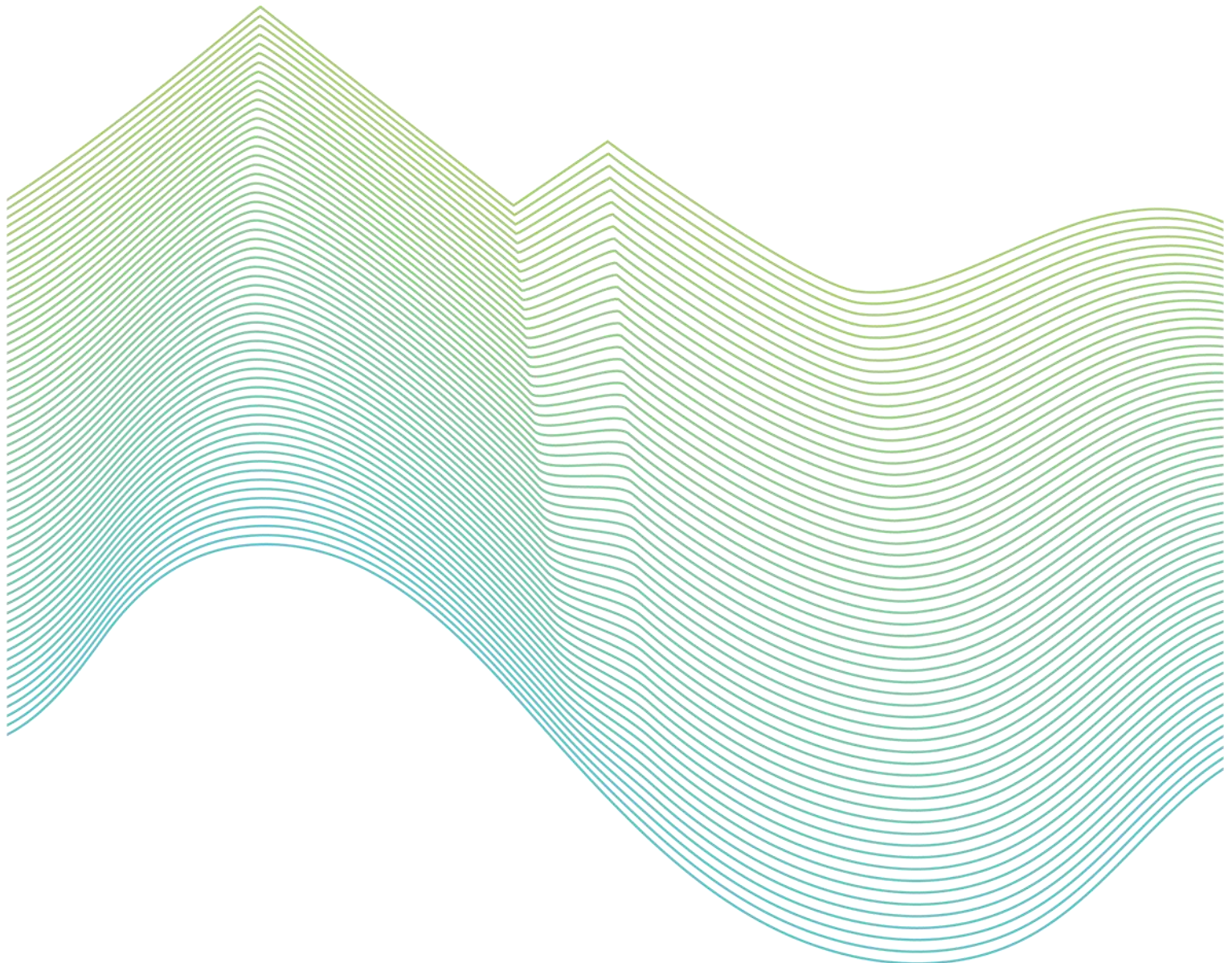


# Tarraleah Redevelopment Project

## Planning Report

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September 2023



#### Hydro Tasmania document control

Title	Planning Report – Tarraleah Redevelopment Project	Version: 1.0
	Document author:	H Andree
	Document reviewer	B Yu
Approver:	I Jones	Date approved: 22 September 2023

# Executive summary

This proposal relates to the redevelopment of the Tarraleah Hydropower Scheme in the Tasmanian Central Highlands with the purpose of increasing the schemes overall capacity, operational flexibility, and efficiency to meet the evolving needs of the National Electricity Market (**NEM**).

The project is in the vicinity of Tarraleah in the Central Highlands local government area, approximately 125 km northwest of Hobart, Tasmania. The project area covers 4,208 hectares (**ha**), and extends from Lake King William to north of Dee Lagoon via Tarraleah in a broadly linear manner. Within the project area, the disturbance footprint is up to 280.6 ha. Development is proposed primarily over land managed by Sustainable Timber Tasmania (**STT**), and Hydro-electric Corporation. A section of the Tarraleah Conservation Area, managed by Parks and Wildlife Services (**PWS**), as well as two reserved roads are also included.

The project site spans across five different zones under the Tasmanian Planning Scheme. Based to the planning assessment documented within this planning report, five discretions were triggered under three zones (rural, environmental management, and utilities). These pertain to the discretionary use of development, size of development area, as well as the height of the proposed surge tower, power station, and transmission line towers. Assessing these against the performance criteria however shows compliance with the criterion as per planning scheme. Five codes were also identified across the project site as part of the planning assessment., however only one was identified to potentially be impacted by the development, being the natural assets code with regard to the removal of vegetation and impacts on protected coastal areas. However, pursuant to provisions of the Code, development that is assessed as a Level 2 Activity is exempt from assessment against this Code. The project is subject to a Level 2 assessment by EPA and therefore the exemption applies.

The redevelopment will upgrade the scheme's capacity from the existing 90 megawatts (**MW**) to approximately 190 MW. This will require a new power station and associated infrastructure to convey water from Lake King William to the power station. The key components of the Tarraleah Redevelopment Project (**the Project**) are:

- headrace pipeline, approximately 4.2 km long up to 4 m diameter, connected to the intake on Lake King William and tunnel completed during upgrade works
- arched headrace tunnel, approximately 12 km long, up to 6.5 m high and 5.5 m wide
- access tunnels and portals to headrace and power tunnels and associated permanent spoil storage stockpiles
- surge tower, up to 75 m high (above ground level) and 14 m diameter and associated underground surge shaft to control water pressure in the headrace and power tunnels
- pumping station of approximately 4 cumec, and approximately 1.1 km long pipeline to transfer water from the existing No. 2 Pond to the surge tower
- new hydropower station with an installed capacity of approximately 190 MW and a rated flow of approximately 60 cumecs located adjacent to the existing Tarraleah Power Station
- new 220 kilovolt (**kV**) transmission line of approximately 16 km in length, connecting the new power station to the existing Liapootah to Palmerston transmission line located to the east
- new switchyard within an area of up to 60 m by 100 m located either adjacent to the existing Tungatinah Power Station or within the easement of the existing Liapootah to Palmerston transmission line.

Access to the project site is afforded primarily by the Lyell Highway and Butlers Gorge Road. The transmission line around Dee Lagoon is accessed via Victoria Valley Road and the remainder of the transmission line is accessed via various minor/unnamed roads from the Lyell Highway.

The activities during the construction and operation of the Project that have a potential impact on the environment are:

- Clearance of up to 176.8 ha of native vegetation (of which approximately 90 ha has previously been harvested for forestry) and 103.8 ha of modified vegetation communities to allow construction of above ground infrastructure
- Noise and vibration generated by blasting for tunnel construction as well as operation of construction plant and equipment, and concrete batching plants
- Increase in light and heavy vehicle movements on Butlers Gorge Road and the Lyell Highway associated with the transport of materials, equipment and workforce during construction
- The hydrological regime of the Nive River between the Tarraleah Power Station and its confluence with the River Derwent at Wayatinah Lagoon, the River Derwent from below Clark Dam to Lake Catagunya, Mossy Marsh Pond, No. 1 Pond and No. 2 Pond are all influenced by the operation of the Tarraleah hydropower scheme. The increased flexibility and increased capacity of the proposed Tarraleah Redevelopment Project would change the way in which the scheme is operated compared to present and affect the flow regime in associated reaches of the Nive River and River Derwent as well as Mossy Marsh Pond and No. 2 Pond.

The project is subject to assessment via preliminary information under the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)* (reference 2023/9482).

# Acronyms and glossary

<b>AHT</b>	<i>Aboriginal Heritage Act 1975 (Tas)</i>
<b>BotN</b>	Battery of the Nation
<b>CHLPS</b>	Central Highlands Local Provisions Schedule
<b>Coastal Policy</b>	The Tasmanian Coastal Policy
<b>DCCEEW</b>	Department of Climate Change, Energy, the Environment, and Water
<b>DSG</b>	Department of State Growth
<b>EMPC Act</b>	<i>Environmental Management and Pollution Control Act 1994</i>
<b>EPA</b>	Tasmanian Environmental Protection Agency
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
<b>EPP</b>	Environmental Protection Policies
<b>ESI Act</b>	<i>Electricity Supply Industry Act 1995</i>
<b>FID</b>	Financial Investment Decision
<b>FPP</b>	Forest Practices Plan
<b>GWh</b>	Gigawatt hours
<b>HEC Act</b>	<i>Hydro-Electric Corporation Act 1995</i>
<b>kV</b>	Kilovolt
<b>LUPA Act</b>	<i>Land Use Planning and Approvals Act 1993</i>
<b>MNES</b>	Matters of National Environmental Significance
<b>MW</b>	Megawatt
<b>NC Act</b>	<i>Tasmanian Nature Conservation Act 2002</i>
<b>NEM</b>	National Electricity Market
<b>NEPM</b>	National Environment Protection Measures
<b>NPRM Act</b>	<i>Tasmanian National Parks and Reserves Management Act 2002</i>
<b>PAL Policy</b>	The State Policy of the Protection of Agricultural Land
<b>PMST</b>	Protected Matters Search Tool
<b>PWS</b>	Tasmanian Parks and Wildlife Service
<b>RAA</b>	Reserve Activity Assessment
<b>RMPS</b>	Resource Management Planning System
<b>SFMC</b>	Tasmanian State Fire Management Council
<b>SPP Act</b>	<i>State Policies and Projects Act 1993</i>
<b>SPWQM</b>	The State Policy on the Water Quality Management

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<b>STRLUS</b>	Southern Tasmanian Land Use Strategy
<b>STT</b>	Sustainable Timbers Tasmania
<b>TWWHA</b>	Tasmanian Wilderness World Heritage Area
<b>WM Act</b>	<i>Water Management Act 1999</i>

# Contents

<b>Executive summary</b>	<b>iii</b>
<b>Acronyms and glossary</b>	<b>v</b>
<b>1.0 Introduction</b>	<b>1</b>
1.1 Tarraleah hydropower scheme	1
1.2 Rationale for redevelopment	1
1.3 Contact person for development application	3
<b>2.0 Proposal</b>	<b>4</b>
2.1 The site	4
2.1.1 Land tenure	5
2.1.2 Existing use	7
2.2 Project description	8
2.2.1 Project components	10
2.2.2 Construction activities	11
2.2.3 Access	13
2.2.4 Decommissioning of existing elements	14
2.2.5 Hours	14
2.2.6 Final design and construction impacts	14
2.3 Works not included in this project description	14
<b>3.0 Key matters</b>	<b>15</b>
3.1 Flora and fauna	15
3.1.1 Matters of national environmental significance	19
3.2 Aboriginal heritage	19
3.3 Traffic	20
3.4 Bushfire	20
<b>4.0 Legislative context</b>	<b>22</b>
4.1 Environment Protection and Biodiversity Conservation Act 1999	22
4.2 Land Use Planning and Approvals Act 1993	22
4.3 Environmental Management and Pollution Control Act 1994	23
4.4 Aboriginal Heritage Act 1975	23
4.5 Threatened Species Protection Act 1995	23

4.6	Nature Conservation Act 2002	23
4.7	National Parks and Reserves Management Act 2002	24
4.8	Water Management Act 1999	24
4.9	Forest Practices Act 1985	24
4.10	Hydro-Electric Corporation Act 1995	25
4.11	Electricity Supply Industry Act 1995	25
4.12	State Policies	25
4.13	National Environment Protection Measures (NEPMs)	25
4.14	Environment Protection Policies	26
4.15	Tasmanian Planning Scheme - Central Highlands	26
4.15.1	Use class	26
4.15.2	Zones	26
4.15.3	Overlays	28
4.15.4	Central Highlands Local Provisions Schedule	33
<b>5.0</b>	<b>Planning Assessment</b>	<b>34</b>
5.1	Southern Tasmanian Land Use Strategy	34
5.2	Objectives of Resource Management Planning System	34
5.3	Village zone	35
5.4	Utilities zone	36
5.4.1	Works in the Utilities Zone	36
5.4.2	Clause 26.1 - Zone purpose	39
5.4.3	Clause 26.3 – Use standards	39
5.4.4	Clause 26.4 – Development standards for buildings and works	40
5.4.5	Clause 26.5 – Developments for subdivision	41
5.5	Rural zone	41
5.5.1	Works within Rural Zone	41
5.5.2	Clause 20.1 – Zone purpose	44
5.5.3	Clause 20.3 – Use standards	45
5.5.4	Clause 20.4 – Development Standards for Buildings and Works	45
5.5.5	Clause 20.5 – Development Standards for subdivision	46
5.6	Environmental management zone	46
5.6.1	Works in Environmental Management Zone	46
5.6.2	Clause 23.1 – Zone purpose	47
5.6.4	Clause 23.3 – Use standards	48
5.6.5	Clause 23.4 – Development standards for buildings and works	49



5.6.6	Clause 23.5 – Development standards for subdivision	51
5.7	Recreation zone	52
5.7.1	Works within Recreation Zone	52
5.7.2	Clause 28.1 – Zone purpose	53
5.7.3	Clause 28.3 – Use standards	53
5.7.4	Clause 28.4 – Development standards for buildings and works	53
5.7.5	Clause 28.5 – Development standards for subdivision	53
<b>6.0</b>	<b>Conclusion</b>	<b>54</b>
<b>Appendices</b>		
<b>A</b>	<b>Certificate of Titles</b>	
<b>B</b>	<b>Map Book</b>	
B.1	Project area overview	
B.2	Disturbance area overview	
B.3	Parcels within disturbance area	
B.4	Land tenure	
B.5	Works in Tarraleah Conservation Area	
B.6	Zoning overview	
B.7	Village zone	
B.8	Utilities zone	
B.9	Rural zone	
B.10	Environmental management zone	
B.11	Recreation zone	
B.12	Attenuation area overlay	
B.13	Bushfire-prone areas overlay	
B.14	Electricity transmission infrastructure corridor overlay	
B.15	Landslip hazard overlay	
B.16	Natural assets overlay	
<b>C</b>	<b>Landowner Consent</b>	
<b>D</b>	<b>Baseline Terrestrial Ecology Report</b>	
<b>E</b>	<b>Concept drawings – Tarraleah Power Station</b>	
<b>F</b>	<b>Concept drawings – Surge tower and pump station</b>	

## List of figures

<b>Figure 1:</b> Existing Tarraleah Power Scheme	1
<b>Figure 2:</b> Project area	5
<b>Figure 3:</b> Land tenure across project site (excluding the transmission line)	6
<b>Figure 4:</b> Land tenure across transmission line alignment	7
<b>Figure 5:</b> Location of existing Tarraleah hydropower scheme with proposed project	8
<b>Figure 6:</b> Disturbance area of Project	9
<b>Figure 7:</b> Key roads in the Project area	13
<b>Figure 8:</b> Vegetation communities within the Tarraleah Redevelopment Project survey area	16
<b>Figure 9:</b> Vegetation communities within the Tarraleah Redevelopment Project transmission line survey area	17
<b>Figure 10:</b> Zones across the project site	27
<b>Figure 11:</b> Attenuation areas overlay	28
<b>Figure 12:</b> Bushfire-prone areas overlay	29
<b>Figure 13:</b> Electricity transmission infrastructure protection code overlay	30
<b>Figure 14:</b> Low landslip hazard overlay	31
<b>Figure 15:</b> Priority vegetation overlay	32
<b>Figure 16:</b> Waterway and coastal protection overlay	33
<b>Figure 17:</b> Works within Village zone	36
<b>Figure 18:</b> Works within Utilities zone (western area)	37
<b>Figure 19:</b> Works within Utilities zone (Tarraleah village area)	38
<b>Figure 20:</b> Works within Utilities zone (transmission line)	39
<b>Figure 21:</b> Works within Rural zone (western project area)	42
<b>Figure 22:</b> Works within Rural zone (Tarraleah village area)	43
<b>Figure 23:</b> Works within Rural zone (eastern project area)	44
<b>Figure 24:</b> Works within Tarraleah Conservation Area	46
<b>Figure 25:</b> Works within Environmental Management zone	47
<b>Figure 26:</b> Works within Recreation zone	52

## List of tables

<b>Table 1:</b> Summary of zones within project area and associated infrastructure within those zones	27
<b>Table 2:</b> Assessment of the proposed development against objectives of the RMPS	34

# 1.0 Introduction

This proposal relates to the redevelopment of the Tarraleah Hydropower Scheme in the Tasmanian Central Highlands with the purpose of increasing the schemes overall capacity, operational flexibility, and efficiency to meet the evolving needs of the National Electricity Market (NEM).

## 1.1 Tarraleah hydropower scheme

The existing Tarraleah Hydropower Scheme is located in the Central Highlands of Tasmania and is part of the Derwent Hydropower Scheme. The scheme has very high utilisation and generates around 634 gigawatt hours (GWh) per annum of largely base load power, which is approximately 6.5% of Hydro Tasmania’s total annual generation.

The Tarraleah Hydropower Scheme was commissioned in 1938. Much of the scheme is more than 80 years old and many of its assets are nearing the end of their operational life. As the scheme is ageing, it is in need of significant investment to ensure it can avoid risk of failure and continue to deliver renewable energy reliably and safely well into the future. A feasibility study looked at how to reimagine the scheme to deliver more energy and improve flexibly to suit the needs of a future NEM that has a substantially higher portion of variable renewable energy. This study demonstrated the technical feasibility of redeveloping the Tarraleah Hydropower Scheme, with potential to transform the scheme to increase capacity and flexibility.

The existing scheme operates with a headwater storage of the Tarraleah Hydropower Scheme, Lake King William, formed by the construction of Clark Dam on the River Derwent. Water from Lake King William is transferred from Butlers Gorge Power Station and Nieterana mini-hydro power station via two conveyances; No. 1 Canal and No. 2 Canal, to the Tarraleah Power Station located on the western bank of the Nive River. No. 1 Canal transfers water directly to No. 1 Pond, while No. 2 Canal transfers water via Mossy Marsh Pond and No. 2 Pond to No. 1 Pond. Water from No. 1 Pond is transferred to the Tarraleah Power Station via a hilltop pipeline and penstocks (refer Figure 1).

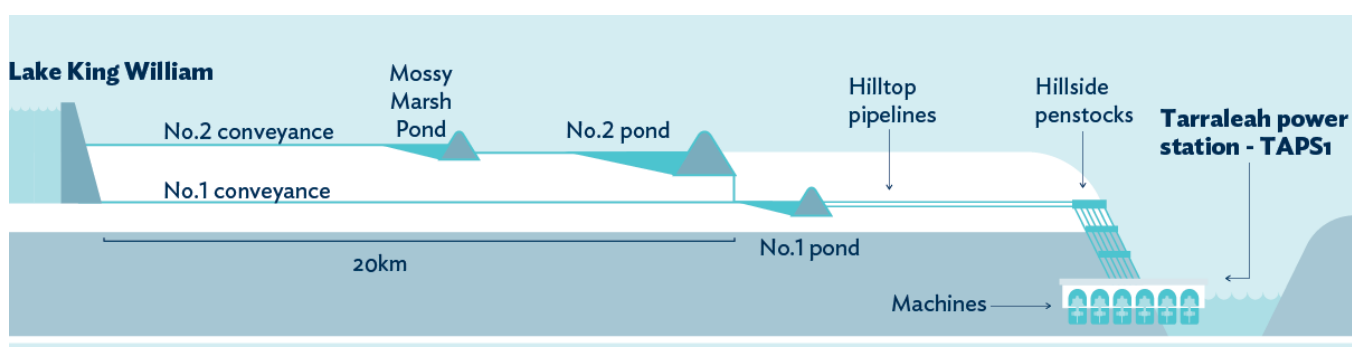


Figure 1: Existing Tarraleah Power Scheme

## 1.2 Rationale for redevelopment

The rationale of the Tarraleah Redevelopment is to:

- transition the existing Tarraleah and Derwent scheme from baseload to flexible generation, increasing efficiency and capacity in order to suit a future electricity market that has substantially higher proportion of variable renewable energy generation;

- design for inter- and intra-season generation flexibility, capable of turning off for several days to weeks without spill, while running at full output during extended periods of high demand; and
- address the risks associated with aging and end of life assets – in particular the No. 1 conveyance, the hillside penstocks and the generating units in the existing power station.

An extensive options assessment and development process was also undertaken to assess other alternatives. A 'do nothing' strategy, by which the condition of the scheme would be allowed to deteriorate to the point that it would no longer be operational is not considered a prudent position.

### **Scheme capacity**

Lake King William is a substantial storage, and its upstream catchment has a yield of close to 30m<sup>3</sup>/s. The proposed action considers a conveyance capacity of approximately 60m<sup>3</sup>/s, which provides ability for the scheme to operate at 50% utilisation factor on an annual basis. This allows the scheme to flexibly dispatch power over both short (hours) and medium to long (days-weeks) term timeframes, thus ensuring it can effectively dispatch energy into an electricity market with high penetration levels of variable renewable energy sources. Alternative flow rates are not considered as:

- a lower discharge capacity does not allow for this flexible generation profile; and
- a higher discharge capacity exceeds the downstream capacity of Liapootah Power Station and results in reduced generation output due to spill.

The pre-feasibility study (2017), feasibility study (2018-2020) and project development (2021-2022) has assessed scheme flow rates from 40m<sup>3</sup>/s (existing scheme flow rate) through to 80m<sup>3</sup>/s. These assessments have concluded that that a flow rate of approximately 60m<sup>3</sup>/s is the best configuration that meets the redevelopment objectives.

### **Conveyance arrangement**

A direct or pressurised conveyance system from Lake King William to the Nive River allows the maximum available head difference to be utilised for energy generation while replacing the end-of-life conveyance assets. Alternative design arrangements, which utilise open flow water ways such as canals to transfer the water from Lake King William to a head pond above the power station resulting in 15-20% less energy output for the same water flows, and additional infrastructure, such as large storage ponds which provide significantly less flexibility, fell short of the objectives to provide inter-seasonal flexibility.

The pre-feasibility study (2017) assessed multiple alternative conveyance configurations and undertook a detailed analysis of the following three broad options:

- a new long pressure tunnel / pipe conveyance from Lake King William to a new power station on the Nive River close to the existing Tarraleah Power Station;
- the construction of a new No. 3 Conveyance from Lake King William to Mossy Marsh Pond to bypass the existing canal system, raising No. 2 Pond to increase its storage capacity and a new pressurised tunnel from No. 2 Pond to a new power station on the Nive River close to the existing Tarraleah Power Station; and
- refurbishment of existing assets while maintaining the scheme in its current configuration.

These options were further developed and analysed during the Feasibility Study (2018-2020) and Design development (2021-2022). Assessments conclude that Option 1 is the only redevelopment option meeting all the Project objectives.

### **Power station arrangement**

A new power station is required to house the larger and more efficient hydro-electric generating units required due to the increased flow and head provided by the redevelopment conveyance arrangement. Several locations

and arrangement(s) of the power station were assessed during the Feasibility Study (2018-2020) and Development phase (2021-2022). These assessments showed that the proposed location, adjacent to the existing Tarraleah Power Station, best meets the following Project objectives:

- located on west bank of Nive River and eliminates requirements for both penstock and access bridges across the Nive River;
- maximise head available and therefore scheme output; and
- existing terrace provides space for construction and implementation of permanent and temporary flood proofing and limits the extent of in river works.

If Hydro Tasmania does not reach a positive financial investment decision (**FID**) to proceed with Redevelopment, the alternative investment decision would be a refurbishment option that involves the replacement or refurbishment of the end-of-life generating assets. A refurbishment option does not meet the redevelopment objectives as it would not allow the scheme to respond well to the predicted operating requirements of a future energy market.

### 1.3 Contact person for development application

The nominated contact person for this planning application is:

**Ian Jones**

**Principal Environment Policy and Planning Specialist**

Hydro Tasmania

4 Elizabeth Street, Hobart, TAS 7000

[ian.jones@hydro.com.au](mailto:ian.jones@hydro.com.au)

## 2.0 Proposal

### 2.1 The site

The Tarraleah Redevelopment Project (**the Project**) is in the vicinity of Tarraleah in the Central Highlands of Tasmania, approximately 125 km northwest of the capital city of Hobart. Access to the Project area is provided by the Lyell Highway and Butlers Gorge Road. Butlers Gorge Road is unsealed, and connects the Lyell Highway to Lake King William and Butlers Gorge Power Station, totalling approximately 17 km in road distance.

The proposed project area, shown in **Figure 2** (and Appendix B.1), covers 4,208 ha over 24 allocated and unallocated land parcels, and two reserved roads. The project area extends from Lake King William to Dee Lagoon. A disturbance area, which represents the area of above ground clearance, is contained within the project area (refer to Appendix B.2) and described in further detail in Section 2.2.

Of the 24 parcels within the project area, 16 are allocated parcels:

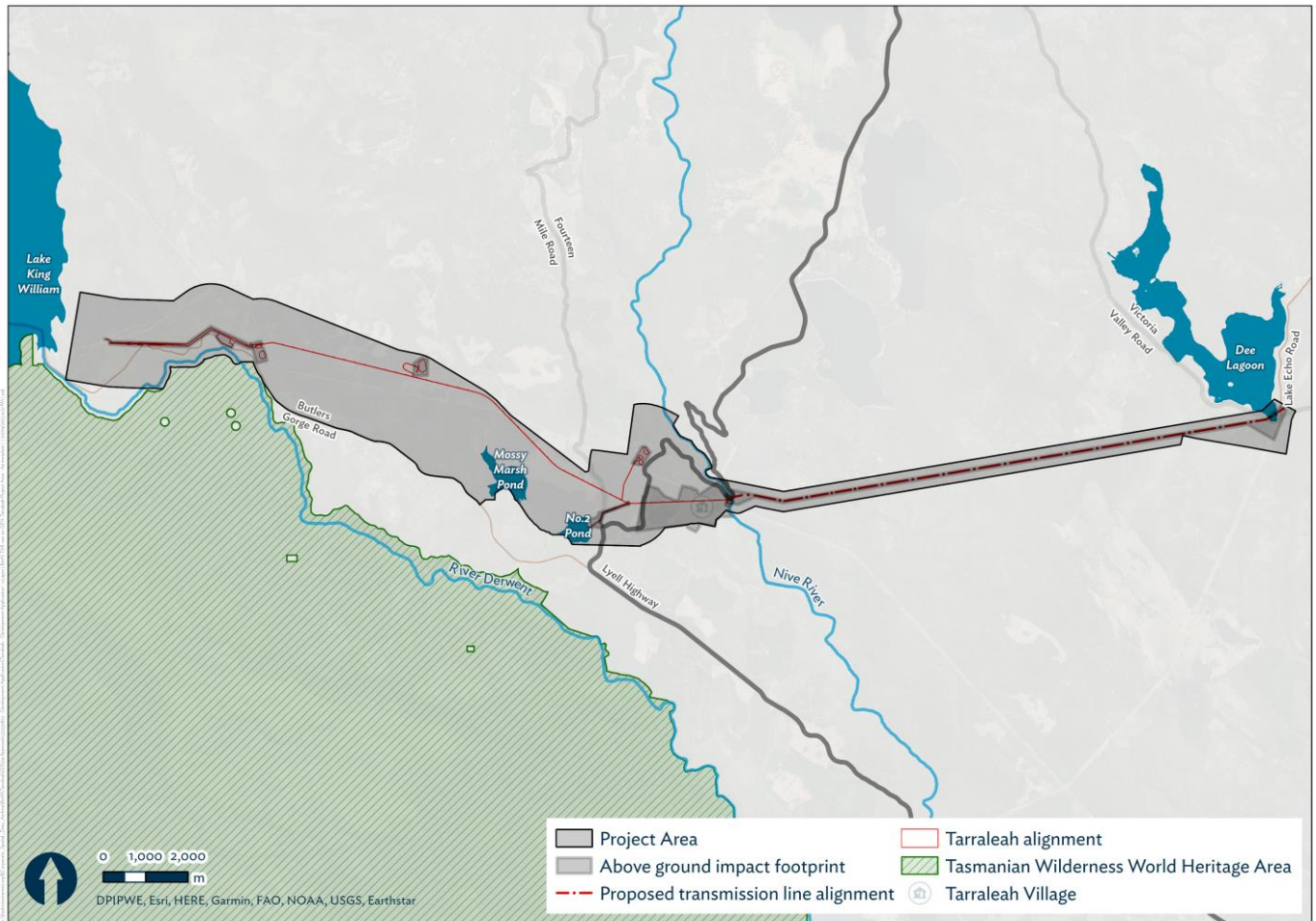
- PID 3384222 – Sustainable Timber Tasmania
- CT 142214/1 – Sustainable Timber Tasmania
- CT 135598/1 – Sustainable Timber Tasmania
- CID 1297597 – Parks and Wildlife Service
- CID 1156124 – Hydro-electric Corporation
- CT 138606/1 – Sustainable Timber Tasmania
- CT 136719/3 – Hydro-electric Corporation
- CT 136719/101 – Reserved Road (The Crown), Lyell Highway
- CT 147038/2 – Woolnorth Bluff Point Holdings Pty Ltd (subsidiary of Hydro-electric Corporation)
- CT 139745/1 – Woolnorth Bluff Point Holdings Pty Ltd (subsidiary of Hydro-electric Corporation)
- PID 3385073 (includes CT136529/1 and CT142602/1) – Sustainable Timber Tasmania
- CT 133439/1 – Sustainable Timber Tasmania
- CT 135373/1 – Sustainable Timber Tasmania
- CT 222384/5 – Hydro-electric Corporation
- CT 133449/1 – Hydro-electric Corporation
- CT 133448/1 – Sustainable Timber Tasmania.

The eight unallocated parcels are authority land managed by Sustainable Timber Tasmania and Hydro-electric Corporation, and two reserved roads. Maps showing parcels that intersect the project area is included in Appendix B.3. Landowner consent from Department of State Growth, Parks and Wildlife Services, and Sustainable Timber Tasmania is included in Appendix C.

The project area is adjacent to the Tasmanian Wilderness World Heritage Area (**TWWHA**), and the Franklin-Gordon Wild Rivers National Park is located to the southwest of the project area. There are no direct impacts on neither the TWWHA nor the National Park.

Associated waterbodies of the Project include the River Derwent from Clark Dam to Lake Catagunya, the Nive River from Tarraleah Power Station to Wayatinah Lagoon, Lake King William, Lake Liapootah, Wayatinah Lagoon,

Mossy Marsh Pond, and No. 1 Pond and No. 2 Pond. All of these are regulated through Hydro Tasmania’s current operation of the Derwent Power Scheme.



**Figure 2:** Project area

The Project traverses undulating topography but generally falls from Lake King William towards the proposed new power station. The highest point within the project area is 814 m (AHD83) at the termination of the proposed transmission line to the northeast of Dee Lagoon, while the lowest is 341 m (AHD83) at the site of the proposed new Tarraleah Power Station.

### 2.1.1 Land tenure

The above ground works for the Project is predominately located on land classified as Permanent Timber Production Zone Land, managed by Sustainable Timbers Tasmania (STT), as well as land owned and managed by Hydro-Electric Corporation (Hydro Tasmania) (refer to [Figure 3](#) and [Figure 4](#)). A small area of the Tarraleah Conservation Area, which is managed by the Tasmanian Parks and Wildlife Service (PWS), is also within the project area. There will be underground works that traverse private freehold land (Tarraleah Estate), owned by Hydro Tasmania, as well as Lyell Highway, managed by Department of State Growth (DSG), reserved roads (Crown) and local council roads. Land tenure maps are also provided for in Appendix B.4.

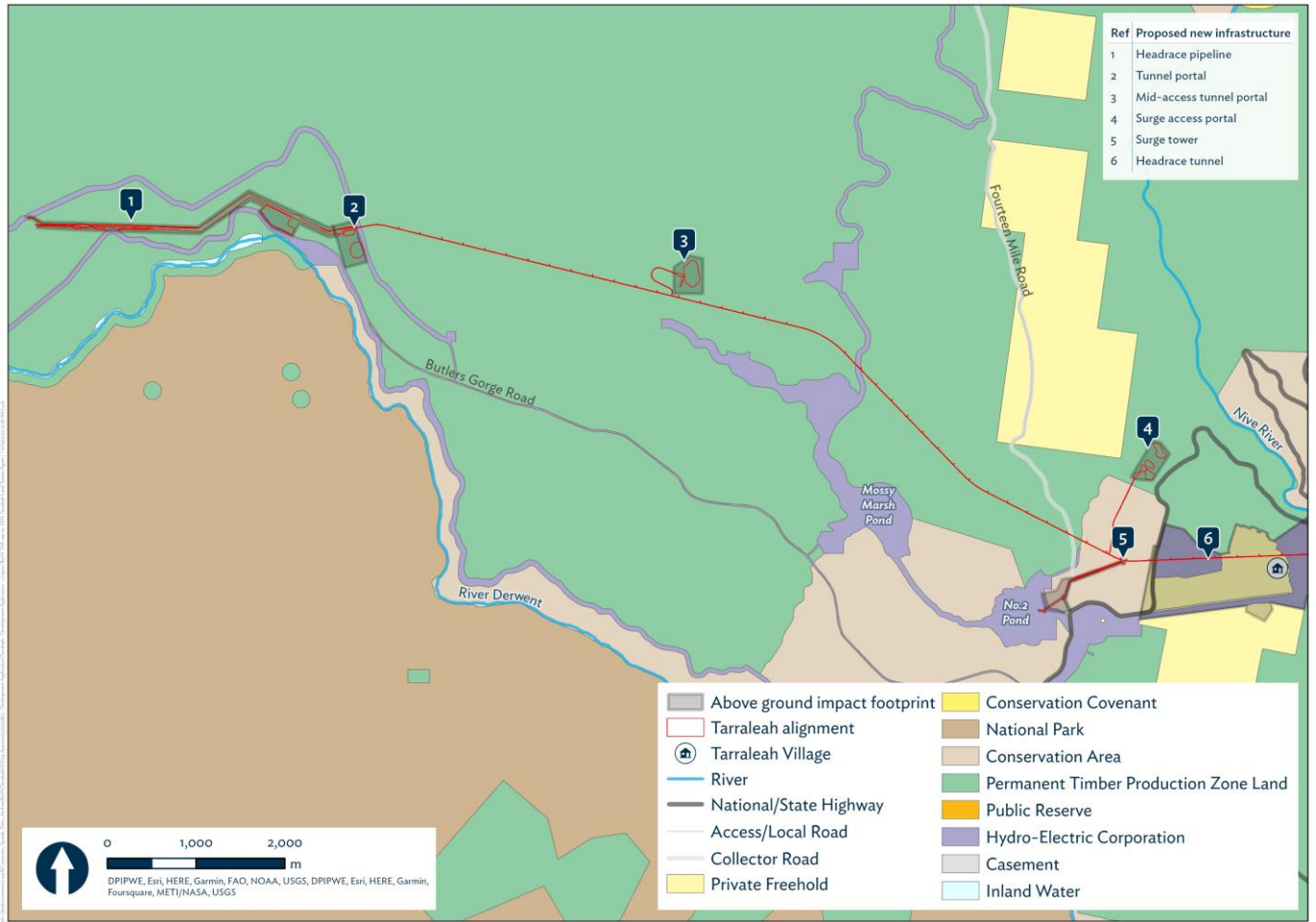
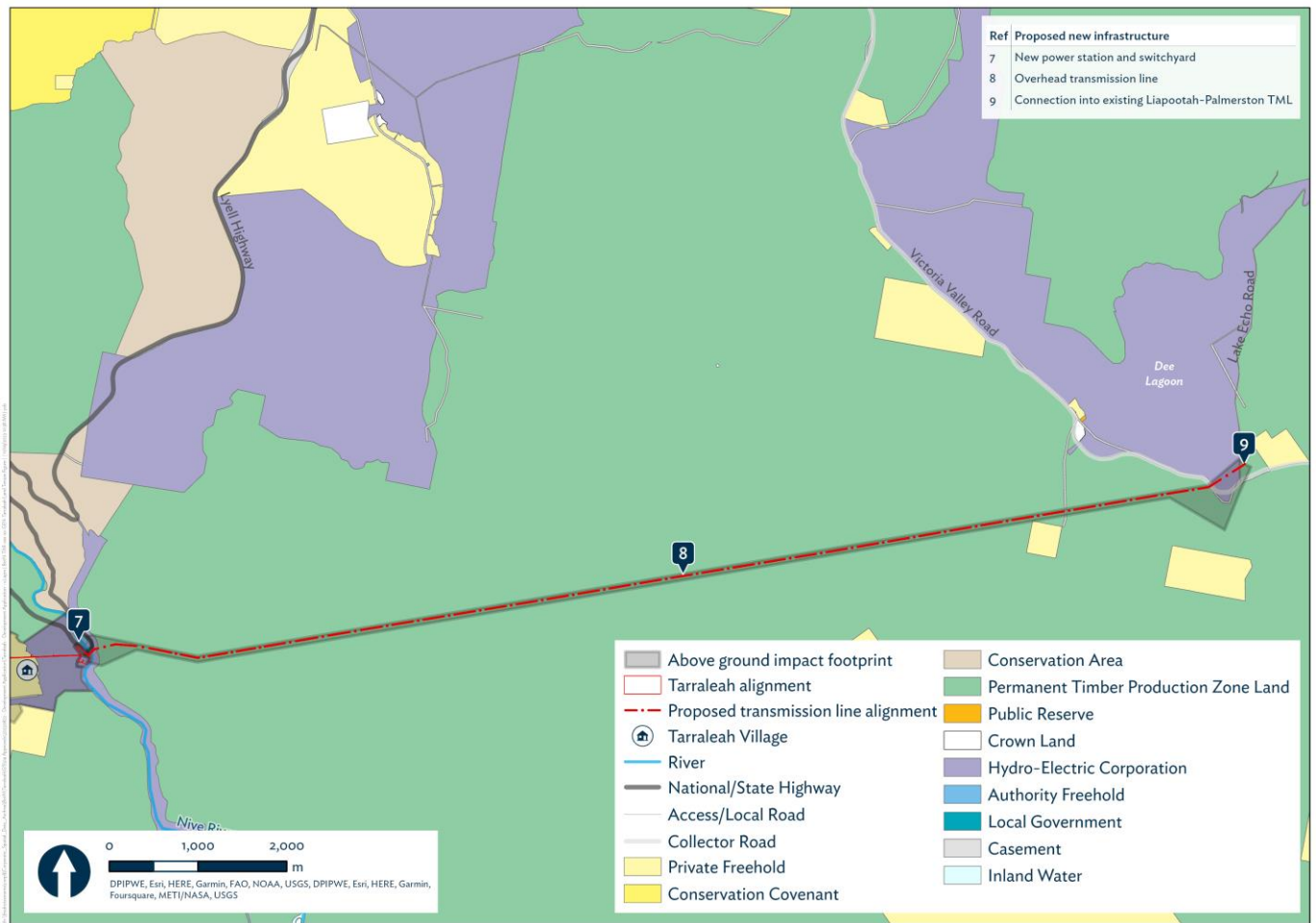


Figure 3: Land tenure across project site (excluding the transmission line)





**Figure 4:** Land tenure across transmission line alignment

### 2.1.2 Existing use

Land use in the Project area is dominated by hydroelectric generation (managed by Hydro Tasmania) and forestry (managed by STT), with some parts of the Project also falling within The Tarraleah Conservation Area, managed by PWS.

The existing Tarraleah hydropower scheme is located adjacent to the proposed Tarraleah Redevelopment Project. Existing infrastructure is highlighted in [Figure 5](#).

With the exception of the conversion of land from forestry operations to use for hydroelectric generation, no other change in land use is proposed.

In addition to hydroelectric generation and forestry, Tarraleah Estate is located on the hillside above the existing Tarraleah Power Station. Tarraleah Estate was originally constructed in the 1930s to house the workforce required to construct the existing Tarraleah Power Scheme. It has since been repurposed as tourist accommodation and an event venue with a focus on the hydroelectric history of the location.

Tarraleah Estate is currently outside the Project area. However, a range of options for workforce accommodation are currently being considered and this may include consideration of Tarraleah Estate in the future. Hydro Tasmania also re-purchased the Tarraleah village in mid-2023.

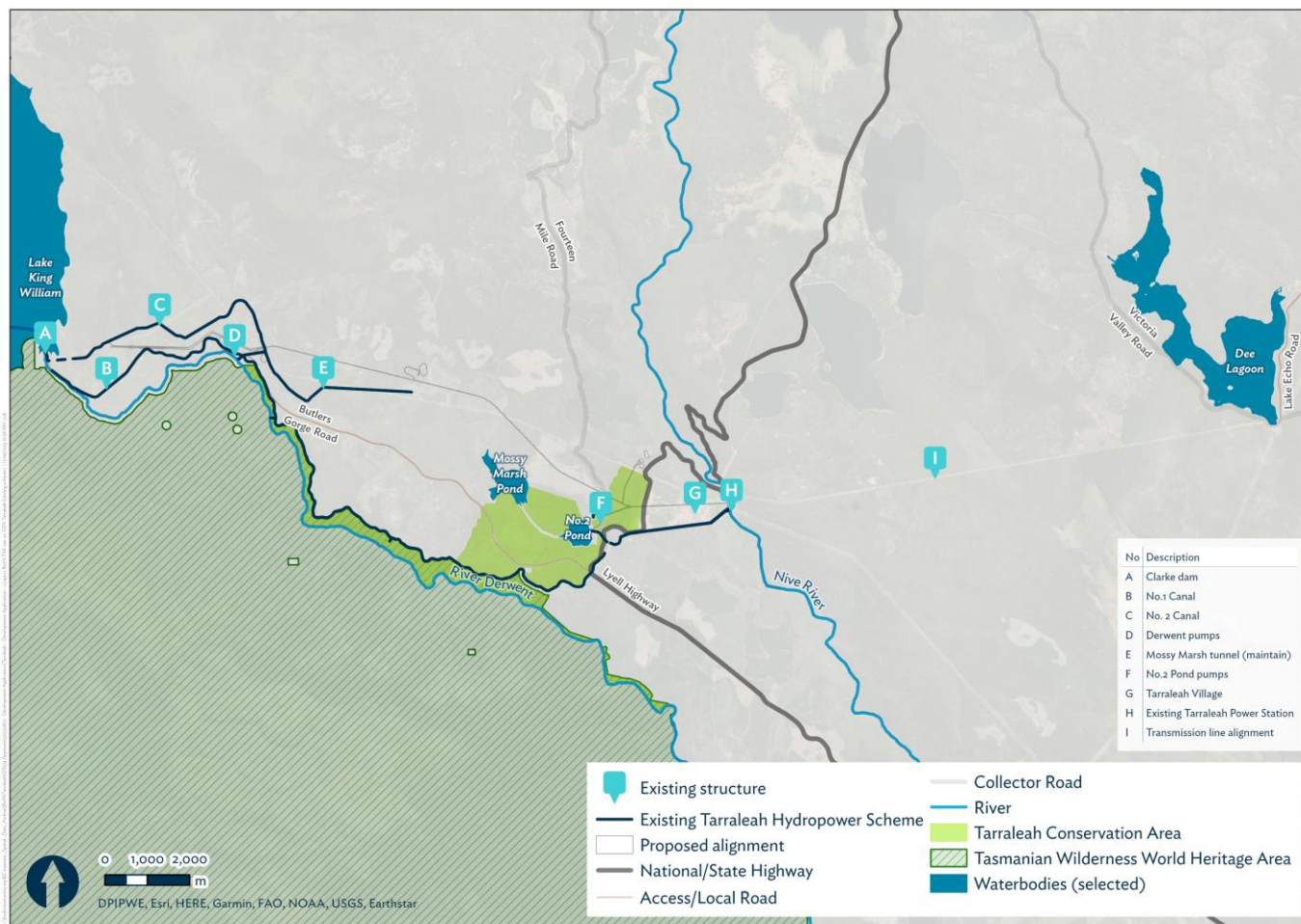
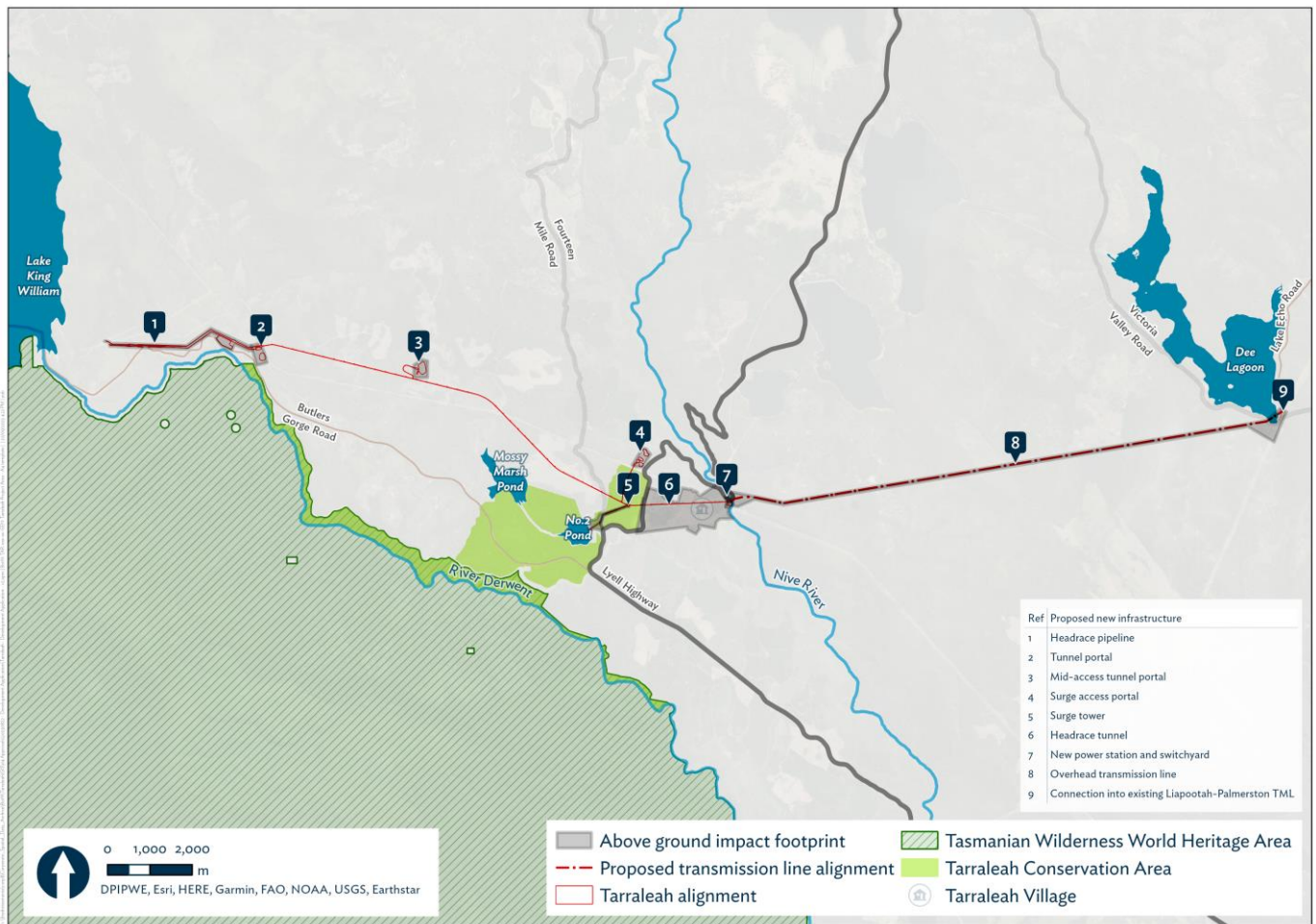


Figure 5: Location of existing Tarraleah hydropower scheme with proposed project

## 2.2 Project description

Hydro Tasmania is seeking a planning permit to develop a 190MW capacity hydro-electric power scheme on the site adjacent the existing Tarraleah Power Scheme in the Tasmanian Central Highlands. The purpose of this development is to further the existing infrastructure where practicable and hence ensuring the facility is capable of meeting future electricity needs and demands.

The proposed project will utilise a new intake on Lake King William and an associated approximately 1 km tunnel currently being constructed as part of a program of upgrade works scheduled to be completed in 2025. Overall, the project subject to this development application will have a above ground disturbance footprint of up to 280.6 ha, as shown in Figure 6.



**Figure 6:** Disturbance area of Project

The current reference design for the Project will comprise construction of the following infrastructure:

- headrace pipeline, approximately 4.2 km long up to 4 m diameter, connected to the intake on Lake King William and tunnel completed during upgrade works
- arched headrace tunnel, approximately 12 km long, up to 6.5 m high and 5.5 m wide
- access tunnels and portals to headrace and power tunnels and associated permanent spoil storage stockpiles
- surge tower, up to 75 m high (above ground level) and 14 m diameter and associated underground surge shaft to control water pressure in the headrace and power tunnels
- pumping station of approximately 6 cumec, and approximately 1.1 km long pipeline to transfer water from the existing No. 2 Pond to the surge tower
- new hydropower station with an installed capacity of approximately 190 MW and a rated flow of approximately 60 cumecs located adjacent to the existing Tarraleah Power Station
- new 220 kilovolt (kV) transmission line of approximately 13 km in length, connecting the new power station to the existing Liapootah to Palmerston transmission line located to the east
- new switchyard within an area of up to 60 m by 100 m located either adjacent to the existing Tungatinah Power Station or within the easement of the existing Liapootah to Palmerston transmission line.

Construction activities and impacts to support development of this operation of the Project that have a potential impact on the environment are:

- Clearance of up to 176.8 ha of native vegetation (of which approximately 90 ha has previously been harvested for forestry) and 103.8 ha of modified vegetation communities to allow construction of above ground infrastructure.
- Noise and vibration generated by blasting for tunnel construction as well as operation of construction plant and equipment, and concrete batching plants.
- Increase in light and heavy vehicle movements on Butlers Gorge Road and the Lyell Highway associated with the transport of materials, equipment and workforce during construction.

As part of the redevelopment project, the No. 1 Canal, existing Tarraleah Power Station, and hillside penstocks will be decommissioned. Mossy Marsh and No. 2 ponds will transfer less water than current as the pressurised tunnel will bypass these storages and water from the Derwent pumps. The natural pickup will be pumped from Pond No. 2 to a new surge tower.

A detailed description of the proposed components of the Project is provided in the subsections below. Note that dimensions are subject to change during final design.

## 2.2.1 Project components

### 2.2.1.1 Headrace pipeline and tunnel

The proposed headrace pipeline is aboveground, and is approximately 4.2 km long, and up to 4 m in diameter. Approximately 5 m wide access tracks will be constructed on either side of the headrace pipeline. The access tracks will be located within an up to 20 m wide asset protection zone which will be maintained on either side of the pipeline. The headrace tunnel is underground and approximately 12 km long, up to 6.5 m high, and 5.5 m wide..

The headrace infrastructure is required to transfer water from the intake at Lake King William to the new power station. The pipeline connects from the new intake completed during the upgrade works to the intersection point with No.2 Canal. From the No.2 Canal intersection point, the headrace tunnel passes through under STT plantation, Tarraleah Conservation Area, and the Tarraleah Village, before connecting to the new power station. The intake was completed during the upgrade works.

### 2.2.1.2 Tunnel access and portals

Access tunnels and portals are required to provide access to the underground infrastructure for maintenance and upgrades. These access points and portals will be aboveground.

A mid-access portal is situated approximately halfway between Clark Dam and the proposed new power station. It is accessed via the mid-access tunnel that tees off from the headrace tunnel.

A surge access portal is proposed to be north of the surge tower for access to the surge tower.

### 2.2.1.3 Surge tower and pump station

A surge tower is a large pressurised underground chamber, creating a free surface in the waterway to improve the dynamic abilities of the power plant waterways. It is situated within the Tarraleah Conservation Area.

The surge tower is approximately 75 m high (above ground level) and 16 m diameter and associated underground surge shaft to control water pressure in the headrace and power tunnels. An approximately 6 cumec pumping station and 1.1 km long pipeline will be required to transfer water from the existing No. 2 Pond to the surge tower.

#### 2.2.1.4 Power station and switchyard

A new power station with an installed capacity of approximately 190 MW is proposed. The new station will have a rated flow of approximately 60 cumecs, and is proposed to be located adjacent to the existing Tarraleah Power Station.

The new power station is proposed to be an architecturally designed building located between the existing Tarraleah power station and the Nive River. The building will be up to 60 m wide, 27 m deep and 16 m tall. As the area is relatively flat, there is no deep excavation proposed. The new power station is approximately 24 m east of the existing Tarraleah Power Station. Refer to Appendix 0 for the elevations and site plans of the power station.

A switchyard is proposed to be located either adjacent to the existing Tungatinah Power Station or within the easement of the existing Liapootah to Palmerston transmission line. It is proposed to have a footprint of up to 60 m by 100 m.

#### 2.2.1.5 Transmission line

A new high voltage 220 kV overhead transmission line of approximately 13 km in length is proposed to allow connection from the new power station into the existing Liapootah to Palmerston transmission line located to the east. This enables the transmission of electricity generated from the scheme to be exported to the National Electricity Market.

The transmission line is proposed to be located entirely on Crown land managed by STT, except for a small section traversing Dee Lagoon, which is owned and managed by HT. The line will be co-located in the same easement that currently allows for the existing 110 kV Tungatinah to Waddamana transmission line, and will be offset approximately 30 m to the south. A 30 m extension of the transmission line easement to the south will be required. The associated clearances are included in the aboveground disturbance area calculations and vegetation surveys have been undertaken in the proposed expanded corridor.

The new transmission line will tee into the existing 220 kV Liapootah-Palmerston line on the southern side.

#### 2.2.1.6 Stockpile areas

A total of approximately 402,000 m<sup>3</sup> of spoil will be generated from the construction of the Project and will be transformed into permanent stockpile areas to be located adjacent to tunnel portals. These stockpiles will be appropriately rehabilitated and vegetated, and will be contoured to conform with the landscape as best as practically possible.

Material excavated from the power station portal will be transported to Paddy's quarry for disposal.

### 2.2.2 Construction activities

Impacts associated with construction activities include:

- management of groundwater, with expected inflows of up to 0.7 l/s/100m for majority of the tunnel alignment and power station excavation. This will be managed through retention basins, treatment (if required) and discharge to the environment.
- stormwater, erosion and pollution prevention and control, as a result of batching and crushing plants.
- threatened fauna, with pre-construction measures to include preconstruction den surveys for Tasmanian devils, spotted tailed quolls and eastern quolls, management measures to avoid impacts to wedge-tailed eagle and masked owl breeding, and construction traffic to reduce roadkill.
- excavation of up to 726,000 m<sup>3</sup> of material comprising of topsoil, rock, and other than rock materials.

- spoil management, which will trigger Level 2 assessment by the Tasmanian Environmental Protection Agency (EPA), for crushing of approximately 246,000 m<sup>3</sup> of rock, to be used as concrete and shotcrete aggregate, pipe backfill and road pavement.

Laydown areas during construction will make use of existing cleared areas and access tracks and roads where possible.

A construction compound will be required, and is likely to be located on the southern side of the site. It will be approximately 100m x 100m in size and will be surfaced with locally sourced gravel.

A materials storage area will also be included within the compound along with a parking area for construction vehicles. The temporary facilities will be removed following completion of the construction.

A summary of construction process for the major proposed infrastructure is provided below:

- Pipeline
  - Establish site including vegetation clearance, laydown areas
  - Civil work including access tracks, trenches and establishment of concrete plinths
  - Installation of pre-fabricated pipe sections either fully buried, partly buried or on concrete plinths
  - Bedding and backfill of pipeline where buried or partly buried.
- Tunnels and underground works
  - Establish tunnel portals including vegetation clearance, laydown areas, site offices and access
  - Establish raised bore shaft at surge tower
  - Crushing and batching plant establishment at selected portals
  - Excavate tunnel using drill and blast at multiple tunnel headings
  - Dewatering tunnels
  - Shotcrete and ground support tunnels
  - Install steel lining in power tunnel.
- Pump house and surge tower
  - Establish site including vegetation clearance
  - Construct access from Fourteen Mile Road to surge tower location
  - Construct prefabricated steel surge tower
  - Excavate pipeline trench and install prefabricated pipeline from pumphouse to surge tower
  - Construct pump station and installation of electro-mechanical equipment.
- Power station
  - Site establishment including access and laydown areas
  - Excavation and flood protection works
  - Dewatering of power station excavation
  - Establishment of portal to connect power and penstock tunnels
  - Construction of power station including foundation and super structure
  - Installation of electro-mechanical equipment.

- Excavation and construction of tail bay
- Construction of switchyard and 220kV connection.

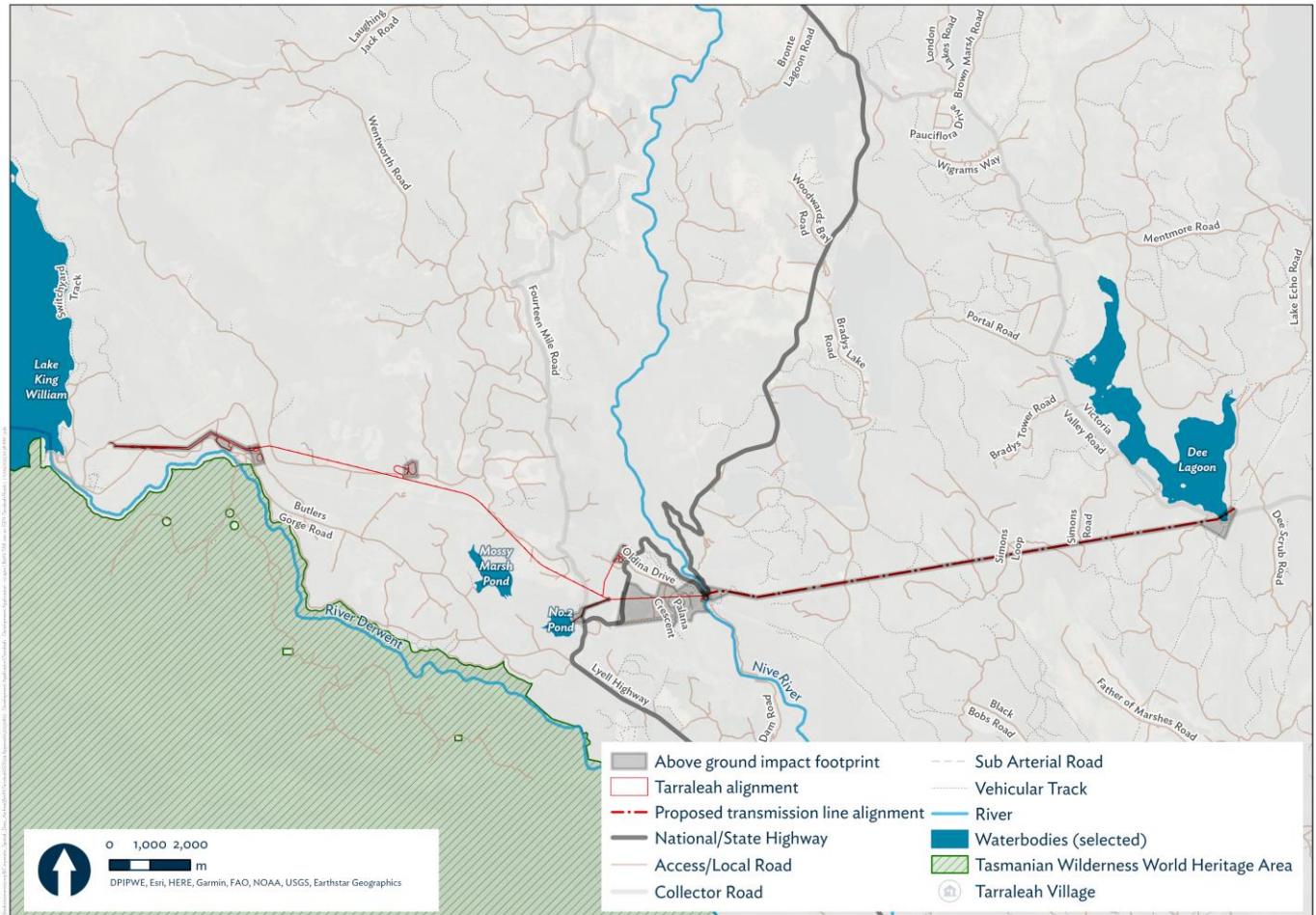
Spoil disposal, backfill and concrete are to be transported by trucks to and from Paddy’s Quarry via Lyell Highway. Based on the preliminary traffic impact assessment, up to 3,500 loads of cement, and up to 9,855 loads for sand and concrete aggregates will be generated (if not produced on site). This estimates to 20,000 semi-trailer loads. Exact number of truck movements have not been calculated as yet.

Over-sized transportation involving a 19 m semi-trailer will be required to transport the transformer and glass-reinforced pipes to site. A permit will be required from Department of State Growth prior to the transportation time. Pilot and escort vehicles will be required in line with the requirements of Heavy Vehicle National Laws. An assessment into loading limitations on the bridges along the transport route is also being undertaken.

### 2.2.3 Access

Access to the project site is afforded primarily by the Lyell Highway and Butlers Gorge Road. The transmission line around Dee Lagoon is accessed via Victoria Valley Road and the remainder of the transmission line is accessed via various minor/unnamed roads from the Lyell Highway.

There is an extensive road/track network within the vicinity of the Project as shown in **Figure 7**, as such new access roads are not required for the Project. Some minor upgrades to existing tracks may be required to facilitate the construction of the project. These upgrade works do not form part of this project subject to this development application.



**Figure 7:** Key roads in the Project area

## 2.2.4 Decommissioning of existing elements

Much of the existing Tarraleah hydropower scheme has heritage value. As part of the redevelopment project, the No. 1 Canal, existing Tarraleah Power Station, and hillside penstocks will be decommissioned, however will not be removed from site.

The decommissioning works will be planned in consultation with Heritage Tasmania and other stakeholders, and is not part of this development application.

## 2.2.5 Hours

Construction works associated with the redevelopment project is estimated to be completed over a four year period, commencing in early 2025, and commissioning is estimated for late 2028.

Above and under ground works will take place 24 hours, 7 days a week. Aboveground works will be reduced at night time.

Ongoing operation of the site will be 24/7 however, after construction there will be no site presence.

Flood lighting will be used for construction and security purposes for the duration of construction as 24/7 operation. Permanent flood lighting will only be for security purposes at power station and pump station.

## 2.2.6 Final design and construction impacts

As indicated above, the proposed project and associated construction activities is based on a reference design that may be subject to minor changes following the appointment of a principal construction contractor. It is anticipated that any minor changes will occur within Project area and are likely to be limited to exterior design of the power station, alignment of pipelines and tunnels, the location of access tunnels, work sites/laydown areas, access tracks and plant and equipment used in construction.

## 2.3 Works not included in this project description

There are existing works being undertaken as part of the Lake King William Intake upgrade works. These works were subject to assessment by the Environment Protection Authority and are outside of this development application.

There are other site preparation works that may be undertaken as part of an early works package, subject to the further design and construction planning by the project team. These could include, but are not limited to:

- upgrades of the Lyell Highway intersection with Butlers Gorge Road
- workforce accommodation at an appropriate site near the Tarraleah Village
- contaminated land assessments associated with the decommissioning of the power station
- geotechnical investigations near the portal areas
- location of explosives magazine.

Details of the above works will be available once a construction contractor has been selected for the Project. Subsequent development applications will be lodged for these works once details are known.



## 3.0 Key matters

### 3.1 Flora and fauna

Ecological surveys of the project's disturbance footprint were conducted between late 2018 to December 2022. The results of the surveys are described in detail in Section 3 of the Tarraleah Redevelopment Project Terrestrial Ecology Report (Appendix D). A summary of the findings is provided below.

#### Vegetation

Seventeen vegetation communities were identified within the survey area, of which 12 native vegetation communities will be impacted across a combined aboveground disturbance area of 176.8 ha (refer to [Figure 8](#) and [Figure 9](#)). These communities are:

- *Eucalyptus amygdalina* forest and woodland on dolerite (DAD)
- *Eucalyptus delegatensis* dry forest and woodland (DDE)
- *Eucalyptus delegatensis* forest with broad-leaf shrubs (WDB)
- *Eucalyptus delegatensis* forest over rainforest (WDR)
- *Eucalyptus dalrympleana* forest (WDA)
- *Eucalyptus dalrympleana*–*Eucalyptus pauciflora* forest and woodland (DDP)
- *Eucalyptus rodwayi* forest and woodland (DRO)
- Pure buttongrass moorland (MBP)
- Buttongrass moorland with emergent shrubs (MBS)
- Subalpine *Diplarrena latifolia* rushland (MDS)
- *Acacia dealbata* forest (NAD)
- *Leptospermum* forest (NLE)

Of the 12 native vegetation communities one, *Diplarrena latifolia* rushland community which occurs on the headrace pipeline alignment, is listed as threatened under the NC Act. In addition, there is a 3.9 ha patch of *Sphagnum* peatland (ASP) adjacent to Mossy Marsh Pond, approximately 1 km south of the tunnel alignment. While this community is not within the Project footprint, it may potentially be affected by hydrological changes as a result of changes in the operation of the redeveloped Tarraleah hydropower scheme.

Four non-native vegetation communities were also recorded during surveys, and will be impacted across an aboveground disturbance area of 103.8 ha. These communities are:

- Regenerating cleared land (FRG)
- Hardwood plantations for silviculture (FPH)
- Permanent easement (FPE)
- Extra-urban miscellaneous (FUM).

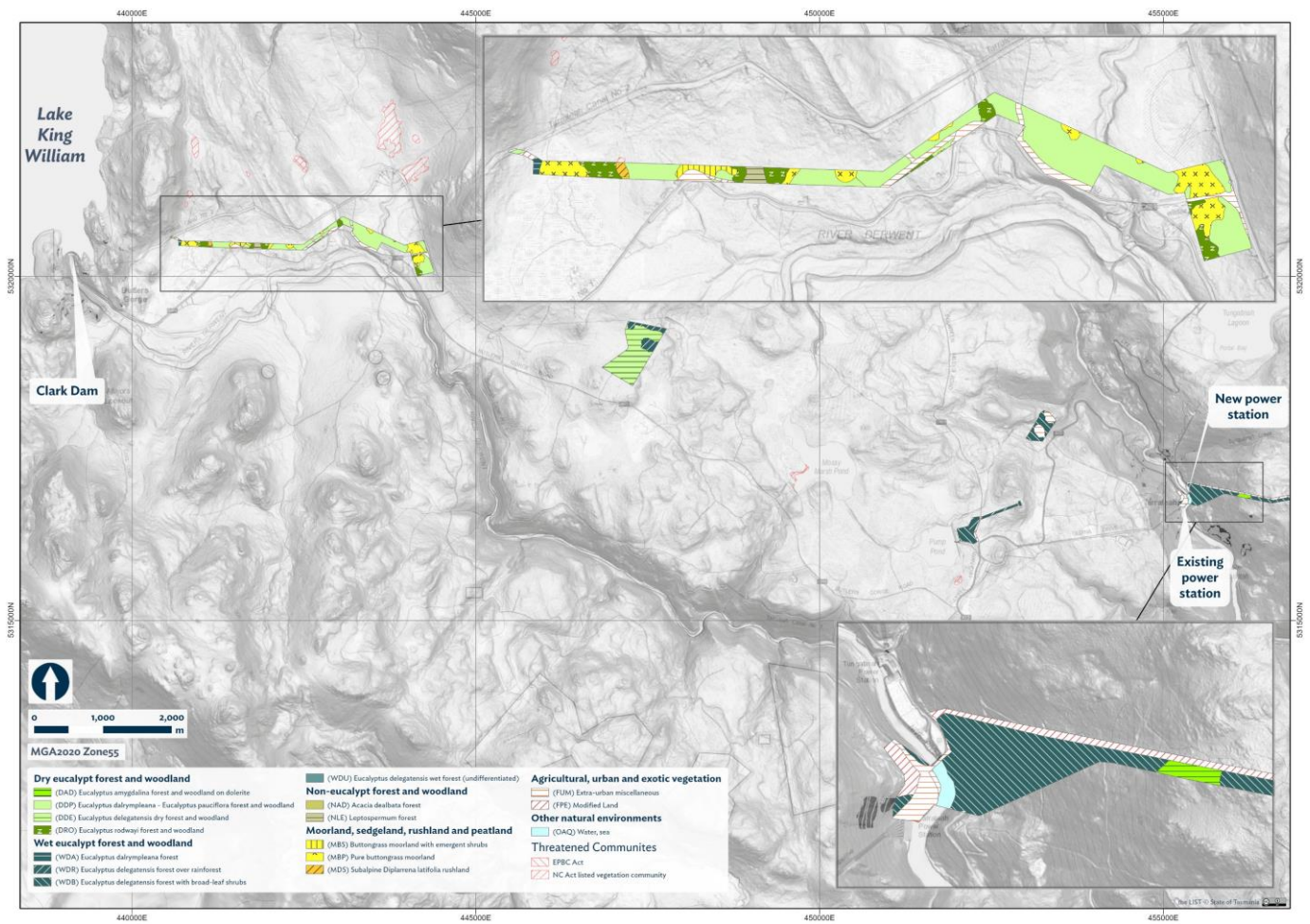
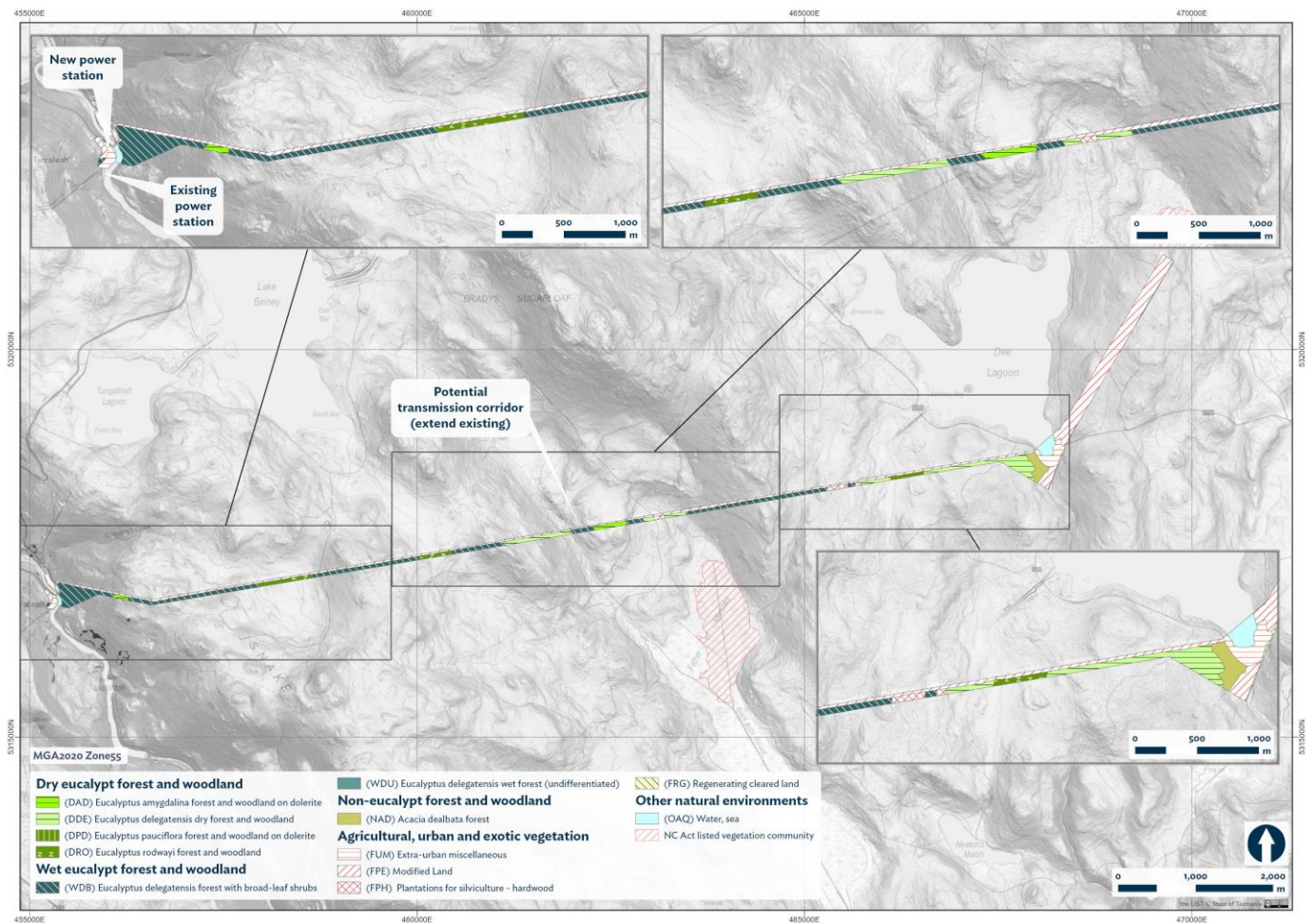


Figure 8: Vegetation communities within the Tarraleah Redevelopment Project survey area



**Figure 9:** Vegetation communities within the Tarraleah Redevelopment Project transmission line survey area

## Flora

The field surveys recorded 135 flora species within the project area. Of these, 119 were native and the remaining 16 were introduced. Of these records, the following three threatened flora species were recorded within the survey area:

- *Westringia angustifolia* (narrowleaf westringia) – rare (TSP Act)
- *Muehlenbeckia axillaris* (matted lignum) – rare (TSP Act)
- *Ptherosphaera hookeriana* (Mount Mawson Pine) – vulnerable (TSP Act).

*W. angustifolia* was recorded at two locations along the transmission line alignment, and at three locations of one plant each, along the River Derwent between Clark Dam and Wayatinah Lagoon.

*Barbarea australis* (native watercress), listed as endangered under both the EPBC Act and the Tasmanian *Threatened Species Protection Act 1995 (TSP Act)*, was recorded from the River Derwent downstream of Wayatinah Lagoon and from the Nive River upstream and downstream of Lake Liapootah during surveys of associated waterbodies. Targeted surveys of the entire 25 km reach of the River Derwent downstream from Derwent Pumps Weir to Wayatinah Lagoon did not record any *B. australis* however, patchy suitable habitat was recorded. *Muehlenbeckia axillaris* was recorded at one location along the River Derwent between Clark Dam and Wayatinah Lagoon, as was *Ptherosphaera hookeriana*. It is noted also that *Pomaderris elachophylla* was recorded just outside the survey area in the vicinity of the headrace tunnel portal.

## Fauna

Surveys recorded three habitat types within the disturbance footprint:

- dry sclerophyll forest
- wet sclerophyll forest
- buttongrass moorland.

Wet and dry forest provides suitable habitat for three species listed on both the TSP Act and EPBC Act – the Tasmanian devil (*Sarcophilus harrisii*), spotted-tailed quoll (*Dasyurus maculatus* subsp. *maculatus*) and eastern quoll (*Dasyurus viverrinus*). Surveys did not record devil or quoll dens, however, there are records of all three species within 5 km of the disturbance footprint and all are considered likely to occur within the disturbance footprint.

The eastern barred bandicoot (*Perameles gunnii*) was identified by the PMST as potentially occurring; however, it is considered unlikely to be present in the disturbance footprint as the closest record is 14 km from the disturbance footprint and there is no suitable habitat in the disturbance footprint.

There are three recorded Tasmanian wedge tailed eagle (*Aquila audax fleayi*) nests within 1 km of the disturbance footprint, all located to the south of the transmission line alignment. The wedge-tailed eagle is listed under the TSP Act and EPBC Act.

A further six fauna species listed under the EPBC Act are considered likely to potentially occur in the disturbance footprint due to the presence of suitable foraging and/or breeding habitat, however was not directly recorded during the surveys:

- satin flycatcher (*Myiagra cyanoleuca*)
- swift parrot (*Lathamus discolor*)
- white-throated needletail (*Hirundapus caudacutus*)
- fork-tailed swift (*Apus pacificus*)
- Latham's snipe (*Gallinago hardwickii*)
- Tasmanian masked owl (*Tyto novaehollandiae castanops*)

The grey goshawk (*Accipiter novaehollandiae*), listed under the TSP Act, is also considered likely to occur within the disturbance footprint.

No aquatic fauna species listed under either the TSP Act or EPBC Act were recorded during surveys of the associated waterbodies nor are they considered likely to occur. One species of fish – Clarence galaxias (*Galaxias johnstoni*) – was identified by the PMST as potentially occurring but is considered unlikely to occur as the waterbodies associated with the Tarraleah Redevelopment Project are outside the known range of the Clarence galaxias.

Other aquatic fauna either recorded or considered likely to occur in the waterbodies associated with the Tarraleah Redevelopment Project include the native species freshwater crayfish (*Astacopsis tricornis*), short-finned eel (*Anguilla australis*) rakali (*Hydromys chrysogaster*) and *Ornithorhynchus anatinus* (platypus) and the introduced species brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*). None of these species are listed under either the TSP Act or EPBC Act.

## Weeds and introduced species

Four declared weed species have been recorded within the disturbance footprint; *Cirsium arvense* var. *arvense*, *Ulex europaeus*, *Genista monspessulana* and *Cytisus scoparius*. The project area is located within the Central Highlands municipality which is a Zone B municipality for all of these species. There was no evidence of

*Phytophthora cinnamomi* infection in the susceptible vegetation communities such as buttongrass moorland within the project area.

### 3.1.1 Matters of national environmental significance

There were also three ecological communities listed under the EPBC Act identified as potentially occurring within 5 km of the survey area on the Protected Matters Search Tool (**PMST**). These are:

- Alpine Sphagnum Bogs and Associated Fens (Endangered)
- Tasmanian Forests and Woodlands dominated by black gum or Brookers gum (*Eucalyptus ovata* / *E. brookeriana*) (Critically Endangered)
- Tasmanian white gum (*Eucalyptus viminalis*) wet forest (Critically Endangered).

The *Sphagnum* peatland located within the survey area is a component of the Commonwealth-listed Alpine Sphagnum Bogs and Associated Fens ecological community.

As MNES, these matters are being assessed by the Commonwealth via the preliminary documentation process and are not part of the State or local assessment processes.

## 3.2 Aboriginal heritage

As a result of the hazards associated with surveying in the steep terrain in and near Tarraleah, negative findings of the desktop assessment and lack of identifiable heritage impacts, no ground surveys with Aboriginal Heritage Officers and associated community consultation have been conducted of the River Derwent within the TWWHA. The assessment of potential values and impacts is based on desktop review.

Archaeological research carried out since the 1980s, including several large-scale regional studies supplemented by forestry coupe and linear infrastructure surveys, suggest that social and economic life in the highlands was heavily focussed around the lakes and the margins of chains of grassy plains that were maintained by cultural burning. Occupation places were clustered rather than dispersed, forming villages of huts that were used and maintained for several seasons before being re-made. Activity areas were connected by managed 'road' corridors for ease of travel, contrasting with the higher mobility occupation and more general movement patterns observed in low-lying and coastal areas. The economy and lifestyle were largely transhumant with clans residing in their homelands during the summer and visiting coastal neighbours during the cooler months, a pattern that appeared to have commenced around 3,000 years ago when the highlands are thought to have been re-occupied following a long post-glacial hiatus.

The archaeological record of this highland way of living comprises substantial artefact scatters around many of the major lakes and marsh/plain edges, with a preference for just inside the forest interfaces which provided the desired degree of shelter, construction resources and strategic amenity. Open sites away from these favoured high-resource zones are small and low density, suggesting rapid movement between targeted activity areas and travel destinations.

Ethnohistorical accounts suggest that the major tributaries of the Derwent, including the Clyde, Ouse, Dee, and Kenmore Rivulets. that drained the eastern portion of the Central Plateau were favoured routes for clans of the Big River people to move between the Derwent valley and major upland lakes and wetlands (i.e. *yingina*/Great Lake, Arthurs Lake, Lakes Crescent, Sorell, Echo etc.) rather than the Derwent above the Nive, which was heavily wooded and steep with few resources. This scenario is supported by the archaeological record, which shows a high density of occupation sites around the lakes and along the waterways and ridges of the open valley systems connecting them.

The TWWHA portion of the River Derwent passes through a steep dolerite ravine and does not contain known Pleistocene sites and cultural deposits, rock art or ceremonial sites, or places associated with significant cultural

resources including stone and ochre. Predictive criteria based on over 25 years' archaeological study suggests that it is extremely unlikely to contain such sites. The narrowness of the valley and steepness of terrain, which typically ranges between 10-50o, is extremely prejudicial to both the formation and preservation of archaeological sites and is an exclusion factor for surveys under the Forest Practices Code which is endorsed under *the Aboriginal Heritage Act 1975 (Tas) (AHT)*.

Hydro Tasmania provided a briefing to the Aboriginal Heritage Council on 28 October 2022 with a project overview and discussion of proposed mitigation measures. An Aboriginal Liaison officer has been engaged to facilitate ongoing engagement.

### 3.3 Traffic

Due to the substantial increase of heavy vehicles moving in and around the Tarraleah site through the development phase of the project, a traffic impact assessment was undertaken to analyse potential impacts on the operation of the roads and transport networks in the area.

The major road network that will be utilised for access to the site is via Lyell Highway that links up with Tarraleah Power Station Access Road. Other roads (and their connecting intersections) that will be impacted/utilised include Fourteen Mile Road, Wayatinah Road, Oldina Drive, and Paddy's Quarry Access Road.

Based off the findings from both the State Growth data and the field surveys, the key recommendations for mitigating traffic-based impacts include:

- Providing right and left turning lanes where necessary at the appropriate intersections as well as improving some of these intersections to provide adequate sight distance for all drivers approaching these intersections. Improvements will include elements such as removing vegetation that may be blocking line of vision and using signage.
- Providing passing opportunities for vehicles aiming to overtake heavier vehicles (trucks etc).
- Improving delineation, including repairing existing guideposts as well as implementing provisions for driving in the dark.
- Provide buses to transport staff between the site and staff camps, limiting the number of individual vehicles on the road.
- Reduce vehicle speeds as part of a construction management plan.
- Any spoil arising from the construction of waterways is left on site to avoid hauling spoil along the road network.
- Containing access and egress from the site to one location
- Sealing the Lyell Highway intersection, preventing gravel going on the road and improving traction.

Furthermore, a 19 m long semi-trailer will be required to transport the transformer and GRP (glass reinforced plastic) pipes to site. For this, special permits will be required pertaining to any temporary changes in road formations such as the widening of shoulders, removal of road signage, or alterations to traffic islands. In line with these permits, pilot and escort vehicles will also be required.

### 3.4 Bushfire

The entire project site falls within the Bushfire-Prone Area as defined by the *Tasmanian Planning Scheme*. As no subdivision or habitable buildings are proposed for the site, a bushfire assessment was not mandatory as part of the preparation of this development application.

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According to the Tasmanian State Fire Management Council (**SFMC**), the whole of the Central Highlands has been marked as an area for more frequent fire events in the coming years as the changing climate creates prolonged dry periods. This combined with a lower population density, leading to slower detection rates and longer response times from fire services, may lead to more intense, more widespread fires. Fires have the potential to impact hydroelectric power infrastructure by increasing turbidity and sedimentation in dams and rivers, this however is a long-term impact where sediment may build up overtime and require dredging when levels become too high.

Although a bushfire assessment is not required under the planning scheme, these factors will be taken into account, considering the bushfire risk treatment plan as per section 5 of the [Midlands Fire Management Area Bushfire Risk Management Plan 2021](#).

## 4.0 Legislative context

### 4.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) provides for the protection of matters of national environmental significance (**MNES**) and the conservation of Australia's biodiversity. While the various states within Australia are primarily responsible for environmental impact assessment, there are a number of triggers that may initiate Commonwealth involvement in a project. Triggers relevant to this proposal include impacts on listed threatened species or a listed threatened ecological community, as well as the project's vicinity to the Tasmanian Wilderness World Heritage Area (**TWWHA**).

There are several species and communities listed under the EPBC Act that will be directly or indirectly impacted by the project. These include:

- one threatened ecological community – Alpine *Sphagnum* Bogs and Associated Fens
- one threatened flora species – *Barbarea australis*
- eight threatened fauna species – four mammals (Tasmanian devil, spotted-tailed quoll, eastern quoll, eastern barred bandicoot) and four birds (wedge-tailed eagle, swift parrot, white-throated needletail, masked owl)
- three migratory species – fork-tailed swift, Latham's snipe, satin flycatcher

A Commonwealth referral was lodged in February 2023, and subsequently determined a 'controlled action' by the Commonwealth Minister of the Environment (EPBC Reference 2023/09482) in May 2023 for the following controlling provisions:

- world heritage properties (sections 12 & 15A)
- national heritage places (sections 15B & 15C)
- listed threatened species and communities (sections 18 & 18A).

Subsequent further assessment by the Commonwealth Department of Climate Change, Energy, the Environment, and Water (**DCCEEW**) will be required. Assessment will be by preliminary documentation with further information to be provided by Hydro Tasmania. The project is not proposed to be assessed via the bilateral assessment agreement between the State of Tasmania and Commonwealth.

### 4.2 Land Use Planning and Approvals Act 1993

The *Land Use Planning and Approvals Act 1993* (**LUPA Act**) is the primary development control legislation within Tasmania's Resources Management Planning System (**RMPS**). The LUPA Act empowers the operation of the State Planning Provisions and Local Provisions Schedule through the Tasmanian Planning Scheme and as set out by the local council area – in this case, the Central Highlands.

In accordance with s.51 of the LUPA Act, a Permit is required for the use and development of land for the Project.

Additionally, in accordance with s.60A(2) of the LUPA Act, Hydro Tasmania, as a Water Entity administering a Water District, is not required to hold a planning permit for any activities necessary for the operation, maintenance, repair, minor modification, upgrading or replacement of existing assets owned by Hydro Tasmania, providing the works will not cause an environmental nuisance, material, or environmental harm. This exemption was not invoked for the redevelopment works as there are environmental impacts arising from the project that is not considered to be negligible.



## 4.3 Environmental Management and Pollution Control Act 1994

The *Environmental Management and Pollution Control Act 1994* (**EMPC Act**) is the primary legislation regulating environmental protection and pollution control in Tasmania. Schedule 2 of the Act prescribes activities that are likely to cause environment harm (Level 2 activities) and require detailed assessment of their impact by the EPA.

The project is likely to require assessment by the EPA for activities associated with material handling during construction. In accordance with the Act, the following is considered a Level 2 Activity:

*(a) Crushing, Grinding or Milling: processing (by crushing, grinding, milling, or separating into different sizes by sieving, air elutriation or in any other manner) of –*

*(i) chemicals or rubber at a rate of 200 tonnes or more per year; or*

*(ii) rock, ores or minerals at a rate in excess of 1 000 cubic metres per year.*

Further, wastewater management of groundwater from tunnelling works and excavation of the power station could also trigger assessment by EPA. It is expected that inflows of up to 0.7 l/s/100m may result for majority of the tunnel alignment and power station excavation. Discussions with the EPA are ongoing, and relevant documentation will be submitted to the EPA for assessment and approval.

In accordance with s.25 of the EMPC Act, where an application has been made to a planning authority in respect of a permissible Level 2 activity, the planning authority must refer the application to the Board of the EPA as soon as practicable.

## 4.4 Aboriginal Heritage Act 1975

The *Aboriginal Heritage Act 1975* serves to protect Aboriginal heritage in Tasmania. Under the Act, it is an offence to disturb, damage or destroy any Aboriginal relics without a permit.

If Aboriginal relics are discovered during construction, Hydro will comply with the requirements of the AHT Unanticipated Discovery Plan, including the requirements to stop work and notify Aboriginal Heritage Tasmania.

## 4.5 Threatened Species Protection Act 1995

The following obligations under the *Threatened Species Protection Act 1995* (**TSP Act**) are relevant to the proposed development. In the absence of a permit:

- no listed species may be killed, injured, or collected
- listed species on land subject to an interim protection order must not be disturbed
- there must be no disturbance to listed species contrary to a land management agreement.

Several species are listed under the TSP Act (section 3.1) and therefore need to be considered when implementing development to ensure these obligations are met and the relevant species remain protected, similarly to EPBC protected species.

## 4.6 Nature Conservation Act 2002

The Tasmanian *Nature Conservation Act 2002* (**NC Act**) provides for the conservation and protection of the fauna, flora, and geological diversity in Tasmania and for the declaration of national parks and other reserved lands.

The field flora and fauna surveys determined two vegetation types that are protected under the NC Act; these are the subalpine *Diplarrena latifolia* rushland, and *Sphagnum* peatland. Although the latter was not recorded within

the area directly affected by the redevelopment project, however it may potentially be impacted by future hydrological changes in the operation of the Tarraleah hydropower scheme.

## 4.7 National Parks and Reserves Management Act 2002

The Tasmanian *National Parks and Reserves Management Act 2002* (**NPRM Act**) specifically ensures that reserve and national park areas are managed in accordance with the appropriate objectives for each reserve class as per the Reserve Activity Assessment (**RAA**) process.

The surge tower, pump station, access track from Butlers Gorge Road and pipeline from No. 2 Pond, is located within the Tarraleah Conservation Area (refer to Appendix B.5) and will be subject to assessment and approval by the PWS through the RAA process.

## 4.8 Water Management Act 1999

The taking and management of water in Tasmania is principally regulated under the *Water Management Act 1999* (**WM Act**). In accordance with Schedule 4 - Savings and transitional provisions of the WM Act, Hydro Tasmania's rights under the previous Act continue, and Hydro Tasmania hold a Special Licence under section 115(2) of the WM Act.

### *7. Saving for certain rights of Corporation under repealed Act*

*(1) A right of the Corporation, as in force under the repealed Act immediately before the commencement day, continues in full force and effect, notwithstanding any other provision of this Act, on the same terms and conditions as were applicable at that time.*

*(2) The Corporation is taken to hold a special licence under section 115(2) with an endorsement that Division 6 of Part 6 applies to the licence, conferring on the Corporation the rights mentioned in subclause (1) with the conditions applicable to those rights under that subclause and also confers such other rights and is subject to such other conditions as the Minister may agree with the Corporation.*

The existing Tarraleah Power Scheme is located within the River Derwent hydro-electric district (originally called the River Derwent hydro-electric water district) appointed under statutory rule No. 111 of 1958, and forms part of the rights to take and manage water afforded by the Special Licence.

## 4.9 Forest Practices Act 1985

The *Forest Practices Act 1985* provides that the Forest Practices Code prescribes the manner in which forest practices are to be conducted. This includes activities such as the clearance and conversion of native vegetation. The Act and Code also serves to protect the natural and cultural values.

A Forest Practices Plan (**FPP**) is required when clearing trees or clearing or converting threatened native vegetation communities listed on Schedule 3A of the Act.

Both vegetation communities listed in section 4.6 are listed under schedule 3A of the NC Act. Notwithstanding this, in accordance with Clause 4(l) of the *Forest Practices Regulations 2017*, Hydro Tasmania is not required to hold a FPP for the harvesting of timber or the clearing of trees on any land, or the clearance and conversion of a threatened native vegetation community on any land, to enable the construction and maintenance of electricity infrastructure.

## 4.10 Hydro-Electric Corporation Act 1995

The *Hydro-Electric Corporation Act 1995 (HEC Act)* regulates certain activities undertaken by Hydro Tasmania. Pursuant to Section 8 of the Act, approval from both Houses of the Tasmanian Parliament is required to construct a major new power facility.

A new power facility is defined as a “*new generating plant with an installed capacity exceeding 40 megawatts or a limit fixed by regulation together with, in the case of hydro-electric generating plant, associated equipment to hold water, or to direct, monitor or control the flow of water, for the purposes of hydro-electric generation.*”

## 4.11 Electricity Supply Industry Act 1995

Provisions within the *Electricity Supply Industry Act 1995 (ESI Act)* allow for some exemptions from the needs of a planning permit in relation to electricity infrastructure works. Section 57 exempts work carried out by an electricity entity on the construction of electricity infrastructure where it is of minor environmental impact from requiring a planning permit.

Further, Section 52 grants an electricity entity power to carry out work on public land, by agreement with the authority responsible to the management of the public land.

The transmission line is located entirely on Crown land managed by Sustainable Timbers Tasmania.

## 4.12 State Policies

State Policies are made under the *State Policies and Projects Act 1993 (SPP Act)*. Currently, there are three State Policies addressing environmental management issues:

- The Tasmanian Coastal Policy (**Coastal Policy**)
- The State Policy on the Protection of Agricultural Land (**PAL Policy**)
- The State Policy on the Water Quality Management (**SPWQM**)

The hydrological regime of the Nive River between the Tarraleah Power Station and its confluence with the River Derwent at Wayatinah Lagoon, the River Derwent from below Clark Dam to Lake Catagunya, Mossy Marsh Pond, No. 1 Pond and No. 2 Pond are all influenced by the operation of the Tarraleah hydropower scheme. As a result, the redevelopment project may have both direct and indirect environmental impacts on several water bodies/systems. Because of this, the SPWQM will be applied, and where applicable, the appropriate objectives and guidelines must be met to ensure sufficient water quality management.

Given the locations, the nature of the development and the site, none of these policies would specifically apply.

However, as they contain more generalised outcomes, State Policies are intended to guide the development of planning schemes rather than apply to individual applications. As part of its approval, the redevelopment project is required to be consistent with the outcomes of the state policies and any inconsistencies removed.

## 4.13 National Environment Protection Measures (NEPMs)

National Environment Protection Measures (**NEPMs**) are also taken to be State Policies in Tasmania. NEPMs are made under Commonwealth legislation and given effect in Tasmania through the SPP Act. Current NEPMs include:

- Air Toxics NEPM
- Ambient Air Quality NEPM
- Assessment of Site Contamination NEPM

- Diesel Vehicle Emissions NEPM
- Movement of Controlled Waste between States and Territories NEPM
- National Pollutant Inventory NEPM
- Used Packaging Materials NEPM

There are no inconsistencies with the outcomes of the NEPMs and this development.

## 4.14 Environment Protection Policies

There are two Environmental Protection Policies (**EPPs**) approved under the EMPC Act:

- Environment Protection Policy (Air Quality)
- Environment Protection Policy (Noise).

EPPs provide guidelines on emission levels expected to be achieved by developments. This development will not be inconsistent with the outcomes of these policies.

## 4.15 Tasmanian Planning Scheme - Central Highlands

### 4.15.1 Use class

Within the TPS, the use of land and water for hydroelectric schemes is classified as **Utilities**. This is defined as under the planning scheme:

*“use of land for utilities and infrastructure including:*

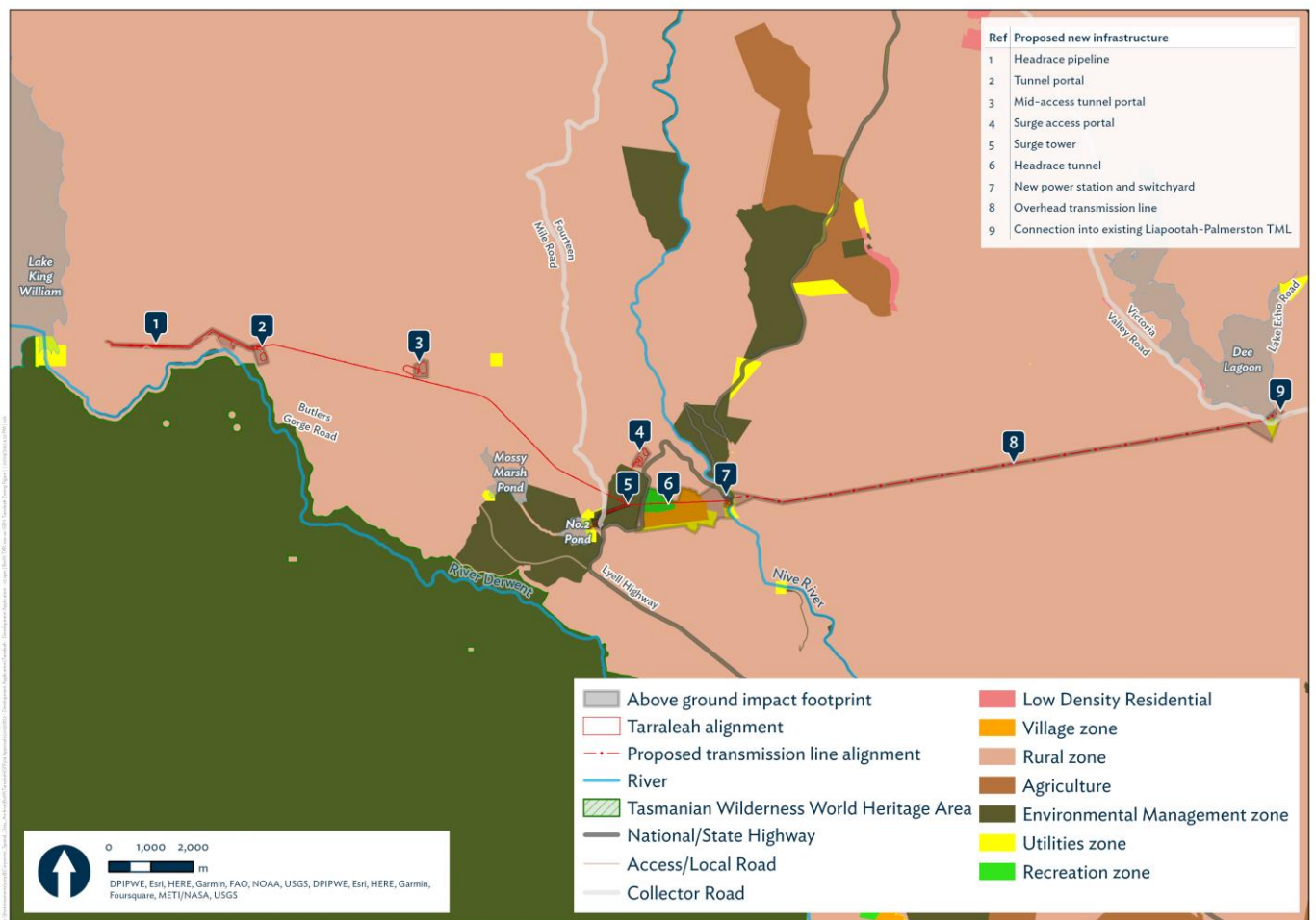
- (a) telecommunications;*
- (b) electricity generation;*
- (c) transmitting or distributing gas, oil, or electricity;*
- (d) transport networks;*
- (e) collecting, treating, transmitting, storing or distributing water; or*
- (f) collecting, treating, or disposing of storm or floodwater, sewage, or sillage.”*

### 4.15.2 Zones

The project will span across the following zones within the TPS as summarised in [Table 1](#) and shown in [Figure 10](#). Zoning maps are also included in Appendix B.6 to B.11.

**Table 1:** Summary of zones within project area and associated infrastructure within those zones

Zone	Use class	Aboveground works	Underground works
Utilities	Permitted	Transmission line Upgrades at No.2 Pond	-
Rural	Discretionary	New power station Transmission line Permanent spoil storage stockpiles Road upgrades Derwent pumps Headrace pipeline	Headrace tunnel
Environmental management	Discretionary	Road upgrades Surge tower and pipeline Pump station	Headrace tunnel Access tunnel and portal to headrace tunnel/power tunnel
Recreation	Discretionary	-	Headrace tunnel
Village	Discretionary	-	Headrace tunnel



**Figure 10:** Zones across the project site

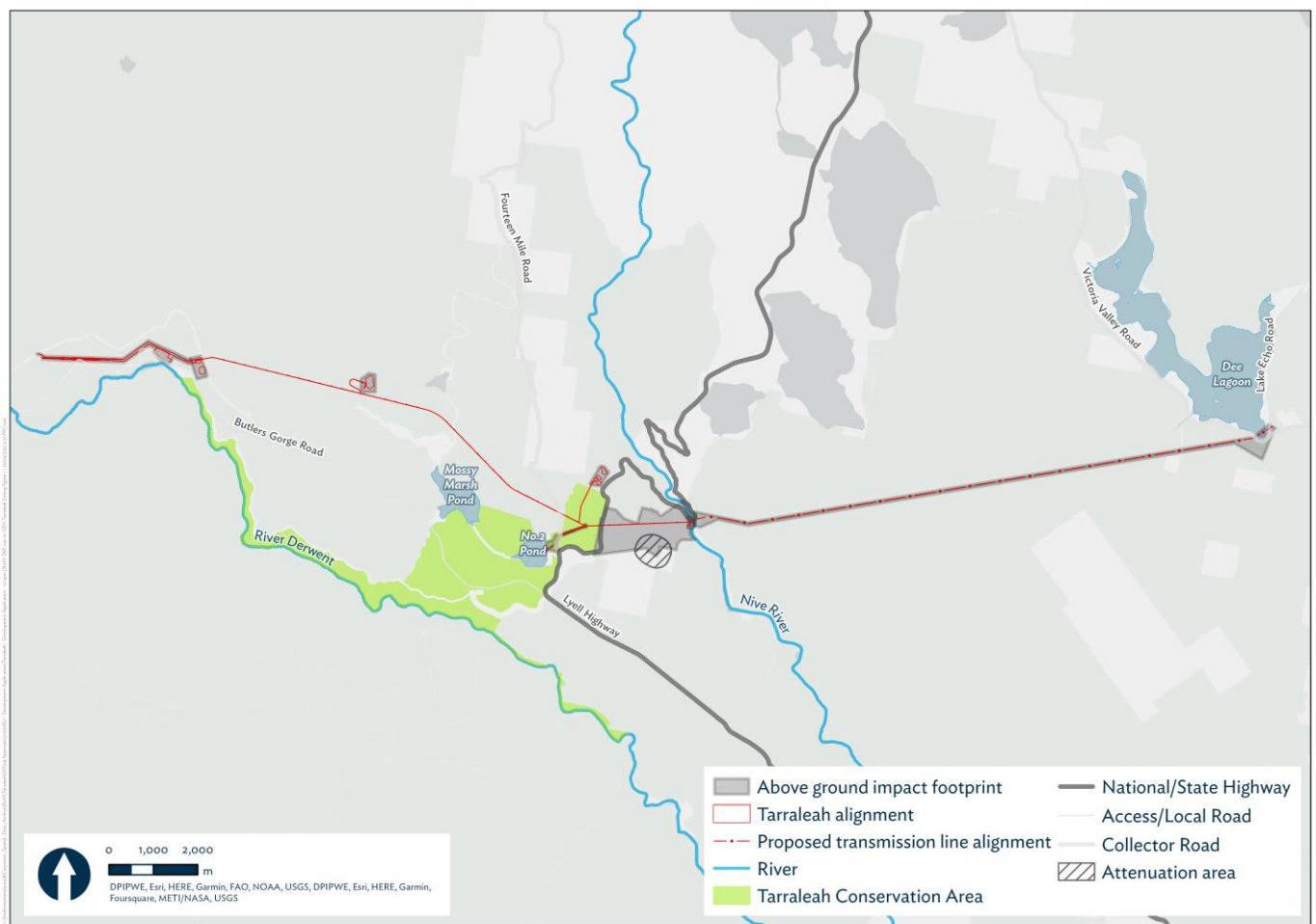
### 4.15.3 Overlays

The relevant overlays are described in the below subsections. Maps are also included in Appendix B.12 to B.16.

#### 4.15.3.1 Attenuation code

There is an attenuation area surrounding a sewage treatment lagoon to the south of Tarraleah village, as shown in **Figure 11**. The project will not be impacted by this code as it is not a sensitive development (i.e. housing), however if any new accommodation (subject to a separate planning permit application) is to be built at the Tarraleah village, proximity to the attenuation area must then be considered.

Further assessment of the project against this code will therefore not be required as part of this development application.

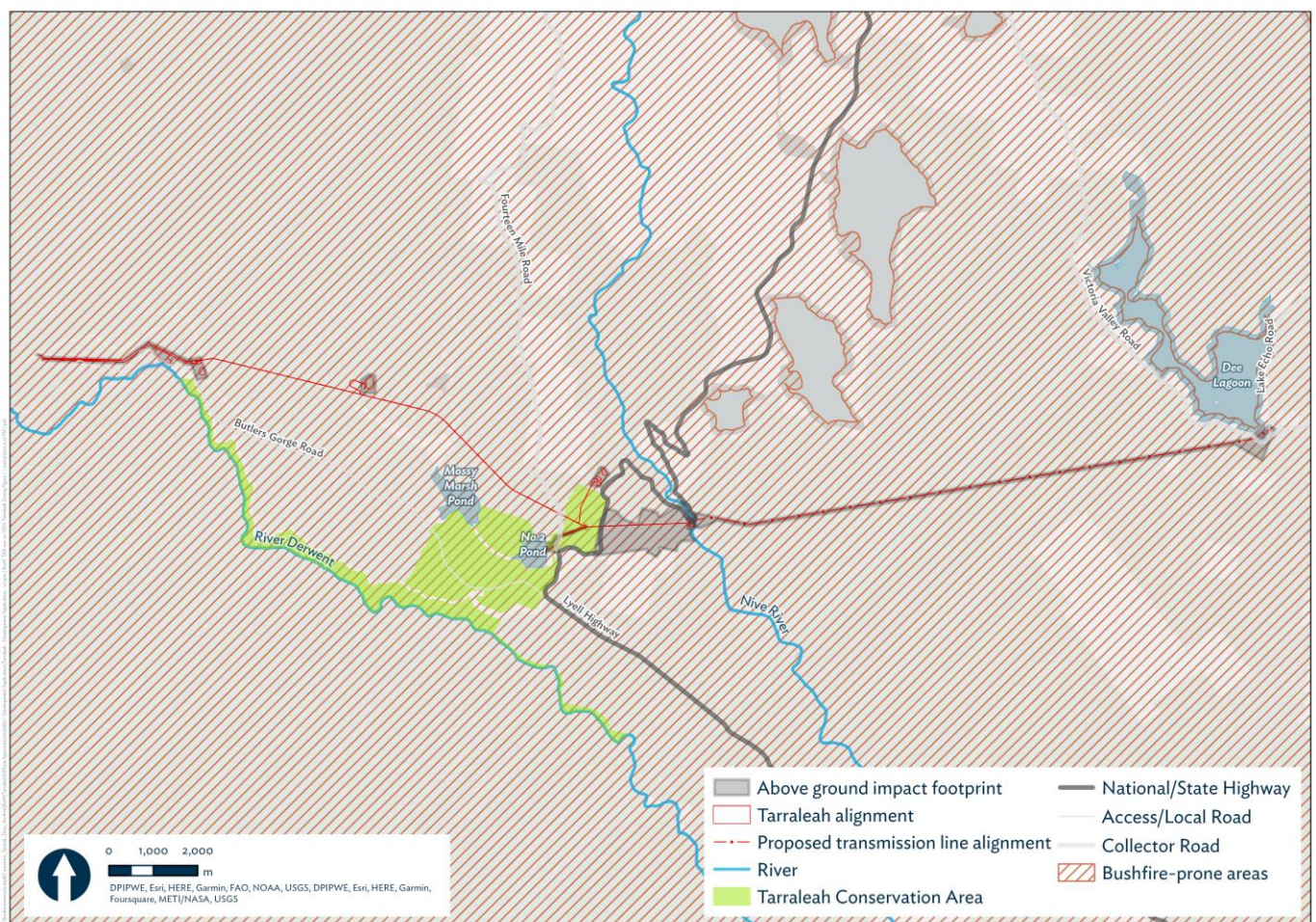


**Figure 11:** Attenuation areas overlay

#### 4.15.3.2 Bushfire-prone areas code

The site is entirely covered by the Bushfire-prone areas overlay, as shown in **Figure 12**. However, pursuant to C13.2.1 of the TPS, the code only applies if the development is for the purposes of a subdivision, and vulnerable or hazardous use. As the development is not a subdivision and does not include a vulnerable or hazardous use, the Bushfire Prone Areas code does not apply to this proposal.

Further assessment of the project against this code will therefore not be required as part of this development application.

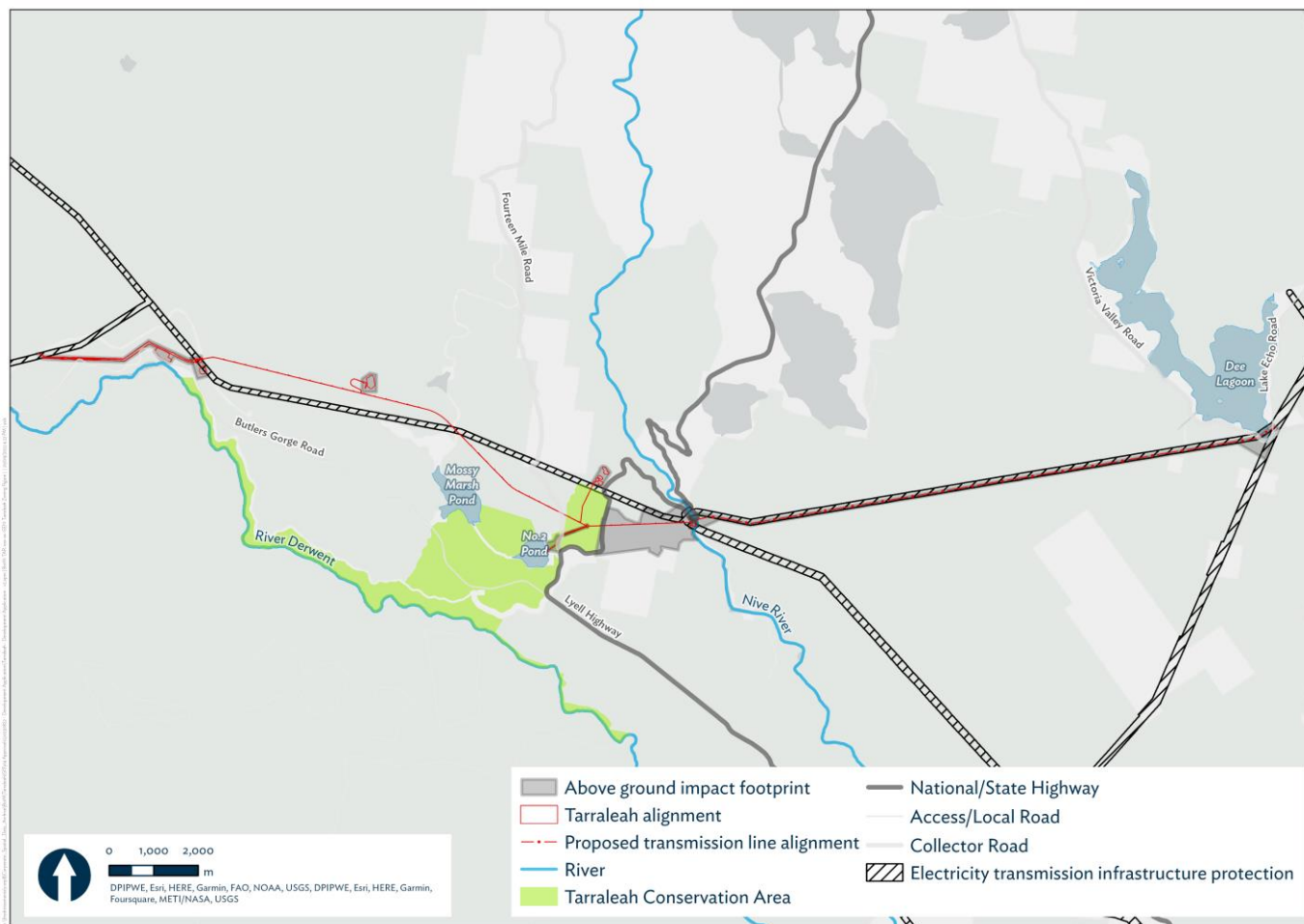


**Figure 12:** Bushfire-prone areas overlay

### 4.15.3.3 Electricity Transmission Infrastructure Protection Code

Sections of the Electricity Transmission Infrastructure Protection overlay runs over the project area as shown in **Figure 13**. However, as the project is for the use and development of electricity infrastructure, it is exempt from this code as per C4.4.1 of the TPS.

Further assessment of the project against this code will therefore not be required as part of this development application.



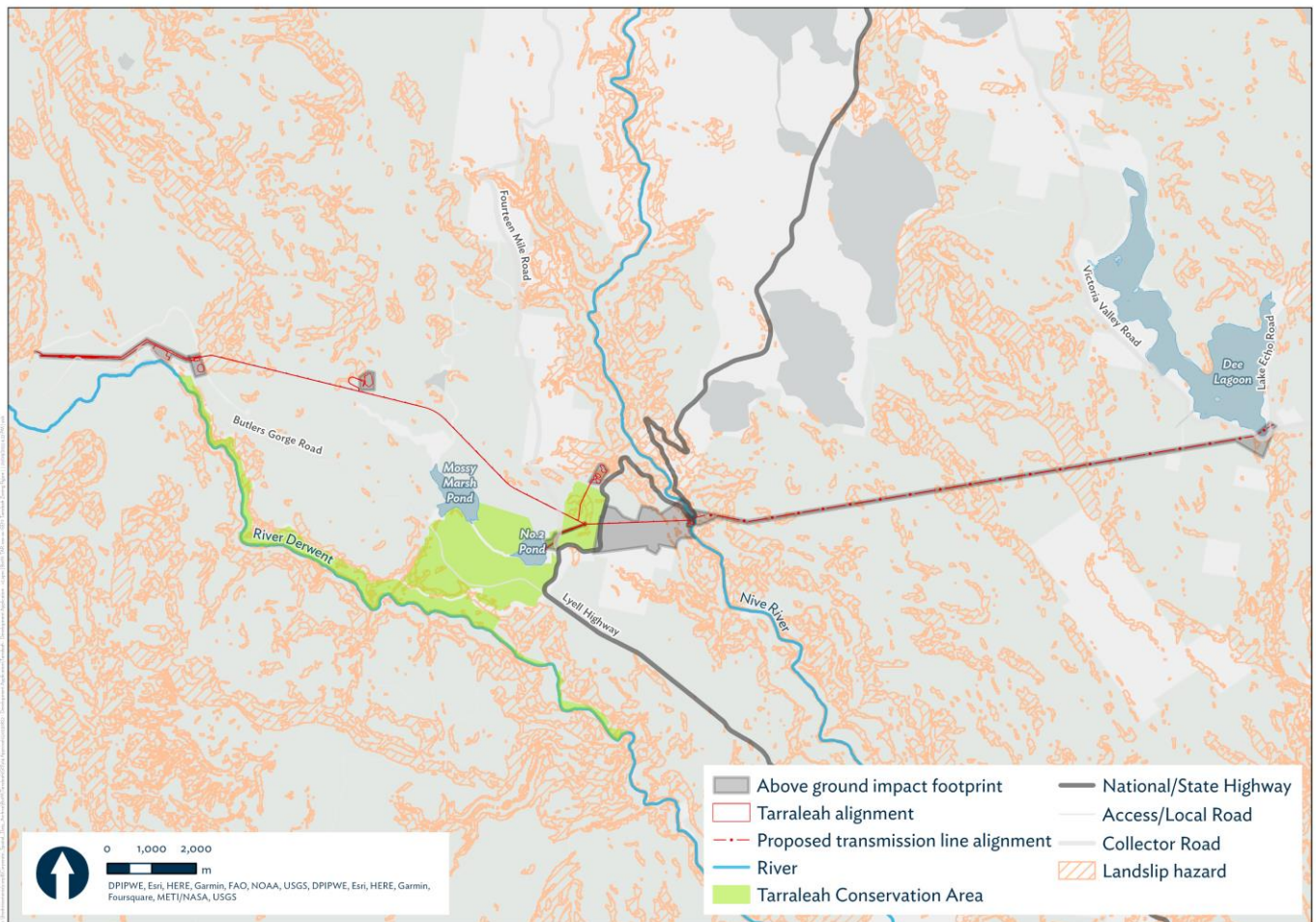
**Figure 13:** Electricity transmission infrastructure protection code overlay



#### 4.15.3.4 Landslip hazard code

There are several locations within the project area that have a low risk of landslip, as shown in **Figure 14**. Because the development is not classed as a critical, hazardous, or vulnerable use (as per C15.3 and C15.4 of the scheme), the development is exempt from this code.

Further assessment of the project against this code will therefore not be required as part of this development application.



**Figure 14:** Low landslip hazard overlay

#### 4.15.3.5 Natural assets code

The two natural assets within the project area are priority vegetation (Figure 15) and waterway and coastal protection (Figure 16). However, pursuant to C7.4.1 of the Code, development that is assessed as a Level 2 Activity is exempt from assessment against this Code.

The Tarraleah Redevelopment Project is proposed to be assessed by the Environment Protection Authority as a Level 2 Activity. If components of the project are separated from that assessment process, subsequent assessment of the natural assets code will be undertaken.

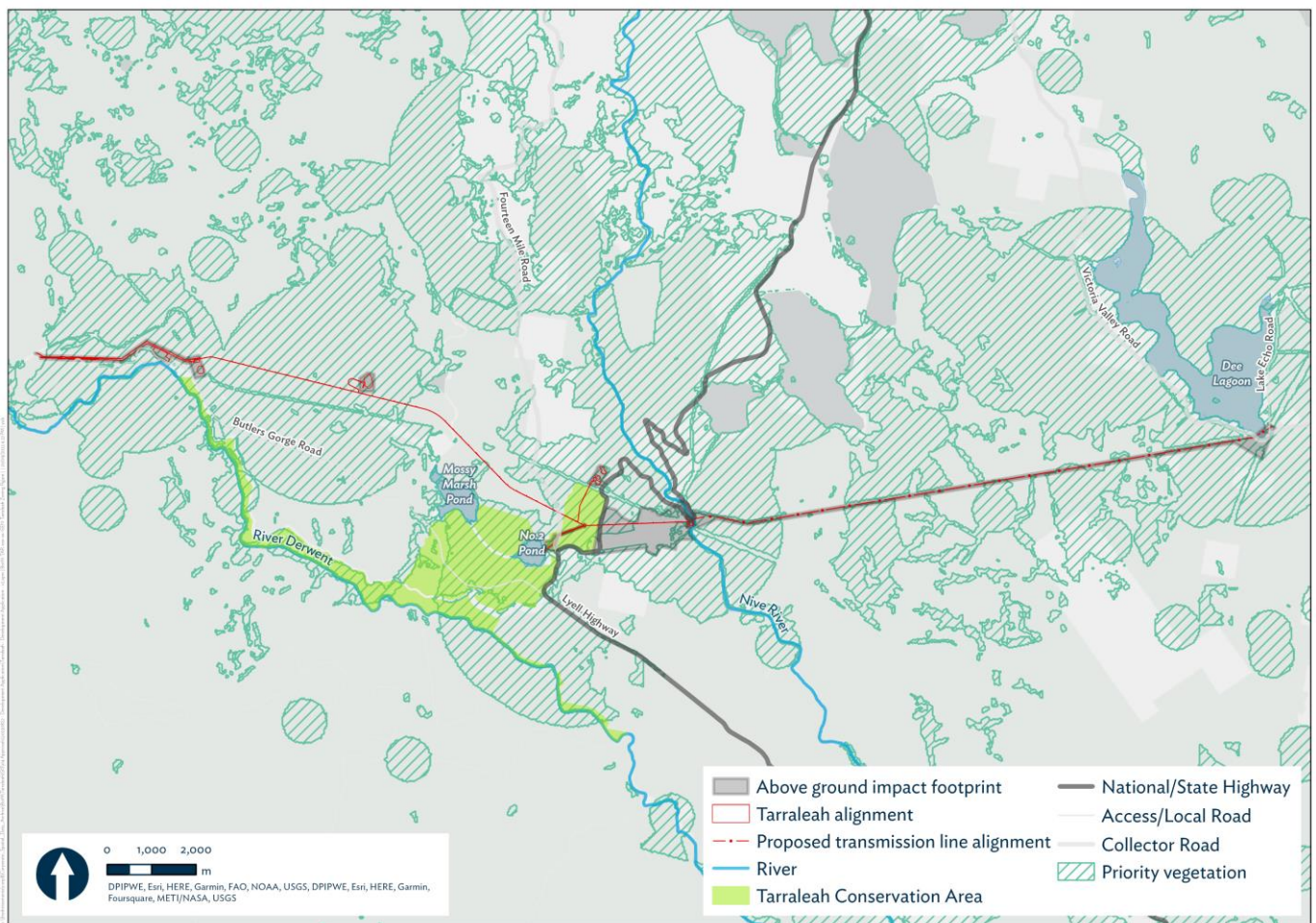


Figure 15: Priority vegetation overlay

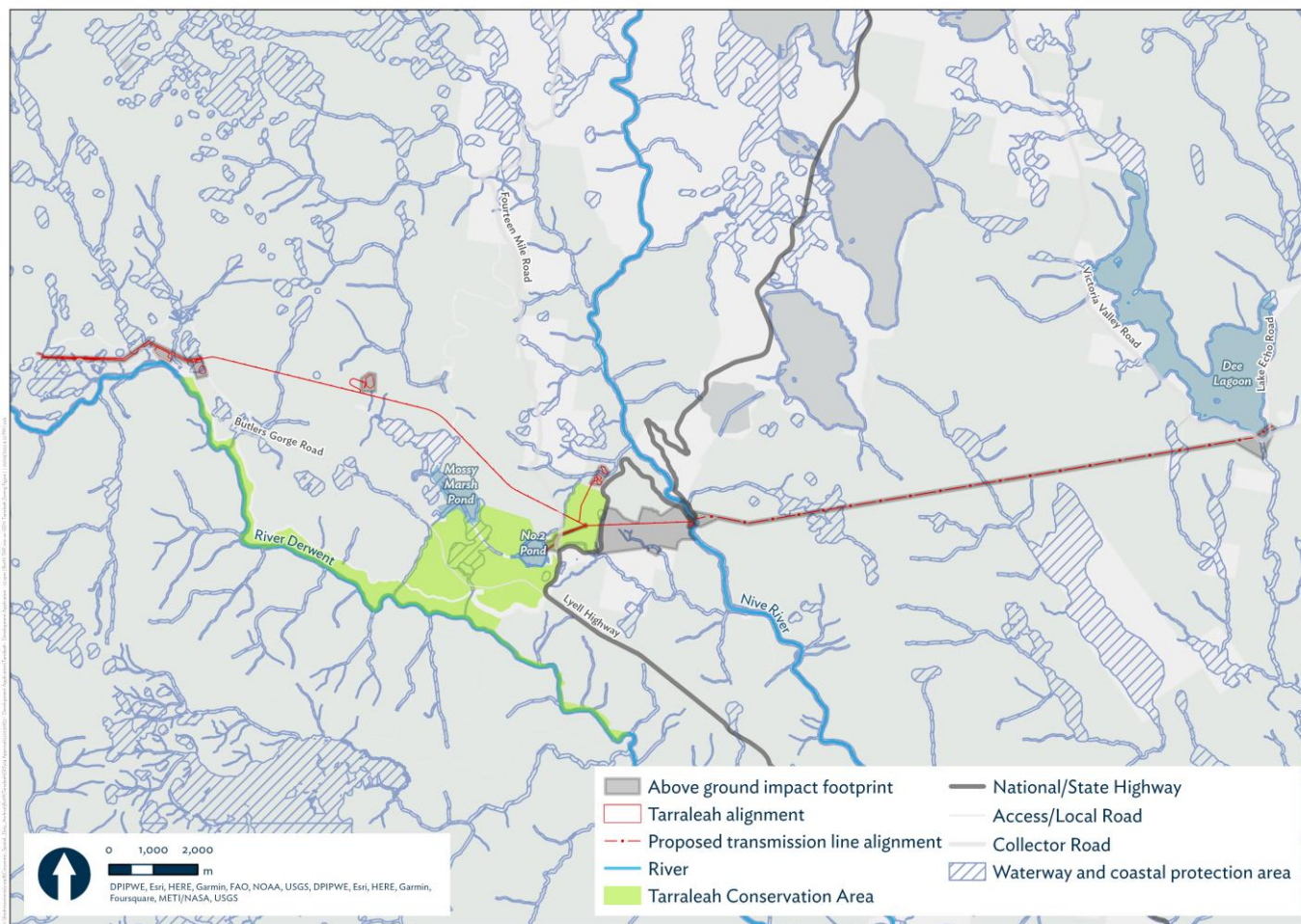


Figure 16: Waterway and coastal protection overlay

#### 4.15.4 Central Highlands Local Provisions Schedule

There are no local provisions, particular purpose zones, specific area plans, or specific qualifications for the Central Highlands council area and therefore are not applied to the project. The existing elements of the power station are not listed locally as a heritage place or within a heritage precinct and therefore the local heritage provisions are also not applicable.

## 5.0 Planning Assessment

The project has been assessed against the relevant provisions of Tasmania’s Resources Management Planning System (**RMPS**) and the Tasmanian Planning Scheme – Central Highlands Local Provisions Schedule (**CHLPS**) as detailed below.

### 5.1 Southern Tasmanian Land Use Strategy

The Southern Tasmanian Land Use Strategy (**STRLUS**) is a regional plan that sets the strategic direction for the 12 local government areas in southern Tasmania, the Central Highlands being one of these. STRLUS is enacted by the state government and aims to meet the key planning objectives as set out by RMPS by providing broad policies and goals to help facilitate change, growth, and development within the region until 2035.

Section 6 of STRLUS discusses the region’s water resources as a key area for sustainable development opportunities with hydroelectric energy production contributing the strategic direction of “making the region nationally and internationally competitive”.

This development would enhance energy generation and support energy efficiency for the state as well as supporting the Battery of the Nation (**BotN**) project by strengthening the generating capacity and futureproofing the energy generated, supporting the NEM and giving the region that competitive edge at the national scale.

Accordingly, this proposal is aligned with the outcomes of STRLUS.

### 5.2 Objectives of Resource Management Planning System

The proposal has been assessed against the Objectives of RMPS as summarised in [Table 2](#).

**Table 2:** Assessment of the proposed development against objectives of the RMPS

Objective	Comment
<b>Part 1</b>	
(a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity	The proposed development will facilitate generation of hydropower to promote renewable energy development in a sustainable manner. The development will not impact on threatened species of communities.
(b) to provide for the fair, orderly and sustainable use and development of air, land and water	The development will use water and other resources fairly to promote sustainable renewable energy generation.
(c) to encourage public involvement in resource management and planning	The public can be involved in the development process, through making representations.
(d) to facilitate economic development in accordance with the objectives set out in paragraphs (a), (b) and (c)	Future renewable energy development, for which the current proposal will provide, will facilitate local economic development through construction and more widely through power generation.
(e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State	The development will be assessed by the planning authority through consultation with other statutory authorities.

Objective	Comment
<b>Part 2</b>	
(a) to require sound strategic planning and co-ordinated action by State and local government	Seeking approval through the planning scheme represents compliance with a coordinated process of approvals.
(b) to establish a system of planning instruments to be the principal way of setting objectives, policies and controls for the use, development and protection of land	This objective is not directly applicable.
(c) to ensure that the effects on the environment are considered and provide for explicit consideration of social and economic effects when decisions are made about the use and development of land	Consideration of environmental impacts has been undertaken in the preparation of this application. The redevelopment disturbance footprint has been set out in a way to best avoid any impacts on threatened communities and minimise the vegetation clearing.
(d) to require land use and development planning and policy to be easily integrated with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels	The proposed development furthers this objective and takes into account State, regional and local planning policies and strategies.
(e) to provide for the consolidation of approvals for land use or development and related matters, and to co-ordinate planning approvals with related approvals	This objective can only be met through legislative change. This development will gain all necessary permits and approvals for its use and development.
(f) to secure a pleasant, efficient and safe working, living and recreational environment for all Tasmanians and visitors to Tasmania	The proposed development will promote maintenance and improvement of environmental quality through the generation of renewable energy, to aid in securing a safe and pleasant environment for residents and visitors.
(g) to conserve those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value	Much of the existing Tarraleah hydropower scheme has heritage value but is not subject to any statutory heritage listings at the local, state or national level. Nevertheless, the decommissioning of elements of the existing scheme that would no longer be used as part of the redevelopment project will be planned in consultation with Heritage Tasmania and other stakeholders. The <i>Aboriginal Heritage Act 1975</i> will apply should any Aboriginal heritage sites be discovered during construction works.
(h) to protect public infrastructure and other assets and enable the orderly provision and co-ordination of public utilities and other facilities for the benefit of the community	The development can be accommodated within the existing infrastructure systems.
(i) to provide a planning framework which fully considers land capability	The proposed development does not directly affect this objective.

## 5.3 Village zone

The Village zone covers areas associated with the existing residential village as well as land south of the Tarraleah Golf Course. There are no aboveground works proposed within the Village zone contained within this DA. As shown below, the underground works will also have no direct impact on the zone purpose.

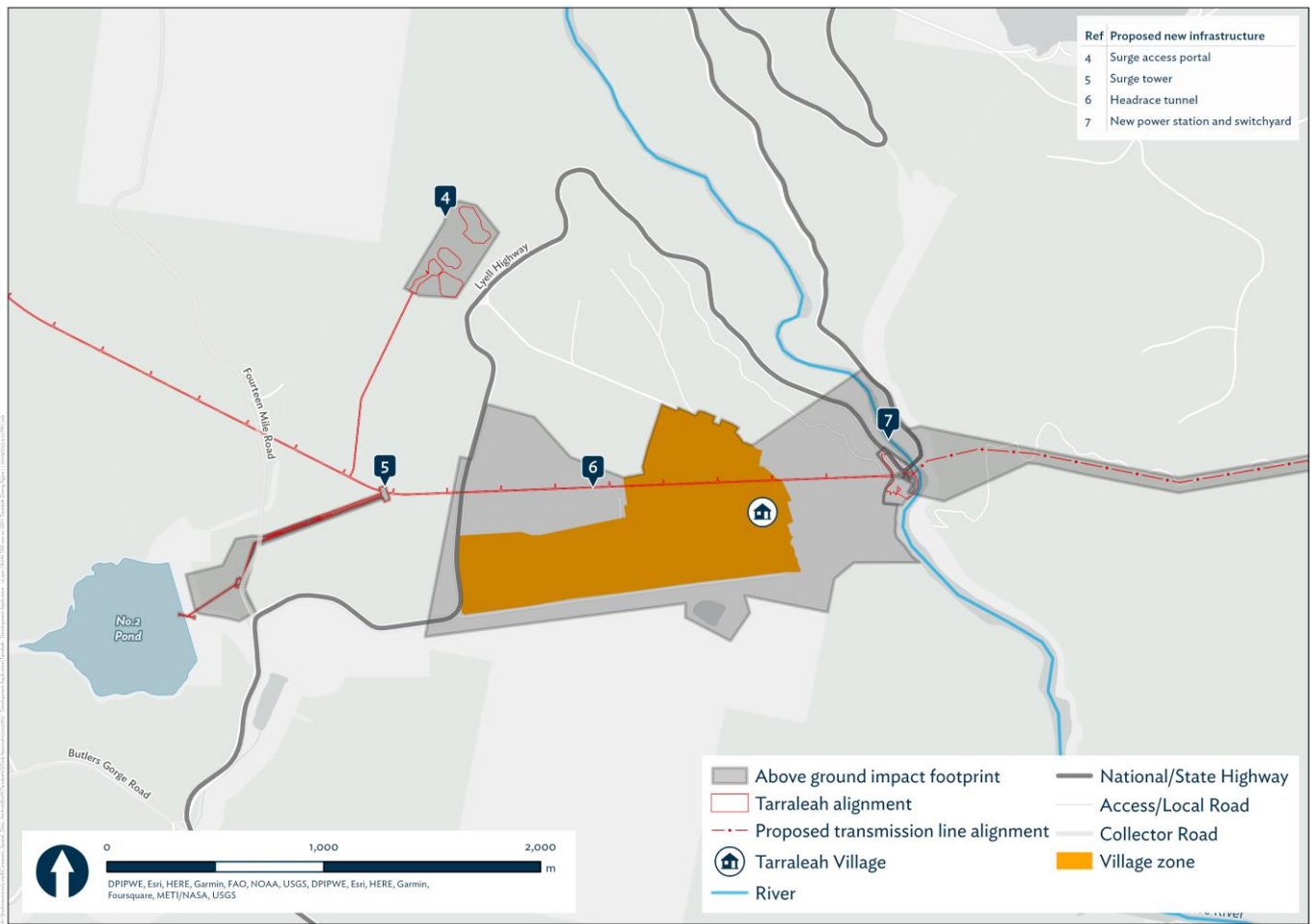


Figure 17: Works within Village zone

### Clause 12.1 – Zone purpose

The purpose of the Village Zone is:

**12.1.1** To provide for small rural centres with a mix of residential, community services and commercial activities.

**12.1.2** To provide amenity for residents appropriate to the mixed use characteristics of the zone.

#### Assessment

There are no aboveground works within the Village zone, and subsequently there is no impact on the zone purpose. The construction of the Project will however see increased people movement in and around the village, benefitting from the existing commercial and community services (such as food and beverages).

## 5.4 Utilities zone

### 5.4.1 Works in the Utilities Zone

Within the project area, the Utilities zone covers Clark Dam at Lake King William, an eastern section of No.2 Pond, and a small area at the southern tip of Dee Lagoon near the intersection of Lake Echo Road and Victoria Valley Road, along the existing transmission line easement for the Liapootah to Palmerston line (refer to Appendix B.8).

There are no works proposed in the area of Clark Dam for the redevelopment project (Figure 18). There will also be aboveground and underground works near No.2 Pond, as shown in Figure 19. The underground works near No.2 Pond relates to a section of tunnel connecting the existing outlet to the surge tower and its pipeline. The aboveground works are related to the upgrade of the existing outlet structure at No.2 Pond. As this upgrade is directly associated with works defined as ‘dam works’ under the WM Act, therefore pursuant to Section 60A(1) of LUPA Act, a permit under the Act is not required. The underground works is not subject to assessment as there is no aboveground disturbance.

The proposed transmission line traverses sections of the existing Tarraleah Power Station area that is zoned Utilities, as well as a section of Dee Lagoon (refer to Figure 20). Therefore, the only works subject to assessment under the Utilities zone is the section of transmission line at Dee Lagoon.

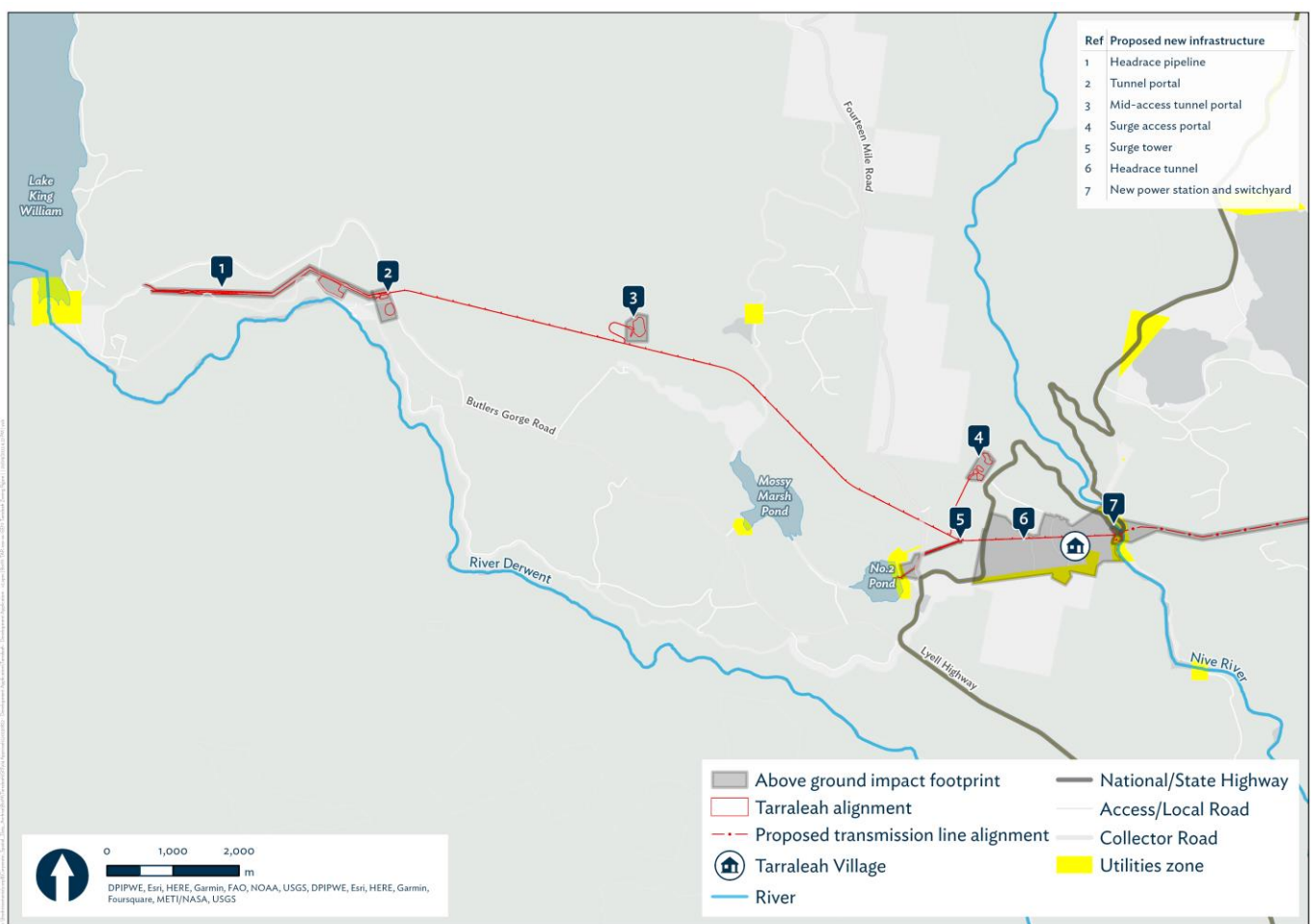


Figure 18: Works within Utilities zone (western area)

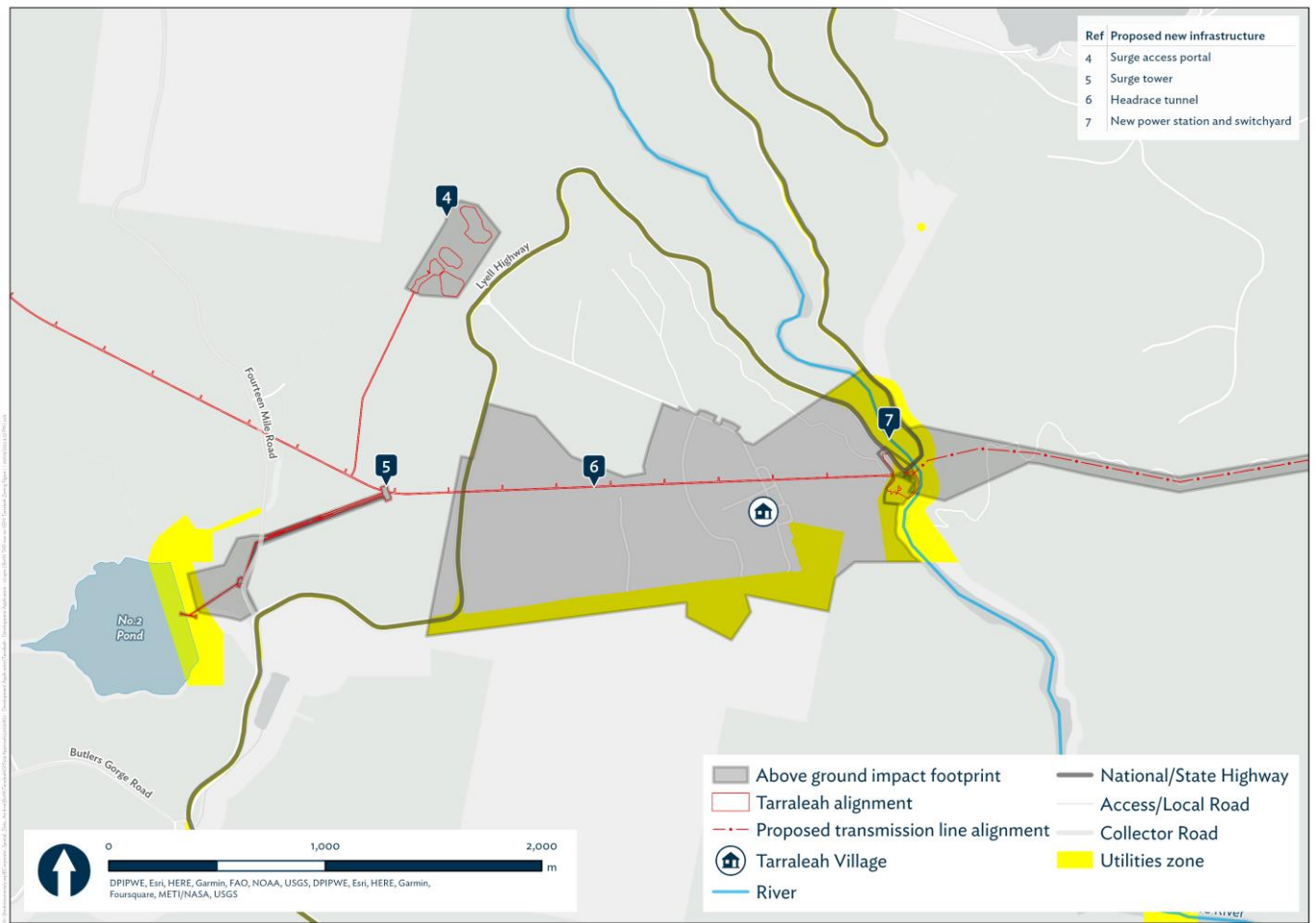


Figure 19: Works within Utilities zone (Tarraleah village area)



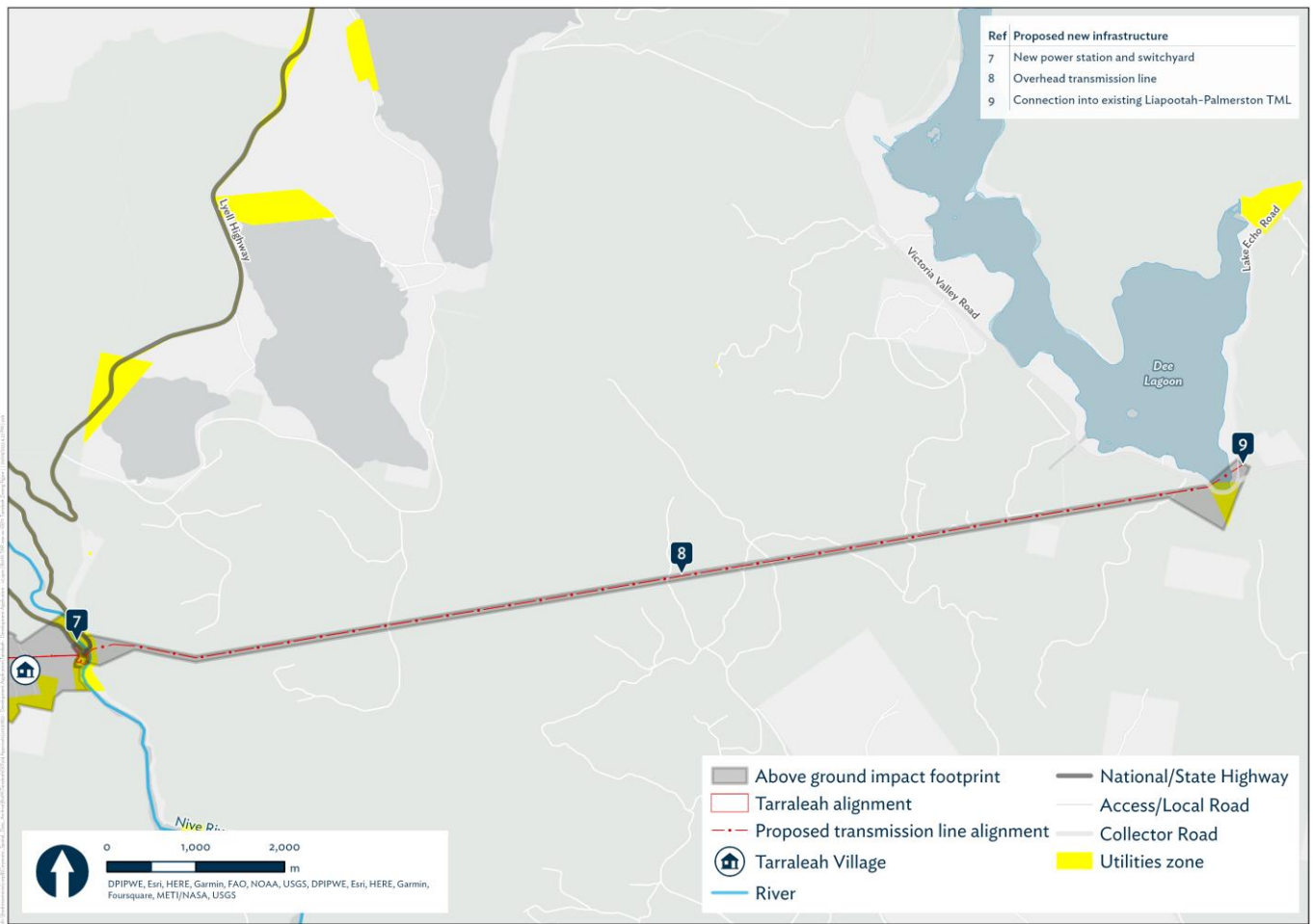


Figure 20: Works within Utilities zone (transmission line)

## 5.4.2 Clause 26.1 - Zone purpose

### Clause 26.1 Zone purpose

The purpose of the Utilities Zone is:

**26.1.1** To provide land for major utilities installations and corridors.

**26.1.2** To provide for other compatible uses where they do not adversely impact on the utility

### Assessment

The proposal is consistent with the zone purpose as land is providing for the upgrade and installation of a major utility service (the power station and associated elements).

## 5.4.3 Clause 26.3 – Use standards

This standard is not applicable as utility works are permitted under utilities zone provisions and hours of operation and external lighting uses are excluded for utility development.

## 5.4.4 Clause 26.4 – Development standards for buildings and works

### 5.4.4.1 Clause 26.4.1 – Building height

Acceptable solutions	Performance criteria
<p>Objective: To provide for a building height that:</p> <ul style="list-style-type: none"> <li>(a) Is necessary for the operation of the use; and</li> <li>(b) Minimise adverse impacts on adjoining properties and the visual character of the area</li> </ul>	
<p><b>A1</b> Building height must be not more than 12m.</p>	<p><b>P1</b> Building height must be necessary for the operation of the use and not cause an unreasonable impact on adjoining properties, having regard to:</p> <ul style="list-style-type: none"> <li>(a) the proposed height of the building</li> <li>(b) the bulk and form of the building</li> <li>(c) the separation from existing uses on adjoining properties; and</li> <li>(d) any buffers created by natural or other features</li> </ul>
<p><b>Assessment</b></p> <p>There are no buildings within the Utilities zone, however the transmission line infrastructure is up to 55m tall, and as such is not consistent with A1, and P1 must therefore be considered.</p> <p>There is a short section of transmission line traversing in a Utilities zone near Dee Lagoon. There are no adjoining properties along the transmission line corridor as it traverses land managed by STT. Further, the transmission line will be located within an existing easement and subsequently it is considered that P1 is met.</p>	

### 5.4.4.2 Clause 26.4.2 – Setbacks

Acceptable solution	Performance criteria
<p>Objective: That buildings setbacks are:</p> <ul style="list-style-type: none"> <li>(a) compatible with the character of the surrounding area; and</li> <li>(b) does not cause an unreasonable loss of amenity to adjoining properties.</li> </ul>	
<p><b>A1</b> Buildings, excluding a structure such as a tower, pole or similar, must have a setback from all boundaries of not less than:</p> <ul style="list-style-type: none"> <li>(a) 5m; or</li> <li>(b) an existing building on the lot</li> </ul>	<p><b>P1</b> Buildings, excluding a structure such as a tower, pole or similar, must be sited to not cause an unreasonable loss of amenity to adjoining properties, having regard to:</p> <ul style="list-style-type: none"> <li>(a) the topography of the site</li> <li>(b) the size, shape and orientation of the site</li> <li>(c) the setback of existing buildings on the site and on adjoining properties</li> <li>(d) the bulk and form of proposed buildings.</li> </ul>
<p><b>Assessment</b></p> <p>Buildings under this clause, does not relate to a tower or pole. The only infrastructure in this zone relates to a section of transmission line. Subsequently, there are no buildings within this zone, and therefore Clause 26.4.2 A1 does not apply.</p>	

#### 5.4.4.3 Clause 26.4.4 – Outdoor storage areas

Acceptable solution	Performance criteria
Objective: That outdoor storage areas do not detract from the appearance of the site or surrounding area	
<b>A1</b> Outdoor storage areas, excluding goods for sale, must not be visible from any road or public open space adjoining the site	<b>P1</b> Outdoor storage areas, excluding any goods for sale, must be located, treated or screened to not cause an unreasonable loss of visual amenity.
<b>Assessment</b> There are no outdoor storage areas in the utilities zone. Therefore, Clause 26.4.4 A1 does not apply.	

#### 5.4.5 Clause 26.5 – Developments for subdivision

This standard is not applicable as there is no subdivision involved in the proposal.

## 5.5 Rural zone

### 5.5.1 Works within Rural Zone

Most of the project is located on land zoned Rural, as shown in [Figure 21](#) (areas west of Tarraleah village), [Figure 22](#) (Tarraleah village), and [Figure 23](#) (transmission line). Works include:

- Headrace pipeline and tunnel
- Permanent spoil storage stockpiles
- Access tunnels
- New power station and switchyard
- Transmission line.

Concept drawings of the power station is being included in Appendix E. It should be noted that these drawings are conceptual only, and are subject to further architectural design response.

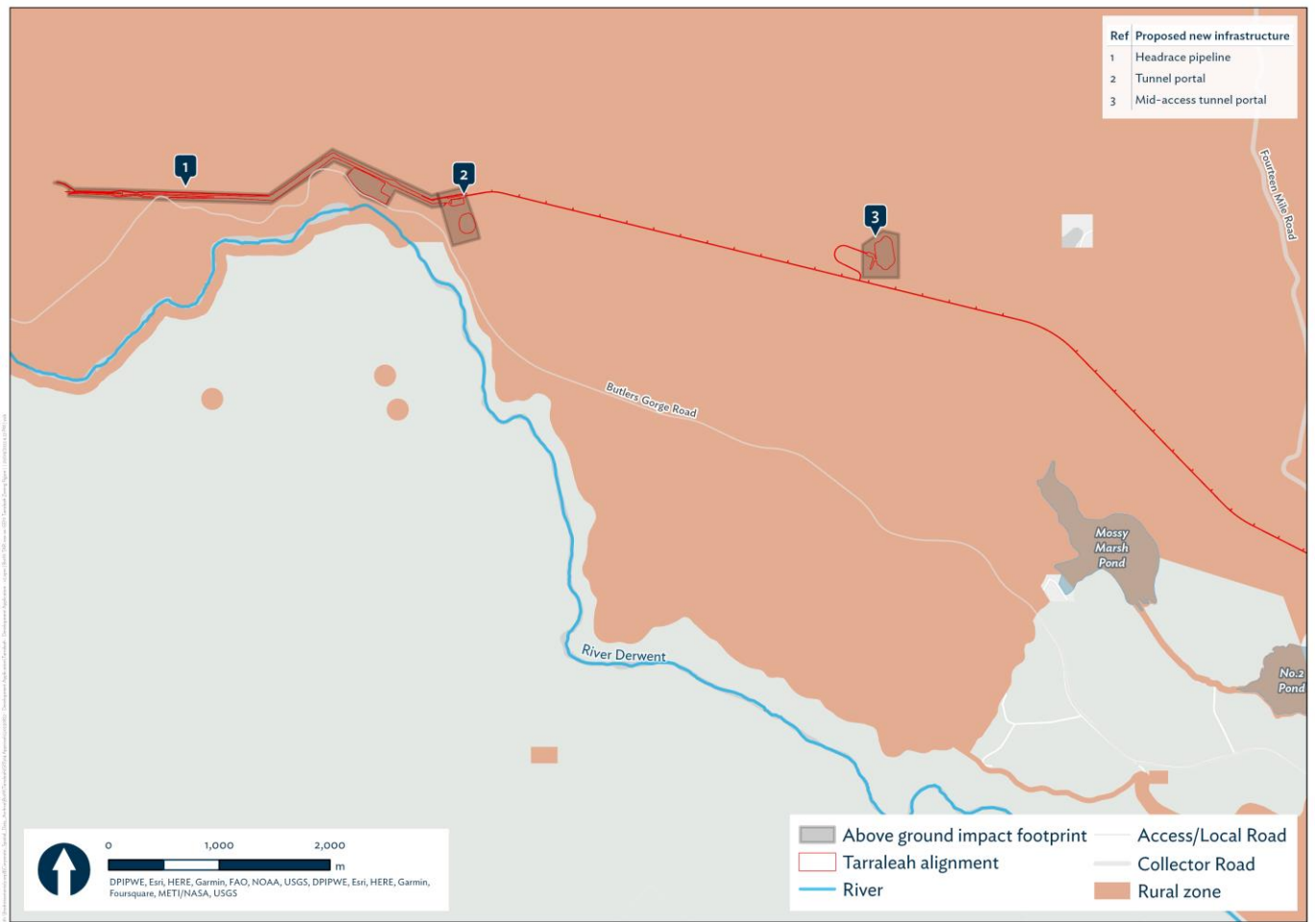


Figure 21: Works within Rural zone (western project area)

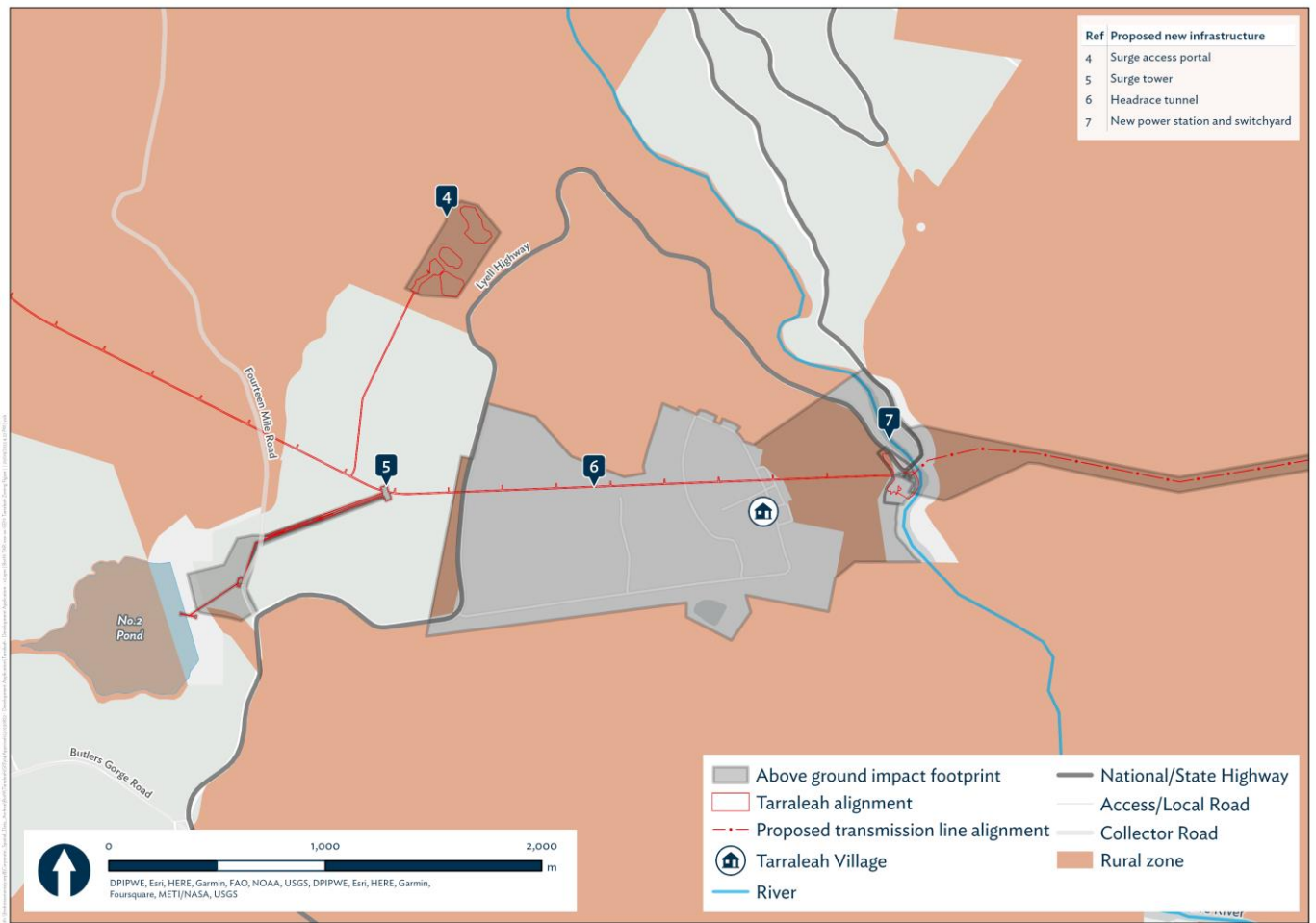


Figure 22: Works within Rural zone (Tarraleah village area)

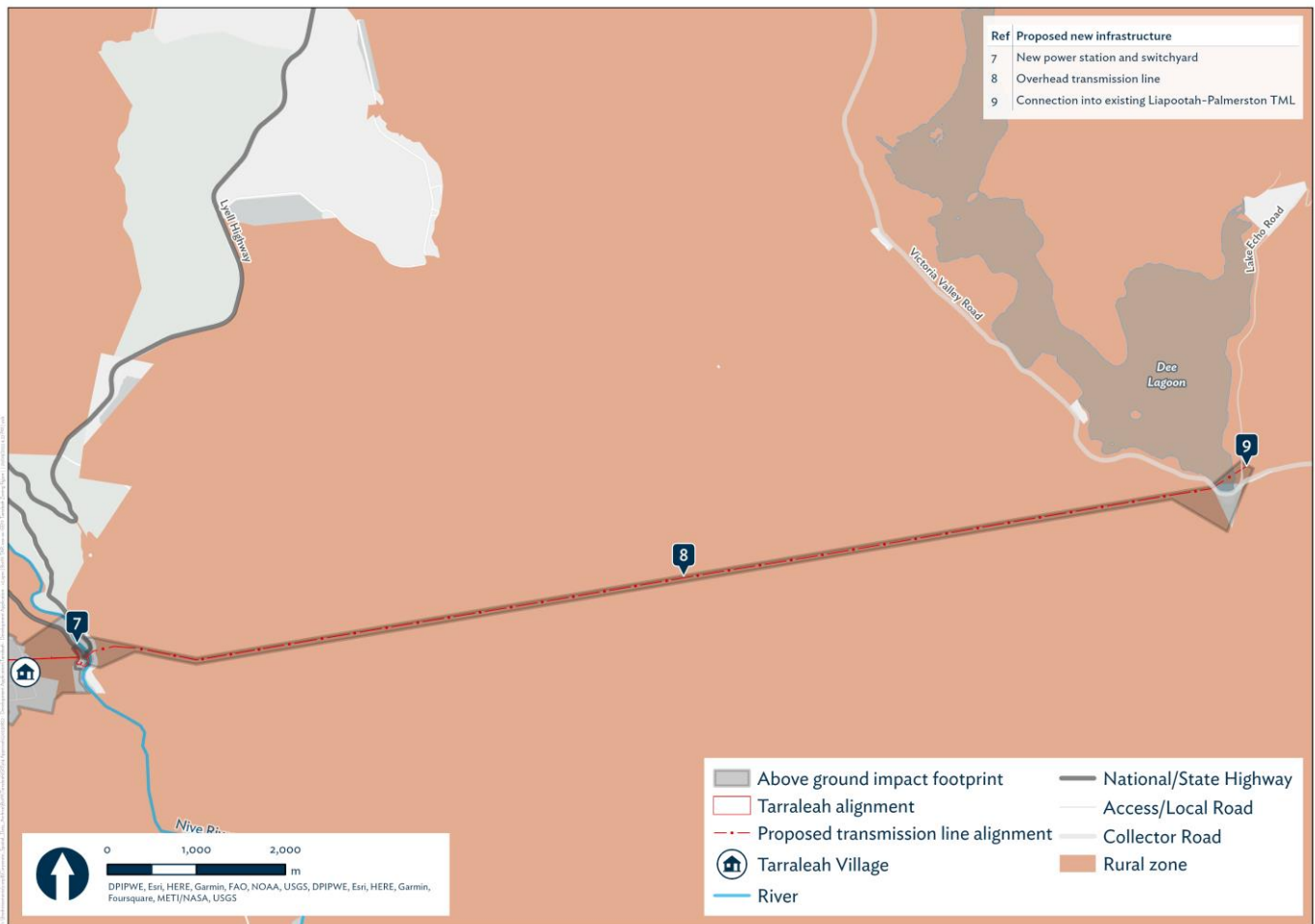


Figure 23: Works within Rural zone (eastern project area)

## 5.5.2 Clause 20.1 – Zone purpose

### Clause 20.1 – Zone Purpose

**20.1.1** To provide for a range of use or development in a rural location:

- a) where agricultural use is limited or marginal due to topographical, environmental or other site or regional characteristics;
- b) that requires a rural location for operational reasons;
- c) is compatible with agricultural use if occurring on agricultural land;
- d) minimises adverse impacts on surrounding uses.

**20.1.2** To minimise conversion of agricultural land for non-agricultural use.

**20.1.3** To ensure that use or development is of a scale and intensity that is appropriate for a rural location and does not compromise the function of surrounding settlements.

### Assessment

The proposal is consistent with the zone purpose as the development area is currently limited in agricultural use due to the existing dam operation and general environmental and topographical characteristics of the site and hence no agricultural land will need to be converted for the project.

### Clause 20.1 – Zone Purpose

Given the size and scale of the project, a rural location such as this is best for operation to ensure as little impact as possible on human settlements. The project is not located near any surrounding settlements.

### 5.5.3 Clause 20.3 – Use standards

Clause 20.3 is not applicable as utility works are permitted under rural zone provisions.

### 5.5.4 Clause 20.4 – Development Standards for Buildings and Works

The following subsection assesses the development against the relevant development standards for buildings and works.

#### 5.5.4.1 Clause 20.4.1 – Building height

Acceptable Solutions	Performance Criteria
<p><b>A1</b> Building height must be not more than 12m.</p>	<p><b>P1</b> Building height must be necessary for the operation of the use and not cause an unreasonable impact on adjoining properties, having regard to:</p> <ul style="list-style-type: none"> <li>a) the proposed height of the building</li> <li>b) the bulk and form of the building</li> <li>c) the separation from existing uses on adjoining properties; and</li> <li>d) any buffers created by natural or other features</li> </ul>

#### Assessment

The power station, as well as the transmission line will be greater than 12 m tall. As such, the proposal is not consistent with A1 and P1 must therefore be considered.

The transmission line towers will be up to 55 m tall. Given the location of the proposed transmission line alignment, and the co-location of the transmission line with an existing transmission line within forestry land, it is considered that the bulk and form is consistent with adjoining uses. There are also no nearby properties through most of the alignment and therefore there will not be an unreasonable impact. The easement of the existing transmission line easement will be expanded to accommodate for the extra transmission line.

The power station will be up to 16m tall from natural ground level. It will be located adjacent to the existing Tarraleah power station, and the new station's bulk and form are aligned with the existing infrastructure. An architecture design response is being prepared as part of the project's ongoing design work.

While both the transmission line and power station height's exceed the acceptable solution, it is considered that they are consistent with the overall area given the existing Tarraleah hydropower scheme.

It is considered that the proposal is consistent with P1.

#### 5.5.4.2 Clause 20.4.2 – Setbacks

Acceptable Solutions	Performance Criteria
<p><b>A1</b> Buildings must have a setback from all boundaries of:</p> <ul style="list-style-type: none"> <li>(a) not less than 5m; or</li> </ul>	<p><b>P1</b> Buildings must be sited to provide adequate vehicle access and not cause an unreasonable impact on existing use on adjoining properties, having regard to:</p>

(b) if the setback of an existing building is within 5m, not less than the existing building

- (a) the proposed height of the building
- (b) the nature of existing use on the adjoining properties
- (c) separation from existing use on the adjoining properties; and
- (d) any buffers created by natural or other features

### Assessment

All works within this zone are set back a minimum of 5 m from the boundary. Therefore, the proposal is consistent with A1.

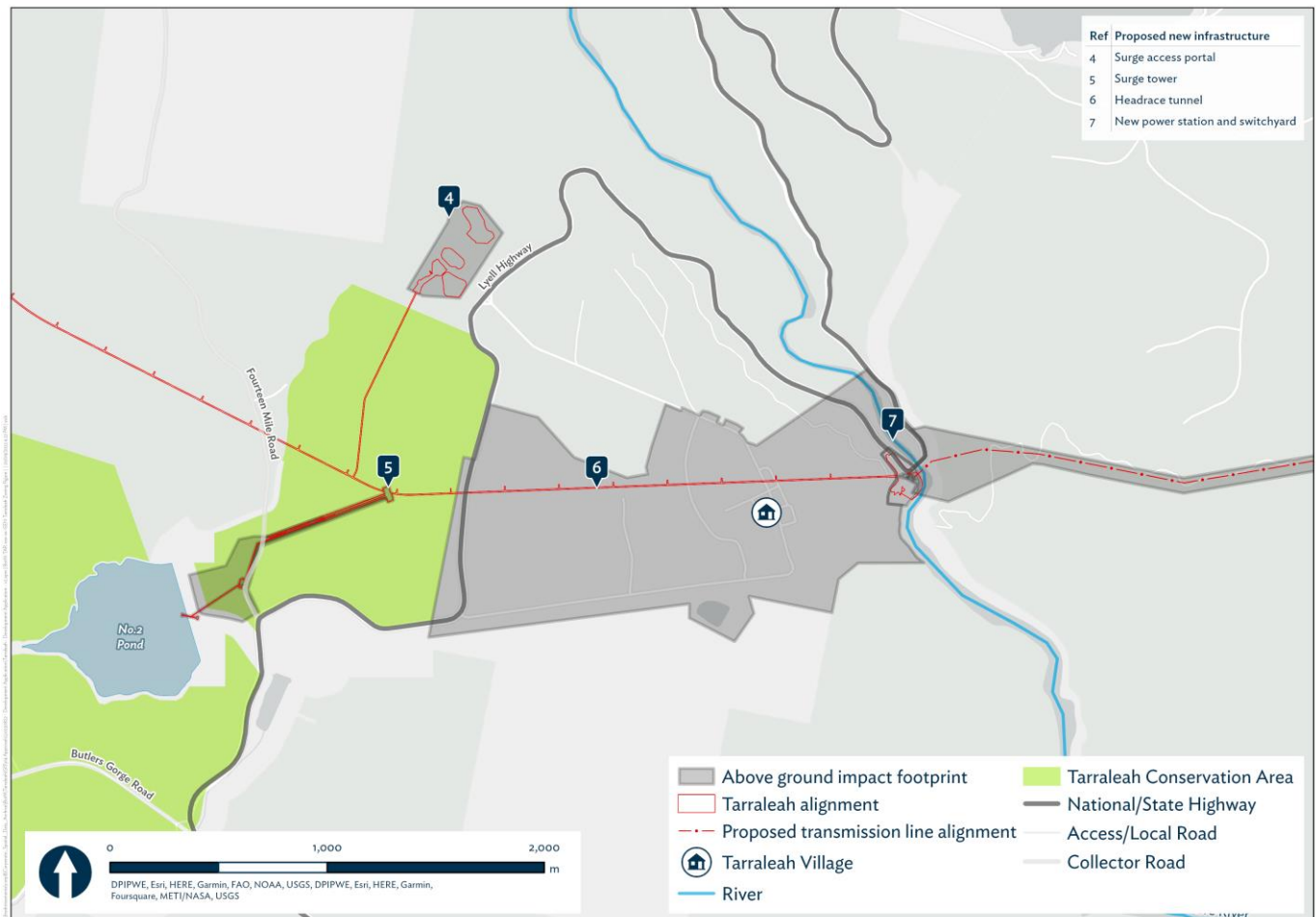
## 5.5.5 Clause 20.5 – Development Standards for subdivision

This standard is not applicable as there is no subdivision involved in the proposal.

## 5.6 Environmental management zone

### 5.6.1 Works in Environmental Management Zone

Land zoned Environmental Management is associated with the Tarraleah Conservation Area as shown in [Figure 24](#) and Appendix B.5. Aboveground works include the surge tower, pump station, pipeline to the surge tower, and a new road from the surge tower to Fourteen Mile Road, as shown in [Figure 25](#) and Appendix B.10. Underground works include the headrace tunnel and access tunnel connecting the access portal with the headrace tunnel and power tunnel. Concept drawings for the surge power and pump station is included in Appendix F.



**Figure 24:** Works within Tarraleah Conservation Area



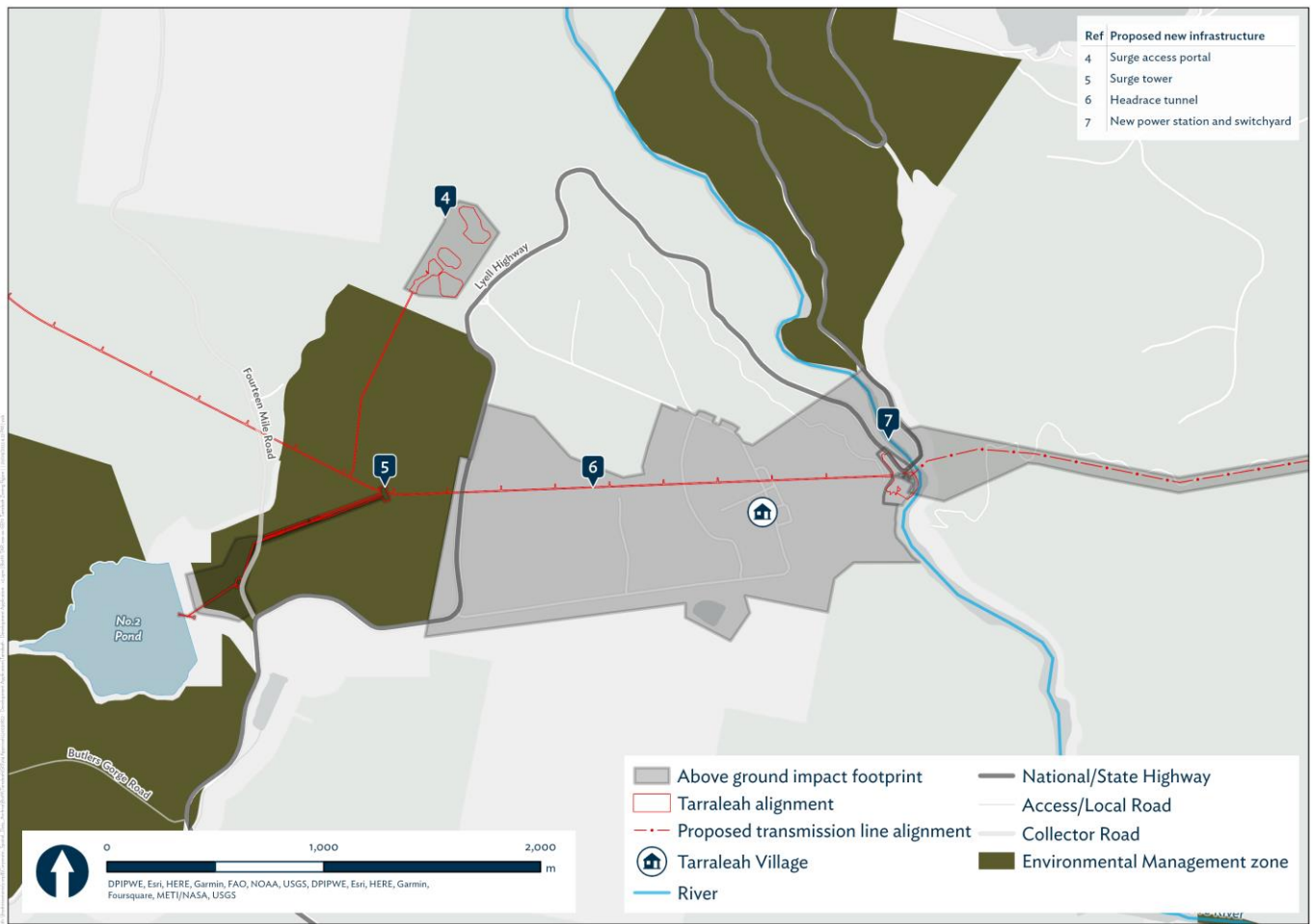


Figure 25: Works within Environmental Management zone

## 5.6.2 Clause 23.1 – Zone purpose

### Clause 23.1 Zone purpose

The purpose of the Environmental Management Zone is:

**23.1.1** To provide for the protection, conservation and management of land with significant ecological, scientific, cultural or scenic value.

**23.1.2** To allow for compatible use or development where it is consistent with:

- a) the protection, conservation, and management of the values of the land; and
- b) applicable reserved land management objectives and objectives of reserve management plans

### Assessment

While the infrastructure works are not directly aligned with the purposes of the Environmental Management zone, it is however considered appropriate for the overall landscape in which the infrastructure will be situated. The overall landscape features an operating hydropower scheme with canals, power stations, flumes, pipelines among other civil infrastructure. There are existing surge towers in the Tarraleah village that has been recognised for its historic value. The Lyell Highway also traverses the existing canal assets. Therefore, while there will be ecological and scenic impacts on the overall landscape, it is not considered inconsistent with the landscape of the areas.

## 5.6.4 Clause 23.3 – Use standards

### 5.6.4.1 Clause 23.3.1 – Discretionary uses

Acceptable solution	Performance criteria
<i>Objective: That uses listed as Discretionary recognise and reflect the relevant values of the reserved land</i>	
<p><b>A1</b></p> <p>No acceptable solution</p>	<p><b>P1</b></p> <p>A use listed as Discretionary must be consistent with the values of the land, having regard to:</p> <ul style="list-style-type: none"> <li>(a) the significance of the ecological, scientific, cultural or scenic values;</li> <li>(b) the protection, conservation, and management of the values;</li> <li>(c) the specific requirements of the use to operate;</li> <li>(d) the location, intensity and scale of the use;</li> <li>(e) the characteristics and type of the use;</li> <li>(f) traffic and parking generation;</li> <li>(g) any emissions and waste produced by the use;</li> <li>(h) the measures to minimise or mitigate impacts;</li> <li>(i) the storage and handling of goods, materials and waste; and</li> <li>(j) the proximity of any sensitive uses.</li> </ul>

#### Assessment

Works within this zone include the surge tower, pump station and pipeline to the surge tower.

It is recognised that the proposed works are undertaken within the Tarraleah Conservation Area, however due to the location of the existing No.2 Pond and the topography of the area, the infrastructure is best placed within the area [P1 (a) to (b)].

Although the scale of work is not insignificant, the location and type of the infrastructure are dependent on the location of existing assets within the Tarraleah hydropower scheme, such as Lake King William, and specific requirements of siting among the existing assets to enable the engineering functions of the infrastructure [P1 (c) to (e)]. The key infrastructure sited in the Tarraleah Conservation Area is the surge tower; the other infrastructure can be considered supporting infrastructure to the surge tower. To enable the surge tower to operate properly, it must be located slightly higher than the elevation of Lake King William (where the water originates), and be in close proximity to the power station (where the water ends up).

There is no ongoing traffic of parking generation associated with the use within this zone, nor emissions and waste produced, apart from asset maintenance and inspections [P1 (f) and (g)]. Subsequently there are no measures needed to mitigate these impacts [P1 (h)].

As part of the infrastructure proposed, there is no permanent storage and handling of goods, materials and waste [P1 (i)]. The nearest sensitive use is the Tarraleah Village, located over 1km to the east [P1 (j)].

It is considered that the proposal is consistent with P1.

## 5.6.5 Clause 23.4 – Development standards for buildings and works

### 5.6.5.1 Clause 23.4.1 – Development area

Acceptable solution	Performance criteria
<p><i>Objective: That the development area is:</i></p> <ul style="list-style-type: none"> <li>(a) <i>Compatible with the values of the site and surrounding area; and</i></li> <li>(b) <i>Minimises disturbance of the site</i></li> </ul>	
<p><b>A1</b></p> <p>The development area must:</p> <ul style="list-style-type: none"> <li>(a) be not more than 500m<sup>2</sup></li> <li>(b) be in accordance with an authority under the <i>National Parks and Reserve Management Regulations 2019</i> granted by the Managing Authority or the Nature Conservation Act 2002; or</li> <li>(c) be in accordance with an approval of the Director General of Lands under the <i>Crown Lands Act 1976</i></li> </ul>	<p><b>P1</b></p> <p>The development area must not cause an unreasonable impact on the values of the site and surrounding area, having regard to:</p> <ul style="list-style-type: none"> <li>(a) the design, siting, scale and type of development;</li> <li>(b) the operation of the use;</li> <li>(c) the impact of the development on the values of the site and surrounding area;</li> <li>(d) the need for the development to be located on the site;</li> <li>(e) how any significant values are managed; and</li> <li>(f) any protection, conservation, remediation or mitigation works.</li> </ul>
<p><b>Assessment</b></p> <p>The development area within this zone is greater than 500 m<sup>2</sup>, therefore the proposed works are not consistent with A1, and P1 must be considered.</p> <p>The surge tower and associated infrastructure is consistent with the surrounding context of the Tarraleah area, which is known for its hydropower history [P1(a)]. The purpose of the surge tower is necessary to control the water pressure between the headrace tunnel (the section of tunnel between Clark Dam and the surge tower), and the power tunnel (section of tunnel between the surge tower and the new power station), and must be sited at the proposed location (as described above, in Section 5.6.4.1). As such the surge tower must be located in its current location [P1(b)-(d)]. As the surge tower is within the Tarraleah Conservation Area, some natural values will be impacted, predominantly There are no significant values on site [P1(e)].</p> <p>Subsequently, given the specific nature and siting requirements of the surge tower and supporting infrastructure, it is considered that the proposal is consistent with P1.</p>	

### 5.6.5.2 Clause 23.4.2 – Building height, setback and siting

Acceptable solution	Performance criteria
<i>Objective: That the design and siting of buildings responds appropriately to the values of the site and surrounding area</i>	
<p><b>A1</b> Building height must:</p> <ul style="list-style-type: none"> <li>(a) be not more than 6m</li> <li>(b) be in accordance with an authority under the <i>National Parks and Reserve Management Regulations 2019</i> granted by the Managing Authority or <b>Nature Conservation Act 2002</b>; or</li> <li>(c) be in accordance with an approval of the Director General of Lands under the <i>Crown Lands Act 1976</i>.</li> </ul>	<p><b>P1</b> Building height must be compatible with the values of the site and surrounding area, having regard to: the bulk and form of proposed buildings;</p> <ul style="list-style-type: none"> <li>(a) the height, bulk and form of existing buildings;</li> <li>(b) the topography of the site;</li> <li>(c) the appearance when viewed from roads and public places; and</li> <li>(d) the character of the surrounding area.</li> </ul>
<p><b>Assessment</b></p> <p>The surge tower is proposed to be up to 75 m tall and therefore is not consistent with A1 (a). The proposed works in the Tarraleah Conservation Area is subject to a reserve activity assessment (<b>RAA</b>) (dated 18 May 2023) provided under the <i>National Parks and Reserve Management Act 2002 (NPRM Act)</i>, however at the time of writing this development application, is not yet approved. As such the proposal has been assessed against P1.</p> <p>Although the infrastructure is of significant size, it is considered compatible with the surrounding area of Tarraleah given its primary use is for hydroelectricity generation. There are no existing buildings [P1(a)], and has been sited to take advantage of the topography of the site [P1(b)]. There are specific requirements for the surge tower to be located in a location of slightly higher elevation to Lake King William.</p> <p>The surge tower will be visible from surrounding roads and the public places, including Lyell Highway and from Tarraleah village [P1(c)], however it is considered that the proposal is consistent with the values and character of the site and surrounding area given the industrial (hydroelectricity) nature of the area [P1(d)].</p>	
<p><b>A2</b> Buildings must have a setback from all boundaries:</p> <ul style="list-style-type: none"> <li>(a) not less than 10m</li> <li>(b) not less than the existing building for extension</li> <li>(c) in accordance with an authority under the <i>National Parks and Reserve Management Regulations 2019</i> granted by the Managing Authority and/or <i>Nature Conservation Act 2002</i>; or</li> <li>(d) be in accordance with an approval of the Director-General of Lands under the <i>Crown Lands Act 1976</i>.</li> </ul>	<p><b>P1</b> Buildings must be sited to be compatible with the values of the site and surrounding area, having regard to:</p> <ul style="list-style-type: none"> <li>(a) the bulk and form of proposed buildings;</li> <li>(b) the height, bulk and form of existing buildings;</li> <li>(c) the topography of the site;</li> <li>(d) the appearance when viewed from roads and public places;</li> <li>(e) the retention of vegetation;</li> <li>(f) the safety of road users; and</li> <li>(g) the character of the surrounding area.</li> </ul>
<p><b>Assessment</b></p> <p>The infrastructure is setback 85 m from the nearest boundary, therefore the proposal is consistent with A1.</p>	

### 5.6.5.3 Clause 23.4.3 – Exterior finish

Acceptable solution	Performance criteria
<i>Objective: That exterior finishes are not prominent and blend with the character of the site and surrounding area.</i>	
<p><b>A1</b> Exterior building finishes must:</p> <ul style="list-style-type: none"> <li>(a) be coloured using colours with a light reflectance value not more than 40% in dark natural tones of grey, green or brown;</li> <li>(b) be in accordance with an authority under <b>National Parks and Reserve Management Regulations 2019</b> granted by the Managing Authority or the <b>Nature Conservation Act 2002</b>; or</li> <li>(c) be in accordance with an approval of the Director-General of Lands under the <b>Crown Lands Act 1976</b>.</li> </ul>	<p><b>P1</b> Exterior building finishes must be compatible with the character of the site and surrounding area, having regard to:</p> <ul style="list-style-type: none"> <li>(a) the topography of the site;</li> <li>(b) the existing vegetation;</li> <li>(c) the dominant colours of the vegetation and surrounding area;</li> <li>(d) the nature of the development;</li> <li>(e) the nature of the exterior finishes;</li> <li>(f) the appearance when viewed from roads and public places; and</li> <li>(g) the character of the surrounding area.</li> </ul>
<p><b>Assessment</b></p> <p>The surge tower and supporting infrastructure are proposed to be finished in a standard matte grey concrete finish, and is therefore consistent with A1.</p>	

### 5.6.5.4 Clause 23.4.4 – Vegetation management

Acceptable solution	Performance criteria
<i>Objective: That the site contributes to the values of the surrounding area by restricting vegetation removal.</i>	
<p><b>A1</b> Building and works must:</p> <ul style="list-style-type: none"> <li>(a) be located on land where the native vegetation cover has been lawfully removed; or</li> <li>(b) be in accordance with an authority under <b>National Parks and Reserve Management Regulations 2019</b> granted by the Managing Authority or the <b>Nature Conservation Act 2002</b>.</li> </ul>	<p><b>P1</b> Building and works must be located to minimise native vegetation removal and the impact on values of the site and surrounding area, having regard to:</p> <ul style="list-style-type: none"> <li>(a) the extent of native vegetation to be removed;</li> <li>(b) any proposed remedial, mitigation or revegetation measures;</li> <li>(c) provision for native habitat for native fauna;</li> <li>(d) the management and treatment of the balance of the site or native vegetation areas; and</li> <li>(e) the type, size and design of development.</li> </ul>
<p><b>Assessment</b></p> <p>Vegetation removal associated with the construction of the surge tower has been assessed by the Tasmanian Parks and Wildlife Services as part of the RAA process. It is considered that the proposal is consistent with A1.</p>	

### 5.6.6 Clause 23.5 – Development standards for subdivision

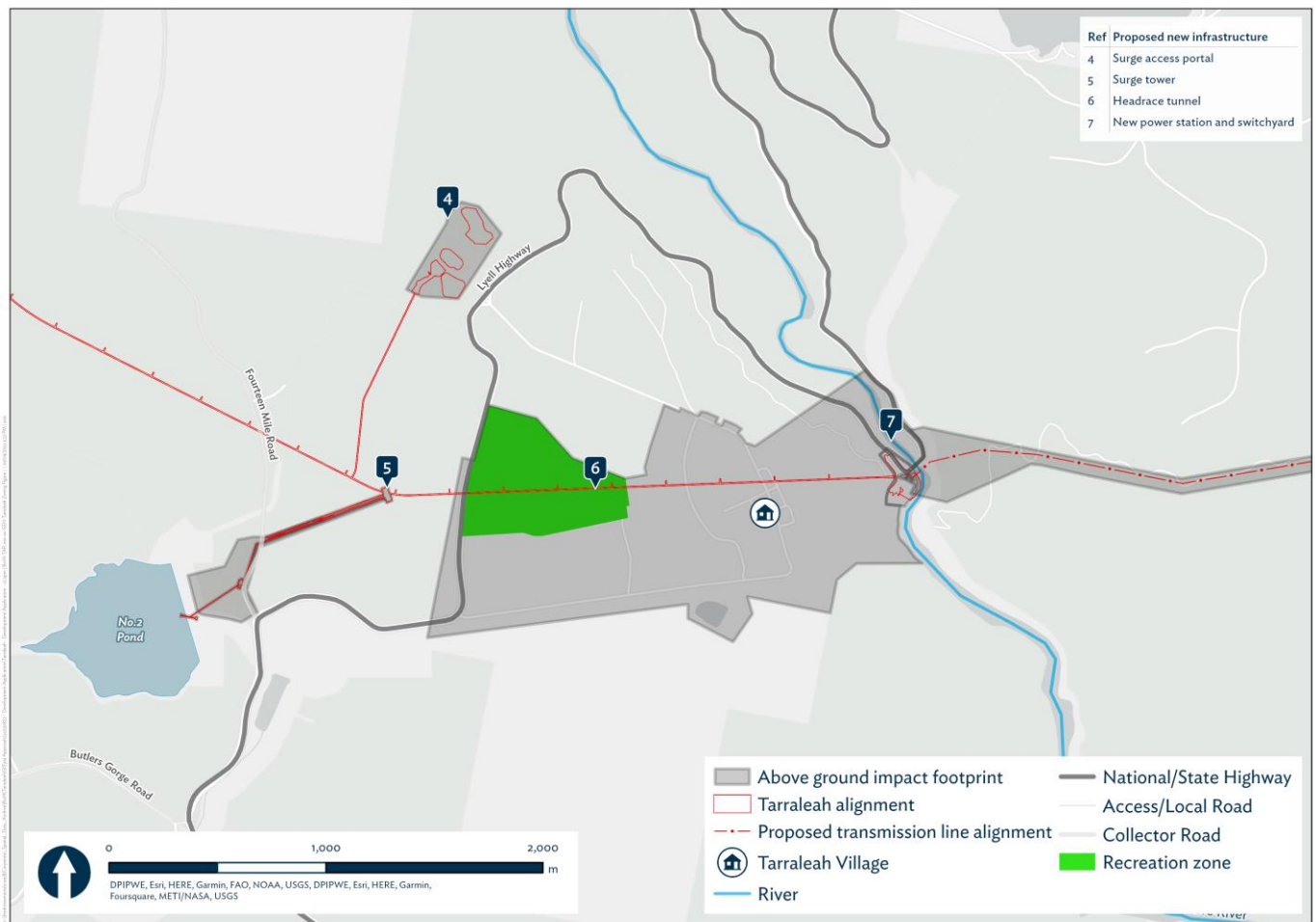
This standard is not applicable as there is no subdivision involved in the proposal.

## 5.7 Recreation zone

### 5.7.1 Works within Recreation Zone

The Recreation Zone is associated with the Tarraleah Golf Course, located to the west of the Tarraleah Village and east of the Tarraleah Conservation Area, as shown in [Figure 26](#) and Appendix B.11.

There are no aboveground works within this zone. Works traversing this zone is the power tunnel which is proposed to be underground.



**Figure 26:** Works within Recreation zone

## 5.7.2 Clause 28.1 – Zone purpose

### Clause 28.1 – Zone purpose

The purpose of the Recreation Zone is:

**28.1.1** To provide for the active and organised recreational use and development ranging from small community facilities to major sporting facilities

**28.1.2** To provide for complementary uses that do not impact adversely on the recreational use of the land

**28.1.3** To ensure that new major sporting facilities do not cause unreasonable impacts on adjacent sensitive uses

### Assessment

The works within this zone do not impact on the purpose of the Recreation zone as they will not affect any aboveground activities.

Temporary disturbance to the recreational use of the Tarraleah Golf Course is likely during construction, however appropriate consultation with members and users of the golf course, as well as the general public, will be undertaken ahead of any disturbances or closures of the facility.

## 5.7.3 Clause 28.3 – Use standards

Clause 28.3.1 is not relevant as the use is not a sports or recreation discretionary use.

## 5.7.4 Clause 28.4 – Development standards for buildings and works

Clause 28.4.1 ‘Building height, setback and siting’ and Clause 28.4.2 ‘Outdoor storage areas’ are not relevant as there are no aboveground works associated with works in this zone.

## 5.7.5 Clause 28.5 – Development standards for subdivision

This standard is not applicable as there is no subdivision involved in the proposal.

## 6.0 Conclusion

Hydro Tasmania is seeking a planning permit to develop the current Tarraleah Hydropower Scheme from a 90MW capacity to 190MW capacity in the Tasmanian Central Highlands. The purpose of this development is to further the existing infrastructure where practicable and hence ensuring the facility is capable of meeting future electricity needs and demands.

Development is proposed across five different zones under the Tasmanian Planning Scheme: village, rural, environmental management, utilities, and recreation. The project is classed as 'Utilities' use, and is a discretionary use in the village, rural, environmental management, and recreation zones.

The following discretions are triggered by the proposed development:

- Clause 20.4.1 – Building height (Rural zone) – power station and the transmission line towers exceeding the acceptable solution of 12 m
- Clause 23.3.1 – Discretionary use (Environmental management zone) – no acceptable solution provided
- Clause 23.4.1 – Development area (Environmental management zone) – development area greater than 500 m<sup>2</sup>
- Clause 23.4.2 – Building height, setback and siting (Environmental management zone) – surge tower greater than 6m
- Clause 26.4.1 – Building height (Utilities zone) – transmission line towers exceeding the acceptable solution of 12m.

Five codes/overlays were relevant for the project area, however only one was identified to potentially be impacted by the development, being the natural assets code with regard to the removal of vegetation and impacts on protected coastal areas. However, pursuant to C7.4.1 of the Code, development that is assessed as a Level 2 Activity is exempt from assessment against this Code. The project is subject to a Level 2 assessment by EPA and therefore the exemption applies.

It is considered that the project satisfactorily meets the requirements of the planning scheme and should be recommended for approval.