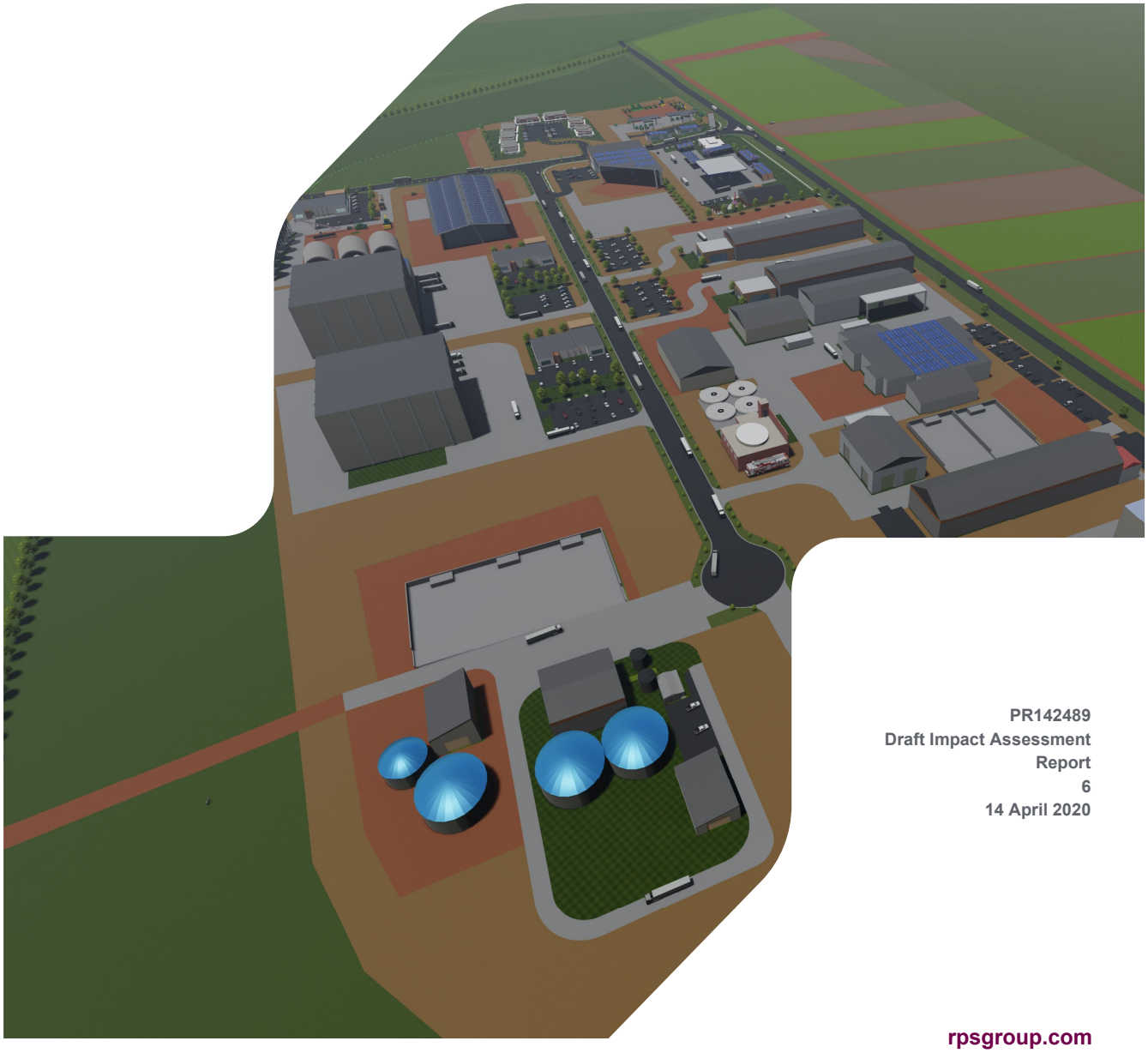
DRAFT IMPACT ASSESSMENT REPORT

Scenic Rim Agricultural Industrial Precinct



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EXECUTIVE SUMMARY

1.1 Subject Site

The subject site is 6200-6206 Cunningham Highway, Kalbar QLD 4309 which is the current location and surrounds of Kalfresh's existing operation. The site is properly described as Lot 1 on RP216694, Lots 2-4 on SP192221, Lot 2 on RP20974, and Lot 2 on RP44024 and has an area of approximately 250 hectares.

1.2 Kalfresh

Kalfresh Pty Ltd (Kalfresh) is an Australian rural agricultural production company, established in 1992 with the vision of uniting local growers under one brand. Kalfresh has since become one of Queensland's leading vegetable production companies, boasting state of the art processing and packaging systems at the Kalbar facility.

Kalfresh is a vertically integrated vegetable farming, processing and marketing business, run by generational farmers who innovate to remain sustainable, respond to consumer trends, and grow healthy, nutrient rich crops with minimal impact on the environment.

Kalfresh grows and supplies fresh produce directly to distribution centres for major supermarkets and food service customers in Australia and overseas.

Kalfresh grows and sells both conventional and certified organic vegetables – carrots, onions, pumpkins, green beans, grape and gourmet tomatoes, capsicums, sweet corn and baby capsicums. Kalfresh utilises five unique growing regions throughout Queensland and New South Wales being:

- Fassifern Valley in the Scenic Rim Local Government Area (LGA)
- Lockyer Valley in the Lockyer Valley LGA
- Bowen in Whitsundays LGA
- Stanthorpe and Clintonvale in the Southern Downs LGA
- Liston in the Tenterfield LGA

Kalfresh controls the entire paddock to plate journey – from seed selection to transport. The business currently employs approximately 600 people (directly and indirectly) at peak production times and has about 3,700 acres under crop in the five growing regions. This geographic diversity enables water security and the ability to produce crops year round. Kalfresh also exports vegetables to New Zealand, Asia and the Middle East. This part of the business is expanding and is expected to exceed $5 million per annum.

Kalfresh, alongside its partners in government, share a mutual goal to continue to strengthen the regional economic and social diversification of the Scenic Rim by seeking opportunities for growth and innovation. Kalfresh is driven to meet the evolving needs of both customers and consumers in food production which supports the State governments general intention in the *South East Queensland Regional Plan 2017* (ShapingSEQ) to generate additional sustainable jobs and infrastructure.

At the heart of the SRAIP proposal is the belief that the region has the capacity, location and natural resources to take advantage of the growing demand for Australian produce. Kalfresh, together with its development partners, is committed to promoting sustainable growth in food production, which will attract new skills and social diversification to the region, aligning with the Scenic Rim Regional Council's guiding principles, outlined in the *Scenic Rim Community Plan 2011-2026*.

This plan highlights the need for development to sustain rural industry, maintain local employment, support the right to farm and help rural industries to prosper, innovate and adapt. It also promotes the need to encourage local investment and support local business by creating conditions that attract business and industry that is compatible with the Scenic Rim lifestyle and environment.

1.3 SRAIP

The Scenic Rim Agricultural Industrial Precinct (SRAIP) aims to create a formal hub for value-added food production in Kalbar, a highly productive agricultural region 84km south-west of the Brisbane CBD. The precinct will enable Australian food businesses to base themselves where the raw ingredients are grown, allowing fresh food to be delivered to customers faster, reducing food miles, improving operational efficiencies, and responding to market demand for trusted, value-add food and beverage products.

Kalfresh first embarked on the work associated with the SRAIP in recognition of major changes to the produce industry. Consumers, and subsequently customers, are seeking more fresh vegetable products which have been prepared and are ready to eat and drink. This level of preparation requires fit-for-purpose infrastructure, not available on the existing site or readily found in any existing industrial development.

Kalfresh has an immediate need to expand and construct facilities which will support the existing vegetable production business and will deliver benefits to producers in the Fassifern and Lockyer Valleys, as well as farmers in Stanthorpe, the Darling Downs and other surrounding growing regions. These facilities would allow the expansion of snacking and organics produce businesses, as well as the vegetable processing business. If these opportunities are not capitalised on in a timely manner - they will be lost to other states. It is essential that construction begins on the SRAIP by mid-2020 to ensure the opportunity is not lost.

The SRAIP, particularly in light of the ongoing drought and bushfire challenges faced by the Scenic Rim, is of great importance to the Queensland agricultural sector. The SRAIP, once developed, will deliver local residents the opportunity for new permanent, 12-month skilled employment, by removing the seasonality from the sector. The precinct will create 996 construction jobs and sustain 1047 new direct and indirect operational jobs / annum (subject to third party investment and the final uses proposed). Further the project will add $140.5 million in Gross Value Added (GVA) (8.3%) to the Scenic Rim economy each year, and $211.9 million contribution to the Australian economy annually once fully developed.

Kalfresh estimates an initial investment of $26 million would be required for site development to allow sales (including construction of sewage and water treatment) and $19 million for the construction of the bioenergy facility. The proponent plans to expand its own business by investing $5 million in two new facilities for organic vegetable and snacking production within the proposed industrial precinct. The construction of the industrial precinct has the potential for further capital investment of up to $291 million by the attraction of additional food production and manufacturing businesses to the precinct.

The SRAIP in itself will be a 16 allotment agricultural industrial estate established on the Cunningham Highway frontage of the site. Kalfresh will expand its existing facilities within four of these allotments with the remainder being marketed to third parties with agricultural / industrial business operations. The SRAIP involves only one direct access from the Cunningham Highway with an internal ‘T-head’ cul-de-sac arrangement providing access to all proposed allotments.

The SRAIP will be supported by infrastructure to support future businesses including water servicing, a sewer treatment plant, and anaerobic digester which will provide power to the precinct but also produce a digestate for distribution onto Kalfresh crops. The SRAIP will be held in a community title arrangement where the above services and internal private road is managed and maintained by the SRAIP body corporate. In the subject site beyond the agricultural industrial precinct - will be ‘rural’ land which supports the key functions of the infrastructure of the SRAIP (for example a composting operation, digestate and irrigation effluent areas).

It is the intention that once fully completed, the SRAIP will be an exhibition of agricultural practices and life in the Scenic Rim with the intention to operate a ‘museum’ showcasing these elements. A café tied to the museum is also envisaged – showcasing a broad offering of Scenic Rim produce.

1.4 Planning Need

This report undertakes a detailed assessment against the relevant statutory framework including the:

- *Scenic Rim Planning Scheme* (the Planning Scheme)

- *South East Queensland Regional Plan 2017* (ShapingSEQ)
- *State Planning Policy* (SPP 2017)

Section 8.1 of the report discusses the identified conflicts with the above planning documents, namely:

1. The siting of the SRAIP outside the nominated Urban Footprint of ShapingSEQ
2. Potential to detract from the nominated Scenic Rim town centres

Section 8.3 of the report outlines the rationale for selecting the project site for the SRAIP in favour of alternative options.

However, in summary of these sections of the report, the following benefits outweigh the identified perceived conflicts:

- Renewable energy generation via the proposed anaerobic digester
- Increased employment for the region resulting in an increase in local population and vitality of the existing Scenic Rim townships
- Promote collaboration between agricultural and industrial uses
- Improved logistics (reduction in food miles meaning fresher produce on the shelves, quicker)
- *Scenic Rim Regional Prosperity Strategy 2020-2025* – Recognition as a 'Strategic Enabling Project'

Specifically, the site has been selected for the following reasons:

- The SRAIP is a Kalfresh initiative, designed to diversify and enhance existing agricultural businesses in the local region. Kalfresh's existing operations are well-established on the site and are supported by farms and family-owned farming businesses in the local and broader region. Therefore, establishing the SRAIP in this location makes logical, and logistical, sense.
- The site is ideally located on the Cunningham Highway which enables ease of access to primary production areas and subsequent markets, being 84km to Brisbane City and within the food producing regions of:
  - Fassifern Valley
  - Lockyer Valley
  - Stanthorpe
  - Darling Downs
  - Bowen

  Additionally, being on the Cunningham Highway, offers easy access for transport servicing the Sydney and wider NSW markets. The site is also well located to the distribution centres of major Australian retailers, as well as air and seaports to access international markets.
- The subject site is a large and consolidated landholding which is predominantly clear of any ecological values given the existing Kalfresh operations and cropping occurring particularly in the east of the site towards the Cunningham Highway. As such, it is an ideal location to establish a large precinct which promotes agriculture and supports industrial uses.
- The subject site is situated in a largely agricultural area with adequate separation distances to the nearest sensitive receivers, making it ideal to establish a range of agricultural and industrial uses.
- Kalfresh has existing links to growers in Scenic Rim, Lockyer Valley, Darling Downs and Stanthorpe and sources produce from these regions to process through the existing facilities.

- A significant amount of money and infrastructure has previously been invested into the subject site by Kalfresh and therefore it is not financially practical to move the current vegetable processing operations to another site.
- The site has direct access to existing water and electricity sources and also a local labour market which will be utilised by the SRAIP.

1.5 Variation Approval

A Preliminary Approval for a Variation Request to override the Planning Scheme is sought as part of this proposal to allow the envisaged uses of the SRAIP to be established within the precinct.

Three new SRAIP activity groups have been created – SRAIP Industrial Activities, SRAIP Infrastructure Activities and SRAIP Support Activities, with two new precincts proposed – the SRAIP Industry Precinct and SRAIP Rural Precinct.

Broadly, it is proposed to allow the SRAIP Industrial and Support Activity Groups to be established in the SRAIP Industry Precinct. This will meet the overall intent of the SRAIP in creating an agricultural industrial precinct which supports the local and State economy. Example land uses to be established include High, Medium, Low impact industry (which are related to food processing or agricultural production) and Rural and Research and Technology Industry uses, Renewable energy facility (Anaerobic Digester facility), Utility installation (Sewage Treatment Plant), Warehouse, Food and drink outlet, Market, Office, Service station and Tourist attraction.

The SRAIP Rural Precinct is intended to support the Industry Precinct and allows for the establishment of the SRAIP Infrastructure Activity group which involves the infrastructure required to support the SRAIP including uses such as Cropping, High impact industry for composting, Renewable energy facility (digestate irrigation area), Utility installation (sewer treatment plant and effluent irrigation area), and Cropping.

The Variation Approval includes a new Precinct Plan, Plan of Development, Level of Assessment tables, and Development Code specifically to guide the development of the SRAIP.

1.6 Environmentally Relevant Activities (ERAs)

Three ERAs are proposed within the SRAIP, as explained below:

1.6.1 Anaerobic Digester Facility

A key component, and significant benefit, of the SRAIP is the co-location of food processing businesses with a proposed $19 million 1.6MW (scalable to 10MW) bio-energy facility, which will convert food and urban waste into renewable energy through anaerobic digestion (AD). This process produces a biogas which will be used directly as power, and a nutrient-rich digestate to be used as fertiliser for the SRAIP associated crops within the local area.

The plant infrastructure for the AD is to be located on proposed Lot 11 of the SRAIP with solid and liquid digestate being treated in the composting and irrigation areas within the Rural Precinct of the site. It is proposed that the power produced by the AD will be captured and fed into the electricity infrastructure to service the SRAIP allotments and future uses.

Kalfresh is working with ARENA to apply for a waste-to-bioenergy grant for this aspect of the proposal as the digestor aims to replace conventional fossil-fuel based products with bioenergy and bioproducts. This further reiterates the importance of this project from a State level, let alone within the local Scenic Rim community.

1.6.2 Composting Facility

A composting facility is proposed in the Rural Precinct of the SRAIP, producing up to 50,000 tonnes per annum of total (finished) compost product to provide high quality organic fertiliser for existing crop production within the precinct and other cropping by Kalfresh and independent local producers.

The activity will utilise typical open windrow composting methods from feedstocks including green waste, wood chip, vegetable waste, anaerobic digestion solids fraction, chicken litter and used mushroom substrate. All material that requires shredding or sorting to be suitable for composting shall be imported in pre-processed forms negating the need for onsite shredding or sorting.

1.6.3 Sewer Treatment Plant

Kalfresh currently treats sewer on site, but as part of the SRAIP a new Sewer Treatment Plant (STP) is required to service the estate. All sewage will be treated to Class B standard for the proposed development within the treatment plant prior to irrigation at the effluent irrigation area.

While the ERAs are important components of the overall SRAIP concept, with mutually beneficial aspects in the case of the anaerobic digester (AD) and composting operations, the ERAs are for all intents and purposes - independent activities.

Ways in which the three ERAs relate are limited to the following:

- The STP shall service human (toilet and ablution) and kitchen wastewater for the entire SRAIP, with the AD and compost activity staff contribution a minor fraction of the overall wastewater received – i.e. the STP will not receive other wastes such as leachate or wash-down water from the AD, compost, or other SRAIP activities.
- The STP shall be powered by energy produced by the AD, along with the SRAIP as a whole.
- The compost activity shall use AD fertiliser (liquid) for compost wetting, and digestate solids as a small fraction of the overall feedstock (~ 17%), whereas the digestate products will largely be utilised for cropping activities on and off site.
- The AD will potentially receive leachate from the composting where rainfall exceeds the design capacity leachate collection system, as a preferred and more sustainable contingency over alternatives such as licensed disposal.

1.7 Reconfiguring a Lot

There are three stages proposed for the SRAIP subdivision to ready the site for development as follows:

- **Stage 1:** Management subdivision to amalgamate and subdivide Lots 3 and 4 on SP192221, Lot 2 on RP20974, and Lot 2 on RP44024. This will create five (5) newly configured management allotments for the majority of the SRAIP activities (Lots 1, 4 & 5), the Environmental Protection Area (Lot 2) and the 'access handle' allotment providing access (via access easement) and a haulage route to the proposed Wagner quarry (Lot 3).
- **Stage 2:** Further management subdivision of Stage 1 to further subdivide/reconfigure newly created Lot 1 to create a composting lot (Lot 3), new lot for the future SRAIP precinct (Lot 1) and balance lot within the Rural Precinct to contain the digestate irrigation infrastructure (Lot 2).
- **Stage 3:** Community Management subdivision (via standard freehold) of newly created Lot 1 of Stage 2 (and including the reconfiguration of existing Kalfresh allotments – Lot 1 on RP216694 & Lot 2 on SP192221) to create the SRAIP which comprises 16 new industrial allotments, private road, overland flow path allotment, and drainage (stormwater basin) allotment.

1.8 Frazerview Quarry / Kalfresh and Haulage Route

The proposed Frazerview Quarry includes Lot 2 on RP20974 within the development application which is currently undergoing assessment by Scenic Rim Regional Council and the Department of State Development, Manufacturing, Infrastructure and Planning (Council Application Ref: MCU19/005).

The new access is directly off the Cunningham Highway and is proposed to be utilised by all quarry traffic including both light and heavy vehicles. This means the access will be classified as a 'haulage route' and has been accommodated for in the proposed SRAIP.

The Frazerview Quarry development expects to produce 20 staff trips and 22 truck trips in the peak hour, which has been accommodated for within the SRAIP Traffic Assessment. The design vehicle for the quarry is a 25-26m long B-double with the possibility of 30-36m A-doubles, which has been accommodated for in the intersection design.

As the access is proposed within the Frazerview Quarry development application, the design of the new intersection between Cunningham Highway and the proposed (internal) road of the SRAIP has been completed and is currently being assessed by Council and DSDMIP, more specifically the DTMR. It is proposed to utilise this intersection for the SRAIP.

1.9 Water Usage

Given the SRAIP is to be an agricultural / industrial estate – water is a key resource for the long term success of the project.

It is proposed that water for the development will be sourced from:

- Existing underground bore water supply;
- Medium priority allocation from Warill Creek; and
- High priority allocation from Warrill Creek.

The water within the SRAIP is proposed to be used in the following ways:

- Warrill Creek water allocation will be pumped to the site from the creek via a proposed pump station and rising main.
- Water will be bought up from the existing underground bore water supply.
- Both of these water sources will feed into the SRAIP water supply servicing the uses to be established within the estate, including the STP and AD.
- Industrial wastewater from the processing facilities to be established within the SRAIP (including vegetable washing and frozen food production) will be mixed with the liquid digestate from the AD and used as the agricultural water supply for spreading onto Kalfresh and local crops.
- Wastewater for the above purpose will also be sourced from the gravity wastewater reticulation network which will be treated at the STP before being pumped to the holding pond.

1.10 Protection of Environmental Values

The SRAIP by its nature has the potential to impact on the environmental values of the site. As such, the following measures are being undertaken to ensure environmental values are protected:

1.10.1 Renewable Energy Production

The incorporation of the AD within the SRAIP is a key initiative being employed to ensure the proposal protects the environment by producing a renewable energy source which will be utilised by the SRAIP rather than relying solely on fossil fuel forms of energy.

The AD recycles a range of substrates, including food waste and grease trap liquids produced by Kalfresh which would have previously been taken to landfill, to create a nutrient rich biofertiliser to promote the next round of crops, in place of a fossil fuel derived fertiliser.

1.10.2 Water Recycling

Given water is a precious commodity in the drought prone Scenic Rim and critical to the SRAIP's success, water recycling is proposed as described under Section 1.9 above to ensure wastage of water is minimised. Wherever possible, water is being reutilised. For example, the industrial wastewater from washing of Kalfresh's crops within their facilities is to be mixed with the AD liquid digestate for crop watering and fertilisation.

1.10.3 Environmental Protection Area

As per the SRAIP Concept Layout, an 'Environmental Protection Area' (EPA) is proposed at the rear of the subject site over significant vegetation (remnant / koala vegetation). This EPA is to protect this area from clearing as part of this proposal. While the EPA does not preclude clearing in the future, it requires that future approvals are obtained if and when clearing of this vegetation is warranted. It is important to note that this will likely be the case in the future as this section of EPA is mapped within the resource and processing area of the Kangaroo Mountain Key Resource Area (KRA141) which is an identified State resource involving the extraction of quarry rock. The KRA is well placed to supply the expansion of urban development in the ShapingSEQ regional place area and is estimated to be sufficient for 50 years at the current level of demand for the Ipswich and Scenic Rim regions.

1.10.4 Waterway Barrier Works

There are Low and Medium Order Queensland waterways for the purposes of waterway barrier works over the site as per the SRAIP Concept Layouts. Given these transect the SRAIP development footprint, it is evident that these waterways will be altered and realigned as a result of the proposal.

It is proposed to re-establish these waterways within the proposed overland flow paths which will connect with Warrill Creek downstream as per the civil engineering documentation. Additionally, to accommodate fish habitats – infrastructure such as deeper fish passages in the proposed overland flow path bordering the estate and openings will be installed in the proposed haulage route crossing the overland flow path to enable fish movement.

1.10.5 Strategic Location of the SRAIP Estate

The SRAIP Estate was predominantly sited to be within close proximity to the Cunningham Highway for access and visibility purposes – however the proposed location also ensures the estate is situated in the portion of the site which is the most clear of vegetation. This ensures that no significant habitat is lost as a result of establishing the SRAIP.

1.10.6 Strategic Location of ERA components

The proposed digestate irrigation area within the proposed Rural Precinct has been designed to provide a 60m wide (30m either side) of a low lying gully to ensure that the pasteurised digestate does not run off into this proposed gully and have flow on effects downstream.

Similarly, the proposed effluent and digestate irrigation areas have been strategically located to avoid nearby sensitive uses.

2 INTRODUCTION

2.1 Overview

2.1.1 Subject Site

The SRAIP is to be established over land situated at 6200-6206 Cunningham Highway, Kalbar QLD 4309 within the Scenic Rim local government area (the Scenic Rim).

The Scenic Rim is ideally located between the major urban hubs of Brisbane and Toowoomba and is identified in Shaping SEQ as being a priority agricultural area, with a reputation as one of the most fertile farmland areas in the world, and Australia's 'food bowl', growing the most diverse range of commercial fruit and vegetables in Australia.

The site is further situated in the Fassifern Valley, ideally suited to large scale rural production, with a history in agricultural production dating from the 1870s. The proposed SRAIP site, on the Cunningham Highway at Kalbar in Fassifern Valley, has been utilised for agricultural production and rural industry since the early 1900s. The fertile alluvial creek flats, coupled with secure, reliable water from the Moogerah Dam, make this a highly-productive farming region.

Kalfresh was established on the site in 1992. The existing operations utilise a vertically integrated business model to control all elements of the production process, from seed to shelf. At the heart of the business success is the proximity of the processing and packing facility to the paddocks where produce grows. The approach is predicated on a desire to produce fresher products faster and transport them to customers shortly after harvest. In 2015, Kalfresh expanded operations to include a value-adding arm to the business, enabling more of the crop to be utilised, while responding to market demand for pre-prepared fresh vegetables.

2.1.2 Kalfresh

Kalfresh is an Australian rural agricultural production company, established in 1992 with the vision of uniting local growers under one brand. Kalfresh has since become one of Queensland's leading vegetable production companies, boasting state of the art processing and packaging systems at the Kalbar facility.

Kalfresh is a vertically integrated vegetable farming, processing and marketing business, run by generational farmers who innovate and push boundaries to remain sustainable and grow healthy, nutrient rich crops with minimal impact on the environment.

Kalfresh grows and supplies fresh produce directly to distribution centres for major supermarkets and food service customers in Australia and overseas.

Kalfresh grows and sells both conventional and certified organic vegetables – carrots, onions, pumpkins, green beans, grape and gourmet tomatoes, capsicums, corn and baby capsicums. Kalfresh utilises five unique growing regions throughout Queensland and New South Wales:

- Fassifern Valley in the Scenic Rim LGA
- Lockyer Valley in the Lockyer Valley LGA
- Bowen in Whitsundays LGA
- Stanthorpe and Clintonvale in the Southern Downs LGA
- Liston in the Tenterfield LGA

Kalfresh controls the entire paddock to plate journey – from seed selection to transport. The business employs about 600 people (directly and indirectly) at peak production times and sells about 40,000 tonnes of produce, sourced from more than 1,220 hectares in the four growing regions. This geographic diversity

enables water security and the ability to produce crops year round. Kalfresh also exports about 1,300 tonnes of vegetables annually, to New Zealand, Asia and the Middle East, in business valued at nearly $5 million.

Kalfresh, alongside its partners in government, share a mutual goal to continue to strengthen the regional economic and social diversification of the region by seeking opportunities for growth and innovation. Kalfresh is driven to meet the evolving needs of both customers and consumers in food production which supports the State governments general intention in ShapingSEQ to generate additional sustainable jobs and infrastructure.

Agriculture occupies 88.4% of Queensland's land area, with 57,000 people employed in Agriculture, Forestry and Fishing. Another 46,700 people are employed in Food and Timber Processing. Horticulture is worth $4.5 billion to the Queensland economy, while Agriculture is the second largest export commodity earner, contributing more than $16.8 billion to the State economy (Qld Agricultural Snapshot 2018, Department of Agriculture and Fisheries). In the Scenic Rim, the Agriculture, Forest and Fishing sector is the largest, representing 26.7 % of total businesses in the region, with a turnover of $252.7million (SRRC Economic Brief 2017).

Kalfresh estimates an initial investment of $26 million would be required for site development to allow sales (including construction of sewage and water treatment) and $19 million for the construction of the bioenergy facility. The proponent plans to expand its own business by investing $5 million in two new facilities for organic vegetable and snacking production within the proposed industrial precinct. The construction of the industrial precinct has the potential for further capital investment of up to $291 million by the attraction of additional food production and manufacturing businesses to the precinct.

At the heart of the SRAIP proposal is the belief that the region has the capacity, location and natural resources to take advantage of the growing demand for Australian produce. Kalfresh, together with its development partners, is committed to promoting sustainable growth in food production, which will attract new skills and social diversification to the region, aligning with the Scenic Rim Regional Council's guiding principles, outlined in the *Scenic Rim Community Plan 2011-2026*.

This plan highlights the need for development to sustain rural industry, maintain local employment, support the right to farm and help rural industries to prosper, innovate and adapt. It also promotes the need to encourage local investment and support local business by creating conditions that attract business and industry that is compatible with the Scenic Rim lifestyle and environment.

2.1.3 SRAIP

Kalfresh intends to create a fully integrated agricultural processing precinct, the SRAIP, on the subject site at the existing Kalbar operating base.

The concept of SRAIP was born out of a need for growth within the existing business and driven by the unique opportunity to create regional growth through the integration and consolidation of a diverse range of rural production activities and rural industries in one centralised locality.

Kalfresh proposes to create a place where primary and secondary high value rural activities are located within close proximity to each other to create opportunities not realised in the typical food-to-retailer system.

The SRAIP proposal provides for approximately 40 hectares of developable land for rural industrial infrastructure primarily for the packing and production of high value secondary produce and the ancillary services and infrastructure required to operate such a precinct. High value cropping land will be maintained surrounding the site to the east, north and south of the site.

The SRAIP will:

- Encourage stable, year-round, employment in a region of low job growth or diversity
- Enable the diversification of rural industry activities in the region
- Encourage the diversification and intensification of rural production activities in the region through demand and opportunities created for expansion

- Reduce regional waste of food by-products
- Reduce the carbon footprint of end products

As a result, the Coordinator General declared the SRAIP a coordinated project for which an impact assessment report (IAR) is required, pursuant to Section 26(1)(b) of the *State Development and Public Works Organisation Act 1971*.

2.2 Coordinated Project Process

A coordinated project is declared by the Coordinator General when the project has:

- complex approval requirements, involving local, State and Federal government
- significant environmental effects
- strategic significance to the locality, region or State, including for the infrastructure, economic and social benefits, capital investment or employment opportunities it may provide
- significant infrastructure requirements

The SRAIP was declared as it has:

- complex approval requirements
- strategic significance to the locality, region or state, including for the infrastructure, economic and social benefits, capital investment or employment opportunities it may provide
- significant infrastructure requirements.

The coordinated project process is as follows:

1. Project declared ‘coordinated’
2. Proponent prepares draft IAR
3. Draft IAR public released
4. Coordinator-General evaluates draft IAR and public submissions
5. Coordinator-General requests additional information (if required)
6. Revised draft IAR provided (may be publicly notified)
7. Coordinator-General accepts final IAR
8. Coordinator-General releases report on IAR
9. Development approvals

As noted in Step 3 and Step 6 above, the public have the opportunity to comment on the Draft IAR and the Revised Draft IAR (if the Coordinator General deems this necessary).

2.3 Purpose of this IAR

The purpose of this IAR is to:

- Assist the Coordinator-General in assessing the project’s environmental impacts and propose mitigation measures in the form of an evaluation report.
- Provide the information necessary to assist the Coordinator-General making a recommendation to progress with the project subject to conditions and recommendations designed to ensure the project’s environmental impacts are properly managed.

2.4 Scope of IAR

The scope of this IAR is for all aspects of the proposed SRAIP on the subject site.

2.5 Assumptions

The following assumptions were made in the development of this report:

- Environmental values established through Queensland Government supplied mapping and data has been reviewed in desktop assessments and ground-truthed by site visits to reflect actual site conditions.
- Water requirement for the SRAIP are based on estimates for the proposed land uses and agricultural purposes as per typical water consumption for these uses.
- SEQWater will provide medium and high priority water allocations to the SRAIP project from Warrill Creek to service the water needs for the SRAIP long term.
- Workforce demands for full development of the SRAIP have been estimated based on the proposed land uses.
- Gross production value for full development of the SRAIP are based on estimates for the proposed land uses.

2.6 Statement of limitations

This report has been prepared by RPS for Kalfresh and may only be used and relied upon by Kalfresh for the purpose agreed between RPS and Kalfresh as set out in Section 2.3 of this report.

RPS otherwise disclaims responsibility to any person other than Kalfresh arising in connection with this report. RPS also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by RPS in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. RPS has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared and submitted.

These opinions, conclusions and any recommendations in this report are based on assumptions made by RPS described in this report (Section 2.5 of this report). RPS disclaims liability arising from any of the assumptions being incorrect.

RPS has prepared this report on the basis of information provided by Kalfresh and others who provided information to RPS, which RPS has not independently verified or checked beyond the agreed scope of work. RPS does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2.7 Overview of Structure of Draft IAR

This draft IAR is in accordance with the following structure:

1. Project site
2. Project description
3. Project approvals
4. Summary of environmental values
5. Impacts and mitigation
6. Planning needs assessment

3 PROJECT SITE

3.1 Site Particulars

The subject site (the site) is situated at 6200-6206 Cunningham Highway, Kalbar QLD 4309. Kalbar is situated 65 kilometres south west of Brisbane, the capital of Queensland, and 40 kilometres south west of the regional centre of Ipswich. The real property descriptions of the lots comprising the site are Lot 1 on RP216694, Lots 2-4 on SP192221, Lot 2 on RP20974, and Lot 2 on RP44024. The site comprises an area of approximately 250 hectares.

The site particulars are identified in Table 1 below.

Table 1: Site particulars

Site Particulars	
Site Address	6200-6206 Cunningham Highway, Kalbar QLD 4309
Real Property Description	Lot 1 on RP216694, Lots 2-4 on SP192221, Lot 2 on RP20974, and Lot 2 on RP44024
Site Area	246.71 hectares
Land Owner(s)	Kallium Pty Ltd (A.C.N. 100 406 157)

The site is shown in Figures 1-3 below.

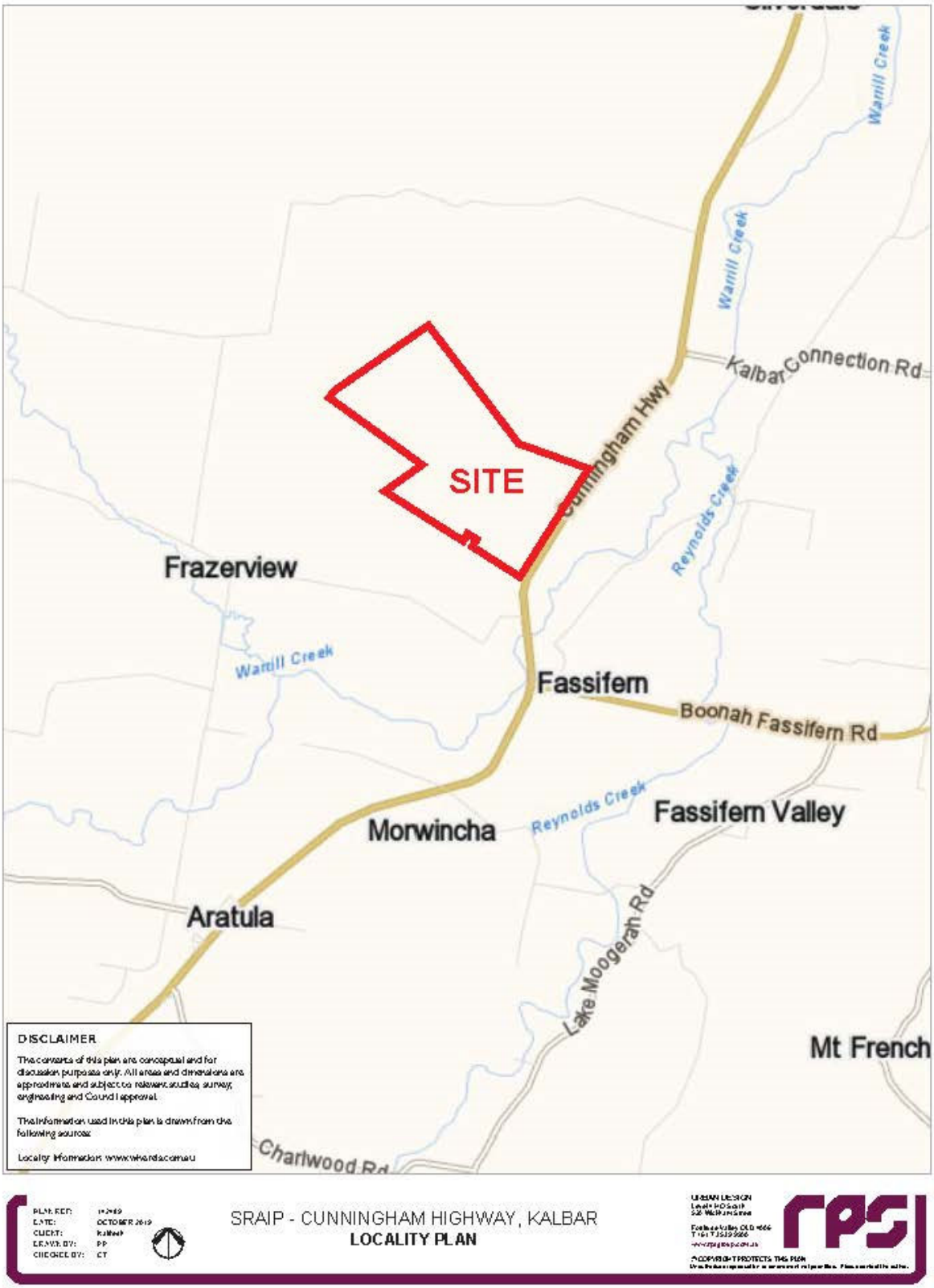


Figure 1 Locality Plan

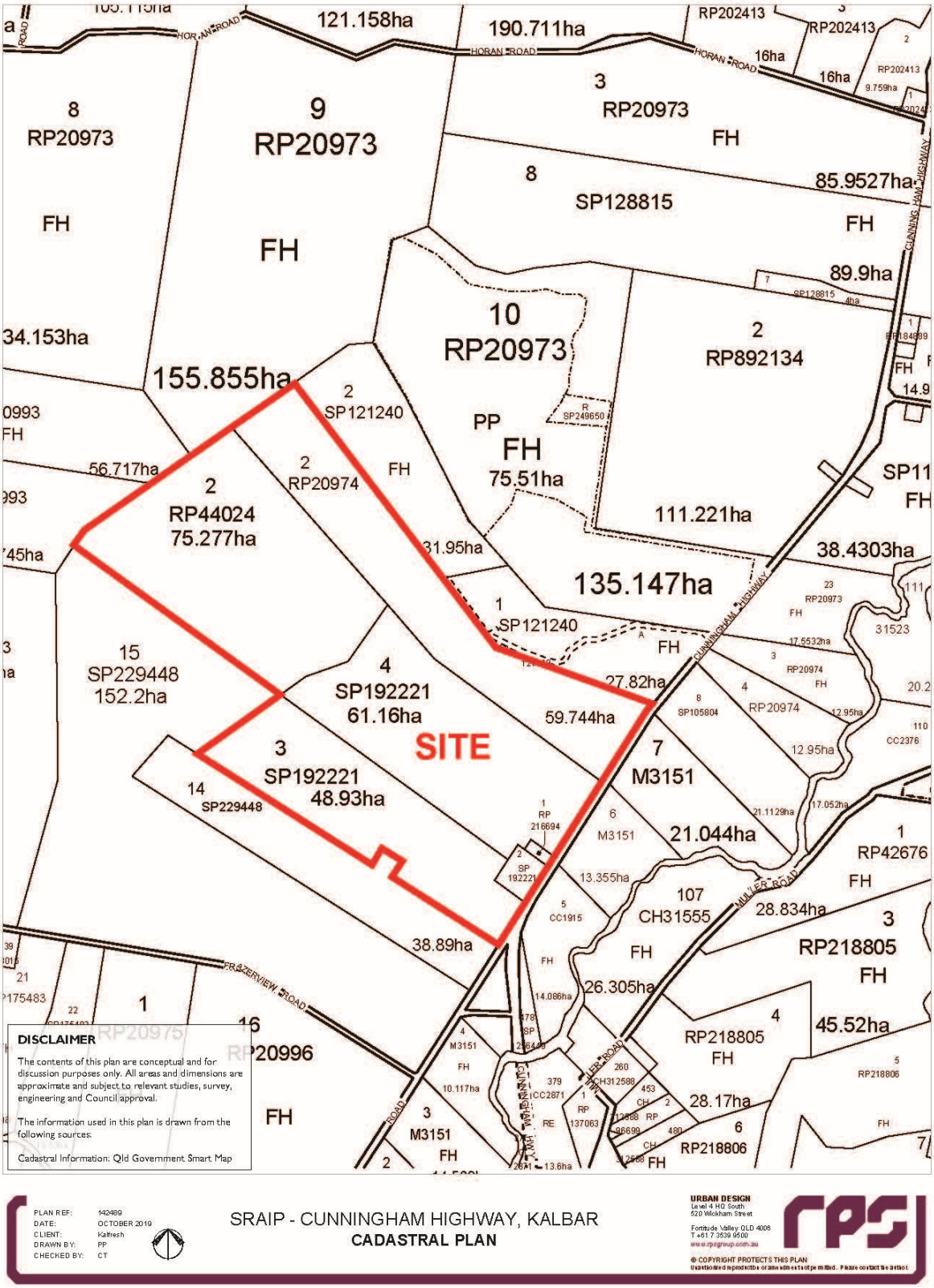


Figure 2 Cadastral Plan

Figure 3 Aerial Photograph

3.2 Location

3.2.1 Regional Context

The site is situated in the Scenic Rim local government area and Fassifern Valley.

The Scenic Rim is ideally located between the major regional hubs of Brisbane and Toowoomba, and is identified in ShapingSEQ as being a priority agricultural area with a reputation as one of the most fertile farmland areas in the world, and its role as Australia's 'food bowl', growing the most diverse range of commercial fruit and vegetables in Australia.

The Fassifern Valley is ideally suited to large scale rural production, with a history in agricultural production dating from the 1870s. The Regional Context is shown below in Figure 4.

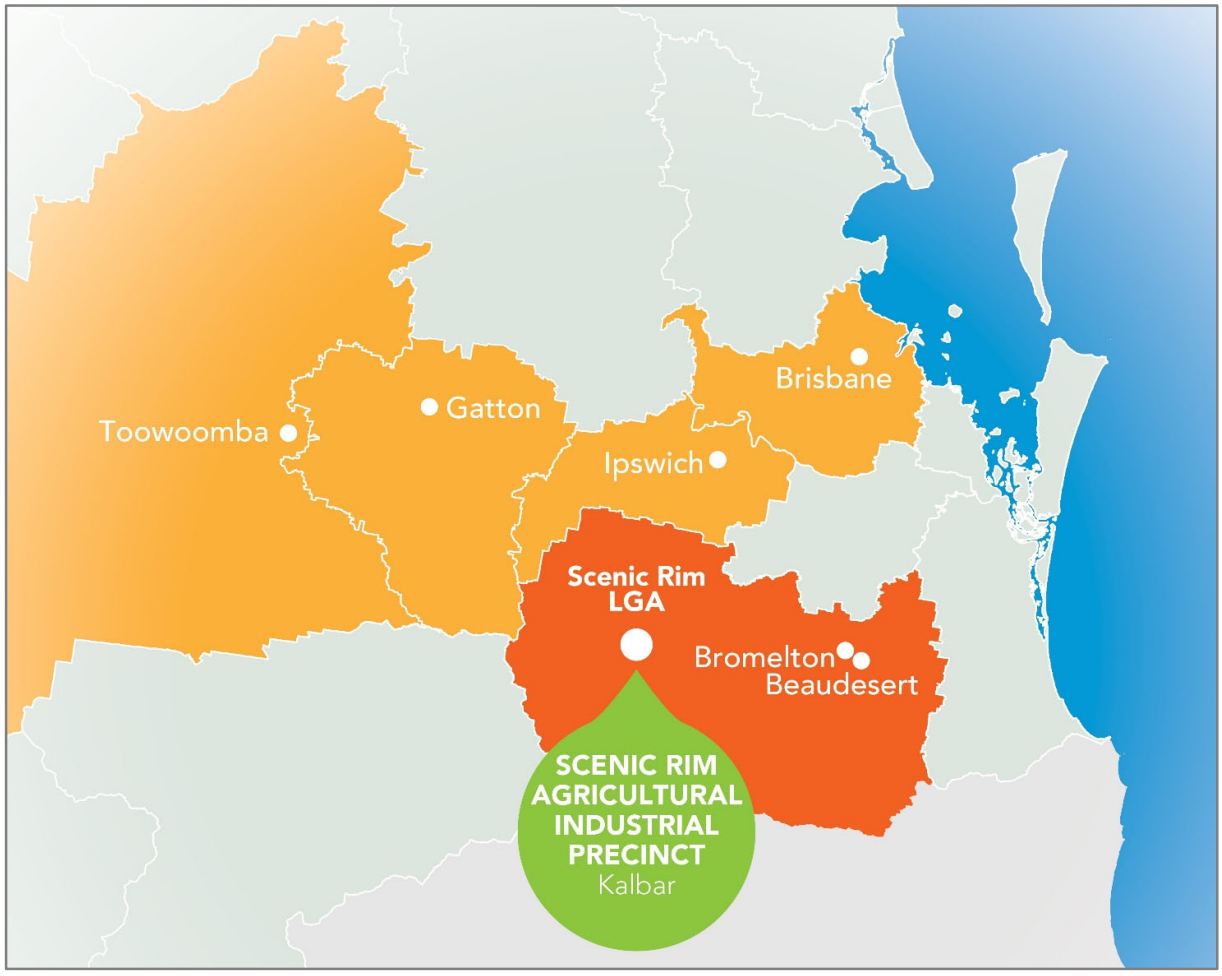


Figure 4 View of existing structures on site looking south west from Cunningham Highway

3.2.2 Local Context

The site fronts the Cunningham Highway which is a State controlled road connecting Ipswich with the Darling Downs region.

The site is located on the western edge of a strip of croplands that follow the productive floodplain of Warrill Creek.

An existing quarry is situated directly west of the site on Lots 14 and 15 on SP229448.

An additional quarry ('the Frazerview Quarry') is proposed over Lot 9 on RP20973 and Lot 2 on RP20974, which is a lot contained within the site, for the purposes of providing access and a haulage route to the Cunningham Highway. This proposed quarry is currently undergoing assessment by Scenic Rim Regional Council (Council Application Ref: MCU19/005) and the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP).

The site is situated four kilometres west of Kalbar, a township within the Scenic Rim local government area. Kalbar had a population of 1093 at the 2016 census and contains 453 households. Kalbar offers a range of services including shopping facilities, a civic centre, hotel, showgrounds, school, historical churches, a retirement village and parks and gardens.

3.3 Existing land use, structures, frontage and access

Kalfresh's existing facilities are established on Lot 1 on RP216694, Lot 2 on SP192221 and Lot 4 on SP192221 in the form of large warehouses and water tanks servicing the development. Cropping areas are established towards the Cunningham Highway frontage of the site. Undeveloped land is situated on the remainder of the site moving west from the Cunningham Highway.

Kalfresh's existing facilities involve processes for receiving unprocessed fruits and vegetables from local farms and processing, packaging and distributing the produce to domestic and international vendors. The existing site provides the following facilities:

- Workshop Area
- Carrot Unloading
- Carrot Processing
- Office
- Onion Packing
- Onion Grading
- Onion Drying Warehouse
- Pumpkin Washing and Packing Shed
- Shared Fire and Water Recycled Water IML

Views of the existing conditions on the site from aerial view and the Cunningham Highway are shown below in Figures 5-8.

Figure 5 Aerial view of existing Kalfresh operations (Cunningham Highway in foreground)

Figure 6 View of existing structures on site looking west from Cunningham Highway

Figure 7 View of existing structures on site looking south

Figure 8 View of site looking west into Lot 3 on SP192221 from Cunningham Highway

The subject site has frontage of approximately 1,215m to the Cunningham Highway.

The following access points exist to the subject site from the Cunningham Highway:

- Northern boundary of Lot 2 on RP20974

- Access across shared boundary of Lot 1 on RP216694 and Lot 2 on SP192221 providing access to Kalfresh's existing facility
- Two accesses on Lot 2 on SP192221 providing access to Kalfresh's existing facility

3.4 Topography, geology and soils

3.4.1 Topography

As evidenced by the site photos in Figures 5-8 above, the site is largely flat at approximately 90m AHD towards the Cunningham Highway frontage of the site and slopes upwards as it moves west towards the rear boundary of the site. The highest point of the site in the north east corner of Lot 2 on RP20974 is 190m AHD.

The existing contours of the site are shown on **Appendix A – SRAIP Concept Plans**.

3.4.2 Geology and Soils

The geology for the site is mapped as Quaternary: Flood plains, river terraces.

Local soil mapping 1:25,000 shows the site classified as Bromelton (eroded phase) with soils comprising dark clay loam or light clay with natural or alkaline structured clay subsoil.

Acid sulfate soils have not been identified for the site.

As evidenced by the existing farming use, the soil is particularly fertile and therefore lends itself to agricultural purposes.

3.5 Lawful Point of Discharge

The current lawful point of discharge is the current flow path that exits the site to the north. Refer to the Civil Engineering Report (**Appendix J**) for greater detail on the existing lawful point of discharge.

3.6 Hydrology

3.6.1 Flooding

The site is subject to both local and regional flooding.

Local flooding is caused by catchments west of the site draining through the north west portion on the subject site.

Regional flooding from the Warrill Creek catchment impacts via overflow from Warrill Creek located east of the development area.

3.6.2 Onsite surface waters

There are waterways mapped on the subject site within the ephemeral gullies. These are expected to flow seasonally or in a heavy rain event – ultimately flowing to Warrill Creek. These waterways are mapped as Queensland waterways – local and medium order which are shown on **Appendix A – SRAIP Concept Plans**.

There are a number of small dams which exist on the site, namely within existing Lot 2 on SP192221, Lot 3 on SP192221, Lot 4 on SP192221 and Lot 2 on RP20974.

3.6.3 Onsite groundwater wells / bores

There are a number of existing bores on the site:

- A registered sub artesian bore (RN138334) which has historically been used for agricultural purposes.

- Five unregistered operational bores within the bounds of Lot 2 SP192221.
- One unregistered bore within the bounds of Lot 3 SP192221 which is non-operational.

3.7 Surrounding land uses

Surrounding land uses comprise the following:

Table 2: Surrounding uses

Direction	Commentary
North	Directly north of the site is quarrying operations currently owned and operated by Wagners on Lots 1 and 2 on SP121240. Additionally, a quarry is currently under assessment within Lot 9 on RP20973 that will require a haulage route road connection to the Cunningham Highway through the subject site (Lot 2 on RP20974). GrowGreen Fertiliser is situated north of the subject site at 6089 Cunningham Highway, Kalbar (Lot 1 on SP121240). GrowGreen are specialists in the production of biological and organic fertilisers.
East	Directly east of the site is the Cunningham Highway with rural / cropping uses beyond. The Kalbar township is situated approximately 4 kilometres east of the site.
South	Cropping / rural uses exist directly south of the site. The township of Fassifern is located less than 1km from the subject site with Aratula situated approximately 5 kilometres south. Warwick is located 64km south west of the site.
West	Quarrying activities also occur on land to the south west of the subject site on Lots 14 and 15 on SP229448. Cropping / rural uses exist beyond this to the west of the site. Clifton is situated approximately 70 kilometres west of the site.

3.8 Sensitive Environments / Environmental Values

The closest sensitive environments to the site as mapped by various regulatory authorities and government agencies are detailed in Table 3 below.

Table 3: Closest Sensitive Environments

Sensitive Environment Element	Distance from site
Warrill Creek (MSES defined watercourse)	250 metres
State watercourses	Traverses site. Refer to **Ecology Assessment – Appendix O**.
Dam (located on Lot 1 on SP121240)	96 metres
Fish habitat and marine parks	None within 5km radius of site
Wetland protection area	None within 5km radius of site
Vegetation (MSES)	Located within the north west corner of the site.
Groundwater dependant ecosystem	The onsite watercourse and nearby Warrill Creek are mapped as moderate confidence alluvial aquifers with near permanent connection between surface water and groundwater
Mining lease permit	18km northeast of site
National Parks	Moogerah Peaks National Park ~ 5.1 km southeast of the site Main Range National Park ~ 13.7 km west of the site
World Heritage Area (WHA)	Main Range National Park ~13.7km west of the site
Native Title	Approximately 1km south of site

The closest sensitive uses (residential) range from being located within 95m-1430m of the site. However the 'residential use' located within 95m of the site (to the east of Lot 1 on SP121240) is utilised for industrial

purposes (fertiliser supply). Refer to **Noise Impact Assessment – Appendix P** for additional information in relation to the closest sensitive land uses.

3.9 Existing Infrastructure and Easements

3.9.1 Existing Infrastructure

3.9.1.1 Local Road Network

The site has frontage along Cunningham Highway to the east. The key roads related to the development are summarised in Table 4.

Table 4: Key Roads Related to Development

Road	Authority	Classification	Posted Speed Limit	Typical Form
Cunningham Highway	Department of Transport and Main Roads (DTMR)	State-controlled Road	100km/hr	Two lane, undivided, with shoulder
Kalbar Connection Road	DTMR	State-controlled Road	100km/hr heading west 80km/hr heading east	Two lane, undivided, with shoulder
Boonah Fassifern Road	DTMR	State-controlled Road	100km/hr	Two lane, undivided, with shoulder

3.9.1.2 State-Controlled Road

The Cunningham Highway is the key State-controlled road related to the development as the site has direct frontage of approximately 1,200m. There are no known upgrades of the State-controlled road directly fronting the site. Figure 9 below shows the Cunningham Highway in relation to the site.

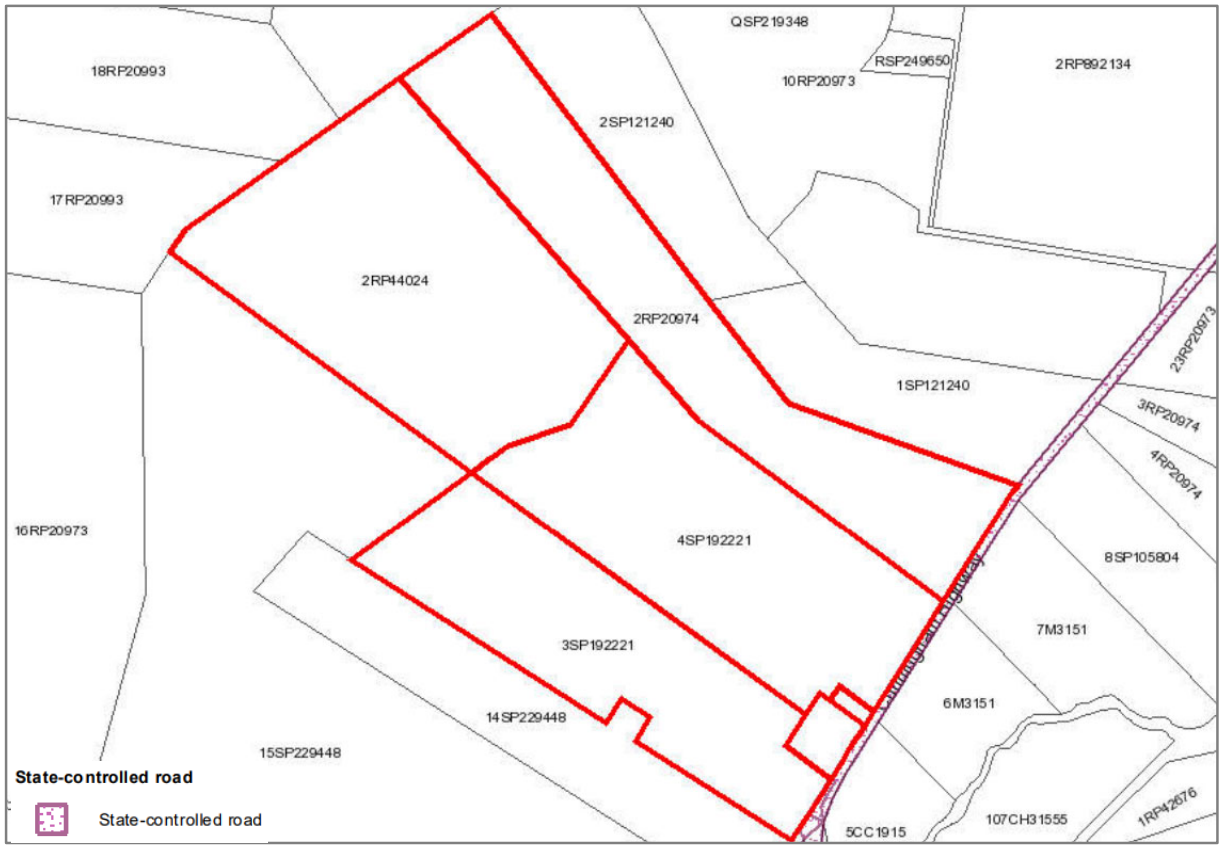


Figure 9 Cunningham Highway (State-controlled road)

3.9.1.3 Frazerview Quarry Proposed Road

The proposed Frazerview Quarry includes Lot 2 on RP20974 within the development application which is currently undergoing assessment by Council and DSDMIP (Council Application Ref: MCU19/005).

The new access is directly off the Cunningham Highway and is proposed to be utilised by all quarry traffic including both light and heavy vehicles. This means the road will be classified as a 'haulage route' and has been accommodated for in the proposed SRAIP, refer to Section 4 below for additional details.

The Frazerview Quarry development expects to produce 20 staff trips and 22 truck trips in the peak hour, which has been accommodated for within the SRAIP Traffic Assessment (**Appendix N**). The design vehicle for the quarry is a 25-26m long B-double with the possibility of 30-36m A-doubles, which has been accommodated for in the intersection design.

The indicative access layout in relation to Lot 2 on RP20974 and the proposed Frazerview Quarry is shown below in Figure 10.

As the access is proposed within the Frazerview Quarry development application, the design of the new intersection has been completed and is currently being assessed by Council and DSDMIP, more specifically the DTMR. The proposed intersection concept functional layout is shown below in Figure 11.

It is proposed to utilise this intersection for the SRAIP, as detailed further in Section 4 below.

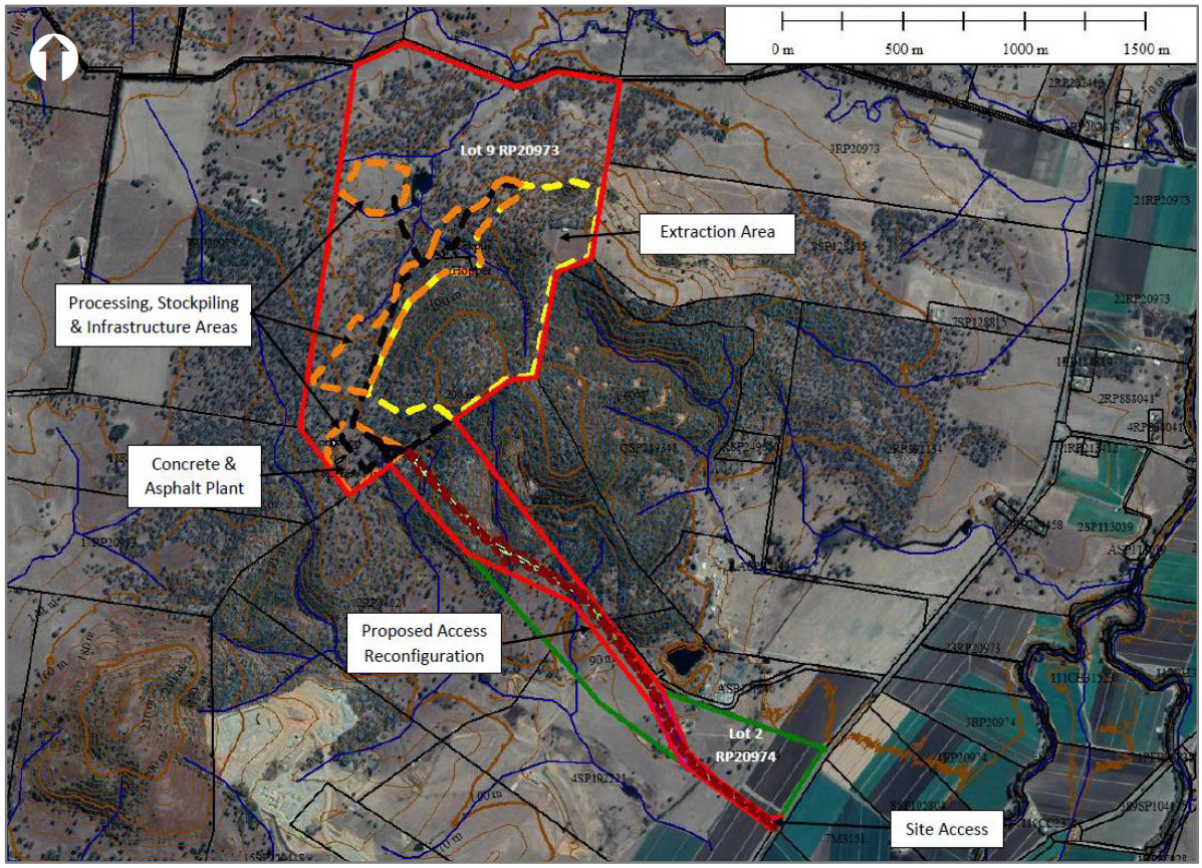


Figure 10 Proposed Frazerview Quarry Access

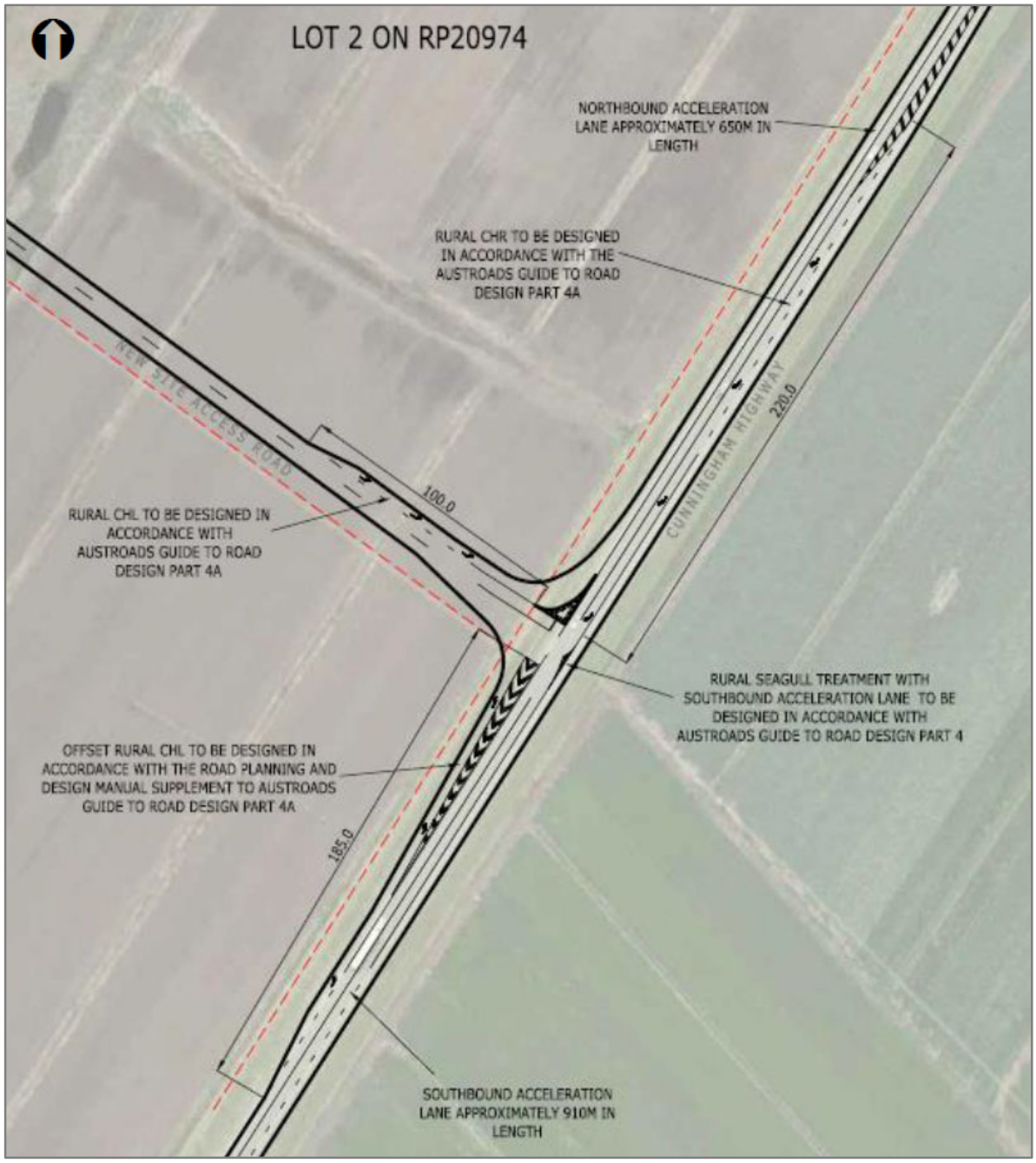


Figure 11 Proposed Cunningham Highway Intersection

3.9.1.4 Scenic Rim Regional Council LGIP

The Scenic Rim Regional Council Local Government Infrastructure Plan (LGIP) has been referenced to identify any future planned transport infrastructure in the vicinity of the development site.

The LGIP does not identify any future transport related upgrades in the vicinity of the site and indicates that the nearest upgrade would be within the Priority Infrastructure Area at Kalbar located 4.5km east of the site.

3.9.2 Easements

The following easements currently exist on the site:

Table 5: Easements for the site

Easements	• Easement A on Lot 1 on RP216694 for the purposes of right of way benefitting Lot 2 and 4 on SP192221 • Easement B in Lot 2 on SP192221 for the purposes of access benefitting Lot 3 and 4 on SP192221 The existing easements are shown below in Figure 12. The existing easements will be extinguished as part of the new SRAIP.

Figure 12 Existing Easements on Site

3.10 Waterways

DSDMIP identifies Queensland waterways for waterway barrier works (low and moderate stream orders) within the boundary of the subject site, as shown below in Figure 13. These waterways are also included on the **SRAIP Concept Plans – Appendix A.**

Figure 13 Queensland Waterways for Waterway Barrier Works

However, ground truthing of the above watercourses has occurred and the only existing waterway occurring on site is a large bunded drainage channel extending in a general south west to north east direction to the rear of the existing cropping areas. This drainage channel, coupled with historical cropping and earthworks, has altered water drainage across the immediate locality, conveying all stormwater and greywater in channelised systems and table drains northward through grazing and cropping lands before it enters a more natural water system pumped under the Cunningham Highway and draining into Warrill Creek.

3.11 Existing Water Management Processes

The following describes how water management processes currently operate within the site:

- The existing packing facility currently utilises water from local bores to wash and process produce.
- This water is collected, treated and pumped to a high point west of the existing Kalfresh facility and drainage channel where it is discharged into a perched table drain.

- The table drain has been cut into a contour of the hill in the west of the site to direct water around the hill to the northwest for polishing as overland flow through the centre of the site.
- This sheet flow of treated grey water disperses over a very broad and flat basin within the site.
- Sheet flow has created a broad, densely vegetated low basin area completely dominated by exotic weed growth which is under graze from stocked cattle which in turn, impacts the soil profile by trampling wet heavy clays.
- The sheet flow is captured by the channelised drain and dispersed northwards with other captured stormwater from the larger catchments to the south and west.

3.12 KRA141 Kangaroo Mountain

The site forms part of the 'resource / processing area' and 'separation area' of the Kangaroo Mountain Key Resource Area (KRA141) as identified in Figure 14 below. The KRA involves the extraction of quarry rock (and minor sand and gravel).

KRA141 is significant as a resource as it is well placed to supply the expansion of urban development in the ShapingSEQ regional place area. It is estimated to be sufficient for 50 years at the current level of demand for the Ipswich and Scenic Rim regions.

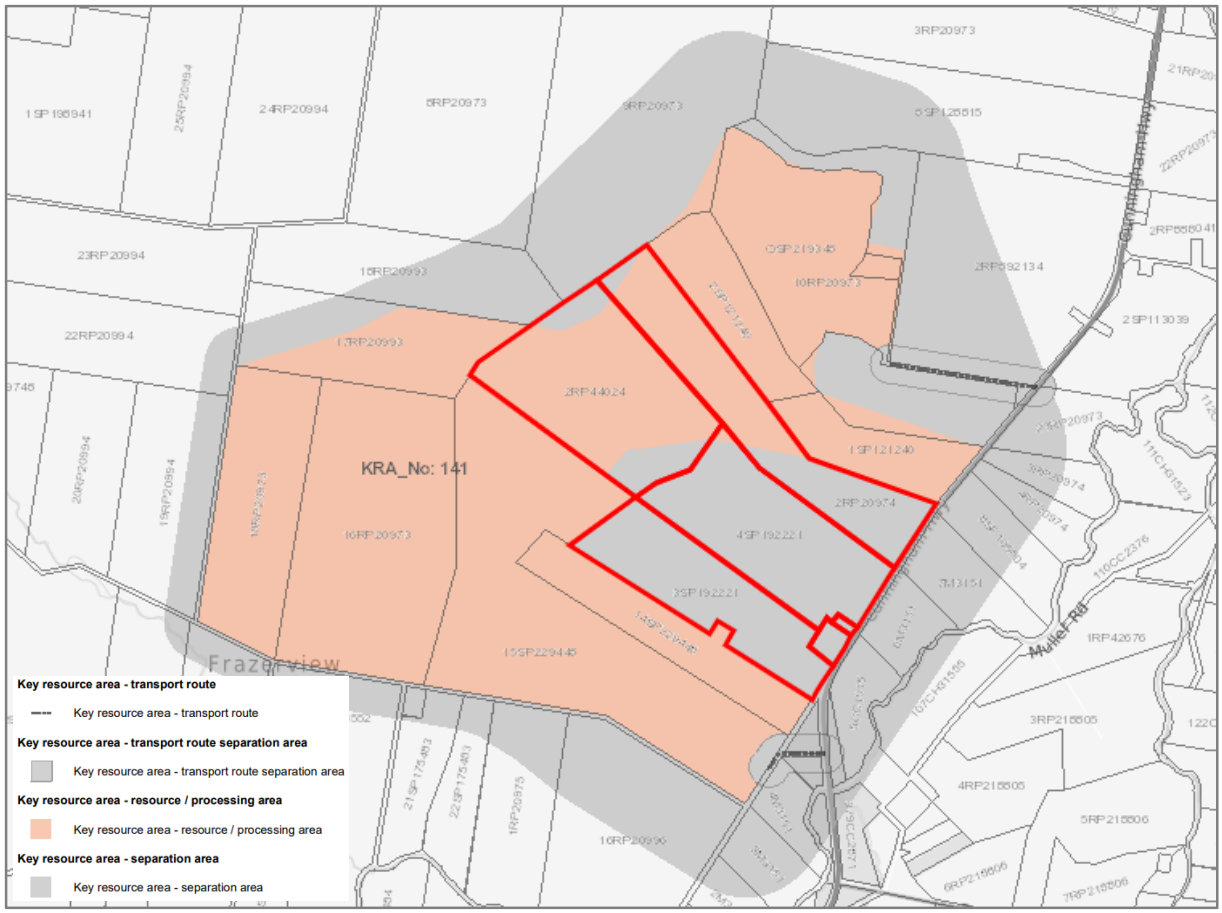


Figure 14 Kangaroo Mountain KRA 141

3.13 Contaminated Land / Environmental Management Register

The subject site is not contained on the Contaminated Land / Environmental Management Register.

The site contains a decommissioned cattle dip and service station which are notifiable activities. These have been reported to the Department of Environment and Science (DES).

3.14 Heritage Values

The site does not have known Aboriginal heritage significance in or adjacent to the site.

3.15 Socio-Economic Profile

The following sections provide the socio-economic profile for the Scenic Rim region.

3.15.1 Population and Age Profile

The Scenic Rim region has a critical mass of population with 42,583 residents and has historically experienced steady growth, increasing at an annual average growth rate of 1.8% over the past decade. Growth is projected to accelerate in the short-medium term, with an expected average annual growth rate of 22.4% between 2018 and 2031. Growth will continue over the following decade, albeit at a slightly slower pace, at 1.5% per year between 2031 and 2041. Total population within the Scenic Rim will surpass 50,000 people by 2025, with this figure increasing to beyond 67,000 by 2041, a 58.4% total increase from 2018's population.

Scenic Rim has a significant elderly population, relative to both the rest of the Scenic Rim population figures, as well as the Queensland benchmark of ageing residents. Accounting for more than 1 in 5 residents (20.5%), those aged 65 and over in Scenic Rim are the largest age cohort, followed by children aged 0 to 14 at 19.1%.

There is an apparent gap in younger, working age people, with those aged 25 to 34 making up just 8.9% of the Scenic Rim population, compared with the Queensland standard of 14.2%. Scenic Rim's share of those aged 15 to 24 and 35 to 44 are also below that of the Queensland benchmark, demonstrating the relative lack of working age people in the region.

In line with the ageing nature of Australia's population, Scenic Rim's elderly population is projected to grow, accounting for over 1 in 4 people by 2031 (26.4%), and almost 1 in 3 by 2041 (29.2%).

3.15.2 Socio-Economic Characteristics

Socio-Economic Indexes for Areas (SEIFA) is a range of four indexes produced by the Australian Bureau of Statistics (ABS) to rank areas in Australia according to relative socio-economic advantages and disadvantages. The information is based off census data, with the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD) one of the more commonly used outputs from the ABS's output. The index is based around a score of 1000 – areas with a score below 1000 are more disadvantaged, and those with a score above 1000 are more advantaged.

The IRSAD presents a value of 968 for the Scenic Rim Local Government Area, indicating a somewhat disadvantaged region. The Statistical Areas (SA) SA2s within the region present a broad range of relative advantage and disadvantage, with the Tamborine-Canungra identified as an area of relative advantage (1025), while Boonah and Beaudesert SA2s are disadvantaged, scoring 963 and 913, respectively.

Median income in the Scenic Rim region has historically been below that of the state of Queensland, however from 2011 to 2016 income growth was greater in the Scenic Rim than the state benchmark. Median Weekly Household Income in Scenic Rim grew from $1,013 in 2011 to $1,222 in 2016, a total increase of 20.6%. This is in comparison to Queensland that grew from $1,235 to $1,402 in the same time frame, an increase of 13.5%.

Unemployment figures in the region have broadly followed the trend of Queensland's overall unemployment over the past decade. Over 2014 and 2015 Scenic Rim's unemployment increased above the State standard, though since 2016 Scenic Rim's unemployment has balanced between 5% and 6%, below Queensland's rate of unemployment.

Further analysis into the region's unemployment shows that both Boonah SA2 and Tamborine-Canungra SA2 have experienced low unemployment rates over the past decade. Since December 2010, Boonah's unemployment rate has averaged 4.3%, with Tamborine-Canungra marginally higher at 4.7%. Beaudesert SA2 has had a structurally higher unemployment, with greater fluctuations and a higher average at 8.5% in the same time period.

3.15.3 Agriculture and Industry

Agriculture, Forestry and Fishing as an industry accounts for the largest share of employees in the Scenic Rim region, with nearly 1 in 7 people (13.3%) employed in the sector. Agriculture, Forestry and Fishing accounts for just 3% of employment in Queensland, indicating the strength of the industry in the Scenic Rim.

Health Care and Social Assistance is another significant contributor to the local labour force (11.5%), with Education and Training and Accommodation and Food Services providing 11.0% and 10.8% of jobs, respectively. A deeper look at agricultural employment in Scenic Rim shows that sheep, beef cattle and grain farming accounts for 4.1% of employment, with dairy cattle farming and mushroom and vegetable growing also key employers in the region (1.9% and 1.8%, respectively).

A majority of businesses in Scenic Rim are non-employing organisations, with two thirds (66.8%) of businesses operating without any employees, higher than the Queensland benchmark of 62.4% of non-employing businesses. 31.8% of Scenic Rim businesses have between 1 and 19 employees and 1.5% of businesses with between 20 and 199 employees. There is an absence of big businesses based in the region, with zero companies reporting more than 200 employees.

Non-residential building approvals have fluctuated significantly over the past 5 years, with no substantial trends or signs of stability in the region. After a productive 2016/17 financial year in which over $92m in non-residential buildings were approved, 2017/18 saw just $16m in value. 2018/19 recovered to over $47m, though still much lower than the lofty standards set in 2016/17.

Given the lack of consistency in building approvals over the past half a decade in Scenic Rim, the past three years of developments were aggregated in order to establish which sectors have seen growth in buildings. 41% of non-residential building approvals have come from commercial buildings, with retail and wholesale trade buildings the most significant contributor. One third of approvals came from other non-residential buildings, such as aged care facilities, health buildings and short-term accommodation. Industrial buildings accounted for the smallest share in the past three years (26%), inclusive of agricultural buildings and warehouses.

3.15.4 Exports and Gross Regional Product

A majority of exports from the Scenic Rim region stay within Australia, with 94.2% of exports in 2017/18 within the domestic market, leaving just 5.8% of exports heading to international markets. Exports have historically grown at a relatively consistent rate, though a peak in 2012 saw a drop and stagnant level of exports until 2016. Value of exports have since surpassed 2012 levels, with 2017/19 producing $829m in domestic exports and $51m in international exports.

Similar to that of employment, exports from the Scenic Rim are also dominated by the agriculture industry. 2017/18 saw $380m of agricultural exports, accounting for 43.3% of all exports from the region. This was made up of $363.5m in domestic exports and $17.1m in international exports, indicative of the strength of the region as a domestic agriculture supplier. Food product manufacturing was the second most significant industry, with 10.4% of exports at a value of $91.9m. This presents a clear picture of the strengths of the Scenic Rim local economy, with the infrastructure and geographic positioning of the area fostering a relationship between agricultural producers and food product manufacturers.

A significant portion of agricultural value stems from livestock, which accounts for over half of the value of agricultural commodities in the region (55%). Vegetables are produced at a large scale in Scenic Rim, making up a fifth (20%) of the value of agricultural commodities, while dairy production is responsible for 12% of the regions agricultural output value.

Gross Regional Product is closely correlated with the level of exports, with GRP following a similar trend to export volume in recent history. After a slight peak in 2012, GRP was stagnant for several years, though the past two years have seen annual growth return, continuing the upward trajectory set pre-2012. Headline GRP was $1,768 in 2017/18 financial year, in real terms based off 2016/17 figures.

3.16 Stakeholder Engagement

To date, the following stakeholder engagement has been undertaken:

- **Presentation to the Scenic Rim Regional Council on 15 May 2017 (closed session) and 26 November 2018 (open session).**

  In relation to the first meeting, the intention was to provide background to the vision of the SRAIP, planning issues and how Kalfresh intended to appropriately deal with the known key issues of the proposal.

  The identified issues and solutions discussed in this meeting are outlined below. As evident, the final solutions proposed as part of this SRAIP proposal do not differ significantly from those originally put forward in Council meeting in May 2017.

  Issue 1: Flood Concerns

  Site is located adjacent to two major flow paths that flood (Overland flow path to NW and creek to SW of site)

  Engineering Solution:

  – The current Kalfresh site did not flood in 2011, 2013 or 2017
  – Site to be filled (where required) to provide allotments above major storm flood levels
  – 50m wide drainage corridor proposed to NW to divert existing overland flows
  – Compensatory filling so doesn't have a flood impact upstream or downstream

  Flood Study Completed which confirms an engineering solution can adequately manage flood waters and the proposed development would have no material impact on downstream or upstream neighbours

  Issue 2: Traffic Concerns

  Subdivision access from Cunningham Highway.

  Engineering Solution:

  – Proposed new subdivision access road from Frazerview Rd (not direct from Cunningham Highway) and an upgraded access with turning lanes at the north of the site.
  – Improved safety to public – new intersection proposed to the SRAIP / Frazerview Quarry

  Issue 3: How to ensure the integrity of the precinct is maintained

  When lots are sold, there is a need to ensure the integrity of the precinct is maintained i.e. the precinct is for agricultural related activities.

  Solution: Proposed to have covenants for each lot to ensure the character is maintained for 'agricultural related activities' only.

  Issue 4: How to mitigate the stormwater treatment issue

  Subdivision will require water quality and quantity controls.

  Solution: Internal road to convey all development runoff to treatment area

  Issue 5: How to mitigate the sewer reticulation issue

  Sewer system and treatment at isolated location

Engineering Solution:

- Sewer reticulation gravity system proposed
- Sewer on site treatment plant proposed
- Trunk Sewer main to site therefore not required.

Issue 6: How to mitigate the water reticulation issue

Source of water supply for potable and non-potable water

Engineering solution:

- Domestic / industry (potable) water reticulation system proposed from bore water
- Firefighting water (non-potable) supply for subdivision provided from fire water tanks

- **Since the coordinated designation was received in May 2019, Kalfresh has remained in close and regular contact with officers and elected representatives from Scenic Rim Regional Council. These informal discussions have kept SRRC up to date on the coordinated project progress, particularly around key issues of employment and social impact modelling, renewable energy and infrastructure requirements.**
- **Discussions with the local State Member (Jon Krause MP) and Federal Member (Scott Buchholz MP) who are supportive of the proposed development**
- **Ongoing discussions are occurring with local farmers who will ultimately be involved in supplying businesses occupied in the SRAIP (crop growers for the Kalfresh facilities) who have indicated initial support for the proposed SRAIP**

3.17 Community Action Plan

As committed to in the IAS, a Community Action Plan (CAP) has been developed as part of this IAR process.

The CAP for the SRAIP is as follows:

- Letters to adjoining owners regarding the proposed SRAIP, where to find details on the IAR and how to have their say on the development (regulatory notification requirement)
- Public signs on the Cunningham Highway frontage of the site advertising the proposed SRAIP, where to find details on the IAR and how to have their say on the development (regulatory notification requirement)
- Ads in the local newspapers surrounding the SRAIP advertising the proposed SRAIP, where to find details on the IAR and how to have their say on the development (regulatory notification requirement)
- Hard copies of the draft IAR application in all local libraries within close proximity to the SRAIP (regulatory notification requirement)
- Following the preceding actions, the notification period will commence for a period of six weeks to enable members of the public to review the draft IAR application and have their say via formal submissions
- Due to the restrictions relating to COVID-19, Kalfresh will co-ordinate a number of stakeholder engagement sessions via web-based consultation platforms. These sessions would be limited to small, manageable numbers and could be grouped by interest group/interest area. RPS and relevant consultants will be available to respond to questions. These sessions will be scheduled to meet community demand.
- Kalfresh will also ensure information about the SRAIP is available on their website and will make available key staff to respond to enquiries, either via phone, email, or video link.

- Kalfresh will engage with local community and interest groups, including growers, suppliers, industry bodies, and the Chambers of Commerce.
- The Kalfresh directors have maintained close contact with the Scenic Rim Regional Council and will continue to keep Council staff, and the new Council, informed regarding SRAIP plans.
- Formal submissions, community feedback from the zoom sessions and community enquiries will be managed and tracked by Kalfresh, RPS and the Coordinator General office as the project progresses.

4 PROJECT DESCRIPTION

4.1 Overall Intent

The SRAIP will be a fully integrated agricultural processing precinct to be established on the site.

The concept of SRAIP was born out of a need for growth within the existing Kalfresh business and driven by the unique opportunity to create regional growth through the integration and consolidation of a diverse range of rural production activities and rural industries in one centralised locality.

The SRAIP proposes to create a place where primary and secondary high value rural activities are located within close proximity to each other to create opportunities not realised in the typical food-to-retailer system.

The SRAIP proposal provides for approximately 40 hectares of developable footprint for rural industrial infrastructure primarily for the packing and production of high value secondary produce and the ancillary services and infrastructure required to operate such a precinct. High value cropping land will be maintained surrounding the site to the east, north and south of the site.

The SRAIP will:

- Encourage stable, year-round, employment in a region of low job growth or diversity
- Enable the diversification of rural industry activities in the region
- Encourage the diversification and intensification of rural production activities in the region through demand and opportunities created for expansion
- Reduce regional waste of food by-products and
- Reduce the carbon footprint of end products.

4.1.1 Proposed Development Layout

The proposed SRAIP involves the following elements:

- The creation of 16 industrial allotments within the SRAIP development footprint
- 22m wide private road to be held in a body corporate arrangement servicing the 16 industrial allotments and providing access from the Cunningham Highway to the proposed Frazerview Quarry Access via the one access point proposed from the highway
- Kalfresh will own and retain the Lots 5-7 and 9 to enable expansion of their facilities
- A bio-energy facility on Lot 11 (herein referred to as the ‘digester’) to create fertiliser for local crops from the food waste generated by the Kalfresh facility. The digester will also create a biofuel sustainable power source which is to bed fed into the electrical system to supply the SRAIP. Digestate irrigation is proposed west of Lot 11 and has an area of 18 hectares. Digestate storage is also proposed.
- One drainage lot containing a stormwater basin in the northern corner of the development footprint
- A proposed overland flowpath which ‘wraps’ the SRAIP development footprint to provide the new lawful point of discharge for the SRAIP
- A composting site for the production of nutrient rich compost, intended to be used on Kalfresh crops and sold to local and other regional farms. The composter comprises of two windrow pads, feedstock holding bay, finished product and storage area, plant and equipment storage, parking and office amenities, four leachate pond / dams. Road connections to the composter from the proposed haulage route and an existing access track maintained from proposed Lot 11
- Proposed effluent irrigation with an area of 2 hectares
- Two proposed dams

- An Environmental Protection Area (EPA) which covers the area of site with existing State protected vegetation. Clearing within the EPA is subject to future investigation / approvals.

The proposed development layout is shown below in Figures 15 and 16:

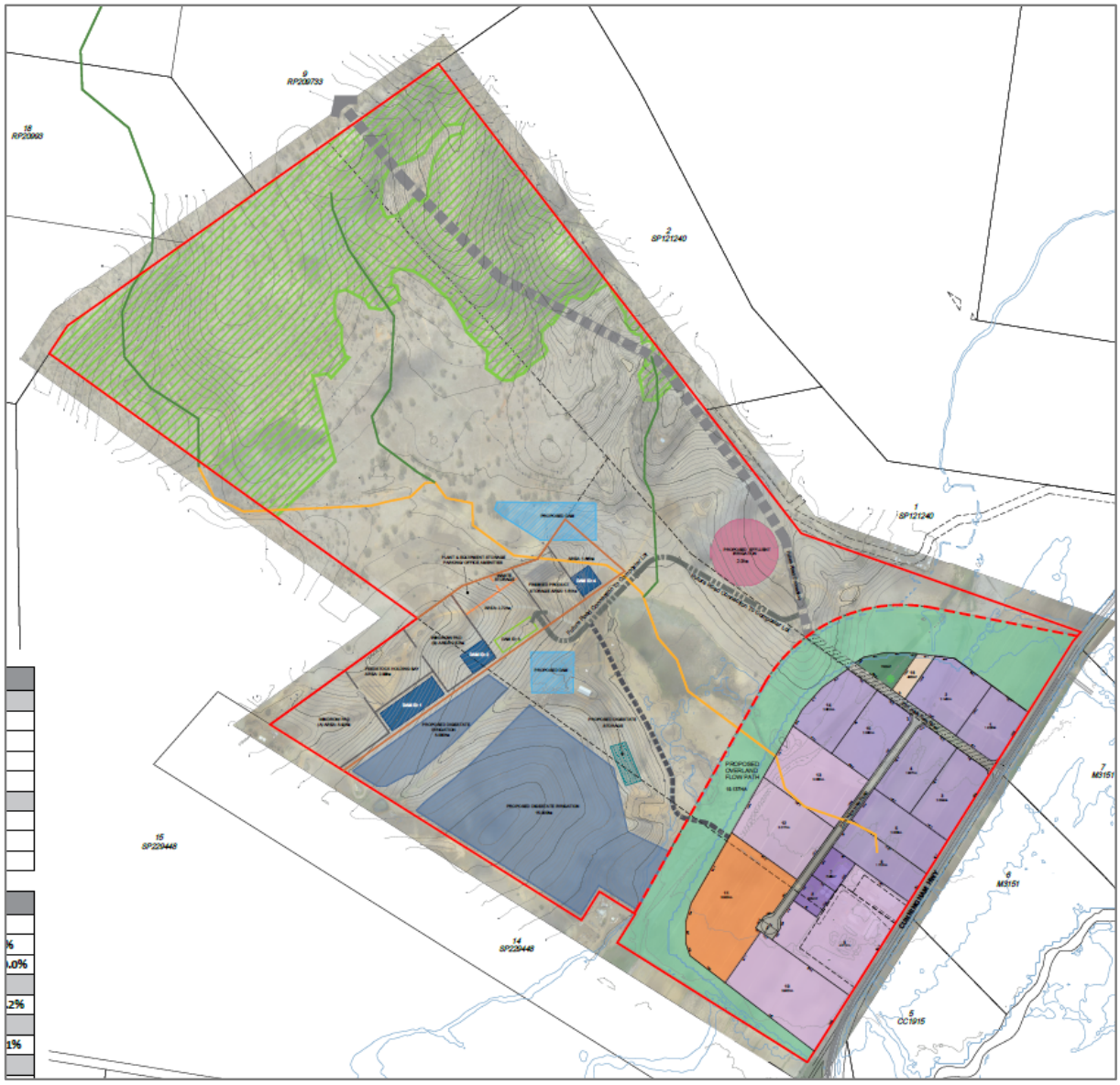
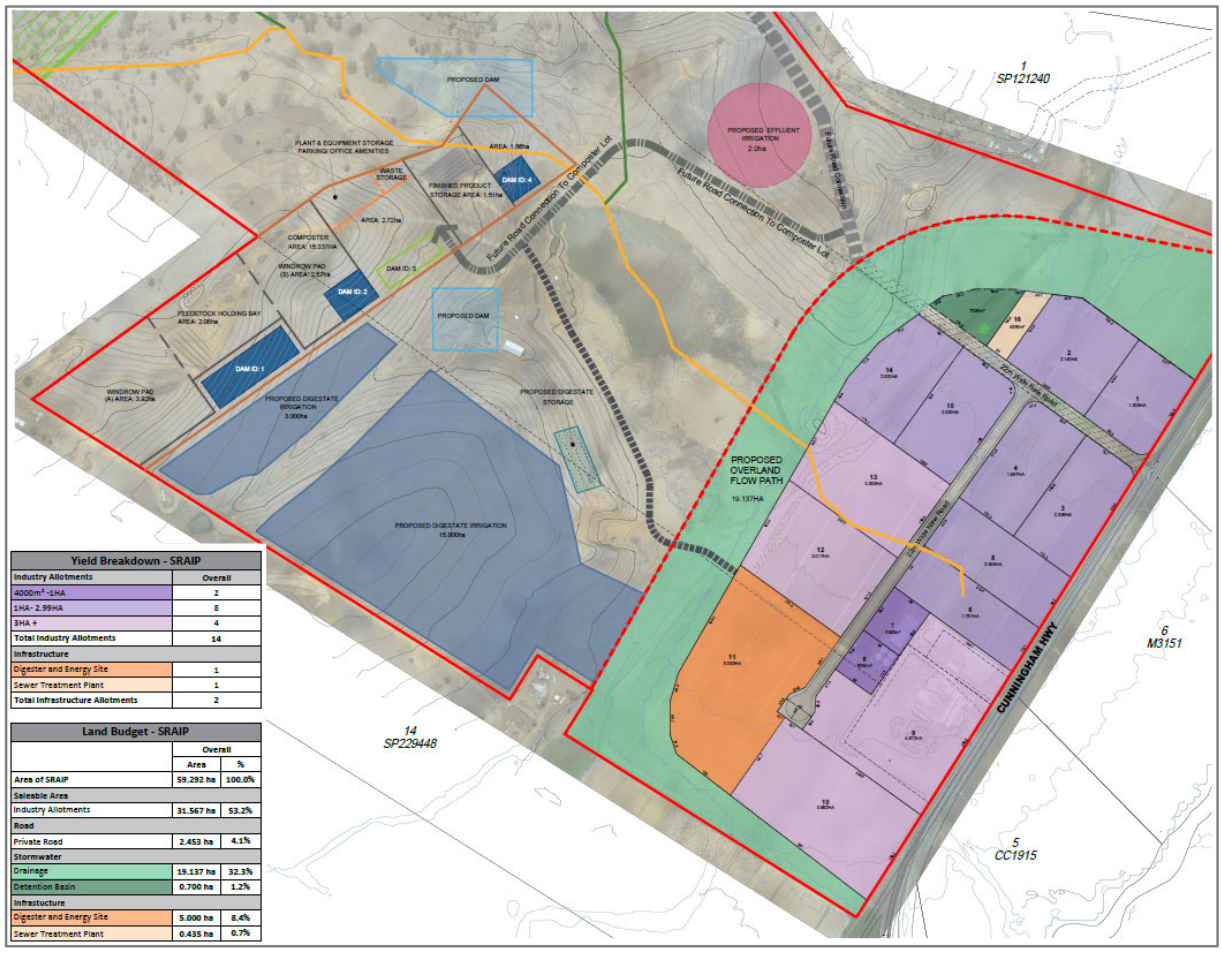


Figure 15 Overall SRAIP Concept Layout



Yield Breakdown - SRAIP	
Industry Allotments	Overall
4000m² -1HA	2
1HA- 2.99HA	8
3HA +	4
Total Industry Allotments	14
Infrastructure	
Digester and Energy Site	1
Sewer Treatment Plant	1
Total Infrastructure Allotments	2

Land Budget - SRAIP	Overall	
	Area	%
Area of SRAIP	59.292 ha	100.0%
Saleable Area		
Industry Allotments	31.567 ha	53.2%
Road		
Private Road	2.453 ha	4.1%
Stormwater		
Drainage	19.137 ha	32.3%
Detention Basin	0.700 ha	1.2%
Infrastucture		
Digester and Energy Site	5.000 ha	8.4%
Sewer Treatment Plant	0.435 ha	0.7%

Figure 16 SRAIP Concept Layout

4.2 Development Aspects

The SRAIP involves the following development aspects:

4.2.1 SRAIP Variation Request

4.2.1.1 Overview

The variation approval sought by this application will set up a framework for subsequent development applications (material change of use, reconfiguring a lot and operational works) over the site.

Full details of the variation request are set out in the **SRAIP Variation Approval Documents – Appendix C.**

The variation request includes a proposed SRAIP precinct plan, plan of development, activity groups, level of assessment tables and development code.

It is intended that future applications over the site will be assessed against the variation request material as it will become an approved document.

The variation material responds to overring the *Scenic Rim Planning Scheme 2019* (the planning scheme) to be adopted by Council on 20 March 2020.

Additionally, the intent of the SRAIP variation request is that it will only apply once the SRAIP subdivision has been delivered and the lots are sealed and ready for development.

4.2.1.2 Proposed Precinct Plan

The proposed Precinct Plan is held at **Appendix C** and is shown below in Figure 17:

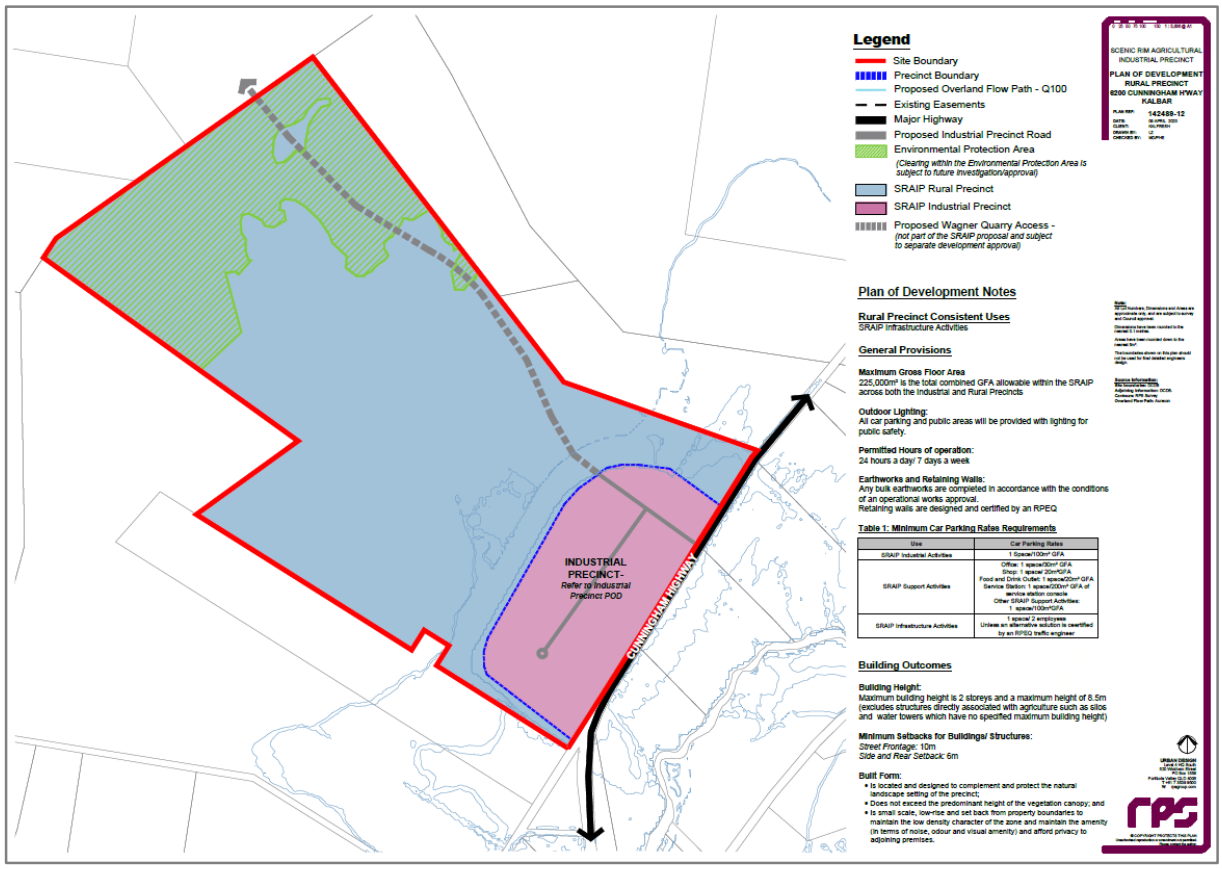


Figure 17 Proposed Precinct Plan

The Precinct Plan proposed as part of the variation request nominates:

- the SRAIP development footprint as the 'SRAIP Industrial Precinct'
- the remaining area of the site as the 'SRAIP Rural Precinct'

It is the intention that the variation request is structured in such a way that it will approve an SRAIP precinct under both the Industry and Rural Zones of the planning scheme.

The SRAIP industrial precinct is intended to accommodate a wide range of agricultural and industrial uses. Supporting activities are also envisaged in this precinct to support the primary uses occurring or to provide services to the future employees of the SRAIP.

The SRAIP Rural Precinct is intended to provide the area where the infrastructure activities required to support the Industrial Precinct are located (e.g. composting facility, digester irrigation and dams).

4.2.1.3 Proposed Plan of Development

The proposed SRAIP Plan of Development (PoD) is held at **Appendix C** and is shown below in Figure 18:

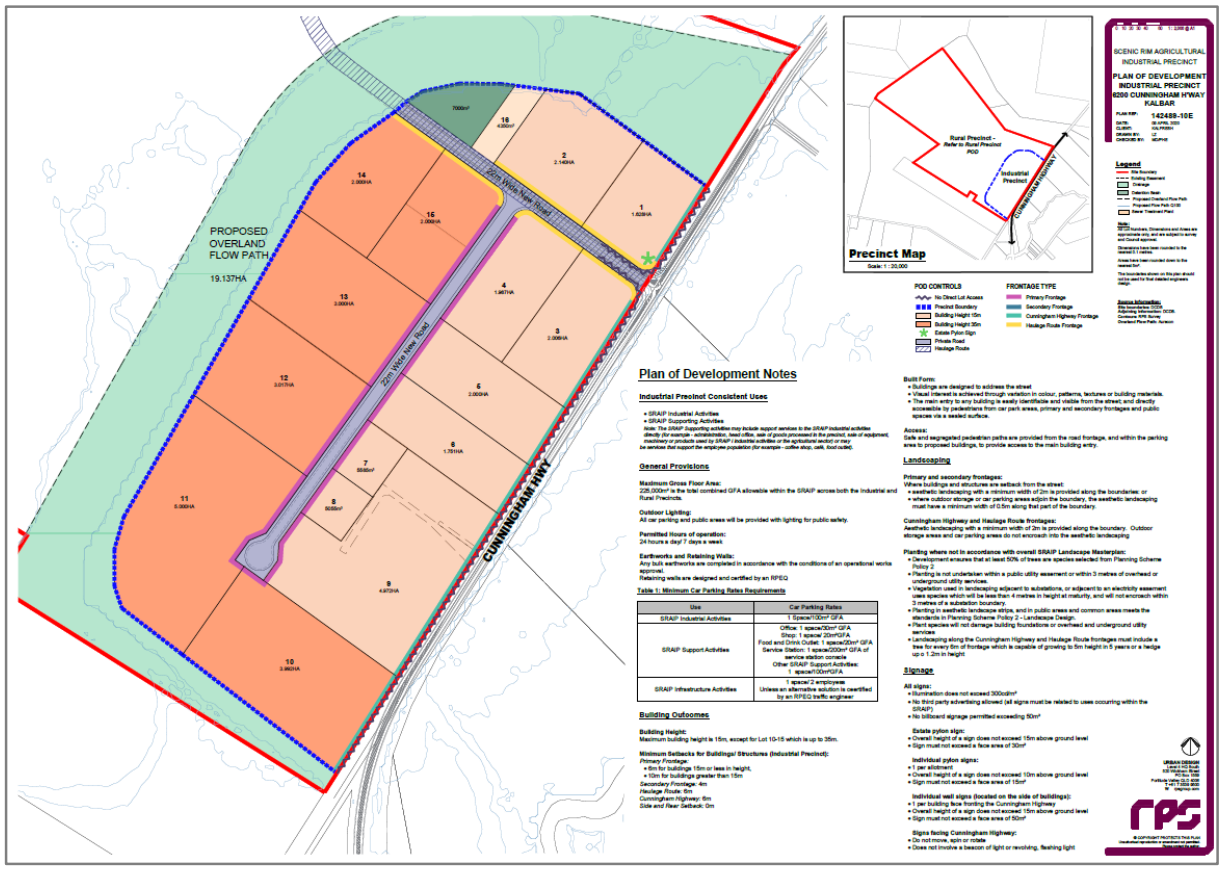


Figure 18 Proposed Plan of Development

The proposed SRAIP PoD will work in conjunction with the SRAIP Development Code to specify the provisions for establishing built form within the precinct.

The PoD specifically nominates:

- the consistent uses within each precinct
- maximum gross floor area of 225,000m^2 for the SRAIP
- maximum building height
- minimum setbacks for buildings and structures within the SRAIP Industrial Precinct
- built form provisions
- access limitation
- minimum car parking rates
- outdoor lighting provisions
- earthworks and retaining wall requirements
- landscaping requirements
- signage provisions

It is intended that where there is a conflict between the SRAIP PoD and planning scheme, the PoD prevails.

4.2.1.4 Proposed SRAIP Activity Groups, Level of Assessment Tables and Development Code

4.2.1.4.1 Activity Groups

The proposed SRAIP activity groups, level of assessment tables and development code are held at **Appendix C.**

The proposed SRAIP activity groups are:

- SRAIP Industrial Activities
- SRAIP Infrastructure Activities
- SRAIP Support Activities

The proposed land uses within these three activity groups are discussed specifically in Section 4.2.1.7 below.

It is the intention that once approved, these activity groups will be additional to those described in the planning scheme and will be applicable to development within the site only.

4.2.1.4.2 Level of Assessment

The proposed level of assessment (LoA) tables for Material Change of Use, Reconfiguring a Lot, Operational Works applications are held at **Appendix C**.

It is the intention that the SRAIP level of assessment tables will override the Industry and Rural level of assessment tables of the planning scheme, specifically for development within the site.

Material Change of Use

Simply, the proposed Material Change of Use LoA tables look to make the above uses:

- Where in the SRAIP Industrial Precinct: SRAIP Industrial and Support Activities are accepted development where complying with the SRAIP PoD and development code, or Code assessable.
- Where in the SRAIP Rural Precinct: SRAIP Infrastructure Activities are accepted development where complying with the SRAIP PoD and development code, or Code assessable.

Inconsistent uses will remain Impact assessable.

Reconfiguring a Lot (RoL)

Simply, the proposed RoL LoA seeks to make the following RoL applications Accepted development:

- Boundary realignment or reconfiguring a lot where:

1. creating no more than two ‘new’ allotments (i.e. 1 additional lot); or
2. Involving the proposed reconfiguration of land involving a community title scheme;

   AND

3. where any newly created lots can be demonstrated to be adequately serviced in accordance with the approved SRAIP Civil Servicing Report (and where not part of a community title proposal) are:
   - SRAIP Industrial Precinct: Greater than 2,000m^2; or
   - SRAIP Rural Precinct: Greater than 5ha

All other reconfiguring a lot applications, where not Accepted development, are proposed to be Code assessable.

While the proposed SRAIP subdivision is the envisaged final lot layout and no further subdivision is reasonably expected – the proposed RoL LoA table is to build in full flexibility for third parties buying into the

SRAIP to enable them to be able to reconfigure their lot to suit their purposes through a Code assessable application at a maximum.

The nominated lot sizes of 2,000m^2 in the SRAIP Industrial Precinct and 5ha in the SRAIP Rural Precinct are reasonable given the nature of the SRAIP for the following reasons:

- 2,000m^2 in the SRAIP Industrial Precinct will allow for uses requiring a smaller area to establish themselves in a feasible way – for example a Food and Drink Outlet to service the SRAIP could be held on its own individual allotment.
- The 5ha in the SRAIP Rural Precinct – similar to reasons above and additionally that the Rural Precinct will be buffered from the Cunningham Highway by the precinct once developed so smaller lot sizes will not impact on the perceived rural amenity of the area. Further, the use limitations built into the SRAIP Rural Precinct will ensure that this area is not overdeveloped.

Operational Works (OPW)

The SRAIP OPW LoA table seeks to vary the level of assessment for OPW applications in the SRAIP – refer to **Appendix C**.

The intent of the variations is to ensure standard requirements to 'ready' the sites for development are Accepted development where complying with the proposed SRAIP Development Code. For example, the following would be Accepted:

- Advertising device (where for signage associated with the SRAIP and complying with the signage requirements on the SRAIP PoD)
- Filling and excavation if for minor filling and excavation or where carried out in accordance with a development approval
- Operational Work associated with reconfiguring a lot (where compliant with the SRAIP PoD and certified by an RPEQ as compliant)
- Car park is carried out in accordance with a development approval, the SRAIP PoD and certified by an RPEQ as compliant.

The above are Code assessable in some circumstances detailed in Appendix C or where not meeting the Accepted development criteria. In accordance with the Scenic Rim Planning Scheme, all other operational work not listed in the SRAIP OPW LoA table is Accepted development.

Overlays

The Scenic Rim Planning Scheme Overlays are being adequately addressed through the SRAIP variation approval assessment. Acceptance/approval of the supporting technical documentation (addressing these overlays) whilst not specifically seeking to alter the level of assessment for relevant overlays, will negate any future need for further overlay provisions to be addressed for future development within the SRAIP.

Therefore the SRAIP Overlays LoA proposes that any development applications affected by the overlays mapped on the site will be Accepted development where in accordance with the SRAIP PoD and Development Code i.e. the overlays do not change the level of assessments proposed under the MCU, RoL and OPW LoA tables.

4.2.1.4.3 Development Code

The SRAIP Development Code has been structured to accord with other Zone Codes under the planning scheme, prescribing:

- Application;
- Purpose and Overall Outcomes; and
- Assessment Benchmarks.

The Development Code will work in conjunction with the PoD to set the requirements for built form, accepted and assessable development within the SRAIP.

It is the intention that where there is a conflict between the SRAIP Development Code and the planning scheme, the Development Code will prevail.

4.2.1.5 Proposed Variations to Planning Scheme

The variation request proposes that the following zones and precinct apply to the land:

- Industry Zone (SRAIP Industrial Precinct) – this new zone and precinct will apply to the SRAIP development footprint to ensure the intent of the SRAIP can be achieved in its fullest sense
- Rural Zone (SRAIP Rural Precinct) – as the site is currently zoned for rural under the planning scheme, this will introduce the new SRAIP Rural Precinct which allows for uses to be established only that service a function to the SRAIP or directly support the agricultural / industrial uses occurring in the Industrial Precinct.

The variation request also seeks to vary elements of the planning scheme applying to the site including:

- Amendments to the building height, setback, access, built form, car parking rates, landscaping and signage requirements which would have applied to the site under the planning scheme
- The applicability of the planning scheme overlays to the site. They will no longer apply as they will assessed and addressed as part of this process and therefore it is proposed that no further assessment is warranted. Overlays will also no longer affect the level of assessment for uses to occur within the SRAIP.
- Amendments to the Reconfiguration of a Lot Code to include provisions to allow for smaller lot sizes to be established in the SRAIP.
- The Code assessable threshold for Extractive Industries in the SRAIP Rural Precinct: from ‘extracting less than 5,000 tonnes per annum’ to ‘extracting less than 15,000 tonnes per annum’.

4.2.1.6 Suitability of Proposed Variations

The following sections discusses the key variations proposed from the Scenic Rim Planning Scheme and the suitability of these:

Exceeding maximum building height

The Scenic Rim Planning Scheme specifies a maximum building height of 15m in the Industry Zone Code whereas the SRAIP proposed a maximum building height in accordance with the proposed PoD (PO1 and AO1 of the SRAIP Development Code) being 15m on proposed Lots 1-9 and 35m on proposed Lots 10-15 of the precinct.

While it is understood that this maximum building height is a variation from the planning scheme, it is warranted to accommodate third party operators who have expressed interest within the precinct.

For example, a third-party operator has expressed interest in establishing a fully automated cold storage facility for food produce. By their very nature, fully automated facilities can be up to 10 storeys in building height.

The fully automated sector is rapidly evolving and is an integral part of Asia Pacific’s domestic and international supply chains for food products including dairy, seafood, raw and cooked meat, poultry, frozen vegetables and other frozen or chilled foods. Fully automated facilities have many benefits including faster shipment of order, storage optimisation, labour productivity and waste decrease. Hence it is essential that the SRAIP accommodate these fully automated facilities which will play a key role in the future of food processing and therefore the reasoning for why the 35m building height is proposed for limited sites only at the rear of the precinct.

The 35m maximum building height lots have been strategically placed at the 'rear' of the SRAIP to mitigate visual impacts from the Cunningham Highway. We note that proposed Lot 10 has a 35m building height but this is essential to give Kalfresh the flexibility to construct their own fully automated cold storage facility in the future. The proposed landscaping provisions along the Cunningham Highway within the SRAIP PoD will assist in buffering the impact of establishing a 35m tall building on this allotment.

It is important to reiterate that it is not the intention to establish 35m tall buildings on each of the proposed Lots 10-15 and Kalfresh will maintain some level of control over this as they will be responsible for selling of lots within the SRAIP and a body corporate will also be in place to ensure this situation does not occur.

Setbacks

We note that the proposed SRAIP PoD does propose reduced setbacks to those specified in the Scenic Rim Planning Scheme Industry Zone Code. That is, the SRAIP PoD proposes a minimum primary frontage setback of 6m (for buildings less than 15m in height) and 10m (for buildings greater than 15m in height) and the Industry Zone Code proposes a minimum street frontage setback of 6m.

However, the SRAIP PoD introduces further requirements for setbacks to secondary frontages, the proposed haulage route, Cunningham Highway and the side and rear setbacks.

Given no reduction to the planning scheme setbacks are proposed and additional requirements are imposed, the proposed SRAIP Code will:

- Reduce the visual dominance of buildings and structures as viewed from the street
- Allow for landscaping along street frontages
- Provide separation between built form on proposed allotments to protect the amenity within the SRAIP.

Reduced car parking rates

The SRAIP car parking rates are reduced from those within the planning scheme – refer to **Appendix C**. Cardno has undertaken an assessment of the required car parks to service the SRAIP which are in accordance with these reduced car parking rates. Refer to **Traffic Impact Assessment – Appendix N**.

Increase in Extractive Industry Threshold

The SRAIP Rural Precinct is situated on land that is identified as KRA141 resource / processing area and separation area as described in Section 3.12 above. As such, the State has specifically nominated this area for extracting quarry rock to supply the expansion of urban development in the SEQ regional plan area.

Accordingly, an Extractive Industry use will very likely be established in the SRAIP Rural Precinct in the future (subject to future development approvals for the use and vegetation clearing etc.). The threshold of 5,000 tonnes per annum as per the planning scheme is not in accordance with the targets and amount of resource required to be utilised from this key State resource area. As such, the proponent has proposed an annual threshold of 15,000 tonnes per annum for Extractive Resources as a Code assessable use in accordance with the State's intent for the KRA141.

4.2.1.7 Proposed Land Uses and Suitability of Proposed Uses

The following land uses are proposed for the SRAIP as per the SRAIP Activity Groups, shown below in Table 6:

Table 6: SRAIP Activity Groups

SRAIP Industrial Activities	SRAIP Infrastructure Activities	SRAIP Support Activities
• Agricultural supplies store • Bulk landscape supplies • Cropping where for harvesting, storing or packing plants or plant material • High impact industry where for: – processing, brewing, smoking, drying, curing, milling, bottling or canning food, beverages or pet food, greater than 500 tonnes per annum; or – vegetable oil or oilseed processing in works with a design production capacity of greater than 10,000 tonnes per annum; or – manufacturing soil conditioners by receiving, blending, storing, processing, drying or composting organic material or organic waste, including animal manures, sewage, septic sludges and domestic waste; or – distilling alcohol in works producing greater than 2,500 litres per annum • Intensive horticulture • Local utility • Low impact industry, where for: – processing, brewing, smoking, drying, curing, milling, bottling or canning food, beverages or pet food, up to 50 tonnes per annum – repairing and servicing motor vehicles, including mechanical components, radiators, electrical components, wheel alignments, exhausts, tyres, suspension or air conditioning, not including spray painting and panel beating • Medium impact industry, where for: – processing, brewing, smoking, drying, curing, milling, bottling or canning food, beverages or pet food, greater than 50	• Agricultural supplies store • Animal husbandry • Bulk landscape supplies • Cropping • High impact industry only where for manufacturing soil conditioners by receiving, blending, storing, processing, drying or composting organic material or organic waste, including animal manures, sewage, septic sludges and domestic waste • Local utility • Renewable energy facility • Substation • Utility installation	The following uses where they have a nexus to, provide a support or service function to, sell produce, and/or sell goods processed and promoted by SRAIP rural industrial activities: • Emergency services • Food and drink outlet • Garden centre • Indoor sport and recreation • Market • Office • Outdoor sales • Park • Sales office where involving the selling of lots for SRAIP • Service station • Substation • Shop • Showroom • Tourist attraction where the use has a nexus to food processing or distribution, or exhibits or promotes farming, agriculture, or food processing practices, lifestyle, or history *Note: Support activities may include support services to the SRAIP industrial activities and the wider agricultural community / industry (e.g. admin, head office, sale of goods processed in the SRAIP, sale of equipment, machinery or products used by SRAIP rural industrial activities or the agricultural sector, etc.).*

  - tonnes but less than 500 tonnes per annum; or
  - vegetable oil or oilseed processing in works with a design production capacity of less than 10,000 tonnes per annum; or
  - distilling alcohol in works producing less than 2,500 litres per annum
- Parking station
- Renewable energy facility
- Research and technology industry
- Rural industry
- Transport depot
- Utility Installation
- Warehouse
- Wholesale nursery
- Winery

The acceptability of the proposed uses within the SRAIP were assessed as part of the process to declare the project as a coordinated project (IAS process). The proposed uses at this stage cover the majority of the proposed uses in the table above.

Through this IAR process, the introduction of some uses in addition to those identified as part of the IAS process has occurred to assist in the SRAIP realising its full potential of cohabitation of agricultural and industrial uses.

These uses are identified below:

- High impact industry
- Agricultural supplies store / Bulk landscape supplies
- Parking station
- Emergency services
- Indoor sport and recreation services
- Park
- Sales office where selling of lots for the SRAIP
- Service station

The appropriateness of including each of these land uses and the reasoning for why they are required is identified below:

High impact industry

High impact industry is proposed to be accommodated within the SRAIP where it has a direct nexus with food processing or compost manufacturing, particularly for the following industry thresholds as defined under the Scenic Rim Planning Scheme:

- processing, brewing, smoking, drying, curing, milling, bottling or canning food, beverages or pet food, greater than 500 tonnes per annum; or
- vegetable oil or oilseed processing in works with a design production capacity of greater than 10,000 tonnes per annum; or

- manufacturing soil conditioners by receiving, blending, storing, processing, drying or composting organic material or organic waste, including animal manures, sewage, septic sludges and domestic waste; or
- distilling alcohol in works producing greater than 2,500 litres per annum

The inclusion of the High impact industry use in the SRAIP is integral to the precinct's intent of providing a hub for food processing and the precinct's ability to attract key players within these industries in the future (i.e. the SRAIP will allow for uses which produce large volumes of food / oil / alcohol per annum).

The proposed SRAIP development code has several provisions included to ensure the proposed High impact industry uses do not impact on uses outside the subject site, for example noise, odour, air quality requirements.

Agriculture supplies store / Bulk landscape supplies

The above uses have been incorporated into the SRAIP to similarly provide for a range of flexibility for end users but similarly to enable the selling of the proposed compost and digestate products to be produced on the site as a result of the digester and composting operations.

Given the ERAs and Development Permits for the above components are being sought as part of this IAR application, the inclusion of these two uses is a sensible conclusion.

Parking station

A parking station has been included as one of the lots may solely be used for the purposes of parking vehicles and trucks associated with the SRAIP.

This is a use which has low impacts and is appropriate to support the operations of the SRAIP.

Emergency services

Included if deemed necessary to provide emergency services within the SRAIP in the future.

Indoor sport and recreation services

Included to provide amenity to employees of the SRAIP i.e. indoor gym for use of employees during breaks / end of shifts etc.

Park

Park is not envisaged within the SRAIP as evident by the proposed subdivision layout however should a lot not be sold in the future, with the inclusion of this use – it could be transferred to a Park for enjoyment of the employees of the SRAIP.

Sales office where selling of lots for the SRAIP

A sensical use to include as Kalfresh will require a sales office on site during the preliminary stages to enable selling of the lots.

Service station

The proposed service station within the SRAIP is proposed to primarily service the uses established within the SRAIP. This service will be critical as the SRAIP by its nature will have several cars and long distance trucks who will be departing for long journeys, north, south and west of the site. The inclusion of a service station ensures these vehicles can fuel up within the convenience of the SRAIP prior to departing the site. We also note that the subject site historically operated as a service station.

4.2.2 SRAIP Subdivision

The SRAIP is proposed in three stages:

Stage 1: Management Subdivision

First management subdivision to create three allotments in accordance with the future interests / uses of the land as shown in Figure 19 below:

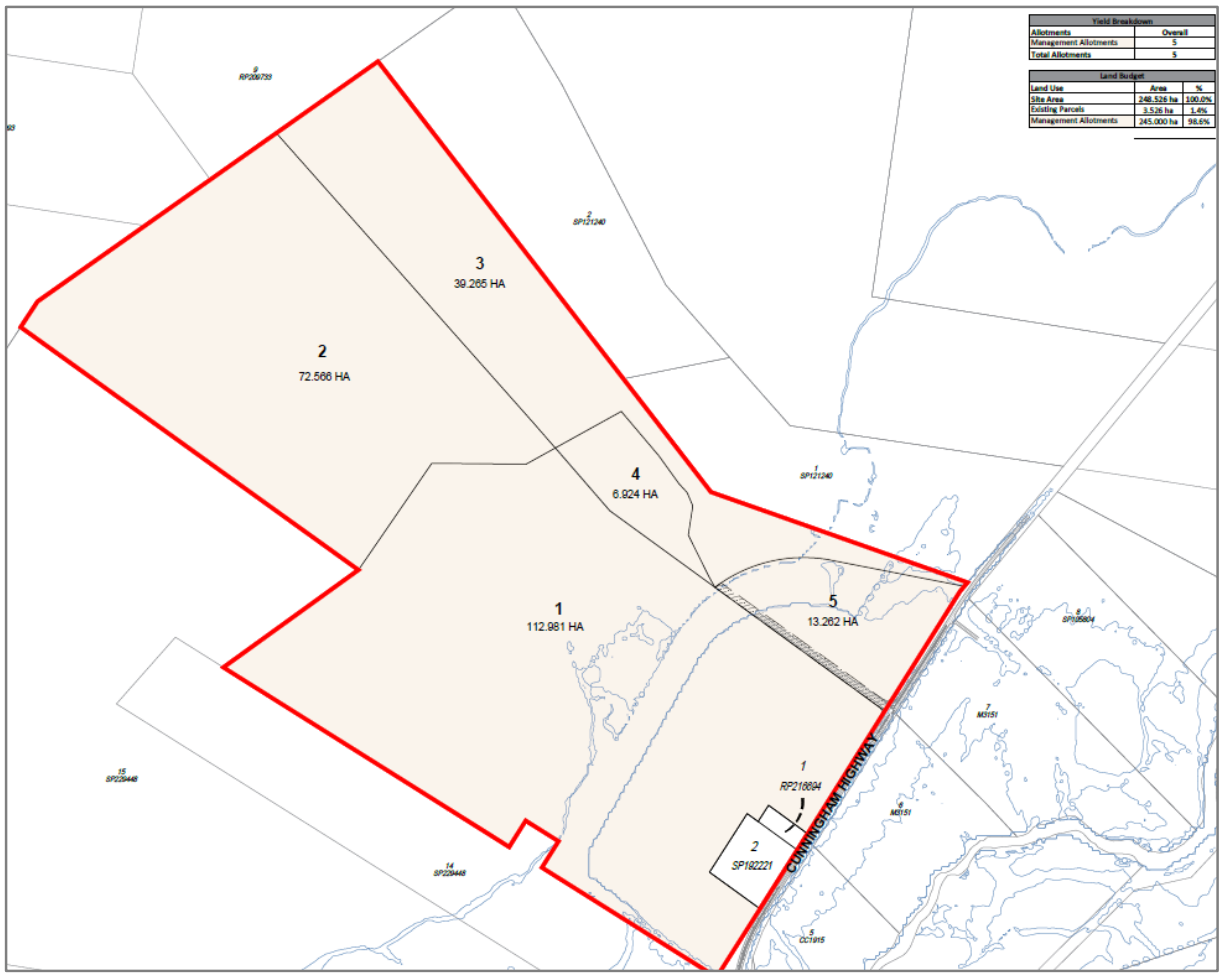


Figure 19 Stage 1 Management Subdivision

Stage 2: Management Subdivision

Second management subdivision to create further management allotments for the proposed composting area and SRAIP plus future access easements as shown in Figure 20 below:

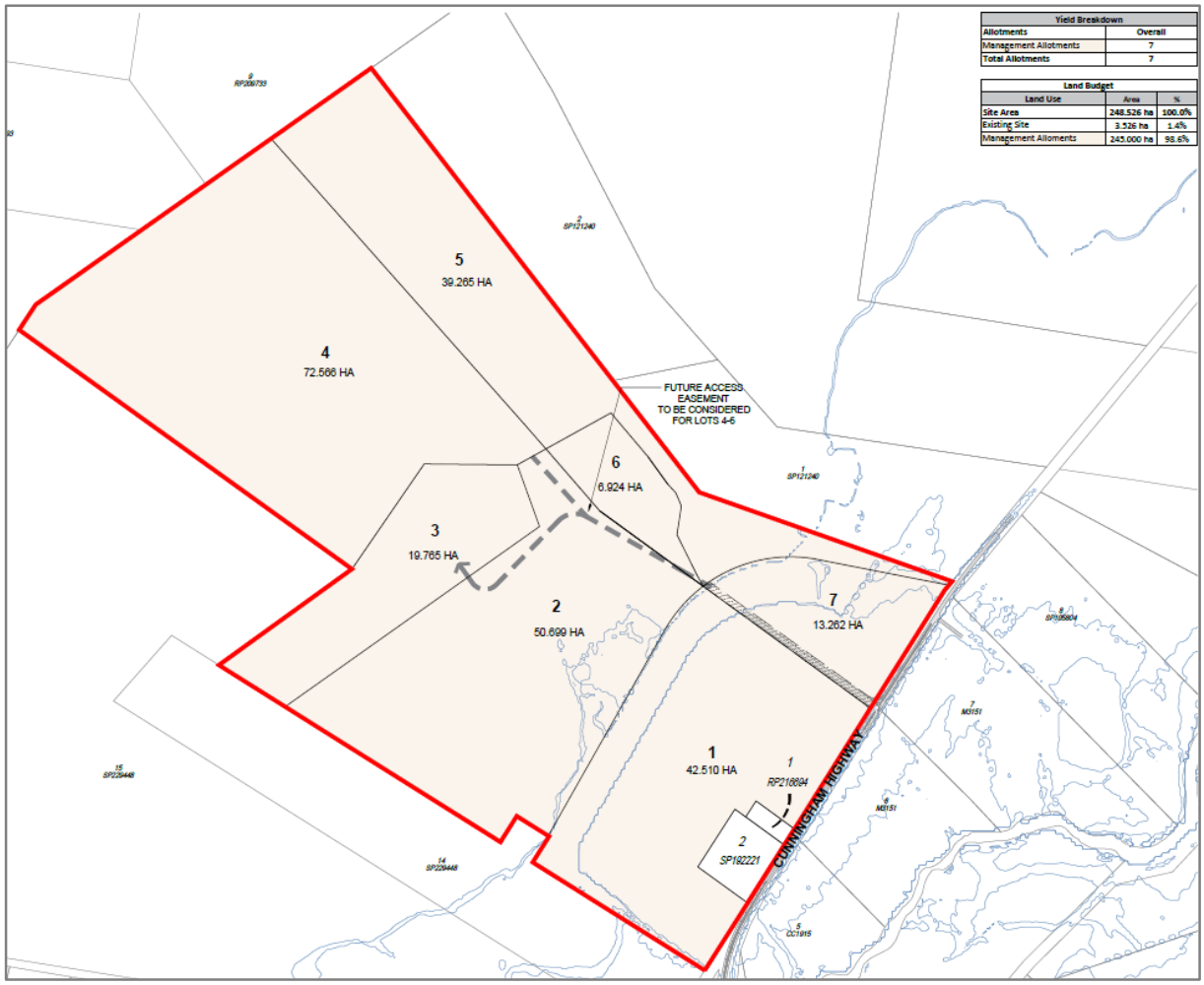


Figure 20 Stage 2 Management Subdivision

Stage 3: SRAIP Subdivision

The Stage 3 SRAIP Subdivision will be the final subdivisional stage proposed as part of this application and will result in the following:

- 15 industrial agricultural allotments ranging in size from 5,055m^2 to 5ha forming the SRAIP, this includes one allotment for the anaerobic digester (Lot 11)
- One drainage allotment to accommodate a stormwater basin and one allotment for an overland flow path
- One allotment to accommodate a sewerage treatment plant (Lot 16)
- The balance lots created by the Stage 2 management subdivision in the west of the subject site which will accommodate the proposed areas of digestate irrigation and storage, two proposed dams, the composting facility and the proposed effluent irrigation area
- One access point off the Cunningham Highway which then connects and aligns with the proposed access through the subject site from the Wagner Quarry north west of the site
- 22m wide new road to be held in common property with a cul-de-sac head proposed in the south of the precinct which can accommodate large vehicle turnarounds as per the **Traffic Impact Assessment – Appendix N**.

The Subdivision Proposal Plans are held at **Appendix B** and is also shown below in Figure 21.

Stage 3 is proposed in three sub-stages for construction purposes as depicted in Figure 21 below.

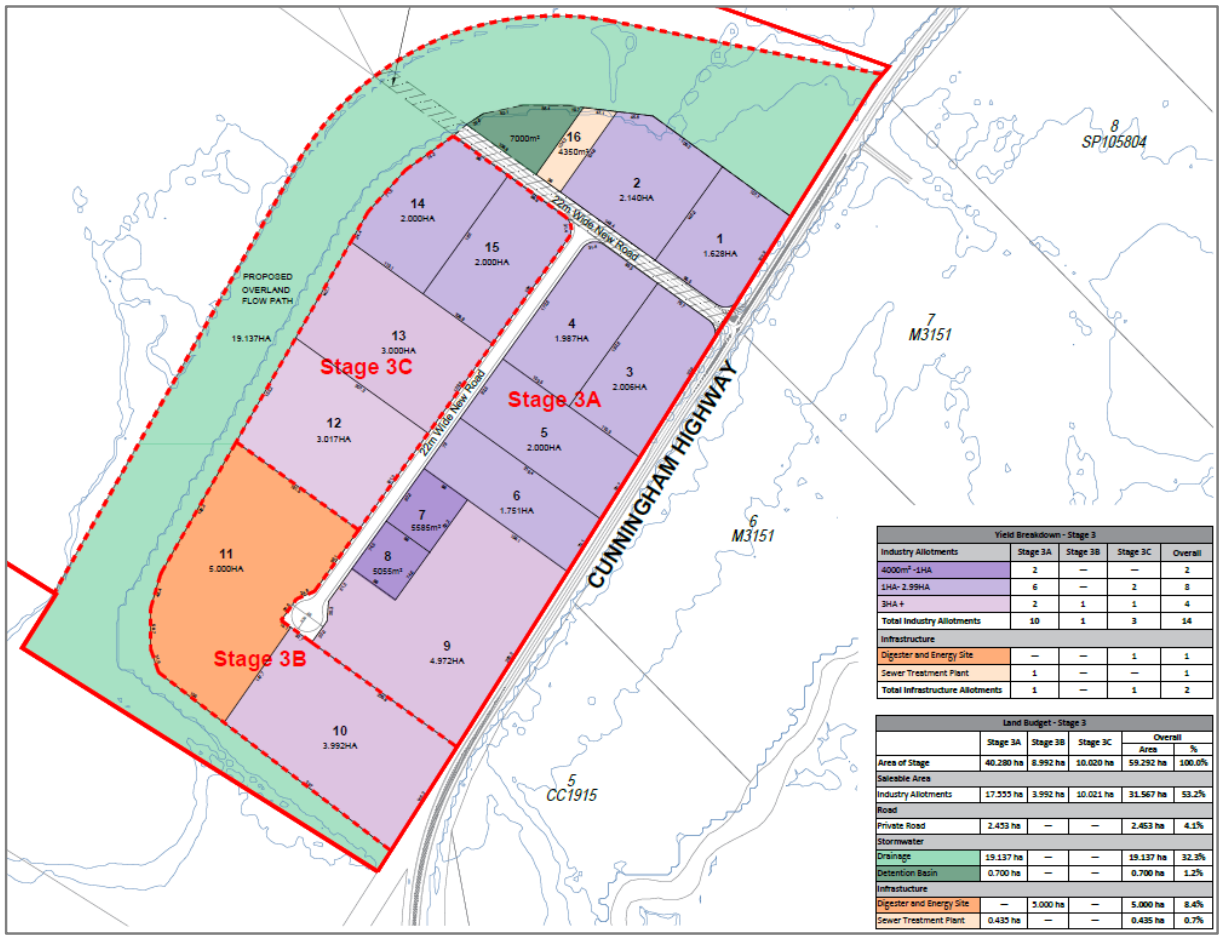


Figure 21 Stage 2 Management Subdivision

Within the proposed subdivision, Kalfresh will own proposed Lots 5, 6, 7 and 9. Lot 11 is to be used for the purposes of the proposed digester and a drainage allotment is proposed in the north west corner of the precinct. The remaining allotments are to be put to market and developed in accordance with the proposed SRAIP PoD and Code. The ownership within the precinct is shown below in Figure 22:

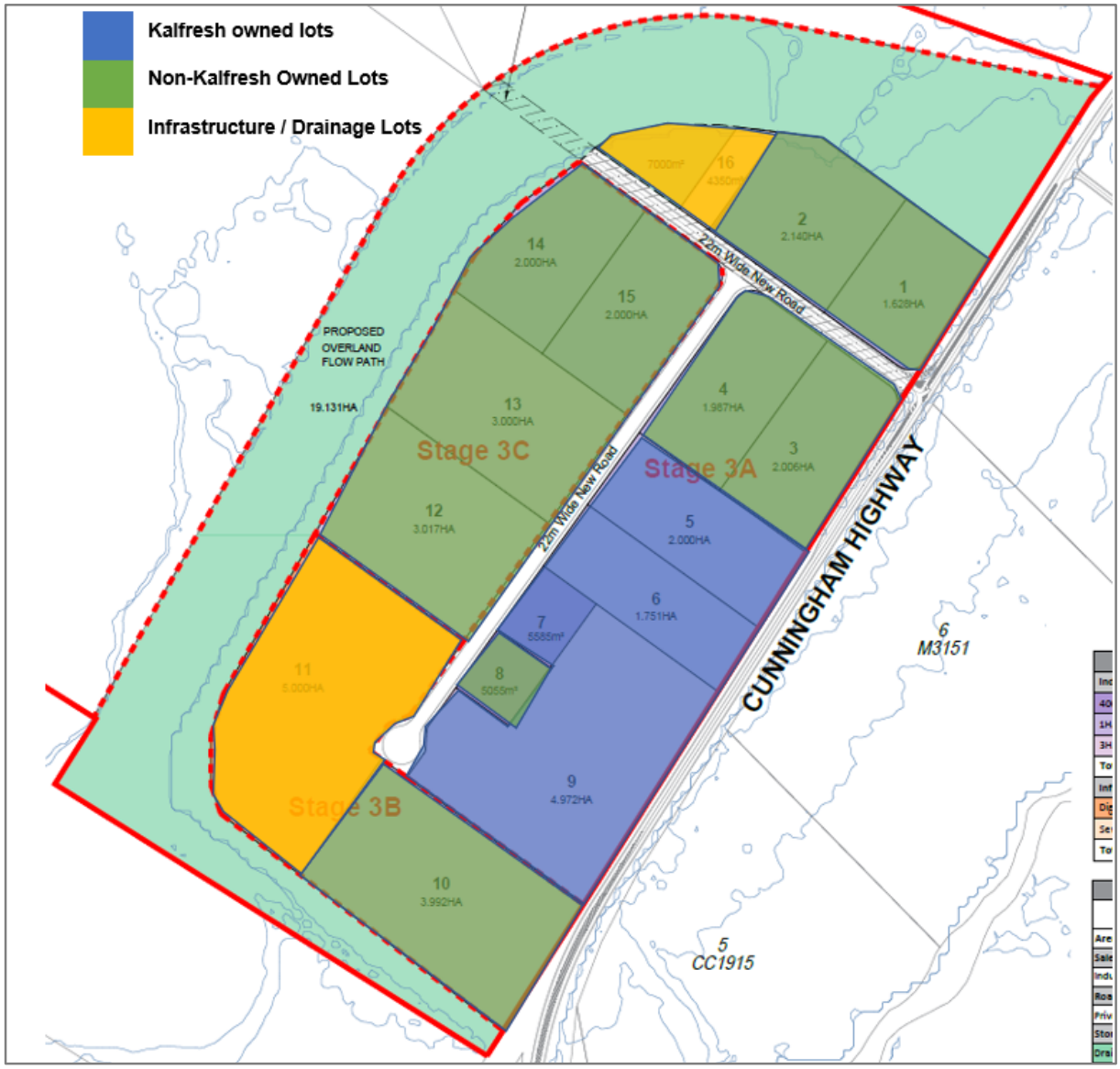


Figure 22 Proposed Ownership of SRAIP

4.2.2.1 Infrastructure Charging Provisions

In conjunction with the above subdivision provisions, it is acknowledged that infrastructure charging provisions will need to be implemented by Council. With the nomination of accepted development provisions this is recognised as being potentially challenging in terms of the specific collection of charges.

In this instance, it has been envisaged that infrastructure contributions will be calculated as part of the plan sealing (i.e. compliance assessment process) whereby prior to the signing of a plan of subdivision associated with any related reconfiguring a lot component, the applicant must establish a base level infrastructure contribution credit for the land, particularly the 15 industrial agricultural allotments being created under Stage 3. The infrastructure contributions are to be determined in accordance with the rates,

policies and legislation applicable at the date of the payment of the contributions or as otherwise stated in a related development permit. Management lots will not be subject to infrastructure contribution charging.

These contributions will bring the SRAIP, as identified by the corresponding PoD / Precinct Plan details, up to a deemed credit rate commensurate to a site located within the relevant zone(s) as identified by the new Scenic Rim Planning Scheme.

4.2.3 Detailed Bulk Earthworks

Bulk earthworks will be completed across the subject site to create a developable land formation in accordance with Cardno sketch 510357-001-CI-1010 (**Appendix K**). This earthwork operation will include the stripping/ stockpiling of topsoil and reshaping of land to generally achieve the proposed site levels across the development. In addition, Cardno have prepared a bulk earthworks engineering set of drawings which are included at **Appendix K.**

Based upon Cardno's experience within the Scenic Rim region and surrounding areas, coupled with the elevated site levels, it has been assumed that the site is devoid of acid sulphate soils.

The preliminary earthworks design comprises of filling the site above the 1% AEP flood level. This will require additional material which is proposed to be obtained from the deepening of the flood diversion channel and the excavation of material within the subject site (that adjoining the proposed overland flow area). Hence, the haulage distance of fill material will be limited to within the existing allotment boundaries and haulage of material from outside the subject site will be minimal.

The earthworks design based upon the proposed development layout indicates that the earthworks operation will comprise approximately 400,000m^3 cut to fill onsite and 314,000m^3 of additional fill required which will be obtained from the borrow pits within the subject site (locations indicated on drawing 510357-001-CI-1010 – **Appendix K**).

The proposed earthworks profile has been created with the intent to minimize the amount of fill whilst ensuring the development can be appropriately serviced by a stormwater drainage network and also be resilient to the 1% AEP flood event. All earthworks on the site will be carried out in accordance with Level 1 supervision and testing requirements, with any existing dams and/or unsound materials being removed and replaced under Level 1 supervision. It is also recommended that prior to the de-commissioning of all sediment basins, all collected silt and unsuitable material should be removed from the site and the basin area rehabilitated using a high quality of fill material in order to ensure long-term stability to this area of the site.

The Cardno sketch 510357-001-CI-1010 (**Appendix K**) held below at Figure 23 illustrates the proposed cut and fill zones to establish the SRAIP development footprint.

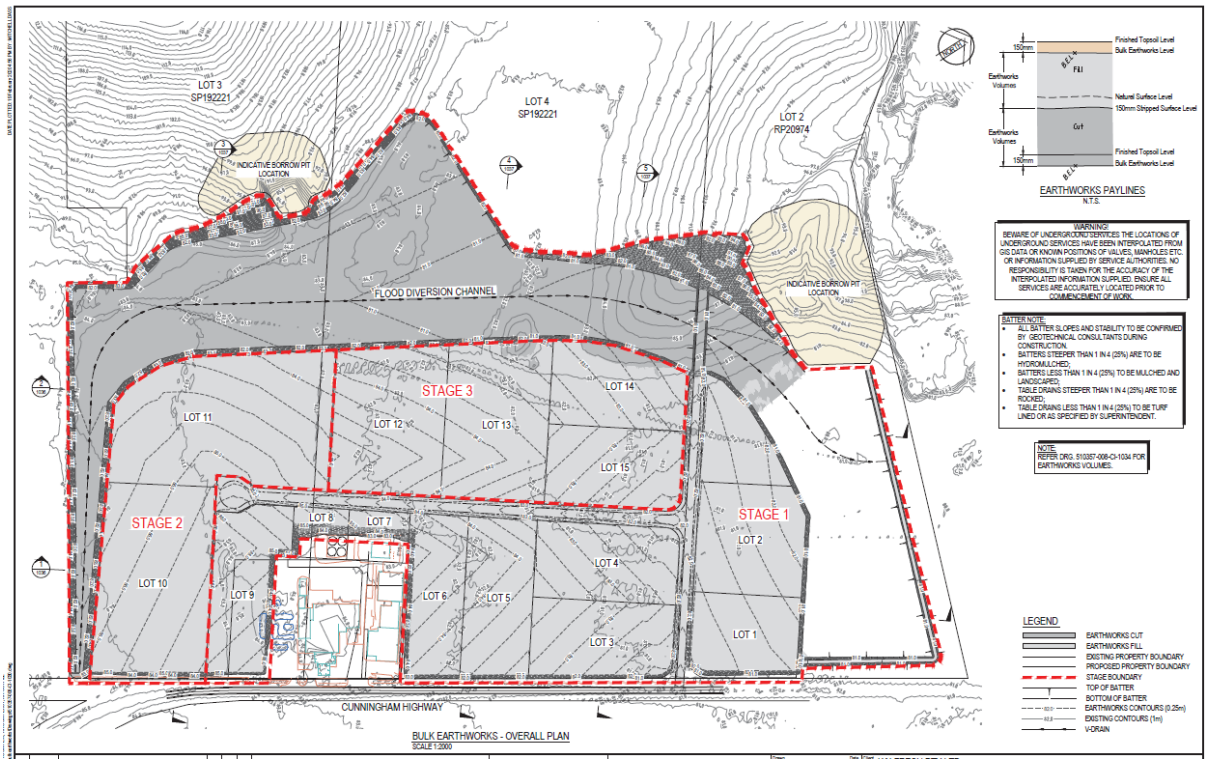


Figure 23 Bulk Earthworks Overall Plan

4.2.4 Renewable Energy Facility (Digester) / High Impact Industry (Composter) / Utility Installation (Sewerage Treatment Plant)

4.2.4.1 Digestor

A digestor facility is proposed on Lot 11 of the SRAIP as per the **SRAIP Concept Plans – Appendix A**. The digester is proposed to be owned and operated by Kalfresh and another party (yet to be finalised). The digestor facility is formally described as a 'Renewable energy facility' and 'Utility installation' under the planning scheme. An ERA53b – Organic material processing (by anaerobic digestion) is required for this aspect of the development. Details of this ERA are provided below in Section 5.4.

4.2.4.1.1 Weltec Biopower

The proposed AD is being designed and constructed in partnership with Weltec Biopower (Weltec). Weltec is one of the world's leading enterprises in the field of stainless-steel biogas plant construction. The company has planned, developed and built anaerobic digestion plants since 2001 and has established more than 300 energy plants in 25 countries worldwide. The global distribution and service network spans six continents. The range of customers includes businesses from the agriculture, food, waste and wastewater industries.

4.2.4.1.2 Anerobic Digestion Process

The key steps in the anaerobic digestion process are summarised as following:

- Feedstock collection / storage and processing facility
- Anerobic digestion plant
- Biogas produced by the anaerobic decomposition of putrescible organic material will be forwarded to the biogas plant for production of electricity and useable heat
- Pasteurisation of digestate to eliminate pathogens and seeds

- Initial storage of digestate
- Solid-liquid separation of digestate
- Storage of liquid fraction digestate
- Temporary storage of solid fraction digestate
- The separated solid fraction will be used as follows:
  - windrow composting for onsite reuse as a soil conditioner/fertiliser
  - drying and pelletising for on and offsite application as fertiliser.
- The separated liquid fraction will be used as follows:
  - onsite irrigation
  - windrow composting
  - offsite application following road transport and tractor application
  - offsite irrigation via a pipe and storage system (future).

The process is demonstrated diagrammatically below in Figure 24:

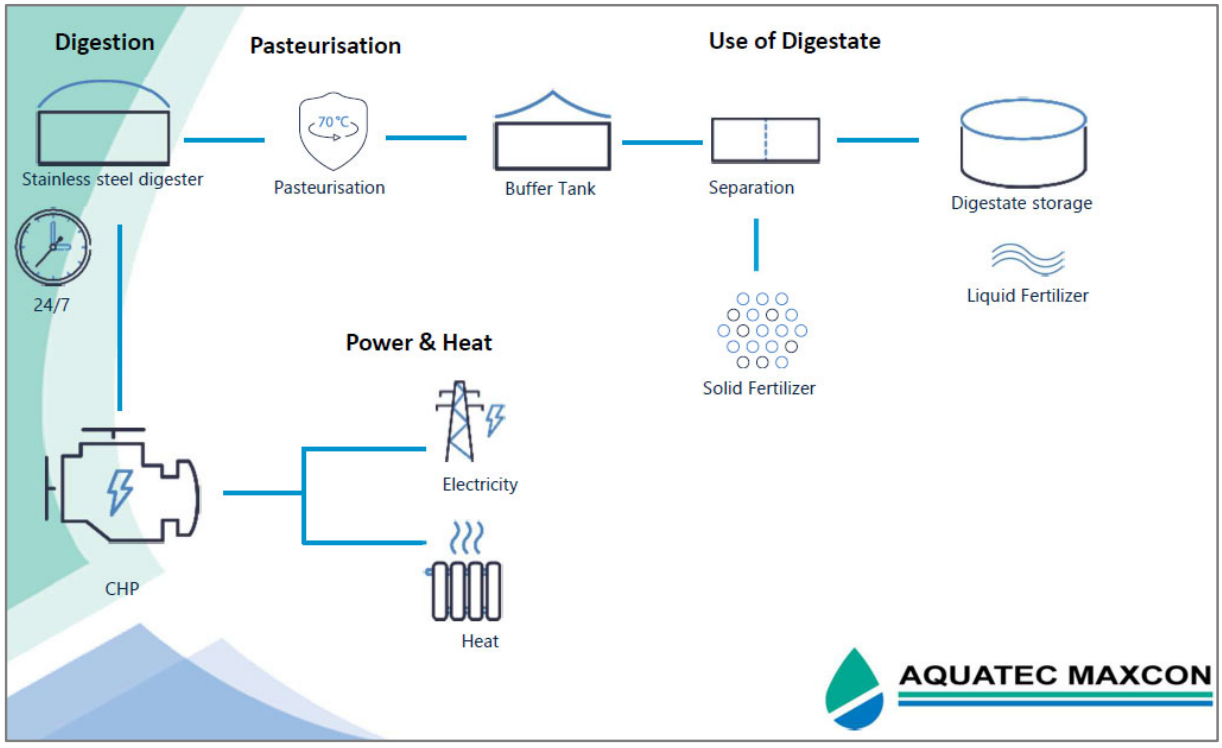


Figure 24 Anaerobic Digester Process

4.2.4.1.3 Site Layout

The digestor involves the following components to be established on Lot 11:

- Two fermenter tanks – each with a volume of 3,573m^3
- One digestate storage tank – volume of 2,625m^3
- Two pre-storage tanks, each with a volume of 189m^3
- One buffer tank – volume 524m^3

- Two containers with CHP
- Emergency flare
- Office
- Workshop building
- Biofilter
- Water processing building
- Building with Hygienization and Separation
- Silage Bays
- Gas pre-treatment
- Biofilter
- Weighbridge
- Wheel wash

The digestor layout is shown below in Figure 25:

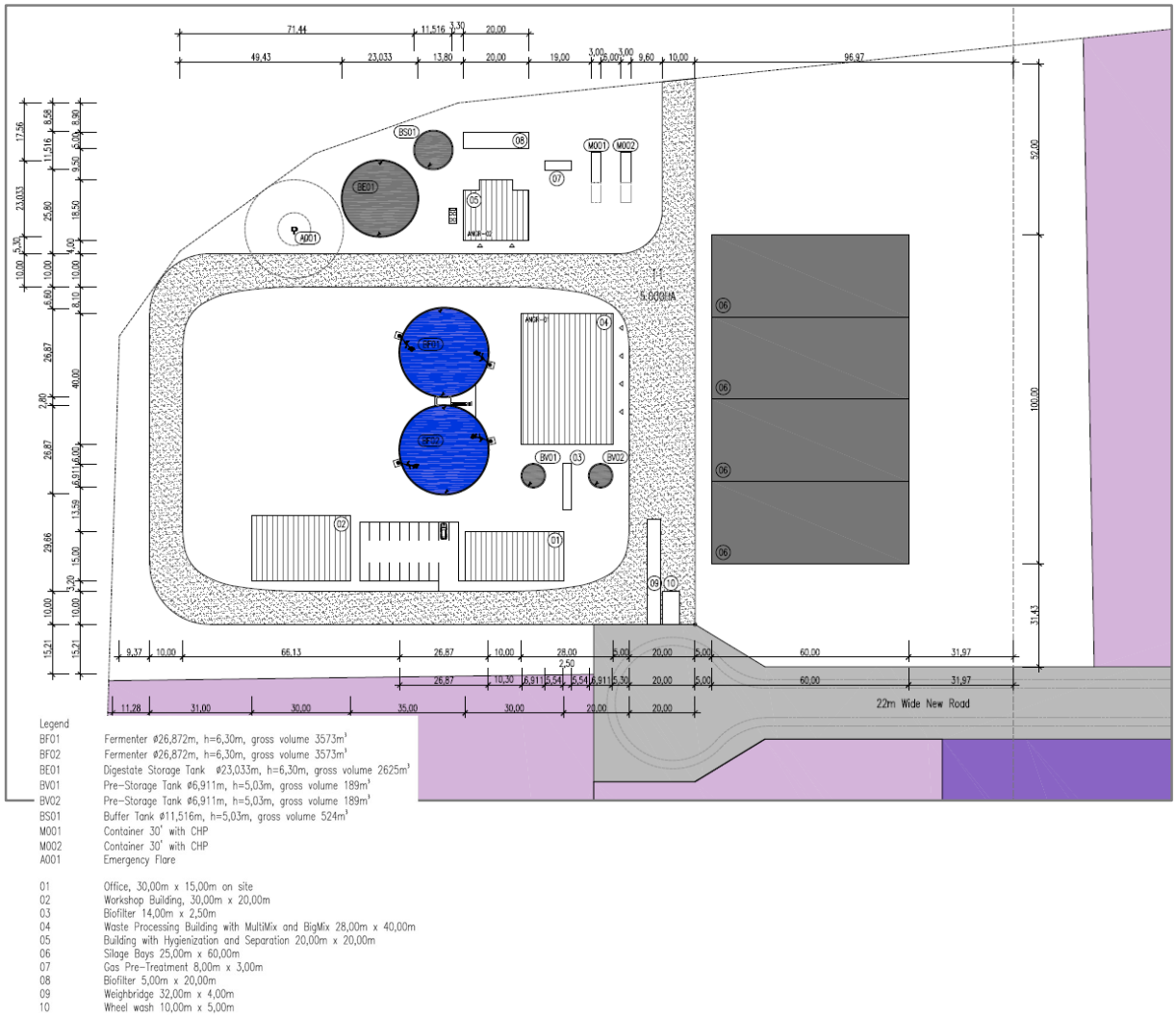


Figure 25 Proposed Digestor Layout

4.2.4.1.4 Feedstock Quantity / Quality

Initially, the digester is being designed to produce 1-2MW of power annually and to achieve this the total volume of feedstock material to be utilised at the site per day is estimated to be 95 to 110 tonnes. The proposed feedstock will typically consist of raw and dewatered grease trap waste (≈10,000 tonnes per year [t/year] and ≈15,000 t/year respectively), corn silage (≈3,650 t/year), chicken litter (≈3,650 t/year), and ruminant waste (≈5,110 t/year). The feedstock utilised may change from time to time in terms of material types and mixing ratios as part of the ongoing refinement and development process. The volume of feedstock will increase over time until the digester reaches its full capacity producing 10MW annually.

Feedstock material will be sourced from known suppliers under written agreement between Kalfresh and its suppliers. Only raw materials that can be converted to energy will be used as feedstock. Strict quality control procedures will be adopted to ensure that unsuitable feedstock is not brought onto the site. Specifically, suppliers of feedstock will demonstrate to Kalfresh as part of the ongoing quality management system that material is not contaminated with compounds that cannot be readily converted to energy. These include heavy metals, dioxins, furans, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), petrogenic derived petroleum hydrocarbons, pesticides and per- and poly-fluoroalkyl substances (PFAS). Plant based organic materials will be additionally free of fungus and diseases, and manures and ruminant waste disease and hormone free.

Where there is insufficient information available to certify the feedstock as being suitable for use in the anaerobic digestor, the material will be rejected prior to receival onsite. Volume/batch-based chemical testing would typically form part of the quality control procedure for verification of feedstock suitability. The limits identified in **Appendix G** - Section 4, Tables 14 and 15, will be utilised for this purpose in addition to other approved methods to the satisfaction to DES. This would include regular site inspection of the supply source sites, inspection of specific materials prior to importation on site, and a risk assessment of the potential contaminants of potential concern associated with each supply site and specific media (e.g. grease trap waste, plant matter, ruminant waste). This information is to be updated and detailed in the site environmental management plans. All feedstock will be inspected when it is received at the site and rejected if it is not deemed suitable for use.

4.2.4.1.5 Recording Waste Volumes

A proposed weighbridge is to be located at the entrance to the proposed anaerobic digester on Lot 11 as a ‘source of truth’ to record all waste that is accepted to the facility. The record is kept for billing and auditing purposes and is calibrated yearly.

4.2.4.1.6 Waste Unloading

Waste is unloaded to solid unloading bay for separate storage of waste. Sampling of the waste is undertaken if deemed necessary. Inspection of contamination occurs in the waste streams. Enclosed unloading of all waste streams is undertaken to control odour emissions.

4.2.4.1.7 Water Supply

The water supply at the site will be obtained from a combination of sources that may include onsite bores, roof water harvesting, and piped creek water. Water used for direct drinking is currently harvested from the roofs of select site buildings and this process is likely to continue with the proposed expansion and supplemented by tanker imports on an as required basis. The bore water is currently used for process purposes (i.e. washing of root vegetables). It is anticipated that both bore water and/or piped creek water will be used for process water and for the dilution of the digestate (liquid fraction) for onsite irrigation.

We note that water supply to the project is scalable. That is, bore water and existing allocations can be utilised in the early stages of the SRAIP until the time that a medium / high priority water solution is realised.

4.2.4.1.8 Pasteurisation Unit

The proposed pasteurisation unit is critical in ensuring the digestate produced is appropriate for reuse. With regard to this unit, we note the following:

- A separate pipe connection is used before and after the pasteurisation process to avoid any exchange of germs
- Any / all substates will be pasteurised prior transfer to digestate treatment
- The process involves 1 hour at greater than 70 degrees Celsius
- Reduction of pathogenic microbes for agricultural land application as per Environmental Authority (EA) approval
- Record for each digestate batch is available from the Supervisory Control and Data Acquisition (SCADA) system

4.2.4.1.9 Separation Unit

Once pasteurised, the digestate passes through the separation unit which separates the liquid digestate from the solid digestate.

4.2.4.1.10 Digestate (Liquid fraction)

Initially, the liquid fraction is estimated to be 65 to 80 tonnes/day following separation from the solid phase. The liquid will be utilised for:

- **On-site irrigation** (automated centre-pivot irrigator)
- **Windrow composting** (composting of green-waste, wood-chips and solid fraction)
- **Off-site application** (trailing hose application / transport to local Kalfresh farms)
- **Off-site irrigation** (automated centre-pivot irrigator)

Refer to **Appendix G – ERA53(b) Report** which contains information from Kalfresh regarding the separation, management and reuse of this material.

To assess the reuse opportunities for land irrigation, MEDLI modelling was undertaken at various dilution ratios until a sustainable irrigation scenario could be predicted. It was determined that in order to minimise the potential for environmental harm, the liquid fraction would need a 1:25 dilution with water (i.e. sourced from bore or creek) for onsite land irrigation. The digestate may be pre-mixed in a tank or dam prior to irrigation occurring or via direct injection into the dilutant as irrigation is occurring. A DIA of 160ha was selected as part of a multiple run scenario to simulate a 100% mixed stream.

Digestate characteristics following dilution (i.e. the modelled characteristics) are provided within the Precise – ERA53(b) Report (**Appendix G**).

4.2.4.1.11 Digestate (Solid Fraction)

Initially, the solid fraction is estimated to be 25 to 35 tonnes/day following separation from the liquid phase. The solid will be utilised for windrow composting (composting of green-waste, wood-chips and solid digestate) and offsite application (bio solid and nutrients as solid enhancer). Site composting will be managed under a licence for ERA 53(a)—Organic material processing by composting. Information on the proposed composting activity is provided at Section 4.2.4.2 below. Refer to **Appendix G** which contains information from Kalfresh regarding the separation, management and reuse of this material.

4.2.4.1.12 Storage

The proposed digester will have the following storage capacity:

2,625m^3 liquid digestate storage capacity on Lot 11

- Covered tank structure
- Storage capacity: 30 days

20,000m^3 liquid digestate storage capacity on Lot 2 of Stage 2 of the SRAIP Subdivision

- Proposed storage dam
- Storage capacity: 250 days

Total capacity of approximately 9 months

4.2.4.1.13 Odour control system

Odour control equipment is installed to mitigate odour issues from waste bays, pre-storage and digestate treatment. The odour control system results in 99.9% H2S removal < 500 OU after carbon. Regular service and testing occurs on exhaust emissions.

4.2.4.1.14 Biogas

Type B Gas Application

Introduction

Gas devices used at biogas plants typically include stationary engines, turbines, boilers and hot water heaters and flares. Such industrial gas devices (i.e. which use gas to produce heat, light and power) are defined as Type B gas devices under Section 724 of the *Petroleum and Gas (Production and Safety) Act 2004* (P&G Act). In Queensland, all Type B gas devices must be approved and certified prior to installation and use.

According to the P&G Act definition, the Type B appliance starts at the appliance isolating valve. In the case of the flare, this valve is located at the base of the flare and for the engines; the valve is located in the valve train inside the engine enclosure. Therefore, everything downstream of this valve is considered as part of the Type B appliance.

The gathering system for a biogas facility needs to have a formal safety assessment to inform the design process. Risks associated with collecting and transporting the biogas (particularly if within a flammable range) and risks associated with proximity of any ignition sources must be identified and eliminated or effectively controlled (to an acceptable level).

Currently no Australian Standards cover the entire biogas pipe system (i.e. from collection at the source to use at the plant). Elements of AS 4645 – Gas distribution networks, AS 5601 – Gas installations and the Australian Pipeline and Gas Association (APIA) APGA Code of Practice for Upstream PE Gathering Networks in the CSG industry' may be used, so long as any deviations are clearly addressed in the formal safety assessment (as required during the design stage).

The gas installation begins at a demarcation point on the biogas pipework, downstream of the digesters (which in this case will be the biogas isolating valves BF01-X03, BF01-X53 and BF02-X03, BF02-X53) and ends at the Type B appliance isolating valve. Therefore, the biogas pre-treatment upstream of the CHP engines is included in the complex gas installation.

The biogas systems will be designed to the relevant Australian Standards AS3814 & AS5601 which will be captured in the Type B submissions. The assessment of the design or look needs to be done, after signing a construction contract. Aquatec Maxcon has done sufficient work to date in complying with the standards so that Type B approval should be granted without significant issues.

The approving authority do not provide approval for anything upstream of the biogas isolating valve (i.e. the digester itself) however they do require a statement from Kalfresh indicating that everything upstream of their demarcation point is 'approved' to be confident that what they are connecting up to is safe. The approving authority suggested that this is usually in the form of a letter from Kalfresh declaring that the digesters have been 'designed, hazard and operability studied, risk assessed and constructed to be a safe plant'.

The design of the biogas plant will undergo a formal risk assessment consisting of the systematic identification of risk and a description of the technical and other measures undertaken to control the identified risks.

Anaerobic digestion can be regarded as a chemical process with all the associated risks:

- interaction with operating plants or contractors
- hazardous areas
- flammable gas
- fire and explosion
- hazardous substances (e.g. H2S)
- confined spaces
- pressure systems of un-odorised gas
- gas handling and gas storage use

It is essential that thorough safety assessments are carried out at each stage of the project from design to installation, commissioning, implementation and operation.

The design and installation of biogas systems will also take into account relevant Standards including, but not limited to:

- AS 1375 Industrial fuel-fired appliances
- AS 3814 Industrial and commercial gas-fired appliances
- AS/NZS 5601.1 Gas installations – General installations
- AS/NZS 60079.10.1 Explosive atmospheres – Classification of areas

A Type B submission can be completed as part of the detailed design.

The approving authority has a procedure to be followed by all persons wishing to install, modify or commission new or second hand Type B appliances or carry out complex gas installation work. These include:

- Ensure that all relevant information has been supplied a month prior to gas being required
- Ensure the information has been accepted before commissioning of gas is required
- Ensure a compliance notice has been submitted at least 48 hours prior to gas being required for commissioning
- At least seven days before hand-over of the appliance to the customer, ensure that an appointment has been made with an inspector to witness any required tests
- When accepted by the inspector, an appliance will be allocated an acceptance label. This must be attached to the appliance before handing over to the consumer
- Any installation of a Type B appliance is a ‘complex gas installation’. Compliance notices must be provided for both the consumer piping installation and the appliance
- Special conditions apply for steel welding work, fusion jointing of polyethylene pipe, hot tapping and installation work over 200kPa gas pressure.

The Type B compliance of the appliances and the complex gas installation impacts on the detailed design as the components within the installations need to be approved by a Chief Inspector and needs to be of suitable quality and functionality to comply to the relevant Australian Standards (most notably AS3814 – Industrial and Commercial Gas-Fired Appliances and AS5601 – Gas Installations). For example, all valves within the Type B appliance need to be approved by the Australian Gas Association (AGA). There is a list of approved

suppliers of valves published by AGA so the easiest method to ensure compliance of valves in the CHP engine is to select the valves from the AGA approved list.

The relevant Australian Standards as well as AGA lists will be provided to Weltec to ensure Type B compliance of the Type B appliances and the complex gas installation. A Type B gas consultant who works exclusively in the design, compliance and commissioning of Type B gas installations needs to be engaged to assist in the assessment of the Weltec design as being compliant as a Type B gas appliance and in the preparation of the Type B applications.

The CHP, Flare and complex gas installation will be provided during detailed design.

CHP Type B Gas Appliance

The two CHP co-generation engines will need to be approved as Type B appliances and signed off by the Chief Inspector prior to commissioning. The specifics relating to the approval of the CHP's as Type B appliances is covered in the relevant sections of the Type B application to the approving authority. Potential aspects of the design of the CHP system which may require exemptions in the Type B approval process include:

- Engine Control System: The engine control system is constructed in accordance ISO 13849 "Safety of machinery - Safety-related parts of control systems" and the CHP system is manufactured in accordance with the European Machinery Directive 2006/42/EC and the Electromagnetic Compatibility Directive 2004/108/EC. These standards deviate from the prescribed standards contained in the Type B standards, although they are generally considered as equivalent and therefore an exemption should be granted on these grounds.
- Valve train certification: The pipework within this valve train has been built to the European Standard "EN13480 – European metallic industrial piping code". This European standard complies with the Australian standard "AS4041 – Pressure Piping" which will enable us to prove the valve train as being the equivalent of the requirements outlined in "AS5601.1 – Gas installations".

Flare Type B Gas Appliance

The flare is classified according to the P&G Act definition as a Type B appliance and will need to be approved and signed off by the approving authority prior to commissioning. The specifics relating to the approval of the flare as a Type B appliance is covered in the relevant sections of the Type B application to the approving authority. Potential aspects of the design of the flare system which may require exemptions in the Type B approval process include:

- Burner Control Unit: The flare is supplied from a German technology supplier and as such it is compliant to the European Standards EN298 & EN746 and not certified to AS4625. This is normally considered as an acceptable equivalent standard so it is expected that an exemption will be granted by the approving authority on this basis.

Type B Complex Gas Installation

The complex gas installation is defined as the gas pipework between the gas isolating valve at the digesters and the appliance isolating valve of the Type B appliances. As part of this installation, the complex gas installation includes the following components:

- Above ground stainless steel pipework
- Underground polyethylene pipework
- Biogas pipe condensate drain point
- Biogas pre-treatment (biogas cooler and activated carbon filter).

Potential aspects of the design of the complex gas installation which may require exemptions in the Type B approval process include:

- Flame arresters: a risk assessment will be required to demonstrate that flame arresters are not required on the biogas line of the complex gas installation. There are flame arresters integrated into the Type B appliances (CHP valve train and flare valve train).

Hazardous Area

Biogas, by virtue of the methane present, can be explosive if the concentration in the air is within flammable limits. For methane, the concentration in air is between 4.4% and 16.5%. Inside the biogas dome of the digester, biogas will be present at 100% concentration and therefore not in an explosive mixture.

If a leak occurs in the digester roof or biogas pipe, biogas can leak to the environment. Concentrations will depend on factors such as wind and size of the leak and are hard to predict.

Typical hydrogen sulphide concentrations in biogas will depend on the sulphur concentration in the substrate fed to the digester. The Weltec Biopower digester design is based on controlling hydrogen sulphide concentration at 100-200ppmV by ferric hydroxide dosing and micro aeration of the digester content. This is well in the toxic range.

In order to safely deal with the risks of biogas and its typical components a number of actions have been taken during the plant design or will be addressed during the course of the project. These include:

- **Hazardous areas classification and equipment selection**

The plant has to be assessed in terms of hazardous areas in terms of explosion by (electrical) sparks by Weltec, Aquatec Maxcon and a Hazardous Area consultant.

This assessment will result in several hazardous area drawings at detailed design phase. These hazardous areas have an impact on the type of electrical equipment which is selected in the various hazardous zones.

- **Signage**

Where biogas, and/or any of its constituents may be present and risk for explosion or health risks may exist, restricted access will be imposed by ways of signage. The signs will indicate ‘hazardous area, biogas may be present, restricted access. No sparking electrical equipment allowed. Work permit required’.

This signage aims to avoid that no untrained people enter the hazardous areas at any time.

- **Restricted access**

In addition to the signage, the stairs to the digesters and liquid storage vessels will be equipped with a lockable barrier which requires the operator to unlock.

- **Training operators and maintenance crews**

The Waste to Energy operators will be trained in hazards and safe working in hazardous areas containing biogas and hydrogen sulphide. This will be done in a dedicated training session in a classroom setting and at the plant by Aquatec Maxcon or suitably qualified person. Operation and maintenance manuals will contain sections on working with biogas at construction phase.

- **Gas related Personal Protection Device (PPD)**

Every operator (and maintenance staff or contractor) will need to make use of a certified and calibrated portable gas detector, which measures explosive environments, hydrogen sulphide and oxygen content. Operators will need to carry these devices whenever they are at the biogas facility. The monitors normally alarm when there is danger for explosion, lack of oxygen or hydrogen sulphide concentrations higher than 15 ppmV.

- **Procedures**

Plant operation and maintenance will be covered under a set of procedures. One of the key procedures will be that any maintenance job, which involves work in a hazardous area is to be risk assessed and supervised (and signed off) by the main plant operator prior to the works proceeding.

Hazardous Area Classification

Hazardous area classification in this instance involves identifying hazardous area zones that exist around vessels and equipment and identifying appropriate explosion protection techniques and identifying temperature classes for electrical equipment installed within the identified hazardous area zone.

Hazardous area zones are presented in terms of their level of risk as defined below:

- Zone 0: an area in which an explosive gas atmosphere is present continuously, or for long periods or frequently
- Zone 1: an area in which an explosive gas atmosphere is likely to occur in normal operation occasionally
- Zone 2: an area in which an explosive gas atmosphere is not likely to occur in normal operation, but if it does occur will persist for a short period only

Hazardous area classification of the site was performed in accordance with AS/NZS 60079 10.1 which is the peak Australian Standard for classification of gaseous hazardous areas. The classification will be presented in the 'Hazardous Area Classification Assessment Report' completed at detailed design phase. This will then be workshopped in a risk assessment approach and finally the hazardous area drawings will be developed which will show the extents of the hazardous areas around the site. The implications of these zones is that equipment located within the zones needs to be suitably rated according to the IECex standard of hazardous rating. The standard of rating in European countries is via the ATEX convention which is not usually recognised in Australia or other countries outside Europe and can cause problems if projects assume compliance of equipment if it comes with an ATEX certificate. In this instance, the equipment has to go through a conformity assessment which can be time consuming, costly and in many instances fruitless if the information contained within the ATEX certification is insufficient to grant IECex certification.

The suppliers of all equipment and instrumentation in hazardous zones were requested to apply for IECex certification or replace the equipment with similar equipment that carries IECex certification. This is a simpler technique to ensuring hazardous area acceptance of the installation and avoiding timely and costly overruns due to inadequate planning.

This design approach will lead to all hazardous rated equipment within the hazardous areas that normally carries an ATEX certification being replaced with equivalent equipment that carries IECex certification.

As with the Type B gas assessments, specialist consultants will need to be engaged to assist with the zoning and defining the requirements of the compliance of hazardous area rated equipment.

Hazardous Area Dossier

All of the information related to the hazardous area assessment of the plant will be summarised in a hazardous area dossier which includes a list of all the rated equipment with the rating definition and all supporting information including drawings, IECex certificates, product data sheets, operating manuals etc. The dossier will be a working document throughout the completion of the project as information becomes available. It also includes areas that are applicable to inspections of the installation by trained hazardous area (HA) inspectors.

The HA inspector will be engaged throughout the detailed design process to ensure that the HA design is on track and the information received will be sufficient for them when it comes time for the inspections. It is also planned for the inspector to review the dossier at various intervals throughout the project to ensure that when it comes time for inspection of the installation, there are no surprises that were missed during the design process.

4.2.4.2 Composting Facility

Approval is also sought for a composting facility in the south west extent of the subject site, located in the proposed Lot 3 of the Stage 2 subdivision as per the **SRAIP Subdivision Plans – Appendix B**. The composting facility is also proposed to be owned and operated by Kalfresh.

We note that the composting activity will not be utilising a GORE cover system which was a preliminary design option. Whilst a GORE cover can increase the rate of compost production, the organic composting methods described above will better suit Kalfresh's operational requirements.

The composting facility is formally described as a 'High impact industry' under the planning scheme. An ERA53b – Organic material processing (by composting the organic material) is required for this aspect of the development, refer to Section 4.4 below for further details on this ERA.

4.2.4.2.1 Location and Layout

The composting activity shall operate over 15.4 ha of land within the SRAIP Rural Precinct, as shown on the **SRAIP Concept Plan – Appendix A**. The composting area ranges between ~ 90 – 120 m AHD, above the modelled Q10 and Q100 flood levels of 80 - 83 m AHD.

Transition from the existing operation shall involve expansion of the existing southwest compost pad to accommodate feedstock storage, composting, and finished product storage. The existing northeast pad shall be used for composting until finished product storage is relocated to this area. All drainage (leachate) from these material handling areas shall report to leachate basins.

Plant and equipment storage, carparking and amenities are located central to the material handling pads. Stormwater from these areas shall report to the proposed stormwater basin. Access to the composting area will be via the existing internal (unsealed) road which will connect proposed Lot 11 with the composting area.

4.2.4.2.2 Flow Process

The activity will utilise open windrow composting methods which involve the general process and integration with the SRAIP concept. This flow process is described in detail in **ERA53(a) Report – Appendix F** and shown below in Figure 26.

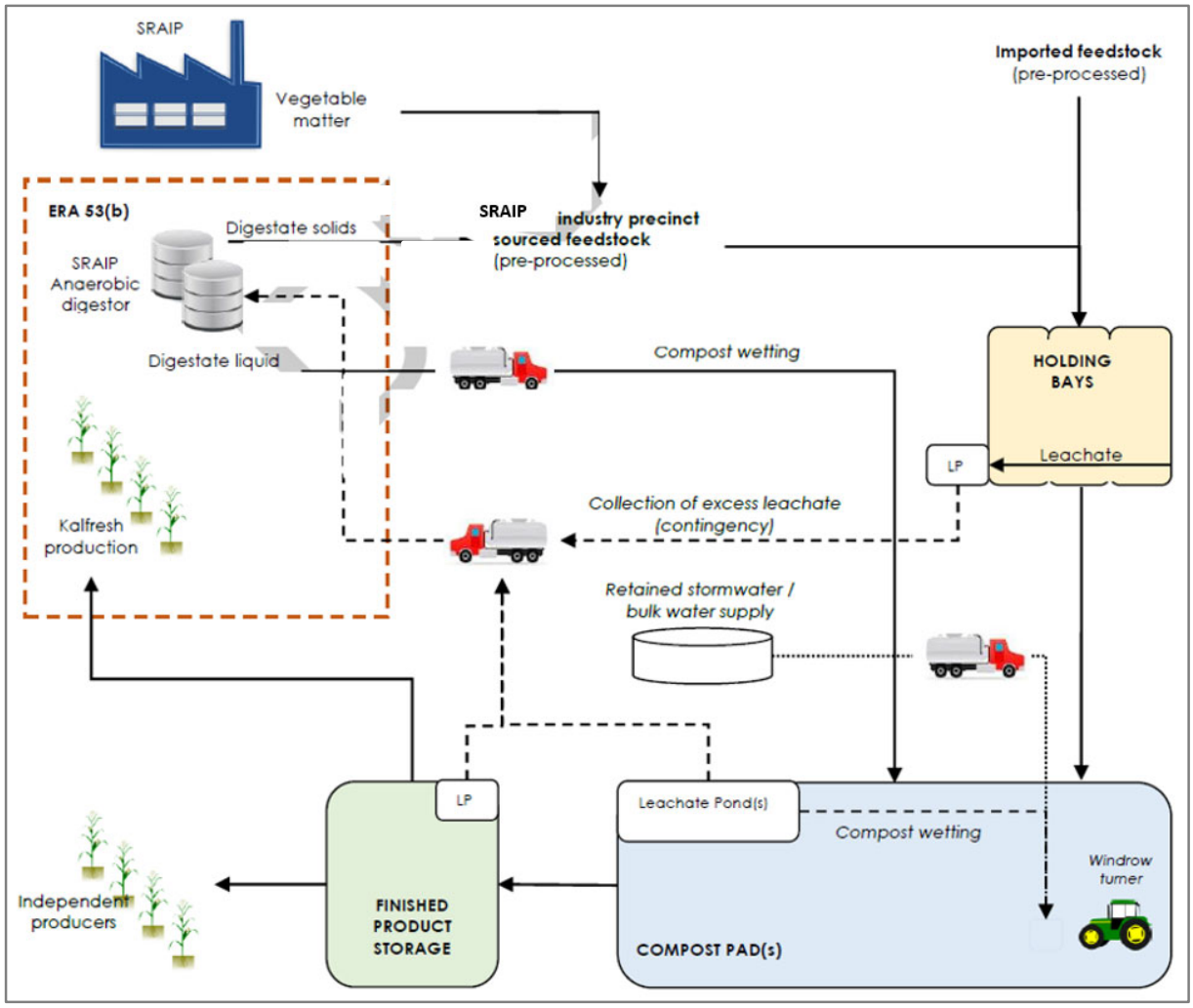


Figure 26 Flow Process – Windrow Composting

4.2.4.2.3 Infrastructure, Plant and Equipment

Descriptions of the infrastructure, plant and equipment directly associated with the activity are summarised in Table 8 of the **ERA53(a) Report – Appendix F**.

4.2.4.2.4 Feedstock Quantities and Compost Productivity Rates

The maximum productivity rate for the activity shall be up to 50,000 tpa of total compost product based on ~ 65% conversion of the feedstocks to be utilised, as detailed within **ERA53(a) Report – Appendix F.** Digestate liquid fertiliser shall be added as required for compost wetting to maintain optimum windrow moisture.

At peak capacity the activity will produce 4 – 5 batches of 10,000 t – 12,500 tonnes per annum based on a typical 12 week composting period per batch.

4.2.4.2.5 Feedstock and Product Handling

All feedstock and finished product shall be placed directly into open holding bays with leachate collection located in the southwest portion of the subject area. Basic construction details of the holding bays are provided in **ERA53(a) Report – Appendix F**.

Feedstock materials shall be imported to the site by supplier operated trucks (i.e. green waste, chicken litter, mushroom substrate), or relocated internally by Kalfresh operated trucks from SRAIP processors and the digester facility. All feedstocks shall be subject to strict acceptance criteria (Section 5.2 of **ERA53(a) Report – Appendix F**) including pre-processing (shredding and sorting) prior to receipt at the composting site.

Onsite storage of raw materials shall be necessary to acquire enough feedstock to supply the next batch of compost. Proposed storage quantities and timeframes for each feedstock at any given time are provided in **ERA53(a) Report – Appendix F**, which take into consideration quantities required, availability, and leachate and odour risks associated with specific materials.

On commencing a new compost batch, a loader, or similar plant, shall be used to transfer feedstock from the holding bays to the composting pads for mixing and windrow formation by a windrow turner. Finished product shall be transferred from the compost pad(s) into stockpile as soon as practicable following completion of the composting cycle. A loader, or similar plant, shall be used to load Kalfresh or customer operated trucks with the finished product for on-site or external use.

4.2.4.2.6 Windrow Preparation and Blending

All feedstocks will be tested for C:N ratio and the feedstock ratios will be calculated to ensure that the C:N ratio of the aggregate mixture is within the 25-30:1 target ration.

Green waste will be laid out in lines with front end loader (FEL) first. Feedstocks will be blended as per calculations by 'patting down' wood chips with the FEL and laying calculated quantities of additional feedstocks along the length of the windrow to achieve the target C:N ratio. The windrow turner will then pass over the feedstocks to blend and lay out windrow. Further blending will occur during subsequent windrow turns.

Blending ratios will be subject to change depending on feedstock availability however will abide by the following rules:

- C:N ratio between 25-30:1
- Digestate solid fraction to green waste/wood chips ratio between 1:3 and 1:4

Documented standard operating procedures (SOP) will be prepared for the operator which aligns with the methodologies specified above, and the conditions set within the environmental authority.

4.2.4.2.7 Windrow Turning and Pasteurisation

Windrow turning and pasteurisation shall follow the process detailed in AS 4454-2012: Composts, soil conditioners and mulches, as summarised below:

- Windrows will be turned at least four times to ensure all material is exposed to at least 55ºC for three consecutive days and for at least 15 days during the composting period:
  - temperature will be monitored using a temperature gauge that stores data electronically.
  - when the internal windrow temperature has been maintained for three consecutive days above 55ºC the windrow will be turned.
- Water is added, from both the facility runoff (onsite leachate and/or stormwater) and bulk water supply (if required), to ensure moisture content of between 40% and 60% is maintained.
- The compost is windrowed at the above temperature requirements and turned for a minimum of 12 weeks.
- Once the pasteurisation process is complete the material will be stockpiled for internal use, or sale.

4.2.4.2.8 Compost Area Design and Construction

Operational areas for the compost pads, holding bays and finished product storage shall be constructed with low permeability bases and walls as part of the overall leachate barrier and collection system. The composter

layout has been designed to maintain separate leachate collection and stormwater management systems to the extent practicable.

Design and construction standards and principles of these and other key environmental aspects of the activity's establishment and operation such as site access, waste storages are discussed in **ERA53(a) Report – Appendix F.**

4.2.4.3 Utility Installation (Sewerage Treatment Plant)

The proposed sewerage treatment plant is to be located on proposed Lot 16. The sewerage treatment plant will be constructed by the SRAIP and managed accordingly by the body corporate.

Appendix H – ERA 63 (Sewer Treatment Plant) Report provides the details of the proposed sewerage treatment plant.

4.2.5 Waterway Barrier Works

As outlined in **Appendix M – Waterway Barrier Works Technical Report**, Department of Agriculture and Fisheries waterway mapping indicates that there are three green 'low-risk' waterways and a single amber 'moderate-risk' waterway within the site. The green waterways within the site were found to be upper drainage lines that did not contain waterway features, retain water or have any flow despite recent and substantial rainfall and therefore were not waterways for the purpose of the *Fisheries Act 1994*. The amber waterway was found to have lower risk to fish passage consistent with a green 'low risk' waterway classification and it is recommended the waterway be reclassified accordingly.

4.2.5.1 Site Inspection Results

Fish sampling found that fish were present within the lower reaches of the site, in the historical drainage channel and the lower section of the amber waterway. No fish were observed or sampled in the middle and upper reaches of the mapped amber waterway. This is likely due to the presence of an existing waterway barrier.

4.2.5.2 Mitigation Measures

Aspects of the SRAIP that may impact waterways within the site includes filling to create allotments, construction of the floodway, internal roads and works to on-stream dams. The waterway crossings and any works to on-stream dams will comply with the accepted development requirements (ADR) for operational works that is construction or raising of waterway barrier works. Works will be undertaken to replace the existing culvert crossing to and provide fish passage to upstream habitats. Fish habitat and waterway connectivity will be provided as part of the SRAIP through the incorporation of billabong type habitats within the floodway and lower reach of the mapped amber waterway. These habitats will be connected via a spoon drain that will concentrate low flows.

Undertaking works in compliance with the ADR, incorporating fish habitats and providing for waterway connectivity with the site will minimise and mitigate any impacts to waterways that provide fish passage. The proposed SRAIP will not result in a significant residual impact.

For additional information in relation to the mitigation measures, refer to **Appendix M – Waterway Barrier Works Technical Report** and **Appendix K – Detailed Engineering Drawings**.

4.3 Location, Design and Capacity of Proposed Infrastructure

4.3.1 Water Supply

It is proposed that the development will be serviced by two watermains, consisting of:

- A conventional potable pressure water reticulation system treated to drinking standard; and
- A recycled watermain network for industrial and/or processing uses.

It is proposed that the internal water reticulation will be supplied by existing bores on the site. Kalfresh are currently in discussions with Department of Natural Resources, Mines and Energy (DNRME) in relation to securing alternative high priority water sources. Negotiations are ongoing with SEQ Water in relation to water allocation from the Warrill Creek.

Ultimately, it is intended that the proposed development will operate self-sufficiently in relation to potable water. Therefore, no agreement or planning approval will be sought from Queensland Urban Utilities (QUU).

We note that water supply to the project is scalable. That is, bore water and existing allocations can be utilised in the early stages of the SRAIP until the time that a medium / high priority water solution is realised.

The conceptual water reticulation layout has been provided for information only and is illustrated in Cardno sketch 510309-002-CI-1500 (**Appendix K**) and also shown below:

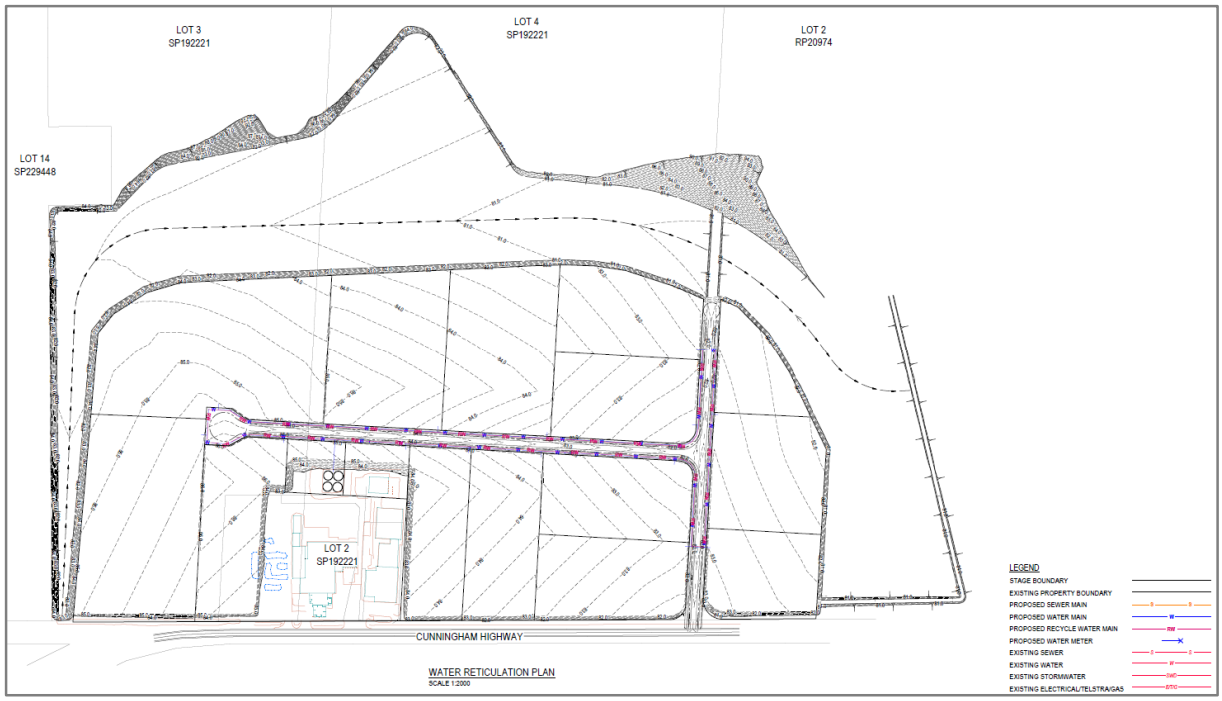


Figure 27 Proposed Water Reticulation Plan

The water to be utilised by the future uses within the SRAIP are anticipated to be sourced from:

- Existing underground bore water supply;
- Medium priority allocation from Warrill Creek; and
- High priority allocation from Warrill Creek.

The water within the SRAIP is proposed to be used in the following ways:

- Warrill Creek water allocation pumped to the site from the creek via a proposed pump station and rising main
- Water bought up from the existing underground bore water supply
- Both of these water sources to feed into the SRAIP water supply servicing the uses to be established within the precinct, including the wastewater treatment plant and anerobic digester
- Industrial wastewater from the processing facilities to be established within the SRAIP including vegetable washing and frozen food production to be mixed with the liquid digestate from the anerobic digester and used as the agricultural water supply

- Wastewater for the above purpose will also be sourced from the gravity wastewater reticulation network which will be treated at the wastewater treatment plant before being pumped to the holding pond

The above process is shown diagrammatically below in Figure 28:

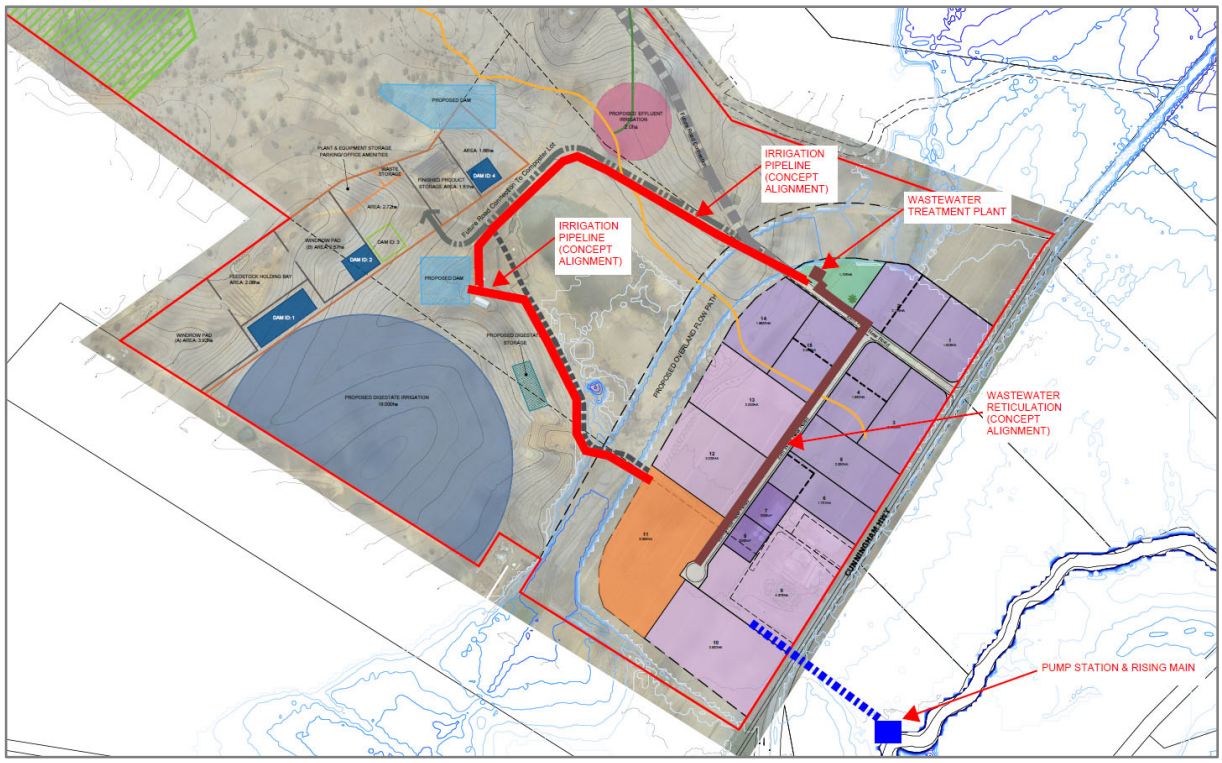


Figure 28 SRAIP Water Process

4.3.2 Power Generation

Power within the SRAIP will be provided by two sources:

- The proposed anaerobic digester which will produce between 1-2 MW per annum initially with potential to reach a maximum output of 10MW annually (no greater and as such no ERA14 is required as part of this application)
- Existing electrical infrastructure servicing the site

The power infrastructure will be finalised during detailed design.

4.3.3 Transmission Infrastructure

Kalfresh have been in discussions with Energex in relation to the transmission infrastructure for the proposed SRAIP. Discussions with Energex are ongoing but in the first instance, an upgrade to the grid is not required for the proposed 1.6MW AD.

The SRAIP body corporate will manage electricity for the entirety of the precinct.

4.4 Infrastructure Requirements

4.4.1 Roads

4.4.1.1 SRAIP Development

As previously stated, the proposed expansion is planned to be separated into two components:

- Lots owned and operated by Kalfresh
- Lots sold and operated by others

The classification of the lots are indicated in Figure 28 above.

The uses for the overall site are as proposed under the variation approval to vary the planning scheme for predominantly agricultural / industrial uses. At this early stage of planning, a high level yield estimate has been adopted for the purposes of the traffic assessment. This has been informed by a 45% developable area over the SRAIP development footprint. Table 7 provides a summary of the assumed yields.

Table 7 Anticipated Kalfresh Expansion Workforce

Indicative Lots	Land Use	Approximate Land Area	Approximate Developable Area*
Kalfresh 5,6,7,9	Agricultural / Industrial	92,770m^2	41,747m^2
Non-Kalfresh 1, 2, 3, 4, 8, 10, 12, 13, 14, 15	Agricultural / Industrial	222,715m^2	100,222m^2
Total		**315,485m^2**	**141,968m^2**

4.4.1.2 Trip Generation

Traffic generation rates for Agricultural / Industrial land use have been sourced from DMTR's Trip Generation Database (2018) for Industrial uses. The average weekday development peak trip rate has been adopted for this assessment. The sourced data is illustrated in Figure 29 below. The orange line represents the average trip rate across the data set, which equates to 0.47 vph/100sq.m.

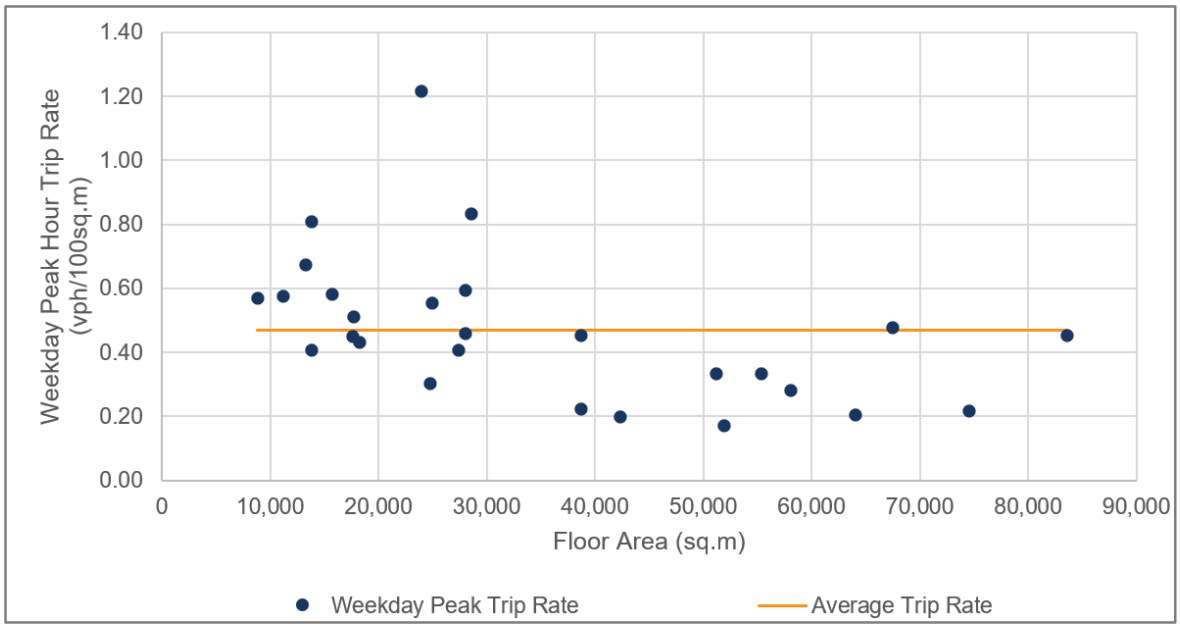


Figure 29 Trip Generation Rate – Industrial Uses

Table 8 outlines the traffic generation for the proposed development. As shown, the proposed development is anticipated to generate 667 vph in each AM and PM peak period.

Table 8: Development Traffic Generation

Use	Land Use	Development Yield	Trip Generation Rates		Trip Generation	
			AM	PM	AM	PM
Kalfresh	Agricultural / Industrial	41,747m^2	0.47 trips/100m^2	0.47 trips/100m^2	196 vph	196 vph
Non-Kalfresh	Agricultural / Industrial	100,222m^2	0.47 trips/100m^2	0.47 trips/100m^2	471 vph	471 vph
Total		**141,968m^2**			**667 vph**	**667 vph**

4.4.1.3 External Distribution

The distribution expected for the proposed development is advised to follow the existing distribution patterns. Table 9 outlines the distribution assumed for workforce trips.

Table 9: Distribution – Proposed Development

Direction	Origin	Distribution
North	Brisbane / Ipswich	12.5%
North-East	Kalbar	37.5%
South-East	Boonah	37.5%
South	Aratula	12.5%
Total		**100%**

4.4.1.4 Directional Distribution

Directional distribution for the proposed development has been estimated as follows:

- **Kalfresh lots**: based on advised shift breakdown, as per Table 10
- **Non-Kalfresh lots**: based on generally accepted distribution splits

The shift breakdown was advised by Kalfresh as follows:

Table 10: Kalfresh Shift Operations

Shift	Shift Time	Proportion of Staff
1	6am to 4pm	45%
2	4pm to 12am	45%
3	12am to 6am	10%
Total		**100%**

The trip movements associated with each shift at each peak period is outlined in Table 11.

Table 11: Kalfresh Trip Movements by Shift

Shift	Shift Times (bold signifies coincides with peak period)	Proportion of Staff	Trip Movements			
			AM in	AM out	PM in	PM out
1	**6am** to **4pm**	45%	**100%**	0%	0%	**100%**
2	**4pm** to 12am	45%	0%	0%	**100%**	0%
3	12am to **6am**	10%	0%	**100%**	0%	0%
Sub-total		**100%**	**45%**	**10%**	**45%**	**45%**
Total			**AM Peak: 55%**		**PM Peak: 90%**	

This results in the following directional splits for the Kalfresh operations:

- **AM Peak**: of the total **55%** staff trips occurring in the peak:
  - 82% in
  - 18% out
- **PM Peak**: of the total **90%** staff trips occurring in the peak:
  - 50% in
  - 50% out

The resultant directional distribution is outlined in Table 12.

Table 12: Directional Distribution – Proposed Development

Use	Trip Generation			
	AM in	AM out	PM in	PM out
Kalfresh	82%	18%	50%	50%
Non-Kalfresh	70%	30%	30%	70%

4.4.1.5 Traffic Generation

The anticipated traffic generated from both the Kalfresh and Non-Kalfresh components of the proposed development is outlined in Table 13.

Table 13: Proposed Development Traffic

Use	Trip Generation			
	AM in	AM out	PM in	PM out
Kalfresh	161 vph	36 vph	98 vph	98 vph
Non-Kalfresh	330 vph	141 vph	141 vph	330 vph
Total	**490 vph**	**177 vph**	**239 vph**	**428 vph**

4.4.1.6 Access

Vehicle access to the site is proposed via a new road, located approximately 430m north from the existing main crossover onto the Cunningham Highway. The intersection with the Cunningham Highway has been determined as a seagull priority controlled T-junction. A concept sketch of the intersection form is provided within the **Traffic Impact Assessment – Appendix N**.

The access arrangement to each development lot is proposed as rear lot access in comparison to the existing access off the Cunningham Highway. The existing access points on Cunningham Highway are proposed to be permanently closed.

4.4.1.7 Sight Distance Review

A sight distance review of the proposed new road location was undertaken in accordance with Austroads standards which provides access to the development. The sight distance requirements for a posted speed of 100km/hr (110km/hr design speed) along the Cunningham Highway is summarised in Table 14.

Table 14: Sight Distance Requirements

Sight Distance Criteria	Design Speed	Requirement
Safe Intersection Stopping Distance (SISD)	110km/hr	285m

From the site inspection, the sight distance review indicated that the proposed new road location can achieve the requirement of 285m set out in Austroads Guide to Road Design Part 4A in both directions on the Cunningham Highway. The sight distance for both approaches (north and south) is in excess of 500m in both directions.

Therefore, the proposed new road location is considered to be appropriate in terms of achieving sufficient sight distance.

4.4.1.8 Proposed Internal Road Network

4.4.1.8.1 Cross Sections

The road reserve for the internal roads have been designed with 22m width. This is in accordance with Queensland Streets, which is referenced in the Boonah Shire Planning Scheme. A typical industrial street cross section is illustrated in Figure 30, as extracted from Queensland Streets.

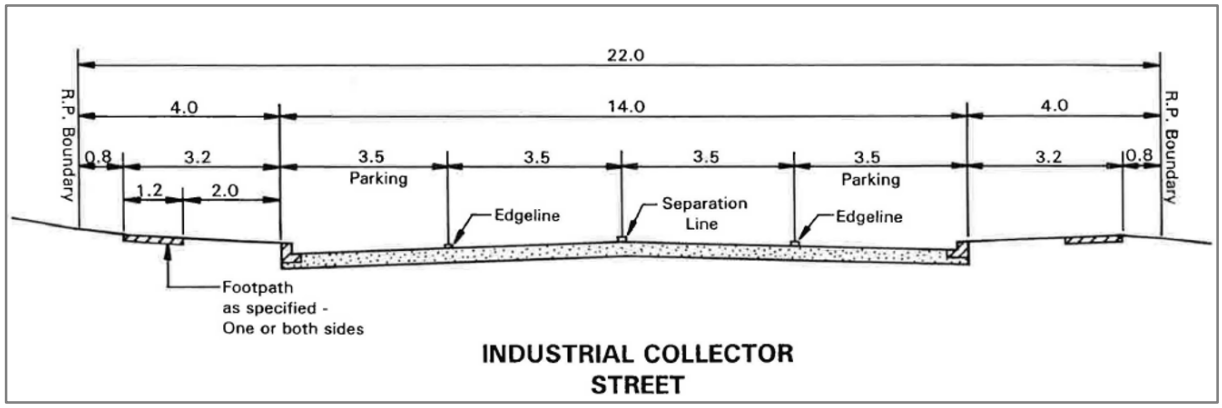


Figure 30 Industrial Street Cross Section

4.4.1.9 Intersection Spacing

The planning scheme policy indicates that intersection spacing should be provided in accordance with the following provisions:

Table 15: Road Intersection Spacing Requirements

Road Type	Minimum Intersection Spacing	
	On Same Side of Through Road	On opposite Side of Through Road
Access Place	60m	40m
Collector Street	60m	40m

The development layout indicates that the first internal intersection is located 200m from the site access intersection with the Cunningham Highway. This is in excess of the minimum spacing requirements for Collector Streets, as indicated in Table 15 above, and thus is sufficient.

4.4.2 Car Parking

4.4.2.1 Acceptable Parking Solution

A summary of Council's acceptable solution for the Kalfresh development car parking when calculated in accordance with the rates outlined in Table 16.

Table 16: Road Intersection Spacing Requirements

Use	Developable Area*	Land Use	Acceptable Solution Rate	Acceptable Solution
Kalfresh	41,747m^2	Industry (all classes including Rural Industry)	1 space per 100m^2 of gross floor area.	418 car parking spaces
Non-Kalfresh	100,222m^2		1 space per 100m^2 of gross floor area.	1003 car parking spaces

As outlined in Table 16, the Kalfresh development lots are recommended to supply in the order of 418 car parking spaces across all lots, in accordance with the estimated yields and the parking rates outlined in the Plan of Development. The Non-Kalfresh lots are recommended to provide 1,003 parking spaces across all lots.

4.4.2.2 Parking for People with Disabilities

Additionally, in accordance with both the Car Parking, Access and Manoeuvrability policy in the Planning Scheme and the Buildings Code of Australia (BCA), a minimum of one parking space per 100 standard parking spaces should be provided for people with disabilities (PWD). This results in a total of 5 spaces for the Kalfresh lots and 11 spaces for the non-Kalfresh lots.

4.4.2.3 Car Park Design Parameters

Carpark design recommendations have been formulated from relevant national standards and guidelines including:

- Australian Standards: Parking Facilities Part 1 - Off-street Car Parking (AS2890.1) 2004
- Australian Standards: Parking Facilities Part 6 - Off-street Parking for People with Disabilities (AS2890.6) 2009

It is recommended the detailed lot designs adhere to the design standards put forward to achieve a suitable carpark design solution.

In accordance with the car parking design requirements set out in AS2890.1, the following design parameters outlined in Table 17 are recommended for on-site car parking for both Kalfresh and Non-Kalfresh lots.

Table 17: Parking Design Parameters

Design Criteria	Design Standard
Bay length	5.4m
Bay width	2.6m
Bay length – People with Disability	5.4m
Bay width – People with Disability	2.4m plus 2.4m shared zone
Aisle width	Minimum 6.2m
Maximum continuous aisle length	100m (if above 100m, install speed humps)
Terminating aisle extension	1.0m

4.4.3 Servicing

4.4.3.1 Design Vehicle

The largest servicing vehicle used for operations within the SRAIP will be a Class 9 truck, which is a 19m articulated vehicle (AV). This is a standard heavy vehicle for industrial lots and as such, the proposed cross section will be sufficient to cater for the movement of these trucks.

4.4.3.2 Servicing Area

It is recommended that the individual lots are designed in order to safely accommodate the movement of AVs. In accordance with Australian Standards Parking Facilities Part 2 - Off-street Commercial Vehicle Facilities (AS2890.2) 2002, servicing areas should be designed to allow for the dimensions outlined in Table 18.

Table 18: Servicing Design Parameters

Design Criteria	Design Standard
Servicing bay length (AV)	19m
Servicing bay width (AV)	3.5m
Servicing aisle width (two way)	Minimum 6.5m

4.4.4 Electricity

The site is currently serviced by existing electrical infrastructure. This electrical infrastructure will be extended to service the new SRAIP.

4.4.5 Telecommunications

The site is currently serviced by existing telecommunications infrastructure. This telecommunications infrastructure will be extended to service the new SRAIP.

4.4.6 Sewerage

An internal sewerage network is to be constructed from NuSewer (PE) in accordance with the provisions of the SEQ Code. NuSewer is a Queensland Urban Utility (WUU) sewerage standard comprising fully of welded PE pipes, fittings and maintenance shafts. The elimination of rubber ring joints minimises ground water infiltration and tree root intrusion reducing maintenance and sewage treatment costs. Where possible all allotments within the development have been graded such that they may be serviced by sewer located within the road reserve at the front of the allotments.

It is proposed the wastewater flows generated within the proposed development will be discharged to the on-site wastewater treatment plant (WWTP). Details of the on-site WWTP are provided at **Appendix H – ERA**

63 Report. The WWTP has been designed to accommodate 200 kL of wastewater flows and will treat sewerage to a Class A standard as per Queensland Water Recycling Guidelines (EPA 2005) and the Public Health Regulation 2005 (QLD). Treated sewerage will then be piped to the proposed irrigation area to the north west of the industrial precinct.

The development will have a maximum of 800 staff working for the industry supplying and distributing vegetables. Sewerage generation estimates were based on the 'QLD Department of Energy and Water Supply – Planning Guidelines for Water Supply and Sewerage April 2010 - Chapter 6 amended March 2014: Table A – Indicative average demands/flows from commercial/institutional developments (litres/day)'. This guidelines states that the sewage generation rate is 25 to 45 L/d per staff member. Based on maximum rate, the average dry weather flow (ADWF) is 45 x 800 = 36,000 L/d = 0.42 L/s.

As such it has been determined that the proposed development can be entirely serviced via an internal reticulation of 160mm diameter NuSewer PE pipework.

The proposed development will operate self-sufficiently in relation to sewerage reticulation, treatment and disposal. Therefore, no agreement or planning approval will be sought from QUU.

The conceptual sewer reticulation layout has been provided for information only and is illustrated in Cardno sketch 510357-001-CI-1500 (**Appendix K**) and also shown below at Figure 31:

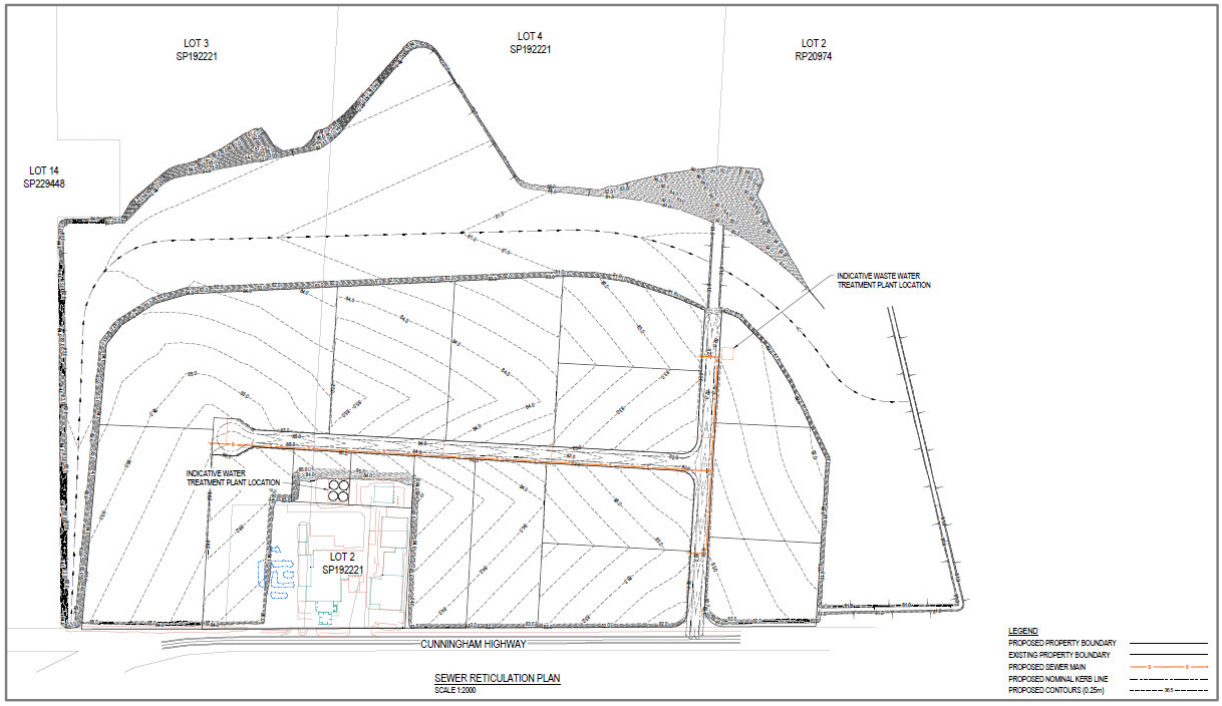


Figure 31 Sewer Reticulation Plan

4.4.7 Waste Disposal

As mentioned above, treated waste is proposed to be disposed at the effluent disposal area. The effluent disposal area is not within 250m of any bore used for domestic waste supply or 1,000m of any bored used for town water supply.

The proposed disposal of effluent to land will be undertaken in a way that ensures:

- Infiltration to groundwater and subsurface flows of contaminants to surface waters are prevented
- Surface pondage and runoff of effluent is prevented
- Degradation of soil structure is minimised

- Soil sodicity and the build up of nutrients and heavy metals in the soil and subsoil are minimised
- Spray drift or overspray do not carry beyond effluent disposal areas
- Effluent disposal areas are maintained with an appropriate crop in a viable state for transpiration and nutrient uptake
- The crop on the disposal area is harvested and removed from the disposal area

4.5 Diversion / Interception of Overland Flow

There is an existing overland flow path running along the western extents of the proposed development area which will be reconfigured to cater for the 1% AEP flood event as part of the proposed works. The land towards the rear of the property, outside of the development footprint and on the opposite side of the overland flow path, ruses sharply towards the western boundary.

Refer to **Civil Services Engineering Report – Appendix J** for design of the proposed overland flow path.

4.6 Pre-construction activities

The site development area currently consists of agricultural cropping land and the existing Kalfresh production facilities. The development of this site necessitates that the area is cleared completely of any existing vegetation including the removal of any unsuitable material identified prior to the commencement of bulk earthworks and civil works construction.

Early establishment of erosion and sediment control measures is carried out in conjunction with the commencement of clearing works in order to prevent the discharge of soils from the site and protect existing downstream infrastructure.

4.6.1 Vegetation Clearing

4.6.1.1 Potential Impacts and Proposed Mitigation Measures

4.6.1.1.1 Impact Avoidance

The location of the SRAIP development footprint is such that many potential impacts associated with the SRAIP are avoided through physical separation from areas of notable ecological value within the site. The SRAIP focuses on areas of existing and historical disturbance, thereby preserving the more intact habitats in the north western portion of the site. Further, the SRAIP nominates an 'Environmental Protection Area', refer to **SRAIP Concept Plans – Appendix A** which specifies that no clearing will occur within the area without additional planning approvals. The residual impacts associated with the SRAIP are minor and are discussed below.

4.6.1.1.2 Residual Impacts

4.6.1.1.2.1 Vegetation

The SRAIP will require the establishment of the proposed uses over a predominantly cleared and heavily modified landscape. The extent of each surveyed vegetation community type within the site is identified in Table 4 of the **Ecology Report – Appendix O**.

Within the vegetation community described as grazed paddocks and scattered mature trees, the SRAIP will require the removal of 15 Non-Juvenile Koala Habitat Trees (NJKHTs). The location of these NJKHTs is shown within a Vegetation and Fauna Management Plan in Attachment 2 of the **Ecology Report – Appendix O**.

4.6.1.1.2.2 Fauna

General Habitat Impacts

Based on the highly degraded and heavily modified nature of the SRAIP development footprint, the SRAIP will have minimal impacts on native fauna species. The habitats that will be directly impacted consist of currently cropped lands, a table drain, and heavily grazed paddock areas with sporadic relict native trees.

The areas within the SRAIP development footprint are not considered to provide important habitat for any fauna of significance. The primary fauna assemblages that utilise these areas are likely to consist of introduced species (e.g. field mouse) and locally common and robust species such as reptiles and arboreal mammals such as possums.

Indirect Impacts

There is potential for the SRAIP to lead to indirect impacts on fauna within and surrounding the site through increased traffic, light, air pollution, noise and odour. Air pollution, noise and odour elements are being assessed under ERA processes; it is expected that the regulations governing the ERAs will be sufficient for the purposes of avoiding notable impacts on resident fauna in what is a highly disturbed area. With respect to traffic and light generation, these aspects will likely increase through the establishment of the SRAIP. However, it must be noted that the site is highly modified and largely devoid of important fauna habitat; particularly in proximity to the development footprint. As such, it is considered that the SRAIP is located in an area that is well-suited to absorb increases in traffic and light spill. The indirect impacts associated with the SRAIP are also likely to further deter native animals from entering the operational areas of the development, thus promoting the ongoing use of peripheral habitat areas.

Fauna of Conservation Significance

No significant impacts on fauna species of conservation significance are expected to result from the SRAIP. Nevertheless, based on its sporadic presence within the site and potentially the SRAIP development footprint, an impact assessment focusing on koalas is provided below. A total of 15 NJKHTs will be impacted to establish the SRAIP.

This section below provides an assessment of the SRAIP against the DoEE's Significant Impact Criteria for the Vulnerable koala.

An action is likely to have a significant impact on a vulnerable species if there is a real chance of possibility that it will:

(a) Lead to a long-term decrease in the size of an important population of a species

As noted in the **Ecology Report – Appendix O**, koalas in the locality are not considered to be an important population. The proposed SRAIP will result in the establishment of a concentrated industrial and agricultural precinct adjacent to the Cunningham Highway and will be co-located with areas under heavy cropping and focused around an existing primary produce process and packing facility. The SRAIP will also involve the establishment of a large pivot circle to spread digestate over a completely cleared paddock. Impacts arising from the SRAIP are negligible (15 highly isolated koala habitat trees) in the context of resident koala populations. Secondary impacts are also considered to be negligible in this context as works will be localised to the SRAIP development footprint and consistent with the surrounding landscape. A minor increase in traffic will arise as a result of the SRAIP; however, all traffic generated will be utilising an already heavily trafficked highway with limited koala habitat adjoining it in the immediate area (i.e. bound by areas under heavy cropping).

(b) Reduce the area of occupancy of an important population

As noted in the **Ecology Report – Appendix O**, koalas in the locality are not considered to be an important population. The proposed SRAIP will not reduce the area of favourable or movement habitat for koala. It is unlikely that the removal of 15 NJKHTs will impact the broader koala population; this impact is negligible for

koala populations and can be significantly improved through revegetation within the site and SRAIP development footprint (within drainage areas).

(c) Fragment an existing important population into two or more populations

Koalas in the locality are not considered to be an important population. It is considered that the SRAIP development footprint and immediate surrounds does not constitute important koala habitat; however, it is acknowledged that individuals will on occasion move through these areas despite their general poor quality and potential risks (e.g. dogs and cars). The SRAIP will not establish a barrier to movement nor is it proposed to be located in an area considered to be important for koala movement (i.e. it is positioned in an area of existing cropping land that stretches over a width of more than 1km with a major highway bisecting the cropping area). As noted, a minor increase in traffic (slow moving as it will be pulling in or departing the SRAIP – reducing collision potential) will arise as a result of the SRAIP. There will be localised traffic increases within the internal road to be established within the SRAIP; however, increases on the Cunningham Highway are likely to be minor or negligible. All generated traffic will occur within areas where limited koala habitat adjoins the carriageways; thereby reducing the likelihood of koala interaction with any traffic associated with the SRAIP.

(d) Adversely affect habitat critical to the survival of a species

The SRAIP development footprint and immediately surrounding areas (c.400 m) do not support habitat critical to the survival of the koala. Consequently, the SRAIP will not adversely impact any habitat critical to the survival of koala.

(e) Disrupt the breeding cycle of an important population

As noted above, the development footprint and immediately surrounding areas do not support habitat critical to the survival of koala, nor does the broader locality support an important population. It is unlikely that the aggregated nature of the SRAIP and its co-location with heavily cleared (cropped or grassed) habitats will impact opportunities for koalas to breed, to seek out mates or to disperse during breeding season.

(f) Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

The SRAIP will not impact any habitat critical to the survival of the koala. It will result in the removal of 15 NJKHTs in a heavily cleared and intensely used agricultural precinct (cropped and grazed) adjoining a major highway. The impacts from the removal of 15 individual NJKHTs and the establishment of the SRAIP over areas under heavy crop or grazing and enveloped by similar uses is unlikely to negatively impact on koala and lead to a decline in the species or local population. Revegetation works within the broader site (e.g. the proposed overland flow path) can significantly increase the available koala habitat, foraging resources and movement opportunities for koala.

(g) Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat

The SRAIP does not occur within any core koala habitat and is well removed from such. It is not expected that the establishment of the SRAIP will increase the level of invasive species that impact koala such as dog or fox.

(h) Introduce disease that may cause the species to decline

The SRAIP is unlikely to introduce pressures to the broader population that do not already existing in the region. The isolated nature of the SRAIP development footprint in relation to the more intact habitat and movement corridors would also separate the proposed uses from koala populations. Individuals moving through the site are unlikely to be incentivised to move towards or through the SRAIP, owing to a lack of suitable habitat (forage or roosting) within or adjoining the SRAIP or to the east across the highway.

(i) Interfere substantially with the recovery of the species

As noted above, the SRAIP development footprint and immediately surrounding areas do not support habitat critical to the survival of koala, nor does the broader locality support an important population. Opportunities

that currently exist for koala movement through the site will not be impacted by the SRAIP as they generally occur a large distance from the SRAIP development footprint. Further, koalas are unlikely to be incentivised to move towards or through the SRAIP as there is no koala forage or roosting opportunities in this area.

Based on this assessment:

- the SRAIP development footprint and its immediate surrounds do not support habitat critical to the survival of the koala;
- the broader locality does not support a defined important population;
- the SRAIP does not occur in areas that support intact koala habitat nor will the SRAIP interfere with koala movement. Further, the location and setting of the SRAIP development footprint does not provide an incentive or any habitat amenity for koala (post development) as there are no koala trees or other vegetation within or proximate to the location (i.e. koalas are unlikely to move through the SRAIP as there is no habitat to move to or adjoining it to the east); and
- koala habitat can be significantly improved within the site through rehabilitation and/or active natural regeneration in areas not under graze or cropping.

4.6.1.1.2.3 Prescribed Matters

The SRAIP will not have a Significant Residual Impact on a prescribed matter.

4.6.1.1.3 Proposed Mitigation

Owing to the minor nature of impacts to flora and fauna resulting from the SRAIP, mitigation measures are largely unwarranted. Any minor residual impacts can be mitigated through rehabilitation of some of the habitats within the site, as described below:

- Compensatory planting works of Queensland blue gum within the overland flow path to promote koala movement through the site. To be clear, this is not formally required as an offset under the relevant legislation but is provided as an ecological offering which will also provide amenity to the SRAIP. This will not affect any Manning's coefficient for stormwater and will increase the presence of koala trees in this area from the existing sparse and scattered prevalence.
- Waterway embellishments or retention of soak areas utilising produced greywater.
- Furthermore, the establishment of the SRAIP will be guided by an approved Vegetation Management Plan (VMP) and Fauna Management Plan (FMP) prepared in accordance with the Planning Scheme's Planning Scheme Policy 5 – Ecological Assessments. A conceptual VMP and FMP is provided for the SRAIP in Attachment 2 of the **Ecology Assessment – Appendix O**.

4.6.1.1.4 Offsets

Due to a lack of impacts on MNES, MSES and MLES, offsets are not required for the SRAIP under the Queensland Environmental Offsets Policy.

4.6.2 Interference with Watercourses and Floodplain Areas

As discussed, the proposal does interfere with a State mapped watercourse and a floodplain area to establish the SRAIP.

A waterway barrier works permit is sought as part of this application. As part of this application, investigations and reporting have been undertaken to:

1. Ground truth the State mapped watercourse on site
2. Establish the lack of ecological values present in this 'watercourse'. Refer to Section 7.6 below and **Appendix M – Waterway Barrier Works Technical Report** for further information on this waterway barrier works investigation.

The site is located on a floodplain that is inundated by Warrill Creek. As the subject site is prone to flooding, the earthworks design comprises filling of the site to be above the 1% AEP flood level. The proposed earthworks profile has been created with the intent to minimise the amount of fill whilst ensuring the development can be appropriately serviced by a stormwater drainage network and also be resilient to the 1% AEP flood event.

4.7 Surface / Groundwater

4.7.1 Proposed Extraction

As mentioned above, groundwater will be extracted from the existing bores on site as per the current situation to service the water needs of the SRAIP in the short term.

No changes to the current methods of extracting groundwater are proposed.

4.7.2 Discharge

Water will be recycled from the new uses within the proposed SRAIP and 'discharged' to the areas in the west of the site for sewer and digestate irrigation.

4.8 Proposed Construction Methods

The following provides a broad overview of potential civil construction methodology:

- Clearing and Site Preparation
  - Survey set-out
  - Identify existing utilities / services
  - Remove unsuitable material prior to commencement of bulk earthworks and civil works construction
  - Establish erosion and sediment control measures
  - Set-up site compound
- Bulk Earthworks
  - Strip and stockpile topsoil material
  - Provision of erosion and sediment control measures
  - Earthworks including compaction and re-spread of topsoil (level 1 supervision required)
    - Includes on-leads and import of excess fill material
  - Compaction testing and certification
  - As-constructed survey
- Internal Roadworks
  - Excavate any bad ground followed by detailed earthworks and compaction to 95%
  - Install sub-soil drainage
  - Trimming and compaction of pavement sub-grade
  - Install concrete kerb and channel
  - Construct pavement using specified material (spread and compact) and finish with asphalt surface course
  - Construct concrete footpaths including excavation, joints, broom finish as specified

  - Provision of cross road service conduits in accordance with detailed design
  - Provision of signs and line-marking
  - Turfing to designated areas
  - Material and pavement testing and certification
  - As-constructed survey
- Stormwater Drainage (this would likely be constructed during the bulk earthworks phase with finishing details completed with the internal roadworks)
  - Supply and construct stormwater pipes, manhole chambers and gully pits / inlets
  - As-constructed survey
- Stormwater Quality / Quantity
  - Construction Bio and Detention basins
    - De-silt and re-shape basins following bulk earthworks
    - Install filter media (i.e. sandy loam), transition layer, impermeable membrane, slotted pipes, outlet pipes and weir etc.
- Sewerage reticulation (this would likely be constructed during the bulk earthworks phase with finishing details completed with the internal roadworks)
  - Supply and construct sewer main, manhole chambers and lot connections
  - Video surveillance to confirm integrity of network
  - As-constructed survey
- Water reticulation (this would likely be constructed during the bulk earthworks phase with finishing details completed with the internal roadworks)
  - Supply and construct potable and re-cycled water mains (including provision of fittings and water meters).
  - Scour and swab completed mains and disinfect with chlorine solution
  - Pressure test and as-constructed survey

4.9 Proposed Operational Principles

The proposed development will operate in accordance with the following standards and regulations:

Vegetation Clearing

- Queensland Nature Conservation Act – Standard industry recognised measures employed during vegetation clearing to minimise harm and disruption to animals and breeding places

Erosion and Sediment Control

- International Erosion Control Associated (IECA) Australasia ‘Best Practice Guidelines and Scenic Rim Council Standards’

Proposed Haulage Route / SRAIP / Cunningham Highway Intersection

- DTMR Standards

Car Park Design Parameters

- Australian Standards: Parking Facilities Part 1 – Off-street Car Parking (AS2890.1) 2004

- Australian Standards: Parking Facilities Part 6 – Off-street Parking for People with Disabilities (AS2890.6) 2009

Servicing Areas

- Australian Standards Parking Facilities Part 2 – Off-street Commercial Vehicle Facilities (AS2890.25) 2002

Wastewater Treatment Plant

- Class A Standard of treatment – Queensland Water Recycling Guidelines (EPA 2005) and the Public Health Regulation 2005 (Qld)

Wastewater

- Guidelines for sewerage systems – Use of reclaimed water (2000)
- Planning Guidelines for Water Supply & Sewerage (DERM 2010)
- Public Health Regulation 2005 (QPC 2010)
- Queensland Plumbing and Wastewater Code (DHPW 2013)
- Queensland Water Recycling Guidelines (EPA 2005)
- Water Quality Guidelines for Recycled Water Schemes (2008)

Chemical Storage / Hazardous Material

- Australian Standard AS1940-2004 The Storage and Handling of Flammable and Combustible Liquids
- National Standard for the Storage and Handling of Workplace Dangerous Goods
- Australian Code for the Transport of Dangerous Goods by Road and Rail
- Dangerous Goods Safety Management Act 2001
- Managing risks of hazardous chemicals in the workplace – Code of Practice (SWA 2012)

ERA53(a) and ERA53(b)

- AS ISO 14001: 2016 – Environmental Management Systems
- AS / NZS ISO 31000: 2009 Risk Management – Principles and Guidelines
- Guideline: Open windrow composting under environmentally relevant activity 53(a) – Organic material processing by composting (DES2018c)
- Guideline: Application requirements for activities with waste impacts (DES 2019)
- Guideline: Application requirements for activities with impacts to water (DES 2017a)
- Guideline: Application requirements for activities with impacts to land (DES 2017c)
- Guideline: Application requirements for activities with impacts to air (DES 2017d)
- Guideline: Noise Control – Planning for Noise Control (DEHP 2015)
- Guideline: Odour Impact Assessment from Developments (DEHP 2013c)
- Compost Guidelines (EPA 2013)

Feedstock and End-Product Quality

- AS 4454-2021: Composts, soil conditioners and mulches
- Managing risks of hazardous chemicals in the workplace – Code of Practice (SWA 2018)

Noise

- Noise Measurement Manual (ESR/2016/2195, DEHP 2013a)

Water Quality

- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG 2018)
- AS/NZs 5667-1998: Water quality – Sampling
- Monitoring and Sampling Manual (DES 2018a)
- Queensland Water Quality Guidelines (DEHP 2013b)
- Guideline: Environmental Protection (Water) Policy 2009 – Deciding aquatic ecosystem indicators and local water quality guidelines (DES2018b)

4.10 Total Traffic Generation

The Traffic Impact Assessment (**Appendix N**) for the proposed development has been undertaken to account for the following development elements:

- Construction Traffic Impact
  - Existing Kalfresh site operations traffic
  - Construction traffic
- Proposed Development Traffic Impact
  - Quarry traffic (determined by others)
  - Proposed development traffic (Kalfresh lots and Non-Kalfresh lots)

Sections 4.10.1 and 4.10.2 detail the anticipated traffic generation for the abovementioned elements of the development.

4.10.1 Existing Kalfresh Operations Traffic

To determine the existing day to day operations of the Kalfresh site, Cardno has undertaken a first principles assessment with data supplied from Kalfresh to gain an understanding of daily traffic associated with the existing site.

4.10.1.1 Existing Kalfresh Operations Traffic (Workforce)

This section outlines the trip generation related to the existing workforce employed at the current Kalfresh site. The existing operations workforce as advised by Kalfresh is outlined in Table 19:

Table 19: Existing Operations Workforce

Staff	Operations
Permanent Staff	50 staff (admin, trucking, packing, farming)
Casual Staff	50 to 150 staff (varies depending on the season, consists of operations in the packing sheds)

The proposed workforce distribution is summarised in Table 20 below. Kalfresh has advised that generally at least 20 of staff are usually passengers (car pooling) and as a result, 80% of staff person trips will result in driving trips.

Table 20: Workforce Distribution – Existing Operations and Construction

Direction	Origin	Vehicle Type	Distribution		
			Car as driver	Car as passenger^	Distribution as % of driving trips
North	Brisbane / Ipswich	Light vehicle	10%	2.5%	12.5%
North-East	Kalbar		30%	7.5%	37.5%
South-East	Boonah		30%	7.5%	37.5%
South*	Aratula		10%	2.5%	12.5%
Total			**80%**	**20%**	**100%**

Note: * Assumed remaining 10% originates from the South, ^ 20% passenger split between the various origin locations

The estimated driving trips for the existing workforce are summarised in Table 21 below.

Table 21: Traffic Generation - Existing Operations

Staff Type	No. of Staff	Daily Person Trips#	% Driving Trips	Daily Driving Trips	AM peak % of Daily	PM peak % of Daily	AM Peak Trips	PM Peak Trips
Permanent staff	50	100	80%	80	50%†	50%†	40	40
Casual staff	150*	300	80%	240	33%^	33%^	40	40
Total				**320 vpd**			**80 vph**	**80 vph**

Note: # Assume two person trips per staff per day * Assumed upper limit of casual staff representing peak season operations, † Assumed permanent staff arrive during peak hours only, ^ Assume casual staff work in three (3) shifts per day with equal staff per shift, arriving during peak hours

Table 23 summarises the directional distribution of the existing workforce trips in the AM and PM peaks. It is noted that the casual staff trips represent a shift change over during the peak periods therefore, staff for one shift will be departing and staff for the next shift will be arriving during the peak hour.

Table 22: In/Out Split - Existing Operations

Staff Type	No. of Staff	AM In %	AM Out %	PM In %	PM Out %
Permanent staff	50	100%	0%	0%	100%
Casual staff	150	100%	100%	100%	100%

The resultant traffic generated by direction for the existing workforce is summarised in Table X.

Table 23: Directional Traffic Generation - Existing Operations

Staff Type	No. of Staff	Trip Generation (vph)			
		AM In	AM Out	PM In	PM Out
Permanent staff	50	40	0	0	40
Casual staff	150	40	40	40	40
Total		**80 vph**	**40 vph**	**40 vph**	**80 vph**

4.10.1.2 Existing Kalfresh Operations Traffic (Operations)

4.10.1.2.1 Deliveries from Site

This section outlines the trip generation related to the existing operations (deliveries) at the current Kalfresh site. Existing operation distribution patterns for deliveries departing site (processed produce) are outlined in Tables 24 and 25.

Table 24: Existing Operations Distribution – Deliveries Departing Site

Origin	Destination	Direction	Vehicle	Daily Trucks	AM % of Daily Trips	PM % of Daily Trips
Kalfresh site	WW DC	North	Class 9 truck	4	50%	50%
Kalfresh site	Coles DC	North	Class 9 truck	4	50%	50%
Kalfresh site	Brisbane Markets / Brisbane	North	Class 9 truck	1	100%*	100%*
Kalfresh site	Nolans (Gatton) for interstate	North	Class 9 truck	3	50%	50%

* Adopted conservative assumption for each peak that trucks arrive and depart in both peaks

Table 25: Existing Operations Trips – Deliveries Departing Site

Origin	Destination	Vehicle	Daily Trucks	Daily Trips	AM Trips	PM Trips
Kalfresh site	WW DC	Class 9 truck	4	8	4	4
Kalfresh site	Coles DC	Class 9 truck	4	8	4	4
Kalfresh site	Brisbane Markets / Brisbane	Class 9 truck	1	2	2	2
Kalfresh site	Nolans (Gatton) for interstate	Class 9 truck	3	6	3	3
Total				**24**	**13 vph**	**13 vph**

4.10.1.2.2 Deliveries to Site

Existing operation distribution patterns for deliveries arriving to site (unprocessed produce) are outlined in Tables 26 to 27.

Table 26: Existing Operations Distribution – Deliveries Arriving to Site

Origin	Destination	Direction	Vehicle	Daily Trucks	AM % of Daily Trips	PM % of Daily Trips
Kalbar/Lockyer	Kalfresh site	North-east	Class 9 Truck	2	50%	50%
Liston/Downs	Kalfresh site	South	Class 9 Truck	2	50%	50%
Kalbar/Lockyer	Kalfresh site	North-east	Class 5 Truck	2	50%	50%
Liston/Downs	Kalfresh site	South	Class 5 Truck	2	50%	50%
Nolans (Gatton)	Kalfresh site	North	Class 9 Truck	3	50%	50%
Bowen*	Kalfresh site	North	Class 9 Truck	1	100%*	100%*

* Adopted conservative assumption for each peak that trucks arrive and depart in both peaks

Table 27: Existing Operations Trips – Deliveries Arriving to Site

Origin	Destination	Vehicle	Daily Trucks	Daily Trips	AM Trips	PM Trips
Kalbar/Lockyer	Kalfresh site	Class 9 Truck	2	4	2	2
Liston/Downs	Kalfresh site	Class 9 Truck	2	4	2	2
Kalbar/Lockyer	Kalfresh site	Class 5 Truck	2	4	2	2
Liston/Downs	Kalfresh site	Class 5 Truck	2	4	2	2
Nolans (Gatton)	Kalfresh site	Class 9 Truck	3	6	3	3
Bowen	Kalfresh site	Class 9 Truck	1	2	2*	2*
Total				**24 vph**	**13 vph**	**13 vph**

* Adopted conservative assumption for each peak that trucks arrive and depart in both peaks

As shown, a total of 26 vph are estimated for both deliveries to and from site in each peak period. It is noted that the total of the peak period trips result in a larger value than the estimated daily trips. This is due to adoption of the conservative assumption that deliveries occurring once per day will arrive and depart in both peak periods, to ensure both peaks include the impact of the delivery.

4.10.2 Construction Traffic

To determine the traffic generated during the construction works for the expansion of the Kalfresh site, Cardno has undertaken a first principles assessment to gain an understanding of daily traffic associated with the existing site.

Table 28 outlines the assumptions adopted when calculating the anticipated traffic generation proposed for the construction workforce, with the adopted traffic generation rates outlined in Table 29.

Table 28: Construction Phase Assumptions

Construction Phase	Assumptions	
Phase 3: Groundworks and Construction	32 workers^	• Earthworks activities: 1 truck (B-doubles, AVs) every 10 mins over 10 hrs per day • Import of earthworks would have the greatest heavy vehicle traffic impact
Phase 5: Digester Construction	33 workers^	• Assume all workforce trips are single occupant vehicle trips
Phase 5: Building Construction	443 workers*	• Lots would likely be constructed over a period of time, not all at once • However for a conservative assessment, assume all lots constructed at the same time • Assume 33 construction workforce per lot except lots 7 and 8 which have been proportioned by lot area compared to average lot area • Assume all workforce trips are single occupant vehicle trips

Note ^ Kalfresh assumption, * Based on Cardno assumptions

Table 29: Construction Workforce Trip Generation

Construction Phase	No. of Workers	Trip Generation Rate (trips per worker)		
		AM	PM	Daily
Phase 3: Groundworks and Construction	32	1	1	2
Phase 5: Digester Construction	33	1	1	2
Phase 5: Building Construction	443	1	1	2

The estimated traffic generation associated with the construction workforce is outlined in Table 30.

Table 30: Construction Workforce Traffic Generation

Construction Phase	No. of Workers	Trip Generation		
		AM	PM	Daily
Phase 3: Groundworks and Construction	32	32 vph	32 vph	64 vpd
Phase 5: Digester Construction	33	33 vph	33 vph	66 vpd
Phase 5: Building Construction	443	443 vph	443 vph	886 vpd

4.10.2.1 Construction Phase 5 Traffic – Peak Traffic Impact

It is anticipated that the peak construction traffic in terms of overall vehicle trips will occur during Phase 5. This is largely attributed to the workforce numbers which are considered to be overestimated due to the assumption that all lots will be constructed at the same time. While this is not considered to be a likely outcome, this assessment has been undertaken to anticipate the worst case construction traffic impact.

Table 31 outlines the directional distribution expected for Phase 5 workforce trips, with the resultant traffic generation outlined in Table 32.

Table 31: Construction Workforce Directional Distribution

Construction Phase	No. of Workers	Distribution			
		AM in	AM out	PM in	PM out
Phase 5: Digester Construction	33	100%	0%	0%	100%
Phase 5: Building Construction	443	100%	0%	0%	100%

Table 32: Construction Workforce Traffic Generation

Construction Phase	No. of Workers	Trip Generation			
		AM in	AM out	PM in	PM out
Phase 5: Digester Construction	33	33	0	0	33
Phase 5: Building Construction	443	443	0	0	443
Total		**476 vph**	**0 vph**	**0 vph**	**476 vph**

As shown, the Phase 5 construction activities are estimated to generate 476 vph in each peak period.

4.10.3 Frazerview Quarry Traffic

The Frazerview Quarry traffic volumes have been considered in the traffic impact assessment and have been sourced from the PTT Frazerview Quarry Traffic Impact Assessment dated 22 January 2019.

The proposed peak hour volumes generated from the Frazerview Quarry are outlined in Table 33.

Table 33: Traffic Generation - Frazerview Quarry

User	Traffic Generation			
	AM In	AM Out	PM In	PM Out
Staff	**16**	**4**	**4**	**16**
Trucks	**11**	**11**	**11**	**11**

The external network distribution adopted for the assessment is outlined in Table 34.

Table 34: Trip Distribution - Frazerview Quarry

User	North	South
Staff	50%	50%
Trucks	90%	10%

4.11 Project Benefits

4.11.1 Economic Benefits

The SRAIP will support up to 100 direct and indirect construction jobs every year over the course of the 10 year construction phase through both civil and non-residential construction activity. Once fully operational, Kalfresh and other occupants of the Precinct will support over 1,000 direct and indirect jobs in the locally economy. This will include adding $140.5 million in GVA (80.5%) to the Scenic Rim economy each year.

4.11.2 Social Benefits

The SRAIP will transform, diversify and value add to the Boonah and Scenic Rim communities. It will support a more sustainable and diversified economy which will be less volatile and provide local farmers with an expanded value adding opportunities in the region. Additionally, local businesses in construction and manufacturing support sectors will benefit from their involvement in the SRAIP supply chains, improving their sustainability and viability.

Finally, the jobs generated in SRAIP will also help to:

- Increase the attractiveness of the region to younger workers and households addressing socio-economic and age profile challenges in the region
- Reduce unemployment by providing more sustainable ongoing permanent employment opportunities
- Improve the quality of life of workers by reducing travel times within and outside of the Scenic Rim for work and retail/service access
- Reduce the volatility and improve the sustainability and dynamism of local communities through more permanent, non-seasonal employment and economic opportunities.

Overall, the MCA-based Social Impact Assessment held within the **Economic Impact Assessment – Appendix E** identified no major negative impacts to the community with the overall Social Impact Score from the assessment being overwhelmingly positive.

Boonah and Kalbar are likely to experience the most significant impacts among the towns of the Scenic Rim and these social and economic impacts are likely to be overwhelmingly positive, helping to improve the long-term sustainability of the townships.

Further engagement with stakeholders, coupled with ongoing monitoring and measuring of outcomes during implementation phases are recommended to further understand, enhance and/or mitigate social impacts over time.

4.11.3 Opportunities to Capture Economic and Social Benefits

A series of opportunities have been identified for the SRAIP to capture and yield economic and social benefits for the communities of the Scenic Rim.

A summary of these benefits, and the approach taken to calculate their value are outlined in Table 35 below:

Table 35: Opportunities to Capture Economic and Social Benefits

Benefit	Description	Calculation Approach
Gross Value Added of Additional Food Production (Kalfresh)	The Gross Value Added of food manufacturing production from Kalfresh specific sites. Based on the net additional production output and the direct gross value added share captured by the local economy. Represents additional production in the Scenic Rim that otherwise would not occur.	Estimated using the Scenic Rim specific Economic Impact Assessment model, utilised by RPS in the SRAIP SEIA report for the Queensland Coordinator General. Economic impact Assessment model transaction table was adjusted to the Scenic Rim economy. Direct benefits only are captured.
Construction Supply Chain (Stage 1 infrastructure only)	The indirect gross value added generated by capital construction costs for the specific construction items (civil and digestor supporting infrastructure). Represents the impact on the Scenic Rim construction supply chain from the new capital investment. Excludes the impact of subsequent construction in the SRAIP.	Estimated using the Scenic Rim specific Economic Impact Assessment model, utilised by RPS in the SRAIP SEIA report for the Queensland Coordinator General. Economic impact Assessment model transaction table was adjusted to the Scenic Rim economy. Indirect Industry Production Induced Gross Value Added values only.
Value of Digestate	The market value of digestate by-product from the Digestor's anerobic energy production. Used as a fertiliser for agricultural production.	Based on daily production of 100 tonnes with an application of 30m3 of production per hectare and a net value savings of $250 per hectare.
Induced Industrial Production (Non-Kalfresh)	The Gross Value Added of food and other manufacturing production from other non-Kalfresh industrial sites developed and occupied as part of the Precinct. Assumes 50% of sites occupied for food manufacturing and the remainder for other general food-related industry.	Turnover/output estimated by approximating employment for each site and deriving turnover values for manufacturing businesses based on Queensland Business Registrations data from the ABS. Gross Value Added using the Scenic Rim specific Economic Impact Assessment model, utilised by RPS in the SRAIP SEIA report for the Queensland Coordinator General. Economic impact Assessment model transaction table was adjusted to the Scenic Rim economy. Assumed that all production is new and 100% induced into the economy.
Energy Production	Value of energy produced from the anaerobic digester.	Assumes a 1MW plan with an annual production of 7,000 MWh per year. Valued based on annual volumed weighted average spot prices of $66.00 per MWh.
Expenditure by New Workers (Kalfresh)	Value of non-housing and non-health-related expenditure by net additional workers associated with Kalfresh operations.	Based on MarketInfo expenditure data for the Scenic Rim from MarketDataSystems. Assumes approximately $30,087 expenditure per net additional worker, excluding previously unemployment and repatriated workers (benefits quantified separately).
Expenditure by New Workers (Non-Kalfresh)	Value of non-housing and non-health retail-related expenditure by net additional workers associated with non-Kalfresh operations.	Based on MarketInfo expenditure data for the Scenic Rim from MarketDataSystems. Assumes approximately $30,087 expenditure per net additional worker, excluding previously unemployment and repatriated workers (benefits

Benefit	Description	Calculation Approach
		quantified separately). Operational workers only.
Avoided Greenhouse Emissions (Waste)	CO2e value of emissions savings from the redirection to the anaerobic digester of food waster that would otherwise be disposed in landfill.	Approximately 48,190 tonnes per annum of landfill diversion to the digester, saving 1.9t CO2e of emissions per tonne. Valued at $45/tonne CO2e (fully market and environmental impact costing).
Avoided Landfill Disposal Costs	Avoided disposal costs from the redirection to the anaerobic digester of food waster that would otherwise be disposed in landfill.	Approximately 48,190 tonnes per annum of landfill diversion to the digester, saving $67.33 per tonne of direct landfill disposal costs
Avoided Landfill Externalities (Non-Greenhouse Gases)	Avoided externality costs from the redirection to the anaerobic digester of food waster that would otherwise be disposed in landfill.	Approximately 48,190 tonnes per annum of landfill diversion to the digester, valued at $1.70 per tonne of external costs.
Reduction in Unemployment	Reduced costs to the Federal Government of unemployment benefits to workers who will be employed at SRAIP.	Assumes 10% of net additional operational workers are currently unemployed and receiving Newstart allowance (valued at $14,534 per year).
Reduced Travel Time for Repatriated Workers	Reduced travel time costs for workers who current live in the Scenic Rim but have to travel outside of the region for work due to a lack of local opportunities.	Assumes 10% of workers currently travel to Ipswich for employment. Saves 460 trips per worker per year involving of 40minute travel time (each direction). Valued at $7.25 per person per hour timing savings (applying “rule of half”).

4.12 Compatibility of Project

4.12.1 Compatibility of SRAIP with other Major Projects / Development in Surrounding Area and Scenic Rim Region

The SRAIP is strategically positioned to benefit a range of towns and communities on the western side of the Scenic Rim region. In particular, positive social and economic impacts of SRAIP will directly impact and benefit:

- Kalbar – the closest town with a strong and proud agricultural history. The town of Kalbar is home to 800 residents in 2016, up from 723 in 2011. This positive population growth is somewhat unique for a rural agricultural town in Australia and reflects the strong connectivity of the town via the Cunningham Highway and Boonah Fassifern Road. This connectivity has helped to support the attraction of car-based tourist visitation, leveraging the town’s German heritage, colonial buildings and green change lifestyle.
- Boonah – Boonah is the largest town in the western sub-region of the Scenic Rim. Home to over 2,500 people, the town is a service and business hub for a wider catchment of over 12,000 people in towns and communities including Kalbar, Aratula, Harrisville and Peak Crossing. Boonah has a long history as the main street and centre of the wider agricultural district and maintains a rural lifestyle attractive to families, workers and retirees alike. Boonah is also home to a diverse range of local and regional services that meet the needs of the local population as well as servicing into surrounding communities.
- Aratula – The village of Aratula is located on the Cunningham Highway at the foot of Cunningham’s Gap. Aratula is home to 541 residents in 2016, up from 515 in 2011. Aratula offers commercial services, local produce, arts and crafts outlets, cafes, a bakery, service stations, a primary school, School of Arts hall, a hotel, motels, caravan park and camping grounds.

The towns of Kalbar and Boonah are expected to experience the greatest impacts from the development. The SRAIP will generate significant economic activity that will help to ensure the long-term sustainability of the towns at a time in Australia when regional and agricultural-based communities are declining. This includes through improved employment accessibility, unemployment reduction, local business supply chain benefits and improved working age population attraction and economic participation.

The position of the development and the integrated nature of the SRAIP means that the transport impacts on the communities are likely to be minimal, while housing impacts are also expected to be minor, as a portion of the workforce is expected to already be locally based and take up the opportunities presents by the SRAIP to repatriate to the Scenic Rim.

Aratula may also experience some minor positive and negative social impacts from the development, but it is likely that these impacts will be minimal.

The development at full completion is expected to support upward of 475 full time employees (FTEs). Many of these workers are expected to be drawn from local residents in towns like Kalbar and Boonah and so the net additional requirement for community, emergency and other social services from these workers at the SRAIP is expected to be a zero (as they are already living in the area).

A review of EDQ's Community Facilities Guidelines illustrates the population thresholds at which new community facilities and services are required. These include:

- Ambulance – 1 facility per 25,000 people;
- Community Health Centre – 1 facility per 20,000 to 30,000 people;
- Fire and Rescue – dedicated local facility when the service catchment has a population over 25,000 people;
- Police – 1 facility per 20,000 to 30,000 people.

It is understood that these population thresholds were specifically referencing service rates required for new growth areas (hence it is relevant to reference these EDQ guidelines as EDQ typically deal with new growth areas similar to the SRAIP). Similarly, it is understood that more rural and regional areas, that are more spatially disconnected from the broader urban and metropolitan service network, require local facilities and services at lower thresholds.

According to the Australian Bureau of Statistics (ABS), the Boonah Statistical Area 2 (SA2) which includes the towns of Boonah and Kalbar, was home to a population of 12,150 in 2018. Based on this population alone, the towns within the Boonah SA2 do not have a sufficient critical mass of residents to justify a range of health, emergency and community services.

Despite this, and because of the more peri-urban and rural nature of the area, Boonah and Kalbar are home to the following services:

- Boonah Ambulance Station;
- Blue Care Fassifern Community Care and Boonah Hospital and Health Services;
- Boonah Police Station
- Boonah Fire Station
- Kalbar Fire Station; and
- Kalbar Police Station.

The lack of population critical mass in the Boonah SA2 supporting these facilities and services means the addition of non-resident workers at the SRAIP site is unlikely to require an uplift in current service provision. Instead, the net addition of demand for emergency, health and community services from non-resident workers will help to build a critical mass of need to support and justify a higher quality of community service offering in the region in the long-term.

For additional information, refer to **Economic and Social Impact Assessment – Appendix E**.

4.12.2 Compatibility with KRA141

The *State Planning Policy* (SPP) states that KRAs are protected by:

- maintaining the long term availability of the extractive resource and access to the KRA
- avoiding new sensitive land uses and other incompatible land uses within the resource / processing area and the related separation area of a KRA that could impede the extraction of the resource
- avoiding land uses along the transport route and transport route separation area of a KRA that are likely to compromise the ongoing use of the route for the haulage of extractive materials
- avoiding new development adjacent to the transport route that is likely to adversely affect the safe and efficient transportation of the extractive resource

The SRAIP proposal ensures that KRA 141 is protected through the following means:

- the SRAIP variation request proposes that where within the Rural Precinct of the SRAIP, the area identified as the KRA resource and processing area, Extractive Industry is Code assessable where extracting less than 15,000 tonnes per year. This will ensure the resource available within the site can be extracted to 'maintain the long term availability of the resource'.
- the haulage route proposed through Lot 2 on RP20974 as part of the Frazerview quarry application is being maintained by the SRAIP proposal, ensuring access to the KRA is maintained and a new access point is provided to the Cunningham Highway
- the SRAIP level of assessment tables do not allow for 'sensitive land uses' as defined by the *Planning Regulation 2017* (the Regulation) to be established in either the Industrial or Rural Precincts of the SRAIP. The proposed uses allowable within the SRAIP are compatible with the KRA as they comprise mainly agricultural / industrial land uses.
- the SRAIP accommodates for the proposed haulage route. The proposed uses within the SRAIP will not compromise the ongoing use of the route for the haulage of extractive materials as they are not 'sensitive land uses'
- The SRAIP is a compatible use and maintains the new haulage route through to the Cunningham Highway

4.12.3 Regional Planning Interests Act 2014

The Regional Planning Interests Act 2014 (RPI Act) identifies certain areas of Queensland that are of regional interest and seeks to manage the impact and coexistence of resource activities and other regulated activities in those areas. The RPI Act is supported by the Regional Planning Interests Regulation 2014 (RPI Regulation).

There are four areas of regional interests under the RPI Act:

- a priority agricultural area (PAA)
- a priority living area (PLA)
- the strategic cropping area (SCA)
- a strategic environmental area (SEA).

Each area of regional interest is defined under the RPI Act and has been identified because of its contribution, or likely contribution to Queensland's economic, social and environment prosperity.

The RPI Act has identified the following areas of regional interests for the Kalfresh SRAIP land;

- **Strategic Cropping Area (SCA)** – an area of land that is, or is likely to be, highly suitable for cropping because of a combination of the land's soil, climate and landscape features.

- **Priority Agricultural Area (PAA)** – strategic areas of regional interest, identified on a regional scale, that contain significant clusters of the region's high-value intensive agricultural land uses.

As identified in the original initial advice statement (IAS) for the SRAIP, whilst the subject site has been recognised under RPI Act provisions, minimal loss of mapped SCA &/or PAA land has been envisaged. No offsite loss of mapped SCA &/or PAA land has been anticipated as a result of this proposed SRAIP development.

It is recognised that whilst the site is mapped under State Government provisions, there is actually only a relatively small area of existing cropping land (currently situated along the Cunningham Highway frontage and equating to approximately 35 ha in area) which will be directly impacted by this SRAIP proposal.

An extract from the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) SCA mapping is included below in Figure 32:

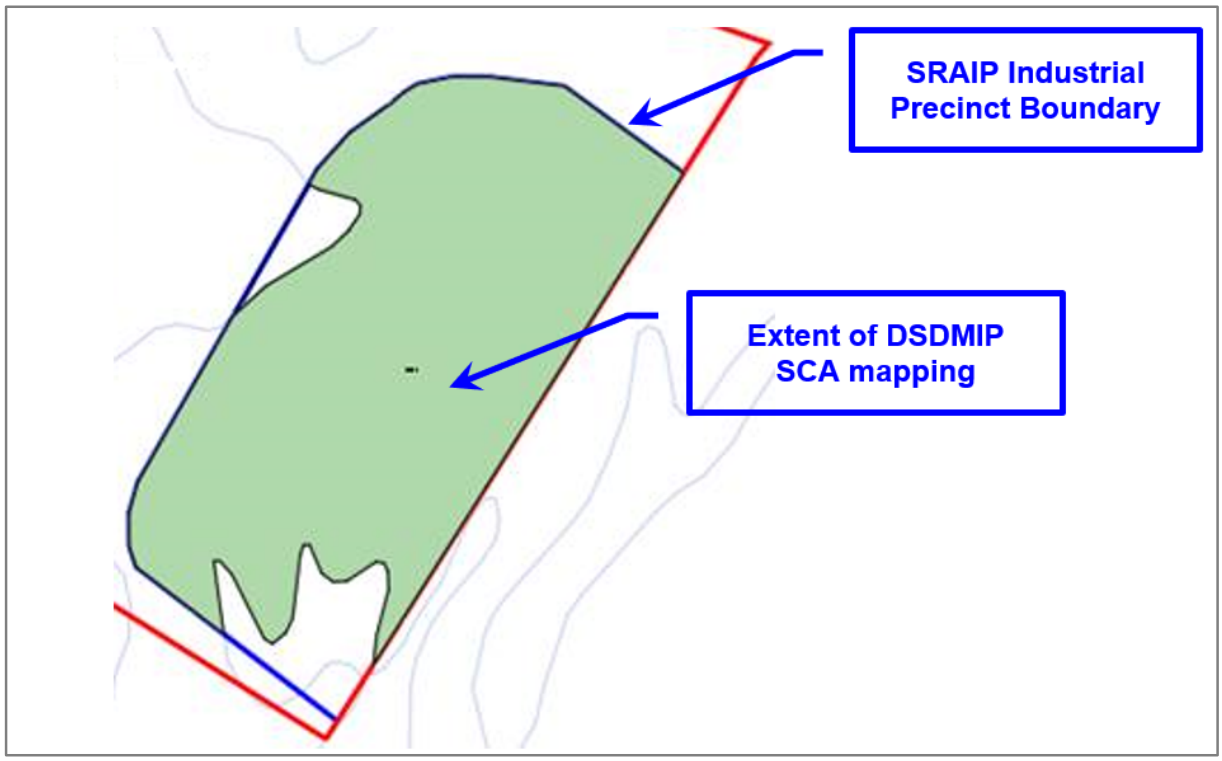


Figure 32 SCA Mapping Extract

A regional interests development approval (issued under section 53) has not been envisaged in this instance as the SRAIP proposal is not for the carrying out of a resource activity or the SRAIP development being recognised as a regulated activity (as defined under the RPI Act).

That aside, the SRAIP project site is considered suitable in this instance as the project is anticipated to result in an increase in the productivity, efficiencies and values of surrounding agricultural lands. This is due to the ability to locate proposed SRAIP agricultural uses / activities (and associated infrastructure) in direct proximity to the agricultural production areas. The ability to accommodate the coexistence of the proposed SRAIP development in proximity to the existing agricultural production areas is considered mutually complimentary to the long-term productivity of agriculture in the surrounding region.

5 PROJECT APPROVALS

5.1 Approvals Sought

The project seeks approval for the following aspects of development:

Planning Act 2016

- Preliminary Approval (including a variation request) for Material Change of Use to override the Planning Scheme to establish the Industry Zone (SRAIP Precinct) and Rural Zone (SRAIP Precinct) to allow for a range of uses including:
  - SRAIP rural industrial activities
  - SRAIP infrastructure activities
  - SRAIP support activities
- Development Permit for Reconfiguring a Lot (6 into 16 lots, one drainage lot, new road, common property and five balance lots)
- Development Permit for Material Change of Use for Renewable energy facility (Digester), High Impact Industry (Composter) and Utility Installation (Sewerage Treatment Plant)
- Development Permit for Material Change of Use for ERA53a – Organic material processing (by composting the organic material), ERA 53b – Organic material processing (by anaerobic digestion), ERA 63(1b) – Sewerage treatment
- Development Permit for Operational Works for Earthworks
- Development Permit for Operational Work for Constructing or raising waterway barrier works
- Preliminary Approval for Operational Work for Native vegetation clearing

Environmental Protection Act 1994

- Environmental authority for environmentally relevant activities (ERAs):
  - ERA 53a – Organic material processing (by composting the organic material)
  - ERA 53b – Organic material processing (by anaerobic digestion)
  - ERA 63(1b) – Sewerage treatment

Water Act 2000

- Riverine protection permit to excavate or place fill in a watercourse
- Water allocation / licence

5.2 Relevant Planning Instruments

The relevant planning instruments for the proposal are:

- South East Queensland Regional Plan 2017 (SEQRP)
- State Planning Policy 2017 (SPP)
- SEQ regulatory provisions under the Planning Regulation 2017
- State Development Assessment Provisions (SDAP)
- Scenic Rim Planning Scheme

5.3 Applicable Local Planning Provisions

5.3.1 Scenic Rim Regional Council Planning Scheme

The following provisions apply to the subject site under the Scenic Rim Regional Council Planning Scheme which was adopted on 20 March 2020.

Table 36: Scenic Rim Regional Council Planning Scheme Provisions

Zone	Rural Zone
Overlays	• Agricultural land – Agricultural land classification A and B – Agricultural land buffer area • Bushfire hazard – High and medium hazard area – Potential impact buffer • Environmental significance – biodiversity – Matters of State environmental significant – regulated vegetation • Environmental significance – local waterways – Stream order 2, 3 and 4 – Watercourse buffer area A and B • Extractive resources - Resource area / processing area – Separation area • Flood hazard – hazard area – Defined floor area • Flood hazard – category area – Flood hazard category area high, medium and low • Landslide hazard and steep slope – Steep slope area – western • Water resource catchments – stream orders – Stream order 1-7 • Transport noise corridor – Category 1-4 • High order roads – Cunningham Highway: high order road • Road hierarchy – Cunningham Highway: state-controlled road

5.4 ERAs

Kalfresh (or related party to be nominated) is to become a registered suitable operator as part of this ERA application and approval process. This will allow Kalfresh to carry out environmentally relevant activities (ERAs) as determined by the Department of Environment and Science (DES).

The applicable ERAs sought for the proposal are:

- ERA 53a – Organic material processing (by composting the organic material)
- ERA 53b – Organic material processing (by anaerobic digestion)
- ERA 63(1b) – Sewerage treatment

Under Schedule 2, Part 4, Section 16 of the *Environmental Protection Regulation 2008,* the above are prescribed and concurrence ERAs.

Pursuant to Schedule 10, Part 5, Division 2 of the *Planning Regulation 2017*, application for concurrence ERA is identified as Material Change of Use for a Prescribed Environmental Relevant Activity. Furthermore, in accordance with Section 115(2) of the *Environmental Protection Act 1994*, an application for a prescribed ERA is taken to be an application for Environmental Authority (EA).

ERA 53 and 63 are defined as follows:

ERA53 – Organic material processing

1. *Organic material processing (the relevant activity) consists of operating a facility for processing, by way of composting or anaerobic digestion, more than 200t of organic material in a year.*

2. *The relevant activity does not include—*

a. *manufacturing mushroom growing substrate; or*

b. *the composting of organic material from agriculture or livestock production if—*

i. *the organic material is either—*

(A) composted at the site where it was produced; or

(B) transported to another site, where agriculture or livestock production is carried out, and composted at that site; and

ii. *the composted organic material is supplied, free of charge, for use at a site where agriculture or livestock production is carried out; or*

c. *the anaerobic digestion of organic material at a facility—*

i. *to which section 63 applies; or*

ii. *where an activity, to which section 25 applies, is carried out.*

3. *In the following table, the aggregate environmental score for the relevant activity is the score stated opposite the threshold within which the activity is carried out:*

Threshold processing more than 200t of organic material in a year—	**Aggregate environmental score**	**3**
(a) by composting the organic material	18	C
(b) by anaerobic digestion	16	C

4. *In this section—*

***anaerobic digestion**, of organic material, means the decomposition of the organic material by microorganisms in the absence of oxygen.*

***organic material** means—*

a. *animal matter, including, for example, dead animals, animal remains and animal excreta; or*

b. *plant matter, including, for example, bark, lawn clippings, leaves, mulch, pruning waste, sawdust, shavings, woodchip and other waste from forest products; or*

c. *organic waste.*

***organic waste**—*

a. *includes the following—*

i. *a substance used for manufacturing fertiliser for agricultural, horticultural or garden use;*

ii. *animal manure;*

iii. *biosolids;*

iv. *cardboard and paper waste;*

v. *fish processing waste;*

vi. *food and food processing waste;*

vii. *grease trap waste;*

viii. *green waste;*

ix. *poultry processing waste;*

x. *waste generated from an abattoir; but*

b. *does not include—*

i. *clinical or related waste; or*

ii. *contaminated soil; or*

iii. *quarantine waste; or*

iv. *synthetic substances, other than synthetic substances to which paragraph (a)(i) applies.*

ERA63 – Sewerage treatment

1. *Sewage treatment (the relevant activity) consists of—*

a. *operating 1 or more sewage treatment works at a site that have a total daily peak design capacity of at least 21EP; or*

b. *operating a sewage pumping station with a total design capacity of more than 40KL in an hour, if the operation of the pumping station is not an essential part of the operation of sewage treatment works to which paragraph (a) applies.*

2. *The relevant activity does not include—*

a. *carrying out works, other than operating a sewage pumping station mentioned in subsection (1)(b), involving only infrastructure for the collection of sewage, including, for example, pipes; or*

b. *carrying out works involving either of the following—*

i. *operating or maintaining composting toilets;*

ii. *treating or recycling greywater; or*

c. *operating no-release works.*

Threshold 1 operating sewage treatment works, other than no-release works, with a total daily peak design capacity of—	Aggregate environmental score	3
(a) 21 to 100EP—		
(i) if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme;	14	
(ii) otherwise	27	C
(b) more than 100 but not more than 1,500EP—		
(i) if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme;	27	
(ii) otherwise	53	C
(c) more than 1,500 but not more than 4,000EP	76	C
(d) more than 4,000 but not more than 10,000EP	89	C
(e) more than 10,000 but not more than 50,000EP	114	C
(f) more than 50,000 but not more than 100,000EP	125	C
(g) more than 100,000EP	145	C
2 operating a sewage pumping station mentioned in subsection (1)(b)	no score	

3. *In the following table, the aggregate environmental score for the relevant activity is the score stated opposite the threshold within which the relevant activity is carried out.*

4. *In this section—*

***daily peak design capacity**, for sewage treatment works, means the higher EP for the works calculated using each of the following formulae—*

a. ***EP = V/200***

where—

***V** is the volume, in litres, of the average dry weather flow of sewage that can be treated at the works in a day;*

b. ***EP = M/ 2.5***

where—

***M** is the mass, in grams, of phosphorus in the influent that the works are designed to treat as the inlet load in a day.*

***no-release works** means sewage treatment works from which neither solid nor liquid contaminants are released to the environment, whether from inside or outside the works.*

***operating**, sewage treatment works, includes—*

a. *collecting gas from the treatment works; and*

b. *operating a pump station or other works associated with the treatment works.*

5.5 Level of Assessment

As the application is subject to Impact assessment, the assessment benchmarks, and the matters the assessment manager must have regard to, are those identified in Section 45(5) of the *Planning Act 2016* and Sections 30 and 31 of the Planning Regulation 2017.

As the application is for a variation request, the matters the assessment manager must have regard to are those identified in Section 32 of the *Planning Regulation 2017*.

5.6 Referral Agencies and Role

In accordance with Schedule 10 of the *Planning Regulation 2017*, the follow referrals apply:

Table 37: Schedule 10 Referral Matters

Schedule 10	Referral topic and reason	Referral Agency
10.3.4.1	Operational work for clearing native vegetation	SARA, DSDMIP
10.5.4.2	Material change of use for an environmentally relevant activity (non-devolved)	SARA, DSDMIP
10.6.4.3.1	Operational work for waterway barrier works	SARA, DSDMIP
10.9.4.1.1	State transport infrastructure – development in excess of the thresholds stated in schedule 20	SARA, DSDMIP
10.9.4.2.1	Reconfiguring a lot near a State transport corridor	SARA, DSDMIP
10.9.4.2.4	Material change of use near a State transport corridor	SARA, DSDMIP
10.19.1.3.1	Operational work that involves taking or interfering with water	SARA, DSDMIP

6 SUMMARY OF ENVIRONMENTAL VALUES

6.1.1 Key Environmental Values

6.1.1.1 Landform, Geology and Soils

Geology details for the site and surrounds are provided in Table 39:

Table 38: Regional Geology

Aspect	Detail
Acid sulfate soil:	There is no acid sulfate soil mapping associated with this site.
Geology:	The geology across the site is mapped as 1:500,000 as Quaternary: Flood plains, river terraces (Geological Survey of Queensland, Moreton Geology 1978). Local soil mapping 1:25,000 shows the site classified as Bromelton (eroded phase) with soils comprising dark clay loan or light clay with neutral or alkaline structed clay subsoil (Qld Department of Primary Industries 1979).

A site inspection was conducted on 21 October 2019 which included the sampling of soils within the proposed development footprint, and dispatch of the samples to the DES Chemistry Centre which holds NATA accreditation. Observed soil characteristics are provided in Table 40 and laboratory results are discussed further in the **ERA 63 (Sewer Treatment Plant) Report – Appendix H**.

Table 39: Soil Characteristics in the proposed development footprint

Aspect	Detail	
Soil profiles:	Two boreholes were constructed by Precise Environmental using a hand auger to a maximum depth of 0.9m. Encountered soil profiles were as follows:	
	BH1	BH2
	0.0-0.1 (Natural) Silty Sand, fine to medium grained sand, grey brown, moist. 0.1-0.6 Clayey Gravelly Sand, fine to medium sized angular gravel, fine to medium grained sand, yellow brown, moist. 0.6 Borehole terminated in extremely weathered granite.	0.0-0.6 (Natural) Light to Medium Clay, grey with orange mottles, moist. 0.6-0.9 Clayey Sand, fine to medium grained sand, yellow brown, moist. 0.9 Borehole terminated extremely weathered rock.

6.1.1.2 Existing Flora Values

The site is heavily cleared and subject to various agricultural land management practices. Outside of the existing Kalfresh operating facilities, the site supports open expanses of cultivated cropping in the east with engineered drainage and areas of overland flow, as well as open paddocks with scattered mature canopy trees subject to heavy cattle grazing. The north west finger of the site transitions into undulating low hills and slopes with a mixed cohort of regrowth and remnant native woodland to open forest communities.

6.1.1.2.1 Cultivation Areas

The active cultivation occurring in the east and north extent of the site are harvested currently for carrot crops and a grain crop has previously been harvested south of the existing facilities.

The intervening carriageways (access tracks) were subject to ongoing mechanical maintenance including slashing and regular vehicle flattening. These access tracks supported exotic species including, but not limited to elastic grass, couch grass, celery top, angleton grass and prostrate knotweed at the time of the survey.

6.1.1.2.2 Drainage Channel and Basin

A constructed drainage channel borders the western edge of the cultivation area and also occurs through the open paddocks in the north eastern extent of the site. A broader drainage basin extends to the north centrally within the site and is fed by Kalfresh facility's recycled grey water. The augmented channel and the basin supported an array of mostly exotic hydrophytes. Woody vegetation is largely absent from this community and limited to localised knolls within the basin and the edges of the drainage channel. The understorey is dominated by celery-top buttercup, knot grass and cumbungi with associated couch grass, many-flowered rush and wild aster. It is noted that the augmented drainage channel does not reflect the mapped State waterways as shown in Figure 12 above.

6.1.1.2.3 Grazed Paddocks with Scattered Mature Trees

The open paddock areas were largely situated on the gently undulating lower rise west of the existing facility operations and were actively grazed at the time of the ecological inspection. The paddocks contained highly scattered mature canopy trees dominated by Queensland blue gum with associated Moreton Bay ash and silver-leaved ironbark. All other woody vegetation, including shrubs, was entirely absent due to the existing land use practices. The understorey was dominated by exotic pasture grasses including rhodes grass and associated exotic herbs such as common verbena and gomphrena weed.

6.1.1.2.4 Brush Box Open Forest

The lower to mid slope of the north-western finger of the site supported a small polygon of brush box low open forest. This community was dominated by brush box to a height of 9m with a very sparse canopy of emergent narrow-leaved ironbark and pink bloodwood. It is considered likely that the community historically contained a canopy dominated by narrow-leaved ironbark over the brush box sub-canopy; however, evidence of cut-stumps suggests historical thinning has occurred. The shrub strata composition was complex and consisted of juvenile brush box as well as shiny-leaved canthium, scrub ironbark, red ash, wombat berry and scattered incursions of lantana. The understorey was sparse and dominated by native grass species including a speargrass and black speargrass.

6.1.1.2.5 Narrow-leaved Ironbark Open Forest

The balance of the site supported a narrow leaved ironbark open forest which was associated with the undulating slopes and trachyandesite deposits. This community was characterised by a canopy dominated by narrow-leaved ironbark at a height of 22m with other associated species such as smooth-barked apple, pink bloodwood, Moreton Bay ash and silver-leaved ironbark also present. The composition and distribution of the sub-canopy and shrub strata were variable, increasing in density in the gullies and tending to very sparse on the higher slopes and hill crests. The sub-canopy was characterised by regenerating canopy species as well as red ash and brush box to a median height of 9m to 12m. The shrub layer also included regenerating canopy species, maiden's wattle and shiny-leaved canthium with vine thicket generalists prevalent within the gullies and higher slopes. Such species included scrub ironbark, scrub boonaree, red kamala, quinine bush and stiff-leaved canthium. Lantana was also observed in low densities throughout the community. The groundcover was characterised by native grasses such as black speargrass, hooky grass, wiregrasses and barbed-wire grasses.

The far northern reaches of this community contained a variation with the canopy becoming dominated by gum-topped box with scattered narrow-leaved ironbark.

A full flora species list for the areas subject to cultivation, the open paddocks and the drainage channel and basin is included in the **Ecology Assessment – Appendix O**. Further, the extent of each described vegetation community and all mature native canopy trees located within and surrounding the site have also been surveyed and are documented in **Appendix O**.

6.1.1.2.6 Species and Features of Conservation Significance

The following conclusions can be drawn from the flora survey and ecological assessment held at **Appendix O**:

- The site does not support any flora Matter of National Environmental Significance (MNES) or Matter of State Environmental Significance (MSES);
- The site does not support any Flora Matter of Local Environmental Significance (MLES).
- The occurrence of habitat trees within and adjacent to the SRAIP development footprint is shown within the Vegetation and Fauna Management Plan held as an attachment in **Appendix O.**
- The State koala habitat mapping, held within **Appendix O**, is grossly incorrect, with some cleared areas under cropping and the denuded wetland feature both mapped as containing bushland habitat. No areas within the site could be considered Koala Bushland Habitat. The only areas of the site that could potentially be considered as Koala Bushland Habitat are the areas of Regulated Vegetation in the north-west of Lot 2 on RP20974 which is proposed as the Environmental Protection Area, refer to **SRAIP Concept Plans – Appendix A** and further detail in Section 4.

6.1.1.3 Existing Fauna Values

6.1.1.3.1 Amphibians

No amphibian species of conservation significance were identified as potentially occurring within the site. Habitat assessments undertaken during field assessments confirmed that the SRAIP development footprint and broader site lack any habitat features suitable for conservation significant amphibian species. Habitats observed within the SRAIP development footprint and the immediate surrounds take the form of cleared, heavily degraded grazing lands on steeper slopes or areas under cropping.

The lower plain and channelised drain in the central components of the site provide the most notable habitat for amphibian species in general. As described in the **Ecology Assessment – Appendix O**, this broad basin area is under constant soaking from dispersed greywater. Within this area, heavy clays support a dense covering of exotic forbs (namely buttercup) with highly scattered native sedges and rushes; all of which exhibited regular grazing impacts. Small areas of ponding occurred infrequently where low depressions were present (with evidence of cattle trampling and wallowing). Habitats within these areas are considered marginal for most native amphibian species given the lack of suitable vegetative or ground structure combined with the constant grazing and trampling of habitats by cattle. It is likely that a reduced native amphibian species assemblage occurs within the site and that this is limited to robust species. Further, the open nature of the environment lends itself to the proliferation of exotic fauna species such as the cane toad or predation from avian and reptile species.

6.1.1.3.2 Reptiles

The remnant habitats, particularly those with a denser understorey and high levels of course woody debris and leaf/mulch litter provide the highest quality habitat for reptiles within the site. Cleared grazing or cropping lands represent very low-quality habitat for this group; however, where heavier clays occur, fossorial species are likely to persist despite the cleared and heavily grazed nature of the site or SRAIP development footprint.

A review of desktop database searches and the EcoSM (2018) reporting identified one reptile species of conservation significance recorded within the region; the common death adder. Habitat assessments identified that much of the site and all of the SRAIP development footprint do not support suitable habitat for this species, particularly given most habitats occur as either cleared grazed paddock or under heavy crop and distinctly lacking any form of coarse woody debris and leaf litter which are critical microhabitats for this species. Higher quality habitats for this species are associated with remnants in the far north west of the site which occurs at a minimum distance of 400m from the SRAIP development footprint (500m from proposed civil works and permanent infrastructure), with the land in between not supporting suitable foraging or movement habitat as it is heavily grazed open paddocks lacking debris. Although suitable habitats for this

species occur some distance from the SRAIP development footprint, the fragmentation in the immediate landscape coupled with limited records in the locality (Wildlife Online has 1 record), suggests that there is only a low likelihood that this species would occur within the broader site.

6.1.1.3.3 Birds

The Wildlife Online database indicates the presence of a diverse bird community in this locality. The Protected Matters Search Tool (PMST) indicates the occurrence of several MNES and MSES bird species.

During habitat assessment surveys, the greatest diversity and abundance of bird species was found in the anthropogenically created soak areas centrally located within the site. This area contains moist soils and pools of water, providing foraging and watering points for a range of open country and wetland oriented avian species.

The small area of remnant vegetation in the far north west of the site supported a moderate composition of common open country aves; however, did not support any uncommon or specific habitat features such as vine thickets, riparian corridors, sheltered gullies, etc. which would provide habitat for cryptic aves requiring such amenity or niches to persist.

The residual of the site and the entirety of the SRAIP development footprint support completely cleared habitats which are either heavily grazed under heavy cropping. These areas are of low value for avian species, providing habitat for aggressive open country species as well as encouraging the dominance of aggressive sedentary avian species such as noisy minor, Torresian crow, butcherbirds and exotic avian species. European pigeons and starlings were regularly observed overflying the SRAIP development footprint and observed utilising most existing built infrastructures for shelter.

It is likely that most of the common rural and peri-urban inhabitants known from the locality will reside, move through or overfly the site at some point (refer Wildlife Online data – Attachment 6); including terrestrial migratory species. It is, however, unlikely that many of the noted species of conservation significance would reside within or rely on the site as a core component of their habitat or life cycle. A review of desktop database searches and the EcoSM (2018) reporting identified one avian species of conservation significance and four migratory species known or likely to occur within the site. A review of each species is provided below:

- Hiundapus caudacutus (white-throated needletail) – This species is not frequently recorded along the east coast, but has potential to occur anywhere, including in the air space above the site as this species is wide ranging and highly mobile. Larger tree species within the site, and in particular old-growth trees with hollows, may provide some roosting opportunity for white-throated needletails. Habitats within the site are highly abundant within the broader region and it is unlikely that white-throated needle-tail would be reliant on the site or surrounding terrestrial environs.
- Apus pacificus (fork-tailed swift) – This species is not frequently recorded along the east coast, but has potential to occur anywhere, including in the air-space above the site. This species is wide ranging and highly mobile. It readily forages above urban areas and rural areas, and as such no particular values on the site are uniquely important for this species.
- Monarcha melanopsis (black-faced monarch) – Habitat assessments across the site failed to identify any suitable habitat for this species; however, it is noted that the EcoSM (2018) surveys identified this species on adjoining remnant parcels. These observations were restricted to areas of steeply incised drainage gullies occurring west of the site. Remnant habitats in the far north-east of the site may facilitate movement opportunities for this species; however, these areas are well removed (>500 m) from the SRAIP development footprint. The land between the remnant habitat and the SRAIP development footprint supported no suitable habitat for this species.
- Symposiachrus trivirgatus (spectacled monarch) – Similar to the black-faced monarch, habitat assessments across the site have identified that most of the areas which support remnant habitats in the far north-east of the site may facilitate movement opportunities for this species; however, these

areas are well removed (>500 m) from the SRAIP development footprint. The land between the remnant habitat and the SRAIP development footprint supported no suitable habitat for this species.

- Rhipidura rufifrons (rufous fantail) – Habitat assessments across the site have failed to identify any suitable habitat for this species; however, it is noted that the EcoSM (2018) surveys identified this species on adjoining remnant parcels. These observations were restricted to areas of steeply incised drainage gullies occurring west of the site. Remnant habitats in the far north-east of the site may facilitate movement opportunities for this species; however, these areas are well removed (>500 m) from the SRAIP development footprint. The land between the remnant habitat and the SRAIP development footprint supported no suitable habitat for this species.

6.1.1.3.4 Mammals

A review of Government databases and the EcoSM (2018) ecological assessments indicated the known or potential occurrence of two mammal species of conservation significance in the broader locality. The shortlisting assessment has determined that one mammal species (koala) should be considered in further detail and that no suitable habitat for the brush-tailed rock-wallaby is present within the site or surrounding remnants (i.e. those higher remnant areas lack rocky outcrops and other critical microhabitats for this species – known populations in the locality are restricted to national parks such as Mt French, Moogerah Peaks and Main Range National Parks).

6.1.1.3.5 Koala and Koala Habitat

The EcoSM (2018) ecological surveys directly and indirectly observed koala or koala evidence (scat or scratch). These observations were recorded in lower slope remnants dominated by the recognised favoured forage tree Queensland blue gum (within RE 12.9-10-7 and lower slopes of 12.8.17).

Active searches (canopy scanning) of all trees within the SRAIP development footprint failed to detect the physical presence of koala. Passive search techniques did, however, identify old koala scats in the far north-east of the site where a small number of relict Queensland blue gums occur. Stands of young and advanced regrowth Queensland blue gum were observed to the north of the SRAIP development footprint surrounding on-line dams / drainage features; while further north c.700 m larger tracts of remnant vegetation dominated by Queensland blue gum are present.

Within the site limited stands of suitable koala habitat occur and these are restricted to the remnants within the extreme, higher north-west of the site. Within the SRAIP development footprint, only very highly scattered koala trees are present; most of which occur within the existing and/or proposed overland flow path. Some of these will be retained, while others will be removed for the proposed development. Refer to the **Ecology Assessment – Appendix O** which shows all koala habitat trees within and surrounding the SRAIP development footprint.

An assessment of the SRAIP development clearly demonstrates the that habitats supported within the SRAIP do not support important koala habitat or suitable koala movement corridors. The vast majority of the development footprint comprises either areas under heavy cropping or cleared grazed paddocks generally devoid of vegetation. Further, the areas surrounding the SRAIP development footprint to the east and south (off site) also comprise areas under heavy cropping and intersected by the Cunningham Highway.

An assessment of koala habitat within the SRAIP development footprint and immediately surrounding areas (i.e. those areas within approximately 400m) has been undertaken against the provisions of the Koala Habitat Assessment Tool (DoEE 2014). This assessment identified that the SRAIP development footprint and immediate surrounds do not support Habitat Critical to the Survival of the Koala.

6.1.1.3.6 Koala Population

The SRAIP development footprint does not occur within any areas that could be conceivably considered as important koala habitat given the distinct lack of woodland, open forest or connective habitats for dispersal and breeding. It is acknowledged and well known that koalas will readily move across non-core habitat and utilise individual trees; however, the widely scattered, isolated paddock trees within the SRAIP development

footprint do not provide critical habitat elements for the local koala population; given the abundance of more favourable, intact or more aggregated habitats to the west and north of the footprint and its immediate surrounds.

The individual koala(s) that, on occasion utilise these isolated trees belong to a larger meta-population which would occur in varying densities across the region and are likely to be more abundant where more intact tracts of vegetation persist on low fertile plains and their adjoining lower slopes (particularly where favoured feed trees are present and or dominant). The population and individuals residing in proximity to the SRAIP development footprint are unlikely to be unique or disjunct from any other populations. Limited ecological or bio-regional barriers occur within the region that would result in the population being isolated from other populations and rendering the population genetically disjunct from others.

6.1.1.4 Regional Ecosystems

The far northern and north western portion of the site contains a number of mapped regional ecosystems including 'Least Concern' 12.8.9 and 'Least Concern' 12.8.17. These regional ecosystems are mapped as a mix of both Category B – Remnant Vegetation and Category C – High Value Regrowth. RE 12.8.9 is described as 'Lophostemon confertus open forest on Cainozoic igneous rocks' and RE 12.8.17 described as 'Eucalyptus melanophloia +/- E. crebra, E. tereticornis, Corymbia tessellaris woodland on Cainozoic igneous rocks'. The various in-field surveys undertaken have confirmed that the mapped regional ecosystems were generally consistent with the communities descriptions and the mapped polygon extents, noting that previous survey efforts involved a PMAV over a portion of the Site (EcoSM Assessment for Fraserview Quarry).

The SRAIP Masterplan does not involve the removal of any part of the mapped regional ecosystems and establishes an Environmental Protection Area (EPA) over the Regulated Vegetation. Further, proposed built infrastructure is situated more than 400 metres from the EPA overlay.

6.1.1.5 Weeds and Pests

The SRAIP site is predominantly cleared of native vegetation being historically modified for agricultural purposes, significantly reducing ecological values of the Site (grazing in the north and west and cropping in the south and east). Much of these agricultural areas contained and in some cases, were dominated by pest plant species, particularly common pasture improvers and opportunistic weed species where regular disturbance occurs for the intervening carriageways (access tracks) in cropping areas, grazing impacts and the augmented drainage channels.

Further, the augmented drainage channels and open nature of the existing greywater discharge and drainage basin centrally were likely to support the proliferation of Rhinella marina (cane toad). It is also expected that other common pest fauna species such as dog, fox and cat would be common throughout the higher vegetated remnants in the north of the site.

6.1.2 Summary of Key Technical Findings

6.1.2.1 Flooding

Maps of the flooding post development are shown in **Appendix L** for the 10%, 5%, 2%, 1% and 1% CC AEP events. Due to the fill encroaching on the flood extents, water level increases have been introduced in some areas. However not all of these increases are deemed a result of the proposed development.

During the developed case 1% AEP, maximum water surfaces downstream of the site are 81.3m AHD, occurring at a location on the North West boundary where water surfaces are 81.14m AHD during the existing case 1% AEP event. The developed case water level is approximately 4 metres below the nearest structure located at 85.2m AHD and 5.5 metres below the nearest residence located at 86.8m AHD.

No water surface level increases are located on residence accesses. Therefore, increases noted are deemed inconsequential with no actionable nuisance at this location.

Increases shown on the east side of the highway during the 1% CC AEP are a result of flows across the highway being restricted in the developed case. In the existing case floodwater in events greater than the 5% AEP flow from east to west across the highway. This movement is restricted in the developed case as a result of lot filling. Due to the coarse model definition, swale drains alongside the highway adjacent to the lack detail which combined with the lot filling, contributes to the water surface level increases shown.

During the 1% CC AEP event, peak increases shown on the eastern side of the highway are 30mm located in one section of the eastern swale drain. Water depths at this location are 700mm deep during the existing case event with extensive flooded areas surrounding it. No changes to flood extents are noted as a result of the increases shown.

During the 1% CC and the 2% AEP event, a number of areas to the east of the highway are showing minor water surface level increases. While some of these increases are a product of the items noted above, other areas further east of Warrill Creek show increases which cannot reasonable be attributed to the proposed development.

This is particularly the case for increases adjacent to and on the eastern side of Warrill Creek. At these locations the existing water surface level (83.7m AHD) is approximately 2 metres above the water surface level adjacent to the proposed development (81.8m AHD). Therefore, it is implausible that changes to the development area topography approximately 500 metres to the west, on the opposite side of the highway have induced these impacts.

These impacts have been deemed a result of minor variations in flood levels within Warrill Creek between cases caused by the topography definition. This is also the case for an isolated area of depth increase shown to the south of the development area in the 5% AEP event. It should be noted that even with the increases shown, the developed 5% AEP water surface levels are 1 metre below the existing 1% AEP levels.

Generally, all water surface level increases that can be attributed to the proposed development are located in areas that have flood depths greater than 900mm during the existing case with no changes to the flooding extent. None of the increases reported pose a risk to persons or infrastructure. The majority of offsite increase are less than 50mm. These increases dissipate quickly moving downstream away from the development.

Near the neighbouring property to the south west, the water surface level decreases from 84.3m AHD predevelopment to 83.4m AHD post development, a 900mm decrease for the 1% AEP event. This is a result of improvements in flow paths at this location.

6.1.2.2 Water Usage Estimates

The water usage estimates for the SRAIP are based on the following land uses being established in the precinct:

- Commercial (offices, equipment sale yards / centre, service station)
- Industrial (warehouses, packing sheds, offices, workshops)
- Processing facilities (vegetable washing facilities, frozen food production facilities)
- Bio-energy facility (digester)

The water usage estimate range for the above is 724ML/year to 1009ML/year.

6.1.2.3 Civil Servicing

The site can be adequately serviced by the existing power and road infrastructure accessible to the site.

The SRAIP will involve independent servicing of sewer and water infrastructure which will be held in common property and owned and maintained by the SRAIP body corporate.

6.1.2.4 Ecological Impact

Environmental constraint mapping identifies environmental values within and surrounding the site. The more significant values are located in areas well removed from the project footprint, particularly those requiring earthworks and permanent infrastructure and are protected by virtue of an Environmental Protection Area proposed as part of the **SRAIP Concept Plans – Appendix A**.

The location of the development footprint is such that many potential impacts associated with the SRAIP are avoided through physical separation from areas of notable ecological value within the site. The SRAIP focuses on areas of existing and historic disturbance, thereby preserving the more intact habitats in the north western portion of the site.

Owing to the minor nature of impacts to flora and fauna resulting from the SRAIP, mitigation measures are largely unwarranted. Any minor residual impacts can be mitigated through rehabilitation of some of the habitats within the site, including planting works (to enable koala movement) within the proposed overland flow path, and waterway embellishments or retention of soak areas that utilise greywater from existing operations.

No relevant purpose determination for clearing under Section 22A of the *Vegetation Management Act 1999* is required for the SRAIP.

6.1.2.5 ERAs

The Precise technical assessments for the three ERAs demonstrate that they can be undertaken in accordance with the appropriate measures to ensure impacts to the environment are minimised and negated. In relation to this point, we note the following:

Composting

- The composting area is located at the top of the sub-catchment. The facility incorporates a feedstock and windrow leachate containment system, and the stormwater management systems has been designed for a 1 in 10 year rain event as per the model condition requirements. A receiving waters monitoring program is proposed to monitor compliance the Bremer River Environment Values (EVs) and Water Quality Objectives (WQOs) until site-specific WQOs are established.
- To mitigate potential impacts from hazardous contaminants, the following measures will be implemented:
  - Feedstock acceptance criteria and rejection of non-compliant materials
  - A feedstock and windrow leachate containment system designed for a 1 in 10 year rain event.
  - Quality assurance monitoring of compost in accordance with AS 4454-2012: Composts, soil conditions and mulches
  - Storage of the limited, if any, HAZMAT within spill containment devices
  - Appropriate waste management receptacles and licensed disposal
  - Emergency response including spills shall be incorporated in SOPs.

Anaerobic Digester

- The AD irrigation area is located a sufficient distance from dams and surface waters.
- To mitigate potential impacts from hazardous contaminants, the following measures will be implemented:
  - Feedstock acceptance criteria and rejection of non-compliant materials
  - Undercover feedstock and digestate solids storage leachate containment system
  - In process and end product quality assurance monitoring of liquid digestate

- Quality assurance monitoring of compost in accordance with AS 4454-2012: Composts, soil conditions and mulches
- Storage of HAZMAT within spill containment devices
- Appropriate waste management receptacles and licensed disposal
- Emergency response including spills shall be incorporated in SOPs.

Sewer Treatment Plant

- The STP irrigation area is located 100m eat of an ephemeral gully, 75m southeast of the closest dam and 1.2km northwest of Warrill Creek.
- The STP is to be fully enclosed and has been appropriately distanced from potential sensitive receptors. The irrigation system will distribute effluent above ground via coarse droplet irrigation methods that minimise aerosols.
- To mitigate potential impacts from hazardous contaminants, the following measures will be implemented:
  - Rejection of trade waste
  - Wet weather storage, or licensed disposal of effluent, when irrigation is not possible (e.g. during / following rain events), and high level alarm warning of potential overflows
  - Desludging and wash down within a containment system
  - Removal of sludge and solid waste by licensed contractor
  - Storage of HAZMAT within spill containment devices
  - Emergency response including spills shall be incorporated in SOPs

6.1.2.6 Traffic

The key technical findings of the traffic impact assessment are:

- Vehicular access to the development is via a proposed new road intersecting with the Cunningham Highway approximately 430m north of the existing main Kalfresh site access
- The peak construction workforce is expected to generate 476 vph in the AM peak and PM peak periods during construction
- The proposed expansion is expected to produce 667 trips in the AM peak and PM peak hour
- The developments impact on the Cunningham Highway / New Site Access intersection is not considered to be significant / adverse on the intersection's performance in the design horizon (2041)
- The development impact on the Cunningham Highway / Kalbar Connection Road intersection is not considered to be significant / adverse on the intersections performance for the developments year of open (2021)
- The development impact on the Cunningham Highway / Boonah Fassifern Road intersection is not considered to be significant / adverse on the intersections performance for the developments year of open (2021)
- A turn warrant assessment of the access form for Cunningham Highway / New Access intersection results in an AUL and a CHR. The proposed form is a seagull which will provide for these turn treatments
- The sight distance assessment of the proposed new road with the Cunningham Highway is considered sufficient in both directions

- The road safety risk assessment identified new risks introduced with the proposed new road, mitigation measures however reduced the risk to an acceptable risk rating (Low) and is therefore considered a safe solution
- The existing sight distance at the Cunningham Highway / Kalbar Connection Road intersection is insufficient to meet safe intersection sight distance for the design speed (110km/hr). However, there are no apparent crash trends related to this constraint, and the proposed development will not add trips to the affected movement. Therefore, it is considered that the development will have minimal impact on the road safety at this intersection.

6.1.2.7 Noise

Indicative future industrial uses on the SRAIP –Variation Request (Preliminary Approval) only and further applications will be required for reconfiguration of lot and ultimately for specific uses on the industrial allotments, with more use specific noise assessment able to be undertaken at that time to ensure that appropriate noise control measures are implemented to achieve the relevant noise amenity criteria at sensitive receptors.

Preliminary source noise level data for the anaerobic digester / biogas plant was supplied by the plant designer (Aquatec Maxcon) during the basic design phase of the plant. Further assessment of noise emissions from the anaerobic digester / biogas plant should be undertaken at the detailed design stage for the plant to ensure that appropriate noise control measures are implemented to achieve the relevant noise amenity criteria at sensitive receptors.

6.1.2.8 Social and Economic Impact Assessment

Key employment and economic impact findings and conclusions from the report include:

- Construction jobs – 641 direct and 354 indirect local jobs over 10 years;
- Additional Operational Jobs – 475 direct and 572 indirect local jobs annually upon full development (subject to third party investment and the final uses proposed);
- Construction Gross Value Added - $89.5m contribution to the Scenic Rim economy (+5.3%) and $238.9m to the Australian economy over the 10 years construction phase; and
- Operational Gross Value Added - $140.5m contribution to the Scenic Rim economy (+8.3%) and $211.9m contribution to the Australian economy annually upon full development.

Key preliminary social impact findings and conclusions from the report include:

- Workforce Management and Impacts – more sustainable construction pipeline for construction workers and more diverse and accessible and less seasonal, permanent employment opportunities for local workers in the long-term;
- Housing and Accommodation – negligible impact on housing affordability and will likely support house prices in the Boonah region which have been declining or flat over the past 5 years;
- Local Businesses and Industry Procurement – opportunities for local businesses across the project life, particularly during the operational phase, by providing local agricultural producers with a reliable local value adding market for output. Also improved local energy security through the proposed investment in an onsite major anerobic digester;
- Health and Community Wellbeing and Quality of Life – project employment will generate increased local household incomes and reduce overall income and economic volatility through greater economic diversification;
- Regional Amenity – provide a new and modern industrial environment for workers as well as convenient access to retail and fuel services for workers and visitors;

- Filling Gaps in the Community – helping to incentivise local attraction and retention of younger workers and facilities to offset the emerging demographic imbalance in the region;
- Community Connections and Social Inclusions – encourages and incentivises increased labour force and economic participation, which worsened in the 5 years to 2016.
- Support and Protecting Local Heritage and Culture – the project seeks to progress a local museum offering to promote and support local heritage.
- Address Social Disadvantage – provide employment opportunities and diversified economic activity and value added to improve access of households in the region to key Economic Resources and reduce local unemployment.

Analysis of potential benefits of the project identified a range of economic, social, environmental and financial benefits for the project stakeholders, Council, the State Government and local businesses and residents. Overall, the project has the potential to yield present value benefits of between $229.5m and $327.1m over the next 20 years (at 7% and 10% discount rates).

7 IMPACTS AND MITIGATION

7.1 Key Environmental Impacts

7.1.1 Vegetation Clearing

The site development area currently consists of agricultural cropping land and the existing Kalfresh production facilities. The development of this site necessitates that the area is cleared completely of any existing vegetation including the removal of any unsuitable material identified prior to the commencement of bulk earthworks and civil works construction.

It is recommended that the early establishment of erosion and sediment control measures is carried out in conjunction with the commencement of clearing works in order to prevent the discharge of soils from the site and protect existing downstream infrastructure.

7.1.2 Earthworks

Bulk earthworks will be completed across the subject site to create a developable land formation in accordance with Cardno sketch 510357-001-CI-1010. This earthwork operation will include the stripping/ stockpiling of topsoil and reshaping of land to generally achieve the proposed site levels across the development.

Based upon Cardno's experience within the Scenic Rim region and surrounding areas, coupled with the elevated site levels, it has been assumed that the site is devoid of acid sulphate soils and contaminated land.

The preliminary earthworks design comprises of filling the site above the 1% AEP flood level. This will require additional material which is proposed to be obtained from the deepening of the flood diversion channel and the excavation of a new quarry located to the north west of the site. Hence, the haulage distance of fill material will be limited to within the existing allotment boundaries and haulage of material from outside the subject site will be minimal.

Final earthworks quantities shall be confirmed through detailed design. An earthworks design based upon the proposed development layout indicates that the earthworks operation will comprise approximately 413,000m^3 cut to fill onsite and 227,000m^3 of additional fill required which will be obtained from the quarry.

The proposed earthworks profile has been created with the intent to minimize the amount of fill whilst ensuring the development is resilient to the 1% AEP flood event. Allotments have been graded towards the central road network road at approximately a 0.5% slope.

All earthworks on the site will be carried out in accordance with Level 1 supervision and testing requirements, with any existing dams and/or unsound materials being removed and replaced under Level 1 supervision.

It is also recommended that prior to the de-commissioning of all sediment basins, all collected silt and unsuitable material should be removed from the site and the basin area rehabilitated using a high quality of fill material in order to ensure long-term stability to this area of the site.

The Cardno sketch 510357-001-CI-1010 included at **Appendix K** illustrates the proposed cut and fill zones.

7.1.3 Erosion and Sediment Control

In accordance with IECA Best Practise Guidelines and Scenic Rim Council standards, it is proposed that in conjunction with the Operational Works Application phase of development a detailed Soil Erosion and Sediment Control Plan will be prepared in order to address the specific measures to be implemented manage erosion onsite and limit sediment discharge offsite. During the construction phase, the contractor is to have a certified erosion and sediment control plan on site at all times.

General measures to be implemented during the construction phase in order to prevent the erosion of sediment from the site are as follows:

- Contractor to achieve temporary, interim or permanent ground cover to disturbed earthworks areas as soon as practicable;
- Sediment filter fencing is to be located at the downstream end of all open earthworks to remove sediment from overland flow prior to discharging off site;
- Truck shake down areas shall be provided to remove any loose materials from vehicles prior to departure from the site;
- All sediment control structures must be maintained in an effective operational condition. These structures must not be allowed to accumulate sediment volumes in excess of forty percent of the sediment storage design capacity;
- If topsoil will be stripped and stockpiled, perimeter silt fences are to be installed around the stockpile areas to prevent the material discharging from the site;
- All sediment control structures are to be supplied and installed in accordance with Scenic Rim Regional Council planning scheme policies and IECA Best Practice Guidelines; and
- A sediment pond is to be constructed to suit the construction site profile and sized appropriately to capture the require volume of sediment laden runoff.

The Erosion and Sediment Control Plan is held at **Appendix K** and also below at Figure 33.

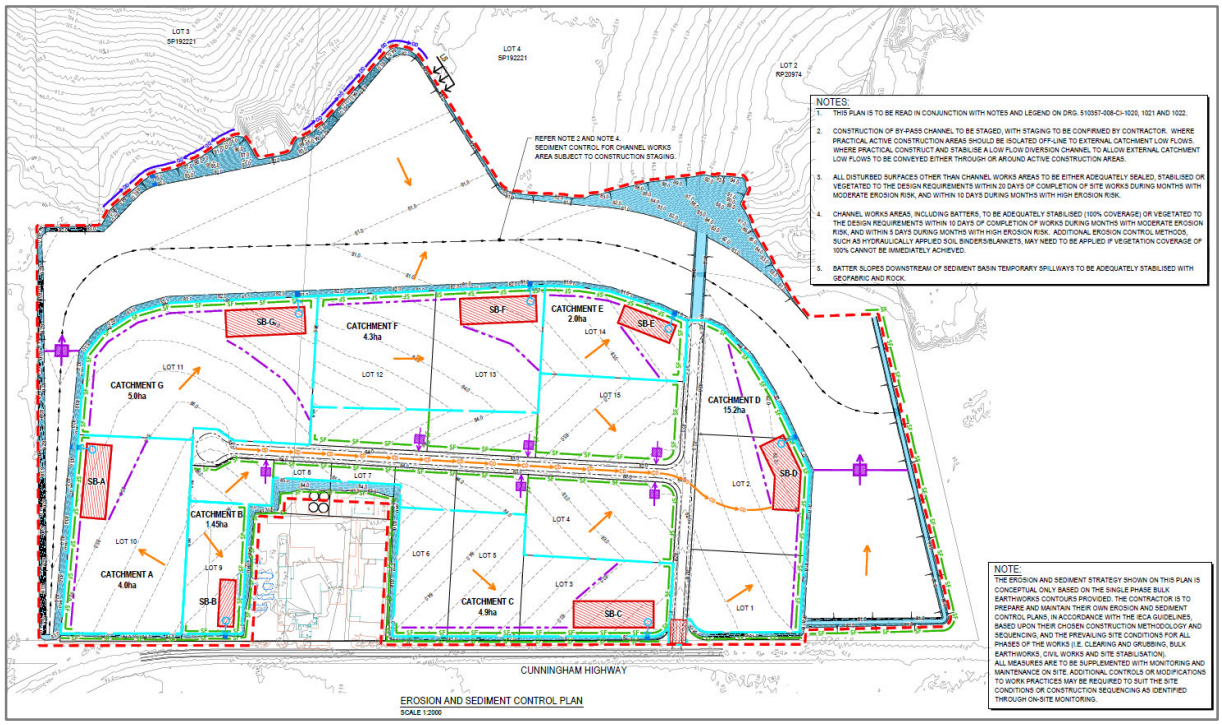


Figure 33 Proposed Erosion and Sediment Control Plan

7.1.4 Stormwater Quantity Management

The stormwater quantity management strategies and outcomes for the proposed development are outlined by the Scenic Rim Agricultural Industrial Precinct Integrated Stormwater Management Plan included at **Appendix L**.

The objective of the stormwater management plan is to ensure that the effect of delivering the proposed development achieves a no worsening of post-development runoff compared to the runoff experience pre-development.

It has been identified that the subject site comprises of two existing stormwater catchments denoted RP1 & RP2 illustrated in Figure 34 below. Under existing conditions RP1 and RP2 are diverted around the existing Kalfresh facilities before discharging to Warrill Creek to the north east of the site via a series of local watercourses.

In order to achieve no worsening of stormwater discharge it is proposed that stormwater detention basins will be provided at the low point of each developed catchment to restrict runoff prior to outfall. The integrated stormwater management plan included at **Appendix L** outlines that the proposed strategy to achieve no-worsening of pre-development runoff is to attenuate the runoff within each development catchment in a detention basin. The detention basins have been sized such that overall post-development peak flows discharging from the site are limited to or are less than the pre-development flows.

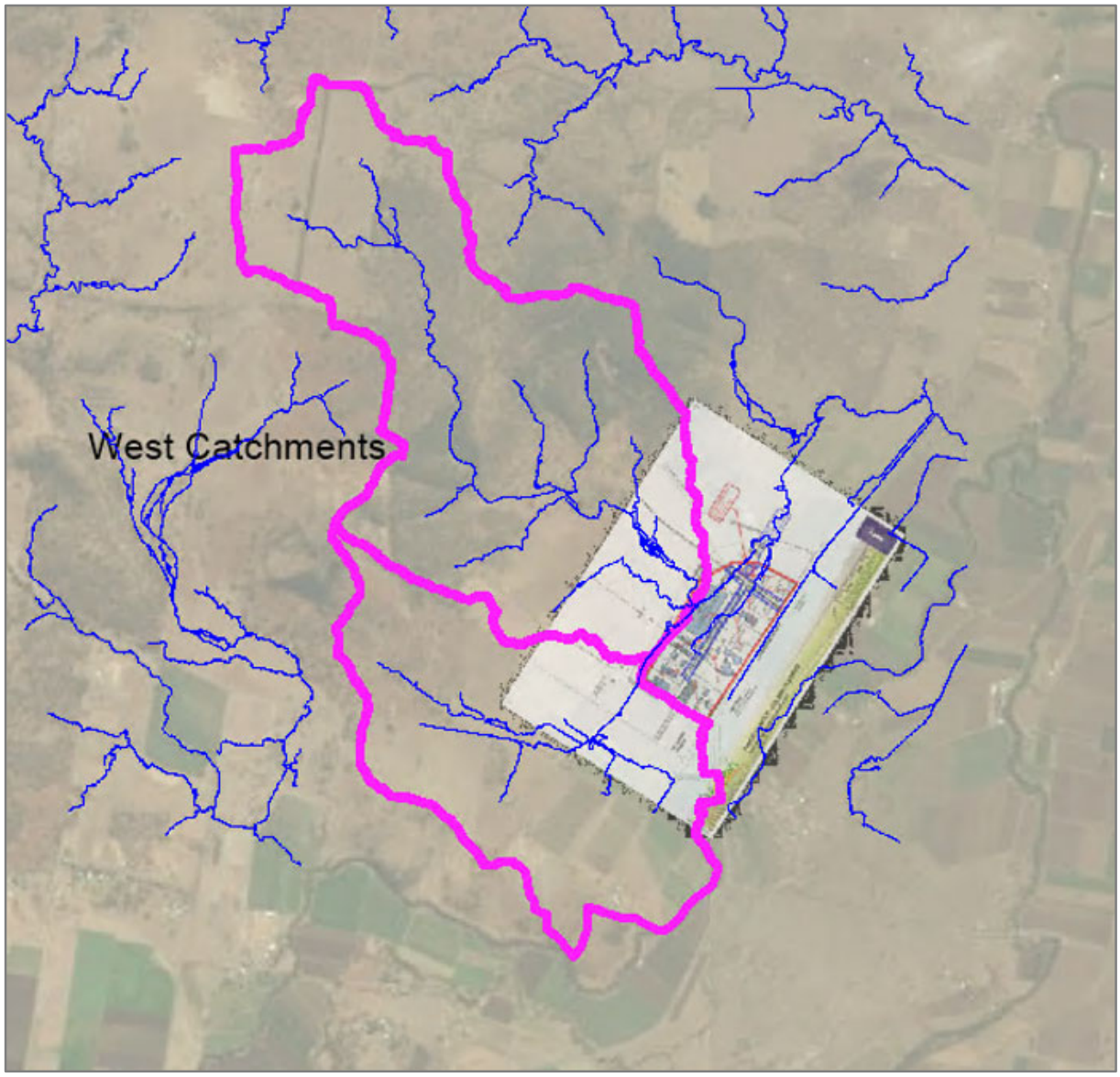


Figure 34 Pre-Development Catchment Layout

All stormwater runoff within the site catchment shall be captured and directed into the stormwater detention basins via a conventional piped drainage network where a basin shall be constructed in accordance with the findings of the Integrated Stormwater Management Plan.

The findings of the stormwater management plan recommend that the detention basins are constructed in accordance with the parameters outlined below:

Table 40: Proposed Detention Basin Properties

Basin ID	Discharge Pipe Diameter (m)	Peak Basin Stage (m)	Spillway Level (m)	Peak basin storage (m^3)	Spillway Width (m)	Approximate Surface Area (m^2)
B1	0.225	1.4	1.3	767	5	795
B2	0.225	1.3	1.3	739	5	780
B3	0.225	1.3	1.3	743	5	780
B4	0.225	1.2	1.3	733	5	770
B5	0.225	1.3	1.3	791	5	800
B6	0.225	1.4	1.3	794	5	900
B7	0.225	1.3	1.3	683	5	750
B8	0.225	1.3	1.3	669	5	730
B9	0.225	1.3	1.3	661	5	730
B10	0.225	1.4	1.3	788	5	940
B11	0.45	1.8	1.35	14,924	6	8,427

The low flow pipes and high level spillway will be shall be provided with a maintenance access path.

The conceptual stormwater drainage layout which includes the developed catchment areas has been provided for information only and is illustrated in Cardno sketch 510357-001-CI-1300 included in **Appendix K**.

7.1.5 Stormwater Quality Management

The stormwater quality management strategies and outcomes for the proposed development are outlined by the Scenic Rim Agricultural Industrial Precinct Integrated Stormwater Management Strategy included in **Appendix L**.

A stormwater management strategy has been prepared outlining the water treatment measures required to be implemented in order to treat stormwater runoff from the development and achieve the stormwater quality objectives required by State and Council Planning Policies.

The proposed stormwater management strategy comprises the construction of bio-retention systems to treat stormwater runoff so that the overall pollutant load reduction meets the individual pollutant load reduction target. Each allotment will be treated on an individual basis via a bio-retention system installed prior to the discharge point of each lot. The internal road network will be treated via the provision of a bio-retention system located within the detention basin at the north of the site.

MUSIC modelling has been completed for the internal road network in order to verify that the proposed treatment trains and bio-retention basin parameters will achieve the required water quality objectives. Table 42 below outlines the proposed bio-retention basin properties.

Table 41: Proposed Bio-Retention Basin Properties

Parameter	Bio-retention Basin
Extended Detention Depth (m)	0.5
Saturated Hydraulic Conductivity (mm/hr)	200
Filter Depth (m)	0.4
Filter Area (m^2)	80
TN Content of Filter Media (mg/kg)	400
Orthophosphate Content of Filter Media (mg/kg)	30

Further details of the MUSIC model are provided by the Integrated Stormwater Management Plan included in **Appendix L**.

7.1.6 Potential Impacts on Surface Water

Baseline water quality data for downstream waters is not currently available. Section 5.10 of the **ERA53(a) Report – Appendix F** outlines the water quality monitoring program to be implemented as part of the activity, including baseline surface water monitoring.

7.1.7 Potential Impacts on Groundwater

Baseline water quality data for downstream waters is not currently available. The risk of adverse impacts to groundwater has been assessed as low based on the following:

- Low permeability leachate barriers to be incorporated in construction of the compost pads, feedstock holding bays, finished product storage and leachate collection system
- Depth to groundwater based on records for registered bores located on the low-lying adjacent land, and elevation of the subject area
- Clayey soil profile and relatively shallow bedrock expected across the subject area based on information for the adjacent land
- Proposed reuse of leachate in the SRAIP anaerobic digester.

Investigation of future groundwater quality is therefore not necessary for the purposes of the activity, at this stage.

7.1.8 Construction Phase Impacts

There are three construction phases proposed for the project as follows:

- Phase 1: Clearing and grubbing of the site
- Phase 2: Bulk earthworks on site
- Phase 3: Stabilisation of the site

The Erosion and Sediment Control Plan held at **Appendix J** represents the minimum standards of erosion and sediment control, and dispersive soil management for both the clearing and earthworks phases.

The impacts to environment will be mitigated through the construction phase by use of the following measures as detailed in **Appendix J**:

- Catch drains
- Flow diversion banks / bund
- Batter chutes
- Level spreaders

- Rock and sandbag check dams
- Chute and channel linings
- Erosion control blankets
- Light and heavy mulching
- Revegetation
- High efficiency sediment basin
- Sediment fence
- Sediment trap
- Filter sock

7.1.9 Operational Impacts

7.1.9.1 Wastewater (Sewerage) Collection and Treatment

All sewage is to be treated to Class B standard for the proposed development. Water quality specifications for Class B quality effluent are provided in the **ERA 63 Report – Appendix H** taken from the Queensland Water Recycling Guidelines (EPA 2005) is now superseded by Water Quality Guidelines for Recycled Water Schemes, however this remains the best source of effluent class criteria.

All Class B water shall be directed from the STP into the WWST prior to irrigation, refer to Figure 34 below:

Figure 35 Flow Process Schematic

7.1.9.2 Wastewater (Sewerage) Disposal / Reuse

As per Figure 35 above, the sewage disposal is proposed as the irrigation area occurring on site, refer to **SRAIP Concept Plans – Appendix A**.

Soil amelioration shall be undertaken prior to the installation of any pipework and commencement of the activity to improve the soils ability to absorb / transpire effluent. Gypsum should be added where required at a rate to be determined by a suitably qualified person and incorporated into the soil with a rotary hoe or tractor. The gypsum will improve the quality of the soil, making it better suited for the application or effluent. This in turn will improve conditions for crop establishment.

It is recommended that organic material be added to the soil and any good quality topsoil from other areas of the site can be used to improve the irrigation area condition.

The proposed irrigation area should be established with Lucerne pasture in advance of the irrigation area becoming operational.

7.1.10 Noise

As per **Appendix P – Noise Impact Assessment** – Section 2.3.3, the SRAIP achieves compliant overall cumulative noise levels at all sensitive receptors. This assessment accounts for the proposed SRAIP, anaerobic digester and composting facility.

We note that as per the **SRAIP Variation Approval – Appendix C**, more specific noise assessments will be undertaken at the time of applications for future uses within the SRAIP. This will allow for more use specific noise assessment to be undertaken to ensure that appropriate noise control measures are implemented to achieve the relevant noise amenity criteria at sensitive receptors.

7.1.11 Air and Odour Impacts

In accordance with **Appendix Q – Air Quality Assessment**, detailed air pollutant dispersion modelling of the proposed SRAIP activities based upon currently available design information demonstrates that compliance with the relevant air quality guidelines can be achieved at sensitive receptors with the implementation of appropriate controls and management measures.

The odorant mix associated with the anaerobic digester plant 'BioAir' systems is expected to be significantly different to the odorant mix associated with the compost windrows, such that the atmospheric concentrations are not simply additive. In the case of the SRAIP, these sources are relatively well separated.

Notwithstanding, modelling outputs for all odour sources associated with the anaerobic digester plant, the digestate irrigation and the composting facility have been combined for the purposes of conservative a review of the potential overall impact of the proposed development. The cumulative assessment has been based upon the Scenario 1, 50,000tpa compost facility operation.

The model predicts a 99.5th percentile 1 hour average odour concentrations at surrounding sensitive receptors for a conservative assessment assuming additive cumulative impacts from the anaerobic digester plant, the digestate irrigation and the composting facility.

In particular we note that the potential odour emissions at sensitive receptors are below the recommended odour emission criterion (2.5 odour units).

Refer to **Appendix Q – Air Quality Assessment** for additional details on the air quality and odour impacts associated with the SRAIP.

7.1.12 Anaerobic Digester Potential Impacts

The potential environmental impacts of the anaerobic digester are discussed extensively in Attachment E of **Appendix G – ERA 53(b) Report.**

The possible impacts and associated risks to environmental values and are summarised below:

- Air quality has the potential to be degraded if noxious and/or offensive odours are permitted to emanate from the AD, associated infrastructure and/or irrigation area; with the potential to impact the environment and/or the neighbouring users (staff, customers, residents).
- Surface water and groundwater could be impacted by digestate runoff or infiltration if the facility is not managed appropriately.
- Nearby wetlands could be impacted by digestate runoff or infiltration if the facility is not managed appropriately.
- The activity may have the potential to contact nearby groundwater receptors (i.e. particularly if the site is within an unconfined aquifer) if not managed appropriately.
- AD can cause excessive noise if they are not correctly designed, operated and maintained.
- The potential sources of waste may include:
  - Unwatered inorganic constituents in the feedstock and digestate that cannot be converted to energy
  - Unwanted anthropogenic continents in feedstock and digestate
  - Other processing wastes and general maintenance related waste materials
- Land contamination could occur as a result of the following:
  - Feedstock or digestate overflowing from the storage facilities
  - Substandard digestate being discharged to the irrigation area
  - Over application of digestate on the land

- Sludge spillages during desludging
- Offsite migration of contaminants to adjacent properties and waterways.

7.1.13 Flood Risk

7.1.13.1 Pre-Development Scenario

Maps of the peak flood levels for the pre-development scenario for the Q10 to Q100CC events with peak flood depths are shown in **Appendix L**.

The existing case results show that approximately half of the proposed development area is inundated in all AEP events. Depth of up to 1 meter were recorded on the northern portion of the site. As shown in **Appendix L** the majority of the eastern portion of the site remains flood free during smaller events (10, 20% AEP) with extensive inundation during larger events. During the 1%CC event the site is completely covered. This flooding is caused by overland flow from Warrill Creek and flows from the western catchments. During flood events the water flows from the south to the north via the western areas of the site, exiting into the existing 'creek' line. In events greater than the 5% AEP floodwaters also cross the highway from east to west, onto the development site.

7.1.13.2 Post- Development Scenario

Maps of the peak flood levels for the post-development scenario for the Q10 to Q100CC events with peak flood depths shown in **Appendix L**. **Appendix L** confirms that topography modifications have resulted in minor changes to water surface levels.

As a result of filling on the development site, flood extents no longer encroach onto the proposed development area. Flows that previously covered the western portion of the site are now diverted along the western boundary via a drainage channel. Flows from Warrill Creek enter this drain at the south west corner of the site, discharging to the north west. Flows from the western catchment discharge into the drainage channel to be conveyed north, exiting the site as per the existing case.

7.1.13.3 Impacts of Development

Maps of the flooding impact caused by the proposed development are shown in Appendix L for the 10, 20, 50, 100 and 100CC AEP events. Due to the fill encroaching on the flood extents, impacts have been introduced in some areas. However not all of these impacts are deemed a result of the proposed development.

Maximum impacts recorded downstream of the site are up to 150mm (**Appendix L**), occurring at a location on the north west boundary where water depths are up to 1 meter deep during the existing case 1% AEP event. The developed case water level is approximately 5 meters below the nearest structure and 6.5 meters below the nearest residence with no impacts on site accesses. Therefore impacts noted are deemed inconsequential.

Impacts shown on the east side of the highway are a result of flows across the highway being restricted in the developed case. In the existing case floodwater in events greater than the 5% AEP flow from east to west across the highway, this movement is restricted in the developed case. Due to the model definition swale drains alongside the highway lack detail which also contributes to the impacts shown.

During the 1% AEP event, peak impacts shown on the eastern side of the highway are 88mm located in one section of the eastern swale drain. Water depths at this location are 700mm deep during the existing case event with extensive flooded areas surrounding it. No changes to flood extents are noted as a result of the impacts shown.

During the 2% AEP event, a number of areas to the east of the highway are showing impacts. While some of these impacts are a product of the items noted above, other areas further east showing impacts cannot reasonable be attributed to the proposed development.

7.2 Proposed Mitigation Strategies and Measures

Based on the above identified potential environmental impacts of the SRAIP, the following section outlines the proposed mitigation strategies and measures which have been implemented in the proposal to address these.

7.2.1 Environmental

7.2.1.1 Strategic Location of the SRAIP

The SRAIP was predominantly sited to be within close proximity to the Cunningham Highway for access and visibility purposes – however the proposed location also ensures the precinct is situated in the portion of the site which is the most clear of vegetation. This ensures that no significant habitat is lost as a result of establishing the SRAIP.

7.2.1.2 Strategic Location of ERA components

The proposed digestate irrigation area within the proposed Rural Precinct has been designed to provide a 60m wide (30m either side) of a low lying gully to ensure that the nutrient rich digestate does not run off into this proposed gully and have flow on effects downstream.

Similarly, the proposed effluent and digestate irrigation areas have been strategically located to avoid nearby sensitive uses.

7.2.1.3 Renewable Energy Production

The incorporation of the AD within the SRAIP is a key initiative being employed to ensure the proposal protects the environment by producing a renewable energy source which will be utilised by the SRAIP rather than relying solely on fossil fuel forms of energy.

The AD also recycles the food waste produced by Kalfresh and other liquid and organic waste which would have previously been taken to landfill, to create a nutrient rich biofertiliser to be used for the next round of crops in place of a synthetic fertilisers.

7.2.1.4 Water Recycling

Given water is a precious commodity in the drought prone Scenic Rim and critical to the SRAIP's success, water recycling is proposed to ensure wastage of water is minimised. Wherever possible, water is being reutilised. For example, the industrial wastewater from washing of Kalfresh's crops within their facilities is to be mixed with the AD liquid digestate for crop watering and fertilization.

7.2.1.5 Environmental Protection Area

As per the SRAIP Concept Layout, an 'Environmental Protection Area' (EPA) is proposed at the rear of the subject site over significant vegetation (remnant / koala vegetation). This EPA is to protect this area from clearing as part of this proposal. While the EPA does not preclude clearing in the future, it requires that future approvals are obtained if and when clearing of this vegetation is warranted. It is important to note that this will likely be the case in the future as this section of EPA is mapped within the resource and processing area of the Kangaroo Mountain Key Resource Area (KRA141) which is an identified State resource involving the extraction of quarry rock. The KRA is well placed to supply the expansion of urban development in the ShapingSEQ regional place area and is estimated to be sufficient for 50 years at the current level of demand for the Ipswich and Scenic Rim regions.

7.2.1.6 Waterway Barrier Works

There are Low and Medium Order Queensland waterways for the purposes of waterway barrier works over the site as per the SRAIP Concept Layouts. Given these transect the SRAIP development footprint, it is evident that these waterways will be altered and realigned as a result of the proposal.

It is proposed to re-establish these waterways within the proposed overland flow paths which will connect with Warrill Creek downstream as per the civil engineering documentation. Additionally, to accommodate fish habitats – infrastructure such as deeper fish passages in the proposed overland flow path bordering the precinct and openings will be installed in the proposed haulage route crossing the overland flow path to enable fish movement.

7.2.1.7 State-Controlled Road Transport Network

Mitigation measures on the State controlled road network have been identified in Section 6, 10 and 11 of Cardno's Road Impact Assessment (**Appendix N**). These include the removal of existing access points onto the State highway and the provision of a new 'seagull' intersection on the State highway to improve traffic capacity and safety.

7.2.1.8 Compensatory Planting Works to Promote Koala Movement

Compensatory planting works is proposed within the overland flow path to enable koala movement across the site. This planting work is not officially required as an offset under relevant legislation but is proposed as an amenity and ecological offering for koalas in the area. This will not affect any Manning's coefficient for stormwater and will increase the presence of koala trees in this area from the existing sparse and scattered prevalence. The planting will result in a significant uplift in the utility of the area for koalas and other arboreal fauna.

7.2.1.9 Specific Anerobic Digester Mitigation Measures

The potential environmental impacts of the anaerobic digester will be offset by the following measures which are discussed extensively in Attachment E of **Appendix G – ERA 53(b) Report**:

- The AD plant will be contained on a concrete slab in shed, and individual tank and associated digestate storage components will be fully enclosed.

  As such, the AD and associated infrastructure is not expected to cause any nuisance odours to any nearby sensitive receptors dur to the strict control measures proposed by Kalfresh. The irrigation system will distribute digestate above ground via centre-pivot which will minimise spray drift, aerosols and odours. The irrigation area has been appropriately distanced from sensitive receptors to minimise health and environmental impacts. Composting of solid digestate will be conducted in a controlled manner to minimise impact to air quality and accordingly sensitive receptors. No nuisance odours are expected to leave the site boundary.
- The irrigation and compost area are located a sufficient distance from dams and surface waters (refer Appendix C, Figure 4). In the unlikely event that runoff occurs, it will be captured in catch drains and directed to a dam for reuse in the AD. The irrigation area has been specifically designed using MEDLI to maximise evapotranspiration in order to prevent ponding and runoff of digestate to surface waters.
- MEDLI modelling has predicted the hydraulic loading which the irrigation area is able to sustainably receive which should mitigate risk to the closest wetland. However, the activity will be maintained with reference to the below management strategies and corrective actions taken if any non-compliances occur.
- The risk of groundwater impacts caused by the irrigation is low given that the proposed application rate is less than 69 mm/year and given the regional aquifer is predominantly sub-artesian. The same risk applies to the application of the solid digestate fraction which will be applied to land at a rate that does not exceed the nutrient assimilation capacity of the specific crop.
- The AD will not cause a noise to any nearby sensitive receptors, e.g. staff, contractors, adjacent properties, flora or fauna. The AD is to be fully enclosed (if practical) to avoid any excessive noise emanating from the facility.
- Waste generated from the operation of the AD will not cause impact to human health or the surrounding environment.

- Land contamination as a result of the application of digestate will be prevented by controlling the quality of digestate, compliance with the design application rates, and ongoing monitoring of digestate quality and routine inspections of the irrigation and storage areas. A site based management plan and/or contaminant release area monitoring program (or similar) may be conditioned by the administering authority as part of the EA approval.

7.2.2 Economic and Social

Realising the economic and social benefits of the SRAIP will require a range of strategies and initiatives to be implemented by Kalfresh in partnership with local and State governments. Relevant strategies and initiatives proposed are outlined in Table 45 below:

Table 42: Economic and Social Impact Realisation Strategies

Strategies and Initiatives	Description	Implementation
Local Worker Repatriation Strategy	SRAIP represents a critical opportunity to provide local employment opportunities to workers who currently travel from the region for their jobs. Providing local employment will provide local workers with travel time and cost saving, while also maximising the expenditure benefits to the local economy from worker expenditure.	Kalfresh will establish a strategy to target agricultural, construction and manufacturing workers that current travel to locations such as Ipswich, Lockyer Valley, Logan and Brisbane for employment. This will include direct advertising of new positions and roles as well as the establishment of a SRAIP online jobs board. The Repatriation Strategy will be part of the Workforce Development Plan.
Agricultural Production Promotion Strategy	SRAIP will provide additional food and agricultural manufacturing capacity, within a dedicated, integrated manufacturing capacity. This will present an opportunity for the expansion of agricultural production in the region, while also providing a more sustainable and less volatile source of local demand for agricultural products.	Kalfresh will promote an increase in local agricultural production through an Agricultural Production Promotion Strategy. This strategy will identify current local production supplies across commodities and identify long-term opportunities for further production expansion as well as short-term inter-regional strategies.
Workforce Development Plan	SRAIP will employ over 450 workers upon completion. These workers will be drawn from a combination of local workers, repatriated and new workers to the region.	Kalfresh will establish a concise Workforce Development Plan. This will identify key skills required for the workforce, identify local skills gaps and establish strategies to address these gaps for Kalfresh and other SRAIP tenant groups, including training and inward migration.
Regional Agricultural Museum	It is proposed the SRAIP will include a regional Agricultural Museum that celebrates the agricultural and farming history of the region. This will be positioned as a local tourist destination as well as a key tool for protecting the cultural heritage of the region. Additionally, the town of Kalbar has an above average share of residents that identify as Indigenous. Integrated and celebrating local Aboriginal history represents a potential opportunity.	Kalfresh will engage with local historical societies and indigenous groups to identify potential exhibits and items for inclusion in the Museum including both European and Aboriginal historical items and exhibits.
Local Construction Supply Chain Procurement	The construction phase of SRAIP will generate significant local and regional construction employment as well as procurement supply chain opportunities for the local area.	Kalfresh will engage with ICN, DSDMIP and Scenic Rim Regional Council to maximise local procurement during the construction phase, with a focus on ensuring local supply chain utilisation in the construction phase, both directly and through subcontractors.

Agricultural Manufacturing Investment Attraction	SRAIP will be anchored by Kalfresh operations but will also provide opportunities to accommodate leading food manufacturing and processing tenants from across Australia and the world.	Kalfresh will work with DSDMIP, Scenic Rim Regional Council, TIQ and Austrade to position and promote SRAIP as an agricultural manufacturing destination of choice for inward investment.
Ongoing Community Engagement Plan	SRAIP has the potential to drive economic activity and growth in wider Boonah and Scenic Rim regions. This will have ongoing impacts on the local community, namely in terms of new employment and economic opportunities.	Kalfresh will establish a plan for ongoing engagement with the community, particularly residents and businesses in Boonah, Kalbar and Aratula. This plan will outline the methods by which the community can engage with Kalfresh and SRAIP representatives on an ongoing basis, as well as any regular engagement activities and events.

This is particularly the case for impacts adjacent to and on the eastern side of Warrill Creek (**Appendix L**). At these locations the existing water surface level is approximately 2 meters above the water surface level adjacent to the proposed development. Therefore it is implausible that changes to the development area topography approximately 500 meters to the east, on the opposite side of the highway have induced these impacts. These impacts have been deemed a result of minor variations in flood levels within Warrill Creek between cases.

Generally all impacts that can be attributed to the proposed development are located in areas that have flood depths greater than 900mm with no changes to the flooding extent. None of these impacts reported pose a risk to persons or infrastructure. The majority of offsite impacts are less than 50mm and occur in areas that are inundated during the existing case model by water depths of up to 1.2 meters in depth.

7.3 Social Impacts

The SRAIP will transform, diversify and value add to the Boonah and Scenic Rim communities. It will support a more sustainable and diversified economy which will be less volatile and provide local farmers with an expanded value adding opportunities in the region. Additionally, local businesses in construction and manufacturing support sectors will benefit from their involvement in the SRAIP supply chains, improving their sustainability and viability.

The jobs generated in SRAIP will also help to:

- Increase the attractiveness of the region to younger workers and households addressing socio-economic and age profile challenges in the region
- Reduce unemployment by providing more sustainable ongoing permanent employment opportunities;
- Improve the quality of life of workers by reducing travel times within and outside of the Scenic Rim for work and retail/service access;
- Reduce the volatility and improve the sustainability and dynamism of local communities through more permanent, non-seasonal employment and economic opportunities.

Overall, the MCA-based Social Impact Assessment identified no major negative impacts to the community with the overall Social Impact Score from the assessment being overwhelmingly positive.

Further engagement with stakeholders, coupled with ongoing monitoring and measuring of outcomes during implementation phases are recommended to further understand, enhance and/or mitigate social impacts over time.

A complete multi-criteria analysis (MCA) framework for the Social Impact Assessment is held at **Appendix E**.

7.4 Economic Benefits

7.4.1 Employment Impacts

7.4.1.1 Summary of Results

Direct and indirect employment impacts of the proposed project are summarised in the table below.

Table 43: Summary of Employment Impacts

Summary	Direct	First Round	Industrial Support	Simple Multiplier
Construction (Over 10 Years)	641	279	75	996
Construction (Annual Average)	64	28	8	100
Operational Jobs	475	414	158	1,047

7.4.1.2 Construction

RPS split the total capital expenditure proportionally across the Non-Residential Buildings (covering buildings and associated investments) and Heavy and Civil Engineering (covering civil earth works and infrastructure). Allowances was made for 5% of the capital costs being allocated to Construction Services.

A total of 641 jobs were estimated for the project over 10 years. The project nature of construction work means this figure must be divided by the number of years to get an average annual construction figure of 32 jobs.

First and second round construction multipliers on the Scenic Rim are more subject to regional imports than other sectors. The Scenic Rim lacks a significant internal construction and associated supply chain capacity meaning the First Round and Industrial Support benefits of the project to the local and regional economy are likely to be less significant.

The impact of these multipliers is that the project will support a total of 100 construction related jobs annually during the 10 year construction phase.

7.4.1.3 Operational Activity

RPS drew on data provided by Kalfresh on both expected and potential productive uses for the subject site. This includes activity from Kalfresh itself as well as agricultural and food manufacturing related production by other prospective tenants within the development.

Additionally, potential productive capacity was estimated based on floor space estimates from the proposed concept plan for lots not specifically identified by Kalfresh. The value of this productive capacity has generally been allocated to Food Manufacturing, in line with the overall strategic positioning of the development.

Finally, a number of supporting and complementary uses were identified for the development. These included (along with their relevant sector of activity):

- Equipment and palette sales and leasing (i.e. Wholesale trade);
- Lab testing facilities (i.e. Professional Scientific and Technical Services);
- A museum (i.e. Other Services);
- A café (i.e. Food and Beverage Services);
- Fabrication activities (i.e. Metal Containers and Other Sheet Metal Product manufacturing); and
- Distribution and Storage (i.e. Road Transport and Transport Support Services and Storage).

Finally, RPS has estimated ongoing employment based on total annual employment at completion and full development of the subject site.

Based on this RPS estimates the development will support approximately 475 FTE jobs once fully developed, with a further 572 jobs from indirect First Round and Industrial Support (subject to third party investment and the final uses proposed).

7.4.2 Economic Impact and Contribution Assessment

7.4.2.1 Summary of Results

Economic impact can be assessed based on Total Economic Output, Incomes and Gross Value Added. The latter is most closely aligned to Gross Regional and Domestic Product which is the main indicator of the size, composition and growth of the economy.

RPS has assessed the economic impact of the proposed project during construction and operational phases for both the Scenic Rim and national economies. The Simple Economic Multiplier impacts are summarised below.

Table 44: Summary of Economic Impacts and Contributions, Simple Economic Multiplier, Subject Project

CONSTRUCTION		
Total	**Scenic Rim**	**Aust**
Output	$348.8	$712.1
Income	$46.8	$127.7
Gross Value Added	$89.5	$238.9
Annual Average	**Scenic Rim**	**Aust**
Output	$17.44	$35.61
Income	$2.34	$6.39
Gross Value Added	$4.47	$11.94

Table 45: Gross Value Added

OPERATIONAL		
Annual	**Scenic Rim**	**Aust**
Output	$425.1	$574.1
Income	$80.0	$118.3
Gross Value Added	$140.5	$211.9

7.4.2.2 Scenic Rim Share of National Economic Impacts

The Scenic Rim region is expected to account for varying shares of the economic impact to the Australian economy of the subject project. Specifically examining the Gross Value Added, 37.5% of the construction impact and 66.3% of the operational impact will be captured by the local economy, with the remainder captured by State and National economies (excluding the Scenic Rim).

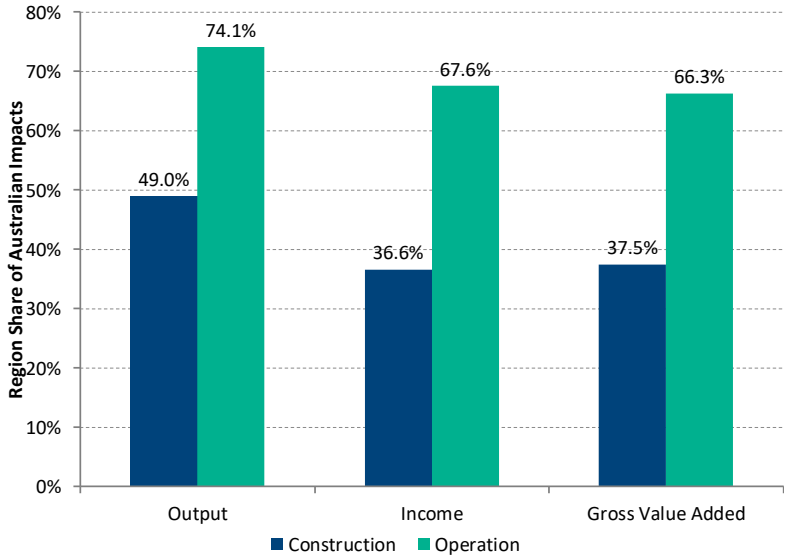


Figure 36 Scenic Rim Share of Australian Economic Impacts, Construction and Operational Phases, Subject Project

7.4.2.3 Contribution to Scenic Rim Economy

Gross Regional Product estimates for Scenic Rim are available from Council's ID economic portal, which summarises annual estimates produced by the National Institute of Economic and Industry Research.

In 2018, the Scenic Rim Gross Regional Product was valued at a total of $1.77 billion, up 3.3% from the previous year. This represents the third straight year of growth, following a general decline in the economy in the region between 2013 and 2015.

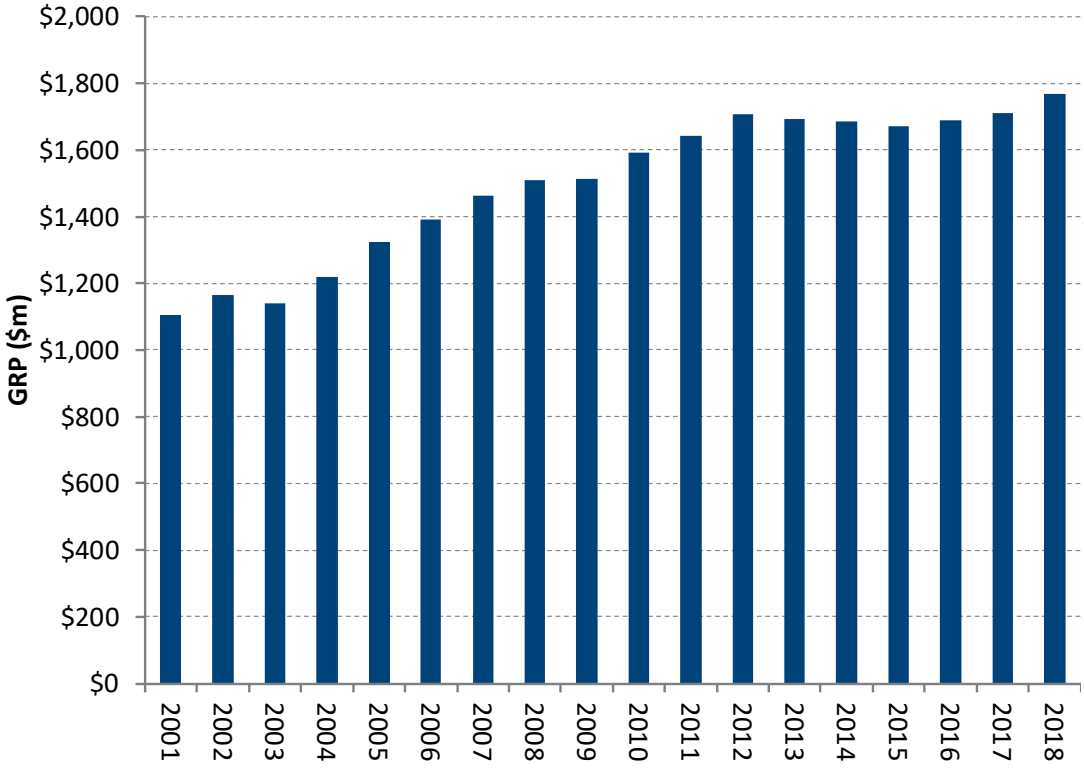


Figure 37 Scenic Rim Gross Regional Product, 2001 to 2018

Compared to the Gross Regional Product in 2018, the proposed project will contribute total Gross Value Added during the construction phase equivalent to 5.3% of the regional economy. Similarly, upon full completion and development, the operational phase of the project will contribute the equivalent of 8.3% of the current Scenic Rim economy.

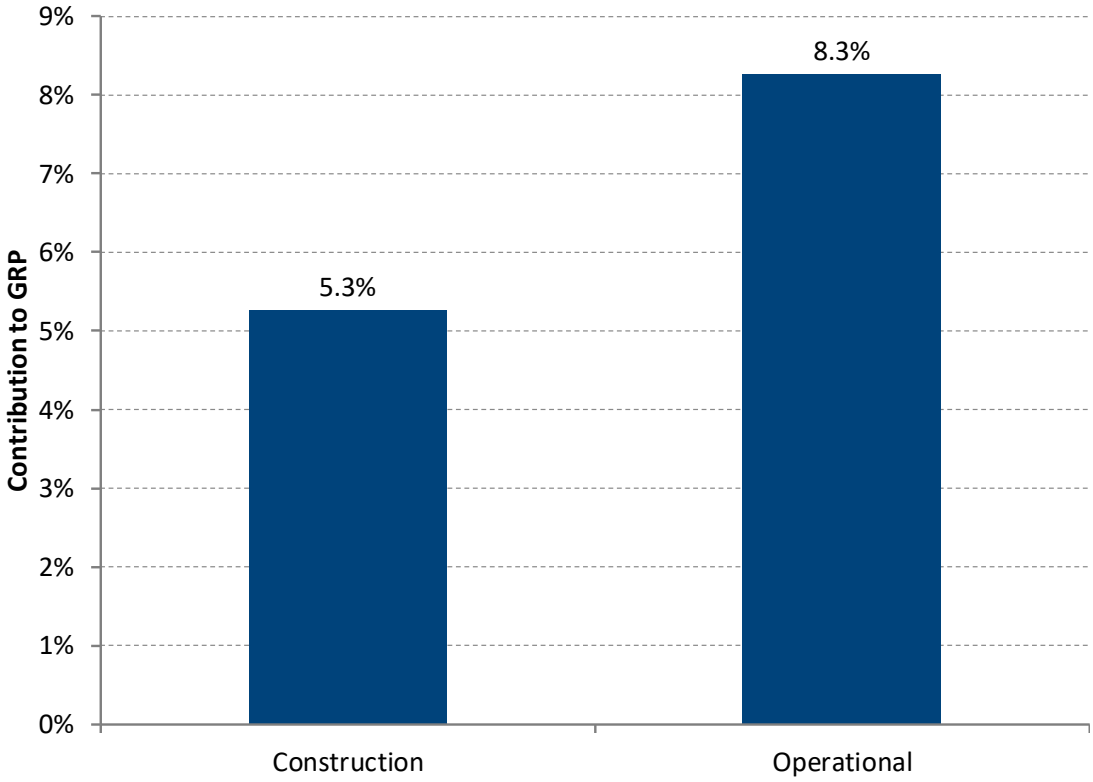


Figure 38 Contribution to Scenic Rim GRP (2019 Levels), Construction and Operational Phases, Subject Project

8 PLANNING NEEDS ASSESSMENT

The proceeding Sections 9 and 10 undertake a detailed assessment against the relevant statutory framework including the:

- *South East Queensland Regional Plan 2017* (ShapingSEQ)
- *State Planning Policy* (SPP 2017)
- *Scenic Rim Planning Scheme* (the Planning Scheme)

8.1 Identified Conflicts

This section discusses the identified conflicts with the above planning documents.

8.1.1 ShapingSEQ and the RLRPA

The site is situated in the Regional Landscape and Rural Production Area (RLRPA) of the ShapingSEQ Regional Plan meaning the SRAIP is situated outside the Urban Footprint. The intent of the RLRPA in accordance with ShapingSEQ is to:

- Protect the values of this land from encroachment by urban and rural residential development
- Protect natural assets and regional landscapes, and ensure their sustainable use and management
- Support development and economic growth of rural communities and industries.

ShapingSEQ states that the RLRPA is to be protected from inappropriate development, particularly urban and rural residential development. In this way, the *Shaping SEQ: Regulatory Provisions* limit the different types of uses and subdivisions allowable in the RLRPA – for example, only residential uses, rural activities or infrastructure services are able to be established and subdivision is prohibited where resulting in lot sizes less than 100 hectares.

The proposed SRAIP through its agricultural / industrial land uses and proposed subdivision pattern contravenes the above limitations placed on the RLRPA through the regulatory provisions and is 'urban development' in nature. Therefore, the SRAIP would be a form of development typically envisaged within the Urban Footprint however as outlined elsewhere in this report, the scale of uses proposed for the SRAIP would be incompatible with the Urban Footprint and has been recognised as being situated in its chosen location for a number of specific locational benefits. The ethos driving the SRAIP proposal will protect the natural assets and regional landscape by diversifying and strengthening the local agriculture sector.

With the subject site being situated outside of the Urban Footprint, this in turn may also result in perceptions of this form of development having the ability to potentially detract from the existing nominated Scenic Rim town centres – this is discussed extensively in Section 8.2.6 below.

The SRAIP draws many similarities with the Shaping SEQ 'Rural Enterprise Precincts' (REPs). REPs are areas which promote and / or protect specified rural activities and natural assets, as well as landscape values within and adjoining the precinct. These precincts are anchored by an existing or future rural activity that encourages investment and support from clustering similar or compatible land uses. The precincts are intended to encourage targeted investment and provide economic and environmental benefits from clustering similar or compatible land uses. REPs recognise that *'agricultural development is not simply a 'default' land use in rural areas but is a significant and deliberate undertaking that is not easily moved and requires detailed planning'*. Essentially, the REPs provide a planning mechanism to locate intensive uses outside of the Urban Footprint.

A REP planning pathway was a potential planning tool that was considered, but ultimately not pursued, for the SRAIP. The preferred coordinated project process, IAR, also provides a preferred mechanism to locate intensive uses outside of the Urban Footprint, along with the ability to facilitate the development of a specific area capable of sustaining rural industry, as well as also providing opportunities to further develop regional

agricultural activities to ensure diversity, as well as value adding industries within a localised (rural) catchment.

It is important to note that as per the *Shaping SEQ Rural Precincts Guideline*, 'Shaping SEQ aims to assist rural businesses and industries to adapt innovatively to changing technology, business operations, and a growing domestic and global demand market for high quality produce'. Whilst the SRAIP is not an envisaged proposal within the RLRPA, the SRAIP directly achieves this intent of the Regional Plan in providing a precinct where agricultural and industrial uses can be co-located directly adjacent to where the raw ingredients are produced.

The co-location of food production and processing results in faster turnaround from paddock to plate, which in turn means reduced food miles, higher operational efficiencies, agricultural diversification and greater demand for Australian-grown produce which in turns allows for a higher quality product to be sent to the domestic and global markets. SRAIP is uniquely positioned for success leveraging strong established supply chains, underpinned by quality production, trusted relationships, efficient logistics and community support. The creation of such a Precinct is envisaged to catalyse economic growth, innovative technology (such as the anaerobic digester for renewable energy) and development opportunities for the regional economy.

8.1.2 State Planning Policy (SPP)

There are 17 state interests contained within the SPP which convey the State's interests in land use planning and development and are contained within the five themes of liveable communities and housing, economic growth, environment and heritage, safety and resilience to hazards, and infrastructure.

There are several interests which the SRAIP directly complies with including 'Agriculture', 'Mining and extractive resources', 'Energy and water supply', and 'Infrastructure integration'.

The perceived conflicts with the SPP are held within the two State interests of:

- Biodiversity; and
- Natural hazards, risk and resilience.

Biodiversity

We note that the subject site is identified as having significant ecological values present, particularly in the north western portion of the site which is mapped as Wildlife habitat (koala habitat areas – core) and Regulated vegetation (essential habitat and intersecting a watercourse).

While development of the subject site for the SRAIP with these values present may be seen as a conflict with the SPP, these ecological values are contained to the north western portion of the site where development, as part of this IAR, is not proposed. Rather, the SRAIP development footprint is sited directly adjacent to the Cunningham Highway where no significant ecological values have been identified as being present. Additionally, the proposal seeks to nominate an 'Environmental Protection Area' over the areas of the site with recognised high ecological significance to prevent any direct broad scale vegetation clearing as part of this IAR proposal.

Natural hazards, risk and resilience

The site is identified as being located in a flood hazard area, and bushfire prone area in accordance with the SPP.

As discussed extensively, the SRAIP proposes an earthworks solution which creates a flood-free development footprint while also ensuring no significant impacts to upstream / downstream owners and hence the flood hazard of the SPP will be addressed as a result of the SRAIP proposal.

Similarly, the bushfire prone portions of the site are mapped in the north western corner. As per the SRAIP proposal, these development areas are adequately distanced from bushfire risk to ensure the development mitigates the risks to people and property to an acceptable level.

8.1.3 Scenic Rim Planning Scheme and the Rural Zone

The subject site is situated in the Rural Zone of the *Scenic Rim Planning Scheme 2020*. The purpose of the Rural Zone is to 'provide for rural uses and activities, or provide for other uses and activities that are compatible with existing and future rural uses and activities, and the character and environmental features of the zone'. The SRAIP, with proposed industrial land uses and the proposed subdivision pattern, would not be a form of development typically envisaged within the Rural Zone.

This means that siting the SRAIP on a site within the Rural Zone has the potential for a perception of such development to detract from the Scenic Rim town centres such as Kalbar, Aratula and Boonah as these townships are where the planning scheme would 'typically' locate the uses that are proposed by the SRAIP. The reasons for why it is not possible to locate the SRAIP in these locations, and the benefits of siting the SRAIP on the chosen site are discussed further in Section 8.3 below.

We note that the Planning Scheme Rural Zone overall outcome (b)(vi) states '*Land uses in the Rural Zone facilitate diversification or value-adding opportunities that support or increase agricultural production and the ongoing operation of rural activities*.' As outlined previously, the SRAIP has been proposed on the basis of seeking to achieve this outcome.

8.2 Project Benefits

The SRAIP is aligned with a number of national, state and regional/local agreements and policies which provide for action on food reliability, climate change and the development of renewable energy infrastructure, namely:

- Australian Government - *Critical Infrastructure Resilience Strategy*
- Australian Government – *Food demand in Australia: Trends and Issues 2018*
- Australian Government – *Clean Energy Innovation Fund*
- Queensland Government – *Powering Queensland Plan*
- Queensland Government – *Growing for Queensland*

The SRAIP will be a significant economic development driver within the Scenic Rim region and Queensland. The SRAIP will enable regional producers to respond to consumer and industry trends for locally-produced, healthy, value-added, convenient ingredients. Servicing these value-added markets efficiently and competitively requires automated production and significant investment in high-technology factories. This investment will lead to a change in the employment opportunities in the farming region, from low-skilled seasonal field jobs, to highly-skilled, permanent manufacturing positions.

Adding value to the raw ingredients in the region where they are grown, means the value will stay in the regions and the end products will be more competitive in the international space (as they are fresher and have a longer shelf life), opening up export opportunities to regional producers.

The construction of the SRAIP, in conjunction with existing agricultural and rural development, will increase the infrastructure diversification within the SEQ region and will result in increasingly resilient and diversified food supplies.

Locating food production and manufacturing businesses close to where the raw ingredients are produced is a specific logistical benefit of the proposed SRAIP location. The volume and value of agricultural produce in the Scenic Rim and surrounding productive regions presents a unique economic and operational opportunity for prospective precinct tenants.

This proposal for the SRAIP is based on the premise that the objective of all businesses in the region is to build on the established reputation and agricultural capability of the area. Kalfresh believes this objective can be achieved by enhancing the ability of producers, and those in the supply chain, to more efficiently deliver processed foods through the coordination and synergistic placement of complementary businesses involved in the production and processing of agricultural produce. Food processors and manufacturers need to grow

and adapt to consumer demand for Australian ready-to-eat products and the SRAIP gives these businesses a much-needed competitive advantage.

The SRAIP will feature specialised infrastructure, industrial and rural services designed to meet food processing tenants' operational requirements. Co-location with fit-for-purpose infrastructure and raw ingredients is the only way input and output efficiencies can be fully realised for all businesses involved in the food processing supply chain.

It is anticipated that the precinct will provide and enhance active channels for business transactions that exist between local growers, food processing tenants, food packaging and freight companies.

Kalfresh estimates an initial investment of $26 million would be required for site development to allow sales (including construction of sewage and water treatment) and $19 million for the construction of the bioenergy facility. The proponent plans to expand its own business by investing $5 million in two new facilities for organic vegetable and snacking production within the proposed industrial precinct. The construction of the industrial precinct has the potential for further capital investment of up to $291 million by the attraction of additional food production and manufacturing businesses to the precinct.

The following project benefits outweigh the perceived conflicts identified in Section 8.1 above:

8.2.1 Renewable Energy Generation

A pivotal part of the SRAIP is the co-location of a renewable energy facility within the precinct. The high-tech food processing and manufacturing businesses proposed for the SRAIP are energy-intensive and require stable, reliable baseload power.

Worldwide investigations undertaken by Kalfresh revealed that many foreign farming regions, particularly in Europe, have adopted anaerobic digestion (AD) as a renewable energy source that is compatible with agriculture.

The SRAIP proposes to co-locate food processing businesses alongside an AD facility, which would transform food and waste into renewable energy. Bio-Energy via co-digestion closes the loops of waste streams, using technology that has been proven overseas.

Bio-Energy delivers multiple benefits, including the decarbonisation of food processing and manufacturing; scalability to delivering reliable power to SRAIP tenants; co-digestion of diverted urban waste, agricultural waste and the opportunity for local producers to grow a dedicated feedstock.

Co-locating an agricultural precinct with an AD facility will be a Queensland first. The co-digestion model proposed for the SRAIP Bio-Energy Facility will be an Australian first. The SRAIP will pave the way for this new renewable energy source and presents an exciting opportunity for the Scenic Rim and Queensland.

The AD has been identified as the most suitable renewable energy source for a regional area, and the only form that can deliver reliable, stable baseload power to a regional grid. The proposed facility offers multiple benefits, which other renewable sources (wind and solar) do not. These include ability for low-cost grid connection in a regional area; baseload power capacity 24/7; surge supply at peak times; power that is independent of geography and season; waste diversion; additional revenue streams (waste receival and fertiliser).

The Bio-Energy Facility produces dispatchable power and therefore has the capacity to provide voltage regulation capacity for the local grid.

The SRAIP vision is to attract a range of new, diversified agriculture businesses to the region and many of these businesses are energy intensive. The uses envisaged for the SRAIP rely on baseload power and power security, which anaerobic digestion will provide.

The anaerobic digester has the added benefit of diverting landfill waste by transforming it to a renewable energy source. Modelling suggests that the 1.6MW facility could divert about 40,000 tonnes of waste / annum. The output of AD is a nutrient-rich fertiliser, which will replace synthetic fertilisers.

Additionally, the anaerobic digester use in itself creates approximately 46 direct and 10 indirect construction jobs, as well as three operational jobs.

The proposed AD will also export approximately 6,000MWh / annum to the electricity grid.

8.2.2 Employment

As previously highlighted, the SRAIP will have significant employment benefits for the Scenic Rim region including 641 direct and 354 indirect local jobs over 10 years and 475 direct and 572 indirect local jobs annually upon full development. We note that these are subject to third party investment and the final uses proposed.

Specially, these jobs numbers in relation to Kalfresh vs other SRAIP third parties to be established is as follows:

- Construction of SRAIP: 641 direct and 354 indirect local jobs over 10 years
- Fully developed SRAP: 475 direct and 572 indirect local jobs
- Kalfresh jobs (including the bio-energy facility):
    - Construction: Lots 5 and 6 will create 13 new direct FTE jobs for developing snacking and organic vegetable and food processing facilities and 3 new indirect FTE jobs from flow on effects during construction
    - Operational: Once Lots 5 and 6 are fully operational – 80 direct and 84 indirect jobs will be created

These statistics are important as the *Scenic Rim Regional Prosperity Strategy 2020-2025* specifically highlights that a key weakness of the Scenic Rim is the 'lack of local jobs'.

The SRAIP will directly deliver local jobs into the Scenic Rim economy which speaks directly to 'Goal 2: Prosper – Element 1: High-Performing Outward-Focused Economy' of Shaping SEQ by fostering high levels of economic activity and employment in agriculture as a high value sector to ensure the Scenic Rim region's economic relationships are strengthened through the development of the SRAIP.

8.2.3 Housing Impacts

Based on the above employment numbers, an assessment has been undertaken to ascertain the new housing opportunities the SRAIP will present to the local Scenic Rim townships.

For reasons presented in **Appendix E – Economic and Social Impact Assessment**, it has been accounted that 20% of workers will be living in the Scenic Rim based on the first two indicators, which leaves 30% of jobs filled by new residents to the region.

Approximately 9.8% of dwellings in the Boonah SA2 were vacant at the last Census period, which is below State and national averages. This rate is typically associated with normal vacancies of housing stock at any one time, and is not representative of a significant quantity of housing stock available for new people. This would mean that new houses will be required in the Scenic Rim townships to service the SRAIP employees.

Assuming 1.05 worker per house (based on one in 20 houses accommodating two SRAIP workers), then this would yield a total housing demand in the region of 171 new houses.

This housing stock would likely be primarily (90%+) comprised of detached houses in line with the prevailing housing stock availability and the poorer feasibility of higher density stock in the region, though medium density approvals have improved in recent years. A higher proportion of rentals would likely be needed in the short-term to facilitate in migration but would likely shift back to owner occupier households due to the prevailing affordability of local housing stock. It is also highly likely that this housing need will be principally captured by Boonah and Kalbar with secondary demand in Aratula.

Finally, a review of land supply estimates from DSDMIP suggest there is more than sufficient realistically developable land that could be brought to market in the short to medium term to accommodate this housing demand.

8.2.4 Promote Collaboration between Agricultural & Industrial Uses

Co-locating agricultural and industrial uses in one location, being the SRAIP, means there will be additional opportunities for collaboration between typical industrial uses and agricultural uses. For example, other food processing operations will collocate in the SRAIP and take advantage of the proposed anaerobic digester or industrial / warehouse uses which involve the production of agricultural equipment with will then be used and bought for use on Kalfresh and other local crops.

This collaboration will be promoted specifically as the SRAIP is to be held within a community title arrangement with a body corporate so all end users will be familiar with one another and their business operations.

It is obvious that this increased exposure to new businesses and close proximity within the SRAIP will promote many synergies for the end users to work together in innovative and exciting ways to move both industries into the future.

8.2.5 Improved Logistics

The site is ideally located on the Cunningham Highway which enables direct road access to the national highways connecting South East Queensland to northern and western Queensland areas and the southern markets of New South Wales and Victoria.

It is important to note that due to the delicate nature and shorter shelf-life of the value-added vegetable products being processed by Kalfresh, reliance on rail infrastructure is not a feasible option for the transportation of the processed vegetables. For this reason, road transport is the only feasible option for efficient distribution from the site. This reliance on road transportation methods, and the site's proximity to existing farming centres, means the current subject site is advantageous, refer to Figure 39 below:

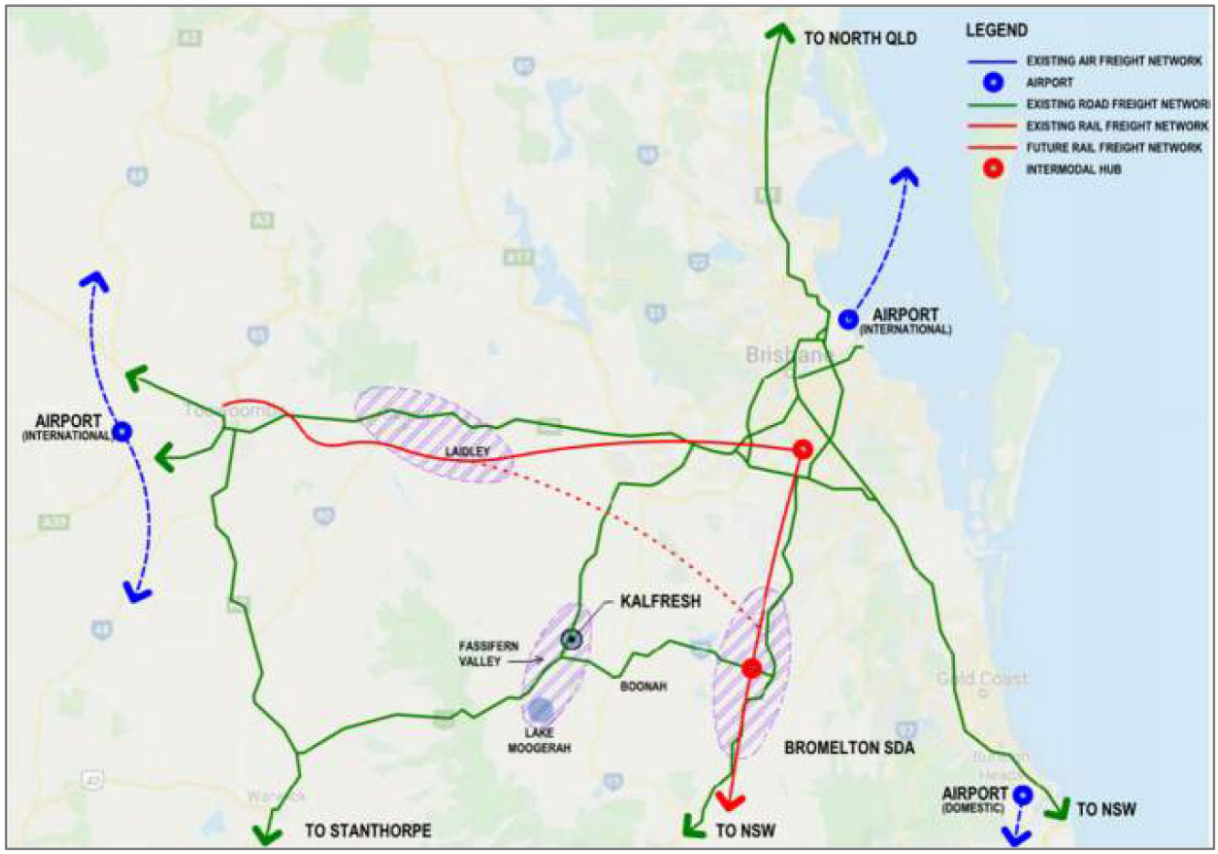


Figure 39 Regional Transport Links and Freight Logistics

The intent of the SRAIP is to provide processing and support facilities for agricultural uses and crops grown within the vicinity of the subject site. Locating food production and manufacturing businesses close to where the raw ingredients are produced is a specific logistical benefit. Transport costs will also be reduced through the removal of need for long commutes between crop to processing facilities (i.e. food mile reduction).

The faster the produce can be delivered to the processing facility from the paddock, the better the end product will be in terms of quality, taste and shelf-life.

It is for the above reasons that the project must occur outside of the Urban Footprint to achieve / maximise the economic, social and environmental benefits.

The location of the Bromelton State Development Area (SDA) approximately 43km to the east of the proposed site with its designation of transportation connections and larger scale heavier industrial development is considered a logistical asset which will assist and complement the proposed development. Kalfresh currently utilises Bromelton rail infrastructure for the receipt of produce.

The above talks directly to 'Goal 2: Prosper – Element 8: Rural Prosperity' of ShapingSEQ. One of the key strategies for this goal is to '*Encourage the intensification or diversification of on-farm agricultural activities and the introduction of new rural value-adding activities such as biotechnology'*.

As outlined above, the SRAIP specifically aims to leverage on the traditional primary industry strengths of the region (agriculture) to expand, diversify and introduce value-adding activities that enhance productivity, resilience and competitiveness in the domestic and global market by:

- Expanding the value-adding activities that currently exist within the Kalfresh operation to ensure these can be diversified to enhance resilience and competitiveness
- The SRAIP will introduce complementary uses to Kalfresh within the SRAIP to build relationships between other agricultural businesses and complimentary industrial uses to again strength and build resilience
- The SRAIP specifically delivers 'biotechnology' through the anaerobic digester to value-add to the precinct by providing a sustainable energy source to power the SRAIP and utilise waste produced on site

To reiterate, the SRAIP directly achieves 'Element 8' of the Prosper theme under ShapingSEQ by promoting the intensification or diversification of agricultural activities on an existing agricultural site, and the introduction of new rural value-adding activities (biotechnology through the anaerobic digester). This supports the rural community to adapt and build on their strategic advantages in existing rural industry and activities.

8.2.6 Potential Impacts on Existing Town Centres

The reality of the SRAIP in terms of scale and end users (likely Medium and High Impact Industry uses) rules out the possibility for the SRAIP to be located closer to the Scenic Rim town centres which are located within the Urban Footprint and perhaps more appropriately zoned for commercial / industrial uses.

As described below, the SRAIP site has been specifically chosen for its ability to accommodate the scale of the project and still maintaining proximity to the rural production areas, but also the appropriateness of these uses as there are no sensitive receivers within close proximity of the site – making it ideal to establish more high impact industrial uses.

Similarly the very nature of the proposed agricultural uses (large cropping areas etc.) means there is no opportunity for the SRAIP to be located within town centres as it defeats the purpose of co-locating the SRAIP directly adjacent to existing productive areas to improve operational efficiencies and reduce 'food miles'. Intensive rural industrial uses are not suited to the town centre and co-location with cropping land is fundamental to the establishment of the SRAIP. However the SRAIP uses will support the town centres via addition of new revenue streams, new residents and workers to the region.

While it is clear that the SRAIP is not appropriate to be located within the existing town centres of the Scenic Rim, the SRAIP will also become a key employer within the region. So rather than detracting from town centres, studies undertaken indicate that the SRAIP will benefit / complement the existing town centres via increased employment, resulting in an increase in population as people relocate to the region – living, interacting and spending within these existing town centres. This will result in a need for housing provisions within these local towns associated with these works which in turn will lead to housing diversity opportunities and a variety of uses being provided to service this new local population. Consequently, while the SRAIP is not located within an existing town centre, it will contribute to much needed economic rejuvenation of these established areas and lead to a flow-on of increased housing and workforce accommodation growth opportunities through increased population and associated workforce demands.

It is also anticipated that new, high-skilled job opportunities created by the SRAIP, will lead to new economic growth and employment opportunities as well as encouraging existing residents to remain in the region, rather than being forced to leave the region to source work. Data reveals that 40 per cent of the Scenic Rim's labour force that lives locally travels up to 40 minutes each day to access employment outside the region.

With regard to the specific land uses to be established within the SRAIP which may compete with similar uses in nearby townships, the SRAIP land uses are intended to primarily service and support the needs of the SRAIP employees and associated visitors. While there may be some leakage from existing businesses this will be more than outweighed by the new activity created by the SRAIP. It is envisaged that these land uses will be established in conjunction with Kalfresh and the SRAIP body corporate to ensure they primarily service the immediate catchment needs of the SRAIP first and foremost. For example, the SRAIP Code (PO11/AO11) specifically states that where a Service Station is to be established in the SRAIP it must:

- Primarily service the uses within the SRAIP
- Site the service station as to ensure it does not provide direct access from the Cunningham Highway, with primary access provided from an internal access road
- Not detract from the existing service station facilities in Aratula (or local townships).

The above elements speak directly to '*Goal 1: Grow – Element 5: Growing Rural Towns and Villages*' of ShapingSEQ. The SRAIP will directly deliver on this regional plan goal by:

- Providing land uses and infrastructure within the precinct that will accommodate population and employment growth, therefore supporting the sustainability of the nearby rural townships
- Appropriately responding to the site constraints and existing local character and identity through the design and proposed land uses of the SRAIP to create a well-designed precinct which integrates with the surrounds and therefore promotes the viability of the rural economy

8.2.7 Scenic Rim Regional Prosperity Strategy – Recognition as a 'Strategic Enabling Project'

The SRAIP has been recognised by Scenic Rim Council as a 'strategic enabling project' in their recently released *Scenic Rim Regional Prosperity Strategy 2020-2025*.

Strategic enabling projects are 'key infrastructure projects that provide both a community and economic benefit'. The strategy states that 'these projects are individually significant and will provide a catalytic boost to local economy, as well as provide a variety of community benefits'.

Specifically in relation to the SRAIP, the strategy states 'The hub seeks to create benefits for future businesses (tenants) through waste to energy technology as well as sharing inputs and waste products, which would create a large, linked and 'circular' precinct. The hub will enable a variety of food processing and related businesses to cluster, creating a significant economic precinct and delivering a significant number of jobs to the local economy'.

The inclusion of this project in the strategy indicates a level of support from Council.

8.3 Subject Site Selection

The SRAIP will expand on historical and current uses in the Kalbar and Boonah region, which have a long, rich history of agricultural production. The SRAIP proposal will take a 'back to the future' approach to food production, harking back to the days when the region was home to a Butter Factory, milk processors, a canning factory, and other businesses which value-added the raw ingredients in the region where they grew.

The local towns were born from this concept and now, with a much larger population living on the doorstep in south-east Queensland, the SRAIP will reinvigorate the food manufacturing and processing sector.

The SRAIP proposes to reintroduce food processing and value-adding on a large, more advanced site that has been specifically designed for the use. This fit-for-purpose site will allow for growth and automation, opening up opportunities for new skilled employment for local residents.

The site has been selected as the ideal location for the establishment of the SRAIP for a number of reasons:

- The SRAIP is a Kalfresh initiative, designed to diversify and enhance existing agricultural businesses in the local region. Kalfresh's existing operations are well-established on the site and are supported by farms and family-owned farming businesses in the local and broader region. Therefore establishing the SRAIP in this location makes logical, and logistical, sense.
- The site is ideally located on the Cunningham Highway which enables ease of access to primary production areas and subsequent markets, being 84km to Brisbane City and within the food producing regions of:
  - Fassifern Valley
  - Lockyer Valley
  - Stanthorpe
  - Darling Downs
  - Bowen

  Additionally, being on the Cunningham Highway, offers easy access for transport servicing the Sydney and wider NSW markets. The site is also well located to the Distribution Centres of major Australian retailers, as well as air and sea ports to access international markets.
- The subject site is a large and consolidated landholding which is predominantly clear of any ecological values given the existing Kalfresh operations and cropping occurring particularly in the east of the site towards the Cunningham Highway. As such, it is an ideal location to establish a large precinct which promotes agriculture and supports industrial uses.
- The subject site is situated in a largely agricultural area with adequate separation distances to the nearest sensitive receivers, making it ideal to establish a range of industrial, agricultural and industrial uses.
- Kalfresh has existing links to growers in the Scenic Rim, Lockyer Valley, Darling Downs and Stanthorpe and sources produce from these regions to process through the existing facilities.
- A significant amount of money and infrastructure has previously been invested into the subject site by Kalfresh and therefore it is not financially practical to move the current vegetable processing operations to another site.
- The site has direct access to existing water and electricity sources and also a local labour market which will be utilised by the SRAIP.

The SRAIP achieves the policies identified within the State Planning Policy (SPP), 'State interest – Agriculture' – specifically by:

- Facilitating opportunities for co-existence with development that is complementary to agricultural uses that do not reduce agricultural productivity. The SRAIP achieves this by co-locating the future

agricultural / industrial uses of the precinct with the proposed anaerobic digester, composter operations and proposed agricultural tourism museum.

- Considering the provision of infrastructure and services necessary to support a strong agriculture industry through the implementation of the proposed SRAIP digester, composter, sewerage treatment plant and water provision and recycling strategy.

Additionally, the SPP 'State interest – Energy and water supply' is also delivered on by providing the anaerobic digester which allows for 'the development and supply of renewable energy at the regional, local and individual scale within an appropriate location'. **Appendix G – ERA53(b) (Anerobic Digester) Report** specifically talks to the digester's siting and appropriateness in terms of potential environmental impacts.

8.3.1 Locational Alternatives

Alternative locations for siting the project are limited due to the following factors:

- Land zoning and availability of sufficient unconstrained land
- Limited availability of direct highway access, transport infrastructure and linkages
- Existing and future water security
- Other infrastructure availability (sufficient water, electricity)
- Receiving environment
- Waste management
- Workforce services and support business
- Social amenity impacts
- Strategic potential
- Proximity to farm

Having consideration to the above factors makes alternative siting of the SRAIP difficult. The proposed location of the SRAIP on a site bordering the Cunningham Highway and surrounded by high-quality horticultural cropping land, meets these criteria and is therefore considered to be suitable for what is being proposed.

8.3.2 Do Nothing Alternative

Should the SRAIP not proceed, significant private investment into the State of Queensland will not be recognised. Potential local job opportunities and further diversification to regional industries will also not be recognised in an area with limited industrial employment options.

The 'do nothing alternative' ultimately means this opportunity for growth and sustained industry viability will be lost to Queensland. Queensland horticulture and agricultural production will fall behind and doing nothing prevents SEQ producers reducing the production costs of supplying the value-added fresh food demanded by their key customers. Additionally, the 'do nothing alternative' will prevent the promotion of National Food Security by failing to encourage diversification within the SEQ regional agricultural market.

9 ASSESSMENT AGAINST STATE INTERESTS

9.1 Planning Regulation 2017

As the application is subject to Impact assessment, the assessment benchmarks, and the matters the assessment manager must have regard to, are those identified in Section 45(5) of the *Planning Act 2016* and Sections 30 and 31 of the *Planning Regulation 2017*.

As the application is for a variation request, the matters the assessment manager must have regard to are those identified in Section 32 of the *Planning Regulation 2017.*

9.2 South East Queensland Regional Plan 2017

Section 30(2)(a)(i) of the *Planning Regulation 2017* requires that the impact assessment of this application must be carried out against the assessment benchmarks stated in *South East Queensland Regional Plan 2017* (Shaping SEQ), to the extent the regional plan is not identified in the planning scheme as having being appropriately integrated.

The subject site is within the Regional Landscape and Rural Production Area (RLRPA) of Shaping SEQ.

Table 46: Shaping SEQ Provisions

Regional Plan	Response
Shaping SEQ	The subject site is located within the RLRPA of Shaping SEQ. The intent of the RLRPA is identified as follows: • Protect the values of this land from encroachment by urban and rural residential development • Protect natural assets and regional landscapes, and ensure their sustainable use and management • Support development and economic growth of rural communities and industries. The proposal is consistent with the intent of the regional plan as demonstrated through the assessment below.

9.2.1 Goals and Elements Assessment

The following provides an assessment of the **relevant** goals and elements of the regional plan and demonstrates that the SRAIP will deliver on many of the outcomes as discussed below:

Goal 1: Grow

Element 5: Growing Rural Towns and Villages

Rural towns and villages provide for sustainable growth and community development in a way that reinforces local identity.

Strategies:

- *Support the sustainability of rural towns and villages by providing sufficient land and infrastructure to accommodate population and employment growth*
- *Plan for well-designed growth that integrates sensitively with existing local character and identity, and promotes viability of the rural economy.*

Response

The SRAIP consolidates the existing Kalfresh operations on site to accommodate employment growth within close proximity to the rural townships of Kalbar and Aratula to ensure growth and development of these communities.

The SRAIP has been intentionally designed to sensitively integrate with the existing local character of the area and protect the ecological values located in the north west corner of the site through the introduction of an 'Environmental Protection Area'. The SRAIP will significantly strengthen the viability of the rural economy, not only within the surrounding townships but the wider SEQ region as a primary producer of agricultural resources for the State and nation.

Goal 2: Prosper

Element 1: High-Performing Outward-Focused Economy

SEQ responds to the transitioning economy by focusing on export-oriented and business-to-business transactions that drive productivity and growth, while continuing to enhance population servicing activities that support growing communities.

Strategies:

- *Foster high levels of economic activity and employment in export-oriented and high-value sectors to strengthen the region's economic relationships*
- *Plan for and support continued growth in population-serving employment and traditional economic industries.*

Response

The SRAIP directly relates to the transitioning economy as it allows for the expansion of the agricultural / industrial capability of the 'food bowl' region which directly exports to the wider State and nation. The SRAIP will drive productivity and growth within the SEQ agricultural / industrial sector of the economy.

The SRAIP will solely deliver the largest economic and employment generator within the local townships and will look to directly employ local members of the community.

Element 8: Rural Prosperity

Rural areas leverage traditional primary industry strengths to expand, diversify and introduce value-adding activities that enhance productivity, resilience and competitiveness in domestic and global markets.

Strategies:

- *Support rural communities to adapt and built on their strategic advantages to continue the profitability and sustainability of existing rural industry and activities*
- *Encourage the intensification or diversification of on-farm agricultural activities and the introduction of new rural value-adding activities such as biotechnology*

Response

The SRAIP directly responds to this element of the regional plan through:

- Expanding, diversifying and introducing value-adding activities to the existing Kalfresh operation which exists on site.
- The SRAIP will enhance the productivity of the existing Kalfresh operation but also introduce new agricultural and industrial operators into the local economy to strengthen and continue to build resilience and competitiveness within the SEQ region, and wider State and national markets.

- Through the SRAIP and the introduction of new facilities, the intensification of surrounding on-farm agricultural activities will increase as a result.
- The SRAIP includes the digester and composter biotechnology elements to value-add to the SRAIP and ensure on site efficiency is maximised.

Goal 3: Connect

Element 1: An Efficient Movement System

People and freight move efficiently around the region, maximising community and economic benefits.

Strategies:

- *Maximise the safe and efficient use of existing transport infrastructure to support the desired regional settlement pattern and major economic areas.*
- *Prioritise efficient and reliable freight movement on key corridors to minimise conflicts with other transport and land uses.*

Response

The SRAIP is proposed adjacent to the Cunningham Highway which is a State controlled road to ensure the efficient use of existing transport infrastructure to prioritise the efficient and reliable movement of the exports leaving the site.

Goal 4: Sustain

Element 2: Biodiversity

The regional biodiversity network is protected and enhanced to support the natural environment and contribute to a sustainable region.

Strategies:

- *Protect regional biodiversity values, and the ecological processes that support them, from inappropriate development.*

Response

As identified within the **Ecology Assessment – Appendix O**, the SRAIP has been designed to ensure the biodiversity values on site remain undisturbed by the proposed development to ensure the values are protected and maintained.

Element 5: Water Sensitive Communities

Water management in SEQ will use innovative approaches in urban, rural and natural areas to enhance and protect the health of waterways, wetlands, coast and bays.

Strategies:

- *Plan for a water sensitive region by supporting innovation in water cycle management that increases the efficient use of water, security of supply, addresses climate change and manages impacts on waterways and Moreton Bay.*

Response

The SRAIP will be a water sensitive development through the use of water within bores on site and the extraction of the water source from the nearby creek to ensure the supply is secured for the full capacity of the ultimate development. The SRAIP will also increase the efficient use of water on site through the use of

greywater from the proposed uses in the irrigation areas proposed for the digestate and the sewer treatment area.

Element 6: Natural Economic Resources

The region's natural economic resources are managed sustainably and efficiently to meet the needs of existing and future communities.

Strategies:

- *Conserve agricultural areas, including those which provide communities with an affordable supply of fresh food, food security and export earning potential.*

Response

The SRAIP will provide a precinct which ensures the local economic resources are capitalised to sustainably and efficiently meet the need of the existing and future local, regional, State and national communities.

The SRAIP looks to capitalise on its location to ensure the agricultural areas surrounding the site can be fully utilised and their products distributed regionally, State and nation wide to provide these communities with an affordable supply of fresh food and food security. Additionally, the SRAIP secures the local areas export earning potential.

9.2.2 Western Sub-Region Assessment

The subject site is located within the Western Sub-region of the SEQRP. The **relevant** overall outcomes are addressed below:

Rural Prosperity

The sub-region's principal rural production lands (for horticulture, forestry and grazing) in the Lockyer Valley, Scenic Rim, Somerset and Ipswich areas support one of the nation's most important food bowls; they are extremely important for long-term food security and export opportunities. This land resource and the supporting processing infrastructure will be protected, including preventing further land fragmentation and protecting rural industries and activities from encroachment by incompatible uses.

Alternative rural futures will be explored to diversity and increase the productivity of rural activities, and strengthen the area's resilience to market cycles and climate change. Maintaining the productive capacity of this land resource will become increasingly important to the region in the face of climate change.

Response

The SRAIP protects land within the Scenic Rim to secure food security and export opportunities within the local economy. The SRAIP is classified as 'supporting processing infrastructure' and will not cause land fragmentation.

The SRAIP is a direct result of Kalfresh looking to diversity and increase the productivity of rural uses within the local area to ensure the economy is more resilient to market cycles.

9.3 State Planning Policy

The *Planning Regulation 2017* (Section 26(2)(a)(ii)) requires the assessment manager to assess the application against the assessment benchmarks stated in the *State Planning Policy* (SPP), Part E, to the extent Part E of the SPP is not identified as being appropriately integrated into the planning scheme.

The SPP matters applicable to the site are as follows:

Table 47: Applicable SPP Matters

Applicable SPP matters	**Agriculture** • Important agricultural areas • Agricultural land classification – class A and B **Mining and extractive resources** • Key resource area – resource / processing area • Key resource area – separation area **Biodiversity** • MSES – Regulated vegetation (essential habitat) • MSES – Regulated vegetation (intersecting a watercourse) **Natural hazards risk and resilience** • Flood hazard area – Level 1 – Queensland floodplain assessment overlay • Flood hazard area – Local Government flood mapping area • Bushfire prone area **Transport infrastructure** • State-controlled road

An assessment of the relevant SPP matters has been undertaken below.

Table 48: SPP Interests and Assessment Benchmarks

State interest and assessment benchmarks	Response
Planning for economic growth	
Agriculture	
No Assessment benchmarks	
Mining and extractive resources	
Applicability	
A development application for: 1. *reconfiguring a lot within a KRA; or* 2. *a material change of use within the resource/processing area of a KRA or the separation area for the resource/processing area of a KRA; or* 3. *a material change of use within the transport route separation area of a KRA that will result in an increase in the number of people working or residing in the transport route separation area. However, requirements (2) and (3) above do not apply to the assessment of a material change of use for a: (a) dwelling house on an existing lot; or (b) home-based business (where not employing more than two non-resident people on a full-time equivalent basis); or (c) caretaker's accommodation (associated with an extractive industry); or (d) animal husbandry; or (e) cropping.*	**Applicable** The development proposes both RoL and MCU components within the KRA – resource / processing areas and separation areas.
All of the following requirements are assessment benchmarks:	
4. *Development within a resource/ processing area of a KRA will not impede the undertaking of an existing or future extractive industry development***.**	**Complies** The extent of development proposed within the resource / processing area is limited to the creation of a balance allotment only. The proposal will not impede the undertaking of an existing or future extractive industry development on the north western portion of the site mapped within the resource / processing area.

State interest and assessment benchmarks	Response
5. *Development of sensitive land uses and other potentially incompatible land uses is avoided within the separation area for a resource/ processing area of a KRA, if it could impede the extraction of the resource.*	**Not Applicable** As for the proposal is for agricultural / industrial uses, development of sensitive land uses is not proposed.
6. *Development not associated with extractive industry in the transport route separation area of a KRA does not increase the number of people working or residing in the transport route separation area unless the development mitigates the impacts of noise, dust and vibration generated by the haulage of extractive materials along the transport route.*	**Not Applicable** The site is not mapped within the transport route separation area.
7. *Development adjacent to the transport route does not adversely affect the safe and efficient use of the transport route by vehicles transporting extractive resources. Further information in relation to these requirements is detailed in the mining and extractive resources guidance material.*	**Not Applicable** Development is not proposed directly adjacent to a mapped transport route.
Planning for the environment and heritage	
Biodiversity	
No Assessment benchmarks	Refer to **Table 45** below.
Planning for safety and resilience to hazards	
Natural hazards, risk and resilience	
Applicability	
A development application for a material change of use, reconfiguration of a lot or operational works on premises in any of the following: 8. *bushfire prone areas* 9. *flood hazard areas* 10. *landslide hazard areas* 11. *storm tide inundation areas* 12. *erosion prone area.*	**Applicable** The site is mapped as a flood hazard area and bushfire prone area.
All of the following requirements are assessment benchmarks for the development:	
Erosion prone areas within a coastal management district:	
13. Development does not occur in an erosion prone area within a coastal management district unless the development cannot feasibly be located elsewhere and is: a. coastal-dependent development; or b. temporary, readily relocatable or able to be abandoned development; or c. essential community infrastructure; or d. minor redevelopment of an existing permanent building or structure that cannot be relocated or abandoned.	**Not Applicable** The site is not situated within an erosion prone area.
14. Development permitted in (1) above, mitigates the risks to people and property to an acceptable or tolerable level.	**Not Applicable** The site is not situated within an erosion prone area.
Bushfire, flood, landslide, storm tide inundation, and erosion prone areas outside the coastal management district:	
15. Development other than that assessed against (1) above, avoids natural hazard areas, or where it is not possible to avoid the natural hazard area, development mitigates the risks to people and property to an acceptable or tolerable level.	**Complies** The proposed development footprint avoids the bushfire prone areas on site as to ensure the natural hazard on site is reduced. The flood risk is appropriately managed as per the **Flood Assessment – Appendix L** to mitigate the risk to people and property.
All natural hazard areas:	

State interest and assessment benchmarks	Response
16. Development supports and does not hinder disaster management response or recovery capacity and capabilities.	**Complies** The development does not increase the need for emergency support or impact on the ability for emergency services to react to a disaster.
17. Development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties.	**Complies** The development in itself would not be significantly affected by a flooding event. Modelling indicates that the development would not result in a cumulative impact on surrounding premises. Refer to **Flood Assessment – Appendix L.**
18. Risks to public safety and the environment from the location of hazardous materials and the release of these materials as a result of a natural hazard are avoided.	**Complies** The storage of hazardous materials on the site is not anticipated. Should it occur, hazardous materials will be stored in low risk locations, such as indoors, or in suitably bunded and caged outdoor areas.
19. The natural processes and the protective function of landforms and the vegetation that can mitigate risks associated with the natural hazard are maintained or enhanced.	**Not Applicable** The natural hazard risk level is not determined significant enough to warrant the altering of existing landforms or vegetation in the locality.
Planning for infrastructure	
Transport infrastructure	
No Assessment benchmarks	

Table 49: Assessment of the Proposed Development against the Biodiversity State Interest Policies

Biodiversity State Interest Policies	Response
1. *Development is located in areas to avoid significant impacts on matters of national environmental significance and considers the requirements of the EPBC Act.*	**Complies.** The SRAIP will not have a significant impact on a MNES.
2. *Matters of State Environmental Significance area identified and development is located in areas that avoid adverse impacts; where adverse impacts cannot be reasonably avoided, they are minimised.*	**Complies.** The Ecology Assessment (Appendix O) identifies MSES of relevance to the SRAIP. The SRAIP will not have any adverse impact on any MSES.
3. *Matters of Local Environmental Significance are identified and development is located in areas that avoid adverse impacts; where adverse impacts cannot be reasonably avoided, they are minimised.*	**Complies.** The Ecology Assessment (**Appendix O**) identifies MLES of relevance to the SRAIP. The SRAP will not have an adverse impact on any MLES.
4. *Ecological processes and connectivity is maintained or enhanced by avoiding fragmentation of matters of environmental significance.*	**Complies.** The SRAIP is located within a highly modified landscape and will have minimal impacts on ecological processes and connectivity. The development footprint does not contain any habitat of significance, nor is it located within an important movement corridor for fauna.
5. *Viable koala populations in South East Queensland are protected by conserving and enhancing koala habitat extent and condition.*	**Complies.** Koalas are known to exist within the subject site, though the habitat of most utility to the species is far removed from the development footprint and restricted to remnant areas in the nominated Environmental Protection Area. The SRAIP will require the removal of 15 NJKHTs within the development footprint. This is not expected to have any significant impact on the koala, refer to the **Ecology Report – Appendix O.** Proposed revegetation works within the site will result in a benefit for the species.

9.4 State Code 16

SARA mapping shows that areas defined as Category B and Category C on the Regulated Vegetation Management Map (RVMM) are limited to the north-eastern extent of the site, some 500 metres or more from the proposed earthworks areas of the development footprint.

The balance of the Project Area is mapped as Category X vegetation. The SRAIP will not impact Category B or Category C Regulated Vegetation.

Under the *Planning Regulation 2017* and the *Vegetation Management Act 1999*, a development permit is required for vegetation clearing (operational work and material change of use) unless that clearing is exempt clearing work. Under Schedule 21, Part 2, Section 2 of the Planning Regulation, clearing vegetation on freehold land in a Category X area is 'exempt clearing work'.

Despite no impact to Category B and Category C Regulated Vegetation, the proposed Material Change of Use application is proposed over the whole of the subject site, including the areas mapped to contain this native vegetation. As such, a response has been provided to State Code 16: Native vegetation Clearing within the Ecology Report (**Appendix O**) for completeness.

9.5 Nature Conservation Act 1992

The site is not located within a mapped 'High Risk Trigger Area' (refer to **Ecology Report – Appendix O**). The detailed botanical survey of the development footprint and surrounding area failed to identify the presence of protected plants and/or suitable habitat for these. Consequently, based on the information presently at hand, a Protected Plant Clearing Permit under the Nature Conservation Act (NC Act) is not likely to be required for the SRAIP. Furthermore, an Exempt Clearing Notification under the NC Act is also not warranted.

Some of the relict trees that will be removed within the development footprint (refer to **Ecology Report – Appendix O**) contain hollows that would serve as animal breeding places. Therefore, clearing of these trees will require a Permit to Tamper with an Animal Breeding Place prior to works occurring. This in turn will require the preparation of a Species Management Program to the satisfaction of DES.

9.6 Operational Works – Waterway Barrier Works and Riverine Protection Permits

As identified in Section 3.3.3, the Operational Works phase of the Proposed Development will potentially require referral to DAF (waterway barrier works) and DNRME (riverine protection permit). With respect to the waterway barrier works matter, the waterway mapping within the subject site is grossly inaccurate and does not reflect the heavily-altered nature of the site's hydrological characteristics. It is noted that the channelised drain running in a generally north direction is not identified as a waterway for waterway barrier works.

Riverine Protection Permits are required under the Water Act 2000 for any proposed activity to excavate, place fill or destroy vegetation in a watercourse, lake or spring. A watercourse assessment undertaken by DAF on the site (**Ecology Report – Appendix O**) determined that no 'watercourse' is present; however, the wetland to the rear of the development is classified as a 'lake'.

It must be noted that this wetland area is of anthropogenic origin and does not function as a natural lake or wetland due to its reliance on greywater from the existing Kalfresh operations. This wetland would likely dry out and be significantly altered through grazing if its greywater supply was removed, as will be the case once the SRAIP is operational (i.e. with a closed wastewater loop).

9.7 State Development Assessment Provisions (SDAP)

The following are the relevant SDAP and are addressed at the following locations:

- SDAP Code 16 – **Appendix O**
- SDAP Codes 18 and 22 – **Appendix S**

10 ASSESSMENT AGAINST LOCAL PLANNING INSTRUMENTS

We note that during the time between the SRAIP being declared as a coordinated project and lodgement of this IAR application, the Boonah Planning Scheme is no longer in effect and the relevant planning scheme is the 'Scenic Rim Planning Scheme' which commenced on 20 March 2020.

As such, the Boonah Planning Scheme 2006 will not be addressed as part of this IAR as it is no longer in effect and the SRAIP demonstrates compliance with the Scenic Rim Planning Scheme moving forward.

10.1 Scenic Rim Regional Council Planning Scheme

The site is currently subject to the development provisions outlined in the draft *Scenic Rim Regional Council Planning Scheme* (draft planning scheme).

10.1.1 Strategic Framework

The subject site is situated as follows within the Strategic Framework mapping:

- Strategic Framework Map SFM-01 Communities and Character: 'Rural Area'
- Strategic Framework Map SFM-02 Growing Economy: 'Extractive resource separation area' and 'Resource area / processing area'

Communities and Character - Strategic Outcomes Assessment

The following provides an assessment against the **relevant** strategic outcomes sought for the 'Rural Areas':

Rural Areas only accommodate those land uses identified in the 'Table of Consistent Uses and Potentially Consistent Uses' for each zone unless it is demonstrated that the development complies with the Strategic Framework.

Response

As identified within the **Variation Approval – Appendix C**, the SRAIP proposes new activity groups to accommodate all of the desired uses to be established in the SRAIP. The differentiation from the Rural Zone uses and the appropriateness of this is explained above in Section 4.2.1.6.

The proceeding assessment demonstrates that while slight variations are sought, the SRAIP proposal remains consistent with the draft strategic framework.

Non-rural activities are located and designed to preserve the landscape character and scenic amenity of Rural Areas, which include (but are not limited to) the following rural and natural qualities:

a) Expanses of productive rural farmland

b) Forested mountain ranges contributing to the region's iconic scenic backdrop

c) Waterways and dams set amongst a varying landscape from forested steep upper reaches to open floodplains

d) Scenic viewing experiences within forested hills and valley settings

Response

The proposed SRAIP has been specifically designed to be located within the cleared area of the subject site fronting the Cunningham Highway as to preserve the landscape character and scenic amenity of the Rural Area. The activities proposed in the west of the site such as composting and irrigation uses are rural in nature and will also maintain the existing rural character of the site.

Rural Areas are protected from encroachment by urban and rural residential development.

Response

The SRAIP is not classified as 'urban or rural residential development'.

The level of amenity expected in a Rural Zone (excluding precincts) is predominantly representative of a traditional rural environment.

Response

The SRAIP will achieve appropriate levels of amenity representative of a traditional rural environment as demonstrated within **Appendix P – Acoustic Assessment** and **Appendix Q – Air Quality and Odour Assessments**.

Growing Economy – Strategic Outcomes Assessment

The following provides an assessment against the **relevant** strategic outcomes sought for the subject site:

Element: Agriculture and Rural Production

Diversification of agricultural activities and uses complimentary to agriculture and associated with the landscape values, including tourism and recreational activities, are facilitated where sited to best enhance agricultural productivity, value-adding and promote the landscape values of rural land.

Response

The subject site for the SRAIP which will involve the diversification of agricultural activities and uses complimentary to agriculture is situated on the Cunningham Highway between Aratula and Silverdale – ideal for distributing the products into the wider State freight network. As stated, the SRAIP is to be situated in the cleared area fronting the Highway where landscape and ecological values are minimal to ensure these are preserved on site.

Element: Natural Resources and Sustainability

Rural areas are retained predominantly for agricultural production, landscape values and scenic amenity.

Response

While the subject site is situated in the Rural area and the SRAIP will not directly be used for agricultural production, it is the intent that the precinct will service the local Rural areas which are used directly for agricultural production to maximise their efficiency and productivity. As per the **SRAIP Concept Plans – Appendix A**, the SRAIP has been sited to ensure the landscape values and scenic amenity in the west of the site is preserved.

Development location and design in Rural Areas appropriately considers soil capability, future agricultural production potential and the potential for land use conflict.

Response

The subject site for the SRAIP proposal is not intended to be used directly for agricultural production however has been appropriately designed to ensure the SRAIP appropriately integrates with surrounding

uses and appropriately manages the impact of noise, air quality and odour in accordance with **Appendix P** and **Appendix Q**.

Key Resource Areas, as identified on Strategic Framework Map SFM-02: Growing Economy and existing or approved Extractive industries, are protected from incompatible development that constrains extraction and transportation of the resource.

Response

The Kangaroo Mountain KRA will be maintained and the proposed SRAIP is considered a compatible development within the separation area. As nominated on proposed Lots 1, 2, 3, 4, 15 and 16 within the **Variation Approval – Appendix C** which front the 'future road connection' and haulage route from the adjacent quarry to the Cunningham Highway, specific use controls will be implemented to ensure incompatible development cannot be established on these lots.

On-site wastewater treatment in unsewered areas is implemented sustainably and in accordance with appropriate densities to prevent groundwater contamination and land salinization, and to protect drinking water catchments.

Response

The proposed on-site wastewater treatment will prevent groundwater contamination and land salinization – refer to **Appendix H**.

Element: Industry and Employment

Low and Medium impact industry, Service industry and Research and technology industry are facilitated in the Industry Zone. High impact industry and Special industry are not located in the Industry Zone due to the proximity of sensitive receivers.

Response

As per the **Variation Approval – Appendix C**, the Industry zone is proposed for the SRAIP Industrial Precinct. High impact industry uses (where in relation to food or composting production) are proposed as the sensitive receivers are not within close proximity of the site and therefore will not have adverse amenity impacts.

Lot sizes meet the operational needs of the range of industrial activities expected in the Industry Zone.

Response

The **Proposal Plan – Appendix A** provides a variety of land uses within the precinct which is to be treated as situated in the Industry Zone as per the **Variation Approval – Appendix C**.

Industrial land will be serviced with necessary infrastructure, vehicular access, local services and amenities.

Response

The SRAIP is to be independently serviced as per the **Civil Servicing Report – Appendix J** and one direct access from the Cunningham Highway is proposed which is appropriate for a precinct of this size which will be accessed by B-Double vehicles for freight purposes.

Industrial activities in the Rural Areas are facilitated only where they support or increase the agricultural production capacity of land in the surrounding area and do not conflict with the agricultural production potential of the land.

Response

The entire intention of the SRAIP which is for Industrial activities in the Rural Area is to support and increase the agricultural production capacity of land in the surrounding area.

A limited number of non-industrial uses may be facilitated in industrial zoned land where they support the intended purpose of the zone and do not compromise the long-term use of the zone for industrial purposes.

Response

The following non-industrial uses are proposed to be accommodated within the SRAP as they will support the agricultural / industrial uses on the site:

- Emergency services
- Food and drink outlet
- Garden centre
- Indoor sport and recreation
- Market
- Office
- Outdoor sales
- Park
- Sales office where involving the selling of lots for SRAIP
- Service station
- Substation
- Shop
- Showroom
- Tourist attraction where the use has a nexus to food processing or distribution, or exhibits or promotes farming, agriculture, or food processing practices, lifestyle or history

Industrial activities have appropriate access to the State controlled road network and are appropriately located to avoid or minimise heavy vehicle movements through residential areas.

Response

The SRAIP proposes one direct access to the precinct from Cunningham Highway (State controlled road).

Industrial activities appropriately minimise any potential adverse off-site environmental impacts.

Response

As per the coordinated project, this IAR process determines the SRAIP will appropriately manage the on and off-site environmental impacts. This is confirmed by the appended technical reports.

Environment and Natural Hazards – Strategic Outcomes Assessment

Element: Natural Environment and Regional Landscape Values

Development protects and enhances the ecological values of Matters of State Environmental Significance.

Response

The **Ecology Assessment – Appendix O** confirms that the proposed SRAIP protects the MSES values mapped on site. Planting for koala movement will also occur between the MSES areas and the proposed SRAIP precinct to ensure ecological values are enhanced and maintained as a result of the proposal.

Development protects and enhances the ecological values of Matters of Local Environmental Significance.

Response

Similarly to the above, the MLES values on site are to preserved and enhanced through the development footprint siting and proposed planting for koala movement to create a buffer between the precinct and the values on site. Refer to **Ecology Assessment – Appendix O** for additional detail.

Development location and design considers biodiversity values and does not compromise the intended function of identified biodiversity linkages.

Response

As per the **Ecology Assessment – Appendix O**, the biodiversity values on site are situated in the west of the subject site. These areas are to be preserved within the proposal to ensure biodiversity linkages are maintained.

Development identified habitat identified for State Significant Species.

Response

The **Ecology Assessment – Appendix O** confirms that no State significant species are present on the site.

Development protects viable koala populations by conserving and enhancing koala habitat extent and condition.

Response

The **Ecology Assessment – Appendix O** confirms that no koala habitat trees are present on the subject site.

The habitat and ecological value of vegetated corridors and biodiversity linkages are protected and enhanced.

Response

The vegetation in the west of the site is to be preserved to ensure vegetated corridors and biodiversity linkages are maintained through the site.

Development is located, designed and operated to avoid adverse impacts on the biodiversity values of Matters of State Environmental Significance.

Response

The **Ecology Assessment – Appendix O** confirms that the proposed SRAIP protects the MSES values mapped on site. Planting will also occur between the MSES areas and the proposed SRAIP precinct to ensure biological values are enhanced and maintained as a result of the proposal.

Development is located, designed and operated to avoid adverse impacts on the biodiversity values of Matters of Local Environmental Significance.

Response

Similarly to the above, the MLES values on site are to preserved and enhanced through the development footprint siting and proposed planting to create a buffer between the precinct and the values on site. Refer to **Ecology Assessment – Appendix O** for additional detail.

The impacts of development on Matters of Local Environmental Significance are effectively managed by:

a) *Avoiding impacts, where practicable*
b) *Minimising impacts, where impacts cannot be reasonably avoided*
c) *Restoring values on the same premises and in an appropriate location, where impacts cannot be reasonably avoided or minimised.*

Response

As per the **Ecology Assessment – Appendix O,** the proposal minimises impacts to the MLES and also proposed planting to restore values on the subject site within the overland flow path to provide an appropriate buffer to the retained vegetation on the site in the west from the proposed SRAIP fronting the Cunningham Highway.

Development maintains, and where possible, enhances the quality of surface water and groundwater.

Response

The SRAIP maintains and enhances the quality of surface water and groundwater. Refer to **Appendix O** for further details.

Development within a Watercourse Buffer Area is designed and located to maintain native vegetation, terrestrial and aquatic habitat, ecological function (including maintenance of fish passage) and water quality.

Response

Refer to **Ecology Assessment – Appendix O** for how the ecological values of the watercourse buffer area on site are being maintained within the SRAIP proposal.

Development protects and enhances the water quality and biodiversity values (including the maintenance of fish passage) of waterways and wetlands and is appropriately setback and provides buffers.

Response

Refer to **Ecology Assessment – Appendix O** for how the ecological values of the watercourse buffer area on site are being maintained within the SRAIP proposal.

Development is designed to incorporate the principles of total water cycle management and water sensitive urban design.

Response

The proposal incorporates complete water recycling strategies to ensure water sensitive urban design is achieved within the SRAIP. Refer to **Appendix L** for additional details.

Stormwater quality, quantity and velocity are managed in a manner which protects and improves water quality in waterways and wetlands.

Response

Refer to **Stormwater Management Plan – Appendix L.**

The water quality of surface and groundwater systems is protected and improved.

Response

The SRAIP maintains and enhances the quality of surface water and groundwater. Refer to **Appendix F, G and H** for further details.

Element: Cultural Heritage

All development takes reasonable and practical measures to ensure Aboriginal cultural heritage is not harmed in accordance with the Aboriginal Cultural Heritage Act 2003.

Response

The SRAIP has taken all reasonable and practical measures to ensure Aboriginal cultural heritage is not harmed.

Element: Natural Hazards, Risk and Resilience

Development that potentially increases the exposure of people and property to natural hazards:

a) *Avoids areas of significant natural hazard risk; or*

b) *Where areas of natural hazard risk cannot be avoided, development is designed, located and managed to ensure the safety of people is maintained and the damage to property and infrastructure before, during and after a natural hazard event is mitigated to an acceptable or tolerable level.*

Response

Refer to **Flood Assessment – Appendix L** which confirms that natural hazard relevant to the site can be appropriately managed.

Development in natural hazard areas:

a) *Directly, indirectly and cumulatively avoids an increase in the extent or severity of a natural hazard and the potential for damage on the site or to other properties*
b) *Is compatible with the nature of the hazard*
c) *Maintains or enhances the protective function of landforms that can mitigate risks associated with the natural hazard;*
d) *Supports and does not hinder disaster management capacity and capabilities; and*
e) *Maintains or enhances the protective function of landforms and vegetation that can mitigate risks associated with the natural hazard.*

Response

Refer to **Integrated Water Management Plan – Appendix L** which confirms that natural hazard relevant to the site can be appropriately managed.

Element: Emissions and Hazardous Activities

Development protects the health and safety of the community and sensitive receivers and is designed and located to mitigate adverse impacts of air, noise, light and odour emissions.

Response

Technical assessment in relation to air quality, noise and odour have been undertaken to ensure the SRAIP protects the health and safety of the community and sensitive receivers. Refer to **Appendix P and Q.**

Sustainable Infrastructure – Strategic Outcomes Assessment

Element: Land Use and Infrastructure

Efficient, cost effective, functional and sustainable infrastructure networks are provided and integrated with development. The provision of infrastructure is consistent with the reasonable expectations for the servicing of the region's settlement pattern.

Response

The SRAIP proposes to self service the entire development using sustainable and renewable energy sources (proposed digester and reuse of water).

Element: Regional Infrastructure

Development in proximity of existing or planned Regional Infrastructure is located, designed, constructed and operated to:

a) *Avoid compromising the integrity, operation and maintenance of existing and planned Regional Infrastructure through the use of buffers and setbacks;*
b) *Protect the amenity, health and safety of people and property;*
c) *Identify, protect and manage key infrastructure sites and corridors;*
d) *Result in increased safety and amenity, and avoid the potential for complaints, or a requirement for measures to be introduced to reduce potential impacts on surrounding areas; and*
e) *Minimise overlooking of and visual exposure to the infrastructure sites and corridors.*

Response

The proposal is adjacent to the Cunningham Highway which is a key piece of regional infrastructure that will be appropriately managed with one consolidated access into the development, refer to **Traffic Impact Assessment – Appendix N**.

While the draft planning scheme identifies the Aratula Bypass (Preliminary Advice Only) transecting the site, this study was undertaken prior to the SRAIP being proposed which provides significant social and economic benefits to the region and therefore the bypass through the site is no longer appropriate.

10.1.2 Zone

The subject site is situated in the Rural Zone (no precinct) of the draft planning scheme.

An assessment of the **relevant** overall outcomes sought by the Rural Zone and the SRAIP are shown below:

Table 50: Rural Zone Overall Outcomes

Rural Zone Overall Outcome	Response
(a) Development facilitates: *(i) A wide range of rural uses, rural living and complementary non-rural uses that protect or enhance;* *(A) The use of the land for agricultural production; and* *(B) The rural character, natural landscape and environmental values of the zone.*	As per the **Variation Approval – Appendix C**, the proposal looks to override the draft planning scheme from the Rural Zone to the Industrial Zone. That being said, the proposal will still look to appropriately integrate with the rural character of the site and neighbouring properties. The key principle of the SRAIP is to facilitate and maximise the local region's use of land for agricultural production.
(b) Land uses: *(i) include a mix of rural activities including aquaculture, animal husbandry, animal keeping, cropping, permanent plantation, roadside stall, rural industry and wholesale nursery* *(iv) include tourism activities and recreation activities of a scale, nature and intensity that complements and protects the rural and natural landscape setting.* *(v) where involving a use other than a rural activity or residential activity:* *(A) maintain the capacity of the land for agricultural production;* *(B) are complementary and remain ancillary to the agricultural resource base* *(vi) facilitate diversification or value-adding opportunities that support or increase agricultural production and the ongoing operation of rural activities.* *(vii) protect or enhance the natural landscape character of the zone;* *(viii) minimise the potential for land use conflict with surrounding rural land* *(ix) protect the rural amenity expected in the zone* *(x) are appropriately serviced by necessary road infrastructure*	As per the **Variation Approval – Appendix C**, the proposal looks to override the draft planning scheme from the Rural Zone to the Industrial Zone. As such, the proposed land uses within the SRAIP are primarily agricultural / industrial in nature. A small tourism activity will be allowable within the precinct where it complements and protects the setting of the site and showcases the SRAIP goods and trades. The key principle for establishing the SRAIP is to facilitate diversification and value-adding opportunities that will support and increase agricultural production within the local area. The **Traffic Impact Assessment – Appendix N** confirms that the SRAIP will be appropriately serviced by the necessary road infrastructure.
(c) Character consists of: *(i) rural and natural landscapes characterised by large expanses of productive agricultural land, hinterland areas, forested mountains, hills and valley settings and waterways and dams in a varying natural landscape from the upper reaches to the low-lying areas of their catchment;*	The SRAIP located adjacent to the highway will ensure the majority of the site is maintained for rural and natural landscapes.

(iv) limited non-rural activities that complement the rural and natural landscape setting of the zone.	
(d) Built form: *(ii) where involving non-rural activities:* *(A) Is small scale, low-rise and set back from property boundaries to protect the potential for or ongoing operation of agricultural production on adjacent land, maintain the low density character of the zone and to afford privacy to residential activities and* *(B) Is located and designed to complement the rural and natural landscape setting of the zone.*	The **Variation Approval – Appendix C** proposes built form controls that will complement the natural setting of the subject site and ensure agricultural production on adjacent lots is not hindered.
(e) Lot design: *(i) facilitates agricultural production, and minimises the loss and fragmentation of land for agricultural production; and* *(ii) complies with the standards in Table 9.4.6.3.2 – Minimum Lot Size and Design.*	As previously stated, the **Variation Approval – Appendix C** seeks to override the Rural Zone of the draft planning scheme and introduce the Industrial Zone to govern future development of the site. As such, the proposed lot design held in the **Subdivision Proposal Plan – Appendix B** accords with lot sizes typical of an Industrial zoned site.

10.1.3 Overlays

Overlays affecting the site are listed in Section 5.6 and a summary of the applicable overlay codes is provided below:

Table 51: Overlays

Overlay	Sub-category	Response
Agricultural land	Agricultural land classification A and B Agricultural land buffer area	The subject site is identified as agricultural land as per the draft planning scheme mapping. As per the SRAIP designation as a coordinated project, it has been identified that the conversion of the subject site to an agricultural / industrial precinct will allow for the local area to diversify and value-add on the existing agricultural operations occurring within the locality.
Bushfire hazard	High and medium hazard area Potential impact buffer	As per the draft planning scheme mapping, the western portion of the site is identified within the hazard and potential impact buffer areas. The SRAIP has been strategically designed to avoid placement of development within these areas to mitigate risk to property and life.
Environmental significance – biodiversity	Matters of State environmental significant – regulated vegetation	The MSES on site is mapped in the far western corner of the site where development is not proposed. Therefore impacts to this significant vegetation is not proposed.
Environmental significance – local waterways	Stream order 2, 3 and 4 Watercourse buffer area A and B	As per the draft planning scheme mapping, there are existing watercourses on the site. As per the **Ecology Assessment – Appendix O** these are proposed to be diverted as a result of the proposed SRAIP. Refer to this reporting for confirmation that the realignment does not significantly alter the ecological values on the site.
Extractive resources	Resource area / processing area Separation area	The proposed SRAIP will not impact on KRA141 and is an appropriate use of the site within the separation area as they are considered to be compatible uses.
Flood hazard – hazard area	Defined floor area	Refer to **Integrated Water Management Plan – Appendix L.**

Flood hazard – category area	Flood hazard category area high, medium and low	Refer to **Integrated Water Management Plan – Appendix L.**
Landslide hazard and steep slope	Steep slope area – western	Landslide hazard is situated in the western corner of the site. Development and earthworks are not proposed in this location and therefore the hazard has not been addressed further.
Water resource catchments – stream orders	Stream order 1-7	Refer to **Ecology Assessment – Appendix O**.
Transport noise corridor	Category 1-4	Refer to **Acoustic Assessment – Appendix P.**
High order roads	Cunningham Highway: high order road	Refer to **Traffic Impact Assessment – Appendix N**.
Road hierarchy	Cunningham Highway: state-controlled road	Refer to **Traffic Impact Assessment – Appendix N.**

10.1.4 Assessment Benchmarks

Table 52: Draft Planning Scheme Code Responses

Planning scheme codes	Location of response
Zone Code	
Rural Zone Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Use Codes	
Service Station Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Development Codes	
General Development Provisions Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Earthworks, Construction and Water Quality Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Infrastructure Design Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Landscaping Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Parking and Access Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Reconfiguring a Lot Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Overlay Codes	
Agricultural Land Overlay Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Bushfire Hazard Overlay Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Environmental Significance Overlay Code	**Appendix O – Ecology Assessment**
Extractive Resources Overlay Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**

Flood Hazard Overlay Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Landslide Hazard and Steep Slope Overlay Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**
Water Resource Catchments Overlay Code	**Appendix R – Scenic Rim Planning Scheme Code Responses**

11 CONCLUSION

11.1 Compliance with Relevant Regulatory Requirements

This report has demonstrated compliance with all relevant regulatory requirements applicable to the SRAIP.

Where conflicts have been identified, a number of benefits associated with the SRAIP have been identified which provide overwhelming justification for the SRAIP to proceed, including:

- Renewable Energy Generation
- Increased Local Employment
- Promote Collaboration between Agricultural and Industrial Uses
- Reduced Transport Costs
- Increased Population to Assist with Revitalization of Existing Town Centres
- Council Support indicated through the Scenic Rim Regional Prosperity Strategy – Recognition as a 'Strategic Enabling Project'

11.2 Potential Impacts Mitigation

As discussed extensively in Section 7.2 of this report, the following mitigation strategies and measures will be implemented to reduce the environmental impacts of the SRAIP:

- Strategic Location of the SRAIP
- Strategic Location of ERA components
- Renewable Energy Production
- Water Recycling
- Environmental Protection Area
- Waterway Barrier Works
- State-Controlled Road Transport Network
- Compensatory Planting Works to Promote Koala Movement
- Local work repatriation
- Agricultural production promotion strategy
- Workforce development plan
- Regional agricultural museum
- Local construction supply chain procurement
- Agricultural manufacturing investment attraction
- Ongoing community engagement

11.3 Planning Need

As discussed in Section 8 of the report, the project benefits outweigh the perceived conflicts identified within the relevant planning documents being:

1. The siting of the SRAIP outside the nominated Urban Footprint of ShapingSEQ
2. Potential to detract from the nominated Scenic Rim town centres

To reiterate, the project benefits include:

- Renewable Energy Generation
- Employment
- Promote Collaboration between Agricultural and Industrial Uses
- Improved Logistics
- Potential to Detract from Town Centres
- Scenic Rim Regional Prosperity Strategy – Recognition as a 'Strategic Enabling Project'

11.4 Project Benefits

Key employment and economic impact findings and conclusions from the report include:

- **Construction jobs** – 641 direct and 354 indirect local jobs over 10 years;
- **Additional Operational Jobs** – 475 direct and 572 indirect local jobs annually upon full development (Subject to third party investment and the final uses proposed);
- **Construction Gross Value Added** - $89.5m contribution to the Scenic Rim economy (+5.3%) and $238.9m to the Australian economy over the 10 years construction phase; and
- **Operational Gross Value Added** - $140.5m contribution to the Scenic Rim economy (+8.3%) and $211.9m contribution to the Australian economy annually upon full development.

Key preliminary social impact findings and conclusions from the report include:

- **Workforce Management and Impacts** – more sustainable construction pipeline for construction workers and more diverse and accessible and less seasonal, permanent employment opportunities for local workers in the long-term;
- **Housing and Accommodation** – negligible impact on housing affordability and will likely support house prices in the Boonah region which have been declining or flat over the past 5 years;
- **Local Businesses and Industry Procurement** – opportunities for local businesses across the project life, particularly during the operational phase, by providing local agricultural producers with a reliable local value adding market for output. Also improved local energy security through the proposed investment in an onsite major anerobic digester;
- **Health and Community Wellbeing and Quality of Life** – project employment will generate increased local household incomes and reduce overall income and economic volatility through greater economic diversification;
- **Regional Amenity** – provide a new and modern industrial environment for workers as well as convenient access to retail and fuel services for workers and visitors;
- **Filling Gaps in the Community** – helping to incentivise local attraction and retention of younger workers and facilities to offset the emerging demographic imbalance in the region;
- **Community Connections and Social Inclusions** – encourages and incentivises increased labour force and economic participation, which worsened in the 5 years to 2016.
- **Support and Protecting Local Heritage and Culture** – the project seeks to progress a local museum offering to promote and support local heritage.
- **Address Social Disadvantage** – provide employment opportunities and diversified economic activity and value added to improve access of households in the region to key Economic Resources and reduce local unemployment.