

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm

#### **Disclosures of conflicts of interest in relation to advice provided in this report**

Under section 80C of the *Local Government Act 1989* officers and persons engaged under a contract providing advice to Council must disclose any conflicts of interests, including the type and nature of interest.

No Council officers or contractors who have provided advice in relation to this report have declared a conflict of interest regarding the matter under consideration.

#### **Council Officers involved in producing this report**

**Author:** Statutory Planner

**Proof reader(s):** Manager Building and Planning

**Approved by:** Director Sustainable Development

#### **Executive Summary**

The application seeks planning approval to use and develop land at 235 Victoria Road, Tallygaroopna for a 30MW renewable energy facility (solar farm). The proposed development includes the removal of three scattered paddock trees and business identification signage. The application represents a development of \$34 million in the municipality.

The land is within the Farming Zone (FZ). The land is not within an area of cultural heritage significance, therefore the proposal does not trigger the need for a Cultural Heritage Management Plan.

Officers have advertised the application and five objections to the proposal have been lodged with Council. The objections largely relate to the following issues:

- Incomplete / insufficient application information;
- Proximity of the land to the township of Tallygaroopna;
- Creation of an eyesore in a rural environment;
- Creation of a micro climate as a result of the solar farm (the heat island effect); and
- Loss of productive agricultural land.

The key issue for consideration is whether the loss of productive agricultural land in a food bowl of national significance for a solar farm is acceptable.

The Greater Shepparton Planning Scheme (the scheme) places a strong emphasis on the retention of agricultural land and the discouragement of non-agricultural uses in farming areas. This application proposes to remove about 96 hectares from agriculture for at least 25 years.

The Rural Regional Land Use Strategy (Rural Strategy) identifies that agriculture within the study region (Campaspe, Moira and Greater Shepparton) consists of about 500,000ha of which 317,000ha is irrigated with about 1.5 million megalitres of water used. Agriculture is without question the main economic driver of the region.

The FZ does not prohibit renewable energy facilities such as solar farms.

The state planning policy seeks to promote and facilitate renewable energy facilities. Clause 19.01-1 (provision of renewable energy) objective is:

*To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met.*



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Clause 52.42 (renewable energy facility) of the scheme seeks to 'facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area'.

In this instance officers are required to consider conflicting policies between agriculture and state policy support for renewable energy facilities and decide in the favour of the net community benefit and sustainable development for the benefit of present and future generations.

Officers note that it is a difficult task in determining this matter, both food and energy production is of fundamental importance to all Victorians.

Officers recommended that a notice of decision to grant a permit issue for the proposed solar farm for the following reasons:

- Officers acknowledge that this proposal will result in the loss of productive agricultural land. Officers also acknowledge that the land is identified as being strategic agricultural land and that agriculture is the driver of the region's economy. Despite this, a solar farm is not a prohibited use and the generation of electricity like food production is essential to the lives of Victorians. Officers note there are other non-agricultural uses in FZ such as mines, quarries and schools. Whilst reducing valuable agricultural land is not an ideal outcome, the proposed solar farm is an acceptable outcome, the loss of 96ha in a food bowl of 317,000ha does not warrant refusal of the application. The solar farm will produce power to assist in the meeting of future electricity demands;
- Generation of solar energy will assist in achieving the Victorian Governments renewable energy target being 25% of generation by 2020 and 40% generation by 2025;

Officers engaged Sustainable Energy Transformation to undertake an expert review of the grounds of objection. The conclusion of this expert review is:

*The technical aspects raised in the objections have been reviewed. Some aspects have been found to be without a technical basis and others can be adequately addressed with appropriate requirements in management plans for the site development.*

Based on this expert assessment officers are satisfied that there is no technical energy basis to refuse the application.

#### Wangaratta

A state government advisory committee considered an expansion of the Countrywide Energy Solar Farm at Wangaratta North. Whilst the issues were different in the Wangaratta case, the advisory committee did support the solar farm application and made the following comments:

*Having considered all matters and material that it is required to consider, the Committee concludes that an amended planning permit should be issued. The proposed expansion of the solar farm represents a significant investment in the Wangaratta area, and will provide economic stimulation to the region, and increased energy security for other businesses and industries in the region, as*



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*well as the broader regional community. The solar farm will also assist Victoria to reduce its overall carbon emissions, and contribute to reaching the State's renewable energy generation targets. These are positive environmental and social outcomes for the region, and for the State more broadly.*

Officers having undertaken an assessment of the application recommend that notice of decision to grant a permit be issued by Council.

#### **RECOMMENDATION**

In relation to Planning Application 2017-274, on the basis of the information before Council and having considered all relevant matters as required by the *Planning and Environment Act 1987*, Council resolves to issue a notice of decision to grant a planning permit subject to the following conditions:

##### **Amended Plans Required**

Before the development starts, amended plans to the satisfaction of the responsible authority must be submitted to and approved by the responsible authority. When approved, the plans will be endorsed and will then form part of the permit. The plans must be drawn to scale with dimensions and a minimum of three copies (or as specified) must be provided. Such plan must be generally in accordance with the plan submitted with the application but modified to show:

- a) A setback of the solar farm of not less than 50 metres to property boundaries
- b) Detailed planning drawings of the development including floor and elevation plans of all proposed buildings
- c) Location and details of the business identification signage

Before the use of the solar farm commences all buildings and works as shown on the endorsed plans must be completed to the satisfaction of the responsible authority.

##### **Layout Not Altered**

The use and development of the land for a solar farm as shown on the endorsed plans must not be altered without the written consent of the responsible authority.

The business identification signage to be erected must be in accordance with the endorsed plan and must not be altered or modified without the prior written approval of the responsible authority.

##### **Section 173 Agreement**

Prior to the use commencing, the owner must enter into an agreement with the Responsible Authority, pursuant to Section 173 of the *Planning and Environment Act 1987* (the Act). This agreement must be registered on the title to the land pursuant to Section 181 of the *Planning and Environment Act 1987*. The owner must pay the reasonable costs of the preparation, execution and registration of the section 173 agreement. The agreement must provide for:

- a) Within three months of the solar farm use ending a decommissioning and rehabilitation management plan prepared by a suitably qualified person must be submitted to the responsible authority for approval. The plan must include but is not limited to:

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1. identification of structures, including but not limited to all solar panels, substation, buildings and electrical infrastructure, including underground infrastructure to be removed and how they will be removed;
2. details of how the land will be rehabilitated back to its pre-development condition, including irrigation layout and soil profile

Within 12 months of the endorsement of the decommissioning and rehabilitation management plan all the decommissioning and rehabilitation must be completed to satisfaction of the responsible authority.

- b) The photovoltaic arrays (solar panels) must be orientated so that the panels are perpendicular to the ground within 30 minutes of sunset until within 30 minutes of sunrise to facilitate night radiant cooling.
- c) The operator of the solar farm accepts and acknowledges that the solar farm operations may be subject to disturbance from agricultural activities including but not limited to spray drift, dust emissions and heavy machinery use.

The said agreement is to be prepared by Council. Council will undertake to have the agreement prepared upon written notification from the applicant. All costs associated with the preparation and registration of the agreement shall be borne by the applicant including Council's administration fee. All fees associated with the documentation must be fully paid prior to execution and registration of the document by Council.

#### **Civil Construction Requirements**

Before any of the development starts, detailed plans with computations to the satisfaction of the responsible authority must be submitted to and approved by the responsible authority. When approved, the plans will be endorsed and will then form part of the permit. The information submitted must show the details listed in the council's Infrastructure Design Manual (IDM) and be designed in accordance with the requirements of that manual.

- a) details (and computations) of how the works on the land are to be drained including drains conveying stormwater to the legal point of discharge;
- b) details of how the drainage design allows for the continuation of existing overland flow paths across the land;
- c) documentation demonstrating approval from the relevant authority for the legal point of discharge;
- d) maximum discharge rate shall not be more than 1.2 l/sec/ha;
- e) carparking areas, circulation lanes and access shall be designed and constructed in accordance with AustRoads Publication 'Guide to Traffic Engineering Practice : Part 11 Parking,' 'Australian Standard AS2890.1-2004 (Off Street Parking)' & 'AS2890.6 (Off Street Parking for People with Disabilities);'
- f) the site shall be properly illuminated with lighting designed, baffled and located to the satisfaction of the responsible authority to prevent any adverse effect on adjoining land;
- g) details of the perimeter fencing of the land

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to the satisfaction of the responsible authority.

All parking spaces must be designed to allow all vehicles to drive forwards both when entering and leaving the property.

The access and parking areas must be constructed and drained to prevent diversion of flood or drainage waters, and maintained in a continuously useable condition to the satisfaction of the responsible authority.

Parking spaces, access lanes and driveways must be kept available for these purposes at all times.

Before the operation of the solar farm commences all buildings and works as shown on the endorsed plans must be constructed in accordance with the endorsed plans to the satisfaction of the responsible authority.

#### Landscape Plan

Before the development starts a landscape plan must be submitted to and approved by the responsible authority. When approved, the plan will be endorsed and will then form part of the permit. The plan must be drawn to scale with dimensions and three copies must be provided;

- a) a survey of all existing vegetation and natural features showing plants (greater than 1200mm diameter) to be removed;
- b) a schedule of all proposed trees, shrubs and ground cover, including the location, number and size at maturity of all plants, the botanical names and the location of areas to be covered by grass, lawn or other surface materials as specified;
- c) how the land under the solar arrays maintains good ground cover at a reasonable level and the management of the ground cover in the fire season
- d) details of permanent screening trees and shrubs with a minimum of six rows using a mixture of local trees and understorey species

All species selected must be to the satisfaction of the responsible authority.

Before the commencement of the use or by such a later date as is approved by the responsible authority in writing, landscaping works shown on the endorsed plan must be carried out and completed to the satisfaction of the responsible authority.

Once the landscaping planting is carried out the landscaping must be maintained including the replacement of any dead or diseased plants to the satisfaction of the responsible authority.

#### Construction Management Plan

Prior to commencement of works, a Construction Site Management Plan in accordance with Council's Infrastructure Design Manual must be prepared, approved and implemented to the satisfaction of the responsible authority. The plan must show:

- a) measures to control erosion and sediment and sediment laden water runoff, including the design details of structures;
- b) measures to retain dust, silt and debris onsite, both during and after the construction phase;
- c) locations of any construction wastes and the method of disposal, equipment,

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- d) machinery and/or earth storage/stockpiling during construction;
- e) where access to the site for construction vehicle traffic will occur;
- f) tree protection zones;
- f) the location of trenching works, boring, and pits associated with the provision of services; and
- g) the location of any temporary buildings or yards.

#### **General Amenity**

The use and development permitted by this permit must not, in the opinion of the responsible authority, adversely affect the amenity of the locality by reason of the processes carried on; the transportation of materials, goods or commodities to or from the subject land; the appearance of any buildings, works or materials; the emission of noise, artificial light, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit, or oil; the presence of vermin, or otherwise.

Prior to the use commencing any security alarm installed on the premises must be 'silently wired' to a security firm or the Victoria Police.

Prior to the use commencing any lighting within the site must be designed, baffled and located in such positions so as to effectively illuminate all pertinent public areas, without spilling onto the road reserve or adjoining land, and must be connected to a time clock switch or other approved system to the satisfaction of the responsible authority.

#### **Native Vegetation Offsets**

Native vegetation offsets are required to offset the removal of three native scattered trees approved as part of this permit. The applicant must provide a native vegetation offset that meets the following requirements, and is in accordance with the *Permitted clearing of native vegetation – Biodiversity assessment guidelines and the Native vegetation gain scoring manual (Department of Environment and Primary Industries)*:

The offset must:

- a) contribute gain of at least 0.018 biodiversity equivalence units
- b) be located within the Goulburn Broken Catchment Management Authority boundary or Greater Shepparton City Council Municipal district
- c) have a strategic biodiversity score of at least 0.278

#### **Native Vegetation Offset Evidence**

Before any native vegetation is removed, evidence that an offset has been secured must be provided to the satisfaction of and approved by the Responsible Authority. This offset must meet the offset requirements set out in this permit and be in accordance with the requirements of the *Permitted clearing of native vegetation – Biodiversity assessment guidelines and the Native vegetation gain scoring manual (Department of Environment and Primary Industries)*.

Offset evidence can be either:

- a) An allocated native vegetation credit register extract from the Native Vegetation Credit Register; or
- b) A security agreement to the required standard for the offset site or sites, including a 10-year Offset Management Plan to the satisfaction and approval of the Responsible Authority.

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Every year, for ten years from the date of approval of the Offset Management Plan, the applicant must provide to the Responsible Authority, notification of actions undertaken towards implementation of the Offset Management Plan, an offset site condition statement and site monitoring photographs.

The Offset Management Plan must be in accordance with Permitted clearing of native vegetation; First party general offset kit (Department of Environment and Primary Industries) and include:

- i. The gain in biodiversity equivalence units and strategic biodiversity score to be achieved by the offset actions
- ii. Location of where offsets are to be provided and size of area (to be drawn to scale)
- iii. Type of offsets to be provided
- iv. If applicable, revegetation details including the method(s), number of trees, shrubs and other plants, species, mix and density
- v. Activities that will be forgone within the offset area, such as grazing, removal of fallen timber and standing trees and other development/uses
- vi. Management actions that will be undertaken to ensure long term sustainability of offset(s) such as permanent fencing, weed control, revegetation maintenance, retention of timber/branches and other habitat management actions
- vii. Method of permanent protection for offset(s) such as a formal agreement
- viii. Person(s) responsible for implementing and monitoring the Offset Management Plan
- ix. Time frame for implementing the Offset Management Plan

#### No alteration to Offset requirements

The requirements noted in an approved and endorsed Offset Plan must not be altered without the written consent of the responsible authority.

#### Goulburn Murray Water Requirements

- a) All construction and ongoing activities must be in accordance with sediment control principles outlined in 'Construction Techniques for Sediment Pollution Control' (EPA, 1991).
- b) All solar panels must be setback at least ten metres from Goulburn Murray Water's East Goulburn 4/18 Channel.
- c) If applicable, all wastewater from the office must be treated and disposed of using an EPA approved system, installed, operated and maintained in compliance with the EPA Code of Practice – Onsite Wastewater Management, Publication 891.4, and to the satisfaction of Council's Environmental Health Department.
- d) If applicable, the wastewater disposal area must be located in accordance with Table 5 of the EPA Code of Practice – Onsite Wastewater Management, Publication 891.4, July 2016, from any waterways (including Goulburn Murray Water open channels), drainage lines, dams or bores.

#### Powercor Requirements

The applicant shall:

- a) Negotiate with Powercor for the connection of the development, to the existing power distribution network.
- b) Any buildings must comply with the clearances required by the Electricity Safety

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- (Installations) Regulations.
- c) Any construction work must comply with Energy Safe Victoria's "No Go Zone" rules.
  - d) Set aside for the use of Powercor Australia Ltd reserves and/or easements satisfactory to Powercor Australia Ltd where any electric substation (other than a pole mounted type) is required.
  - e) Alternatively, at the discretion of Powercor Australia Ltd a lease(s) of the site(s) and for easements for associated powerlines, cables and access ways shall be provided. Such a lease shall be for a period of 30 years at a nominal rental with a right to extend the lease for a further 30 years. Powercor Australia Ltd will register such leases on the title by way of a caveat prior to the registration of the plan of subdivision.
  - f) Provide easements satisfactory to Powercor Australia Ltd, where easements have not been otherwise provided, for all existing Powercor Australia Ltd electric lines on the land and for any new powerlines required to service the lots and adjoining land, save for lines located, or to be located, on public roads set out on the plan. These easements shall show on the plan an easement(s) in favour of "Powercor Australia Ltd" for "Power Line" pursuant to Section 88 of the Electricity Industry Act 2000.
  - g) Obtain for the use of Powercor Australia Ltd any other easement external to the development.

#### Time for Starting and Completion

This permit will expire if one of the following circumstances applies:

- a) the development and use has not started within **two (2) years** of the date of this permit;
- b) the development is not completed within **four (4) years** of the date of this permit.

#### **Moved by Cr Summer Seconded by Cr Patterson**

That the Council resolve to:

1. Note that by letter dated 13 February 2018 the Minister for Planning gave notice that the Minister:
  - a) has agreed to the Council's request under section 97C of the *Planning and Environment Act 1987* that the Minister for Planning decide the following solar farm planning permit applications: 2017-162; 2017-274; 2017-301; 2017-344;
  - b) intends to establish a combined Panel to consider those planning permit applications.
2. Note that as a result the Council is no longer the decision maker for the planning permit applications that were referred to the Minister and the Council must not proceed further with the applications.
3. Through its representatives, appear and make submissions at the hearing(s) by a combined Panel appointed by the Minister for Planning for planning permit application 2017-274 and make available Council Planning Officer's reports.
4. Note the complexities of planning permit application 2017-274 and that there are community concerns in relation to that application.
5. Write to the Panel and request that the hearing(s) be held in Shepparton

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6. Authorise the Chief Executive Officer (who may in turn delegate these authorisations to any of his or her delegates) to:
- take whatever steps as they see fit so as to implement this resolution, including but not limited to engaging legal representatives and appointing expert witnesses;
  - comply with any directions of the Minister for Planning given to the Council as the referring responsible authority; and
  - instruct the Council's legal representatives regardless of Council's position to provide the following draft conditions to the Panel:

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- b) The photovoltaic arrays (solar panels) must be orientated so that the panels are perpendicular to the ground within 30 minutes of sunset until within 30 minutes of sunrise to facilitate night radiant cooling.
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- a) details (and computations) of how the works on the land are to be drained including drains conveying stormwater to the legal point of discharge;
  - b) details of how the drainage design allows for the continuation of existing overland flow paths across the land;
  - c) documentation demonstrating approval from the relevant authority for the legal point of discharge;
  - d) maximum discharge rate shall not be more than 1.2 l/sec/ha;
  - e) carparking areas, circulation lanes and access shall be designed and constructed in accordance with AustRoads Publication 'Guide to Traffic Engineering Practice : Part 11 Parking,' 'Australian Standard AS2890.1-2004 (Off Street Parking)' & 'AS2890.6 (Off Street Parking for People with Disabilities);'
  - f) the site shall be properly illuminated with lighting designed, baffled and located to the satisfaction of the responsible authority to prevent any adverse effect on adjoining land;
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- to the satisfaction of the responsible authority.

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The offset must:

- a) contribute gain of at least 0.018 biodiversity equivalence units
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Offset evidence can be either:

- a) An allocated native vegetation credit register extract from the Native Vegetation Credit Register; or
- b) A security agreement to the required standard for the offset site or sites, including a 10-year Offset Management Plan to the satisfaction and approval of the Responsible Authority.

Every year, for ten years from the date of approval of the Offset Management Plan, the applicant must provide to the Responsible Authority, notification of actions undertaken towards implementation of the Offset Management Plan, an offset site condition statement and site monitoring photographs.

The Offset Management Plan must be in accordance with *Permitted clearing of native vegetation: First party general offset kit (Department of Environment and*

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Primary Industries) and include:

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- c) If applicable, all wastewater from the office must be treated and disposed of using an EPA approved system, installed, operated and maintained in compliance with the EPA Code of Practice – Onsite Wastewater Management, Publication 891.4, and to the satisfaction of Council's Environmental Health Department.
- d) If applicable, the wastewater disposal area must be located in accordance with Table 5 of the EPA Code of Practice – Onsite Wastewater Management, Publication 891.4, July 2016, from any waterways (including Goulburn Murray Water open channels), drainage lines, dams or bores.

#### Powercor Requirements

The applicant shall:

Negotiate with Powercor for the connection of the development, to the existing power distribution network.

- a) Any buildings must comply with the clearances required by the Electricity Safety (Installations) Regulations.
- b) Any construction work must comply with Energy Safe Victoria's "No Go Zone" rules.
- c) Set aside for the use of Powercor Australia Ltd reserves and/or easements satisfactory to Powercor Australia Ltd where any electric substation (other than a pole mounted type) is required.
- d) Alternatively, at the discretion of Powercor Australia Ltd a lease(s) of the site(s) and for easements for associated powerlines, cables and access ways shall be

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

provided. Such a lease shall be for a period of 30 years at a nominal rental with a right to extend the lease for a further 30 years. Powercor Australia Ltd will register such leases on the title by way of a caveat prior to the registration of the plan of subdivision.

- e) Provide easements satisfactory to Powercor Australia Ltd, where easements have not been otherwise provided, for all existing Powercor Australia Ltd electric lines on the land and for any new powerlines required to service the lots and adjoining land, save for lines located, or to be located, on public roads set out on the plan. These easements shall show on the plan an easement(s) in favour of "Powercor Australia Ltd" for "Power Line" pursuant to Section 88 of the Electricity Industry Act 2000.
- f) Obtain for the use of Powercor Australia Ltd any other easement external to the development.

#### Time for Starting and Completion

This permit will expire if one of the following circumstances applies:

- a) the development and use has not started within **two (2) years** of the date of this permit;
- b) the development is not completed within **four (4) years** of the date of this permit.

**CARRIED**

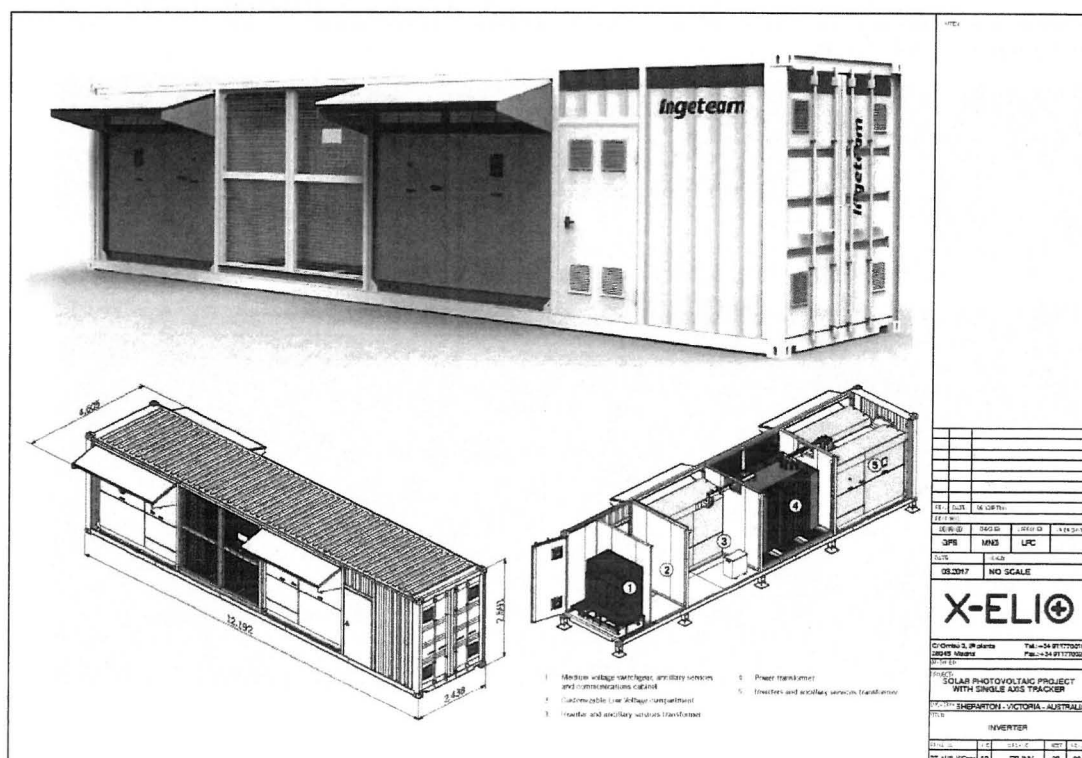
#### **Property Details**

Land/Address	235 Victoria Road, Tallygaroopna. The land is about 96ha in size and is used for cropping and grazing. The land contains an 8ha patch of native vegetation which is retained as part of this application.
Application Number	2017-274
Zones and Overlays	Farming Zone 1 Land Subject to Inundation Overlay Floodway Overlay
Why is a permit required	Use of land for a renewable energy facility under 35.07-1 Buildings and works in the FZ under 35.07-4 Buildings and works in the LSIO under 44.04-1 Erection and display business identification signage (not more than 3sqm) under 52.05-10 Removal of three native trees under 52.17-2
Covenants	No
Area of cultural heritage sensitivity	No



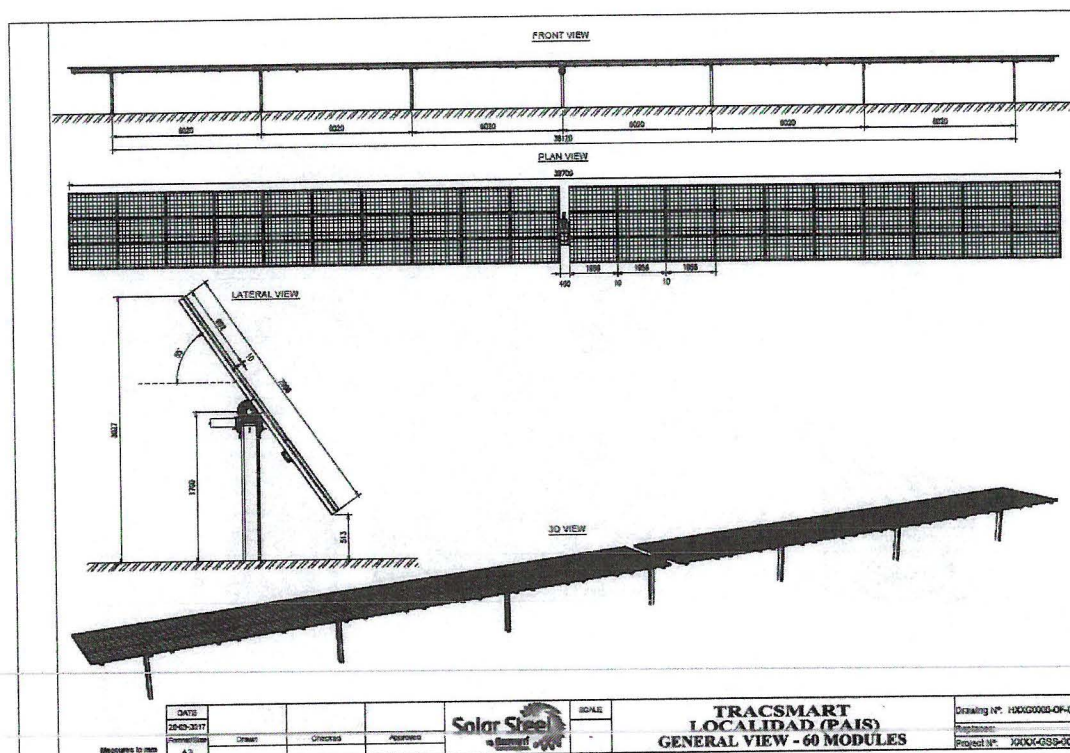
## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

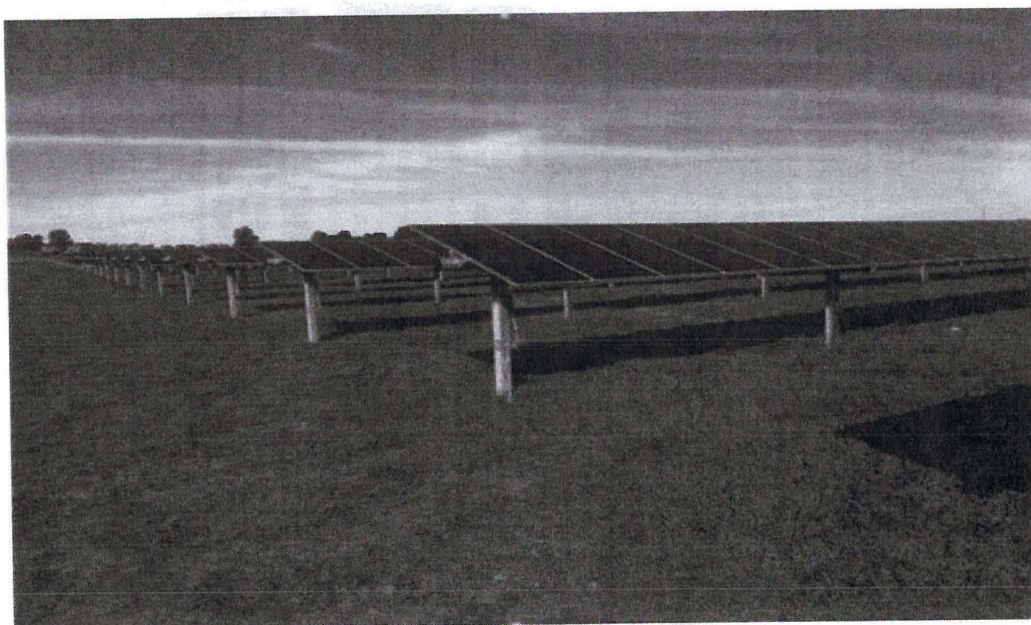


## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)



Below are photos from the Parkes solar farm, to provide a visual example of a constructed solar farm.



## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)



## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

#### Summary of Key Issues

- The application has been advertised and five objections received. Grounds of objection relate to incomplete / insufficient information, proximity of land to the township of Tallygaroopna, creation of an eyesore in the rural environment, the heat island effect and loss of productive agricultural land.
- Officers engaged Sustainable Energy Transformation an expert solar consultant to review technical matters raised in the grounds of objection. The expert review concluded the following:  
*The technical aspects raised in the objections have been reviewed. Some aspects have been found to be without a technical basis and others can be adequately addressed with appropriate requirements in management plans for the site development.*
- The main assessment concern associated with the application and raised by objectors is the loss of productive agricultural land. Officers acknowledge the importance of agriculture to the region, despite this it is considered the loss of 96ha of agricultural land in a food bowl of 317,000ha is an acceptable outcome. Officers also note that the solar farm has a limited life of 25 to 30 years and that rehabilitation of the site can allow future farming of the land.
- Officers are concerned about the possibility that the solar farm could increase temperatures in the locality which could detrimentally impact on horticulture. Scientific research on this issue is not yet conclusive.
- Despite this given the importance of horticulture to the region officers require that night time cooling be provided for by turning the panels perpendicular to the ground.

#### Background

Planning officers met with the applicant prior to the application being lodged and informed of the application requirements.

At the November 2017 Ordinary Council Meeting Council resolved the following:

*That the Council direct the Chief Executive Officer to write to the Minister of Planning:*

- *requesting under section 97C of the Planning and Environment Act 1987 that the Minister for Planning decide the solar farm planning applications referred to the Minister in the Greater Shepparton City Council local government area*
- *inviting the Minister for Planning to establish a process that provides a fair and proper opportunity for all affected stakeholders to be heard.*

Subsequently officers formally requested that the Minister for Planning call in the solar applications to a Panel Hearing. In addition to this written request a meeting was held between the Minister for Planning, the Mayor, Chief Executive Officer and Manager of Planning to discuss the referral of the solar applications.

Despite these efforts the Minister for Planning has decided not to accept Council's invitation to refer the solar applications to an independent planning panel. Consequently Council is required to decide on this application.

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### **10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)**

#### **Assessment under the Planning and Environment Act**

Planning permission is required to use and develop the land for a solar farm in the FZ and LSIO.

The scheme has two themes which form the basis of this assessment being support for agriculture and renewable energy production.

Examples of this policy direction are below:

#### 11.12-5 Hume Regional Growth Plan

This growth plan identifies the subject site as 'strategic agricultural land'.

A strategy for the Hume region is:

- *Support agricultural production through the protection and enhancement of infrastructure and strategic resources such as water and agricultural land, including areas of strategic agricultural land.*

The Hume strategy also includes:

- *Create renewable energy hubs that support co-location of industries to maximise resource use efficiency and minimise waste generation.*

#### 14.01-1 Protection of agricultural land

- *To protect productive farmland which is of strategic significance in the local or regional context.*

#### 19.01-1 Provision of renewable energy

#### **Provision of renewable energy Objective**

*To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met.*

#### **Strategies**

- *Facilitate renewable energy development in appropriate locations.*
- *Protect energy infrastructure against competing and incompatible uses.*
- *Develop appropriate infrastructure to meet community demand for energy services and setting aside suitable land for future energy infrastructure.*
- *In considering proposals for renewable energy, consideration should be given to the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment.*
- *In planning for wind energy facilities, recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds over the year.*

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

#### 21.06-1 Agriculture

*Irrigated primary production and the processing of that product underpin the municipality and the Region's economy. The level of production is nationally important and the region is responsible for significant parts of the nation's milk production, deciduous canned fruit production, stone fruit crop and tomato processing production.*

The land is within a consolidation area.

*Consolidation areas being areas that support existing farm businesses to operate and expand. Consolidation areas typically include land with good soils and include many of the former closer settlement areas, but their lot sizes are no longer reflective of current farm sizes. Consolidation areas are considered to provide opportunities for development of growing agricultural enterprises that can, over time, expand and consolidate through a process of property restructure. In this regard 'consolidation' includes the consolidation of land or the consolidation of farming enterprises through acquisition of non-contiguous land to increase farm size.*

*The development of additional dwellings threatens expanding agricultural enterprises and accordingly, new dwellings within these areas are discouraged. The use of re-subdivision and excisions within consolidation areas will be considered in recognition that the excision of a dwelling from a farm can provide businesses an opportunity to consolidate property holdings based on the value of land for agriculture. The minimum subdivision size in these areas has been set at 40ha and a dwelling needs a planning permit on all land less than 60ha in area.*

#### Rural Regional Land Use Strategy

*The key objective of this rural strategy is to secure and promote the future of agriculture across the region through the respective Council planning schemes. This strategy will ensure that the planning schemes of the three municipalities are responsive to rural issues, and in particular support agricultural growth and change.*

*Irrigated primary production and the processing of that product underpin the Region's economy. The level of production is nationally important; for instance the region is responsible for*

- *25% of the nation's milk production*
- *90% of the national deciduous canned fruit production*
- *45% of Australia's stone fruit crop*
- *90% of the national tomato processing production.*

#### Clause 10.04 Integrated decision making

Planning authorities and responsible authorities should endeavour to integrate the range of policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations.

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### **10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)**

#### Officers Assessment

In principle, a proposal for the generation of renewable energy that reduces fossil fuel dependency is worthwhile. The assessment difficulty with this application is considering if agricultural land of strategic importance should be made unproductive for at least 25 years for a solar farm.

The subject site is irrigated land that is adjacent to an orchard.

A renewable energy facility is a section 2 use in the FZ subject to the following condition which the application complies with:

*Must meet the requirements of clause 52.42*

Officers acknowledge that the scheme provides strategic direction to protect strategic agricultural land from non-agricultural uses.

Throughout the FZ there are non-agricultural uses such as quarries, mines, dwellings and jails. Whilst these uses do not contribute to primary production they are allowable uses in the FZ. Likewise the scheme provides discretion to allow renewable energy facilities like solar farms in the FZ.

Clause 21.06-4 provides the following policy guidelines which provide an assessment guide for this application.

It is policy to:

Discourage industrial use and development (other than rural industry) in rural areas, except where:

Decision Guideline	Officers Response
It is unable to be accommodated in existing industrial zoned areas;	The substantial land size required for solar farms means that insufficient land is available in zones other than the FZ.
It does not compromise the surrounding existing and future agricultural practices;	Council's expert review by Sustainable Energy Transformation has considered impacts on surrounding agricultural land in relation to heat islands and decline of insects. To protect existing and future fruit trees a permit condition will require mitigation of the heat island effect by turning the PV arrays at night to a vertical position to allow night radiant cooling. It is also recommended that a permit condition require the solar arrays be setback not less than 50m from property boundaries to reduce heating of nearby properties to limit impacts on orchard activities.

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

It adds value to the agricultural base of the municipality	The proposed solar farm removes land from production for at least 25 years; as a result the solar farm does not add value to the agricultural base.
It is a rural-based enterprise	A solar farm is a rural based enterprise as the only practical location that large scale solar farms can be located is within a non-urban area.
It provides for the reuse of existing large scale packing sheds and cool stores.	The proposal does not reuse a vacant cool store type building.

The FZ contains various decision guidelines. Officers consider compliance with these decision guidelines is achieved as:

- The solar farm subject to appropriate conditions such as landscape screening and measures to mitigate potential heat islanding is compatible with adjoining and nearby land uses;
- The proposal is located to connect to existing electricity transmission infrastructure;
- Unlike occupants of a dwelling, the solar farm does not limit intensive agricultural uses that could impact on the amenity of the locality such as spray drift, scare guns and heavy vehicle movements.

Permission is sought to remove three scattered paddock trees under 52.17-2 (the old provisions as the application was lodged before the commencement of VC138).

The removal of the three trees is assessed under the low risk based pathway. As offsets can be secured for the loss of native vegetation officers are satisfied that the removal of three trees is acceptable.

52.42-3 (renewable energy facility) includes the following decision guidelines:

Decision Guideline	Officers Response
The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference	Council's expert technical advisor has advised that the proposed solar farm will not result in unacceptable amenity impacts to neighbouring properties.
The impact of the proposal on significant views, including visual corridors and sightlines.	The Tallygaroopna locality is a flat irrigated landscape that is largely cleared of significant remnant vegetation.  The solar panels are about three metres above nature surface level which ensures the panels will not be dominate in the landscape.
The impact of the proposal on the natural environment and natural systems.	The land has a significant patch of native vegetation which has been retained as part of this application.

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

Whether the proposal will require traffic management measures.	The development site is accessed by sealed roads which removes dust emissions as an issue. Officers do not consider specific traffic management conditions are necessary as part of a planning permission.
--	--

Based on this assessment officers are satisfied that the proposal complies with the decision guidelines under 52.42-3.

#### 2017-2021 Council Plan/Key Strategic Activity Council Vision

*Greater Shepparton, Greater Future.  
A thriving economy in the foodbowl of Victoria with excellent lifestyles, innovative agriculture, a diverse community and abundant opportunities.*

#### Environment

An objective under this section of the report is:

*Alternative energy sources with both environmental and economic gains are promoted and encouraged.*

#### **Risk Management**

Risks	Likelihood	Consequence	Rating	Mitigation Action
Incorrect notification	5	1	Low	The application has been properly advertised which allowed objections to be lodged with the Council. These objectors will be informed of Council's decision on the application.

#### **Policy Considerations**

The application has been considered against the policies contained within the Greater Shepparton Planning Scheme and found to achieve acceptable planning outcomes.

#### **Financial Implications**

This planning application has no significant financial implications on Council.

#### **Legal/Statutory Implications**

Should either the applicant or objector be dis-satisfied with Council's decision an application for review can be lodged at VCAT.

#### **Cultural Heritage**

The *Aboriginal Heritage Act 2006* provides protection for all Aboriginal places, objects and human remains in Victoria, regardless of their inclusion on the Victorian Aboriginal Heritage Register or land tenure.

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

The *Aboriginal Heritage Act 2006* introduces a requirement to prepare a Cultural Heritage Management Plan (CHMP) if all or part of the activity is a listed high impact activity, resulting in significant ground disturbance, and all or part of the activity area is an area of cultural heritage sensitivity, which has not been subject to significant ground disturbance.

The land is not within an area of cultural heritage sensitivity therefore the application does not trigger the need for a cultural heritage management plan.

#### Environmental/Sustainability Impacts

The use has no detrimental impact on the environment subject to the inclusion of appropriate drainage conditions should it be decided to grant a permit.

#### Social Implications

Section 60(1)(f) of the Act states the following:

*Before deciding on an application, the responsible authority, if the circumstances appear to so require, must consider—*

- *Any significant social effects and the economic effects which the responsible authority considers the use or development may have.*

This application does not raise social issues that warrant the refusal of the application.

#### Economic Impacts

Approval of the use and development will see new investment within the municipality and associated job creation.

#### Referrals/Public Notice

External Referrals Required by the Planning Scheme:

Section 55 - Referrals Authority	List Planning clause triggering referral	Determining or Recommending	Response
GBCMA	44.04-5	Recommending	The GBCMA consented to the application without requiring any conditions.

External Notice to Authorities:

Section 52 - Notice Authority	Response
GMW	GMW consents to the application subject to their standard siting and drainage conditions.
Powercor	Powercor have consented to the application subject to six conditions all of which are recommended to be included in a notice of decision to grant a permit.

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

The application has been advertised pursuant to Section 52 of the *Planning and Environment Act 1987*, by:

- Sending notices to the owners and occupiers of adjoining land
- Placing a sign on site
- Notice in the Shepparton News on 29 September 2017

Council received five objections to the application. As the application has not received six or more objections the file could be considered by the Development Hearing Panel. Despite this, officers have referred the application to Council for the following reasons:

- The three other solar farm applications are being decided by Council, therefore for consistency purposes this file should also be judged by Council;
- The application raises important policy considerations relating to the siting of large scale solar farms on productive agricultural land;
- The substantial level of investment being \$34 million.

All objectors were issued with an acknowledgment letter.

#### Objector Location Plan



## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

The key issues that were raised in the objections are as follows:

Ground of Objection	Response to Objection
Creation of a micro climate as a result of the solar farm	<p>Council's expert advisor Sustainable Energy Transformation examined two published studies which considered the likelihood of a heat island effect and the possibility of increased temperatures in the surrounding farmland.</p> <p>It is not possible to definitively rule out the possibility of a heat island effect. Impacts on fruit set depend largely on the extent to which any heat island effect would spill over to surrounding properties. At present this is unanswerable with the information available.</p> <p>Assessing heat island impacts on pest insect populations is challenging. Once again the extent to the heat island effect spill into surrounding regions may be critical because the physical environment of a solar farm itself is unlikely to be conducive to harbouring insect populations due to its limited vegetation.</p> <p>Further, while it is the case that temperature is an important factor influencing insect behaviour, distribution, development, survival, and reproduction, the drivers on insect populations dynamics are complex and other factors are relevant.</p> <p>Rainfall is also often an important variable, as is population size. As the population increases so does its vulnerability to disease and predation and the impact of competition within the population and with other species.</p> <p>In the event that a heat island effect did occur, two potential mitigation options are apparent:</p> <p>The first relates to reducing the heat island effect. A study (Barron-Gafford et al.) noted that the warming may be due to heat trapping of re-radiated heat from the ground under the stationary PV arrays at night. If this is the case, a simple mitigation option would be to turn the PV arrays (which will be on a tracker) toward the vertical position thereby opening up the 'view' to the sky to facilitate night radiant cooling.</p> <p>The second relates to biological control of insect populations. In an agricultural setting planting of trees and or shrubs for visual screening purposes will create the opportunity to both boost local biodiversity and increase the populations of insectivorous birds and other species which could assist in reducing insect pest numbers on nearby surrounding properties.</p>

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

Loss of productive agricultural land	Officers acknowledge that this proposal will result in the loss of productive agricultural land. Officers also acknowledge that the land is identified as being strategic agricultural land and that agriculture is the driver of the region's economy. Despite this, a solar farm is not a prohibited use and the generation of electricity like food production is essential to the lives of Victorians. Officers note there are other non-agricultural uses in FZ such as mines, quarries and schools. Whilst reducing valuable agricultural land is not an ideal outcome, the proposed solar farm is an acceptable outcome, the loss of 96ha in a food bowl of 317,000ha does not warrant refusal of the application.
Incomplete / insufficient application information	Officers are satisfied that sufficient information was available to planning officers, Councillors and the community to understand the proposal and make an informed decision.
Proximity of the land to the township of Tallygaroopna	<p>The subject land is about 1.5km to the east of the town of Tallygaroopna. Tallygaroopna is growing on the north eastern edge of the town. The Tallygaroopna framework plan identifies potential growth of the town to Slaughterhouse Road which is setback about 1.1km from the solar farm site.</p> <p>Officers do not dispute that the solar farm is close to Tallygaroopna. Officers consider that sufficient separation is provided between the future town boundary and the proposed solar farm.</p>
Creation of an eyesore in a rural environment	Officers do not consider that solar farms produce an unacceptable visual impact on the landscape. Solar farms are low to the ground (three metres in height) and over time are well screened from public view by landscaping.

Officers believe that appropriate consultation has occurred and the matter is now ready for Council consideration.

#### Strategic Links

##### a) Greater Shepparton 2030 Strategy (GS2030) Environment

At 6.4 of GS2030 the below two strategic objectives are identified:

- *To manage irrigated and non-irrigated land for long-term sustainable production purposes.*
- *To reduce greenhouse gas emissions by local actions, in the interests of current and future generations*

## 10. SUSTAINABLE DEVELOPMENT DIRECTORATE

### 10.4 Use and Develop 235 Victoria Road, Tallygaroopna for a Solar Farm (continued)

#### **Conclusion**

Officers in this report are in no way underplaying the significance of agriculture to the region; the Goulburn Valley is a food bowl of national importance. So much so that Governments have invested more than 2 billion dollars to modernise the irrigation network.

Despite this, it is recommended that permission be granted to use and develop the land for a solar farm on the basis that the development will assist in providing clean power generation.

#### **Attachments**

Nil



26 September 2017

Our Reference: 500000233983

Your Reference: 2017-274

Manager Planning  
Greater Shepparton City Council  
Locked Bag 1000  
SHEPPARTON 3632

Dear Sir/Madam

**APPLICATION NO: 2017-274**

**DESCRIPTION OF LAND: 235 Victoria Road TALLYGAROOPTA (SOLAR FARM)**

**CONDITIONAL CONSENT TO ISSUE OF PLANNING PERMIT**

Powercor Australia Ltd does not object to the issue of a planning permit in respect of the above-mentioned application if the permit is subject to the following conditions:

**CONDITIONS REQUIRED BY POWERCOR AUSTRALIA LTD**

1. The applicant shall:-

- Negotiate with Powercor for the connection of the development, to the existing power distribution network.
- Any buildings must comply with the clearances required by the Electricity Safety (Installations) Regulations.
- Any construction work must comply with Energy Safe Victoria's "No Go Zone" rules.
- Set aside for the use of Powercor Australia Ltd reserves and/or easements satisfactory to Powercor Australia Ltd where any electric substation (other than a pole mounted type) is required.

Alternatively, at the discretion of Powercor Australia Ltd a lease(s) of the site(s) and for easements for associated powerlines, cables and access ways shall be provided. Such a lease shall be for a period of 30 years at a nominal rental with a right to extend the lease for a further 30 years. Powercor Australia Ltd will register such leases on the title by way of a caveat prior to the registration of the plan of subdivision.

**REGISTERED OFFICE:** 40 Market Street, Melbourne VIC Australia  
CitiPower Pty Ltd ABN 76 064 651 056 General Enquiries: **1300 301 101** [www.citipower.com.au](http://www.citipower.com.au)  
Powercor Australia Ltd ABN 89 064 651 109 General Enquiries: **1300 301 101** [www.powercor.com.au](http://www.powercor.com.au)  
Address all correspondence to: **Locked Bag 14090, Melbourne VIC 8001, Australia**

- Provide easements satisfactory to Powercor Australia Ltd, where easements have not been otherwise provided, for all existing Powercor Australia Ltd electric lines on the land and for any new powerlines required to service the lots and adjoining land, save for lines located, or to be located, on public roads set out on the plan. These easements shall show on the plan an easement(s) in favour of "Powercor Australia Ltd" for "Power Line" pursuant to Section 88 of the Electricity Industry Act 2000.
- Obtain for the use of Powercor Australia Ltd any other easement external to the development.

**\*\*\* END OF CONDITIONS \*\*\***

Yours faithfully

*Michael Patten*

Michael Patten  
Customer Requests Officer

Telephone: (03) 5440 5767

(Office Use Only: CR 306417388)

GBCMA Ref: F-2017-0555  
Document No: 3  
Council Ref: 2017-274

Date: 26 September 2017

Mr Ronan Murphy  
Senior Planner  
Greater Shepparton City Council  
Locked Bag 1000  
Shepparton Vic 3632

Dear Mr Murphy

**Planning Permit Application No. 2017-274**  
**Proposed Solar Farm**  
**235 Victoria Road, Tallygaroopna**  
**X-Elio Australia Pty Ltd**

Thank you for your referral under Section 55 of the *Planning and Environment Act, 1987*, received 21 September 2017, regarding the above matter.

The Goulburn Broken CMA's assessment of the above information has determined that the proposed development location is covered by the Farming Zone - Schedule 1 (FZ1), Floodway Overlay (FO) and Land Subject To Inundation Overlay (LSIO) in the Council's Planning Scheme.

The 100-year ARI (1% AEP) flood levels have not been declared for this area under the *Water Act, 1989*, or designated under the *Drainage of Land Act, 1975*.

The Authority's best estimate of the 100-year ARI flood level for the location described above is 108.5 metres AHD, which was established from recorded historic flood levels.

Submitted documents indicate that all components that may be susceptible to flood damage are well outside and above the mapped flood extent and the solar panels set well above ground level supported by pole structures, with the structures several metres apart.

In the light of the above information and pursuant to *Section 56* of the *Planning and Environment Act 1987*, the Goulburn Broken CMA **does not object** to the granting of a permit.

Please note that the 100-year ARI flood is not the maximum possible flood. There is always a possibility that a flood larger in height and extent, than the 100-year ARI flood, may occur in the future.

In accordance with *Section 66* of the *Planning and Environment Act 1987*, please provide a copy of the outcome of this proposal to the Authority for our records.

If you have any queries, please contact me on **(03) 5822 7700**. To assist in handling any enquiries please quote **F-2017-0555** in your correspondence. Please note that all electronic correspondence should be directed to [planning@qbcma.vic.gov.au](mailto:planning@qbcma.vic.gov.au).

Yours sincerely

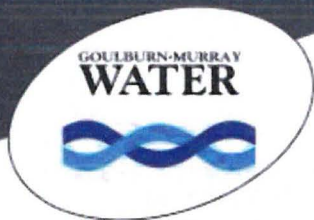
Guy Tierney  
**Statutory Planning and  
Floodplain Manager**

c.c. X-Elio Australia Pty Ltd [jane.macey@spiire.com.au](mailto:jane.macey@spiire.com.au)

Information contained in this correspondence is subject to the definitions and disclaimers below.

**Definitions and Disclaimers**

1. The area referred to in this letter as the 'proposed development location' is the land parcel(s) that, according to the Authority's assessment, represent(s) the location identified by the applicant. The identification of the 'proposed development location' on the Authority's GIS has been done in good faith and in accordance with the information given to the Authority by the applicant(s) and/or local government authority.
2. While every endeavour has been made by the Authority to identify the proposed development location on its GIS using VicMap Parcel and Address data, the Authority accepts no responsibility for or makes no warranty with regard to the accuracy or naming of this proposed development location according to its official land title description.
3. **AEP** as Annual Exceedance Probability – is the likelihood of occurrence of a flood of given size or larger occurring in any one year. AEP is expressed as a percentage (%) risk and may be expressed as the reciprocal of ARI (Average Recurrence Interval).
4. **ARI** as Average Recurrence Interval - is the likelihood of occurrence, expressed in terms of the long-term average number of years, between flood events as large as or larger than the design flood event. For example, floods with a discharge as large as or larger than the 100-year ARI flood will occur on average once every 100 years.
5. **AHD** as Australian Height Datum - is the adopted national height datum that generally relates to height above mean sea level. Elevation is in metres.
6. No warranty is made as to the accuracy or liability of any studies, estimates, calculations, opinions, conclusions, recommendations (which may change without notice) or other information contained in this letter and, to the maximum extent permitted by law, the Authority disclaims all liability and responsibility for any direct or indirect loss or damage which may be suffered by any recipient or other person through relying on anything contained in or omitted from this letter.
7. This letter has been prepared at the request of local government authority for the purpose of a Section 55 referral under the *Planning and Environment Act 1987*, for a proposed **Solar Farm** and is for the use only of the party to whom it is addressed and no responsibility is accepted to any third party for the whole or any part of its contents. Neither the whole nor any part of this letter or any reference thereto may be included in any document, circular or statement without the Authority's written approval of the form and context in which it will appear.
8. The flood information provided represents the best estimates based on currently available information. This information is subject to change as new information becomes available and as further studies are carried out.



GMW Ref: PP-17-00706  
File Ref: 2017/58/1  
DM Ref: 4483330

Greater Shepparton City Council  
Planning Department  
council@shepparton.vic.gov.au

5 October 2017

Dear Sir and/or Madam,

**Planning Permit Application - Utility Installation - Solar Farm**

Application No: 2017-274  
Applicant: Spiire Australia  
Location: Edwards & Victoria Rd TALLYGAROPNA VIC 3634  
V 8988 F 206 Lot 2 Plan 098599  
V 8988 F 207 Lot 3 Plan 098599

Thank you for your letter and information received 21 Sep 2017 in accordance with Section 52 of the *Planning and Environment Act 1987*.

Goulburn-Murray Water's areas of interest are surface water and groundwater quality, use and disposal. Goulburn-Murray Water requires that development proposals do not impact detrimentally on Goulburn-Murray Water's infrastructure and the flow and quality of surface water and groundwater. Applicants must ensure that any required water supplies are available from an approved source.

GMW understands the application seeks approval for a solar farm on the above mentioned parcels. The subject land is in the Farming Zone, and is also partially covered by the Land Subject to Inundation Overlay (LSIO) and the Flood Overlay (FO). From the site plan provided to GMW, it appears most of the solar panels are to be located out of the LSIO and FO. The plan also has a site office included. No information has been provided to GMW in relation to the proposed site office or its potential associated wastewater producing facilities.

GMW East Goulburn 4/18 Channel is located on the north east side of the propose solar panel areas. A suitable offset for any solar panels from any GMW surface infrastructure is ten metres.

Based on the information provided and in accordance with Section 56 (b) of the *Planning and Environment Act 1987*, Goulburn-Murray Water has no objection to this planning permit being granted subject to the following conditions:

1. All construction and ongoing activities must be in accordance with sediment control principles outlined in 'Construction Techniques for Sediment Pollution Control' (EPA, 1991).
2. All solar panels must be setback at least ten metres from Goulburn Murray Water's East Goulburn 4/18 Channel.

3. If applicable, all wastewater from the office must be treated and disposed of using an EPA approved system, installed, operated and maintained in compliance with the EPA Code of Practice – Onsite Wastewater Management, Publication 891.4, and to the satisfaction of council's Environmental Health Department.
4. If applicable, the wastewater disposal area must be located in accordance with Table 5 of the EPA Code of Practice – Onsite Wastewater Management, Publication 891.4, July 2016, from any waterways (including Goulburn Murray Water open channels), drainage lines, dams or bores.

If you require further information please e-mail [planning.referrals@gmwater.com.au](mailto:planning.referrals@gmwater.com.au) or contact 1800 013 357.

Yours sincerely

Neil Repacholi  
SECTION LEADER STATUTORY PLANNING

Per: (original signed by Roey Johnstone)

**From:** [Kyle O'Brien](#)  
**To:** [Ronan Murphy](#)  
**Cc:** [Council](#); "[Clement-Stone Town Planners](#)"; "[Angela Mok](#)"  
**Subject:** OBJECTION AGAINST APP. NO. 2017-274 235 VICTORIA ROAD, TALLYGAROPNA on behalf of NMB&J Barolli  
**Date:** Monday, 13 November 2017 4:11:21 PM  
**Attachments:** [C1 Objection 235.Victoria.Road.Tallygaroopna NMB&J.Barolli.ptv.ltd.pdf](#)  
[The Photovoltaic Heat Island Effect 3a Larger solar power plants increase local temperatures 7c Scientific Reports.pdf](#)

---

Good Afternoon Ronan,

OBJECTION AGAINST APP. NO. 2017-274  
235 VICTORIA ROAD, TALLYGAROPNA

We act for NMB & J Barolli, landowners of 387 Edwards Road, Tallygaroopna.

On behalf of our clients, please find attached grounds of objection in relation to the abovementioned planning permit application.

Thank you for your consideration to date, and please contact me should you require anything further or to discuss.

Kind Regards,

Kyle X O'Brien | Bsc, M.Soc Sci (Env & Plan), MPIA, VPELA  
Senior Planner | Clement-Stone Town Planners



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# Clement-Stone

T O W N P L A N N E R S

10 November 2017

Planning Manager  
Greater Shepparton City Council  
Locked Bag 1000  
Shepparton VIC 3632

Attn Ronan Murphy

**OBJECTION AGAINST APP. NO. 2017-274  
235 VICTORIA ROAD, TALLYGAROPNA  
'Use and Development of Land for a Solar Farm, Removal of Native Vegetation and Business  
Identification Signage'**

Dear Ronan,

We act for NMB & J Barolli Pty Ltd who own land at 387 Edwards Road, Tallygaroopna which is presently used as an orchard and refer to Councils notice in relation to application 20178-274 which seeks approval for **'the use and development of land for a solar farm, removal of native vegetation and business identification signage'** at 235 Victoria Road, Tallygaroopna (the subject site).

Our clients site is located directly to the north-east of the subject site, and adjoins it, as per the below



figure;  
Subject site dashed yellow, our clients site shaded red (387 Edwards Road)

Figure 1 -

We have been instructed by our client to undertake a review of the proposed use and development against the relevant planning controls, and as a result provide the following grounds of objection against the abovementioned proposal for Councils consideration in their assessment.

**Incomplete/Insufficient Application Information**

1. The applicant has not provided a response or assessment against clause 21.06 – 1 Agriculture within the application documentation. This is troubling given that irrigated primary production and processing of that product underpins the Region's economy.
2. Agriculture is a key driver of the Shires economic development, and this is reflected throughout the MSS and in the zoning controls which affect the subject site (Farming Zone 1 - recognising its classification as **growth area** farming land).
3. This is a proposal that seeks to remove irrigated farming land from utilisation and production for a period of at least 25 years, to allow for a use which has not adequately justified itself against the provisions of the Greater Shepparton Planning Scheme or the purposes of the Farming Zone or its decision guidelines.
4. A response to Clause 21.06-1 and assessment of the proposal against the elements of the Regional Rural Land Use Strategy (2008) which was prepared on behalf of and adopted by Moira Shire Council, the City of Greater Shepparton, and the Shire of Campaspe and included in the scheme as a holistic strategy to managing land use and agricultural production needs to be provided before Council can consider this application fully and properly.
5. The application documentation also fails to provide an impact assessment of any Photovoltaic Heat Island Effect (PVHI Effect) which may be caused through operation of the solar farm and its impact on our clients adjacent Orchard operation, which relies on consistent air temperatures in order that growth and production not be adversely compromised.
6. The PVHI effect is supported by recent research conducted at the University of Arizona, which explored the changes in ambient air temperatures above and surrounding solar farms and panels<sup>1</sup> (attached).
7. That research concludes that solar farms can increase ambient air temperatures by 3-4 degrees Celsius over night in comparison to nearby areas.
8. The PVHI effect has the potential to significantly impact on our clients business, particularly in relation to the growing of stone fruits, as per the below extract from the Department of Agriculture's website<sup>2</sup>

---

<sup>1</sup> Barron-Gafford, G. A. *et al.* The Photovoltaic Heat Island Effect: Larger Solar Power Plans Increase Local Temperatures, Scientific Reports 6, 35070 (2016)

<sup>2</sup> <http://agriculture.vic.gov.au/agriculture/horticulture/fruit-and-nuts/stone-fruit/chill-units-of-stone-fruit>

*Stone fruit trees such as peaches and nectarines develop their vegetative and fruiting buds in the summer. As winter approaches, the already developed buds go dormant in response to both shorter day lengths and cooler temperatures. This dormancy or sleeping stage protects buds from the effects of cold weather. Once buds have started dormancy, they will be tolerant to temperatures much below freezing and will not grow in response to mid-winter warm spells.*

### **Chill Units**

*These buds remain dormant until they have accumulated sufficient chilling units (CU) of cold weather. A chill unit is allocated when temperatures spend time within certain parameters (Refer to chill accumulation models). When enough chilling accumulates, the buds are ready to grow in response to warm temperatures. As long as there have been enough CUs the flower and leaf buds develop normally. If the buds do not receive sufficient chilling temperatures during winter to completely release dormancy, trees will develop one or more of the physiological symptoms associated with insufficient chilling:*

- *Delayed foliation*
- *Reduced fruit set and buttons*
- *Reduced fruit quality*

9. If the proposed use of the solar farm increases ambient air temperatures, there is a real risk that fruit grown by our client will not received sufficient chilling through the winter months. This will result in direct detrimental impacts on their business and on the agricultural potential and viability of their land.
10. Further work is required to demonstrate that this aspect of the proposal is addressed and that offsite impacts based on ambient heating will not cause detriment to the viability of our clients land.

### **Response to Clause 21.06-1 Agriculture**

11. Clause 21.06 provides strategic directions in relation to Economic Development. In this case, Clause 21.06-1 provides guidance and direction having regard to Agriculture and agricultural land.
12. Importantly, Clause 21.06-1 provides;
  - *It is increasingly evident that prospective agricultural investment is jeopardized, deterred, or completely lost by land uses and developments that have the potential to compromise the scale and location of such investment.*

13. It is those and other various competing factors and uses which has led Council to adopt the Regional Rural Land Use Strategy (2008) in order to better categorise farming land and to provide direction in relation to its future use.
14. This application which seeks to establish a non agricultural use is a good case in point.
15. Clause 21.06 classifies the subject site as a **growth area**, being "*areas for growth and expansion of existing farm businesses and for new investment*".
16. The subject sites designation as a Growth area is further solidified at Clause 21.08 which lays out the implementation strategy for the Municipality and provides the following;
  - *Apply the Farming Zone to the 'growth' and 'consolidation' (FZ1) areas; and 'niche' (FZ2) areas in accordance with the Rural Regional Land Use Strategy (RRLUS).*
17. This site is within the Farming Zone (Schedule 1)
18. Having regard to the **Objectives** outlined with 21.06, they are as follows;
  - *To ensure that agriculture is and remains the major economic driver in the region*
  - *To facilitate growth of existing farm businesses*
  - *To facilitate growth of new agricultural investment*
  - *To provide for small scale, specialized agriculture*
19. Those Objectives will be achieved through the following **Strategies** which are, as relevant to this proposal;
  - *Encourage growth and expansion of existing farm businesses and new investment in growth and consolidation areas.*
  - *Discourage land uses and development in the Farming Zone, Schedule 1 that would compromise the future agricultural use of the land, including farm related tourism.*
  - *Discourage non-agricultural uses on rural land other than rural based industry*
20. A solar farm, being a non-agricultural use, does not adequately respond to the issues raised within the MSS or the above objectives for agricultural land which are included within the planning scheme, as follows;
  - The proposed does not facilitate the growth of an existing farm business, or the growth of a new agricultural investment.
  - This operation is not 'small scale, specialized agriculture' – it is not agriculture at all.
  - The site is located within an area that encourages and prefers growth and expansion of farm businesses, and this proposal will remove a substantial area of viable, irrigated, agricultural land from future production.
  - This proposal will prevent consolidation of the site with other nearby lots, and will actively preclude the growth and expansion sought by the Greater Shepperton Planning Scheme.

- This proposal will actively prevent the future agricultural use of the land, and will effectively remove this land from agricultural production for the life of the solar farm. Non-agricultural use is discouraged by policy, and this is clearly a non-agricultural use.
  - The proposal would adversely impact other agricultural uses such as our client's orchard by way of the PVHI effect and other offsite impacts.
21. The use is non-agricultural in nature, and does not deserve or receive support from the Municipal Strategic Statement. The applicant has relied on broad and non-planning justifications that relate to the State Governments drive to increase renewable energy production, however in the process have ignored the land use directives and Planning Policy which relate to how, where, and why uses should be located.
22. The continued use of this land for agricultural economic productivity is enshrined within the MSS and within the Zone provisions.
23. This proposal fails at a fundamental level, and we submit that Council cannot decide to grant a permit in relation to this application without ignoring the provisions of the scheme which relate to this area and this site.

**Response to Clause 35.07 Farming Zone (Schedule 1)**

24. A Renewable Energy Facility is a Section 2 use within the Farming Zone. Any application for a planning permit needs to have regard to the purposes and decision guidelines of Clause 35.07 before a permit can be contemplated or granted.
25. This proposal fails to meet those purposes and decision guidelines, as per the below, and as relevant to the proposal;

**Purpose**

- *To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
  - The proposal fails to respond to Clause 21.06 and other directions within the MSS which relate to the protection and enhancement of agricultural land and agricultural production.
- *To provide for the use of land for agriculture.*
  - This proposal does not provide for any agricultural use of the site, and removes a significant area of viable, irrigated, agricultural land from production and future use
- *To encourage the retention of productive agricultural land.*
  - Agricultural land is not retained within this proposal, and is actively removed from future use and production. This is out of step with the high value nature of this land, which is recognised through surrounding land uses (including the orchard at our clients site) and within the Greater Shepparton Planning Scheme.

- *To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.*
  - Agricultural use will no longer be possible on the site due to the proliferation of solar panels and services. The removal of high value growth area agricultural land does not receive support at a policy level or within the purposes of the zone based on its physical context within the Farming Zone and the types of uses which are envisioned for the area and Municipality now and in the future.

## **Decision Guidelines**

### **General issues**

- *The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
  - As per the above, this proposal does not satisfy policy directives with respect to the protection and enhancement of agricultural land.
- *The capability of the land to accommodate the proposed use or development, including the disposal of effluent.*
  - While the land may be able to accommodate the use, insufficient information has been provided in relation to offsite amenity impacts on our clients site.
- *How the use or development relates to sustainable land management.*
  - The proposal is not agricultural in nature, and therefore does not relate to sustainable land management.
- *Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses.*
  - The proposal may have adverse impacts on our clients nearby orchard business via the photovoltaic heat island effect as explored above.

### **Agricultural issues and the impacts from non-agricultural uses**

- *Whether the use or development will support and enhance agricultural production.*
  - The proposal will not support or enhance agricultural production, and will remove this land from future agricultural production – precluding any further growth or consolidation of high quality irrigated farming land.
- *Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production.*
  - This site will be permanently removed from agricultural production for the life of the proposed use. This is an unacceptable outcome when considering how this land is qualified under policy, and its designated as being within a grown farming area pursuant to Clause 21.06.

- *The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses.*
  - Consolidation of farming land is encouraged under policy. The removal of this land from agricultural fabric of Shepparton will limit to possibility for nearby uses to expand, and may have an effect of the growing potential of surrounding land by way of the PVHI effect.
- *The capacity of the site to sustain the agricultural use.*
  - No agricultural use is proposed.
- *The agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure.*
  - The site is irrigated farming land, which should be utilised in accordance with the directions of the scheme and the zone. Removing it from future agricultural production is not appropriate when considering the importance of agri-businesses to the economic fabric of the Region and the State.
  - This use would be better placed in a dry land area, and in an area that was not critical for farming and food production. This land receives protection at a policy and zoning level for continued agricultural uses and this proposal does not meet that test.
- *Any integrated land management plan prepared for the site.*

***Design and siting issues***

- *The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses and to minimise the loss of productive agricultural land.*
  - Productive agricultural land will be lost if this proposal is supported, and opportunities for consolidation of farming land and businesses will be nullified.
  - The high number of PV panels has the potential to impact on our clients site and surrounding uses through rises in ambient air temperatures and associated impacts on food producing uses.
- *The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.*
  - The solar panels, and their high and large site coverage, will present as visually incongruous in the context of surrounding rural and agricultural uses and landscapes.
  - The applicant has provided landscape buffers around the perimeter of the site, however no landscape plan has been provided. A landscape plan should be submitted to provide certainty around how visual impact will be managed.

- *The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance.*
  - As per the above, the character of the area will be fundamentally altered not only through the visual presentation of the panels, but also through the transition of this site away from an agricultural use to power production.
  - The impacts on character are exacerbated when taken together with the opportunities which will be lost for growth and consolidation of farms and business around the site.

### **Conclusion**

26. The proposed use does not adequately respond to Clause 22.06, and insufficient regard has been given to the importance of this area for farming, agricultural, and agri-business both at a regional and State level.
27. The proposal does not meet or adequately respond to the purpose or decision guidelines of the Farming Zone, which is the zone selected to protect and enhance the agricultural use and potential of this land and other similarly zoned areas within the Municipality.
28. The applicant has not sufficiently demonstrated that our clients orchard business will not be impacted through rises in ambient air temperatures by way of the photovoltaic heat island effect, or that fruit growing potential on our clients site will not be compromised.
29. The use of the land for power production is out of step with the character of the area from a visual perspective, and compromises the opportunities for surrounding farms and businesses to grow and expand by removing a large area of viable and irrigated agricultural land.
30. The use proposed is not appropriate in this location for all of the reasons outlined above.
31. On behalf of our clients, we request that Council decide to refuse this application due to its failure to adequately respond to the provisions of the Greater Shepparton Planning Scheme.

We thank you for your consultations to date, and should Council hold a deputation meeting to discuss this application we request to be given the opportunity to be heard.

Should you have further questions please contact me on 9334 2060 or at [ko@townplanners.com.au](mailto:ko@townplanners.com.au)

Kind Regards,



**Kyle X O'Brien** | Bsc, M.Soc Sci (Env & Plan), MPIA, VPELA  
Senior Planner | Clement-Stone **Town Planners**

Article | **OPEN**

# The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures

Greg A. Barron-Gafford, Rebecca L. Minor, Nathan A. Allen, Alex D. Cronin, Adria E. Brooks & Mitchell A. Pavao-Zuckerman

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## Abstract

While photovoltaic (PV) renewable energy production has surged, concerns remain about whether or not PV power plants induce a “heat island” (PVHI) effect, much like the increase in ambient temperatures relative to wildlands generates an Urban Heat Island effect in cities. Transitions to PV plants alter the way that incoming energy is reflected back to the atmosphere or absorbed, stored, and reradiated because PV plants change the albedo, vegetation, and structure of the terrain. Prior work on the PVHI has been mostly theoretical or based upon simulated models. Furthermore, past empirical work has been limited in scope to a single biome. Because there are still large uncertainties surrounding the potential for a PHVI effect, we examined the PVHI empirically with experiments that spanned three biomes. We found temperatures over a PV plant were regularly 3–4 °C warmer than wildlands at night, which is in direct contrast to other studies based on models that

suggested that PV systems should decrease ambient temperatures. Deducing the underlying cause and scale of the PVHI effect and identifying mitigation strategies are key in supporting decision-making regarding PV development, particularly in semiarid landscapes, which are among the most likely for large-scale PV installations.

## Introduction

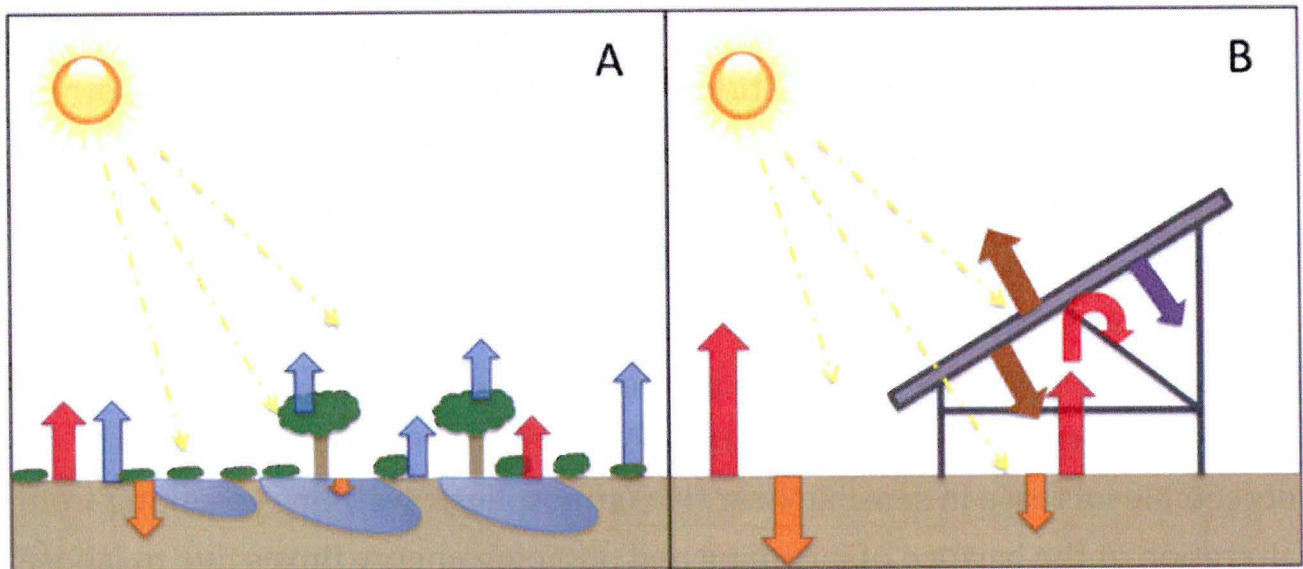
Electricity production from large-scale photovoltaic (PV) installations has increased exponentially in recent decades<sup>1,2,3</sup>. This proliferation in renewable energy portfolios and PV powerplants demonstrate an increase in the acceptance and cost-effectiveness of this technology<sup>4,5</sup>. Corresponding with this upsurge in installation has been an increase in the assessment of the impacts of utility-scale PV<sup>4,6,7,8</sup>, including those on the efficacy of PV to offset energy needs<sup>9,10</sup>. A growing concern that remains understudied is whether or not PV installations cause a “heat island” (PVHI) effect that warms surrounding areas, thereby potentially influencing wildlife habitat, ecosystem function in wildlands, and human health and even home values in residential areas<sup>11</sup>. As with the Urban Heat Island (UHI) effect, large PV power plants induce a landscape change that reduces albedo so that the modified landscape is darker and, therefore, less reflective. Lowering the terrestrial albedo from ~20% in natural deserts<sup>12</sup> to ~5% over PV panels<sup>13</sup> alters the energy balance of absorption, storage, and release of short- and longwave radiation<sup>14,15</sup>. However, several differences between the UHI and potential PVHI effects confound a simple comparison and produce competing hypotheses about whether or not large-scale PV installations will create a heat island effect. These include: (i) PV installations shade a portion of the ground and therefore could reduce heat absorption in surface soils<sup>16</sup>, (ii) PV panels are thin and have little heat capacity per unit area but PV modules emit thermal radiation both up and down, and this is particularly significant during the day when PV modules are often 20 °C warmer than ambient temperatures, (iii) vegetation is usually removed from PV power plants, reducing

the amount of cooling due to transpiration<sup>14</sup>, (iv) electric power removes energy from PV power plants, and (v) PV panels reflect and absorb upwelling longwave radiation, and thus can prevent the soil from cooling as much as it might under a dark sky at night.

Public concerns over a PVHI effect have, in some cases, led to resistance to large-scale solar development. By some estimates, nearly half of recently proposed energy projects have been delayed or abandoned due to local opposition<sup>11</sup>. Yet, there is a remarkable lack of data as to whether or not the PVHI effect is real or simply an issue associated with perceptions of environmental change caused by the installations that lead to “not in my backyard” (NIMBY) thinking. Some models have suggested that PV systems can actually cause a cooling effect on the local environment, depending on the efficiency and placement of the PV panels<sup>17,18</sup>. But these studies are limited in their applicability when evaluating large-scale PV installations because they consider changes in albedo and energy exchange within an urban environment (rather than a natural ecosystem) or in European locations that are not representative of semiarid energy dynamics where large-scale PV installations are concentrated<sup>10,19</sup>. Most previous research, then, is based on untested theory and numerical modeling. Therefore, the potential for a PHVI effect must be examined with empirical data obtained through rigorous experimental terms.

The significance of a PVHI effect depends on energy balance. Incoming solar energy typically is either reflected back to the atmosphere or absorbed, stored, and later re-radiated in the form of latent or sensible heat (Fig. 1)<sup>20,21</sup>. Within natural ecosystems, vegetation reduces heat gain and storage in soils by creating surface shading, though the degree of shading varies among plant types<sup>22</sup>. Energy absorbed by vegetation and surface soils can be released as latent heat in the transition of liquid water to water vapor to the atmosphere through evapotranspiration – the combined water loss from soils (evaporation) and vegetation (transpiration). This heat-dissipating latent energy exchange is dramatically reduced in a typical PV

installation (Fig. 1 transition from A-to-B), potentially leading to greater heat absorption by soils in PV installations. This increased absorption, in turn, could increase soil temperatures and lead to greater sensible heat efflux from the soil in the form of radiation and convection. Additionally, PV panel surfaces absorb more solar insolation due to a decreased albedo<sup>13,23,24</sup>. PV panels will re-radiate most of this energy as longwave sensible heat and convert a lesser amount (~20%) of this energy into usable electricity. PV panels also allow some light energy to pass, which, again, in unvegetated soils will lead to greater heat absorption. This increased absorption could lead to greater sensible heat efflux from the soil that may be trapped under the PV panels. A PVHI effect would be the result of a detectable increase in sensible heat flux (atmospheric warming) resulting from an alteration in the balance of incoming and outgoing energy fluxes due to landscape transformation. Developing a full thermal model is challenging<sup>17,18,25</sup>, and there are large uncertainties surrounding multiple terms including variations in albedo, cloud cover, seasonality in advection, and panel efficiency, which itself is dynamic and impacted by the local environment. These uncertainties are compounded by the lack of empirical data.

**Figure 1: Illustration of midday energy exchange.**

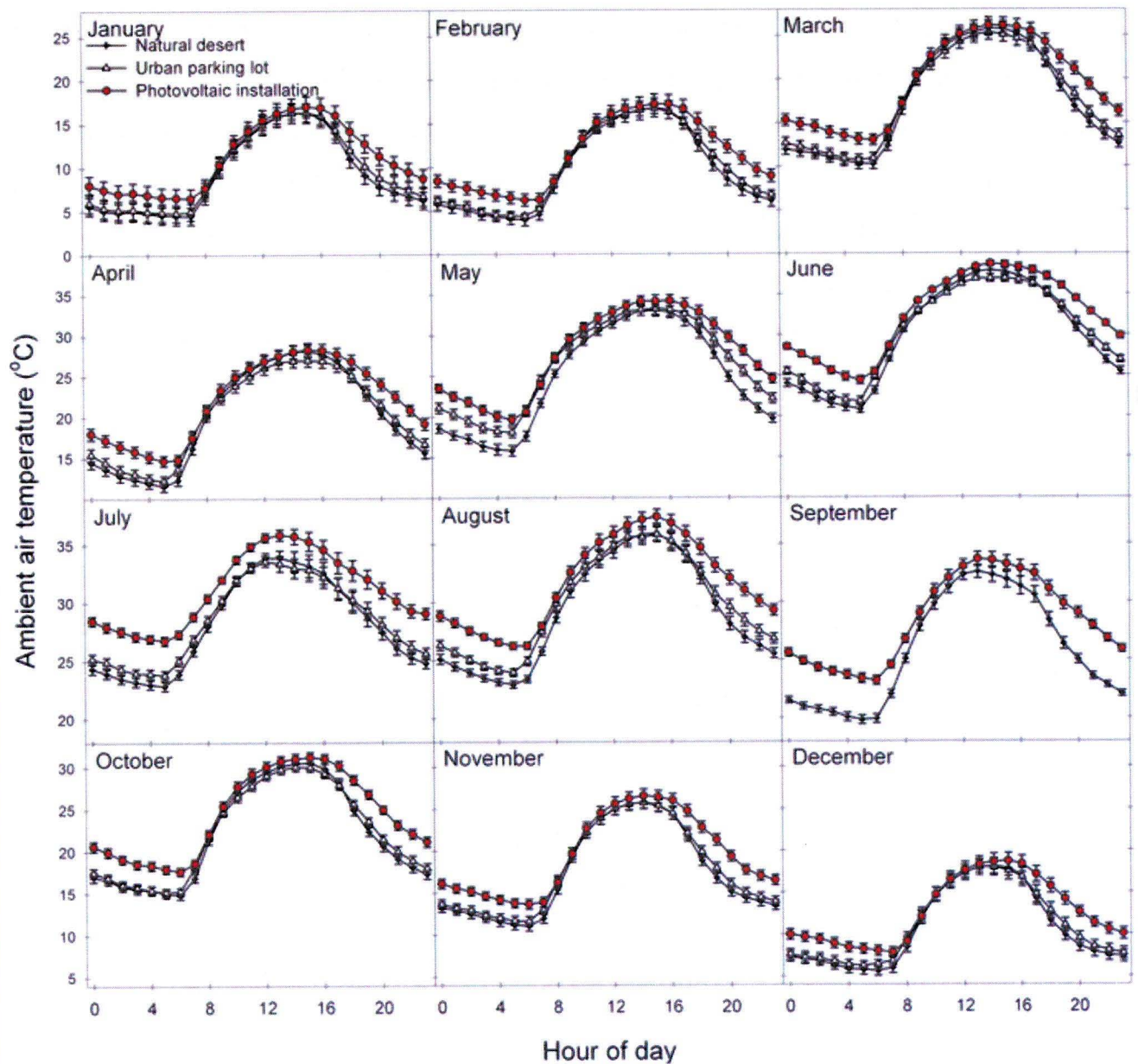
Assuming equal rates of incoming energy from the sun, a transition from (A) a vegetated ecosystem to (B) a photovoltaic (PV) power plant installation will significantly alter the energy flux dynamics of the area. Within natural ecosystems, vegetation reduces heat capture and storage in soils (orange arrows), and infiltrated water and vegetation release heat-dissipating latent energy fluxes in the transition of water-to-water vapor to the atmosphere through evapotranspiration (blue arrows). These latent heat fluxes are dramatically reduced in typical PV installations, leading to greater sensible heat fluxes (red arrows). Energy re-radiation from PV panels (brown arrow) and energy transferred to electricity (purple arrow) are also shown.

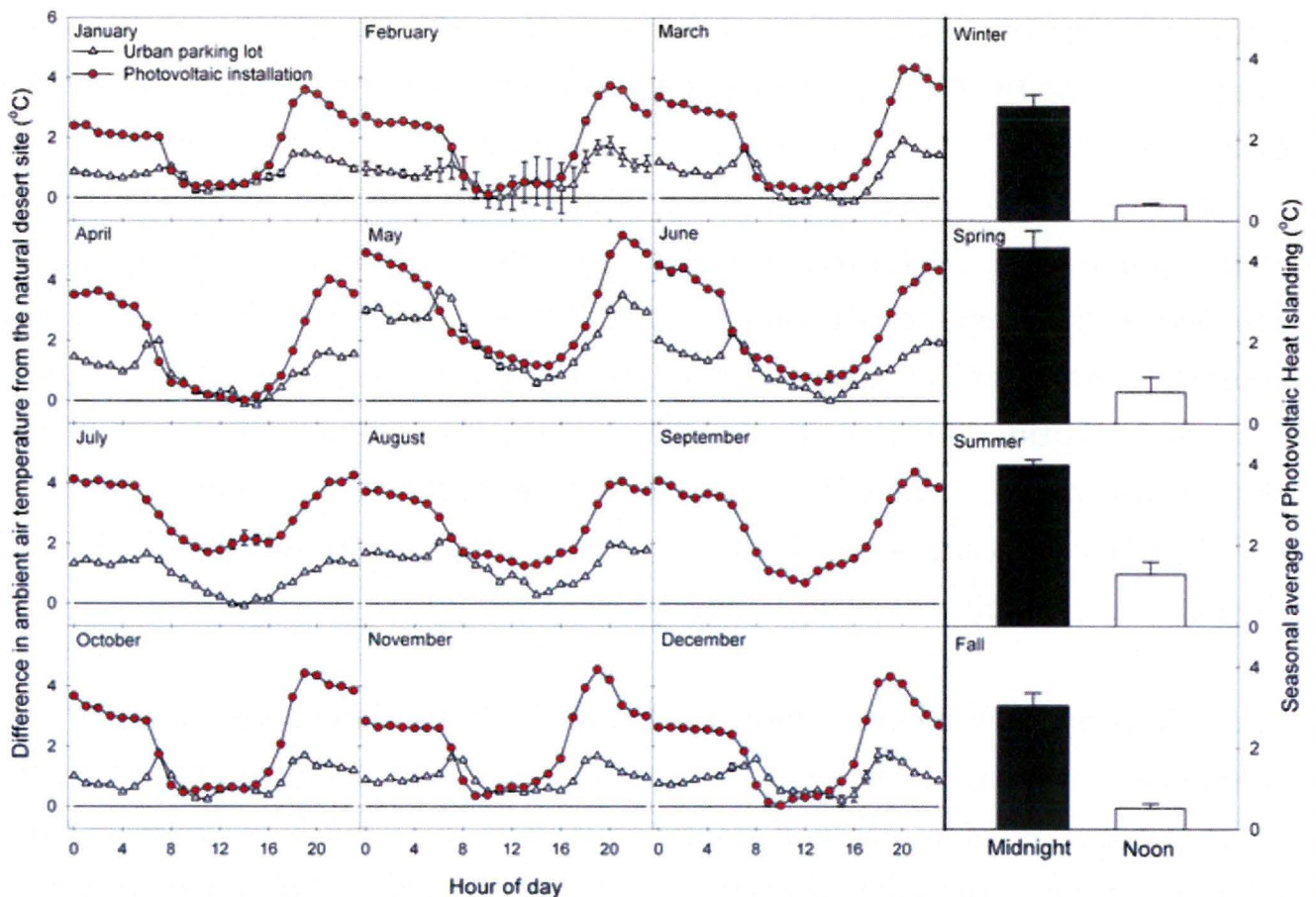
We addressed the paucity of direct quantification of a PVHI effect by simultaneously monitoring three sites that represent a natural desert ecosystem, the traditional built environment (parking lot surrounded by commercial buildings), and a PV power plant. We define a PVHI effect as the difference in ambient air temperature between the PV power plant and the desert landscape. Similarly, UHI is defined as the difference in temperature between the built environment and the desert. We reduced confounding effects of variability in local incoming energy, temperature, and precipitation by utilizing sites contained within a 1 km area.

At each site, we monitored air temperature continuously for over one year using aspirated temperature probes 2.5 m above the soil surface. Average annual

temperature was  $22.7 \pm 0.5$  °C in the PV installation, while the nearby desert ecosystem was only  $20.3 \pm 0.5$  °C, indicating a PVHI effect. Temperature differences between areas varied significantly depending on time of day and month of the year (Fig. 2), but the PV installation was always greater than or equal in temperature to other sites. As is the case with the UHI effect in dryland regions, the PVHI effect delayed the cooling of ambient temperatures in the evening, yielding the most significant difference in overnight temperatures across all seasons. Annual average midnight temperatures were  $19.3 \pm 0.6$  °C in the PV installation, while the nearby desert ecosystem was only  $15.8 \pm 0.6$  °C. This PVHI effect was more significant in terms of actual degrees of warming ( $+3.5$  °C) in warm months (Spring and Summer; Fig. 3, right).

**Figure 2: Average monthly ambient temperatures throughout a 24-hour period provide evidence of a photovoltaic heat island (PVHI) effect.**



**Figure 3**

(Left) Average monthly levels of Photovoltaic Heat Islanding (ambient temperature difference between PV installation and desert) and Urban Heat Islanding (ambient temperature difference between the urban parking lot and the desert). (Right) Average night and day temperatures for four seasonal periods, illustrating a significant PVHI effect across all seasons, with the greatest influence on ambient temperatures at night.

In both PVHI and UHI scenarios, the greater amount of exposed ground surfaces compared to natural systems absorbs a larger proportion of high-energy, shortwave solar radiation during the day. Combined with minimal rates of heat-dissipating transpiration from vegetation, a proportionally higher amount of stored energy is reradiated as longwave radiation during the night in the form of sensible heat (Fig. 1)<sup>15</sup>. Because PV installations introduce shading with a material that, itself, should not store much incoming radiation, one might hypothesize that the effect of a PVHI

effect would be lesser than that of a UHI. Here, we found that the difference in evening ambient air temperature was consistently greater between the PV installation and the desert site than between the parking lot (UHI) and the desert site (Fig. 3). The PVHI effect caused ambient temperature to regularly approach or be in excess of 4 °C warmer than the natural desert in the evenings, essentially doubling the temperature increase due to UHI measured here. This more significant warming under the PVHI than the UHI may be due to heat trapping of re-radiated sensible heat flux under PV arrays at night. Daytime differences from the natural ecosystem were similar between the PV installation and urban parking lot areas, with the exception of the Spring and Summer months, when the PVHI effect was significantly greater than UHI in the day. During these warm seasons, average midnight temperatures were  $25.5 \pm 0.5$  °C in the PV installation and  $23.2 \pm 0.5$  °C in the parking lot, while the nearby desert ecosystem was only  $21.4 \pm 0.5$  °C.

The results presented here demonstrate that the PVHI effect is real and can significantly increase temperatures over PV power plant installations relative to nearby wildlands. More detailed measurements of the underlying causes of the PVHI effect, potential mitigation strategies, and the relative influence of PVHI in the context of the intrinsic carbon offsets from the use of this renewable energy are needed. Thus, we raise several new questions and highlight critical unknowns requiring future research.

## **What is the physical basis of land transformations that might cause a PVHI?**

We hypothesize that the PVHI effect results from the effective transition in how energy moves in and out of a PV installation versus a natural ecosystem. However, measuring the individual components of an energy flux model remains a necessary task. These measurements are difficult and expensive but, nevertheless, are indispensable in identifying the relative influence of multiple potential drivers of

the PVHI effect found here. Environmental conditions that determine patterns of ecosystem carbon, energy, and water dynamics are driven by the means through which incoming energy is reflected or absorbed. Because we lack fundamental knowledge of the changes in surface energy fluxes and microclimates of ecosystems undergoing this land use change, we have little ability to predict the implications in terms of carbon or water cycling<sup>4,8</sup>.

## **What are the physical implications of a PVHI, and how do they vary by region?**

The size of an UHI is determined by properties of the city, including total population<sup>26,27,28</sup>, spatial extent, and the geographic location of that city<sup>29,30,31</sup>. We should, similarly, consider the spatial scale and geographic position of a PV installation when considering the presence and importance of the PVHI effect. Remote sensing could be coupled with ground-based measurements to determine the lateral and vertical extent of the PVHI effect. We could then determine if the size of the PVHI effect scales with some measure of the power plant (for example, panel density or spatial footprint) and whether or not a PVHI effect reaches surrounding areas like wildlands and neighborhoods. Given that different regions around the globe each have distinct background levels of vegetative ground cover and thermodynamic patterns of latent and sensible heat exchange, it is possible that a transition from a natural wildland to a typical PV power plant will have different outcomes than demonstrated here. The paucity in data on the physical effects of this important and growing land use and land cover change warrants more studies from representative ecosystems.

## **What are the human implications of a PVHI, and how might we mitigate these effects?**

With the growing popularity of renewable energy production, the boundaries between residential areas and larger-scale PV installations are decreasing. In fact, closer proximity with residential areas is leading to increased calls for zoning and city planning codes for larger PV installations<sup>32,33</sup>, and PVHI-based concerns over potential reductions in real estate value or health issues tied to Human Thermal Comfort (HTC)<sup>34</sup>. Mitigation of a PVHI effect through targeted revegetation could have synergistic effects in easing ecosystem degradation associated with development of a utility scale PV site and increasing the collective ecosystem services associated with an area<sup>4</sup>. But what are the best mitigation measures? What tradeoffs exist in terms of various means of revegetating degraded PV installations? Can other albedo modifications be used to moderate the severity of the PVHI?

To fully contextualize these findings in terms of global warming, one needs to consider the relative significance of the (globally averaged) decrease in albedo due to PV power plants and their associated warming from the PVHI against the carbon dioxide emission reductions associated with PV power plants. The data presented here represents the first experimental and empirical examination of the presence of a heat island effect associated with PV power plants. An integrated approach to the physical and social dimensions of the PVHI is key in supporting decision-making regarding PV development.

## Methods

### Site Description

We simultaneously monitored a suite of sites that represent the traditional built urban environment (a parking lot) and the transformation from a natural system (undeveloped desert) to a 1 MW PV power plant (Fig. 4; Map data: Google). To minimize confounding effects of variability in local incoming energy, temperature, and precipitation, we identified sites within a 1 km area. All sites were within the boundaries of the University of Arizona Science and Technology Park Solar Zone

(32.092150°N, 110.808764°W; elevation: 888 m ASL). Within a 200 m diameter of the semiarid desert site's environmental monitoring station, the area is composed of a sparse mix of semiarid grasses (*Sporobolus wrightii*, *Eragrostis lehmanniana*, and *Muhlenbergia porteri*), cacti (*Opuntia* spp. and *Ferocactus* spp.), and occasional woody shrubs including creosote bush (*Larrea tridentata*), whitethorn acacia (*Acacia constricta*), and velvet mesquite (*Prosopis velutina*). The remaining area is bare soil. These species commonly co-occur on low elevation desert bajadas, creosote bush flats, and semiarid grasslands. The photovoltaic installation was put in place in early 2011, three full years prior when we initiated monitoring at the site. We maintained the measurement installations for one full year to capture seasonal variation due to sun angle and extremes associated with hot and cold periods. Panels rest on a single-axis tracker system that pivot east-to-west throughout the day. A parking lot with associated building served as our "urban" site and is of comparable spatial scale as our PV site.

**Figure 4: Experimental sites. Monitoring a (1) natural semiarid desert ecosystem, (2) solar (PV) photovoltaic installation, and (3) an “urban” parking lot – the typical source of urban heat islanding – within a 1 km<sup>2</sup> area enabled relative control for the incoming solar energy, allowing us to quantify variation in the localized temperature of these three environments over a year-long time period.**



The Google Earth image shows the University of Arizona's Science and Technology Park's Solar Zone.

## Monitoring Equipment & Variables Monitored

Ambient air temperature ( $^{\circ}\text{C}$ ) was measured with a shaded, aspirated temperature probe 2.5 m above the soil surface (Vaisala HMP60, Vaisala, Helsinki, Finland in the desert and Microdaq U23, Onset, Bourne, MA in the parking lot). Temperature probes were cross-validated for precision (closeness of temperature readings across all probes) at the onset of the experiment. Measurements of temperature were recorded at 30-minute intervals throughout a 24-hour day. Data were recorded on a data-logger (CR1000, Campbell Scientific, Logan, Utah or Microstation, Onset, Bourne, MA). Data from this instrument array is shown for a yearlong period from April 2014 through March 2015. Data from the parking lot was lost for September 2014 because of power supply issues with the datalogger.

## Statistical analysis

Monthly averages of hourly (on-the-hour) data were used to compare across the natural semiarid desert, urban, and PV sites. A Photovoltaic Heat Island (PVHI) effect was calculated as differences in these hourly averages between the PV site and the natural desert site, and estimates of Urban Heat Island (UHI) effect was calculated as differences in hourly averages between the urban parking lot site and the natural desert site. We used midnight and noon values to examine maximum and minimum, respectively, differences in temperatures among the three measurement sites and to test for significance of heat islanding at these times. Comparisons among the sites were made using Tukey's honestly significant difference (HSD) test<sup>35</sup>. Standard errors to calculate HSD were made using pooled midnight and noon values across seasonal periods of winter (January–March), spring (April–June), summer (July–September), and fall (October–December). Seasonal analyses allowed us to identify variation throughout a yearlong period and relate patterns of PVHI or UHI effects with seasons of high or low average temperature to examine correlations between background environmental parameters and localized heat islanding.

## Additional Information

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Mitchell A. Pavao-Zuckerman

### **Contributions**

G.A.B.-G., R.L.M. and N.A.A. established research sites and installed monitoring equipment. G.A.B.-G. directed research and R.L.M. conducted most site maintenance. G.A.B.-G., N.A.A., A.D.C. and M.A.P.-Z. led efforts to secure funding for the research. All authors discussed the results and contributed to the manuscript.

### **Competing interests**

The authors declare no competing financial interests.

### **Corresponding author**

Correspondence to Greg A. Barron-Gafford.

## **Comments**

By submitting a comment you agree to abide by our Terms and Community Guidelines. If you find something abusive or that does not comply with our terms or guidelines please flag it as inappropriate.



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# Objection to grant a Planning Permit

This form is to assist in making an objection as outlined in the Planning and Environment Act 1987.

Planning Enquiries  
Phone: (03) 5832 9730  
Web: [greater-shepparton.com.au](http://greater-shepparton.com.au)

## Privacy notice

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\*Please be aware that in accordance with Part 4, Section 57(5) of the *Planning and Environment Act 1987* the Responsible Authority must make a copy of every objection (including personal information of the objector) available for public inspection at its office during office hours free of charge until the end of the period for which an application may be made for review of a decision on an application'..

## Any person who may be affected by the granting of a permit may object.

- If you object the Council must consider the objection unless you withdraw it.
- If you object you must state the reasons why and say how you would be affected by the grant of a permit.
- The Council may reject an objection that it considers has been made primarily to secure or maintain a direct or indirect commercial advantage for the objector.
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- If you object and are not satisfied with the Council's decision you must appeal within 21 days of the notice of the decision to the Victorian Civil and Administrative Tribunal.
- If the Council refuses the application, the applicant can also appeal.

Greater Shepparton City Council	
Record No	
Referred to	
Copies To	

Please contact the Council on (03) 5832 9730 should you require any further assistance.

## Objector details

Provide details of the objector

The person you want council to communicate with about your objection

1 -  
2 -

Name:	TONY FARRELL		
Organisation:			
Postal Address:	PO Box 47 TALLYGAROO PVA		Postcode: 3634
Contact phone:			Please indicate your preferred contact method by numbering in order of preference
Mobile phone:	0912 878262		
Email:	tonyfarrell@sunweld.com		
Fax:			

## Planning Application details

Provide the Planning Application Number and the details of the proposed application:

Planning Application Number
2017-279
Application Proposal
SOLAR FARM DEVELOPMENT

## The land

Address of the land

Street No:	235	Street Name:	VICTORIA ST
Suburb:	TALLYGAROO PVA		Postcode: 3634

## How will you be affected if a permit is granted?

Attach an additional page if there is insufficient room.

As a local resident and member of the Tallygaroopna Steering Plan Committee I feel there will be very little economic benefit for the Tallygaroopna area. During the construction phase there is a high chance that the workers on site will be F.I.F.O. workers. After construction is completed there will be very little ongoing employment on the site.

## What changes would you like to see to the Application to satisfy your concerns

Attach an additional page if there is insufficient room.

The main changes I would like to see is that the application be revoked and the future solar farms be located on lower grade marginal land within the shire.

## Reason for Objection

Clearly state your reasons for objection

Attach an additional page if there is insufficient room.

DO YOU OBJECT? ☒ YES (Tick Box)

The land the solar farm is proposed on is currently highly productive irrigatable agriculture land, to convert it to a solar panel farm would be making it into low grade industrial land with very little employment generated from it. With land subdivisions closer to the Shepparton town area encroaching on prime horticulture land parcels of land in the irrigation district will be in future in demand. The area where the solar farm is proposed is a proven horticulture area, with a successful orchard business being operated adjacent to it. Exports of local produce are on the rise due to demand from countries going through phases of increased wealth. Demand for quality products that the Goulburn Valley is renowned for is increasing, giving it the Food bowl of Australia Classification. The Greater Shepparton City Council should review their land use strategy so that solar farms can be placed in low grade marginal areas instead of prime land.

## Objectors Signature

Signature: Tony Farrell.


Date: 12 / NOV / 2017

## Lodgement

To ensure the Responsible Authority considers your objection, ensure the authority received it by the due date on the notice.

Lodge the completed and signed form and all documents with:

Mail:   
Greater Shepparton City Council  
Locked Bag 1000  
SHEPPARTON, 3632

In Person:   
Greater Shepparton City Council  
90 Welsford Street  
SHEPPARTON

For help or more information

Telephone: ■ Planning Department (03) 5832 9730 and Fax: (03) 5831 1987





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- If the Council refuses the application, the applicant can also appeal.

Please contact the Council on (03) 5832 9730 should you require any further assistance.

## Objector details

Provide details of the objector

The person you want council to communicate with about your objection

Name: CHRIS CALDER	
Organisation:	
Postal Address: 350 EDWARDS ROAD TALLY GAROOPNA	
Postcode: 3634	
Contact phone:	
Mobile phone: 0475 519 103	
Email:	
Fax:	

Please indicate your preferred contact method by numbering in order of preference

## Planning Application details

Provide the Planning Application Number and the details of the proposed application:

Planning Application Number	2017 - 274
Application Proposal	235 VICTORIA ROAD USE & DEVELOPMENT OF LAND FOR A SOLAR FARM, REMOVAL OF NATIVE VEGETATION & BUSINESS IDENTIFICATION SIGNAGE

## The land

Address of the land

Street No:	Street Name: 235 VICTORIA ROAD
Suburb:	TALLY GAROOPNA
Postcode: 3634	

How will you be affected if a permit is granted?

Attach an additional page if there is insufficient room.

"THEY" BECOME MY NEIGHBOURS - I CURRENTLY LIVE IN A BEAUTIFUL NATURAL AGRICULTURAL AREA ONLY TO HAVE "INDUSTRIAL" PUT RIGHT IN MY FACE. - NOT NICE!

What changes would you like to see to the Application to satisfy your concerns

Attach an additional page if there is insufficient room.

REMOVAL OF PLANNED FARM TO AREA OF "DRYLAND" - NOT LAND CURRENTLY BEING IRRIGATED

Reason for Objection

DO YOU OBJECT? ☒ YES (Tick Box)

Clearly state your reasons for objection

Attach an additional page if there is insufficient room.

WHAT AN EYESORE - AND SO CLOSE TO VILLAGE OF TALLYGALEENNA! NO THOUGHT HAS BEEN GIVEN TO LOCALS - THIS IS STILL A PROSPEROUS AND THRIVING COMMUNITY SO CLOSE TO SHEPPARTON - NEW HOUSES BEING BUILT IN VILLAGE AND THRIVING SCHOOL COMMUNITY FEEDING LARGER SECONDARY SCHOOLS IN SHEPPARTON & NUMARKAN.

WHY WOULD COUNCIL ENDORSE A PROJECT THAT WILL TAKE YET ANOTHER FARM OUT OF THE IRRIGATION SYSTEM? - SURELY THE EFFECTS OF TAKING WATER AWAY ARE ALREADY PLAINLY EVIDENT WITHIN THE SHIRE - THIS MAY "ONLY" BE 71 HA AND "NEGLECTABLE" WITHIN THE TOTAL AREA OF THE SHIRE BUT THE PARABLE WOULD BE "A RIVER STARTS FROM 1 DROP OF RAIN" -

WITHIN THE PAPERS PROVIDED TO ME IS TOO LITTLE DETAIL BUT SOME "MINOR" QUESTIONS ~~FOR~~ NEED TO BE ASKED. 1/ THE 10 METRE "LANDSCAPE" BUFFER IS NOWHERE NEAR ENOUGH - NEEDS AT LEAST DOUBLING. 2/ NO MENTION AS TO SIZE OF "INVERTER & SITE OFFICE" BUILDINGS. 3/ POSITIONING OF BUILDINGS & SIGNAGE NOT MADE CLEAR - AT PRESENT MAKE "BAD" CROSS ROAD CORNER INTO "ACCIDENT WAITING TO HAPPEN" 4/ ~~MENTION~~ MENTION OF ~~HOW~~ HOW POWER GENERATED IS BEING PUT BACK INTO GRID - ABOVE GROUND OR UNDER GROUND? 5/ AMOUNT OF ECONOMIC BENEFIT TO SHEPPARTON COUNCIL IS HOW MANY PERMANENT STAFF TO LIVE WITHIN COMMUNITY?

Does it need upgrading?

---

## Objectors Signature

Signature:

*Mr. Stephen R. Caldwell*

Date:

08/11/2012

---

## Lodgement

To ensure the Responsible Authority considers your objection, ensure the authority received it by the due date on the notice.

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- If the Council refuses the application, the applicant can also appeal.

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## Objector details

Provide details of the objector

The person you want council to communicate with about your objection

Name:	MURRAY AWERS
Organisation:	
Postal Address:	435 Victoria Rd Tallygoree
	Postcode: 3634
Contact phone:	
Mobile phone:	0427214599
Email:	
Fax:	

Please indicate your preferred contact method by numbering in order of preference

## Planning Application details

Provide the Planning Application Number and the details of the proposed application:

Planning Application Number
2017-274
Application Proposal
Solar Farm

## The land

Address of the land

Street No:	235	Street Name:	Victoria Rd
Suburb:	Tallygoree	Postcode:	3634

How will you be affected if a permit is granted?

Attach an additional page if there is insufficient room.

Unsanitary use of land now  
what one live in country  
area expect to see on way  
to & from work.

What changes would you like to see to the Application to satisfy your concerns

Attach an additional page if there is insufficient room.

Reason for Objection

DO YOU OBJECT? ☐ YES (Tick Box)

Clearly state your reasons for objection

Attach an additional page if there is insufficient room.

There are plenty of area within  
the district which are not productive  
agriculture land. This property  
is irrigation land and is currently  
watered land and highly productive  
land.  
This development would mean there  
is more irrigation water going to  
be leaving the district which I  
greatly object to.  
There is plenty of non productive  
country in the district which this  
development could go on if needed

---

## Objectors Signature

Signature:

*M. O. Plus*

Date:

D	D	/	M	M	/	Y	Y	Y	Y
---	---	---	---	---	---	---	---	---	---

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90 Welsford Street  
SHEPPARTON

For help or more information

Telephone: ■ Planning Department (03) 5832 9730 and Fax: (03) 5831 1987

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GREATER  
SHEPPARTON

Planning Enquiries  
Phone: (03) 5832 9730  
Web: [greater-shepparton.com.au](http://greater-shepparton.com.au)

# Objection to grant a Planning Permit

This form is to assist in making an objection as outlined in the Planning and Environment Act 1987.

## Privacy notice

Council is collecting the information on this form so that it may consider your objection in accordance with its legislative powers and functions and it will only be disclosed in accordance with these powers and functions. You may access the information by contacting Council.

'Please be aware that in accordance with Part 4, Section 57(5) of the Planning and Environment Act 1987 the Responsible Authority must make a copy of every objection (including personal information of the objector) available for public inspection at its office during office hours free of charge until the end of the period for which an application may be made for review of a decision on an application'.

## Any person who may be affected by the granting of a permit may object.

- If you object the Council must consider the objection unless you withdraw it.
- If you object you must state the reasons why and say how you would be affected by the grant of a permit.
- The Council may reject an objection that it considers has been made primarily to secure or maintain a direct or indirect commercial advantage for the objector.
- The Council must make a copy of every objection available at its office for any person to inspect during office hours.
- If you object prior to the Council making a decision, you will be notified of the Council's decision.
- If you object and are not satisfied with the Council's decision you must appeal within 21 days of the notice of the decision to the Victorian Civil and Administrative Tribunal.
- If the Council refuses the application, the applicant can also appeal.

Please contact the Council on (03) 5832 9730 should you require any further assistance.

## Objector details

Provide details of the objector

The person you want council to communicate with about your objection

Name: <u>G &amp; N AKERS</u>	
Organisation:	
Postal Address: <u>435 VICTORIA ROAD</u> <u>TALLYGAROPINA</u>	
Postcode:	
Contact phone: <u>58 298 478</u>	<input checked="" type="checkbox"/>
Mobile phone: <u>0408 30427298478</u>	<input type="checkbox"/>
Email: <u>geoffakers1@bigpond.com</u>	<input checked="" type="checkbox"/>
Fax:	<input type="checkbox"/>

Please indicate your preferred contact method by numbering in order of preference

## Planning Application details

Provide the Planning Application Number and the details of the proposed application:

Planning Application Number
<u>2017-274</u>
Application Proposal
<u>Solar Farm</u>

## The land

Address of the land

Street No: <u>235</u>	Street Name: <u>VICTORIA ROAD</u>
Suburb: <u>TALLYGAROPINA</u>	Postcode: <u>3634</u>

### How will you be affected if a permit is granted?

Attach an additional page if there is insufficient room.

- impacts future development opportunities for Tallygaroopna township

### What changes would you like to see to the Application to satisfy your concerns

Attach an additional page if there is insufficient room.

That it doesn't proceed.

### Reason for Objection

Clearly state your reasons for objection

Attach an additional page if there is insufficient room.

DO YOU OBJECT? ☒ YES (Tick Box)

- 2kms from Tallygaroopna township and local school. - too close.

- Application provides no discussion on future ~~to~~ residential development for Tallygaroopna - we believe a solar farm in this location impedes development for later years.

- Reduces productive agricultural land that can be irrigated. - solar farm should be located on ~~to~~ non-irrigation land.

- A reduction in irrigation land increases water prices to those that remain as there is less area to spread those charges.

- Road access to office is off Edwards Road. A large young family will live opposite this and is a real danger to young children.

- Native vegetation will be insufficient to hide 3m high solar panels.

- No discussion on size of shedding.

Overall this development is inappropriate given it is located ~~too~~ close to township.

## Objectors Signature

Signature:

*[Handwritten Signature]*

Date:

23 / 10 / 2017

## Lodgement

To ensure the Responsible Authority considers your objection, ensure the authority received it by the due date on the notice.

Lodge the completed and signed form and all documents with:

Mail:

Greater Shepparton City Council  
Locked Bag 1000  
SHEPPARTON, 3632

In Person: †

Greater Shepparton City Council  
90 Welsford Street  
SHEPPARTON

For help or more information

Telephone: ■ Planning Department (03) 5832 9730 and Fax: (03) 5831 1987

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**REGISTER SEARCH STATEMENT (Title Search) Transfer of  
Land Act 1958**

Page 1 of 1

VOLUME 08988 FOLIO 207

Security no : 124068029944M  
Produced 07/09/2017 02:46 pm

**LAND DESCRIPTION**

Lot 3 on Plan of Subdivision 098599.  
PARENT TITLE Volume 06304 Folio 674  
Created by instrument LP098599 23/08/1973

**REGISTERED PROPRIETOR**

Estate Fee Simple  
Joint Proprietors  
EDWARD GEORGE MOORE  
ALISON MAREE MOORE both of RMB 4920 ZEERUST SCHOOL RD ZEERUST 3634  
V237625Q 02/03/1998

**ENCUMBRANCES, CAVEATS AND NOTICES**

MORTGAGE AK478065T 22/07/2013  
AUSTRALIA AND NEW ZEALAND BANKING GROUP LTD

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

**DIAGRAM LOCATION**

SEE LP098599 FOR FURTHER DETAILS AND BOUNDARIES

**ACTIVITY IN THE LAST 125 DAYS**

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 235 VICTORIA ROAD TALLYGAROPNA VIC 3634

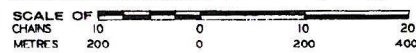
**ADMINISTRATIVE NOTICES**

NIL

eCT Control 16165A AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED  
Effective  
from 22/10/2016

DOCUMENT END

**PARISH: CONGUPNA**  
**COUNTY: MOIRA**



## APPROPRIATIONS

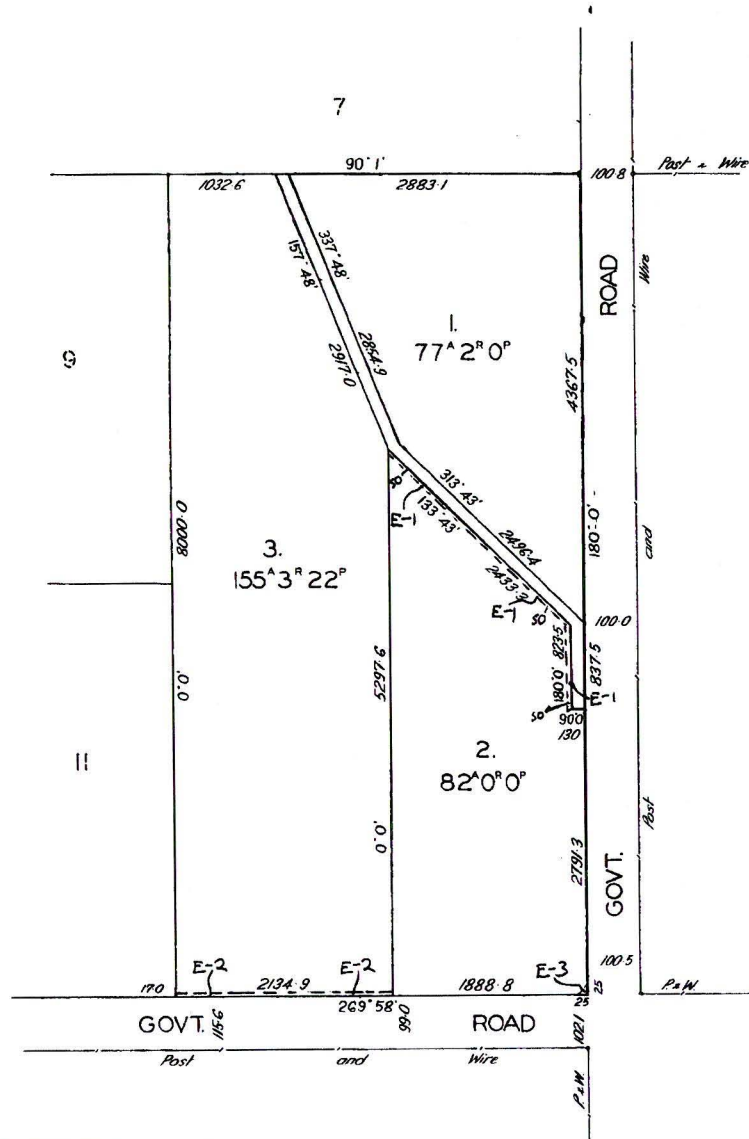
Blue: Water supply purposes.  
Green: Drainage purposes.  
Brown: Carriageway purposes.

## ENCUMBRANCES &amp; OTHER NOTATIONS

Road widths are not drawn to scale.  
For datum & ref. marks, see field notes.

## COLOUR CONVERSION

E-1 = BLUE  
E-2 = GREEN  
E-3 = BROWN



FOR APPROPRIATIONS, ETC,  
SEE BACK HEREOF

84

SUBDIVISIONAL  
CERTIFICATE OF TITLE V. 6304 F. 074

~~FOR TITLE REFERENCES TO LOTS~~  
~~SEE PARCELS INDEX~~

LP 98599  
BACK OF SHEET 1

LODGED BY Mills Oakley + McKay

DEALING No. DATE 4 / 5 / 1973

DECLARED BY Kenneth Arthur Muir

ON 14 / 12 / 1972

COUNCIL Shire of Shepparton

DATE OF CONSENT 10 / 12 / 1972

PLAN MAY BE LODGED        /        /       

PLAN APPROVED, DATE 8 / 6 / 1973 TIME 2.00 <sup>a.m.</sup>  
p.m.

THE LAND COLOURED blue  
IS APPROPRIATED  
OR SET APART FOR  
EASEMENTS OF water supply

THE LAND COLOURED green  
IS APPROPRIATED  
OR SET APART FOR  
EASEMENTS OF drainage

THE LAND COLOURED BROWN  
IS APPROPRIATED  
OR SET APART FOR  
EASEMENTS OF WAY





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**ACTIVITY IN THE LAST 125 DAYS**

NIL

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**ADMINISTRATIVE NOTICES**

NIL

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Effective  
from 22/10/2016

DOCUMENT END





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Document Identification	<b>LP098599</b>
Number of Pages (excluding this cover sheet)	<b>2</b>
Document Assembled	<b>07/09/2017 14:47</b>

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PARISH: CONGUPNA  
COUNTY: MOIRA

SCALE OF CHAINS 10 0 10 20  
METRES 200 0 200 400

## APPROPRIATIONS

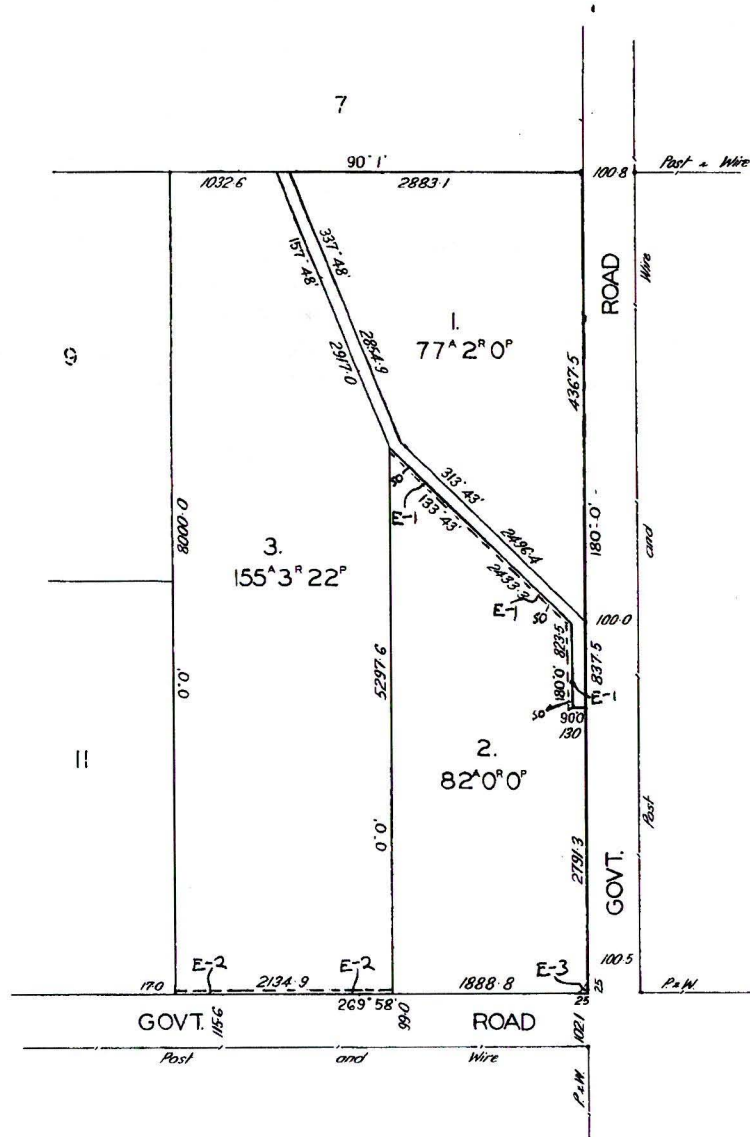
Blue : Water supply purposes.  
Green : Drainage purposes.  
Brown : Carriageway purposes.

## ENCUMBRANCES &amp; OTHER NOTATIONS

Road widths are not drawn to scale.  
For datum & ref. marks, see field notes.

## COLOUR CONVERSION

E-1 = BLUE  
E-2 = GREEN  
E-3 = BROWN



FOR APPROPRIATIONS, ETC,  
SEE BACK HEREOF

90

SUBDIVISIONAL  
CERTIFICATE OF TITLE V. 6304 F. 07A

~~FOR TITLE REFERENCES TO LOTS~~  
~~SEE PARCELS INDEX~~

LP 98599  
BACK OF SHEET 1

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DATE OF CONSENT 10 / 12 / 1972

PLAN MAY BE LODGED ..... / ..... / .....

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THE LAND COLOURED blue  
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**REGISTER SEARCH STATEMENT (Title Search) Transfer of  
Land Act 1958**

Page 1 of 1

VOLUME 08988 FOLIO 206

Security no : 124068029913V  
Produced 07/09/2017 02:45 pm

**LAND DESCRIPTION**

Lot 2 on Plan of Subdivision 098599.  
PARENT TITLE Volume 06304 Folio 674  
Created by instrument LP098599 23/08/1973

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ALISON MAREE MOORE both of RMB 4920 ZEERUST SCHOOL RD ZEERUST 3634  
V237626M 02/03/1998

**ENCUMBRANCES, CAVEATS AND NOTICES**

MORTGAGE AK478065T 22/07/2013  
AUSTRALIA AND NEW ZEALAND BANKING GROUP LTD

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**DIAGRAM LOCATION**

SEE LP098599 FOR FURTHER DETAILS AND BOUNDARIES

**ACTIVITY IN THE LAST 125 DAYS**

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 235 VICTORIA ROAD TALLYGAROPNA VIC 3634

**ADMINISTRATIVE NOTICES**

NIL

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Effective  
from 22/10/2016

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LP98599

EDITION 1

APPROVED 8/16/73

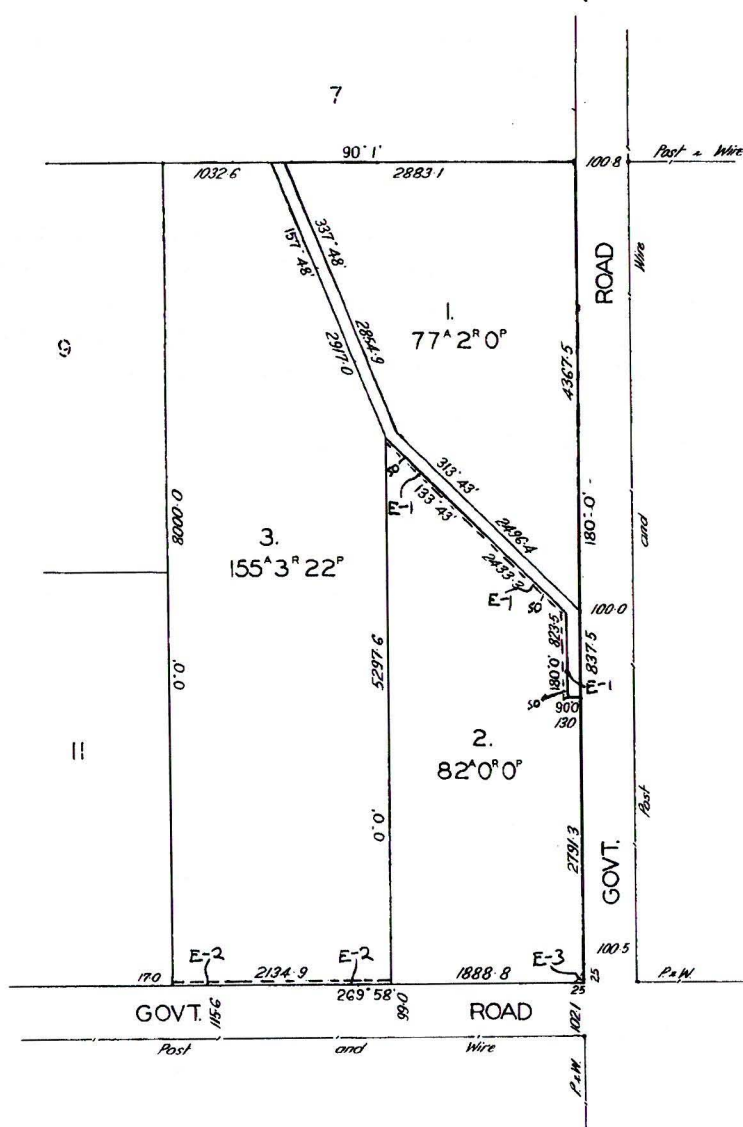
PLAN OF SUBDIVISION OF: PART OF CROWN ALLOTMENT 10 SECTION D	APPROPRIATIONS	ENCUMBRANCES & OTHER NOTATIONS
PARISH: CONGUPNA COUNTY: MOIRA	<i>Blue: Water supply purposes.</i> <i>Green: Drainage purposes.</i> <i>Brown: Carriageway purposes.</i>	<i>Road widths are not drawn to scale.</i> <i>For datum &amp; ref. marks, see field notes.</i>
SCALE OF CHAINS METRES 200 0 200 400		

COLOUR CONVERSION

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E-2 = GREEN

E-3 = BROWN



FOR APPROPRIATIONS, ETC,  
SEE BACK HEREOF

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~~FOR TITLE REFERENCES TO LOTS~~  
~~SEE PARCELS INDEX~~

LP 98599  
BACK OF SHEET 1

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ON 14 / 12 / 1972

COUNCIL Shire of Shepparton

DATE OF CONSENT 12 / 12 / 1972

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**DIAGRAM LOCATION**

SEE LP098599 FOR FURTHER DETAILS AND BOUNDARIES

**ACTIVITY IN THE LAST 125 DAYS**

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 235 VICTORIA ROAD TALLYGAROPNA VIC 3634

**ADMINISTRATIVE NOTICES**

NIL

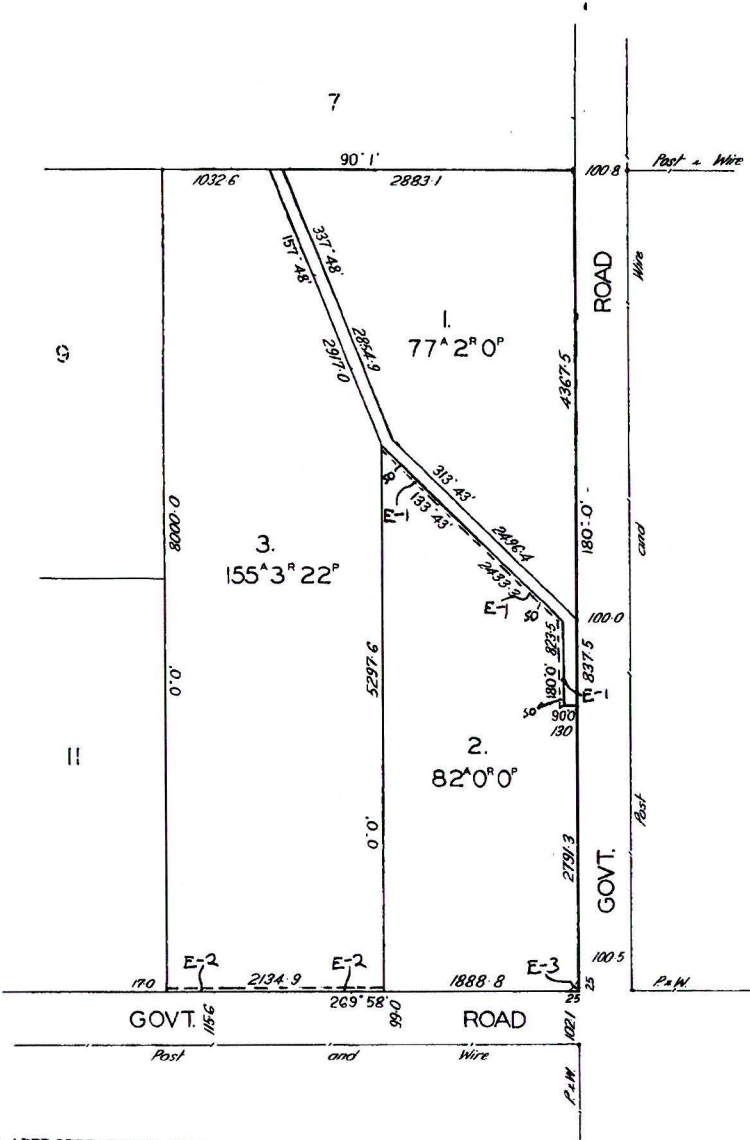
eCT Control 16165A AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED  
Effective  
from 22/10/2016

DOCUMENT END

LP98599  
EDITION 1  
APPROVED 8/6/73

<b>PLAN OF SUBDIVISION OF:</b> <b>PART OF CROWN ALLOTMENT 10</b> <b>SECTION D</b>  <b>PARISH: CONGUPNA</b> <b>COUNTY: MOIRA</b>  <b>SCALE OF CHAINS</b> 10 0 10 20 <b>METRES</b> 200 0 200 400	APPROPRIATIONS	ENCUMBRANCES & OTHER NOTATIONS
	<i>Blue: Water supply purposes.</i> <i>Green: Drainage purposes.</i> <i>Brown: Carriageway purposes.</i>	<i>Road widths are not drawn to scale.</i> <i>For datum &amp; ref. marks, see field notes.</i>

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FOR APPROPRIATIONS, ETC,  
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100

SUBDIVISIONAL  
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THE LAND COLOURED BROWN  
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OR SET APART FOR  
EASEMENTS OF WAY



Our Reference 304046

15 September 2017

Mr Colin Kalms  
Manager Planning & Building  
Greater Shepparton City Council  
Private Bag 1000  
Shepparton VIC 3630

info@shepparton.vic.gov.au

**Via Email (original not following in mail)**

Dear Colin,

**235 Victoria Street, Tallygaroopna  
Planning Permit Application for a Renewable Energy Facility (Solar Farm)**

As you are aware, Spiire Australia acts on behalf of X-Elio Australia P/L in regard to their proposal to establish renewable energy facilities within the Goulburn Valley.

On behalf of our client, please find enclosed a Planning Permit Application for the use and development of land at 235 Victoria Street, Tallygaroopna for a solar farm. The solar farm will generate 30MW of energy, which will feed directly into the existing electricity grid network. As demonstrated by the attached material, the proposal will result in a net community benefit.

To support the application, please find attached the following:

- ▶ Town Planning Report, prepared by Spiire
- ▶ Planning Permit Application Form
- ▶ Copy of Titles
- ▶ Site Layout Plan prepared by Spiire
- ▶ Technical Site Plan prepared by X-Elio
- ▶ Technical Drawings prepared by X-Elio
- ▶ NVIM Assessment report prepared by Spiire.

Council's confirmation of the statutory application fee is requested.

With recent State and Federal discussions in regard to the security of power supply, and the significant movement towards renewable energy generation, this proposal represents an exciting opportunity for Greater Shepparton City Council and the Goulburn Valley. X-Elio Australia and Spiire welcome the opportunity to discuss this proposal further. With any queries, please contact me on 5849 1007.

Yours sincerely



Jane Macey  
Principal Planning

Copy: Dr Ragini Pope, X-Elio Australia P/L



Clear Form

Office Use Only

Application No.:

Date Lodged: / /

## Application for a Planning Permit

If you need help to complete this form, read MORE INFORMATION at the end of this form.

**Any material submitted with this application, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987*. If you have any questions, please contact Council's planning department.**

**Questions marked with an asterisk (\*) must be completed.**

**If the space provided on the form is insufficient, attach a separate sheet.**

**Click for further information.**

### The Land

Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

**Street Address \***

Unit No.:	St. No.: 235	St. Name: Victoria Street
Suburb/Locality: Tallygaroopna		Postcode: 3634

**Formal Land Description \***

Complete either A or B.

**This information can be found on the certificate of title.**

If this application relates to more than one address, attach a separate sheet setting out any additional property details.

A	Lot No.:	<input type="radio"/> Lodged Plan	<input type="radio"/> Title Plan	<input type="radio"/> Plan of Subdivision	No.:
OR					
B	Crown Allotment No.:			Section No.:	
Parish/Township Name: See attached titles					

### The Proposal

**You must give full details of your proposal and attach the information required to assess the application. Insufficient or unclear information will delay your application.**

**For what use, development or other matter do you require a permit? \***

Use and development of land for a renewable energy facility (solar farm), installation of business identification signage and removal of native vegetation.

☒ Provide additional information about the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

**Estimated cost of any development for which the permit is required \***

Cost \$34 million

**You may be required to verify this estimate. Insert '0' if no development is proposed.**

## Existing Conditions

### Describe how the land is used and developed now \*

For example, vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

Agricultural land

☒ Provide a plan of the existing conditions. Photos are also helpful.

## Title Information

### Encumbrances on title \*

Does the proposal breach, in any way, an encumbrance on title such as a restrictive covenant, section 173 agreement or other obligation such as an easement or building envelope?

- ☐ Yes (If 'yes' contact Council for advice on how to proceed before continuing with this application.)
- ☒ No
- ☐ Not applicable (no such encumbrance applies).

☒ Provide a full, current copy of the title for each individual parcel of land forming the subject site. The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'instruments', for example, restrictive covenants.

## Applicant and Owner Details

Provide details of the applicant and the owner of the land.

### Applicant \*

The person who wants the permit.

Please provide at least one contact phone number \*

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

### Owner \*

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

Name:		
Title:	First Name:	Surname:
Organisation (if applicable): X-Ello Australia P/L		
Postal Address:		
Unit No.:	St. No.:	St. Name:
Suburb/Locality:		
State:		Postcode:

### Contact information for applicant OR contact person below

Business phone: 58491007	Email: jane.macey@spiire.com.au
Mobile phone: 0407884982	Fax:

### Contact person's details\*


Same as applicant ☐

Name:		
Title:	First Name: Jane	Surname: Macey
Organisation (if applicable): Spiire P/L		
Postal Address:		
Unit No.:	St. No.:	St. Name: PO Box 926
Suburb/Locality: Shepparton		
State: VIC		Postcode: 3630


Name:		
Title:	First Name: Edward and Alison	Surname: Moore
Organisation (if applicable):		
Postal Address:		
Unit No.:	St. No.: RMB 4920	St. Name: Zeerust School Road
Suburb/Locality: Zeerust		
State: VIC		Postcode: 3634
Owner's Signature (Optional):		Date:
		day / month / year

## Declaration

This form must be signed by the applicant \*

 Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit.

I declare that I am the applicant; and that all the information in this application is true and correct; and the owner (if not myself) has been notified of the permit application.

Signature: 

per X-Elia Aust.

Date: 15 Sept 2017

day / month / year

## Need help with the Application?

General information about the planning process is available at [planning.vic.gov.au](http://planning.vic.gov.au)

Contact Council's planning department to discuss the specific requirements for this application and obtain a planning permit checklist. Insufficient or unclear information may delay your application.

Has there been a pre-application meeting with a council planning officer?

☐

No

☒

Yes

If 'Yes', with whom?: Andrew Dainton and Ronan Murphy

Date: 6 Sept 2017

day / month / year

## Checklist

Have you:

☐

Filled in the form completely?

☐

Paid or included the application fee?



Most applications require a fee to be paid. Contact Council to determine the appropriate fee.



Provided all necessary supporting information and documents?

☐

A full, current copy of title information for each individual parcel of land forming the subject site.

☐

A plan of existing conditions.

☐

Plans showing the layout and details of the proposal.

☐

Any information required by the planning scheme, requested by council or outlined in a council planning permit checklist.

☐

If required, a description of the likely effect of the proposal (for example, traffic, noise, environmental impacts).

☐

Completed the relevant council planning permit checklist?

☐

Signed the declaration above?

## Lodgement

Lodge the completed and signed form, the fee and all documents with:

Greater Shepparton City Council  
Locked Bag 1000  
Shepparton VIC 3632  
90 Welsford Street  
Shepparton VIC 3632

### Contact information:

Phone: (03) 5832 9700

Email: [council@shepparton.vic.gov.au](mailto:council@shepparton.vic.gov.au)

Deliver application in person, by post or by electronic lodgement.



# SOLAR FARM DEVELOPMENT TOWN PLANNING REPORT

235 VICTORIA ROAD, TALLYGAROPNA  
SEPTEMBER 2017

PREPARED FOR X-ELIO

This report has been prepared by the office of Spiire  
144 Welsford Street PO Box 926 **Shepparton** Victoria 3632

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11/08/17	A	BB		
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## 1. INTRODUCTION

Spiire has been engaged by X-Elio to prepare a Town Planning Report in support of a planning permit application for the ***“use and development of land for a renewable energy facility (30MW solar farm), installation of a business identification sign and removal of native vegetation”***.

This Town Planning Report accompanies the planning permit application and addresses the following matters:

- ▶ The site context;
- ▶ The proposed development;
- ▶ The relevant State and local planning policies and Planning Scheme provisions; and
- ▶ The merits of the proposal.

This Report should be read in conjunction with the following documentation submitted as part of the permit application:

- ▶ Planning Permit Application Form;
- ▶ Copy of titles;
- ▶ Site and Drainage Plan prepared by Spiire;
- ▶ Technical Site Plan, prepared by x-Elio;
- ▶ Technical Drawings, prepared by X-Elio; and
- ▶ NVIM Report, prepared by Spiire.

### 1.1 OVERVIEW

X-Elio is a Spanish based company whose primary business is in renewable energy development, particularly solar farms. X-Elio has established many solar farms in numerous places around the world including Japan, South America, the Middle East, South Africa, USA and Mexico. With northern Victoria having a high amount of solar exposure, X-Elio has identified the area as a suitable location to develop renewable energy facilities.

The Planning Permit Application seeks planning approval for the use and development of land at 235 Victoria Road, Tallygaroopna for a solar farm.

The site will be interconnected to the electricity grid by approved means, as negotiated with the electrical distributor or other electric and non-electric asset controllers.

Overall the site has a total area of 95.9 hectares. Solar panels will cover the majority of the site, with the exception of the stands of native vegetation, the areas reserved for landscaping, and land required to be set aside for drainage infrastructure.

The Greater Shepparton Planning Scheme outlines the planning provisions for this site. The land is contained within the Farming Zone and is in part affected by the Floodway Overlay and the Land Subject to Inundation Overlay.

This Report assesses the proposal's consistency with the Greater Shepparton Planning Scheme, and the *Planning and Environment Act 1987*.

As evidenced throughout this Report, it is submitted the proposal is an appropriate outcome for the site and is worthy of Council support for the following reasons:

- ▶ The proposal will result in a net community benefit for the area through local employment, local purchase of construction and maintenance materials, and the generation of clean energy which can be provided back into the electricity grid network, thereby providing more certainty of supply for local users,
- ▶ There is Local, State and Federal Government policies in place to support the development of renewable energy facilities;
- ▶ The proposal is consistent with the relevant provisions of the Greater Shepparton Planning Scheme; and
- ▶ The site is relatively unconstrained, not used for intensive agricultural production and the design of the solar farm has responded appropriately to the attributes of the site.
- ▶ It is not anticipated the solar farm will adversely affect the site itself or adjoining properties in regard to their land use activity or their residents. The solar farm is a relatively peaceful operation with the panels slowly moving along trackers to follow the movement of the sun throughout the day.

## 1.2 PLANNING PERMIT TRIGGERS

The proposal triggers the need for planning approval under the following clauses:

- ▶ Clause 35.07-1 – Use of land for a renewable energy facility in the Farming Zone;
- ▶ Clause 35.07-4 – Development of land associated with a Section 2 use in the Farming Zone;
- ▶ Clause 44.01-1 – Development of land in the Land Subject to Inundation Overlay;
- ▶ Clause 44.03-1 – Development of land in the Floodway Overlay;
- ▶ Clause 52.05 – For the installation of a business identification sign; and
- ▶ Clause 52.17 – For the removal of native vegetation.

## 2. SITE CONTEXT

### 2.1 THE SITE

The site is located at 235 Victoria Road, Tallygaroopna. The site can be more formally identified as:

- ▶ Lot 2 on Plan of Subdivision 098599, Certificate of Title Volume 08988 Folio 206; and
- ▶ Lot 3 on Plan of Subdivision 098599, Certificate of Title Volume 08988 Folio 207.

There are 3 easements on the land. E-1 is located along the northern boundary of the site and is for water supply purposes. E-2 is located along the southern boundary of the site and is for drainage purposes. E-3 is in the south-eastern corner of the site for carriageway purposes. The site is approximately 95.9 hectares in area.

The site is within the Farming Zone and in part affected by the Floodway Overlay and the Land Subject to Inundation Overlay.

The site is irregular in shape and flat in topography. The only built form on the site is a dwelling and associated shedding on the south east corner of the lot. The land has been used for agricultural for many years, primarily for cropping and grazing. There are established trees in the northern area of the site with established trees to the south of the dwelling. The balance of the site is predominately clear of vegetation.

The site is bound by Victoria Road to the south, Edwards Road to the east and the property known as 50 Victoria Street, Tallygaroopna to the west. The site is bound by a Goulburn Valley Water channel to the north.



Figure 1: Subject Site

## 2.2 SURROUNDING AREA

The site is located in a farming area of the Goulburn Valley. The surrounding area is typically used for cropping, with an orchard and dairy farming to the east. All land immediately surrounding the subject site is within the Farming Zone. There are several rural dwellings along the eastern side of Edwards Road, directly opposite the subject site. These dwellings are in association with agricultural uses.

The land to the north, west and south of the site is used for mainly cropping and cattle grazing purposes. These lands are clear of built form with several scattered paddock trees.

The site is located approximately 2.3 kilometres east of the township of Tallygaroopna, and approximately 15 kilometres north-east of Shepparton.

The nearest substation to the site is located approximately 13 kilometres south of the subject site, located in the north of Shepparton.

The nearest commercial services such as accommodation, hospitals and education centres (with the exception of Tallygaroopna Primary School, approximately 2.5 kilometres west of the site) are located in Shepparton, approximately 15 kilometres south of the site.

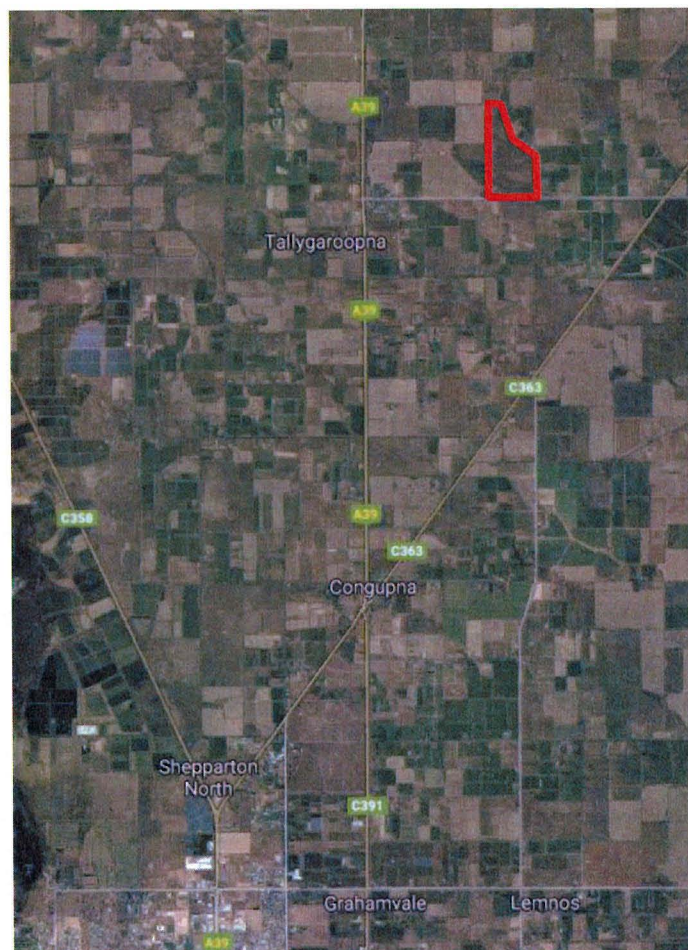


Figure 2: Surrounding Area

Subject Site: 

### 3. THE PROPOSAL

This planning permit application is for the ***“use and development of land for a renewable energy facility (30MW solar farm), installation of a business identification sign and removal of native vegetation”*** at 235 Victoria Road, Tallygaroopna.

#### 3.1 BUILT FORM

It is proposed to install solar panels across the site, a site office, and 10 inverters.

##### 3.1.1 SOLAR PANELS

The solar panels will be constructed on long ‘trackers’ of approximately 36 metres in length. The trackers move to enable the panels to track the path of the sun throughout the day. Each tracker supports 60 individual panels, and is proposed to construct 1,515 trackers across the site, totalling 90,900 modules (panels).

To support the 60 panels, poles are placed in the ground every 6 metres, with the tracker located midway between the panels, thereby supporting 30 panels on either side. Each panel measures approximately 2 square metres.

When tilted at the highest point, the panels will be 3.03 metres high and have a clearance of 0.51 metres from the ground. Please refer to the technical plans submitted with this application for further information.

##### 3.1.2 INVERTERS

The inverters, which convert the energy generated by the solar panel into alternating current (AC) for input into the electrical grid, will be contained in a shipping container, approximately 12 metres in length, 2.5 metres in width and 2.6 metres in height. Ten such containers will be located throughout the site, as identified on the plans provided with the planning permit application.

##### 3.1.3 SITE OFFICE

The site office will be located near the south-eastern corner of the site, as identified in the plans provided with the planning permit application. The office will be a small purpose built building, containing areas for storage of data output reports, maintenance schedules and work programs, table and chairs and a work station. It will not be operated every day, only accessed during maintenance visits.

Please refer to the site plan lodged with this application for further details of the layout of the built form.

#### 3.2 EMPLOYMENT

X-Elio will employ 10 -15 people to maintain and operate this facility. During construction it is anticipated X-Elio will employ approximately 150-250 people.

#### 3.3 VEHICULAR ACCESS

The proposed development will gain vehicular access via Edwards Road, as identified on the site plans submitted with the planning permit application.

A Construction Management Plan will be lodged prior to the commencement of construction to ensure appropriate vehicular access has been identified for construction related vehicles.

### 3.4 CONNECTION TO THE GRID

It is anticipated the solar farm will interconnect directly into new infrastructure along Edwards Road which connects directly to electrical infrastructure.

Powercor is the electrical distributor for this area.

The site has access to the grid via the adjacent SHTS-NKA No 1 66 kV sub transmission line located in Edwards Road. The anticipated point of connection is likely to be made into infrastructure north of the intersection of Victoria Road and Edwards Road.

SHTS-NKA No 1 66 kV is one of two lines between the Shepparton Terminal Station and the Numurkah Zone Substation. Given generation output is to exceed 10MW the farm will need to be connected to the Grid at 66 kV.

### 3.5 NATIVE VEGETATION REMOVAL

To enable the development of the site for a solar farm, it is proposed to remove 3 scattered paddock trees. Through careful design of the solar farm, X-Elio has avoided the removal of vegetation, and where not practical, the removal has been minimised.

As per the NVIM Assessment, the vegetation proposed to be removed has a strategic biodiversity score of 0.278. A general offset amount of 0.018 is required for this removal.

A third party offset equal to 0.018 general biodiversity equivalence units will be sought to ensure there is no net loss to Victoria's biodiversity.

### 3.6 SIGNAGE

Business identification signage will be located on the Edwards Road boundary of the subject site. The sign is proposed to be no larger than 3 square metres.

### 3.7 SETBACKS AND LANDSCAPING

The development proposal includes a 10 metre landscape buffer from all boundaries around the site. This landscape buffer will include a range of indigenous species including shrubs, trees and grasses to enhance the amenity of the area. Bee attracting species will also be included along the common boundary with the orchard, enhancing the pollination of the fruit trees.

A 4 metre access track will be located along the inside of the landscape buffer.

A typical cross section of the proposed landscape buffer and access track is included on the site plan submitted with the application documentation.

### 3.8 FENCING

The site will be securely fenced, with a chain mesh fence of 2 metres in height to be located on the inside of the landscape buffer. The fence will sit 0.2 metres off the ground to allow for the passage of water during a heavy rain or flood event.

### 3.9 CAR PARKING

An area for informal car parking has been provided on site, as shown on the site plan.

### **3.10 DRAINAGE**

Given the tilting nature of the panels, it is not anticipated the development will result in adverse change to the run-off generated from the site currently. The subject site will utilise the existing farm drainage infrastructure, which may be modified as necessary due to the location of the panels and poles. The legal point of discharge from the site into the Goulburn Murray Water infrastructure is in the south-eastern corner of the property. All water will be captured and drained to this point.

Please refer to the plans submitted with the application documentation for further information.

## 4. RENEWEABLE ENERGY TARGETS

Both the Victorian State Government, and the Federal Government currently have renewable energy targets in place to support and encourage the development of renewable energy facilities.

### 4.1 STATE GOVERNMENT

In June 2016, the Victorian Government committed to increase Victorian renewable energy generation targets by:

- ▶ 25% by 2020; and
- ▶ 40% by 2025.

The Government has a number of schemes and strategies in place to ensure these targets can be achieved. These are designed to deliver up to 1500MW of new large-scale renewable energy capacity by 2020, and up to 5400MW by 2025.

This proposal will contribute **30MW** of energy capacity to the Goulburn Valley region, and will contribute to the State Government's targets.

### 4.2 FEDERAL GOVERNMENT

The Renewable Energy Target (RET) scheme was introduced by the Federal Government to reduce emissions of greenhouse gases in the electricity sector, and encourage the additional generation of electricity from sustainable and renewable sources.

The target for large-scale generation of 33,000GWh in 2020 will double the amount of large-scale renewable energy being delivered by the scheme compared to the current levels, resulting in approximately 23.5% of Australia's electricity generation in 2020 will be from renewable sources.

## 5. GREATER SHEPPARTON PLANNING SCHEME

The Greater Shepparton Planning Scheme guides the use and development of this land. There are a number of State and Local planning policies with the Greater Shepparton Planning Scheme applicable to this proposal. The merits of the proposal have been assessed against the relevant policies in Section 6 of this Report.

### 5.1 STATE PLANNING POLICY FRAMEWORK

- ▶ Clause 11.07 Regional Victoria
- ▶ Clause 11.12 Hume
- ▶ Clause 12.01 Biodiversity
- ▶ Clause 13.02 Floodplains
- ▶ Clause 17 Economic Development
- ▶ Clause 19.01 Renewable energy

### 5.2 LOCAL PLANNING POLICY FRAMEWORK

- ▶ Clause 21.05 Environment
- ▶ Clause 21.07 Infrastructure

### 5.3 ZONE

- ▶ Clause 35.07 Farming Zone

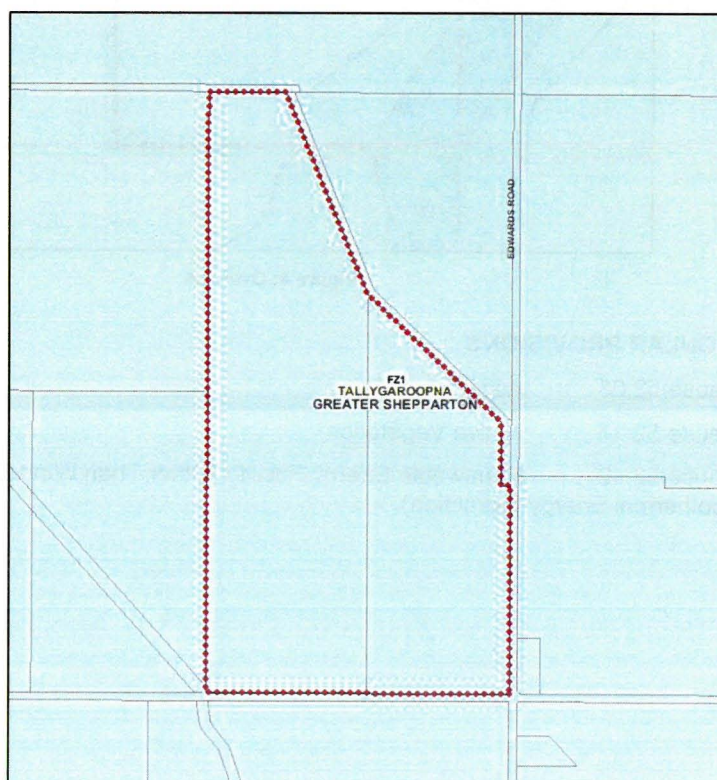


Figure 3: Zoning

#### 5.4 OVERLAY

- ▶ Clause 44.03 Floodway Overlay
- ▶ Clause 44.04 Land Subject to Inundation Overlay



Figure 4: Overlays

#### 5.5 PARTICULAR PROVISIONS

- ▶ Clause 52.05 Advertising Signs
- ▶ Clause 52.17 Native Vegetation
- ▶ Clause 52.42 Renewable Energy Facility (Other Than Wind Energy Facility and Geothermal Energy Extraction)

## 6. MERITS OF THE PROPOSAL

The following provides an analysis of the proposal's consistency with State and Local planning policies, zone, overlay and particular provisions.

### 6.1 CONSISTENCY WITH STATE AND LOCAL PLANNING POLICY

The solar farm development of land is consistent with the State and Local planning policies which have been identified in Section 5 of this Report. In particular, the solar farm will provide a renewable source of electricity to the region, along with up to 250 jobs during construction and 10-15 jobs for the ongoing maintenance of the facility. X-Elio anticipates the development will contribute nearly \$600,000 to the local economy through employment and on-going sourcing of local materials for construction and maintenance.

**Clause 11.12** of the State Planning Policy Framework details a number of strategies for development within the 'Hume region' of which Greater Shepparton is part. This solar farm is anticipated to contribute to development in the region through job creation, provision of construction and maintenance materials, as well as the security of electricity supply with the on-going production of renewable energy.

The environmental values of the site will be retained through the carefully designed layout of the solar panels. The location of the panels has been designed to ensure no significant vegetation is required to be removed from the subject site. The only vegetation proposed to be removed from the site has been identified as low in value, and comprises only three scattered paddock trees.

The development is likely to increase the biodiversity values of the site. As the development has been designed to ensure no significant native vegetation is being removed, and it is proposing to plant a number of buffer screens around the development with a range of indigenous species, the biodiversity values of the site are likely to increase through this development.

The development has been located outside the area subject to flooding and inundation, ensuring the built form will not impact natural water flows in flood events. Also, the security fencing will sit 0.2 metres off the ground to allow free passage of water during a flood event.

The development will contribute significantly to the local economy. X-Elio anticipates at least 15% of the \$33,996,600 cost of construction will go directly back into the local economy through human and physical resourcing.

**Clause 19.01-1 Provision of renewable energy** details a number of strategies regarding renewable energy development. This proposal is consistent with this State policy as the development has been appropriately located within close proximity to existing electrical infrastructure and can readily connect to the electrical substation in Shepparton. The proposal will contribute to the high demand for renewable energy in Victoria and will contribute to the **State Government's energy production targets**. It is considered unlikely the development will detrimentally impact on the surrounding area and broader community.

The development is considered to be consistent with both **Clause 21.05 Environment** and **Clause 21.07 Infrastructure** of the Local Planning Policy Framework. The environmental values of the site will be increased by the amount of native vegetation proposed to be planted as part of the landscape buffers. The infrastructure proposed as part of this development will benefit the local area and is anticipated to become a benchmark for high quality solar development in the region.

Given the above, the application is considered to be consistent with both the State and Local Planning Policy Frameworks in the Greater Shepparton Planning Scheme.

## 6.2 CONSISTENCY WITH ZONE PROVISIONS

The subject site is located within the Farming Zone pursuant to the Greater Shepparton Planning Scheme. The purpose of the Farming Zone is:

- ▶ *“To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- ▶ *To provide for the use of land for agriculture.*
- ▶ *To encourage the retention of productive agricultural land.*
- ▶ *To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.*
- ▶ *To encourage the retention of employment and population to support rural communities.*
- ▶ *To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.”*

A planning permit is required for the use and development of land for a renewable energy facility in the Farming Zone. The proposed use and development of this land for a solar farm will enable the production of renewable energy which is in increasing demand across Victoria. It is a use which cannot be provided at this scale within an urban area, and the provisions of the zone enable the consideration of such development proposals.

The proposed solar farm is unlikely to impact on surrounding properties or farming practices as it will not emit noise, dust, glare, odour or other nuisances. Once the solar farm is operational the number of vehicle movements into/from the site per week will be minimal as the only people visiting the site will be maintenance staff.

The development of the land for a solar farm will not adversely impact the visual character of the area. As stated previously the panels are designed to tilt so as to track the sun during the day. At their highest tilt the panels stand at approximately 3 metres in height. They will be at this height at the start of the day to capture the first easterly rays of light, and finish the day at the height to capture the last westerly rays of light. All other times during the day the panels will be less tilted, and therefore lower in height, being their flattest when the sun is directly overhead. During the darker hours of night the panels will move back to the highest tilt easterly facing, ready for the sunrise.

It is further noted, the highest tilt of the solar panels is not as high as other agricultural infrastructure and structures found in the area, including pivot irrigating systems, farm shedding and silos.

Although the land will be removed from its existing agricultural production for the lifespan of the solar farm, currently estimated at 25 years given current life expectancy of the trackers and panel infrastructure, the loss of traditional production from this property will not noticeably impact on the gross agricultural production of the area. The land was not used for intensive agricultural purposes, and the use of the land for a solar farm will benefit the surrounding area by providing a ‘green’ energy supply directly into the grid. With the State Government releasing high renewable energy targets for the short and medium term, this proposal is considered appropriate as it will result in a net community benefit for Tallygaroopna and the broader region.

To enhance the amenity of surrounding properties, a 10 metre wide landscaping buffer will be put in place around the boundary of the development. This will ensure the environmental qualities of the landscape are sustained and enhanced along with providing an appealing outlook to residents surrounding the development site. Once the landscape buffers mature,

the mix of smaller and tall plantings will provide a visual screen to the solar farm from the adjoining road network and surrounding properties.

Before deciding on an application to use or subdivide land, construct a building or construct or carry out works, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

Decision Guideline	Response
<b>General Issues</b>	
<ul style="list-style-type: none"> <li>▶ <i>The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.</i></li> <li>▶ <i>Any Regional Catchment Strategy and associated plan applying to the land.</i></li> <li>▶ <i>The capability of the land to accommodate the proposed use or development, including the disposal of effluent.</i></li> <li>▶ <i>How the use or development relates to sustainable land management.</i></li> <li>▶ <i>Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses.</i></li> <li>▶ <i>How the use and development makes use of existing infrastructure and services.</i></li> </ul>	<ul style="list-style-type: none"> <li>▶ As detailed in this section of the Report, the proposal is consistent with the relevant policies of the State and Local Policy Frameworks.</li> <li>▶ The use is considered to be compatible with adjoining properties. The development in the area is typically agricultural. The use of the land for a solar farm is unlikely to detrimentally impact the amenity of the surrounding land users given it does not cause nuisance, and will not have high traffic movements to and from the site for the operation of the farm.</li> </ul>
<b>Agricultural issues and the impacts from non-agricultural uses</b>	
<ul style="list-style-type: none"> <li>▶ <i>Whether the use or development will support and enhance agricultural production.</i></li> <li>▶ <i>Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production.</i></li> <li>▶ <i>The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses.</i></li> <li>▶ <i>The capacity of the site to sustain the agricultural use.</i></li> <li>▶ <i>The agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure.</i></li> <li>▶ <i>Any integrated land management plan prepared for the site.</i></li> </ul>	<ul style="list-style-type: none"> <li>▶ Although the land will not be used for agriculture, the solar farm is unlikely to impact on the surrounding agricultural uses. The panels will silently follow the path of the sun during the day, and will not emit noise to disturb nearby livestock, dust to affect fruit at the nearby orchard or odour to affect nearby landowners.</li> <li>▶ The nature of the development should not limit the expansion of adjoining and nearby agricultural uses.</li> <li>▶ Although the land may not be used for agriculture in the short term, the lifespan of solar farms is approximately 25 years. This provides the potential for this land to revert to productive agricultural use when the lifespan of this solar farm has ceased.</li> <li>▶ The solar farm will create a net community benefit by providing a new</li> </ul>

Decision Guideline	Response
	sustainable renewable energy source, both suitable for the environment and a sustainable method of energy production.
<b>Dwelling issues</b>	
<ul style="list-style-type: none"> <li>▶ Whether the dwelling will result in the loss or fragmentation of productive agricultural land.</li> <li>▶ Whether the dwelling will be adversely affected by agricultural activities on adjacent and nearby land due to dust, noise, odour, use of chemicals and farm machinery, traffic and hours of operation.</li> <li>▶ Whether the dwelling will adversely affect the operation and expansion of adjoining and nearby agricultural uses.</li> <li>▶ The potential for the proposal to lead to a concentration or proliferation of dwellings in the area and the impact of this on the use of the land for agriculture.</li> </ul>	<ul style="list-style-type: none"> <li>▶ There are no new dwellings proposed as part of this development.</li> </ul>
<b>Environmental issues</b>	
<ul style="list-style-type: none"> <li>▶ The impact of the proposal on the natural physical features and resources of the area, in particular on soil and water quality.</li> <li>▶ The impact of the use or development on the flora and fauna on the site and its surrounds.</li> <li>▶ The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.</li> <li>▶ The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.</li> </ul>	<ul style="list-style-type: none"> <li>▶ The design of the solar farm has taken the environmental features of the site into careful consideration, including avoiding areas of remnant vegetation and limiting the removal of paddock trees.</li> <li>▶ Areas on the site with significant native vegetation have been excluded from the development area.</li> <li>▶ Other areas across the site have been excluded from the development to ensure the biodiversity of the area is protected and enhanced from this development.</li> <li>▶ Appropriate offsets will be sought for vegetation proposed to be removed as part of this development.</li> </ul>
<b>Design and siting issues</b>	
<ul style="list-style-type: none"> <li>▶ The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses and to minimise the loss of productive agricultural land.</li> <li>▶ The impact of the siting, design, height, bulk, colours and materials to be used, on</li> </ul>	<ul style="list-style-type: none"> <li>▶ The buildings on site have been located appropriately on site to assist in the preservation of the landscape character of the area.</li> </ul>

Decision Guideline	Response
<p><i>the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.</i></p> <ul style="list-style-type: none"> <li>▶ <i>The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance.</i></li> <li>▶ <i>The location and design of existing and proposed infrastructure including roads, gas, water, drainage, telecommunications and sewerage facilities.</i></li> <li>▶ <i>Whether the use and development will require traffic management measures.</i></li> </ul>	<ul style="list-style-type: none"> <li>▶ The design and siting of the panels and buildings are unlikely to cause detrimental impacts to the amenity of the area.</li> <li>▶ The panels do not project glare or glint, given the orientation of the panels and the manner in which they track with the movement of the sun.</li> <li>▶ The area does not carry significant features nor does it have natural scenic beauty or importance in a planning context. Given this, the proposed built form is likely to complement the existing agricultural area with the provision of this renewable energy facility.</li> <li>▶ During the construction of the facility, traffic management measures will be put in place. The details of these traffic management measures will be provided to Council at the construction stage of the project through a Construction Management Plan. The ongoing operations of the facility is not likely to require permanent traffic management measures.</li> </ul>

Given the above, the application is considered to meet the Decision Guidelines of the Farming Zone, and is therefore an appropriate development outcome for the subject site.

### 6.3 CONSISTENCY WITH OVERLAY PROVISIONS

The subject site is affected in part by the Floodway Overlay and the Land Subject to Inundation Overlay.

The purpose of the **Floodway Overlay** is:

- ▶ *"To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- ▶ *To identify waterways, major floodpaths, drainage depressions and high hazard areas which have the greatest risk and frequency of being affected by flooding.*
- ▶ *To ensure that any development maintains the free passage and temporary storage of floodwater, minimises flood damage and is compatible with flood hazard, local drainage conditions and the minimisation of soil erosion, sedimentation and silting.*
- ▶ *To reflect any declarations under Division 4 of Part 10 of the Water Act, 1989 if a declaration has been made.*

- ▶ *To protect water quality and waterways as natural resources in accordance with the provisions of relevant State Environment Protection Policies, and particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria).*
- ▶ *To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health."*

The purpose of the **Land Subject to Inundation Overlay** is:

- ▶ *"To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.*
- ▶ *To identify land in a flood storage or flood fringe area affected by the 1 in 100 year flood or any other area determined by the floodplain management authority.*
- ▶ *To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.*
- ▶ *To reflect any declaration under Division 4 of Part 10 of the Water Act, 1989 where a declaration has been made.*
- ▶ *To protect water quality in accordance with the provisions of relevant State Environment Protection Policies, particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria).*
- ▶ *To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health."*

As demonstrated in this Section of the Report, the proposed use and development of the land for a solar farm is consistent with the relevant planning policies as detailed in the State and Local Planning Policy Frameworks in the Greater Shepparton Planning Scheme.

Given the solar panels will have a clearance of at least 0.5 metres from the ground at all times, and the poles being spaced at least 6 metres apart, the proposed development will not impede the natural flow of floodwater across the land.

The buildings on site have been sited appropriately outside of the overlays to ensure there will be little, if any, flood impact on the buildings on site, and to increase safety to life in the event of a flood.

All electrical cabling will be at a height which is clear from floodwater to ensure risks to infrastructure from flooding is not being created by this development.

Security fencing will sit 0.2 metres of the ground to allow for the free passage of water during a flood or inundation event.

Given this, the application is consistent with the purposes of both the Floodway Overlay and the Land Subject to Inundation Overlay.

## 6.4 CONSISTENCY WITH PARTICULAR PROVISIONS

### Clause 52.05 Advertising Signs

A planning permit is required for the display of a business identification sign pursuant to this particular provision.

The purpose of this particular provision is:

- ▶ *To regulate the display of signs and associated structures.*
- ▶ *To provide for signs that are compatible with the amenity and visual appearance of an area, including the existing or desired future character.*
- ▶ *To ensure signs do not contribute to excessive visual clutter or visual disorder.*
- ▶ *To ensure that signs do not cause loss of amenity or adversely affect the natural or built environment or the safety, appearance or efficiency of a road.*

This site is located in a Category 4 – Sensitive area, given the land is within the Farming Zone. The maximum size a business identification sign can be is 3 square metres.

Details of the signage will be provided to Council when available. The sign is proposed to be smaller than 3 square metres, and will be visible from the Edwards Road boundary of the site.

The size will be designed to reflect the rural character of the area and will not create visual clutter or distraction.

#### **Clause 52.17 Native Vegetation**

A planning permit is required to remove native vegetation on the site.

The purpose of this particular provision is:

- ▶ *"To ensure permitted clearing of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity.*
- ▶ *This is achieved through the following approach:*
  - *Avoid the removal of native vegetation that makes a significant contribution to Victoria's biodiversity.*
  - *Minimise impacts on Victoria's biodiversity from the removal of native vegetation.*
  - *Where native vegetation is permitted to be removed, ensure that an offset is provided in a manner that makes a contribution to Victoria's biodiversity that is equivalent to the contribution made by the native vegetation to be removed.*
- ▶ *To manage native vegetation to minimise land and water degradation.*
- ▶ *To manage native vegetation near buildings to reduce the threat to life and property from bushfire."*

The policy of avoiding and minimising native vegetation removal has been applied appropriately in this instance, with the aim of retaining as many trees as possible to ensure the biodiversity of the area is not detrimentally impacted from the vegetation removal. Only three scattered paddock trees are proposed to be removed from the site.

A third-party offset will be sought to ensure that Victoria's biodiversity is not at a net loss.

The native vegetation proposed to be removed is unlikely to adversely impact on land and water degradation given the low amount of trees proposed to be removed and the high amount of vegetation which will remain on site.

Before deciding on an application, in addition to the decision guidelines at Clause 65, the responsible authority must consider, as appropriate:

- ▶ *The contribution that native vegetation to be removed makes to Victoria's biodiversity. This is determined by:*

- *The extent and condition of the native vegetation.*
- *The biodiversity value of the native vegetation, including whether the native vegetation is important habitat for rare or threatened species.*

The vegetation proposed to be removed is limited to three small trees. The trees are not of a local significance. The vegetation is in good condition, as is the balance of the vegetation which will remain on site.

The vegetation has not been identified as a habitat for rare or threatened species. The condition of and the amount of vegetation remaining on site will provide habitat for any species which may need to relocate as a result of this native vegetation removal.

- ▶ *Whether the removal of native vegetation is defined as being in the low, moderate or high risk-based pathway, as defined in the Permitted clearing of native vegetation – Biodiversity assessment guidelines (Department of Environment and Primary Industries, September 2013) and apply the decision guidelines accordingly.*

The vegetation has been mapped as a Low Category removal, in a Location 'A' area. As this is the lowest risk removal category on the Native Vegetation Information Management system, the removal of this small amount of vegetation is unlikely to decrease Victoria's biodiversity. A general offset amount of 0.018 will be secured prior to the removal of the vegetation.

#### **Clause 52.42 Renewable Energy Facility (Other Than Wind Energy Facility and Geothermal Energy Extraction)**

This clause applies to land used and developed or proposed to be used and developed for a renewable energy facility.

The purpose of this particular provision is:

- ▶ *"To facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area."*

The proposal is considered to meet the necessary requirements and purpose of this Clause. The solar farm layout has carefully considered the existing built form and environmental value of the site, especially by designing around the large stand of trees in the northern part of the site, and providing landscaped setbacks from the site boundaries.

The solar farm itself has the capacity to produce 30MW of electricity, which will be provided back into the electricity grid network through existing infrastructure connecting to the Shepparton substation in Verney Road, Shepparton. The development will not produce waste, therefore a Works Approval is not required from the Environment Protection Authority.

Before deciding on an application, in addition to the decision guidelines of Clause 65, the responsible authority must consider, as appropriate:

- ▶ *The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference*

The proposed solar farm is unlikely to impact the surrounding area with regard to noise, glint, light spill, vibration, smell or electromagnetic interference as these nuisances will not be generated by or emitted from the development.

The design and orientation of the panels restricts glare and glint to zero. The panels have been designed to track the movement of the sun in order to capture the maximum amount of sunlight possible. Therefore, the angle at which the light hits the panel is the same as the angle at which the light is refracted from the panel. This is consistent with the purpose of the solar farm, which is to gather the light to produce energy, rather than to deflect it from the panels.

The panels do not make sound. The trackers will be well maintained (oiled) so they track effectively, and will therefore not emit any noise as they move in line with the path of the sun.

The only lighting on site will be security lighting for the inverter containers and site office. This will not create light spill, and will be similar to the lighting commonly found around farm buildings, including shed, dairies and other agricultural buildings.

Similarly, the solar farms do not emit smell or vibration. They are generally peaceful places, with panels moving slowly to follow the alignment of the sun.

The source of potential electromagnetic emission is the inverters. As shown on the plans submitted with the permit application, the inverters are contained within insulated containers, constructed to required standards and specifications. In addition, the inverters are located away from nearby dwellings. In this regard, the proposed development is unlikely to cause electromagnetic interference on the property or its surrounds.

► *The impact of the proposal on significant views, including visual corridors and sightlines.*

The subject site, like the surrounding land, is generally flat in topography. There are no significant views or sightlines within vicinity of the site. The solar farm development will not detract from the rural landscapes, however will add visual interest and diversity to the view lines in this area of Tallygaroopna.

As shown on the development plans forming part of the planning permit application, a 10 metre wide landscape buffer will be planted along all boundaries of the site. This buffer will enhance the amenity of the site through the planting of indigenous trees, shrubs and grasses.

► *The impact of the proposal on the natural environment and natural systems.*

The site does not contain any significant natural environments. There is a floodway through the southern area of the site, however the built form will not impact the natural flood carrying capacity of the site due to the nature of the built form proposed for the site.

The layout of the panels has avoided the area of native vegetation in the northern portion of the site, and in doing so will retain this environmental attribute of the site. Given this, the proposed solar farm is unlikely to cause adverse impact on the natural environment of the subject site and its surrounding area.

► *Whether the proposal will require traffic management measures.*

When the solar farm is operational, traffic entering and exiting the site will be minimal, generally being maintenance crew visiting as required. As such, traffic management measures are not required once the site is operational.

As common with infrastructure projects of this scale, traffic management will be required during the construction period. A construction management plan will be submitted to Council prior to the commencement of works.

Given the above, the application is considered to meet the relevant requirements and purpose of this particular provision.

## 7. CONCLUSION

This Report establishes a sound planning basis for Greater Shepparton City Council to support the proposed ***“use and development of land for a renewable energy facility (30MW solar farm), installation of a business identification sign and removal of native vegetation”*** at 235 Victoria Road, Tallygaroopna.

This Report demonstrates there is consistency with:

- ▶ The relevant policies, objectives and strategies from the State and Local Planning Policy Frameworks;
- ▶ The provisions of the Farming Zone;
- ▶ The provisions of the Floodway Overlay and the Land Subject to Inundation Overlay;
- ▶ The provisions of:
  - Clause 52.05 Advertising Signs,
  - Clause 52.17 Native Vegetation, and
  - Clause 52.47 Renewable Energy Facility (Other than Wind Energy Facility and Geothermal Energy Extraction); and
- ▶ The sensitivity to the site and its environs; and the amenity of the adjoining properties.

It is submitted the application should be supported as:

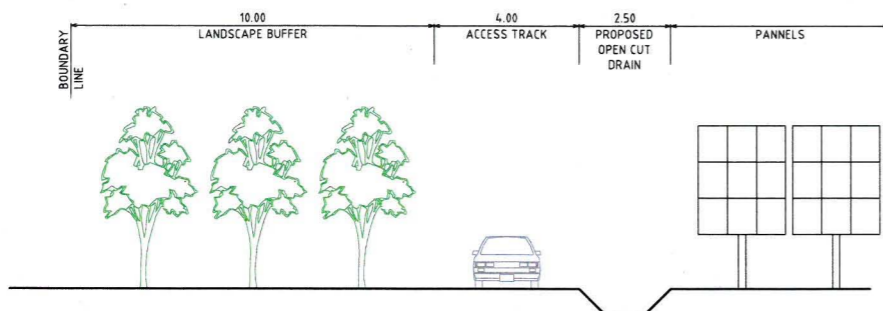
- ▶ The proposal will result in a net community benefit for the area through local employment, local purchase of construction and maintenance materials, and the generation of clean energy which can provided back into the electricity grid network, thereby providing more certainty of supply for local users,
- ▶ There is Local, State and Federal Government policies in place to support the development of renewable energy facilities;
- ▶ The proposal is consistent with the relevant provisions of the Greater Shepparton Planning Scheme; and
- ▶ The site is relatively unconstrained, not used for intensive agricultural production and the design of the solar farm has responded appropriately to the attributes of the site.
- ▶ It is not anticipated the solar farm will adversely affect the adjoining properties - their land use activity or their residents. The solar farm is a relatively peaceful operation with the panels slowly moving along trackers to follow the movement of the sun throughout the day.

For the above reasons, the proposal is commended to Council as one seeing to achieve the relevant outcomes promoted by the Greater Shepparton City Council, the State Government of Victoria and the Federal Government of Australia.

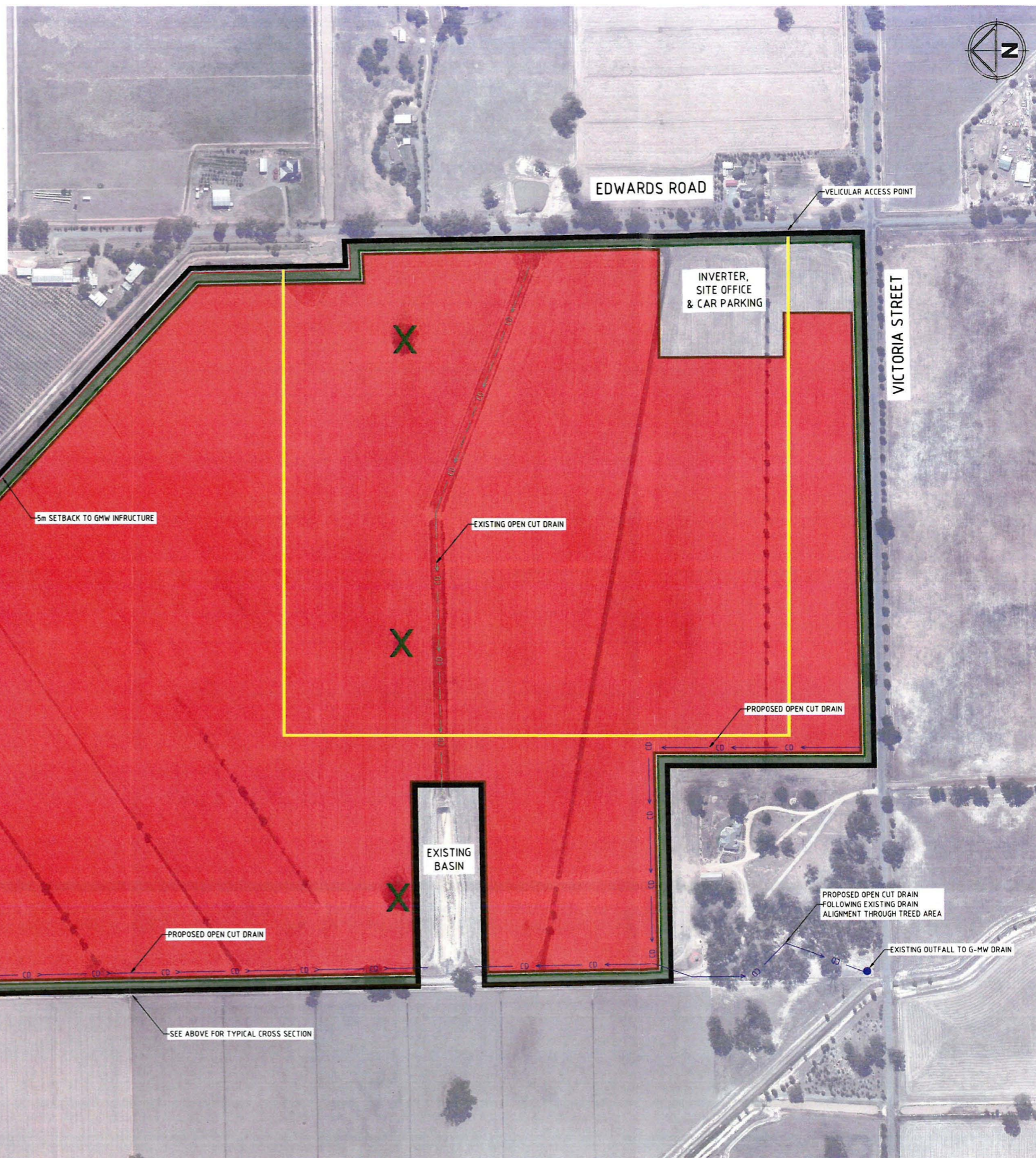
Accordingly, it is respectfully requested Council consider this application favourably.

# LEGEND

- PANELS - AREA OF 71ha
- 10m LANDSCAPE BUFFER
- TREES TO BE REMOVED
- AREA OF WORKS
- LANDSCAPE BUFFER
- GRAVEL ROAD
- ACCESS TRACK



TYPICAL CROSS SECTION  
NOT TO SCALE



file name: 304046CG300 SITE PLAN.dwg layout name: CG300, plotted by: Charlene Chessells  
file location: \\spiire.com.au\shared\data\304046CG300\304046CG300\304046CG300.dwg plot date: 06/09/2017 11:37 AM Sheet 1 of 1

Rev	Amendments	Approved	Date
A	FOR PLANNING SUBMISSION	B.B	06-09-17

H: 1:2500  
SCALE @ A1



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Designed \_\_\_\_\_ Checked \_\_\_\_\_  
Authorised \_\_\_\_\_ Date \_\_\_\_\_

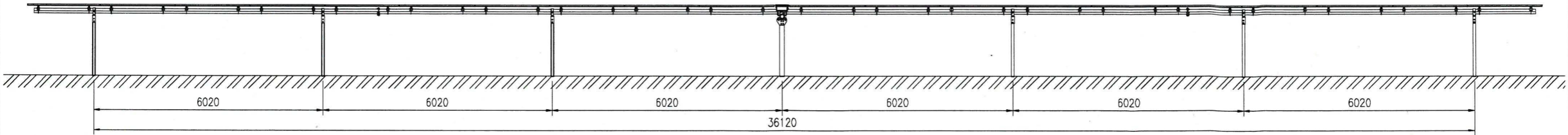
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SOLAR FARM DEVELOPMENT  
PROPOSED DRAINAGE PLAN

CITY OF GREATER SHEPPARTON  
X-ELIO

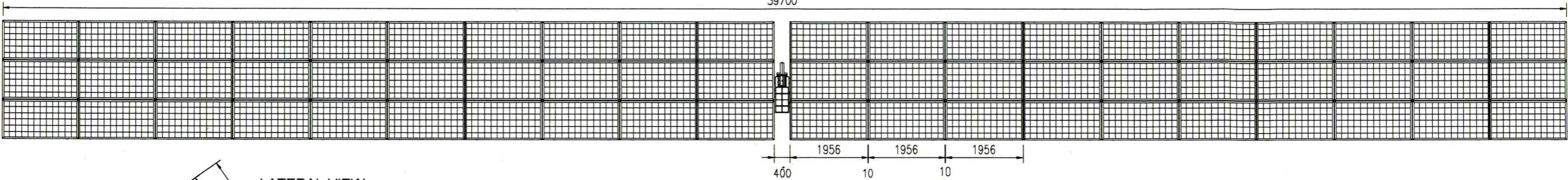
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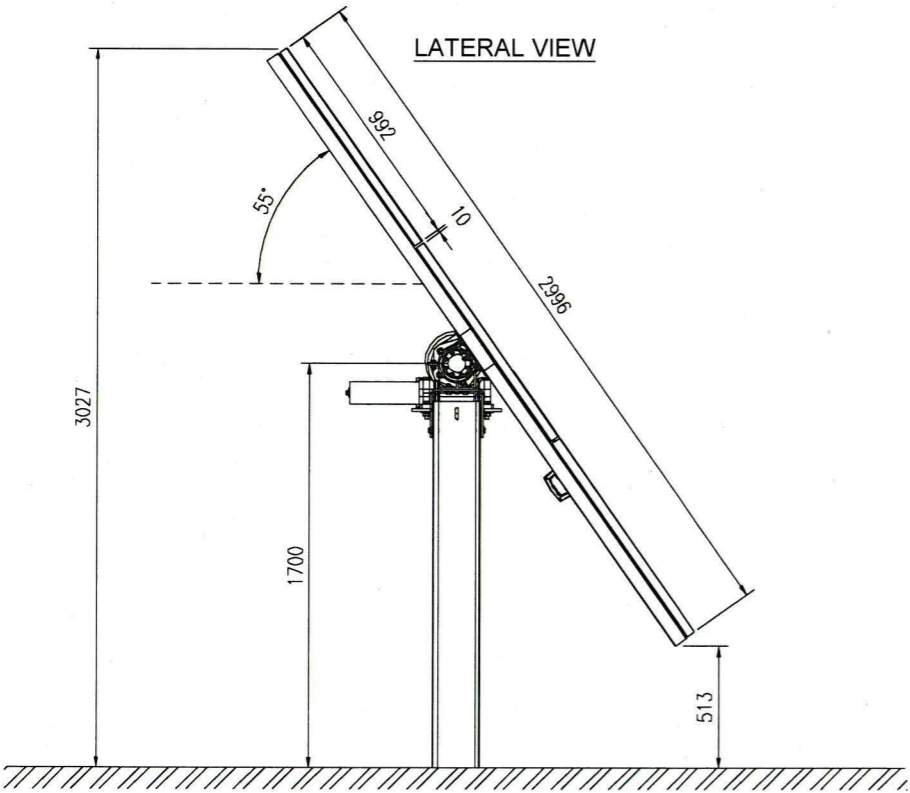
FRONT VIEW



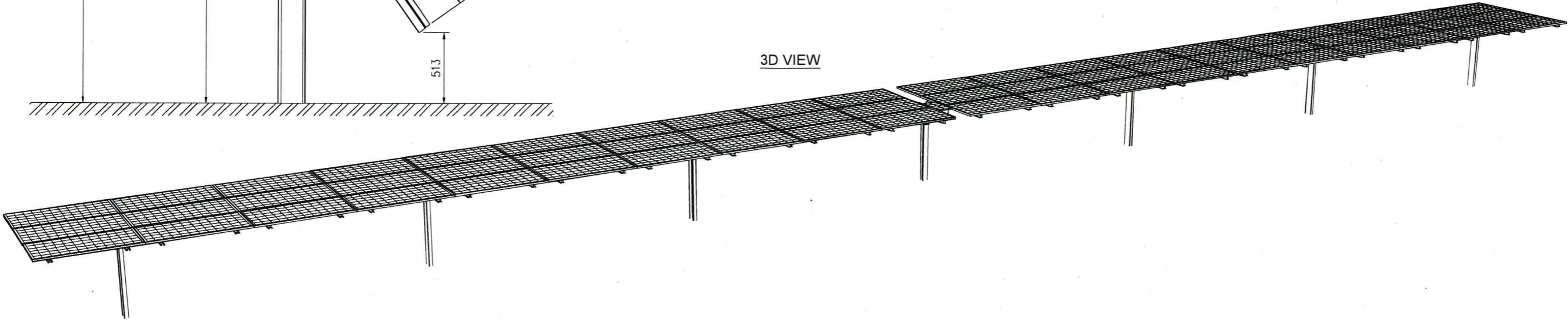
PLAN VIEW



LATERAL VIEW



3D VIEW



Measures in mm

DATE			
20-03-2017			
Format/Size	Drawn	Checked	Approved
A3			



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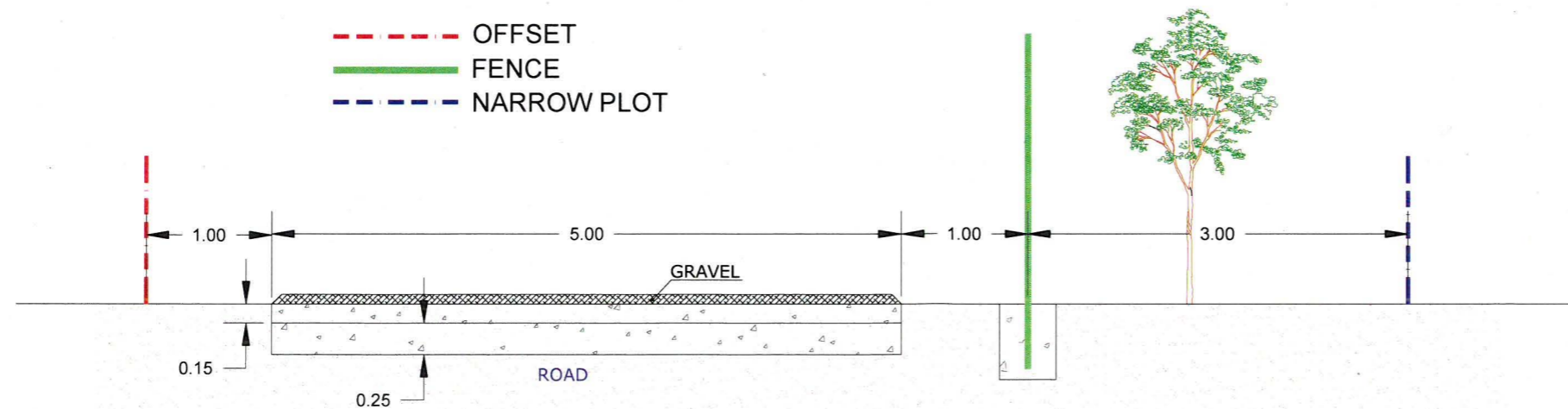
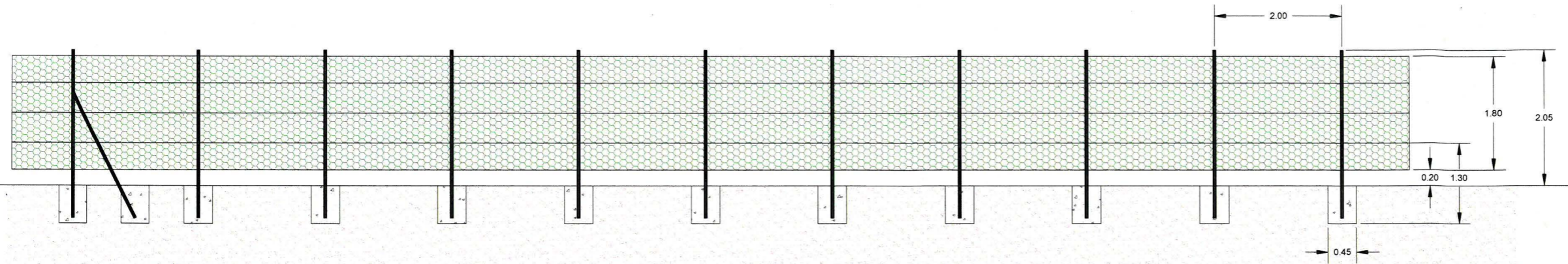
**TRACSMART  
LOCALIDAD (PAIS)  
GENERAL VIEW - 60 MODULES**

Drawing N°: HXXG0000-OF-001

Replaces:

Project N°: XXXX-GSS-0000





NOTES

REV DATE DESCRIPTION

REVISIONS

DESIGNED CHECKED APPROVED Vº Bº CUST

GPS MNG LFC

DATE SCALE

03.2017 1:75 1:50

**X-ELIO**

C/ Ombú 3, 2ª planta Tel.: +34 911770010  
28045 Madrid Fax.: +34 911770025

CUSTOMER

PROJECT SOLAR PHOTOVOLTAIC PROJECT  
WITH SINGLE AXIS TRACKER

LOCATION SHEPARTON - VICTORIA - AUSTRALIA

TITLE

FENCE

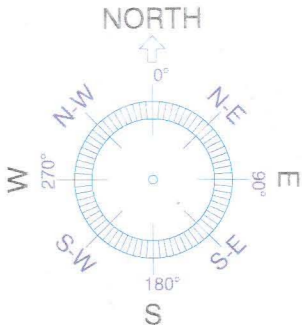
PROJ Nº SIZE Nº PLANE SHEET REV

DT\_AUS\_VIC004 A3 OC-VALL 02 00



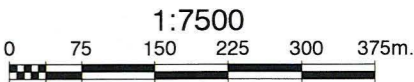
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PEAK POWER	30.906 MWp
MODULE TECHNOLOGY	Monocrystalline
MODULE TYPE	TSM-340DD14A
MODULE POWER	340 Wp
MODULE DIMENSIONS	1956 X 992 mm
STRUCTURE	SINGLE AXIS TRACKER
NUMBER OF TRACKERS	1515
NUMBER OF MODULS	90900
INVERTERS	INGECON SUN 1165TTL B420 OUTDOOR

NOTES



LEGEND

- NARROW PLOT
- OFFSET
- FENCE
- GRAVEL ROAD
- SINGLE AXIS TRAKER (60 MODULES)
- INVERTERS + TRANSFORMER
- SITE OFFICE



REV	DATE	DESCRIPTION
REVISIONS		
DESIGNED	CHECKED	APPROVED
GPS	MNG	LFC
DATE	SCALE	
03.2017	1:7500	



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CUSTOMER

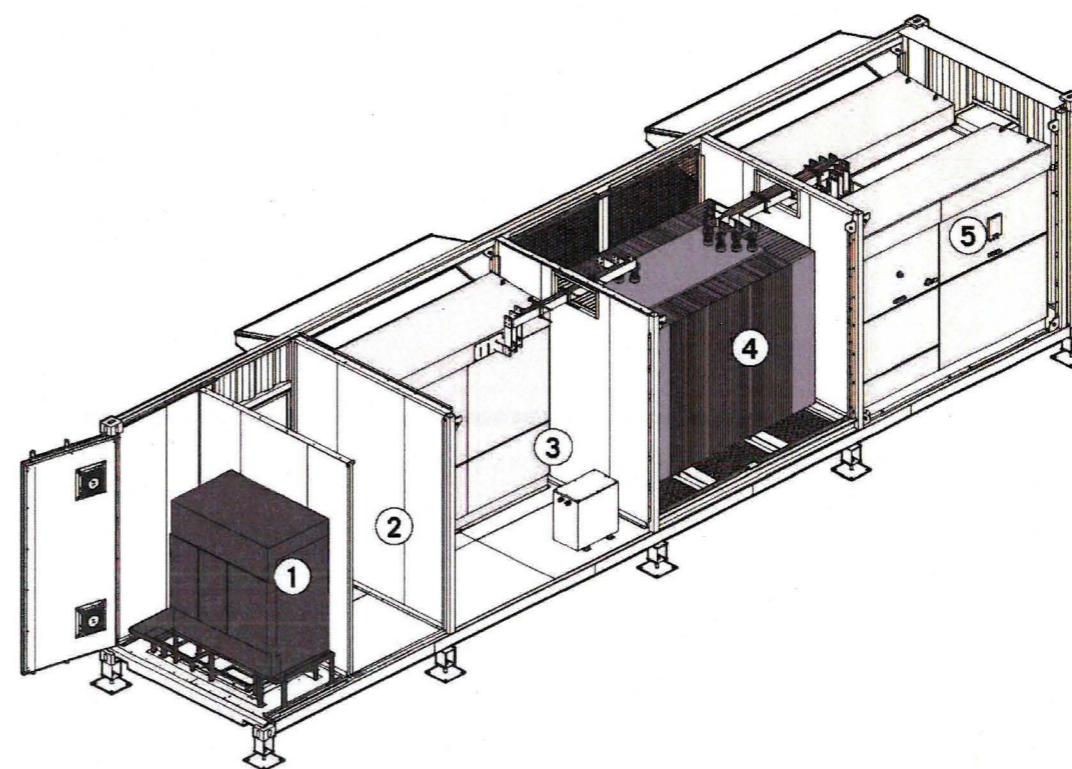
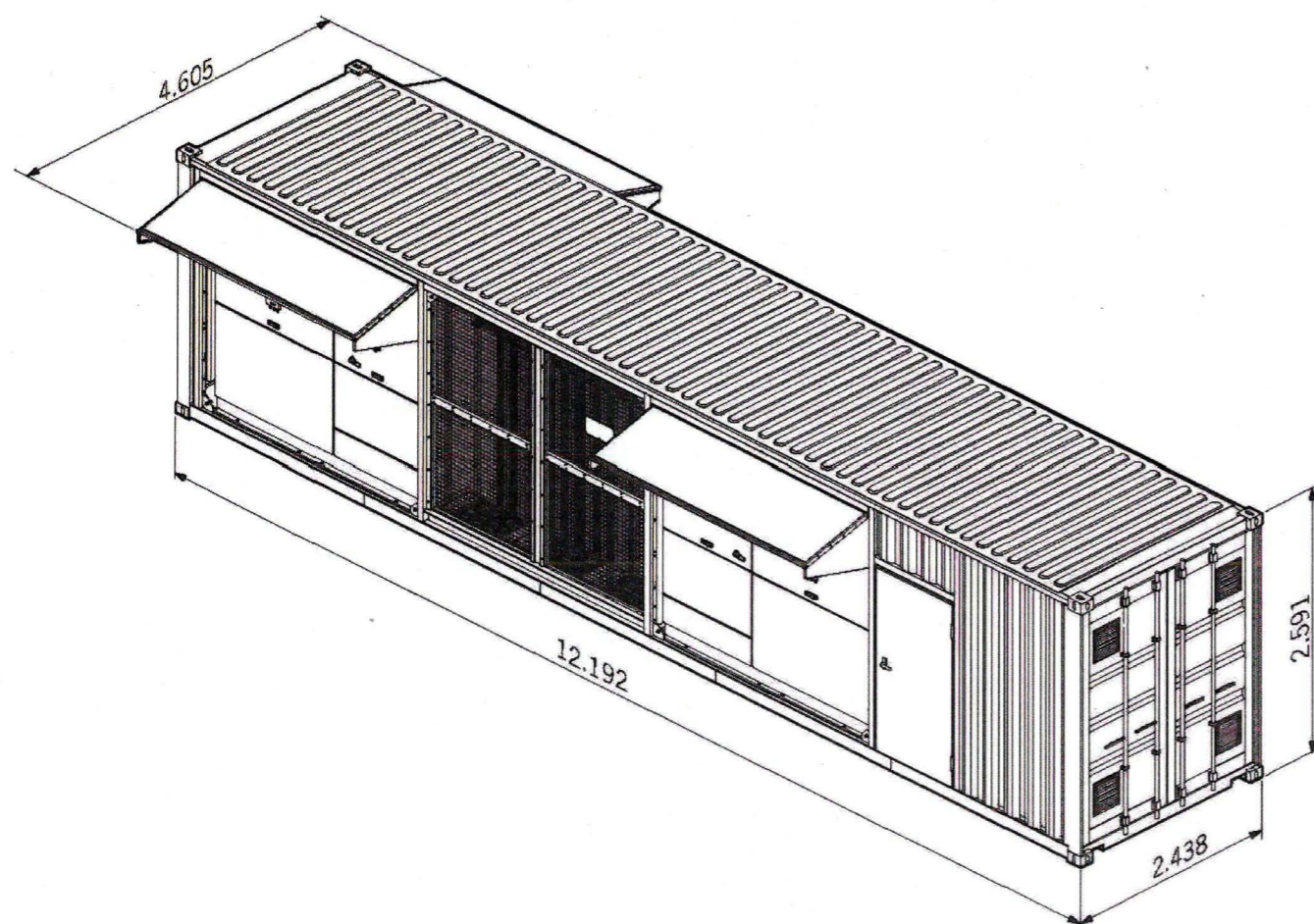
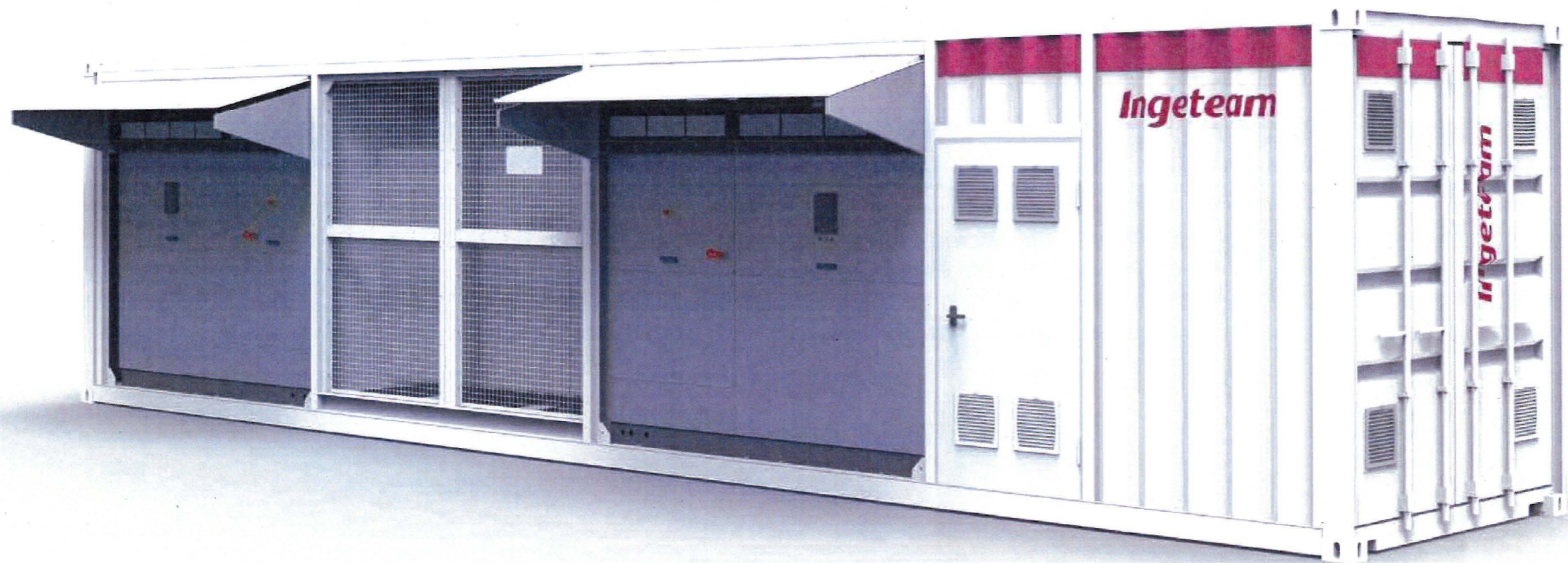
PROJECT  
SOLAR PHOTOVOLTAIC PROJECT  
WITH SINGLE AXIS TRACKER

LOCATION  
SHEPARTON - VICTORIA - AUSTRALIA

TITLE  
GENERAL LAYOUT

PROJ Nº	SIZE	Nº PLANE	SHEET	REV
DT_AUS_VIC004	A3	GE-DIS	01	00





1. Medium voltage switchgear, ancillary services and communications cabinet
2. Customizable Low Voltage compartment
3. Inverter and ancillary services transformer
4. Power transformer
5. Inverters and ancillary services transformer

NOTES

REV	DATE	DESCRIPTION

REVISIONS

DESIGNED	CHECKED	APPROVED	VS BY CUST
GPS	MNG	LFC	

DATE

SCALE

03.2017 NO SCALE

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28045 Madrid

Tel.: +34 911770010  
Fax.: +34 911770025

CUSTOMER

PROJECT

SOLAR PHOTOVOLTAIC PROJECT

WITH SINGLE AXIS TRACKER

LOCATION

SHEPARTON - VICTORIA - AUSTRALIA

TITLE

INVERTER

PROJ Nº

DT\_AUS\_VIC004

SIZE

A3

Nº PLANE

ED-INV

SHEET

03

REV

00



# Biodiversity assessment report

Biodiversity information for applications for permits to remove native vegetation under clause 52.16 or 52.17 of the Victoria Planning Provisions

Date of issue: 05 September 2017

Time of issue: 14:38:14

**Property address** 235 VICTORIA ROAD TALLYGAROPNA 3634

## Summary of marked native vegetation

<b>Risk-based pathway</b>	<b>Low</b>
<b>Total extent</b>	3 trees
Scattered trees	3 trees
<b>Location risk</b>	A

See Appendix 1 for risk-based pathway details

## Offset requirements

If a permit is granted to remove the marked native vegetation, a requirement to obtain a native vegetation offset will be included in the permit conditions. The offset must meet the following requirements:

<b>Offset type</b>	General offset
<b>Offset amount (general biodiversity equivalence units)</b>	0.018
<b>Offset attributes</b>	
Vicinity	Goulburn Broken Catchment Management Authority (CMA)
Minimum strategic biodiversity score	0.222
<b>Strategic biodiversity score of marked native vegetation</b>	0.278

See Appendix 2 for offset requirements details

# Biodiversity assessment report

## Next steps

This proposal to remove native vegetation must meet the application requirements of the low risk-based pathway and it will be assessed in the low risk-based pathway.

If you wish to remove the marked native vegetation you are required to apply for a permit from your local council.

The Biodiversity assessment report should be submitted with your application for a permit to remove native vegetation you plan to remove, lop or destroy.

The Biodiversity assessment report provides the following information that is required to be provided with your application for a permit to remove native vegetation:

- The location of the site where native vegetation is to be removed.
- The area of the patch of native vegetation and/or the number of any scattered trees to be removed.
- Maps or plans containing information set out in the *Permitted clearing of native vegetation - Biodiversity assessment guidelines*.
- The risk-based pathway of the application for a permit to remove native vegetation.
- The strategic biodiversity score of the native vegetation to be removed.
- The offset requirements should a permit be granted to remove native vegetation.

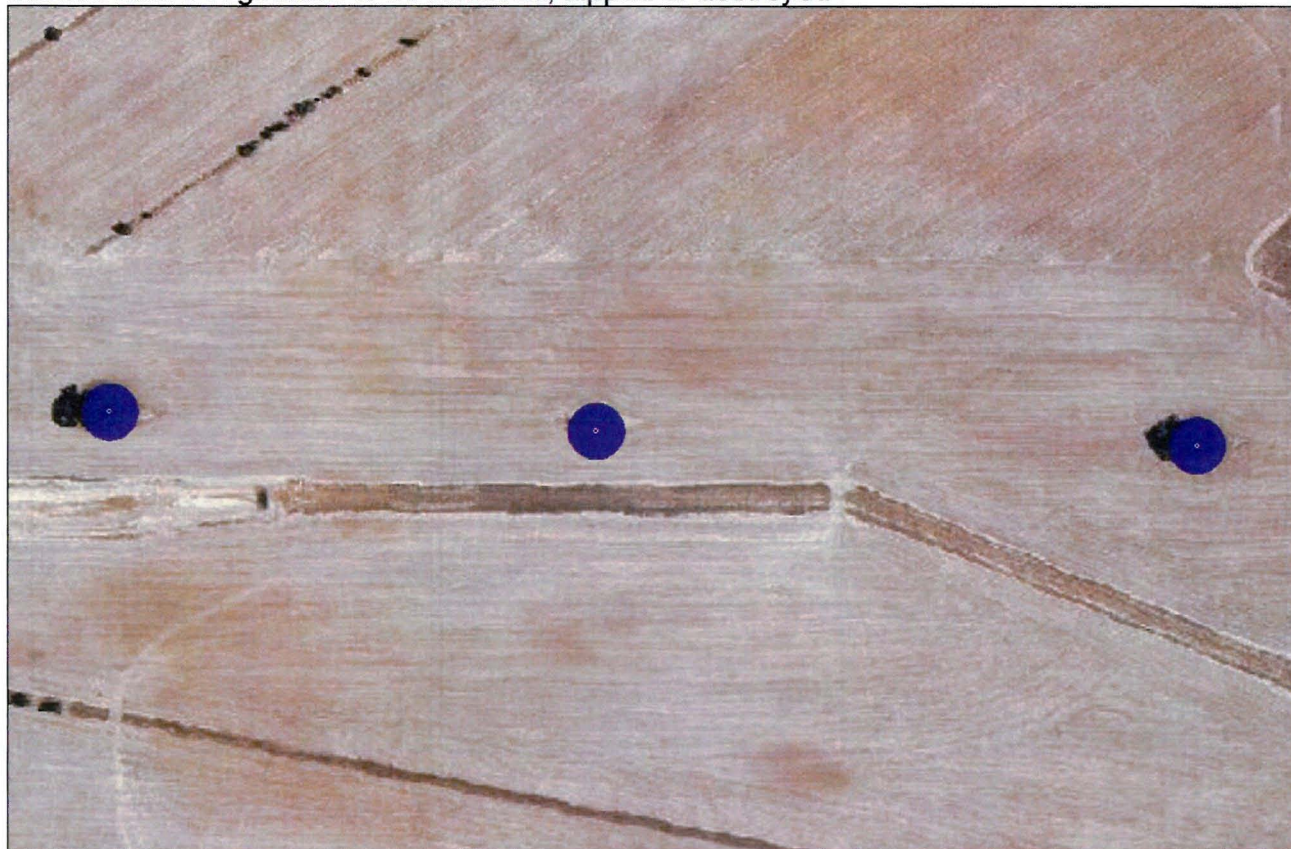
If you have undertaken any permitted clearing on your property within the last five years contact DELWP to confirm offset requirements.

Additional information is required when submitting an application for a permit to remove native vegetation. Refer to the *Permitted clearing of native vegetation - Biodiversity assessment guidelines* for a full list of application requirements.



# Biodiversity assessment report

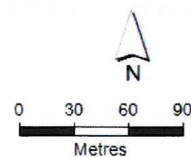
## Maps of marked native vegetation

Marked native vegetation to be removed, lopped or destroyed



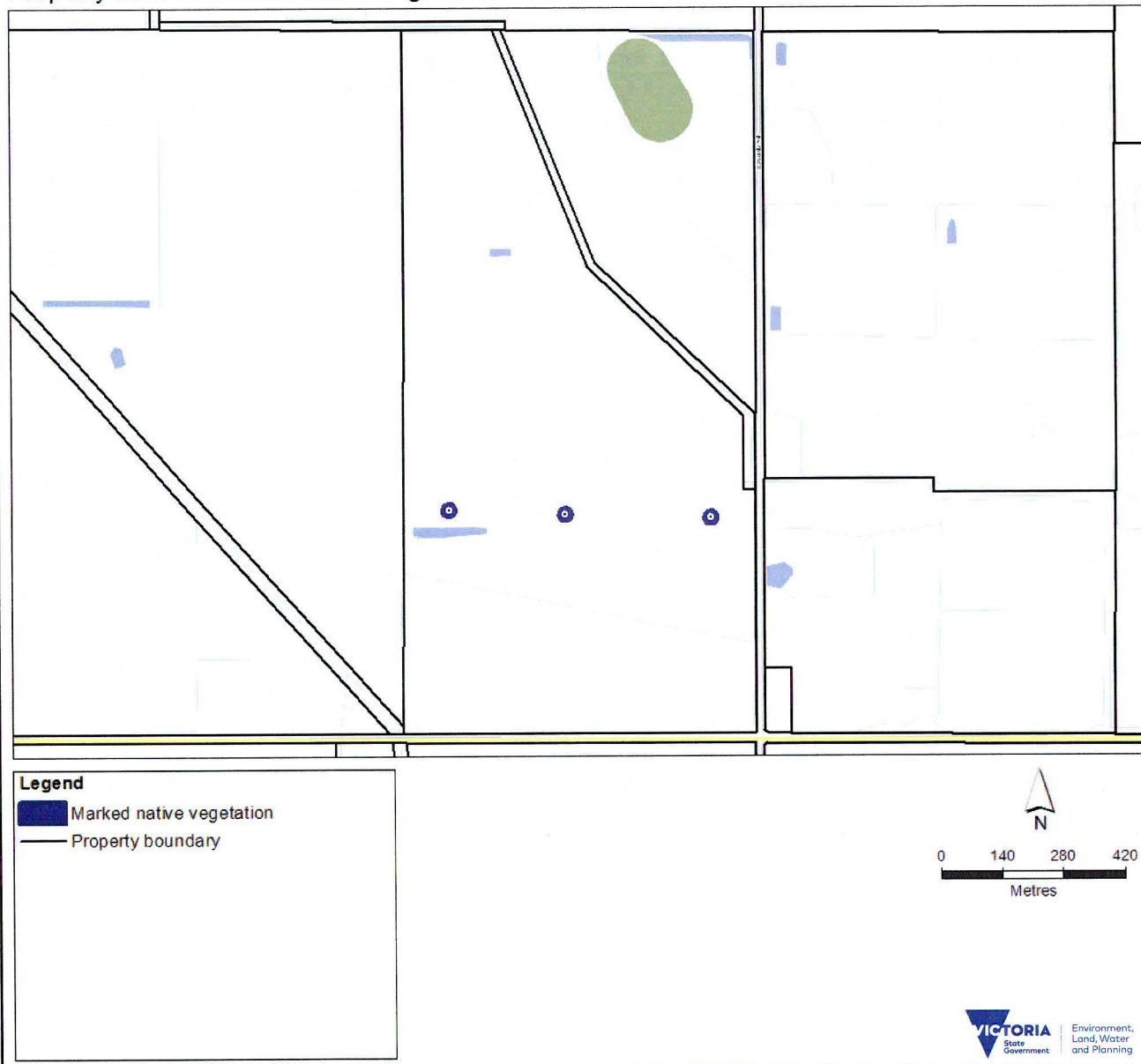
### Legend

-  Marked native vegetation
-  Property boundary



# Biodiversity assessment report

## Property view of marked native vegetation



See Appendix 3 for biodiversity information maps

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[www.delwp.vic.gov.au](http://www.delwp.vic.gov.au)

Obtaining this publication does not guarantee that an application will meet the requirements of clauses 52.16 or 52.17 of the Victoria Planning Provisions or that a permit to remove native vegetation will be granted.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of clauses 52.16 or 52.17 of the Victoria Planning Provisions.



Environment,  
Land, Water  
and Planning

146

# Biodiversity assessment report

## Appendix 1 - Risk-based pathway details

<b>Risk-based pathway</b>	<b>Low</b>
<b>Total extent</b>	3 trees
Scattered trees	3 trees
<b>Location risk</b>	A

### Why is the risk-based pathway low?

The following table explains how the risk-based pathway is determined:

Extent	Location A	Location B	Location C
< 15 scattered trees	Low	Moderate	High
≥ 15 scattered trees	Moderate	High	High

The marked native vegetation is located entirely within Location A and has a total extent of less than 15 scattered trees.

At this location, native vegetation removal of this size is not expected to have a significant impact on the habitat of any rare or threatened species. As a result, an application for the removal of this native vegetation must meet the requirements of, and will be assessed in, the low risk-based pathway.

For further information on location risk please see *Native vegetation location risk map factsheet*. For information on the determination of the risk-based pathway see *Permitted clearing of native vegetation – Biodiversity assessment guidelines*.

### Have you received a planning permit to remove native vegetation in the last five years?

If you have undertaken any permitted clearing on your property within the last five years, the extent of this past clearing must be included in the total extent of your current permit application. The risk-based pathway for your application requirements and assessment pathway is determined using the combined extent of permitted clearing within the last five years and proposed clearing.

If the risk-based pathway determined from this combined extent is low, contact DELWP to confirm offset requirements.

# Biodiversity assessment report

## Appendix 2 - Offset requirements details

If a permit is granted to remove the marked native vegetation the permit condition will include the requirement to obtain a native vegetation offset. This offset must meet the following requirements:

<b>Offset type</b>	General offset
<b>Offset amount (general biodiversity equivalence units)</b>	0.018
<b>Offset attributes</b>	
Vicinity	Goulburn Broken Catchment Management Authority (CMA)
Minimum strategic biodiversity score	0.222
<b>Strategic biodiversity score of marked native vegetation</b>	0.278

### Native vegetation to be removed

<b>Total extent (hectares) for calculating habitat hectares</b>	0.213	<p>This is the total area of the marked native vegetation in hectares.</p> <p>The total extent of native vegetation is an input to calculating the habitat hectares of a site and in calculating the general biodiversity equivalence score. Where the marked native vegetation includes scattered trees, each tree is converted to hectares using a standard area calculation of 0.071 hectares per tree.</p>
<b>Condition score*</b>	0.200	<p>This is the weighted average condition score of the marked native vegetation. This condition score has been calculated using the <i>Native vegetation condition map</i>.</p> <p>The condition score of native vegetation is a site-based measure of how close the native vegetation is to its mature natural state, as represented by a benchmark reflecting pre-settlement circumstances. The <i>Native vegetation condition map</i> is a modelled layer based on survey data combined with a benchmark model and a range of other environmental data.</p>
<b>Habitat hectares</b>	0.043	<p>Habitat hectares is a site-based measure that combines extent and condition of native vegetation. The habitat hectares of native vegetation is equal to the current condition of the vegetation (condition score) multiplied by the extent of native vegetation.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <math display="block">\text{Habitat hectares} = \text{total extent} \times \text{condition}</math> </div>
<b>Strategic biodiversity score</b>	0.278	<p>This is the weighted average strategic biodiversity score of the marked native vegetation. This strategic biodiversity score has been calculated using the <i>Strategic biodiversity map</i>.</p> <p>The strategic biodiversity score of native vegetation is a measure of the native vegetation's importance for Victoria's biodiversity, relative to other locations across the landscape. The <i>Strategic biodiversity map</i> is a modelled layer that prioritises locations on the basis of rarity and level of depletion of the types of vegetation, species habitats, and condition and connectivity of native vegetation.</p>

# Biodiversity assessment report

<b>General biodiversity equivalence score</b>	0.012	<p>The general biodiversity equivalence score quantifies the relative overall contribution that the native vegetation to be removed (the marked native vegetation) makes to Victoria's biodiversity. It is calculated as follows:</p> <div> <p>General biodiversity equivalence score = habitat hectares × strategic biodiversity score</p> </div>
---	-------	--

\* Offset requirements for partial clearing: If your proposal is to remove parts of the native vegetation in a remnant patch (for example only understorey plants) the condition score must be adjusted. This will require manual editing of the *condition score*, and an update to the following calculations that the biodiversity assessment tool has provided: *habitat hectares*, *general biodiversity equivalence score* and *offset amount*.

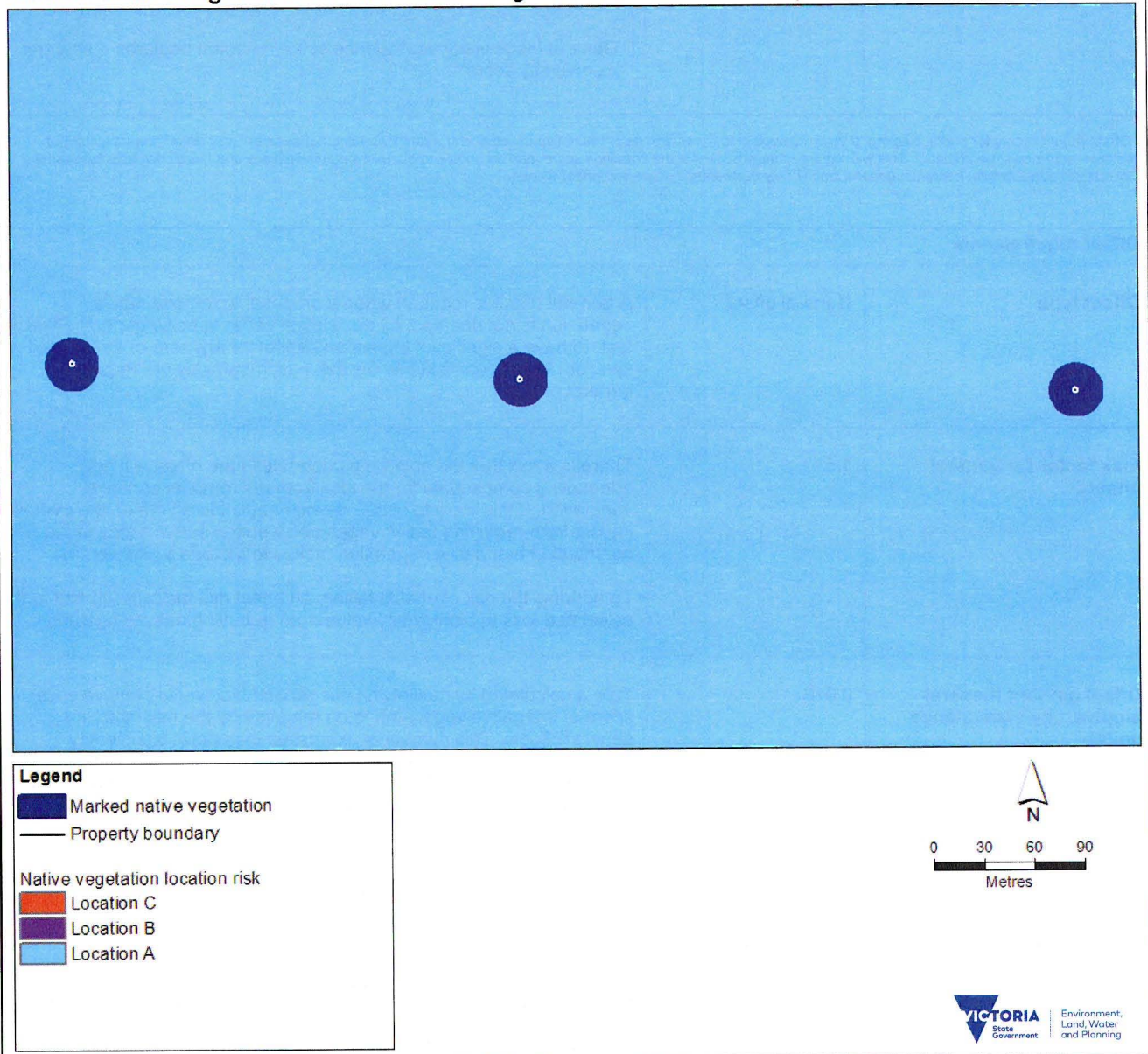
## Offset requirements

<b>Offset type</b>	General offset	A general offset is required when a proposal to remove native vegetation is not deemed, by application of the specific-general offset test, to have a significant impact on habitat for any rare or threatened species. All proposals in the low risk-based pathway will require a general offset.
<b>Risk factor for general offsets</b>	1.5	<p>There is a risk that the gain from undertaking the offset will not adequately compensate for the loss from the removal of native vegetation. If this were to occur, despite obtaining an offset, the overall impact from removing native vegetation would result in a loss in the contribution that native vegetation makes to Victoria's biodiversity.</p> <p>To address the risk of offsets failing, an offset risk factor is applied to the calculated loss to biodiversity value from removing native vegetation.</p>
<b>Offset amount (general biodiversity equivalence units)</b>	0.018	<p>This is calculated by multiplying the general biodiversity equivalence score of the native vegetation to be removed by the risk factor for general offsets. This number is expressed in general biodiversity equivalence units and is the amount of offset that is required to be provided should the application be approved. This offset requirement will be a condition to the permit for the removal of native vegetation.</p> <div> <p>Risk adjusted general biodiversity equivalence score = general biodiversity equivalence score clearing × 1.5</p> </div>
<b>Minimum strategic biodiversity score</b>	0.222	The strategic biodiversity score of the offset site must be at least 80 per cent of the strategic biodiversity score of the native vegetation to be removed. This is to ensure offsets are located in areas with a strategic value that is comparable to, or better than, the native vegetation to be removed.
<b>Vicinity</b>	Goulburn Broken CMA	The offset site must be located within the same Catchment Management Authority boundary as the native vegetation to be removed.

# Biodiversity assessment report

## Appendix 3 - Biodiversity information maps

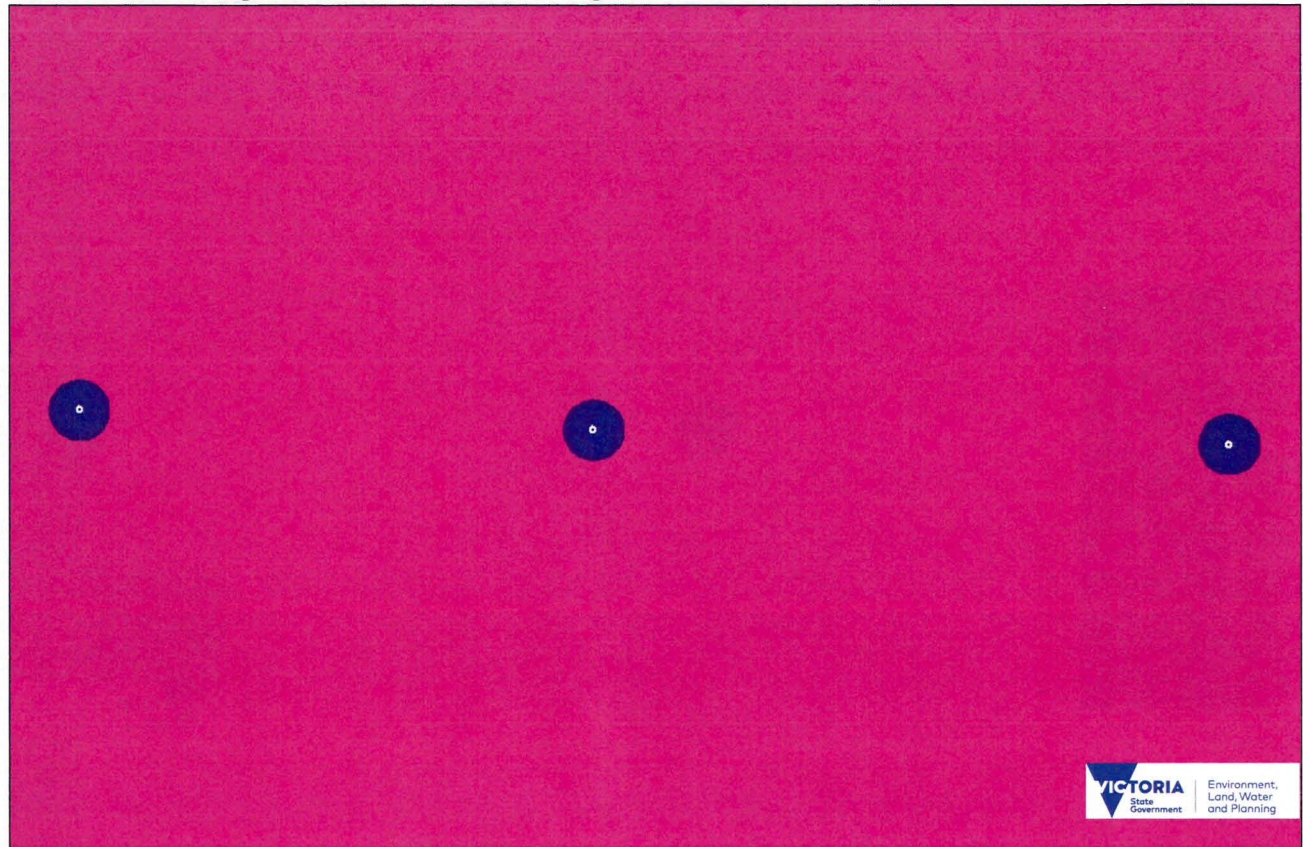
Marked native vegetation and the *Native vegetation location risk map*





150

# Biodiversity assessment report






Marked native vegetation and the *Native vegetation condition map*



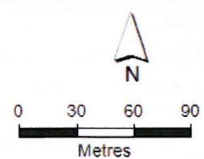
## Legend

-  Marked native vegetation
-  Property boundary

## Native vegetation condition\*

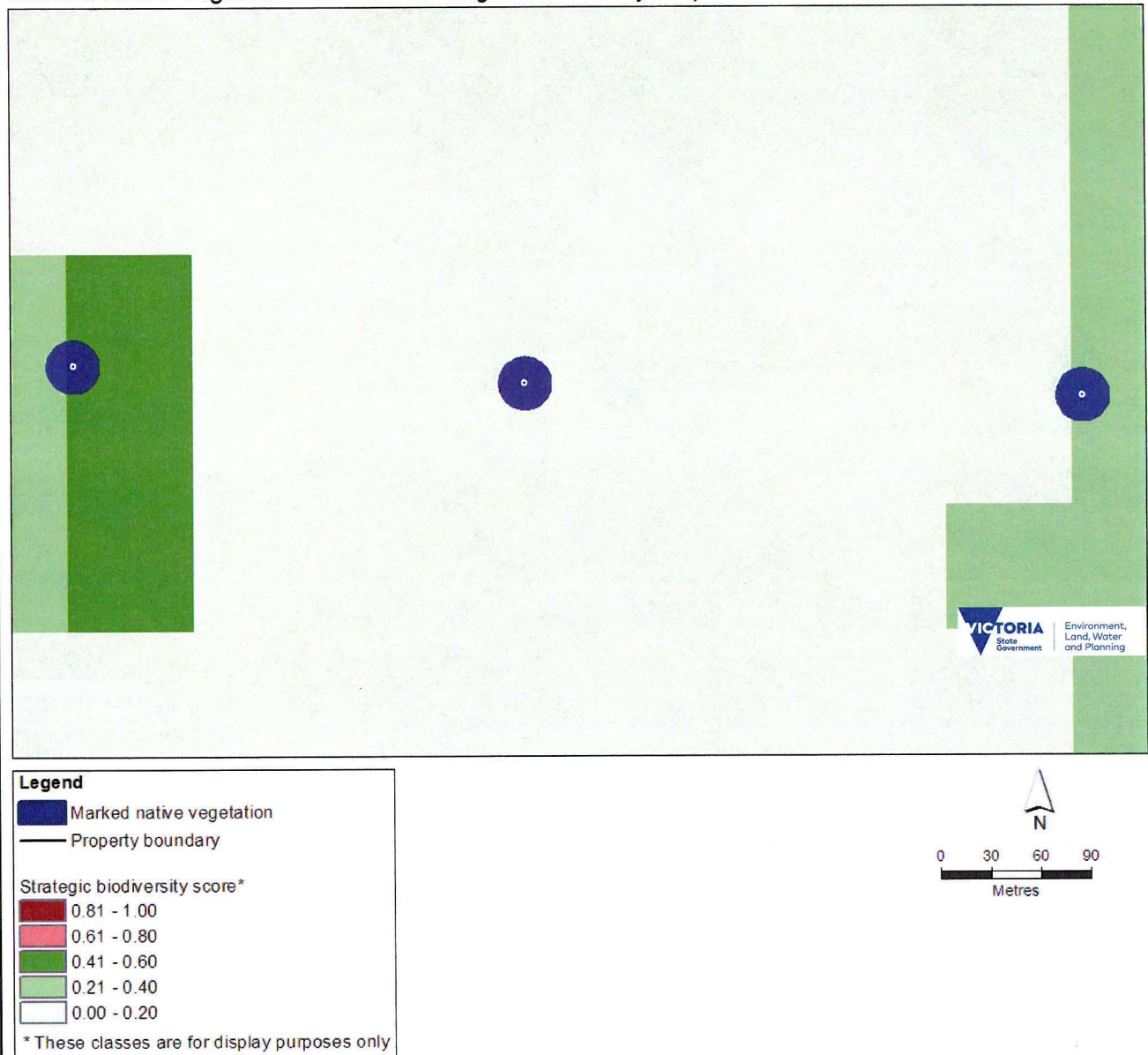
-  0.81 - 1.00
-  0.61 - 0.80
-  0.41 - 0.60
-  0.21 - 0.40
-  0.00 - 0.20

\* These classes are for display purposes only



# Biodiversity assessment report

Marked native vegetation and the *Strategic biodiversity map*



# Planning Property Report

from [www.planning.vic.gov.au](http://www.planning.vic.gov.au) on 15 September 2017 02:51 PM

**Address:** 235 VICTORIA ROAD TALLYGAROPNA 3634

**Lot and Plan Number:** Lot 2 LP98599

**Local Government (Council):** GREATER SHEPPARTON **Council Property Number:** 176314

**Directory Reference:** VicRoads 32 J5

This property has a total of 2 parcels.

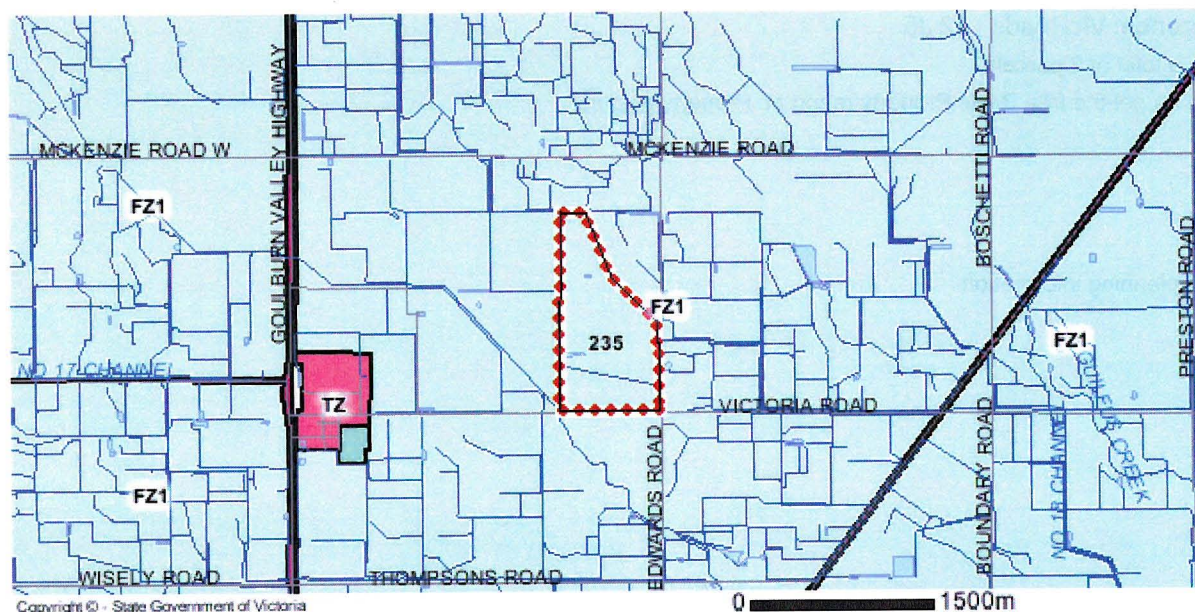
For full parcel details get the free Basic Property report at [Property Reports](#)

See next page for planning information

## Planning Zone

### FARMING ZONE (FZ)

### FARMING ZONE - SCHEDULE 1 (FZ1)



Note: labels for zones may appear outside the actual zone - please compare the labels with the legend.

### Zones Legend

ACZ - Activity Centre	IN1Z - Industrial 1	R1Z - General Residential
B1Z - Commercial 1	IN2Z - Industrial 2	R2Z - General Residential
B2Z - Commercial 1	IN3Z - Industrial 3	R3Z - General Residential
B3Z - Commercial 2	LDRZ - Low Density Residential	RAZ - Rural Activity
B4Z - Commercial 2	MUZ - Mixed Use	RCZ - Rural Conservation
B5Z - Commercial 1	NRZ - Neighbourhood Residential	RDZ1 - Road - Category 1
C1Z - Commercial 1	PCRZ - Public Conservation & Resource	RDZ2 - Road - Category 2
C2Z - Commercial 2	PDZ - Priority Development	RGZ - Residential Growth
CA - Commonwealth Land	PPRZ - Public Park & Recreation	RLZ - Rural Living
CCZ - Capital City	PUZ1 - Public Use - Service & Utility	RUZ - Rural
CDZ - Comprehensive Development	PUZ2 - Public Use - Education	SUZ - Special Use
DZ - Dockland	PUZ3 - Public Use - Health Community	TZ - Township
ERZ - Environmental Rural	PUZ4 - Public Use - Transport	UFZ - Urban Floodway
FZ - Farming	PUZ5 - Public Use - Cemetery/Crematorium	UGZ - Urban Growth
GRZ - General Residential	PUZ6 - Public Use - Local Government	
GWAZ - Green Wedge A	PUZ7 - Public Use - Other Public Use	
GWZ - Green Wedge	PZ - Port	

- - - Urban Growth Boundary  
 ++++++ Railway    +---+---+ Tram    --- River, stream    Lake, waterbody

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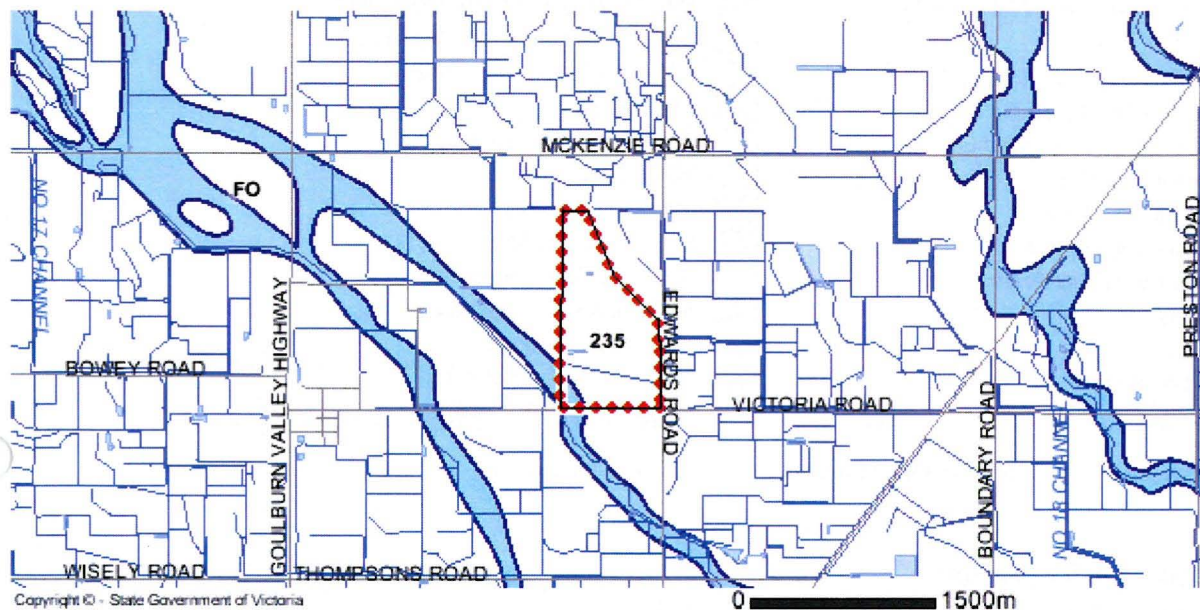


Environment,  
Land, Water  
and Planning

## Planning Overlays

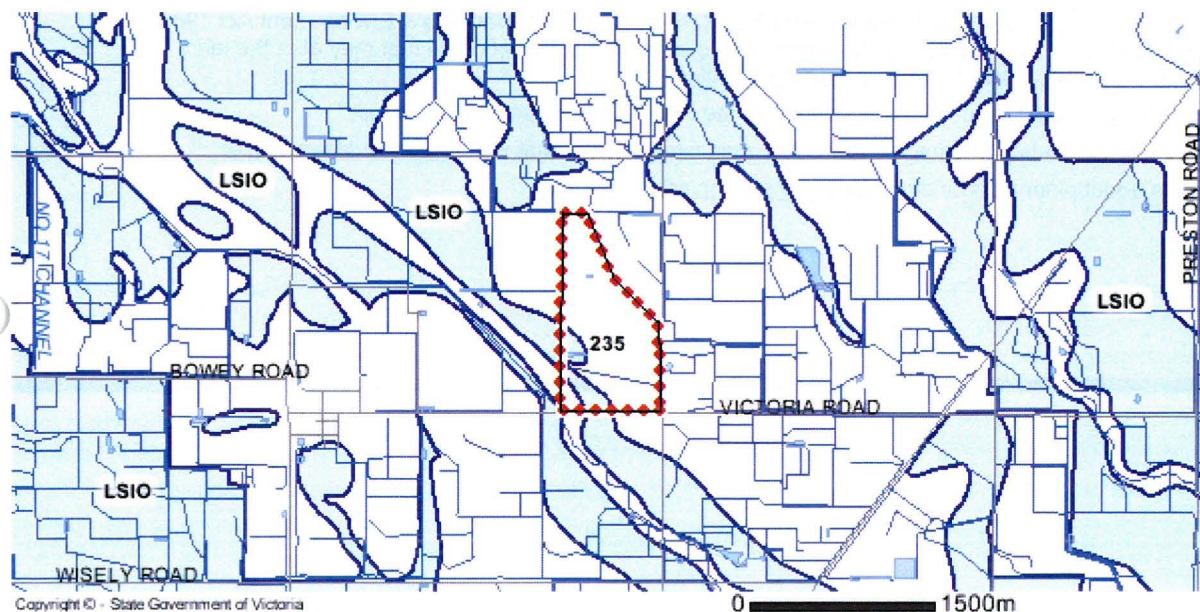
### FLOODWAY OVERLAY (FO)

### FLOODWAY OVERLAY SCHEDULE (FO)



### LAND SUBJECT TO INUNDATION OVERLAY (LSIO)

### LAND SUBJECT TO INUNDATION OVERLAY SCHEDULE (LSIO)



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


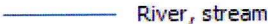
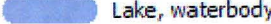


Environment,  
Land, Water  
and Planning

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Page 3 of 4

## Planning Overlays Legend

### Overlays Legend

	AEO - Airport Environs		LSIO - Land Subject to Inundation
	BMO - Bushfire Management (also WMO)		MAEO1 - Melbourne Airport Environs 1
	CLPO - City Link Project		MAEO2 - Melbourne Airport Environs 2
	DCPD - Development Contributions Plan		NCO - Neighbourhood Character
	DDO - Design & Development		PD - Parking
	DDOPT - Design & Development Part		PAO - Public Acquisition
	DPO - Development Plan		RO - Restructure
	EAO - Environmental Audit		RCO - Road Closure
	EMO - Erosion Management		SBO - Special Building
	ESO - Environmental Significance		SLO - Significant Landscape
	FO - Floodway		SMD - Salinity Management
	HO - Heritage		SRO - State Resource
	IPO - Incorporated Plan		VPO - Vegetation Protection
 Railway		 Tram	
 River, stream		 Lake, waterbody	

Note: due to overlaps some colours on the maps may not match those in the legend.

## Further Planning Information

Planning scheme data last updated on 12 September 2017.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.

This report provides information about the zone and overlay provisions that apply to the selected land.

Information about the State, local, particular and general provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting [Planning Schemes Online](#)

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the Planning & Environment Act 1987.

It does not include information about exhibited planning scheme amendments, or zonings that may affect the land.

To obtain a Planning Certificate go to [Titles and Property Certificates](#)

For details of surrounding properties, use this service to get the Reports for properties of interest

To view planning zones, overlay and heritage information in an interactive format visit [Planning Maps Online](#)

For other information about planning in Victoria visit [www.planning.vic.gov.au](http://www.planning.vic.gov.au)

## 10.01

28/03/2018  
VC145

## INTEGRATED DECISION MAKING

Society has various needs and expectations such as land for settlement, protection of the environment, economic well-being, various social needs, proper management of resources and infrastructure. Planning aims to meet these by addressing aspects of economic, environmental and social well-being affected by land use and development.

Planning authorities and responsible authorities should endeavour to integrate the range of policies relevant to the issues to be determined and balance conflicting objectives in favour of net community benefit and sustainable development for the benefit of present and future generations. However in bushfire affected areas, planning authorities and responsible authorities must prioritise the protection of human life over all other policy considerations.

Consistent with the objectives of local government under the *Local Government Act 1989*, municipal planning authorities are required to identify the potential for regional impacts in their decision-making and co-ordinate strategic planning with their neighbours and other public bodies to achieve sustainable development and effective and efficient use of resources.



## **11.07**

31/03/2017  
VC134

## **REGIONAL VICTORIA**

### **11.07-1**

31/03/2017  
VC134

### **Regional planning**

#### **Objective**

To develop regions and settlements which have a strong identity, are prosperous and are environmentally sustainable.

#### **Strategies**

Identify and assess the spatial and land use planning implications of a region's strategic directions in Regional Strategic Plans.

Ensure regions and their settlements are planned in accordance with any relevant regional growth plan.

Apply the following principles to settlement planning in Victoria's regions, including the peri-urban areas:

#### **A network of integrated and prosperous regional settlements**

Support a network of integrated and prosperous regional settlements by:

- Strengthening networks of settlements by maintaining and improving transport links, digital connectivity, spatial patterns of service delivery, and promoting commercial relationships and community activities.
- Directing growth to locations where utility, transport, commercial and social infrastructure and services are available or can be provided in the most efficient and sustainable manner.
- Ensuring there is a sufficient supply of appropriately located residential, commercial, and industrial land across a region to meet the needs identified at regional level.
- Developing strategies for regional cities that reflect growth opportunities and priorities, including the identification of urban renewal and infill opportunities to optimise infrastructure investment and surplus government land.

#### **Environmental health and productivity**

Maintain and provide for the enhancement of environmental health and productivity of rural and peri-urban landscapes by:

- Managing the impacts of settlement growth and development to deliver positive land-use and natural resource management outcomes.
- Avoiding development impacts on land that contains high biodiversity values, landscape amenity, water conservation values, food production and energy production capacity, extractable resources and minerals, cultural heritage and recreation values, assets and recognised uses.

#### **Regional Victoria's competitive advantages**

Maintain and enhance regional Victoria's competitive advantages by:

- Ensuring that the capacity of major infrastructure (including highways, railways, airports, ports, communications networks and energy generation and distribution systems) is not affected adversely by urban development in adjacent areas.
- Focusing major government and private sector investments in regional cities and centres on major transport corridors, particularly railway lines, in order to maximise the access and mobility of communities.
- Providing adequate and competitive land supply, including urban regeneration, redevelopment and greenfield sites, to meet future housing and urban needs and to ensure effective utilisation of land.
- Strengthening settlements by ensuring that retail, office-based employment, community facilities and services are concentrated in central locations.

### **Climate change, natural hazards and community safety**

Respond to the impacts of climate change and natural hazards and promote community safety by:

- Siting and designing new dwellings, subdivisions and other development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards, such as bushfire and flood.
- Developing adaptation response strategies for existing settlements in hazardous and high risk areas to accommodate change over time.
- Encouraging reduced energy and water consumption through environmentally sustainable subdivision and building design.
- Encouraging a form and density of settlements that support sustainable transport to reduce greenhouse gas emissions.

### **Distinct and diverse regional settlements**

Support the growth and development of distinctive and diverse regional settlements by:

- Encouraging high-quality urban and architectural design which respects the heritage, character and identity of each settlement.
- Ensuring development respects and enhances the scenic amenity, landscape features and view corridors of each settlement.
- Limiting urban sprawl and directing growth into existing settlements, promoting and capitalising on opportunities for urban renewal and infill redevelopment.
- Ensuring that the potential of land that may be required for future urban expansion is not compromised.
- Creating opportunities to enhance open space networks within and between settlements.

### **Liveable settlements and healthy communities**

Promote liveable regional settlements and healthy communities by:

- Responding to changing community needs and facilitating timely provision of, and access to, social infrastructure and services.
- Encouraging the development of compact urban areas which are based around existing or planned activity centres to maximise accessibility to facilities and services.

- Improving the availability of a diverse range of affordable accommodation, including social housing, in regional cities and locations with good access to transport, commercial facilities and community services.
- Supporting innovative ways to maintain equitable service delivery to settlements that have limited or no capacity for further growth, or that experience population decline.

### Policy guidelines

Planning must consider as relevant:

- *Central Highlands Regional Growth Plan* (Victorian Government, 2014).
- *G21 Regional Growth Plan* (Geelong Region Alliance, 2013).
- *Gippsland Regional Growth Plan* (Victorian Government, 2014).
- *Great South Coast Regional Growth Plan* (Victorian Government, 2014).
- *Hume Regional Growth Plan* (Victorian Government, 2014).
- *Loddon Mallee North Regional Growth Plan* (Victorian Government, 2014).
- *Loddon Mallee South Regional Growth Plan* (Victorian Government, 2014).
- *Wimmera Southern Mallee Regional Growth Plan* (Victorian Government, 2014).

11.07-2

31/03/2017  
VC134

### Peri-urban areas

#### Objective

To manage growth in peri-urban areas to protect and enhance their identified valued attributes.

#### Strategies

Identify and protect areas that are strategically important for the environment, biodiversity, landscape, open space, water, agriculture, energy, recreation, tourism, environment, cultural heritage, infrastructure, extractive and other natural resources.

Provide for development in established settlements that have capacity for growth having regard to complex ecosystems, landscapes, agricultural and recreational activities in the area. These settlements include Warragul-Drouin, Bacchus Marsh, Torquay-Jan Juc, Gisborne and Kyneton and other towns identified by Regional Growth Plans as having potential for growth including Wonthaggi, Kilmore, Broadford, Seymour and Ballan.

Strengthen and enhance the character, identity attractiveness and amenity of peri-urban towns.

Prevent dispersed settlement and provide for non-urban breaks between urban areas.

Site and design new development to minimise risk to life, property, the natural environment and community infrastructure from natural hazards such as bushfire and flooding.

Establish growth boundaries for peri-urban towns to avoid urban sprawl and protect agricultural land and environmental assets.

Ensure development is linked to the timely and viable provision of physical and social infrastructure and employment.

Improve connections to regional and metropolitan transport services.

### **Policy guidelines**

Planning must consider as relevant:

- *Central Highlands Regional Growth Plan* (Victorian Government, 2014).
- *G21 Regional Growth Plan* (Geelong Region Alliance, 2013).
- *Gippsland Regional Growth Plan* (Victorian Government, 2014).
- *Great South Coast Regional Growth Plan* (Victorian Government, 2014).
- *Hume Regional Growth Plan* (Victorian Government, 2014).
- *Loddon Mallee North Regional Growth Plan* (Victorian Government, 2014).
- *Loddon Mallee South Regional Growth Plan* (Victorian Government, 2014).
- *Wimmera Southern Mallee Regional Growth Plan* (Victorian Government, 2014).
- *Plan Melbourne 2017-2050: Metropolitan Planning Strategy* (Department of Environment, Land, Water and Planning, 2017).

## 11.12

31/03/2017  
VC134

## HUME

For the purpose of this Clause, the 'Hume region' comprises the municipal areas of Alpine, Benalla, Greater Shepparton, Indigo, Mansfield, Mitchell, Moira, Murrindindi, Strathbogie, Towong, Wangaratta and Wodonga, covered in the *Hume Regional Growth Plan* (Victorian Government, 2014).

### Policy guidelines

In considering the policy objectives and strategies for the Hume region, planning must consider as relevant, the *Hume Regional Growth Plan* (Victorian Government, 2014).

## 11.12-1

31/03/2017  
VC134

## A diversified economy

### Objective

To develop a more diverse regional economy while managing and enhancing key regional economic assets.

### Strategies

Plan for a more diverse and sustainable regional economy by supporting existing economic activity and encouraging appropriate new and developing forms of industry, agriculture, tourism and alternative energy production.

Support tourism activities, including nature-based tourism, that take advantage of environmental and cultural heritage assets and the rural environment without compromising their future.

Support opportunities for nature-based tourism throughout the region, including those arising from the restoration of the Winton Wetlands and other wetlands of national and regional value such as the Barmah Forest and the lower Ovens River.

Support large commercial tourism uses in urban locations or rural areas of lower agricultural value and away from areas identified as strategic agricultural land.

Facilitate rural tourism activities that support agricultural enterprises such as cellar door and farm gate sales and accommodation in appropriate locations.

Avoid encroachment from rural residential settlement and other land uses that are non-complementary to agriculture in areas identified as strategic agricultural land and direct proposals for settlement to existing centres and townships.

Support agricultural production through the protection and enhancement of infrastructure and strategic resources such as water and agricultural land, including areas of strategic agricultural land.

Support clustering of intensive rural industries and agricultural production to take advantage of locational opportunities, including access to key infrastructure such as transport, power, water, information and communications technology, and separation from sensitive land uses.

Create renewable energy hubs that support co-location of industries to maximise resource use efficiency and minimise waste generation.

Plan for rural areas by considering the location of earth resources, the potential for their future extraction and how to minimise impacts on sensitive uses and the environment.

Support the availability of construction materials locally and consider measures to facilitate and manage their extraction.

Maintain and develop buffers around mining and quarrying activities to manage potential land use conflicts.

#### **11.12-2 Environmental assets**

31/03/2017  
VC134

##### **Objective**

To protect environmental and heritage assets, and maximise the regional benefit from them, while managing exposure to natural hazards and planning for the potential impacts of climate change.

##### **Strategies**

Conserve water and manage waterways and storages as key environmental, social and economic assets to the region.

Protect the Murray River corridor as a key environmental (scenic, biodiversity, riverine), cultural and economic asset.

#### **11.12-3 Planning for growth**

31/03/2017  
VC134

##### **Objective**

To focus growth and development to maximise the strengths of existing settlements.

##### **Strategies**

Facilitate growth and development specifically in the regional cities of Shepparton, Wangaratta and Wodonga, and in Benalla.

Facilitate and strengthen the economic role of Seymour, while supporting population growth.

Support growth and development in other existing urban settlements and foster the sustainability of small rural settlements.

Maintain and enhance the distinctive and valued characteristics of settlements in the region, including townships associated with early settlement and the gold rush.

Support improved access to a range of employment and education opportunities, particularly in key urban locations such as Shepparton, Wangaratta, Wodonga, Benalla and Seymour.

#### **11.12-4 Infrastructure**

31/03/2017  
VC134

##### **Objective**

To improve people and freight movements and plan strategically for future infrastructure needs.

## Strategies

Plan for freight connectivity to the network that is flexible and adaptable to changes in the mix of commodities and freight logistic operations.

Support improved east-west transport links including those into Gippsland.

Support the region's network of tracks and trails and activities that complement and extend their use.

Support the development of freight and logistics precincts in strategic locations along key regional freight corridors.

Provide for appropriate settlement buffers around sewerage treatment areas, solid waste management and resource recovery facilities and industrial areas to minimise potential impacts on the environment such as noise and odour.

Avoid locating water treatment plants close to development nodes.

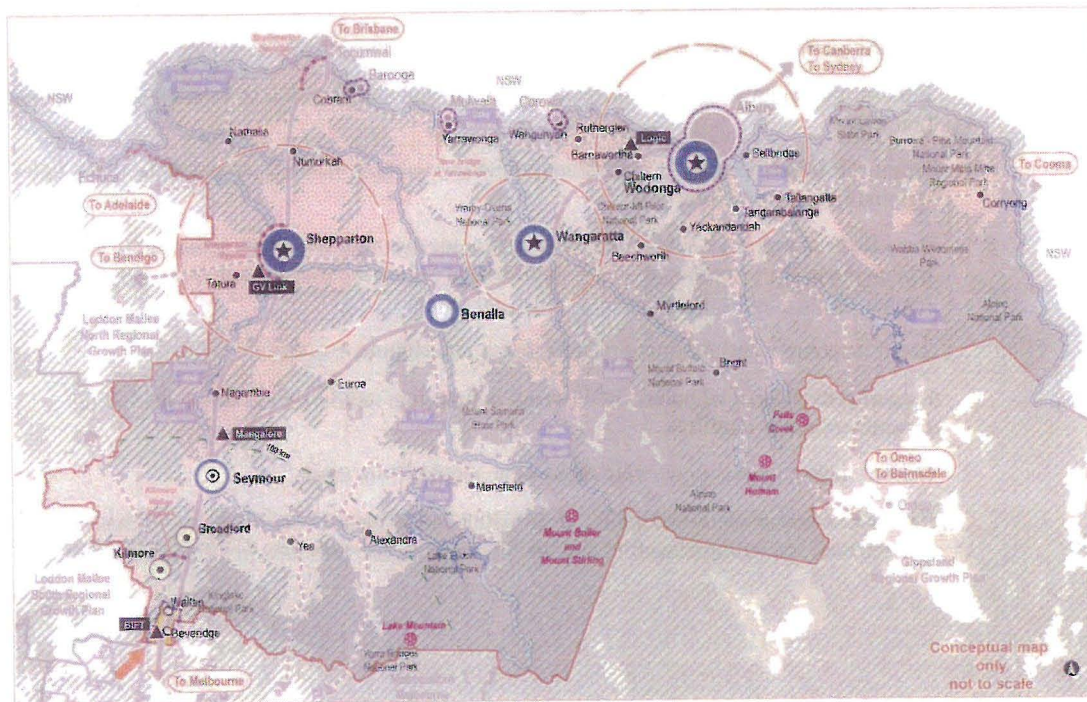
Support provision of adequate facilities to manage the region's solid waste, including resource recovery facilities.

Support opportunities to generate renewable energy from waste.

Facilitate coordinated development of growth areas to ensure required land, infrastructure and services, including education and health services, are provided in a timely manner.

## 11.12-5 Hume Regional Growth Plan

31/03/2017  
VC134



### SETTLEMENT NETWORK

- Major growth location
- Medium to high growth location
- Significant change location
- Designated identified growth centre in Plan Melbourne<sup>11</sup>
- Locations identified as 'Regional Cities' in a statewide context

### OTHER KEY URBAN SETTLEMENTS

<sup>11</sup>Plan Melbourne (Chapter 6 – State of Cities) identifies Broadford, Kilmore and Seymour as peri-urban towns with potential to attract housing and population growth out of Melbourne

- Cross-border settlements
- Support growth in these urban locations, and lifestyle opportunities
- Towns and areas in the Hume Region within Melbourne's Urban Growth Boundary
- Settlements external to the region

### URBAN GROWTH AND HINTERLAND INFLUENCE

- Hinterland influence
- Areas within 100 km of central Melbourne

### CONNECTIVITY

- National transport corridor (road and rail)
- Other major transport link
- Improved future transport link
- Freight and logistics precinct
- Melbourne metropolitan growth into the Hume Region

### ECONOMIC DEVELOPMENT

- Strategic agricultural land

### ENVIRONMENT

- Alpine resort
- Areas containing high value terrestrial habitat
- Public land
- Key water and tourism assets
- Murray River corridor

## 12.01

28/03/2018  
VC145

## BIODIVERSITY

### 12.01-1

16/01/2018  
VC142

### Protection of biodiversity

#### Objective

To assist the protection and conservation of Victoria's biodiversity.

#### Strategies

Use biodiversity information to identify important areas of biodiversity, including key habitat for rare or threatened species and communities, and strategically valuable biodiversity sites.

Use strategic planning as the primary planning tool for the protection and conservation of Victoria's biodiversity, particularly those areas identified as important.

Ensure that decision making takes into account the impacts of land use and development on Victoria's biodiversity.

Planning should:

- Avoid and minimise impacts of land use and development on important areas of biodiversity, including consideration of:
  - Cumulative impacts.
  - Fragmentation of habitat.
  - The spread of pest plants, animals and pathogens into natural ecosystems.
- Consider impacts of any change in land-use or development that may affect the biodiversity value of national parks and conservation reserves or nationally and internationally significant sites including wetlands and wetland wildlife habitat designated under the Convention on Wetlands of International Importance (the Ramsar Convention), and sites utilised by species listed under the Japan-Australia Migratory Birds Agreement (JAMBA), the China-Australia Migratory Birds Agreement (CAMBA), or the Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).
- Assist in the identification, protection and management of important areas of biodiversity.
- Assist in the re-establishment of links between important areas of biodiversity.

#### Policy guidelines

Planning must consider as relevant:

- *Protecting Victoria's Environment – Biodiversity 2037* (Department of Environment, Land, Water and Planning, 2017).
- *Guidelines for the removal, destruction or lopping of native vegetation* (Department of Environment, Land, Water and Planning, 2017).
- Any applicable biodiversity strategies, including the relevant Regional Catchment Strategy (prepared under Part 4 of the *Catchment and Land Protection Act 1994*).
- Statewide biodiversity information maintained by the Department of Environment, Land, Water and Planning.

## 12.01-2 Native vegetation management

12/12/2017  
VC138

### Objective

To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.

### Strategies

When making decisions about proposals that involve, or will lead to, the removal, destruction or lopping of native vegetation, apply the three step approach in accordance with the *Guidelines for the removal, destruction or lopping of native vegetation* (Department of Environment, Land Water and Planning, 2017):

1. Avoid the removal, destruction or lopping of native vegetation.
2. Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.
3. Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.

### Policy guidelines

Planning must consider as relevant:

- *Guidelines for the removal, destruction or lopping of native vegetation* (Department of Environment, Land, Water and Planning, 2017).
- *Assessor's handbook – applications to remove, destroy or lop native vegetation* (Department of Environment, Land, Water and Planning).
- Statewide biodiversity information maintained by the Department of Environment, Land, Water and Planning.

## 13.02

28/03/2018  
VC145

## FLOODPLAINS

### 13.02-1

16/01/2018  
VC142

### Floodplain management

#### Objective

To assist the protection of:

- Life, property and community infrastructure from flood hazard.
- The natural flood carrying capacity of rivers, streams and floodways.
- The flood storage function of floodplains and waterways.
- Floodplain areas of environmental significance or of importance to river health.

#### Strategies

Identify land affected by flooding, including floodway areas, as verified by the relevant floodplain management authority, in planning scheme maps. Land affected by flooding is land inundated by the 1 in 100 year flood event or as determined by the floodplain management authority.

Avoid intensifying the impacts of flooding through inappropriately located uses and developments.

Locate emergency and community facilities (including hospitals, ambulance stations, police stations, fire stations, residential aged care facilities, communication facilities, transport facilities, community shelters and schools) outside the 1 in 100 year floodplain and, where possible, at levels above the height of the probable maximum flood.

Locate developments and uses which involve the storage or disposal of environmentally hazardous industrial and agricultural chemicals or wastes and other dangerous goods (including intensive animal industries and sewage treatment plants) must not be located on floodplains unless site design and management is such that potential contact between such substances and floodwaters is prevented, without affecting the flood carrying and flood storage functions of the floodplain.

#### Policy guidelines

Planning must consider as relevant:

- *State Environment Protection Policy (Waters of Victoria).*
- Regional catchment strategies and special area plans approved by the Minister for Environment and Climate Change.
- Any floodplain management manual of policy and practice, or catchment management, river health, wetland or floodplain management strategy adopted by the relevant responsible floodplain management authority.
- Any best practice environmental management guidelines for stormwater adopted by the Environment Protection Authority.
- *Victoria Floodplain Management Strategy* (Department of Environment, Land, Water and Planning 2016).



## 14.01

28/03/2018  
VC145

## AGRICULTURE

### 14.01-1

31/03/2017  
VC134

### Protection of agricultural land

#### Objective

To protect productive farmland which is of strategic significance in the local or regional context.

#### Strategies

Ensure that the State's agricultural base is protected from the unplanned loss of productive agricultural land due to permanent changes of land use.

Prevent inappropriately dispersed urban activities in rural areas.

Limit new housing development in rural areas, including:

- Directing housing growth into existing settlements.
- Discouraging development of isolated small lots in the rural zones from use for single dwellings, rural living or other incompatible uses.
- Encouraging consolidation of existing isolated small lots in rural zones.

Consult with the Department of Economic Development, Jobs, Transport and Resources and utilise available information to identify areas of productive agricultural land.

Take into consideration regional, state and local, issues and characteristics in the assessment of agricultural quality and productivity.

Permanent removal of productive agricultural land from the State's agricultural base must not be undertaken without consideration of its economic importance for the agricultural production and processing sectors.

In considering a proposal to subdivide or develop agricultural land, the following factors must be considered:

- The desirability and impacts of removing the land from primary production, given its agricultural productivity.
- The impacts of the proposed subdivision or development on the continuation of primary production on adjacent land, with particular regard to land values and to the viability of infrastructure for such production.
- The compatibility between the proposed or likely development and the existing uses of the surrounding land.
- Assessment of the land capability.

Subdivision of productive agricultural land should not detract from the long-term productive capacity of the land.

Where inappropriate subdivisions exist on productive agricultural land, priority should be given by planning authorities to their re-structure.

In assessing rural development proposals, planning and responsible authorities must balance the potential off-site effects of rural land use proposals (such as degradation of soil or water quality and land salinisation) which might affect productive agricultural land against the benefits of the proposals.

Planning for rural land use should consider:

- land capability; and
- the potential impacts of land use and development on the spread of plant and animal pests from areas of known infestation into agricultural areas.

#### 14.01-2 Sustainable agricultural land use

29/10/2015  
VC101

##### Objective

To encourage sustainable agricultural land use.

##### Strategies

Ensure agricultural and productive rural land use activities are managed to maintain the long-term sustainable use and management of existing natural resources.

Encourage sustainable agricultural and associated rural land use and support and assist the development of innovative approaches to sustainable practices.

Support effective agricultural production and processing infrastructure, rural industry and farm-related retailing and assist genuine farming enterprises to adjust flexibly to market changes.

Facilitate the establishment and expansion of cattle feedlots, piggeries, poultry farms and other intensive animal industries in a manner consistent with orderly and proper planning and protection of the environment.

##### Policy guidelines

Planning must consider as relevant:

- *Victorian Code for Cattle Feedlots* (Department of Agriculture, Energy and Minerals, 1995), in considering proposals for use and development of beef cattle feedlots.
- *Victorian Code for Broiler Farms* (Department of Primary Industries, 2009), in considering proposals for use and development of broiler farms.
- *Code of Practice: Piggeries* (Health Commission of Victoria and Department of Food and Agriculture, 1992), in considering proposals for use and development of piggeries.
- *Apiary Code of Practice* (May 2011) and any relevant scientific reports, in considering proposals for apiculture.
- *Planning Guidelines for Land Based Aquaculture in Victoria* (Department of Primary Industries, No. 21, September 2005), in considering proposals for land based aquaculture facilities.

#### 14.01-3 Forestry and timber production

29/10/2015  
VC101

##### Objective

To facilitate the establishment, management and harvesting of plantations, and harvesting of timber from native forests.

##### Strategies

Promote the establishment of softwood and hardwood plantations on predominantly cleared land as well as other areas subject to or contributing to land and water degradation.

Identify areas which may be suitably used and developed for plantation timber production.

Ensure protection of water quality and soil.

Ensure timber production in native forests is conducted in a sustainable manner.

Timber production (except agroforestry, windbreaks and commercial plantations of 5 hectares or less) is to be conducted in accordance with the *Code of Practice for Timber Production* (Department of Environment and Primary Industries, 2014).

Ensuring Victoria's greenhouse sinks are protected and enhanced by controlling land clearing, containing the growth of urban areas and supporting revegetation programs.

## 14.02

28/03/2018  
VC145

## WATER

### 14.02-1

16/01/2018  
VC142

### Catchment planning and management

#### Objective

To assist the protection and, where possible, restoration of catchments, waterways, water bodies, groundwater, and the marine environment.

#### Strategies

Protect water catchments and water supply facilities to ensure the continued availability of clean, high-quality drinking water.

Consider the impacts of catchment management on downstream water quality and freshwater, coastal and marine environments.

Retain natural drainage corridors with vegetated buffer zones at least 30m wide along each side of a waterway to maintain the natural drainage function, stream habitat and wildlife corridors and landscape values, to minimise erosion of stream banks and verges and to reduce polluted surface runoff from adjacent land uses.

Undertake measures to minimise the quantity and retard the flow of stormwater runoff from developed areas.

Encourage measures to filter sediment and wastes from stormwater prior to its discharge into waterways, including the preservation of floodplain or other land for wetlands and retention basins.

Ensure that works at or near waterways provide for the protection and enhancement of the environmental qualities of waterways and their instream uses.

Ensure land use and development proposals minimise nutrient contributions to waterways and water bodies and the potential for the development of algal blooms.

Require the use of appropriate measures to restrict sediment discharges from construction sites.

Ensure planning is coordinated with the activities of catchment management authorities.

#### Policy guidelines

Planning must consider as relevant:

- *State Environment Protection Policy (Waters of Victoria).*
- Any relevant regional river health program, river and wetland restoration plans or waterway and wetland management works programs approved by a catchment management authority.
- *Murray River Regional Environmental Plan No 2 (REP2) of New South Wales*, for adjoining land.
- Any regional catchment strategies approved under the *Catchment and Land Protection Act 1994* and any associated implementation plan or strategy including any regional river health and wetland strategies.
- Any special areas or management plans under the *Heritage Rivers Act (1992)*.
- Any Action Statements and management plans prepared under the *Flora and Fauna Guarantee Act 1988*.
- Any special area plans approved under the *Catchment and Land Protection Act 1994*.
- *Guidelines for planning permit applications in open, potable water supply catchment areas* (Department of Sustainability and Environment, 2012)

## 14.02-2

29/10/2015  
VC101

### Water quality

#### Objective

To protect water quality.

#### Strategies

Protect reservoirs, water mains and local storage facilities from potential contamination.

Ensure that land use activities potentially discharging contaminated runoff or wastes to waterways are sited and managed to minimise such discharges and to protect the quality of surface water and groundwater resources, rivers, streams, wetlands, estuaries and marine environments.

Discourage incompatible land use activities in areas subject to flooding, severe soil degradation, groundwater salinity or geotechnical hazards where the land cannot be sustainably managed to ensure minimum impact on downstream water quality or flow volumes.

Prevent the establishment of incompatible land uses in aquifer recharge or saline discharge areas and in potable water catchments.

Encourage the siting, design, operation and rehabilitation of landfills to reduce impact on groundwater and surface water.

#### Policy guidelines

Planning must consider as relevant:

- Mapped information available from the Department of Environment, Land, Water and Planning to identify the beneficial uses of groundwater resources and have regard to potential impacts on these resources of proposed land use or development.
- *Victorian Nutrient Management Strategy* (Government of Victoria, 1995).
- *Construction Techniques for Sediment Pollution Control* (Environmental Protection Authority, 1991).
- *Environmental Guidelines for Major Construction Sites* (Environmental Protection Authority, 1996 - Publication 480).
- *Doing it Right on Subdivisions: Temporary Environment Protection Measures for Subdivision Construction Sites* (Environmental Protection Authority, 2004 - Publication 960).
- *Guidelines for planning permit applications in open, potable water supply catchments* (Department of Sustainability and Environment, 2012)

## 14.02-3

20/09/2010  
VC71

### Water conservation

#### Objective

To ensure that water resources are managed in a sustainable way.

#### Strategies

Encourage the use of alternative water sources such as rainwater tanks, stormwater and recycled water by governments, developers and households.

Ensure the development of new urban areas and green spaces takes advantage of any opportunities for effluent recycling.

Protect areas with potential to recycle water for forestry, agriculture or other uses that can use treated effluent of an appropriate quality.

## 19.01

## RENEWABLE ENERGY

28/03/2018  
VC145

### 19.01-1

### Provision of renewable energy

21/11/2017  
VC141

#### Objective

To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met.

#### Strategies

Facilitate renewable energy development in appropriate locations.

Protect energy infrastructure against competing and incompatible uses.

Develop appropriate infrastructure to meet community demand for energy services and setting aside suitable land for future energy infrastructure.

In considering proposals for renewable energy, consideration should be given to the economic and environmental benefits to the broader community of renewable energy generation while also considering the need to minimise the effects of a proposal on the local community and environment.

In planning for wind energy facilities, recognise that economically viable wind energy facilities are dependent on locations with consistently strong winds over the year.

#### Policy guidelines

Planning must consider as relevant:

- *Policy and Planning Guidelines for Development of Wind Energy Facilities in Victoria* (Department of Environment, Land, Water and Planning, November 2017).



**21.05**15/03/2018  
C199**ENVIRONMENT****21.05-1**15/03/2018  
C199**Natural Environment and Biodiversity**

Key biodiversity issues in Greater Shepparton are associated with native vegetation and with the myriad of river, floodplain and wetland systems.

The natural landscape of the municipality and wider region has been modified significantly as a result of pastoral activities and more recently through extensive irrigation activities. As a result, areas of remnant native vegetation are now primarily limited to waterways, road reserves and corridors. These corridors (as well as native vegetation stands on private property) provide important habitat links for flora and fauna and for the fostering of biodiversity.

The development of vast areas for irrigated agricultural activities has resulted in high water tables and salinity which have affected the productivity of the land, local bio-systems and in some instances the ultimate viability of some agricultural enterprises.

The *Goulburn Broken Catchment Management Strategy* provides the blueprint for integrated natural resource management across the municipality (and the wider region) and in part forms the regional component of the state's Biodiversity Strategy. In essence, the strategy seeks to maintain and enhance biodiversity of native flora and fauna communities and protect the region's natural resource base through the management of key threats.

The Regional Rural Land Use Strategy (RRLUS - 2008) notes that:

- Native vegetation is required to be preserved to maintain biodiversity and manage water tables.
- Floodplains and flood events are required to flush waterways and enhance water quality.
- Fauna is required to maintain biodiversity and manage pest plants and animals.

The RRLUS also notes that presently, the application of environmental controls in the region varies with a limited use of available overlays, specifically to manage significant vegetation, landscape and habitat. The application of appropriate zones, overlays and consideration of Biodiversity Action Planning processes being completed by Catchment Management Authorities are acknowledged as critical to decision making.

The RRLUS identifies land of high conservation value south and west of Murchison and around the Dookie Hills. Further strategic work will be undertaken to determine the appropriate zone or overlay to achieve the conservation outcomes envisioned in the strategy.

**Objectives - Natural Environment & Biodiversity**

- To maintain and enhance biodiversity of native flora and fauna communities.
- To protect and manage the natural resources of water, air and land.
- To identify natural landscape features which are to be protected and managed.
- To ensure planning for residential and rural residential growth provides for biodiversity protection and enhancement measures.

**Strategies - Natural Environment & Biodiversity**

- Protect remnant areas of native vegetation, streamlines, wetlands and other environmentally sensitive features.
- Ensure appropriate identification of native vegetation on land to be developed or subdivided.
- Ensure that residential and rural residential developments, and Precinct Structure Plans, address the following biodiversity protection and enhancement measures:

- Site and design development, including service infrastructure, roads and subdivision boundaries, in a manner that minimises the need to remove remnant native vegetation;
- Site and design stormwater disposal and flood mitigation infrastructure to provide for waterway habitat enhancement; and
- Enhance biodiversity values by requiring native vegetation in landscape treatments, in particular within floodways and reserves that link to rivers.

## 21.05-2 Floodplain and Drainage Management

19/09/2013  
C121

The catchments of the various rivers and streams within the municipality include areas of flood prone land, where flooding has historically caused substantial damage to the natural and built environment. Floods are naturally occurring events and the inherent functions of the floodplains to convey and store floodwater should be recognised and preserved to minimise the deterioration of environmental values, the long term flood risk to floodplain production, assets and communities.

Flooding imposes substantial costs on individuals and the community. While significant costs are incurred by direct damage to public and private property, indirect costs to the community such as loss of productivity, displacement of residents, closure of roads, trauma and ill health are also significant. Notwithstanding these significant impacts, natural flooding of floodplains and their associated wetlands provide essential breeding habitats for bird and aquatic species, and promotes the health of rivers and floodplains.

Sound floodplain management is the means by which the economic, social and environmental risks associated with floodplain use and development can be minimised. This level of management is provided by six "local floodplain development plans (LFDP)" incorporated into the scheme at Clause 81.

### Objectives - Floodplain and Drainage Management

- To recognise the constraints of the floodplain on the use and development of land.

### Strategies - Floodplain Management

- Discourage development and subdivision on land subject to flooding.
- Ensure that all new development maintains the free passage and temporary storage of floodwater, minimises flood damage is compatible with flood hazard and local drainage conditions, and minimises soil erosion, sedimentation and silting.
- Prevent tree removal to minimise loss of riparian vegetation as a result of development on the floodplain.

## 21.05-3 Best Practice Land Management

19/09/2013  
C121

Decades of open pasture farming and irrigated agriculture has also changed the natural hydrological balance. Drainage management attempts to reduce the direct costs in terms of loss of stock and damage to property, and the indirect costs of reduced productivity, road rebuilding, and inconvenience. The key issue relating to drainage management is the provision of efficient drainage of land without causing other environmental impacts.

Land use and development should be based on land capability and suitability and be mindful of potential impact of external factors such as reconfiguration of irrigation delivery and drainage infrastructure arising from irrigation water reforms. As such, Council encourages the preparation of whole farm plans to assist farming enterprises to reduce downstream impacts of nutrients on water quality, protection of natural ecosystems, reduce water logging and salinity and sustain viable farming enterprises.

It is noted that Council joined the *Cities for Climate Protection Program* in 2000 and has committed to evaluate and set targets for greenhouse gas emissions for council and

community activities, promote energy efficient subdivision and house design, promote municipal domestic wastewater management and provide corresponding incentives and programs. Council is evaluating and planning for appropriate water saving measures relating to its own water use.

#### **Objectives - Best Practice Land Management**

- To provide a supply of high quality water for urban and agricultural use.
- To minimise the degree of salinity through an integrated regional surface water management program.
- To reduce greenhouse gas emissions.
- To direct development according to identified land capability and suitability.
- To recognise the threat posed to surface water and groundwater quality by non-reticulated domestic wastewater systems.

#### **Strategies - Best Practice Land Management**

- Promote energy efficient and sustainable built form and development.
- Ensure all new developments have adequate reticulated services or effluent disposal systems to protect watercourses and water quality.
- Support innovative methods of effluent disposal such as composting.
- Encourage the development of surface water management systems with run-off into natural systems or into reuse storage for irrigation
- Encourage ecologically sustainable development principles and technologies.
- Assist carbon emission reduction.
- Promote the use of appropriate water saving measures.

#### **21.05-4**

03/10/2013  
C110

#### **Cultural Heritage**

Clause 15.03 of the State Planning Policy Framework (SPPF) identifies the need for cultural heritage policy to guide decisions on development and demolition of all places affected by heritage controls.

The Council aims to ensure that places of pre settlement and post settlement cultural heritage significance within the municipality are preserved for future generations. These places of natural and cultural heritage significance include buildings, collections, streetscapes, remnants of settlements, places of Aboriginal cultural heritage significance, significant landscapes and natural features.

Places of cultural heritage significance are highly valued by the community. The continued conservation, protection and maintenance of these places of cultural heritage significance are important to the Council.

The Council acknowledges the traditional custodians of the land which now comprises Greater Shepparton, whose descendants have a long ancestral history in the area. A number of places of cultural heritage significance have been recognised. However more detailed investigation is needed to ascertain the importance of these places.

Greater Shepparton has a rich and varied built cultural heritage reflecting its origins as a pastoral area during the mid-19<sup>th</sup> century. The Goulburn Valley is one of the more successful settlement areas following the Land Selection Acts. This is reflected in the development of Shepparton, Tatura and Mooroopna during the late 19<sup>th</sup> century and into the 20<sup>th</sup> century. This growth was consolidated by Closer Settlement policies, linked with the establishment of irrigation in the region. There is a strong 20<sup>th</sup> century inheritance of built cultural heritage fabric, a consequence of the success of horticultural enterprises and post war migration, as well as the development of Shepparton as an important regional centre.



**21.06**03/03/2016  
C162**ECONOMIC DEVELOPMENT**

The City of Greater Shepparton services a significantly wider region than that located within the municipal boundaries and has experienced strong growth over the past fifteen years. The local economy is diverse, and includes a range of activities including agriculture, food processing, manufacturing, retail, education, health/community services, transport and warehousing.

**21.06-1**19/09/2013  
C121**Agriculture**

Irrigated primary production and the processing of that product underpin the municipality and the Region's economy. The level of production is nationally important and the region is responsible for significant parts of the nation's milk production, deciduous canned fruit production, stone fruit crop and tomato processing production.

The region's workforce is heavily dependent on the agricultural sector with many people directly involved in agricultural production on farms, and an estimated similar number involved directly and indirectly in the processing and transport of that product. In both irrigation and dryland production the drivers of future successful agribusinesses, regardless of the scale of enterprise, are likely to be:

- Continuing current trends for significantly increased scale of production which is achieved by expanding the land area of production and/or by increasing the intensity of the production system.
- A shift to individual management of their own business risks such as consolidation into contiguous properties to manage all their own water supply.
- Agribusinesses that seek to minimize the number of neighbours.
- Agribusinesses that expand into land that is priced competitively because it is used for agriculture rather than having inflated land values because it has been subdivided for hobby farms.

It is increasingly evident that prospective agricultural investment is jeopardized, deterred, or completely lost by land uses and developments that have the potential to compromise the scale and location of such investment. In particular, agricultural investment is far less likely where land is already fragmented in ownership with housing dispersed throughout.

A Regional Rural Land Use Strategy 2008 (RRLUS) has been adopted by Moira Shire Council, the City of Greater Shepparton and the Shire of Campaspe. This strategy identifies new categories of farming areas in the municipalities and recommends different subdivision and minimum lot size provisions for dwellings for each category. The categories are as follows.

**Growth areas** being areas for growth and expansion of existing farm businesses and for new investment. Growth areas include those areas that have been retained in larger properties and provide the opportunity for large scale, stand alone new agricultural development as well as for consolidation of existing farm properties wishing to grow. The RRLUS seeks to discourage the establishment of new dwellings and where possible encourage farm tenements and property boundaries to consolidate and enlarge in line with the trends in agriculture associated with productivity and viability. The minimum subdivision size in these areas has been set at 40ha and a dwelling needs a planning permit on all land less than 60ha in area.

**Consolidation areas** being areas that support existing farm businesses to operate and expand. Consolidation areas typically include land with good soils and include many of the former closer settlement areas, but their lot sizes are no longer reflective of current farm sizes. Consolidation areas are considered to provide opportunities for development of growing agricultural enterprises that can, over time, expand and consolidate through a process of property restructure. In this regard 'consolidation' includes the consolidation of

land or the consolidation of farming enterprises through acquisition of non-contiguous land to increase farm size. The development of additional dwellings threatens expanding agricultural enterprises and accordingly, new dwellings within these areas are discouraged. The use of re-subdivision and excisions within consolidation areas will be considered in recognition that the excision of a dwelling from a farm can provide businesses an opportunity to consolidate property holdings based on the value of land for agriculture. The minimum subdivision size in these areas has been set at 40ha and a dwelling needs a planning permit on all land less than 60ha in area.

**Niche areas** being those areas with productive potential based on existing lot configuration and opportunities for smaller scale and specialized agriculture. Niche areas include those rural areas with productive potential due to soil type, property size or water access. The opportunity for properties within these areas to expand in response to general market trends is limited however due to land value and existing development as most lots are smaller with dwellings. Niche areas are productive farming areas and not rural living areas. Niche areas may involve activities such as spraying and frost fans etc. New dwellings within the niche area can be considered where associated with farm business activity. Given the existing size and lot configuration, it is envisaged that subdivision would rarely be required. The minimum subdivision size in these areas has been set at 40ha and a dwelling needs a planning permit on all land less than 40ha in area.

The RRLUS also discusses the conflict which arises when the expectations of the farmer and the rural lifestyle resident differ. It is acknowledged that direction is required to ensure that unplanned rural living is not displacing agriculture or preventing flexibility for farm businesses. In particular, existing minimum lot requirements that allow 'as of right' dwellings within the Farming Zone have been reviewed.

Important principles that have been applied in the rural areas are:

- The minimum subdivision size is to be less or equal to the minimum dwelling size in order to avoid expectations and perceptions that there will be an automatic entitlement to erect a dwelling on all newly created lots in the Farming Zone.
- Small lot subdivisions should not create any additional entitlements for a dwelling nor should they create an opportunity for a dwelling without a planning permit.

### **Objectives - Agriculture**

To ensure that agriculture is and remains the major economic driver in the region.

To facilitate growth of existing farm businesses.

To facilitate growth of new agricultural investment.

To provide for small scale, specialized agriculture.

### **Strategies - Agriculture**

- Identify 'growth', 'consolidation' and 'niche' areas in the Farming Zone.
- Encourage growth and expansion of existing farm businesses and new investment in 'growth' and 'consolidation' areas.
- Encourage opportunities for smaller scale, specialized agriculture in 'niche' areas.
- Discourage land uses and development in the Farming Zone, Schedule 1 that would compromise the future agricultural use of the land, including farm related tourism.
- Encourage tourism in the Farming Zone, Schedule 2 that is carefully managed to prevent conflict and impact on agricultural operations.
- Encourage value adding and new enterprises for agricultural production.
- Encourage the preparation of Whole Farm Plans for on farm earthworks.

- Discourage non-agricultural uses on rural land other than rural based industry.
- Discourage non-agricultural development in rural areas except where development is dependent on a rural location, and cannot be accommodated within existing industrial or business zoned land.
- Discourage non-agricultural development along major roads in rural areas especially at the fringe of existing urban areas when it may contribute to ribbon development.
- Buildings for non-agricultural purposes in rural areas should be set back a minimum of 100 metres from any road, be constructed in muted coloured 'colorbond' materials or similar and screened from any road by dense tree and shrub planting.
- Signs for industrial and commercial development in rural areas will be strictly limited in size and number.

**21.06-2**19/09/2013  
C121**Subdivision in Rural Areas**

Farm holdings in rural areas are becoming larger. Rural dwelling lot excisions continue to pose a threat to the long term viability of the agricultural sector by reducing the size of farms and by causing friction between the expectations of farmers and residents.

The planning scheme provides for a range of subdivision sizes based on the outcomes of the RRLUS. Subdivision of rural land at a density greater than these minimums, especially for personal and financial reasons; or to create lots for "rural lifestyle" purposes, could jeopardise the economic future of the region.

The only circumstance in which Council will contemplate a small lot subdivision is if it leads to the consolidation of rural landholdings so as to promote the viability of agriculture. This is an increasingly important issue in the municipality since the deregulation of the dairy industry. Council wishes to facilitate farm consolidation so as to assist with (among other things) the rationalisation of a sustainable dairy industry. It is acknowledged that in some circumstances, small lot subdivision can assist the process of consolidation as it enables the farming land to be priced at its agricultural value rather than have it distorted by its housing value. While small lot subdivisions are discouraged in the municipality, they will be considered on a case by case basis if the outcome is farm consolidation.

The RRLUS identified new categories of Farming Zone and has included objectives and policies for each with respect to rural subdivision.

**Objectives - Subdivision in Rural Areas**

To limit the further fragmentation of rural land by subdivision.

To ensure that lots resulting from subdivision are of a sufficient size to be of benefit to agricultural production.

To encourage the consolidation of rural lots.

To provide for the incremental growth of farming enterprises.

To discourage "small lot" subdivision unless the balance lot is at least the minimum lot size and is of a size sufficient to support a viable agricultural enterprise.

To ensure that small lot subdivisions do not prejudice surrounding agricultural activities.

To ensure that small lots have access to adequate infrastructure including access to all weather roads.

To prevent small lot subdivision to meet personal and financial circumstances or to create lots for 'rural lifestyle' purposes.

To prevent the creation of irregular shaped lots.



## 35.07

## FARMING ZONE

16/01/2018  
VC142

Shown on the planning scheme map as **FZ** with a number (if shown).

### Purpose

To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.

To provide for the use of land for agriculture.

To encourage the retention of productive agricultural land.

To ensure that non-agricultural uses, including dwellings, do not adversely affect the use of land for agriculture.

To encourage the retention of employment and population to support rural communities.

To encourage use and development of land based on comprehensive and sustainable land management practices and infrastructure provision.

### 35.07-1

### Table of uses

16/01/2018  
VC142

#### Section 1 – Permit not required

Use	Condition
<b>Agriculture (other than Animal keeping, Apiculture, Intensive animal husbandry, Racing dog training, Rice growing and Timber production)</b>	
<b>Animal keeping (other than Animal boarding)</b>	Must be no more than 5 animals.
<b>Bed and breakfast</b>	No more than 10 persons may be accommodated away from their normal place of residence.  At least 1 car parking space must be provided for each 2 persons able to be accommodated away from their normal place of residence.
<b>Cattle feedlot</b>	Must meet the requirements of Clause 52.26. The total number of cattle to be housed in the cattle feedlot must be 1000 or less. The site must be located outside a special water supply catchment under the Catchment and Land Protection Act 1994. The site must be located outside a catchment area listed in Appendix 2 of the Victorian Code for Cattle Feedlots – August 1995.
<b>Dependent person's unit</b>	Must be the only dependent person's unit on the lot.  Must meet the requirements of Clause 35.07-2.
<b>Dwelling (other than Bed and breakfast)</b>	Must be the only dwelling on the lot. The lot must be at least the area specified in a schedule to this zone. If no area is specified, the lot must be at least 40 hectares.  Must meet the requirements of Clause 35.07-2.
<b>Home based business</b> <b>Informal outdoor recreation</b>	
<b>Primary produce sales</b>	Must not be within 100 metres of a dwelling in

Use	Condition
	<p>separate ownership.</p> <p>The area used for the display and sale of primary produce must not exceed 50 square metres.</p>
Racing dog training	Must be no more than 5 animals.
Railway	
Rural industry (other than Abattoir and Sawmill)	<p>Must not have a gross floor area more than 200 square metres.</p> <p>Must not be within 100 metres of a dwelling in separate ownership.</p> <p>Must not be a purpose shown with a Note 1 or Note 2 in the table to Clause 52.10.</p> <p>The land must be at least the following distances from land (not a road) which is in a residential zone or Rural Living Zone:</p> <ul style="list-style-type: none"> <li>▪ The threshold distance, for a purpose listed in the table to Clause 52.10.</li> <li>▪ 30 metres, for a purpose not listed in the table to Clause 52.10.</li> </ul>
Rural store	<p>Must be used in conjunction with Agriculture.</p> <p>Must be in a building, not a dwelling and have a gross floor area of less than 100 square metres.</p> <p>Must be the only Rural store on the lot.</p>
Timber production	<p>Must meet the requirements of Clause 52.18.</p> <p>The plantation area must not exceed any area specified in a schedule to this zone. Any area specified must be at least 40 hectares.</p> <p>The total plantation area (existing and proposed) on contiguous land which was in the same ownership on or after 28 October 1993 must not exceed any scheduled area.</p> <p>The plantation must not be within 100 metres of:</p> <ul style="list-style-type: none"> <li>▪ Any dwelling in separate ownership.</li> <li>▪ Any land zoned for residential, commercial or industrial use.</li> <li>▪ Any site specified on a permit which is in force which permits a dwelling to be constructed.</li> </ul> <p>The plantation must not be within 20 metres of a powerline whether on private or public land, except with the consent of the relevant electricity supply or distribution authority.</p>
Tramway	
Any use listed in Clause 62.01	Must meet requirements of Clause 62.01.

## Section 2 – Permit required

Use	Condition
Abattoir	
Animal boarding	
Broiler farm	Must meet the requirements of Clause 52.31.

Use	Condition
Camping and caravan park	
Car park	Must be used in conjunction with another use in Section 1 or 2.
Cattle feedlot – if the Section 1 condition is not met	Must meet the requirements of Clause 52.26. The site must be located outside a catchment area listed in Appendix 2 of the Victorian Code for Cattle Feedlots – August 1995.
Cemetery	
Crematorium	
Dependent person's unit – if the Section 1 condition is not met	Must meet the requirements of Clause 35.07-2.
Dwelling (other than Bed and breakfast) – if the Section 1 condition is not met	
Emergency services facility	
Freeway service centre	Must meet the requirements of Clause 52.30.
Group accommodation	
Host farm	
Industry (other than Rural industry)	
Intensive animal husbandry (other than Broiler farm and Cattle feedlot)	
Landscape gardening supplies	
Leisure and recreation (other than Informal outdoor recreation)	
Manufacturing sales	
Market	
Place of assembly (other than Amusement parlour, Night club, Carnival and Circus)	
Primary school	
Racing dog keeping – if the Section 1 condition to Animal keeping is not met	Must meet the requirements of Clause 52.40.
Racing dog training – if the Section 1 condition is not met	
Renewable energy facility (other than Wind energy facility)	Must meet the requirements of Clause 52.42.
Residential hotel	
Restaurant	
Rice growing	
Sawmill	
Secondary school	
Timber production – if the Section 1 condition is not met	Must meet the requirements of Clause 52.18.
Trade supplies	
Utility installation (other than Minor utility installation and Telecommunications facility)	
Warehouse (other than Rural store)	
Wind energy facility	Must meet the requirements of Clause 52.32.

Use	Condition
-----	-----------

Winery

Any other use not in Section 1 or 3

### Section 3 – Prohibited

Use
-----

Accommodation (other than Bed and breakfast, Camping and caravan park, Dependent person's unit, Dwelling, Group accommodation, Host farm and Residential hotel)

Amusement parlour

Brothel

Child care centre

Cinema based entertainment facility

Education centre (other than Primary school and Secondary school)

Nightclub

Office

Retail premises (other than Market, Landscape gardening supplies, Manufacturing sales, Primary produce sales, Restaurant and Trade supplies)

#### 35.07-2

19/01/2006  
VC37

#### Use of land for a dwelling

A lot used for a dwelling must meet the following requirements:

- Access to the dwelling must be provided via an all-weather road with dimensions adequate to accommodate emergency vehicles.
- The dwelling must be connected to a reticulated sewerage system or if not available, the waste water must be treated and retained on-site in accordance with the State Environment Protection Policy (Waters of Victoria) under the Environment Protection Act 1970.
- The dwelling must be connected to a reticulated potable water supply or have an alternative potable water supply with adequate storage for domestic use as well as for fire fighting purposes.
- The dwelling must be connected to a reticulated electricity supply or have an alternative energy source.

These requirements also apply to a dependent person's unit.

#### 35.07-3

05/09/2013  
VC103

#### Subdivision

A permit is required to subdivide land.

Each lot must be at least the area specified for the land in a schedule to this zone. If no area is specified, each lot must be at least 40 hectares.

A permit may be granted to create smaller lots if any of the following apply:

- The subdivision is to create a lot for an existing dwelling. The subdivision must be a two lot subdivision.
- The subdivision is the re-subdivision of existing lots and the number of lots is not increased.
- The subdivision is by a public authority or utility service provider to create a lot for a utility installation.

#### 35.07-4

05/09/2013  
VC103

#### Buildings and works

A permit is required to construct or carry out any of the following:

- A building or works associated with a use in Section 2 of Clause 35.07-1. This does not apply to:
  - An alteration or extension to an existing dwelling provided the floor area of the alteration or extension is not more than the area specified in a schedule to this zone or, if no area is specified, 100 square metres. Any area specified must be more than 100 square metres.
  - An out-building associated with an existing dwelling provided the floor area of the out-building is not more than the area specified in a schedule to this zone or, if no area is specified, 100 square metres. Any area specified must be more than 100 square metres.
  - An alteration or extension to an existing building used for agriculture provided the floor area of the alteration or extension is not more than the area specified in a schedule to this zone or, if no area is specified, 200 square metres. Any area specified must be more than 200 square metres. The building must not be used to keep, board, breed or train animals.
  - A rainwater tank.
- Earthworks specified in a schedule to this zone, if on land specified in a schedule.
- A building which is within any of the following setbacks:
  - The setback from a Road Zone Category 1 or land in a Public Acquisition Overlay to be acquired for a road, Category 1 specified in a schedule to this zone or, if no setback is specified, 50 metres.
  - The setback from any other road or boundary specified in a schedule to this zone.
  - The setback from a dwelling not in the same ownership specified in a schedule to this zone.
  - 100 metres from a waterway, wetlands or designated flood plain.

### **35.07-5 Application requirements for dwellings**

19/01/2006  
VC37

An application to use a lot for a dwelling must be accompanied by a written statement which explains how the proposed dwelling responds to the decision guidelines for dwellings in the zone.

### **35.07-6 Decision guidelines**

05/09/2013  
VC103

Before deciding on an application to use or subdivide land, construct a building or construct or carry out works, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

#### **General issues**

- The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- Any Regional Catchment Strategy and associated plan applying to the land.
- The capability of the land to accommodate the proposed use or development, including the disposal of effluent.
- How the use or development relates to sustainable land management.
- Whether the site is suitable for the use or development and whether the proposal is compatible with adjoining and nearby land uses.
- How the use and development makes use of existing infrastructure and services.

### **Agricultural issues and the impacts from non-agricultural uses**

- Whether the use or development will support and enhance agricultural production.
- Whether the use or development will adversely affect soil quality or permanently remove land from agricultural production.
- The potential for the use or development to limit the operation and expansion of adjoining and nearby agricultural uses.
- The capacity of the site to sustain the agricultural use.
- The agricultural qualities of the land, such as soil quality, access to water and access to rural infrastructure.
- Any integrated land management plan prepared for the site.

### **Dwelling issues**

- Whether the dwelling will result in the loss or fragmentation of productive agricultural land.
- Whether the dwelling will be adversely affected by agricultural activities on adjacent and nearby land due to dust, noise, odour, use of chemicals and farm machinery, traffic and hours of operation.
- Whether the dwelling will adversely affect the operation and expansion of adjoining and nearby agricultural uses.
- The potential for the proposal to lead to a concentration or proliferation of dwellings in the area and the impact of this on the use of the land for agriculture.

### **Environmental issues**

- The impact of the proposal on the natural physical features and resources of the area, in particular on soil and water quality.
- The impact of the use or development on the flora and fauna on the site and its surrounds.
- The need to protect and enhance the biodiversity of the area, including the retention of vegetation and faunal habitat and the need to revegetate land including riparian buffers along waterways, gullies, ridgelines, property boundaries and saline discharge and recharge area.
- The location of on-site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.

### **Design and siting issues**

- The need to locate buildings in one area to avoid any adverse impacts on surrounding agricultural uses and to minimise the loss of productive agricultural land.
- The impact of the siting, design, height, bulk, colours and materials to be used, on the natural environment, major roads, vistas and water features and the measures to be undertaken to minimise any adverse impacts.
- The impact on the character and appearance of the area or features of architectural, historic or scientific significance or of natural scenic beauty or importance.
- The location and design of existing and proposed infrastructure including roads, gas, water, drainage, telecommunications and sewerage facilities.
- Whether the use and development will require traffic management measures.

**35.07-7**

**Advertising signs**

19/01/2006  
VC37

*Notes:*

Advertising sign requirements are at Clause 52.05. This zone is in Category 4.

*Refer to the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement, for strategies and policies which may affect the use and development of land.*

*Check whether an overlay also applies to the land.*

*Other requirements may also apply. These can be found at Particular Provisions.*



19/09/2013  
C121**SCHEDULE 1 TO THE FARMING ZONE**Shown on the planning scheme map as **FZ1**.

	Land	Area/Dimensions/Distance
Minimum subdivision area (hectares).	Land as delineated FZ1 on the planning scheme maps	40 hectares
Minimum area for which no permit is required to use land for a dwelling (hectares).	Land as delineated FZ1 on the planning scheme maps	60 hectares
Maximum area for which no permit is required to use land for timber production (hectares).	None specified	
Maximum floor area for which no permit is required to alter or extend an existing dwelling (square metres).	All land	100 square metres
Maximum floor area for which no permit is required to construct an out-building associated with a dwelling (square metres)	None specified	
Maximum floor area for which no permit is required to alter or extend an existing building used for agriculture (square metres).	All land	100 square metres
Minimum setback from a road (metres).	A Road Zone Category 1 or land in a Public Acquisition Overlay to be acquired for a road, Category 1	100 metres
	A Road Zone Category 2 or land in a Public Acquisition Overlay to be acquired for a road, Category 2	40 metres
	Any other road	20 metres
Minimum setback from a boundary (metres).	Any other boundary	5 metres
Minimum setback from a dwelling not in the same ownership (metres).	All land	100 metres

Permit requirement for earthworks	Land
Earthworks which change the rate of flow or the discharge point of water across a property boundary.	All land except for that which an approval or an exemption has been made or granted under the 'Earthworks Controls in the Shire of Campaspe, City of Greater Shepparton and Moira Shire – August 2010' incorporated at Clause 81.  All the land with the exception of Lot 3 PS331755 identified as a component of the Goulburn Valley Freight Logistics Centre at Mooroopna and which is

Permit requirement for earthworks	Land
	<p>subject to the prior preparation of a Flood Management Plan approved by the relevant Floodplain Management Authority and the Responsible Authority.</p> <p>That required for the construction of the Goulburn Valley Highway – Shepparton Bypass and associated works, subject to prior preparation of a Flood Management Plan which is approved by the relevant Floodplain Management Authority and the Responsible Authority.</p>
<p>Earthworks which increase the discharge of saline groundwater.</p>	<p>All land except for that which an approval or an exemption has been made or granted under the 'Earthworks Controls in the Shire of Campaspe, City of Greater Shepparton and Moira Shire – August 2010' incorporated at Clause 81</p> <p>All the land with the exception of Lot 3 PS331755 identified as a component of the Goulburn Valley Freight Logistics Centre at Mooroopna and which is subject to the prior preparation of a Flood Management Plan approved by the relevant Floodplain Management Authority and the Responsible Authority</p> <p>That required for the construction of the Goulburn Valley Highway – Shepparton Bypass and associated works, subject to the approval of the Responsible Authority.</p>

#### 44.03

16/01/2018  
VC142

### FLOODWAY OVERLAY

Shown on the planning scheme map as **FO** or **RFO** with a number (if shown).

#### Purpose

To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.

To identify waterways, major floodpaths, drainage depressions and high hazard areas which have the greatest risk and frequency of being affected by flooding.

To ensure that any development maintains the free passage and temporary storage of floodwater, minimises flood damage and is compatible with flood hazard, local drainage conditions and the minimisation of soil erosion, sedimentation and silting.

To reflect any declarations under Division 4 of Part 10 of the Water Act, 1989 if a declaration has been made.

To protect water quality and waterways as natural resources in accordance with the provisions of relevant State Environment Protection Policies, and particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria).

To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health.

#### 44.03-1

16/01/2018  
VC142

### Buildings and works

A permit is required to construct a building or to construct or carry out works, including:

- A fence.
- Roadworks, if the water flow path is redirected or obstructed.
- Bicycle pathways and trails.
- Public toilets.
- A domestic swimming pool or spa and associated mechanical and safety equipment if associated with one dwelling on a lot.
- Rainwater tank with a capacity of not more than 10,000 litres.
- A pergola or verandah, including an open-sided pergola or verandah to a dwelling with a finished floor level not more than 800mm above ground level and a maximum building height of 3 metres above ground level.
- A deck, including a deck to a dwelling with a finished floor level not more than 800mm above ground level.
- A non-domestic disabled access ramp.
- A dependant person's unit.

This does not apply:

- If a schedule to this overlay specifically states that a permit is not required.
- To flood mitigation works carried out by the responsible authority or floodplain management authority.
- To the following works in accordance with plans prepared to the satisfaction of the responsible authority:
  - The laying of underground sewerage, water and gas mains, oil pipelines, underground telephone lines and underground power lines provided they do not alter the topography of the land.
  - The erection of telephone or power lines provided they do not involve the construction of towers or poles.
- To post and wire and post and rail fencing.

#### 44.03-2 Subdivision

19/01/2006  
VC37

A permit is required to subdivide land. A permit may only be granted to subdivide land if the following apply:

- The subdivision does not create any new lots, which are entirely within this overlay. This does not apply if the subdivision creates a lot, which by agreement between the owner and the relevant floodplain management authority, is to be transferred to an authority for a public purpose.
- The subdivision is the resubdivision of existing lots and the number of lots is not increased, unless a local floodplain development plan incorporated into this scheme specifically provides otherwise.

#### 44.03-3 Application requirements

21/09/2009  
VC60

##### Local floodplain development plan

If a local floodplain development plan has been developed for the area and has been incorporated into this scheme, an application must be consistent with the plan.

##### Flood risk report

If a local floodplain development plan for the area has not been incorporated into this scheme, an application must be accompanied by a flood risk report to the satisfaction of the responsible authority, which must consider the following, where applicable:

- The State Planning Policy Framework and the Local Planning Policy Framework.
- The existing use and development of the land.
- Whether the proposed use or development could be located on flood-free land or land with a lesser flood hazard outside this overlay.
- The susceptibility of the development to flooding and flood damage.
- The potential flood risk to life, health and safety associated with the development. Flood risk factors to consider include:
  - The frequency, duration, extent, depth and velocity of flooding of the site and accessway.
  - The flood warning time available.
  - The danger to the occupants of the development, other floodplain residents and emergency personnel if the site or accessway is flooded.
- The effect of the development on redirecting or obstructing floodwater, stormwater or drainage water and the effect of the development on reducing flood storage and increasing flood levels and flow velocities.
- The effects of the development on river health values including wetlands, natural habitat, stream stability, erosion, environmental flows, water quality and sites of scientific significance.

#### 44.03-4 Exemption from notice and review

19/01/2006  
VC37

An application under this overlay is exempt from the notice requirements of Section 52(1)(a), (b) and (d), the decision requirements of Section 64(1), (2) and (3) and the review rights of Section 82(1) of the Act.

#### 44.03-5 Referral of applications

19/01/2006  
VC37

An application must be referred to the relevant floodplain management authority under Section 55 of the Act unless in the opinion of the responsible authority the proposal

satisfies requirements or conditions previously agreed in writing between the responsible authority and the floodplain management authority.

**44.03-6**

**Decision guidelines**

21/09/2009  
VC60

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

- The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- The local floodplain development plan or flood risk report.
- Any comments of the relevant floodplain management authority.
- The Victorian River Health Strategy (2002) and any relevant regional river health strategy and associated wetland plan.

*Notes:*

*Refer to the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement, for strategies and policies which may affect the use and development of land.*

*Check the requirements of the zone which applies to the land.*

*Other requirements may also apply. These can be found at Particular Provisions.*



25/08/2011  
C138

## **SCHEDULE TO THE FLOODWAY OVERLAY**

Shown on the planning scheme map as **FO**

### **1.0**

25/08/2011  
C138

#### **Permit requirement**

A permit is not required to construct or carry out the following buildings or works:

- a single or multiple industrial, retail or office building extension where the combined ground floor area of the extension since 29th July 1999 is not greater than 100 m<sup>2</sup>;
- a single or multiple dwelling extension where the combined ground floor area of the extension since 29th July 1999 is not greater than 20 m<sup>2</sup>;
- an upper storey extension to an existing building within the existing building footprint;
- a pergola, veranda, decking, garage, carport or domestic shed adjacent to an existing dwelling;
- an in-ground swimming pool with open style security fencing adjacent to an existing dwelling;
- a pump shed;
- a wooden or metal paling fence or cyclone mesh fence in a residential, business or industrial zone (not including a brick, masonry, or concrete wall);
- an agricultural shed (other than one used for industrial, retail or office purposes) for the storage of farm machinery, farm vehicles and workshop associated with a rural use in a farming zone with a floor area not more than 100 m<sup>2</sup>;
- a sportsground, racecourse or recreation area (with no permanent grandstand or raised viewing area), pathways and trails constructed at general natural surface elevation, playground, open picnic shelter, picnic table, drinking tap, rubbish bin, barbecue, works associated with an apiary or underground infrastructure;
- an outdoor advertising sign/structure;
- a mast, antenna, lighting or telecommunications tower;
- an accessway constructed at general natural surface elevations;
- roadworks carried out by a public authority;
- earthworks/dam in accordance with the Earthworks Controls in the Shire of Campaspe, City of Greater Shepparton and Moira Shire – August 2010 at Clause 81 and approved by the responsible authority and the floodplain management authority; and
- earthworks/flood mitigation works in association with the Goulburn Valley Freight Logistics Centre provided such works are in accordance with a Flood Management Plan approved by the responsible authority and the floodplain management authority.

### **2.0**

25/08/2011  
C138

#### **Decision Guidelines – Greater Shepparton Local Floodplain Development Plans**

In addition to the Decision Guidelines in Clause 44.03-5, before deciding on an application, the responsible authority must consider the following relevant local floodplain development plans, which has been incorporated at Clause 81 of this scheme, as indicated on the attached map:

- Precinct of Lower Goulburn (2006);
- Precinct of Goulburn River (2006);
- Precinct of Broken River (2006);
- Precinct of Broken Creek (2006);

- Precinct of Honeysuckle Creek and Seven Creeks (2006); and
- Precinct of Mosquito Creek (2006).

The Responsible Authority must also consider the 'Earthworks Controls in the Shire of Campaspe, City of Greater Shepparton and Moira Shire – August 2010' incorporated at Clause 81.

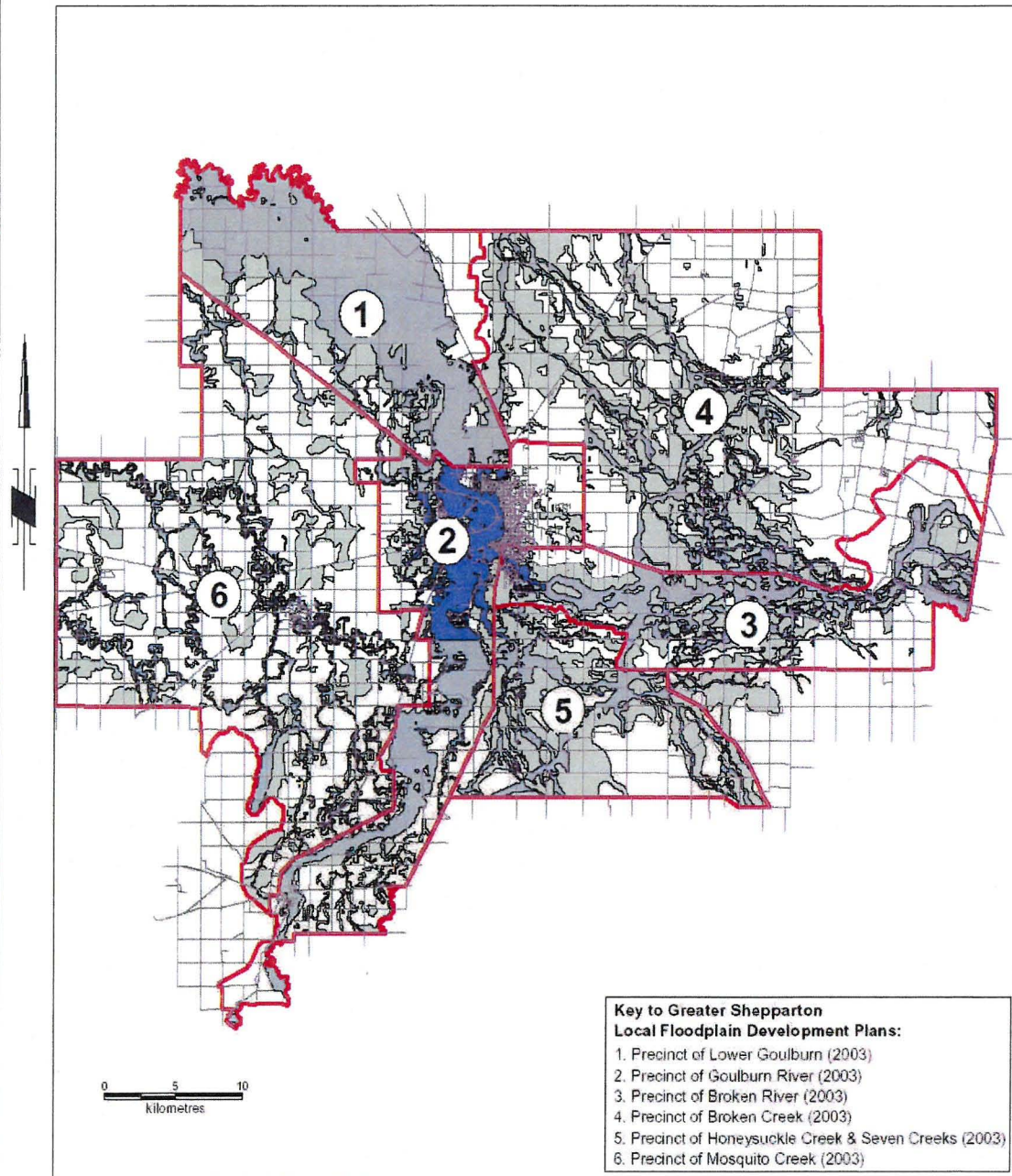
### 3.0

16/02/2006  
C63

#### **Referral of applications**

An application is not required to be referred to the relevant floodplain management authority pursuant to Section 55 of the *Planning and Environment Act 1987* if the application is in accordance with a local floodplain development plan which has been incorporated at Clause 81 of this scheme.

## Greater Shepparton Local Floodplain Development Plans



### LEGEND

- Roads
- Precinct Boundary
- LSIO region
- FO region
- UFZ region

PREPARED BY: PLANNING DATA AND MAPPING TEAM  
DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT

The above Greater Shepparton Local Floodplain Development Plans are incorporated documents at Clause 81 of the Greater Shepparton Planning Scheme which contain flood information and specific development requirements.

These maps showing FO, LSIO & UFZ areas are indicative only and not to be used as a substitute over the planning scheme maps.

FLOODWAY OVERLAY - SCHEDULE



PAGE 2 OF 2



**44.04**

16/01/2018  
VC142

**LAND SUBJECT TO INUNDATION OVERLAY**

Shown on the planning scheme map as **LSIO** with a number (if shown).

**Purpose**

To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.

To identify land in a flood storage or flood fringe area affected by the 1 in 100 year flood or any other area determined by the floodplain management authority.

To ensure that development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.

To reflect any declaration under Division 4 of Part 10 of the Water Act, 1989 where a declaration has been made.

To protect water quality in accordance with the provisions of relevant State Environment Protection Policies, particularly in accordance with Clauses 33 and 35 of the State Environment Protection Policy (Waters of Victoria).

To ensure that development maintains or improves river and wetland health, waterway protection and flood plain health.

**44.04-1**

16/01/2018  
VC142

**Buildings and works**

A permit is required to construct a building or to construct or carry out works, including:

- A fence.
- Roadworks, if the water flow path is redirected or obstructed.
- Bicycle pathways and trails.
- Public toilets.
- A domestic swimming pool or spa and associated mechanical and safety equipment if associated with one dwelling on a lot.
- Rainwater tank with a capacity of not more than 10,000 litres.
- A pergola or verandah, including an open-sided pergola or verandah to a dwelling with a finished floor level not more than 800mm above ground level and a maximum building height of 3 metres above ground level.
- A deck, including a deck to a dwelling with a finished floor level not more than 800mm above ground level.
- A non-domestic disabled access ramp.
- A dependent person's unit.

This does not apply:

- If a schedule to this overlay specifically states that a permit is not required.
- To flood mitigation works carried out by the responsible authority or floodplain management authority.
- To the following works in accordance with plans prepared to the satisfaction of the responsible authority:
  - The laying of underground sewerage, water and gas mains, oil pipelines, underground telephone lines and underground power lines provided they do not alter the topography of the land.
  - The erection of telephone or power lines provided they do not involve the construction of towers or poles.
- To post and wire and post and rail fencing.

#### 44.04-2 Subdivision

19/01/2006  
VC37

A permit is required to subdivide land.

#### 44.04-3 Application requirements

19/01/2006  
VC37

##### Local floodplain development plan

If a local floodplain development plan has been developed for the area and has been incorporated into this scheme, an application must be consistent with the plan.

#### 44.04-4 Exemption from notice and review

19/01/2006  
VC37

An application under this overlay is exempt from the notice requirements of Section 52(1)(a), (b) and (d), the decision requirements of Section 64(1), (2) and (3) and the review rights of Section 82(1) of the Act.

#### 44.04-5 Referral of applications

19/01/2006  
VC37

An application must be referred to the relevant floodplain management authority under Section 55 of the Act unless in the opinion of the responsible authority, the proposal satisfies requirements or conditions previously agreed in writing between the responsible authority and the floodplain management authority.

#### 44.04-6 Decision guidelines

21/09/2009  
VC60

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

- The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- Any local floodplain development plan.
- Any comments from the relevant floodplain management authority.
- The existing use and development of the land.
- Whether the proposed use or development could be located on flood-free land or land with a lesser flood hazard outside this overlay.
- The susceptibility of the development to flooding and flood damage.
- The potential flood risk to life, health and safety associated with the development. Flood risk factors to consider include:
  - The frequency, duration, extent, depth and velocity of flooding of the site and accessway.
  - The flood warning time available.
  - The danger to the occupants of the development, other floodplain residents and emergency personnel if the site or accessway is flooded.
- The effect of the development on redirecting or obstructing floodwater, stormwater or drainage water and the effect of the development on reducing flood storage and increasing flood levels and flow velocities.
- The effect of the development on river health values including wetlands, natural habitat, stream stability, erosion, environmental flows, water quality and sites of scientific significance.

Notes:

*Refer to the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement, for strategies and policies which may affect the use and development of land.*

*Check the requirements of the zone which applies to the land.*

*Other requirements may also apply. These can be found at Particular Provisions.*



11/02/2016  
C179**SCHEDULE TO THE LAND SUBJECT TO INUNDATION OVERLAY**Shown on the planning scheme map as **LSIO**.**1.0**11/02/2016  
C179**Permit requirement**

A permit is not required to construct or carry out the following buildings or works:

- a single dwelling on an allotment within General Residential Zones, Neighbourhood Residential Zones, Residential Growth Zones where the floor level is at least 300 mm above the 100-year ARI flood level, or a higher level set by the responsible authority;
- a replacement dwelling where the floor level is at least 300 mm above the 100-year ARI flood level, or a higher level set by the responsible authority;
- a single or multiple dwelling extension where:
  - the combined ground floor area of the extension since 29th July 1999 is not greater than 20 m<sup>2</sup>; or
  - the owner can demonstrate to the satisfaction of the responsible authority that the floor height of the proposed dwelling extension/s is at least 300 millimetres above the 100-year ARI flood at the date of enquiry.
- an upper storey extension to an existing building within the existing building footprint;
- a pergola, verandah, decking, garage, carport, domestic shed, spa or swimming pool adjacent to an existing dwelling; including the extension to any of the aforementioned;
- an agricultural shed (other than one used for industrial, retail or office purposes) for the storage of farm machinery, farm vehicles and workshop associated with a rural use in a farming zone with a floor area not more than 130 m<sup>2</sup>;
- a new industrial, retail, or office building within any industrial or business zone of Mooroopna, Shepparton and Tatura where the floor level is at least 300 millimetres above the 100-year ARI flood level, or a higher level set by the responsible authority;
- an extension to an existing industrial, retail or office building provided that the total ground floor area of the building is less than 130 m<sup>2</sup>;
- a fence in a residential, business or industrial zone;
- open type fencing (not including solid fences such as wooden or metal paling fences, cyclone mesh fences or brick, stone or concrete wall);
- an outdoor advertising sign/structure;
- a pump shed;
- a hay shed with open sides;
- a sportsground, racecourse or recreation area (with no permanent grandstand or raised viewing area), pathways and trails constructed at general natural surface elevation, playground, open picnic shelter, picnic table, drinking tap, rubbish bin, barbecue, works associated with an apiary or underground infrastructure;
- a mast, antenna, lighting or telecommunications tower;
- an accessway constructed at general natural surface elevations;
- roadworks carried out by a public authority;

- earthworks/dam in accordance with the *Earthworks Controls in the Shire of Campaspe, City of Greater Shepparton and Moira Shire – August 2010* at Clause 81 and approved by the responsible authority and the floodplain management authority; and
- earthworks/flood mitigation works in association with the Goulburn Valley Freight Logistics Centre provided such works are in accordance with a Flood Management Plan approved by the responsible authority and the floodplain management authority.

**2.0**

25/08/2011  
C138

**Decision Guidelines – Greater Shepparton Local Floodplain Development Plans**

In addition to the Decision Guidelines in Clause 44.03-5, before deciding on an application, the responsible authority must consider the following relevant local floodplain development plans, which has been incorporated at Clause 81 of this scheme, as indicated on the attached map:

- Precinct of Lower Goulburn (2006);
- Precinct of Goulburn River (2006);
- Precinct of Broken River (2006);
- Precinct of Broken Creek (2006);
- Precinct of Honeysuckle Creek and Seven Creeks (2006); and
- Precinct of Mosquito Creek (2006).

The Responsible Authority must also consider the '*Earthworks Controls in the Shire of Campaspe, City of Greater Shepparton and Moira Shire – August 2010*' incorporated at Clause 81.

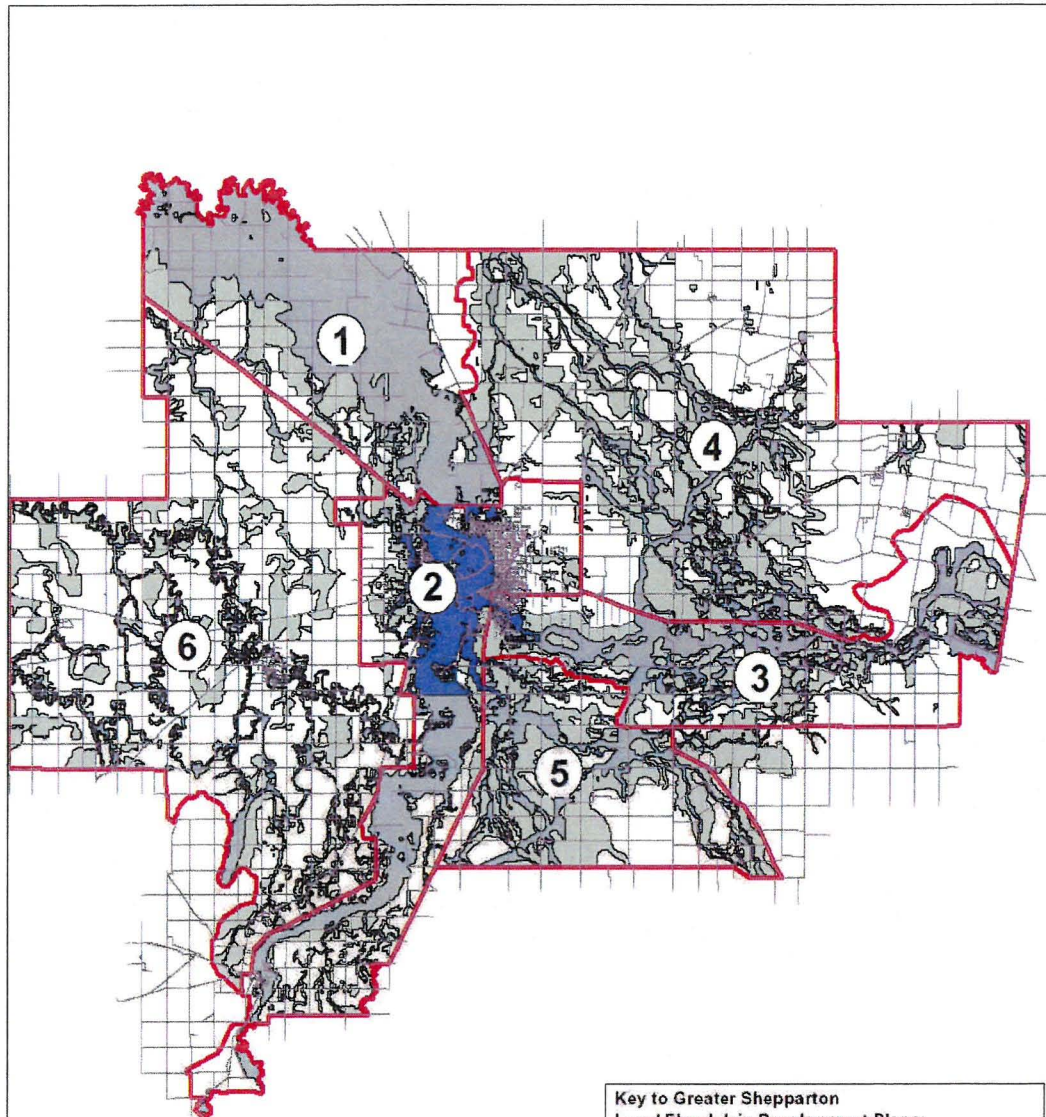
**3.0**

16/02/2006  
C63

**Referral of applications**






An application is not required to be referred to the relevant floodplain management authority pursuant to Section 55 of the *Planning and Environment Act 1987* if the application is in accordance with a local floodplain development plan which has been incorporated at Clause 81 of this scheme.

## Greater Shepparton Local Floodplain Development Plans



- Key to Greater Shepparton  
Local Floodplain Development Plans:**
1. Precinct of Lower Goulburn (2003)
  2. Precinct of Goulburn River (2003)
  3. Precinct of Broken River (2003)
  4. Precinct of Broken Creek (2003)
  5. Precinct of Honeysuckle Creek & Seven Creeks (2003)
  6. Precinct of Mosquito Creek (2003)

### LEGEND

-  Roads
-  Precinct Boundary
-  LSIO region
-  FO region
-  UFZ region

PREPARED BY: PLANNING DATA AND MAPPING TEAM  
DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT

The above Greater Shepparton Local Floodplain Development Plans are incorporated documents at Clause 81 of the Greater Shepparton Planning Scheme which contain flood information and specific development requirements.

These maps showing FO, LSIO & UFZ areas are indicative only and not to be used as a substitute over the planning scheme maps.

LAND SUBJECT TO INUNDATION OVERLAY - SCHEDULE



PAGE 2 OF 2



**52.17**  
02/04/2015  
VC124

## **NATIVE VEGETATION**

### **Purpose**

To ensure permitted clearing of native vegetation results in no net loss in the contribution made by native vegetation to Victoria's biodiversity. This is achieved through the following approach:

- Avoid the removal of native vegetation that makes a significant contribution to Victoria's biodiversity.
- Minimise impacts on Victoria's biodiversity from the removal of native vegetation.
- Where native vegetation is permitted to be removed, ensure that an offset is provided in a manner that makes a contribution to Victoria's biodiversity that is equivalent to the contribution made by the native vegetation to be removed.

To manage native vegetation to minimise land and water degradation.

To manage native vegetation near buildings to reduce the threat to life and property from bushfire.

**52.17-1**  
15/09/2008  
VC49

### **Native vegetation precinct plans**

This clause does not apply if a Native vegetation precinct plan corresponding to the land is incorporated into this scheme.

**52.17-2**  
20/12/2013  
VC105

### **Permit requirement**

A permit is required to remove, destroy or lop native vegetation, including dead native vegetation. This does not apply:

- If the table to Clause 52.17-7 specifically states that a permit is not required.
- To the removal, destruction or lopping of native vegetation specified in the schedule to this clause.
- To an area specified in the schedule to this clause.

### **Class of application**

An application to remove, destroy or lop native vegetation must be classified as one of the following risk-based pathways: low, moderate or high, as defined in the *Permitted clearing of native vegetation Biodiversity assessment guidelines* (Department of Environment and Primary Industries, September 2013). The application requirements and decision guidelines included in this clause must be applied in accordance with the classified pathway.

**52.17-3**  
20/12/2013  
VC105

### **Application requirements**

All applications to remove, destroy or lop native vegetation must comply with the General application requirements.

An application in the moderate or high risk-based pathway must also comply with the moderate and high risk-based pathway application requirements.

## General application requirements

All applications to remove, destroy or lop native vegetation must be accompanied by the following information, as appropriate:

- The location of the native vegetation to be removed.
- A description of the native vegetation to be removed, including the area of the patch of native vegetation and/or the number of any scattered trees to be removed.
- Maps or plans containing information set out in the *Permitted clearing of native vegetation – Biodiversity assessment guidelines*, (Department of Environment and Primary Industries, September 2013)
- Recent dated photographs of the native vegetation to be removed.
- Topographic information, highlighting ridges, crests and hilltops, streams and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion.
- A copy of any property vegetation plan that applies to the site.
- Where the removal, destruction or lopping of vegetation is to create defensible space, a statement explaining why removal, destruction or lopping of native vegetation is required having regard to other available bushfire risk mitigation measures. This does not apply to the creation of defensible space in conjunction with an application under the Bushfire Management Overlay.
- Details of any other native vegetation that was permitted to be removed on the same property with the same ownership in the five year period before the application for a permit to remove native vegetation is lodged.
- The strategic biodiversity score of the native vegetation to be removed.
- The offset requirement if the native vegetation is permitted to be removed.

## Moderate and high risk-based pathway application requirements

An application included in the moderate and high risk-based pathway must also be accompanied by the following information, as appropriate:

- A habitat hectare assessment of the native vegetation to be removed.
- A statement outlining what steps have been taken to minimise the impacts of the removal of native vegetation on biodiversity.
- An assessment of whether the proposed removal of native vegetation will have a significant impact on Victoria's biodiversity, with specific regard to the proportional impact on habitat for any rare or threatened species.
- An offset strategy that details how a compliant offset will be secured to offset the biodiversity impacts of the removal of native vegetation.

52.17-4

16/03/2006  
VC38

### Property vegetation plans

Any permit granted to remove, destroy or lop native vegetation in accordance with a property vegetation plan:

- May include conditions which reflect relevant restrictions or obligations contained in that plan.
- Must include the following condition:

“This permit will expire if one of the following circumstances applies:

- the development or any stage of it does not start within ten years of the date of this permit.
- the development or any stage of it is not completed within ten years of the date of this permit.”

## 52.17-5

20/12/2013  
VC105

### Decision guidelines

Before deciding on an application, in addition to the decision guidelines in Clause 65, the responsible authority must consider, as appropriate:

### Biodiversity considerations

#### For all applications

- The contribution that native vegetation to be removed makes to Victoria’s biodiversity. This is determined by:
  - The extent and condition of the native vegetation.
  - The biodiversity value of the native vegetation, including whether the native vegetation is important habitat for rare or threatened species.
- Whether the removal of native vegetation is defined as being in the low, moderate or high risk-based pathway, as defined in the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (Department of Environment and Primary Industries, September 2013) and apply the decision guidelines accordingly.

#### For an application considered under the moderate risk-based pathway

- Whether reasonable steps have been taken to minimise the impacts of the removal of native vegetation on biodiversity.
- That an offset that meets the offset requirements for the native vegetation that is to be removed as defined in the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (Department of Environment and Primary Industries, September 2013) has been identified.

#### For an application considered under the high risk-based pathway

- Whether reasonable steps have been taken to minimise the impacts of the removal of native vegetation on biodiversity.
- Whether the native vegetation to be removed makes a significant contribution to Victoria’s biodiversity.
- That an offset that meets the offset requirements for the native vegetation that is to be removed as defined in the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (Department of Environment and Primary Industries, September 2013) has been identified.

### Other matters

The responsible authority must also consider the following issues, as appropriate:

- The need to remove, destroy or lop native vegetation to create defensible space to reduce the risk of bushfire to life and property, having regard to the other available bushfire risk mitigation measures.

- The role of native vegetation in:
  - Protecting water quality and waterway and riparian ecosystems, particularly within 30 metres of a wetland or waterway and in special water supply catchment areas listed in the *Catchment and Land Protection Act 1994*.
  - Preventing land degradation, including soil erosion, salination, acidity, instability, and water logging, particularly:
    - Where ground slopes are more than 20 per cent.
    - On land which is subject to soil erosion or slippage.
    - In harsh environments, such as coastal or alpine area.
  - Preventing adverse effects on groundwater quality on land:
    - Where groundwater recharge to saline waterbodies occurs.
    - That is in proximity to a discharge area.
    - Which is a known recharge area.
- In the case of timber production, the benefits of including a condition requiring operations to be carried out in accordance with any relevant code of practice under Part 5 of the *Conservation, Forests and Land Act 1987*.
- Managing native vegetation to preserve identified landscape values.
- The conservation of native vegetation protected under the *Aboriginal Heritage Act 2006*.

#### 52.17-6

20/12/2013  
VC105

#### Offset requirements

The biodiversity impacts of the removal of native vegetation are required to be offset, in accordance with the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (Department of Environment and Primary Industries, September 2013). The conditions on the permit for the removal of native vegetation must specify this offset requirement. The offset requirements must take account of:

- The location of the native vegetation to be removed.
- The condition and extent of native vegetation to be removed.
- The strategic biodiversity score of the native vegetation to be removed.
- Whether the native vegetation to be removed is important habitat for rare or threatened species, and the proportional impact of the removal on those species' habitat.

## Table of exemptions

No permit is required to remove, destroy or lop native vegetation to the minimum extent necessary if any of the following apply:

<b>Crown Land</b>	<ul style="list-style-type: none"> <li>To manage Crown land. The works must be: <ul style="list-style-type: none"> <li>by or on behalf, or with the written permission of the Secretary of the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the <i>Conservation, Forest and Lands Act 1987</i>); and</li> <li>on Crown land managed by or on behalf of the Secretary of the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the <i>Conservation, Forest and Lands Act 1987</i>).</li> </ul> </li> <li>The vegetation is to be removed, destroyed or lopped on Crown land and by a person acting under and in accordance with an authorisation order made under sections 82 or 84 of the <i>Traditional Owner Settlement Act 2010</i>.</li> </ul>
<b>Dead vegetation</b>	<ul style="list-style-type: none"> <li>The native vegetation is dead.</li> </ul> <p>This exemption does not apply to standing dead trees with a trunk diameter of 40 centimetres or more at a height of 1.3 metres above ground level.</p>
<b>Emergency works</b>	<ul style="list-style-type: none"> <li>The native vegetation presents an immediate risk of personal injury or damage to property and only that part of vegetation which presents the immediate risk is removed, destroyed or lopped.</li> <li>By or on behalf of a public authority or municipal council to create an emergency access or to enable emergency works.</li> </ul>
<b>Existing and approved buildings</b>	<ul style="list-style-type: none"> <li>To enable the: <ul style="list-style-type: none"> <li>Construction of a building approved by a planning permit granted under this planning scheme or by building permit granted under <i>Building Act 1993</i>, before 15 September 2008.</li> <li>Use and maintenance of a building constructed or approved by a planning permit granted under this planning scheme or by building permit granted under <i>Building Act 1993</i>, before 15 September 2008.</li> </ul> </li> </ul> <p>This exemption does not apply to:</p> <ul style="list-style-type: none"> <li>Enable the operation or maintenance of a fence.</li> <li>Native vegetation located more than 10 metres from a building.</li> </ul>
<b>Existing buildings and works in the Farming Zone and Rural Activity Zone</b>	<ul style="list-style-type: none"> <li>To enable the use or maintenance of a building or works used for Agricultural production, including a dam, utility service, bore, horticultural trellising and accessway, in the Farming Zone or the Rural Activity Zone.</li> </ul> <p>This exemption does not apply to:</p> <ul style="list-style-type: none"> <li>The use or maintenance of a Dwelling.</li> <li>The operation or maintenance of a fence.</li> <li>Native vegetation located more than 10 metres from a building or works.</li> </ul>

No permit is required to remove, destroy or lop native vegetation to the minimum extent necessary if any of the following apply:

**Fences**

- To enable the:
  - Construction of a fence on a boundary between properties in different ownership; or
  - Operation or maintenance of an existing fence.

The combined maximum width of clearing permitted either side of the fence under this exemption is 4 metres.

**Fire protection**

- For fire fighting measures, periodic fuel reduction burning, or the making of a fuel break or fire fighting access track up to 6 metres wide.
- For the making of a fuelbreak by or on behalf of a public authority in accordance with a strategic fuelbreak plan approved by the Secretary to Department of Environment, Land, Water and Planning (as constituted under Part 2 of the *Conservation, Forest and Lands Act 1987*). The maximum width of a fuelbreak must not exceed 40 metres.
- The native vegetation is a tree overhanging the roof of a building used for Accommodation. This exemption only allows the removal, destruction or lopping of that part of the tree which is overhanging the building and which is necessary for fire protection.
- In accordance with a fire prevention notice under:
  - Section 65 of the *Forests Act 1958*.
  - Section 41 of the *Country Fire Authority Act 1958*.
  - Section 8 of the *Local Government Act 1989*.
- To keep the whole or any part of any native vegetation clear of an electric line in accordance with a code of practice prepared under Part 8 of the *Electricity Safety Act 1998*.
- In accordance with any code of practice prepared in accordance with Part 8 of the *Electricity Safety Act 1998* in order to minimise the risk of bushfire ignition in the proximity of electricity lines.
- To reduce fuel loads on roadsides to minimise the risk to life and property from bushfire of an existing public road managed by the relevant responsible road authority (as defined by the *Road Management Act 2004*) in accordance with the written agreement of the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the *Conservation, Forest and Lands Act 1987*).

*Note: Further permit exemptions for bushfire protection can be found at Clause 52.48.*

**Geothermal energy exploration and extraction**

- To enable the carrying out of geothermal energy exploration or extraction in accordance with the *Geothermal Energy Resources Act 2005*.

**Grasses**

- For mowing or slashing of grass for maintenance only.  
Under this exemption the grass must be:
  - Located within a lawn, garden or other planted area; or
  - Maintained at a height of at least 100 millimetres above ground level.

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No permit is required to remove, destroy or lop native vegetation to the minimum extent necessary if any of the following apply:

<b>Grazing</b>	<ul style="list-style-type: none"> <li>For grazing by domestic stock.</li> </ul> <p>This exemption allows grazing on unused roads specified under Section 400 of the <i>Land Act 1958</i>.</p>
<b>Greenhouse gas sequestration</b>	<ul style="list-style-type: none"> <li>To enable the carrying out of greenhouse gas sequestration in accordance with the <i>Greenhouse Gas Geological Sequestration Act 2008</i>.</li> </ul>
<b>Greenhouse gas sequestration exploration</b>	<ul style="list-style-type: none"> <li>To enable the carrying out of greenhouse gas sequestration exploration in accordance with the <i>Greenhouse Gas Geological Sequestration Act 2008</i>.</li> </ul>
<b>Harvesting for timber production – naturally established native vegetation</b>	<ul style="list-style-type: none"> <li>To enable the carrying out of timber harvesting operations and associated activities which are: <ul style="list-style-type: none"> <li>Undertaken on public land under a licence issued by the Secretary to the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the <i>Conservation, Forest and Lands Act 1987</i>) under section 52 of the <i>Forests Act 1958</i>; or</li> <li>Authorised in accordance with Part 5 of the <i>Sustainable Forests (Timber) Act 2004</i>.</li> </ul> </li> </ul>
<b>Land management notices</b>	<ul style="list-style-type: none"> <li>To comply with land management notice issued under the <i>Catchment and Land Protection Act 1994</i>.</li> </ul>
<b>Land use conditions</b>	<ul style="list-style-type: none"> <li>To comply with a land use condition served under the <i>Catchment and Land Protection Act 1994</i>.</li> </ul>
<b>Lopping and pruning for maintenance</b>	<ul style="list-style-type: none"> <li>Pruning or lopping for maintenance only and no more than 1/3 of the foliage is removed from any individual plant.</li> </ul> <p>This exemption does not apply to:</p> <ul style="list-style-type: none"> <li>Pruning or lopping of the trunk of a tree or shrub.</li> <li>Native vegetation within a road or railway reservation.</li> </ul>
<b>Mineral exploration</b>	<ul style="list-style-type: none"> <li>To enable the carrying out of Mineral exploration.</li> </ul>
<b>Mineral extraction</b>	<ul style="list-style-type: none"> <li>To enable the carrying out of Mineral extraction in accordance with a work plan approved under the <i>Mineral Resources (Sustainable Development) Act 1990</i> and authorised by a work authority granted under that Act.</li> </ul>

No permit is required to remove, destroy or lop native vegetation to the minimum extent necessary if any of the following apply:

**New buildings and works in the Farming Zone and Rural Activity Zone**

- To enable the construction of a building or works used for Agricultural production, including a dam, utility service, bore and accessway, in the Farming Zone or the Rural Activity Zone.

The maximum extent of native vegetation removed, destroyed or lopped under this exemption on contiguous land in the same ownership in a five year period must not exceed any of the following:

- 1 hectare of native vegetation which does not include a tree.
- 15 native trees if each tree has a trunk diameter of less than 40 centimetres at a height of 1.3 metres above ground level.
- 5 native trees if each tree has a trunk diameter of 40 centimetres or more at a height of 1.3 metres above ground level.

This exemption does not apply:

- To the construction or operation of a pivot irrigation system or horticultural trellising.

**New dwellings in the Farming Zone and Rural Activity Zone**

- To enable the construction of a Dwelling, in the Farming Zone or the Rural Activity Zone.

The maximum extent of native vegetation removed, destroyed or lopped under this exemption on contiguous land in the same ownership in a five year period is must not exceed any of the following:

- 300 square metres of native vegetation which does not include a tree.
- 5 native trees if each tree has a trunk diameter of less than 40 centimetres at a height of 1.3 metres above ground level.
- 1 native tree if the tree has a trunk diameter of 40 centimetres or more at a height of 1.3 metres above ground level.

This exemption does not apply:

- To the construction of a tennis court, horse ménage or swimming pool.

**Personal use**

- Native vegetation removal by cutting only to obtain reasonable amounts of wood for personal use by the owner or occupier of the land. Personal use includes wood used for firewood, the construction of fences and buildings on the same land, and hobbies such as craft.

This exemption does not apply to:

- Standing living and dead trees with a trunk diameter of 40 centimetres or more at a height of 1.3 metres above ground level.
- Living native vegetation on contiguous land in the same ownership with an area less than 10 hectares.

**No permit is required to remove, destroy or lop native vegetation to the minimum extent necessary if any of the following apply:**

<b>Pest animal burrows</b>	<ul style="list-style-type: none"> <li>To enable the removal of pest animal burrows in the Farming Zone or the Rural Activity Zone.</li> </ul> <p>Unless in accordance with the written agreement of an officer of the Department responsible for administering the <i>Flora and Fauna Guarantee Act 1998</i>, the maximum extent of native vegetation removed, destroyed or lopped under this exemption on contiguous land in the same ownership in a five year period must not exceed any of the following:</p> <ul style="list-style-type: none"> <li>1 hectare of native vegetation which does not include a tree.</li> <li>15 native trees if each tree has a trunk diameter of less than 20 centimetres at a height of 1.3 metres above ground level.</li> </ul>
<b>Planted vegetation</b>	<ul style="list-style-type: none"> <li>The native vegetation has been planted or grown as a result of direct seeding for Crop raising, Extensive animal husbandry, aesthetic or amenity purposes, including: agroforestry (the simultaneous and substantial production of forest and other agricultural products from the same land unit), shelter belts, woodlots, street trees, gardens or the like.</li> </ul> <p>This exemption does not apply if public funding was provided to assist in planting or managing the native vegetation and the terms of the funding did not anticipate removal or harvesting of the vegetation.</p>
<b>Railways</b>	<ul style="list-style-type: none"> <li>To maintain the safe and efficient function of an existing railway or railway access road, in accordance with the written agreement of the Secretary of the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the <i>Conservation, Forest and Lands Act 1987</i>).</li> </ul>
<b>Regrowth</b>	<ul style="list-style-type: none"> <li>For regrowth which has naturally established or regenerated on land lawfully cleared of naturally established native vegetation and is: <ul style="list-style-type: none"> <li>Less than 10 years old; or</li> <li>Bracken (<i>Pteridium esculentum</i>); or</li> <li>Less than ten years old at the time of a Property Vegetation Plan being signed by the Secretary of the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the <i>Conservation, Forest and Lands Act 1987</i>), and is shown on that Plan as being 'certified regrowth', and is on land that is to be used or maintained for cultivation or pasture during the term of that Plan; or</li> <li>Within the boundary of a timber production plantation, as indicated on a Plantation Development Notice or other documented record, and has established after the plantation.</li> </ul> </li> </ul> <p>This exemption does not apply to land on which native vegetation has been cleared or otherwise destroyed or damaged as a result of flood, fire or other natural disaster.</p>
<b>Road safety</b>	<ul style="list-style-type: none"> <li>To maintain the safe and efficient function of an existing road managed by a public authority or municipal council in accordance with the written agreement of the Secretary of the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the <i>Conservation, Forest and Lands Act 1987</i>).</li> </ul>

No permit is required to remove, destroy or lop native vegetation to the minimum extent necessary if any of the following apply:

<b>Stone exploration</b>	<ul style="list-style-type: none"> <li>To enable the carrying out of the Stone exploration.</li> </ul> <p>The maximum extent of native vegetation removed, destroyed or lopped under this exemption on contiguous land in the same ownership in a five year period must not exceed any of the following:</p> <ul style="list-style-type: none"> <li>1 hectare of native vegetation which does not include a tree.</li> <li>15 native trees if each tree has a trunk diameter of less than 40 centimetres at a height of 1.3 metres above ground level.</li> <li>5 native trees if each tree has a trunk diameter of 40 centimetres or more at a height of 1.3 metres above ground level.</li> </ul> <p>This exemption does not apply to costeaning and bulk sampling activities.</p>
<b>Stone extraction</b>	<ul style="list-style-type: none"> <li>To enable the carrying out of Stone extraction in accordance with a work plan approved under the <i>Mineral Resources (Sustainable Development) Act 1990</i> and authorised by a work authority granted under that Act.</li> </ul>
<b>Site area</b>	<ul style="list-style-type: none"> <li>The native vegetation is on land which, together with all contiguous land in one ownership, has an area of less than 0.4 hectare.</li> <li>This exemption does not apply to native vegetation within a road reservation.</li> </ul>
<b>Stock movements on roads</b>	<ul style="list-style-type: none"> <li>As a result of moving stock along a road.</li> <li>This exemption does not apply to grazing as a result of holding stock in a temporary fence (including an electric fence) on a roadside for the purpose of feeding.</li> </ul>
<b>Surveying</b>	<ul style="list-style-type: none"> <li>To establish sight-lines for the measurement of land by surveyors in the exercise of their profession, and if using hand-held tools.</li> </ul>
<b>Utility installations</b>	<ul style="list-style-type: none"> <li>To maintain a Minor utility installation.</li> <li>To maintain a Utility installation in accordance with a code(s) of practice approved by Secretary of the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the <i>Conservation, Forest and Lands Act 1987</i>), incorporated into this scheme and listed in the Schedule to this Clause.</li> <li>To enable the construction of a Utility installation in accordance with a code(s) of practice approved by Secretary of the Department of Environment, Land, Water and Planning (as constituted under Part 2 of the <i>Conservation, Forest and Lands Act 1987</i>), incorporated into this scheme and listed in the Schedule to this Clause.</li> </ul>

No permit is required to remove, destroy or lop native vegetation to the minimum extent necessary if any of the following apply:

**Vehicle access  
from public roads**

- To enable the construction or maintenance of a vehicle access across a road reserve from a property boundary to a public road, subject to authorisation from the relevant public land manager.

This exemption only applies to properties which share a common boundary with the road reserve.

The maximum total width of native vegetation permitted to be removed, destroyed or lopped under this exemption is 6 metres.

This exemption does not apply where there is a practical opportunity to site the accessway to avoid the removal, destruction or lopping of native vegetation.

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**Weeds**

- To enable the removal or destruction of a weed listed in the schedule to this clause.

The maximum extent of native vegetation removed, destroyed or lopped under this exemption on contiguous land in the same ownership in a five year period must not exceed any of the following:

- 1 hectare of native vegetation which does not include a tree.
  - 15 native trees if each tree has a trunk diameter of less than 20 centimetres at a height of 1.3 metres above ground level.
-



**52.42**  
21/09/2009  
VC60

## **RENEWABLE ENERGY FACILITY (OTHER THAN WIND ENERGY FACILITY AND GEOTHERMAL ENERGY EXTRACTION)**

### **Purpose**

To facilitate the establishment and expansion of renewable energy facilities, in appropriate locations, with minimal impact on the amenity of the area.

**52.42-1**  
21/09/2009  
VC60

### **Scope**

This clause applies to land used and developed or proposed to be used and developed for a renewable energy facility.

**52.42-2**  
21/09/2009  
VC60

### **Application requirements**

An application must be accompanied by the following information, as appropriate:

- A site and context analysis, including:
  - A site plan, photographs or other techniques to accurately describe the site and the surrounding area.
  - A location plan showing the full site area, local electricity grid, access roads to the site and direction and distance to nearby accommodation, hospital or education centre.
- A design response, including:
  - Detailed plans of the proposed development including, the layout and height of the facility and associated building and works, materials, reflectivity, colour, lighting, landscaping, the electricity distribution starting point (where the electricity will enter the distribution system), access roads and parking areas.
  - Accurate visual simulations illustrating the development in the context of the surrounding area and from key public view points.
  - The extent of vegetation removal and a rehabilitation plan for the site.
  - Written report and assessment, including:
    - An explanation of how the proposed design derives from and responds to the site analysis.
    - A description of the proposal, including the types of process to be utilised, materials to be stored and the treatment of waste.
    - Whether a Works Approval or Licence is required from the Environment Protection Authority.
    - the potential amenity impacts such as noise, glint, light spill, emissions to air, land or water, vibration, smell and electromagnetic interference.
    - the effect of traffic to be generated on roads.
    - the impact upon Aboriginal or non-Aboriginal cultural heritage.
    - the impact of the proposal on any species listed under the *Flora and Fauna Guarantee Act 1988* or *Environment Protection and Biodiversity Conservation Act 1999*.

- A statement of why the site is suitable for a renewable energy facility including, a calculation of the greenhouse benefits.
- An environmental management plan including, a construction management plan, any rehabilitation and monitoring.

#### 52.42-3

#### Decision guidelines

21/09/2009  
VC60

Before deciding on an application, in addition to the decision guidelines of Clause 65, the responsible authority must consider, as appropriate:

- The effect of the proposal on the surrounding area in terms of noise, glint, light spill, vibration, smell and electromagnetic interference
- The impact of the proposal on significant views, including visual corridors and sightlines.
- The impact of the proposal on the natural environment and natural systems.
- Whether the proposal will require traffic management measures.

## 65.01

28/03/2018  
VC145

## APPROVAL OF AN APPLICATION OR PLAN

Before deciding on an application or approval of a plan, the responsible authority must consider, as appropriate:

- The matters set out in Section 60 of the Act.
- The State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- The purpose of the zone, overlay or other provision.
- Any matter required to be considered in the zone, overlay or other provision.
- The orderly planning of the area.
- The effect on the amenity of the area.
- The proximity of the land to any public land.
- Factors likely to cause or contribute to land degradation, salinity or reduce water quality.
- Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.
- The extent and character of native vegetation and the likelihood of its destruction.
- Whether native vegetation is to be or can be protected, planted or allowed to regenerate.
- The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.
- The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.

This clause does not apply to a VicSmart application.

