

APPENDIX C

Agricultural Land and Production Report

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1 Executive Summary

The Caboolture West area includes Good Quality Agricultural Land, Strategic Cropping Land and has been identified in the Queensland Agricultural Land Audit as part of an important agricultural area. Because of the presence of mapped GQAL, and potential Strategic Cropping Land (SCL) within the Caboolture West area the preparation of the Caboolture West Land Use and Infrastructure Plan (Caboolture West Plan) is also subject to State Planning Policy 1/12 Protection of Queensland's strategic cropping land which commenced on 30 January 2012.

This report provides information and analysis of SCL, GQAL and agricultural production within the Caboolture West area and concludes that:

GQAL

- only a small part of the Caboolture West study area is GQAL and considered suitable for a wide range of current and potential crops;
- part of the study area is of marginal quality for a narrow range of current and potential crops; and
- most of the land is either non-agricultural land or land suitable only for native pasture for grazing purposes or softwood and native forestry plantations; and

SCL

- large areas of mapped SCL are only suitable for native pastures and forestry purposes;
- much of the SCL mapped land within the Caboolture West area fails the slope criteria and therefore does not qualify as SCL; and

Agricultural Land and Production

- good quality agricultural land criteria/principles are not in themselves sufficient to determine an area's suitability to be retained for agricultural production purposes;
- there is no shortage of land in the region for growing pineapples or strawberries, the main limitation on these industries is lack of markets;
- the QALA identification of Caboolture West as an important agricultural area does not reflect the findings of the revised GQAL mapping by DNRM or the revised SCL mapping based on the slope assessment undertaken by MBRC but is mainly only potentially suitable for pasture or native and softwood forestry purposes;
- the potential for viable softwood plantations to be established in the Caboolture West area has been questioned in the MBRAS which found that expansion of softwood plantations onto freehold land will be insignificant except where there are no alternative land uses options and favourable taxation incentives;
- the MBRAS study also found that most grazing activities are only occurring on a semi-commercial basis on smaller properties and a significant increase in animal production in the Caboolture West area (particularly intensive animal production) would have potentially significant adverse impacts on water quality in local waterways.

Developing part of the Caboolture West area for urban purposes is not likely to limit the potential for agricultural production in MBRC. The level of agricultural production in MBRC is limited more by access to markets and other factors. Agricultural production can be increased through use of lands elsewhere in the MBRC area which have more assessed potential for agricultural production including the

Neurum-Woodford area, in the inter-urban break between Caboolture and Caloundra on the Sunshine Coast, and in the Caboolture-Ningi area.

1.1 Background

Moreton Bay Regional Council (MBRC) is undertaking a comprehensive planning process to include Caboolture West into Moreton Bay Regional Council's new planning scheme by November 2015. The SEQ Regional Plan 2009-2031 had envisaged that urban growth at Caboolture West area would only occur before 2031 in exceptional circumstances and where further investigations address the Urban Footprint principles and relevant studies identified in the sub-regional narratives.

The SEQ Regional Plan was based on the capacity of the planning schemes by the former Shires of Redcliffe, Caboolture and Pine Rivers. Since that time population projections for MBRC have significantly increased and development continues at a higher rate than was projected in 2008. In taking a wider regional view, the new MBRC considered that Caboolture West would be needed for land supply in the short to medium term. It wrote to the former Minister for Planning and Infrastructure in 2011 advising that Caboolture West would need to be included in MBRC Strategic Plan for the region to help accommodate the planned 84,000 additional dwellings by 2031 allocated by the SEQ Regional Plan's to Moreton Bay.

In response, the former State Government declared Caboolture West a Master Planned area (MPA) under the provisions of the Sustainable Planning Act on 17 February 2012. The declaration initiated the current comprehensive planning process for Caboolture West.

The Caboolture West area includes Good Quality Agricultural Landⁱ, Strategic Cropping Landⁱⁱ and has been identified in the Queensland Agricultural Land Auditⁱⁱⁱ as part of an important agricultural area. Because of the presence of mapped GQAL, and potential Strategic Cropping Land (SCL) within the Caboolture West area the preparation of the Caboolture West Land Use and Infrastructure Plan (Caboolture West Plan) is also subject to State Planning Policy 1/12 Protection of Queensland's strategic cropping land which commenced on 30 January 2012. If the decision is made to designate the Caboolture West area a development area then the provisions of SPP 1/12 no longer apply to the designated area.

1.2 Purpose

In 2009 the SEQ Regional Plan designated the Caboolture West area as an Identified Growth Area that subject to further investigation could help accommodate long-term growth. MBRC is now undertaking studies and addressing Urban Footprint principles through its structure planning process for Caboolture West.

It is intended that this report will form part of the planning scheme submission to provide information and analysis of the SCL, GQAL and associated agricultural activities within the Moreton Bay Regional Council (MBRC) area generally and the Caboolture West area specifically related to land suitability and capability for agricultural production purposes to help inform/determine the preferred planning outcomes of the Caboolture West area.

1.3 The Strategic Framework

Council is in the process of preparing a new planning scheme which is intended to include the Caboolture West Plan as a local plan. The Caboolture Shire Plan which currently regulates development

in and around the Caboolture West area is planned to be superseded by the new MBRC planning scheme in 2014, 2015. The draft Strategic Framework which forms part of the new planning scheme was prepared with extensive consultation with State agencies, was made public on Council's web site in 2012 and provides the broad policy framework to guide the preparation of more detailed aspects of the planning scheme including the Caboolture West area. Figure 1 shows the draft Strategic framework Settlement Pattern Map including the extent of existing urban areas, forestry areas, and cropping areas (Class A and B good quality agricultural land) in the northern part of MBRC as assessed in 2011/12.

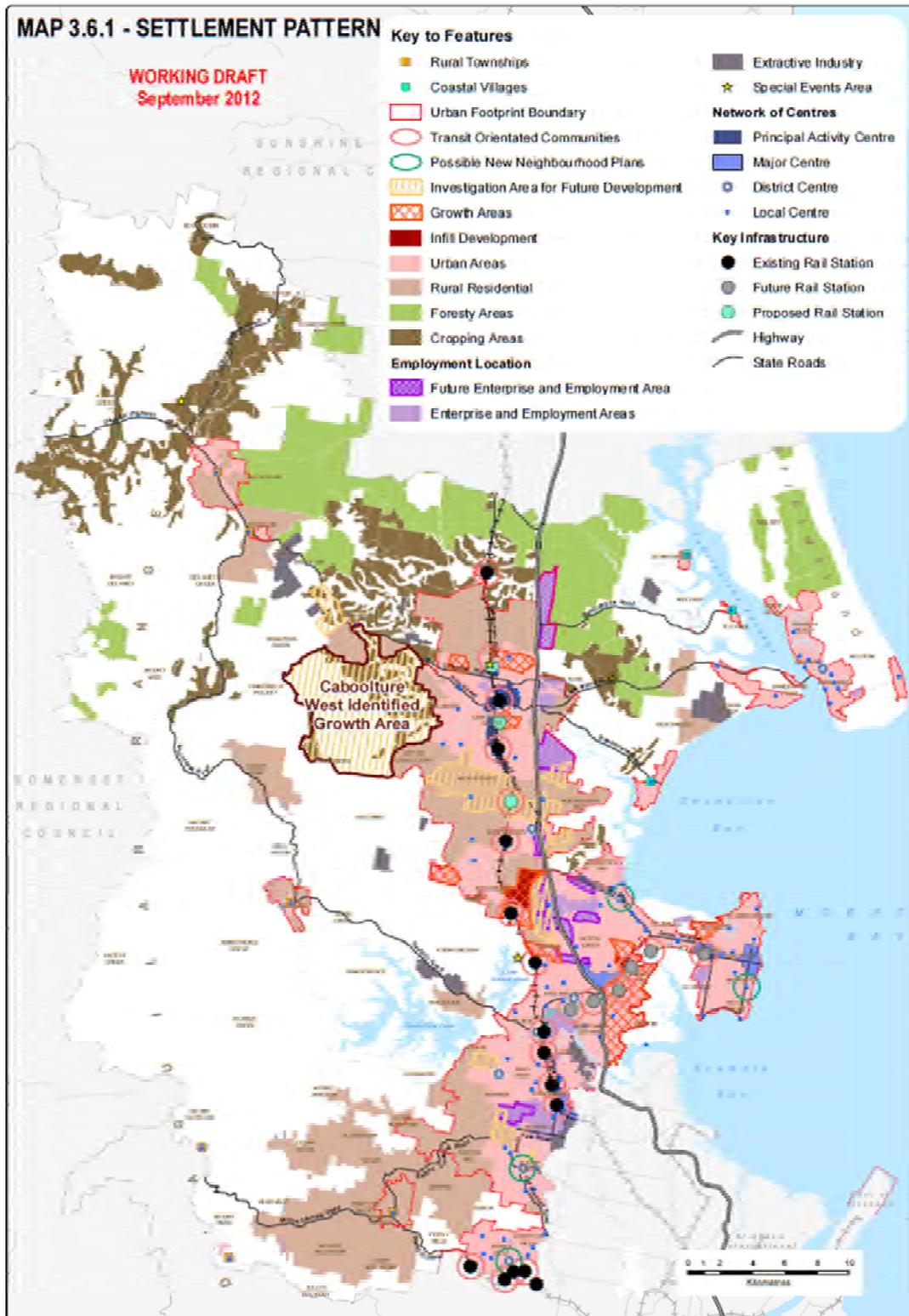


Figure 1 draft Strategic framework settlement pattern map

The draft Strategic Framework recognises both the current rural character of the Caboolture West area but also the potential for part of this area to become a new urban area as part of a future Caboolture City. The Caboolture West planning process involves structuring relevant urban and natural area place types to form a new urban area and rural and natural area place types to form rural areas. In doing so the Caboolture West project identifies a boundary between urban and rural places incorporating existing rural residential areas and the Wamuran township and more natural places that mitigate the impacts of urban development in Caboolture West on important agricultural production areas and vice versa. Figure 2 shows the draft place types for the Caboolture City planning area.

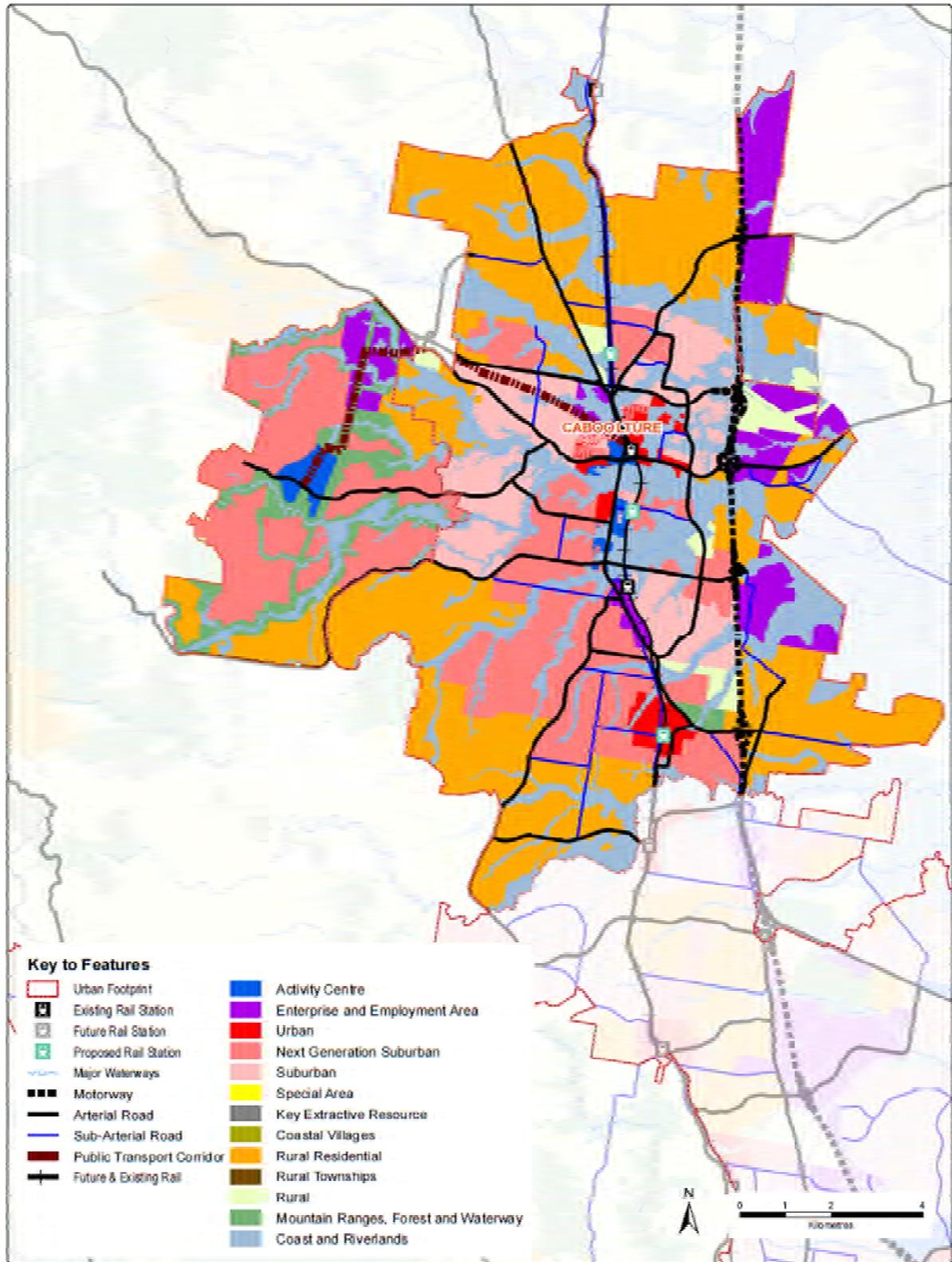


Figure 2 draft structure plan for Caboolture City and adjacent rural areas

1.4 Good Quality Agricultural Land

Good quality agricultural land (GQAL) is a finite resource that should be conserved and managed in perpetuity provided that other factors or criteria are present to unlock the potential of that land for successful and sustainable production. It follows that where competing claims are made for the use of land which is classified as good quality for agricultural purposes but also identified as having potential for urban purposes that the decision needs to be informed by the best available information including consideration of a range of factors related both to the agricultural potential of the land and the urban potential of the land.

State Planning policy 1/92 (Development and Conservation of Agricultural Land)iv now lapsed and associated Planning Guidelines: The identification of good quality agricultural landv provided guidance on how GQAL was to be identified and addressed in planning schemes. The policy stated that, “The best and most versatile farming land has a special importance and should not be built on unless there is an overriding need for the development in terms of public benefit and no other site is suitable for the particular purpose.”

The current Caboolture Shire Plan identifies good quality agricultural land based on the outcomes of a Caboolture Rural Lands Study 2001^{vi} (CRLS) which in turn was based on the methodology specified in the lapsed SPP 1/92 and its associated planning guidelines. The Rural Lands Study provided an overview of the soils and land capability in the Caboolture Shire. The study noted that where the preservation of good agricultural land is an issue detailed evaluations are required in accordance with Planning Guidelines for the Identification of Good Quality Agricultural Land. The CRLS provided a map of agricultural land quality and identified four land suitability classes consistent with the classification system contained in the planning guidelines. Figure 3 below shows the extent of good quality agricultural land (Class A arable – yellow, and Class B limited arable land - green) identified in the Caboolture Shire Plan based on the Rural Lands Study 2001.

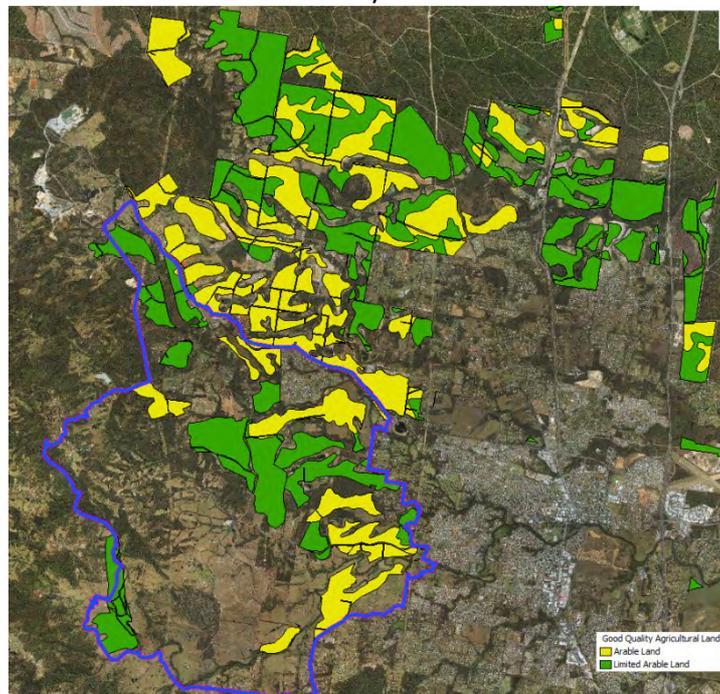


Figure 3 GQAL in the Caboolture Shire Plan

Since the commencement of the Caboolture Shire Plan in 2005 further work has been undertaken in respect to the distribution of GQAL. In 2009 the Caboolture West Land Owner Group submitted a report^{vii} that acknowledged that good quality agricultural land is a Level 1 constraint but, given the designation of the land in the SEQ Regional Plan, further studies should be undertaken to identify the extent of good quality agricultural land within the Cab West area. In 2013 DNRM provided revised agricultural land classification data for the Caboolture West area consistent with the classification system specified in now lapsed SPP 1/92. Figure 4 below shows the revised classification within the Caboolture West area.

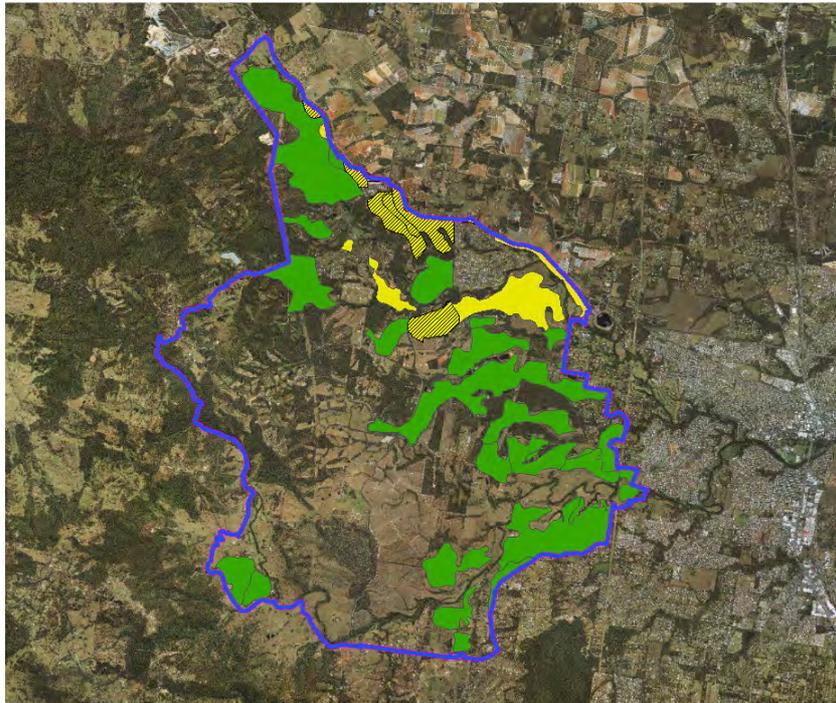


Figure 4 revised GQAL mapping by DNRM 2013

Only a small part of the Caboolture West study area (Class A1 and A2 Crop Land - yellow) is now considered suitable for a wide range of current and potential crops. Limited crop land (green) is marginal for a narrow range of current and potential crops but may be made suitable for cropping with engineering and/or agronomic improvements. The balance of the Caboolture West area is either non-agricultural land or land suitable only for native pasture for grazing purposes or softwood and native forestry plantations. The soils in these balance areas are not classified as suitable for ground disturbance normally associated with horticulture or pasture development.

1.5 Strategic Cropping Land

In January 2012 the Strategic Cropping Land Act 2011^{viii}, The Strategic Cropping Land Regulation 2011^{ix}, and the State Planning Policy 1/12 Protection of Queensland's strategic cropping land^x commenced. This legislation:

- seeks to protect strategic cropping land as a finite resource from developments that lead to permanent impacts or diminished productivity;
- does not allow development to proceed except in exceptional circumstances and where mitigation is provided for the permanently impacted land; and
- directs that planning schemes need to protect strategic cropping land.

While the legislation is also intended to be reflected in the next review of the SEQ Regional Plan where there is a conflict between the SPP1/12 and the SEQ Regional Plan 2006-2031 the regional plan currently prevails. The legislation includes a Trigger Map, an excerpt of which is shown in Figure 5 below. The left hand figure is an excerpt from the trigger map; the right hand figure shows the distribution of SCL (brown hatch) in MBRC in relationship to the Caboolture West area (purple outline), the Caboolture City planning area (red outline) identified in Council's draft Strategic Framework, and the urban footprint (pink).

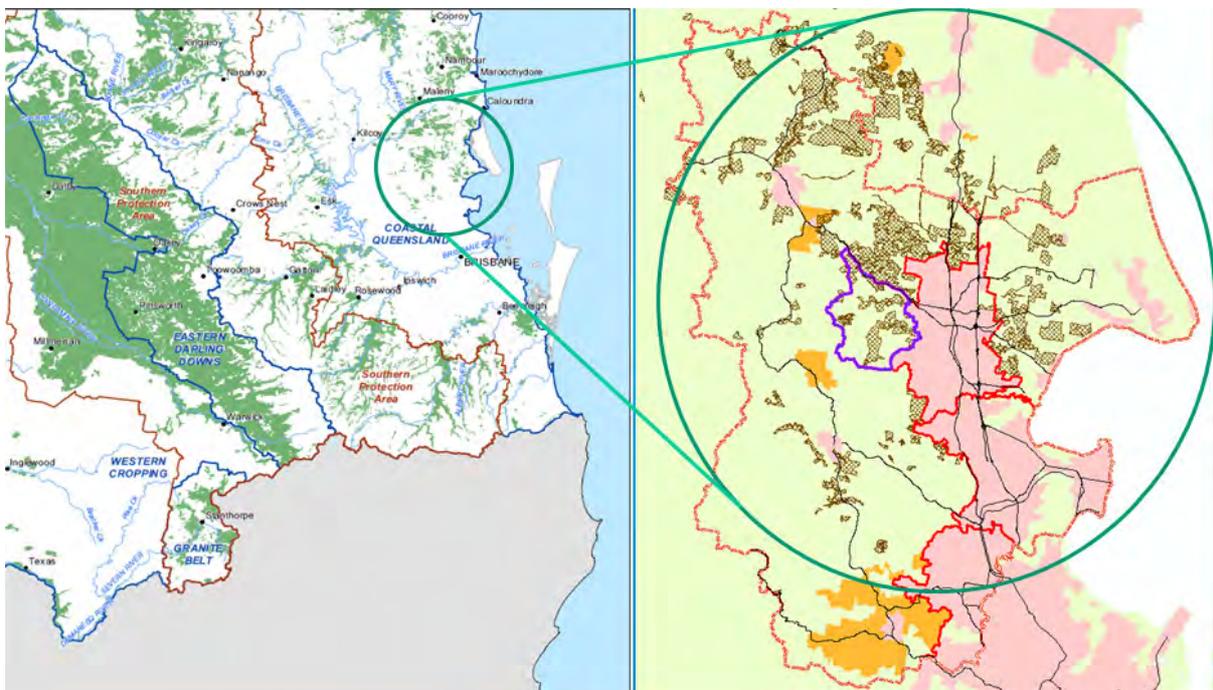


Figure 5 SCL Trigger Map in relationship to the Caboolture West area

The relationship between mapped strategic cropping land (SCL) and GOAL within the Caboolture West area is shown in Figure 6 below. The figure on the left shows the relationship between SCL (brown

hatch), Class A cropping land (yellow), and Class B marginal cropping land (green). Much of the mapped SCL is only marginal cropping land. The figure on the right shows the relationship between SCL (brown) and pasture land (light green). Large areas of mapped SCL are only suitable for native pastures and forestry purposes.

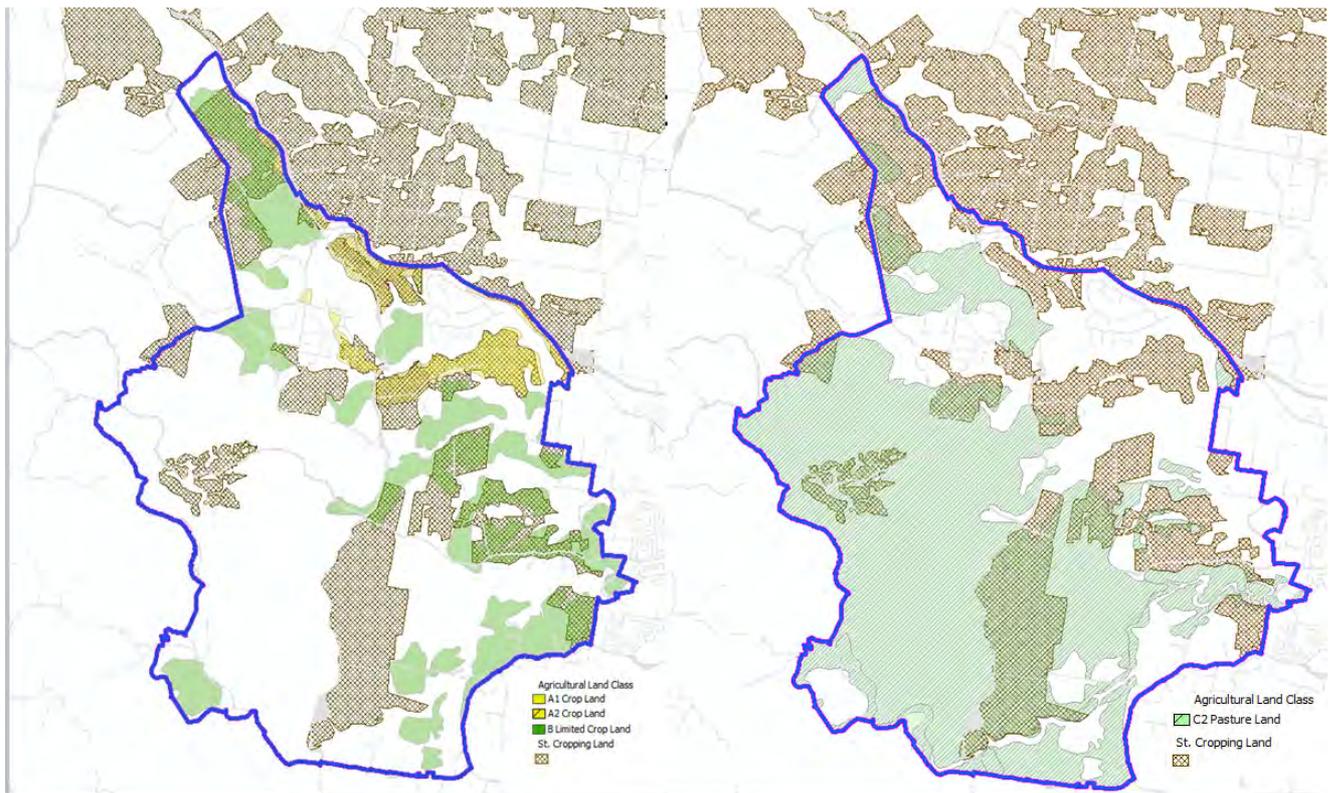


Figure 6 comparison of SCL Trigger Map and GQAL

The process for validating SCL is described in the Strategic Cropping land Act 2011. Eight criteria are used to define SCL^{xi}:

1. slope less than 5%;
2. rockiness 20% or less;
3. gilgai microrelief with depressions less than 500mm depth and less than 50% of the surface area;
4. soil depth is 600mm or more;
5. the land has favourable drainage;
6. soil pH at 300mm depth is 5.1 to 8.9 for rigid soils, and greater than 5 for non-rigid soils;
7. soil electrical conductivity at 600mm depth or less is less than 5.6 decisiemens per metre;
8. soil water storage is 75 mm or more.

All eight criteria must be met for land to be considered SCL.

MBRC has undertaken a slope assessment of land within the Caboolture West area against the SCL slope criteria. The slope dataset was created from the 2009 LiDAR^{xii} Capture for SEQ. Before creating the

slope dataset the Digital Elevation Model (DEM) was resampled from 2.5m x 2.5m to 20m x 20m. Resampling to 20m, gives an average slope over 20m of horizontal distance this gives a more representative result of change in terrain as high resolution (2.5m) slope analysis picks up many unwanted anomalies such as the edges of roads, edges of garden beds, retaining walls etc. The result of this assessment is shown on Figure 7.

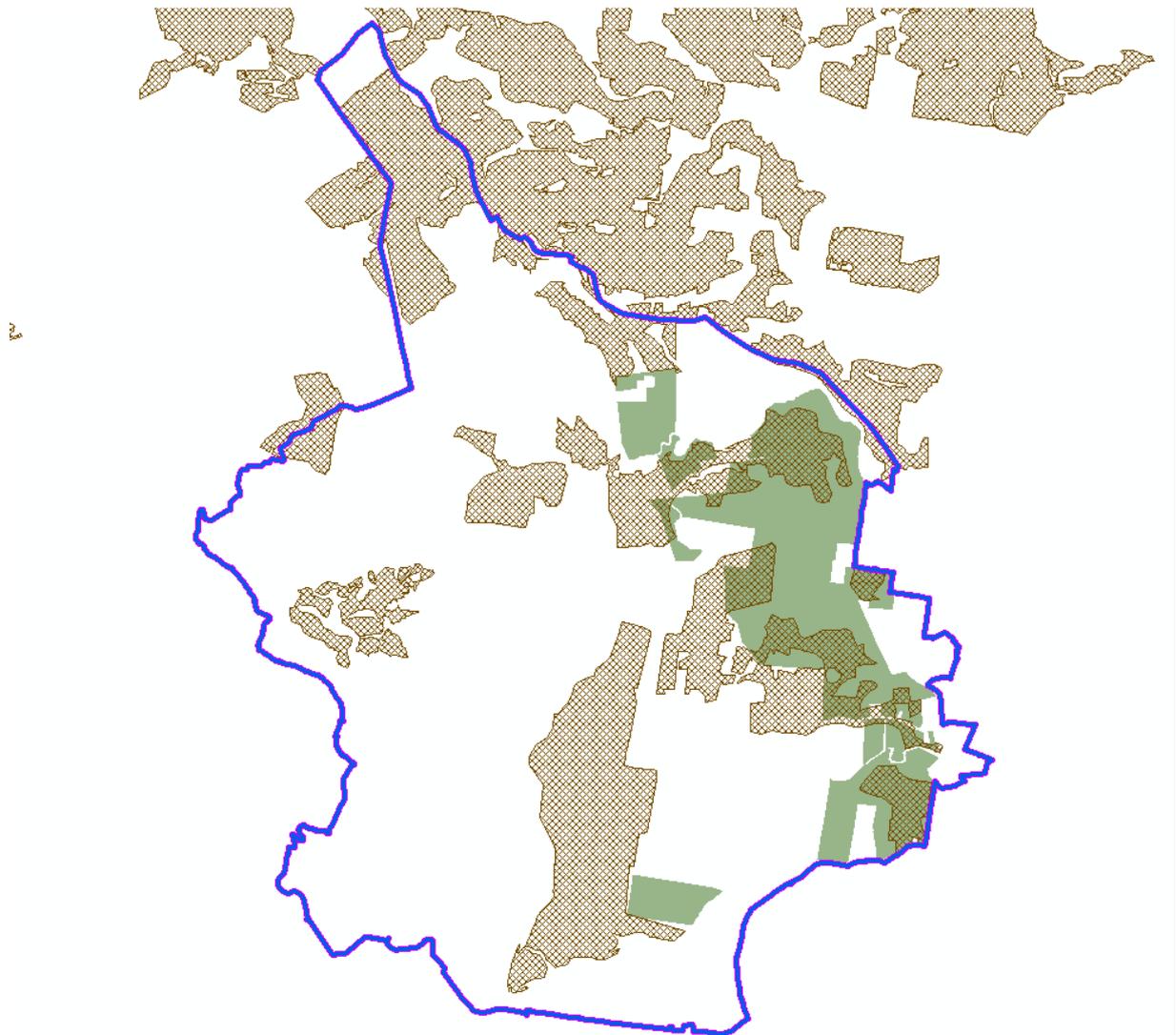


Figure 7 mapped SCL and land with less than 5% slope

Figure 1.5.3 shows:

- SCL shown in brown hatch;
- lots that contain more than 50% of the lot area with slopes less than 5% shaded green;
- land mapped as SCL which contains more than 50% of the lot area steeper than 5% is white.

Much of the SCL mapped land within the Caboolture West area fails the slope criteria and therefore does not qualify as SCL.

The Caboolture West project is being prepared having regard to the plan making provisions of SPP 1/12

and is intended to address and resolve the issues associated with SCL as part of the strategy for the area rather than at the development application stage. In addressing the requirements of SPP 1/12 the need to protect SCL and GQAL which has limited potential and suitability for future agricultural production needs to be weighed against the need to develop land for urban purposes in the future.

1.6 Agricultural Production

1.6.1 Baseline Study of selected agricultural land uses

In 2008 Spiller Gibbons Swan Economics and Planning (SGS) was commissioned by MBRC to prepare a baseline analysis of strawberry, pineapple and turf production in the Caboolture area^{xiv}. The report:

- provides a contextual analysis of industry trends, policies and prospects that are currently influencing the agricultural sector in the Caboolture district;
- maps the location and analysis of the economic contribution of selected horticultural precincts;
- establishes criteria for the assessment of appropriate land for future agricultural use;
- identifies an opportunity to develop horticulture related research and development businesses and other industries in the local agri-industry supply chain that might be located within the Caboolture West area.

The SGS report does not seek to recommend whether cropping land within the Caboolture West area should be retained for agricultural purposes.

The report identifies a number of horticultural precincts around Caboolture that satisfied criteria used by SGS to identify appropriate land for future agricultural use. Figure 8 shows the agricultural precincts within the Caboolture district identified by the SGS report.

- Precinct 1 is assessed as being suitable for pineapple, strawberry and turf farming production but is relatively underutilised for this purpose. The report recommends further investigation to determine why the precinct is underutilised;
- Precinct 2 is particularly suitable for strawberry production but is currently underutilised;
- Precinct 3 has the greatest concentration of strawberry and pineapple crops in the Caboolture district and has potential for further development of agricultural activities;
- Precinct 4 was identified due to its relationship to the Caboolture West area.

The report notes the relationship of Precinct 4 to agricultural production in Precinct 3 but does not recommend either retaining the area for agricultural production or developing it into an urban area. The report notes that Precinct 4 could provide an opportunity to locate horticultural related research and development businesses and other industries allied to the local agricultural industry supply chains.

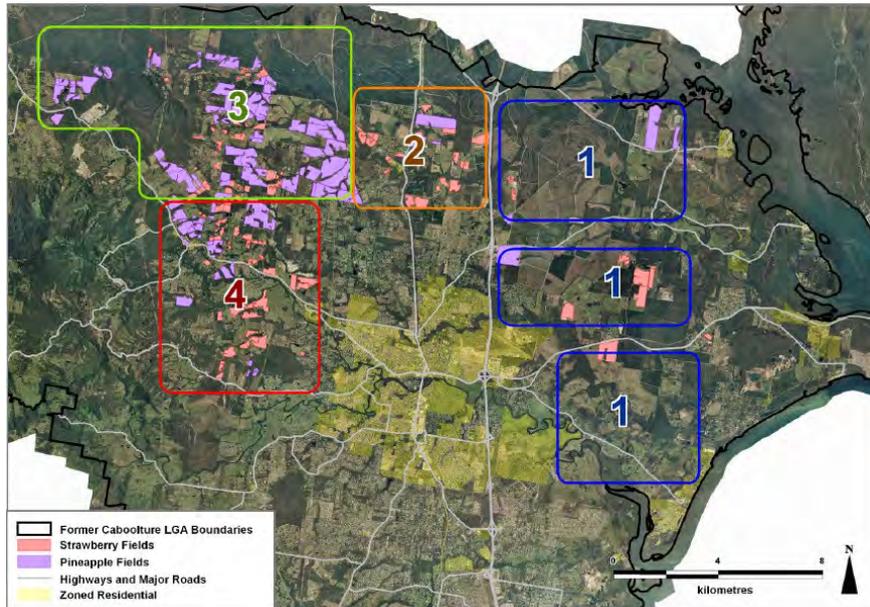


Figure 8 SGS agricultural precincts around Caboolture

The SGS report notes that good quality agricultural land criteria/principles are not in themselves sufficient to determine an areas suitability to be retained for agricultural production purposes. Criteria identified by SGS include:

- Quality of agricultural land;
- Existing use;
- Ownership/tenure, fragmented ownership can create difficulties in assembling land to achieve larger farm sizes utilising more intensive farming methods;
- Size and configuration of land suitable for a variety of cropping purposes varies;
- Slope, flooding and other topographical considerations;
- Neighbouring land uses including proximity to core uses which are complementary and sensitive uses that give rise to conflicts;
- Accessibility via main transport routes;
- Availability of water, and electricity;
- Environmental values in an area;
- Visual amenity considerations;
- Proximity to synergistic uses and supply chains including associated industries and suppliers;
- Proximity to consistent supply of labour;
- Proximity to future urban areas;
- Land values; and
- Existing and potential physical clusters of farms to encourage knowledge sharing support networks.

As a result of this study the agricultural production area north of the D’Aguilar Highway with the greatest concentration of strawberry and pineapple crops in the Caboolture district was not included in the State Government declaration of the Caboolture West Master Planned Area in 2009 and is not included in the Caboolture West planning study.

The SGS report concludes that given the high levels of predicted growth in the Caboolture district it is not likely that urbanisation pressures will abate in the foreseeable future and recommends:

- careful planning to ensure appropriate agricultural areas are retained;
- sufficient buffers are maintained between urban areas and GQAL;
- transport routes to the region are developed and maintained;
- a rural industries facilitation project is needed to drive innovation in the agricultural sector, encourage industry clustering and value adding to existing products, set targets and standards for sustainability, and actively market agriculture to the community.

1.6.2 Moreton Bay Rural Areas Study

In 2011 MBRC commissioned Buckley Vann Town Planning Consultants to prepare the Moreton Bay Rural Areas Strategy^{xv} (MBRAS) as a background study for the new planning scheme. This study found that:

- Traditional primary industries in the Moreton Bay Regional Council area are in decline particularly around Woodford and there is limited scope for new primary industries to replace them as most have lost their competitive advantage;
- Pineapples and strawberries are mainly grown/concentrated in the Wamuran area;
- There is no shortage of land in the region for growing pineapples or strawberries, the main limitation on these industries is lack of markets;
- A high proportion of active rural enterprises are owned/managed by rural producers reaching retirement age;
- Existing fragmented rural lots facilitate the move towards rural residential lifestyles displacing productive agricultural uses;
- Leasing, renting and share farming by existing operators is increasingly common;
- GQAL and SCL policy approaches are not likely to be sufficient to resist subdivision pressures or retain/encourage investment in agricultural industries;
- There is some scope to assist in achieving economic development objectives in the areas of tourism and events in the rural areas;
- The decline of traditional industries may mean a greater focus on the role of the townships to support employment and economic development in the rural areas;
- A comprehensive economic development strategy is required which takes the rural areas into account; and
- A place based approach as advocated in the draft Strategic Framework may be the best strategy to help agricultural activities to maintain their economic and comparative advantages in the foreseeable future.

The Rural Areas Strategy investigations include the following recommended actions to maintain employment in the rural areas given the expected decline of the current rural industries:

- focus support for the rural sector in the future in the north-west part of the MBRC study area, centred on Woodford;
- implement clean energy initiatives, both generally across the rural areas, and specifically to assist businesses in rural industries that are in decline;
- implement tourism initiatives, particularly focussing on: the main rural centres of Woodford, Dayboro and Samford; establishing further boutique bed and breakfasts, 'farm stays'; other

rural experiences such as agro-eco-friendly tourism such as ‘working farms or value adding’; potentially investigating the wine industry; and, growing the festivals and events market in the Region with a particular emphasis on lifestyle and rural events;

- investigate and implement transport and logistics infrastructure in locations to support appropriate industrial land requirements;
- investigate opportunities associated with attracting FI/FO workers or the building manufacturing sector;
- support home based business opportunities;
- implement a branding and marketing strategy for the rural areas, with an emphasis on the main centres as well as other tourism attributes;
- develop the main centres to reach their tourism potential using a place making focus;
- complete a social and community needs assessment for the Rural Areas;
- maximise accessibility between Council’s rural areas and urban employment nodes; and
- prepare a comprehensive economic development strategy for the rural areas.

1.6.3 Queensland Agricultural Land Audit

The Queensland Agricultural Land Audit^{xvi} was released in May 2013 and forms part of the Queensland Government’s goal of doubling agriculture, fisheries and forestry in Queensland by 2040. As such the land audit aims to identify land important to current and future production.

The introduction to the audit states that:

“The audit considers all land across the state where natural resources are, or could be used for agricultural activities. The audit analyses agricultural production activities up until the product leaves the farm gate, including:

- *broadacre cropping*
- *sugarcane*
- *grazing*
- *intensive livestock*
- *horticulture*
- *forestry*

The audit supports the Queensland agricultural strategy which seeks to grow the agricultural industry in Queensland by:

- *securing and increasing resources availability;*
- *driving productivity growth across the supply chain;*
- *securing and increasing market access; and*
- *minimising the costs of production.*

The main finding of the agricultural land audit relevant to the Caboolture West area is the determination of the important agricultural area within MBRC. Figure 9 below shows the results of this assessment. Important agricultural areas (shown as orange on the map) are defined as land that has all of the requirements for agriculture to be successful and sustainable, are part of a critical mass of land with similar characteristics and is strategically significant to the region or the state. The significance of a critical mass of current and potential agricultural land was based on consideration of a range of criteria that reflect the current (or potential) contribution that the land can make to the region and the state economically and socially. These criteria include:

- current or potential contribution of agricultural development of the area to economic activity and employment (and other social factors) in the locality, region or state
- strategic importance of the area for continuity and consistency of supply of particular products or markets locally, nationally or internationally
- extent of investment required to develop the land for agriculture (e.g. through construction of irrigation schemes, grain storage facilities or saleyards).

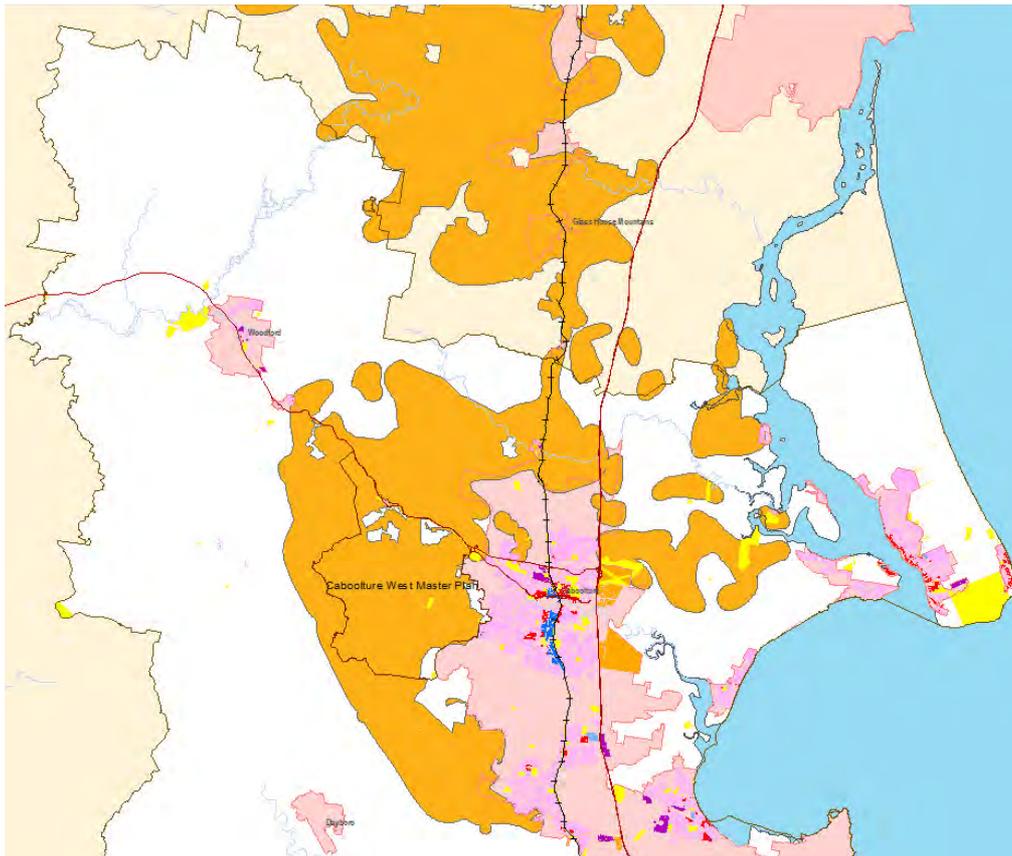


Figure 9 important agricultural area identified in the QALA

It is notable that the important agricultural area identified in the QALA does not include the rural area around Woodford which was identified in the MBRAS as the main focus of support for the rural sector in the future. Nor does it reflect the findings of the revised GQAL mapping by DNRM or the revised SCL mapping based on the slope assessment undertaken by MBRC. The important agricultural area is centred on Wamuran and Elimbah and includes a large area south of the D’Aguilar Highway and west of the urban footprint which also includes the Caboolture West area.

Figure 10 shows the relationship between the important agricultural area and the DERM mapped GQAL, and SCL areas. This large area south of the D’Aguilar Highway and west of Caboolture includes some GQAL suitable for cropping and some marginal cropping land but is mainly only potentially suitable for pasture or native and softwood forestry purposes as detailed in Section 1.7 below.

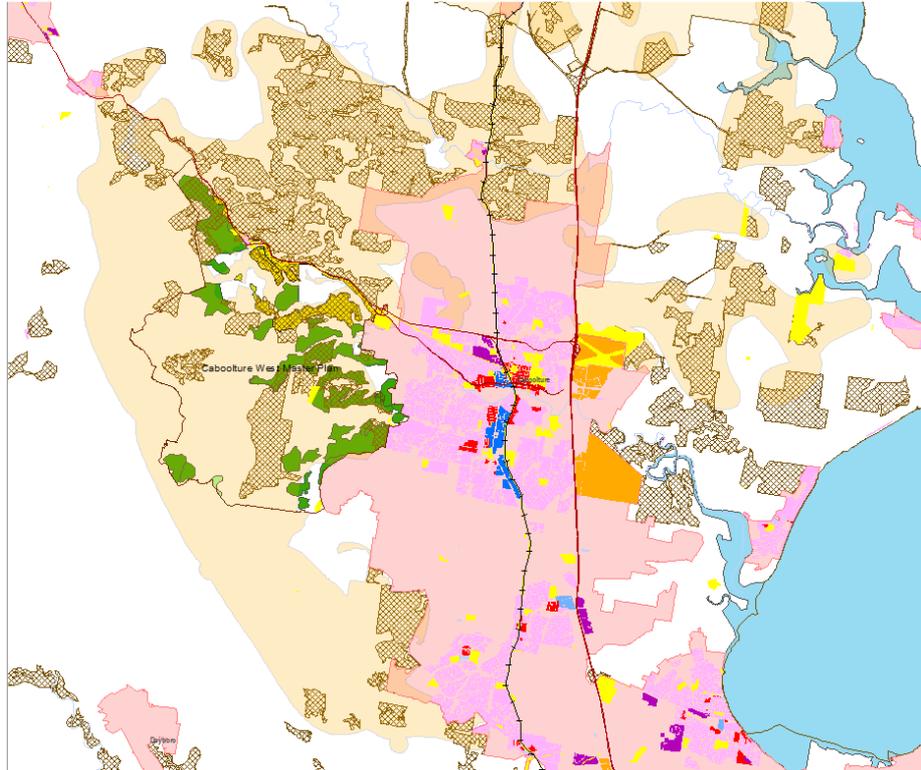


Figure 10 distribution of SCL and GQAL in the important agricultural area

Figure 11 shows the relationship of Caboolture West to the agricultural production areas to the north of the D'Aguiar Highway, Caboolture City to the east, the steep country to the west, and the areas assessed as having limited agricultural production value other than grazing or forestry based on information available to Council.

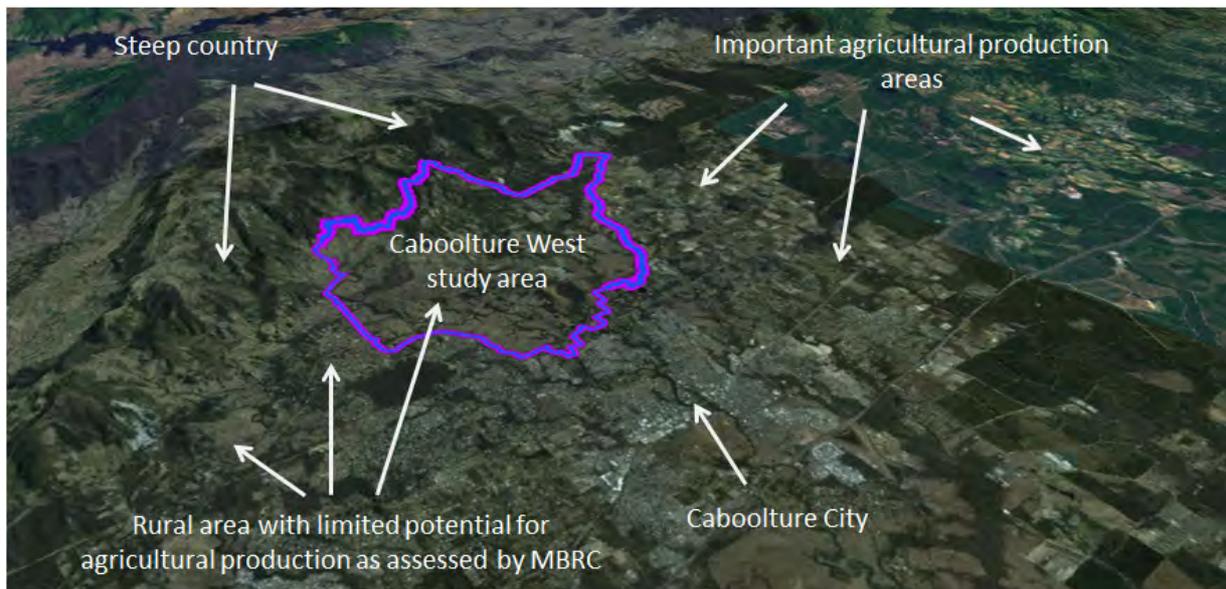


Figure 11 Caboolture West at the intersect of Caboolture City, productive farmland, steep land and semi-rural lifestyle areas

1.7 Synopsis of rural industries in Moreton Bay

This section provides a summary of the rural industries in the region generally and in the Caboolture West study area in particular and is based on:

- the Baseline study of selected agricultural land uses by SGS;
- the Moreton Bay Rural Areas Strategy by Buckley Vann in association with LRAM; and
- the Queensland Agricultural Land Audit (QALA).

1.7.1 Plantation/Forestry

The area north of Caboolture has significant timber plantations dominated by softwood plantations now largely exporting low value product out of the area for value adding elsewhere. According to advice provided in the Moreton Bay Rural Areas Study (LRAM):

- unless constrained by tenure and facilitated by taxation strategies, it is unlikely that expansion of forestry into the freehold lands will be significant – except in areas where there are no other alternative land use options;
- the carbon sequestration market is also unlikely to provide a boost to the industry in areas where land has comparative advantage for other uses; and
- apart from the capital losses associated with recent managed investment schemes for forestry, the medium term price direction of carbon is unclear with carbon trading internationally at approximately one fifth of the price currently mandated for Australia.

While it would be prudent to protect the areas currently used for plantation forestry, it would also be prudent to:

- identify sequestration forestry of exotics as an incompatible use for rural lands that are either GQAL or SCL;
- require all new forest plantation sequestration projects to address fire, weed, landscape aesthetic issues – particularly where they are proposed in areas that also contain rural living or rural residential uses; and
- define the size of a planting above which it would be regarded as a plantation.

Figure 12 shows the extent of current forestry plantations in MBRC and the Sunshine Coast regional Council area (SCRC). It should be noted that there are currently no forestry plantations south of the D'Aguilar Highway and the critical mass of this industry is well to the north of the Caboolture West area.

Figure 13 shows the potential hardwood plantation (yellow cross hatched area) and the potential softwood plantation area (green shading) identified in the QALA. The potential hardwood plantation areas correspond to the GQAL mapped areas. Softwood plantation is identified in the QALA as one of the main potential agricultural activities in the Caboolture West area.

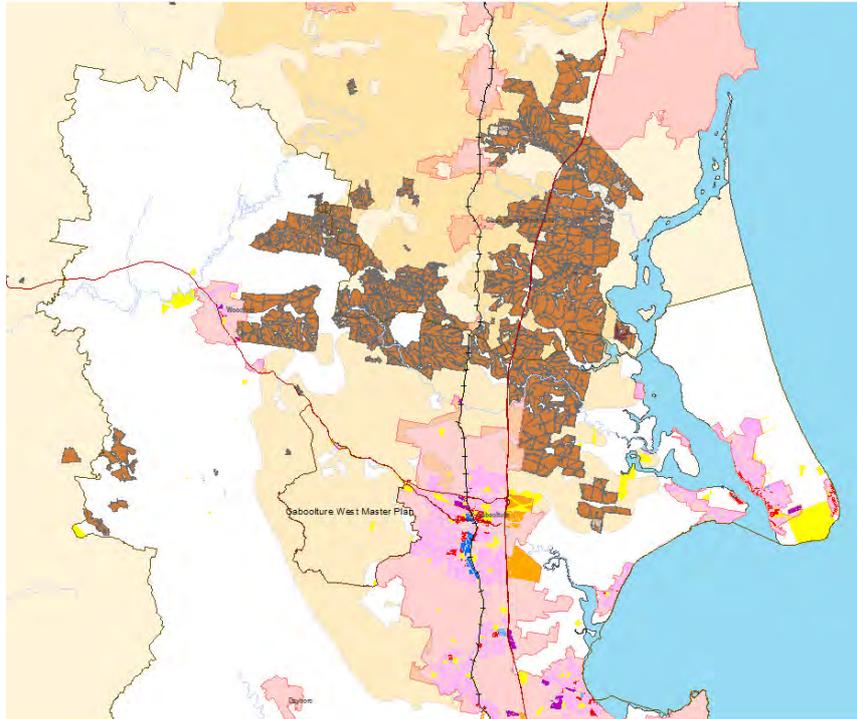


Figure 12 extent of current forestry plantations in MBRC^{xvii}

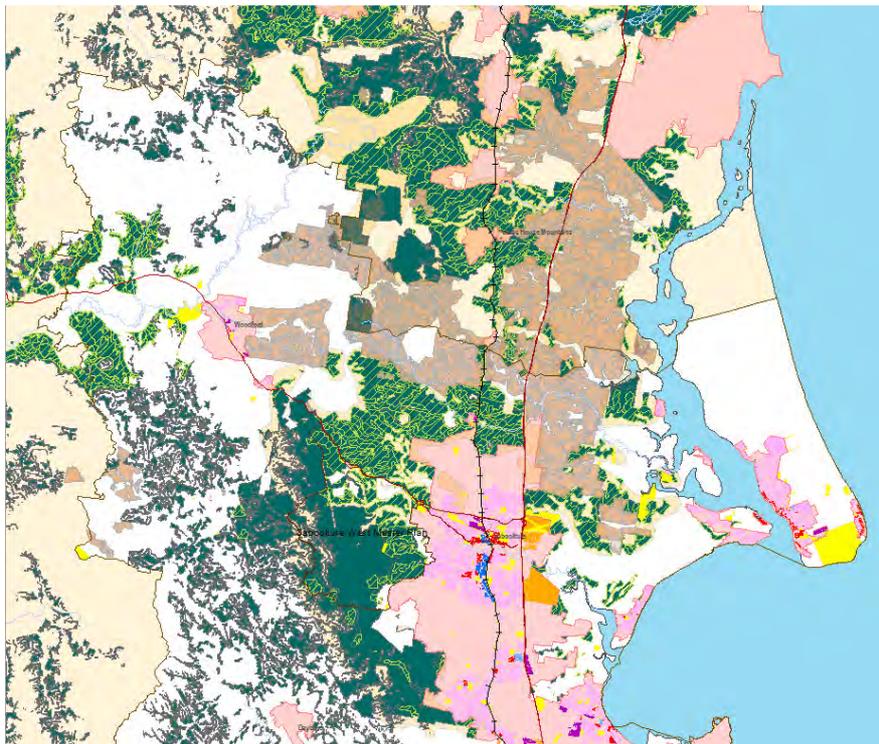


Figure 13 areas with potential for forestry identified in the QALAs^{xviii}

1.7.2 Dairying

According to advice provided in the Moreton Bay Rural Areas Study (LRAM):

“Townships such as Woodford, and to a lesser extent Dayboro and Samford, were important service centres for this sector. The Woodford cattle, pig and calf sales are the last significant component of the old paradigm. Dairying remains a significant industry in the Upper Dayboro and in the Stanley River area, but it is now far less prevalent elsewhere.”

In the MBRC rural areas, the restructuring of the dairy industry has followed a fairly straightforward pattern as follows.

- initially, the least profitable operations (the dry land dairies) failed and whilst some of the land was taken up by adjoining farmers, most of these farms were sold off block by blocks as many of these farms comprised more than one block. This was the start of new land settlement model which ultimately lead to the rural living uses of today;
- in the next phase, the remaining farms had to expand their herd sizes – milk production remained the same but the number of farms declined as more herds were increasingly supplementary fed. In the study area, the scope for this was limited;
- some of the old grazed dairying areas produced fodder for the bigger farms and this still happens in parts of the Stanley River areas. There was and remains very limited scope for grain production – most grain has to be imported from outside of the region.

Today, the dairy industry remains significant as a relatively strong employer and high user of within district expertise. However, the region has lost its comparative advantage which was previously based on its more reliable rainfall and relative frost free improved pasture lands. There are no dairy farms within the Caboolture West area.

1.7.3 Beef Cattle

According to advice provided in the Moreton Bay Rural Areas Study (LRAM) the beef cattle sector has a number of components. Commercial scale herds based on breeder herd as well as fattening herds have declined – primarily because the grazing sector needs relatively large herd sizes (300 to 500 breeders – 500+ fattening animals) to be viable as a stand-alone commercial entity. In situations where such large herd sizes exist, the major external benefit is that large parts of the catchment are under single management.

As the number of larger enterprises has declined, they have been replaced by more, smaller herd sizes on smaller land holdings, as individual enterprises often comprising multiple lots have been sold off. As a result, it is likely that actual herd numbers have increased, along with grazing pressure from an increasing number of new ‘semi commercial graziers’ who have invested heavily in some of the smaller properties, particularly on fencing yards tracks and fire breaks.

Despite the change of industry characteristics, the beef cattle sector will continue. Ultimately, it is the lowest cost form of land management – the alternatives of managing excess vegetation growth and weeds in the 47,000 ha of cleared land used for pasture within MBRC are far more costly. However most rural enterprises based around grazing are likely to be reliant on other forms of income or production and in this sense the concept of rural families running profitable business using the land resources of the rural area is overly simplistic. The challenge for the beef sector is to improve the skills and knowledge of the new part-time graziers so that land management outcomes over the third of the rural areas throughout MBRC that are used for pastures are improved.

Figure 14 shows the pattern of current/potential high grazing activity (blue-grey), low activity (green) and medium activity (pale yellow) in and around the Caboolture West area according to the QALA^{xix}.

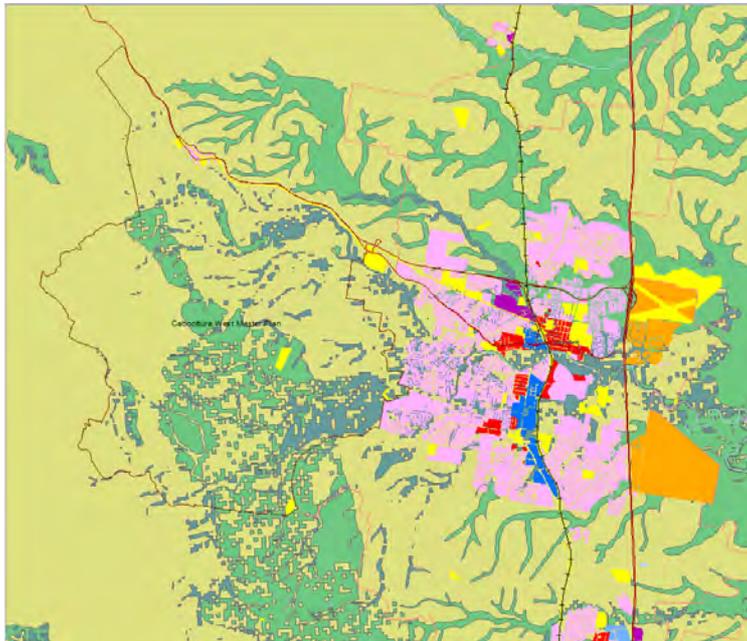


Figure 14 pattern of grazing activity as mapped in the QALA^{xix}

Figure 15 shows the current extent of sown pastures (brown) and potential to be sown (green). The current and potential sown pasture areas are within the major floodplains of the local waterways. Within the Caboolture West area the waterways are intended to be revegetated to achieve water quality and flood plain management objectives identified in Council's Total Water Cycle Management Plan. A significant increase in agricultural production (grazing and sown pastures) within the flood plains of the waterways will have potentially adverse impacts on water quality and flooding outcomes downstream of the Caboolture West area.

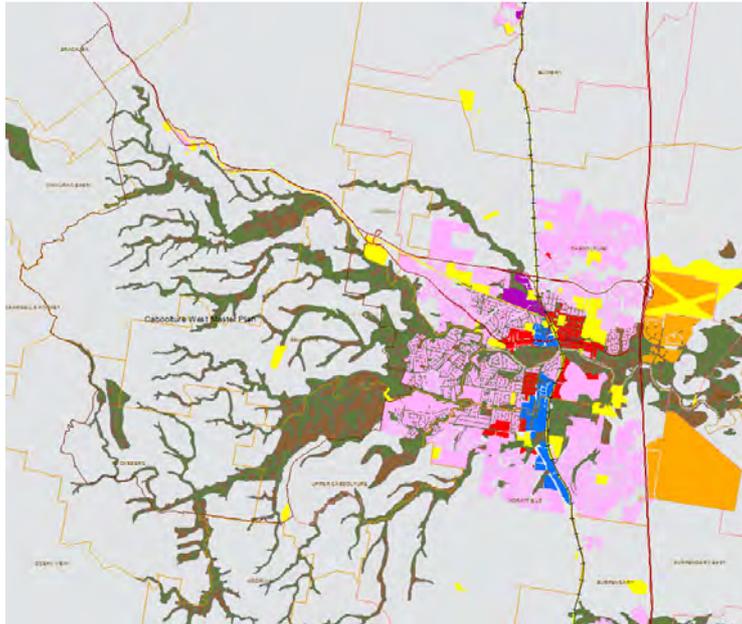


Figure 15 current and potential sown pasture mapped in QALA

The QALA assessment is that the Caboolture West area has potential for a significant increase in grazing activity but this assessment is not supported in the MBRAS findings.

1.7.4 Equine Sector

The equine sector encompasses the working, pleasure, racing and performance horse sectors. The recent investment in an equestrian centre in Caboolture 'balances' the location of such facilities with facilities at Gatton and Warwick west of Brisbane and private facilities in the Scenic Rim. According to advice provided in the Moreton Bay Rural Areas Study (LRAM):

"... it is, however, doubtful whether the equine sector will be able to compete with the Scenic Rim and Southern Darling Downs areas which have extensive and high end tertiary services sectors in place. The recreational part of the industry is likely to grow and it is particularly well integrated into the rural living land uses.

As in the beef sector, the land management skills of this sector need improving. It may also be worthwhile setting up guidelines for the location of stables, day yards etc. as well as feed-out areas, so that sensitive waterways and other environmental assets are not threatened by equine related activities."

1.7.5 Intensive Livestock and Poultry

According to advice provided in the Moreton Bay Rural Areas Study (LRAM) both of these uses have a number of key strategic requirements:

- they must have high quality road and utility access for feedstuffs and produce; and
- they must be able to be located in areas where visual amenity is low^{xxi} and where land use conflicts can be minimized;
- they require large lots;^{xxii} and
- they could potentially impact on water quality in sensitive catchments such as the Stanley River (major water storage), and Pumicestone Passage (coastal and estuarine environmental values);

According to advice provided in the Moreton Bay Rural Areas Study (LRAM):

- both industries also have relatively low commercial advantages in MBRC;
- the egg component of these industries as well as cattle feedlots has shifted to the Darling Downs and South Burnett where climate and feedstock sources as well as terrain and access are more favourable;
- the chicken meat sector remains 'tethered' to SEQ by the location of the processing works. The length of the 'tether' from the processing works located south of the Brisbane River should also discourage further investment in the sector over time compared to areas west and south of Brisbane; and
- the poultry industry in Moreton Bay which is responsible for 26.2% of the state's commodity value of meat poultry production may gradually decline in the foreseeable future.

It should be noted however that the market for poultry meat production is growing in SEQ as the population of SEQ increases, regulations governing poultry meat production are changing allowing more intensive farming and the poultry industry has recently shown an interest in land around Gympie in the Traveston Dam catchment which may indicate that if land is close enough to the processors then locations in MBRC may continue to be of interest to growers. Figure 16 shows the location of current intensive livestock and poultry industry activities in the northern part of MBRC.

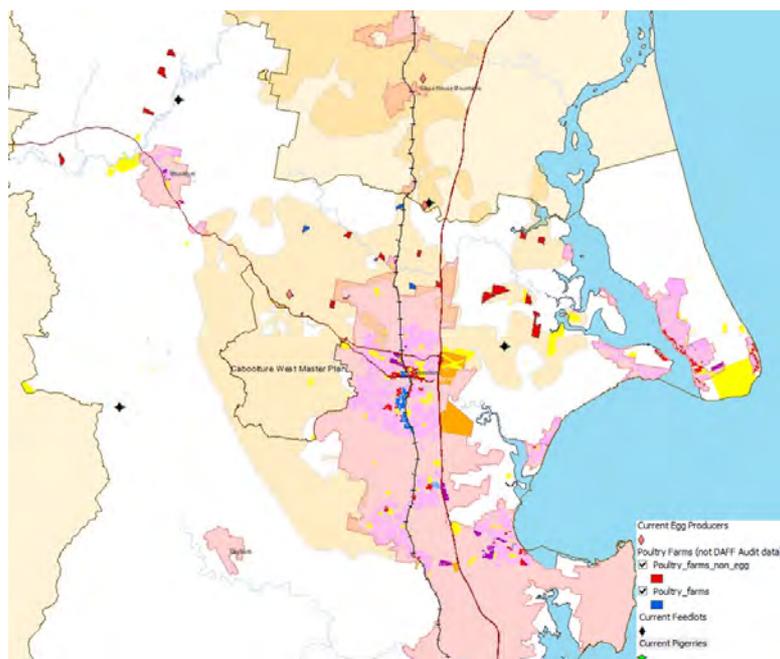


Figure 16 location of poultry farms in MBRC^{xxiii}

Figure 17 shows the assessed potential for intensive livestock production in the QALA (areas shaded red). There are currently no intensive livestock or poultry activities within the Caboolture West area and potential for expansion of this activity is limited by close proximity of the red areas to the more closely settled areas around Wamuran and Bellmere.

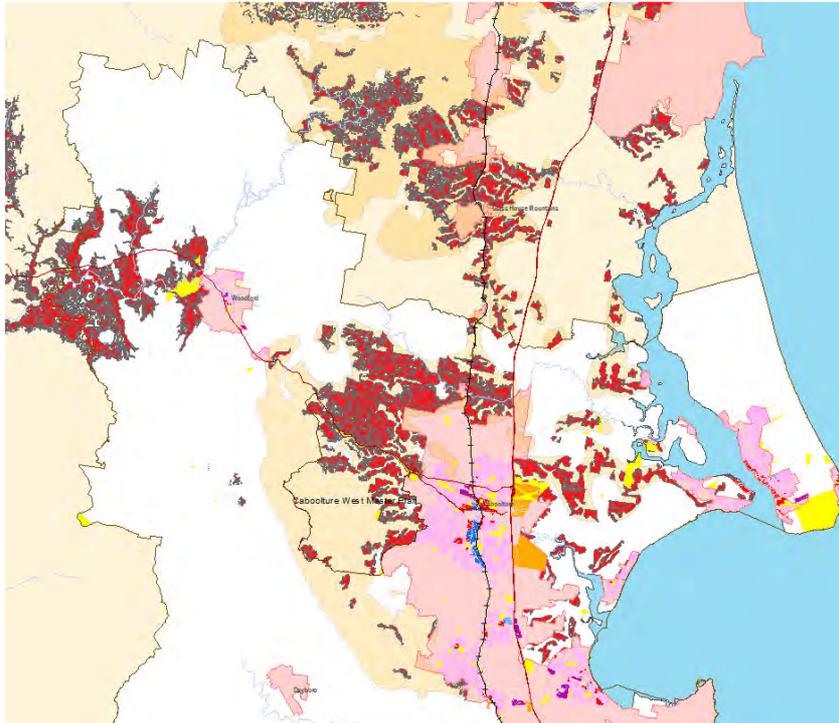


Figure 17 potential for intensive livestock production identified in the QALA

1.7.6 Horticulture

The Wamuran and Elimbah areas are the focus of an important area for horticultural production stretching in a band from the rural areas east of the Bruce Highway, to Wamuran west of the highway. These areas primarily produce multiple crops most notably pineapples, berries and strawberries. The SGS report identified 158 ha of turf production, 480 ha of strawberry production and 1,450 ha of pineapple production in precincts 1 to 4 Figure 8.^{xxiv}

Analysis undertaken by Council officers has estimated that the Caboolture West area has:

- 30 properties used for cropping;
- total area of the parcels which are used for cropping is 336 Ha;
- in the area north of Wararba Creek 135 ha under cultivation for small crops (lemons, limes, pumpkins, bananas and nuts) and 55 ha under cultivation for pineapples and nuts; and
- south of Wararba Creek 146 ha cultivated for strawberries.

Figure 18 shows the actual farmed/cropped areas and associated buffer areas in the Caboolture West area in 2012 assessed by MBRC from aerial photographs. It should be noted that much of the existing buffer area is compromised by existing rural residential development.

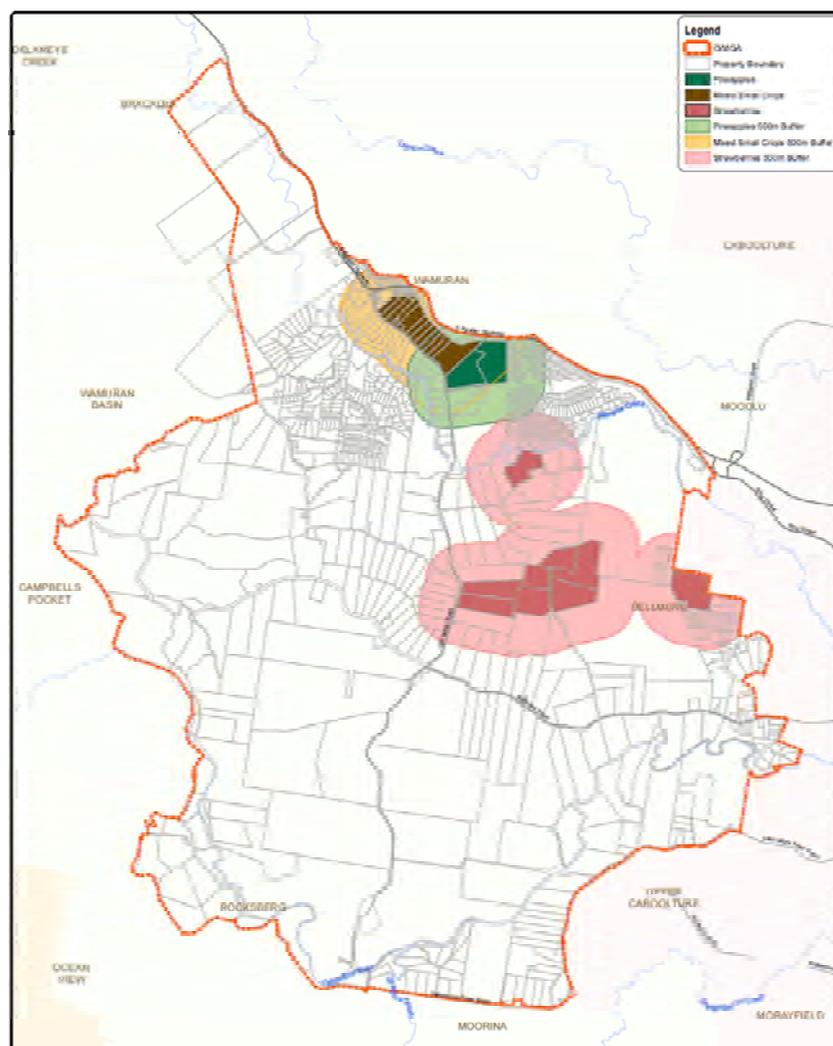


Figure 18 areas under cultivation in Caboolture West

According to advice provided in the Moreton Bay Rural Areas Study (LRAM):

- while pineapples have survived the closure of the cannery, in common with the cane industry, it is not conducive to diversification or scaling down to a semi commercial operation with many producers;
- pineapple farming (like cane farming) is a highly specialized farming system, requiring specialized agronomy and machinery. Such skills and assets are not as easily applied to another crop if the industry goes into decline. Farmers have left the industry. Leasing, renting and share farming by existing operators are increasingly common;
- the pineapple industry is restricted to the Wamuran area and to the undulating plains precincts;
- there is no shortage of lands suited to pineapples either in MBRC – or in areas along the coast line as far north as Yeppoon. Suitable lands are not limiting the industry – a lack of markets on which to base any expansion of the industry is the primary limitation.

Apart from dairying, horticulture and in particular pineapples has been a defining rural land use in the area. The Brisbane based cannery (now closed) provided a key comparative advantage for pineapples in the Wamuran area. The fact that pineapples still exist in the area now that the cannery has closed is evidence of the industry's ability to adjust their farming system to produce product better adapted to the fresh fruit market. The key to the survival of the current industry is that the fresh fruit market has always existed. The cane industry on the other hand almost disappeared from the Maroochy cane lands as soon as the Nambour sugar mill closed – there being no other established market for cane that growers could commercially supply, however over time new opportunities have opened up for some cane growers.^{xxv}

According to advice provided in the Moreton Bay Rural Areas Study (LRAM) strawberries are common in the area, but again there is no shortage of land on which this crop can be grown, whilst tree based horticulture also exists – primarily on the better quality soils that are also used for pineapples.

The Total Water Cycle Management Plan (TWCMP) for MBRC identifies the pineapple farms as potential users for recycled water. Berry crops may also have a similar potential. Of particular benefit is that the level of treatment required for agricultural irrigation is anticipated as being less than that required for recycled water to be reticulated to residential benefits. A secondary benefit is that the nutrients contained in the recycled wastewater can assist in offsetting fertiliser application on-farm and returns nutrients back to where they were first applied. The TWCMP identifies the former Moodlu Ballast Quarry as having a water void suitable for storage of recycled water prior to distribution to the pineapple farms. The challenge with the use of recycled water on these farms is that the Wamuran, Elimbah area is a high rainfall area and significant consultation is required with potential users to clarify the actual demand and quality of water required for irrigation. These issues have yet to be resolved and the viability of such a recycling scheme is therefore not assured.

Figure 19 shows the areas with potential for annual^{xxvi} and perennial^{xxvii} horticulture production (areas shaded green) in MBRC identified in the QALA. The main areas are to the north of the D'Aguiar Highway at Wamuran, and west of Woodford. The area south of the D'Aguiar Highway and west of Caboolture which has been assessed in the QALA as an important agricultural area (area shaded light yellow) has only limited assessed potential for annual and perennial horticulture.

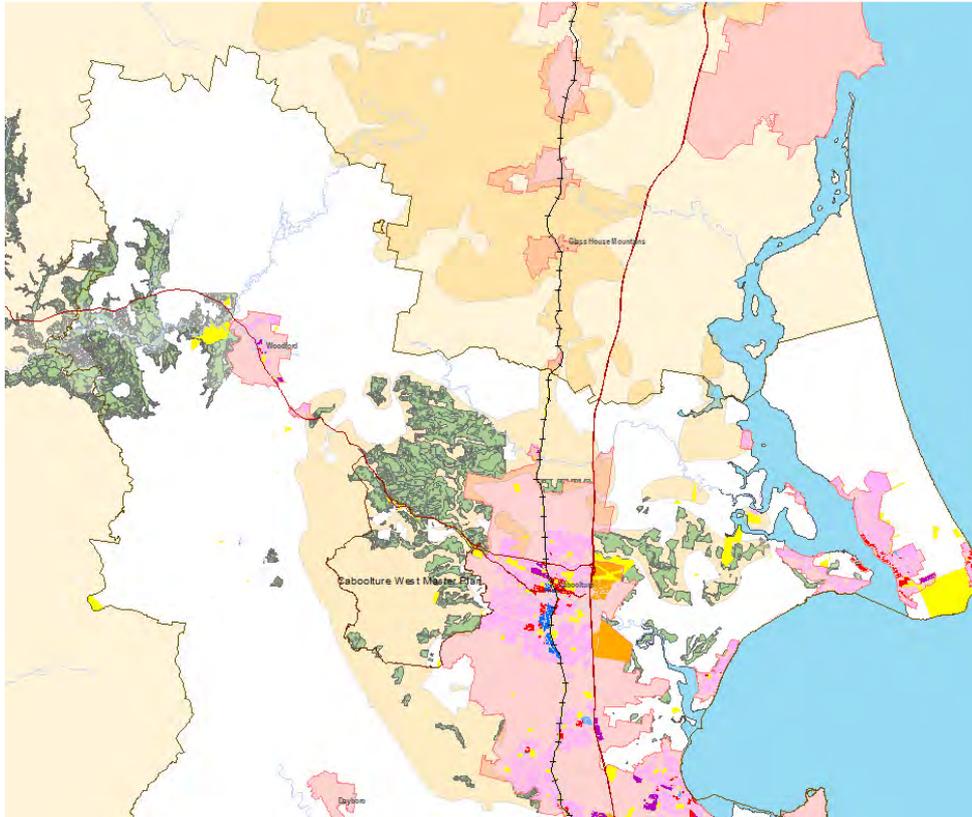


Figure 19 areas identified as suitable for annual and perennial crop production QALA

1.8 Summary of Agricultural Industry Issues

The Caboolture West study area extends over an area of approximately 6,600 ha and 1,070 lots. Investigations undertaken by Council indicate that within this study area approximately 2,700 ha may be suitable for urban development on the lower lying land extending from Wamuran to Bellmere, Upper Caboolture and Rocksberg in the south. Within this more limited area there are 30 properties used for growing a variety of crops including strawberries, pineapples, bananas, nut varieties, lemons/limes and pumpkins.

The area of Class A GQAL which has been mapped as part of this project has been revised down by the Department of Natural Resources and Mines from 598 Ha distributed along the northern and eastern edges of the study area extending from Wamuran to Upper Caboolture to 350Ha in the northern area around Wamuran.

The area of mapped SCL which is identified in the State Trigger Map covering 1600 Ha and dispersed widely across the study area has been revised down to 300ha along the eastern edge of the study area as a result of the slope assessment undertaken by Council.

The SGS and MBRAS studies undertaken by Council identify a number of localities with potential for development of agriculture in the MBRC area. These localities are Neurum-Woodford, Wamuran-Elimbah and Caboolture-Ningi.

The important agricultural area identified in the QALA does not include the Woodford-Neurum area but focusses only on the areas immediately adjoining the urban footprint including the Caboolture West study area, North East Business Park, the Caboolture airport, and the Elimbah East regional development area (see Figure 20). As mapped this important agricultural area would potentially significantly limit development of a future Caboolture City as envisaged in the draft MBRC Strategic Framework.

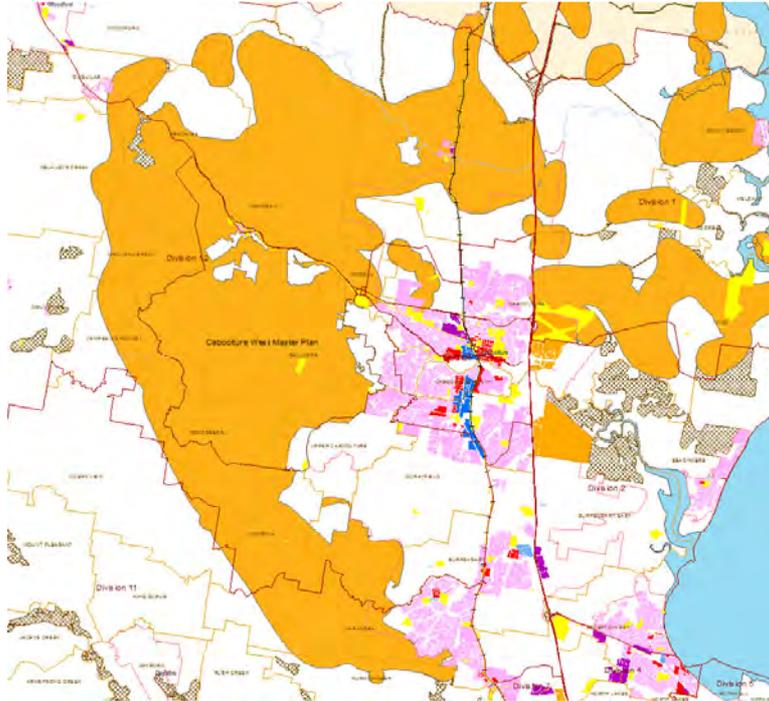


Figure 20 important agricultural area identified in the QALA

The area south of the D'Aguiar Highway and west of Caboolture containing the Caboolture West study area and extending south through the localities of Moorina, Morayfield and Narangba has limited potential for annual and perennial horticulture. The main reasons that the QALA included this area in the important agricultural area seems to be based on:

- limited areas of GQAL adjacent to the urban footprint and the D'Aguiar Highway at Wamuran within the Caboolture West area; and
- the areas potential for softwood plantations, native forests and grazing activity.

The potential for viable softwood plantations to be established in the Caboolture West area has been questioned in the MBRAS which found that expansion of softwood plantations onto freehold land will be insignificant except where there are no alternative land uses options and favourable taxation incentives. The QALA also indicates that there is no shortage of land within MBRC with potential for native forestry production.

The MBRAS study also found that most grazing activities are only occurring on a semi-commercial basis on smaller properties. A significant increase in animal production in the Caboolture West area (particularly intensive animal production) would also have potentially significant adverse impacts on water quality in local waterways that drain through established urban areas to the east.

The QALA has identified an area south of the D'Aguiar Highway and west of Caboolture as an important area for future agricultural production. This designation is not supported by the studies undertaken by Council which recommend:

- there is no shortage of land elsewhere on which to conduct grazing, horticulture, plantations, and intensive livestock production;

- the Neurum-Woodford area, the Wamuran-Elimbah area north of the D’Aguilar Highway and land east of the Bruce Highway (excluding the North East Business Park, Elimbah East and the Caboolture airport) could be the focus of future agricultural production; and
- GQAL principles alone are not sufficient to determine an areas suitability for agricultural production purposes.

Developing part of the Caboolture West area for urban purposes is not likely to limit the potential for agricultural production in MBRC. The level of agricultural production in MBRC is limited more by access to markets and other factors. Agricultural production can be increased through use of lands elsewhere in the MBRC area which have more assessed potential for agricultural production including the Neurum-Woodford area, in the inter-urban break between Caboolture and Caloundra on the Sunshine Coast, and in the Caboolture-Ningi area.

The potential for increased agricultural production within MBRC is also contingent upon factors identified in the SGS and MBRLS reports:

- careful planning to ensure the most productive agricultural areas and those with the greatest potential for agricultural production are retained and protected from further urban encroachment;
- transport routes to the region are developed and maintained;
- development of a rural industries facilitation project and a comprehensive economic development strategy for rural areas, a treated waste water agricultural irrigation scheme could form part of such a strategy; and
- actively marketing agriculture to the community.

The recently released draft single State Planning Policy^{xxviii} recognises “agriculture” and “development and construction” as key pillars of the Queensland economy. It also recognises the need for sufficient land and housing stock to support vital development, resource and infrastructure related projects and to meet the diverse needs of different sections of the community. These are all relevant considerations in determining the outcomes of the Caboolture West project. The draft single SPP contains explicit provisions relating to managing competing state interests and specifically points to resolving these conflicts in a way which:

1. best achieves and advances ecological sustainability as defined in the Sustainable Planning Act 2009^{xxix} and
2. achieves the objectives of:
 - a. considering State interest in their entirety;
 - b. supporting innovative and locally appropriate solutions; and
 - c. empowering and supporting local governments to make the best planning decisions for their communities.

This background report has described the agricultural land and production issues associated with the Caboolture West project. Other background investigations and analysis being undertaken by Council have examined the urban design, environmental issues, flood hazard, land use, land supply, infrastructure, and economic development issues associated with the Caboolture West area. This report has found that the main potential for expansion of agricultural production in the Caboolture West area in the longer term is limited to forestry and grazing for which there is no shortage of land elsewhere in MBRC. The potential for expansion of the urban area within MBRC is limited to the Caboolture West area. There is no other land available which:

- adjoins the urban footprint;

- is within 10 minutes' drive time of the Caboolture-Morayfield Principle Activity Centre;
- is not constrained by steep land, flooding, urban water supply catchment, or extractive resources;
- is relatively unconstrained by existing development or lot fragmentation; and
- has the potential to provide land for housing and employment in the medium to longer term that will support continued growth of the local economy without compromising long term agricultural productivity in the area.

The draft single SPP specifically provides for situations where particular State interest provisions may be departed from where there is an overriding need in the public interest. The draft single SPP therefore provides a useful platform from which to resolve the conflicting issues associated with the Caboolture West project.

End notes

ⁱ MBRC Caboolture Shire Plan 2005

ⁱⁱ Queensland Government Strategic Cropping Land Trigger Map 2012

ⁱⁱⁱ Queensland Government Queensland Agricultural Land Audit 2013

^{iv} Queensland Government, State Planning policy 1/92 Development and conservation of agricultural land. December 1992

^v Queensland Government, Planning Guidelines: The identification of good quality agricultural land. January 1993.

^{vi} Brown and Root, Caboolture Rural Lands Study, Strategy report, July 2003

^{vii} Urbis 2009. Caboolture Identified Growth Area – Strategic constraints analysis. April 2009

^{viii} Queensland Government Strategic cropping Land Act 2011. Act No. 47 of 2011

^{ix} Queensland Government, Strategic Cropping Land Regulation 2011

^x Queensland Government, State Planning Policy 1/12, Protection of Queensland’s strategic cropping land. January 2012.

^{xi} Protecting Queensland’s Strategic Cropping Land, Guidelines for applying the proposed strategic cropping land criteria. September 2011.

^{xii} Lidar (light detection and ranging) is an optical remote-sensing technique that uses laser light to densely sample the surface of the earth, producing highly accurate x,y,z measurements. Lidar, primarily used in airborne laser mapping applications, is emerging as a cost-effective alternative to traditional surveying techniques such as photogrammetry. Lidar produces mass point cloud datasets that can be managed, visualized, analyzed, and shared using ArcGIS.

^{xiii} The ground elevation is referred to as the digital elevation model (DEM).

^{xiv} SGS Economics & Planning (2008), Baseline Study of Selected Agricultural Land Use in the Caboolture Area, Informing Planning for Rural and regional Prosperity.

^{xv} Buckley Vann Town Planning Consultants (2012), Moreton Bay Rural Areas Strategy, Final Strategy report) May 2012.

^{xvi} Queensland Government, Queensland Agricultural Land Audit. May 2013

^{xvii} Source Queensland Government Queensland Agricultural Land Audit 2013

^{xviii} Source Queensland Government Queensland Agricultural Land Audit 2013

^{xix} Source Queensland Government Queensland agricultural Land Audit 2013

^{xx} Source Queensland Government Queensland Agricultural Land Audit 2013. Assumptions based on this mapping can be misleading as the QALA maps yearly pasture production which means the area might support high, medium, low stocking rates.

^{xxi} The Queensland Government is currently working on the new draft single SPP. It is not clear at this stage the extent to which amenity considerations that may otherwise constrain intensive animal industry development will be addressed in the SPP in rural zoned areas or be allowed to be included in new MBRC planning scheme provisions.

^{xxii} The Moreton Bay Rural Lands Study found that:

- the large lots are all associated with non-freehold tenures or lands currently used for forestry;
- with average lot sizes in the rural area precincts ranging from 15 to 30 ha, and with approximately one in two lots already built on, there will be very few locations that could be suited to these industries;
- areas in the hills, uplands ranges all have terrain and microclimate condition which will increase development costs to manage odour, erosion and water quality problems; and
- the undulating plains, inland valleys and alluvial plains contain GQAL which may limit site selection however there have been a number of exemptions to agricultural developments in SCL including intensive animal husbandry that may indicate that GQAL is not such a constraint.

^{xxiii} Source Queensland Government Queensland Agricultural Land Audit 2013 and MBRC GIS mapping of poultry farm locations.

^{xxiv} SGA 2009 SGS undertook consultation to assist with determining the value of production of turf, strawberry and pineapple production. It was determined that there is approximately 158 hectares of turf production in Caboolture yielding approximately \$70,000 per hectare, with total revenue of around \$10.9 million. Strawberry crops are conservatively estimated to use 480 hectares of land in Caboolture, yielding 90,000 punnets of strawberries, with total approximate revenue of \$65.7 million dollars at, on average, \$1.52 per punnet. Finally, it was estimated that there is approximately 1,450 hectares of pineapple crops in Caboolture, conservatively yielding \$30,000 per hectare, with a total income of around \$43.5 million. The total value of production estimated for the three industries together is \$120.1 million, which is 46% of the total agricultural production. From the values determined above for production (direct effects), and using the input-output multipliers, it was estimated that turf, strawberries and pineapple production contribute flow-on effects of \$5.6 million, \$33.9 million and \$22.4 million respectively. This is a total contribution for each land use of \$16.6 million, \$99.6 million and \$65.9 million respectively to the Caboolture economy as shown in Table 1 below. All together, the three industries contribute approximately \$182 million dollars to the region's economy.

^{xxv} Although the cane industry on the coast nearly collapsed with the mill closure, it never completely disappeared as some growers tried to start up an alternative use for their cane (Cow Candy) and others supplied the Maryborough Mill. Currently Maryborough Sugar Factory has contracted a number of farmers (12 – 15) on the Sunshine Coast to produce cane for them, so the cane industry is actually looking better than it has since the mill closed

^{xxvi} Annual horticulture (intensive seasonal cropping): land used for growing plants and/or production of plant materials for commercial purposes where plants live for less than one year, are dependent on intensive cultivation of the soil, and usually require a relatively high degree of nutrient, weed and moisture control. Rainfall is almost exclusively supplemented by irrigation to promote high yields and productivity. Cropping usually takes place on a small scale (paddocks generally <100ha). Includes harvesting and the storage and packing of produce and plants grown on the site and the ancillary repair and servicing of machinery used on the site.

^{xxvii} Perennial horticulture (tree and vine cropping): use of land for production of nuts and fruits from woody and semi-herbaceous plants (trees or perennial vines) that are cropped over a period longer than one year. Production may be dependent on intensive cultivation of the soil at intervals during that period, and usually requires a relatively high degree of nutrient, weed and moisture control. Rainfall is normally supplemented to promote high yields and productivity, and survival over dry periods, depending on the season and water availability.

^{xxviii} Queensland Government dept. of State Development, Infrastructure and Planning (2013), State Planning Policy (draft for Consultation) April 2013.

^{xxix} Queensland Government 2009, Sustainable Planning Act 2009 Act No. 36 of 2009