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Gawler Rural Land Use and Infrastructure Investigation

Report No. 1 *Background Paper* March 2015

In association with Wallbridge & Gilbert, and Econsearch



Document Quality Control

Project Name	Gawler Rural Land Use and Infrastructure Investigation
Project Number	P2714
Client	Town of Gawler
Document	Report No 1 Background Paper
Document File Name	P2714-V2Report 1 Background Paper Gawler Buffer.04MayKF
Author of Document	RW/KF/PJ

Version	Date of Document Release	Name of Person/s document was released to	Method of Release	Authorised By	Authorisation Date
2	4 May 2015	Ryan Viney	Email/hightail	KF	4 May 2015



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1 Introduction

1.1 Overview

This *Report No 1 Background Paper* provides a summary of all of the background information that will influence the future policy of the land relating to the “Buffer Area” located primarily within the Rural Zone in the Town of Gawler. The next *Report # 2 Draft Recommended Policy Approach* will provide recommended policies for further community and council review and feedback.

This report details information about:

- The history of the concept of a “buffer” area
- The physical characteristics of the area – topography, vegetation, roads, allotment sizes, distribution of allotments, uses of the land, views, water, power, roads, stormwater, telecommunications and sewer.
- The policies that currently relate to the area – state and local government
- The issues associated with continuation and support of rural productivity in the area
- The issues associated with more rural living allotments in the area
- Consultation feedback to date.

1.2 Background

There is a long history of discussion about the best use of the land surrounding the Town of Gawler dating back at least to the Playford / Dunstan Governments era when a plan was forged to have a one mile (1.6 km) wide buffer (or second generation of parklands) around several of the townships to the north of Adelaide. In the context of this study area, the plan would have resulted in a green belt of approximately 800 metres width running along either side of Dalkeith/Smith Roads on the southern edge of what is now the Gawler Council area.

The plan was not realised for several reasons, mostly as the land in this locality had been divided into smaller holdings and the presence of rural, residential and industrial development imposed limitations on the kind of buffer that could be achieved (primarily because of the high economic and social costs that would be involved in removing the existing development).

Over the following years, attempts to form buffers and subsequent reviews to urban growth boundaries have resulted in the situation before us today. The land to the south of the Council area (south of Dalkeith Road) has been partly developed as an ‘urban forest’, but the majority has been given over to “suburban” residential development. Additional urban development and changing agricultural environments has added to the equation and brought additional considerations as to what are the most appropriate land uses for the area and how can they contribute to the desired landscape character. The topic is still enthusiastically discussed; however solutions and clear strategic positions have yet to be achieved.

This study will assist to inform future development policy decisions affecting the area between Adelaide and Gawler with the aim of setting an agreed long term vision that provides a level of certainty and clarity that is currently lacking.

1.3 Purpose of the Study

This study was initiated by the Town of Gawler to:

- Deliver a clear picture of the significant social, environmental and economic factors influencing's Gawler's rural area to determine the viability of this land for primary production into the future.
- Provide an assessment of current and proposed infrastructure/asset provisions which will have a direct impact on the productivity of primary production.
- Offer an assessment of the rural landscape character and recommend strategies to improve the amenity of defining area between Gawler and metropolitan Adelaide.
- Recommend a vision, strategies, policies and actions to inform the provision of infrastructure and other land-use planning initiatives, including possible Development Plan Amendment.

1.4 The Study Area

The study area is depicted below in Figure 1. The area contains approximately 1,700 hectares of land to the south and south-west of the Gawler Township and is bounded by the Gawler River, Wingate, Dalkeith and Smith Roads and the eastern Council boundary running along the foothills of the northern Mount Lofty Ranges.



Figure 1. Study Area

1.5 What is a Buffer or Green Belt?

The terms 'buffer' and 'green belt' are often used interchangeably in this context but can have different meanings and different purposes. There are however some common elements that are relevant to note. They include:

- a **transition** in landscape that marks a **separation** between different areas, communities or environments
- this is usually experienced in a **visual way** when a person travels through an area and registers the change from one locality to the next.
- the space between communities can also provide a sense of **identity** to each community
- also provides a sense of **arrival** when a person leaves or arrives in a familiar or new place.

The area within the buffer should not be simply considered as the **space between two places**. It can be a highly valuable area and **place in itself** and contain a host of land uses and **functions** as is the case here. If appropriately allocated and designed the space can **'buffer'** competing land uses (such as agricultural and industrial activities from living areas) and can provide opportunities for **open space, conservation and biodiversity** (green belt) that cannot easily occur within urbanised areas.

In this context, the space between Gawler and Adelaide seeks to achieve all of the above. This study assumes that the goal to retain a buffer between Gawler and Adelaide is consistent with state and local government strategic policy directions (as described further on in this report), and there is a strong community support for achieving this.

“The existence and nature of a buffer shapes our perceptions of a town or district. Therefore, by visually reinforcing a perception of difference, it can play an important role in defining the character or identity of that town or district” (Jensen, 1997: 26 and Town of Gawler, 2000).

Gawler Community Plan Goal 1: A uniquely identifiable township
Objective 1: Maintain a clearly defined township, one which is distinct from neighbouring areas” (Gawler Community Plan, 2014- 2024)

Therefore, the question becomes not whether Gawler seeks to retain a buffer between Gawler and the expanding communities of metropolitan Adelaide located in Playford Council. The real question is “what are the most appropriate land uses that meet the goals of a buffer, and also meet key social, economic and environmental goals”. This study seeks to examine this question.

2 Strategic Setting

2.1 Southern Gawler Growth Options Study, Jensen Planning + Design, 1997

Jensen Planning + Design was previously commissioned by the Strategic Directions Steering Committee for the Development of the Gawler Region (a committee comprising representatives of the Town of Gawler, the District Councils of Kapunda and Light and Barossa, the City of Munno Para, the SA Urban Projects Authority and the Department of Housing and Urban Development) to undertake a study examining development options for the Gawler region and to make recommendations regarding the strategic planning intentions of the Council and Government Agencies. This included consideration of the issues of land use, buffers and character in the current study area. The key findings included:

- The area to the south of Gawler is currently used for cropping but could be used for horticulture if it could obtain a water allocation.
- The area south-west of Gawler currently has good quality underground water and is used for some horticultural activities. Based on agriculture suitability considerations this area should be protected from urbanisation and retained for long-term horticultural use.
- Throughout the Northern Adelaide Plains, the underground water basin is currently over utilised. However, the study area is the recharge area for the basin and as such will have the best quality underground water available in the basin. Furthermore, this area may be able to be served by water reuse schemes.
- To minimise the potential conflict between urban and rural land uses it was recommended that a 300 metres open buffer or 60 metre vegetated buffer be adopted for horticulture. For agricultural cropping land uses the buffer could be reduced to 30 metres if suitably landscaped.

2.2 Gawler South, A Discussion Paper Planning SA 2004

Jensen Planning + Design was also involved in providing advice to the State Government to assist the preparation of the Gawler Urban Growth Rezoning which gave effect to the southern urban growth boundary of the Gawler Council area.

This work also examined the role and importance of the green buffer between Gawler and Adelaide and recommended the following:

- The buffer plays an important role in distinguishing the Town of Gawler from Metropolitan Adelaide.
- The buffer is an important element in reinforcing the identity of Gawler as having the 'best of town and country' appeal.
- The buffer should focus on the positive landscape elements and visually emphasise the perception of difference.
- Strategies to reinforce the buffer included screen plantings, enhancement of the riverine corridors and improved design and siting development controls for the rural living allotments in the locality. This included:
- Plantings to screen negative built elements adjacent Tiver and Hayles Roads

- Judicious removal of perimeter plantings on Renewal SA land immediately north of Hayles Road (to allow views to the foothills)
- Creation of a more natural appearance to the riverine appearance of the creek line north of the Dalkeith Caravan Park.

2.3 Town of Gawler Strategic Position

Over the last twenty years the Town of Gawler has consistently stated its position to be one whereby it supports the provision and maintenance of an effective buffer or clear separation between the Town of Gawler and Metropolitan Adelaide.

2.3.1 Gawler Community Plan 2014-2024

The Gawler Community Plan 2014-2024 seeks to guide the allocation of resources for the infrastructure and services provided to the community by the Town of Gawler. The Plan has the intention to contribute to meeting the strategies and objectives within the South Australian Strategic Plan.

The Community Plan is centred on five key themes, each with a goal and several objectives:

- Our Identity
Goal: A uniquely identifiable township
- Our Growth
Goal: Sustainable growth management
- Our Community
Goal: A healthy, active, safe, engaged community
- Our Environment
Goal: To respect and nurture the environment
- Our Leadership
Goal: A strong, vibrant community

Central to achieving the goal of maintaining and promoting Gawler as 'a uniquely identifiable township' is the preservation of Gawler as a 'clearly defined township', physically separated from surrounding areas. The history of the Town of Gawler, the preservation of views and vistas, and the promotion of community pride among its residents, are also key objectives in strengthening the identity of Gawler.

Key Objectives relevant to the Study include:

- Maintain a clearly defined township, one which is distinct from neighbouring areas.

Develop regional and local town planning policies that ensure Gawler maintains a real sense of distinction from its surrounding areas and continues to function as a regional centre for the provision of services to communities in surrounding areas.

Safeguard views and vistas to retain Gawler's township identity, open landscape character and sense of arrival into Gawler from all directions through the provision of open space.

- Promote local government boundary realignments.

This should more accurately reflect the township of Gawler's population and reinforce its sense of a community with common interests.

- Urban growth to be sustainably managed.

Undertake a rural land use and infrastructure investigation to provide guidance on the development of land use policies for the rural area.

2.3.2 Town of Gawler Strategic Directions Report 2013-2017

- Development policies to ensure Gawler retains its **identity as a town**
- Advocate for a State Planning Strategy that recognises **Gawler as a Regional Town**
- Gawler's "positioning" within the broader regional community, including the **tourist market is developed and refined**
- Development policies to **facilitate rural production and economic development.**

2.3.3 Town of Gawler Development Plan

2.3.3.1 Structure Plans

The Structure Plan within the Development Plan for the Town of Gawler (see Figure 2) indicates that the majority of the study area is designated for 'Rural' use.

There is also provision for a 'Rural/Urban Interface Buffer' around the southern boundary of the urban zones although there is no description as to what form this may take.

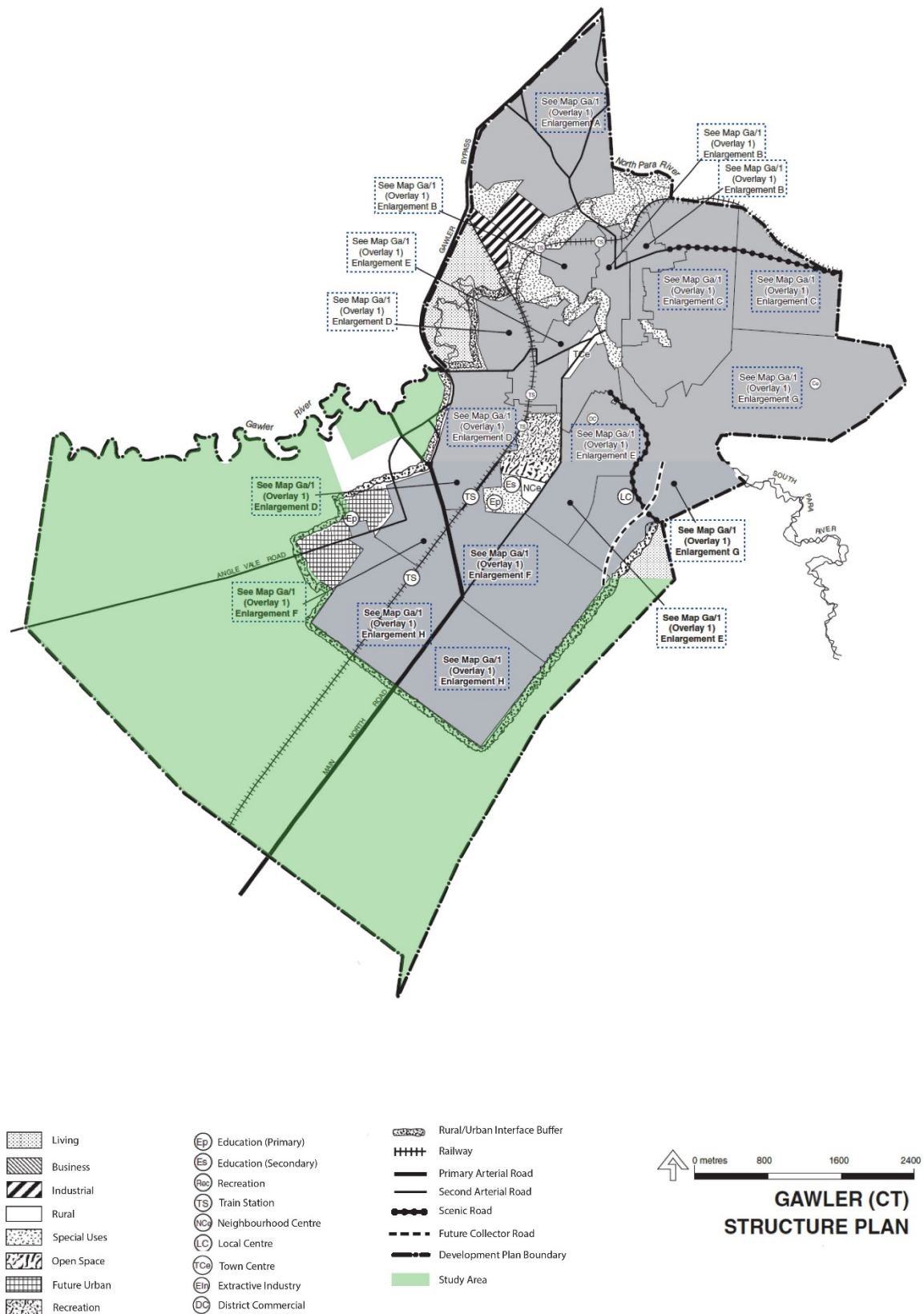


Figure 2. The Gawler Structure Plan

2.3.3.3 Rural Zone

The study area is almost entirely within the Rural Zone which seeks to accommodate primary production (see Figure 4), apart from the Dalkeith caravan park on Main North Road which is zoned 'Residential Park'.

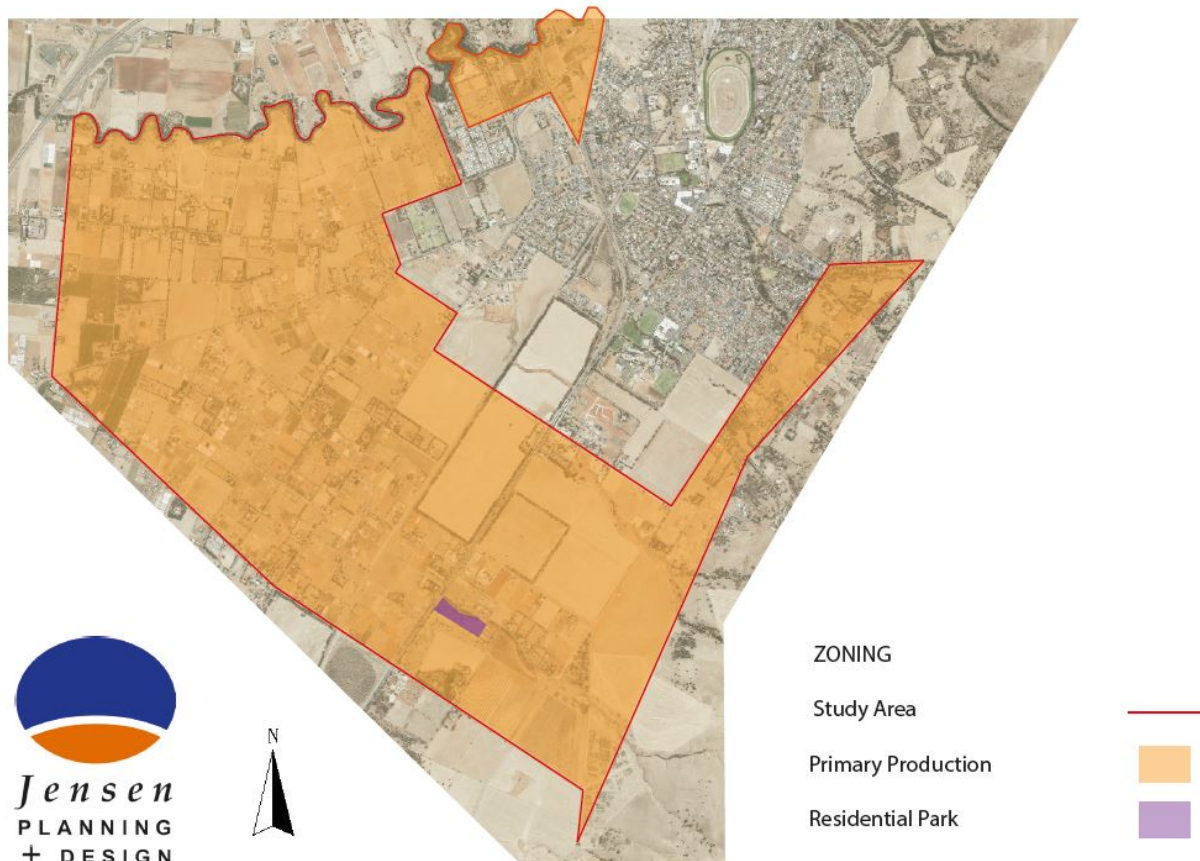


Figure 4. Zoning within Study Area

The **Rural Zone** has a single Objective which states that **land should be retained in use primarily for agricultural purposes**. The first Principle of Development Control reinforces this seeking, that development that is primarily for agricultural purposes.

Other Principles of Development Control **restrict the division of land to a minimum of 4 hectares**, except within the portion of Kudla shown in Figure 4 where the land may be divided to 0.9 hectares.

A minimum frontage to a public road of 25 metres is required in all situations.

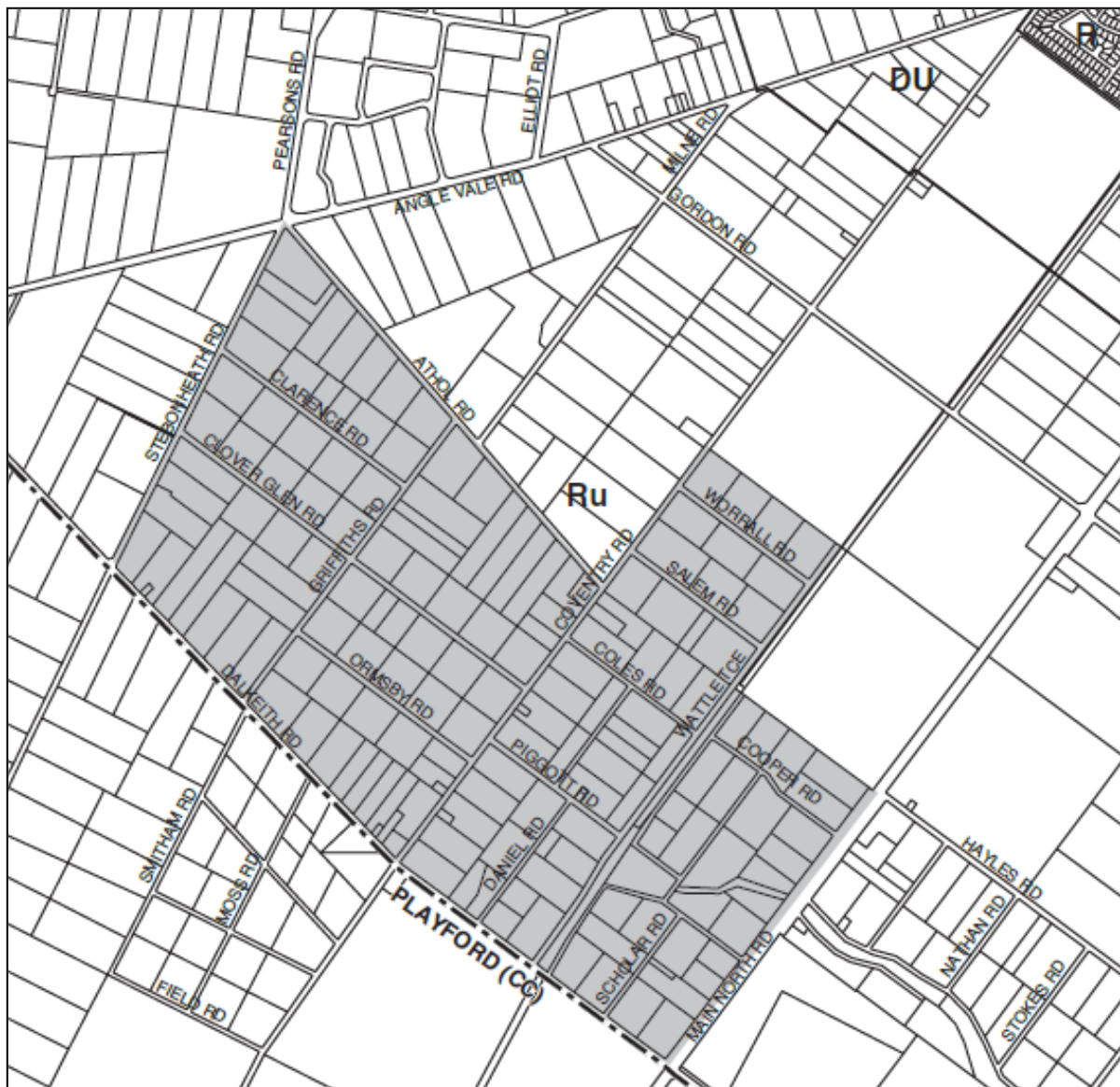


Figure 5. Portion of Kudla where land may be divided to 0.9 hectares

A portion of the Rural Zone is within the Gawler River Floodplain Area. In this area no additional allotments are allowed and there are restrictions on the circumstances in which dwellings, dwelling additions and farm buildings can be constructed.

There are a number of Principles of Development Control (PDCs) that are relevant in that they affect the way in which agriculture (and other development) can be undertaken. They include:

- No new vehicular access is allowed to allotments fronting Main North Road (PDC 3).
- Development within 300 metres of urban zones needs to apply land management practices to minimise impacts on residential uses. This restricts the use of aerial spraying, the storage of refuse or organic waste and other farming activities.
- A landscaped buffer is required (within the Rural Zone) where the Rural Zone abuts the residential or urban zones.

It is also relevant to note that there is an area containing a range of commercial and industrial developments on Main North Road and bounded by Hales, Nicholson and Gale Roads. Whilst this area is within the Rural Zone, some of these industrial uses are “non rural” in function, as well as there being some that are related to rural enterprises. These land uses include a retail showroom, concrete batching plant, car and tractor sales and repairs, and a saddlery. In relation to these industrial uses within the Rural Zone:

- The Development Plan Principle 7 states that general industry and light industry may be developed where it is the extension of an existing industry
- It also states that general and light industry can be expanded subject to certain conditions that restrict the site coverage to 50% and requires a three metre wide landscaping strip adjacent the road frontage.
- However the list of non-complying uses in this zone states that expansion of general industry is non complying. This contradicts previous guidance in the Development Plan
- Any new commercial uses in this zone including shops, motor repair stations, offices, service industries and warehouses are currently described as non-complying forms of development in the Development Plan

Implications:

The majority of the study area is **currently zoned to promote agricultural activities** but also allows for the division of land down to 4 and 0.9 hectares in the **Kudla area**. This may be counterproductive to the goal of the current Rural Zone which is to retain the land for the long term use of the area for agriculture.

It is difficult for land owners living in the area to understand **why there are differences** between policy provisions relating to land division across the area. The rationale and justification for this needs to be examined in the current context of the use of the land, the current patterns of land division and development, the opportunities for future rural productivity, and long term state policy goals.

The zoning recognises the limitations imposed upon farming adjacent to urban zones and places some additional restrictions and expectations for farming in the rural zone adjacent the urban zones.

The presence of some types of industrial development, particularly on the main entrance to Gawler, is **contrary to the objective for the Rural Zone**. There are contradictions in the Development Plan about whether expansion of existing general industry in the Rural Zone should be supported or not. This needs clarification.

2.3.3.4 Residential Park Zone

The Dalkeith Caravan Park, located on Main North Road is zoned 'Residential Park' which allows for short and long term accommodation in the form of caravans, relocatable dwellings, cabins and camping sites.

Implications:

The presence of the Dalkeith Caravan Park, while located on a key entrance to Gawler is not considered a major risk to the attainment of the objective for the surrounding Rural Zone given its relatively small site frontage to Main North Road and it is well screened by landscaping and creek environs.

2.3.3.5 Open Space Provision - Councils' Development Plan in MAP Ga/1 (Overlay 1) Enlargement H (Evanston Gardens/Evanston South Structure Plan).

In addition to the land set aside for open space along the southern boundary of the study there is a plan by Council to establish an open space corridor to the north of the study area along Main North Road on the entrance to Gawler within the land zoned for urban purposes. This land is primarily in public ownership (see Figure 6).



Figure 6. The areas to the south of Gawler that are in public ownership for open space purposes

The location of the Open Space corridor is depicted in Councils' Development Plan in MAP Ga/1 (Overlay 1) Enlargement H (Evanston Gardens/Evanston South Structure Plan) as reproduced below in Figure 6.

The open space corridor will be approximately 45 hectares in area and straddle Main North road with a linear reserve of between 100 -200 metres either side of the road. Approximately 95% of this land is currently being vested in Council's care and control through land division processes. Council has indicated that it intends to utilise the land for a combination of active and passive recreational activities, in an open landscape character.

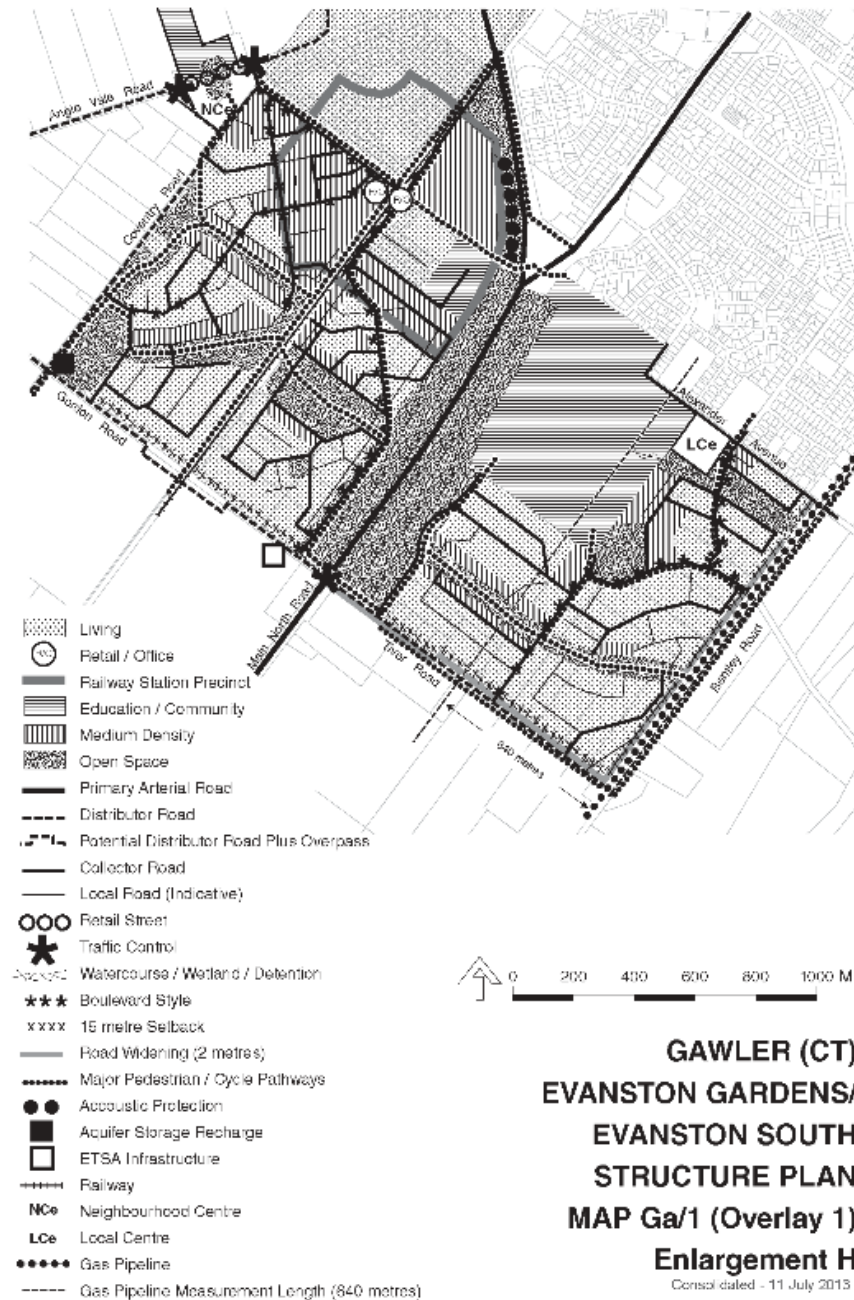


Figure 7. Development Plan Structure Plan showing provision for Open Space corridor along Main North Road

2.4 South Australian Government Strategic Position

2.4.1 SA Strategic Plan

South Australia's Strategic Plan drives the State Government policymaking and budgeting decisions and is focussed around six objectives as follows:

- Growing prosperity
- Improving wellbeing
- Attaining sustainability
- Fostering creativity and innovation
- Building communities
- Expanding opportunity

In addition to these broad objectives there are 100 targets aimed at making South Australia the best it can be. Many of the targets are relevant to this project and will assist to achieve these objectives in a general sense. The most relevant targets for consideration in this context are:

Target 40: Food industry:

Grow the contribution made by the South Australian food industry to \$20 billion by 2020

Target 70: Sustainable land management:

By 2020, achieve a 25% increase in the protection of agricultural cropping land from soil erosion and a 25% improvement in the condition of pastoral land.

Target 73: Recycled stormwater:

South Australia has the system capacity to harvest up to 35 GL of stormwater per annum by 2025

Target 74: Recycled wastewater:

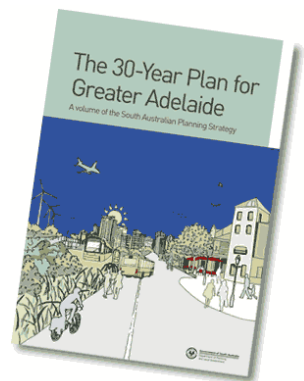
South Australia has the system capacity to recycle up to 50 GL of wastewater per annum by 2025

2.4.2 The Planning Strategy (The 30-Year Plan)

The Planning Strategy for metropolitan Adelaide is the 30-Year Plan. It provides the State direction for land use and development across Adelaide. The planning directions outlined in the Planning Strategy are translated into local policy by Councils when they are incorporated into local Development Plans. The role of the Development Plan is to assist in implementing the Planning Strategy.

The Plan identifies areas for residential growth mainly through infill around transport corridors including.

- Prioritise residential and employment growth in areas where transport infrastructure is planned.
- Designated five fixed transit corridors including the Gawler train line.
- Provides for additional population and jobs.
- Protect Greater Adelaide's high quality fruit bowl areas to ensure a supply of affordable fresh food.
- Prioritise for the Greater Adelaide open space framework include
- Greening the Gawler Buffer as an urban forest, which will consist of about 230 hectares by 2014.
- Developing the Gawler River linear park, which will link a system of open space in and around Gawler.
- Rezone **130 hectares in the Gawler buffer as open space by 2012.**



Open Space

The targets relating to establishing an urban forest and rezoning land as open space have essentially been achieved.

There is now 130 hectares of land in public ownership (shared across Gawler and Playford Councils and the State Government) with some areas of the 'urban forest' established (mainly to the south of Dalkeith Road in the Playford Council area).

The State Government is not currently actively pursuing the purchase of additional land in this locality and the Urban Forest program (run through DEWNR) is considered to be completed.

Primary Production

With respect to primary production, the 30-Year Plan requires that:

"...areas of primary production significance will be identified on the basis of land capability, industry investment and land use, climatic considerations (including anticipated climate change), access to water, and any other local conditions that give rural land special significance for primary production. The process of identifying these areas will be restricted to land zoned rural, general farming, primary production or similar, where agriculture or primary production is already nominated as the intended future use of the land." (GSA 2010, pg 106)

Implications:

The study area, while adjacent to the urban areas of Adelaide and crossed by one of the five key transit corridors, is not identified for urban growth and is expected to be separated from the urban areas and contribute to the Metropolitan Open Space Scheme.

Urban growth, population and employment is expected to increase in the region and there is likely to be ongoing pressure to develop the area for urban forms of development.

Council and the community should not expect any further land purchases for the purposes of adding to the Metropolitan Open Space System (MOSS) network.

2.4.3 Department for Transport Planning and Infrastructure (DPTI)

The Department for Transport Planning and Infrastructure (DPTI) is the agency responsible for the preparation and review of the State's Planning Strategy (*The 30-Year Plan for Greater Adelaide*). DPTI have advised that they have commenced the preparation of a Greater Gawler Regional Spatial Framework Study which will help to inform the next update of the 30-Year Plan and will implement DPTI's undertaking given to Council in 2002 to "prepare rural development policies for the Gawler Green Belt"

The Greater Gawler Regional Spatial Framework Study is expected to be completed in 2015. While it is not possible to predict the outcomes of the study at this early stage, DPTI have indicated that it is likely to be still supportive of a buffer or separation between Adelaide and Gawler. DPTI does not have a firm position on what form/function the area should have.

Implications:

This study is timely and will help to inform the State Government's review of the 30 Year Plan for Greater Adelaide.

2.4.4 *Renewal SA*

Renewal SA is the State Government agency responsible for development of Government owned land for new residential and industrial communities. Renewal SA is responsible for a number of parcels of land both within the study area and within the urban area at Evanston Gardens. The land within the study under Renewal SA ownership is indicated in Figure 8 below.

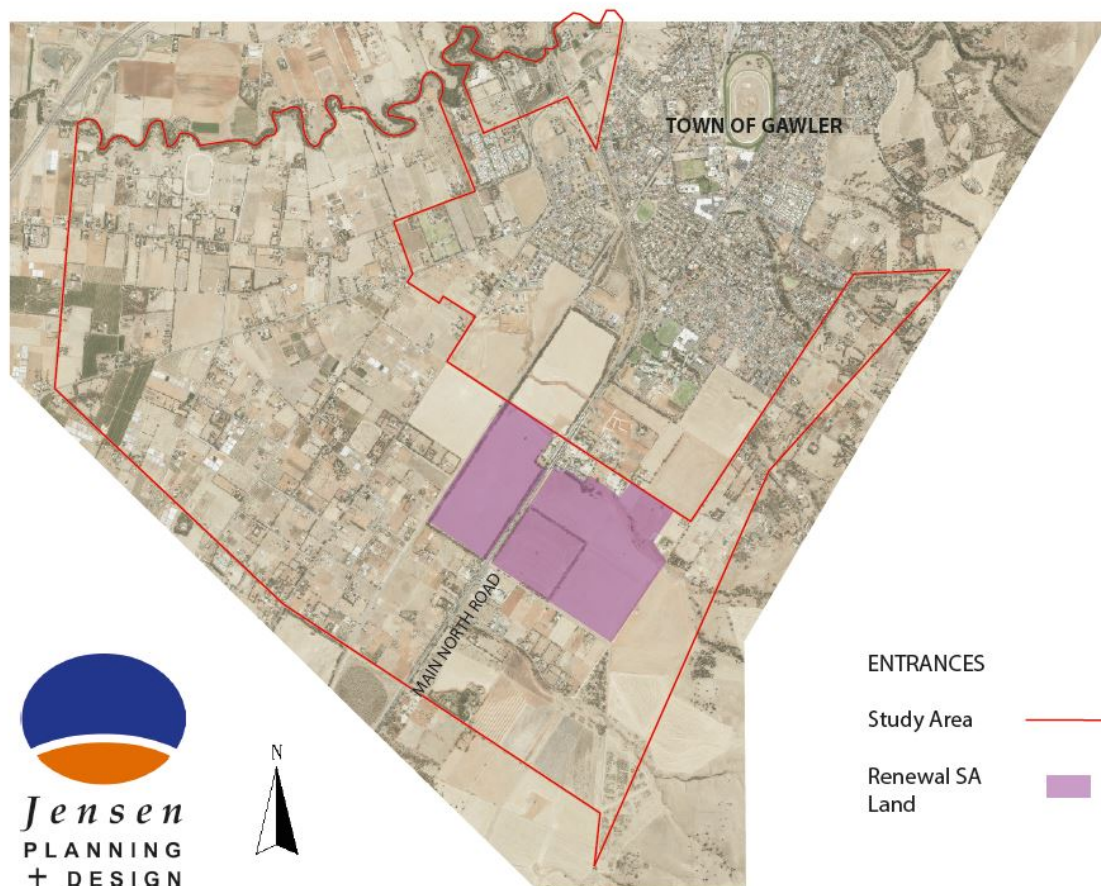


Figure 8. *Renewal SA Land within Study Area*

Renewal SA has advised that there are no current plans for this land and there is not an expectation that this land will be included in any residential development scenario in the short term. Renewal SA has considerable land holdings within the urban zones that have not yet been developed. The majority of Renewal SA land holdings are currently leased and used for farming (cropping) purposes. A small portion of land has recently been utilised for a new electricity station.

Implications:

There is considerable opportunity to shape the future use of this Government owned land to assist with the attainment of the goals for the study area given the current zoning, Government position and relatively undeveloped nature of the land.

2.4.5 Primary Industries and Regions SA

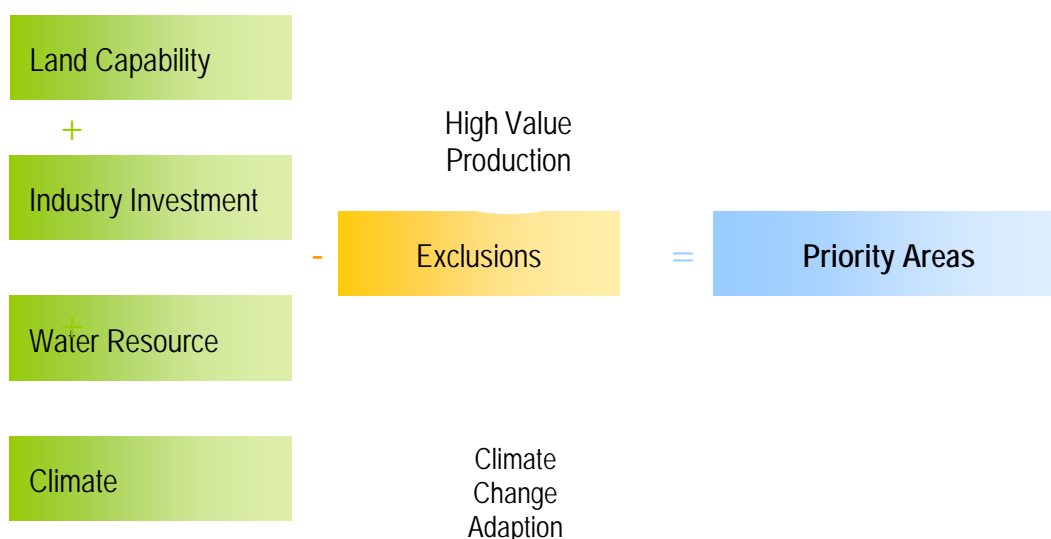
Discussion with Primary Industries and Regions SA (PIRSA) indicates that Government of South Australia's policy position about agriculture in the study area is expressed through the 30 Year Plan as described previously in this report.

PIRSA does not see the Gawler area as a strategic priority and tends to focus its efforts on other areas around the State. This is mainly due to the combination of limited land size, land use conflicts and the access to water. They do however support the retention of small scale agriculture and consider that the area, while small, makes a functional contribution.

In 2011 PIRSA completed a study that identified Primary Production Priority Areas (PPPAs) for South Australia. This mapping detailed areas with primary production significance within the Greater Adelaide region. The broad objective of the project was to identify these areas for local and state government to consider when developing land use policy for primary industry land.

The areas were identified using a multi-dimensional assessment in recognition of the complicated farming sector and food system in SA – acknowledging that soil conditions alone are rarely a sufficient explanation of strategic importance. The figure below shows what relevant factors were combined in order to identify priority areas:

Figure 9. Conceptual outline of PPPA identification method (PIRSA 2011)



For the Gawler Council area, there is a small portion of the study area (in the south west corner of the study area) identified and as being a PPPA based upon the intensity of existing land use and investment, good soil and water conditions and its proximity to the Virginia horticultural district.

PIRSA is currently focussing on the raising the profile of South Australia as a producer of premium food and wine from its clean water, air and soil. Efforts to achieve this include building the profile, productivity and security of food and wine production.

2.5 Initial Community Opinion

In considering community opinion, there are several key points to note:

- There has not been broader community consultation at this stage on policy options developed for the purposes of this study
- There has only been small scale targeted consultation with some local landowners and community group representatives at this stage on understanding background issue
- Council have received much feedback over many years on opinions relating to the future use of the buffer land relating to previous studies. This has been provided particularly in relation to Council's Strategic Directions and the State Government's 30 Year Plan
- This feedback is valued and has been an input into this study
- There is a diversity of views about the future of this land
- Across any community there are a diversity of views, but these are not always expressed. Community feedback verbally expressed in meetings and workshops is one form of feedback. Giving consideration to the totality and diversity of community views is important
- Consideration of community opinion must include both local resident and business views, as well as broader community views. Broader communities may have differing views because they are not living in the area. However as citizens, land owners, visitors, employees, renters and business owners with an interest in the broader council area, their views are also important.
- Community opinion must be balanced against government policy requirements, government priorities, costs to government, and other environmental, economic and social factors.

Key points raised during consultation to date are summarised below.

- Representatives from **The Kudla Community Inc** feel that current Development Plan policy does not reflect realistic or achievable outcomes and support a review based on:
 - Agricultural use of the area being minimal and uneconomic due to high land values, water costs and more economically viable land available nearby in the Virginia area.
 - Rural living use occurring on much of the land.
 - Land division policies supporting the achievement of rural living allotments
 - The vision for an open, natural rural character is unachievable given existing development.

- The potential to create a green entrance to Gawler but utilise other land in and around Kudla for a 'green village' with living environments amongst an 'urban forest' including green corridors, recreation facilities and improved services.
- They seek improved infrastructure and facilities to support the existing (and future) Kudla population
- We understand that these expressed views are shaped by the results from a previous survey undertaken by the Kudla Community Inc
- The **Gawler Region Community Forum Inc** supports a retention of a separation between Gawler and Adelaide but considers that some further development in the Kudla area is desirable provided the rural character is retained.
- **Some land owners** want the opportunity to **divide land further**, but there are differences in what sizes and character the area should aspire to.
- **Some land owners** seek to divide land into allotment sizes smaller than the current 9,000m² policy provision because they believe this size is too difficult to manage sustainably.
- **Others land owners** seek to divide land that is currently in the 4ha policy area into rural living allotments, and be provided with the same opportunities that those in the 9,000m² policy area currently have.
- **Many land owners** feel that the current land division policies are **not equitable** and do not understand their rationale
- **Some land owners** do not see that there is **an economic future** in retaining the land for rural production, and note their experiences are that it is extremely difficult to remain profitable given the land capability, infrastructure and market/competition challenges
- Conversely, some property owners **support the retention of the ability to sustainably farm** within the area, and provide local examples where this is possible. They note that it is common/likely to also supplement sustainable farming with other forms of income
- There is a **relatively consistent view** that it is important to have some kind of **visual buffer** between Gawler and metropolitan Adelaide.
- There is a **relatively consistent view** that **retaining the views towards the hills** as a backdrop to the buffer area is important
- There is a **relatively consistent view** that services and infrastructure in the Kudla area are **extremely poor**, especially the dry, unsealed roads
- **Many Kudla residents** feel that the area is the "**forgotten**" land - with an established resident population but extremely low regard by council for their needs
- There has not been any expressed views that oppose the notion that the **views from the main entrances into Gawler are important**, although there has been varying views about which main entrances views are important to nurture

- There is a **relatively consistent view** that there is much opportunity to “green and vegetate” the areas that are viewed from the main entrances

3 Study Area Analysis

The study area is of considerable size (approximately 1700 hectares) and has a variety of land uses, allotment sizes, geographical features and functions. Given this diversity in form and function across the total buffer area, it is possible that a different policy response may be required for differing areas.

Therefore, the area **should not be treated as a generic buffer** that offers the same consistent character and function throughout.

Instead, to better understand these differences and common features, the study area has been divided into four logical “sub” areas.

Whilst this helps with the analysis of issues across the study area, **it does not necessarily mean** that final policy recommendations will relate specifically to the boundary of each sub area. The sub areas generally relate to views across the area from the major transport corridors, differing land uses, allotment patterns, and geographic features (see Figure 10 for sub areas).

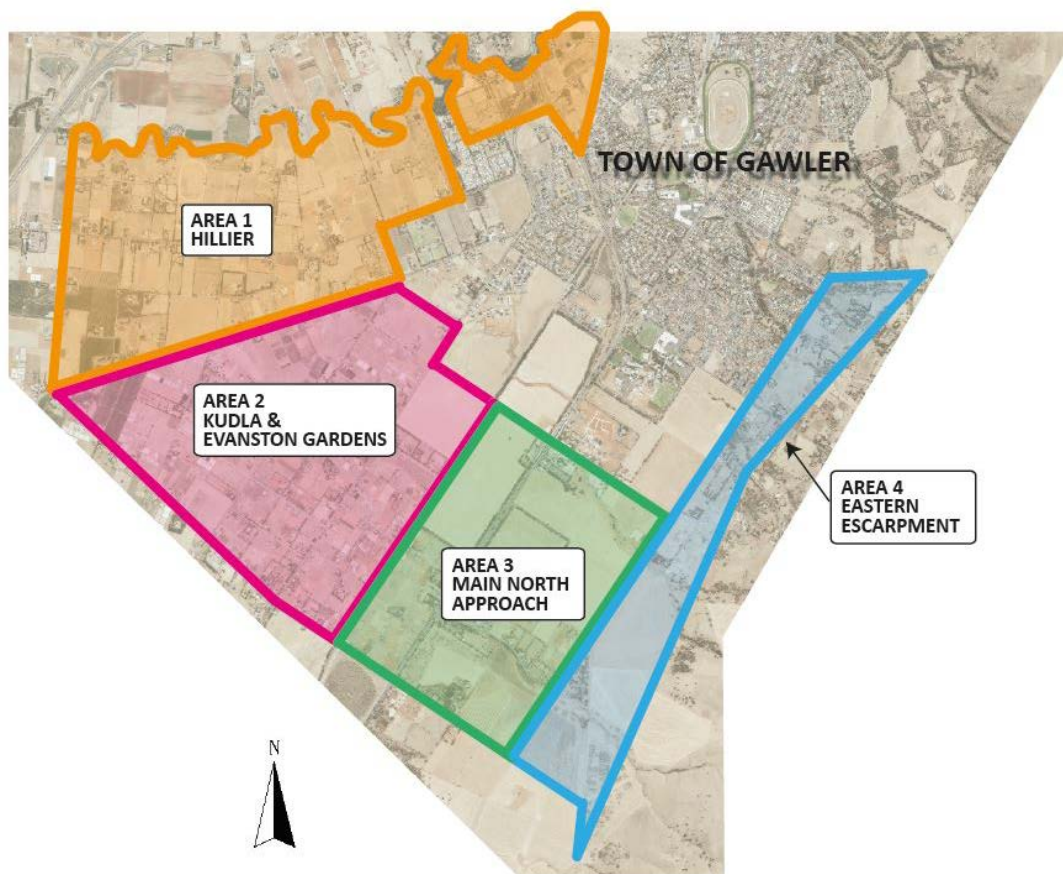


Figure 10. *Sub Areas (for the purpose of informing initial analysis only)*

Understanding the distribution of allotment sizes is important. The existing distribution often provides an indication of likely future uses and character of an area. Once an area has been divided

or developed, it is often extremely difficult to reassemble parcels for the purposes of a large, masterplanned community (which is generally the way in which objectives like mass greening of an area can be achieved). Similarly, once divided into smaller parcels, it is difficult to amalgamate allotments necessary for broadacre rural production purposes.

The allotment sizes across the whole buffer area vary. Figure 11 below broadly depicts three allotment size ranges – from small (1 – 4,000m²), medium (from 4,001 – 25,000m²) and large (25,001 – 100,000m²).

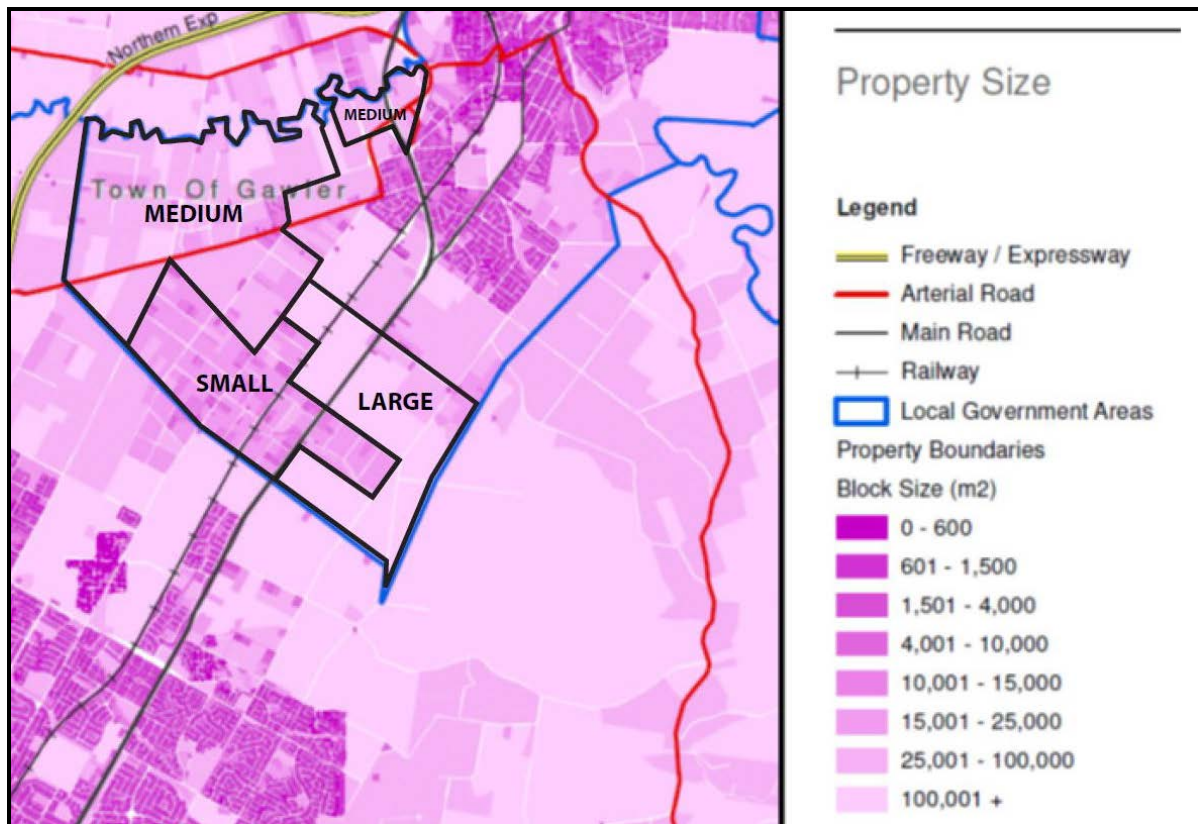


Figure 11. *Allotment Sizes - Distribution of Small, Medium and Large Allotments*

3.1 Area 1

Area 1 is on the north-west of the study area and is located between the Gawler River and Angle Vale Road. The locality is predominantly known as Hillier and Evanston Gardens.

3.1.1 Topography

The terrain is very flat and is partially within the Gawler River flood plain. The riverine environment is well vegetated along the length of the river with tall eucalypts and dense understorey vegetation. This vegetation provides a backdrop for views across the open land to the south of the river. Most of the indigenous vegetation away from the river has been removed as a result of the past farming practices.



Figure 12. *Aerial view looking north over Area 1 from Angle Vale Road to the Gawler River*

3.1.2 Land Uses

The predominant land uses within this area include hay production and grazing in conjunction with rural residential use of many properties.

A general guide based on land use data captured suggests the following breakdown of uses:

- Grazing, modified pastures (270 ha or 51%)
- Rural residential (approx. 100 ha or 19%)
- Irrigate crops (approx. 80 ha or 15%)
- Glasshouses (approx. 8 ha or 2%)

There is also a considerable amount of horse keeping occurring as well as remnants of past orchids and a now disused poultry (egg) farm. **It is noted that despite the primary land use being rural or horticultural, many of these rural activities may not necessarily be currently viable or under production. The data is indicative only.**

There is also current aspirations by some people to develop land just east of the Hillier area. This land was originally zoned Deferred Urban and therefore some perceptions that this land was going to be used for residential purposes in the future.

3.1.3 Allotment Sizes

This area generally features medium sized allotments which are mostly located north of Kudla spanning across to the Gawler River (these are shown in Figure 11).



3.2 Area 2

Area 2 is bound by Angle Vale Road, Dalkeith Road, and the Adelaide to Gawler railway line and Gordon Road (the southern boundary of the Gawler urban area). It contains the locality known as Kudla.



Figure 13. *Aerial view looking north over Area 2 from Dalkeith Road to Angle Vale Road*

3.2.1 Topography

The topography in this area is also very flat with negligible remnant native vegetation as a result of past clearance for agricultural purposes. There are however stands of planted native trees along several roadways and small scale orchards contributing to character. This area is also the most intensely developed with allotment sizes generally being smaller than the rest of the study area.

3.2.2 Land Uses

Land uses are a mixture of rural living and some horticultural and hobby farming activities. The more extensive horticultural land uses are generally located in the western portion of this area (particularly to the west of Stebonheath Road where the allotment sizes are larger). The eastern portion of this area has smaller allotments, less agricultural activities and a predominance of rural living. Rural residential properties tend to have more of a more rural feel - vegetation, rural style fencing, rural outbuildings, visible tree crops or field crops or livestock, typically unirrigated gardens and some remnant or new vegetation plantings. Some of the smaller or newer rural residential properties tend to look more "urban" in form and character – urban style residential landscaping, suburban style housing, sealed or gravelled carparks, urban style front yards, and urban style fencing.

There is also current aspirations by some people to develop land just north of the Kudla and Evanston Gardens. This land was originally zoned Deferred Urban and therefore some perceptions that this land was going to be used for residential purposes in the future.



Figure 14. *Aerial view of extensive horticultural activities and associated glass houses in western portion of Area 2*

Allotment Sizes

The smaller allotments are concentrated in the portion of the Kudla area that currently allow for 0.9 hectare minimum allotment size (see Figure 15). Some other allotments are located in the Rural Zone where a different policy approach exists and owners can divide land to a minimum of 4 hectares.

In addition to the existing allotment pattern, consideration has also been given to the potential for land division and future development in the Kudla area. While there is some potential for land division of the larger allotments across the study area, the area with the greatest potential to change (under current planning policy) is the area with the smallest existing allotments, that being the portion of Kudla where allotments can be divided down to 0.9 hectares.



Figure 15. *Perspectives of future growth within the Kudla .9ha policy area*

- Within the 'Kudla 0.9 hectare area' there are 193 properties with a total area 305.2 hectares
- This provides an average allotment size 1.58 hectares
- The largest allotment is 4 hectares and the smallest allotment is 890 m²
- There are 24 existing allotments that are less than 0.9 hectares
- The vast majority of allotments (169) are greater than 0.9 hectares in area. So there is significant potential to see an increase in population in Kudla (for example doubling of the 169 households to 340 households) even if there was no policy change
- Importantly there are 98 allotments that are greater than 1.8 hectares in size and are theoretically possible to sub-divide
- 10 property owners have more than one allotment. 9 have 2 lots, one has 3 lots

Further development of the Kudla 0.9 hectare area has significant potential to influence the character of the study area. It contains the most intensive level of development and more than half the existing allotments have the potential to be sub-divided. It also sits adjacent to land zoned for suburban residential development within the adjoining Playford Council area.

With further intensification and urban development along Dalkeith Road it may be difficult to distinguish between the urban areas of Adelaide and the Town of Gawler in this location unless there are other provisions relating to landscaping, setbacks, house design and character which may give this area a character consistent with its function as a buffer area.

This scenario is possible even without further policy change to the Kudla .9ha policy area. There is of course also the need to examine the areas that currently only provide for land division to 4 ha. Further development of those areas by relaxing the land division opportunity will also see increased population growth.

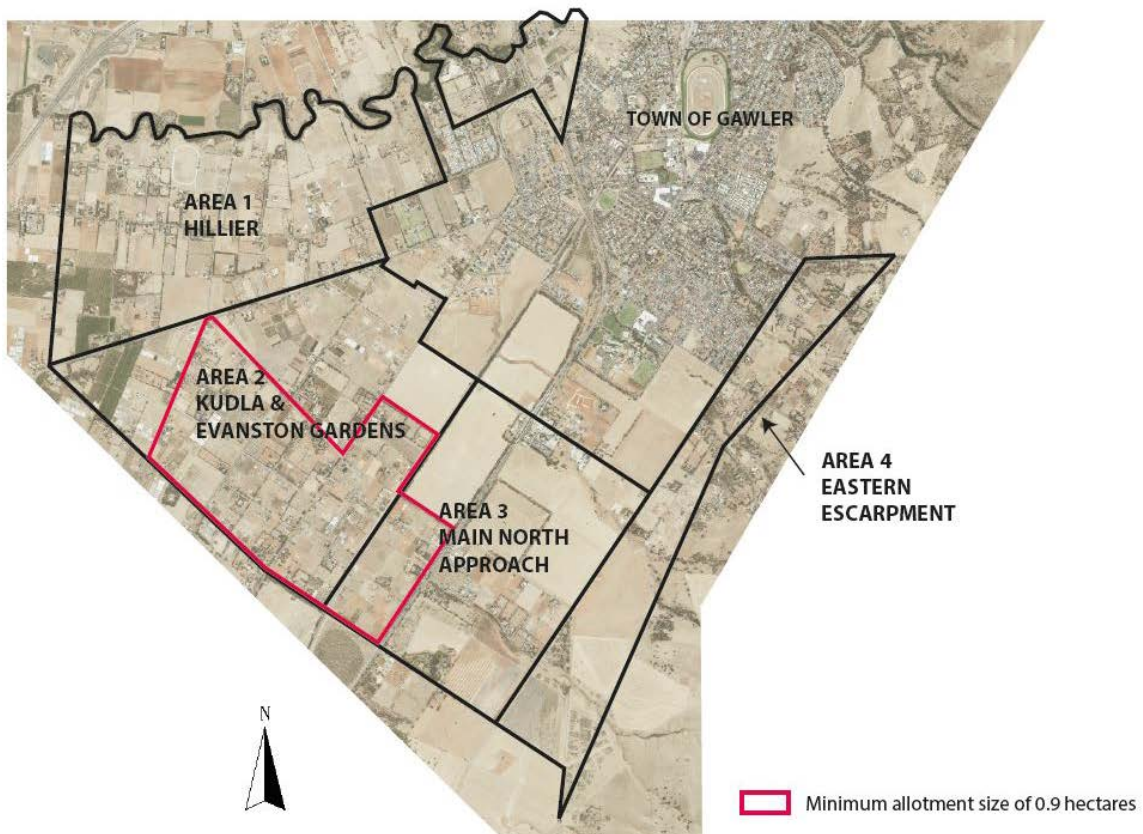


Figure 16. 0.9 Hectare area.

3.3 Area 3 Main North Approach

Area 3 (see Figure 17 below) straddles Main North Road and extends to the Adelaide to Gawler Train line on the west, Smith Road on the south, Tiver Road on the north and Bentley Road on the east. It contains the locality known as Evanston South. It is the area where most people see the “buffer” zone from.

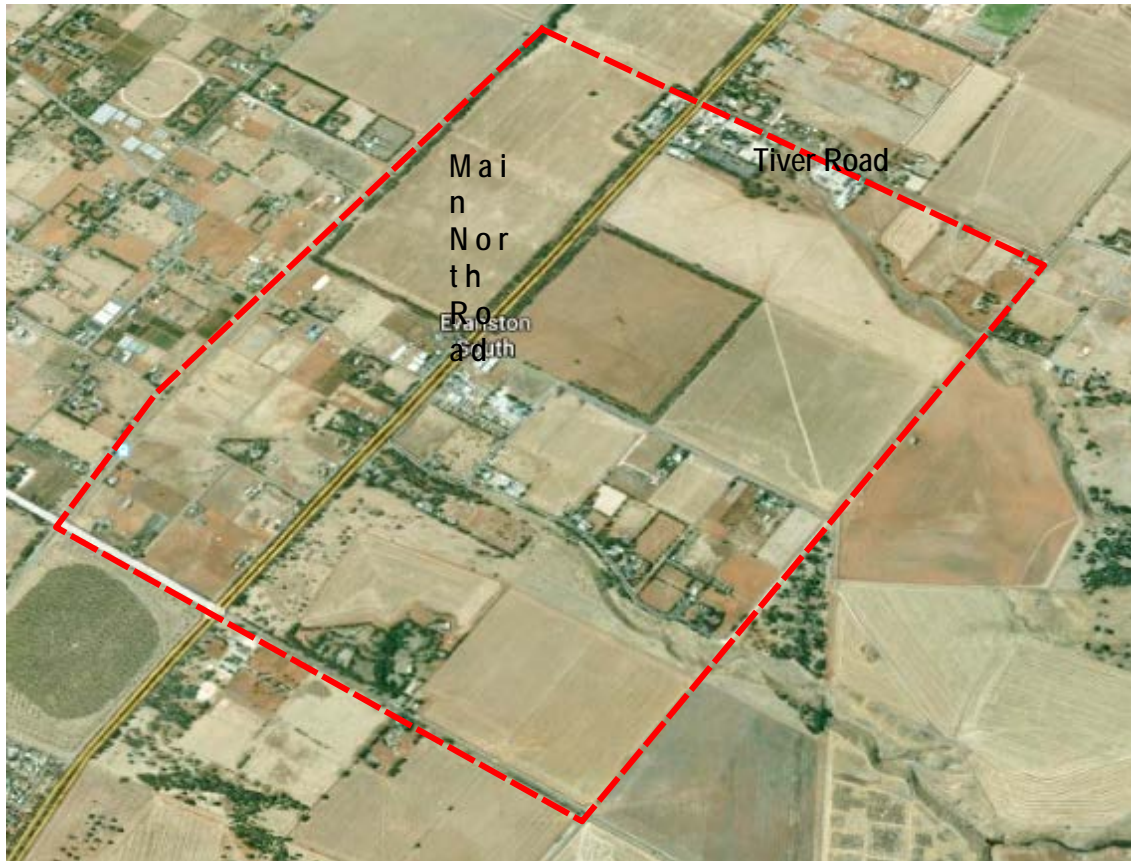


Figure 17. Aerial view of Area 3

3.3.1 Topography

This area is generally flat like those to the west but begins to rise gently in elevation to the east where the plains meet the lower foothills of the Mount Lofty Ranges. There are two creek lines traversing the area.

Vegetation in this area is also limited and sparse due to extensive clearance for agriculture. There are patches of planted trees along some roadways, property boundaries, creek lines, the railway line and individual sites. Main North Road has considerable planted vegetation along the roadside, particularly at the southern end of the area.

3.3.2 Land uses

The area is of mixed nature and contains a number of distinct and diverse land uses including:

- Large open paddocks used for cropping
- A cemetery
- A caravan park
- Businesses in groups along portions of Main North Road including building product display centres for paving, sheds, playgrounds, tiles, carpets, a vet, car sales and repairs, motorcycle sales, tractor and farm equipment sales and repairs.
- A concrete batching plant
- Small scale rural residential properties.

This area contains two of the main transportation routes between Adelaide and Gawler being Main North Road (National Highway A20) and the Adelaide to Gawler Rail line. The area between these two corridors forms a strip of land approximately 525 metres wide. This area is predominantly used for agricultural purposes with some rural residential development and a gardens supplies business.

The land to the east of main north road is predominantly comprised of large open paddocks used for cropping and the majority of the commercial and industrial uses mentioned above.

The following photographs illustrate the range of uses that are prominent in Area 3.





Figure 18. *View of Entrance to Study Area looking north along Main North Road*

3.3.3 Allotment Sizes

The allotment sizes vary between small allotments and large allotments (see Figure 11). The areas under public ownership are generally large allotments, with smaller ones being occupied primarily by commercial uses.

3.4 Area 4 Eastern Escarpment

Area 4 runs along the eastern boundary of the study area and adjoins the foothills of the Mount Lofty Ranges. It is also the Council boundary. The adjoining hills are within the Playford Council area and provide a prominent scenic backdrop to the locality.

Area 4 is bounded by Smith Road in the South, Potts Road on the north and Bentley Road on the west. Bentley Road is also the boundary of the urban area contained within Evanston Park.

3.4.1 Topography

The land form is undulating and moderately steep in parts with several gullies running from the east down to the west.

In the northern portion of the area, the predominant land use is rural living. A small number of these properties are undertaking a small amount of horticulture however the majority appear to have no agricultural activities occurring.

3.4.2 Land Uses

In the southern end of this area there is some cropping and grazing occurring on larger properties that also extend eastward into the hills face and adjoining Council area. There are very few buildings present or visible in the southern portion of Area 4

This area forms part of the scenic rural backdrop to the Gawler Township.

3.4.3 Allotment Sizes

Generally this area exhibits larger allotments (see Figure 22) which are largely those that are in the ownership of State or Local Government and are set aside for open space or are under the care and control of Renewal SA and are currently leased out for cropping purposes.



Figure 19. *Looking east from Smith Road to the Hills Face in southern portion of Area 4*



Figure 20. *Looking south east from Westdown Road*



Figure 21. *View from Area 3 looking east to Area 4*

3.5 Key Entrances and Views

The way in which the study area is perceived is largely determined by how it is observed when residents or visitors travel between Gawler and Adelaide. The image and identity associated with these views is particularly important to the look and feel of this area as a buffer area. Therefore, development plan policy (and other council tools) that promotes and facilitates views associated with the desired look, feel and function of these views as a buffer area should be a strong objective of this study. Consideration of the views from the main entrances from the south, and the number of people travelling through them each day, (as shown in Figure 22) are as follows:

- Main North Road (31,000 trips/day). Views are long range across to the escarpment and over predominantly open rural area and some stands of trees. Views are also short range, of commercial land uses adjacent to main road. ea.
- The Adelaide to Gawler Railway (62 trains/day with approximately 3500 passengers). Views are likely to be long range across the landscape towards the escarpment to the east and plains to the west. Due to the speed and elevation of passengers, the views immediately adjacent to the railcar are less predominant.
- Angle Vale Road (3,500 trips/day). Views are of rural residential properties, and of a range of rural pursuits. The views are of quite flat and relatively dry conditions.

There are a number of secondary roadways that have also been considered for their contribution to the network of entrances to Gawler. They are Dalkeith, Hillier and Stebonheath Roads. The boundary of the study area along Dalkeith Road in particular is critical if a distinction between metropolitan Adelaide and Gawler is to be maintained. . Unlike the other edges and interfaces there are no natural features, open space provision or contrasting forms of development (e.g. rural) to mark the edge of the buffer area.

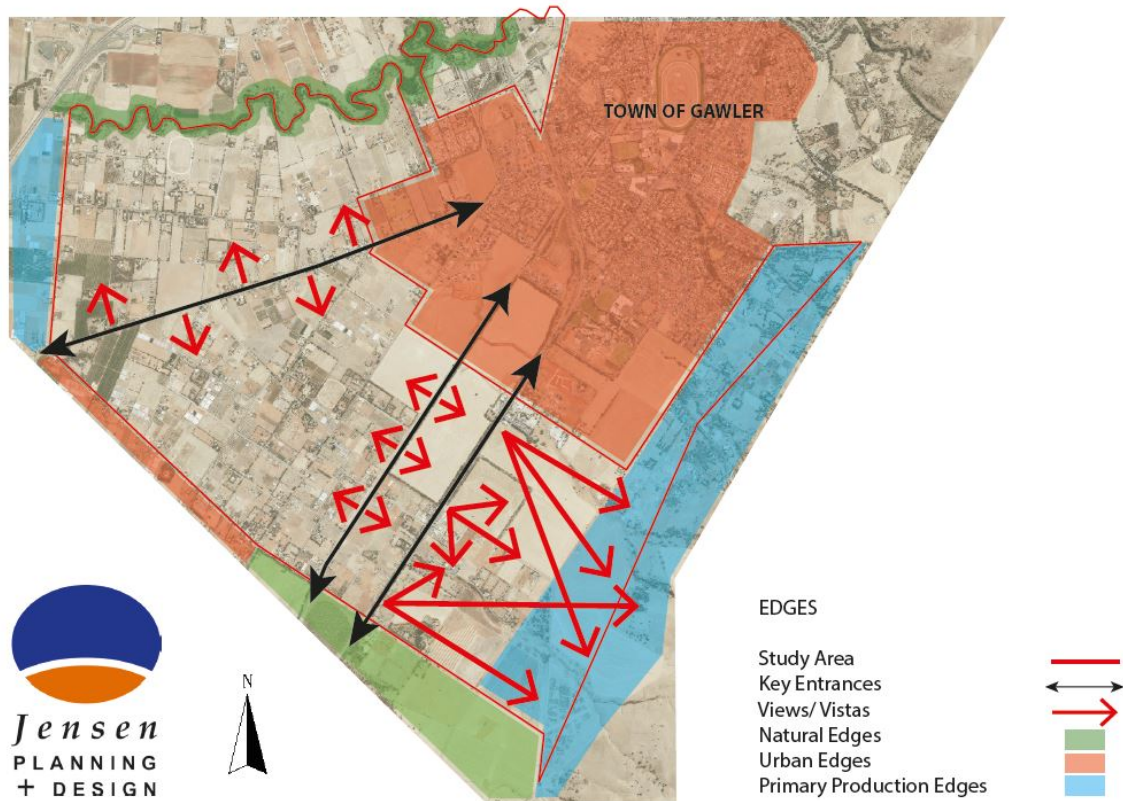


Figure 22. Views from key entrances into Gawler from the Southern and Western side

4 Assessment of the Value of Agricultural Land Uses

A key outcome of this study is to estimate the value of agricultural production within the study area.

This analysis is primarily based on information sourced from the ABS *Agricultural Census* (ABS 2012) for the Gawler South Statistical Area 2 (SA2). This Statistical Area is larger than the study area for this project.

Therefore, the data incorporates land uses and economic values for some properties that sit outside the study area. The data also is a few years old and may not always indicate what land uses are occurring now.

This information is indicative only, and to be treated as a guide. It is acknowledged that there may be inconsistencies between what is currently occurring on properties, and what the data indicates.

4.1 Existing Agricultural Land Uses

Approximately 60% (1022 hectares) of the Gawler South Statistical Area 2 (of which this study area is part of) is classified as being in agricultural production. Of course, not all of this land is currently under production or may be underutilised for productive purposes (for example, the “cereals” category below may not be currently used for cropping).

Quite a lot of this land may also be considered as “rural residential” or “hobby farms”. Further detail of the types and location of agriculture land uses is shown on Figure 23.

- Total area within the boundary is estimated at almost 1,700ha.
- Of this total area, almost 600ha is used for non-agricultural purposes, the majority of which is for rural residential use (90 per cent).
- The remaining area, almost 1,100ha, is used for agricultural purposes.

4.2 Trends in Agriculture

Historically agriculture has played a dominant role in Australian culture and economy however in recent decades its relative importance has declined. Key drivers have been shifts in consumer demand, changes in government policies, technological innovation and emerging environmental concerns.

Farms are much fewer and larger than twenty years ago¹. Agricultural productivity has however exhibited strong growth as a result of increased demand to keep pace with population growth and the demand for Australian exports. Exports have also become more diverse, with less reliance on traditional commodities such as wool and more on processed products such as wine, cheese and

¹ Sources: *Trends in Australian Agriculture*, Productivity Commission, Australian Government Research Paper 2005, CSIRO *Assessing Landscape Systems and Trends for Agricultural Sustainability*, 2010.

seafood. The cropping industry has recorded the highest productivity gains, and the sheep and beef industries the lowest.

The agricultural workforce has moved away from a high proportion of self-employed, family and casual workers; long job tenure; and a relatively old workforce with low education levels to an increase in the number of employees and a fall in employers and contributing family workers. The educational attainment of workers has also improved as has their acceptance to utilise technology.

Off-farm employment has become increasingly important to maintaining family farm incomes with nearly 45% of Australian farming families supporting their income with other sources. There are many examples of this in the study area – the farm business is not profitable enough to maintain an income for a whole family, and supplementary income is required.

Increased efficiency or 'producing more with less' is the underlying theme for the future of agriculture. There is little new arable land in the world. The result is that existing producers will have to continue to focus on smarter, better, more efficient growing in order to meet demand.

Looking to the future, there is growing opinion that “business as usual is not an option” and that there will be a change away from large scale monoculture fertilizer reliant agriculture towards more sustainable and resilient smaller scale farms and strong local food systems. Advocates for such change include the UN Commission on Trade and Development (UNCTAD) and has been endorsed by nearly 60 Countries through the International Assessment of Knowledge, Science and Technology Development report, 2007. In South Australia, this is reflected in a growing interest for “loca vore” – meaning our food should come from local producers rather than long distances.

Recent Climate Change reports indicate that Goyders Line in SA is pushing further South. This suggests that our food production areas will also need to move correspondingly further south, where rainfall is higher and land is more suitable. This trend highlights the need to future proof land that is capable of sustaining food production for local populations into the future.

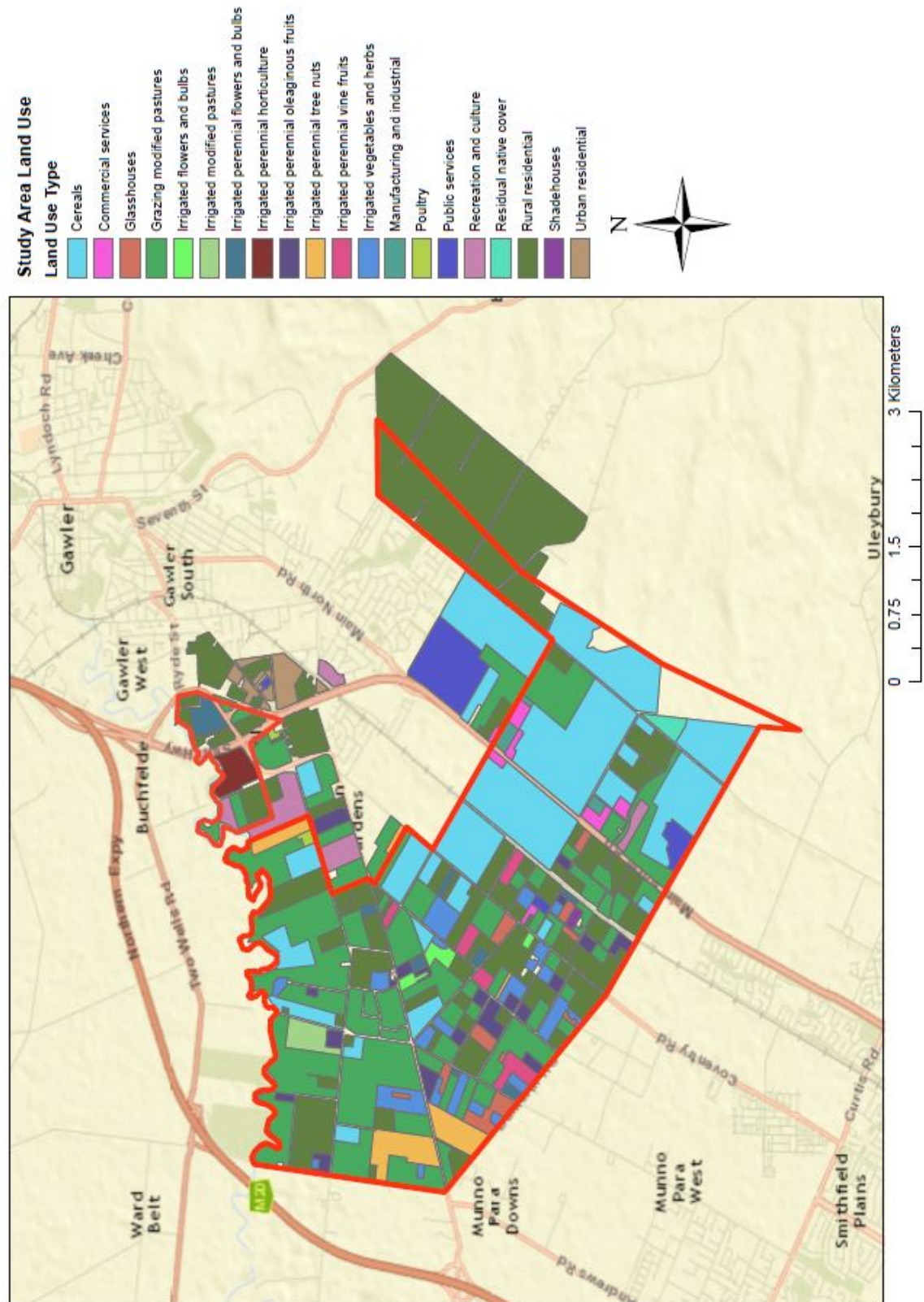


Figure 23. Land use within the study area boundary

4.3 State Government Designated Primary Production Priority Areas

In 2011, the Primary Industries and Resources division of the SA Government identified the areas within Council areas that are considered to be Primary Production Priority Areas (PPPAs) based on a combination of land capability, industry investment, land use, access to water, climatic conditions and any local conditions that give rural land special significance of primary production.

For the Gawler Council area, there was a small portion of the study area identified and being a PPPA based upon the intensity of existing land use and investment, good soil and water conditions and its proximity to the Virginia horticultural district.

The remainder of the study area was noted to contain some good land and weather conditions, especially near the Gawler River. However, with only a few exceptions, land use is generally not regarded as being currently managed as a highly productive operation.

4.4 Subdivision Patterns of Rural Land Uses across the Study Area

This baseline analysis of allotment patterns and land use distribution raises number questions to consider in relation to the future of rural production.

- Is it sensible to determine a minimum land division size given the difficulty in determining minimum development units for rural production? Field crop land sizes are highly influenced by unpredictable climate, economic and market forces and therefore a minimum allotment size is more difficult to determine. It is possible to determine minimum sizes for greenhouses, but these are unlikely to be palatable in a “buffer” area that seeks to be open and rural in character.
- Does a Council’s ‘no division’ policy in a rural zone support the longevity of the rural industry or stifle innovative growth?
- Will further fragmentation of the land jeopardise its long-term potential as rural land? It may be appropriate to allow further fragmentation of land in an area already significantly fragmented and with minimal opportunity to return to viable rural uses. However, it is likely to be less appropriate in areas still suitable for broad-acre field cropping. But are there any areas still suitable for broad acre field cropping in the buffer area?
- Similarly, what impact will further land division have on the value of land? An increase to land value may not necessarily be detrimental to the market for smaller land parcels for horticultural uses such as greenhouses as the division allows opportunity for purchase of smaller parcels of land. However, for horticultural land uses that require extensive land (e.g. field cropping) an increase in land value will impact on future economic viability of these uses with land becoming too expensive to farm.
- Should planning policies support legitimate value adding activities that might relate to rural production and what are these?

Implications:

The study area reflects the trends in agriculture described above.

While the locality displays limited potential for large scale agriculture there is potential for the locality to respond to and capitalise on future trends for small scale local food production. These are more likely to be in horticulture.

Water availability and quality, escalating land value prices, and interface issues are some of the key barriers to achieving potential horticultural production in the area.

This opportunity for smaller scale local food production and intensive horticultural uses should be considered in conjunction with the other characteristics and opportunities discussed in this paper, and noting the large numbers of existing rural residential properties. The areas retention for agriculture is but one option for consideration.

4.5 Economic Assessment

The following analysis describes the baseline agricultural data for the region.

Summary:

As shown in Figure 23, the total value of agricultural production in the study region is estimated to be approximately \$8.4 million for 2012/13. This translates to an average GVP of \$7,700 per ha (2012/13).

While cereal production (wheat and barley) and sheep grazing accounted for the largest proportion of land by area (85 per cent), these crops only contributed 6 per cent of the total value of production in the region (around \$530,000).

However, vegetables (tomatoes, capsicums and beans) took up only 9 per cent of agricultural land but contributed 77 per cent of the value of agricultural production for the region.

Other important crops, in terms of value of production, are almonds and cut flowers.

These estimates of gross value of production should be treated with some caution as they are based on a mix of data from different time periods and a set of assumptions that were necessary due to the lack of detailed data for the study region. For example, it was assumed that the enterprise mix in the broad land use categories for the study region is the same as that reported for the ABS Agricultural Census (ABS 2012) for the Gawler South Statistical Area 2 (SA2), an area which includes the study area but is larger than the study area.

How were these values achieved?

In order to estimate the value of agricultural production in the study area, prices and yields were sourced for the different enterprise types.

Prices and yields were sourced from:

- The ABS (2014a and 2014b) for wheat, barley, lucerne, cut flowers and eggs.
- For olives, almonds, tomatoes, capsicums and beans these data were sourced from a recent study on horticulture in Virginia and the Northern Adelaide Plains (Jensen Planning + Design et al. 2013). Data on wine grape yields and prices were sourced from the Phylloxera and Grape Industry Board of South Australia (PGIBSA 2014).
- Data on the value of sheep production were sourced from Rural Solution's *2013 Farm Gross Margin and Enterprise Planning Guide* (PIRSA 2013).

The data on the land area, yield and price data for each enterprise type was then used to estimate an approximate value of production by enterprise type for the region.

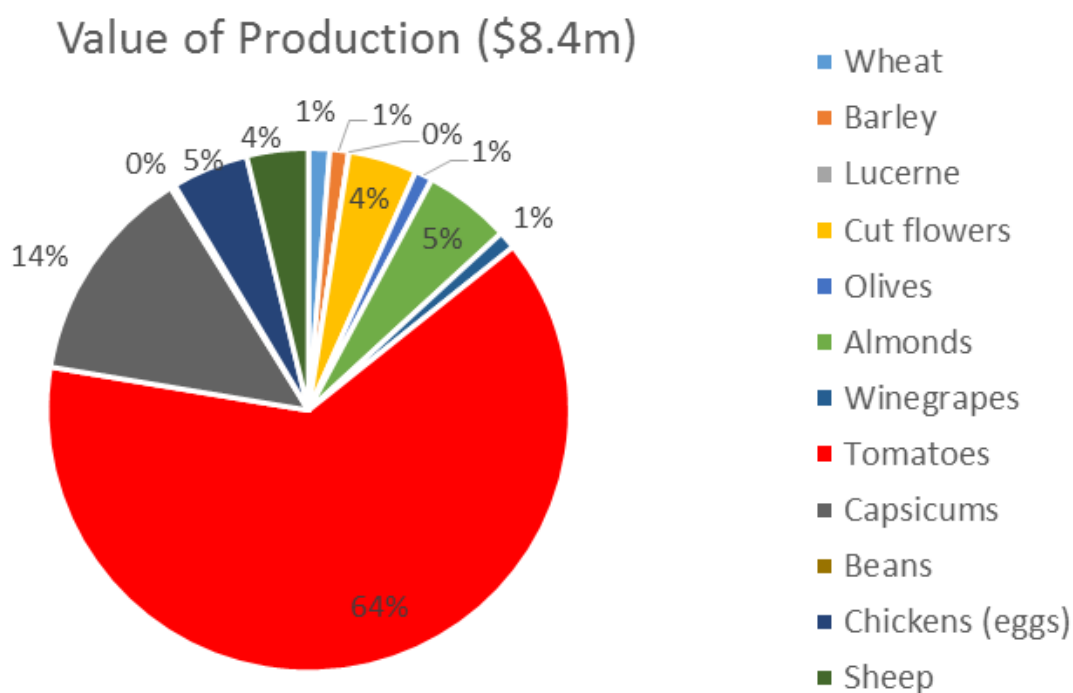


Figure 24. Value of production in the study area, 2012/13. Source: EconSearch Analysis

4.6 How does this Value Compare to Other Regions?

Gawler Statistical Area 2 (which includes the study area)

Estimated average GVP per ha of \$7,700/ha (2012/13)

Northern Adelaide Plains (NAP) Horticultural Region

Comparable in location, similar distances to the Adelaide market, existence of both intensive horticultural crops and rural living. Note that there are differences in business management, culture, allotment sizes, levels of salinity and so on – so any comparison is only indicative.
Estimated average GVP per ha of \$14,200 (2011/12).

Caution

It should be noted that averages such as this encompass a wide variation in land use type and therefore a wide variation in returns per hectare. For example, in the study area high value horticulture comprises around 15 per cent of the total agricultural land area, in contrast to the NAP where 26 per cent of the total area is used for horticulture. Low value grazing/pasture accounts for 43 per cent of agricultural land in the study area but just 21 per cent in the NAP. These differences in land use mix account for a significant part of the difference in average GVP/ha.

4.7 What does Rural Production Need into the Future if it is to be Viable?

4.7.1 Land

- Not all soils within the region are suitable for horticulture and assessment regarding the suitability of the soil against the requirement of the crop should be undertaken
- Land should be of a size appropriate for the growing of crops in an efficient and profitable way, and situated away from urban areas (where possible) unless there are suitable management mechanisms for interface issues
- Preferably not in the lowest part of the landscape with a higher risk of flooding or water-logging
- Land should be available that has not been used for the growing of incompatible crops with possible carryover of soil diseases, or has had incompatible weedicide applied to the previous crop
- Hydroponic particularly is not dependant on good soil so this presents the area with an opportunity, although glasshouses are possibly not consistent with the open rural character

4.7.2 Infrastructure

The infrastructure available on or near the property should include most of the following things:

- Water supply, including mains supply, bore water, or WRSV water connection, or the possibility of a new connection being available.
- Power (3 phase) installed, or in close proximity.
- Gas, particularly for greenhouse heating, processing or packing of produce.
- Road access to allow truck and machinery access.
- Adequate shedding, office or housing on property, or no impediment to them being constructed
- Suitable access to transport
- Access to storage

4.7.3 *Economic certainty*

- Land right certainty
- Operational certainty as well as certainty about the future value of land for sale/superannuation

4.7.4 *Financial Management*

- A purchase price for the land / business that can be supported by the returns from the crop to be grown (difficult if prices are inflated due to property speculation)
- It is important to carry out a rigorous reality check on the economics of growing the proposed crop on the land
- The costs and returns for growing the proposed crop are realistic and verifiable. Include some discount factor taking into account a 1-year-in-10 chance of getting a complete crop failure
- Think about how the predicted climate changes in the next 20 years may impact on the crop
- Use realistic interest rates into the future as current rates are the lowest they have been for a long time
- Beware of mortgaging your assets too highly to provide security to the body providing you with finance (leave some capacity for an unforeseen requirement for further funds)

4.7.5 *Operational Management*

- A manager with experience in growing the crop in the region
- Good people management skills
- Knowledge of management to a rigid cash flow budget
- Requires flexible and cooperative approach to match changes in market demand and supply conditions, changes in technology, changes in availability of labour and so on

4.7.6 *Access and Knowledge of Markets*

Markets can change very quickly as crops go in and out of favour.

- Understanding of competitors in the market
- Membership of a marketing group with other like-minded growers
- Understanding of what is happening with the proposed crop elsewhere in the region, interstate and overseas
- Knowledge of what agents and other potential buyers are thinking about your produce
- Flexibility in use of machinery and infrastructure, the property infrastructure and machinery should be suitable if another crop needs to be grown

4.7.7 *Training*

- Relevant to cropping systems
- Specific to cultural and language needs of the growers
- Tailored to existing level of knowledge/competency
- Training should be seen as a way of not only building knowledge but creating/maintaining relationships / collaborative opportunities
- Localised
- Scenario and interactive

4.8 Key Limitations and Barriers to Future Rural Production

There are several key main barriers to future rural production in this area. They are:

- Availability of affordable, consistent and good quality water
- Increasing land values that are major deterrents for new agricultural enterprises and challenge the on-going viability of existing agricultural operations.
- The effect that speculative land holding for future urban development has on the use of the land. The encroaching urban development from the urban areas to the south and the expansion of the urban boundary south of Gawler have influenced some land owners to believe that it is only a matter of time before the land between Adelaide and Gawler is rezoned for urban development. This is despite being contrary to the strategic positions for both the State and Local Government.
- The existing size of land holdings which make it difficult to undertake many (but not all) rural productions because of the limitations the size presents to machinery, opportunities for crop rotation, land management and so on
- Possible salinity issues

4.9 Policy Mechanisms that may Support future Rural Production

There are a range of policy mechanisms and other measures that may support future rural production – however they are not all zoning and planning tools.

In the United States, rather than setting minimum allotment sizes, economic incentives are widely used as a way of preserving agricultural land as well as achieving biodiversity conservation and landscape preservation.

For example, the government will purchase the development rights to a farm (therefore farmers receive an income from the sale of development rights), and in return, a covenant is taken out over the land to ensure it is only used for agricultural or conservation purposes.

This type of policy works in the United States as it is based on the assumption that the owner has an inherent right to continue to develop rural land. This economic incentive approach has limited application in Australia where there is no such right to develop land, only the right to lodge a development application which is then assessed against the relevant policies.

However, the use of economic incentives is not uncommon – several councils offer rate concessions to farmers to counter the effect of inflated land values caused by increased demand for rural living allotments.

The main difference between policy approaches in Australia relate to prescriptive (such as minimum allotment sizes) versus performance-based policies (i.e. policies which require the applicant to show that the development will achieve environmental or rural or conservation objectives).

Implications of the Economic Assessment

The imperial data points towards this area being unsustainable for traditional, dryland or non-irrigated agricultural land uses.

Vegetables and intensive production provides the greatest income source, even though it occupies the least space in the area.

With global trends and policy supporting sustainable and resilient smaller scale farms and strong local food systems, there is some wisdom in supporting flexible land uses that provide the opportunity for increased numbers of such systems so that South Australia is provided with flexible food options into the future.

This future opportunity is more likely to be aligned with intensive, likely irrigated horticulture rather than dryland or broadacre agricultural uses.

Land uses such as small allotments with dwellings that rule out that opportunity into the future would not support this opportunity.

However some land that has limited water supply, salinity barriers or is already significantly divided and allotments are too small to be viable as productive units. Pressure to develop the land for other land uses (particularly residential) will continue to increase.

A conducive planning policy environment is only a small part of facilitating viable rural production in the area. Many more incentives and proactive approaches are required by local government, state government and industry in order to achieve vibrant, sustainable and strong local productive systems.

There is a dynamic tension between those that value and wish to see agriculture retained and enhanced, and those that feel that the opportunity to farm this area productively has been lost and is more appropriately pursued elsewhere.

5 Assessment of the Value of Rural Living Land

Rural living development, or large allotments that have both a house and space for some animals, open space and possibly agricultural uses such as olives or almonds, at the moment is primarily located in and around Kudla and Hillier.

Rural living areas can result in both benefits and create challenges – both to local landowners as well as more broadly for the communities within the region: Whilst generally they are desired in rural areas by parts of the community, they often present management difficulties for local council, and the resources required to maintain them are great for a small population number (compared to urban areas).

Benefits

- The increasing diversity of household type (like people who are attracted to rural living pursuits) to a local population can have a positive effect on the vibrancy and economic activity within the supporting townships and communities
- The development of portions of rural land into rural living provides income to existing land-owners that can support capital investment into their business and/or provide a 'boost' to the land owner's superannuation
- Some people suggest that smaller properties are more likely to be planted out to native vegetation and other landscaping, providing more opportunities for "greening" an area
- If well managed and vegetated, they can contribute to an open rural character

Challenges

- There is a significant body of research that suggests smaller 'rural living' or 'hobby farms' are often poorly managed and that this can lead to increases in disease, pests and weeds (i.e. biosecurity risk)
- The creation of these smaller allotments also can result in conflict between land users with the needs (and perhaps expectations) of the country lifestyle seeker, which are often different from those who need the land for productive purposes, or from those who want to live in an urbanised area (ie neighbouring Playford region)
- Additional households within the region place strain on existing services and infrastructure that typically Council must resource and manage
- Unapproved land uses, for example horse keeping and commercial truck parking, seems to be prevalent in these areas (this is explored more in Section 6.3.1)
- Rural living allotments (depending on the size) can often look and function like suburban residential areas – houses, sheds, driveways, cars, minimal setbacks from the road, all signify "urban" rather than "rural" primary function. This is sometimes at odds with the desired "rural"

The extent of the effect rural living will have on a region is linked to the size of the lots and the nature of their use – obviously the smaller the allotment, the higher likelihood of conflict (e.g. less noise and spray buffers, more intensive residential use), the more "urbanised" it looks, and the less chance of productive use of the land due to its size, etc.

The demand for more rural living is not clear.

The infrastructure costs for more rural living allotments will need to be paid by the broader community (through council rates).

The costs may also relate more broadly to a declining opportunities for productive landscapes because of increased property values. The benefits will be experienced at a local level by residents living on rural living allotments.

Some of these issues can be managed through:

- Improved land management techniques
- Improved levels of understanding about the issues and management responses
- Planning policy that supports appropriate size, shape and distribution of rural living allotments
- Planning policy that supports early consideration of interface issues through the development assessment process
- Requirement that rural living allotments install their own septic “envirocycle” which must be linked to watering of vegetation – this creates an opportunity to “green” an area. However is extremely difficult to enforce and manage by local government, and successes of this system as a way of greening a whole area are difficult to find.

5.1 Economic costs and benefits

A detailed economic analysis of economic costs and benefits of further rural living development has not been undertaken as part of this project.

The following points are noted:

- Larger scale masterplanned developments may see developers paying for stormwater drainage, roads, footpaths and kerbing and then transferring to council for ongoing management. However, given the existing allotment configuration and ownership pattern, this area is likely to see small scale, fragmented and uncoordinated development which will result in a cumulative impact and require council to upgrade existing assets
- With small scale, incremental development, it may be hard to convince a developer for any discretionary developer contributions (e.g. the need for a negotiated precinct agreement under which the developer pays monies (directly or through a levy on allotments) to fund specified works and projects carried out by Council).
- There is an existing concern within the Kudla and Hiller/Evanston Gardens communities that existing road infrastructure is poor, and a push from the community for Council to expend monies on upgrading its existing roads to a standard suitable for a residential community in that area. This may be a requirement of council regardless of whether there is further development.
- With any policy change that provides for increased subdivision opportunities, Council will receive additional revenue would flow as a consequence of the additional properties created and the associated increase in population.

6 Infrastructure

6.1 Water

Current Council requirements are:

- Mains extension
- Indirect water service through private easements on adjoining land
- Dry lots with requirements for onsite water tanks

Allocation for properties is generally based on urban (residential) use requirements. SA Water currently only allocates additional water allocation based on commercial factors, e.g. if an irrigator's group or development proposal is put forward.

6.1.1 Mains Water

There is a potable water network servicing the study area. It is part of the Adelaide Water District and is generally serviced from the 750mm transmission main (Barossa Trunk Main) which runs along Bentley Road. More specifically, most allotments within this area are serviced via 100mm/150mm distribution mains.

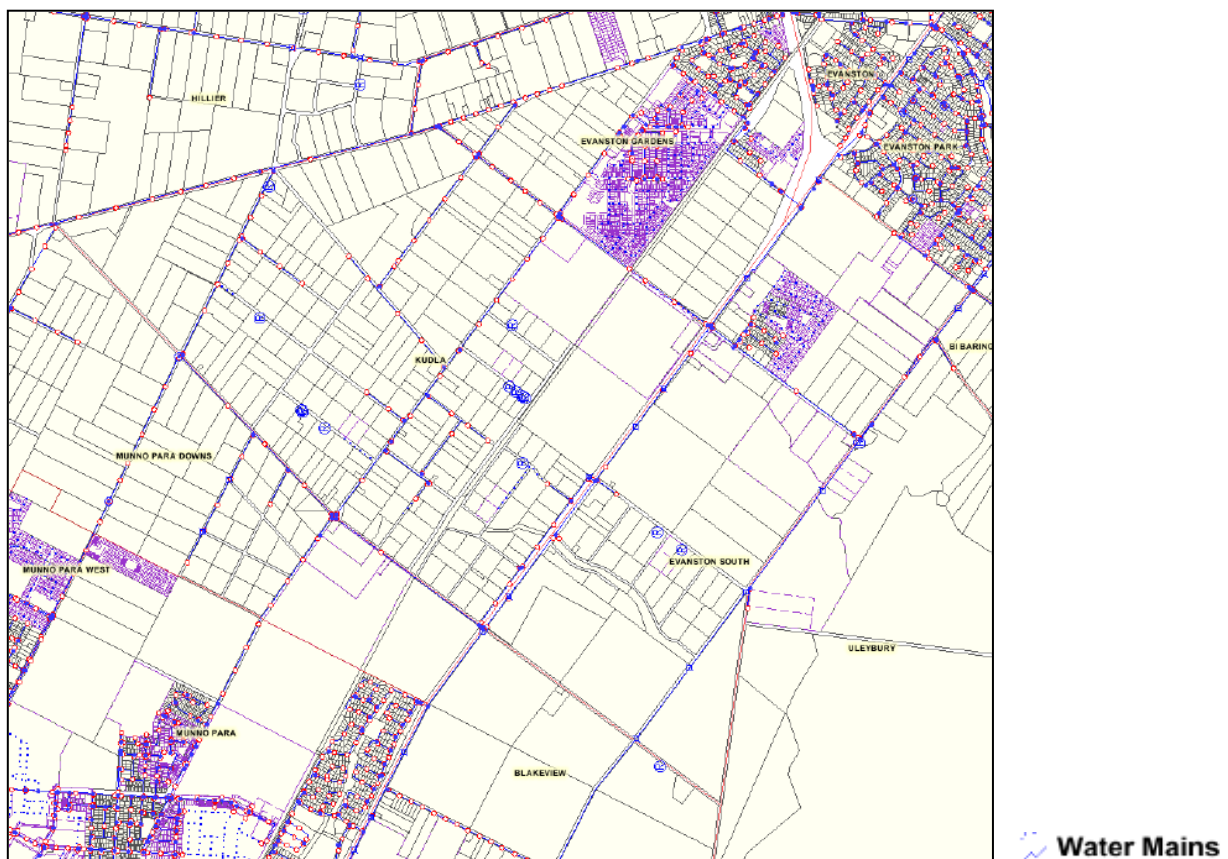


Figure 25. *Mains Water Network*

6.1.2 Indirect Service

An indirect service also occurs to some properties in the area. This is a service arrangement whereby SA Water provides a water meter adjacent to its main, and the private land owner requests a permit from the Council to lay a water pipe in the Council's road verge from the meter to the new allotment.

The concerns for Council with *indirect services* are:

- Road verges are locations for a range of public services (Telstra, Council stormwater, sewer, water mains, underground and above ground power). The co-location of private services is an additional level/layer of responsibility for Council in managing public roads;
- Invariably where one indirect service is required, multiple services result and the road verge becomes the location for numerous private water pipes. These are installed using varying degrees of skill and quality of product. Damage to one line can result by installing a new line;
- Underground services management becomes an economic cost to Council when the road requires upgrading/rebuilding, as most roads in Kudla will ultimately require. The road verge becomes an essential location for stormwater management which may require the private services to be relayed, with an associated complexity and cost to the project.

6.1.3 Ground water

The study area is within the Northern Adelaide Plains Prescribed Wells Area and is subject to the provision of the Natural Resources Management Act 2004 which requires licencing for the extraction of water and the provision of a Plains Water Allocation Plan (WAP) with rules under which prescribed water resources are managed.

A Water Allocation Plan Report Card was prepared in 2011 which indicated that:

- Extracted water was predominantly used by vegetables and herbs (61%), perennial horticulture (20%), pasture (16%) and urban industrial and recreational uses (3%)
- The water level has been stable over the last 10 years.
- Salinity levels are generally stable at around 1200-1300 mg/L (typical for the Adelaide plains) however some isolated pockets (to the west of the study area) have experienced increased salinity levels over the last 10 years.

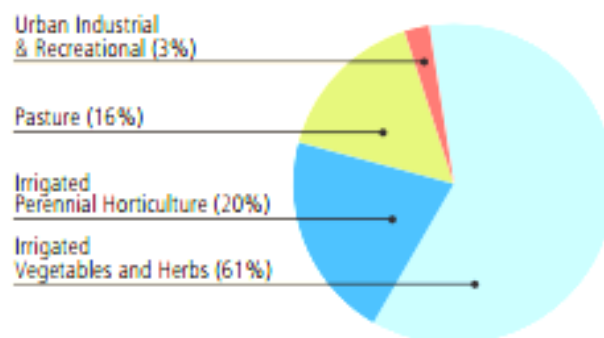


Figure 26. **Proportion of ground water used by land use**

6.1.4 Recycled / Reuse

There is currently no recycled water infrastructure in the study area.

There is a proposal to develop a **recycled water system within the Town of Gawler** which up until recently included the study area.

It is noted that the ongoing feasibility of this distribution network is currently being reassessed, which may result in the study area being excluded from the distribution network, or the network not proceeding in any capacity.

This is a multi-water use scheme involving 1.2 GL in two wetlands (one on the Gawler River and the other at the Gawler racecourse) by 2017, and ultimately 12 GL over the next 30 years as the Gawler/Roseworthy expansion continues to grow.

The scheme is based on reusing stormwater in the growing northern suburbs (Greater Gawler and Roseworthy). The network is planned to extend south to Evanston Gardens and East to Woods Road, Ward Belt but the actual extent of the works to be constructed may change through the design development phase.

It intends to supply water to the four northern councils and recreation space users, and there will be some potential to extend the scheme to horticultural uses.

It is commencing with a \$10.7 million Commonwealth grant, which has been approved, and LR+M Consortium has been secured as the preferred partner.

Councils are also seeking the addition of the currently unallocated Gawler river flow, which could increase supply by 10GL per year for use in irrigation. The SA Minister for Water has advised that progress on the Draft Water Allocation Plan has ceased, so the Councils should continue to seek this access to this water.

There is potential to link the scheme to other schemes including the Waterproofing Playford system and potentially to supply non-potable water to Blakeview and Playford Alive.

SA Water are currently reviewing alternative reuse schemes relating to the Bolivar Treated Water, including extending the treated water through a new distribution scheme to horticultural recipients in the Northern Adelaide Plains region.

The **Evanston Gardens Stormwater Management and Reuse Scheme** is adjacent to, but not within the study area. It is designed to capture, treat, detain and reuse stormwater from a 6.5 km² catchment. The scheme includes three wetlands and three retarding basins that have a combined storage capacity of 165,000m³. The wetlands and retarding basins are linked by a combination of open channels and culverts that are designed to carry stormwater runoff from a 1 in 100 year average recurrence interval (ARI) event. Stormwater captured by the scheme is designed to be injected at the proposed Gordon Road Wetland using an existing aquifer storage and recovery (ASR) well. Water is to be extracted from the well and combined with water extracted from two wells at Karbeethon Reserve before being disinfected and distributed to meet irrigation demands of parks

and reserves within the catchment. At this stage, there is no proposal to extend this into the study area.

6.1.5 Potential Integrated Water Management Approaches

There are significant opportunities for future improved water supply and water quality for both residential and productive uses. Some of the opportunities have stalled pending further investigations and funding. However, there remains considerable interest and research investment into increasing water supply to the region for productive purposes and urban uses.

The region is working towards an integrated approach to water management in which the mains and groundwater resources are supplemented by combining the use of all sources of recycled water together to provide a sustainable non-potable supply for urban and economic uses thus reducing the need for potable water.

This has been facilitated by a collaborative process involving all four councils – Mallala, Light, Gawler and Barossa. The region's clear goal is to develop water reuse infrastructure for the benefit of the Northern Adelaide Plains Horticulture industry (as identified in the *RDA Barossa Regional Roadmap*, 2012).

The regional integrated approach aims to provide a minimum 40 GL non-potable water supply scheme by 2040, sourced from:

- 33.6 GL - Waste Water – Bolivar, Buckland Park , Two Wells, Roseworthy & Concordia, Angle Vale & Virginia
- 18.7 GL - Storm/Surface Water – Greater Gawler, Buckland Park, Angle Vale , Virginia, Two Wells & Gawler River
- 4 GL - Possible incorporation of Greater Edinburgh Parks

The use of this water is likely to be for

- Urban non-potable uses in Greater Gawler, Two Wells, Angle Vale & Virginia and potentially within Buckland Park and Greater Edinburgh Parks
- Irrigation – 32GL for grapes, glass houses, intensive animal raising & broad acre specialty crops

(Sourced from *Gawler Water – Progress Report*, 30 May 2013, Wakefield Group)

SA Water is also currently investigating opportunities to extend pipelines to supply Bolivar Treated Water on a commercial basis. This has come about because of changes to the way in which SA Water are charged for Bolivar water outputs, and the opportunities this presents to SA Water to further commercialise those outputs by selling them to horticultural and other productive suppliers.

Salinity levels are a current potential barrier for many of the productive uses. Horticultural crops will vary in how much salt they can tolerate before yield is affected however the majority of fruit and vegetable crops are rated as sensitive to moderately sensitive. Sensitive crops include beans, carrots, onion, parsnips, peas and strawberries.

However, research is being undertaken into ways to minimise salinity levels by mixing varying water sources and therefore diluting the salinity impact. Again, whilst this is a current barrier, there is a significant interest and commitment to further exploring this opportunity for the benefit of the region.

Implications:

The indirect supply of water to some residential properties is a concern to council particularly if there is to be increased population growth within the region.

A consistent supply of quality water throughout all seasons is required if more intensive productive uses is to gain traction in the area. This remains the largest barrier to increasing productivity.

Groundwater is available but licensing and monitoring is required to ensure over exploitation of ground water resources do not occur.

Salinity levels also are a potential barrier. In the study area salinity is considered to be in the upper end of the medium scale and suitable for plants with a medium level of salt tolerance. There is current research investigating ways to minimise salinity impacts.

Whilst good quality and consistently available water supply is a current barrier to productivity, there is much research and exploration of funding opportunities currently underway to source potential new water supply opportunities.

6.1.6 Stormwater and Flooding

The stormwater infrastructure in the study area is limited. It consists mainly of table drains within the verge of the road, combined with concrete culverts at the road crossings. The Milne Road Drain is currently under significantly under capacity and poor functional condition. Council is currently considering methods for mitigating the associated flooding potential along with opportunities stormwater harvesting.

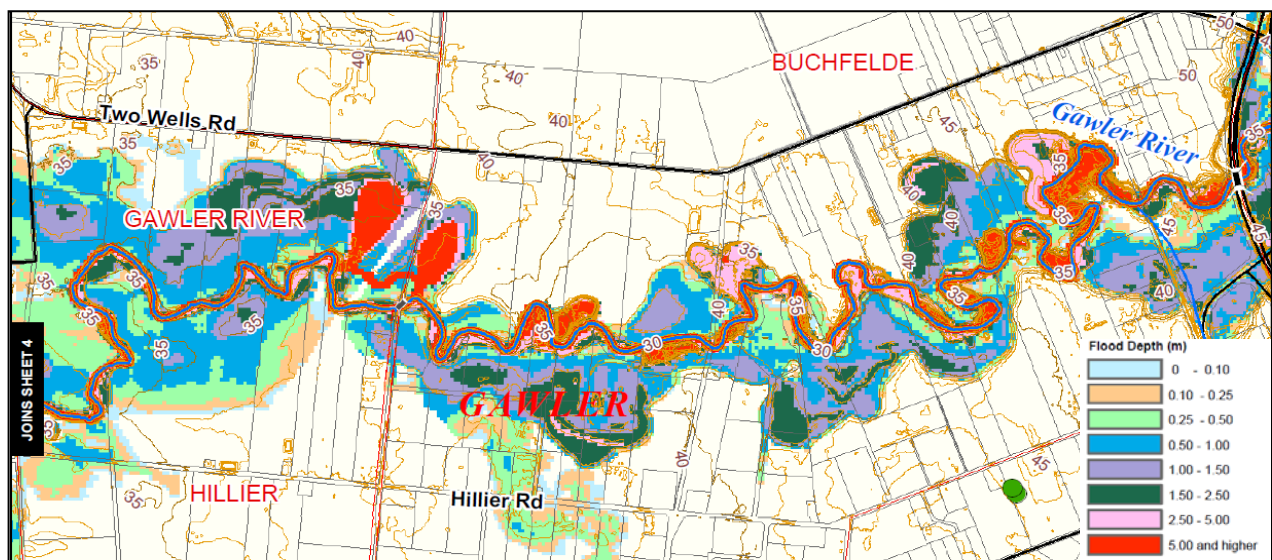


Figure 27. Flooding Map

Implications:

The Gawler River has an area which floods during large rain events. This restricts development but can aid agriculture given the resulting alluvial soil deposits. There is an opportunity to develop trails

and areas of public open space along the river areas that may align with part of the objectives of this area to be an open, green buffer.

6.2 Sewer

Currently, waste disposal in the area predominately consists of on-site septic tanks with soakage systems. The only allotments in the study area that are currently service by a sewer system (SA Water) are those allotments fronting Stebonheath Road as there is a 450mm diameter trunk main passing through the study area.

SA Water has given consideration to a proposal for the sewer system to be extended within this region, however, this is yet to be confirmed. Any further upgrades are generally commercially driven, through residential development in this region, or beyond.

6.3 Transport

6.3.1 Roads

The study area is serviced by arterial and local roads. Department for Planning, Transport and Infrastructure manage the arterial roads.

Most of the Council roads throughout Kudla, Hillier and Evanston Gardens are unmade. They are very dusty in summer, muddy in winter, and contribute to unsafe driving conditions.

6.3.2 Truck Parking

Council indicates that the practice of truck parking is a land use that can have an impact upon the appearance and amenity of the area. The parking of any vehicle exceeding 3,000 kilograms (3 tonnes) in unladen weight on land used for residential purposes requires Development Approval from Council. Truck owners are often attracted to live on larger rural residential properties so as to have space to store commercial vehicles when they are not out on the road. The visual and noise impacts if not managed appropriately can cause negative effects upon amenity.

Vehicles by their very nature are mobile and only temporarily play a role in the visual appearance of the area. This type of development is not typical of the types of development normally managed by Development Plan Policy. It is noted that Council's Development Plan is relatively silent in terms of policy to guide the assessment of applications for truck parking. Council does however produce a non-statutory Fact Sheet to guide applicants.

Implications:

The conditions of the local roads are a very significant issue for many local residents, and requires attention. Population growth in the area would significantly exacerbate the dust.

The visual and noise impacts of trucks if not managed appropriately can cause negative effects upon amenity. This may need further control through Development Plan policy.

The view from main arterial roads is a particularly important component of the buffer considerations.

6.3.3 Rail (Freight and Passenger)

The broad gauge rail network is utilised to provide passenger train services to Gawler and freight services from the Barossa Valley and Roseworthy to grain export facilities and processing plants on the Le Fevre Peninsula.

Evanston Railway Station provides access to the Gawler and Districts College and the St Brigid's School. Tambelin Railway Station is located further south of Evanston Railway Station and features some informal, unsealed off-street car parking. Kudla Railway Station is located south of Tambelin Station in close proximity to Dalkeith Road and Main North Road. A railway station located at the Gawler Racecourse is operated during events associated with the racecourse facilities. The rail service travels between Gawler Central and Adelaide via the major centres of Elizabeth, Salisbury and Mawson Lakes. The service operates at approximately 10 minute intervals in the AM peak period and 15 minute intervals in the PM peak period. It is noted that full electrification works of the Gawler passenger railway line has been deferred by the South Australian Government.

6.3.4 Bus

There are a number of Adelaide Metro bus services operating internally within Gawler. Each bus service operates from Gawler Railway Station and loops around different surrounding suburbs. The Gawler bus services consist of the following routes and operate half hourly in peak periods and hourly in off peak times:

- 493 – Gawler Station – Gawler South – Evanston Park – Tambelin Station – Hillier – Gawler Station.
- 494 – Gawler Station – Hillier – Tambelin Station – Evanston Park – Gawler South – Gawler Station

School bus services are also provided. It is apparent that some areas are not serviced by bus services. No existing bus services are available in Hillier and Evanston Gardens.

6.3.5 Pedestrian and Cycling

There are no dedicated cycling paths or pedestrian paths through the area.

Implications:

The local railway station in Kudla currently lacks infrastructure suitable to attract wide patronage – it is not particularly safe, it is surrounded by paddocks and a few houses, is not easily accessible. There is an opportunity to upgrade it to be more attractive for local commuters to use comfortably and safely.

If population was to increase significantly in the area, local government investment in improved pedestrian connections at a minimum would be required. Increased population would also require improved local bus services, particularly school bus services.

6.4 Electricity, Gas and Telecommunications

As with the potable water, the electrical, gas and telecommunications services are provided on a demand basis (generally based on urban demands). Should a greater demand be required, a group must submit usage information to the service provider to determine the scope of upgrades required.

During peak times, some intensive horticulture operators report that electricity supply is inconsistent.

Broadband is not currently supplied in the area however this is anticipated to be supplied in the near future.

Implications:

If further intensive productive operations were to be undertaken in the area it is likely that there would need to be improved electricity and gas supply.

7 Draft Vision and Guiding Principles for the Study Area

An overall Vision and Guiding Principles provide a framework to consider and decide upon appropriate land uses for the area.

7.1 Vision

A succinct vision for this area has not previously been articulated. This study seeks to address this and the following draft vision is proposed. The vision builds upon three key aspects:

- the desire to retain views of **open rural character** that can be seen from main entrances into Gawler (the “buffer”)
- to reflect community aspirations for **improved amenity** around Kudla
- to provide opportunities for **future productivity**

The Study area functions as a **buffer** between the town of Gawler and metropolitan Adelaide.

The buffer **function will be primarily achieved by maintaining key views** from the main entrances into The Town of Gawler of a ***predominantly open rural character*** (see table below for what a rural character is). These views separate and distinguish Gawler from the urban character of metropolitan Adelaide.

The area should **offer opportunities for further intensive productive** land uses as well as **rural living land uses**.

Rural character in this context may contain a mixture of low scale land uses (with consideration given to interface and impacts between uses and subject to further investigations) including:

Farming	Grazing/Cropping (less likely to be profitable in this area due to land holding sizes, market conditions etc)
	Horticulture (outdoors)
	Horticulture (indoors)
	Animal keeping
	Farm buildings
Living	Rural living (residential on large allotments that are well managed and vegetated, potentially with horse or dog keeping and unproductive orchards or other crops)
Business	Industrial (potential minor extension of existing or new associated with farming)
	Commercial (potential minor extension of existing or new associated with farming)
	Truck parking (consideration of types of trucks, purpose, impact on visual and noise amenity and safety needs to be further considered)
Environment	Open space, natural environment
	Trees and other vegetation

7.2 Guiding Principles

These principles reflect the Vision, and best practice planning that seeks to support sustainable communities.

Sustainable communities are ones that are healthy **socially, economically and environmentally**. In considering sustainable communities, Council will have regard to the current and future needs of communities.

They must also consider sustainability of **local communities** living or working in the study area, as well as the **broader Gawler community**.

The key guiding principles that will inform the appropriateness of future land uses for this area are:

1. Land uses will maintain and improve *views of an open rural character from key entrances to Gawler of a rural character (components of a rural character relating to land use, style, setbacks, design features etc will be required to facilitate and achieve open rural views)*
2. Land uses will reinforce the transition between Gawler (a regional township in a rural setting) and metropolitan Adelaide
3. Land uses can be managed to address interface issues between incompatible land uses
4. Land uses will contribute to the economic health of the local and broader community
5. Land uses will contribute to the social health of the local and broader community
6. Land uses will contribute to the environmental health of the study area and region

7.3 Next Steps

In accordance with Council Motion 2015:08:341, the Gawler Rural Land Use and Infrastructure Investigation Report 1 – Background Paper (as prepared by Jensen Planning & Design) will be released for community consultation over an eight week period, commencing 23 September 2015.

All written submissions are sought from the community by no later than 5pm on 18 November 2015, and should be addressed to:

Chief Executive Officer
Town of Gawler
Gawler Rural Land Use and Infrastructure Investigation Report 1 – Background Paper
PO Box 130
Gawler SA 5118

Or email: planningadmin@gawler.sa.gov.au

At the end of this eight week consultation period a report will be presented to either the Infrastructure and Environmental Services Committee or Council. Jensen Planning & Design will then provide a further report to Council on options for future policy changes and amendments to the Town of Gawler Development Plan.