. Such food tends to be characterized by high content levels of fats and sugars. Examples include what are typically referred to as "fast" takeaway foods as well as many pre-packaged/processed "snack" foods. See, for example: http://www.publish.csiro.au/?act=view_file&file_id=HE11210.pdf.

initiatives should though also be viewed in relation to comment elsewhere in this section on their actual, practical impact).

Q. 30. Do participants have an ability to grow healthy food?

The provision of space and resources may encourage people to grow some or a lot of their own food. This assists freshness and thus nutrition, and also raise interest and awareness of healthy eating generally. Visibility of fresh food growing can also raise such interest and awareness.

Yes, there are some opportunities available.

The size of the residential allotments relative to dwelling size (footprint) means that there is generally little open space area of effective size (including sun access) available for food growing, particularly when outdoor recreation spaces are also provided. Only two out of 20 participants (10%) indicated they grew food at home, though a larger number indicated they may in the future when they are more settled in. Foods nominated as currently grown were principally herbs and tomatoes, generally in pots.

Interview comments on growing own food at home.

- Do not currently grow any foods at home, but will try vegetables in the future – my son’s school has been doing this so he knows about growing things.
- Don’t grow foods at home yet. Have done in my previous house, but have just arrived here.
- Grow leafy greens and herbs in vegetable beds and pots in the backyard.
- Grow vegetables e.g. tomatoes.
- Grow vegetables in beds in the backyard, and herbs in pots. Tomatoes, beans, corn, chillies, rosemary, parsley, chives and mint.
- Grow some herbs, tomatoes and strawberries in the backyard in pots. Don’t have good soil – so trying in pots.
- Grow some herbs.
- Don’t grow food yet, but might in the future.

There are two community gardens in New Rouse Hill, however none of the residents interviewed used them and there was some questioning in the focus group as to their current efficacy. Interview participants were evenly divided as to whether community gardens were important in what they need to keep healthy.

The ‘Community Kitchen Garden’ at the Town Centre, established with the Stephanie Alexander Kitchen Garden Foundation, did not appear to offer plot spaces for residents, only the ability to utilise the produce as grown by others; although the ability to do this was not clear from the signage or general design, being surrounded by a fence with only one gate access. The garden plots at Mungerie House although noted as well maintained at the time of the Audit and well-located in conjunction with other of the estate’s community title facilities appeared not to be used at all in a

later inspection. Again, their management arrangements are unclear, as illustrated in the following focus group discussion:

Does anyone ever go to that kitchen garden which is near the cinema end, as you walk in from the bus terminal?

I'm not sure how that operates. I think - is it a secret society or something? Because there's a locked gate, you can't get in. I don't know, there might be a small group of people who look after it, I don't know.

Doesn't look like it's very well looked after. I've looked in. It looks like it's half dead and not much growing.

I'm not sure - I don't recall hearing about how it started or who looks after it or who's allowed to go in it. But you can't get in without a key.

Okay because there's also one next to Mungerie House as well.

Yeah, that's the same deal, that's not maintained as well.

Oh yeah, look that was one that we all - the original people, when we were a very small group, we all started that and we used to plant stuff and go and weed it and help yourself to things. For a couple of years it ran really well but, as the community got bigger and bigger, I don't know, we lost interest or something I suppose. It was one of those things. I think there's still some herbs growing.

So is that generally accessible or do you need to get a key for that?

No that's one open...you can get to it. I have been known to zip up there - I haven't done it for a while - and just pick a bit of something fresh that I needed for something or other. So it was quite good.

It needs leadership...because that's what we had in the beginning. There was a young couple who were very keen and they organised it all.

Did they volunteer for that?

Yeah they did. I can remember we had a trivia quiz afternoon one time to raise money to buy some more seedlings, and all that sort of stuff. It was all real community stuff that was going on in those early days. Which doesn't go on too much anymore.

Q. 31. Can (farmed) healthy food be sourced (fresh) close to participants?

Healthy food needs to be fresh. Ensuring agricultural areas close to urban areas are retained can assist by reducing the necessity for extensive transport infrastructure to get food grown elsewhere to urban areas within critical time-frames, and reduce need to treat food to maintain freshness. Visibility of fresh food growing can raise interest and awareness of healthy eating generally.

Yes, though scattered; and there is low utilisation by participants.

There are a number of opportunities to access fresh farm produce:

- the weekly farmers' market at the Town Centre, and the fortnightly market at Castle Hill.
- a nearby farm shop.
- direct from other farms in the wider region.

The survey of farmers markets indicated that both the Rouse Hill and Castle Hill farmers markets had higher levels of produce sourced from either the stall holder's own farm or from the local area than the average for all farmers markets in Sydney surveyed, though the market at Castle Hill scored substantially higher than Rouse Hill in this regard (Table 4.4).

Table 4.4: Source of market produce.

Source of produce *	Rouse Hill market	Castle Hill market	All markets surveyed
Own farm or property	25 %	44 %	26 %
Within local area	50 %	67 %	20 %
Within state	75 %	44 %	27 %
Interstate	50 %	67 %	15 %
Overseas	25 %	67 %	12 %

* The figure represents the number of stallholders stocking produce from a particular source. Most stallholders sourced their produce from more than one location.

That said, the efficacy of the Town Centre farmers' market in terms of quality and price of produce was questioned in the focus group and, as noted, no participant indicated they used this farmers' market as their principal source of fresh food:

The farmers market there, does anyone go?

We've got a farmers market here?.

Yeah really small...

Yeah.

... and pretty expensive.

It's not - they're not... not very good.

Yeah not good quality.

I've tried it but I've never bought... organics, they try and - it's organics so it's sort of a worse quality at higher price.

Yeah, so your carrots are about this big and you know...

The survey of farmers' markets would suggest the comments relating to the cost of produce are valid. On the days surveyed, just over half of the items costed were more expensive than those at the Castle Hill market, and 72% of items were more expensive compared to all markets surveyed.

The existence of a nearby farm shop was mentioned by only one participant (who also mentioned the ability to access farm stalls and 'pick-your-own' orchards within the larger region) and discussion in the focus group suggests that it is not well known or used, and may not in any case be of particular interest:

There's also an actual shop in a farm on the other side of Rouse Hill, some people have said they've gone to.

What is it? A shop in the farm?

That's good. I haven't heard of it.

I have heard someone mention something like that.

Oh there's one in Kellyville.

Yeah, in another suburb.

Do you go there?

I think I go by Annangrove Road or something like that. I think I did see something in that direction.

Never but I did go past that place. Then I was telling myself, I should come, but I never - but, I guess, it's not really that near to my place. It's quite a long drive.

Would people go to somewhere like that if they knew it was there?

Well the supermarket is fairly convenient...

Yeah.

Rouse Hill is just convenient.

Yeah, that's right. Not worth the petrol or the [effort].

My parents go there to buy eggs. They sell like eggs and chicken. It's cheaper - especially the eggs is much cheaper.

It's easy to get to?

You have to drive there, yeah.

Q. 32. Is there a diversity of sources available for the sale or other distribution of healthy food (eg. markets, co-ops, food trucks)?

Maintaining a diversity of potential outlets for healthy food (ie. not just shops and supermarkets) increases the potential for variety of food available, responsiveness to particular local demands and needs, and fresh food environments that will also facilitate a variety of incidental social interactions.

Not really in New Rouse Hill, but yes in the wider locality.

Within New Rouse Hill the only existing non-typical source of healthy food comprises the weekly farmers' market within the Town Centre.

Management arrangements within both the Town Centre and the residential areas have the potential to both facilitate or restrict the provision of additional diverse sources, depending on overall management policies.

In the Town Centre the statutory land use zoning allows a wide diversity of uses. In practice, as a single-ownership managed centre the actual range of land use activities available (shops, commercial premises, markets, etc) is determined by the Centre Management in accordance with its own commercial and marketing objectives. As such, the Centre could encourage and promote the establishment of additional types of food outlets; however it would also no doubt be mindful of competitive impact on existing businesses when making such decisions.

In the residential area the statutory land use zoning allows only predominantly residential uses. Further, the overall character of the area, particularly within 'common' areas, is again determined

via a single management arrangement as part of the community title status of the area. As such, again, the Community Title Association could encourage and promote the establishment of additional types of food outlets (where permitted within the zoning); however it would also no doubt be mindful of residents' opinions as to impact on their amenity and competitive impact on existing businesses in the Town Centre.

Interview comments about alternative sources of retail food.

- Go to Castle Hill farmers' market occasionally.
- Regularly go to Parklea Markets (2)
- Not applicable – my wife does the food shopping.
- I have just found out about a farmers' market in Richmond and will go there also in the future – am willing to drive. We sometimes go to Bilpin for fruit picking as well.
- Find farmers' markets expensive – so go to Parklea Markets instead.
- We buy all our fruit and vegetables from either the farmers' market or the farm shop nearby. Not at the supermarket at all.

Q. 33. Might eating habits be adversely affected by local advertising?

The relative marketing and advertising of healthy and unhealthy foods influences consumption habits. Public exposure to signage advertising healthy food in, around and near public spaces, sporting grounds and schools may affect patterns of consumption.

Not really.

The residential zoning of the residential part of the estate precludes general advertising.

However, advertising signs are included on the perimeter fencing to the sports oval to the north-east of the Study area adjacent to the high school, and managed by the local Council. When audited at the time of this Report only one sign related to food. Although this sign advertised a fast food chain it was not particularly visually prominent; its own design was low-key, and it was only one sign amongst numerous others. However this relative low prominence is probably more by chance than intention, and suggests the desirability of a policy by the local Council precluding the advertising of EDNP foods.

Advertising within the Town Centre is more prevalent as would be expected. However again there is no particular prominence given to signage that might adversely affect eating habits. This may also be more by chance than intention, and also suggests the desirability of a policy by the centre management that consciously balances the prominence of signage to favour non-EDNP foods.

Q. 34. Is the presence of healthy food options visible?

The relative marketing and advertising of healthy and unhealthy foods influences consumption habits. If healthy food options are hidden away they are less likely to be taken up.

Yes.

Within the Town Centre there is no particularly obvious attention to making healthy foods relatively more visible as part of management policies (relating to its single management regime). However the impact of this is probably neutral given that healthy food outlets are indeed visible in themselves. In this regard (and as already noted above in relation to Q. 29):

- individual fresh food shops food shops are quite visible and are grouped around the entrances to the two supermarkets, which in themselves are principal attractors.
- as is now current practice in supermarket floor layout, the two supermarkets tend to give visual and locational prominence to their fresh food sections.
- although there are a large number of restaurant-type food outlets clustered along High Street and therefore quite visible, the food outlets that are most likely to comprise EDNP foods are mostly (not all - there are also some stalls in the main corridors) grouped in a separate 'food terrace' away from the supermarket entrances.
- the food terrace itself is designed such that all food outlets and accompanying signage are of the small scale and have similar visibility, without any visual dominance of any one food type.
- the Community Kitchen Garden and the weekly Farmers' Market are both located on the main pedestrian access between the shopping area of the Town Centre and the T-way bus transit station (with the Kitchen Garden being opposite the cinema complex).

Participants did not raise any particular concerns about relative visibility of healthy and non-healthy foods, though an associated aspect raised by one participant in the focus group when nutrition in general was being discussed is worth including here:

Even within the supermarkets, it's 80 per cent processed food and high fat, high sugar, high salt. The advice that I - as I say, I've been researching this - is that you shop the periphery. Because it's like you've got the fruit and vegetables up one end, the milk and dairy at the other and the meat at the other. If you shop the periphery and just ignore all the stuff in the middle, because all the stuff in the middle is the stuff that they're trying to kill you with basically. So it's not only the number of other shops, it's also what the supermarkets do.

Summation – Nutrition.

- (i) The ability of participants to access fresh food is high given high personal mobility levels and a large choice in terms of fresh food shops in the Town Centre, the Town Centre farmer's market, the Parklea Markets, and within nearby farming areas.
- (ii) The ease of accessing a range of fresh foods in the Town Centre was raised by participants in the focus group as one of the attributes of Rouse Hill currently assisting them to keep healthy.
- (iii) There appears to be a high level of awareness of the importance of healthy eating; which led some participants in the focus group to query the 'freshness' of foods at the supermarkets and Parklea Markets and cite the need to eat less sugary foods.
- (iv) However, this level of awareness does not translate into any particular knowledge or valuing of on-farm food sources that may be available in the area, or use of the two community gardens (even though participants have indicated some interest in involvement in community gardening and in growing their own foods). There would seem to be scope to expand the contribution of and participation in these two food sources.
- (v) The ability of participants to afford healthy food does not appear to be an issue. Where cost of some items has been raised, particularly in relation to the Town Centre farmers' market, it is also noted that there are a range of alternative choices available.
- (vi) There is no noticeable adverse *relative* presence, supply or advertising of non-healthy (EDNP) food options. The 'food terrace' in the Town Centre is a good example of an overall design and management that does not allow any particular food type to dominate.
- (vii) That said, opportunity could be taken of the single-ownership management of both the Town Centre and the residential area to instigate a positive policy to ensure this situation continues, and to even expand provision of healthy food through explicit leasing and promotion actions and ensure the presence and advertising of EDNP foods does not dominate.
- (viii) There would seem to be scope to expand the contribution of and participation in existing and new additional and alternative healthy food sources both within New Rouse Hill and in the surrounding agricultural area. This could be done as part of establishing a New Rouse Hill 'lifestyle', as done for example when marketing the estate of Renwick near Mittagong, also developed by UrbanGrowth NSW, and as suggested by recent publicity for the adjacent suburb of The Ponds). Should there be any reluctance by the New Rouse Hill management bodies in this regard, say because of concerns about competition for the Town Centre, the local Council could undertake such roles as part of overall community development and resident health policies. Promoting existing on-farm food sources can also have the co-benefit of raising awareness of the larger issue of the retention of agricultural lands and supporting farm businesses on the urban fringe.

4.4 Wellbeing – the overall attributes of New Rouse Hill as a healthy place.

Introduction.

The previous sections (Sections 4.1 to 4.3) have assessed the Study findings against the known healthy built environment determinants as described in each of the three domains and seven key actions identified in the earlier literature review, and the related series of 34 questions.

This Section takes a further look at these findings, now from the perspective of the ‘overall’ relationship between the physical make-up of New Rouse Hill and the health of its residents. In this sense it is about how all the elements of New Rouse Hill interact to generate a level of ‘wellbeing’. It is structured around four topics:

- (1) participants’ overall satisfaction with New Rouse Hill as a ‘good place to live’ and in terms of whether they would be ‘sad to leave’.
- (2) participants’ overall satisfaction with specific health-related matters as experienced when living in New Rouse Hill.
- (3) the degree to which participants have access to the factors they need to keep healthy.
- (4) the nature of any on-going annoyances expressed by participants.

The assessment in item (2) draws in particular on responses to a series of questions asked in the interviews. The results are illustrated in Table 4.5, in two ways:³⁴

- (i) by including the *actual numerical* total of participants citing the particular ‘level’ of satisfaction with the particular matters asked in the interview questions (out of a total of 20 participant interviews).
- (ii) by representing the *relative* levels of satisfaction and dissatisfaction with the various matters via bands of shading. Darker bandings represent higher ‘scores’ or numbers of participants citing a particular level of satisfaction; the lighter bandings represent fewer numbers of participants citing that particular level. When looking at the Table as a whole they give a quick visual indication of:
 - whether participants are *overall* satisfied or dissatisfied with the experience of living in Renwick (as measured through this list of specific matters).
 - those matters which stand out (i.e. as darker shadings) as leading to high levels of satisfaction, or to high levels of dissatisfaction and thus requiring attention.

³⁴ The list of matters is the same as those used in a similar study of Selandra Rise, a new residential estate in Melbourne, Victoria (*The Selandra Rise Neighbourhood Health and Wellbeing Survey*; Maller, C. & Nicholls, L. (2012), unpublished research, RMIT University). They were chosen as a way of enabling future comparative assessments of projects in different areas in Australia. However, two matters have been deleted from Table 4.5 on the basis they are not directly applicable to the healthy built environment focus of this Study: “access to major roads or freeways”, and “access to car parking in your street”.

Table 4.5: Living in New Rouse Hill - overall levels of satisfaction.

	STRONGLY DISSATISFIED	SOMEWHAT DISSATISFIED	NEITHER SATISFIED NOR DISSATISFIED	SOMEWHAT SATISFIED	STRONGLY SATISFIED	DON'T KNOW/ NOT APPLICABLE
1. Access to public transport in your neighbourhood.		2	1	5	12	
2. Travel time to work.	1	3	2	4	6	
3. Travel time to your place of study.		1	2		1	16
4. Travel time to children's school or place of study.	1			1	7	11
5. Speed of vehicle traffic in the local streets near your home.		4	4	7	5	
6. Traffic noise near your home.		3	1	7	9	
7. How easy and pleasant it is to walk in your neighbourhood.			1	4	16	
8. How easy and pleasant it is to cycle in your neighbourhood.			2	8	6	4
9. Safety from threat of crime in your neighbourhood.		2		10	7	1
10. Personal safety in neighbour-hood streets after dark.			3	8	9	
11. Access to entertainment in your neighbourhood.			5	8	7	
12. Access to fresh food shops in your neighbourhood.				4	16	
13. Access to cafes and restaurants in your neighbourhood.	1		2	5	12	
14. Opportunities to meet people in your neighbourhood.		2	4	5	9	
15. Number of friends you have in your neighbourhood.		1	9	6	4	
16. Number of people you know in your neighbourhood.			5	12	3	
17. Child care in the neighbourhood.	2	1	1	1	3	12
18. Primary schools in the neighbourhood.	1			4	4	10
19. High schools in the neighbourhood.	1	1		6	2	11
20. Number of parks in your neighbourhood.		1	1	6	12	
21. Quality of parks in your neighbourhood		1	1	8	9	
22. Community Centres in your neighbourhood.	1	2	5	6	4	
23. Access to medical services in your neighbourhood.		1		7	11	
24. Your neighbourhood as a good place to raise children.				1	14	5
25. Your neighbourhood as a good place to live.				5	15	

(1) Participants' overall satisfaction with living in New Rouse Hill.

Overall levels of satisfaction with living in New Rouse Hill are very high.

Participants were asked to rate their level of satisfaction with New Rouse Hill 'as a good place to live'. As shown in Table 4.5 (Item 25), there is an overwhelming positive response, with all participants advising they are satisfied and 15 out of 20 (75%) indicating they were 'strongly' satisfied.

This high level of satisfaction is usefully summed up in the following comment made at the focus group:

I think Rouse Hill is very good, kind of overall. I think they could spend a little bit more effort. Then they could really get what they intended from the area, if they just put a few more systems in place or stuff like that, to regulate things really. That's about it. Then they could get it to the stage where everything's as it was intended to be in the beginning. I don't think it would be too hard for them to achieve their initial goal of what they wanted for Rouse Hill.

This comment and the other responses overall suggest that:

- (i) the built environment features of New Rouse Hill appear to make a significant contribution to these levels of satisfaction, and thus to participants' overall wellbeing.
- (ii) where dissatisfaction exists, this does not generally relate to any lack of a particular item of physical infrastructure, but more to the ways in which they have been designed or are currently managed.

Participants were also asked, in a separate question, whether they would be 'sad' to leave New Rouse Hill. The responses are similar, with 16 out of 20 participants (80%) indicating they would be sad to leave, marginally higher than the NSW average of 73.4%.³⁵ Two participants (10%) indicated they would not be sad to leave, and another two (10%) were neutral.

Of the participants who indicated they would not be sad to leave, the reasons do not appear to relate to any built environment deficiencies. One was in her early 20's and had already re-located from New Rouse Hill at the time of the later focus group to be closer with others in her social circle (though in any case was still living in the general region). Consistent with this, this participant had nominated a lack of other residents in her age group in response to the interview question asking about factors which limited the extent to which participants socialised in the local area. The other indicated at the time of the interview that he tended not to become particularly attached to any place of residence.

³⁵ NSW Ministry of Health (Centre for Epidemiology and Evidence): *NSW Adult Population Health Survey 2008-2010* (refer Attachment 2 to this Report: Health Assessment and Population Profile).

(2) Participants' overall satisfaction with specific health-related matters.

In addition to the more composite matter of 'your neighbourhood as a good place to live', participants were asked to rate their levels of satisfaction with the 24 individual matters relating to living in New Rouse Hill (Items 1-24 in Table 4.5).

Again, participants indicate high levels of satisfaction:

- the darker bandings of colour, representing higher 'scores', are clearly weighted towards the right-hand or 'satisfaction' side of the Table.
- there are relatively few scores of dissatisfaction (the left-hand side of the Table) and those that exist tend to be low, though slightly higher entries exist in relation to 'speed of traffic' and 'noise from traffic' near to participants' homes, and 'travel time to work'.

That said, a number of matters achieved slightly high scores in the 'neutral' category ('neither satisfied nor dissatisfied'):

- speed of traffic (again).
- access to entertainment.
- a number of matters closely-associated with social interaction: opportunities to meet people, the number of friends participants had, the number of people participants knew in the neighbourhood, and community centres in the neighbourhood.

Table 4.5 also shows that matters directly related to the healthy built environment domains of physical activity (items 1, 7, 8 and 21) and to nutrition (Item 12) received high levels of satisfaction. Though and as discussed earlier in relation to physical activity it needs to be noted that 'satisfaction' in this regard does not necessarily translate to uptake into healthy behaviours.

The following comments are made in respect to those matters of concern which have been raised:

- (i) Traffic. As a potentially constant 'intrusion' into people's lives, traffic speed and noise is worth attention. The exact source of the concerns expressed by participants is not known, but is possibly from the 'connector' road of Sanctuary Drive which is bridged and thus slightly elevated over the central open space area. It may well be worthwhile for the local council to investigate this matter to ascertain the extent of any issue and whether it can be addressed through ameliorative measures.
- (ii) Social interaction. There is some variation in participant responses in respect to their satisfaction with their current levels of social interaction. Although levels of social interaction with neighbours is low participants are generally satisfied with this, in conjunction also with a recognition that both they themselves as well as their neighbours are often currently pre-occupied with settling-in to their new lives in New Rouse Hill and also often spend considerable time during weekdays on their daily commute to work. However, the responses also indicate a level of need that is as yet unmet and which should be addressed. This could take different forms:

- action by the local council to investigate the actual source of the concern, and to more-widely promote the range of social activities that do exist in New Rouse Hill and/or facilitate new additional activities.
 - instigate the Community Title governance arrangements for the residential component of the estate, as one way in which to promote additional interactions between residents.
 - ensuring that the future development of the peripheral sites surrounding the Town Centre includes ground floor non-residential spaces able to be taken up by uses that generate additional destinations, hence facilitating additional formal and incidental social interactions.
 - ensuring that the design of future multi-unit residential buildings addresses the need for common areas and internal access security arrangements that facilitate informal social interactions amongst residents.
- (iii) Community centres. The ‘neutral’ level of satisfaction expressed about community centres is worth investigating further given that there is a substantial existing community centre space and also a library that includes social activities within the Town Centre, and as such easily accessible to residents. Again it would be worthwhile to ascertain whether the actual reason for this matter being cited is because residents are not aware of the activities that already exist, or whether new additional activities should be sponsored to better reflect need.

(3) Access to factors participants advise they require to keep healthy.

Participants in the focus group were asked to list the behaviours and things they considered they need to be healthy, and then:

- those matters they currently had access to, and as such were currently assisting them to keep healthy, and
- those matters they currently did not have access to, and as such, if available, would further assist their ability to keep healthy.

Although participants were aware the Study was primarily orientated to matters relating to the built environment, no restriction was placed on what participants could advise (see Section 3: ‘Methodology’). The responses to all questions are shown in Table 4.6.

Most matters relate either directly or indirectly to the three domains of chronic disease factors that have been the focus of this Study (physical activity, social interaction, and nutrition). Additional matters that fall outside the three domains were also identified by the participants. They are shown as circled in Table 4.6.

Table 4.6: Focus Group responses: New Rouse Hill.

<i>What I do to keep healthy.</i>	<i>What is helping me to keep healthy.</i> (things I have now)	<i>What I need to keep healthy.</i> (things I do not have now)	<i>What I should be doing to keep healthy.</i>
Eat healthy when at home.	Convenient shopping environment.	Exercise group.	Eat proper breakfast.
Eat more greens and fruits.	Town Centre promotes lots of walking when shopping.	Classes of yoga, dance, etc.	Eat more red meat.
Eat more fresh vege and fruit.	Convenience of shopping areas with kids' play area.	No soccer field, or running oval for track & field.	Less sugary foods and snacks.
Eat fresh food (not processed) (5 vege + 2 fruit/day).	Shops in walking distance- easy to eat fresh food, shop daily.	Badminton court.	Drink less sugary drinks.
Eat sensibly.	Nice fruit shops and choice in Town Centre.	Some community events throughout the year.	Eat less sugary treats.
Go to the gym everyday + cycle once or twice/week.	Playground facilities great for spending outdoor time with grandchildren.	Rouse Hill library not main branch-more activities at Castle Hill.	Not to drink more than 5 cups of coffee.
Go for jogs.	Playgrounds are close by for kids.	Social network club.	Spending time on physical exercises.
Exercise regularly.	The kids playground.	Not aware of community exercise groups.	More exercise in weekends.
Bodyweight exercises (situps, pushups, lunges).	Many kids playgrounds nearby.	Living in units-don't get to know neighbours.	Walk to shops instead of driving (like I did today).
Walk after dinner.	Good footpaths with many routes.	More attention to damaged footpaths.	Go outside more.
Brisk walk.	Lots of good places to walk.	Clean environment.	Being more social.
Leisure activities with family on weekends.	Nice environment within community for walk.	Dogs barking can keep you up.	Having more relaxation time.
Preventative health checks-immunisation, health monitoring.	Bike paths (though sometimes not maintained/cleaned).	Xmas road rage in Town Centre - I avoid by staying in or going out early.	Less worrying by taking life in a more leisurely perspective.
Go to my local Catholic church on Sundays.	Near to gym facilities.	Light pollution at night.	Sleep at regular times.
Spend more time with friends.	Gym within walking distance.	Recent violent event- now scary to go out at night.	Sleep more/earlier.
Sleep at least 6 hours/day.	Swimming pool to be opened soon.		Not to spend too much time on the computer.
See health professionals when necessary.	The tennis court.		Not to watch TV till late hours.
Keeping the house and surrounds tidy.	Lots of trees – good shade when out.		
	Gym in Town Centre.		
	The pool and gym room		
	Good friendly neighbours.		
	Open-air character of Town Centre is great-fresh air.		
	Nature areas are plentiful.		
	Less crowded than The Ponds where there are rows and rows of houses.		
	Doctor in walking distance - can wait at home until appointment time.		
	Not working - time to devote to exercise & cooking (not commuting).		
	Good internet access.		

Matters relating to the three domains.

The responses to the questions about matters participants do or do not currently have access to are shown in Columns 2 and 3. The matters that can be addressed through built environment actions are highlighted in two ways:

- actual 'direct' built environment matters are shown in darker highlighting.
- associated, more 'management' related items are shown in lighter highlighting.

Addressing these matters will assist participants to achieve the things they list as important for their health and which they also need to give more attention to in terms of their personal behaviour (Column 4).

Most of the matters listed relate to the built environment, and have also been covered elsewhere in this Report. The following additional comments are made:

- (i) The high proportion of built environment matters listed in Column 2 (things that are assisting the participants to keep healthy) suggests that New Rouse Hill offers its residents a high standard of a 'healthy built environment' (even though it has not been specifically designed with this criterion in mind).
- (ii) The matters here include good access to shopping facilities, to playgrounds, to walking and cycling tracks, and to various active recreation facilities; and a generally pleasant 'open' environment.
- (iii) Of the items listed in Column 3 (things they require to keep healthy but do not currently have) only one (a badminton court) comprises a physical built environment item that does not exist. Most matters listed comprise the provision of actual organised 'services' (exercise groups or classes, social activities) as well as attention to 'maintenance' that in practice is generally something the local government authority undertakes.
- (iv) As suggested in some of the participants' wording, it may be that some or all of these services already exist but either residents are not aware of them or they are delivered at times that are not convenient. A specific example is the reference to the need for a sports field or oval. As further discussion in the focus group confirmed, such a facility already exists (provided by the local government authority) adjacent to the estate. The issue was that the participant was not aware of its existence given the oval is somewhat hidden, with the connecting pedestrian and cycle path not necessarily obvious.
- (v) The reference to a badminton court obviously relates to a personal interest. An internet search indicates that there are badminton courts and player competitions in the wider local area that may be able to be accessed – if the participant has access to private transport. However, a feature of a healthy built environment generally is that facilities should preferably be able to be accessed by active transport means. In this case, it may well be of use for the local government authority to investigate likely usage of such a facility given:
 - it would be relatively low cost, and there is sufficient open space areas in New Rouse Hill on which it could be located.
 - once constructed, it is a facility that could be 'self-managed', somewhat like the existing tennis court at Mungarie House provided under the Community Title arrangements.

- it could provide a facility orientated to the youth population of the area and as such assist in ameliorating the concerns expressed elsewhere in this Study about anti-social activities in part associated with this age group.

One characteristic of the focus group discussion is that it included how the participants themselves often saw how the various individual domains relating to healthy built environments may interact in terms of contributing or not to their own health – and thus also indicate a sense of relative wellbeing. The following comment by a participant, now retired, about her previous ‘lifestyle’ when working and requiring a time-consuming commute provides a good illustration of the potential influence of proximity, physical exercise, socialisation, and nutrition:

These entries about being more social – the need for a social network club and parts some more community events. Is that about time as well?

It's just my friends are all sort of still working and they're not living in the area. So it's difficult, when the times I want to be social and I'm going, oh yeah I'm free, and they're not. I mean I know what it's like because when I was working too I was working hideously long hours and that sort of stuff. ...it used to be, for me, the travel to work. I was travelling and spending three hours a day in the car. That then meant that I couldn't exercise, that it meant I was too tired to really cook anything decent when I got home. It was sort of, what can I bang in the microwave, what can I buy that's quick and easy. That was a huge issue, because of the traffic.

Additional matters.

The matters raised by participants that fall outside the three domains are also worth noting. Most tend to relate to quite personal issues and behaviours. Some can however also point to potential built environment responses (either through the provision of infrastructure or the management of that infrastructure or the provision of community services) in order to maximise the achievement of overall health. The participants in New Rouse Hill have identified fewer matters that fit this characterisation compared to the other Study areas. Two examples though are evident, though both are already well-catered for in New Rouse Hill:

- a good range of facilities to support physical activity and social interaction can ensure weekend family leisure activities support healthy behaviour.
- a good local doctor can encourage regular visitation for check-ups.

(4) On-going annoyances.

As a final determinant of the extent to which the built environment of New Rouse Hill contributes to the wellbeing of participants the Study noted any particular annoyances that were expressed on the basis that:

- a low level of annoyances can suggest that participants are overall contented with the area, contributing to high overall levels of wellbeing and hence general health.
- certain on-going annoyances or an unreasonable number of concurrent annoyances can lead to an accumulation of frustrations which in turn may reduce wellbeing and impact negatively on general health.

The following matters were mentioned by participants as annoyances:

- the speed and noise of traffic near to participants' homes.
- commuter car parking in residential streets.
- barking dogs.
- light pollution at night.
- road rage in the Town Centre at the busy Christmas time.

Overall, these matters can be considered to be relatively minor, and as such indicative of a built environment that satisfactorily provides for resident needs. Further, the matters are generally of a 'management' nature, and structures exist to deal with their resolution. For the matters cited this is generally the local Council.

Of course it may also be that a greater public benefit overrides particular individual concerns. The reference to light pollution at night (made at the focus group) is an example. Here the source of the lighting is from a nearby oval and relates to night-timer physical recreation activity which is obviously of benefit in terms of physical activity and social interaction. Further, as agreed in the discussion, the lights do not stay on all night.

The discussion around the matter of road rage in the Town Centre did however reveal a deficiency in the built environment design that deserves recognition so that it can be avoided in the future. It has two components:

- the high pedestrian volumes (at Christmas) and narrow carriageway widths of the streets means that the formal pedestrian crossings have a constant flow of people across them, meaning that there is no break in pedestrians to allow motor vehicles through.
- the access points to the car parking areas for the residential components of the Town Centre development are from the internal road network, meaning that residents' vehicles must cross the footpaths areas. Again, conflicts then arise when there are high pedestrian volumes on those footpaths.

Focus Group comment about Town Centre traffic issues:

Oh and the other thing on my road rage thing is that, at Christmas, it's the nightmare to get in and out with the traffic pedestrian crossings. Because there's just constantly people on the pedestrian crossings. Oh yeah.

They don't stop and you've got to just like floor it, like when you get a break, and try not to run anyone over. Because it's the only way you're getting through and it is...

They should shut that area off to anyone but residents really because it would just clog up completely. Yeah.

It's hard enough on a weekend trying to get through.

So you can only access your car park from that main street?

Yes. I've got to come through the main street, no other option right. So you've got the pedestrian crossings. I don't know, if you've ever been to Penrith shopping centre and Westfield's, they've got traffic lights and pedestrian crossing on a street that's not even very busy. I'm like, why can't we have some traffic lights to give us a go to get in and out, and for the safety of pedestrians too. Because I don't think flooring it across the pedestrian crossings is particularly safe for them either.

It's mainly on that one crossing near the bank isn't it?

Yeah it's that one. They're all pretty bad to get through.

... they need to get someone from the shopping centre as a traffic policeman going, yes you go, now you stop, whatever. But no, it's a free-for-all. It's just you make your own way out. So actually in the week or two before Christmas, I actually always make sure I either have to make a decision in the morning to either leave the premises at seven in the morning and not plan to come back until six at night. Vacate. Or stay in and go, no today's a stay-in day, I won't be going out.

Summation - Overall wellbeing.

- (i) *Overall* levels of satisfaction with living in New Rouse Hill are very high.
- (ii) When participants were asked about things in their lives that are assisting them to keep healthy, significant mention is made of both the physical features of New Rouse Hill and actual items of infrastructure within New Rouse Hill.
- (iii) Overall, the number and characteristics of aspects of living in New Rouse Hill that participants find annoying are relatively minor.
- (iv) It is worthwhile investigating the following matters to determine the exact nature of concerns that have been raised and the extent to which they can be addressed:
 - (a) overall levels of maintenance of footpaths and cycle paths.
 - (b) the provision and promotion of organised exercise groups, classes, and social activities.
 - (c) better access to the existing oval space adjacent to the north-east of the estate.
 - (d) installation of an informal badminton court.
 - (e) local traffic speeds, and traffic noise.
 - (f) instigation of the Community Title governance arrangements for the residential component of the estate.
 - (g) the provision of space within the future expansion of the Town Centre for additional 'destination' activities.
 - (h) the inclusion of informal social interaction spaces within future multi-unit residential buildings.
 - (i) vehicular and pedestrian traffic conflicts during peak times in the Town Centre.
- (v) Concerns raised about vehicular and pedestrian traffic conflicts in the Town Centre should be noted as a lesson to be addressed when designing similar areas in the future.

5. CONCLUSIONS – key needs for New Rouse Hill as a healthy built environment.

5.1 Introduction.

The New Rouse Hill is a significant development achievement. In a matter of some five years previously open land now services the larger 'North-West Sector' Growth Corridor with one of the largest regional shopping centres in Australia, and comprises a growing suburb of residents with access to a range of established recreation facilities, walking and cycling paths, extensive open space areas including a 'restored' riparian area, a new primary and high school and childcare centre. The shopping centre is designed to function as a 'town centre' with extensive retail and other services including cinemas, gymnasiums, and a Council library and community centre; and in respect to its overall design is regarded as innovative in its attempt to replicate the open-air nature and public spaces of traditional town centres, and in its energy and water saving measures.

The significance of New Rouse Hill will continue to grow with the future establishment of higher density residential developments adjacent to the Town Centre and with the imminent completion of the North West Rail Link. Combined, these attributes are intended to yield, as stated in the master plan vision for The New Rouse Hill, a '*city in a garden*' (emphasis added).

The design of New Rouse Hill did not consciously include any specific focus on the role of the built environment in influencing residents' health. Rather, and indicative of the time in which it was planned, the key focus was on environmental matters (energy and water conservation, riparian management, and 'green' travel) and the generation of a feeling of 'community' (for example in the residential areas through the early provision of community facilities, and in the Town Centre attention to how the public areas would contribute to the making of a 'place').

New Rouse Hill as a healthy built environment?

Notwithstanding the achievements of New Rouse Hill, an assessment of the overall environment from the perspective of whether it is likely to be conducive to the long-term health of its residents yields mixed results.

Indicative of the fact that the environmental and community matters listed above by their nature have a co-beneficial effect on the health outcomes of residents, the built environment of New Rouse Hill rates highly in providing the broad necessary elements of healthy living: the opportunity to engage in active transport modes; an environment that is pleasantly walkable and with destinations (the Town Centre, regional and local open spaces), and so is conducive to exercise and incidental social interaction; a choice of recreation facilities; and a wide range of options to source fresh food.

When the Focus group participants were asked about things they need to keep healthy and which they do not currently have access to, few structural built environment matters were cited and overall the things mentioned might be considered to be relatively minor (Table 4.6). This overall positiveness was also usefully summarised by a focus group participant:

I just was thinking too about this exercise, I'm old enough to go back to the Life Be In It campaigns and that, back in the '70s. That was the first, I think, general awareness program for people in Australia, that we need to get out and exercise et cetera. So I think it's been a

gradual whole of society thing for the last 30, 40 years. Some people embrace it, others don't, and there's so many lifestyle shows and things on, on TV and everything these days, also which highlight it all. The thing about living in Rouse Hill is, I find it assists you to do those things because of the facilitates that are here, the situation and, well, the eating thing. I mean that's a - we've got good shops, we can buy fresh fruit and stuff like that.

However, the extent to which participants avail themselves of these attributes which will assist their long term health, is variable. In one sense this can be expected and may be a passing phase: many residents are still establishing themselves in terms of their houses, gardens and social contacts at the same time as commuting. Available time to make changes to perhaps previously-established lifestyle habits is currently limited. The need to have a presentable garden is also in a sense 'forced' on residents through a bond paid at the time of purchased and refunded later when the garden is established. New Rouse Hill is similar to the type of outer-urban, lower-density and car-orientated dormitory suburb that results in lifestyles that are generally familiar and hence comfortable – but which have led to the current concern about an epidemic of chronic 'lifestyle' diseases. While the participants currently present as being healthy, in part due to their generally younger demographic, the risk is that future health issues will arise as a result of their lifestyles. In a way this risk may be exacerbated by the high overall levels of satisfaction with living in New Rouse Hill that participants cite in that this level of 'comfort' with the existing situation may make it difficult to generate any changes in lifestyle habits necessary for better longer term personal health.

Here, the Study points to one particular overriding concern: the future health impact of low levels of physical activity. Only 12 out of 20 participants (60%) achieve the recommended minimum number of hours of physical activity; and of these one-third (four participants) achieve the recommended number of hours via 'moderate' activities alone, with the risk that this level may not actually achieve the necessary cardiovascular and other benefits needed. Seven participants (35%) nominated only two or less hours spent on moderate physical activity per week (when the recommended minimum level is 2½ to 5 hours).

The use of 'active' transport (which by combining physical activity with the need to travel for other purposes is a good way to achieve required minimum levels of exercise) is also low. 15 out of 20 participants (75%) use the car for 50% or more of trips, with nine participants (45%) using the car for 90% or more of trips.

In terms of the other core 'healthy built environment' domains (nutrition and social interaction), the Study suggests that New Rouse Hill residents are knowledgeable about and have good access to fresh foods; and that they are generally satisfied with their current levels of interaction with neighbours and with the community generally. That said, there is potential to:

- draw on a stated interest by participants to grow more of their own foods (with the co-benefits of additional physical activity, and the promotion of further incidental social interactions where utilising the existing community garden spaces); and to promote the ability to access fresh foods direct from existing farming enterprises in the region.
- expand the likelihood of incidental social interactions within the streets and other public spaces by encouraging walking for both transport and recreation by increasing the range of local destinations and activities. This will assist in addressing comment suggesting a desire for a greater ability to meet people, as well as achieving the co-benefit of increased physical activity.

Participants in the focus group were also asked to nominate the things that they should be doing to keep healthy but were not currently doing. The matters cited were more about their own personal behavioural choices than about any deficiencies in the built environment (Table 4.6). It suggests that, for various reasons, residents are not partaking to the extent possible of the health-supporting opportunities that New Rouse Hill provides as a walkable, transit-orientated development with good access to a wide range of facilities. The question arises: to what extent is this due to the personal agency of the participants, or to any perhaps hidden or subtle deficiency in the built environment of New Rouse Hill itself? Or, expressed another way: to what extent can these concerns be addressed through targeted changes to the built environment, or do they need to be addressed solely via explicit attention to the behaviours and lifestyle habits of the residents themselves?

Here the Study suggests the need to address both areas:

- there is room to improve in detail elements of the overall structural layout of New Rouse Hill, both in terms of its physical shape and the management of existing facilities.
- there are opportunities to engage with the residential population in respect to encouraging different, healthier ways to use the existing built environment of New Rouse Hill.

Two additional characteristics of New Rouse Hill that can assist.

Two features of the overall development processes within New Rouse Hill can assist additional action to support the health of its residents:

- (i) the development process is not yet complete.
 - the opening of the North West Rail Link will facilitate a major change in travel patterns, from sedentary car use to more 'active' modes. UrbanGrowth NSW is now also involved in a major 'Urban Transformation Program' to maximise these and other benefits from this new link at each of the planned railway stations. Equal attention in this regard should be given to New Rouse Hill, notwithstanding that it is further along this development paths than other station locations.
 - the infill of development sites on the periphery of the Town Centre will change the 'no-man's land' feel of this area and provide 'activation' opportunities.
 - development of the higher density residential precincts gives the opportunity to re-look at internal street design in the areas to the south of the Town Centre, and at initiatives to improve social interaction in multi-unit housing.
 - completion of links in walking and cycling tracks with the local Council's regional access routes will increase the variety of destinations and length of routes, and hence encourage longer periods of time engaged in physical activity.
- (ii) the particular ownership and governance arrangements.
 - the Community Title arrangements in the residential areas provide the opportunity for direct access in local governance, adoption of targeted policies relating to health, and for social interactions.
 - the single ownership and management of the Town Centre can permit explicit management policies that assist health outcomes.

- within the existing development and management agencies there are dedicated positions tasked with community development and the encouragement of 'green travel'. These can assist in implementing further behavioural change initiatives.

Co-benefits.

As evidenced in the Study findings there is a high degree of interrelationship between:

- individual physical aspects of the built environment,
- the ways in which that built environment is managed governed, and
- personal individual health-related behaviour.

In turn, these strong interrelationships also mean that actions or inactions in one area can have important leverage or flow-on affects in another. Positively, it can mean a compounding effect whereby resources and attention applied to one matter can produce, often with no additional inputs, important benefits ('co-benefits') in another.

The comments in this Section and the subsequent Recommendations are drafted, in part, around these understandings.

Singapore as a model?

An unexpected component of the focus group discussion is worth mentioning here – three of the participants had associations with Singapore. Two were born there, subsequently moving to Australia; one to study and the other to retire with her son. Another was raised in and has lived mostly in Australia, but has worked in Singapore. This latter participant commented that one of the reasons she had decided to live in the Rouse Hill Town Centre was because it seemed to provide a similar convenient and dynamic mix of residential uses with shops and other activities.

- Can I just mention, I used to work in Singapore (not live there permanently), and that was one of the reasons that I actually chose [Rouse Hill], when I saw this place built, and went, I want to live there. Because it's like in Singapore, where they've got the houses and the shops underneath. I just noticed that you're from Singapore and it's this Singapore connection...

... I'm going, maybe it's not only me, maybe it's other people that are going, hey yeah, like Singapore, like this is a cool place.

In this sense the environment of New Rouse Hill would appear to have achieved its vision of a 'city in a park'. However, the focus group discussion did also point out some important differences – and limitations in achieving this vision, suggesting perhaps that a more 'Singapore-like' city or urban, rather than 'suburban' mindset is adopted in the design of its additional stages and in the on-going governance arrangements of the Town Centre. This in turn will assist in generating additional destinations, thus encouraging active use of the Town Centre with then beneficial flow-on effects of additional 'active' transport (walking and cycling) trips, and social interactions:

- [Singapore] is a city yeah, it's very busy and everything. Anytime you want to eat something ... when feel like eating something, we just go down the road or just drive maybe five, 10 minutes, we can get something nice. Whereas over here the restaurants close at 10pm, 11pm. So this is my problem. ...But overall I do like it but except for this little [glitches], like not convenient to eat, things like that.

5.1 Key needs for New Rouse Hill as a healthy built environment.

(1) Explicit attention to increasing the amount of physical activity, which often does not meet recommended minimums.

The development of a greater culture of walking and cycling for both transport and recreation has the potential to increase time spent in physical activity as well as incidental and planned social interaction. Action in this regard needs to be multi-dimensional. There are two main components:

- (i) The responsible entities. Importantly there is an existing multi-dimensional aspect to the entities currently involved in the governance and management of New Rouse Hill. This should be utilised to instigate a new walking and cycling strategy. The various bodies are: the local Council, the Community Association, GPT (in respect to the Town Centre, and where there is already involvement through the Green Travel Plan and dedicated Green Travel Officer position), Lend Lease (in respect to the residential components), and UrbanGrowth NSW (as the overriding project manager for New Rouse Hill and now also for the larger North West Urban Transformation Project relating to the North West Rail Link). In addition, the (NSW) Premier's Council for Active Living can also provide overview resources and the Heart Foundation could provide necessary 'leadership' and on-the-ground organisation.
- (ii) The range of actions needs to be similarly broad. Key suggestions are in separate listings below. Some additional ideas include:
 - drawing on the key role that schools, and to some extent churches, play in the current stage of social development of New Rouse Hill by encouraging people to regard a walk to school or the church as an essential component of their attendance.
 - perhaps unconventional initiatives such as giving all households a personal shopping trolley to encourage them to walk to the shops (by removing the excuse that it is necessary to take the car in order to carry home shopping), or starting an evening 'passaggiata' walking group.
 - rectifying of gaps between existing walking and cycling routes between the residential areas, schools and the extensive open space and recreation facilities in the immediate region.
 - promotion of scenic walking and cycling destinations in the immediate region.

(2) Use the new rail link as an opportunity to increase active transport usage.

The new North West Rail Link is likely to raise levels of public transport usage. It provides the opportunity to ensure walking and cycling links from the residential areas promote active travel to the station, and to the Town Centre generally. This may require:

- (i) more direct links across the Caddies Creek open space (the existing circuitous link appears to be designed more with recreation in mind).
- (ii) way-finding signage.
- (iii) an associated concerted campaign to 'leave the car at home'.

(3) Address lingering concerns about security in public spaces.

A *Crime Prevention Through Environmental Design* (CPTED) audit of New Rouse Hill with a commitment to action any deficiencies can assist in resolving lingering safety concerns by residents. Particular attention should be given to:

- (i) those parts of the Caddies Creek open space corridor (the amphitheatre and Leisure Square) where current issues are apparent, including any need to provide alternative facilities and gathering spaces for the youth population of New Rouse Hill.
- (ii) the valid use of the Town Centre as a regional meeting and gathering place.
- (iv) the design of the new transport interchange being developed with the new railway station.
- (v) any need for a local Police station.
- (vi) the management policies associated with the governance arrangements for both the Town Centre and the Community Title facilities and spaces.

(4) Increase the propensity to use the Town Centre as a destination, accessed via 'active transport'.

Currently the Town Centre is separated from the residential areas by a periphery of undeveloped sites. The unattractiveness of these areas and the existing 'screen' landscaping contributes to a sense of detachment of the Town Centre and would appear to have some influence on the propensity of residents to drive rather than walk or cycle to the Town Centre and T-way. The infill development of these sites should explicitly address these existing concerns by including 'active' mixed use street frontages to:

- (i) provide additional 'destinations' to encourage trips to the Town Centre area.
- (ii) provide uses which offer an attraction to stop and look or visit and so encourage travel by walking or cycling.
- (ii) allow for a wider range of private-sector uses within the Town Centre than would otherwise result from the existing management policies, thus better reflecting the more varied nature of 'traditional' town centres characterised by mixed land ownerships. This would be consistent with the 'city' component of the vision for New Rouse Hill as a 'city in a garden'; and assist in making the Town Centre a more frequented destination, in turn encouraging physical activity, social interaction, and the provision of diverse sources of food.
- (iii) assist in passive surveillance of the surrounding streets, and of the adjacent Leisure Square open space, in turn encouraging greater pedestrian activity and other usage of these spaces.

(5) Increase involvement in neighbourhood governance by establishing the community title associations.

Slow establishment of the respective Community Associations means little current resident involvement in local governance and an inability to resolve social etiquette and other more serious anti-social issues. In addition, and as suggested in marketing material for New Rouse Hill, involvement in these processes can of itself assist personal feelings of wellbeing and incidental and formal social interaction. Early action should be taken to establish the Community Precinct Associations as active entities.

(6) Audit the specific contributions of the Community Association and the Town Centre management to New Rouse Hill as a healthy built environment.

Management of many of the common facilities and public spaces of New Rouse Hill is via two governance arrangements largely outside the relevant local Council: the Community Association for the residential areas, and GPT for the Town Centre (including its internal streets and open spaces). An audit of the potential impact on healthy built environment outcomes of these governance arrangements and associated management policies and practices, with a commitment to action any deficiencies, would be useful.

- In respect to the Community Title arrangements, particular attention should be given to:
 - (i) the ability of residents under 16 years of age to utilise the community recreation facilities without a supervising adult, thus potentially assisting younger residents achieve recommended minimum hours of physical activity.
 - (ii) the ability of residents to book the tennis court, thus potentially increasing its use.
 - (iii) encouragement of greater use of the community garden at Mungerie House.
 - (iv) ensuring the non-residential components of the future infill development in the areas peripheral to the Town Centre do not result in undue presence or advertising of non-healthy foods.
- In respect to the Town Centre arrangements, particular attention should be given to:
 - (i) ensuring leasing policies give prominence to shops retailing healthy food, and do not result in undue presence or advertising of non-healthy foods.
 - (ii) encouragement of greater use of the 'kitchen garden'.
 - (iii) ensuring the potential for a diverse range of uses to be established in the peripheral development sites, particularly at ground level.

(7) Ensure future multi-unit buildings facilitate incidental social interactions.

The design and internal security management arrangements of existing and future multi-unit residential buildings needs to be reviewed to better facilitate incidental social interaction amongst residents and the ease by which residents can visit each other on an informal basis.

(8) Develop local streets to become 'complete streets'.

The development of the remaining residential precincts provides the opportunity to trial different internal street designs to address concerns about deficiencies in existing designs relating to bicycle safety. Here reference could be made to the 'complete streets' model.

6. RECOMMENDATIONS.

- (1) Additional physical activity needs to be encouraged to address a concern that only 60% of participants currently achieve minimum recommended number of hours of exercise. Given that New Rouse Hill is well-served in respect to infrastructure in this regard attention needs to be given to addressing:

- (i) cultural impediments to the undertaking of physical activity, including a default to using the motor car as transport, and
- (ii) maintenance and governance arrangements of the infrastructure that exists to facilitate and encourage further use and uptake.

Here, advantage needs to be taken of the various existing governance arrangements within The New Rouse Hill:

- the local Council,
- the Community Association,
- the Town Centre managers (General Property Trust), including the Green Travel Officer position,
- Lend Lease (in respect to the residential components), and
- UrbanGrowth NSW (as the overriding project manager for New Rouse Hill and now also for the larger North West Urban Transformation Project relating to the North West Rail Link).

In addition, the (NSW) Premier's Council for Active Living can also provide overview resources and the Heart Foundation could provide necessary 'leadership' and on-the-ground organisation.

- (2) Opportunity should be taken of the new North West Rail Link to raise levels of public transport usage in conjunction with increased levels of walking and cycling to the station and to the Town Centre generally. This may require:
- (i) more direct links across the Caddies Creek open space (the existing circuitous link appears to be designed more with recreation in mind).
 - (ii) way-finding signage.
 - (iii) an associated concerted campaign to 'leave the car at home'.
- (3) Undertake a *Crime Prevention Through Environmental Design* (CPTED) audit of New Rouse Hill with a commitment to action any deficiencies can assist in resolving lingering safety concerns by residents. Particular attention should be given to:
- (i) those parts of the Caddies Creek open space corridor (the amphitheatre and Leisure Square) where current issues are apparent, including any need to provide alternative facilities and gathering spaces for the youth population of New Rouse Hill.
 - (ii) use of the Town Centre as a regional meeting and gathering place.
 - (iv) the design of the new transport interchange being developed with the new railway station.
 - (v) any need for a local Police station.

- (vi) the provisions of the management policies associated with the governance arrangements for both the Town Centre and the Community Title facilities and spaces.
- (4) Develop and action specific behaviour-change promotional activities to increase a culture of walking and cycling within New Rouse Hill, possibly in conjunction with the established Green Travel Officer position, including, as examples:
- drawing on the key role that schools, and to some extent churches, play in the current stage of social development of New Rouse Hill by encouraging people to regard a walk to school or the church as an essential component of the experience.
 - 'outside the box' initiatives such as giving all households a shopping trolley to encourage them to walk to the shops without the need to take their car to carry their shopping, or starting an evening 'passaggiata' walking group.
 - the identification and rectifying of gaps between existing walking and cycling routes between the residential areas, schools and the extensive open space and recreation facilities in the immediate region
 - the promotion of scenic walking and cycling destinations in the immediate region.
- (5) Ensure the infill development of the peripheral development sites surrounding the Town Centre addresses the existing unattractiveness of these areas and the apparent 'detachment' of the Town Centre by including 'active' mixed use street frontages to:
- (i) provide additional 'destinations' to encourage trips to the Town Centre area.
 - (ii) provide uses which offer an attraction to stop and look or visit and so encourage travel by walking or cycling.
 - (ii) allow for a wider range of potential private-sector uses to be provided within the Town Centre area than would otherwise result from the management policies governing the existing Town Centre, thus better reflecting more the varied nature of 'traditional' town centres characterised by mixed land ownerships. This again will assist the Town Centre in acting as a destination, in turn encouraging physical activity, social interaction, and the provision of different food sources consistent with the 'city' component of the master plan vision for The New Rouse Hill as a 'city in a garden', as distinct from the more 'suburban' ambience of the surrounding residential precincts. (Here also there may be an approach or mentality to the management of the Town Centre that is more 'suburban' 'shopping mall' than 'city' that should be recognised and addressed).
 - (iii) assist in passive surveillance of the surrounding streets, and of the adjacent Leisure Square open space, in turn encouraging greater pedestrian activity and other usage of these spaces.
- (6) Bring forward the establishment of the respective Community Associations to permit greater resident involvement in local governance in order to address existing social etiquette and other more serious anti-social issues within common (Community Title) property, and to provide another venue to facilitate formal and informal social interactions (as suggested in existing marketing material for The New Rouse Hill).

- (7) Undertake an audit of the potential impact on Healthy Built Environment outcomes of the dedicated New Rouse Hill-specific governance arrangements of the Community Association (for the residential areas) and General Property Trust (GPT) (for the Town Centre) and associated management policies and practices, with a commitment to action any deficiencies.

In respect to the Community Title, particular attention should be given to:

- (i) the ability of residents under 16 years of age to utilise the community recreation facilities without a supervising adult, thus potentially assisting younger residents achieve recommended minimum hours of physical activity.
- (ii) the ability of residents to book the tennis court, thus potentially increasing its use.
- (iii) encouragement of greater use of the community garden at Mungerie House.
- (iv) ensuring the non-residential components of the future infill development in the areas peripheral to the Town Centre do not result in undue presence or advertising of non-healthy foods.



In respect to the Town Centre, particular attention should be given to:

- (i) ensuring leasing policies give prominence to shops retailing healthy food, and do not result in undue presence or advertising of non-healthy foods.
- (ii) encouragement of greater use of the 'kitchen garden'.

- (8) The design and internal security management arrangements of the future multi-unit residential buildings on the sites on the periphery of the Town Centre and within adjacent precincts to include particular attention to facilitating both incidental social interaction for residents and the ease by which residents can visit each other on an informal basis.
- (9) The development of the remaining residential precincts provides the opportunity to trial different internal street designs to address the concerns about deficiencies in existing designs relating to bicycle safety. Here reference could be made to the 'complete streets' model.
- (10) Consider the establishment of a Men's Shed or similar community workshop space to assist social interaction opportunities.




ATTACHMENTS.

- 1. New Rouse Hill Healthy Neighbourhood Audit** - Refer separately bound document.
- 2. The Study flyer, as distributed as part of the recruitment of participants.**
- 3. The Neighbourhood Audit Instrument.**
- 4. Interview questions.**



HEALTHY BUILT ENVIRONMENTS PROGRAM

PLANNING AND BUILDING HEALTHY COMMUNITIES



INVITATION TO PARTICIPATE IN A RESEARCH PROJECT

The Healthy Built Environments Program at the University of New South Wales is undertaking research on what makes a neighbourhood healthy for community members. This information sheet has been prepared for residents of the New Rouse Hill.

Who is involved in the project?

The project is being run by the Healthy Built Environments Program at the University of New South Wales, in partnership with Landcom, the National Heart Foundation and the South Western Sydney Local Health District.

What is the research about?

Chronic diseases such as heart disease, diabetes, depression and cancer are the most common cause of death worldwide. The built environment has a significant impact on three of the main behavioural risk factors for these diseases - physical inactivity, social isolation and obesity.

The aim of the project is to understand how different residential localities can make healthy everyday living a reality, and reduce the burden of chronic disease.

Where is the research taking place?

The research is being undertaken in four neighbourhoods in NSW – Victoria Park, Rouse Hill, Airds Bradbury and Renwick.

Who is eligible to participate in the project?

Participants in the research must be over 18 years of age, and currently living in the New Rouse Hill (within the area bounded in red on the map overleaf).

What will I be asked to do?

The first stage of the research involves structured individual interviews. This interview includes questions about the place where you live and the way you experience your neighbourhood and city. The interview can be undertaken by telephone or in person.

You will receive a **\$20 GIFT VOUCHER** for your participation in an interview.

As the study progresses you may be invited to participate in further aspects of the research.

How do I get involved?

If you or someone in your household is interested in participating in the project, please register your interest at:

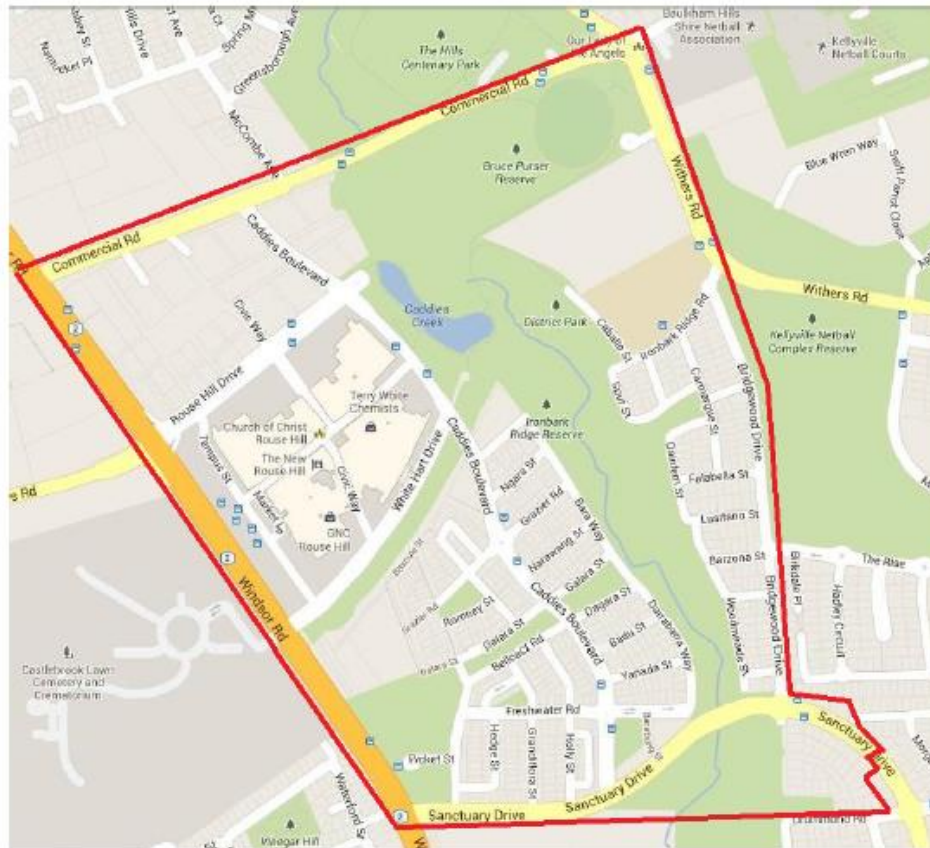
www.surveys.unsw.edu.au/survey/157498/10fd/

Alternatively, you can contact us by phone or email:

Emily Mitchell, Research Officer
Healthy Built Environments Program, UNSW
Email: e.mitchell@unsw.edu.au
Phone: (02) 9385 6441

Please visit our website www.be.unsw.edu.au/healthy-built-environments-program/research for more information.

CASE STUDY SITE BOUNDARIES:



HEALTHY NEIGHBOURHOOD AUDIT INSTRUMENT

CONTENTS:

- I. Audit Particulars
- II. Land Use
 - a. Land Use Map
 - b. Further Detail of Land Uses
- III. Street Network
 - a. Street Network Maps
 - b. Further Detail of Street Networks
- IV. Overall Issues/Impressions
 - a. Relationship of the Site to the Broader Area
 - b. Social Interaction
 - c. Psychological, Emotional and Spiritual Belonging
 - d. Overall Impression
- V. Improvements
- VI. Additional Thoughts

I. AUDIT PARTICULARS

a. Names of auditors:

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b. Date (including the day of the week) and time of audit:

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c. Description of weather conditions:

--

d. Please note any other particulars which may have an impact on the results of the audit (e.g. whether the audit is being undertaken during the school holiday period):

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II. LAND USE

a. Land Use Map

Using a cadastral map of the site, note the category of land use on each allotment according to the following table.

(NB. Aerial photos and site plans can be used to collect land use information, however, it is important to ensure that any photos, maps and plans utilised for audit purposes are up to date – if possible, please note the date. Further, data from aerial photos and site plans must be verified through site visits and windscreen observations – this needs to be noted on the audit.)

Nature of land use		Ref. on map
<i>Residential:</i>	Detached dwelling	R1
	Terrace/ townhouse	R2
	Duplex/semi-detached	R3
	Dual occupancy	R4
	Unit (up to 3 storey)	R5
	Unit (3 storeys and above – note the amount of storeys on the map)	R6
	Other	Describe on map
<i>Mixed use:</i>	Commercial/Residential - Note the specific uses on the map	MU
<i>Recreational:</i>	Open/ green space	Rec1
	Park	Rec2

	Playground	Rec3
	Equal access playground	Rec4
	Sports field	Rec5
	Recreational walking path/cycleway	Rec6
	Outdoor gym	Rec7
	Basketball/tennis court	Rec8
	Swimming pool	Rec9
	Lawn bowling green	Rec10
	Amenities for people with physical impairments (describe on map)	Rec11
	Water Sensitive Urban Design/open space	Rec12
	Private open space	Rec13
	Other	Describe on map
<i>Institutional/ services:</i>	Hospital or 'long hours' medical centre	S1
	Doctor's surgery	S2
	Chemist	S3
	Dentist	S4
	Other health/medical facility (describe on map)	S5
	Child care centre	S6
	Nursing home/aged housing	S7
	Primary school	S8
	Secondary school	S9
	Other	Describe on map
<i>Commercial:</i>	Fast food/takeaway shop	F1
	Café/restaurant	F2
	Pub/bar	F3
	Supermarket/grocery store	F4
	Convenience store	F5
	Retail store (describe on map)	C1
	Office (describe on map)	C2
	Other	Describe on map
<i>Community facilities:</i>	Community centre	Com1
	Library	Com2
	Town square	Com3
	Other	Describe on map
<i>Community gardens/edible plantings:</i>	Note the location of community, verge or school gardens	Com.G
<i>Derelict buildings/spaces:</i>	Note the location of derelict buildings/spaces (if possible note last use)	D
<i>Vacant buildings/spaces or construction:</i>	Note the location of vacant buildings or spaces (if possible note last use)	V
	Note the details of any construction (i.e. future use)	Con

b. Further Detail of Land Uses:

General

What overall quality/character dominates the land use?

(N.B. Take note of the residential density, types of housing, extent of commercial development, and any other key built, natural or social features present within the neighbourhood).

Describe the number of people present in the locality at the time of the audit. What spaces are they using? Make a note of particular spaces which are popular with children, young people, adults and older adults.

Commercial and Food Access

Is there a sufficient mix of retail to serve the local community?

Prepared Meals

What is the general price of a meal in a fast food/takeaway shop? (Entrée, main & drink?)

What is the general price of a meal in a café/restaurant? (Entrée, main & non-alcoholic drink?)

What is the general price of a meal in a pub/bar? (Entrée, main & alcoholic drink?)

Overall comments about the quality of prepared meals available – quality and value

Community Gardens & Farmers' Markets

Describe the types of crops in the garden/s.

If there are no edible gardens in the area, is there potential for some? Where?

Nearest location of farmers' market:

Frequency of farmers' markets:

What is the price of a kilo of a basic vegetable or fruit (i.e. carrot, lettuce, apple, orange) at the farmer's market?

What is the price of a kilo of organic carrots at the farmers' market?

Built Form

Consider the form and style of the residential, institutional and commercial buildings.

Does the built form provide an opportunity for passive surveillance (i.e. through allowing people to overlook the street)?

Do the buildings and their uses encourage pedestrian activity?

How does the building relate to the human scale? (i.e. is it welcoming, does it contribute to a pleasant and safe environment for those walking past?)

How easy is it to identify the land use from the facade of the building?

III. STREET NETWORK

a. Street Network Maps

Using a cadastral map of the site, create a number of street network maps by noting and describing elements of the street pattern and road network; parking; walking and cycling infrastructure; street furniture; and public transport systems. The tables below provide reference codes for the different elements. Add comments to the maps to describe elements in more detail where necessary.

(NB. Aerial photos and site plans can be used to collect street network information, however, it is important to ensure that any photos, maps and plans utilised for audit purposes are up to date – if possible, please note the date. Further, data from aerial photos and site plans must be verified through site visits and windscreen observations – this needs to be noted on the audit.)

Map	Element	Ref. On map
Roadways:	Traffic lanes	Note the number of lanes and direction of traffic on the map
	Posted speed limits	Note speed limits for each street on the map
	Road use	Light (T-L) Moderate (T-M) Heavy (T-H)
	Signage/way finding	Note and describe the directional and instructional signage around the site
	Other	Describe on map
Parking:	Unrestricted parking	P1
	Metered parking	P2
	Time restricted parking (note time on	P3

	map)	
	Parking station	P4
	Resident only parking	P5
	Disabled parking	P6
	Mothers with prams parking	P7
	Car share parking spaces	P8
	Motorcycle parking	P9
	Bicycle parking	P8
	Loading zones	P10
	Taxi rank	P11
	Bus stop	P12
	Other	Describe on map
<i>Walking/Footpaths:</i>	Footpaths	W1
	Signalised pedestrian crossings	W2
	Painted pedestrian crossings	W3
	Note whether crossing the street is accessible for all (e.g. people with limited mobility or parents with prams)*	Accessible (Acc.) Not accessible (N/ Acc.)
	Material of footpaths	Dirt (D) Concrete (Con) Bitumen (Bit) Paving (Pav) Cobblestone (Cobb) Other (describe on map)
	Quality of footpaths (i.e. consistency and evenness of surfaces, presence of trip/slip hazards)	Poor (M-P) Average (M-A) Good (M-G)
	Width of footpaths	Measure and note the width of footpaths on the map
	Gradient of footpaths	Flat (G-F) Moderate (G-M) Steep (G-S) Other (describe on map)
	Type of buffer between footpath and street (i.e. trees, fence/railing)	Note and describe on the map
	Types of obstructions along the footpaths (e.g. overgrown vegetation, café dining)	Note and describe on the map
	Visibility along footpaths	Poor (V-P) Average (V-A) Good (V-G)
	Connectivity of footpaths	Continuous (Cont.) Abrupt end (Abr.)
	Type of shading of footpaths	Awning (Awn.) Shade structures (Sh.St) Vegetation (Veg) Other (describe on map)
	Quality of shading of footpaths	Poor (Sh-P) Average (Sh-A) Good (Sh-G)
	Other	Describe on map
<i>Street furniture/amenities:</i>	Street lights	A1

	Benches/seating	A2
	Shade structure/awnings	A3
	Trees	A4
	Gardens/plants	A5
	Telephone booths	A6
	Bubblers/ drinking fountains	A7
	Public toilets	A8
	Rubbish bins	A9
	Flagpoles/banners	A10
	Community noticeboards	A11
	Public art (describe on map)	A12
	Dog litter bags and bins	A13
	Post boxes	A14
	Other	Describe on map
<i>Cycling:</i>	Recreational cycling lanes	C1
	Utilitarian cycling lanes (i.e. for transport)	C2
	Shower/changing facilities	C3
	Bicycle storage	C4
	Types of obstructions along cycle lanes (e.g. overgrown vegetation)	Note and describe on the map
	Connectivity of cycle lanes	Continuous (Cont.) Abrupt end (Abr.)
	Other	Describe on map
<i>Traffic calming:</i>	Speed hump	TC1
	Chicane/ one way slow point	TC2
	Roundabout	TC3
	Flashing lights	TC4
	Restricted street entry	TC5
	Landscaping	TC6
	Designated share zones	TC7
	Traffic calming absent but required (describe particular issues on the map)	No TC
	Other	Describe on map
<i>Public Transport:</i>	Bus stops	PT1
	Train stations	PT2
	Time schedule	TS
	Frequency of service arrival	Note and describe on the map
	Signage/ way finding	Note and describe the directional and instructional signage relating to the public transport stop
	Amenity of public transport stops	Lighting (L) Shade/ weather Protection (Sh) Benches/seating (Be) Bubblers (Bu) Other (describe on map)
	Quality of amenities	Poor (PTA-P) Average (PTA-A) Good (PTA-G)
	Natural surveillance – include	Poor (PTS-P)

	comments on how natural surveillance is provided or inhibited	Average (PTS-A) Good (PTS-G)
	Other	Describe on map
<i>Safety/Surveillance:</i>	Surveillance cameras	SC
	Natural surveillance – include comments on how natural surveillance is provided or inhibited	Poor (S-P) Average (S-A) Good (S-G) Other (describe on map)
	Note the adequacy of the street lighting in each area (i.e. is it evenly distributed and of a level which would allow a face to be identified at a distance of 15 metres).	Poor (SL-P) Average (SL-A) Good (SL-G) Other (describe on map)
	Note if any street lights are not working	Equipment failure (No SL – EF) Damage/vandalism (No SL – D)
	Sightlines (i.e. open and uninterrupted vision of the street ahead. Examples of obstructions to sightlines include overgrown vegetation, corners, curving streets and hills)	Poor (Sight-P) Average (Sight-A) Good (Sight-G) Other (describe on map)
	Signs of physical disorder (e.g. vandalism, graffiti, broken bottles, rubbish etc.)	Note and describe on the map
	Other	Describe on map

*To assess accessibility, consider 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.

b. Further Detail of Street Networks

The following general questions relate to the entire site area.

How does the street balance the needs of all users – is one user privileged over others? (e.g. cars, buses, bicycle, pedestrians, prams)

What is the amenity of the street like? (e.g. in relation to air quality/pollution, noise pollution, quality of drainage, odours, pools of still water etc.)

How well does the street network connect with the following areas, and which modes of transport are accommodated?

Residential:

Recreational:

Institutional:

Commercial:

IV. OVERALL ISSUES/IMPRESSIONS

a. Relationship of the Site to the Broader Area

Consider how the site relates to the broader area in terms of access, transport, and use of shops and services.

What public transport nodes surround the site? What is the relationship between these nodes and public transport services within the site?

What key services, shops and destinations surround the site? How can these be accessed?

b. Social Interaction

Consider each of the residential, recreational, institutional and commercial areas. Do you feel safe? Would you feel safe at night? Mark on the map if there are any particular areas which may be unsafe and/or perceived to be unsafe.

Would other people feel safe in this area? During the day? At night?

Is there a gendered presence in the area? For example, would a man/woman feel comfortable in the area? Why/ why not?

Are there signs of social inclusion, cultural diversity and religious diversity within the neighbourhood? Consider whether people of different sexual orientations, cultures and religions would feel comfortable within the area, and whether there are specific facilities, services and spaces provided for different groups. Take note of any 'physical' manifestations of culture – buildings, gardens, monuments etc.

Do people congregate in the area with a common purpose? (e.g. pram walkers, book club, adolescents hanging out). How does one find out about these groups and when they meet?

c. Psychological, emotional and spiritual belonging

What aspects of this environment might contribute to a feeling of belonging in this locality? Consider the physical features as well as the socio-cultural features.

What specific facilities – person made and natural – might enhance these feelings?

What specific facilities – person made and natural – might detract from these feelings?

Any other comments?

d. Overall Impression

What is your overall impression of the neighbourhood?

How do you think others from different backgrounds would feel about this area?

What is the general accessibility of the area?

What is the general level of safety in the area?

Is it easy to be physically active in this area?

Is it easy to access healthy foods in this area?

What is the aesthetic condition of the neighbourhood?

Is this neighbourhood a healthy built environment?

Would you live here? Why/why not?

V. IMPROVEMENTS

What improvements would you recommend to make the area healthier?

VI. ADDITIONAL THOUGHTS

Did you need extra room to record your thoughts? Place them here. OR are there additional observations made not covered by the Healthy Neighbourhood Audit? If so, what are they?

Attachment 4: INTERVIEW QUESTIONS.



PLANNING AND BUILDING HEALTHY COMMUNITIES STRUCTURED INTERVIEW

Eligibility for this interview

1. Are you over 18 years of age?

Yes ☐ No ☐ → Thank you for your interest, but you are not eligible for this interview.

Disclaimer: This interview includes questions about mental and physical health that some people may find confronting. You are not obligated to answer a question if you would prefer not to do so. Please be assured that all answers you give will be confidential.

Your Neighbourhood¹

In this section, I'm going to ask about which features of the environment you think are most important in keeping you healthy. I will also ask you to rate your level of satisfaction with different elements of your neighbourhood.

2. I am now going to read out a list of things that you may or may not think are important in keeping you healthy. Please tell me how important each feature is to you. Are they very important, important, neither important nor unimportant, unimportant, or very unimportant?

	VERY IMPORTANT	IMPORTANT	NEITHER IMPORTANT NOR UNIMPORTANT	UNIMPORTANT	VERY UNIMPORTANT	DON'T KNOW
Low levels of air pollution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low levels of noise pollution	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being able to walk around your local area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being able to cycle around your local area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being able to catch public transport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being close to parks and open/green spaces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being able to go to gyms/exercise equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being able to go to a farmers' market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹ Some questions in this section are adapted from: Maller, C. & Nicholls, L. 2012. *The Selandra Rise Neighbourhood Health and Wellbeing Survey*. Unpublished research, RMIT University Melbourne.

Continuation of Question 2: Please tell me how important each feature is to you. Are they very important, important, neither important nor unimportant, or very unimportant?

	VERY IMPORTANT	IMPORTANT	NEITHER IMPORTANT NOR UNIMPORTANT	UNIMPORTANT	VERY UNIMPORTANT	DON'T KNOW
Being close to a community garden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being able to spend time with a pet in your local area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Being able to meet with friends and neighbours in your local area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are there any other things you think are important for keeping you healthy that we did not mention?

3. I am now going to read out a list of things that you may or may not be satisfied with in your current neighbourhood. Please tell me your level of satisfaction with each item. Are you strongly dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied or strongly satisfied? You may also indicate if an item does not apply to you.

	STRONGLY DISSATISFIED	SOMEWHAT DISSATISFIED	NEITHER SATISFIED NOR DISSATISFIED	SOMEWHAT SATISFIED	STRONGLY SATISFIED	DON'T KNOW/ NOT APPLICABLE
Access from your home to major roads or freeways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to public transport in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to car parking in your street	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your travel time to work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your travel time to your place of study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your travel time to your child- ren/s school or place of study	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speed of vehicle traffic in the local streets near your home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Noise from traffic near your home	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Continuation of Question 3: Please tell me your level of satisfaction with each item. Are you strongly dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied or strongly satisfied?

	STRONGLY DISSATISFIED	SOMEWHAT DISSATISFIED	NEITHER SATISFIED NOR DISSATISFIED	SOMEWHAT SATISFIED	STRONGLY SATISFIED	DON'T KNOW/ NOT APPLICABLE
How easy and pleasant it is to walk in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How easy and pleasant it is to bicycle in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety from threat of crime in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Personal safety in your neighbourhood streets after dark	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to entertainment in your neighbourhood (e.g. movies, clubs...)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to fresh food shops in your neighbourhood (e.g. green grocer, supermarket, butcher)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to cafes and restaurants in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunities to meet people in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of friends you have in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of people you know in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child care in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Primary schools in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High schools in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of parks in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Continuation of Question 3: Please tell me your level of satisfaction with each item. Are you strongly dissatisfied, somewhat dissatisfied, neither satisfied nor dissatisfied, somewhat satisfied or strongly satisfied?

	STRONGLY DISSATISFIED	SOMEWHAT DISSATISFIED	NEITHER SATISFIED NOR DISSATISFIED	SOMEWHAT SATISFIED	STRONGLY SATISFIED	DON'T KNOW/ NOT APPLICABLE
Quality of parks in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community Centres in your neighbourhood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to medical services in your neighbourhood (e.g. GPs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your neighbourhood as a good place to live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your neighbourhood as a good place to raise children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are there any other issues that you are satisfied or not satisfied with in your neighbourhood?

Being Active²

In this section, I am going to ask you about the different kinds of physical activities you do during a usual week. This includes walking and cycling for transport, walking and cycling for recreation, sports and other forms of exercise like gardening.

Getting around your neighbourhood to do the things you need to do

4. In a usual week, do you walk around your neighbourhood to get to or from somewhere, such as going to and from work, walking to the shop or walking to public transport? (*If no, skip to Question 8*).

Yes ☐ No ☐

5. How many times do you walk as a means of transport in a usual week? (e.g. walking to and from work once a week = 1 time).

1-2 walks ☐
 3-6 walks ☐
 7-10 walks ☐
 More than 10 walks ☐

² The following questions have been adapted from Giles-Corti B, Cutt H, Timperio A, Pikora TJ, Bull FL, Knuiman M, Bulsara M, Van Niel K, Shilton T. *Development of a reliable measure of walking within and outside the local neighborhood: RESIDE's Neighbourhood Physical Activity Questionnaire*. Preventive Medicine (in press, accepted January 26, 2006).

6. Please estimate the total time you spend walking as a means of transport in a usual week (e.g. 5 times by 10 minutes = 50 minutes).

Hours _____ Minutes _____

7. Please tell me the places where you walk to as a means of transport in your neighbourhood in a usual week.

Places interviewee might walk to as a means of transport in their neighbourhood in a usual week	Tick ALL the places interviewee <u>WALKS</u> to in a usual week
To or from work (or study)	<input type="checkbox"/>
To or from public transport	<input type="checkbox"/>
To or from shops (for small purchases – e.g. a bottle of milk)	<input type="checkbox"/>
To or from shops (for large purchases – e.g. a full grocery shop)	<input type="checkbox"/>
To or from school	<input type="checkbox"/>
To or from café or restaurant	<input type="checkbox"/>
To or from friend's house	<input type="checkbox"/>
To recreation (e.g. gym, organised sport etc.)	<input type="checkbox"/>
Somewhere else: Please write where	

8. Is there anything that stops you from walking for transport around your neighbourhood? Please describe the main reasons.

9. In a usual week, do you cycle around your neighbourhood to get to or from somewhere, such as cycling to a shop or to public transport? (*If no, skip to Question 13*).

Yes ☐ No ☐

10. In a usual week, how many times do you cycle as a means of transport, such as going to and from work, cycling to the shop or cycling to public transport in your neighbourhood? (e.g. cycling to and from work once a week = 1 time).

1-2 rides ☐
 3-6 rides ☐
 7-10 rides ☐
 More than 10 rides ☐

11. Please estimate the total time you spend cycling as a means of transport in your neighbourhood in a usual week (e.g. 5 times by 10 minutes = 50 minutes).

Hours _____ Minutes _____

12. Please tell me the places where you cycle to as a means of transport in your neighbourhood in a usual week.

Places interviewee might cycle to as a means of transport in their neighbourhood in a usual week	Tick ALL the places interviewee <u>CYCLES</u> to in a usual week
To or from work (or study)	<input type="checkbox"/>
To or from public transport	<input type="checkbox"/>
To or from shops (for small purchases – e.g. a bottle of milk)	<input type="checkbox"/>
To or from shops (for large purchases – e.g. a full grocery shop)	<input type="checkbox"/>
To or from school	<input type="checkbox"/>
To or from café or restaurant	<input type="checkbox"/>
To or from friend's house	<input type="checkbox"/>
Somewhere else: Please write where	

13. Is there anything that stops you from cycling for transport around your neighbourhood? Please describe the main reasons.

Enjoying active recreation in your neighbourhood

14. In a usual week, do you walk around your neighbourhood for recreation, health or fitness (including walking your dog)? (If no, skip to Question 18).

Yes ☐ No ☐

15. In a usual week, how many times do you walk for recreation, health or fitness around your neighbourhood?

1-2 walks ☐
 3-6 walks ☐
 7-10 walks ☐
 More than 10 walks ☐

16. Please estimate the total time you spend walking for recreation, health or fitness around your neighbourhood in a usual week (e.g. 5 times by 20 minutes = 100 minutes).

Hours _____ Minutes _____

17. Please tell me the places where you walk for recreation, health or fitness in your neighbourhood in a usual week.

Places interviewee might walk for recreation, health or fitness in their neighbourhood in a usual week	Tick ALL the places interviewee WALKS in a usual week
Park	<input type="checkbox"/>
Sports field	<input type="checkbox"/>
Bushlands	<input type="checkbox"/>
Around the neighbourhood using the streets/footpaths (no specific destination)	<input type="checkbox"/>
Walking trails/bicycle paths NOT in a park	<input type="checkbox"/>
To or from café or restaurant	<input type="checkbox"/>
To or from a shop	<input type="checkbox"/>
Somewhere else: Please write where	

18. Is there anything that stops you from walking for recreation, health or fitness around your neighbourhood? Please describe the main reasons.

19. In a usual week, do you cycle around your neighbourhood for recreation, health or fitness? (If no, skip to Question 23).

Yes ☐ No ☐

20. In a usual week, how many times do you cycle for recreation, health or fitness around your neighbourhood?

1-2 rides ☐
 3-6 rides ☐
 7-10 rides ☐
 More than 10 rides ☐

21. Please estimate the total time you spend cycling for recreation, health or fitness around your neighbourhood in a usual week (e.g. 5 times by 20 minutes = 100 minutes).

Hours _____ Minutes _____

22. Please tell me the places where you cycle for recreation, health or fitness in your neighbourhood in a usual week.

Places interviewee might cycle for recreation, health or fitness in their neighbourhood in a usual week	Tick ALL the places interviewee <u>CYCLES</u> in a usual week
Park	<input type="checkbox"/>
Sports field	<input type="checkbox"/>
Bushlands	<input type="checkbox"/>
Around the neighbourhood using the streets/footpaths (no specific destination)	<input type="checkbox"/>
Walking trails/bicycle paths NOT in a park	<input type="checkbox"/>
To or from café or restaurant	<input type="checkbox"/>
To or from a shop	<input type="checkbox"/>
Somewhere else: Please write where	

23. Is there anything that stops you from cycling for recreation, health or fitness around your neighbourhood? Please describe the main reasons.

Other recreational physical activities

In this section I am going to ask you about other kinds of recreational physical activities you take part in during a usual week. First, I will ask about how often you take part in **moderate intensity** recreational physical activities, and then then I will ask about **vigorous intensity** recreational physical activities. I will also ask about the places where you take part in recreational physical activities, and the modes of transport you use to get to these places.

24. In a usual week, do you do any **moderate intensity recreational physical activities** (i.e. activities which do not make you breathe harder or puff and pant, such as gentle swimming, social tennis, golf or heavy gardening)? Do not include any walking or cycling. (If no, skip to Question 28).

Yes ☐ No ☐

25. In a usual week, how many times do you do moderate intensity recreational physical activities?

Write in number of times _____

26. What do you estimate is the total time you spend doing moderate intensity recreational physical activities in a usual week? (e.g. 1 time for 1 hour = 1 hour)

Hours _____ Minutes _____

27. Please tell me all the places where you do moderate intensity recreational activities in a usual week, including whether or not the places are in your neighbourhood. Then please tell me which method of transport you use to get to each place.

Places interviewee does moderate intensity recreational activities in a usual week	Tick ALL the places INSIDE their neighbourhood	Tick ALL the places OUTSIDE their neighbourhood	How do they get there? (i.e. by car, walking, cycling, public transport, or a number of modes)
Home	<input type="checkbox"/>	<input type="checkbox"/>	
Garden	<input type="checkbox"/>	<input type="checkbox"/>	
Beach	<input type="checkbox"/>	<input type="checkbox"/>	
Park	<input type="checkbox"/>	<input type="checkbox"/>	
Sports field	<input type="checkbox"/>	<input type="checkbox"/>	
Bushlands	<input type="checkbox"/>	<input type="checkbox"/>	
Around another neighbourhood using the streets/footpaths (no specific destination)	<input type="checkbox"/>	<input type="checkbox"/>	
Walking trails/bicycle paths NOT in a park or beach	<input type="checkbox"/>	<input type="checkbox"/>	
Gym	<input type="checkbox"/>	<input type="checkbox"/>	
Sports centre/recreational facility	<input type="checkbox"/>	<input type="checkbox"/>	
Somewhere else (1): Please write where	<input type="checkbox"/>	<input type="checkbox"/>	
Somewhere else (2): Please write where	<input type="checkbox"/>	<input type="checkbox"/>	

28. In a usual week, do you do any **vigorous intensity recreational physical activities** which do make you puff and pant, such as jogging, aerobics, soccer or competitive tennis? Do not include walking or cycling or moderate intensity physical activities. (If no, skip to Question 32).

Yes ☐ No ☐

29. In a usual week, how many times do you do vigorous intensity recreational physical activities which make you breathe harder or puff and pant?

Write in number of times _____

30. What do you estimate is the total time you spend doing vigorous intensity recreational physical activities in a usual week? (e.g. 3 times for 20 minutes = 60 minutes)

Hours _____ Minutes _____

31. Please tell me the places where you do vigorous intensity recreational activities in a usual week, including whether or not the places are in your neighbourhood. Then please tell me which method of transport you use to get to each place.

Places interviewee does vigorous intensity recreational activities in a usual week	Tick ALL the places INSIDE their neighbourhood	Tick ALL the places OUTSIDE their neighbourhood	How do they get there? (i.e. by car, walking, cycling, public transport, or a number of modes)
Beach	<input type="checkbox"/>	<input type="checkbox"/>	
Park	<input type="checkbox"/>	<input type="checkbox"/>	
Sports field	<input type="checkbox"/>	<input type="checkbox"/>	
Bushlands	<input type="checkbox"/>	<input type="checkbox"/>	
Around another neighbourhood using the streets/footpaths (no specific destination)	<input type="checkbox"/>	<input type="checkbox"/>	
Walking trails/paths NOT in a park or beach	<input type="checkbox"/>	<input type="checkbox"/>	
Gym	<input type="checkbox"/>	<input type="checkbox"/>	
Sports centre/recreational facility	<input type="checkbox"/>	<input type="checkbox"/>	
Somewhere else (1): Please write where	<input type="checkbox"/>	<input type="checkbox"/>	
Somewhere else (2): Please write where	<input type="checkbox"/>	<input type="checkbox"/>	

32. In an average week, how do you normally travel? If, in the average week, you usually travel by different modes, please nominate an approximate percentage for each mode (e.g. 50% by car, 50% by public transport):

Mode	Tick ALL the modes of transport usually used in an average week	Approximate % breakdown for each mode
By car/motorbike/scooter	<input type="checkbox"/>	
By public transport	<input type="checkbox"/>	
By bicycle	<input type="checkbox"/>	
By walking	<input type="checkbox"/>	
Other (please specify)	<input type="checkbox"/>	

Your Community³

In this section, I am going to ask you about your relationships with your neighbours. I will also ask about the places you use in your local area to meet with and spend time with your neighbours (i.e. people living in adjacent/nearby apartments or houses). I will also ask about any social or community activities you may take part in.

33. Please tell me which of the following options most accurately describe how well you know your neighbours.

- I do not speak to or socialise with my neighbours ☐
- I speak to my neighbours occasionally ☐
- I regularly socialise with my neighbours ☐
- I consider my neighbours to be close friends ☐

34. Are you satisfied with the level of interaction you have with your neighbours?

Yes ☐ No ☐ Don't know ☐

35. I am going to read you a list of things that may or may not limit the extent to which you socialise with your neighbours. Please tell me whether or not the following things have an impact on your interactions with your neighbours.

	YES	NO	DON'T KNOW
Not enough time due to other commitments (e.g. family, work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Language difficulties or barriers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Health reasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Financial reasons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Don't feel welcome	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not interested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other (please specify):

³ Some questions in this section are adapted from the NSW Adult Population Health Survey, Centre for Epidemiology and Evidence, NSW Ministry of Health (<http://www.health.nsw.gov.au/surveys/pages/default.aspx>); and the Green Square Snapshot Survey, City Futures Research Centre, UNSW.

36. *If interviewee indicated above that they do not socialise with their neighbours, skip to Question 37.* When you meet with your neighbours and spend time together, do you use the following places?

	YES	NO
Your/their home	<input type="checkbox"/>	<input type="checkbox"/>
The street	<input type="checkbox"/>	<input type="checkbox"/>
Town square	<input type="checkbox"/>	<input type="checkbox"/>
Local shops	<input type="checkbox"/>	<input type="checkbox"/>
Shopping mall	<input type="checkbox"/>	<input type="checkbox"/>
Local café/ restaurant	<input type="checkbox"/>	<input type="checkbox"/>
Park	<input type="checkbox"/>	<input type="checkbox"/>
Sports field	<input type="checkbox"/>	<input type="checkbox"/>
Bushland	<input type="checkbox"/>	<input type="checkbox"/>
Community centre	<input type="checkbox"/>	<input type="checkbox"/>
School or child care	<input type="checkbox"/>	<input type="checkbox"/>

Somewhere else: Please write where

37. In the last 12 months, have you participated in any of the following activities (either inside or outside your neighbourhood)?

	YES	NO	DON'T KNOW
Recreational group or cultural group activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Community or special interest group activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Church or religious activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Went out to a café, restaurant or bar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Took part in sport or physical activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attended a sporting event as a spectator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visited a library, museum or art gallery	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attended the movies, a theatre or a concert	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visited a park, botanic gardens , zoo or theme park	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

38. Are you an active member of a local organisation, church or club, such as a sport, craft, or social club?

☐ Yes, very active
 ☐ Yes, somewhat active
 ☐ Yes, a little active
 ☐ No, not an active member
 ☐ Don't know/Not Applicable

39. If you were caring for a child and needed to go out for a while, and could not take the child with you, would you ask someone in your neighbourhood for help?

Yes, definitely ☐ Yes, possibly ☐ No, probably not ☐ No, definitely not ☐ Don't know/Not Applicable ☐

40. How often have you visited someone in your neighbourhood in the last week?

Frequently ☐ A few times ☐ At least once ☐ Never (in the last week) ☐ Don't know ☐

41. When you go shopping in your local area how often are you likely to run into friends and acquaintances?

Nearly always ☐ Most of the time ☐ Some of the time ☐ Rarely or never ☐ Don't know ☐

42. Would you be sad if you had to leave this neighbourhood?

Yes ☐ No ☐ Don't know ☐

43. Most people can be trusted. Do you agree or disagree?

Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree ☐ Don't know ☐

44. I feel safe walking down my street after dark. Do you agree or disagree?

Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree ☐ Don't know ☐

45. My area has a reputation for being a safe place. Do you agree or disagree?

Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree ☐ Don't know ☐

Your Food

In this section, I am going to ask you about where, and how often, you buy fresh fruits and vegetables. I will also ask about how you get to the places where you buy your food. Then I will ask about other means of getting food – such as growing your own, or participating in a community garden.

46. In a usual week, how many times do you buy fresh fruits and vegetables?

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

47. Please tell me all the places you buy fresh fruits and vegetables.

Supermarket ☐

Farmers' market ☐

Fruit and vegetable store ☐

Other ☐
(write where)

48. Where do you buy fruits and vegetables **most often**?

49. For the location you just mentioned, why do you buy your fruits and vegetables from there?

Easy to travel to ☐

Variety of fruits and vegetables ☐

Affordable ☐

Selection of other foods available ☐

Quality of fruits and vegetables ☐

Other (please specify) ☐

50. How do you get to the place where you buy fruits and vegetables from **most often**?

By car ☐

By public transport ☐

By bicycle ☐

Multiple modes (e.g. cycling and bus) ☐

By walking ☐

Other (please specify) ☐

51. For the mode of travel you just mentioned, how long does the journey take you?

Less than 5 minutes ☐

30 – 45 minutes ☐

5 – 15 minutes ☐

45 minutes – 1 hour ☐

15 – 30 minutes ☐

More than 1 hour ☐

52. Do you grow any foods at home? If so, please describe where/how, as well as the types of foods you grow.

53. Do you participate in a community garden? *(If no, skip to Question 56).*

Yes ☐ No ☐

54. Where is the community garden located?

55. What is your role in the community garden?

56. Do you regularly go to a farmers' market? *(If no, skip to Question 58).*

Yes ☐ No ☐

57. Where is the farmers' market located?

Your Health⁴

In this section, I am going to ask you about how you would rate your physical and mental health, and whether you have experienced any changes in your health since moving to your current location. Just to remind you, you are not obligated to answer a question if you would prefer not to do so. Please be assured that all answers you give will be confidential.

58. How do you rate your general health?

Very Good ☐ Good ☐ Average ☐ Poor ☐ Very Poor ☐ Declined ☐

Please outline any health problems you have, if relevant.

⁴ Some questions in this section are adapted from the NSW Adult Population Health Survey, Centre for Epidemiology and Evidence, NSW Ministry of Health (<http://www.health.nsw.gov.au/surveys/pages/default.aspx>).

59. What was your health status before you lived in this location?

Very Good ☐ Good ☐ Average ☐ Poor ☐ Very Poor ☐ Declined ☐

Please outline any health problems you had before moving to this location, if relevant.

60. During the past 30 days, how much difficulty did you have doing your daily work or activities?

No difficulty at all ☐ A little bit of difficulty ☐ Some difficulty ☐ Much difficulty ☐ Could not do work/activities ☐ Don't know ☐ Declined ☐

61. During the past 30 days, how much bodily pain have you generally had?

No pain ☐ Very mild pain ☐ Mild pain ☐ Moderate pain ☐ Severe pain ☐ Don't know ☐ Declined ☐

62. During the past 30 days, about how often did you feel nervous?

All of the time ☐ Most of the time ☐ Some of the time ☐ A little of the time ☐ None of the time ☐ Don't know ☐ Declined ☐

63. During the past 30 days, about how often did you feel hopeless?

All of the time ☐ Most of the time ☐ Some of the time ☐ A little of the time ☐ None of the time ☐ Don't know ☐ Declined ☐

64. During the past 30 days, about how often did you feel restless or fidgety?

All of the time ☐ Most of the time ☐ Some of the time ☐ A little of the time ☐ None of the time ☐ Don't know ☐ Declined ☐

65. During the past 30 days, about how often did you feel that everything was an effort?

All of the time ☐ Most of the time ☐ Some of the time ☐ A little of the time ☐ None of the time ☐ Don't know ☐ Declined ☐

66. During the past 30 days, about how often did you feel so depressed that nothing could cheer you up?

All of the time ☐ Most of the time ☐ Some of the time ☐ A little of the time ☐ None of the time ☐ Don't know ☐ Declined ☐

67. During the past 30 days, about how often did you feel worthless?

All of the time ☐ Most of the time ☐ Some of the time ☐ A little of the time ☐ None of the time ☐ Don't know ☐ Declined ☐

About You and Where You Live

In this section, I am going to ask you for a few details about yourself and where you live. We need this information to see if there are any links between specific personal characteristics, specific locations and health outcomes. We will not use any of the information you share in this section to identify you by name in our research.

Note gender of interviewee:

Male ☐ Female ☐

68. What is your age?

18 – 21 ☐ 22-34 ☐ 35-44 ☐ 45-54 ☐ 55-64 ☐ 65 and over ☐ Decline ☐ → If interviewee declines to answer, please estimate age: _____

69. What is your occupation?

70. What is your highest level of education? (i.e. primary school, TAFE, high school, bachelor degree, postgraduate degree)

71. Where, approximately, do you live?

Your street: _____

A nearby cross street: _____

Your suburb: _____

(Please note that providing this information does not disclose your address).

72. We would like to talk further about the impact of the neighbourhood on health outcomes with some people in a focus group. The focus group will take approximately two hours. It will involve a discussion with a facilitator and other residents about how your neighbourhood supports you being healthy. Participants will receive a \$50 gift voucher to thank them for their time. Would you be willing to participate in a focus group?

Yes ☐ No ☐

(Please note that by saying yes, you have indicated that you allow us to contact you to arrange a focus group. The number of participants selected for focus groups is limited, and we cannot guarantee that you will be contacted).

73. *Ask only if interviewee answered yes to Question 72.* Could you please provide your contact details, so that we can be in touch to organise the time and location of the focus group. Please be assured this information will be filed separately from this questionnaire to ensure your privacy.

Name: _____

E-mail address: _____

Phone no: _____

74. Do you know any other residents in [Study Area] who may be interested in participating in our research? (List contact details if provided).

Name: _____

E-mail address: _____

Phone no: _____

This is the end of the interview.

Thank you for participating. In appreciation of your time, you will receive a \$20 gift voucher. (*Interviewer to organise how to deliver gift voucher to the interviewee*).