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Solar Farm Flood Study - Cimitiere Creek Tasmania

APPENDIX A. GLOSSARY

Taken from the Floodplain Development Manual (April 2005 edition)

acid following disturbance or drainage as sulfur compounds react when exposed to oxygen to form sulfuric acid. More detailed explanation and definition can be found in the NSW Government Acid Sulfate Soil Manual published by Acid Sulfate Soil

Management Advisory Committee.

Annual Exceedance The chance of a flood of a given or larger size occurring in any one year, usually Probability (AEP) expressed as a percentage. For example, if a peak flood discharge of 500 m³/s

has an AEP of 5%, it means that there is a 5% chance (that is one-in-20 chance)

of a 500 m³/s or larger event occurring in any one year (see ARI).

Australian Height Datum A common national surface level datum approximately corresponding to mean sea (AHD) level.

Average Annual Damage Depending on its size (or severity), each flood will cause a different amount of flood

damage to a flood prone area. AAD is the average damage per year that would occur in a nominated development situation from flooding over a very long period

of time.

Average Recurrence The long term average number of years between the occurrence of a flood as big Interval (ARI) as, or larger than, the selected event. For example, floods with a discharge as

as, or larger than, the selected event. For example, floods with a discharge as great as, or greater than, the 20 year ARI flood event will occur on average once every 20 years. ARI is another way of expressing the likelihood of occurrence of a

flood event.

caravan and moveableCaravans and moveable dwellings are being increasingly used for long-term and home parks
permanent accommodation purposes. Standards relating to their siting, design,

construction and management can be found in the Regulations under the LG Act.

catchment The land area draining through the main stream, as well as tributary streams, to a

particular site. It always relates to an area above a specific location.

consent authority The Council, government agency or person having the function to determine a

development application for land use under the EP&A Act. The consent authority is most often the Council, however legislation or an EPI may specify a Minister or public authority (other than a Council), or the Director General of DIPNR, as having

the function to determine an application.

development Is defined in Part 4 of the Environmental Planning and Assessment Act (EP&A Act).

infill development: refers to the development of vacant blocks of land that are generally surrounded by developed properties and is permissible under the current zoning of the land. Conditions such as minimum floor levels may be imposed on

infill development.

new development: refers to development of a completely different nature to that associated with the former land use. For example, the urban subdivision of an area previously used for rural purposes. New developments involve rezoning and typically require major extensions of existing urban services, such as roads, water

supply, sewerage and electric power.

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redevelopment: refers to rebuilding in an area. For example, as urban areas age, it may become necessary to demolish and reconstruct buildings on a relatively large scale. Redevelopment generally does not require either rezoning or major extensions to urban services.

disaster plan (DISPLAN)

A step by step sequence of previously agreed roles, responsibilities, functions, actions and management arrangements for the conduct of a single or series of connected emergency operations, with the object of ensuring the coordinated response by all agencies having responsibilities and functions in emergencies.

discharge

The rate of flow of water measured in terms of volume per unit time, for example, cubic metres per second (m³/s). Discharge is different from the speed or velocity of flow, which is a measure of how fast the water is moving for example, metres per second (m/s).

ecologically sustainable development (ESD)

Using, conserving and enhancing natural resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be maintained or increased. A more detailed definition is included in the Local Government Act 1993. The use of sustainability and sustainable in this manual relate to ESD.

effective warning time

The time available after receiving advice of an impending flood and before the floodwaters prevent appropriate flood response actions being undertaken. The effective warning time is typically used to move farm equipment, move stock, raise furniture, evacuate people and transport their possessions.

emergency management

A range of measures to manage risks to communities and the environment. In the flood context it may include measures to prevent, prepare for, respond to and recover from flooding.

flash flooding

Flooding which is sudden and unexpected. It is often caused by sudden local or nearby heavy rainfall. Often defined as flooding which peaks within six hours of the causative rain.

flood

Relatively high stream flow which overtops the natural or artificial banks in any part of a stream, river, estuary, lake or dam, and/or local overland flooding associated with major drainage before entering a watercourse, and/or coastal inundation resulting from super-elevated sea levels and/or waves overtopping coastline defences excluding tsunami.

flood awareness

Flood awareness is an appreciation of the likely effects of flooding and a knowledge of the relevant flood warning, response and evacuation procedures.

flood education

Flood education seeks to provide information to raise awareness of the flood problem so as to enable individuals to understand how to manage themselves an their property in response to flood warnings and in a flood event. It invokes a state of flood readiness.

flood fringe areas

The remaining area of flood prone land after floodway and flood storage areas have been defined.

flood liable land

Is synonymous with flood prone land (i.e. land susceptible to flooding by the probable maximum flood (PMF) event). Note that the term flood liable land covers the whole of the floodplain, not just that part below the flood planning level (see flood planning area).

flood mitigation standard

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(FPLs)

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The average recurrence interval of the flood, selected as part of the floodplain risk management process that forms the basis for physical works to modify the impacts of flooding.

floodplain Area of land which is subject to inundation by floods up to and including the

probable maximum flood event, that is, flood prone land.

probable maximum flood event, that is, flood prone land.

floodplain riskThe measures that might be feasible for the management of a particular area of the management options

floodplain. Preparation of a floodplain risk management plan requires a detailed

evaluation of floodplain risk management options.

floodplain risk A management plan developed in accordance with the principles and guidelines in management plan this manual. Usually includes both written and diagrammetic information describing

how particular areas of flood prone land are to be used and managed to achieve

defined objectives.

flood plan (local) A sub-plan of a disaster plan that deals specifically with flooding. They can exist at

State, Division and local levels. Local flood plans are prepared under the

leadership of the State Emergency Service.

flood planning area The area of land below the flood planning level and thus subject to flood related

development controls. The concept of flood planning area generally supersedes

the Aflood liable land@ concept in the 1986 Manual.

Flood Planning Levels FPL=s are the combinations of flood levels (derived from significant historical flood

events or floods of specific AEPs) and freeboards selected for floodplain risk management purposes, as determined in management studies and incorporated in management plans. FPLs supersede the Astandard flood event@ in the 1986

manual.

flood proofing A combination of measures incorporated in the design, construction and alteration

of individual buildings or structures subject to flooding, to reduce or eliminate flood

damages.

prone land is synonymous with flood liable land.

flood readiness Flood readiness is an ability to react within the effective warning time.

flood risk Potential danger to personal safety and potential damage to property resulting from

flooding. The degree of risk varies with circumstances across the full range of floods. Flood risk in this manual is divided into 3 types, existing, future and

continuing risks. They are described below.

existing flood risk: the risk a community is exposed to as a result of its location

on the floodplain.

future flood risk: the risk a community may be exposed to as a result of new

development on the floodplain.

continuing flood risk: the risk a community is exposed to after floodplain risk management measures have been implemented. For a town protected by levees, the continuing flood risk is the consequences of the levees being overtopped. For an area without any floodplain risk management measures, the continuing flood risk

is simply the existence of its flood exposure.

flood storage areas Those parts of the floodplain that are important for the temporary storage of

floodwaters during the passage of a flood. The extent and behaviour of flood

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storage areas may change with flood severity, and loss of flood storage can increase the severity of flood impacts by reducing natural flood attenuation. Hence, it is necessary to investigate a range of flood sizes before defining flood storage areas.

floodway areas Those areas of the floodplain where a significant discharge of water occurs during

floods. They are often aligned with naturally defined channels. Floodways are areas that, even if only partially blocked, would cause a significant redistribution of

flood flows, or a significant increase in flood levels.

freeboard Freeboard provides reasonable certainty that the risk exposure selected in deciding

on a particular flood chosen as the basis for the FPL is actually provided. It is a factor of safety typically used in relation to the setting of floor levels, levee crest

levels, etc. Freeboard is included in the flood planning level.

habitable room in a residential situation: a living or working area, such as a lounge room, dining

room, rumpus room, kitchen, bedroom or workroom.

in an industrial or commercial situation: an area used for offices or to store

valuable possessions susceptible to flood damage in the event of a flood.

hazard A source of potential harm or a situation with a potential to cause loss. In relation

to this manual the hazard is flooding which has the potential to cause damage to the community. Definitions of high and low hazard categories are provided in the

Manual.

hydraulics Term given to the study of water flow in waterways; in particular, the evaluation of

flow parameters such as water level and velocity.

hydrograph A graph which shows how the discharge or stage/flood level at any particular

location varies with time during a flood.

hydrology Term given to the study of the rainfall and runoff process; in particular, the

evaluation of peak flows, flow volumes and the derivation of hydrographs for a

range of floods.

local overland flooding Inundation by local runoff rather than overbank discharge from a stream, river,

estuary, lake or dam.

local drainage Are smaller scale problems in urban areas. They are outside the definition of major

drainage in this glossary.

artificial banks of a stream, river, estuary, lake or dam.

major drainage Councils have discretion in determining whether urban drainage problems are

associated with major or local drainage. For the purpose of this manual major

drainage involves:

 the floodplains of original watercourses (which may now be piped, channelised or diverted), or sloping areas where overland flows develop along alternative paths once system capacity is exceeded; and/or

 water depths generally in excess of 0.3 m (in the major system design storm as defined in the current version of Australian Rainfall and Runoff). These conditions may result in danger to personal safety and property damage

to both premises and vehicles; and/or

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- major overland flow paths through developed areas outside of defined drainage reserves; and/or
- the potential to affect a number of buildings along the major flow path.

mathematical/computer models

The mathematical representation of the physical processes involved in runoff generation and stream flow. These models are often run on computers due to the complexity of the mathematical relationships between runoff, stream flow and the distribution of flows across the floodplain.

merit approach

The merit approach weighs social, economic, ecological and cultural impacts of land use options for different flood prone areas together with flood damage, hazard and behaviour implications, and environmental protection and well being of the State=s rivers and floodplains.

The merit approach operates at two levels. At the strategic level it allows for the consideration of social, economic, ecological, cultural and flooding issues to determine strategies for the management of future flood risk which are formulated into Council plans, policy and EPIs. At a site specific level, it involves consideration of the best way of conditioning development allowable under the floodplain risk management plan, local floodplain risk management policy and EPIs.

minor, moderate and major flooding

Both the State Emergency Service and the Bureau of Meteorology use the following definitions in flood warnings to give a general indication of the types of problems expected with a flood:

minor flooding: causes inconvenience such as closing of minor roads and the submergence of low level bridges. The lower limit of this class of flooding on the reference gauge is the initial flood level at which landholders and townspeople begin to be flooded.

moderate flooding: low-lying areas are inundated requiring removal of stock and/or evacuation of some houses. Main traffic routes may be covered.

major flooding: appreciable urban areas are flooded and/or extensive rural areas are flooded. Properties, villages and towns can be isolated.

modification measures

Measures that modify either the flood, the property or the response to flooding. Examples are indicated in Table 2.1 with further discussion in the Manual.

peak discharge

The maximum discharge occurring during a flood event.

Probable Maximum Flood (PMF)

The PMF is the largest flood that could conceivably occur at a particular location, usually estimated from probable maximum precipitation, and where applicable, snow melt, coupled with the worst flood producing catchment conditions. Generally, it is not physically or economically possible to provide complete protection against this event. The PMF defines the extent of flood prone land, that is, the floodplain. The extent, nature and potential consequences of flooding associated with a range of events rarer than the flood used for designing mitigation works and controlling development, up to and including the PMF event should be addressed in a floodplain risk management study.

Probable Maximum Precipitation (PMP)

The PMP is the greatest depth of precipitation for a given duration meteorologically possible over a given size storm area at a particular location at a particular time of the year, with no allowance made for long-term climatic trends (World Meteorological Organisation, 1986). It is the primary input to PMF estimation.

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probability A statistical measure of the expected chance of flooding (see AEP).

risk Chance of something happening that will have an impact. It is measured in terms

of consequences and likelihood. In the context of the manual it is the likelihood of consequences arising from the interaction of floods, communities and the

environment.

runoff The amount of rainfall which actually ends up as streamflow, also known as rainfall

excess.

stage Equivalent to Awater level@. Both are measured with reference to a specified

datum.

stage hydrograph A graph that shows how the water level at a particular location changes with time

during a flood. It must be referenced to a particular datum.

survey plan A plan prepared by a registered surveyor.

water surface profile A graph showing the flood stage at any given location along a watercourse at a

particular time.

wind fetch The horizontal distance in the direction of wind over which wind waves are

generated.

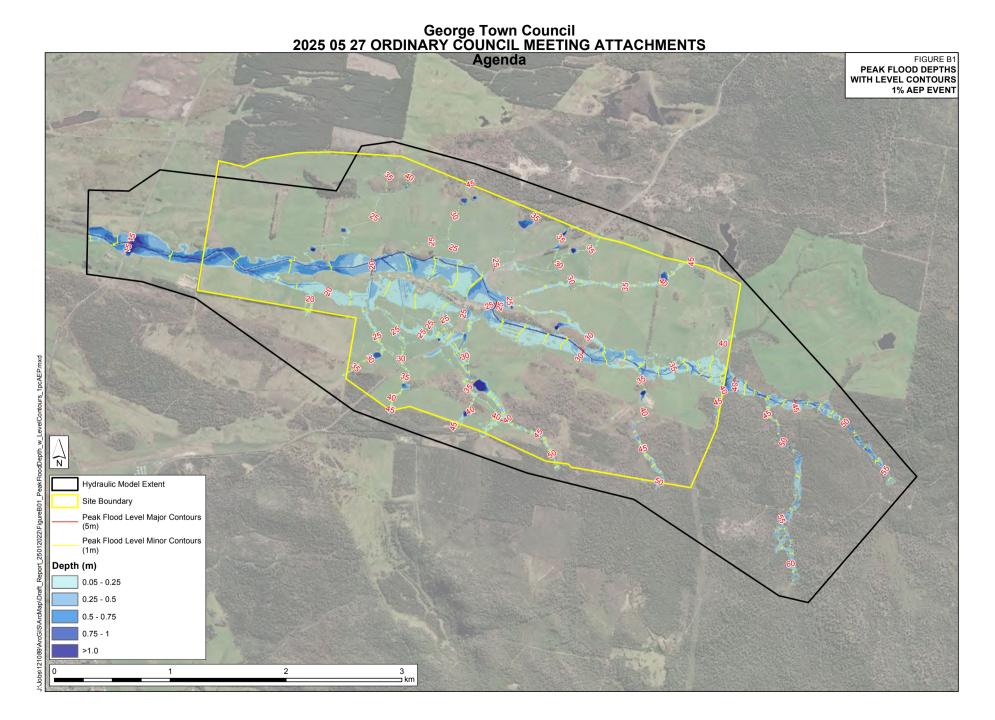


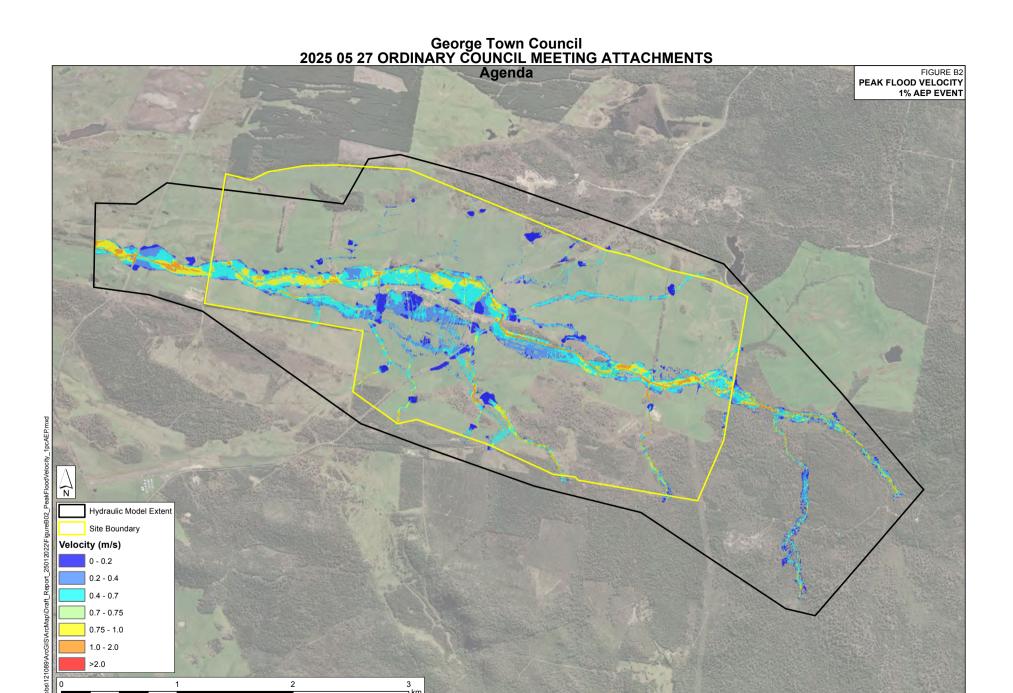
Appendix B

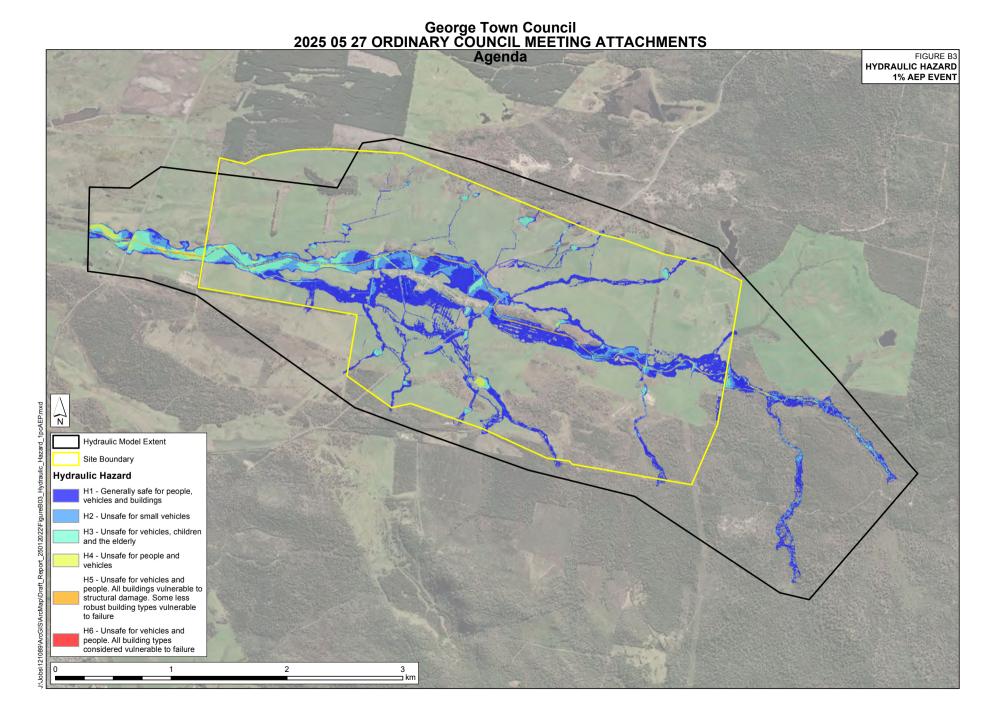


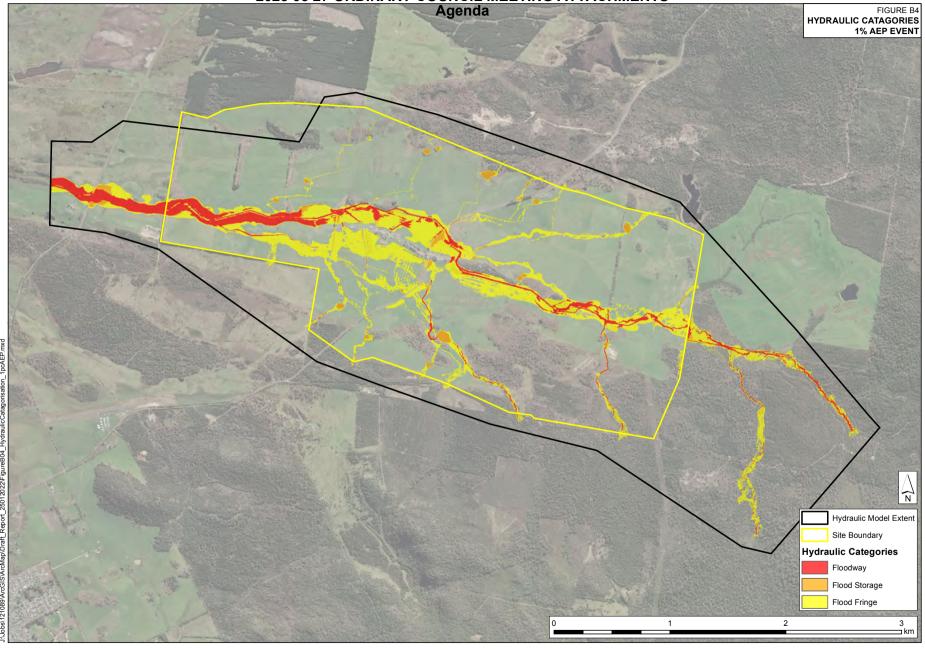
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APPENDIX B. DESIGN EVENT FLOOD MAPPING











Appendix M
Climate of George
Town and Corvallis

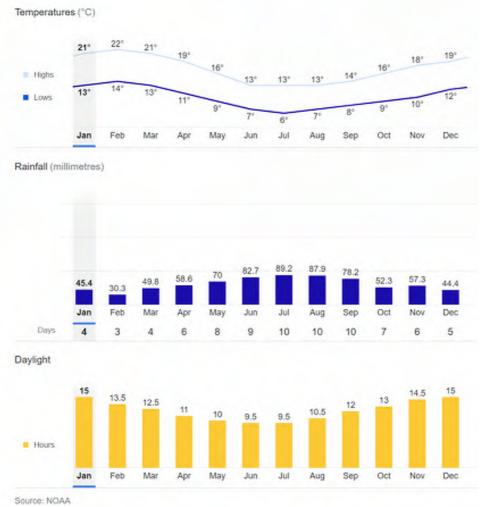
Cimitiere Plains Solar Farm





Climate of George Town, Tasmania and Corvallis, Oregon.

Climate of George Town



Climate of Corvallis, Oregon





Appendix N Landslip Risk Assessment

Cimitiere Plains Solar Farm







LANDSLIDE RISK ASSESSMENT
PROPOSED SOLAR FARM AND TRANSMISSION
LINE
381 SOLDIERS SETTLEMENT ROAD, GEORGE
TOWN

Prepared for: Sun Spot 9 Pty Ltd

Date: 19 December 2023

Document Reference: TG23237/1 - 01report

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Important information about your report

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Figure 5

Figure 1	Proposed Solar Farm, Transmission Line & Landslide Hazard Bands
Figure 2	MRT Geology Map Extract
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Figure 4	MRT Landslide Susceptibility Map Extract

Site Walkover Area and Site Photograph Locations

Appendices

Appendix A Site Photographs

Appendix B Landslide Risk Matrix

Appendix C Hillside Construction Practice

Version	Date	Prepared by	Reviewed by	Distribution
Draft	7 December 2023	Nevil Vanderslink	Dr Wayne Griffioen	Electronic
Final	19 December 2023	Nevil Vanderslink	Dr Wayne Griffioen	Electronic

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1 INTRODUCTION

Tasman Geotechnics was commissioned by Sun Spot 9 Pty Ltd to carry out a Landslide Risk Assessment for a proposed solar farm and transmission line at George Town.

The majority of the proposed solar farm planning envelope is located at 381 Soldiers Settlement Road, George Town, and falls on a number of title references including 43381/1, 43382/1, 104543/3, 107403/1, 154906/1 and 154910/1. The proposed transmission line planning envelope extends approximately 6km to the south of the proposed solar farm to the existing George Town substation and falls on title references 11369/1, 30617/4, 30617/8, 86544/1, 86544/3, 135016/1, 139746/1, 154929/1, 156738/4, 241466/1 and 251653/1. The existing George Town substation is located at 4289 East Tamar Highway, Bell Bay (title reference 154928/1).

The assessment is required as part of the Planning Application process as part of the proposed transmission line envelope is mapped within Low and Medium hazard bands on the Landslide Planning Map V2 – Hazard Bands overlay on The LIST (Version 2, dated 19 August, 2013). The landslide hazard bands within the proposed transmission line envelope are located on four lots including title reference 135016/1, 154929/1, 156738/4 and 241466/1. The proposed solar farm envelope is not located in a landslide hazard area.

Our scope of work consisted of:

- Reviewing available reports and maps;
- Carrying out a site walkover along a portion of the proposed transmission line envelope which falls within Low and Medium landslide hazard bands to note geomorphological features associated with landslide activity;
- Conducting a Landslide Risk Assessment.

The location of the proposed solar farm and transmission line envelope, and landslide hazard bands is shown in Figure 1.

It should be noted that a subsurface investigation (boreholes and/or test pits) was not included in the scope of work.

The assessment is consistent with the Landslide Risk Assessment guidelines published by the Australian Geomechanics Society (2007).

2 BACKGROUND INFORMATION

2.1 Planning Scheme

The Tasmanian Planning Scheme is effective in the George Town municipality since 4 October 2023. Clause C15.6.1 of the scheme stipulates that the objective for building and works within a landslip hazard area is:

"That building and works on land within a landslip hazard area can:

- (a) minimise the likelihood of triggering a landslip event; and
- (b) achieve and maintain a tolerable risk from a landslip."

There are no acceptable solutions. There are three performance criteria (P1.1 – P1.3), which refer to a landslip hazard report (this document).

A landslide risk assessment is to address risk to property and risk to life.

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Although tolerable levels of risk for property loss are rarely quoted in literature, AGS (2007d) suggests a Moderate risk profile as a tolerable level of risk for low-rise residential buildings on existing slopes as well as existing landslides, and this has been adopted for the proposed transmission line.

AGS (2007c) suggests the tolerable loss of life individual risk should be 10⁻⁵/annum for new constructed slopes, new development, or existing landslide, and 10⁻⁴/annum for existing slopes or existing development.

For the proposed works, the following tolerable levels of risk are adopted;

Risk to property: Moderate,
Risk to life: 10⁻⁵/annum.

2.2 Regional Setting

The proposed solar farm envelope and transmission line envelope is located between 3km and 5km to the northeast and east of George Town. They cover a combined area of approximately 540ha and extend over a total length of about 8km from the northern boundary of the proposed solar farm envelope to the existing George Town substation.

The site covers two physiographic areas of Tasmania, including the North East Coastal Platforms, and to the southwest of this, the Tamar Graben.

The proposed solar farm and northern third of the proposed transmission are located within the North East Coastal Platforms, an extensive area of sand plains and windblown sand dunes which mainly consist of undulating low sand plains, with parallel dune ridges and blow-out dunes. These coastal platforms have been formed by seaward extensions of emerged platforms, by processes of coastal accretion and have subsequently been covered by windblown sands.

The Tamar Graben is a narrow (~5km wide) but elongated (~60km long) northwest/southeast trending basin (formed by faulting) located directly to the southwest of the North East Coastal Platforms. The north-eastern side of the Graben has been dissected by the present Tamar River which drains into the Tamar Estuary, a former river valley drowned by post-glacial sea level rise. The basin contains a relatively thick sequence of generally poorly consolidated Cenozoic-aged sediments and basalt, overlying Jurassic-aged dolerite. The dolerite is exposed on the flanks of the central axis of the basin as a series of stepped discontinuous ridges, separated by areas of shallower Cenozoic and/or Quaternary deposits. The southern portion of the proposed transmission line passes over two of these dolerite ridges, known as George Town Sugarloaf and Mount George, before crossing the flatter slopes surrounding Four Mile Creek and finally terminating at the George Town substation, approximately 500m to the north of the Tamar River foreshore.

2.3 Geology

The Mineral Resources Tasmania (MRT) 1:25,000 Series Digital Geological map, Low Head and Bell Bay Sheets, show the majority of the proposed solar farm envelope to be mapped on Quaternary-aged sediments described as "windblown and locally derived sand", with smaller pockets of "silt with rounded clasts of granite, schist, quartzite, conglomerate derived from Permian strata" and "Basalt derived lag deposits". Minor Jurassic-aged dolerite is mapped on the northern margin of the proposed envelope to the west of Soldiers Settlement Road.

The proposed transmission line envelope is mapped on a number of geological units. The relatively flat and undulating slopes to the north of George Town Sugarloaf are mapped as Quaternary-aged "windblown and locally derived sand". To the south of this, George Town Sugarloaf and Mount George are mapped as Jurassic-aged dolerite, with Permian and Triassic-aged sedimentary rocks including sandstone, siltstone and shale mapped on the moderate to very steep flanks. To the south of Mount George, the proposed transmission line is mapped on Cenozoic-aged sediments described as "dominantly non-marine sequences of gravel, sand, silt, clay and regolith" and "ferricrete" and minor Cenozoic-aged igneous rocks (Basalt), overlain in parts by Quaternary-aged "windblown and locally derived sand".

An extract of the MRT geology map is presented in Figure 2.

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2.4 Landslide Mapping

The MRT Landslide Inventory Map shows that the proposed solar farm envelope and transmission line envelope is not mapped on any known landslides. A series of landslides are mapped on the steep slopes adjacent to the Tamar River foreshore, the closest of which being approximately 200m to the south and southwest of the existing George Town substation. The landslides are described as soil slides in include landslides of both 'recent or active' and 'unknown' activity state.

An extract of the Landslide Inventory Map is presented in Figure 3.

Susceptibility zones for first time failures were developed by MRT by statistical analysis of slope geometry and geological material of known landslides, and are mapped as possible source, regression and runout areas associated with potential landslide movement.

For the Jurassic-aged dolerite, threshold values for source, regression and runout areas are 15°, 89° and 12° respectively. For the Permian and Triassic-aged sedimentary rocks (Upper and Lower Parmeener Group), threshold values for source, regression and runout areas are 16°, 16° and 12° respectively.

The Bell Bay Landslide Susceptibility Map shows that the proposed solar farm envelope is not mapped on a landslide susceptibility area. Parts of the proposed transmission line envelope are mapped on potential source, regression and runout areas on the steeper slopes of George Town Surgarloaf and Mount George.

For the Cenozoic-aged sediments mapped in the southern portion of the proposed transmission line, threshold values for source, regression and runout areas are 7°, 7° and 8° respectively. The proposed transmission line falls on a small source, regression and runout area which coincides with the steeper slopes (possible fill) adjacent to the Bell Bay train line.

An extract of the MRT Deep-Seated Slide Susceptibility map is presented in Figure 4.

2.5 Previous Reports

A search on the MRT website for previous investigations at or near the site did not reveal any reports relating to the area covered by the proposed solar farm envelope or transmission line envelope.

A number of reports pertaining to slope stability assessments at the Bell Bay port and aluminium plant between about 1km and 3km to the southwest of the existing George Town substation (and southern extent of the proposed transmission line). Stability problems related to Cenozoic-aged sediments in the natural slopes adjacent to the Tamar River foreshore and are not considered to be relevant to the proposed development.

2.6 Proposed Development

The proposed development includes a 288MW solar farm and 110kV transmission line. The proposed solar farm is located between about 3km to the northeast of George Town and is separated into two proposed envelopes to the east and west of Soldiers Settlement Road respectively. The proposed double circuit 110kV transmission line will connect the solar farm to the existing George Town substation at 4289 East Tamar Highway, Bell Bay. The proposed transmission line envelope is approximately 6km in length and between about 70m to 300m in width. The transmission line towers will typically be 33m in height, with a maximum height of approximately 38m. The towers will be constructed from galvanised steel or concrete and the galvanising will be dulled to reduce visual impact. A 50m wide easement will be cleared of trees and shrubs that are taller than 3m or likely to grow taller than 3m in height.

Specific details of the proposed transmission tower locations were not provided by the client as the design has not been completed at this stage. However, it is our understanding that the tower spacing will typically be about 250-300m.

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3 FIELD INVESTIGATION

The field investigation was completed by a Senior Engineering Geologist from Tasman Geotechnics over two separate visits on 14 and 23 November 2023 respectively. The field investigation involved a site walkover of the portion of the proposed transmission line envelope mapped within Low and Medium landslide hazard bands to note geomorphological features associated with landslides.

Selected site photographs are presented in Appendix A. The site walkover area and site photograph locations are Figure 5.

4 RESULTS

4.1 Surface Conditions

The site walkover covered an approximate length of about 3.2km of the proposed transmission line envelope. The walkover commenced at the northern boundary of the envelope at approximate Easting/Northing coordinates (GDA94) of 489625E, 5452555N and finished on the southern slopes of Mount George at about 490530E, 5449385N.

Site observations were mostly restricted to access roads and nearby surrounds due to dense vegetation restricting access.

The site observations were relatively consistent with the MRT mapped geology. The relatively flat and undulating terrain to the north of George Town Sugarloaf consist of light grey and pale brown, fine to medium grained sands and silty sands consistent with the mapped Quaternary-aged sand deposits.

Outcrops of mapped Permian and Triassic-aged sedimentary rocks on the flanks of George Town Sugarloaf and Mount George were not visible, however the presence of light grey and grey brown sands and silty sands with subangular to subrounded sandstone gravel indicates that the sedimentary rocks have been subjected to weathering and erosion and most likely overlain by colluvium derived from the sedimentary rocks and by younger (Quaternary) windblown sands. What appears to be two dolerite caps overlying the sedimentary rocks were observed within the proposed transmission line envelope, directly east of the main George Town Sugarloaf peak. The dolerite caps are potentially larger than the MRT mapping suggests and are also surrounded by dolerite-derived colluvium consisting of brown, low plasticity clay with dolerite gravel and dolerite cobbles/boulders.

The steeper hillslopes and peaks of George Town Sugarloaf and Mount George (on which the most of the Low and Medium landslide hazard bands are mapped) consist of dolerite bedrock and dolerite-derived colluvium. The exposed dolerite outcrops were mostly Moderately to Slightly Weathered, blue-grey/grey-brown in colour and most likely High to Very High Strength. However, some Highly Weathered zones of Low to Medium strength were exposed in washed out road cuttings on the east and south facing slopes of Mount George. Closely spaced (~30-300mm) subvertical joints were observed in some outcrops, mostly dipping ~70-85° towards the northeast to southeast.

The dolerite-derived colluvium mostly consists of low to medium plasticity silty clays with dolerite gravel and abundant dolerite cobbles and boulders. Desiccation cracking was observed in the clays which is typical of expansive soils and does not appear to be due to landslide-related movement. The dolerite cobbles and boulders are mostly angular to subangular, indicating that they have not been transported far from the source. Subrounded cobbles and boulders were consistent with subrounded dolerite kernels observed in the highly weathered rock outcrops, indicating that the rounding is a weathering product rather than due to transport. Colluvium depths in exposed road cuttings range from about 0.2m to 1m.

No groundwater seepage or other indications of high groundwater were observed within the study area. Some road surfaces were washed out and eroded, mostly in the sandy areas, indicating that erosion from surface runoff during high rainfall events occurs in the area. Water from recent

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Landslide Risk Assessment, 381 Soldiers Settlement Road, George Town

rain had pooled on some access tracks composed of clay. In general, the study area appears to be well drained.

No indications of recent or active landslide movement were noted in the surface observations.

5 LANDSLIDE RISK ASSESSMENT

5.1 General

Risk assessment and management principles applied to slopes can be interpreted as answering the following questions:

- What might happen? (HAZARD IDENTIFICATION).
- How likely is it? (LIKELIHOOD).
- What damage or injury might result? (CONSEQUENCE).
- How important is it? (RISK EVALUATION).
- What can be done about it? (RISK TREATMENT).

The risk is a combination of the likelihood and the consequences for the hazard in question. Thus, both likelihood and consequences are taken into account when evaluating a risk and deciding whether treatment is required.

The qualitative likelihood, consequence and risk terms used in this report for risk to property are given in Appendix B and are based on the Landslide Risk Management Guidelines, published by Australian Geomechanics Society (AGS, 2007). The risk terms are defined by a matrix that brings together different combinations of likelihood and consequence. Risk matrices help to communicate the results of risk assessment, rank risks, set priorities and develop transparent approaches to decision making.

5.2 Geotechnical Model

The geology and geological history of the area has a major influence on the present-day topography and landforms within the study area. For example, the Jurassic-aged dolerite generally forms rugged, steep and stony landforms, such as that of George Town Sugarloaf and Mount George, because it is highly resistant to erosion. Whereas, the Permian and Triassic-aged sandstones, siltstones and shales are less resistant to erosion, forming lower subdued landforms.

The Permian and Triassic-aged sedimentary rocks have been intruded by dolerite which now forms a protective cap. Where these sediments have been protected from erosion by the dolerite, they form steep slopes. The Low and Medium landslide hazard bands coincide with the steep dolerite and protected sedimentary rock slopes. Where there is no protective dolerite capping over the sediments, the landscapes are more subdued and have lower relief, The lower relief areas have subsequently been covered by colluvium derived from the sedimentary rocks, or by younger (Quaternary) windblown sands. The Permian and Triassic-aged sandstones, siltstones and shales occur around the northern and eastern slopes of George Town Sugarloaf and Mount George. A subsurface investigation was not included in this scope so the depth of the overlying colluvium and windblown sands was not confirmed.

Some erosion of the dolerite has occurred as evidenced by the presence of dolerite-derived colluvium on and at the base of the dolerite ridges. The depth of the colluvium was not confirmed by drilling, however it varied from about 0.2m to 1m in exposed road cuttings.

The site walkover did not include an inspection of the proposed transmission line envelope to the south of Mount George, or the proposed solar farm envelope to the north of the proposed transmission line.

There is no indication of recent or active landslide-related movement within the area covered by the site walkover.

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5.3 Potential Hazards

Based on the site observations and available information discussed in the sections above, the following landslide hazards are identified for the proposed transmission line:

Deep-seated landslide. Such a landslide would require failure of the colluvium and/or underlying rock and would likely require regionally high groundwater levels or a geologically active earth. The likelihood of a deep-seated landslide at the site under current climatic conditions is assessed to be Barely Credible.

Small to medium scale landslide (up to about 3m deep). Such landslides can occur where slopes are locally steep, or have been steepened by earthworks (cut or fill) and could involve up to 1,000 m³ of soil. Small to medium scale landslides may also occur due to localised soil erosion (e.g., from poor control of surface runoff or clearing of vegetation), or locally elevated groundwater levels (e.g., seepage water collected in fill embankments).

The proposed transmission line will potentially require cut and/or fill at some tower locations and will also require clearing of vegetation within the proposed corridor. No evidence of elevated groundwater was observed within the study area, however some erosion from surface runoff was observed, particularly in the sandy areas. Provided the limitations listed in Section 6 are incorporated into the design, the likelihood of a small to medium scale landslide affecting the proposed transmission line is assessed to be Unlikely.

The identification of the potential hazards considers both the site and nearby properties, and is necessary to address stability issues that may negatively impact upon the site and influence the risk to property.

5.4 Risk to Property

The following table summarises the risk to property of the landslide events in relation to the proposed transmission line as described in Section 2.6, **assuming limitations in Section 6 are incorporated.**

Table 1. Landslide risk profiles

Scenario	Likelihood	Consequence	Risk Profile
Deep seated landslide	Barely Credible	Major: Significant damage to the proposed transmission line	Very Low
Small to medium scale landslide	Unlikely	Medium to Minor: Proposed transmission line is likely to be damaged to some extent	Low

The assessment shows that the proposed development presents a Very Low to Low level of risk, provided the limitations listed in Section 6 are incorporated in the design.

5.5 Risk to Life

Considering that the proposed development does not include a habitable structure with no ongoing occupancy, the risk to life is not deemed to be credible and therefore can be considered to meet the tolerable level of risk without the need for a quantitative assessment.

5.6 Risk Evaluation

As noted in Section 2.1, the performance criteria require that building and works in a landslip hazard area minimise the likelihood of triggering a landslip event and achieve and maintain a tolerable risk from landslip. The proposed tolerable levels of risk were presented in Section 2.1.

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Reference: TG23237/1 - 01report

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Landslide Risk Assessment, 381 Soldiers Settlement Road, George Town

Risk to Property

The risk to property is assessed to be Very Low to Low. As the risk profile is lower than the adopted level of risk, the works achieve and maintain a tolerable risk from a landslip, and thus the requirements of Clause C15.6.1 are satisfied for risk to property. No reduction or protection measures are required beyond the boundary of the site.

Risk to Life

Given that the assessed risk to life is not considered to be credible for the proposed development, we conclude that the requirements of Clause C15.6.1 are satisfied for risk to life.

6 DISCUSSION & RECOMMENDATIONS

6.1 Limitations on Development

In order to ensure the proposed development does not change the risk profile above Low for the site, it is recommended that the following limitations be enforced for development within the Landslide Hazards Bands:

- Transmission line towers should be positioned and spaced in a manner which avoids
 placement of towers within the Landslide Hazard Bands. This should be possible given
 that the width of the Low and Medium Landslide Hazard Bands within the proposed
 envelope are less than the typical 250-300m spacing of the towers.
- If the placement of transmission line towers is unable to avoid the Landslide Hazard Bands, then a subsurface investigation (boreholes and/or test pits) should be conducted to assess the subsurface conditions and provide recommendations for footing design.
- Permanent excavations other than for footings (e.g., access roads) should not exceed
 1m vertical height unless retained by an engineer designed retention system. Retaining
 walls should be designed for sloping backfill, surcharge loading and resist at-rest earth
 pressures. Retaining walls should also include subsoil drainage.
- Cut slopes and fill batters should be sloped at a maximum of 1V:3H (~18°). All batter
 faces should be protected against erosion (eg by vegetation, mulch, or erosion mats).
 Steeper slopes will need to be retained by an engineer designed retention system.
- Runoff should be diverted away from the proposed transmission line towers via table drains and directed towards natural drainage gullies.
- Where possible, vegetation should be maintained on the slopes to prevent erosion of surface soils. Trees and shrubs taller than 3m (or likely to grow taller than 3m) in height are proposed to be removed within the transmission line corridor. Within the Landslide Hazard Bands, these trees and shrubs should be cut with the stumps and roots left in place and all other vegetation should be left undisturbed.
- Maintenance of surface runoff, vegetation, retaining structures and other measures described above are the responsibility of the site owner.
- Good hillside construction practices should be followed. A copy of Geoguide LR8 -Hillside Construction Practice is presented in Appendix C.

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Important information about your report

These notes are provided to help you understand the limitations of your report.

Project Scope

Your report has been developed on the basis of your unique project specific requirements as understood by Tasman Geotechnics at the time, and applies only to the site investigated. Tasman Geotechnics should be consulted if there are subsequent changes to the proposed project, to assess how the changes impact on the report's recommendations.

Subsurface Conditions

Subsurface conditions are created by natural processes and the activity of man.

A site assessment identifies subsurface conditions at discrete locations. Actual conditions at other locations may differ from those inferred to exist, because no professional, no matter how qualified, can reveal what is hidden by earth, rock and time.

Nothing can be done to change the conditions that exist, but steps can be taken to reduce the impact of unexpected conditions. For this reason, the services of Tasman Geotechnics should be retained throughout the project, to identify variable conditions, conduct additional investigation or tests if required and recommend solutions to problems encountered on site.

Advice and Recommendations

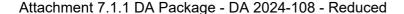
Your report contains advice or recommendations which are based on observations, measurements, calculations and professional interpretation, all of which have a level of uncertainty attached.

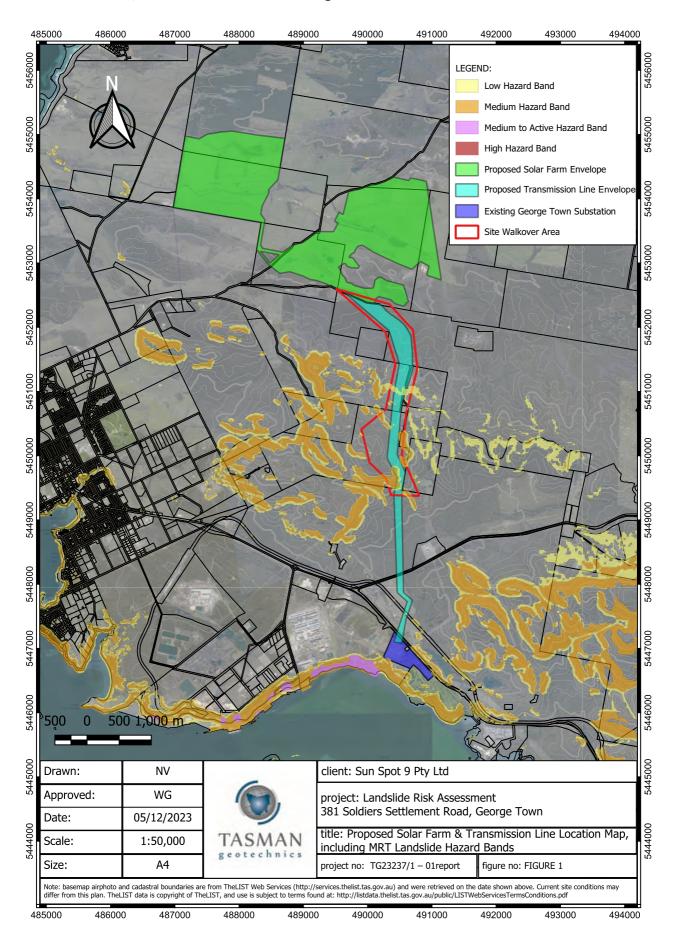
The recommendations are based on the assumption that subsurface conditions encountered at the discrete locations are indicative of an area. This can not be substantiated until implementation of the project has commenced. Tasman Geotechnics is familiar with the background information and should be consulted to assess whether or not the report's recommendations are valid, or whether changes should be considered.

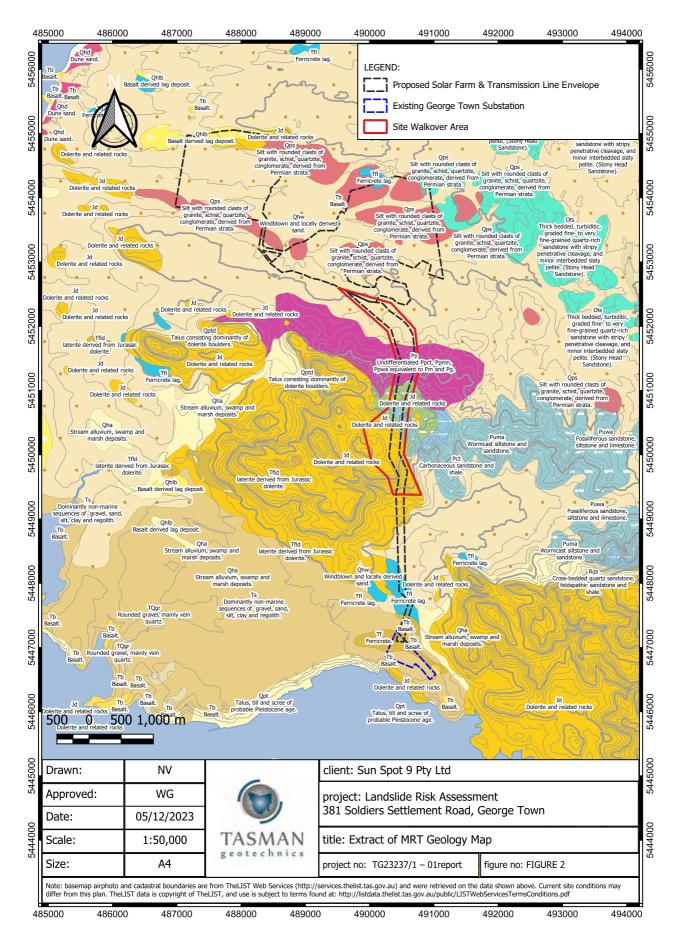
The report as a whole presents the findings of the site assessment, and the report should not be copied in part or altered in any way.

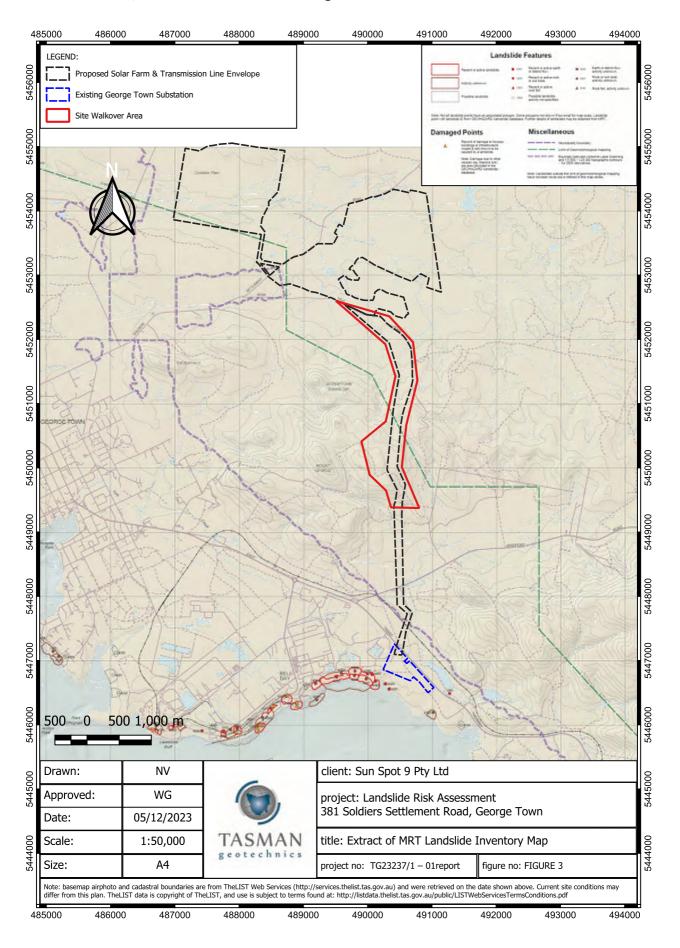
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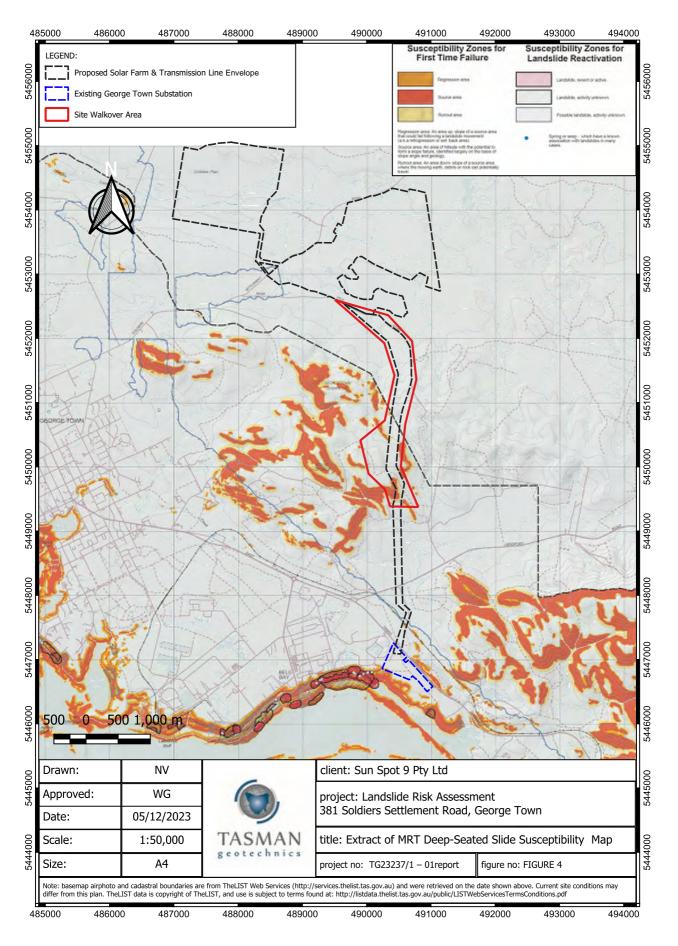
Rev 02, July 2018

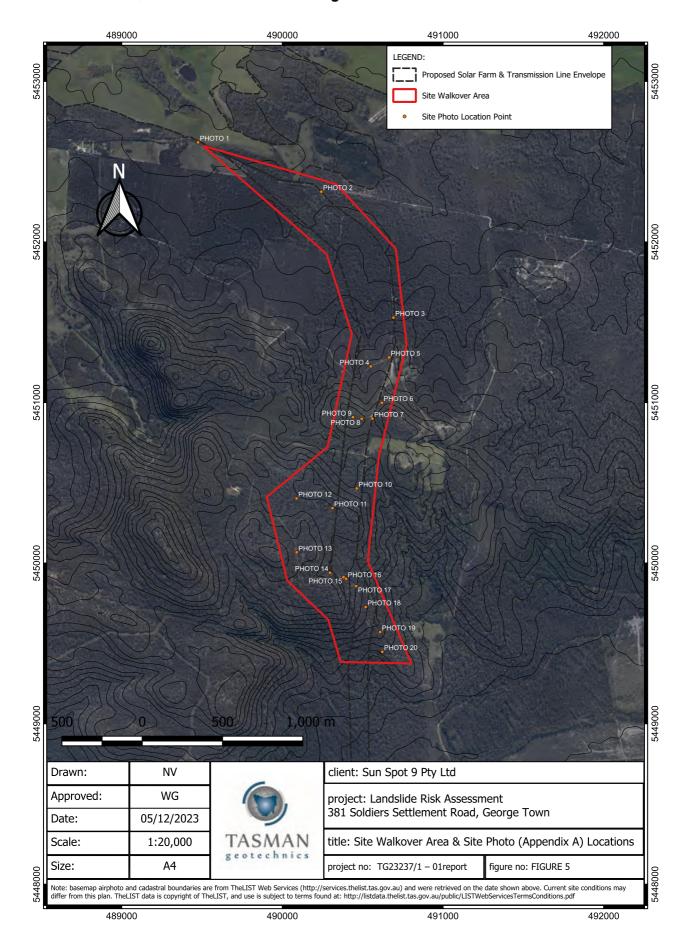












Landslide Risk Assessment, 381 Soldiers Settlement Road, George Town

Appendix A

Site Photographs

Tasman Geotechnics Reference: TG23237/1 - 01report

Landslide Risk Assessment, 381 Soldiers Settlement Road, George Town



Photo 1. Proposed solar farm envelope on eastern side of Soldier Settlement Road, looking north.



Photo 2. Quaternary windblown sands on Musk Vale Road, looking east.

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Landslide Risk Assessment, 381 Soldiers Settlement Road, George Town



Photo 3. Silty sand with sandstone gravel (possible colluvium derived from Permian-aged sandstone), road washed out due to surface runoff, looking south.



Photo 4. Light grey/pale brown silty sand with subrounded sandstone gravel (possible colluvium derived from Permian-aged sandstone), looking southwest.

Tasman Geotechnics Reference: TG23237/1 - 01report

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Photo 6. Angular to subangular dolerite cobbles and boulders to north of Jurassic-aged dolerite mapped by MRT, looking east.

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Photo 7. Light grey silty sand in ~1.2m high road cutting, looking northwest.



Photo 8. Hill composed of Jurassic-aged dolerite surrounded by sands derived from Permianaged sedimentary rocks. Hill has formed as dolerite is less susceptible to erosion than the surrounding sedimentary rocks, looking west.

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Photo 9. Dolerite sub-crop and cobbles/boulders to northeast of Jurassic-aged dolerite mapped by MRT, looking west.



Photo 10. Base of steep hill, silty and gravelly sands possibly derived from Permian and Triassic-aged sedimentary rocks observed on the slope, transitioning into Jurassic-aged dolerite at the crest, looking southwest.

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Landslide Risk Assessment, 381 Soldiers Settlement Road, George Town



Photo 11. Dolerite bedrock sub-cropping in access road, joints dipping steeply \sim 70 $^{\circ}$ towards 120 $^{\circ}$ (southeast).



Photo 12. Desiccation cracking in brown, low to medium plasticity clay on access road.

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Photo 13. Orange brown low plasticity clay with subangular to subrounded dolerite cobbles/boulders (possible colluvium derived from Jurassic-aged dolerite) in ~1m high road cutting, looking west.



Photo 14. Orange brown low plasticity clay with abundant subangular dolerite cobbles and boulders (possible colluvium derived from Jurassic-aged dolerite), looking southwest

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Photo 15. Highly weathered dolerite bedrock exposed in road cutting, overlain by \sim 0.2-0.3m of colluvium. Joints steeply dipping \sim 85° towards 140° (southeast), looking southwest.



Photo 16. 'Onion layering' in highly weathered dolerite outcrop, producing subrounded to rounded kernels.

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Photo 17. Highly weathered dolerite bedrock overlain by ~1.2m of colluvium, road cutting has been undercut by erosion, looking southwest.



Photo 18. Highly weathered dolerite bedrock exposed in washed out access road, joints dipping steeply ~85° towards 060° (northeast), looking southeast.

Landslide Risk Assessment, 381 Soldiers Settlement Road, George Town



Photo 19. Steep southeast facing slope of Mount George, looking southeast.



Photo 20. Brown low plasticity clay with abundant subangular to subrounded dolerite cobbles and boulders (possible colluvium derived from Jurassic-aged dolerite), looking west.

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Appendix B

Landslide Risk Matrix



Terminology for use in Assessing Risk to Property

These notes are provided to help you understand concepts and terms used in Landslide Risk Assessment and are based on the "Practice Note Guidelines for Landslide Risk Management 2007" published in *Australian Geomechanics* Vol 42, No 1, 2007.

Likelihood Terms

The qualitative likelihood terms have been related to a nominal design life of 50 years. The assessment of likelihood involves judgment based on the knowledge and experience of the assessor. Different assessors may make different judgments.

Approximate Annual Probability	Implied indicative Recurrence Interval	Description	Descriptor	Level
10 ⁻¹	10 years	The event is expected to occur over the design life	Almost Certain	Α
10 ⁻²	100 years	The event will probably occur under adverse conditions over the design life	Likely	В
10 ⁻³	1000 years	The event could occur under adverse conditions over the design life	Possible	С
10 ⁻⁴	10,000 years	The event might occur under very adverse conditions over the design life	Unlikely	D
10 ⁻⁵	100,000 years	The event is conceivable but only under exceptional circumstances over the design life	Rare	E
10 ⁻⁶	1,000,000 years	The event is inconceivable or fanciful for the design life	Barely Credible	F

Qualitative Measures of Consequence to Property

Indicative Cost of Damage	Description	Descriptor	Level
200%	Structure(s) completely destroyed and/or large scale damage requiring major engineering works for stabilisation. Could cause at least one adjacent property major consequential damage.	Catastrophic	1
60%	Extensive damage to most of structure, and/or extending beyond site boundaries requiring significant stabilisation works. Could cause at least one adjacent property medium consequential damage	Major	2
20%	Moderate damage to some of structure, and/or significant part of site requiring large stabilisation works. Could cause at least one adjacent property minor consequential damage.	Medium	3
5%	Limited damage to part of structure, and/or part of site requiring some reinstatement stabilisation works	Minor	4
0.5%	Little damage.	Insignificant	5

The assessment of consequences involves judgment based on the knowledge and experience of the assessor. The relative consequence terms are value judgments related to how the potential consequences may be perceived by those affected by the risk. Explicit descriptions of potential consequences will help the stakeholders understand the consequences and arrive at their judgment.

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Rev 01, June 2008

Qualitative Risk Analysis Matrix - Risk to Property

Likelihood		Consequences to Property				
	Approximate annual probability	1: Catastrophic	2: Major	3: Medium	4: Minor	5: Insignificant
A: Almost Certain	10 ⁻¹	VH	VH	VH	Н	L
B: Likely	10 ⁻²	VH	VH	Н	M	L
C: Possible	10 ⁻³	VH	Н	M	M	VL
D: Unlikely	10 ⁻⁴	Н	М	L	L	VL
E: Rare	10 ⁻⁵	M	L	L	VL	VL
F: Barely credible	10 ⁻⁶	L	VL	VL	VL	VL

NOTES:

- 1. The risk associated with Insignificant consequences, however likely, is defined as Low or Very Low
- 2. The main purpose of a risk matrix is to help rank risks and set priorities and help the decision making process.

Response to Risk

In general, it is the responsibility of the client and/or regulatory and/or others who may be affected to decide whether to accept or treat the risk. The risk assessor and/or other advisers may assist by making risk comparisons, discussing treatment options, explaining the risk management process, advising how others have reacted to risk in similar situations and making recommendations. Attitudes to risk vary widely and risk evaluation often involves considering more than just property damage (eg environmental effects, public reaction, business confidence etc).

The following is a guide to typical responses to assessed risk.

R	isk Level	Example Implications
VH	Very High	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to Low; may be too expensive and not practical. Work likely to cost more than the value of the property.
Н	High	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to Low. Work would cost a substantial sum in relation to the value of the property.
М	Moderate	May be tolerated in certain circumstances (subject to regulator's approval) but requires investigation, planning and implementation of treatment options to reduce the risk to Low. Treatment options to reduce to Low risk should be implemented as soon as practicable.
L	Low	Usually accepted by regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.
VL	Very Low	Acceptable. Manage by normal slope maintenance procedures

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Appendix C

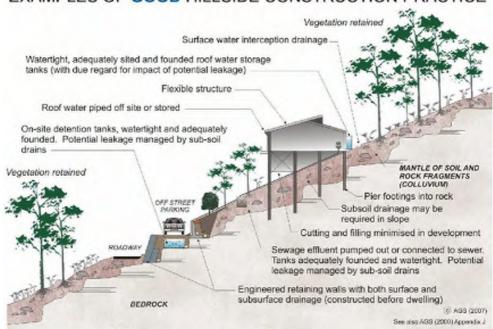
Hillside Construction Practice

AUSTRALIAN GEOGUIDE LR8 (CONSTRUCTION PRACTICE)

HILLSIDE CONSTRUCTION PRACTICE

Sensible development practices are required when building on hillsides, particularly if the hillside has more than a low risk of instability (GeoGuide LR7). Only building techniques intended to maintain, or reduce, the overall level of landslide risk should be considered. Examples of good hillside construction practice are illustrated below.

EXAMPLES OF GOOD HILLSIDE CONSTRUCTION PRACTICE



WHY ARE THESE PRACTICES GOOD?

Roadways and parking areas - are paved and incorporate kerbs which prevent water discharging straight into the hillside (GeoGuide LR5).

Cuttings - are supported by retaining walls (GeoGuide LR6).

Retaining walls - are engineer designed to withstand the lateral earth pressures and surcharges expected, and include drains to prevent water pressures developing in the backfill. Where the ground slopes steeply down towards the high side of a retaining wall, the disturbing force (see GeoGuide LR6) can be two or more times that in level ground. Retaining walls must be designed taking these forces into account.

Sewage - whether treated or not is either taken away in pipes or contained in properly founded tanks so it cannot soak into the ground.

Surface water - from roofs and other hard surfaces is piped away to a suitable discharge point rather than being allowed to infiltrate into the ground. Preferably, the discharge point will be in a natural creek where ground water exits, rather than enters, the ground. Shallow, lined, drains on the surface can fulfil the same purpose (GeoGuide LR5).

Surface loads - are minimised. No fill embankments have been built. The house is a lightweight structure. Foundation loads have been taken down below the level at which a landslide is likely to occur and, preferably, to rock. This sort of construction is probably not applicable to soil slopes (GeoGuide LR3). If you are uncertain whether your site has rock near the surface, or is essentially a soil slope, you should engage a geotechnical practitioner to find out.

Flexible structures - have been used because they can tolerate a certain amount of movement with minimal signs of distress and maintain their functionality.

Vegetation clearance - on soil slopes has been kept to a reasonable minimum. Trees, and to a lesser extent smaller vegetation, take large quantities of water out of the ground every day. This lowers the ground water table, which in turn helps to maintain the stability of the slope. Large scale clearing can result in a rise in water table with a consequent increase in the likelihood of a landslide (GeoGuide LR5). An exception may have to be made to this rule on steep rock slopes where trees have little effect on the water table, but their roots pose a landslide hazard by dislodging boulders.

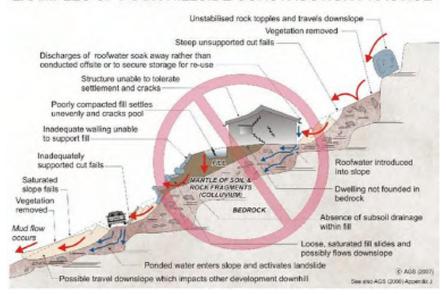
Possible effects of ignoring good construction practices are illustrated on page 2. Unfortunately, these poor construction practices are not as unusual as you might think and are often chosen because, on the face of it, they will save the developer, or owner, money. You should not lose sight of the fact that the cost and anguish associated with any one of the disasters illustrated, is likely to more than wipe out any apparent savings at the outset.

ADOPT GOOD PRACTICE ON HILLSIDE SITES

Australian Geomechanics Vol 42 No 1 March 2007

AUSTRALIAN GEOGUIDE LR8 (CONSTRUCTION PRACTICE)

EXAMPLES OF POOR HILLSIDE CONSTRUCTION PRACTICE



WHY ARE THESE PRACTICES POOR?

Roadways and parking areas - are unsurfaced and lack proper table drains (gutters) causing surface water to pond and soak into the ground.

Cut and fill - has been used to balance earthworks quantities and level the site leaving unstable cut faces and added large surface loads to the ground. Failure to compact the fill properly has led to settlement, which will probably continue for several years after completion. The house and pool have been built on the fill and have settled with it and cracked. Leakage from the cracked pool and the applied surface loads from the fill have combined to cause landslides.

Retaining walls - have been avoided, to minimise cost, and hand placed rock walls used instead. Without applying engineering design principles, the walls have failed to provide the required support to the ground and have failed, creating a very dangerous situation.

A heavy, rigid, house - has been built on shallow, conventional, footings. Not only has the brickwork cracked because of the resulting ground movements, but it has also become involved in a man-made landslide.

Soak-away drainage - has been used for sewage and surface water run-off from roofs and pavements. This water soaks into the ground and raises the water table (GeoGuide LR5). Subsoil drains that run along the contours should be avoided for the same reason. If felt necessary, subsoil drains should run steeply downhill in a chevron, or herring bone, pattern. This may conflict with the requirements for effluent and surface water disposal (GeoGuide LR9) and if so, you will need to seek professional advice.

Rock debris - from landslides higher up on the slope seems likely to pass through the site. Such locations are often referred to by geotechnical practitioners as "debris flow paths". Rock is normally even denser than ordinary fill, so even quite modest boulders are likely to weigh many tonnes and do a lot of damage once they start to roll. Boulders have been known to travel hundreds of metres downhill leaving behind a trail of destruction.

Vegetation - has been completely cleared, leading to a possible rise in the water table and increased landslide risk (GeoGuide LR5).

DON'T CUT CORNERS ON HILLSIDE SITES - OBTAIN ADVICE FROM A GEOTECHNICAL PRACTITIONER

More information relevant to your particular situation may be found in other Australian GeoGuides:

- GeoGuide LR1 Introduction
 GeoGuide LR2 Landslides
- GeoGuide LR3 Landslides in Soil
- GeoGuide LR3 Landslides in Soil
 GeoGuide LR4 Landslides in Rock
- GeoGuide LR5 Water & Drainage
- GeoGuide LR6 Retaining Walls
- GeoGuide LR7 Landslide Risk
- GeoGuide LR9 Effluent & Surface Water Disposal
- GeoGuide LR10 Coastal Landslides
 GeoGuide LR11 Record Keeping

The Australian GeoGuides (LR series) are a set of publications intended for property owners; local councils; planning authorities; developers; insurers; lawyers and, in fact, anyone who lives with, or has an interest in, a natural or engineered slope, a cutting, or an excavation. They are intended to help you understand why slopes and retaining structures can be a hazard and what can be done with appropriate professional advice and local council approval (if required) to remove, reduce, or minimise the risk they represent. The GeoGuides have been prepared by the <u>Australian Geomechanics Society</u>, a specialist technical society within Engineers Australia, the national peak body for all engineering disciplines in Australia, whose members are professional geotechnical engineers and engineering geologists with a particular interest in ground engineering. The GeoGuides have been funded under the Australian governments' National Disaster Mitigation Program.

Australian Geomechanics Vol 42 No 1 March 2007

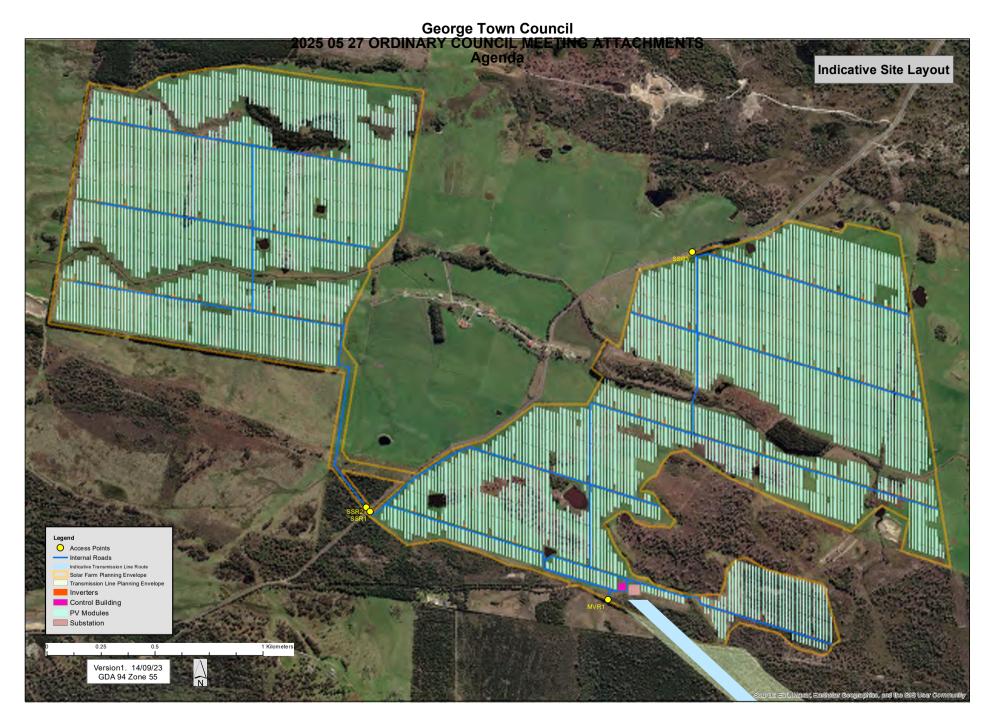


Appendix O
A3 Plans

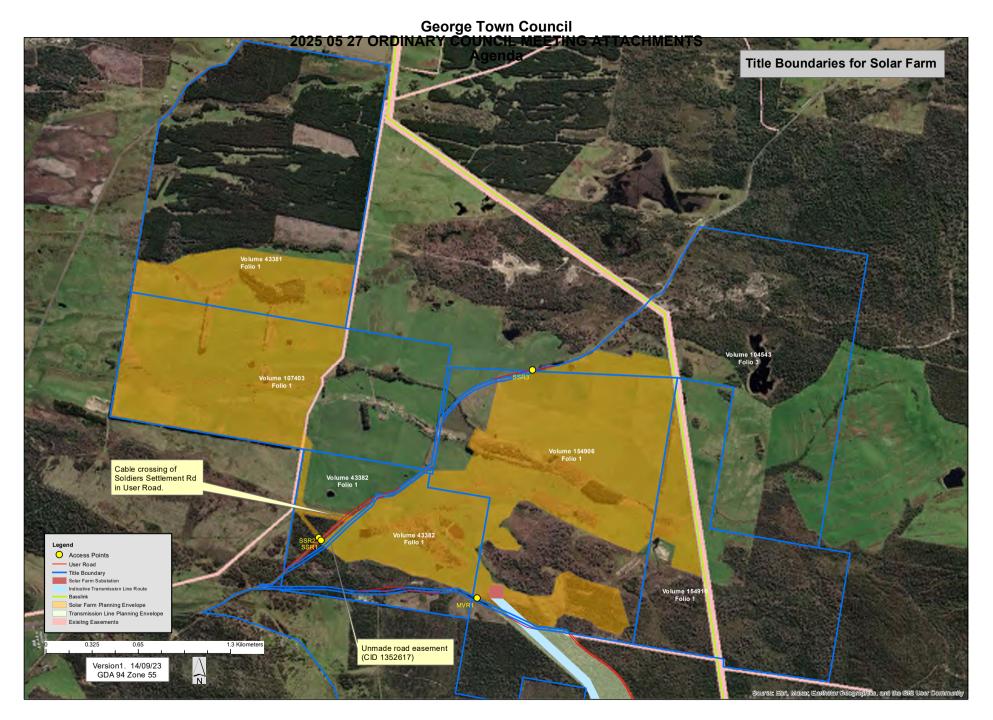
Cimitiere Plains Solar Farm





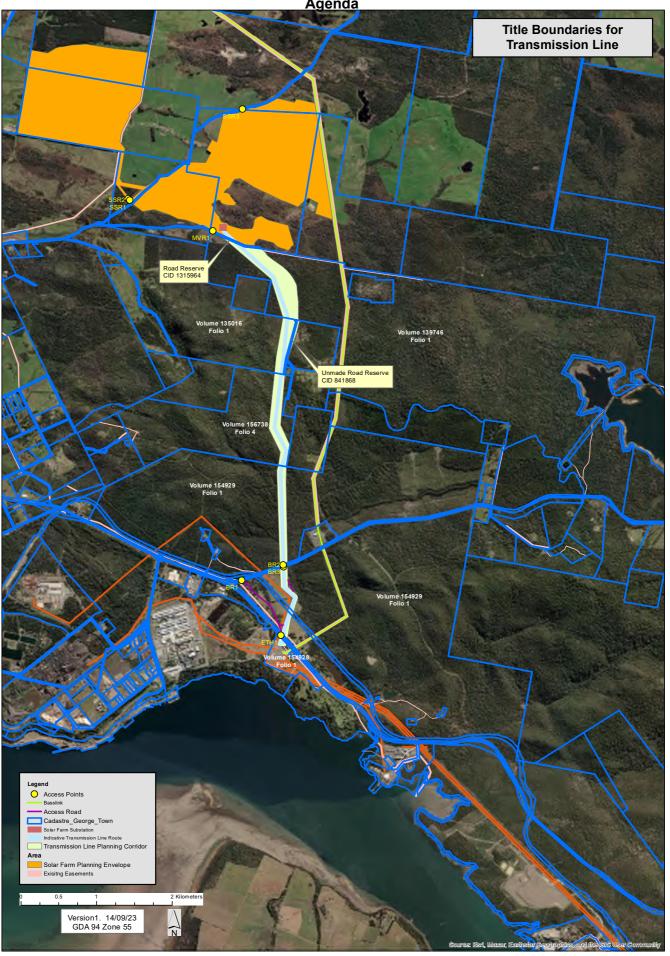


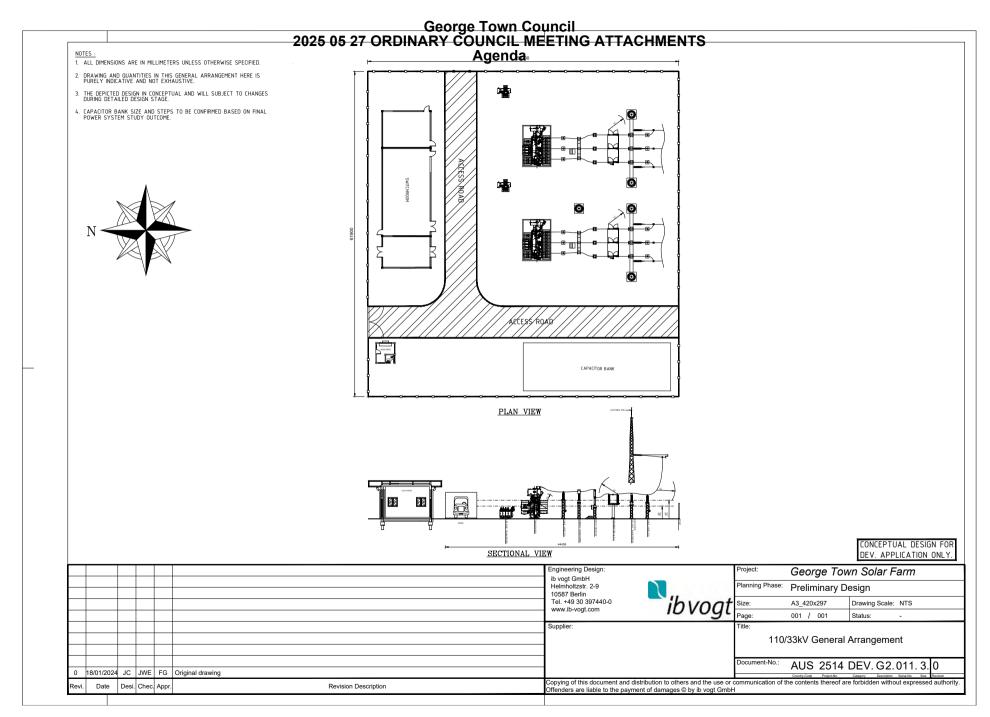
Attachment 7.1.1 DA Package - DA 2024-108 - Reduced

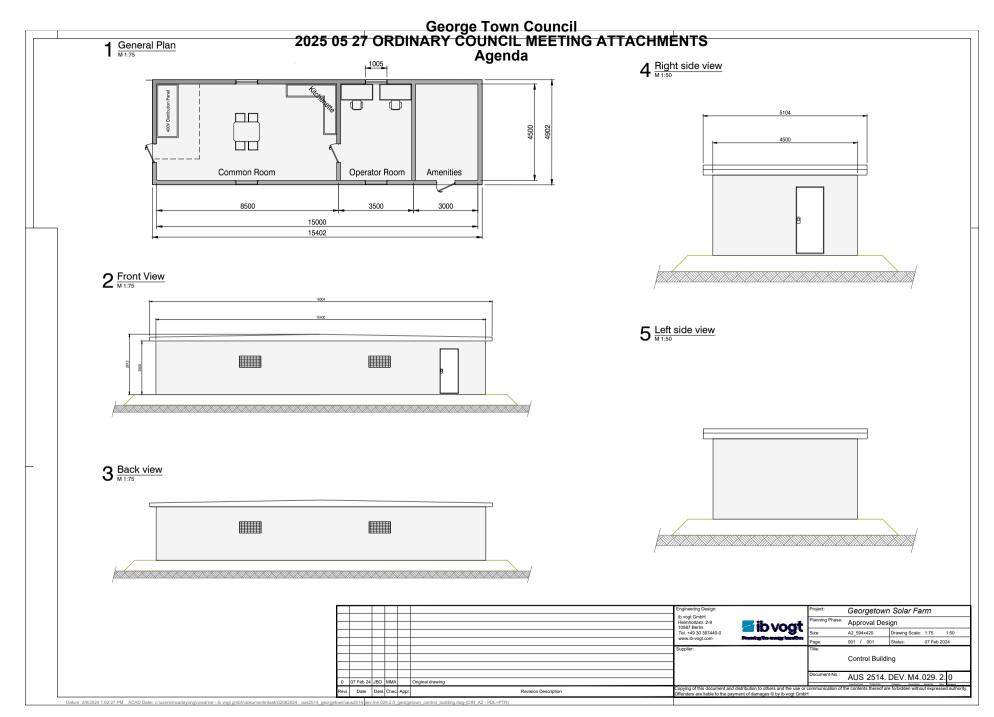


Attachment 7.1.1 DA Package - DA 2024-108 - Reduced

George Town Council 2025 05 27 ORDINARY COUNCIL MEETING ATTACHMENTS Agenda









Appendix P
Record of advice
from Aboriginal
Heritage Tasmania

Cimitiere Plains Solar Farm





AHR Instrument: AHA601

Applicant: Daryl Brown (Envoca)
Date: 13 December 2023

RECORD OF ADVICE FROM ABORIGINAL HERITAGE TASMANIA ON AN ABORIGINAL HERITAGE ASSESSMENT REPORT

This document provides a record of advice relating to an assessment undertaken in accordance with the *Aboriginal Heritage Standards and Procedures*, as adopted by the Guidelines issued under section 21A of the *Aboriginal Heritage Act 1975*.

Report title: Cimitiere Plains Solar Farm Project - Final V3 - December 2023 - Stuart Huys

Advice: Please see next page.

All Aboriginal heritage is protected under the *Aboriginal Heritage Act 1975*. It is an offence to destroy, damage, deface, conceal, or otherwise interfere with a relic (Aboriginal heritage) without a permit granted by the Minister. If at any time Aboriginal heritage is suspected, the process outlined in the **Unanticipated Discovery Plan** should be followed as there is an obligation to report findings of Aboriginal heritage as soon as practicable.

As explained in the Guidelines, obtaining this record of advice does not exempt a person from their obligations under the Act but is an important element of the actions summarised in the Guidelines. To be sure that you have "in so far as is practicable ... complied with the guidelines" (s.21(1) of the Aboriginal Heritage Act 1975), be sure to read the relevant part and take any other action that may be relevant to your situation.

This advice is valid for two years and only for the activity as described in the Aboriginal Heritage Assessment Report specified above.

Please contact Aboriginal Heritage Tasmania on 1300 487 045 or aboriginalheritage@dpac.tas.gov.au if you require further information.

Disclaimer The advice contained within this document is based on information available to Aboriginal Heritage Tasmania at the time of its preparation and is provided in good faith. It does not constitute legal advice, is not intended to be a substitute for legal advice and should not be relied upon as such. Proponents should seek specialist legal advice, if required, regarding the Aboriginal Heritage Act 1975 when applying the information to their specific needs.

Tasmanian Government

Aboriginal Heritage Tasmania Department of Premier and Cabinet

RECORD OF ADVICE FROM ABORIGINAL HERITAGE TASMANIA ON AN ABORIGINAL HERITAGE ASSESSMENT REPORT Page 2

Further advice or comments:

AHT acknowledge the findings and recommendations of the assessment. For the purposes of the Aboriginal Heritage Act 1975 the report conforms to the assessment standards outlined in the Aboriginal Heritage Standards and Procedures.

AHT notes survey coverage was highly variable. While the potential for unanticipated discoveries cannot be entirely ruled out, the consultants have stated the effective coverage achieved during the assessment is adequate for the purposes of determining the potential extent, nature and distribution of Aboriginal cultural heritage sites in the study area.

The project should adhere to the recommendations made within the report.

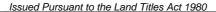
It is understood the project is still in the very early design stage. If impact to Aboriginal heritage cannot be avoided a permit under the Aboriginal Heritage Act 1975 must be obtained prior to works proceeding. AHT would be happy to discuss the project footprint with you once a design plan has been drafted.

From: Sent: To: Cc: Subject:	Daryl Brown Thursday, 3 April 2025 3:11 PM Justin Simons; Dan Halperin; Naresh Bista; Dane Stewart RE: Flood Assessment	Alexander Bowles
Follow Up Flag: Flag Status:	Follow up Flagged	
CAUTION: Do not click links of	or attachments unless you recognize the sender and know	the content is safe
Hi Justin,		
 and Old Aerodrome Rd, t Prior to construct similar) will cond accordance with Technology and Aprovided to the C The pre-construct assessments. A Level 2 Structur qualified profession will be prepared as The construction. The construction of the construction of the prepared as The construction. One year 	culverts where Cimitiere Creek passes under Soldan he Proponent makes the following commitments: ion of the solar farm, a suitably qualified person (euct a Level 2 – Structural/Engineering Assessment relevant Australian Standards including Austroads Australian Standard AS 5100 (Bridge Design Code). ouncil. Ition assessed condition will serve as the benchmateral/Engineering Assessment will be conducted again and provided to Council. These assessments will terruction phase, or after either the commencement of operations or the power occurs later.	g. civil engineer or of the culverts in Guide to Bridge The report will be ork for future in by a suitably A condition report ake place during:
blockages, sedim necessary repairs • The Proponent is	anges to the culverts are identified, including structions, or flow obstructions, the Proponent will so to restore the culverts to their pre-construction contresponsible for any damage to the culverts in the Annual Exceedance Probability.	carry out the ondition.
Please let me know if you	ı require any further information.	
Best regards		
Daryl Brown		

Daryl Brown

RESULT OF SEARCH







SEARCH OF TORRENS TITLE

VOLUME	FOLIO
11369	23
EDITION	DATE OF ISSUE
3	27-Sep-2004

SEARCH DATE : 12-Sep-2023 SEARCH TIME : 02.55 PM

DESCRIPTION OF LAND

Parish of CRANBOURNE, Land District of DORSET Lot 23 on Plan 11369

Derivation: Part of Lot 626 Gtd. to W.E. Lawrence, Part of Lots 45 and 124 Gtd. to A.T. Collett and Part of 1000 Acres and 640 Acres Gtd. to T.B. Bartley & Ors.

Prior CT 3844/4

SCHEDULE 1

C139368 TRANSFER to THE CROWN Registered 16-Oct-1998 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BURDENING EASEMENT: SUBJECT TO: The following rights of Her
Majesty the Queen, namely: - (1) the right at all
times of making and constructing in or on the said
land within described such and so many drains sewers
and waterway for sanitary or other purposes as may be
deemed expedient and also the right of altering
amending cleansing or repairing such drains sewers
and waterways; and (2) the right always to resume
such portions of the said land within described as
may be required for any roads railways tramways
water-races or other public utilities

C527089 BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with the benefit of a restriction as to user of land in favour of Basslink Pty Ltd over the Power Transmission Easement shown passing through the said land within described (subject to provisions) Registered 27-Sep-2004 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

154653 Plan - Pending Lodged by TRANSEND on 03-Jun-2008 BP: 154653

164552 PLAN Lodged by TRANSEND Networks Pty Ltd 1-7

552 PLAN Lodged by TRANSEND Networks Pty Ltd 1-7 Maria Street Lenah Valley on 20-Aug-2012 BP: 164552

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Department of Natural Resources and Environment Tasmania www.thelist.tas.gov.au

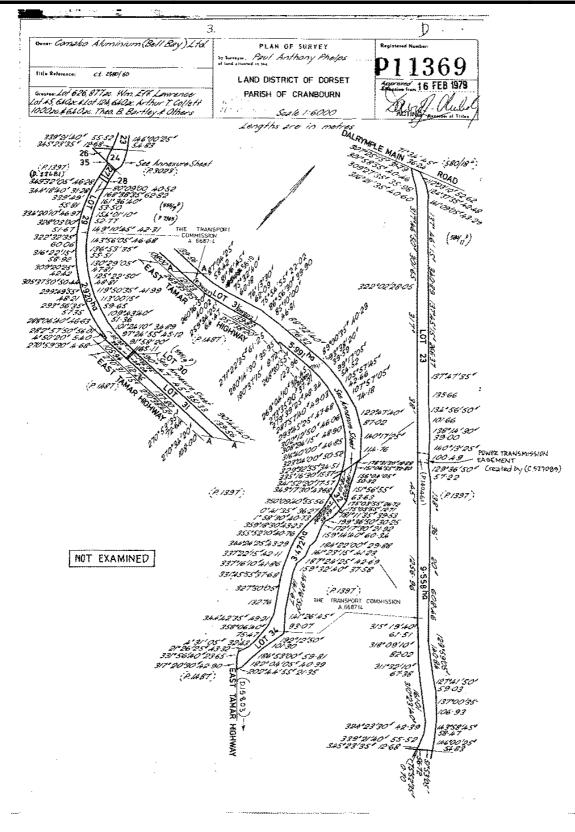


FOLIO PLAN

RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980



Volume Number: 11369

Revision Number: 04

Search Date: 12 Sep 2023 Search Time: 02:55 PM

Department of Natural Resources and Environment Tasmania

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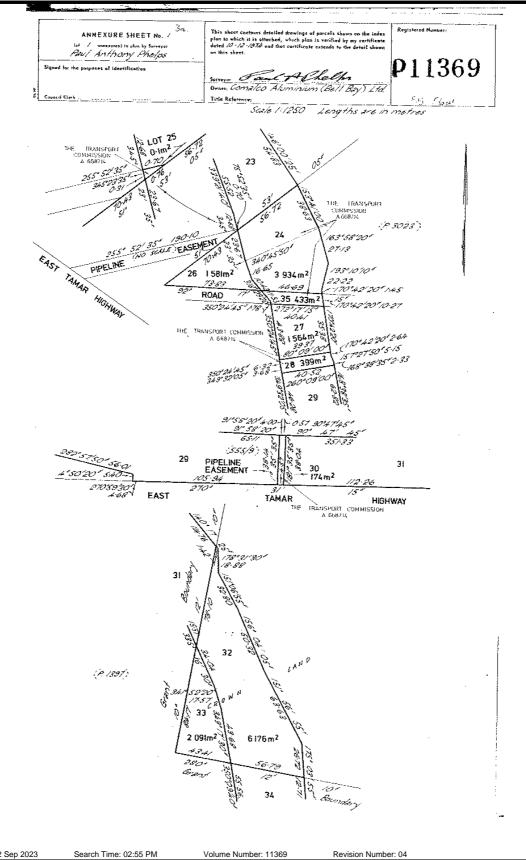


FOLIO PLAN

RECORDER OF TITLES



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Search Date: 12 Sep 2023 Search Time: 02:55 PM

Department of Natural Resources and Environment Tasmania

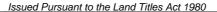
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RESULT OF SEARCH

RECORDER OF TITLES





SEARCH OF TORRENS TITLE

VOLUME	FOLIO
30617	4
EDITION	DATE OF ISSUE
3	27-Sep-2004

SEARCH DATE : 12-Sep-2023 SEARCH TIME : 02.55 PM

DESCRIPTION OF LAND

Parish of CRANBOURNE, Land District of DORSET

Lot 4 on Plan 30617

Derivation : For grantees see plan

Prior CT 4499/60

SCHEDULE 1

THE CROWN

SCHEDULE 2

Reservations and conditions in the Crown Grant if any C527089 BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with the benefit of a restriction as to user of land in favour of Basslink Pty Ltd over the Power Transmission Easement shown passing through the said land within described (subject to provisions) Registered 27-Sep-2004 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

D4391 TRANSFER of EASEMENT Lodged by GUNSON WILLIAMS on

08-Feb-2012 BP: D4391

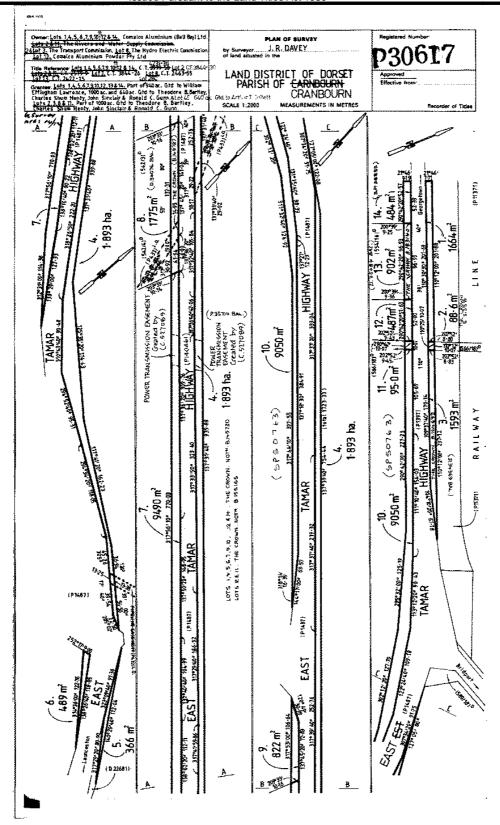


FOLIO PLAN

RECORDER OF TITLES



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Search Date: 12 Sep 2023

Search Time: 02:55 PM

Volume Number: 30617

Revision Number: 03

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RESULT OF SEARCH



RECORDER OF TITLES

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SEARCH OF TORRENS TITLE

VOLUME 30617	FOLIO 8
EDITION	DATE OF ISSUE
2	13-Aug-1999

SEARCH DATE : 12-Sep-2023 SEARCH TIME : 02.55 PM

DESCRIPTION OF LAND

Parish of CRANBOURNE, Land District of DORSET Lot 8 on Plan 30617 Derivation: Part of 1000 acres granted to THEODORE B. BARTLEY, CHARLES SHUM HENTY, JOHN SINCLAIR AND RONALD C. GUNN and duly surrendered as appears by Transfer No. B149727 Prior CT 4439/11

SCHEDULE 1

THE CROWN

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
BENEFITING EASMENT: full and free right and liberty for The
Hydro-Electric Commission and its assigns the owner
or owners for the time being of the said land within
described and as appurtenant thereto to carry on
manufacturing operations on the said land within
described notwithstanding that such operations may
cause dust, noxious fumes and gases and fluids smoke
noise vibration or disturbance of the ground or may
predjudicially affect the enjoyment of the lands
comprised in Certificate of Title Volume 732 Folio 79,
Volume 890 Folio 56, Volume 890 Folio 57 and Volume
1062 Folio 45 and Conveyances Nos. 26/6118 and 27/3288

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

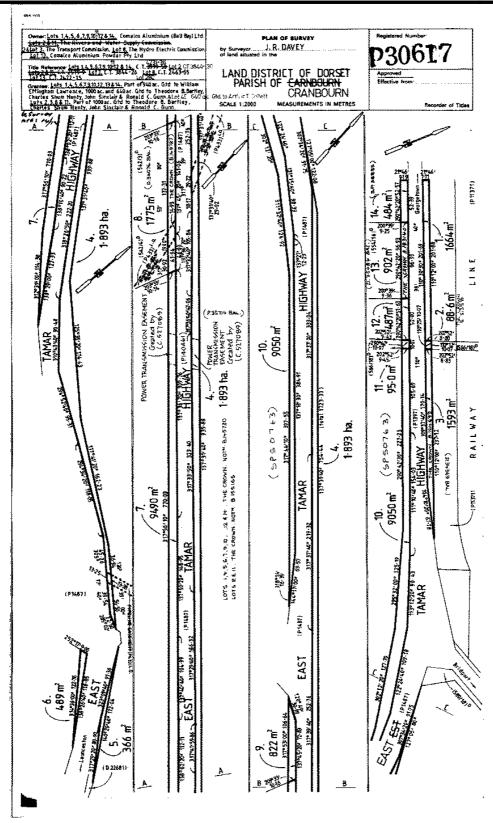


FOLIO PLAN

RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980



Search Date: 12 Sep 2023

Search Time: 02:55 PM

Volume Number: 30617

Revision Number: 03

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RESULT OF SEARCH

RECORDER OF TITLES

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SEARCH OF TORRENS TITLE

VOLUME 43381	FOLIO 1
EDITION	DATE OF ISSUE
7	13-May-2014

SEARCH DATE : 28-Aug-2023 SEARCH TIME : 09.42 AM

DESCRIPTION OF LAND

Parish of CHARING, Land District of DORSET Lot 1 on Diagram 43381 Derivation: Part of Lot 25017 Granted to E. Archer Prior CT 4594/7

SCHEDULE 1

A802999 EFFINGHAM PTY LTD

SCHEDULE 2

Reservations and conditions in the Crown Grant if any BURDENING EASEMENT: a pipeline easement subject to a restriction as to user of land (appurtenant to Lot 1 on Sealed Plan 152001, Lot 1 on Sealed Plan 136962, Lot 2 on sealed Plan 136962 and Lot 1 on Plan 152545) over the land marked Pipeline Easement Variable Width on Diagram 43381 Registered 22-Mar-2012 at noon C45943 PRIVATE TIMBER RESERVE pursuant to Section 15(1) of the Forest Practices Act 1985 "against portion of the land as described therein" Registered 08-Apr-1998 at noon D118522 MORTGAGE to Rural Bank Limited Registered 13-May-2014 at 12.01 PM E183177 CAVEAT by Sun Spot 9 Pty Ltd Registered 05-Jan-2021 at noon

UNREGISTERED DEALINGS AND NOTATIONS

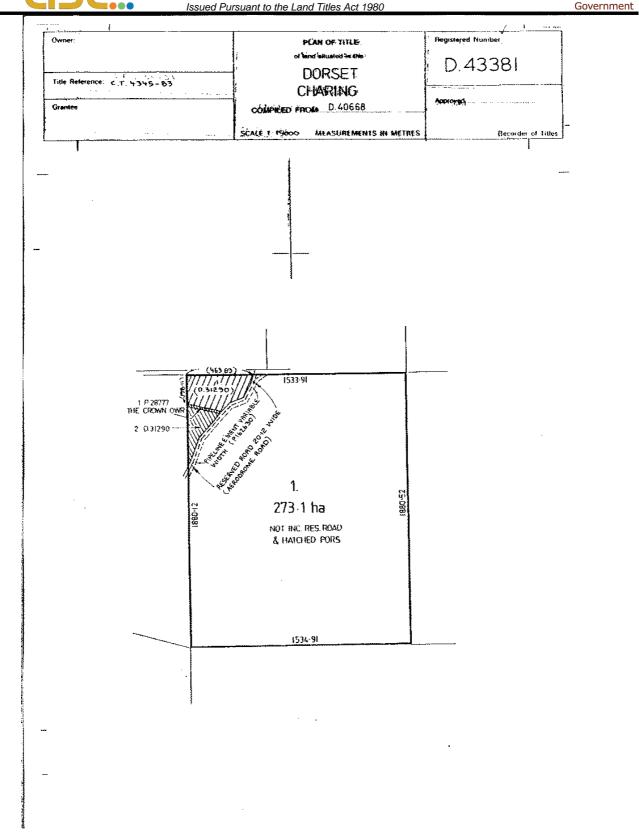
No unregistered dealings or other notations



FOLIO PLAN

RECORDER OF TITLES





Search Date: 28 Aug 2023 Search Time: 09:42 AM

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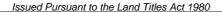
Volume Number: 43381

Revision Number: 02



RESULT OF SEARCH

RECORDER OF TITLES





SEARCH OF TORRENS TITLE

VOLUME	FOLIO
43382	1
EDITION	DATE OF ISSUE
3	13-May-2014

SEARCH DATE : 28-Aug-2023 SEARCH TIME : 09.48 AM

DESCRIPTION OF LAND

Parish of BLANDFORD, Land District of DORSET Lot 1 on Diagram 43382 Derivation: Part of Lot 24001 Gtd. to A.E. Campbell Prior CT 2240/100

SCHEDULE 1

A802999 TRANSFER to EFFINGHAM PTY. LTD.

SCHEDULE 2

Reservations and conditions in the Crown Grant if any D118522 MORTGAGE to Rural Bank Limited Registered 13-May-2014 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

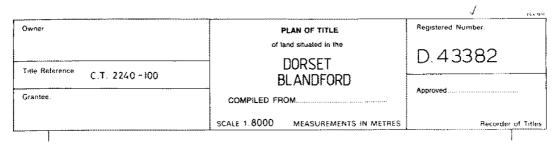


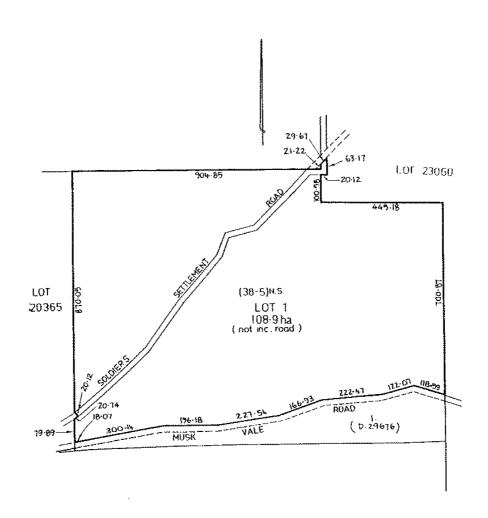
FOLIO PLAN

RECORDER OF TITLES



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W.

Search Date: 28 Aug 2023

Search Time: 09:48 AM

Volume Number: 43382

Revision Number: 01

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RESULT OF SEARCH

RECORDER OF TITLES





SEARCH OF TORRENS TITLE

VOLUME	FOLIO
86544	1
EDITION	DATE OF ISSUE
3	14-Oct-2008

SEARCH DATE : 12-Sep-2023 SEARCH TIME : 02.55 PM

DESCRIPTION OF LAND

Parish of CRANBOURNE, Land District of DORSET Lot 1 on Diagram 86544 (formerly being 580-18D) Derivation: Parts of Lot 627 and 640 Gtd to William Effingham Lawrence and Theodore Bryant Bartley, Charles Shum Henty, John Sinclair and Ronald C Gunn respectivelyand duly acquired by Notification No. A337466 Prior CT 2682/12

SCHEDULE 1

A337467 TRANSFER to THE CROWN

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

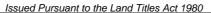
UNREGISTERED DEALINGS AND NOTATIONS

D4391 TRANSFER of EASEMENT Lodged by GUNSON WILLIAMS on 08-Feb-2012 BP: D4391

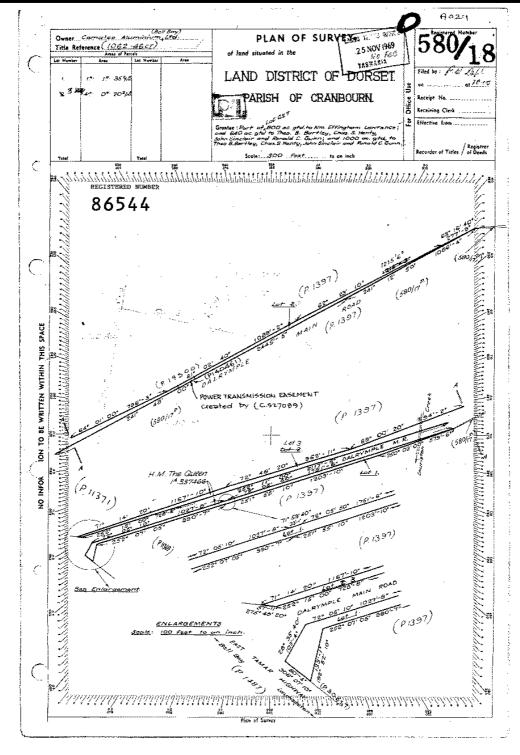


FOLIO PLAN

RECORDER OF TITLES







Search Date: 12 Sep 2023

Search Time: 02:55 PM

Volume Number: 86544

Revision Number: 03



RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME 104543	FOLIO 3
EDITION	DATE OF ISSUE
7	13-May-2014

SEARCH DATE: 28-Aug-2023 SEARCH TIME : 09.37 AM

DESCRIPTION OF LAND

Parish of CHARING, Land District of DORSET Lot 3 on Diagram 104543 Derivation: Whole of Lot 27130 Gtd to T H Davis

Prior CT 4651/64

SCHEDULE 1

A802999 EFFINGHAM PTY LTD

SCHEDULE 2

Reservations and conditions in the Crown Grant if any C844842 BURDENING EASEMENT: a power transmission right (fully

set forth in Memorandum of Common Provisions

M235)(appurtenant to Lot 1 on Plan 139714) over the Power Transmission Easement '5' on Diagram 104543 (P.

140461) (subject to variations) Registered

12-Aug-2008 at 12.01 PM

C45942 PRIVATE TIMBER RESERVE pursuant to Section 15(1) of

> the Forest Practices Act 1985 "against portion of the land as described therein" Registered 08-Apr-1998 at

noon

E183177 CAVEAT by Sun Spot 9 Pty Ltd Registered 05-Jan-2021

at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

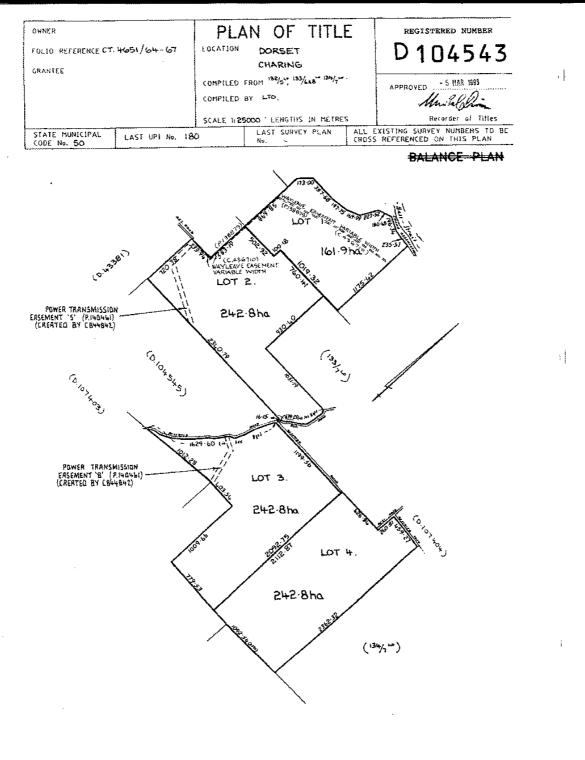


FOLIO PLAN

RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980



Search Date: 28 Aug 2023

Search Time: 09:37 AM

Volume Number: 104543

Revision Number: 06

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RESULT OF SEARCH

RECORDER OF TITLES

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SEARCH OF TORRENS TITLE

VOLUME	FOLIO
107403	1
EDITION	DATE OF ISSUE
5	13-May-2014

SEARCH DATE : 28-Aug-2023 SEARCH TIME : 09.40 AM

DESCRIPTION OF LAND

Parish of BLANDFORD, Land District of DORSET

Lot 1 on Diagram 107403

Derivation: Part of 500-0-0 Granted to J. Clark

Derived from Y16418

SCHEDULE 1

EFFINGHAM PTY. LIMITED

SCHEDULE 2

Reservations and conditions in the Crown Grant if any C441457 SUBJECT to the Gas Pipeline right set forth in Memorandum of Provisions No. M261 acquired by the Crown in accordance with the Land Acquisition Act 1993 freed and discharged from all estates, statutory reservations and dedications in so far as they affect the said Gas Pipeline right over the land marked "Gas Supply Easement" shown on Plan No.137000 as passing through the said land within described

D4388 Transfer of the "Gas Pipeline Right" created by Instrument C441457 in favour of Tasmanian Gas Pipeline Pty Ltd Registered 02-May-2012 at noon

C286302 NOTICE of Notified Corridor under Section 15 of the Major Infrastructure Development Approvals Act 1999 affecting the land therein described Registered 14-Mar-2001 at noon

C605155 Notice of Permit Corridor under S15 of the Major Infrastructure Development Act 1999 affecting the said land within described. Registered 10-Nov-2004 at noon

D118522 MORTGAGE to Rural Bank Limited Registered 13-May-2014 at 12.01 PM

E183177 CAVEAT by Sun Spot 9 Pty Ltd Registered 05-Jan-2021 at noon

UNREGISTERED DEALINGS AND NOTATIONS



RESULT OF SEARCH

RECORDER OF TITLES





No unregistered dealings or other notations

Page 2 of 2

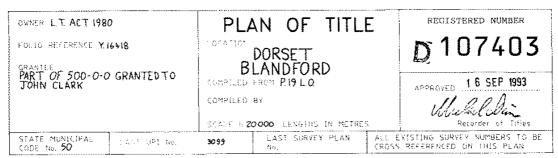


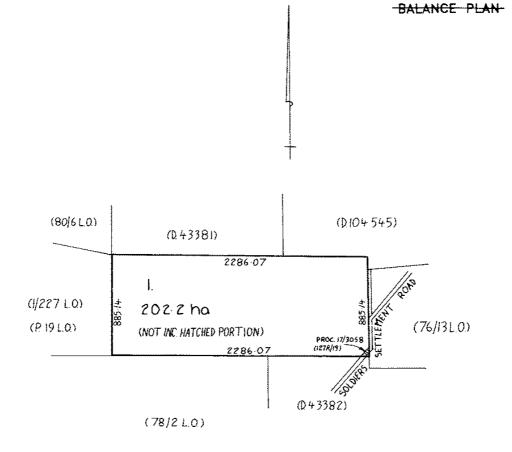
FOLIO PLAN

RECORDER OF TITLES









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Search Date: 28 Aug 2023

Search Time: 09:40 AM

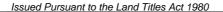
Volume Number: 107403

Revision Number: 01



RESULT OF SEARCH

RECORDER OF TITLES





SEARCH OF TORRENS TITLE

VOLUME	FOLIO
135016	1
EDITION	DATE OF ISSUE
11	16-Aug-2023

SEARCH DATE : 08-Sep-2023 SEARCH TIME : 01.17 PM

DESCRIPTION OF LAND

Parish of BLANDFORD, Land District of DORSET

Lot 1 on Plan 135016

Derivation: Part of Lot 31129, Gtd. to H.E. Davidson.

Prior CT 118369/1

SCHEDULE 1

D79357 TRANSFER to DENNIS PATRICK LAWRENCE Registered 06-Jan-2015 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any E330903 CAVEAT by Sun Spot 9 Pty Ltd Registered 30-Jan-2023 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

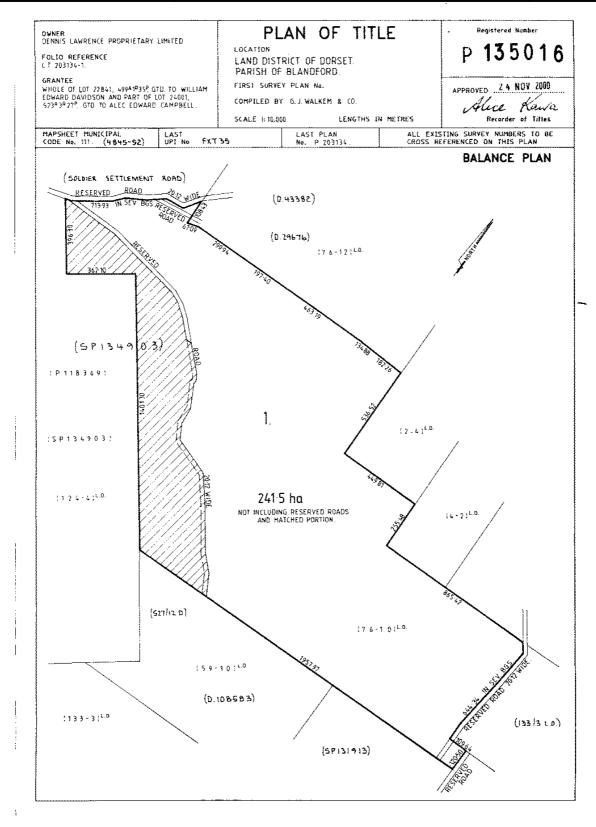


FOLIO PLAN

RECORDER OF TITLES







Search Date: 08 Sep 2023 Search Time: 01:17 PM

Department of Natural Resources and Environment Tasmania

Volume Number: 135016 Revision Number: 02

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RESULT OF SEARCH



Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME	FOLIO
139746	1
EDITION	DATE OF ISSUE
7	08-Sep-2008

SEARCH DATE : 11-Sep-2023 SEARCH TIME : 03.47 PM

DESCRIPTION OF LAND

Parish of BLANDFORD Land District of DORSET
Parish of CRANBOURNE Land District of DORSET
Lot 1 on Plan 139746 (Section 27A of the Land Titles Act.)
Derivation: Whole of Lot 1 on Plan 139746 Gtd. to The Crown

SCHEDULE 1

C549128 APPLICATION: THE CROWN

SCHEDULE 2

осперопе .	
C549128	Land is limited in depth to 15 metres, excludes minerals and is subject to reservations relating to
C527089	drains sewers and waterways in favour of the Crown BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with the benefit of a restriction as to user of land in
	favour of Basslink Pty Ltd over the Power
	Transmission Easement shown passing through the said
	land within described (subject to provisions)
	Registered 27-Sep-2004 at 12.01 PM
C788089	BURDENING EASEMENT: A Right of Carriageway
	(appurtenant to Lot 1 on P.152395) over the Right of
	Way 10.00 Wide shown on P.139746 Registered
GE05000	19-Sep-2007 at noon
C785082	BURDENING EASEMENT: a right of carriageway
	(appurtenant to Lot 1 on Plan 152395) over the Right of Way 20.00 wide on Plan 139746 Registered
	13-Mar-2008 at noon
C637060	BURDENING EASEMENT: A Right of Carriageway
2037000	(appurtenant to Lot 1 on P.144165) over the right of
	Way 20.00 wide on Plan 139746 (subject to conditions)
	Registered 08-Sep-2008 at noon
C789365	Instrument creating a Forestry Right for Wesley Vale
	Engineering Pty Ltd and Forestry Tasmania for the
	term of fifteen years from 30th June 2003 and ending
	on the 29th June 2018 or the date of completion of
	harvest whichever is the later over the lands shown
	hatched on the Forestry Right Diagrams filed in

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Department of Natural Resources and Environment Tasmania



RESULT OF SEARCH

RECORDER OF TITLES

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"Plan-Related Documents" against the titleplan to the within land (together with ancillary rights)
Registered 03-Mar-2009 at 12.06 PM

D147455 CAVEAT by The Trust Company (Australia) Limited
Registered 17-Nov-2014 at noon

E102603 INSTRUMENT Creating Forestry Rights for Reliance
Forest Fibre Pty Ltd for the term of 99 years from
6th October 2017 and ending 5th October 2116 over the
land shown hatched on the Forestry Right Diagram
files in "Plan-Related Documents" against the
titleplan to the within land (together with ancillary
rights) Registered 10-Apr-2018 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

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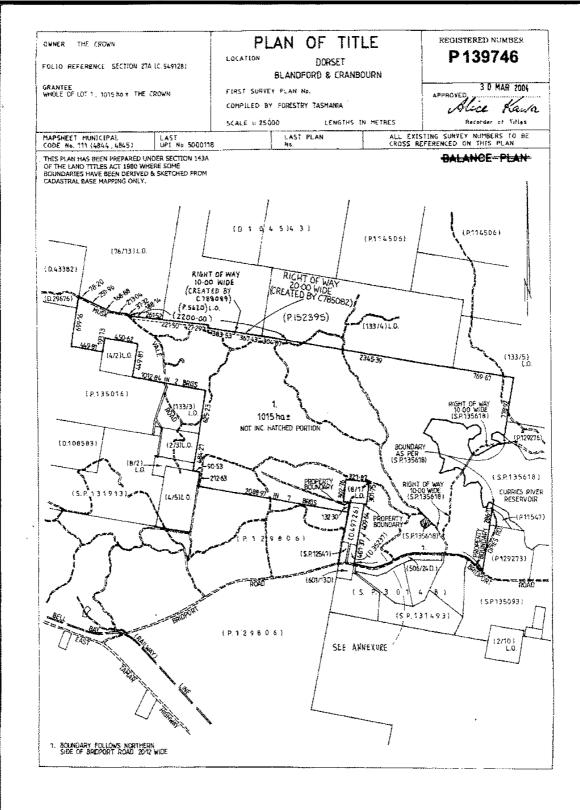


FOLIO PLAN

RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980



Search Date: 11 Sep 2023

Search Time: 03:47 PM

Volume Number: 139746

Revision Number: 07

Page 1 of 2

Department of Natural Resources and Environment Tasmania

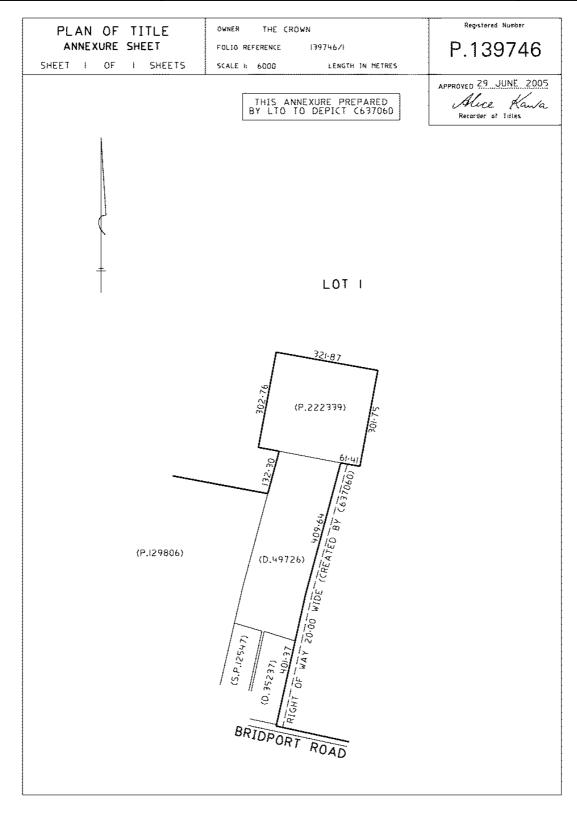


FOLIO PLAN

RECORDER OF TITLES







Search Date: 11 Sep 2023

Search Time: 03:47 PM

Volume Number: 139746

Revision Number: 07

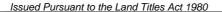
Page 2 of 2

Department of Natural Resources and Environment Tasmania



RESULT OF SEARCH

RECORDER OF TITLES





SEARCH OF TORRENS TITLE

VOLUME 154906	FOLIO 1
EDITION	DATE OF ISSUE
3	13-May-2014

SEARCH DATE : 28-Aug-2023 SEARCH TIME : 09.43 AM

DESCRIPTION OF LAND

Parish of BLANDFORD Land District of DORSET Lot 1 on Plan 154906 Derivation: Lot 23060 Gtd. to E. Archer. Prior CT 229788/1

SCHEDULE 1

A802999 TRANSFER to EFFINGHAM PTY. LTD.

SCHEDULE 2

Reservations and conditions in the Crown Grant if any C844842 BURDENING EASEMENT: a power transmission right (fully set forth in Memorandum of Common Provisions M235)(appurtenant to Lot 1 on Plan 139714) over the Power Transmission Easement '5' on Diagram 104543 (P. 140461) (subject to variations) Registered 12-Aug-2008 at 12.01 PM
D118522 MORTGAGE to Rural Bank Limited Registered 13-May-2014 at 12.01 PM
E183177 CAVEAT by Sun Spot 9 Pty Ltd Registered 05-Jan-2021 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

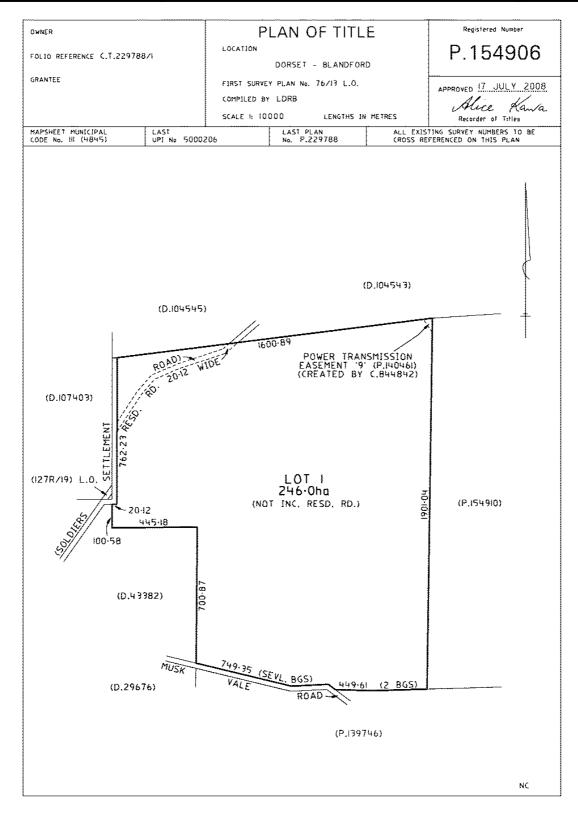


FOLIO PLAN

RECORDER OF TITLES







Search Date: 28 Aug 2023

Search Time: 09:43 AM

Volume Number: 154906

Revision Number: 01

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RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME	FOLIO
154910	1
EDITION	DATE OF ISSUE
2	21-Oct-2008

SEARCH DATE : 28-Aug-2023 SEARCH TIME : 09.47 AM

DESCRIPTION OF LAND

Parish of BLANDFORD Land District of DORSET Lot 1 on Plan 154910

Derivation: Whole of Lot 38638 Gtd. to L.D. Archer.

Prior CT 242192/1

SCHEDULE 1

M198574 TRANSFER to WINSTON DAVID ARCHER Registered 21-Oct-2008 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any C844841 BURDENING EASEMENT: a power transmission right (fully set forth in Memorandum of Common Provisions M235)(appurtenant to Lot 1 on Plan 139714) over the Power Transmission Easement '10' 55.00 wide on Plan 154910 (P.140461) (subject to variations) Registered 12-Aug-2008 at noon
E183174 CAVEAT by Sun Spot 9 Pty Ltd Registered 11-Jan-2021 at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

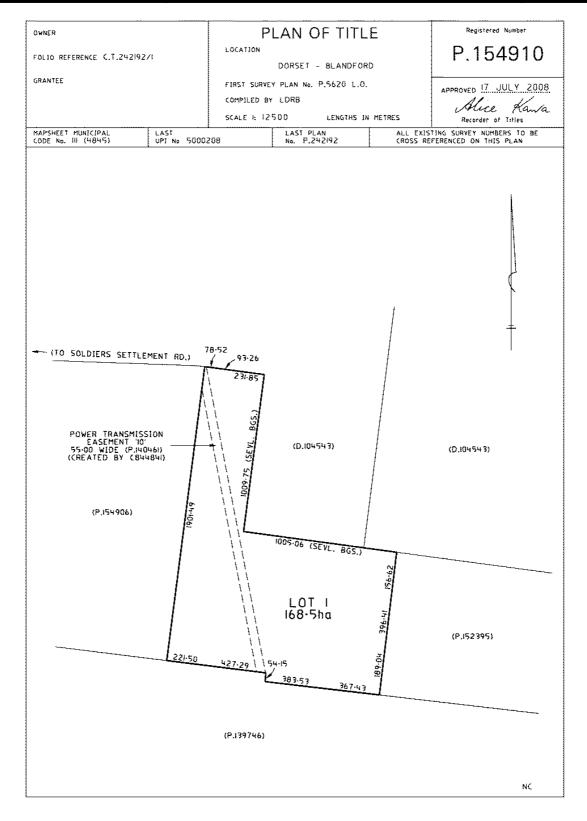


FOLIO PLAN

RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980



Search Date: 28 Aug 2023

Search Time: 09:47 AM

Volume Number: 154910

Revision Number: 01

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Department of Natural Resources and Environment Tasmania

RESULT OF SEARCH



Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME	FOLIO
154928	1
EDITION	DATE OF ISSUE
2	05-Jun-2020

SEARCH DATE : 28-Aug-2023 SEARCH TIME : 10.04 AM

DESCRIPTION OF LAND

Parish of CRANBOURNE Land District of DORSET Lot 1 on Sealed Plan 154928 Derivation: Part of 1000 Acres Gtd to Theodore B. Bartley & Ors. and Part of 640 Acres Gtd to Teodore B. Bartley & Ors. Prior CTs 152451/1 and 34076/1

SCHEDULE 1

E179641 TASMANIAN NETWORKS PTY LTD Registered 05-Jun-2020 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
EXCEPTING THEREOUT (as relates to that portion of the said
land within described formerly comprised in Folio of
the Register Volume 34076 Folio 1) so much thereof as
lies below the depth of 15.24 metres from the surface
thereof saving as to wells and springs ALSO EXCEPTING
THEREOUT the property in all gold silver copper tin
and other metals ore minerals and other substances
containing metals and in all coal and mineral oil and
in all gems and precious stones in or on the said
land within described

SP154928 EASEMENTS in Schedule of Easements
C145423 PROCLAMATION under Section 9A and 52A of the Roads

C145423 PROCLAMATION under Section 9A and 52A of the Roads and Jetties Act 1935 Registered 19-Oct-1999 at noon C870335 INSTRUMENT Creating Restrictive Covenants Registered 05-May-2009 at 12.02 PM

C880239 CAVEAT by Rio Tinto Aluminium (Bell Bay) Limited Registered 05-May-2009 at 12.03 PM

D18775 APPLICATION Caveat C880239 has been partially lapsed pursuant to Section 136 (5) of the Land Titles Act 1980 to permit registration of Transfer D4382 only Registered 03-May-2012 at noon

UNREGISTERED DEALINGS AND NOTATIONS

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RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



NOTICE: This folio is affected as to amended easements pursuant to Request to Amend No. D6063 made under Section 103 of the Local Government (Building and Miscellaneous Provisions) Act 1993. Search Sealed Plan No. 154928 Lodged by CROWN SOLICITOR on

05-Apr-2011 BP: D6063

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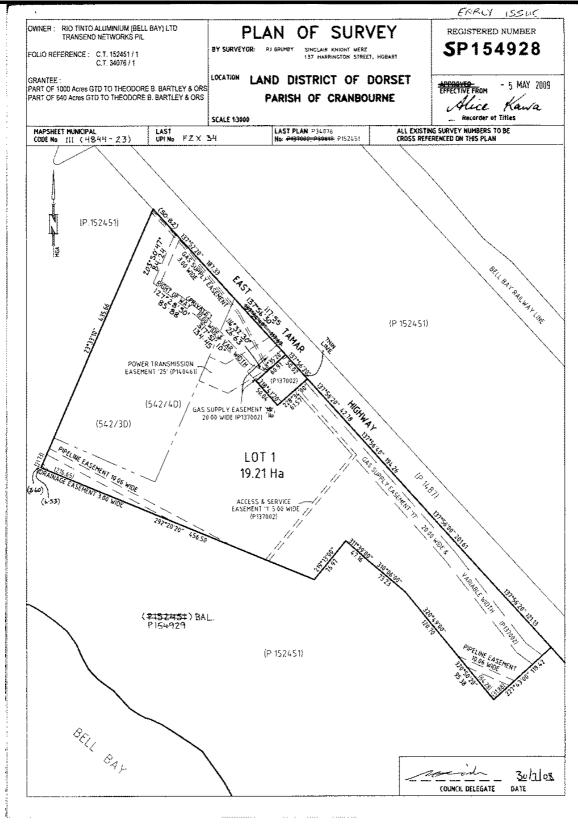


FOLIO PLAN

RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980



Volume Number: 154928

Revision Number: 04

Search Date: 28 Aug 2023 Search Time: 10:04 AM

Department of Natural Resources and Environment Tasmania

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RESULT OF SEARCH



RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
154929	1
EDITION 4	DATE OF ISSUE 22-Jun-2011

SEARCH DATE : 28-Aug-2023 SEARCH TIME : 10.03 AM

DESCRIPTION OF LAND

Parish of CRANBOURN Land District of DORSET Lot 1 on Plan 154929 Derivation : For Grantees See Plan

Prior CT 152451/1

SCHEDULE 1

C807674 RIO TINTO ALUMINIUM (BELL BAY) LIMITED Registered 09-Aug-2007 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any SP109249 BURDENING EASEMENT: Right of Drainage [appurtenant to Lot 1 on SP109249] over the Drainage Easement 20 metres wide shown on Plan No. 154929

BURDENING EASEMENT: (Relating to all the said land within described except those portions of Lots 38185 and 38186 shown on Plan No. 122550) the following right for the Crown, namely: (1) the right at all times of making and constructing in or on the said lots such and so many drains sewers and waterways for the sanitary or other purposes as may be deemed expedient and also the right of altering amending cleansing or repairing such drains sewers and waterways; (2) the right always to resume such portions of the said lots as may be required for any roads railways tramways water races or other public utilities

BENEFITING EASEMENT: full and free right and liberty for the owner or owners for the time being of the said land within described and as appurtenant thereto to carry on manufacturing operations on the said land within described notwithstanding that such operations may cause dust noxious disturbance of the ground or may prejudicially affect the enjoyment of the lands comprised in Certificates of Title Volume 732 Folio 79, Volume 890 Folios 56 & 57, Volume 1062 Folio 45 and Conveyance Nos. 26/6118 & 27/3288

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Department of Natural Resources and Environment Tasmania

RESULT OF SEARCH







- BURDENING EASEMENT: Right of Carriageway [appurtenant to 2a-1r-7 3/10ps on Diagram No. 555/9] over the Roadway marked J.K. and L.M. on Plan No. 154929
- BURDENING EASEMENT: Pipeline Easement as described in Acquisition No. A298000 for the Hydro Electric Commission over the Pipeline Easement 4.57 wide shown on Plan No. 154929
- BURDENING EASEMENT: Right of Carriageway [appurtenant to Lot 1 on Diagram No. 566/18] over the land marked ABCD on Plan No. 154929
- BURDENING EASEMENT: Pipeline Easement as described in Transfer No. A304452 for the Rivers and Waters Supply Commission over the strips of land marked ABCD and EFGH on Plan No. 154929
- BURDENING EASEMENT: Right of carriageway and pipeline easement as described in Indenture No. A959415 (appurtenant to Lots 1 and 2 on Plan No. 19500) over the lands marked Right of Carriageway and Pipeline Easement 10.00 wide shown on Plan No. 154929
- BURDENING EASEMENT: Pipeline Easement (appurtenant to Lot 1 on Sealed Plan No. 38855) over the Pipeline Easement 10. 06 wide shown on Plan No. 154929
- BURDENING EASEMENT: Right of Drainage [appurtenant to Lot 1 on Sealed Plan No. 129251) over the Drainage Easement 5. 00 wide shown on Plan No. 154929
- SP 139714 BENEFITTING EASEMENT: Right of carriageway subject to condition set forth in Sealed Plan No. 139714 over the Right of Way (Private) 10.00 wide shown passing through Lot 1 on Sealed Plan No. 139714
- SP 143038 BURDENING EASEMENT:a right of carriageway subject to condition set forth in Sealed Plan 143038 (appurtenant to Lots 1 & 2 on Sealed Plan 143038) over the Right of Way 10.06 wide marked RS, TN and PQ on Plan 154929
- SP 143038 BURDENING EASEMENT:a power supply right (appurtenant to Lot 2 on Sealed plan 143038) over the Power Supply Easement 6.00 wide on Plan 154929
- SP 143038 BURDENING EASEMENT:a pipeline right (appurtenant to Lot 2 on Sealed Plan 143038) over the Drainage and Pipeline Easement 10.00 wide on Plan 154929
- C557844 BURDENING EASEMENT: power transmission right (fully set forth in Memorandum of Common Provisions M235) (appurtenant to Lot 1 on SP139714) over the lands marked Power Transmission Easement and Power Transmission Easement 40.00 Wide shown passing through the said land within described (subject to variations) Registered 11-Oct-2005 at 12.01 PM
- SP152001 BENEFITING EASEMENT: Right of Carriageway over the Right of Way 5.00 wide (SP152001) on Plan No. 154929
- SP154928 BENEFITING EASEMENT: Right of Drainage over the Drainage Easement 3.00 wide shown passing through Lot

Page 2 of 4

RESULT OF SEARCH





Issued Pursuant to the Land Titles Act 1980

	issued Fursualli to the Land Thies Act 1900
	1 on Sealed Plan 154928 created by and more fully set
	forth in Sealed Plan 154928.
C999974	BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with
	the benefit of a restriction as to user of land in
	favour of Aurora Energy Pty Ltd over the land marked
	Electricity Infrastructure Easement shown on P.154929
	(Subject to Provisions) Registered 21-Mar-2011 at
	noon
D12691	BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with
	the benefit of a restiction as to user of land in
	favour of Aurora Energy Pty Ltd over the land marked
	Electricity Infrastructure Easement shown on Plan
	154929 (Subject to Provisions) Registered
	03-Jun-2011 at noon
D12692	BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with
D12092	the benefit of a restiction as to user of land in
	favour of Aurora Energy Pty Ltd over the land marked
	Electricity Infrastructure Easement shown on Plan
	154929 (Subject to Provisions) Registered
G050014	03-Jun-2011 at 12.01 PM
C950014	BURDENING EASEMENT: A Pipeline Easement in favour of
	Tasmanian Water and Sewerage Corporation (Northern
	Region) Pty Ltd over the lands marked Pipeline
	Easement 10.06 wide and Pipeline Easement variable
	width on D.100984 Registered 22-Jun-2011 at noon
D4382	Transfer of the "Gas Pipeline Access and Services
	Right" created by Instrument C395625 in favour of
	Tasmanian Gas Pipeline Pty Ltd Registered
	02-May-2012 at noon
D4385	Transfer of the "Gas Pipeline Right" created by
	Instrument C395625 in favour of Tasmanian Gas
	Pipeline Pty Ltd Registered 02-May-2012 at noon
C145423	PROCLAMATION under Section 9A and 52A of the Roads
	and Jetties Act 1935 Registered 19-Oct-1999 at noon
C288481	NOTICE of Notified Corridor under Section 15 of the
	Major Infrastructure Development Approvals Act 1999
	affecting the land therein described Registered
	15-Mar-2001 at noon
C395625	Burdening Easement: Gas Pipeline Access & Services
	Right with Restrictions (fully set forth in
	Memorandum of Provisions No.M226) (appurtenant to Lot
	1 on Plan 137002) in, over or under the strip of land
	marked "Access & Service Easement "1" shown on Plan
	No.137002
C395625	Burdening Easement: Gas Pipeline Right with
	Conditions & Restrictions (fully set forth in
	Memorandum of Provisions No.M225) for the Crown, on,
	over, under, or through the strips of land marked "Gas

Supply Easement" '1' '12' & '17' on Plan No.137002

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RESULT OF SEARCH

RECORDER OF TITLES





UNREGISTERED DEALINGS AND NOTATIONS

154653	Plan - Pending Lodged by TRANSEND on 03-Jun-2008 BP: 154653
161998	PLAN Lodged by WILL EDWARDS LAWYERS on 03-Jun-2011 BP: 161998
164552	PLAN Lodged by TRANSEND Networks Pty Ltd 1-7 Maria Street Lenah Valley on 20-Aug-2012 BP: 164552
165907	PLAN Lodged by GUNSON WILLIAMS on 30-Apr-2013 BP: 165907
D79329	BURDENING EASEMENT: a right of carriageway (appurtenat to Lot 2 on Sealed Plan 152399) over the land marked Right of Way 10.06 Wide 'AB' on Plan 154929 Lodged by GUNSON WILLIAMS on 30-Apr-2013 BP: 165907
D79329	BURDENING EASEMENT: a pipeline easement (appurtenant to Lot 2 on Sealed Plan 152399) over the land marked Pipeline Easement 10.00 Wide & Variable Width on Plan 154929 Lodged by LTO on 14-Jun-2013 BP: \$2896751
M522025	PRIORITY NOTICE reserving priority for 90 days TFR/EASE Rio Tinto Aluminium (bell Bay) Limited to Tasmanian Networks Pty Ltd Lodged by WALLACE WILK & WEB on 19-May-2015 BP: M522025
169567	PLAN Lodged by WALLACE WILK & WEB on 20-May-2015 BP: 169567
E949	TRANSFER of EASEMENT Lodged by WALLACE WILK & WEB on 20-May-2015 BP: 169567
184608	Plan - Pending Lodged by STATE GROWTH on 23-Jan-2023 BP: 184608
E295281	TRANSFER of EASEMENT Lodged by PAGE SEAGER on 17-Aug-2023 BP: N112294

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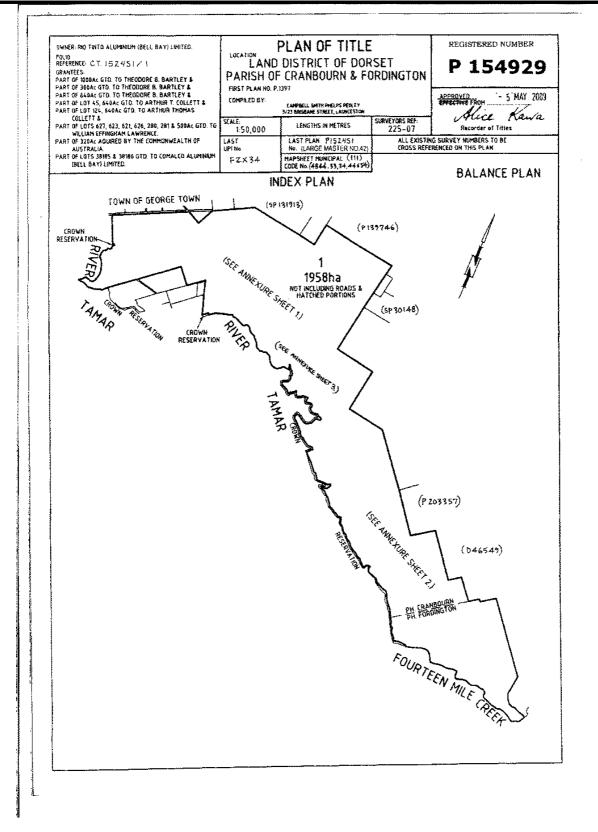


FOLIO PLAN

RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980



Search Date: 28 Aug 2023

Search Time: 10:03 AM

Volume Number: 154929

Revision Number: 10

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Department of Natural Resources and Environment Tasmania

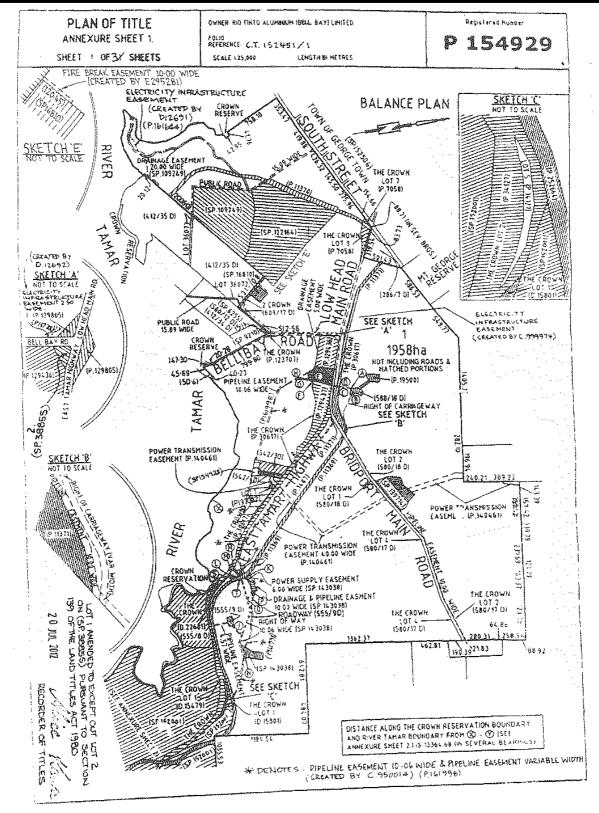


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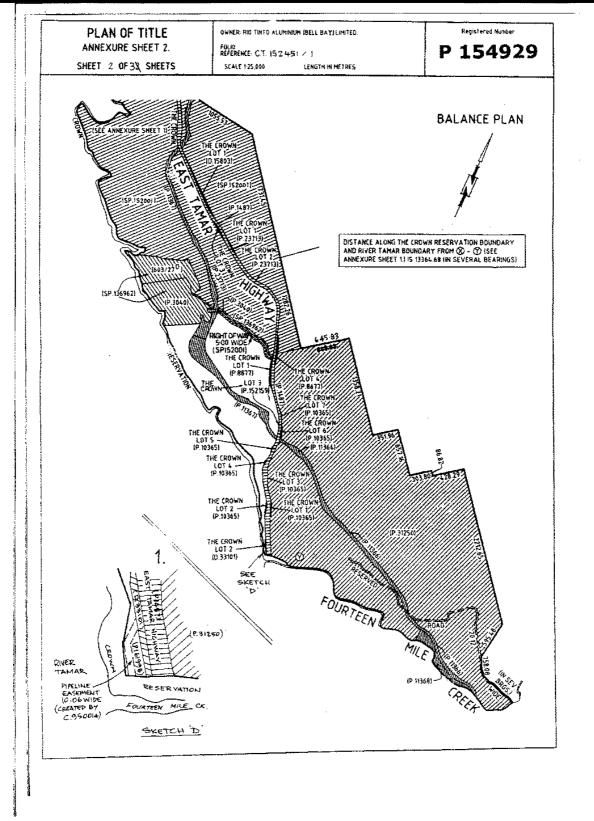


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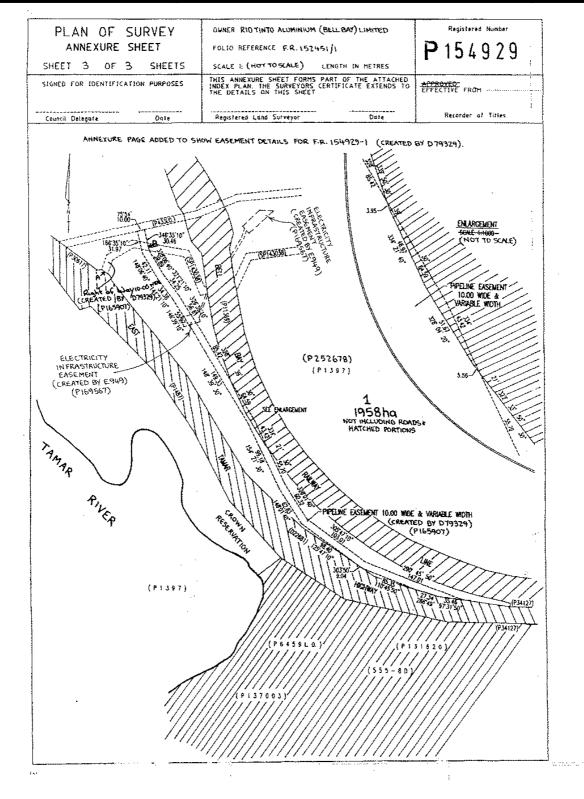


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RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME	FOLIO
156738	4
EDITION	DATE OF ISSUE
3	05-Jul-2021

SEARCH DATE : 28-Aug-2023 SEARCH TIME : 10.09 AM

DESCRIPTION OF LAND

Parish of BLANDFORD Land District of DORSET

Lot 4 on Sealed Plan 156738

Derivation: Part of Lot 28841, 598A-OR-11P Gtd to Henry

Edward Davidson

Prior CTs 131913/1 and 131913/2

SCHEDULE 1

 ${\tt M900501}$ TRANSFER to NIKOLAS GEOFFREY CERJANEC and TRICIA JOY

CALINISAN ANDRES as tenants in common in equal shares

Registered 05-Jul-2021 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

SP156738 EASEMENTS in Schedule of Easements

SP156738 FENCING COVENANT in Schedule of Easements

A238204 Subject to conditions in Transfer.

SP131913 FENCING COVENANT in Schedule of Easements

SP131913 COUNCIL NOTIFICATION under Section 83(5) of the Local Government (Building and Miscellaneous Provisions)

Act 1993.

SP131913 SEPTIC TANK NOTIFICATION

E355214 CAVEAT by Sun Spot 9 Pty Ltd Registered 10-Aug-2023

at noon

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

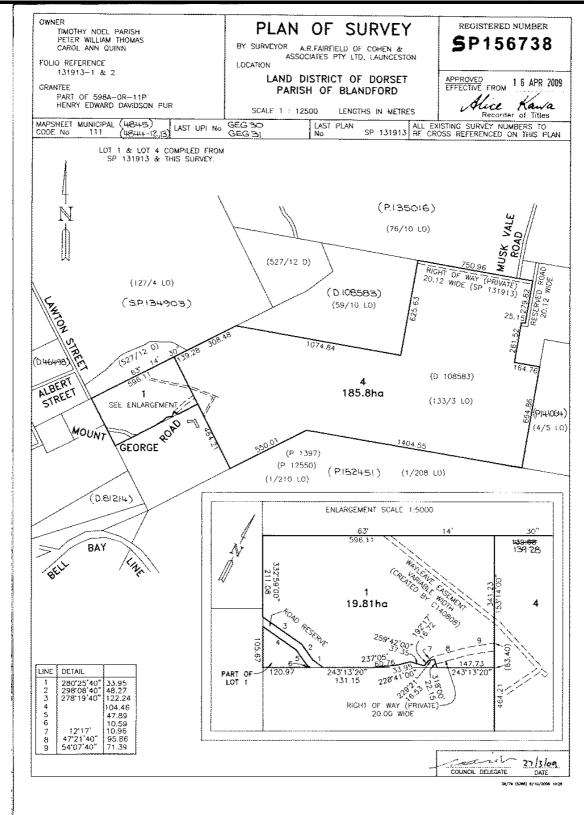


FOLIO PLAN

RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980



Search Date: 28 Aug 2023

Search Time: 10:09 AM

Volume Number: 156738

Revision Number: 01

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Department of Natural Resources and Environment Tasmania

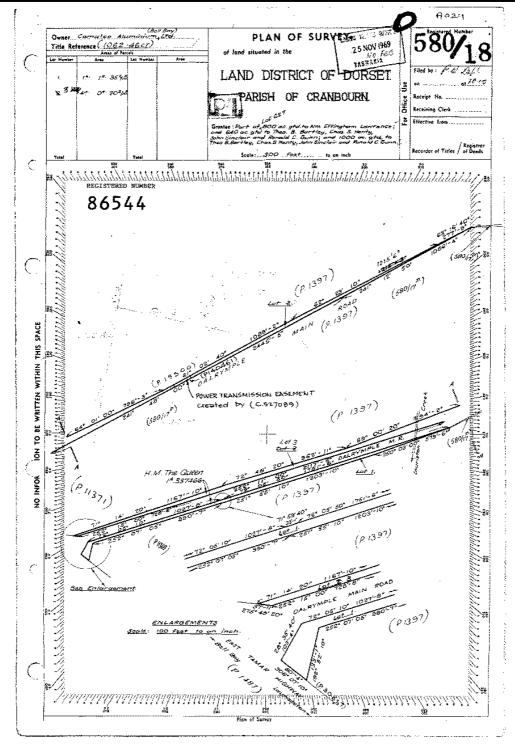


FOLIO PLAN

RECORDER OF TITLES







Search Date: 02 Apr 2025

Search Time: 10:29 AM

Volume Number: 86544

Revision Number: 03

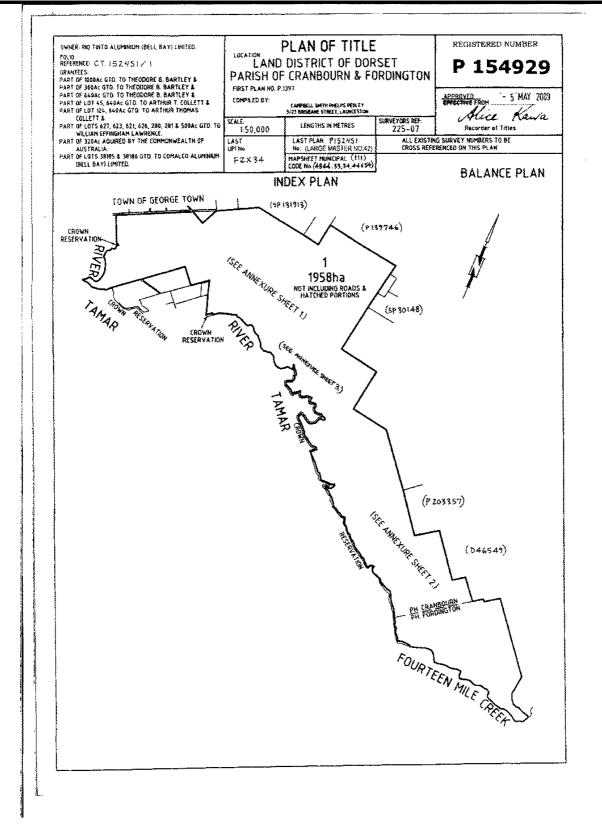


FOLIO PLAN

RECORDER OF TITLES



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Search Date: 23 Nov 2018

Search Time: 03:27 PM

Volume Number: 154929

Revision Number: 09

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Department of Primary Industries, Parks, Water and Environment

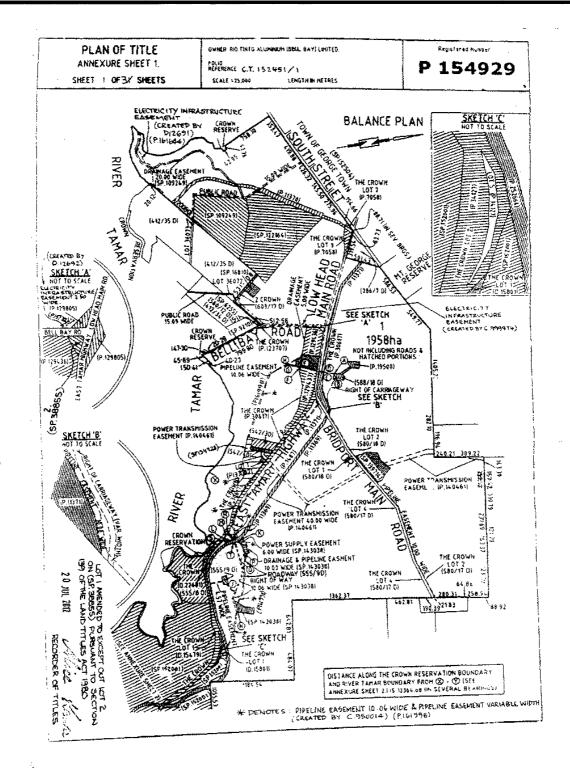


FOLIO PLAN

RECORDER OF TITLES



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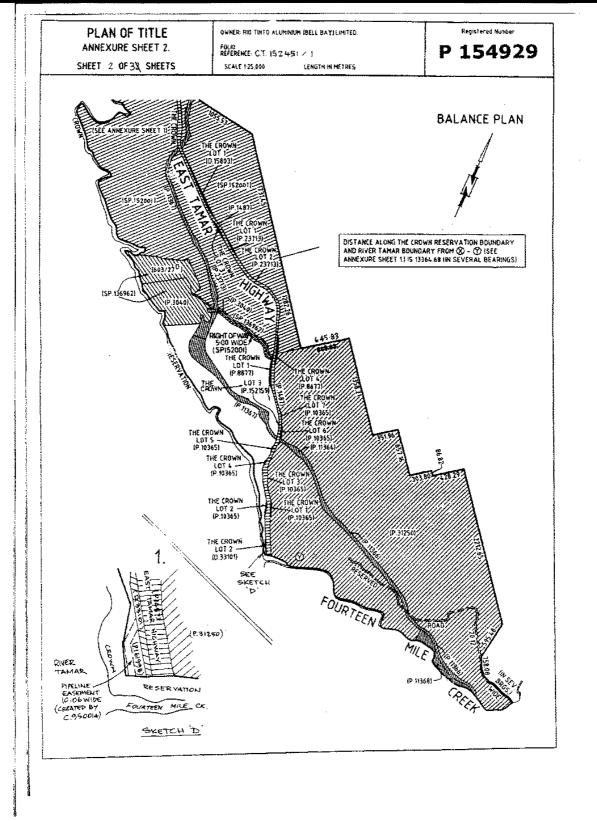


FOLIO PLAN

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Search Date: 23 Nov 2018

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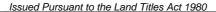
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Department of Primary Industries, Parks, Water and Environment

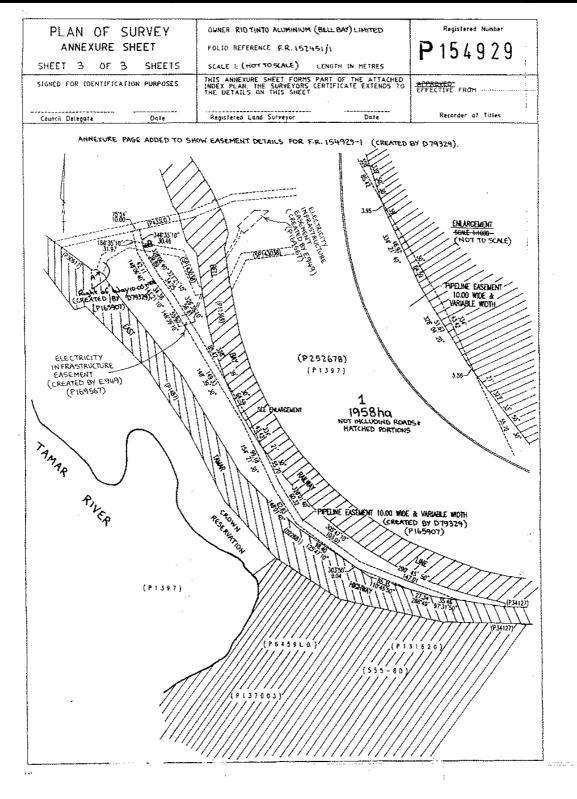


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Volume Number: 154929

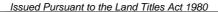
Revision Number: 09

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RESULT OF SEARCH

RECORDER OF TITLES





SEARCH OF TORRENS TITLE

VOLUME	FOLIO
86544	3
EDITION	DATE OF ISSUE
4	14-Oct-2008

SEARCH DATE : 02-Apr-2025 SEARCH TIME : 10.29 AM

DESCRIPTION OF LAND

Parish of CRANBOURNE, Land District of DORSET Lot 3 on Diagram 86544 (formerly being 580-18D) Derivation: Parts of Lot 627 and 640 Gtd to William Effingham Lawrence and Theodore Bryant Bartley, Charles Shum Henty, John Sinclair and Ronald C Gunn respectivelyand duly acquired by Notification No. A337466 Prior CT 2682/12

SCHEDULE 1

A337467 TRANSFER to THE CROWN

SCHEDULE 2

Reservations and conditions in the Crown Grant if any C527089 BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with the benefit of a restriction as to user of land in favour of Basslink Pty Ltd over the Power Transmission Easement shown passing through the said land within described (subject to provisions) Registered 27-Sep-2004 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

D4391 TRANSFER of EASEMENT Lodged by GUNSON WILLIAMS on 08-Feb-2012 BP: D4391

RESULT OF SEARCH



RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



SEARCH OF TORRENS TITLE

VOLUME	FOLIO
154929	1
EDITION	DATE OF ISSUE
4	22-Jun-2011

SEARCH DATE : 23-Nov-2018 SEARCH TIME : 03.26 PM

DESCRIPTION OF LAND

Parish of CRANBOURN Land District of DORSET Lot 1 on Plan 154929 Derivation: For Grantees See Plan Prior CT 152451/1

SCHEDULE 1

C807674 RIO TINTO ALUMINIUM (BELL BAY) LIMITED Registered 09-Aug-2007 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any SP109249 BURDENING EASEMENT: Right of Drainage [appurtenant to Lot 1 on SP109249] over the Drainage Easement 20 metres wide shown on Plan No. 154929

BURDENING EASEMENT: (Relating to all the said land within described except those portions of Lots 38185 and 38186 shown on Plan No. 122550) the following right for the Crown, namely: (1) the right at all times of making and constructing in or on the said lots such and so many drains sewers and waterways for the sanitary or other purposes as may be deemed expedient and also the right of altering amending cleansing or repairing such drains sewers and waterways; (2) the right always to resume such portions of the said lots as may be required for any roads railways tramways water races or other public utilities

BENEFITING EASEMENT: full and free right and liberty for the owner or owners for the time being of the said land within described and as appurtenant thereto to carry on manufacturing operations on the said land within described notwithstanding that such operations may cause dust noxious disturbance of the ground or may prejudicially affect the enjoyment of the lands comprised in Certificates of Title Volume 732 Folio 79, Volume 890 Folios 56 & 57, Volume 1062 Folio 45 and Conveyance Nos. 26/6118 & 27/3288

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RESULT OF SEARCH



RECORDER OF TITLES



Issued Pursuant to the Land Titles Act 1980

- BURDENING EASEMENT: Right of Carriageway [appurtenant to 2a-1r-7 3/10ps on Diagram No. 555/9] over the Roadway marked J.K. and L.M. on Plan No. 154929
- BURDENING EASEMENT: Pipeline Easement as described in Acquisition No. A298000 for the Hydro Electric Commission over the Pipeline Easement 4.57 wide shown on Plan No. 154929
- BURDENING EASEMENT: Right of Carriageway [appurtenant to Lot 1 on Diagram No. 566/18] over the land marked ABCD on Plan No. 154929
- BURDENING EASEMENT: Pipeline Easement as described in Transfer No. A304452 for the Rivers and Waters Supply Commission over the strips of land marked ABCD and EFGH on Plan No. 154929
- BURDENING EASEMENT: Right of carriageway and pipeline easement as described in Indenture No. A959415 (appurtenant to Lots 1 and 2 on Plan No. 19500) over the lands marked Right of Carriageway and Pipeline Easement 10.00 wide shown on Plan No. 154929
- BURDENING EASEMENT: Pipeline Easement (appurtenant to Lot 1 on Sealed Plan No. 38855) over the Pipeline Easement 10. 06 wide shown on Plan No. 154929
- BURDENING EASEMENT: Right of Drainage [appurtenant to Lot 1 on Sealed Plan No. 129251) over the Drainage Easement 5. 00 wide shown on Plan No. 154929
- SP 139714 BENEFITTING EASEMENT: Right of carriageway subject to condition set forth in Sealed Plan No. 139714 over the Right of Way (Private) 10.00 wide shown passing through Lot 1 on Sealed Plan No. 139714
- SP 143038 BURDENING EASEMENT:a right of carriageway subject to condition set forth in Sealed Plan 143038 (appurtenant to Lots 1 & 2 on Sealed Plan 143038) over the Right of Way 10.06 wide marked RS, TN and PQ on Plan 154929
- SP 143038 BURDENING EASEMENT:a power supply right (appurtenant to Lot 2 on Sealed plan 143038) over the Power Supply Easement 6.00 wide on Plan 154929
- SP 143038 BURDENING EASEMENT:a pipeline right (appurtenant to Lot 2 on Sealed Plan 143038) over the Drainage and Pipeline Easement 10.00 wide on Plan 154929
- C557844 BURDENING EASEMENT: power transmission right (fully set forth in Memorandum of Common Provisions M235) (appurtenant to Lot 1 on SP139714) over the lands marked Power Transmission Easement and Power Transmission Easement 40.00 Wide shown passing through the said land within described (subject to variations) Registered 11-Oct-2005 at 12.01 PM
- SP152001 BENEFITING EASEMENT: Right of Carriageway over the Right of Way 5.00 wide (SP152001) on Plan No. 154929
- SP154928 BENEFITING EASEMENT: Right of Drainage over the Drainage Easement 3.00 wide shown passing through Lot

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the list

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980



	1 on Sealed Plan 154928 created by and more fully set
	forth in Sealed Plan 154928.
C999974	BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with
	the benefit of a restriction as to user of land in
	favour of Aurora Energy Pty Ltd over the land marked
	Electricity Infrastructure Easement shown on P.154929
	(Subject to Provisions) Registered 21-Mar-2011 at
	noon
D12691	BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with
	the benefit of a restiction as to user of land in
	favour of Aurora Energy Pty Ltd over the land marked
	Electricity Infrastructure Easement shown on Plan
	154929 (Subject to Provisions) Registered
	03-Jun-2011 at noon
D12692	BURDENING ELECTRICITY INFRASTRUCTURE EASEMENT with
	the benefit of a restiction as to user of land in
	favour of Aurora Energy Pty Ltd over the land marked
	Electricity Infrastructure Easement shown on Plan
	154929 (Subject to Provisions) Registered
	03-Jun-2011 at 12.01 PM
C950014	BURDENING EASEMENT: A Pipeline Easement in favour of
	Tasmanian Water and Sewerage Corporation (Northern
	Region) Pty Ltd over the lands marked Pipeline
	Easement 10.06 wide and Pipeline Easement variable
	width on D.100984 Registered 22-Jun-2011 at noon
D4382	Transfer of the "Gas Pipeline Access and Services
	Right" created by Instrument C395625 in favour of
	Tasmanian Gas Pipeline Pty Ltd Registered
	02-May-2012 at noon
D4385	Transfer of the "Gas Pipeline Right" created by
	Instrument C395625 in favour of Tasmanian Gas
	Pipeline Pty Ltd Registered 02-May-2012 at noon
C145423	PROCLAMATION under Section 9A and 52A of the Roads
	and Jetties Act 1935 Registered 19-Oct-1999 at noon
C288481	NOTICE of Notified Corridor under Section 15 of the
	Major Infrastructure Development Approvals Act 1999
	affecting the land therein described Registered
	15-Mar-2001 at noon
C395625	1
	Right with Restrictions (fully set forth in
	Memorandum of Provisions No.M226) (appurtenant to Lot
	1 on Plan 137002) in, over or under the strip of land
	marked "Access & Service Easement "1" shown on Plan
	No.137002
C395625	Burdening Easement: Gas Pipeline Right with
	Conditions & Restrictions (fully set forth in
	Memorandum of Provisions No.M225) for the Crown, on,
	over, under, or through the strips of land marked "Gas
	Supply Easement" '1' '12' & '17' on Plan No.137002

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RESULT OF SEARCH

RECORDER OF TITLES





UNREGISTERED DEALINGS AND NOTATIONS

154653	PLAN Lodged by TRANSEND on 03-Jun-2008 BP: 154653
161998	PLAN Lodged by WILL EDWARDS LAWYERS on 03-Jun-2011
	BP: 161998
164552	PLAN Lodged by TRANSEND Networks Pty Ltd 1-7
	Maria Street Lenah Valley on 20-Aug-2012 BP: 164552
165907	PLAN Lodged by GUNSON WILLIAMS on 30-Apr-2013 BP:
	165907
D79329	BURDENING EASEMENT: a right of carriageway
	(appurtenat to Lot 2 on Sealed Plan 152399) over the
	land marked Right of Way 10.06 Wide 'AB' on Plan
	154929 Lodged by GUNSON WILLIAMS on 30-Apr-2013 BP:
	165907
D79329	BURDENING EASEMENT: a pipeline easement (appurtenant
D19329	to Lot 2 on Sealed Plan 152399) over the land marked
	Pipeline Easement 10.00 Wide & Variable Width on Plan
	154929 Lodged by LTO on 14-Jun-2013 BP: \$2896751
M522025	PRIORITY NOTICE reserving priority for 60 days
	TFR/EASE Rio Tinto Aluminium (bell Bay) Limited to
	Tasmanian Networks Pty Ltd Lodged by WALLACE WILK &
	WEB on 19-May-2015 BP: M522025
169567	PLAN Lodged by WALLACE WILK & WEB on 20-May-2015 BP:
	169567
E949	TRANSFER of EASEMENT Lodged by WALLACE WILK & WEB
	on 20-May-2015 BP: 169567
	011 20-may-2013 DF. 10330/

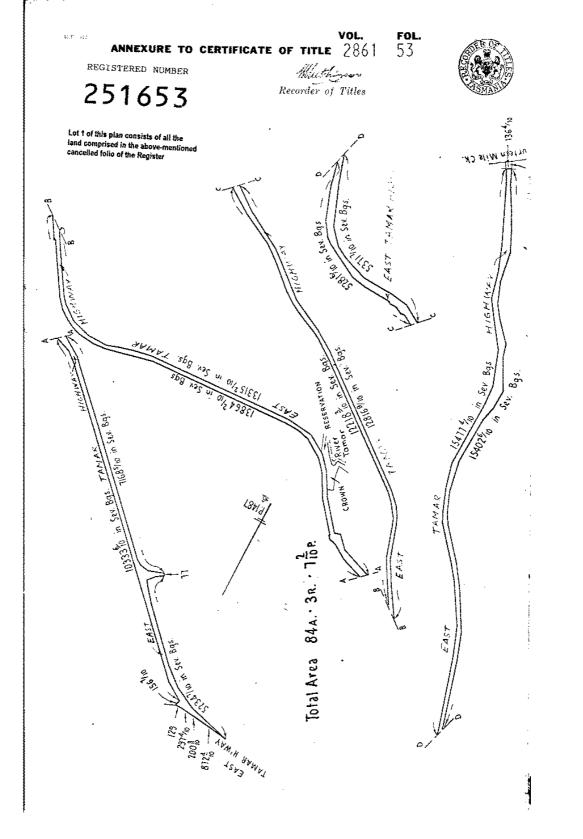


FOLIO PLAN

RECORDER OF TITLES



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Search Date: 04 Jun 2020

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Revision Number: 01

Page 1 of 1

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RESULT OF SEARCH

RECORDER OF TITLES

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SEARCH OF TORRENS TITLE

VOLUME	FOLIO	
251653	1	
EDITION	DATE OF ISSUE	
2	12-Jul-1999	

SEARCH DATE : 04-Jun-2020 SEARCH TIME : 08.22 PM

DESCRIPTION OF LAND

Parish of CRANBOURNE, Land District of DORSET Parish of FORDINGTON, Land District of DORSET

Lot 1 on Plan 251653

Derivation : For grantees see plan

Prior CT 2861/53

SCHEDULE 1

A157144 THE CROWN

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

UNREGISTERED DEALINGS AND NOTATIONS

D4391 TRANSFER of EASEMENT Lodged by GUNSON WILLIAMS on 08-Feb-2012 BP: D4391

Page 1 of 1



Cimitiere Creek Solar Farm - Flood Assessment

Sun Spot 9 Pty Ltd - 20 March | 2025

Cimitiere Creek Solar Farm - Flood Assessment

20 March 2025

Our Ref:

0001-30269620-AAR-03-Cimitiere Creek Updated Flood Study

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1 Introduction

On 9 January 2025, Sun Spot 9 Pty Ltd (a subsidiary of ib vogt), received a letter from George Town Council to provide additional information regarding their submission for a planning permit (DA 2024/108). Arcadis Australia Pacific Pty Ltd (Arcadis) was engaged by Envoca Environmental Consulting, on behalf of ib vogt, to assist in providing the additional flood information pertaining to the proposed development of the Cimitiere Plains Solar Farm in response to the Section 54 Request for Additional Information (RFI) received from George Town Council 9 January 2025.

The RFI requests additional information relative to the data presented in the 2022 WMAwater 'Solar Farm Flood Study – Cimitiere Creek Tasmania' report. Arcadis has prepared an addendum to the report, outlining the risks associated with climate change and the developed scenario.

1.1 Background

A Flood Risk Assessment (FRA) was prepared by WMAwater in 2022, as part of a due diligence assessment of a proposed solar farm location within the Cimitiere Creek catchment in Tasmania. The FRA defined the risks and constraints to the proposed development relative to flooding within Cimitiere Creek under a 1% AEP design flood scenario. The location was ultimately identified for the site of the proposed solar farm and the permit application process was started.

The WMAwater FRA was submitted as part of the planning application documentation resulting in the subsequent RFI from Council. The WMAwater flood model was adopted in this study.

1.2 Objectives

The George Town Council RFI defines the objective of this study. These are detailed below -

- A. Stormwater modelling of entire existing site for a 1% AEP + CC rainfall event
- B. Demonstrate post-development downstream impacts (intensity and frequency) on existing road crossings at Old Aerodrome Road and Soldier Settlement Road and downstream private properties
- C. Include mitigation strategies (where necessary) to stagger peak flows during the 1% AEP + CC rainfall events.

2 Reference documentation

- Georgetown Council Request for Information (RFI)
- Module Array Layout (pdf and shapefiles) received from ib vogt
- WMAwater report: Solar Farm Flood Study Cimitiere Creek Tasmania
- Intensity-Duration-Frequency (IDF) curves from Bureau of Meteorology (BOM)
- Catchment characteristics and temporal patterns from Australian Rainfall & Runoff (ARR) Data Hub
- ARR Guidelines (version 4.2)

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3 Methodology

To understand the impacts of climate change and the new development on the Cimitiere Creek floodplain, the existing WMAwater hydrological and hydraulic models were updated. The following sections elaborate on the developed site design and changes made to the hydrological and hydraulic models to achieve the objectives. For the methodology behind the original models, refer to Section 2 of WMAwater's Solar Farm Flood Study – Cimitiere Creek Tasmania report (Li et al., 2022).

3.1 Developed Site

The developed site will contain the following:

- Solar panels;
- Maintenance roads;
- Substation and inverter stations;
- · Control building;
- Spare parts containers;
- O&M building container;
- Fence surrounding the areas covered by solar panels.

The extents of these developments are shown in Figure 3-1.

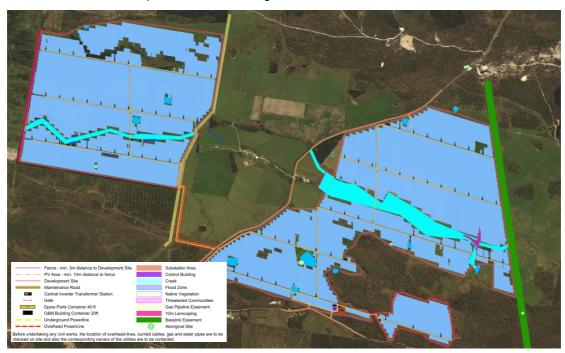


Figure 3-1 Developed site

The proposed substation, inverter stations, control building, O&M building and spare parts containers would increase the total impervious area (TIA) within the project site. However, these facilities constitute a small fraction of the total site area, approxiately 0.6%. Noting the impervious surfaces are not directly connected to

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Cimitiere Creek, the change in effective impervious area (EIA) is not significant. The proposed development does not significantly impact the hydrological process of the site.

The solar panel array will not increase runoff as they have not been installed as a continuous impermeable surface. The raised installation of the panels on elevated racks allows water to flow underneath and between the panels. This design allows rainwater to reach the ground where it can infiltrate naturally. The Cimitiere Plains Solar Farm will maintain the ground surface characteristics between and beneath the panels. This not only supports soil health and biodiversity but also enhances the soil's ability to absorb water rather than generating excess runoff.

Pervious and impervious percentages for existing and developed conditions are provided in Table 3-1.

Table 3-1 Percentages pervious / impervious

Scenario	Pervious (%)	Impervious (%)
Existing Conditions	99.53	0.47
Developed Conditions	99.40	0.60

3.2 Hydrological model updates

Section 2.2.6 of the WMAwater report, identified the critical duration for the 1% AEP event within the study catchment as the -

 6 hr duration, temporal pattern 6 (aligns with TP-6559 from WMAwater's Solar Farm Flood Study – Cimitiere Creek Tasmania report).

This critical duration was applied to all flood modelling scenarios in this report.

Temporal patterns, obtained from the ARR Data Hub, were analysed with the IDF curves, obtained from BOM 2016 rainfall data.

3.2.1 Climate change

The existing hydrological model (WBNM) was updated to include the 1% AEP + CC rainfall event. Climate change scenarios are based on the 2024 AR&R v4.2 guidelines. The following Shared Socioeconomic Pathway (SSP) scenario was used:

 SSP2-4.5 – an intermediate scenario with a predicted warming of ~2.4 C by 2100 (analogous to RCP4.5)

Noting that the projection SSP5/8.5 is considered to be an extreme scenario by AR&R v4.2 and considered too conservative within the scope of this study. SSP5/8.5 assumes rapid growth by intensive use of fossil fuels. This pathway contradicts the renewable energy transition that this development (solar farm) represents and directly reduces the likelihood of this scenario occurring in the future. As such, the assessment of SSP5/8.5 has not been proposed in this study.

3.2.2 Post-development conditions

The change in effective impervious area for the proposed development is negligible. Therefore, no further changes have been made to the catchment's hydrological characteristics which had been applied in the WMAwater WBNM model.

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3.3 Hydraulic model updates

To assess the flood extents and impacts of flooding under developed conditions, the existing WMAwater hydraulic model was updated. The hydraulic modelling software used was TUFLOW version 2020-10-AA, used in Single Precision mode.

The developed site design incorporates several hydraulic constraints, which are discussed in detail in the following sections.

3.3.1 Bed resistance

Within the TUFLOW model, hydraulic losses are represented by the materials layer. Within the materials layer, the site's bed resistance is represented by the Manning's value. The developed site results in the following changes to the bed resistance of the site:

- Forested areas to be cut down to allow placement of solar panels.
- Vegetation underneath the solar panels will remain low, as the solar panels will limit high vegetation growth. It is assumed that any bed resistance caused by solar panel legs is negligible, due to the relatively small surface area.
- Introduction of new gravel maintenance roads.

The selected Manning's values for each surface type are presented in Table 3-2.

Table 3-2 Manning's coefficient

Manning's n	Description
0.040	Pasture
0.040	Area covered by solar panels
0.020	Asphalt roads
0.035	Gravel road
0.080	Forest

3.3.2 Hydraulic structures

3.3.2.1 Buildings

To represent the substation, inverter stations, control building and containers, a 2D Z-Shape (2d_zsh) was used. These layers are used to manually raise the DEM to a selected value. The elevation for all buildings is chosen as such that it does not allow for overtopping during the 1% AEP event and no flood storage is provided within the building footprint.

3.3.2.2 Fences

The Australian Resilience Handbook Collection (Handbook 7) states that both open and solid fences can affect flood behaviour, with the impact depending on the type of fence. The handbook advises against using solid fences across flow paths, stating that open fences are preferable. The proposed security fence surrounding the site crosses the Cimitiere Creek channel at the east and western boundaries.

The project's Environmental Impact Statement, Section 6.8.4, states: 'Where the security fence crosses the Cimitiere Creek, the fence shall be designed to let water flow freely in the event of a flood. The chain mesh security fence allows free conveyance of flood water, although it can be more susceptible to blockage caused

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by debris transportation within flood water. A section of horizontal wire fencing has been considered for creek crossings due to its lower blockage potential over chain mesh. However, both fencing solutions are suitable.

To understand the impact of potential blockage of the security fence, resulting from debris buildup, a blockage sensitivity analysis was undertaken. The sensitivity analysis ensures that any risks associated with debris accumulation are considered. A chain-mesh fence provides the greater blockage potential; therefore, it was considered for the sensitivity analysis as it represented the 'worst-case' scenario for potential flood impacts.

The blockage sensitivity analysis was undertaken using methods outlined in the ARR Guidebook V4.2 (Book 6 Chapter 6). This method considers floating, non-floating, and 'urban' debris. Given the highly vegetated condition of the catchment with no major visible signs of erosion, and no upstream urban areas, floating debris was deemed the likely source of blockage.

The fence surrounding the Project Area was classified into three zones based on their upstream catchments:

- Zone 1 fence inside of existing 1% AEP critical flow path with forested area directly upstream
- Zone 2 fence inside of existing 1% AEP critical flow path situated downstream of another fence
- Zone 3 fence outside of existing 1% AEP critical flow path

For Zone 1 and 2, a blockage factor was calculated and applied to a depth of the existing 1% AEP critical flood level for all storm events. Since the only event modelled for this study is the 1% AEP, Zone 3 is not used. The location of the fences and their respective zones are shown in Figure 3-2.

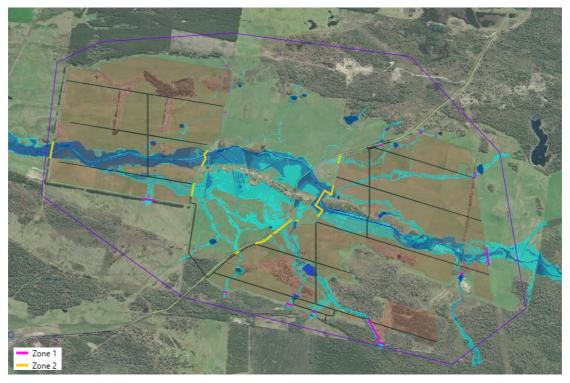


Figure 3-2 Fence location and zone classification

For the remaining fence above the existing 1% AEP critical flood level, a blockage factor was calculated for the fence caused by the chain mesh. A chain wire fence with 50 x 2.5 mm mesh, at 2.1 m high was assumed in this assessment, detailed in Table 3-3.

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Table 3-3 Fence details

Fence Type	Mesh Details	Clear Opening (%)	Blockage (%)
Close Space Welded Mesh	Chain wire 50 x 2.50 mm mesh	90.3	10

The following factors were assessed to determine the amount of blockage for each zone type:

Selection of L10:

- The selection of the longest 10% of anticipated floating debris (the L10 values) was guided by the aerial visualisation of the upstream catchments within the debris zones. Trees were identified as a source of two potential L10's: 3.0m for trees in proximity to the proposed fence, and 1.5m for distant trees. The rationale was that a 3.0m L10 that must travel some distance to become debris at the fence would be broken down to a smaller length (1.5m) or get snagged along the way by an upstream fence.
- Due to most fence areas being some distance away from the treeline, an L10 of 1.5 m was assumed for all zones.

Debris Availability:

- Zone 1: assumed high, due to dense, mostly unmaintained forested areas upstream.
- Zone 2: assumed low, as these areas consist mainly of well-maintained rural lands and paddocks.

Debris Mobility:

- Zone 1: assumed high under a conservative approach, due to receiving streams frequently
 overtopping their banks and main debris source areas are close to the streams. A more realistic
 approach would be to classify the debris mobility as medium as the vegetation cover is relatively
 dense with overall slow response times.
- Zone 2: assumed medium, as the source areas are large and flat, but contain streams that frequently overtop their banks.
- Debris Transportability:
 - Zone 1: assumed medium, due to upstream stream velocities between 1 and 2.5 m/s.
 - Zone 2: assumed low, due to upstream stream velocities mostly below 1 m/s.

The final blockage factors applied are provided in Table 3-4. Realistically, it is unlikely that the fences would be 100% blocked. Based on the above assessment, changing the Debris Mobility from high to medium would reduce the blockage factor from 100% to 50%.

Table 3-4 Blockage factors per zone

Zone	Blockage level
1 (high - unlikely)	100%
1 (medium - possible)	50%
2 (low – likely)	25%

The blockage analysis parameters and calculations are provided in Appendix A.

If mesh fencing is to be adopted, it is recommended to execute periodic inspections to clear debris and inspections following major flood events to remove debris buildup.

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3.3.2.3 **Culverts**

There are two locations where the proposed maintenance roads cross Cimitiere Creek. As no further design details were provided, the following assumptions were made:

- The new maintenance roads cross the creek at the surrounding bank levels.
- To allow continuous water flow in the river, culverts have been placed under these proposed roads.
 Culvert design is based on the existing culverts underneath Soldiers Settlement Road, which are implemented into the model with a width of 4 m and a height of 1 m. The dimensions of the modelled culverts are modified to the existing river dimensions and have been modelled to be 3 m wide and 1 m high.

3.3.3 Sensitivity Analysis

The blockage methodology is subjective and dependant on the analyst's debris factor derivation. To reduce some of the subjectivity, sensitivity tests were performed to see the impact of the developed site with blockage factor applied versus without.

For the sensitivity analysis, two different variations were used:

- A more conservative scenario, displaying worst-case impacts of debris blockage. For this scenario,
 Zone 1 fences had a blockage factor of 100% and Zone 2 fences a blockage factor of 25%.
- A more realistic scenario, displaying likely impacts of debris blockage. For this scenario, Zone 1 fences had a blockage factor of 50% and Zone 2 fences a blockage factor of 25%.

For both scenarios, the blockage factor was also applied to the new culverts as described in Section 3.3.2.3. These culverts were assumed to have similar characteristics as fences in Zone 2, and as such were given a blockage percentage of 25%. Existing culverts were excluded from the sensitivity analysis.

3.4 Assumptions

- Solar panels to be elevated high enough to not cause obstruction to the flow path. It is assumed that solar panels will restrict dense vegetation growth underneath, as a result of continued grazing and reduced sunlight intake.
- Fence to be 2.1 m high and be permeable (chain link fence).
- Culvert sizes based on height of surrounding banks and width.
- Maintenance roads assumed to be gravel.

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4 Results

The following sections assess the impacts of climate change and the developed site design on the flood depths and extents. In accordance with the WMAwater Solar Farm Flood Study – Cimitiere Creek Tasmania report, areas with depths greater than 50 mm are considered to be flooded.

The Australian Rainfall and Runoff Flood Hazard categories (based on velocity and depth) were used to assess the impact of flooding to all areas, as shown in Figure 4-1. This classification provides a detailed distinction and practical application to hazard categories, identifying the following 6 classes of hydraulic hazard:

- H1 No constraints, generally safe for vehicles, people and buildings;
- H2 Unsafe for small vehicles;
- H3 Unsafe for all vehicles, children and the elderly;
- H4 Unsafe for all people and all vehicles;
- H5 Unsafe for all people and all vehicles. All building types vulnerable to structural damage. Some
 less robust building types vulnerable to failure. Buildings require special engineering design and
 construction; and
- H6 Unsafe for all people and all vehicles. All building types considered vulnerable to failure.

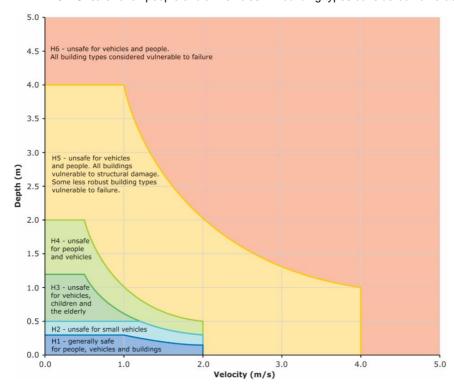


Figure 4-1 Combined Flood Hazard Curves

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4.1 Climate change

The incorporation of a climate change scenario (SSP2/4.5) for the 2100 1% AEP event results in modelled increases in flood depth of up to 0.2 m and minor increases in flood extent when compared to the current climate 1% AEP event (refer Figure 4-2). Maps of all existing conditions characteristics (with and without climate change) are provided in Appendix B.

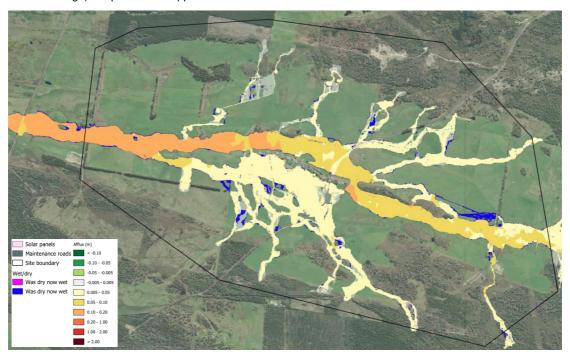


Figure 4-2 Flood level increase - 1% AEP + Climate Change 2100 vs current conditions 1% AEP event

Figure 4-2 shows an increase in flood level throughout the whole study site. Notable increases are at the Soldiers Settlement Road and Old Aerodrome Road crossings.

Despite the rise in water level, all buildings located to the west of Soldiers Settlement Road remain free of flooding. Flood levels overtopping the evacuation route, Soldiers Settlement Road, increase by 0.01-0.03 m. Flood levels crossing northern sections of Soldiers Settlement Road increase by 0.03 m. Hydraulic hazard ratings along these sections change from H1 with 1% AEP event conditions to H3 and H4 with 1% AEP + CC conditions.

Southern sections of Soldiers Settlement Road increase with 0.01-0.02 m. The hydraulic hazard rating remains the same under the 1% AEP and 1% AEP + CC events. Most areas of the road are classified as H1, with some parts increasing to H2, but leaving enough space to drive around.

Flood depths across Old Aerodrome Road increase from 0.29 m (1% AEP) to 0.35 m (1% AEP + CC). The hydraulic hazard rating across the overtopped section is H1-H2 for the 1% AEP event and increase to H3-H4 for the 1% AEP + CC event.

Peak flows in Cimitiere Creek downstream of the site are 55.7 m3/s for the 1% AEP event and increase to 77.1 m3/s for the 1% AEP + CC event. The hydrographs for both events are shown in Figure 4-3.

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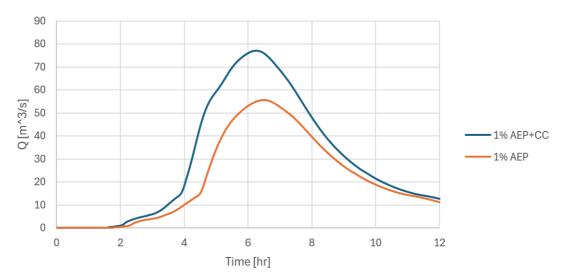


Figure 4-3 Cimitiere Creek hydrographs measured downstream of site, 1% AEP + CC vs 1% AEP

4.2 Post-development conditions

4.2.1 Flood impacts

Post-development conditions (with blockage) were compared to existing conditions. The resulting afflux map is shown in Figure 4-4. Maps of all developed conditions characteristics are attached in Appendix B.

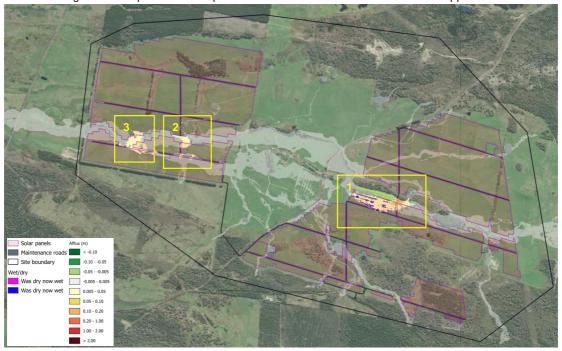


Figure 4-4 Afflux map of developed conditions vs existing conditions (1% AEP event)

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Location 1:

The implementation of a maintenance road and modelled culvert within the creek alters local hydraulics, functioning similarly to a weir by impeding and controlling flow to some extent. Changes in flood depth occur upstream and downstream of the proposed Cimitiere Creek maintenance road crossings. A close-up of the Location 1 - 1% AEP afflux map is shown in Figure 4-5.

Localised afflux is observed extending (a distance < 50 m) along the waterway channel alignment, upstream of the modelled crossing. Localised afflux of up to 0.1 m and 0.3 m is observed for the 1% AEP and Climate Change, respectively.

Downstream of the crossing, water levels decrease by 0.04 m. Impacts observed beyond these extents result in a maximum water level increase of 0.05 m. This last phenomenon is a result of the restricted water flow in the channel at the point of the road crossing, causing water to be redistributed within the wider floodplain. The change n hydraulic behaviour does not result in the generation of adverse impacts in his location.

Minor afflux observed near the flood fringe is a result of interaction with the proposed inverter stations. Any risk associated with the interaction of flood water with the inverter stations can be managed with design of bench levels, ensuring suitable immunity to the critical infrastructure.

Flood levels upstream of the inverter stations increase by maximum 0.08 m, within a distance of 20 m from the structures. The resulting change in hydraulic behaviour does not result in increased flood risk within the floodplain.

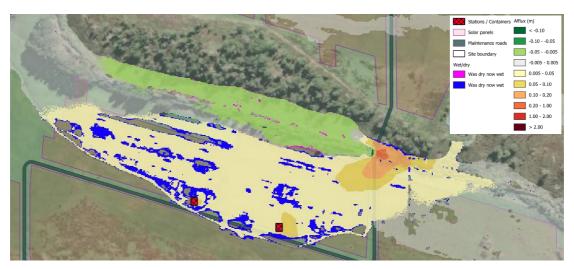


Figure 4-5 Afflux map of developed conditions vs existing conditions for the eastern maintenance track crossing – Location

Hydraulic hazard maps (shown in Figure 4-6) show that the implementation of maintenance roads and culverts do not cause significant impacts to surrounding areas covered by solar panels. These maps show that the localised changes in hydraulic behaviour, as described above, do not change the hydraulic profile. There is no increase in flood risk as a result of the new maintenance tracks and inverter stations.

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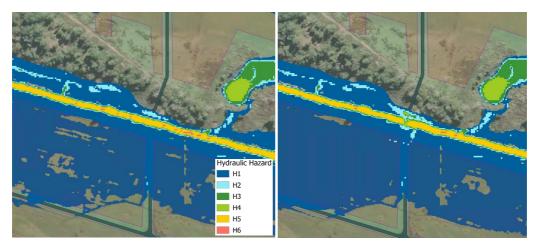


Figure 4-6 Hydraulic Hazard of existing conditions (left) and developed conditions (right) for a 1% AEP event (Location 1)

Location 2:

A close-up of the Location 2-1% AEP afflux map is shown in Figure 4-7. Similar to Location 1, changes in flood depth are a result of the proposed maintenance road crossing, inverter stations and spare parts containers. The extent of afflux is quite small at each location. Changes in flood levels limited to areas directly surrounding the structures, representing the change in morphology. Immediately upstream of the crossing, water levels increase by up to 0.1 m, within a localised area extending less than 10 m upstream of the crossing. Afflux levels beyond these are within 0.05 m.

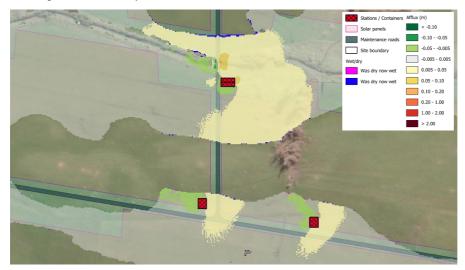


Figure 4-7 Afflux map of developed conditions vs existing conditions for the western maintenance track crossing – Location 2

Hydraulic Hazard maps (Figure 4-8) show an increased extent of H4 classification for the developed scenario as a result of the modelled maintenance track crossing and spare parts container benches. However, Figure 4-7 indicates that this does not result in notable afflux (<0.005 m). the proposed works does not create a notable change in velocity (<0.02 m/s). Based on this, it is expected that the locations showing a change in hydraulic hazard level (H3-H4) were likely already on the upper H3 depth limit.

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A cross-section of the area shows a small channel along the H4 line, confirming that the change in classification is primarily depth related. It is expected that the small swale depression will likely be backfilled as part of the construction of the solar array. As the changes to flood depth are minimal it would not affect the hydraulic grade of the flood. This adjustment can be implemented without losing flood storage or causing adverse impacts to the flow conditions.

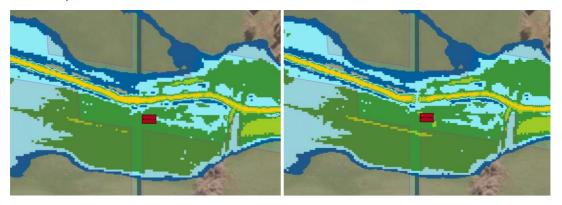


Figure 4-8 Hydraulic Hazard of existing conditions (left) and developed conditions (right) for a 1% AEP event (Location 2)

Location 3:

A close-up of the Location 3 - 1% AEP afflux map is shown in Figure 4-9. Changes observed in flood levels are a result of the proposed inverter stations/benches and spare parts containers. Afflux is contained within a localised area extended less than 8.0 m upstream. Increase of up to 0.06 m are shown in this location.

Afflux created by the spare parts containers extend upstream approximately 2.0 m with a maximum flood level increase of 0.13 m. Beyond these extents, a maximum flood level increase of 0.05 m is shown.

The hydraulic hazard maps (Figure 4-10) show no significant change to the hydraulic profile, indicating no change in flood risk as a result of the new inverter stations and spare parts containers.

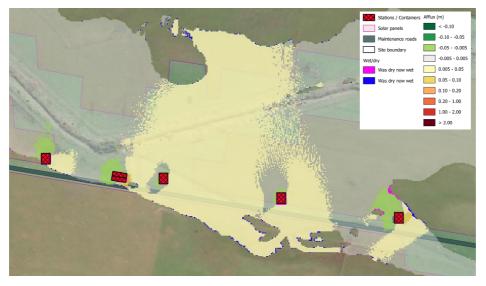


Figure 4-9 Afflux map of developed conditions vs existing conditions for Location 3

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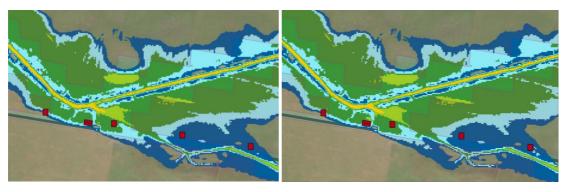


Figure 4-10 Hydraulic Hazard of existing conditions (left) and developed conditions (right) for a 1% AEP event (Location 3)

Downstream of site:

Flood hydrographs measured directly downstream of the site show no significant difference between existing and developed conditions, as shown in Figure 4-7. This further emphasizes the localized impacts of the development and shows that the proposed development does not impact areas downstream of the site.

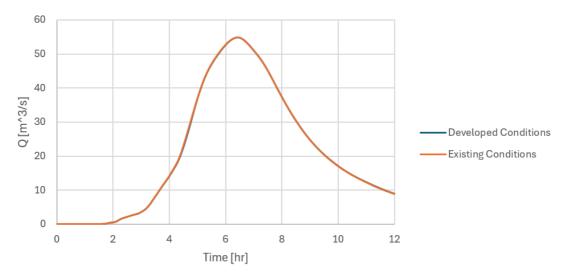


Figure 4-11 Cimitiere Creek hydrographs measured downstream of site, developed conditions vs existing conditions

4.2.1.1 Existing infrastructure

As seen from Figure 4-4, the properties located in between the two solar panel sites are not affected by the development. Flood depths in the flood plains close to the properties do not change, and the buildings remain free of flooding.

The hydraulic hazard profile at the Soldiers Settlement Road crossing does not change between pre and post developed scenarios. Flood levels overtopping the road do not increase and the hydraulic hazard rating along the road is classified as H1 for both developed and existing conditions (1% AEP). Under climate change conditions the hydraulic hazard profile remains consistent between the existing and developed scenario, as shown in Figure 4-12. The hydraulic hazard rating is classified as H3-H4 for both existing and developed conditions (1% AEP + CC).

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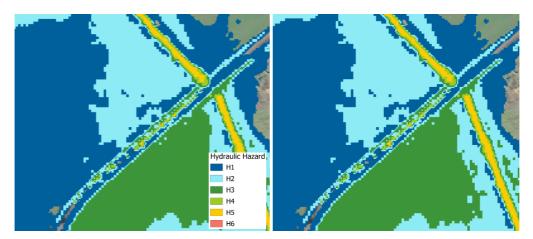


Figure 4-12 Hydraulic Hazard Rating along Soldiers Settlement Road for existing conditions (left) and developed conditions (right) for a 1% AEP + CC event

Flood depths within the floodplain upstream and downstream of Old Aerodrome Road are not impacted by the development and flood depths over the road surface do not show change. The hydraulic hazards (HH) are H1-H2 for both developed and existing conditions.

Further comparison between scenarios is provided in Table 4-1, with climate change impacts added for the developed conditions.

Table 4-1 Depth and hydraulic hazard rating comparison for existing infrastructure

	Exis Cond 1%	itions	cond	sting litions EP + CC	cond	loped itions AEP	cond	eloped litions EP + CC
Road	Max d (m)	Max HH	Max d (m)	Max HH	Max d (m)	Max HH	Max d (m)	Max HH
Soldiers Settlement Road	0.22	1	0.25	4	0.22	1	0.25	4
Old Aerodrome Road	0.29	2	0.35	4	0.29	2	0.35	4

4.2.1.2 Solar panel array

Several areas designated for solar panels are located within the existing floodplain. Post-development hydraulic modelling indicates that the preliminary solar array footprint extends into areas classified as H4. However, in accordance with the EIS, H4 areas will, ultimately, not form part of the panel array footprint.

The EIS nominates a 1.4 metre design height for the solar panels. Hydraulic modelling indicates that this is sufficiently high enough to avoid obstructing and or interaction with flood flow. Flood depth mapping indicates maximum water depths of up to 1.0 m during a 1% AEP event and up to 1.1 m during a 1% AEP + CC event in areas covered by solar panels (areas classified as H4 excluded). The flood velocity profile shows that velocities do not exceed 1.3 m/s for a 1% AEP event and 1.4 m/s for a 1% AEP + CC event.

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4.2.1.3 Bench levels

As mentioned in Section 4.2.1, it is assumed that the inverter stations and other buildings will be benched to provide immunity to inundation during a 1% AEP flood event. It is assumed that the following standards apply for the development:

 Floor levels to be determined by assessing the highest flood level for a 1% AEP storm event and allowing for a 300 mm freeboard.

Stations and buildings located outside of the flood extents have been left out of the assessment. The proposed bench levels are provided in Table 4-2.

Table 4-2 Bench levels for stations and buildings

	Flood lovel 40/	1% AEP	Flood lovel	1% AEP + CC
Danah lasatian	Flood level 1%		Flood level	
Bench location	AEP	Floor level	1% AEP + CC	Floor level
	(m AHD)	(m AHD)	(m AHD)	(m AHD)
1	17.158	17.458	17.273	17.573
2	17.249	17.549	17.364	17.664
3	17.251	17.551	17.368	17.668
4	17.405	17.705	17.518	17.818
5	17.543	17.843	17.656	17.956
6	18.077	18.377	18.115	18.415
7	19.139	19.439	19.205	19.505
8	18.407	18.707	18.518	18.818
9	18.436	18.736	18.549	18.849
10	18.436	18.736	18.549	18.849
11	19.554	19.854	19.588	19.888
12	21.641	21.941	21.645	21.945
13	26.717	27.017	26.719	27.019
14	26.953	27.253	26.994	27.294
15	27.312	27.612	27.367	27.667
16	27.812	28.112	27.894	28.194
17	46.218	46.518	46.248	46.548
18	47.622	47.922	47.627	47.927
19	47.750	48.050	47.756	48.056
20	47.962	48.262	47.967	48.267
21	31.339	31.639	31.354	31.654
22	31.366	31.666	31.377	31.677

A map of the locations is provided in Appendix D.

4.2.1.4 Maintenance roads

Parts of the proposed maintenance roads are located within the floodplain or cross the 1% AEP critical flow paths. The hydraulic hazard rating was analysed for each of these crossings for the 1% AEP event and the 1% AEP + CC event. All crossings are shown in Figure 4-13. The hydraulic hazard ratings are presented in Table 4-3, where only hazardous crossings with H2 or higher are included. A map of the crossings under climate change conditions is attached in Appendix E.

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A crossing classified as H1 is considered to be safe for this assessment. The duration of a crossing being unsafe is classified as the time the crossing has a higher rating than H1. During a 1% AEP event, this provides an indication of the amount of time the respective maintenance roads could be out of use. Noting that these maintenance roads are modelled under the assumption that the road alignment extends from the top-of-bank and has not been raised.

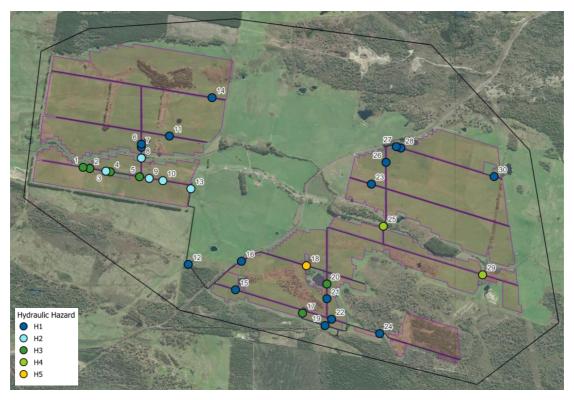


Figure 4-13 Maintenance Road crossings and respective hydraulic hazard rating (1% AEP event)

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Table 4-3 Hydraulic hazard rating for maintenance roads crossings

Nr.	1% AEP	1% AEP + CC	Duration unsafe crossing - 1% AEP
1	3	3	6 hr
2	3	3	5 hr
3	2	3	9.6 hr
4	3	3	9.3 hr
5	3	3	7.5 hr
8	2	2	2.3 hr
9	2	2	6 hr
10	2	3	9.2 hr
13	2	2	6.8 hr
17	3	3	7.2 hr
18	5	5	9.5 hr
20	3	3	7.5 hr
25	4	5	4.5 hr
27	1	2	-
29	4	4	4.3 hr

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4.2.2 Sensitivity Analysis

A sensitivity analysis was conducted to show the impact of a blockage factor on the developed conditions. Two blockage scenarios have been assessed: a high blockage (conservative) scenario and a medium blockage (more realistic) scenario.

Impact mapping depicting the medium blockage scenario is shown in Figure 4-14. Impacts are relatively localised around the point of blockage - The largest impact is observed along the eastern boundary of the site. Partial blockage of the fence crossing the creek alignment restricts the flow within Cimitiere Creek channel, resulting in localised afflux and propagation of flood flow along the eastern boundary. Partial restriction of the flow path (50% blockage) results in a 0.1 m localised increase in flood depth. However, the flood risk is not increased.

Assessment of the most extreme blockage scenario (100%) provides a worst-case scenario. The impact mapping can be seen in Figure 4-15. Complete blockage of the Cimitiere Creek channel, at the upstream boundary, forces flood water to extend along the eastern boundary. Flood depths up to 5 m upstream of the fence increase by 0.4 m, creating an increased localised impact against the site boundary. However, this does not result in adverse impacts, material damage or increase in flood hazard profile. Refer to Figure 4-16.

Further change in flood behaviour can be observed at the maintenance road crossing locations. The assumed culvert sizes do not have the capacity to convey the 1% AEP, or 1% AEP Climate Change scenario. Flood depths overtopping the eastern maintenance road increase from 0.48 m (no blockage) to 0.49 m (blockage – conservative scenario). Hazard levels crossing the maintenance road remain H4 for all scenarios.

The flood conveyance within Cimitiere Creek is not significantly impacted by medium to extreme blockage potential. No adverse impacts, increase in flood hazard or material damage is created due to simulated blockage of the fence line. Potential blockage does not impact existing buildings or roads (Soldiers Settlement Road or Old Aerodrome Road). This indicates that, even in the event of medium or extreme debris buildup, the resulting blockage does not cause significant impacts to the site or surrounding areas. Therefore, the chain-link mesh fence is considered appropriate for this application.

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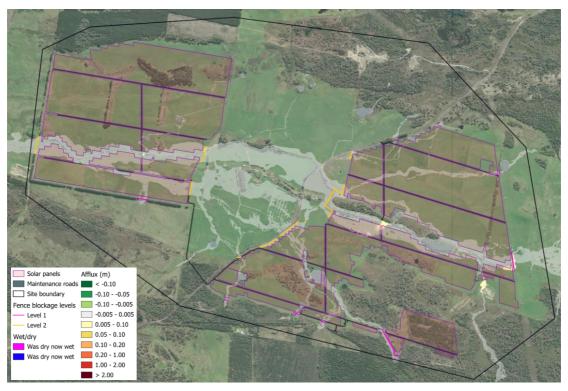


Figure 4-14 Afflux map of developed conditions with blockage vs developed conditions without blockage, realistic scenario (1% AEP event)

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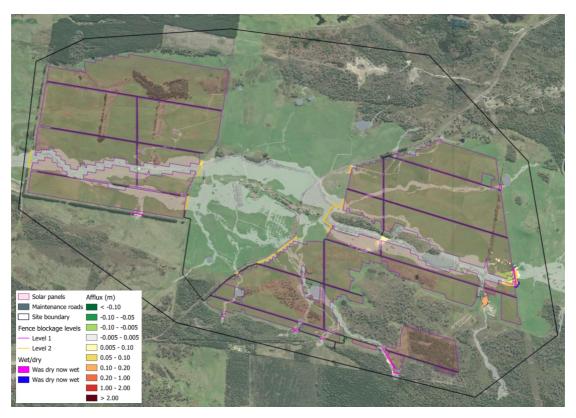


Figure 4-15 Afflux map of developed conditions with blockage vs developed conditions without blockage, conservative scenario (1% AEP event)

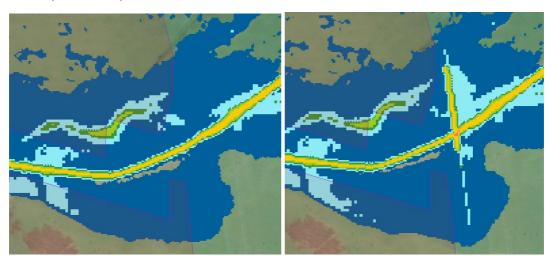


Figure 4-16 Hydraulic hazard maps of fence at upstream site boundary for developed conditions - no blockage (left) and developed conditions - conservative blockage (right)

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5 Summary

5.1 Climate change

Despite rising water levels, all existing buildings remain flood-free. Flood depths on Soldiers Settlement Road increase by 0.01–0.03 m, with hazard ratings rising from H1 to H3–H4 in northern sections under 1% AEP + CC conditions, while southern sections see smaller depth increases (0.01–0.02 m) and maintain similar hazard levels. Old Aerodrome Road experiences a 0.06 m increase in flood depth, with hazard ratings staying at H1–H2. Peak flows in Cimitiere Creek rise from 55.7 m³/s (1% AEP) to 77.1 m³/s (1% AEP + CC).

5.2 Developed conditions

The developed design incorporates a fence and two new culverts, which have the potential to cause blockages during a 1% AEP event. A sensitivity analysis was conducted to assess the impact, which was found to be relatively minor, with flood impacts restricted to the areas of blockage.

The development of the site has no significant impact on the flood levels outside of the site boundaries. A hydrograph of Cimitiere Creek taken directly downstream of the site shows no significant change between existing and developed conditions. Localized changes to flood levels are a result of the proposed stations and buildings, or maintenance road crossings, where the increase in water levels ranges between 0.05 - 0.3 m.

Buildings located west of Soldiers Settlement Road remain unaffected, with no floodplain depth increases and no flooding. Soldiers Settlement Road and Old Aerodrome Road are unaffected by the development, with no changes to overtopping depths or hydraulic hazard ratings, which remain H1-H2 (1% AEP) and H3-H4 (1% AEP + CC) for both existing and developed conditions.

5.3 Mitigation strategies

Mitigation strategies were deemed unnecessary as changes in flood characteristics were contained within the development site. Existing buildings were unaffected, with no instances of increases in flood risk. Critical infrastructure, including Soldiers Settlement Road and Old Aerodrome Road, showed no significant changes in overtopping depths or hydraulic hazard ratings. The overall impact of the development on flood behaviour was considered minor and did not warrant further intervention.

6 Recommendations

 Consider requirement for movement with site during a flood event when designing the grade of the maintenance roads within the flood plain.

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7 References

- 1. Simons, J. 2025. Request for additional information 381 Soldiers Settlement Road, George Town. Georgetown Council. 9 January.
- 2. ib vogt. 2022. Module Array Layout.
- 3. Li Y, Gil I, Colegate M. 2022. Solar Farm Flood Study Cimitiere Creek Tasmania. WMAwater.
- 4. Australian Government Bureau of Meteorology. (n.d.). *Design Rainfall Data System*. http://www.bom.gov.au/water/designRainfalls/
- 5. Commonwealth of Australia (Geoscience Australia). (n.d.). ARR Data Hub. https://data.arr-software.org/
- Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retallick M, Testoni I, (Editors). 2019. Australian Rainfall and Runoff: A Guide to Flood Estimation. © Commonwealth of Australia (Geoscience Australia). Version 4.2. <u>ARR: A guide to flood estimation</u>

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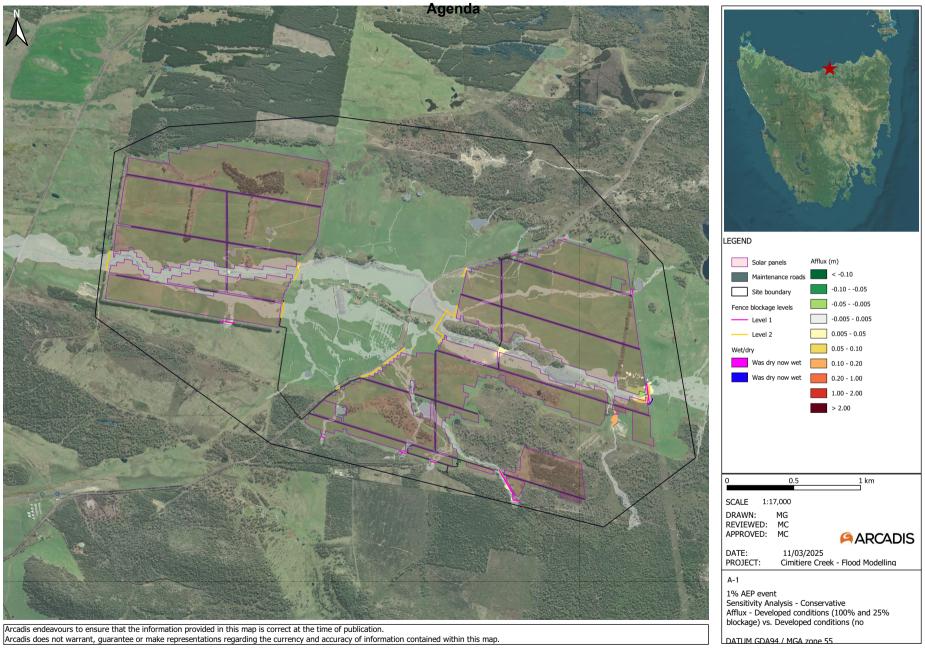


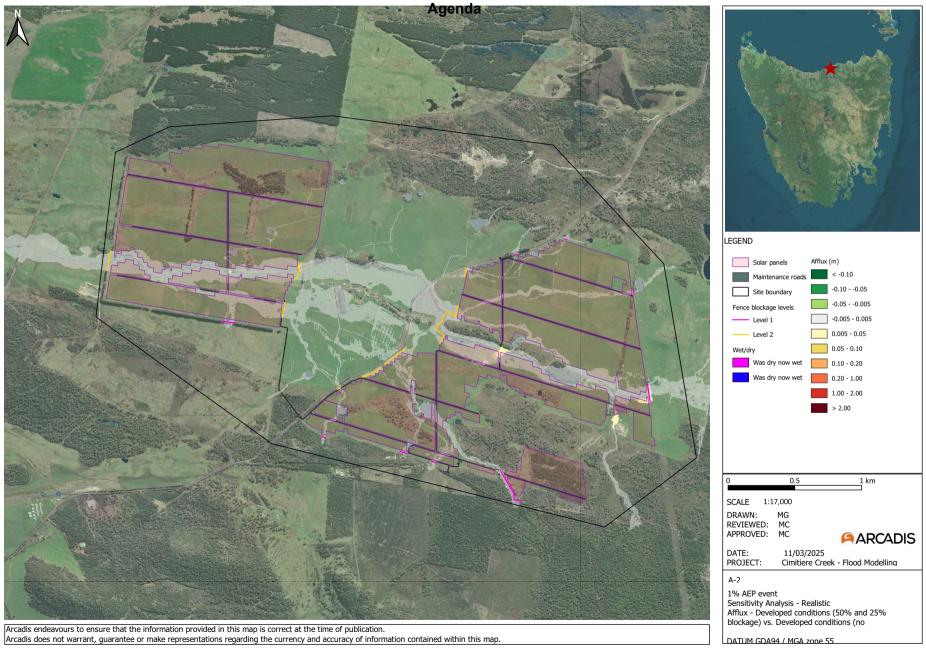
8 Appendices



Appendix A. Sensitivity Analysis

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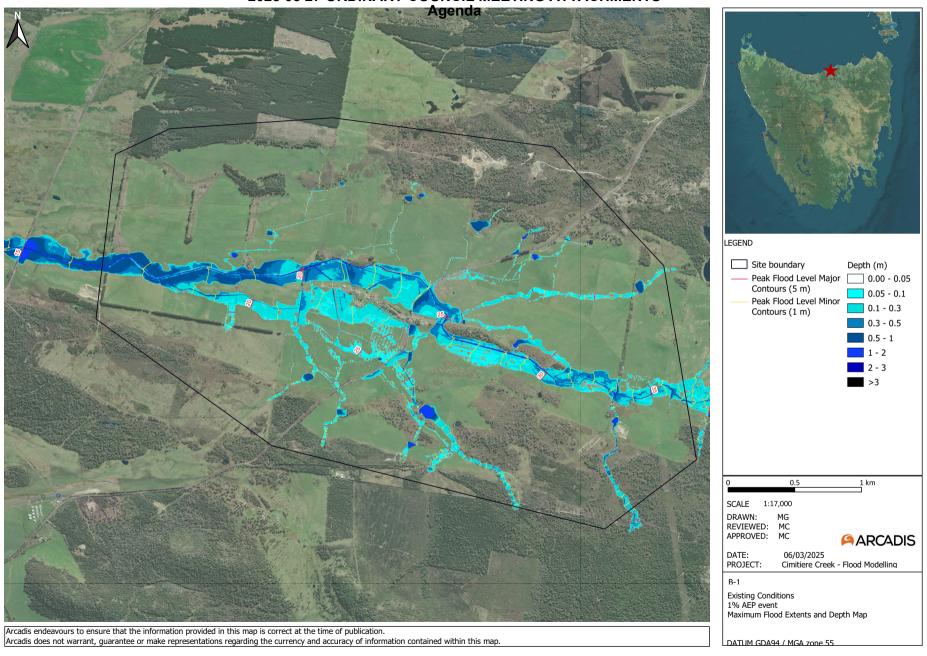


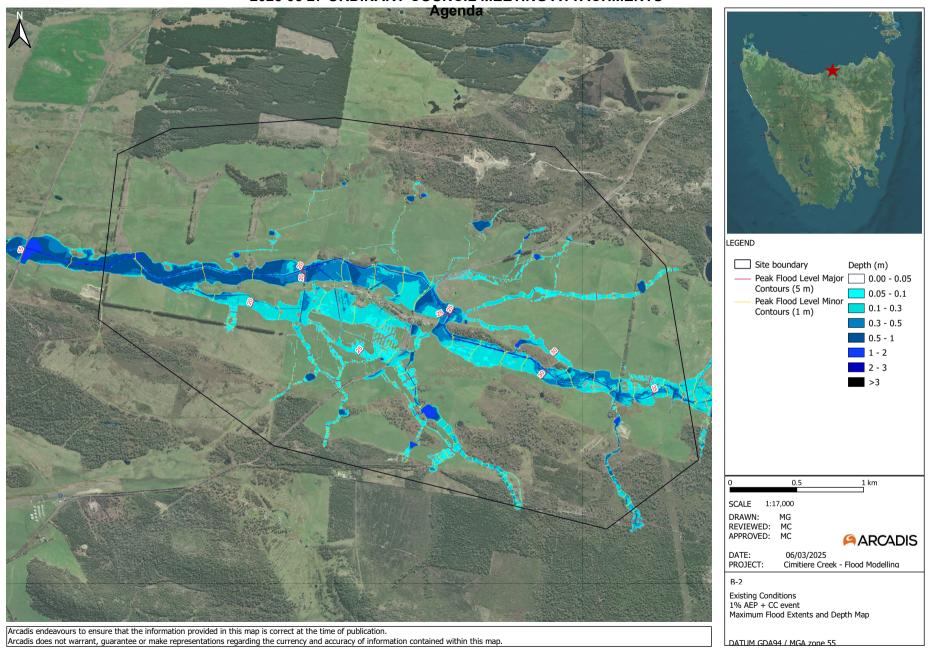


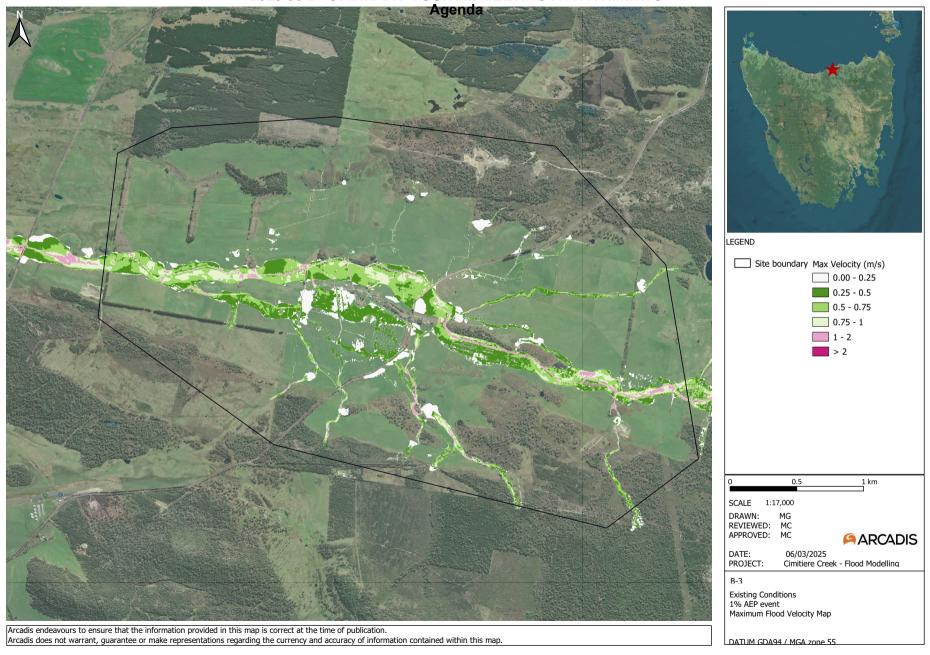


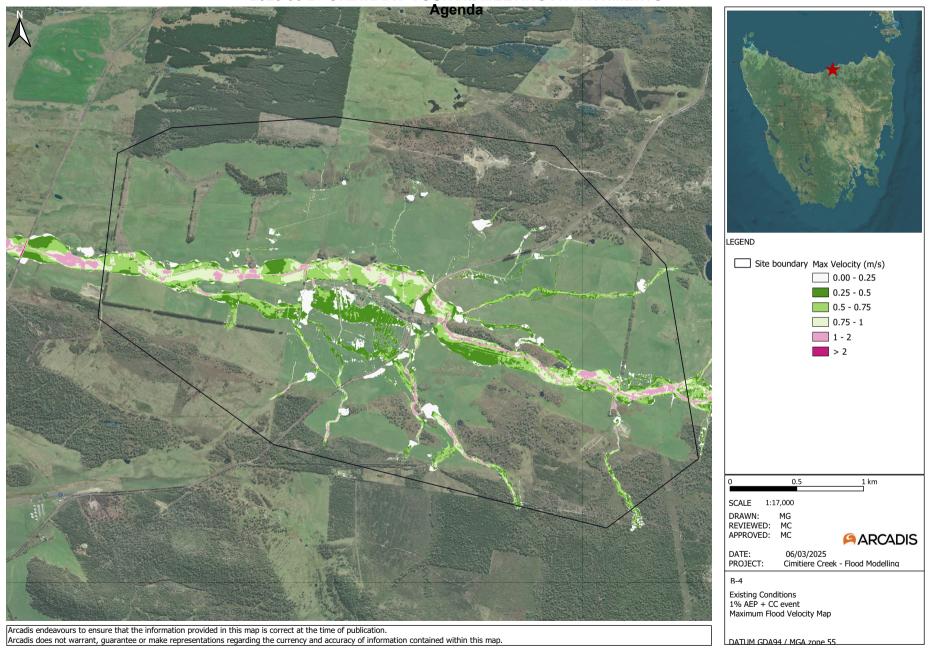
Appendix B. Flood Maps Existing Conditions

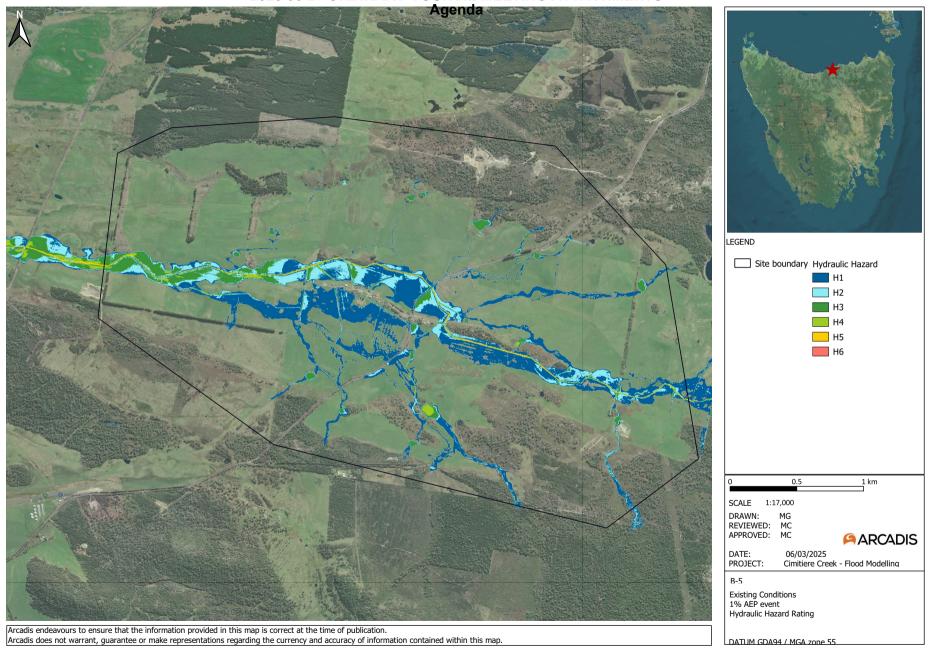
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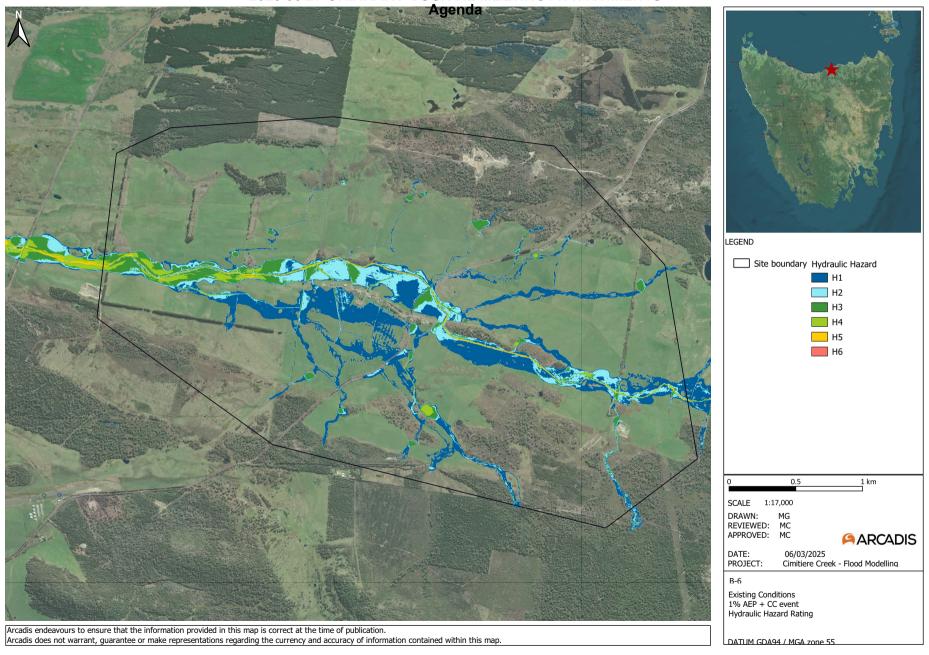


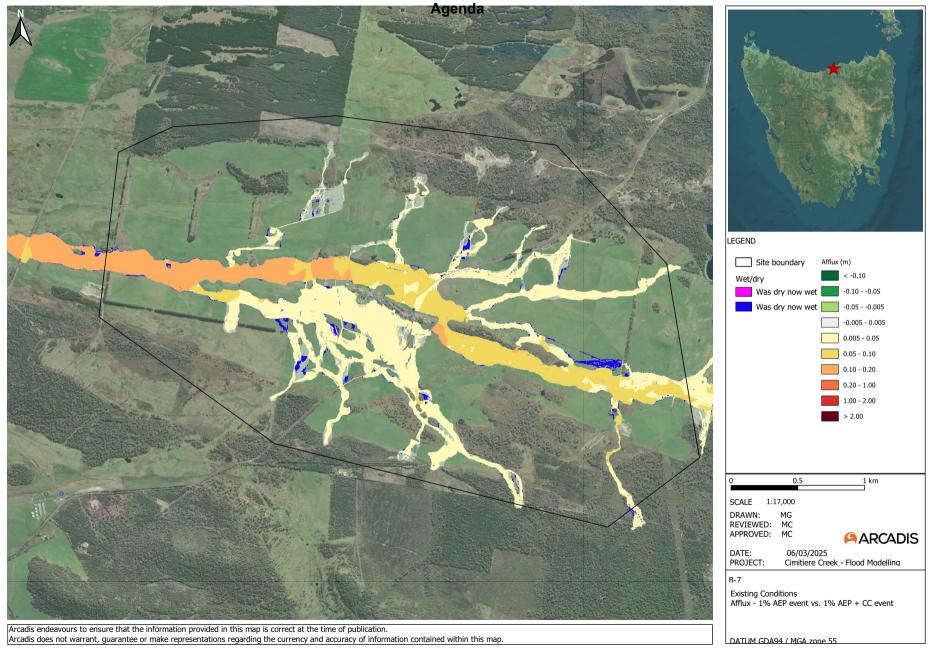








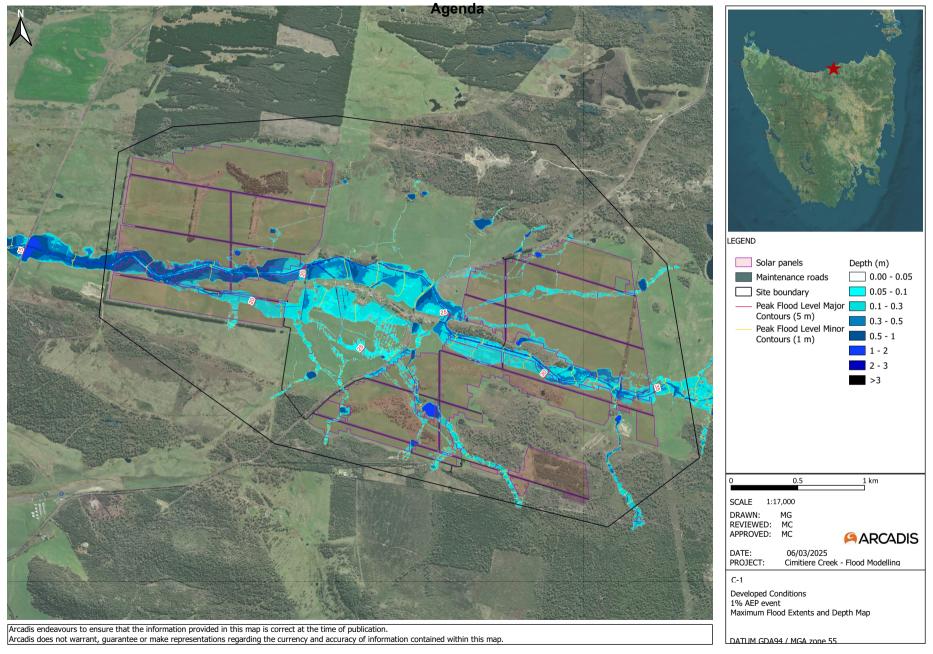


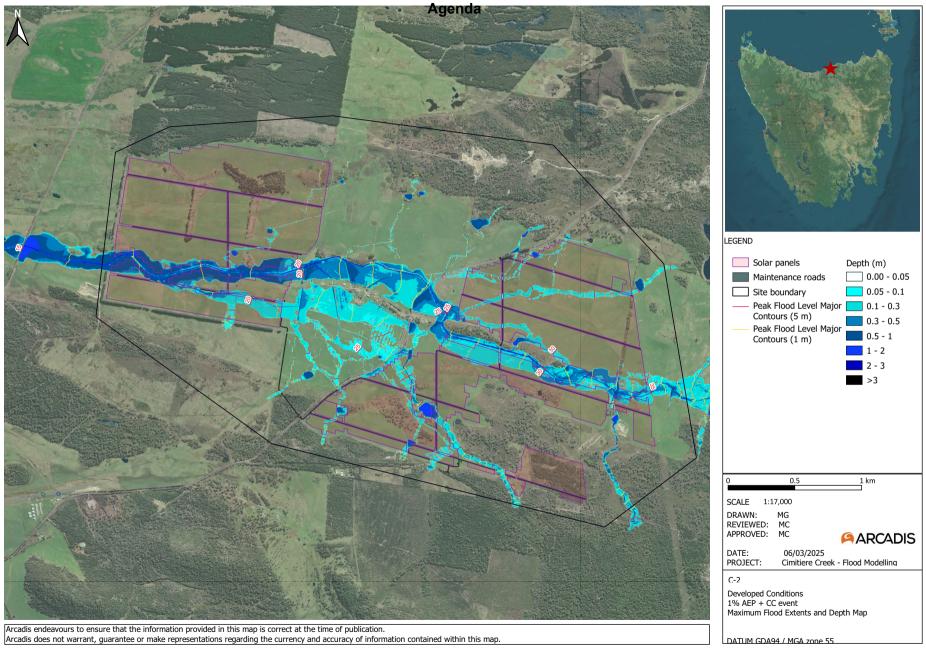


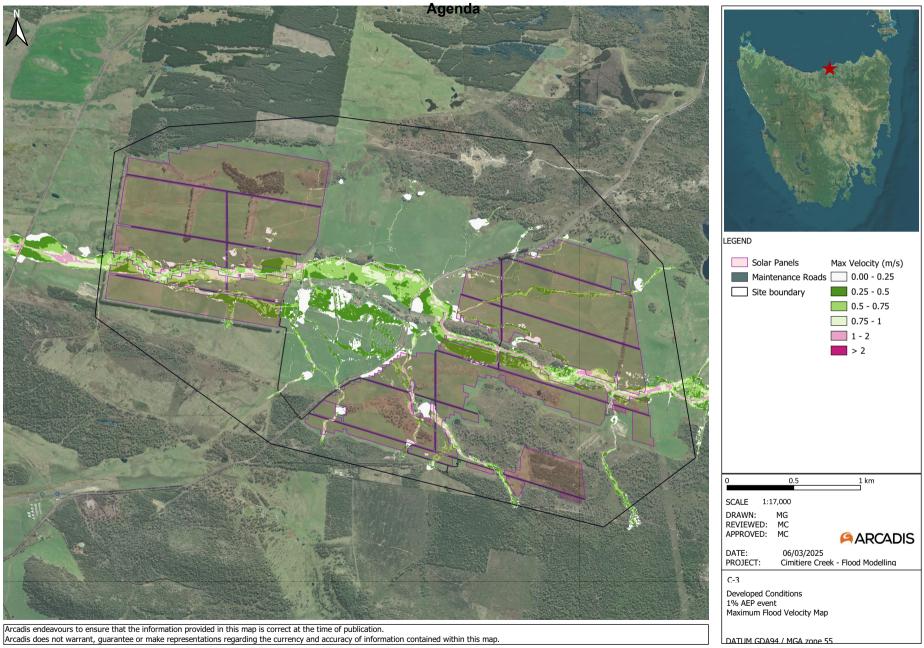


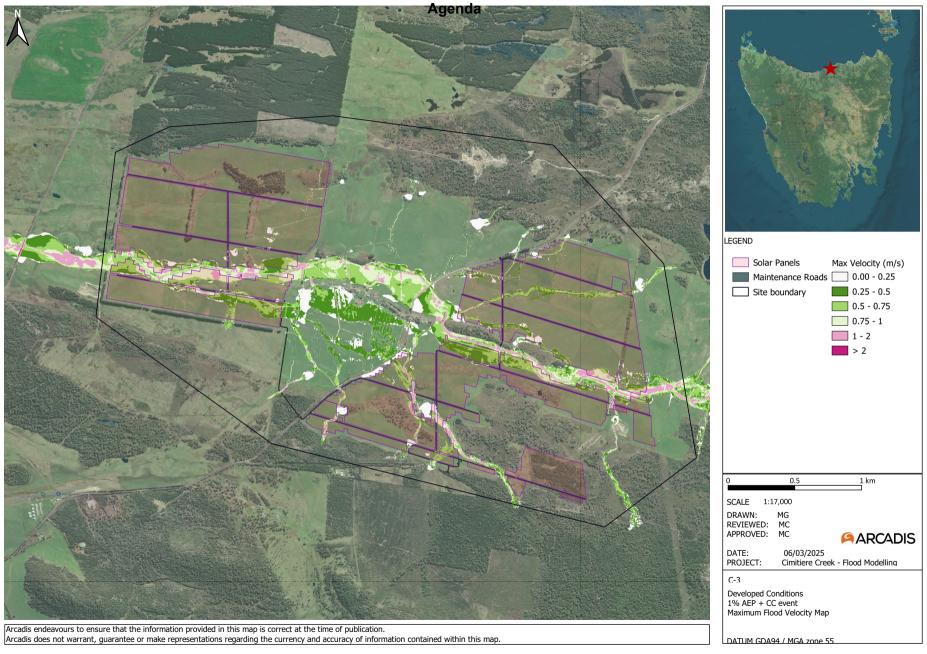
Appendix C. Flood Maps Developed Conditions

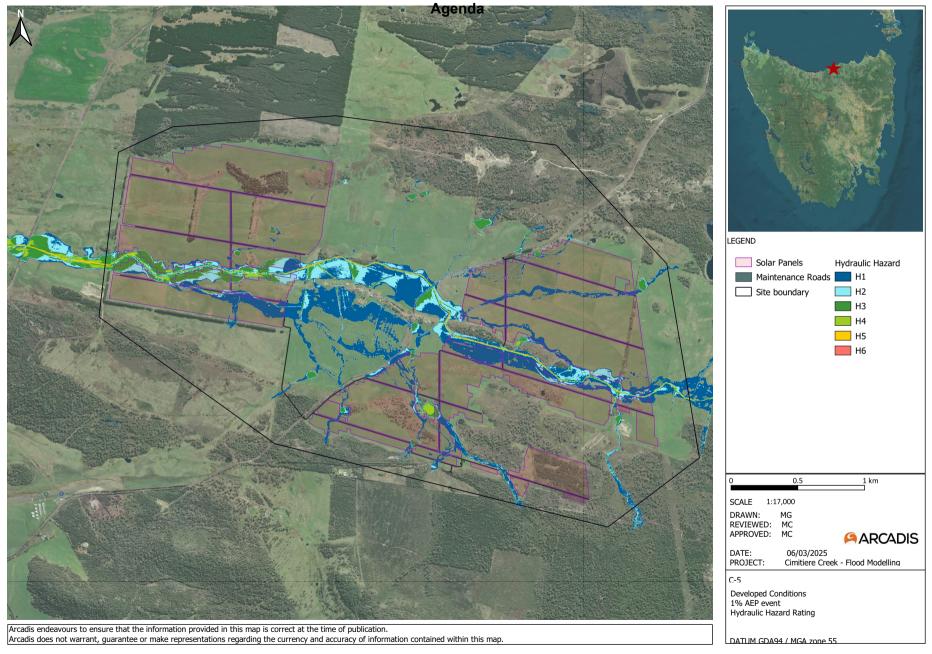
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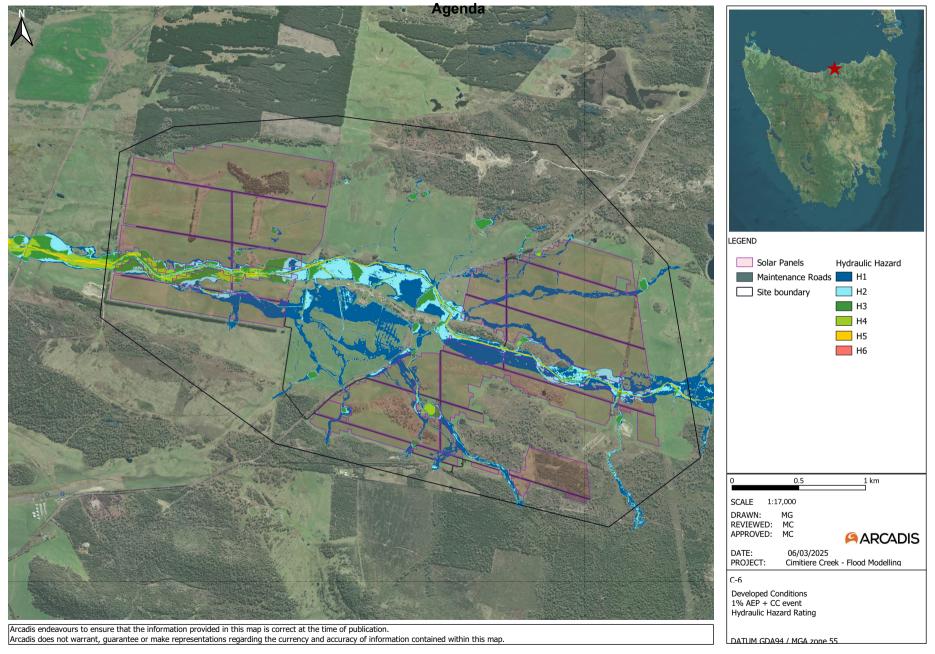


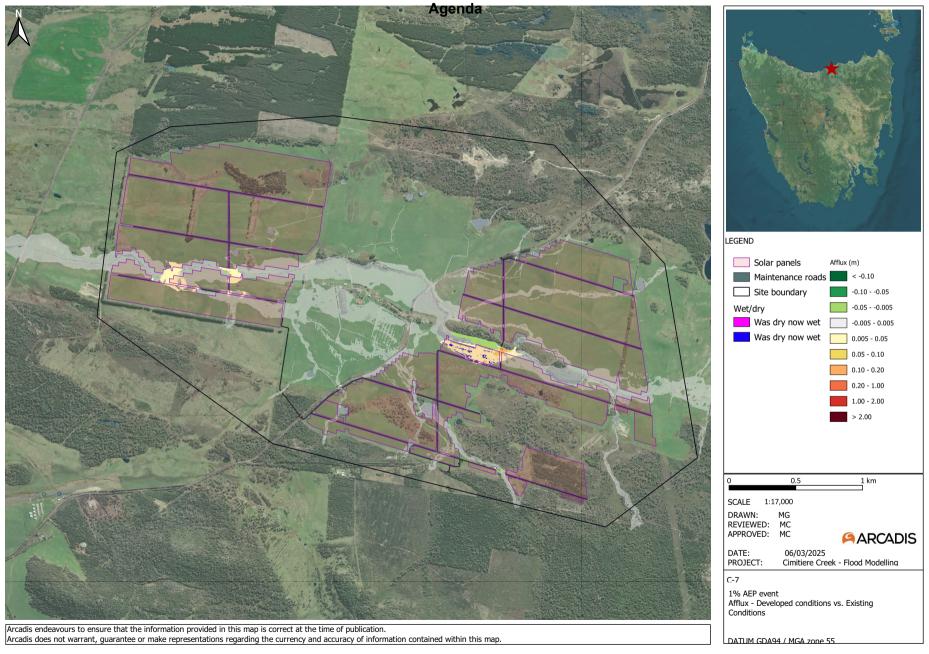


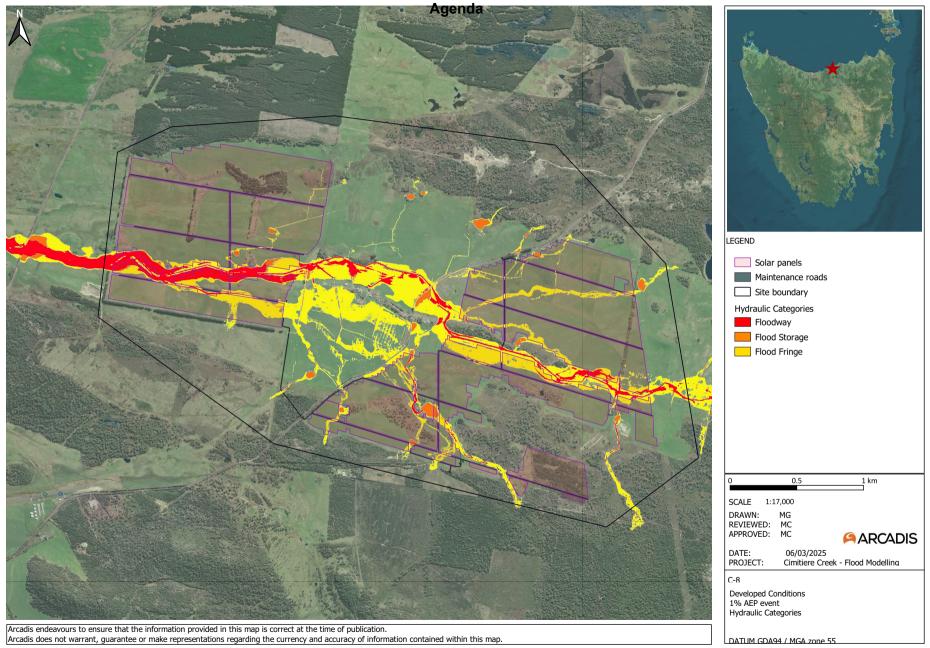












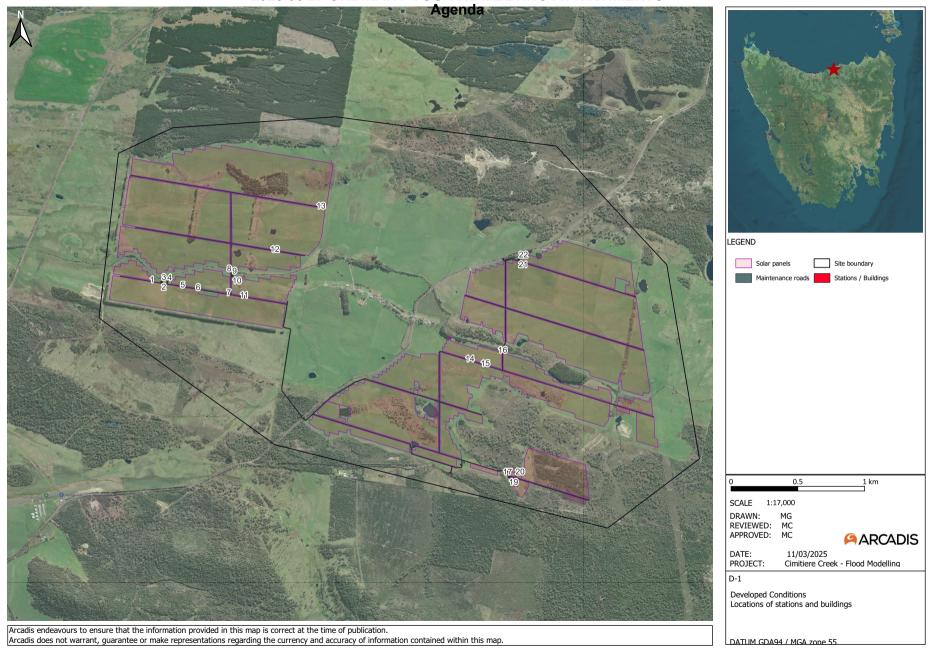


Appendix D. Bench Levels

Table 8-1 Bench levels for stations and buildings

Bench	Flood level 1% AEP	1% AEP Floor level	Flood level 1% AEP + CC	1% AEP + CC Floor level
location	(m AHD)	(m AHD)	(m AHD)	(m AHD)
1	17.158	17.458	17.273	17.573
2	17.249	17.549	17.364	17.664
3	17.251	17.551	17.368	17.668
4	17.405	17.705	17.518	17.818
5	17.543	17.843	17.656	17.956
6	18.077	18.377	18.115	18.415
7	19.139	19.439	19.205	19.505
8	18.407	18.707	18.518	18.818
9	18.436	18.736	18.549	18.849
10	18.436	18.736	18.549	18.849
11	19.554	19.854	19.588	19.888
12	21.641	21.941	21.645	21.945
13	26.717	27.017	26.719	27.019
14	26.953	27.253	26.994	27.294
15	27.312	27.612	27.367	27.667
16	27.812	28.112	27.894	28.194
17	46.218	46.518	46.248	46.548
18	47.622	47.922	47.627	47.927
19	47.750	48.050	47.756	48.056
20	47.962	48.262	47.967	48.267
21	31.339	31.639	31.354	31.654
22	31.366	31.666	31.377	31.677

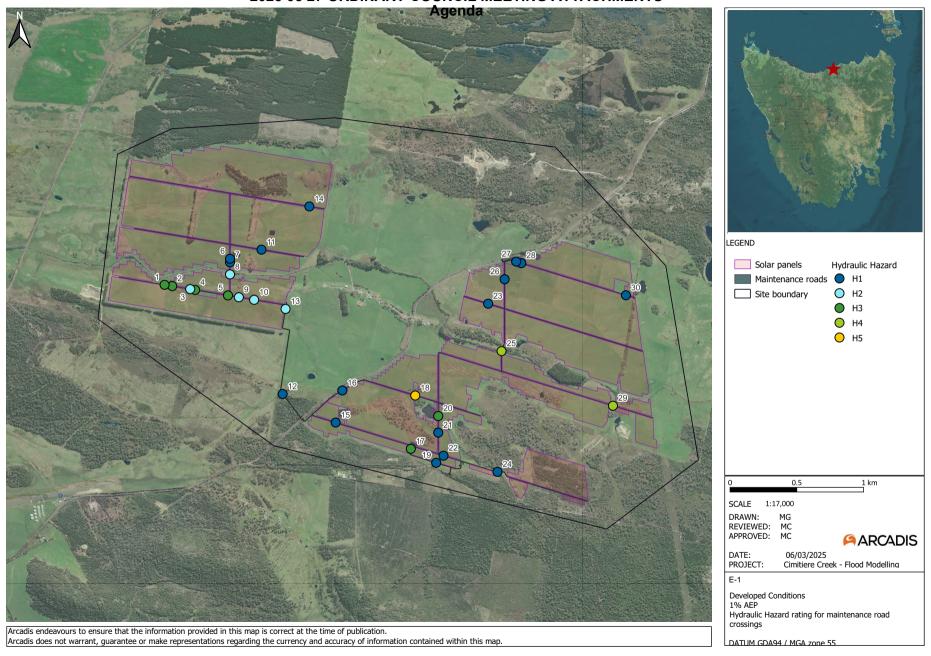
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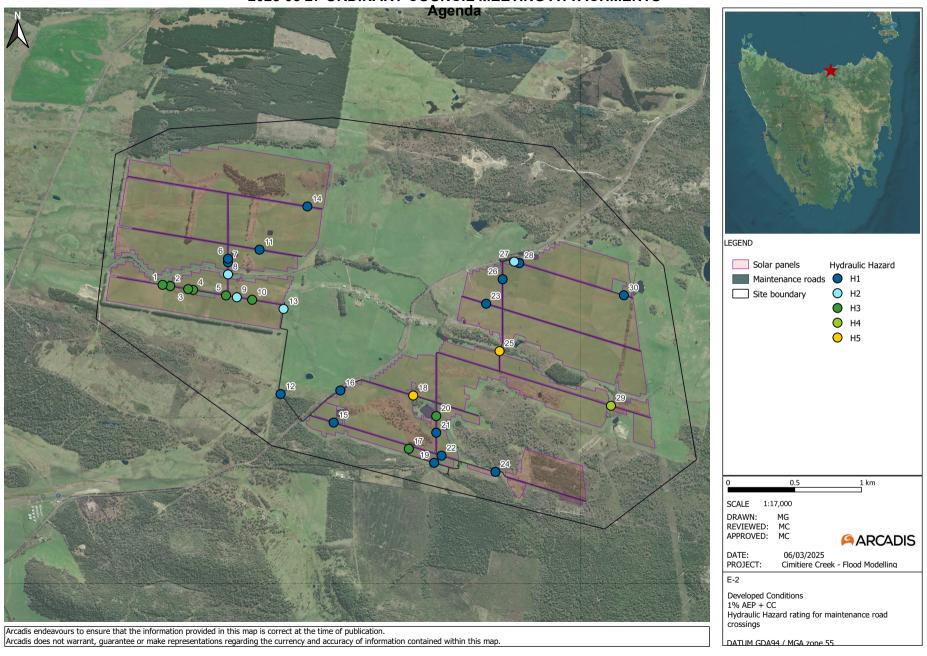




Appendix E. Maintenance Road Crossings

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DA 2024/108 / D25/96191



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DA 2024/108 - Solar farm and supporting infrastructure, Sun Spot 9 Pty Ltd, George Town

The Department of State Growth (State Growth) has reviewed the proposal for a 288 MW solar farm on Cimitier Plains and the accompanying six kilometres of transmission line between Soldiers Settlement Road and the Bell Bay substation.

While the formal advertising period for the proposal has now closed, the comments below are relevant to the assessment of the proposal and are provided for consideration by Council.

Limited access roads

Bridport Main Road and the East Tamar Highway in the location of the proposed construction access points and transmission line crossing are limited access roads. This proclamation restricts any new accesses, while the use of existing accesses must be consistent with the terms of the access licence.

The East Tamar Highway is a Category 1 road under the State Road hierarchy, and a major regional freight route. It is important that the proposed transmission line provides adequate clearance for heavy vehicles. Detailed plans including pylon locations in relation to tenure boundaries, and profile plans showing transmission line clearance heights over the Highway, should be provided to State Growth.

A licence agreement to undertake works within the Crown road reserve is yet to be finalised. A works permit/s will be required for works such as vegetation clearance within the State road reservation.

Heavy vehicles

The development application Traffic Impact Assessment (TIA) identifies potential heavy vehicle routes from Burnie, Devonport and Bell Bay. However, there is limited detail regarding potential Oversize/Overmass (OSOM) movements. Given the scale of the project, it is likely some OSOM transport will be required and this should be addressed in the TIA.

In terms of access, Bell Bay Port would appear to be the preferred origin for OSOM components given its proximity to the site and reduced risk of infrastructure limitations compared with longer routes from Burnie or Devonport ports.

The TIA references the preparation of a Construction Traffic Management Plan. This Plan should be made available to State Growth as soon as possible in order to understand the scope of the transport task, to assess potential OSOM impacts and to identify any road infrastructure issues.

Generally, State Growth encourages the proponent to engage with the department early to assist in planning heavy vehicle movements, including, if required, route assessment and/or permits for heavy vehicle transport.

- 2 -

Landslide risk

The proposal is supported by a landslide risk assessment, prepared in 2023 by Tasman Geotechnics.

The report contains no additional landslide mapping beyond that already undertaken by Mineral Resources Tasmania (MRT). MRT's landslide mapping should not be assumed to exhaustively capture all identifiable landslide features, and the report should include a large-scale (site-specific) review of landslide indicators visible in Tasmania's freely available LiDAR data. This data provides a clearer view of landforms in vegetated areas than site walkovers and should be used in combination with the ground observations already included in the report.

An initial review of the LiDAR hillshade on LIST Map reveals numerous small, muted landslides in the headwaters of Four Mile Creek, which indicate geologically recent slope failures. It is not possible to determine whether the landslide-affected slopes occur within or only nearby the transmission corridor, based on the small-scale, low-detail maps provided. Larger scale maps, or the provision of geospatial files, is necessary to identity where the site boundaries are in relation to possible landslide features. Ideally, both large-scale maps and geospatial files should be provided to MRT.

In relation to the assumed likelihoods of the two landslide scenarios identified, further justification is required as to how these likelihoods were identified. The likelihoods have flow-on effects for the subsequent estimation of landslide risk.

Landslide likelihood and estimated property risk levels are provided in the report. However, the consideration of exposure and vulnerability (i.e. the estimation of consequence) necessary to arrive at the estimated risk levels is not indicated.

As noted in the report, the lack of detailed plans showing proposed tower locations or construction details precludes assessment of their specific landslide risk. In addition to the report's suggestion that subsurface investigation should be undertaken for tower sites in landslide-prone areas, those investigations should also include site-specific landslide risk assessments (noting it is possible the towers will be located outside landslide-prone areas).

Bell Bay Line

The proponent is encouraged to consult with TasRail in relation to construction of the transmission line over the Bell Bay rail line, and to minimise any disruption to operations during construction.

Please contact Christine Corbett, Development Assessment Planner who can coordinate engagement with relevant State Growth officers, by ringing (03) 6165 4085 or email planningpolicy@stategrowth.tas.gov.au.

Yours sincerely,

DI GEE

DIRECTOR, STRATEGIC GROWTH AND INTEGRATED PLANNING

30 April 2024



a: Level 1, 125A Elizabeth St *nipaluna* (Hobart) 7000 p: (03) 6165 0443 e: enquiries@eraplanning.com.au abn: 67 141 991 004

23 April 2025 Reference: 2425-032

General Manager George Town Council 16-18 Anne Street GEORGE TOWN TAS 7253

By email: council@georgetown.tas.gov.au

Dear Sir,

CIMITIERE PLAINS SOLAR FARM DA 2024/108 REPRESENTATION

ERA Planning and Environment (ERA) have been engaged by Equis Wind (Australia) Projects Pty Ltd (Equis) and are writing in regard to the development application currently on public exhibition for the Cimitiere Plains Solar Farm (DA 2024/108). This solar farm is located at 381 Soldiers Settlement Road, George Town and includes a transmission line connecting the proposed solar farm to Bell Bay.

As Council is aware Equis is progressing approval for a wind farm on land north-east of George Town through the major project approval pathway provided for under Division 2A of Part 4 of the Land Use Planning and Approvals Act 1993 (LUPA Act). Known as the Bell Bay Wind Farm, the project has been declared a major project by the Minister for Planning and final assessment criteria have been issued by the assessment panel appointed by the Tasmanian Planning Commission. Equis are now in the process of undertaking site studies to inform the preparation of a Major Project Impact Statement.

The proposed Cimitiere Plains Solar Farm is partially located on land to which the major project declaration relates for the Bell Bay Wind Farm, being parcel 104543/3, as shown in Figure 1. Once a major project is declared, the LUPA Act limits the issue of permits on related land to uses and developments which is not substantially the same as the major project. The purpose of this limitation is to not unreasonable impact on the assessment of the major project or create an alternative pathway for any proponent. The limitation is imposed through Section 60S(1) which states:

A person must not undertake a use or development, on land to which a major project relates, that is –

- (a) the same as, or substantially the same as, a use or development to which the major project permit relates; and
- (b) a use or development for which, under a planning scheme that applies to the land, a permit is required –

except if the use or development is under and in accordance with -

- (c) a major project permit in relation to the project; or
- a permit that was in force immediately before the project was declared to be a major project.

In our opinion, there is a reasonable argument that the proposed solar farm is substantially the same use and development as the Bell Bay Wind Farm. It is for an energy generation facility under the Utilities use class (the same which applies to a wind farm) and also includes a transmission line which is on a duplicative

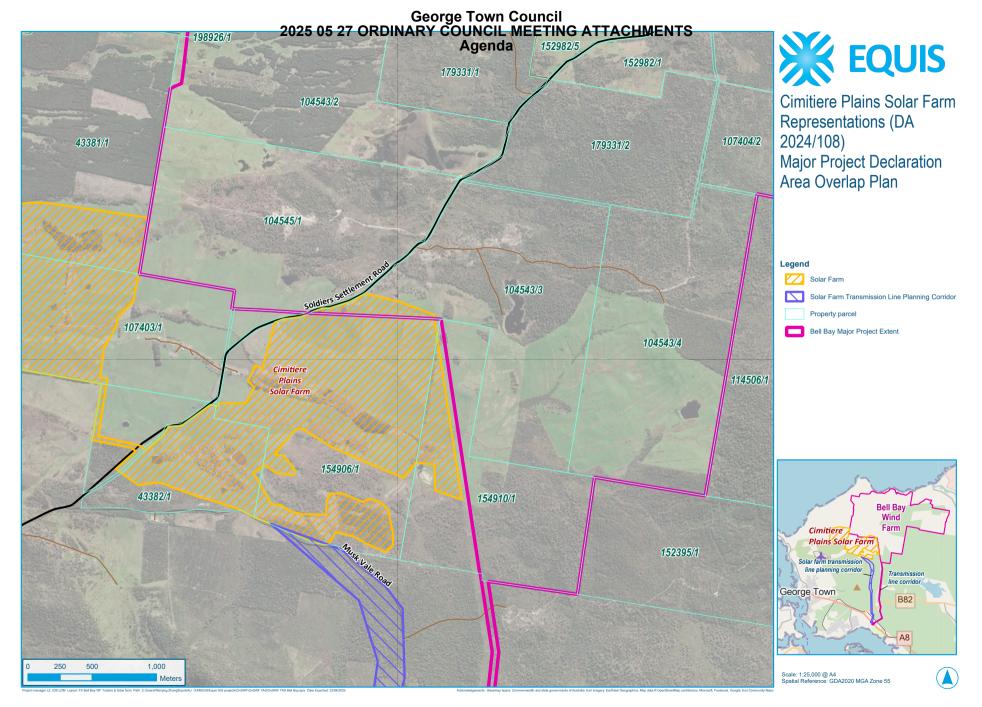
alignment from the project land through to Bell Bay as outlined in the Bell Bay Wind Farm Major Project Proposal.

The location of the proposed solar farm within the Project Land for the Bell Bay Wind Farm, and the duplicative elements, raises cumulative impact assessment matters which are relevant under the declared assessment criteria for the wind farm. In light of this, we ask that Council consider its ability to issue a permit for the proposed solar farm over parcel 104543/3 having regard to the requirements of section 60S(1) of the LUPA Act.

Yours sincerely,

Emma Riley, RPIA (Fellow), GAICD

Director



From: Mel Axford

To: George Town Council Planning

Cc: Property Team

Subject: Development Application_ Sun Spot 9 Ltd - Solar Farm

Date: Wednesday, 23 April 2025 5:15:49 PM

Attachments: <u>image001.jpg</u> image002.jpg

image003.pnq image004.pnq image005.ipq image006.jpq

CAUTION: Do not click links or attachments unless you recognize the sender and know the content is safe

Afternoon

Thank you for the opportunity to review the development application for the Sun Spot 9 Solar Farm project. TasRail has no objections to the proposal at this stage; however, we kindly request that the following information be shared with the Developer for their guidance and compliance.

The State Rail Network comprises designated land corridors essential to the safe and efficient operation of rail services, including freight and logistics activities. As such, development on or near this land is generally restricted and subject to specific conditions in accordance with TasRail's regulatory and operational requirements. We therefore request the following:

- Infrastructure Installations: Any proposal involving infrastructure installation within or
 over State Rail Network land must be submitted directly to TasRail for review. These
 applications will be assessed based on safety, technical, and operational criteria. If
 approved, a Permit Authority will be issued to allow the works to proceed.
- Transmission Assets: For privately owned transmission infrastructure that crosses over TasRail land, the applicant will be required to enter into a Service Infrastructure Licence Agreement with TasRail.
- Proximity Considerations: To avoid obstructing sightlines at railway crossings or
 interfering with rail operations, above-ground infrastructure (such as poles or towers)
 adjacent to the rail corridor must be carefully planned. Any works or excavations within 3
 metres of the rail boundary or where there is a potential impact on TasRails operations
 must be discussed with TasRail, and a separate permit may be required.

To support the successful delivery of the Sun Spot 9 Solar Farm Project, we encourage early engagement with TasRail for all matters involving access to, or works within the vicinity of State Rail Network land.

For further guidance, please contact TasRail at property@tasrail.com.au.

Kind regards,

Mel Axford

Property, Legal and Compliance Manager | Property | Mobile: 0419 618 515 11 Techno Park Drive, Kings Meadows, Tasmania, 7249 mel.axford@tasrail.com.au

'Tasmania's trusted provider of safe and dependable rail logistics solutions'



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1

Victoria Jansen-Riley

22/4/25

Shane Power
Manager George Town Council
Anne St.
George Town
7253

Comments on DA 2024/108 -Sunspot 9 Pty Ltd -Solar farm

To whom it may concern:

I wish to submit comments as follows-

The solar farm footprint alongside Old Aerodrome Rd is too close to residences along this road as well as to the Bell Buoy Beach village: in terms of detrimental effects from noise and loss of visual amenity; possible electro-magnetic field interference; and effects on climate.

Both visitors to Bell Buoy Beach and residential owners will be confronted by the panels as they drive down Old Aerodrome rd., thus experiencing a loss of natural values. Those living nearby will experience the 'hum' from these panels, thus losing their quality of a quiet lifestyle. (Noise emissions mentioned page 6.6.1.of proposal).

Studies reveal that solar panels can cause a 'heat island effect' i.e. they create heat directly above them, which can cause fluctuations in temperature and humidity.(Study on The local climatic effects of Solar farms –Solar Energy Vol.144 2017)

The electro-magnetic emissions from solar panels could possibly affect human health (have studies on this been included?) as well as effects on television and phone reception.

There will also be habitat loss and disruption of ecosystems thus negatively impacting the native wildlife, (especially in the Musk Vale road area, which has quite a large area of bush that would have to be cleared). There are also

2

residences within this area that could be negatively impacted in the manner discussed above.

A better place for any solar farm would be near further north-east of where the Bass Link transmission lines currently cross over Soldiers Settlement road, or in the cleared farm land just before that location.

Also, within the consideration of this proposal, there should be an ongoing formal complaints procedure created for those nearby residents who could be impacted by this development in terms of nuisance noise etc. (should it be approved).

Yours sincerely,

Ms. Victoria Jansen-Riley

From: ionathon currant

Attachments:

George Town Council Planning To:

Representation Regarding DA 2024/108 – Cimitiere Plains Solar Farm Subject:

Tuesday, 22 April 2025 12:22:30 PM Date: image001.jpg

image002.jpg image003.jpg image004.jpg

Muskvale Road.pdf

George Town Municipality Road Map.pdf

AUTION: Do not click links or attachments unless you recognize the sender and know the content is safe

To: George Town Council

Attention: Planning Department PO Box 161, George Town TAS 7253

Email: planning@georgetown.tas.gov.au

Date: 22/04/2025

Subject: Representation Regarding DA 2024/108 – Cimitiere Plains Solar Farm

Dear Sir/Madam.

I received a notice of planning application from the George Town Council on the 4th of April regarding DA 2024/108 - Cimitiere Plains Solar Farm. This notification was the first I had heard of the project.

I am writing as a directly affected landowner in relation to Development Application DA 2024/108 submitted by Sun Spot 9 Pty Ltd for the establishment of the Cimitiere Plains Solar Farm and associated infrastructure. I own P/209 Musk Vale Road George Town. I have owned the property since 1998.

As per the development application the proposed transmission line traverses my access. My property access is currently secured by a locked boom gate and large rocks along the fence line to prevent vehicular access. Security & theft prevention are a daily struggle in this area of the municipality.

The condition of Musk Vale Road in general is also of great concern to me. The road is no longer maintained in full by the George Town Council. I have been advised by the council engineer that an imaginary line exists, and that the council maintain up to this point. Post this point the road has fallen into severe disrepair over the past 20 years. There are sections of the road that are almost unpassable. Please find the attached municipal road map that was removed from the council web site.

I respectfully request that the following matters be given due consideration during the planning and assessment process:

1. Security and Controlled Access to Adjoining Properties

The proposed development, including access tracks and transmission lines, traverses' areas in close proximity to my private property. It is essential that the applicant provides clear, practical, and enforceable measures to ensure the security and controlled access to my property is maintained throughout both the construction and operational phases.

Specifically:

- How does the applicant intend to prevent unauthorised access via construction routes or internal roads?
- · How will the applicant ensure that no damage is caused to my existing access whilst the infrastructure is installed & operated?
- · Will physical barriers, signage, or surveillance be installed to protect adjoining landowners' interests?

- What recourse will landowners have in the event of damage, breach or theft of property as a result of the installation & maintenance of the proposed infrastructure?
- What steps will the applicant put in place to ensure I have unimpeded access to my property throughout the construction period?

2. Ongoing Maintenance and Condition of Musk Vale Road

Musk Vale Road is a critical access point for both private property and crown land which will carry the development-related traffic. The road surface has no gravel coverage in places. The DA states the road will be left in the same condition as it was prior to construction. With increased heavy vehicle use during the construction phase and continued operational traffic over the long term, there is concern regarding further degradation of the road surface and surrounding infrastructure.

- What commitments will the applicant make to upgrade Musk Vale Road apart from Widening as stated in the DA?
- Improved road conditions could lead to increased dumping of rubbish & cars along Musk Vale Road and surrounding properties which has become a real problem over the past few years.
- Will there be routine monitoring and rectification of any construction-related damage?
- Has the Council confirmed a formal agreement or condition to hold the applicant accountable too for road maintenance on the portion of the road that's not maintained by the George Town Council? How can council act in the best interest of the private landowners if it's not responsible for Musk Vale Road in its entirety?
- Will the applicant be liable for damages to vehicles or persons if incurred as a result of the construction or operational activities of the transmission line?
- The access over private property from the end of Musk Vale Road is single lane and was installed by my father. Due to the steep terrain this access is single carriageway only. How will the risk of a single lane carriageway be minimised by the applicant?
- What steps will the applicant put in place to ensure I have unimpeded access to my property
 whilst the construction activities are taking place.

3. Health Concerns:

As the transmission line traverses my access, I will be forced to travel next to or below the proposed line every time I access my property. In the development application my property is referred to as R6.

- Are there any known negative health impacts regarding regular prolonged close contact to transmission lines or the EMF'S that are generated from transmission?
- Psychosocial risks that may develop including stresses to landowners from the construction and maintenance of the proposed infrastructure installation.

As this development will have lasting impacts on the surrounding landowners & community, it is critical that these concerns are addressed through formal conditions within the permit, should approval be granted.

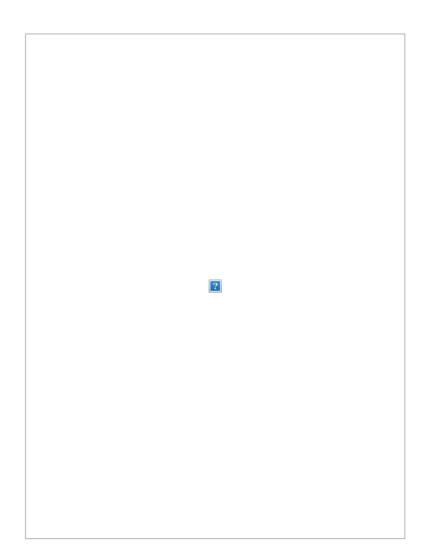
Please find the supporting attachments and photos below.

Thank you for the opportunity to make this representation. Please confirm receipt and do not hesitate to contact me should you require further clarification.

Regards	
Jonathon Currant	
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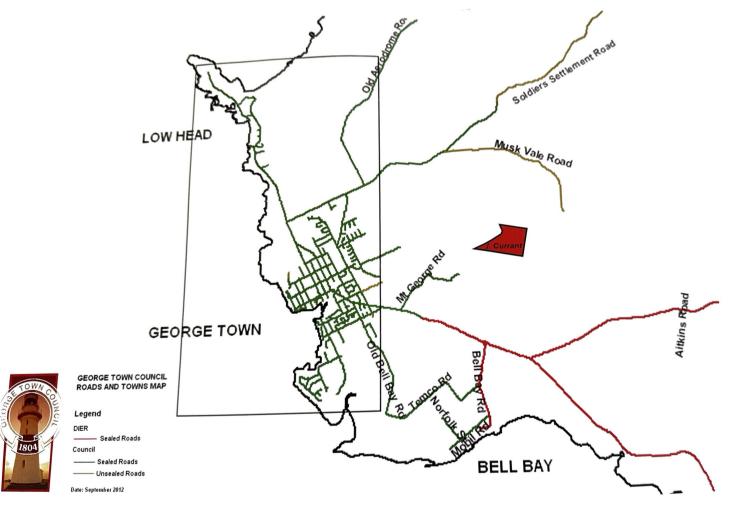


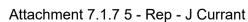


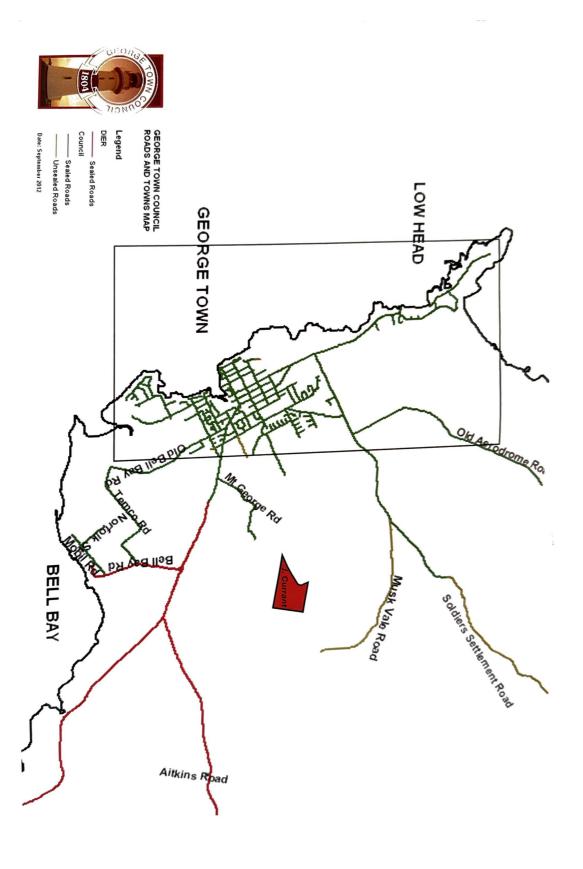












CERTIFICATE OF TITLE

LAND TITLES ACT 1980



TASMANIA

TORRENS TITLE					
\ \ \	VOLUME				
108	108583				
EDITION	ĺ	DATE OF ISS			
3	1-0	01			
Page	1	of	1		

I certify that the person described in Schedule 1 is the registered proprietor of an estate in fee simple (or such other estate or interest as is set forth in that Schedule) in the land within described subject to such exceptions, encumbrances, interests and entries specified in Schedule 2 and to any additional entries in the Folio of the Register.

Alice Kawa

Recorder of Titles.

DESCRIPTION OF LAND

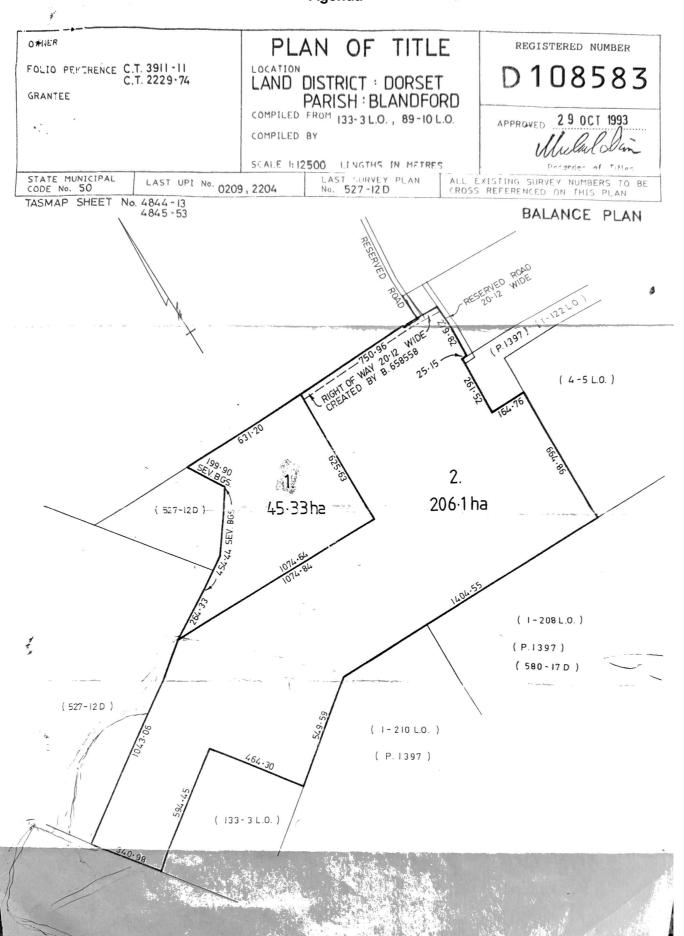
Parish of BLANDFORD, Land District of DORSET Lot 1 on Diagram 108583 Derivation: PART OF LOT 24438 GTD. TO W.E.DAVIDSON Prior CT 2229/74

SCHEDULE 1

C331633 TRANSFER to JONATHAN EDWARD CURRANT Registered 1-Oct-2001 at 12.1 pm

SCHEDULE 2

Reservations and conditions in the Crown Grant if any B65858 Benefiting easement; right of carriageway over the right of way 20.12 wide on D.108583.





12 May 2025

Mr Shane Power General Manager George Town Council planning@georgetown.com.au PO Box 161 George Town, TAS 7249 **Dane Stewart Development Manager** IB Vogt Development Australia

M: 0410 192 029

E: dane.stewart@ibvogt.com

A: Bay 5-7 North, 2 Locomotive St Eveleigh, NSW 2015

CIMITIERE PLAINS SOLAR FARM - RESPONSE TO SUBMISSIONS

Dear Mr Power,

Thank you for providing the representations made on the planning permit application for Cimitière Plains Solar Farm.

Please find below our response to the submissions, which have been grouped by topic for ease of response.

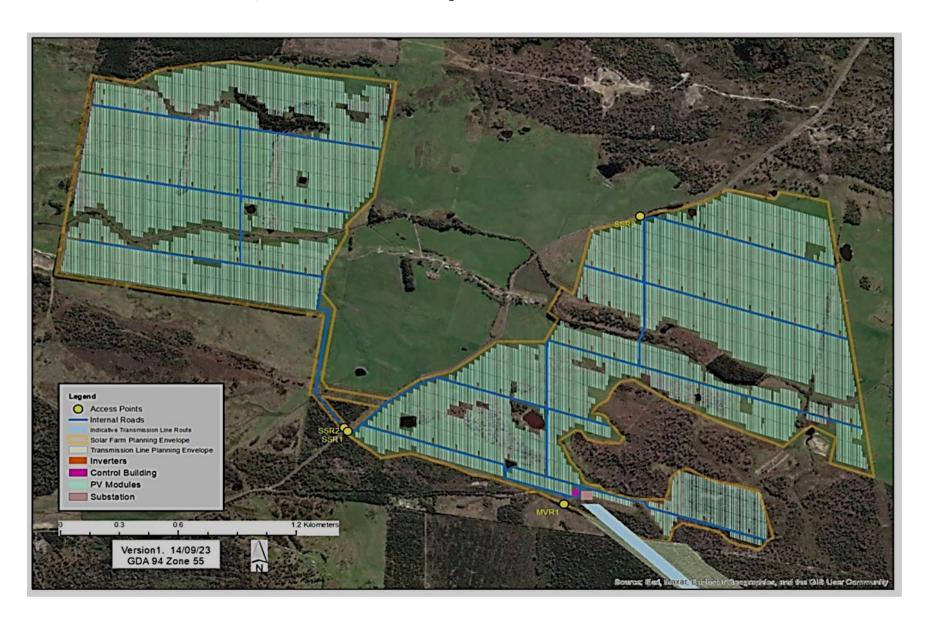
Please do not hesitate to contact myself or Dan Halperin if you require any further information.

Regards,

Dane Stewart DEVELOPMENT MANAGER IB VOGT DEVELOPMENT AUSTRALIA

Attachment 7.1.8 Applicants Response to Submissions

Page | 989



1. SITE ACCESSIBILITY

REPRESENTATIONS

The following concerns were raised in relation to security and controlled access:

- How does the applicant intend to prevent unauthorised access via construction routes or internal roads?
- How will the applicant ensure that no damage is caused to my existing access whilst the infrastructure is installed & operated?
- Will physical barriers, signage, or surveillance be installed to protect adjoining landowners' interests?
- What recourse will landowners have in the event of damage, breach or theft of property as a result of the installation & maintenance of the proposed infrastructure?
- What steps will the applicant put in place to ensure I have unimpeded access to my property throughout the construction period?

RESPONSE

1.1 Access to Site

The project will be upgrading Musk Vale Rd from the access point MVR1 (refer to Figure 1) near the proposed solar farm substation to the end of the road reserve. At the end of the road reserve, the existing track continues south onto private land (Volume 156738 Folio 4) and also to the west towards land owned by Johnathon Currant. The proponent has an agreement with the landholder of Volume 156738 Folio 4 to re-establish secure gates at this point including a gate across Mr Currant's access.

Construction machinery will generally not need to use Mr Currant's access road. During clearing of the transmission line easement, machinery may need to pass over the road and some vehicles may pass along the road. This would only occur along the first 140m of the right of way. If there is any damage to that section of the road, that damage will be repaired to a condition at least equal to that prior to the commencement of construction.

During the upgrading of this section of Musk Vale Rd and construction of the transmission line, Mr Currant will have access to his property. When the road works are being undertaken, the road will be a construction site, and as with any road upgrades, there will be systems for traffic control to prevent interactions between construction machinery and landholders wishing to use the road. The construction contractor will work closely

with landholders to minimise any disruption to their access through the site. Given that there is currently only one landholder living permanently in the area makes this task relatively straight forward.

2. MANAGEMENT OF MUSK VALE ROAD

REPRESENTATIONS

The following concerns were raised in relation to road maintenance and condition:

- What commitments will the applicant make to upgrade Musk Vale Road apart from widening as stated in the DA?
- Improved road conditions could lead to increased dumping of rubbish & cars along Musk Vale Road and surrounding properties, which has become a real problem over the past few years.
- Will there be routine monitoring and rectification of any constructionrelated damage?
- Has the Council confirmed a formal agreement or condition to hold the
 applicant accountable too for road maintenance on the portion of the
 road that's not maintained by the George Town Council? How can
 council act in the best interests of the private landowners if it's not
 responsible for Musk Vale Road in its entirety?
- Will the applicant be liable for damages to vehicles or persons if incurred as a result of the construction or operational activities of the transmission line?
- The access over private property from the end of Musk Vale Road is single lane and was installed by my father. Due to the steep terrain this access is single carriageway only. How will the risk of a single lane carriageway be minimised by the applicant?
- What steps will the applicant put in place to ensure I have unimpeded access to my property whilst the construction activities are taking place.

RESPONSE

2.1 Road Use and Management

Attachment 7.1.8 Applicants Response to Submissions

As discussed in the development application, construction traffic will not use the section of Musk Vale Rd from Soldiers Settlement Road to MVR1. Instead, they will use an internal road from SSR1 to travel to MVR1. They will then be

able to enter from Musk Vale Road at MVR1 where they can continue along Musk Vale Road to the southeast for the purpose of constructing the transmission line. This section of Musk Vale Road will be upgraded with a combination of passing bays and road widening to 5.5 metres where necessary (blind corners) to suitably accommodate construction vehicle traffic. Treatments will be determined by onsite investigations prior-to construction. This will mean that by the end of construction, the section of Musk Vale Road from MVR1 to the end of the road reserve will be in significantly better condition post construction than its current state.

Operation of the transmission line will involve maintaining the easement, regular inspections (normally annually) and maintenance of the line where required. For that section of Musk Vale Road that is not maintained by Council, the operator of the transmission line would maintain the road such that it is fit for purpose as access for operational activities.

As discussed in the section on security and controlled access, construction machinery will generally not need to use Mr Currant's access road. During clearing of the transmission line easement, machinery may need to pass over the road and some vehicles may pass along the road. This would only occur along the first 140m of the right of way. Once construction is complete, there should be no reason for vehicles related to the transmission line to use the Mr Currant's access road and therefore there is no issue that the road is only single carriageway.

With respect to the issue of the dumping of rubbish along Musk Vale Road, it is difficult to know what impact the project will have if any. Having operational staff at the control building and using Musk Vale Rd may deter the illegal dumping of waste in the vicinity. Increased traffic during construction may also deter this activity.

3. HEALTH CONCERNS

REPRESENTATIONS

The following concerns were raised in relation to the risk to safety and health posed by the construction and operation of the solar farm and transmission line:

- Studies reveal that solar panels can cause a 'heat island effect' i.e. they create heat directly above them, which can cause fluctuations in temperature and humidity.
- The electro-magnetic emissions from solar panels could possibly affect human health (have studies on this been included?) as well as effects on television and phone reception.
- Are there any known negative health impacts regarding regular prolonged close contact to transmission lines or the EMF that are generated from transmission?

RESPONSE

3.1 Heat Island Effect

The 'heat island effect' is a well-known and studied phenomenon. It is most relevant in urban areas which experience higher temperatures compared to surrounding rural areas. This effect is primarily due to the absorption and retention of heat by buildings, roads, and other surfaces, which then emit thermal radiation.

Solar farms create a modest and localised heat island effect. This increase in temperature is most pronounced immediately above the solar panels is typically between 0.5 and 2 degrees Celsius and can be as high as 3 - 4 degree Celsius during the day in summer, and lower in winter. This temperature difference dissipates within 18 metres from the solar panels, and is diminished further if surrounded by vegetation that blocks sunlight from reaching the ground. The effect only occurs during daylight hours.

Solar farms with grazing undertaken within the panel arrays are not typically seen as negatively impacting livestock health, in fact it has been shown that panels provide shade and cooler temperatures to livestock sheltering beneath the panels.

ib vogt — Powering the Energy Transition

¹" The Photovoltaic Heat Island Effect: Larger solar power plants increase local temperatures ", Greg A. Barron -Gafford et al. 2016 in Scientific Reports

3.2 Electromagnetic Fields (EMF)

The use of electricity in daily life exposes us to low frequency EMFs which emit low level radiation and are not considered a risk to human health.

Transmission lines, solar panels, household appliances and electrical equipment operate at 50 Hertz and therefore produce extremely low frequency EMFs that occupy the lower part of the electromagnetic spectrum in the frequency range of 0 - 3000 Hertz (ARPANSA, 2022).

The current international standard for human exposure limit to magnetic field levels is 2000 milligauss (mG) set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) in 2010. This standard is recommended by APRANSA, the the Australian Government's primary authority on radiation protection and nuclear safety. Transmission lines generally emit 10-50mG at the edge of the transmission line easement and 20-200mG directly under the transmission line, which is significantly below the international standard for human exposure limit.

Considering that the EMF levels associated with the infrastructure are below reference levels and that EMF attenuates with distance, the risk of human health being impacted by exposure to EMF is very low. This is examined in more detail in the assessment report, under section 6.10 Hazards and risks.

4. LANDSLIDE RISK

REPRESENTATIONS

The following was raised by Department of State Growth in relation to the transmission corridor:

The proposal is supported by a landslide risk assessment, prepared in 2023 by Tasman Geotechnics. The subsurface investigation undertaken for tower sites in landslide-prone areas should also include site-specific landslide risk assessments.

RESPONSE

4.1 Landslide Risk

The landslip risk assessment undertaken as part of the development application did not incorporate all regional data available. Due to the very low risk of landslip indicated for the project at the site level, it was considered sufficient for the level of risk involved.

We commit to undertaking site specific landslip risk assessments during the process of siting the exact transmission pole locations once the design process commences. We anticipate a condition on the planning permit related to this risk assessment and can provide further assistance on this if required.

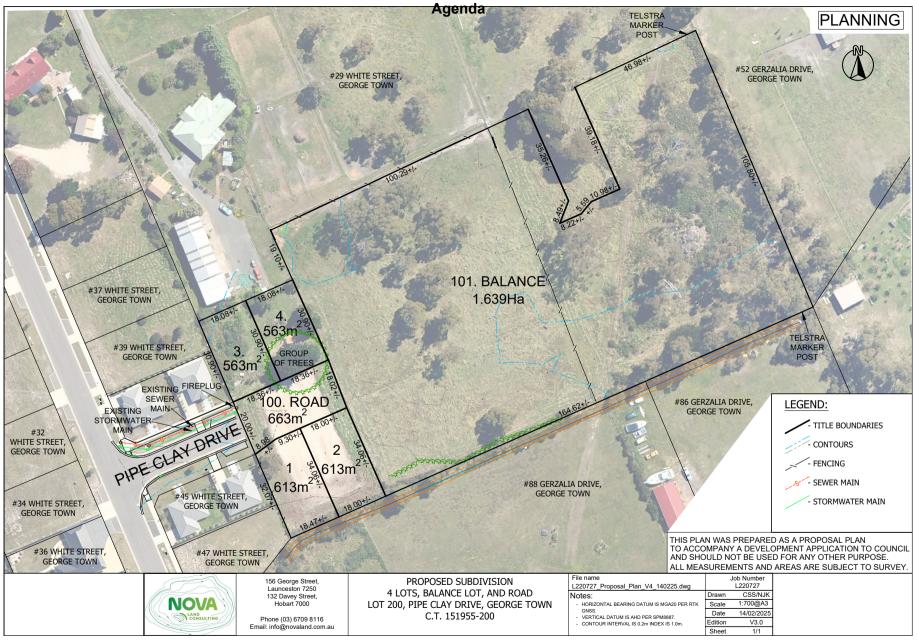


PLANNING APPLICATION FORM

Section 57 & 58

OFFICE USE ONLY									
Application Number:	DA ²⁰²⁵ /	17			Date: 0	8.04.2025			
PID: 2816863		Zone:	General Residentia	al		Per	mitted	or Discre	etionary
						•			
Learning (A. L. Learne	DEVE	LOPM	ENT APPLICA	ATIC	N DET	AILS			
Location/Address of Proposed Development:	Lot 200, Pipe	e Clay Dri	ve, George Town						
Applicant Name:	Nova Land	d Consulti	ng						
Title Reference:	151955 /	200							
Existing Development/Use: (describe the way the land is used now)	Vacant								
Development Type:	New dwel Fend Subdivis	ing 🗆	D	emoli	ding □ tion □ use □	Ado		tension Signage Other	
Description/Use:	4 Lot Subd	ivision, Ba	alance Lot and Roa	ad lot.					
New floor area:	m²	Total	floor area:		m²	New bu	ilding h	eight:	т
Water Supply:	TasWater kı	Tank [Wastewater	: Т	asWater	☑ On-S	Site Was	tewater :	System
Driveway/Vehicle Cro	ssover:		Existing Contact Cou	ncil's				on Require ails on cro	
Does the application i			Yes □ No		If 'yes', ple	ase provide	accordar	nce with see	ction 52 (1B)
			SUB	DIVI	SION				N/A □
Existing Lots:	1		Number of	tota	l lots pro	oosed:	4 r	esidential	lots
		C	OMMERCIAL	/INI	DUSTRI	Δ1			N/A □
Existing business and proposed business de				71.					
		Weekd	ays (Mon – Fri)				То		
Hours of Operation:		Saturda	ay				То		
		Sunday	/				То		
Signage:		Yes □	No □	If 'v	es', pleas	e provide		with appl	ication.
Existing no. of employ	Existing no. of employees: No. of employees (proposed):								
Parking spaces (exist	ing)				king spa	ces (prop	osed)		

Page **1** of **4**



PLANNING REPORT

4 LOT SUBDIVISION, BALANCE LOT AND ROAD LOT LOT 200, PIPE CLAY DRIVE, GEORGE TOWN

April 2025



LAND SURVEYING | TOWN PLANNING | PROJECT MANAGEMENT

Job Number: L220727

Prepared by: James Stewart (james@novaland.com.au)

Senior Town Planner

Rev. no	Description	Date
1	FINAL	02/04/2025



Land Surveying | Town Planning | Project Management

w novaland.com.au

e info@novaland.com.au

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Launceston

156 George Street Launceston 7250 **p** (03) 6709 8116

Hobart

Rear studio, 132 Davey Street Hobart 7000 **p** (03) 6227 7968

LAND SURVEYING | TOWN PLANNING | PROJECT MANAGEMENT

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	2.2	Existing Use & Development	
	2.3	Access & Transport	
	2.4	Services	
		Surrounding Area	
	2.5	ect Description	
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		ning Assessment	
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LAND SURVEYING | TOWN PLANNING | PROJECT MANAGEMENT

1. Introduction

This report has been prepared in support of a planning permit application under Section 57 of the *Land Use Planning and Approval Act 1993* (the 'Act') to develop land at Lot 200, Pipe Clay Drive, George Town (the 'subject site').

The application seeks to undertake a four (4) lot subdivision of the existing title, while creating a road lot for frontage, and retaining a balance lot.

This report should be read in conjunction with the subdivision proposal plan, submitted as an annexure to this application.

2. Site Analysis

2.1 Site Summary

Address	Lot 200, Pipe Clay Drive, George Town		
Property ID	2816863		
Title	151955/200		
Land area	1.9ha		
Planning Authority	George Town Council.		
Covenant/Easements	Section 71 Agreement		
Existing Access	Pipe Clay Drive (Council maintained road)		
Planning Controls			
_			
Zone	General Residential Zone		
Zone General Overlay	NA		
General Overlay	NA		
General Overlay	 Bushfire Prone Areas Overlay Airport Obstacle Limitation Area. 		
General Overlay Overlays	 Bushfire Prone Areas Overlay Airport Obstacle Limitation Area. 		
General Overlay Overlays Existing services and infr	Bushfire Prone Areas Overlay Airport Obstacle Limitation Area. astructure		

PLANNING REPORT - LOT 200, PIPE CLAY DRIVE, GEORGE TOWN

NOVALAND.COM.AU | PAGE 3

LAND SURVEYING | TOWN PLANNING | PROJECT MANAGEMENT

2.2 Existing Use & Development

The site is currently vacant with no use or development.

2.3 Access & Transport

Access to the site is via Pipe Clay Drive, which abuts the western property boundary. It is expected that the site will be developed by extending Pipe Clay Drive to the east. The shape of the site ensures a future road link will be provided to the north as part of a future subdivision.







Figure 2 – Pipe Clay Drive, looking west from the site.

2.4 Services

The subject site is capable of connecting to reticulated services. A rare servicing report has been submitted with the application.

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2.5 Surrounding Area

The subject site is located within an established residential area. Land to the north, south, and west is within the General Residential Zone, and includes a combination of single and multiple dwellings. Land to the east is within the Low Density Zone.



Figure 3 - Aerial view of surrounding area and existing uses

3. Project Description

Planning approval is sought for a proposed four (4) lot subdivision, plus balance lot and road lot of the subject site. Details of the subdivision are below:

Lot Number:	Lot Size:	Frontage
Lot 1	613m ²	18m
Lot 2	613m ²	18m
Lot 3	563m ²	18m
Lot 4	563m ²	18m

A balance lot will be established, which will provide for future subdivision.

PLANNING REPORT - LOT 200, PIPE CLAY DRIVE, GEORGE TOWN

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4. Planning Assessment

4.1 Planning Scheme Zone Assessment

The site is currently within the General Residential Zone (GRZ) of the Tasmanian Planning Scheme.



Figure 4 - Zoning map of subject site and surrounding area.

Use Classification:

Not applicable. Clause 6.2.6 of the scheme states that a development application for subdivision does **not** need to be categorised into one of the use classes.

8.0 General Residential Zone

The purpose of the General Residential Zone is:

- 8.1.1 To provide for residential use or development that accommodates a range of dwelling types where full infrastructure services are available or can be provided.
- 8.1.2 To provide for the efficient utilisation of available social, transport and other service infrastructure.
- 8.1.3 To provide for non-residential use that:
 - (a) primarily serves the local community; and
 - (b) does not cause an unreasonable loss of amenity through scale, intensity, noise, activity outside of business hours, traffic generation and movement, or other off site impacts.

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8.1.4 To provide for Visitor Accommodation that is compatible with residential character.

Response

The proposed use and development does not present a conflict to the purpose of the zone. The land provides four lots within a residential environment. Each lot is large enough to provide for a single dwelling.

(b) is provided with appropriate access to a road;

(a) has an area and dimensions appropriate for use and development

8.3 Use Standards

Not applicable. Use standards are not applicable to the proposed subdivision.

8.6 Development Standards for Subdivision

That each lot:

in the zone;

8.6.1 Lot design

Objective:

(c) contains areas which are suitable for development appropriate to the zone purpose, located to avoid natural hazards; and(d) is orientated to provide solar access for future dwellings.						
	•	Performance Criteria				
Acceptable So	lutions					
A1		P1				
Each lot, or a lot proposed in a plan of subdivision, must: (a) have an area of not less than 450m² and: i. be able to contain a minimum area of 10m x 15m with a		Each lot, or a lot proposed in a plan of subdivision, must have sufficient useable area and dimensions suitable for its intended use, having regard to:				
		(a) the relevant requirements for development of buildings on the lots;				
	nt not steeper than 1 in 5,	(b) the intended location of buildings on the lots;				
	a. all setbacks required by	(c) the topography of the site;				
	use 8.4.2 A1, A2 and A3, d 8.5.1 A1 and A2; and	(d) the presence of any natural hazards;				
b. eas	b. easements or other title restrictions that limit or	(e) adequate provision of private open space; and				
res	trict development; and	(f) the pattern of development existing				
with th	g buildings are consistent e setback required by 8.4.2 A1, A2 and A3, and and A2;	on established properties in the area.				
	d for public use by the council or a State					
(c) be require	d for the provision of					

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Utilities; or

(d) be for the consolidation of a lot with another lot provided each lot is within the same zone.

Response:

A1 Complies.

a) Each lot has an area larger than 450m^2 . Each lot is capable of accommodating a $10\text{m} \times 15\text{m}$ building envelope. The building envelope is clear of any easements and can comply with the setback requirements outlined under clause 8.4.2.

A2

Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a frontage not less than 12m.

P2

Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must be provided with a frontage or legal connection to a road by a right of carriageway, that is sufficient for the intended use, having regard to:

- (a) the width of frontage proposed, if any;
- (b) the number of other lots which have the land subject to the right of carriageway as their sole or principal means of access;
- (c) the topography of the site;
- (d) the functionality and useability of the frontage;
- (e) the ability to manoeuvre vehicles on the site; and
- (f) the pattern of development existing on established properties in the area,

and is not less than 3.6m wide.

Response:

A2 Complies.

Each lot is provided with 18m of road frontage. Pipe Clay Drive will be extended for 40m, ensuring that there is legal access for each lot.

А3

Each lot, or a lot proposed in a plan of subdivision, must be provided with a vehicular access from the boundary of the lot to a road in accordance with the

P2

Each lot, or a lot proposed in a plan of subdivision, must be provided with reasonable vehicular access to a boundary of a lot or building area on the lot, if any,

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requirements of the road authority.	having regard to:
	(a) the topography of the site;
	(b) the distance between the lot or building area and the carriageway;
	(c) the nature of the road and the traffic;
	(d) the anticipated nature of vehicles likely to access the site; and
	(e) the ability for emergency services to access the site.

A3 Complies

Each lot will be provided with legal access to a road.

A4

Any lot in a subdivision with a new road, must have the long axis of the lot between 30 degrees west of true north and 30 degrees east of true north.

P4

Subdivision must provide for solar orientation of lots adequate to provide solar access for future dwellings, having regard to:

- (a) the size, shape and orientation of the lots:
- (b) the topography of the site;
- (c) the extent of overshadowing from adjoining properties;
- (d) any development on the site;
- (e) the location of roads and access to lots; and
- (f) the existing pattern of subdivision in the area.

Response:

A4 Complies.

Each lot is oriented with a northerly aspect.

8.6.2 Roads

Objectiv	e: That the arrangement of new roads within a subdivision provides for:
	 (a) safe, convenient and efficient connections to assist accessibility and mobility of the community;
	(b) the adequate accommodation of vehicular, pedestrian, cycling and public transport traffic; and
	(c) the efficient ultimate subdivision of the entirety of the land and of

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surrounding land	
Acceptable Solutions	Performance Criteria
A1	P1
The subdivision includes no new roads.	The arrangement and construction of roads within a subdivision must provide an appropriate level of access, connectivity, safety and convenience for vehicles, pedestrians and cyclists, having regard to:
	(a) any road network plan adopted by the council;
	(b) the existing and proposed road hierarchy;
	(c) the need for connecting roads and pedestrian and cycling paths, to common boundaries with adjoining land, to facilitate future subdivision potential;
	(d) maximising connectivity with the surrounding road, pedestrian, cycling and public transport networks;
	(e) minimising the travel distance between key destinations such as shops and services and public transport routes;
	(f) access to public transport;
	(g) the efficient and safe movement of pedestrians, cyclists and public transport;
	(h) the need to provide bicycle infrastructure on new arterial and collector roads in accordance with the Guide to Road Design Part 6A: Paths for Walking and Cycling 2016;
	(i) the topography of the site; and
	(j) the future subdivision potential of any balance lots on adjoining or adjacent land

Response:

Relies on performance criteria, due to the extension of Pipe Clay Drive. The road extension is extremely minimal. The extension connects to an existing road, and provides opportunity for a further extension to the east. The road will be developed in accordance with Council

PLANNING REPORT - LOT 200, PIPE CLAY DRIVE, GEORGE TOWN

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standards as per an approved engineering design.

The performance criteria is satisfied.

8.6.1 Services

Objective:	That the subdivision of land provides services for the future use and development of the land.		
Acceptable Solutions		Performance Criteria	
A1		P1	
Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a connection to a full water supply service.		A lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a connection to a limited water supply service, having regard to:	
		(a) flow rates;	
		(b) the quality of potable water;	
		(c) any existing or proposed infrastructure to provide the water service and its location;	
		(d) the topography of the site; and	
		(e) any advice from a regulated entity.	
A2		P2	
Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a connection to a reticulated sewerage system.		No Performance Criterion.	
A3		Р3	
subdivision, exc space, a ripario Utilities, must b	ot proposed in a plan of cluding for public open in or littoral reserve or be capable of connecting mwater system.	Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must be capable of accommodating an on-site stormwater management system adequate for the future use and development of the land, having regard to:	
		(a) the size of the lot;	
		(b) topography of the site;	
		(c) soil conditions;	
		(d) any existing buildings on the site;	
		(e) any area of the site covered by	

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impervious surfaces; and	
(f) any watercourse on the land.	

Response:

A1 Complies

Each lot is provided with a water connection to the reticulated water network. A new water metre will be provided for each lot.

A2 Complies

Each lot is provided with a sewer connection to the TasWater reticulated sewer network.

A3 Complies

Each lot will be provided with a connection to the reticulated stormwater system.

4.2 Planning Scheme Code Assessment

C2.0 Parking and Sustainable Transport Code

Each lot provides ample room for onsite parking and manoeuvring. The provisions of the code are achieved. Future dwelling applications will be assessed against the code.

5. Conclusion

The application before Council is for a 4 lot subdivision of residentially zoned land. The subdivision will create 4 lots, a balance lot and road lot.

The proposal seeks to extend Pipe Clay Drive into the site, providing new service connections for each lot.

The subdivision is considered to comply with relevant zone standards under the General Residential Zone, and any relevant codes.

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PLANNING REPORT - LOT 200, PIPE CLAY DRIVE, GEORGE TOWN

BUSHFIRE HAZARD REPORT

4 LOT SUBDIVISION, BALANCE LOT & ROAD LOT LOT 200, PIPE CLAY DRIVE, GEORGE TOWN March 2025



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Job number: L220727

NL00925

Prepared by: James Stewart

Town Planner & Bushfire Hazard Practitioner BFP 157

Rev. no	Description	Date
1	FINAL	31st March 2025

Disclaimer

This report deals with the potential bushfire risk only, all other statutory assessments sit outside of this report. This report is not to be used for future or further development on the site, other then what has been specifically provided for in the certified plans attached. Nova Land Consulting Pty Ltd accepts no responsibility to any purchaser, prospective purchaser or mortgagee of the property who in any way rely on this report. This report sets out the owner's requirements and responsibilities and does not guarantee that buildings will survive in the event of a bushfire event. If characteristics of the property change or are altered from those which have been identified, the BAL classification may be different to that which has been identified as part of this report. In this event the report is considered to be void.

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Executive Summary

Development of a 4-lot subdivision is proposed for lot 200, Pipe Clay Drive, George Town. The 4 lot subdivision includes 4 residential lots, a balance lot and a road lot. The road lot will provide frontage for lots 1-4, while the balance lot will be subdivided for additional residential lots at a future date.

The site is entirely within the boundary of a bushfire prone area shown on an overlay planning scheme map for the *Tasmanian Planning Scheme –George Town*.

A bushfire event at this site or within the immediate area is likely to impact on future buildings at this location and subject development to considerable radiant heat and ember attack.

A bushfire hazard management plan has been prepared and is provided as an appendix to this report. The plan sets out the owner's responsibilities to maintain a managed area for each lot, taking into consideration the relevant requirements under Australian Standard AS3959-2018 Construction of buildings in bushfire-prone areas.

Conclusions and recommendations

- a) Hazard management areas meeting the minimum requirements of BAL 19 can be achieved for lots 1-4 & Lot 101.
- Future dwellings on lots 1-4 must maintain hazard management areas and follow recommendations as outlined in the Bushfire Hazard Management Plan and section 5.2 of this report. Maintenance of these hazard management areas is to be in perpetuity.
- c) Proposed roads and private access must be in compliance with Table C13.1, Element A, & Table C13.2 as outlined in section 5.3 of this report.
- d) Lots 1-4, and 100, are to be treated as a hazard management area in accordance with section 5.2 of this report. Maintenance of all hazard management areas must be in perpetuity.
- e) Prior to the sealing of the final plan for the subdivision;
 - The lots are to be cleared and maintained as a hazard management area as shown on the BHMP.
 - ii. Hazard management areas on adjoining lots are to be cleared and managed as low threat vegetation as shown on the BHMP.
 - iii. Any dead end or cul de sac roads must provide a temporary gravel turning head with a 12m outer radius.
- f) The owner is to enter into a Part 5 agreement that:
 - i. Requires a 14m wide hazard management buffer as shown on the BHMP over the balance lot 101. This agreement is via section 71 of the *land use planning and approvals act 1993*.

Signed:

Author: James Stewart

Position: Town Planner and Accredited Bushfire Practitioner BFP 157

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1. Introduction

This Bushfire Hazard Report and Bushfire Hazard Management Plan (BHMP) has been prepared in support of a proposed 4 lot subdivision at lot 200 Pipe Clay Drive, George Town.

1.1 The subject site

The following is a summary of the application information:

Property address	Lot 200, Pipe Clay Drive, George Town.
Certificate of title	CT151955-200
Property ID (PID)	2816863
Property Owners	Zinger Developments Pty Ltd.
Existing Use and Development	Vacant Land.
Zoning	General Residential Zone
Planning Scheme	Tasmanian Planning Scheme – George Town
ldentified on a Bushfire Overlay Map	Yes
Proposed Works	4 Lot Subdivision and road extension.
Water Supply	Reticulated Water Supply.
Vehicular Access	Pipe Clay Drive (Council maintained)

1.2 Bushfire Assessment

A bushfire assessment is a process of analysing information about the potential impacts on a proposed development that is likely to have in a bushfire hazard scenario. A 'bushfire-prone area' is an area where a bushfire event is likely to occur that may result in significant adverse impact on buildings and even lives. In Tasmania, most local Councils have a planning scheme overlay map that identifies bushfire-prone areas. Subdivision within a bushfire-prone area triggers the assessment of the Bushfire-Prone Areas Code under the planning schemes and subsequently requires assessment against the provisions of the Code. The assessment generally requires a BHMP to be provided as part of the application.

The bushfire assessment will determine the Bushfire Attack Level (BAL) for the future lots, which measures the possible exposure of a building to bushfire hazard. The BAL is assessed in accordance with Australian Standard AS 3959-2018 construction of buildings in bushfire-prone areas.

The subject site falls within the municipal area of George Town Council. The assessment has been undertaken in accordance with C13.0 Bushfire-Prone Areas Code and to accompany a subdivision application under the *Tasmanian Planning Scheme - George Town*.

Section 6 of the report provides an assessment of compliance against the code. The bushfire assessment is required to understand the fuel management requirements for the subject site and to demonstrate that new buildings within each lot can be constructed to minimum BAL19 level under the *Building Act 2016*.

1.3 References

The following documents were referred in the preparation of, and should be read in connection with, this bushfire assessment report:

- C13.0 Bushfire-Prone Areas Code Tasmanian Planning Scheme.
- Tasmanian State Government, Director's Determination Bushfire Hazard Areas
- Tasmanian Planning Scheme George Town
- Australian Standard, AS3959-2018 construction of buildings in bushfire-prone areas.
- Building Act 2016
- Tasmanian Fire Service, Bushfire Hazard Advisory Notes

2. Site Description

2.1 Site context

The subject site is located at lot 200, Pipeclay Drive, George Town. The land has an area of 1.9ha. The proposed subdivision is located in the western end of the site, with a balance lot expected to be developed at a later stage.



Figure 1 - Aerial view of the subject site (source: The LIST Map)

2.2 Planning controls

The site is within the municipal area of George Town Council. Therefore, the planning instrument is the Tasmanian Planning Scheme – George Town (The Scheme).

The subject site is within the General Residential Zone. Land to the north, south, and west is within the General Residential Zone, while land to the east is zoned Low Density Residential.

The subject site falls within the Bushfire-Prone Areas Overlay.



Figure 2 - Zoning map of subject site.

3. The Proposal

It is proposed to subdivide the subject site into 4 residential lots, a road lot, and retain a balance lot. Lots are varied in size, however generally typical of sizes seen in the General Residential Zone. Lots are between 563m2² and 613m². The balance lot will be 1.6ha.

All lots provide frontage to a proposed Council maintained road. There are no cul de sacs proposed as part of the subdivision design. There will be a balance lot retained within the General Residential Zone.

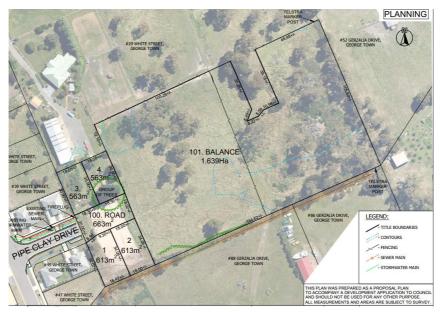


Figure 3 - Extract of proposal plan for subdivision

4. Bushfire Site Assessment

4.1 Vegetation Analysis

The TasVeg map 4.0 provides general information indicating potential bushfire prone vegetation in the area.

The mapping shows that the land surrounding the subject site is mixed classifications, however consists of residential use and development. Land to the north west and west is typical of urban lots, which are entirely managed and contain a single dwelling. Land to the north, south and east consist of larger lifestyle style blocks, which contain a dwelling.

The larger lifestyle blocks contain a managed area around the house, with the remainder of the lot normally classified as grassland.

The rear of lot 101 contains a section of vegetation classified as woodland. The woodland extended over into the rear of 52 Gerzalia Drive. The woodland was classified as large eucalypts with a generally grassy understory. The canopy cover was open with separation provided between tree canopies.



Figure 4 - Extract of vegetation mapping from TasVeg 4.0

FAG	Agricultural Land
FUR	Urban Areas

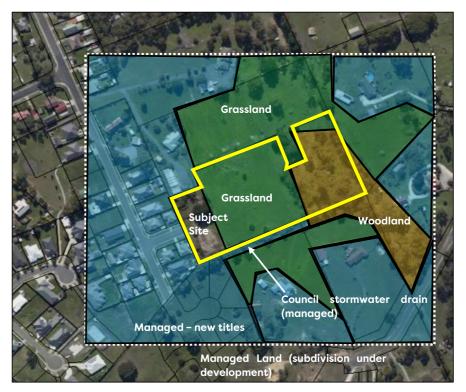


Figure 5 - Vegetation analysis within 120m of subject site

4.2 Slope Analysis

Figure 6 below shows that the land sits at the 20m AHD contour. There is no evident slope or fall across the site, or underneath the classified vegetation.

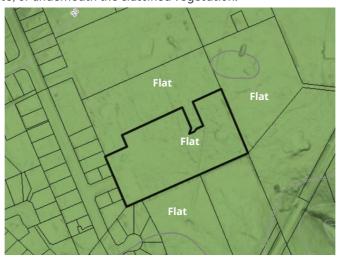


Figure 6 - Slope under bushfire prone vegetation

4.3 Photos



Figure 7 - Looking south from lot 1, new managed residential lots adjoining the site.



Figure 8 – Looking north over the area of lots 1-4.



Figure 9 - Looking south east over the new Council drain. Grassland classified as the vegetation beyond the drain. Drain 2m wide



Figure 10 – Looking west from lot 4. Grassland over the balance of the site.



Figure 11 - Looking west from the rear of lot 101. Figure 12 - Existing hydrant at the end of Pipe Small area of Woodland on the adjoining Clay Drive. property.



5. Bushfire Protection Measures

5.1 BAL Rating and Risk Assessment

The purpose of the BAL rating assessment in this report is to identify the minimum separation between the bushfire prone vegetation to a building area within each proposed lot.

The assessment aims to achieve the minimum requirements of **BAL 19**. It also demonstrates the required protection area associated with future residential development.

The definition of BAL 19 and BAL 12.5 is highlighted as follows:

Bushfire attack level (BAL)	Predicted bushfire attack and exposure level
BAL-LOW	Insufficient risk to warrant specific construction requirements
BAL-12.5	Ember attack, radiant heat below 12.5kW/m²
BAL-19	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 12.5-19kW/m²
BAL-29	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 19-29kW/m²
BAL-40	Increasing ember attack and burning debris ignited by windborne embers together with increasing heat flux between 29-40kW/m²
BAL-FZ	Direct exposure to flames radian heat and embers from the fire front.

The vegetation separation and slope is shown for each lot in the table below.

Lot1	North	East	South	West
Vegetation within 100m of lot	Om-100m+ Managed	Om-18m Managed 18m-32m Managed (via section 71 agreement) 32m-100m+ Grassland.	O-100m+ Managed	Om-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	NA	NA
BAL 19 Setbacks	NA	NA	NA	NA
BAL 12.5 Setbacks	NA	NA	NA	NA

Lot 2	North	East	South	West
Vegetation within 100m of lot	Om-100m+ Managed	Om-14m Managed (via section 71 agreement) 14m-100m+ Grassland.	O-8m Managed 8m-10m Managed (SW drain) 10m-100m+ Grassland	Om-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	NA	8m	NA
BAL 12.5 Setbacks	NA	NA	12m	NA

Lot 3	North	East	South	West
Vegetation within 100m of lot	Om-100m+ Managed	Om-18m Managed 18m-32m Managed (via section 71 agreement) 32m-100m+ Grassland.	O-100m+ Managed	Om-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	NA	NA
BAL 19 Setbacks	NA	NA	NA	NA
BAL 12.5 Setbacks	NA	NA	NA	NA

Lot 4	North	East	South	West
Vegetation within 100m of lot	Om-100m+ Managed	Om-14m Managed (via section 71 agreement) 14m-100m+ Grassland.	Om-60m Managed 60m-100m+ Grassland	Om-100m+ Managed
Slope (degrees, over 100m)	NA	Flat	Flat	NA
BAL 19 Setbacks	NA	NA	NA	NA
BAL 12.5 Setbacks	NA	NA	NA	NA

Lot 101	North	East	South	West
Vegetation within 100m of building area.	Om-10 Managed 10m-100m+ Grassland	Om-10 Managed 10m-100m+ Grassland	Om-10 Managed 10m-100m+ Grassland	Om-10 Managed 10m-100m+ Grassland
Slope (degrees, over 100m)	Flat	Flat	Flat	Flat
BAL 19 Setbacks	10m	10m	10m	10m
BAL 12.5 Setbacks	14m	14m	14m	14m

5.2 Hazard Management Areas

As outlined in C13.0 *Bushfire-Prone Areas Code*, a Bushfire Hazard Management Area (BHMA) will be managed in accordance with the provided plan. Existing vegetation needs to be strategically modified and then maintained within this area in accordance with the Bushfire Hazard Management Plan (BHMP) to achieve the following outcomes:

- to reduce the quantity of windborne sparks and embers reaching buildings;
- to reduce radiant heat at the building; and
- to halt or check direct flame attack.

The BHMA will be developed within and up to the property boundaries to provide access to a fire front for firefighting, which is maintained in a minimal fuel condition and in which there are no other hazards present that will significantly contribute to the spread of a bushfire.

The BHMA will be achieved by adoption of the following strategies:

Maintenance of Fuel Management Areas

It is the responsibility of the property owner to maintain and manage the landscaping in accordance with the BHMP.

This area is to be regularly managed and maintained. Landscaping in this area will be minimised:

- Grass maintained to a maximum height of 100mm, with fuel loads kept to less than 2 tonnes per hectare which will be maintained at this level.
- Trees and any undergrowth will be clear of (BCA) class 1 9 buildings on all sides.
- All undergrowth and understorey of trees (up to 2m) will be removed within the bushfire hazard management area.
- Pathways to 1 metre surrounding the buildings and landscaping material, will be non-combustible (stone, pebbles etc.).
- The total shrub cover will be a maximum of 20% of the available area.
- There will be a clear space from the buildings of at least four (4) times the mature height of any shrubs planted.
- Shrubs will not be planted in clumps, this is to avoid build-up of debris and dead vegetation materials.

Landscaping

- vegetation along the pathways to comprise non-flammable style succulent ground cover or plants (avoid plants that produce fine fuel which is easily ignited, plants that produce a lot of
 - debris, trees and shrubs which retain dead material in branches or which shed long strips of bark, rough fibrous bark or drop large quantities of leaves in the spring and summer, vines on walls or tree canopies which overhang roofs)
- timber woodchip and flammable mulches cannot be used and brush and timber fencing should be avoided where possible

5.3 Roads

Table C13.1 - Roads must be constructed as per the following table. All roads will be taken over by Council as the Road Authority at the completion of the relevant stage. A temporary turning head will be provided at the end of Pipe Clay Drive.

Ele	ement	Requirement
Α.	Roads	Unless the development standards in the zone require a higher standard, the following apply: (a) two-wheel drive, all-weather construction; (b) load capacity of at least 20t, including for bridges and culverts; (c) minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road; (d) minimum vertical clearance of 4m; (e) minimum horizontal clearance of 2m from the edge of the carriageway; (f) cross falls of less than 3 degrees (1:20 or 5%); (g) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; (h) curves have a minimum inner radius of 10m; (i) dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7 meters in width; (j) dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and
		carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with <i>Australian Standard AS1743-2001 Road signs-Specifications</i> .

5.4 Property Access

Private access roads must be constructed as per the following table C13.2. Crossovers will need to be provided as part of the subdivision works, however private access for future dwellings does not need to completed as part of the subdivision. As the lots are within the general residential zone, all property access will be less than 30m to a fire fighting water point. Lot 101 can be developed with a dwelling within 120m of a hydrant, noting that there is intent to further subdivide lot 101.

Table C13.2 Standards for property access

Ele	ement	Requirement
Α.	Property access length is less than 30m; or access is not required for a fire appliance to access a fire fighting water point.	There are no specified design and construction requirements.
В.	Property access length is 30m or greater; or access is required for a fire appliance to a fire	The following design and construction requirements apply to property access: (a) all-weather construction; (b) load capacity of at least 20t, including for bridges and culverts;

	fighting water point.	 (c) minimum carriageway width of 4m; (d) minimum vertical clearance of 4m; (e) minimum horizontal clearance of 0.5m from the edge of the carriageway; (f) cross falls of less than 3 degrees (1:20 or 5%); (g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle; (h) curves with a minimum inner radius of 10m; (i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and (j) terminate with a turning area for fire appliances provided by one of the following: (i) a turning circle with a minimum outer radius of 10m; or (ii) a property access encircling the building; or (iii) a hammerhead "T" or "Y" turning head 4m wide and 8m long.
C.	Property access length is 200m or greater.	The following design and construction requirements apply to property access: (a) the requirements for B above; and (b) passing bays of 2m additional carriageway width and 20m length provided every 200m.
D.	Property access length is greater than 30m, and access is provided to 3 or more properties.	The following design and construction requirements apply to property access: (a) complies with requirements for B above; and (b) passing bays of 2m additional carriageway width and 20m length must be provided every 100m.

5.5 Fire Fighting Water Supply

A firefighting water supply will be provided for the subdivision. The development will connect to the reticulated water supply. There is an existing hydrant to the west of lot 3, on Pipe Clay Drive.

Table C13.4 Reticulated water supply for firefighting.

Ele	ement	Requirement
A.	Distance between building area to be protected and water supply.	The following requirements apply: (a) the building area to be protected must be located within 120m of a fire hydrant; and (b) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.
В.	Design criteria for fire hydrants	The following requirements apply: (a) fire hydrant system must be designed and constructed in accordance with TasWater Supplement to Water Supply Code of Australia WSA 03 – 2011-3.1 MRWA 2 nd Edition; and (b) fire hydrants are not installed in parking areas.
C.	Hardstand	A hardstand area for fire appliances must be: (a) no more than 3m from the hydrant, measured as a hose lay; (b) no closer than 6m from the building area to be protected; (c) a minimum width of 3m constructed to the same standard as the carriageway; and (d) connected to the property access by a carriageway equivalent to the standard of the property access.

6. Bushfire-Prone Areas Code Assessment

An assessment of C13.0 Bushfire-Prone Areas Code under the Scheme is provided as follows.

C13.6 Development Standards for Subdivision

C13.6.1 Subdivision: Provision of hazard management areas

Objective

Subdivision provides for hazard management areas that:

- facilitate an integrated approach between subdivision and subsequent building on a
- provide for sufficient separation of building areas from bushfire-prone vegetation to (b) reduce the radiant heat levels, direct flame attack and ember attack at the building area: and
- provide protection for lots at any stage of a staged subdivision. (c)

Acceptable Solution. **Performance Criteria**

- (a) TFS or an accredited person certifies that there is an insufficient increase in risk from bushfire to warrant the provision of hazard management areas as part of a subdivision; or
- (b) The proposed plan of subdivision:
 - shows all lots that are within or partly within a bushfire-prone area, including those developed at each stage of a staged subdivision;
 - shows the building area for each
 - iii. shows hazard management areas between bushfire-prone vegetation and each building area that have dimensions equal to, or greater than, the separation distances required for BAL 19 in Table 2.6 of Australian Standard AS3959:2018 Construction of buildings in bushfire-prone areas,
 - is accompanied by a bushfire hazard management plan that addresses all the individual lots and that is certified by the TFS or accredited person, showing hazard management areas equal to, or greater than the separation distances required for BAL 19 in Table 2.6 of Australian Standard AS3959:2018 Construction

- proposed plan of subdivision shows adequate hazard management areas in relation to the building areas shown on lots within a bushfire-prone area, having regard
 - a) the dimensions of hazard management areas:
 - b) a bushfire risk assessment of each lot at any stage of staged subdivision;
 - c) the nature of the bushfire-prone vegetation including the type, fuel load, structure and flammability;
 - d) the topography, including site slope;
 - e) any other potential forms of fuel and ignition sources;
 - separation distances from the bushfire-prone vegetation not unreasonably restricting subsequent development:
 - g) an instrument that will facilitate management of fuels located on land external to the subdivision; and
 - h) any advice from the TFS.

buildings in bushfire-prone Areas, and

(c) If hazard management areas are to be located on land external to the proposed subdivision the application is accompanied by the written consent of the owner of that land to enter into an agreement under section 71 of the Act that will be registered on the title of the neighbouring property providing for the affected land to be managed in accordance with the bushfire hazard management plan.

Response:

Complies with the acceptable solution.

- a) Lot 100, road lot is assessed as an insufficient increase in risk.
- b) The proposed plan of subdivision complies with part b) of the acceptable solution.
 - i. The plan of subdivision shows all lots that are within a bushfire prone area.
 - ii. A 10m x 15m building area can be provided on each lot, within an area subject to
 - Hazard management areas have been shown. Each lot can provide a building area that meets a minimum BAL 19 rating.
 - iv. A BHMP has been provided and accompanies the application. The BHMP demonstrates that separation distances not less than BAL 19 can be achieved.
- c) A section 71 agreement has been recommended over the balance lot. There is no agreement proposed over land external to the subdivision.

C13.6.2 Subdivision: Public and firefighting access

Objective

Access roads to, and the layout of roads, tracks and trails, in a subdivision:

- (a) allow safe access and egress for residents, fire fighters and emergency service personnel;
- provide access to the bushfire-prone vegetation that enables both property to be defended when under bushfire attack and for hazard management works to be undertaken;
- (c) are designed and constructed to allow for fire appliances to be manoeuvred;
- (d) provide access to water supplies for fire appliances; and
- (e) are designed to allow connectivity, and where needed, offering multiple evacuation points.

Acceptable solutions	Performance Criteria.	
A1	P1	
 a) TFS or an accredited person certi- fies that there is an insufficient in- 	A proposed plan of subdivision shows access and egress for residents, fire-fighting vehicles and emergency service	

- crease in risk from bushfire to warrant specific measures for public access in the subdivision for the purposes of fire fighting; or
- A proposed plan of subdivision showing the layout of roads and fire trails, and the location of property access to building areas, is included in a bushfire hazard management plan that
 - (i) demonstrates proposed roads will comply with Table C13.1, proposed property accesses will comply with Table C13.2 and proposed fire trails will comply with Table C13.3 and
 - (ii) is certified by the TFS or an accredited person

personnel to enable protection from bushfires, having regard to:

- a) appropriate design measures, including:
 - i) two way traffic;
 - ii) all weather surfaces
 - iii) height and width of any vegetation clearances
- iv) load capacity
- v) provision of passing bays
- vi) traffic control devices
- vii) geometry, alignment and slope of roads, tracks and trails
- viii) use of through roads to provide for connectivity
- ix) limits on the length of cul-de-sacs and dead-end roads
- x) provision of turning areas
- xi) provision for parking areas
- xii) perimeter access; and
- xiii) fire trails
- b) the provision of access to
 - i) bushfire-prone vegetation to permit the undertaking of hazard management works; and
 - ii) fire fighting water supplies;

and any advice from the TFS.

Responses

Complies with the acceptable solution. The BHMP demonstrates that the layout of roads will comply with Table C13.1. Any private property accesses will comply with C13.2. There are no proposed fire trails. The plan is certificated by an accredited person.

C13.6.3 Subdivision: Provision of water supply for fire fighting purposes

Objective

Adequate, accessible and reliable water supply for the purposes of fire fighting can be demonstrated at the subdivision stage and allow for the protection of life and property associated with the subsequent use and development of bushfire-prone areas.

Acceptable solutions	Performance Criteria.
A1	P1
In areas serviced with reticulated water by the water corporation: (a) TFS or an accredited person certifies that there is an insufficient increase in risk from bushfire to warrant the provision of a water supply for fire fighting purposes;	No performance criteria.

(b)	A proposed plan of subdivision
	showing the layout of fire hydrants,
	and building areas, is included in a
	bushfire hazard management plan
	approved by the TFS or accredited
	person as being compliant with
	Table C13.4; or

(c)	A bushfire hazard management plar certified by the TFS or an accredited
	,
	person demonstrates that the
	provision of water supply for fire
	fighting purposes is sufficient to
	manage the risks to property and
	lives in the event of a bushfire.

Response:

Complies with the acceptable solution. The BHMP shows the location of the existing hydrant on Pipe Clay Drive. This hydrant provides protection to building areas on each lot.

7. Conclusions and Recommendations

The proposal seeks planning approval for a 4-lot subdivision, balance lot and road lot of land at Lot 200, Pipe Clay Drive, George Town.

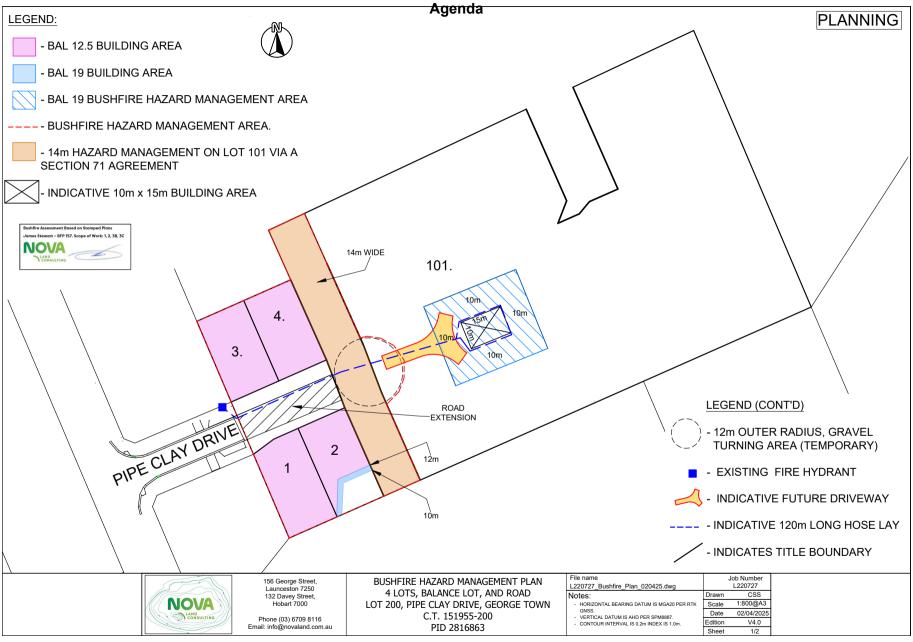
The site falls within a bushfire prone area as shown on a planning scheme overlay.

All of the lots have demonstrated that a building area can be provided in an area meeting the requirements of BAL 19.

The report provides the following recommendations:

- a) Hazard management areas meeting the minimum requirements of BAL 19 can be achieved for lots 1-4 & Lot 101.
- b) Future dwellings on lots 1-4 must maintain hazard management areas and follow recommendations as outlined in the Bushfire Hazard Management Plan and section 5.2 of this report. Maintenance of these hazard management areas is to be in perpetuity.
- c) Proposed roads and private access must be in compliance with Table C13.1, Element A, & Table C13.2 as outlined in section 5.3 of this report.
- d) Lots 1-4, and 100, are to be treated as a hazard management area in accordance with section 5.2 of this report. Maintenance of all hazard management areas must be in perpetuity.
- e) Prior to the sealing of the final plan for the subdivision;
 - The lots are to be cleared and maintained as a hazard management area as shown on the BHMP.
 - Hazard management areas on adjoining lots are to be cleared and managed as low threat vegetation as shown on the BHMP.
 - iii. Any dead end or cul de sac roads must provide a temporary gravel turning head with a 12m outer radius.
- f) The owner is to enter into a Part 5 agreement that:
 - i. Requires a 14m wide hazard management buffer as shown on the BHMP over the balance lot 101. This agreement is via section 71 of the *land use planning and approvals act 1993*.

Annexure 1 – Bushfire Hazard Management Plan



Bushfire Assessment Based on Stamped Plans
James Stewart - BFP 157, Scope of Work: 1, 2, 38, 3C

Hazard Management and Protection Area Requirements:

Hazard management and protection measures requires:

Roads

Unless the development standards in the zone require a higher standard, the following apply:

- (a) two-wheel drive, all-weather construction;
- (b) load capacity of at least 20t, including for bridges and culverts;
- (c) minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road;
- (d) minimum vertical clearance of 4m;
- (e) minimum horizontal clearance of 2m from the edge of the carriageway;
- (f) cross falls of less than 3 degrees (1:20 or 5%);
- (g) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads,
- (h) curves have a minimum inner radius of 10m;
- (i) dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7 meters in width;
- (j) a gravel temporary turning head is to be provided on lot 101, at the confusion of lot 100 road lot. The temporary turning head must provide an outer radius turning head of 12m.
- (k) carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with Australian Standard AS1743-2001 Road signs-Specifications.

Reticulated Water Supply for Fire Fighting

The following requirements apply:

- (a) the building area to be protected must be located within 120m of a fire hydrant; and
- (b) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.

The following requirements apply:

- (a) fire hydrant system must be designed and constructed in accordance with TasWater Supplement to Water Supply Code of Australia WSA
- 03 2011-3.1 MRWA 2nd Edition; and
- (b) fire hydrants are not installed in parking areas

Hazard Management - Vegetation Management

- Lots 1-4 in their entirety are to be treated and maintained as a bushfire hazard management area.
- Vegetation in the hazard management area (as dimensioned and shown), including those areas shown to be part of a section 71
 agreement on lot 101, is to managed and maintained in a minimum fuel condition (refer to section 5.2 of Bushfire Hazard Management
 Report).

Notes:

- Refer plans Proposal Plan, Proposed subdivision 4 lots, balance lot and road lot 200, Pipe Clay Drive, George Town, CT151955/200, dated 14/02/2025
- 2. All future works to comply with Director's Determination Bushfire Hazard Areas (v1.2). Table 1, 2, 3 and 4.
- 3. Plan to be read in conjunction with Bushfire Hazard Management Report dated 31/03/25

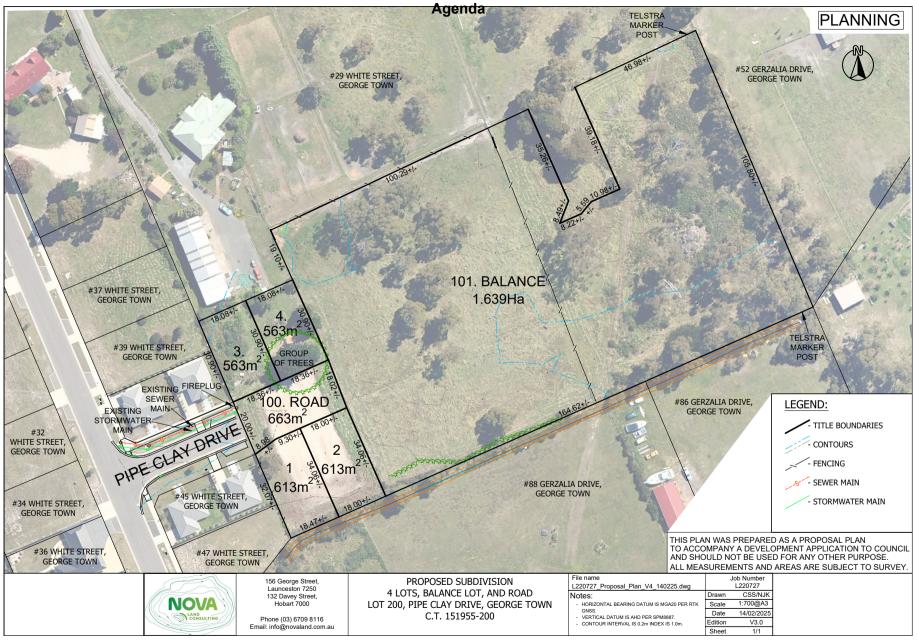


156 George Street, Launceston 7250 132 Davey Street, Hobart 7000

Phone (03) 6709 8116 Email: info@novaland.com.au BUSHFIRE HAZARD MANAGEMENT PLAN 4 LOTS, BALANCE LOT, AND ROAD LOT 200, PIPE CLAY DRIVE, GEORGE TOWN C.T. 151955-200 PID 2816863

File name L220727_Bushfire_Plan_020425.dwg		Job Number L220727
Notes:	Drawn	CSS
- HORIZONTAL BEARING DATUM IS MGA20 PER RTK	Scale	
GNSS VERTICAL DATUM IS AHD PER SPM8887	Date	02/04/2025
- CONTOUR INTERVAL IS 0.2m INDEX IS 1.0m.	Edition	V4.0
	Sheet	2/2

Annexure 2 – Subdivision Proposal Plans



Annexure 3 - Planning Certificate

BUSHFIRE-PRONE AREAS CODE

CERTIFICATE¹ UNDER S51(2)(d) LAND USE PLANNING AND APPROVALS ACT 1993

1. Land to which certificate applies

The subject site includes property that is proposed for use and development and includes all properties upon which works are proposed for bushfire protection purposes.

Street address: Lot 200, Pipeclay Drive, George Town

Certificate of Title / PID: CT151955/200, PID2816863

2. Proposed Use or Development

Description of proposed Use and Development:

4 lot subdivision, balance lot, road lot.

Applicable Planning Scheme:

Tasmanian Planning Scheme – George Town

3. Documents relied upon

This certificate relates to the following documents:

Title	Author	Date	Version
Bushfire Hazard Report	Nova Land Consulting	31/03/2025	1
Subdivision 4 lots, balance lot, and road.	Nova Land Consulting	14/02/2025	3
Bushfire Hazard Management Plan	Nova Land Consulting	02/03/2025	1

Planning Certificate from a Bushfire Hazard Practitioner v5.0

Page 1 of 4

¹ This document is the approved form of certification for this purpose and must not be altered from its original form.

	4 Nature of Contificate				
	4. Nature of Certificate				
The	The following requirements are applicable to the proposed use and development:				
	E1.4 / C13.4 - Use or developmen	nt exempt from this Code			
	Compliance test	Compliance Requirement			
\boxtimes	E1.4(a) / C13.4.1(a)	Insufficient increase in risk. Lot 100			
	E1.5.1 / C13.5.1 – Vulnerable Use	ae			
	Acceptable Solution	Compliance Requirement			
	E1.5.1 P1 / C13.5.1 P1	Planning authority discretion required. A proposal cannot be certified as compliant with P1.			
	E1.5.1 A2 / C13.5.1 A2	Emergency management strategy			
	E1.5.1 A3 / C13.5.1 A2	Bushfire hazard management plan			
	E1.5.2 / C13.5.2 – Hazardous Use	es es			
	Acceptable Solution	Compliance Requirement			
	E1.5.2 P1 / C13.5.2 P1	Planning authority discretion required. A proposal cannot be certified as compliant with P1.			
	E1.5.2 A2 / C13.5.2 A2	Emergency management strategy			
	E1.5.2 A3 / C13.5.2 A3	Bushfire hazard management plan			
\boxtimes	E1.6.1 / C13.6.1 Subdivision: Pro	vision of hazard management areas			
	Acceptable Solution	Compliance Requirement			
	E1.6.1 P1 / C13.6.1 P1	Planning authority discretion required. A proposal cannot be certified as compliant with P1.			
	E1.6.1 A1 (a) / C13.6.1 A1(a)	Insufficient increase in risk.			
\boxtimes	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all lots			

Consent for Part 5 Agreement

Planning Certificate from a Bushfire Hazard Practitioner v5.0

Page 2 of 4

\boxtimes	E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access		
	Acceptable Solution Compliance Requirement		
	E1.6.2 P1 / C13.6.2 P1	Planning authority discretion required. A proposal cannot be certified as compliant with P1.	
	E1.6.2 A1 (a) / C13.6.2 A1 (a)	Insufficient increase in risk.	
	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access complies with relevant Tables	

\boxtimes	E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes				
	Acceptable Solution Compliance Requirement				
	E1.6.3 A1 (a) / C13.6.3 A1 (a)	Insufficient increase in risk.			
\boxtimes	E1.6.3 A1 (b) / C13.6.3 A1 (b)	Reticulated water supply complies with relevant Table			
	E1.6.3 A1 (c) / C13.6.3 A1 (c)	Water supply consistent with the objective			
	E1.6.3 A2 (a) / C13.6.3 A2 (a)	Insufficient increase in risk.			
	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table.			
	E1.6.3 A2 (c) / C13.6.3 A2 (c)	Static water supply consistent with the objective			

5. Bu	shfire Hazard Practitioner			
Name:	James Stewart	Ph	one No:	0467 676 721
Postal Address:	PO BOX 8035, Trevallyn, TAS 7250	Email Address:	james@	⊉novaland.com.au
			ı	
Accreditati	on No: BFP - 157		Scope:	1, 2, 3B, 3C
6. Ce	rtification			
	at in accordance with the authority give the proposed use and development:	en under Pa	art 4A of	the Fire Service Act
7373 triat	the proposed use and development.			
	Is exempt from the requirement Bushf to the objective of all applicable standard	ards in the (Code, the	ere is considered to be an
	insufficient increase in risk to the use of specific bushfire protection measures,		nent from	i busnfire to warrant any
	The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate			
\boxtimes	is/are in accordance with the Chief Officer's requirements and compliant with the relevant Acceptable Solutions identified in Section 4 of this Certificate.			
	relevant Acceptable Columnia Identi	ilea ili occii	1011 4 01 11	nis Certificate.
Signed:				
certifier				
Name:	James Stewart	Date:	02/04/20	25
		L		
		Certificate	NII 00005	
		Number:	NL00925	
	(for Practition	er Use on	ıly)

Planning Certificate from a Bushfire Hazard Practitioner v5.0

Page 4 of 4

Annexure 4 - Form 55

CERTIFICATI ITEM	E OF QUALIFIED PERSON – A	SSES	SSABLE Section 321
To:	Zinger Developments Pty Ltd		Owner /Agent
	Lot 200, Pipe Clay Drive		Address Form 55
	George Town 7	253	Suburb/postcod∋
Qualified pers	on details:		
Qualified person:	James Stewart		
Address:	156 George Street		Phone No: 0467676721
		250	Fax No:
Licence No:	BFP-157 Email address	s: jam	nes@novaland.com.au
Qualifications and Insurance details:	Accredited to report on bushfire hazards under the Fire Services Act 1979	Direct	iption from Column 3 of the or's Determination - Certificates alified Persons for Assessable
Speciality area of expertise:	Analysis of hazards in bushfire prone areas	ription from Column 4 of the or's Determination - Certificates alified Persons for Assessable	
Details of worl	k:		
Address:	Lot 200, Pipe Clay Drive		Lot No: 151955
	George Town 7	253	Certificate of title No: 200
The assessable item related to this certificate:	Bushfire Attack Level Assessment Report and Bushfire Hazard Management Plan.		(description of the assessable item being certified) Assessable item includes – - a material; - a design - a form of construction - a document - testing of a component, building system or plumbing system - an inspection, or assessment, performed
Certificate det	ails:		
Certificate type:	Bushfire Hazard Certificate	Schedul Determin	tion from Column 1 of e 1 of the Director's nation - Certificates by I Persons for Assessable
	relation to the above assessable items, at a g work, plumbing work or plumbing installation		

Director of Building Control – Date Approved 1 July 2017

Building Act 2016 - Approved Form No. 55

C a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant -

Documents:

Bushfire Hazard Management Plan -, job number L220727, 02/04/2025

Bushfire Hazard Report – version 1.0, job number L220727. Version 1.0, 31/03/2025

Relevant calculations:

Refer Bushfire Hazard Report. Assessed as BAL 19, BAL 12.5

References:

- Australian Standards 3959 Construction of Buildings in Bushfire Prone Areas, Standards Australia – 2018.
- Directors determination Bushfire Hazard Areas (v1.2)
- Building Regulations 2016
- Building Act 2016

Substance of Certificate: (what it is that is being certified)

- 1. Assessment of the site at BAL 19, BAL and 12.5 to Australia Standards 3959:2018
- 2. Bushfire Hazard Management Plan
- 3. Refer Bushfire Hazard Report. Assessed as BAL 19 and BAL 12.5.

Future Dwellings must comply with DTS requirements, clauses 4.1, 4.2, 4.3 and 4.4 Directors Determination Bushfire Hazard Areas V1.2.

Scope and/or Limitations

- 1. The effectiveness of the measures and recommendations made in the abovementioned documentation are dependent on their implementation and maintenance for the life of the subject building.
- The assessed Bushfire Attack Level is correct at the time of certification. No liability can be accepted for the actions of other parties that compromise the effectiveness of the recommended hazard management area of construction standards.

I certify the matters described in this certificate.

Director of Building Control – Date Approved 1 July 2017

Building Act 2016 - Approved Form No. 55

_	Signed:	Certificate No:	Date:
Qualified person:		BFP-157	02/04/2025



Land Surveying | Town Planning | Project Management w novaland.com.au e info@novaland.com.au

Launceston 156 George Street Launceston 7250 **p** (03) 6709 8116

Hobart Rear studio, 132 Davey Street Hobart 7000 p (03) 6227 7968

ZINGER INVESTMENTS

PROJECT: **4 LOT SUBDIVISION**

ADDRESS: **LOT 200 PIPE CLAY DRIVE, GEORGE TOWN**

> PROJECT No: 231028

STATUS:

CONTROLLED DOCUMENT

ISSUED FOR / DESCRIPTION: **APPROVAL**

DRAWINGS:

COV - COVER SHEET
COOO - CIVIL NOTES
C101 - EXISTING SITE/DEMOLITION PLAN
C400 - OVERALL WORKS PLAN

C401 - CIVIL WORKS PLAN

C411 - PIPE CLAY DRIVE LONG SECTION

C421 - PIPE CLAY DRIVE CROSS SECTION - SHEET 1

C422 - PIPE CLAY DRIVE CROSS SECTION - SHEET 2

C501 - DRAINAGE PLAN - SHEET 1

C502 - DRAINAGE PLAN - SHEET 2
C511 - STORMWATER LONG SECTION - SHEET 1
C512 - STORMWATER LONG SECTION - SHEET 2
C513 - SEWER LONG SECTION - SHEET 1

C514 - SEWER LONG SECTION - SHEET 2

C601 - WATER RETICULATION

C701 - SECTIONS & DETAILS

				_				_	
				STATI	JS:	DESIGN BY: KL		CLIENT: ZINGER INVESTMENTS	TITLE: COVER SHEET
\vdash			_	CONTROLLED DOCUMENT		DESIGN CHK: RJJ	rara		
\vdash		\vdash	_	DO NOT SCALE - IF	IN DOLLET ASK	DRAWN BY: KL	fufc.	PROJECT: 4 LOT SUBDIVISION	
\vdash				THIS DOCUMENT MAY COLY BE USED FOR THE PURPOSE FOR WHICH IT WAS PREPARED. O PARE INNOVATION PTY LTD. ABN 51 619 588 257					SCALE: - SHEET SIZE: A1 DWGs IN SET: -
0	APPROVAL	KL	31-03-25				22-24 Paterson Street	ADDRESS: LOT 200 PIPE CLAY DRIVE, GEORGE TOWN	
REV	ISSUED FOR / DESCRIPTION:	BY:	DATE:	APPROVED: R. JESSON	ACRED. No: CC4858I	DATE: 31-03-25	Launceston TAS 7250 203 6388 92	00.	PROJECT No: 231028 DWG No: COV REV: 0

GENERAL 1. NOTICE TO TENDERER I, NOTICE TO TENDERER IN TO MAKE THEMSELVES AWARE OF THE COLAL COUNCIL, TAS MATER AND THE DEPARTMENT OF STATE GROWTH (ID STANDARDS FOR COM, WORKS, CONSTRUCTION IS TO BE CARRIED OUT TO THESE STANDARDS. TENDERS IN TO A LOW FOR THESE STANDARDS JURINUM PRICING. COPIESS OF THE STANDARDS ARE AVAILABLE FOR SYSPECTION UPON BEQUEST FROM THE COLAL COUNCIL OR 50, S. 19. 2 NOTIFICATION PRIOR TO COMMENCING ANY WORK FOR THE POSSIBLE LOCATION OF ANY EXISTING SERVICES NOT SHOWN ON THESE PLANS, AND IS TO NOTIFY THE

THESE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED FOR THE PURPOSE OF DETAINING COUNCIL APPROVAL AND CALLING OF TENDERS. THEY ARE NOT TO BE USED FOR CONSTRUCTION. A CONSTRUCTION SET OF DRAWINGS STAMPED TOONSTRUCTION SET WILL BE ISSUED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION SET.

SUDDEM MINIMUM PHOM ANY MAIN CREATER THAN ZUDGES DIG. ELECTRICAL CALLES SHOULD BE LICATED ON THE OPESITE SUDGET THE STREET. WHERE THIS IS NOT POSSIBLE A 400mm MINIMUM DISTANCE MUST BE DISSERVED OF WHICH SOOMM SHOULD BE IN NATURAL AND INDINSTRIBERT MATERIAL.

5. TASNETWORKS TRENCHING

ONTRACTOR IS TO ALLOW FOR EXCAVATION AND BACKFILLING OF RENCHES FOR THE INSTALLATION OF TASNETWORKS CABLES. AACTOR IS TO LIASE WITH THE TASNETWORKS FOR THE EXTENT OF CABLE HING. COMOUNTS & PITS.

6. COMMUNICATION TRENCHING
THE CONTRACTOR IS TO ALLOW FOR EXCAVATION AND BACKFILLING OF ALL TRENCHES FOR THE INSTALLATION OF COMMUNICATIONS CABLES.
CONTRACTOR IS TO LIASE WITH COMMUNICATION AUTHORITY FOR THE EXENT OF CABLE TRENCHING.

7 FXISTING SERVICES

8. COUNCIL & AUTHORITIES APPROVALS ALL WORKS ARE TO BE IN ACCORDANCE WITH THE R

ALL SIGN WORKS AND INSTALLATION TO BE IN ACCORDANCE WITH CURRENT VERSION OF MUTCO & AUSTROADS FOR SIGNAGE DETAILS.

GENERAL CONT. 11. LINE TYPE LEGEND DENOTES PROPOSED STORM WATER MAIN DENOTES EXISTING SEWER MAIN (CONFIRM EXACT LOCATION) DENOTES PROPOSED SEWER MAIN DENOTES PROPOSED SEWER MAIN (CONFIRM EXACT LOCATION) DENOTES PROPOSED WATER MAIN DENOTES PROPOSED CAS MAIN

DENOTES EXISTING UNDERGROUND TELECOM /FIBRE OPTIC LINE (CONFIRM EXACT LOCATION) 12. SITE WORKS SYMBOLS LECEND
PED PEDESTRIAN RAMP
TYPE BK RAMPITR KERB
TYPE KC KERB AND CHANNEL - SMALL
TYPE KCM MOUNTAILE KERB AND CHANNEL
TYPE KCM MOUNTAIRE KERB AND CHANNEL

VEHICULAR CROSSING BOLLARD, REFER DETAIL

13. BUILDING SERVICES SYMBOLS LEGEND
TELECOMMUNICATION PT

14. SURVEY SYMBOLS LEGEND CONT I EVEL WITH DECORPTION EXISTING SPOT LEVEL +44330

S. LEGEND
TIOMMATTH MANNEL
TIOMATHH TO THE MANNEL
TIOMATH TO THE MANNEL

16. WATER RETICULATION SYMBOLS LEGEND

METER

CHECK METER MONITORED VALVE BALANCE VALVE DN100 REFLUX VALVE

DUAL HEAD FIRE HYDRANT

1. GENERAL GENERAL EARTH

EARTHWORKS

3 AREAS OF FILL 2. A REAS OF FILL
A PROMOTE TO PSOLL AND ORDANIC MATERIAL
B. PROOF ROLL SUBGRADER IN ACCORDANICE WITH AS 1280 TO.
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- 90% STANDARD ON Y RESERT TO STANDARD AND CARP PARC
- 90% STANDARD ON Y RESERT TO STANDARD ON Y RESERT AS STATED ARBOYCE
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4. A REAS OF CUT

A. REMOVE TOP SOIL AND ORGANIC MATERIAL

B. PRIOLE FILL SUBGRAME IN ACCORDANCE WITH AS 1290 TO.

- 690. STANDARD BRY DENSITY UNICER BULDINGS

- 690. STANDARD BRY DENSITY BUSCER BULDINGS

- 690. STANDARD BRY DENSITY BUSCER BULDINGS

- 690. STANDARD BRY DENSITY AS STATED BASINY

MISTURE CONTENT TO STANDARD BRY DENSITY AS STATED ABOY

SOIL & WATER MANAGEMENT

1. GENERAL
ALL WORKS ARE TO BE CARRED OUT IN ACCORDANCE WITH 'SOIL
8 WATER MANAGEMENT ON BUILDING & CONSTRUCTION SITES'
GUIDELINES AVAILABLE FROM MORTHERN RESOURCE
MANAGEMENT (WRIV).

2. SOIL EROSION CONTROL 2. SOUL ENDISON CONTROL

SOLE BEISON CONTROL IN ACCORDANCE WITH NEW GUIDELINES.
CONTRACTOR TO ALLOW TO.

LIMIT DISTURBANCE WHEN EXACTING BY PRESERVING
VEDETATED AREA SA MUCH AS POSSIBLE

OWERT UP ASCEN AREA WICH AS POSSIBLE

INSTITUTE OF WARTER WISER PROVIDED.

INSTITUTE OF WARTER WISER PROVIDED.

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WATER OFFICE ALLOW FROM TO STORM
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3 NRM GUIDELINES 3. NRM GUIDELINES
CONTRACTOR TO COMPLETE ALL WORKS IN ACCORDANCE WITH
NRM SOIL & WATER MANAGEMENT ON BUILDING &
CONSTRUCTION STIFE USING THE FACT SHEETS:
FACT SHEET 1: SOIL & WATER MANAGEMENT ON LARGE
BUILDING & CONSTRUCTION STIES
FACT SHEET 2: SOIL & WATER MANAGEMENT ON STANDARD
FACT SHEET 2: SOIL & WATER MANAGEMENT ON STANDARD

FACT SHEET & DESPRESHE SOUS. HIGH RISK OF TUNNE ENGINE.
FACT SHEET S, MIRMANDE SOLD DETURBANCE.
FACT SHEET S, MIRMANDE SOLD DETURBANCE.
FACT SHEET S, MIRMAND S, MIRMANDE S, MIRMANDE S, FACT SHEET S, MIRMANDE S, MIRMAND S, FACT SHEET S, MIRMAND S, MIRMAN

ROAD WORKS

ALL WORKS ARE TO BE CARRIED OUT TO THE LOCAL COUNCIL AND D.S.O. STANDARDS. ANY DEPARTURES FROM THESE STANDARDS REQUIRES THE PRIOR APPROVAL OF THE SUPERINTENDENT AND THE LOCAL COUNCIL WORKS SUPERINSOR.

2. INSPECTIONS
THE CONTRACTOR IS RESPONSIBLE FOR ORGANISING THE FOLLOWINSPECTIONS WITH THE SUPERINTENCENT: 48 HOURS NOTICE IS REQUIRED TO BE GIVEN TO THE SUPERINTENDENT PRIOR TO THE

PECTION
- SUBGRADE PREPARATION
- SUBGRADE PREPARATION
- SUBGRASE FOR ROADS, CARPARKS AND KERBS
- BASE COURSE
- FINAL TRIM PRIOR TO PLACING KERBS
- FINAL TRIM PRIOR TO SEALING

3 TESTING

4. HOTMIX ALL HOTMIX IS TO BE BLACK IN COLOUR AND IS TO MEET AND BE PLACED IN ACCORDANCE WITH D.S.G. SPEC SECTION 407-HOT MIX

5. KERBS
ALL KERBS ARE TO BE AS SHOWN ON THE DRAWINGS AND BE IN ACCORDANCE WITH IPWEAL DAT STANDARD DRAWINGS. 6 ROAD RESERVE WORKS

7. FOOTPATHS CONSTRUCT FOOTPATHS INCLUDING EXPANSION / CONTROL / WEAKENED PLANE JOINTS IN ACCORDANCE WITH IPWEA STD DWG TSD-R11-v3

8. LANDSCAPE / STREET FURNITURE

ALL WORKS ARE TO BE CARRIED OUT TO THE LOCAL COUNCIL AND DOS STAMMARDS. ANY DEPARTURES FROM THESE STAMMARDS HEQUIES THE PRIOR APPRIVATE OF THE SUPERINTERSORT AND THE LOCAL COUNCIL WORKS SUPERINFORM. ALL STORM WATER PLUMBING DEPARAMENT OF LOCHETY WITH TA S 2000 2300S STORM WATER PLUMBING DEPARAMENT OF LOCHETY WITH TA S 2000 2300S STORM WATER PRIVAN

2 TESTING ALL DRAINAGE WORKS SHALL BE SUBJECT TO THE TESTS PRESCRIB!
BY THE AUTHORITIES HAVING JURISDICTION OVER THE VARIOUS
SERVICES. ANY SECTION FAILING SUCH TESTS SHALL BE REMOVED
AND PROPERTY INSTALL IF OUT THE CONTRACTORS SUPPLIES.

4 SIDE ENTRY PIT (SEP) . SINE ENTITY FIT (SET)
PIT INVERT DEPTHS VARY, REFER SITE PLAN.
-BENCH OUT IN A NEAT AND TBY MANNER TO BROINEERS APPROVAL.
-CORATED PIT - GULLY HINGED OR OTHER TYPE APPROVED
-CORCINETE KERE LINTEL - STEEL KERB LINTEL AND 1200 LONG GALV BAR

5. TRENCHING AND BACKFILL
ALL TRENCHES ARE TO BE EXCAVATED AND BACKFILLED IN
ACCORDANCE WITH THE DRAWINGS AND THE LOCAL COUNCIL
STANDARDS.

6. INSPECTIONS

V. INSPECTIONS
THE CONTRACTION SESSIONISEE FOR ORGANISMO THE FOLLOWING
INSPECTION WITH THE SUPERINTENDENT: 4 HOUSE NOTIFICE
INSPECTION
INSPECTION
- PREVIOUS REGIONS
- PREVIOUS REGIONS
- PREVIOUS REGIONS
- STALLED PRE PRIOR TO BACKFALLING
- SACCRELING

7 AS CONSTRUCTED DRAWINGS 1. AS CONSTRUCTED DYNAMINGS
THE CONTRACTOR WILL BE RESPONSIBLE FOR PRODUCING "AS CONSTRUCTED" DRAWINGS TO THE STANDARD REQUIRED BY THE LOCAL COUNCIL. THE DRAWINGS SHALL BE CERTIFIED AS BEING CORRECT BY ETHER A CHARATERED CAUL PROMPTER OF A PROTECTED SUMPTYME. CLITED A CHARLEDGE CIVIL ENGINEER OR A REGISTERED SURVEYOR.
RARE CAN PROVIDE THIS SERVICE, HOWEVER THE
CONTRACTOR WILL BE CHARGED FOR THIS SERVICE AND SHOULD BE
AWARE OF THIS WHEN PRICING.

TESTING
 CONTRACTOR SHALL CAMERA TEST ALL PIPES AND SUBMIT FOOTAGE TO LOCAL COUNCIL FOR APPROVAL.

9 REDUNDANT PIPE WORK FILL REDUNDANT SECTION OF PIPEWORK WITH LIQUIFILL' (ORADE PC.1 - 0.5-2.0 MPa) SEWERAGE

1. GENERAL
ALL SEWER WORKS TO BE IN ACCORDANCE WITH THE WISA SEWER CODE
(WISA 02-014-3.1 MRWA) AND AS AMENDED BY THE TASWATER

ALL DIMINABLE MUMAS SHALL BE SUBJECT TO THE TESTA THE ASSAULT BY THE AUTHORITIES HAWING JURISDICTION OVER THE VARIOUS SERVICES, ANY SECTION FAILING SUCH TESTS SHALL BE REMOVED AND PROPERLY INSTALLED AT THE CONTRACTOR'S EXPENSE.

3. SEWER MAIN CONNECTIONS

ALL NOW IN THE CONNECTIONS TO EXISTING TASMATER SEWER INFRASTRUCTURE INCLUDING BUT NOT LIMITED TO SEWER MAINS / MANHOLES TO BE COMPLETED BY TASMATER (LINLESS PRIOR WRITTEN APPROVAL) AT OWNERS COGT. AT OWNERS COST.
INSTALL PROPERTY SEWER CONNECTIONS (STANDARD OR SLOPED) WITH SURFACE LO.
NORMALLY 1.0m WITHIN EACH NEW LOT IN ACCORDANCE WITH SECTION 5 OF WSA

A. MANFOLES

AMMONELS AND THE BOOK IS PREMATE CONCRET WITH ALL IT TO HEAT THE MANCE

AMMONELS AND THE BOOK IS PREMATE CONCRET WITH ALL IT TO HEAT THE MANCE

CONCRETE AND THE BOOK IS THE WASHINGTON OF THE WASHIN

5 TRENCHING AND RACKELL O. THE NOTHING WHO DIAGOTHEL
ALL TRENCHES ARE TO BE EXCAVATED AND BACKFILLED IN
ACCORDANCE WITH THE DRAWINGS AND TASWATER
STANDARDS INCLUDING ELECTROMAGNETIC METAL
IMPREVALED TAPE IN ALL INON METAL IT OF PIET TERMOTES.

CEMENT STARILISED EMBEDMENT

FOR SEWER MAINS THE FOLLOWING CHANGES SHOULD BE APPLIED TO THE MRWA-SEWERAGE STANDARDS DRAWINGS MRWA-S-202 AND MRWA-S-205 SEMENACE STANDARDS DRAWINGS MRWA-S-202 AND MRWA-S-205
MRWA-S-202
THE REQUIREMENT IDENTIFIED IN THE THIRD DOT POINT FOR TYPE B IN THE NOTES
REGARDING TABLE 202-A SHALL BE AMENDED TO READ "WHERE SEWER AT GRADE > 1
NO. 107.

EMBELIER I SHALL BE USED AS PEN MINING-S-2022*

OF UNIVERSAL THE CONTRACTOR IS RESPONSIBLE FOR ORGANISING THE FOLLOWING INSPECTIONS WITH THE SUPERINFERNDENT (LAS WITH TASWATER).

4 ROUGHS OLDER IS REQUIRED TO BE OFUND TO THE SUPERINFERNDENT.

7. AS CONSTRUCTED DRAWINGS
THE CONTRACTOR WILL BE RESPONSIBLE FOR PRODUCING "AS INSTALLED" DRAWINGS TO THE STANDARD REQUIRED BY TASIMATER. THE DRAWINGS SHALL BE CERTIFIED AS BEING CORRECT BY EITHER A CHARTERED CIVIL ENGINEER OR A REGISTERED SURVEYOR.

8 TESTING

CONTRACTOR SHALL CCTV ALL PIPES AND SUBMIT FOOTAGE TO TASWATER FOR APPROVAL.

9. REDUNDANT PIPE WORK

WATER RETICULATION

1. GENERAL ALL WATER SUPPLY CONSTRUCTION TO:

SURVEY

2. SETOUT

1. SURVEY DETAILS

. WATER SUPPLY CORE OF AUSTRALIA (WSA 03-2011-3.1 VERSI MARIA SUPPLY CODE OF AUSTRALIA (WSA 03-2011-3.1 VERSI MARIA SERVICE CODE OF AUSTRALIA OF MATER SERVICES ASSOCIATION OF AUSTRALIA - TASMATER SUPPLEMENT -TASMATER'S STANDARD DRAWNINGS TWS-W-0022 SENES - MATER METERNIO POLICY, METERNING DUDGLINES

- WARTER METERIND POLICY/METERING CILICELINES
- TASKINETES STANDALING DRAWNES TWO WHO DO J- FOR PROPERTY
SERVICE CONNECTIONS - CADE FOR WARTER METER ASSEMBLY
- BOURDAMY BACKFLOW CONTAMBMENT REQUIREMENTS AND
- ASSEMIL 2003.
- ANY DEPARTMENTS FROM THESE STANDARDS REQUIRES THE PRIOR
APPROVAL OF THE SUPERINTENDICHT AND THE LOCAL WATER
AUTHORITY WORDS SUPERINSOR.

2. TESTING

2. TESTING ALL WATER RETICULATION WORKS SHALL BE SUBJECT TO THE TESTS PRESCRIBED BY THE AUTHORITIES HAVING JURISDICTION OVER THE VARIOUS SERVICES. ANY SECTION FAILING SUCH TESTS SHALL BE REMOVED AND PROPERTY INSTALLED AT THE CONTRACTIONS SUPPLIES.

3. FIRE HYDRANTS 3. FIRE HYDRANTS
FIRE HYDRANTS ARE TO BE AS SHOWN ON THE DRAWINGS. THE
CONTRACTOR TO ALLOW TO PLACE STANDARD MARKERS AS
REQUIRED BY THE LOCAL AUTHORITY

THRUST AND ANCHOR BLOCKS
THRUST AND ANCHOR BLOCKS ARE TO BE PROVIDED AT BENDS,
VALVES, HYDRANTS AND LINE ENDS IN ACCORDANCE WITH TASWATER.

5. TRENCHING AND BACKFILL

ALL TRENCHES ARE TO BE EXCAVATED AND BACKFILLED IN

ACCORDANCE WITH THE GRAWNOS AND TASWATER

STANDARDES INCLUDING ELECTROMAGNETIC METAL

IMPREDNATED TAPE IN ALL NOM METALLIC PIPE TRENCHES.

POMENT STARK ISEN EMBERMENT THE LATEST VERSION OF DRAWING MRWA W-208 (REV 3) INCLUDES TABLE 208, A WITH NOTE OF INDICATING THAT WHEN TRENCHSTOPS OR BULKHEADS ARE USED (DRADES GREETER THAN 54), CEMENT STABILISED EMBEDMENT MUST BE USED. THIS IS NOT TAXINATER'S PREFERRED.

EMERICANIE IN BOS DE COSCI. 1935 ON UI AGRANI EN PIPETREMO.

TO REPOSE UP 100 ROCADE ENSANTEM AL CASEPT THE REPOSITOUS ENVISORM FANTA, 1987 22. E. PIPES UP 10 10: GABGE DO MOT RECISIE DEVISIONO FANTA, 1987 23. E. PIPES UP 10 10: GABGE DO MOT RECISIE DEVISOR FANTA EN CANONITO SANDE DE MEMBRANI TANCES THE CONNITTO SANDE SANDE LICENT TO SANDE SANDE LICENT TO SANDE HON DEVISOR EN CANONITO SANDE SANDE LICENT TO SANDE HON DEVISOR EN CANONITO SANDE SANDE LICENT TO SANDE HON DEVISOR EN CANONITO SANDE SANDE

VALID.
THE LATEST VERSION OF MRINA W-203 (REV 2) EMBEDMENT SHALL BE ADDITED NOTING THAT THE REQUIREMENT IDENTIFIED IN THE THIRD DC POINT FOR TYPE B IN THE NOTES REGARDING TABLE 203-A SHALL BE AMENDED TO READ "MHERE WATER MAN (RADE-101".

U. MOTECTIONS

THE CONTRACTOR IS RESPONSIBLE FOR ORGANISMO THE FOLLOWING MESPECTIONS WITH THE SUPERINTENDENT. 48 HURRS NOTICE IS REQUIRED TO BE GOVEN TO THE SUPERINTENDENT PRIOR TO THE INSPECTION.

- PIPERIORIS BEDGING

- INSTALLED RIPE PRIOR TO BACKFILLING
- BACKFILLING
- BACKFILLING

7. PIPE CLEANING - 'DISINFECTION'
THE CONTRACTOR IS TO ALLOW TO CLEANSE WATER MANS BY
FLUSHIND WITH SCOUM HYPOCHLORIDE AS DIRECTED BY THE LOCAL
AUTHORITY.

8 AS CONSTRUCTED DRAWINGS

INSTALLED' DRAWINGS TO THE STANDARD REQUIRED BY TASWATER. THE DRAWINGS SHALL BE CERTIFIED AS BEING CORRECT BY EITHER A CHARTERED CIVIL ENGINEER OR A REGISTERED SURVEYOR.

9. PROPERTY WATER CONNECTIONS ALL PROPERTY CONNECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MRWA-W-110 AND MRWA-W-111 AND TASWATER STANDARD DRAWING TW-W-0002 SERIES, THEY SHALL BE DN25(LD 20) HDPE (PE100) SDR 1

11. MINIMUM COVER
MINIMUM COVER FOR WATER LINES ARE TO BE:
- HANGES BOAD WAYS (EYE! IDING MALIDS BOADS) AND VEHICLE ARE

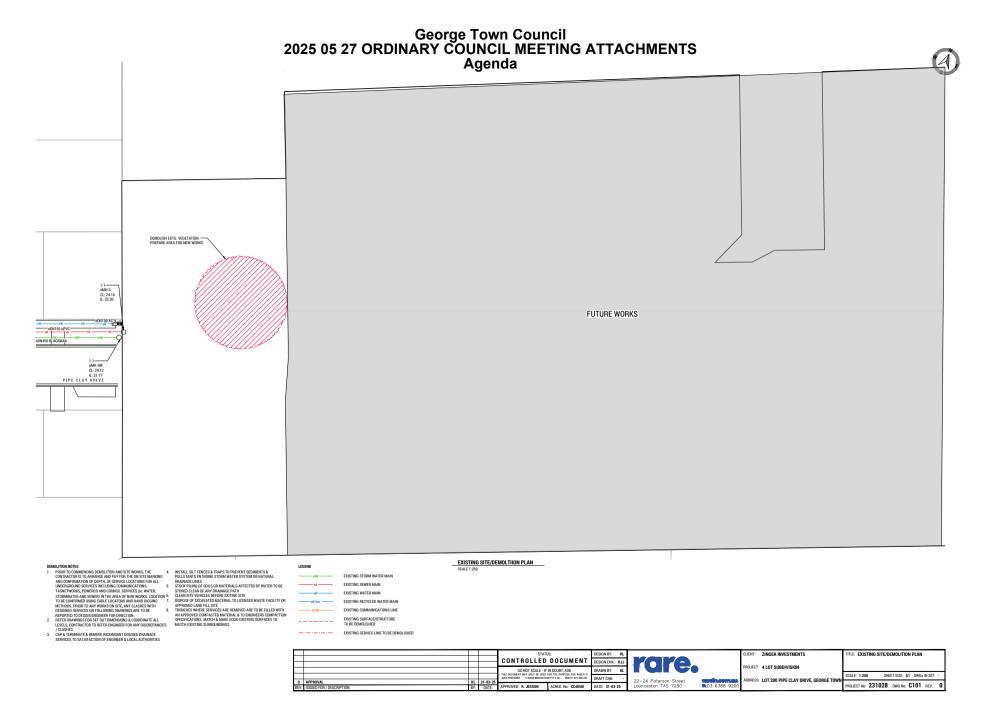
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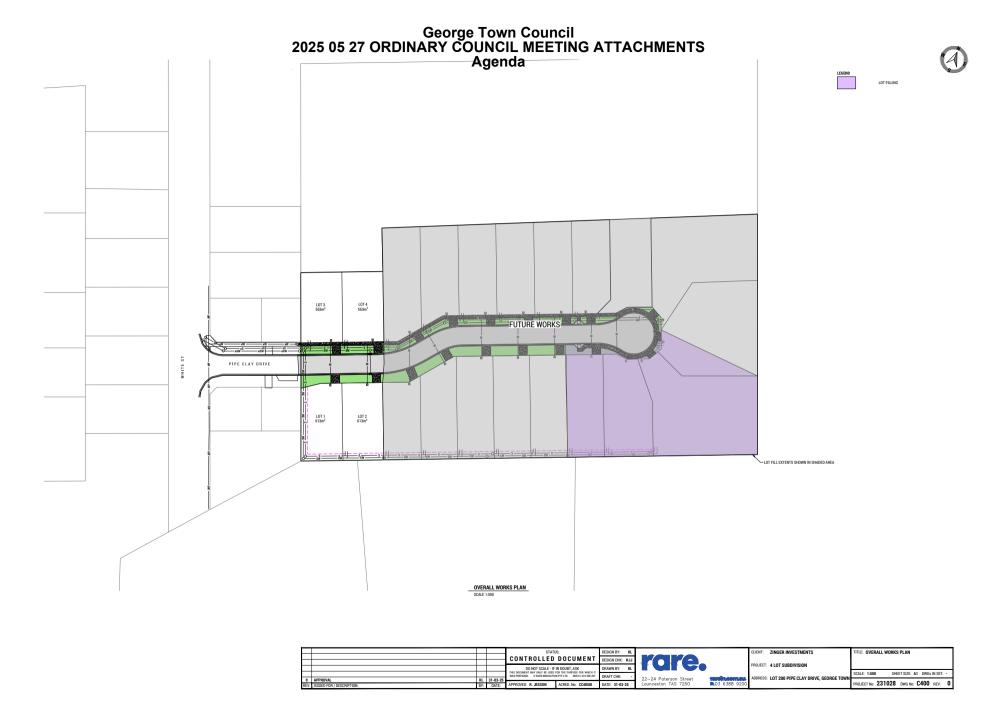
IMPORTANT NOT THE THESE CAME BE READ IN BLACK AND WHITE, HOWEVER THESE DRAWINGS ARE BEST PRINTED IN FULL COLOUR FOR OPTIMUM CLARITY OF NEW AND EXISTING PIDE WORK.
A COLOUR COPY SHOULD BE RETAINED ON SITE AT ALL TIMES FOR CONTRACTORS COMPLETING WORKS.

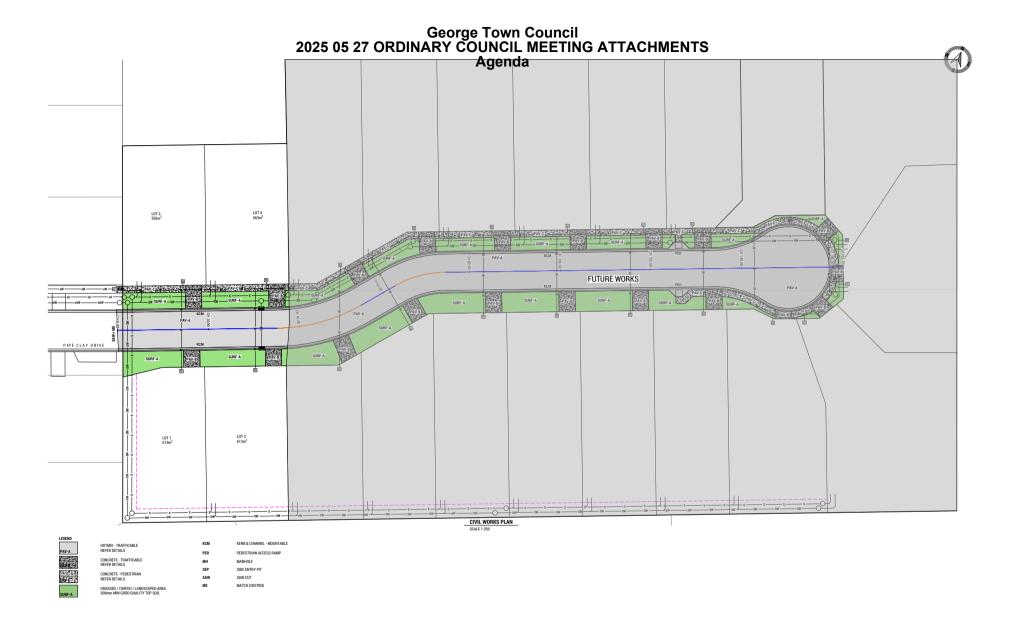
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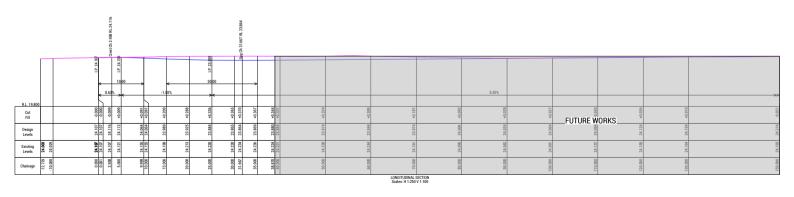
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	PROJECT:	4 LOT SUBDIVISION	
	ADDDESS:	LOT 200 PIPE CLAY DRIVE. GEORGE TOWN	SCALE: - SHEET SIZE: A1 DWGs IN SET: -
00	ADDRESS.	LOT 200 PIPE CLAT DRIVE, GEORGE TOWN	PROJECT No: 231028 DWG No: $C000$ REV: 0

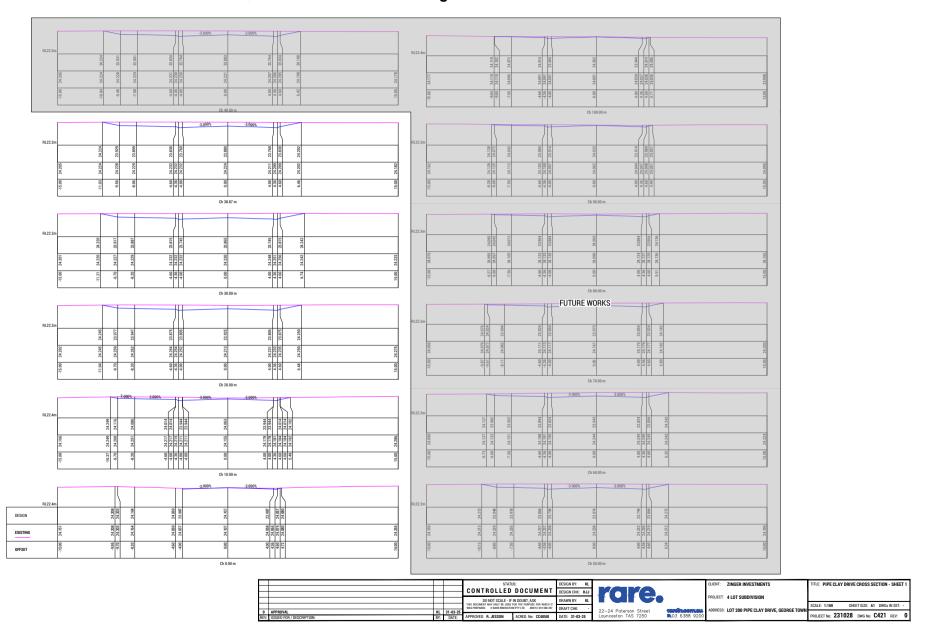


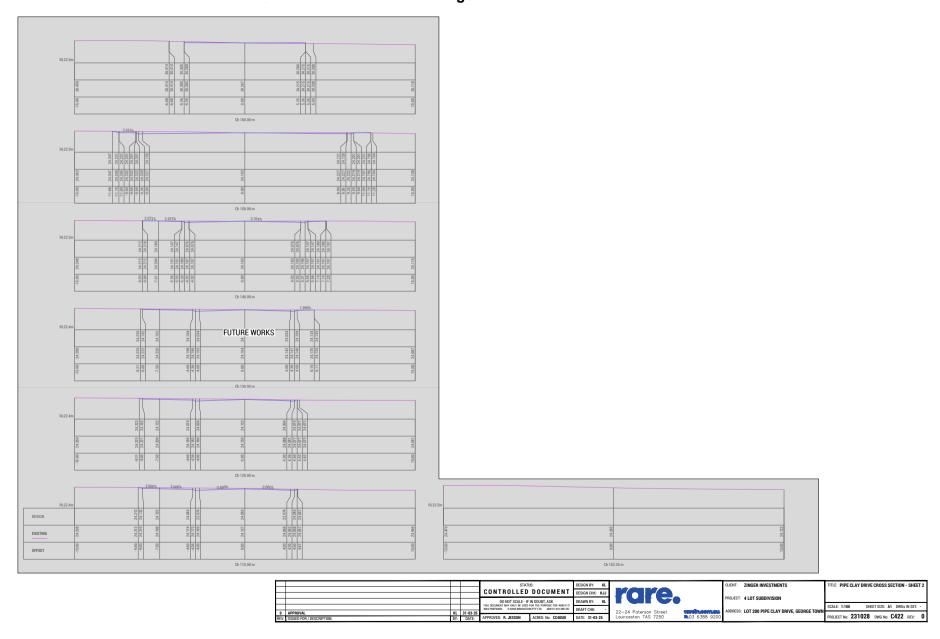


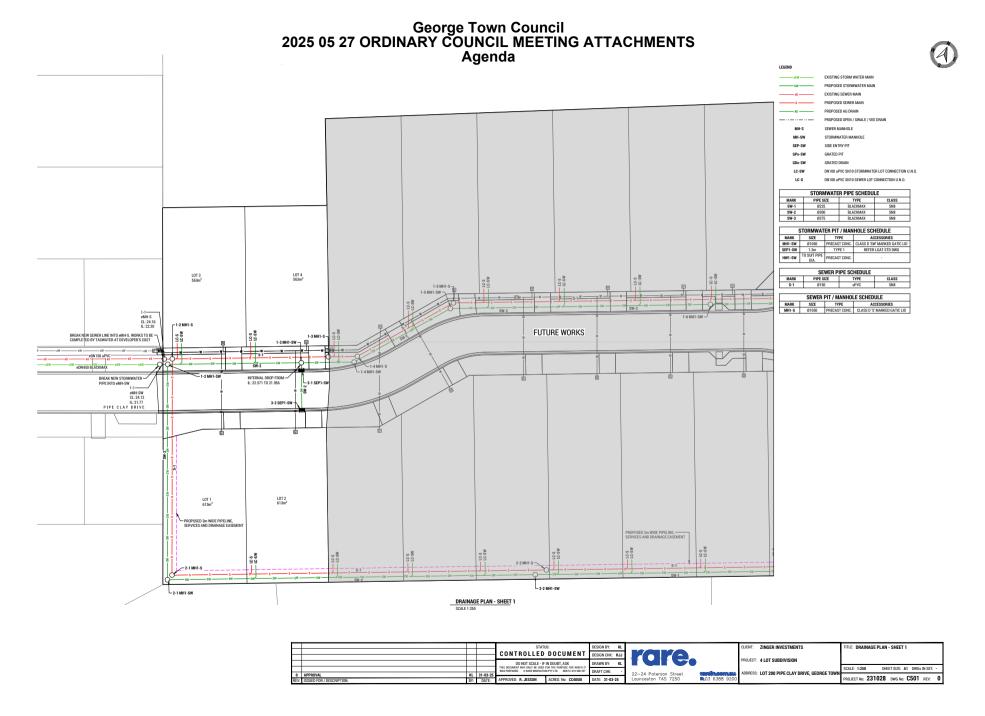


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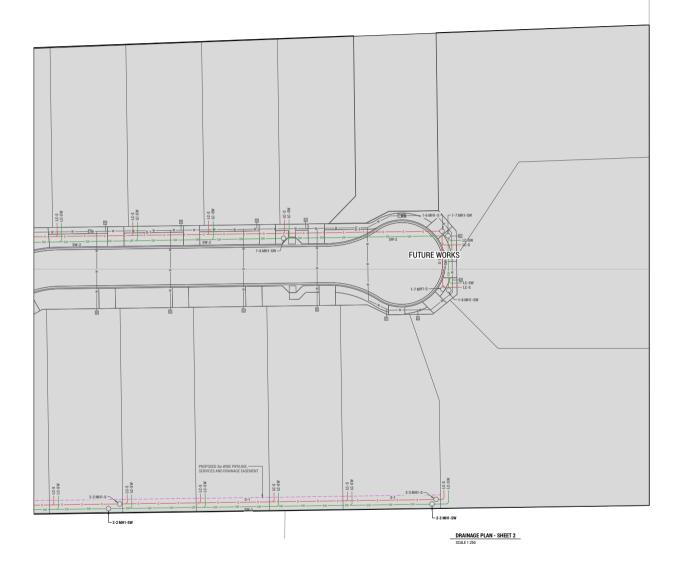






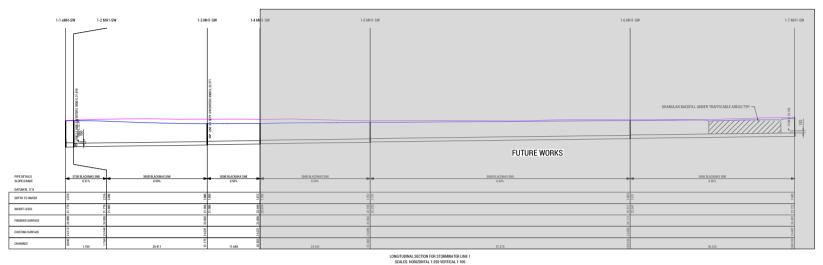






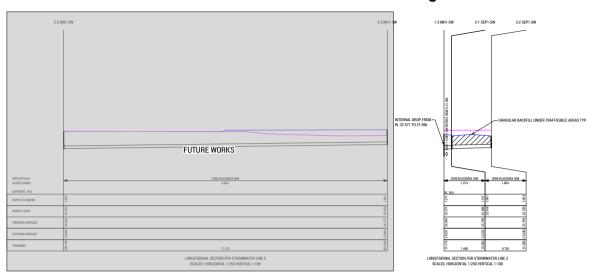
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sw		PROPOSI	ED STOR	MWATER MAIN	ı					
es-		EXISTING SEWER MAIN								
s-		PROPOSED SEWER MAIN								
AG -		PROPOSI	ED AG DR	AIN						
		ppnpnei	ED ODEN	/ SWALE / VEI	EDDAIN					
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	-									
MH-	SW	STORMW	ATER MA	NHOLE						
SEP	SW	SIDE ENT	RY PIT							
GPx	SW	GRATED	PIT							
GDx	SW	GRATED DRAIN								
LC-	SW	DN100 uPVC SN10 STORMWATER LOT CONNECTION U								
ıc	.e	DN100 ul	NIC SNI	SEWEDINT	CONNECTION U.N.O.					
	•	DI 100 U	10 0111	OLMLII LOI	DOTERLO FIGHT G. H. G.					
	STORM	NWATE	R PIPE	SCHEDU	LE					
MARK	PIPES	IZE		TYPE	CLASS					
SW-1	022	5	BL	ACKMAX	SN8					
SW-2	Ø30)	BL	ACKMAX	SN8					
SW-3	037	5	BL	ACKMAX	SN8					
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MH1-SW	Ø1050	PRECAS	T CONC.	CLASS D'SV	V MARKED GATIC LID					
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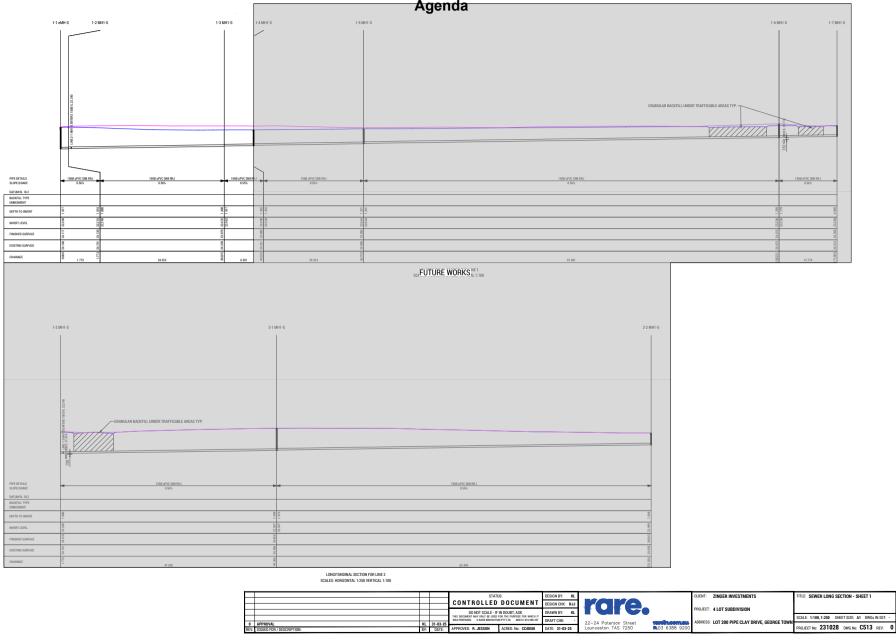
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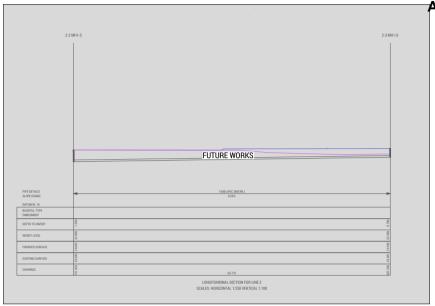


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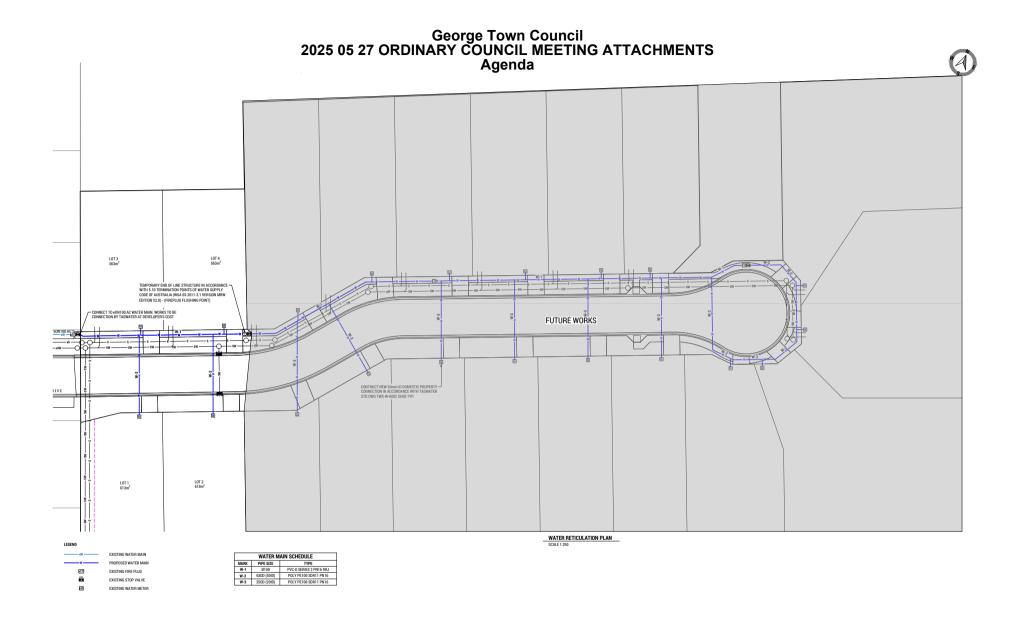




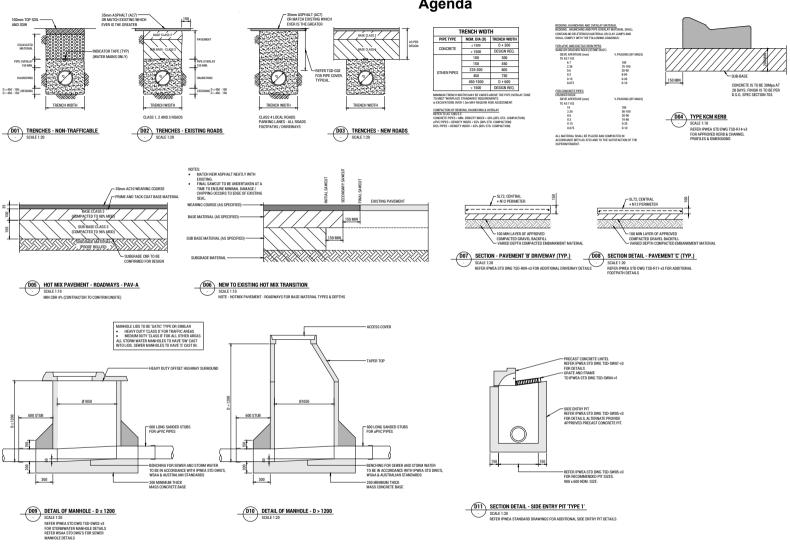








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		_		THIS DOCUMENT MAY ONLY BE USED FOR THE PURPOSE FOR WHICH IT		DRAWN BY: KL			SCALE: 1:10.1:20 SHEET SIZE: A1 DWGs IN SET: -
-				WAS PREPARED. O PARE INNOVATIO	IN PTY LTD. ABN 51 619 598 257	DRAFT CHK: -	22-24 Paterson Street	ADDRESS: LOT 200 PIPE CLAY DRIVE, GEORGE TOWN	
0	APPROVAL I ISSUED FOR / DESCRIPTION:	KL	31-03-25 DATE:	APPROVED: R. JESSON	ACRED, No: CC4858I	DATE: 31-03-25	Launceston TAS 7250 03 6388 920		PROJECT No: 231028 DWG No: C701 REV: 0
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