

Thomastown Battery Energy Storage System 15 High Street, Thomastown

Planning Permit Application Report

Prepared for AusNet Transmission Group Pty Ltd

Prepared by Beca Pty Ltd

ABN: 85 004 974 341

19 October 2022

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Appendix A – Certificate of Title

Appendix B – Development Plans

Appendix C – Traffic Impact Assessment

Appendix D – Hydraulic Impact Assessment

Appendix E – Contamination Report

Appendix F – Noise Modelling

Appendix G – Ecology Assessment

Appendix H – Project Information Flyer

Appendix I – Fire Hazard & Risk Assessment

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Revision History

Revision N°	Prepared By	Description	Date
1		Draft for internal review	22 February 2022
2		Draft for client review	1 June 2022
3		Final for client review	19 July 2022
4		Final	27 July 2022
5		Final – Updates in response to DELWP RFI of 7/9/22: <ul style="list-style-type: none"> Sections 2, 5.1, 5.3, 5.4, 5.6.2, 5.10 and 7.1 to remove references to permit triggers under the UFZ Section 6.1 to include reference to the RFI and a summary of responses Sections 7.3 to clarify the approach to noise assessment 	19 October 2022

Document Acceptance

Action	Name	Signed	Date
Prepared by			27 July 2022
Reviewed by			28 July 2022
Approved by			19 October 2022
on behalf of	Beca Limited		

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Glossary

Name	Acronym
Alternating Current	AC
Australian Energy Market Operator	AEMO
AusNet Transmission Group Pty Ltd	AusNet
Beca Pty Ltd	Beca
Battery Energy Storage System	BESS
Aboriginal Cultural Heritage Management Plan	CHMP
Construction Management Traffic Plan	CTMP
Direct Current	DC
Development Contributions Plan Overlay 3	DCPO3
Fire Rescue Victoria	FRV
Industrial 1 Zone	IN1Z
Land Subject to Inundation Overlay	LSIO
Melbourne Metropolitan Board of Works	MMBW
Municipal Strategic Statement	MSS
State Electricity Commission of Victoria	SEVC
State Planning Policy Framework	SPPF
Traffic Management Plan	TMP
Thomastown Terminal Station	TTS
Urban Floodway Zone	UFZ
Whittlesea City Council	WCC
Whittlesea Planning Scheme	WPS
Water Sensitive Urban Design	WSUD

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1 Introduction

With the move away from thermal generation towards renewable generation the Victorian transmission network is undergoing major changes. To support the performance of the network, the Victorian Government and the Australian Energy Market Operator (AEMO) are closely monitoring “system strength” requirements and are working to procure this service across the state from multiple new projects including batteries. Additionally, ensuring increased energy storage is built is one of the key actions outlined in the Victorian State Governments Renewable Energy Action Plan (July 2017).

The AEMO has found that the planned reduction of coal-fired generators and introduction of renewables is “expected to lead to system strength shortfalls at Thomastown after 2025-26”. The introduction of a Battery Energy Storage Systems (BESS) at the Thomastown Terminal Station (TTS) is proposed by AusNet Transmission Group Pty Ltd (AusNet) as a potential solution to resolve this issue. To meet these timelines the BESS would need to be operation in early 2025.

The proposed BESS would be located adjacent and connected to the existing TTS, at 15 High Street, Thomastown. Access to the BESS site is via 27 Pelmet Crescent.

Beca Pty Ltd (Beca) has been engaged by AusNet, the Victorian transmission network owner and operator, to prepare the planning permit application for the project (this document).

This document provides details of the proposed BESS and assesses the relevant provisions of the Whittlesea Planning Scheme.

The following technical assessments have been undertaken to inform the planning design and planning permit application and are referenced within this document:

- Appendix A: Certificate of Title
- Appendix B: Development Plans
- Appendix C: Traffic Impact Assessment
- Appendix D: Hydraulic Impact Assessment
- Appendix E: Contamination Report
- Appendix F: Noise Modelling
- Appendix G: Ecology Assessment
- Appendix H: Project Information Flyer
- Appendix I: Hazard and Risk Assessment

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2 Planning Summary

A summary of the planning permit application details is provided in Table 1.

Table 1. Planning summary.

Project	Thomastown Battery Energy Storage System
Site	BESS – 15 High Street, Thomastown, 3074 Access – 27 Pelmet Crescent, Thomastown, 3074
Certificate of title	BESS – Lot 2 PS401440 Connecting infrastructure - Lot 1 TP865439 Access – Lot 22 LP219848
Applicant	AusNet Transmission Group Pty Ltd
Permit Application Contact	[REDACTED] Principal Environmental Planner, Beca Pty Ltd. Email: [REDACTED] Phone: [REDACTED]
Zoning	Industrial 1 Zone (IN1Z) Urban Flood Zone (UFZ)
Overlays	Land Subject to Inundation Overlay (LSIO) Development Contributions Plan Overlay 3 (DCPO3)
Permit Triggers	Use permit under the IN1Z Building and works permit under the IN1Z & LSIO

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3 The Site

3.1 Location

The BESS is proposed to be located at 15 High Street, Thomastown, on vacant land at the existing Thomastown Terminal Station (TTS) (the Site). The site has been selected based on its proximity to the TTS.

Access to the site is proposed via 27 Pelmet Crescent, being a dedicated access point to the Site.

The areas to the north, east and west of the property are generally industrial in nature. The area to the south, across Mahoneys Road is primarily residential, the closest residential property is located approximately 300m south of the location proposed for the BESS. William Ruthven Primary School and Secondary College is located to the southwest on Mahoneys Road, approximately 400m from the location of the proposed BESS. A recreation area, including the JC Donath Reserve, IW Dole Reserve, tennis courts, sports grounds and a skate park are located approximately 880m to the southeast of the location proposed for the BESS. Edgars Creek runs through the property, and it is occupied within a linear creek reserve both upstream and downstream of the site.

The Epping Rail line runs parallel to High Street on the opposite side of the street to the terminal station. Keon Park Train Station is located opposite the site at the north-eastern corner of the intersection of Keon Parade and High Streets. The Metropolitan Ring Road is located approximately 300m to the north of the site. A major gas pipeline runs along Mahoneys Road/Keon Parade.

The site location is illustrated in Figure 1.



Figure 1. Property Location at 15 High Street and 27 Pelmet Crescent. Source: NearMap (2022).

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3.2 Site Overview

The following subsections provide an overview of the key site features, as illustrated in Figure 2.



Figure 2. Waterway and topography overview. Source: Esri (2022).

3.2.1 Boundaries

The site is bound by Mahoneys Road to the south (which accommodates TTS, a depot, and a plant nursery), High Street to the east, Pelmet Crescent to the north (which accommodates various industry and manufacturing) and Chaffey Street to the west (which accommodates industrial properties). The site is predominately surrounded by industrial and manufacturing businesses.

3.2.2 Waterways

Edgars Creek, a Melbourne Water managed waterway and minor tributary to Merri Creek, crosses the site in a roughly diagonal direction from north to southwest. The southwestern third of the creek is channelised, with the rest in natural form, although it has undergone significant disturbance in the past, including redirection. TTS has an established discharge point to the Edgars Creek, roughly central to its length within the Site.

3.2.3 Topography

The east and south-east section of the TTS site is relatively flat. Towards the northwest of the site, where Edgars Creek is located, is a gradual decline in topography towards the waterway. This decline follows the natural waterway of the creek throughout the site.

3.2.4 Existing Infrastructure

The existing TTS is concentrated to the southeast, at the corner of High Street and Mahoneys Road. TTS includes an existing utility installation and depot. The station yard is fenced. Transmission lines run along the northern and western boundaries of the Site, as well as centrally through the site from TTS to the west in the

direction of Horne Street, and in east-west and southeast-northwest directions to the north of TTS. A relatively small area in the southwestern corner of the property is leased and operates as a plant nursery.

An existing electrical substation is located on a separate land parcel in the north-east of the site.

3.2.5 Access

The area of the site to the southeast of Edgars creek is accessed via High Street and Mahoneys Road. The area of the site to the northwest of Edgars Creek is accessed via 27 Pelmet Crescent.

3.2.6 Vegetation

The eastern and southern property boundaries are landscaped with planted vegetation. Edgars Creek is bordered by a mix of native and non-native vegetation. This is further discussed in Section 7.5. The area of the property to the west and north of Edgars Creek is undeveloped and currently grassed with exotic grasses.

3.3 Legal Description

The Site is made up of three land parcels, as illustrated in Figure 3:

- Lot 22 LP219848 – site access via 27 Pelmet Crescent
- Lot 2 PS401440 – the northern parcel of 15 High Street.
- Lot 1 TP865439 – the southern parcel of 15 High Street

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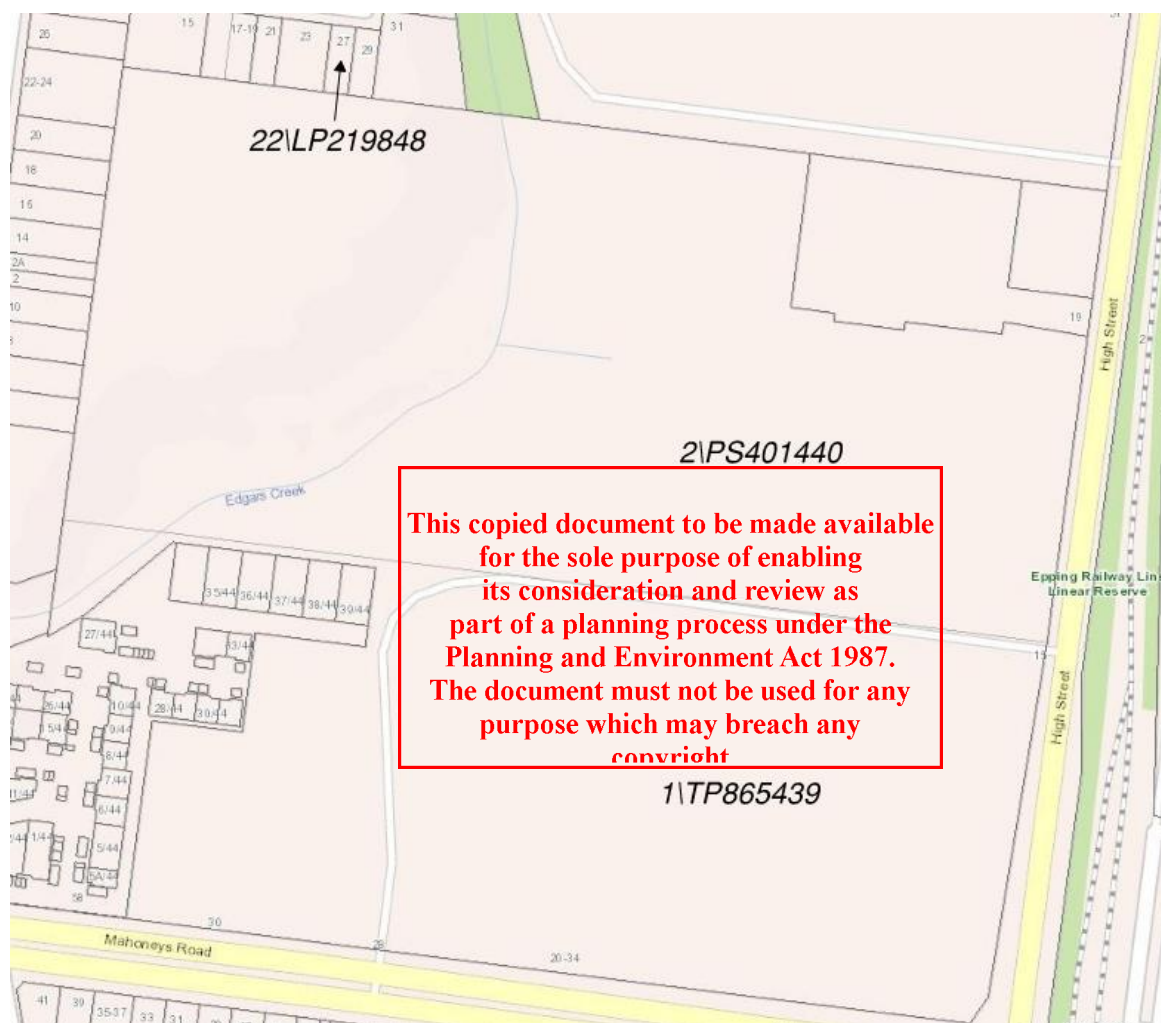


Figure 3. Site parcels. Source: VicPlan (2022).

Several easements exist within the site boundary. Those within the footprint of the development are described in Table 2 and highlighted in Figure 4, Figure 5 and Figure 6. These easements mostly relate to sewerage and drainage and transmission of electricity and powerlines. The powerline easements are in favour of AusNet through succession in ownership from Eastern Energy and the State Electricity Commission of Victoria (SECV). AusNet internal processes for works within easements will be followed including seeking a permit to work.

Existing overhead 22kV powerlines in the easement on the northern and western boundary will be relocated to an underground cable and a new easement will be registered. The existing easement will be surrendered.

The majority of works within the easements is overhead and there will be no ground disturbance. Some ground disturbing works will be undertaken in the Melbourne Metropolitan Board of Works (MMBW) easement, consent to work in the easement will be sought from MMBW following issue of the planning permit. Initial discussions have been held with MMBW in relation to the project.

A copy of the title particulars is included in

Table 2. Easements and Encumbrances on Titles from northern parcel of land to southern parcel of land.

Parcel Description	Easements & Encumbrances
Lot 22 LP219848 Sole Proprietor: SPI Powernet Pty Ltd (AusNet Transmission Group Pty Ltd)	<ul style="list-style-type: none"> E-4- Drainage & Sewerage E-5 – Powerline benefitting State Electricity Commission of Victoria (SECV)
Lot 2 PS401440 Sole Proprietor: GPU Powernet Pty Ltd (AusNet Transmission Group Pty Ltd)	<ul style="list-style-type: none"> E-2 Sewerage in benefit of MMBW E-3 Sewerage in benefit of MMBW E-4 Drainage in benefit of MMBW E-5 Transmission of Electricity in benefit of SECV E-6 Any easement – unspecified E-7 Carriageway E-8 Powerline in benefit of Eastern Energy Ltd. E-13 Sewerage for MMBW and Transmission of Electricity for SECV E-16 Transmission of Electricity for SECV and Powerline for Eastern Energy Ltd. E-17 Transmission of Electricity for SECV
Lot 1 TP865439 Sole Proprietor: GPU Powernet Pty Ltd (AusNet Transmission Group Pty Ltd)	<ul style="list-style-type: none"> E-1 & E-3 for the transmission of electricity created by Inst.1114933 E-3 the easement to the MMBW created by INST.C710766
Note	The Transmission Easements referenced above were vested in AusNet Transmission Group by the <i>Electricity Industry (Residual Provisions) Act (Vic) 1993</i>

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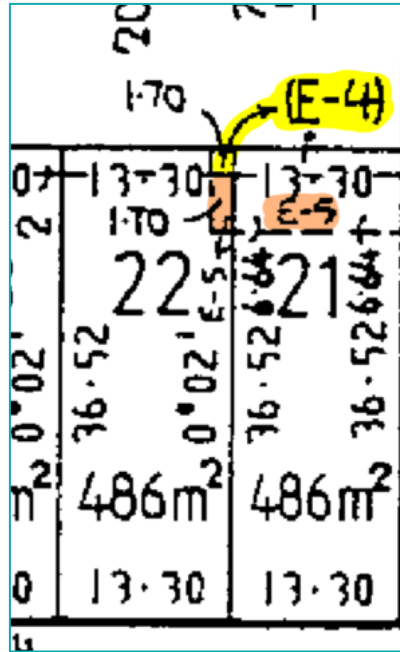


Figure 4. Easements impacting Lot 22 LP219848 (site access via 27 Pelmet Crescent).

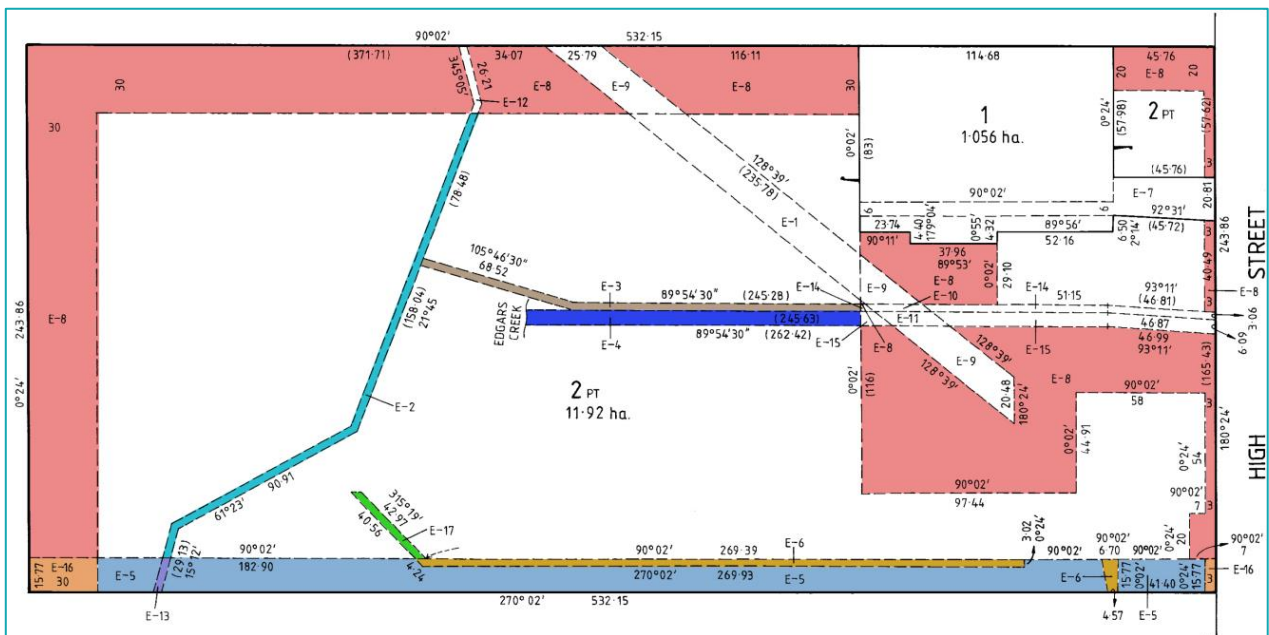


Figure 5. Easements impacting Lot 2 PS401440 (northern parcel of 15 High Street).

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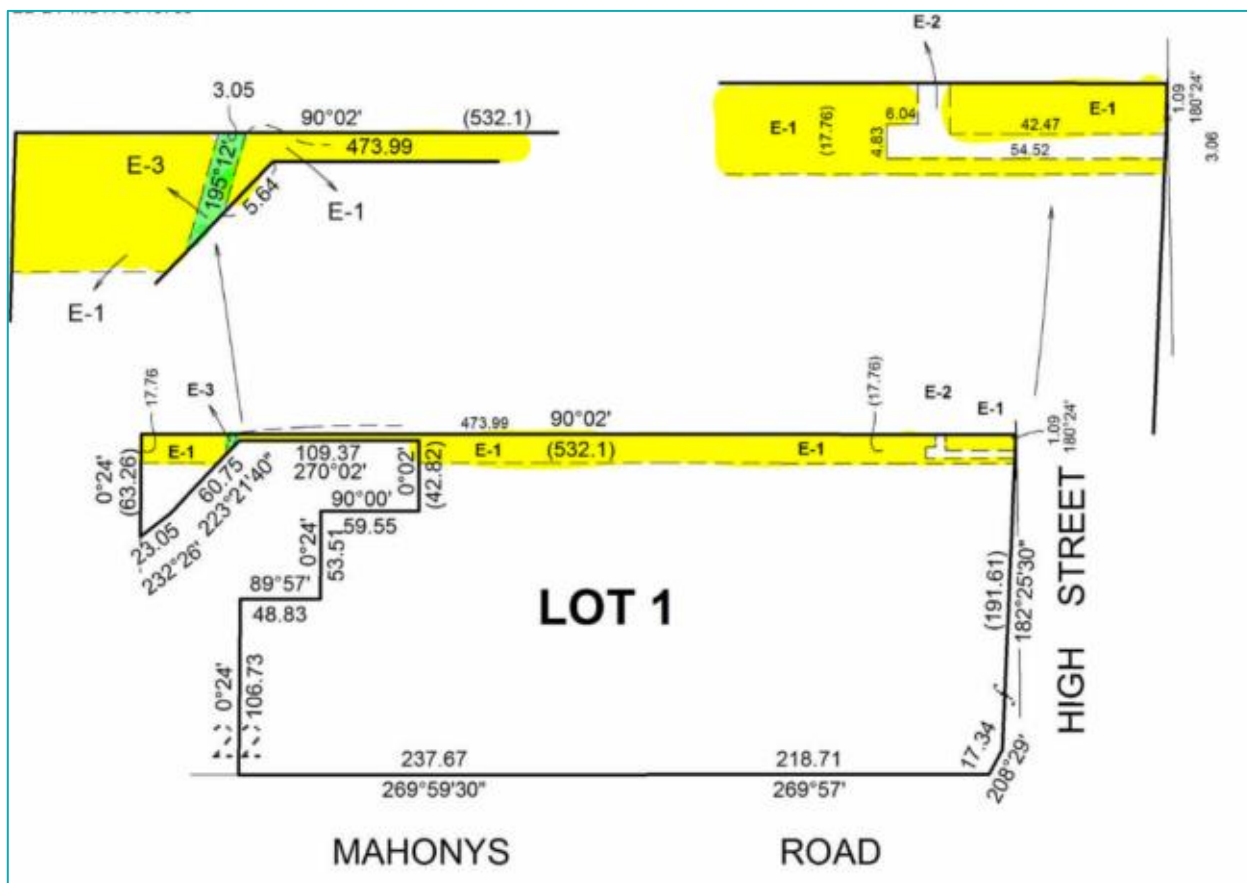


Figure 6. Easements impacting Lot 1 TP865439 (southern parcel of 15 High Street).

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4 Proposal

AusNet is seeking to install a 300 MW/600 MWh Battery Energy Storage System (BESS) and associated infrastructure to the northwest of the Thomastown Terminal Station (TTS) yard, as generally depicted by Figure 7.

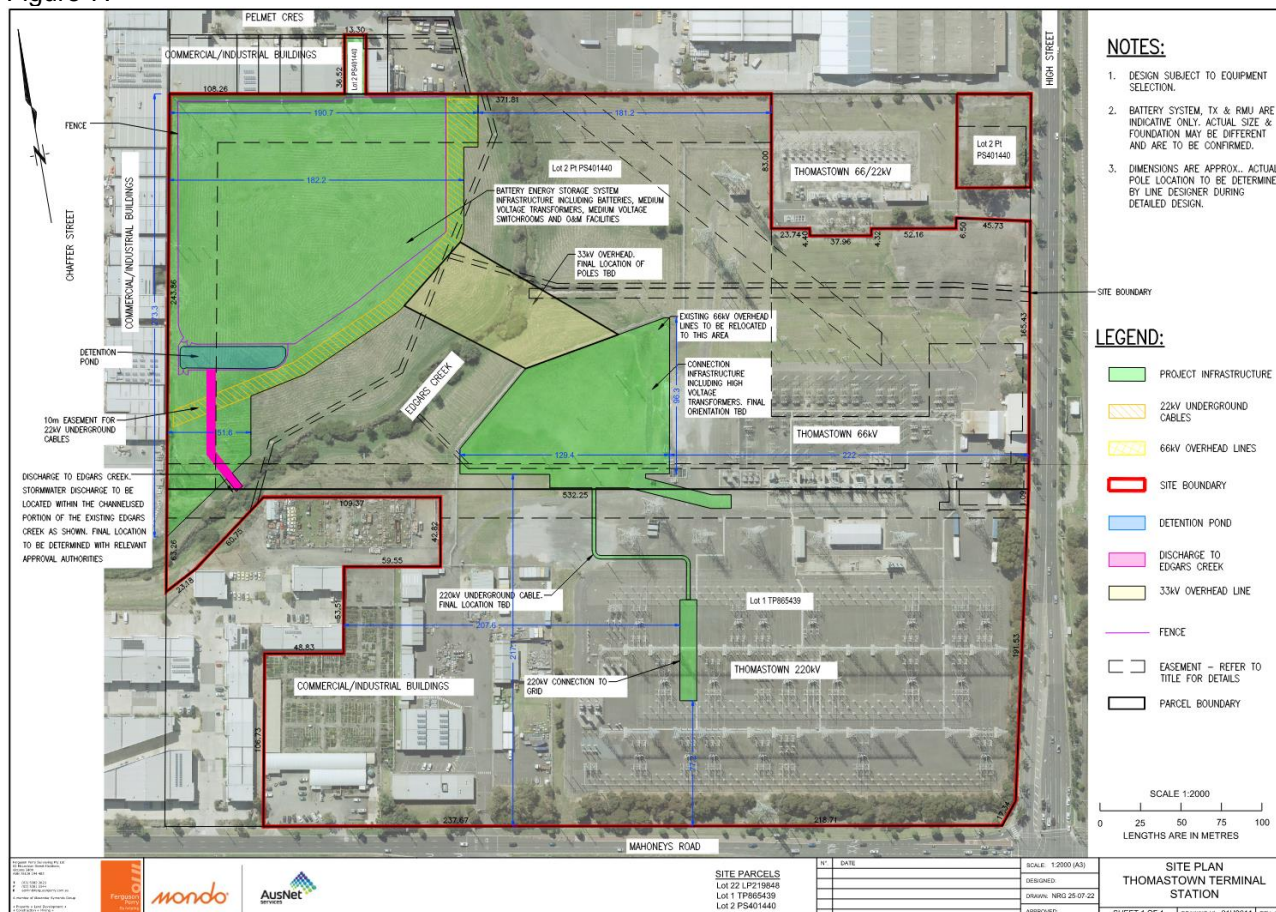


Figure 7. Proposed battery. Source: AusNet (2022).

The development involves the construction of hardstand, access, acoustic walls, security fences and the installation of the BESS and associated infrastructure. The proposed development footprint is approximately 4.8 hectares.

The development will include:

- A series of battery units, inverters, cooling systems, MV transformers, protection devices, ring main units and connecting infrastructure (nominal 300MW / 600MWh storage capacity)
- Transmission connection infrastructure including HV transformers, protection devices, earthing systems and connecting infrastructure
- Removal of contaminated topsoil
- Control room, switch room and maintenance buildings, including ablution facilities
- Utility connections
- Sealed access at entrance to the BESS facility
- Unsealed access tracks and parking areas to provide access to the BESS facility
- Earth grid typically not below 1m in depth around the entire equipment area
- Fire protection equipment including water tanks, booster pumps, hydrants

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- Aboveground and underground direct current (DC) cabling, trenching typically not below 1m in depth and 1m wide
- Low voltage (LV) aboveground infrastructure and underground alternating current (AC) cables, trenching typically not below 1m in depth and 1m wide per circuit
- Medium voltage (MV) aboveground infrastructure and underground alternating current (AC) cables, trenching typically not below 1m in depth and 1m wide per circuit
- High voltage (HV) aboveground infrastructure and underground alternating current (AC) cables, trenching typically not below 1.5m in depth and 1.5m wide
- Underground communications cable, trenching typically not below 1m in depth and 1m wide
- Civil and drainage infrastructure within the site including provision for a detention pond typically not below 1.5m depth
- Combination of trenched and open swale type stormwater drainage to Edgars Creek
- Installation of perimeter security fencing to a depth of approximately 600mm
- Installation of lighting poles and lightening masts
- Provision of an up to 10m noise/fire wall to a pile depth of approximately 3-7m.

A temporary construction laydown and vehicle turning area will be developed for the purpose of the construction.

4.1 Overview

The BESS is a modular system which converts power for storage in rechargeable lithium-ion battery packs. The system incorporates a number of components, as described in the following sections. These components are installed in rows which contain:

- Two battery units, each consisting of seven battery cabinets
- A medium voltage transformer

A total of 82 rows that will be installed in three groups. A maintenance building and parking areas will be located near the site entrance. Supporting infrastructure such as accessways, drainage infrastructure, fire services, lightening masts, security fencing, lighting and acoustic barriers will also be constructed as part of the project.

Figure 8 illustrates an isometric view of a typical battery layout, with ring main units and a Control Room to the rear.

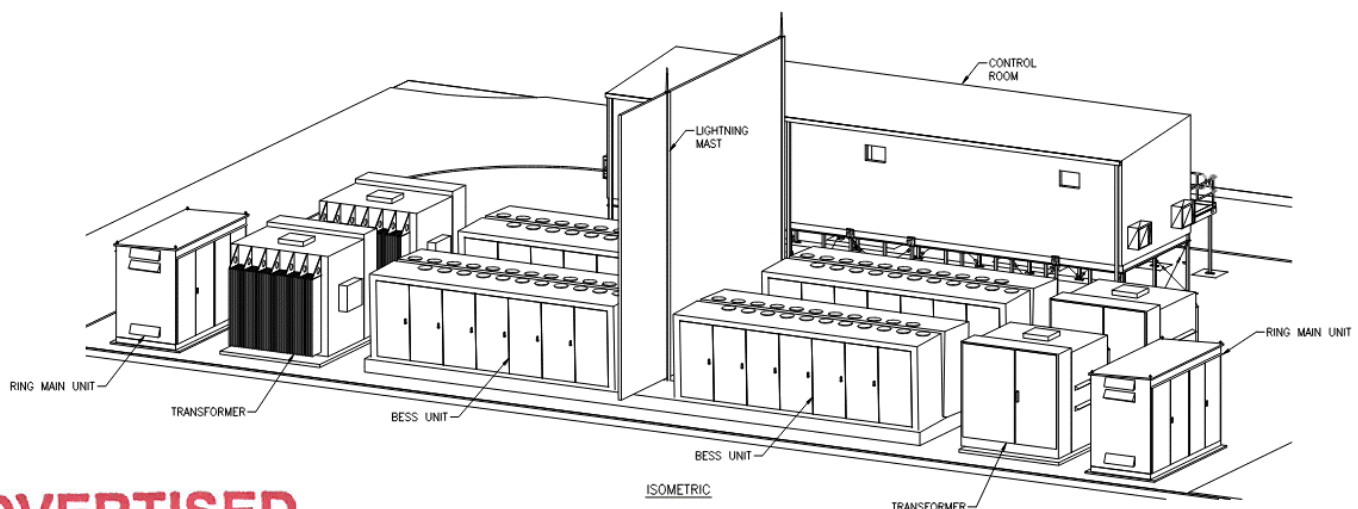


Figure 8. Isometric view of typical battery layout

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Figure 9 provides a 3D visualisation of the BESS, looking south from above Pelmet Crescent.

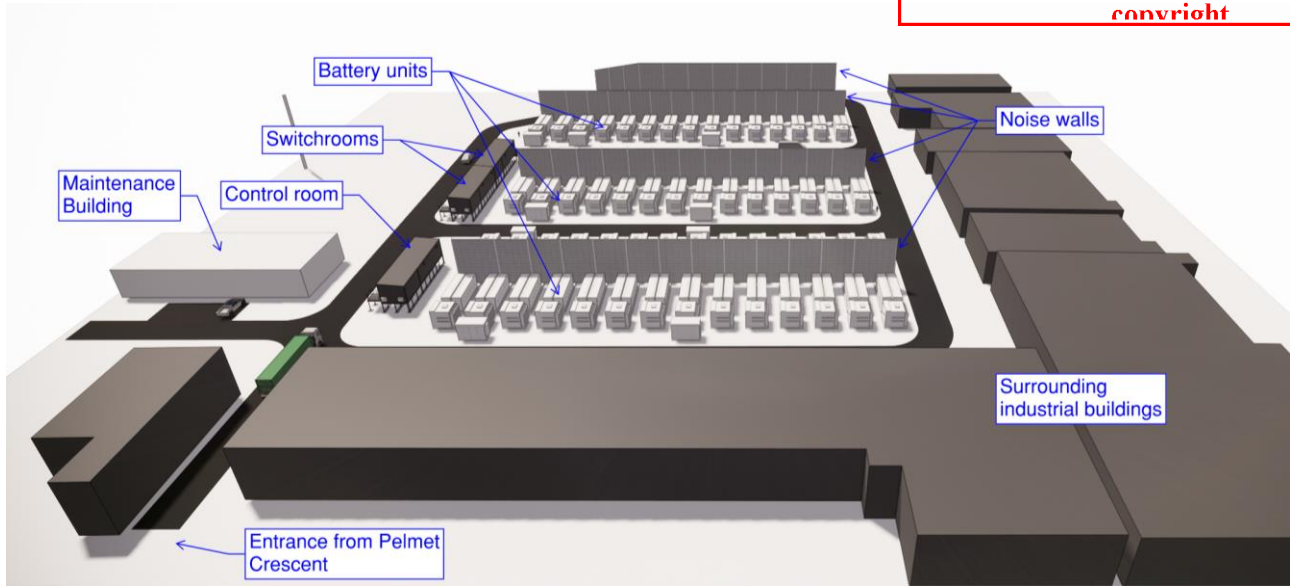


Figure 9. 3D visualisation of BESS

The following sections provide further description of each of the key components. As the project has not yet undergone detailed design, the layout and dimensions are approximate.

Development plans are attached at Appendix B – Development Plans.

4.2 Batteries & Inverters

Lithium-ion battery cells are contained within purpose-designed housing with integrated cooling and inverters. Batteries will be arranged in groups of seven to form battery units which will be installed in pairs on concrete footings. Each pair of battery units will have a footprint of approximately 8.8m x 3.8m. Once installed on the concrete footings, the battery units will have a total height of approximately 3.3m.

The metal housing that the batteries are installed within will have a non-reflective off-white finish.

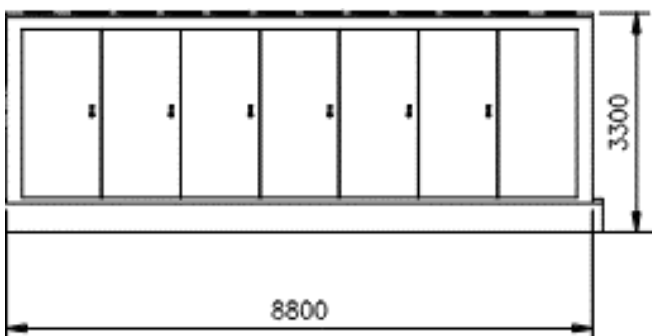


Figure 10. Battery bank – elevation



Figure 11. Example image of installed batteries

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4.3 Medium Voltage Transformers

The circuit is solidly grounded by connecting the battery terminals to a transformer. The transformer units have a footprint of approximately 3.5m x 4m and 3.6m high. The transformers will have a maximum voltage of 33kV. They will be nonreflective, and have a powder coated finish, in a light grey, off-white or light green colour.

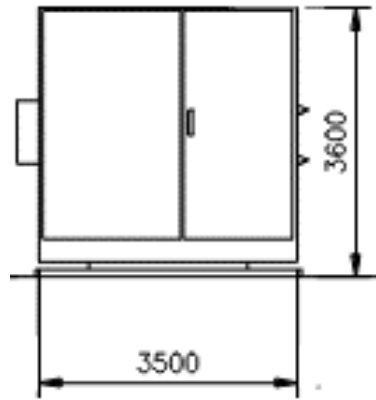


Figure 12. MV Transformer - Front elevation

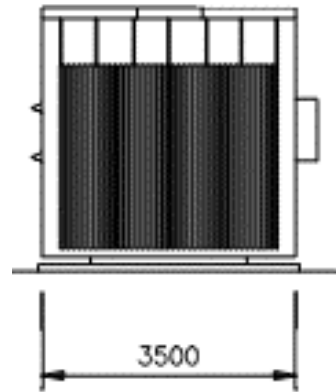


Figure 13. MV Transformer - Rear elevation

4.4 Ring Main Unit

The Ring Main Unit is an enclosed cabinet which contains switchgear. Twelve Ring Main Units will be positioned throughout the BESS. Each unit will be approximately 2.2m x 6.2m and approximately 3.4m high. The enclosures for the Ring Main Units will be a nonreflective, powder coated finish, in a light grey colour.



Figure 14. Ring Main Unit - Isometric view

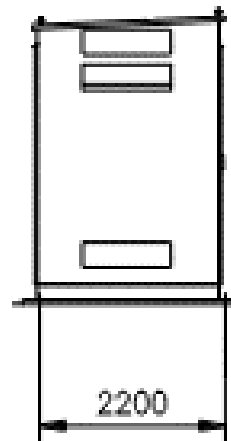


Figure 15. Ring Main Unit - Elevation

4.5 Control Room

The Control Room will be located to the east of the northern-most group of battery units. The Control Room contains instrumentation that coordinates operation of the BESS. The Control Room will be approximately 18.5m long and 4m wide. It will have a finished height of approximately 6m high. It will be installed on footings that elevate it from the ground and it will be accessible by stairs that connect to doors at each end of the front of the building. Cooling units will be attached to the exterior of each end of the building. The Control Room will be constructed using a prefabricated building, with Colourbond cladding, in a non-reflective off-white colour.

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4.6 Switch Rooms

Two 33kV switch rooms will be installed on concrete hardstand to the east of the BESS. The switch rooms contain automated control and switchgear that controls the transmission of electricity to TTS. Each switch room will be approximately 14.5m long, 6m wide and 6m high. The switch rooms will be installed on footings that elevate the buildings from the ground and they will be accessible by stairs that connect to doors at each end of the front of the buildings. Cooling units will be attached to the exterior of each building. The switch rooms will be constructed using a prefabricated building, with Colourbond cladding, in a non-reflective off-white colour.

4.7 Maintenance Building / Workshop

The maintenance building will be located to the east of the BESS, close to the main site entrance off Pelmet Crescent. The maintenance building will contain an office area, The building will be mounted on a concrete hardstand and be approximately 35m long, 15m wide and up to 5.4m high. The maintenance building will be clad with Colourbond, in a non-reflective off-white colour.

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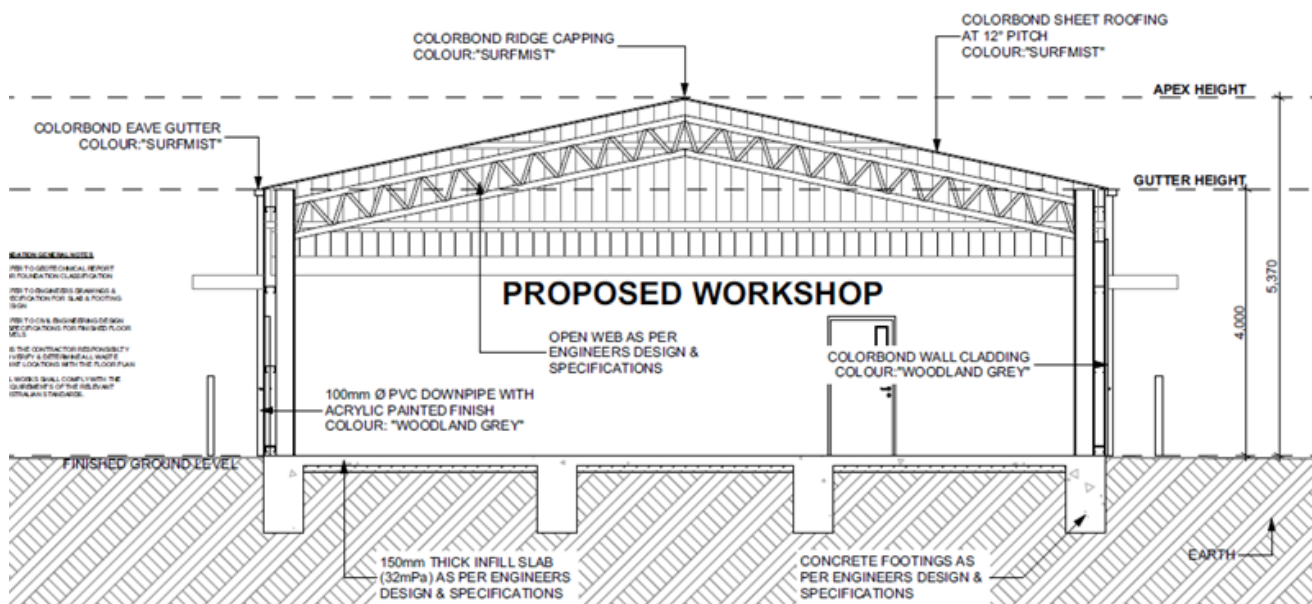


Figure 16. Elevation of Maintenance Building / Workshop

4.8 Acoustic Attenuation

An acoustic assessment was undertaken by Marshall Day Acoustics. This assessment determined that for the noise generated by the BESS to be maintained at an acceptable level, noise attenuation is required.

Acoustic attenuation will be undertaken in the form acoustic attenuation walls (also referred to as “noise walls”) and through enclosing the transformers:

- The noise walls will be approximately 10m high and be constructed of precast concrete slabs, with acoustic absorption material fixed to the side(s) of the walls facing batteries. The walls will be supported by metal frames which will have belowground footings of up to 7m. A typical noise wall is illustrated in Figure 17. Lightning rods will be fixed to the noise walls and will extend approximately 1m above the height of the noise wall
- The transformer enclosures will be constructed around the high voltage transformers to be installed. The enclosures will be made of precast concrete. A typical transformer enclosure is illustrated below. Figure 17

For further information on the noise assessment, please see section 7.3.

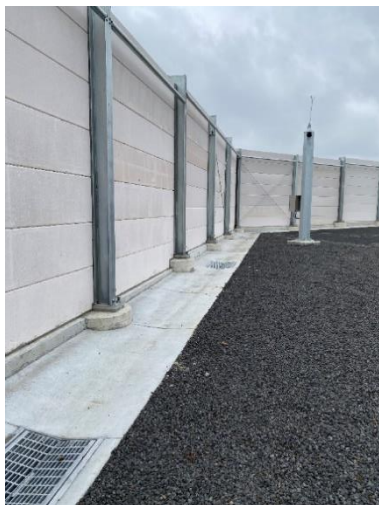


Figure 17. Typical Noise Wall



Figure 18. Photo of a typical transformer enclosure

4.9 High Voltage Transformers

Two, high voltage transformers and associated equipment will be located on a concrete hardstand on the south-east side of Edgars Creek, to the west of TTS. This equipment will convert electricity from 33kV to 220kV, allowing the BESS to be connected to TTS. The incoming 33kV overhead line from the BESS site will connect to the transformers. 220kV underground cables will connect the transformers to the TTS 220kV switchyard. The transformers and ancillary equipment will be contained within a standalone bund. As mentioned above, each of the transformers will be enclosed for the purpose of acoustic attenuation and will have dimensions of approximately 12m wide and 5.8m high. The transformers drums will protrude above the enclosures and have a height of approximately 10.5m. The transformers will be connected to one another via a series of electrical equipment that is similar to poles and overhead racks in appearance, as illustrated by Figure 19.

The transformers will be fully banded and the bands will be connected to the existing TTS triple interceptor, which will treat water captured in the bunds.

The existing transformer road and hardstand will be extended to the new transformers to allow access for delivery, installation, and maintenance.

The transformers, associated equipment and hardstand areas will have a footprint of approximately 55m x 75m. The earthworks will be constructed so as to maintain freeboard above the defined flood levels.

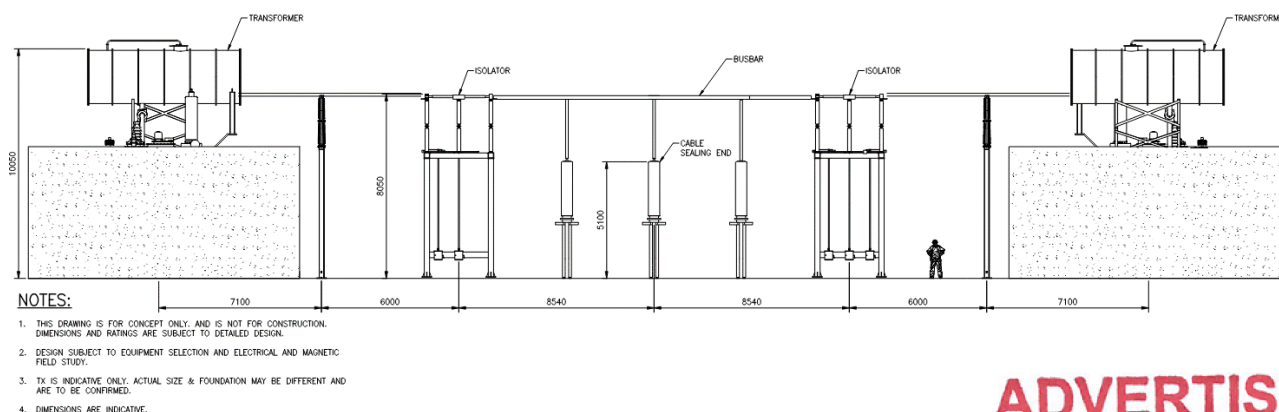


Figure 19. High Voltage Transformers - Elevation

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4.10 Fire Services

The internal fire services have been designed in accordance with emergency services guidelines and will be connected to the existing 150mm water main in Pelmet Crescent. The fire services will include a booster pump and two storage tanks with a total capacity of 288kL.

At the existing TTS site, the existing fire services system will be used.

4.11 Overhead Lines

Electricity will be carried from the switch rooms at the BESS to the high voltage transformers via a combination of underground and overhead lines, as illustrated by Figure 20. Overhead lines will be used to cross Edgars Creek to avoid disturbance to the waterway, native vegetation, and cultural heritage values.

A combination of single and double-circuit vertical configuration poles, of heights varying between 17m and 30m, will be used.

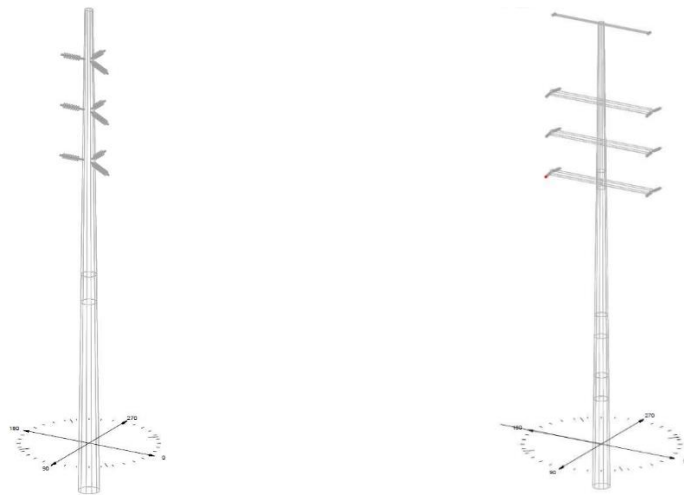
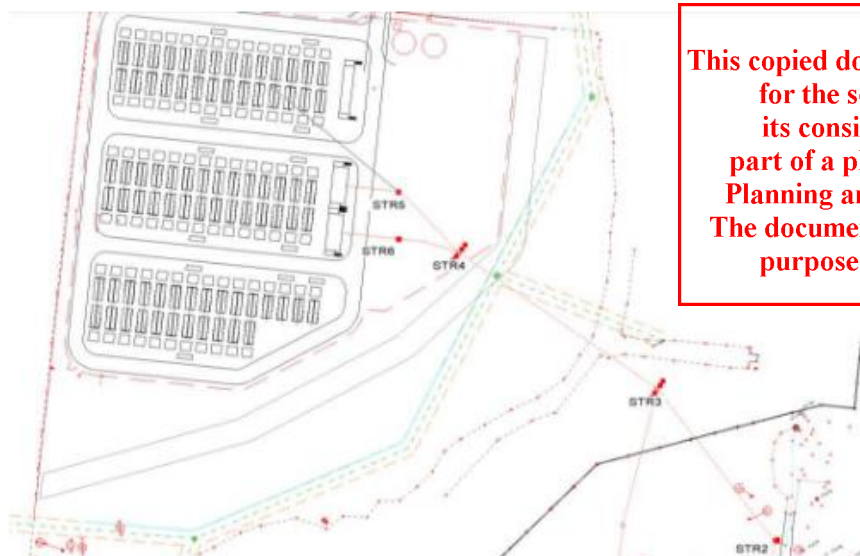


Figure 20 Single Circuit (left) and Double Circuit (right) Pole Configurations

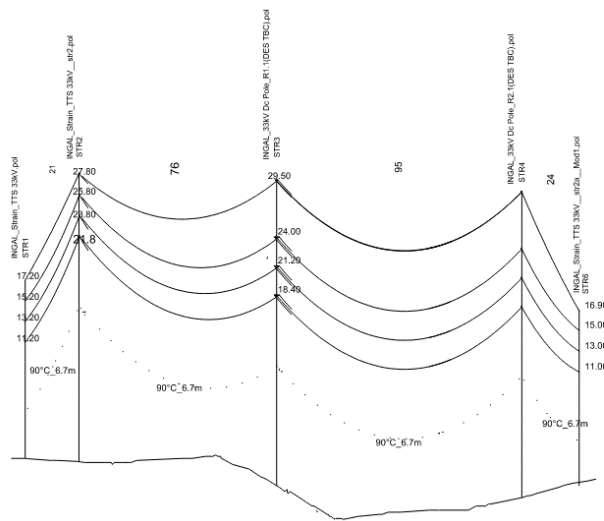


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Figure 21. Pole Layout between BESS and TTS

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Row #	Structure Number	Struct. Height (m)
1	STR1	17.2
2	STR2	27.8
3	STR3	29.6
4	STR4	29.6
5	STR5	17
6	STR1A	20.6
7	STR6	17

Figure 22. Profile View of Poles between BESS and TTS

4.12 Lightning Masts

Lightning masts will be installed throughout the BESS facility on top of the noise walls and buildings. The masts act as a protection device, in the event of lightning strike. Each mast will be up to approximately 1m high, above the height of the wall/building it is installed on.

4.13 Site Security

The battery area will be fully enclosed in an electrified security fence. The fence will be a 3m high chain wire mesh fence with electrified wires on the secure side of the fence – supported by a concrete plinth around the entire site perimeter.

The entrance gate will consist of an automated cantilever gate (with a 358 welded mesh covering and Gallagher security fencing) and entry/egress authorised by way of the AusNet enterprise electronic access control system and fitted with card readers for entry and exit. In the event that the fence is breached, the security fence will trigger an alarm at the AusNet Security Control Room. Real time CCTV will be present to then further investigate the cause of the alarm and instigate a response.

While the site will not be permanently lit, automated security lighting will be installed throughout the site (and controlled from the security control room). Lights will be installed on poles that are approximately 4m high. All lighting will be installed in accordance with Australian Standards.

4.14 Site Access

As per Appendix C – Traffic Impact Assessment, vehicles are anticipated to travel to the BESS site via Mahoneys Road, Edgars Road and the industrial roads leading to Pelmet Crescent. These roads (with the exception of Pelmet Crescent) are approved declared roads on the VicRoads B-double network.

Pelmet Crescent is a road providing access to industrial uses at the end of a B-double route. The roads on the access routes are therefore designed to accommodate the heavy vehicle design vehicles associated with this use. All vehicles will access the BESS site from Pelmet Crescent.

It is noted that any required traffic management treatments and/or mitigation works are to be identified and addressed by way of an approved construction management traffic plan (CTMP) or traffic management plan (TMP) prior to the commencement of construction.

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Vertical clearance to powerlines and other overhead obstructions will be required for all trucks accessing the site. This will be managed via the Permit to Work Process for works in powerline easements.

4.15 Vehicle Access & Parking

Access

Unsealed access roads will provide internal access throughout the BESS facility. The access routes have been designed to provide suitable access by a B-double truck (the critical vehicle accessing the site during the construction phase). The internal access road will be a minimum 6.0m width (as per emergency services requirements). During construction, on-site turning space will be provided in the laydown and parking area to accommodate a B-double turning around on site and enable forward entry and exit for all vehicles on site.

Works within TTS will utilise the existing access roads. The existing transformer road and hardstand will be extended to the new transformers to allow access for delivery, installation, and maintenance.

Parking

Parking will be provided at both the BESS site and at TTS during the construction phase:

- BESS – 30 car parking spaces will be provided during the construction of the facility to meet the maximum requirement during the construction period.
- TTS – Approximately 35 formally marked and formed car parking spaces are currently provided at TTS. These parks currently experience very low utilisation and therefore are expected to adequately accommodate the minor (temporary) increase to car parking demand during the works that need to be undertaken at TTS.

Following the completion of construction, TTS site will operate as per existing conditions and no further parking will be required.

This on-site parking area at the BESS will accommodate 5 car parking spaces once the BESS facility is operational. Car parking spaces will be constructed in accordance with the dimensions required under Clause 52.06-9 of the Whittlesea Planning Scheme (i.e. a minimum 2.6m wide x 4.9m long accessed from a 6.4m wide aisle). The layout of car parking spaces will be confirmed during the detailed design phase of the project. The Whittlesea Planning Scheme does not include a specific requirement for the number of car parks associated with a BESS facility (utility installation land use), therefore an assessment of demand was undertaken, which determined that five car parks are expected to be sufficient during operation of the BESS.

Please see section 7.2 for further information regarding traffic impacts.

4.16 Stormwater Management

BESS

The site will incorporate Water Sensitive Urban Design (WSUD) treatment by way of a bio retention basin which will filter contaminants collected from the hardstand areas from the runoff prior to discharge. Concrete surface drains adjacent to roadways will collect runoff and deliver it to an underground pipe network which delivers all stormwater to the bioretention basin, before discharging to the approved point of discharge. The retention pond will be approximately 50m x 15m x 1.5m deep.

Whittlesea City Council (WCC) has advised that connection to the existing drainage system is not possible as pipe sizing has not allowed for this development. A new stormwater outlet is proposed to connect the stormwater retention pond to Edgars Creek. This discharge point has been located adjacent to the existing council end wall to avoid impact to native vegetation and avoid areas that are potentially sensitive in terms of

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Aboriginal cultural heritage. The discharge will be designed in accordance with Melbourne Water requirements.

In the event of a fire, firewater flows will be contained within the retention pond in the SW corner of the site. The pond has been designed to accommodate firewater, in the event of a fire. The outlet of the retention basin will have a valve installed which will allow discharge to Edgar's Creek to be stopped during an emergency event. This protocol will be documented in the site Emergency Response Plan. Perimeter drainage around the site will also be sized to accommodate flows that might be experienced in a fire event.

High Voltage Transformers

The accessway and hardstand around the 220/33kV transformer will be connected via surface drains to connect to the existing drainage outlet northwest of the proposed transformer pad. The 220/33kV transformer bund will be connected to the existing onsite triple interceptor to allow water treatment prior to discharge via the current stormwater outlet.

4.17 Landscaping

Due to its position towards the rear of existing industrial development and setback from other boundaries, the BESS will not be highly visible. While landscaping is not expected to provide significant visual benefits, AusNet has discussed with WCC, opportunities to enhance the Edgars Creek corridor. AusNet has offered to contribute to the cost of landscaping the section of Edgars Creek that runs through the Site.

4.18 Maintenance

The area within the BESS will be either hardstand or compacted crushed rock. Any grassed areas outside of the fence will be regularly cut in order to avoid attracting vermin and other pests.

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5 Planning Assessment

The following sections provide an assessment of the planning framework, as relevant to the proposal.

5.1 Planning Context

The Thomastown Terminal Station is located within the Whittlesea City Council local government area. The Whittlesea Planning Scheme (WPS), along with the provisions of the *Planning & Environment Act 1987* sets the planning requirements for the proposal.

The WPS applies the following zones and overlays to the proposal footprint:

- Industrial 1 Zone (IN1Z)
- Urban Floodway Zone (UFZ) – Note: further design review following DELWP’s RFI of 7 September 2022 has found there will not be any works within the UFZ
- Land Subject to Inundation Overlay (LSIO)
- Development Contributions Plan Overlay 3 (DCPO3)

Figure 23 and Figure 24 illustrate the zones and overlays that apply to the site.



Figure 23 - Zoning

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Figure 24 - Overlays

5.2 Land Use Definition

The proposed BESS is defined as a **Utility Installation** under the land use definitions outlined in Clause 73.03 of the WPS:

‘To transmit, distribute or store power’.

The land to the southeast of Edgars Creek is currently used as a Utility Installation, as it is occupied by TTS. The land to the northwest of Edgars Creek is currently vacant and does not have a defined use. The planning permit application proposes to use the land to the northwest of Edgars Creek as Utility Installation.

5.3 Planning Permit Triggers

Permit type	Trigger
Use permit	As the BESS is not considered an ancillary use to the existing terminal station, it will need to be evaluated as a new use. Pursuant to Clause 33.01-1 (of the IN1Z) of the Whittlesea Planning Scheme a permit is required for Section 2 Use, which includes a Utility Installation.
Building and works permit	Pursuant to Clause 33.01-4 (of the IN1Z) and 44.04-2 (of the LSIO) of the Whittlesea Planning Scheme, a permit is required to construct a building or construct or carry out works.
Vegetation removal	The ecology report by NGH Pty Ltd (Appendix G – Ecology Assessment) anticipates that no native vegetation removal is required for the proposed works and therefore no planning permit is required under Clause 52.17 – Native vegetation.

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5.4 State Planning Policy Framework (SPPF)

The SPPF contains overarching state level policies that apply across Victoria. Table 3 summarises the clauses which are most relevant to this proposal and provides a brief assessment of each.

Table 3. Planning Policy Framework Assessment.

Clause		Objective	Assessment
<u>Clause 12</u>	Clause 12.01-1S Protection of Biodiversity	<i>To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.</i>	There is no native vegetation removal required for the proposed works. Therefore, no offsets are required to compensate for the biodiversity impact from the removal, destruction, or lopping of vegetation. Further details can be found in Appendix G – Ecology Assessment.
<u>Clause 13 Environmental Risks and Amenity</u>	Clause 13.03-1S Floodplain Management	<p><i>To assist the protection of: Life, property, and community infrastructure from flood hazard, including coastal inundation, riverine and overland flows.</i></p> <p><i>The natural flood carrying capacity of rivers, streams, and flood ways.</i></p> <p><i>The flood storage function of floodplains and waterways.</i></p> <p><i>Floodplain areas of environmental significance or of importance to river, wetland, or coastal health.</i></p>	<p>A hydraulic impact assessment was undertaken by Beca (Appendix D – Hydraulic Impact Assessment). A hydraulic TUFLOW model was developed to simulate the behaviour of the Edgars Creek floodplain during significant storm events, and the model validated against designated 1% AEP flood extents within the LSIO. The model was found to provide a good representation of the floodplain and deemed suitable for use in impact analysis. The proposed BESS works location was compared to both the LSIO extent and 1% AEP flood extent derived from the flood modelling and found to be located outside of both. As the proposed works are primarily located outside of the 1% AEP flood extents, there is to be no impact upon the floodplain as a result of the works.</p> <p>Works within the flood extents (stormwater connection and underground power cables) have been considered and will not impact flood risk.</p> <p>See section 7.1 for further detail.</p>
	Clause 13.04-1S Contaminated and potentially contaminated land	<i>To ensure that contaminated and potentially contaminated land is used and developed safely.</i>	<p>An Environmental Site Investigation was undertaken by GeoPollution Management on 8th March 2022 (Appendix E – Contamination Report). The site investigation found that asbestos-containing materials occur in pockets of heterogenous imported fill material across the site.</p> <p>In order to mitigate the risks from contamination, it is proposed that as part of development of the site, the contaminated topsoil will be removed and disposed off-site and classified as Reportable Priority Waste (Category C) with asbestos.</p> <p>See section 7.6 for further details.</p>

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Clause		Objective	Assessment
	Clause 13.05-1S Noise abatement	<i>To assist the control of noise on sensitive land uses.</i>	<p>A noise study of the site was undertaken by Marshall Day Acoustics (Appendix F – Noise Modelling) to determine the likely noise impacts and attenuation requirements for the development.</p> <p>A noise model found that in order to meet environmental noise criteria, noise walls would need to be installed and the high voltage transformers would need to be enclosed. Accordingly, the design accommodates noise walls throughout the BESS, as well as transformer enclosures.</p> <p>Please see section 7.3 for further detail.</p>
	Clause 13.07-1S Land use compatibility	<i>To protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.</i>	<p>The proposed works are located within an Industrial Zone 1 and are compatible with the land use objectives of that zone. The surrounding land uses are largely industrial in nature and therefore the proposed BESS is considered compatible with the local area.</p> <p>The recommendations of hazard and noise assessments have been incorporated into the design for the safe operation of the facility.</p> <p>The BESS will operate in accordance with health and safety operating procedures and undergo 24-hour monitoring.</p> <p>Please see section 7.8 for further information.</p>
<u>Clause 14</u> <u>Natural</u> <u>Resource</u> <u>Management</u>	Clause 14.02-1S Catchment planning and management	<i>To assist the protection and restoration of catchments, waterways, estuaries, bays, water bodies, groundwater, and the marine environment.</i>	The results of the baseline flood modelling (Appendix D – Hydraulic Impact Assessment) found that while the overall TTS site is subject to flooding during a significant storm event, that the proposal will not impact the flood risk of the area. As such, the proposed works meet the requirements of the LSIO under the Planning Scheme.
<u>Clause 15</u> <u>Built</u> <u>Environment</u> <u>and Heritage</u>	Clause 15.02-1S Energy and resource efficiency	<i>To encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions.</i>	The BESS aims to facilitate the connection of more renewable energy projects to the transmission network, therefore contributing to a reduction in reliance on coal produced power and minimising greenhouse gas emissions.
<u>Clause 17</u> <u>Economic</u> <u>Development</u>	Clause 17.01-1S Diversified economy	<i>To strengthen and diversify the economy</i>	The development of a BESS at TTS contributes towards the Victorian State Governments renewable energy goals. Energy storage

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Clause		Objective	Assessment
	Clause 17.01-2S Innovation and research	<i>To create opportunities for innovation and the knowledge economy within existing and emerging industries, research, and education.</i>	systems improve grid reliability and return contribute to lower electricity prices. The Thomastown BESS (TTB) can provide instantaneous energy during critical peak times and help to integrate renewable energy generation. The TTB will result in a number of community benefits, including the capacity to provide energy to households, and create jobs for up to 30 staff on site during the construction phase.
	Clause 17.03-2S Sustainable Industry	<i>To facilitate the sustainable operation of industry.</i>	
<u>Clause 19 Infrastructure</u>	Clause 19.01-1S Energy Supply	<i>To facilitate appropriate development of energy supply infrastructure.</i>	The development of TTB supports transition to renewable energy solutions and plays a pivotal role in modernising Victoria's power supply and providing a secure, reliable, and cost-effective energy source to Victoria.
	Clause 19.01-2S Renewable Energy	<i>To promote the provision of renewable energy in a manner that ensures appropriate siting and design considerations are met.</i>	
	Clause 19.03-1S Development and infrastructure contribution plans	<i>To facilitate the timely provision of planned infrastructure to communities through the preparation and implementation of development contribution plans and infrastructure contribution plans.</i>	

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5.5 Municipal Strategic Statement (MSS)

The MSS sets out the overarching vision, strategic planning, land use and development objectives for the City of Whittlesea. Table 4 summarises an assessment of the clauses that are most relevant to this proposal.

Table 4. Municipal Strategic Statement Assessment

Clause	Objective	Assessment
<u>Clause 02.03-7 Economic Development</u>	<i>Supports economic activity that has respect for the environment and is resilient to changes in the economic climate</i>	TTB will contribute to the reliable supply of electricity to the City of Whittlesea and beyond.
<u>Clause 02.03-5 Built environment and heritage</u>	<i>Council is committed to creating an environmentally sustainable city and should be incorporated</i>	The purpose of the BESS is to strengthen the Victorian electricity network and to enable the connection of further renewable electricity generation.

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	during the planning of a development.	This project aligns with creating a resilient and sustainable city under Clause 02.03-7 and 02.03-5.
Clause 02.03-9 Infrastructure	Development infrastructure and contributions are required to support the delivery of essential infrastructure in the growth areas of Whittlesea	Additionally, The Whittlesea Drainage Infrastructure Development Contributions Plan (DCP) is applicable to the Site. Any payments due in relation to the proposed development will be identified in consultation with Council and paid accordingly.

5.6 Zones

5.6.1 Industrial 1 Zone (IN1Z)

The majority of the development footprint is within IN1Z.

The WPS identifies the purpose of the IN1Z as:

- To implement the Municipal Planning Strategy and the Planning Policy Framework.
- To provide for manufacturing industry, the storage and distribution of goods and associated uses in a manner which does not affect the safety and amenity of local communities.

The proposal to develop a BESS at the Thomastown Terminal Station is broadly consistent with the purpose of the IN1Z. Table 5 summarises the decision-making criteria for applications within the IN1Z and briefly evaluates the proposal against each criterion. The decision-making criteria of section 60 is incorporated into the table below, under the most relevant topics.

Table 5. Summary of decision-making criteria for applications within the IN1Z.

Decision Making Criteria	Evaluation of Proposal
The effect that the use may have on nearby existing or proposed residential areas or other uses which are sensitive to industrial off-site effects, having regard to any comments or directions of the referral authorities / Interface on non-industrial areas.	<p>The predominate land use surrounding the proposed works is IN1Z. GRZ2 is located to the south of the site but is beyond Mahoneys Road (TRZ2) which acts as a physical separation.</p> <p>The closest residential properties are to the south across Mahoneys Road. At the closest points the distance between the proposed development (high voltage transformers) and the residences is over 200m, although there is over 300m between the main BESS development and the closest houses.</p> <p>The development will not be easily visible by residences along Mahoneys Road and where it is visible, it will not have a significant impact against its existing industrial backdrop. The noise walls will screen the majority of the BESS and will appear very similar to the appearance of existing industrial buildings.</p> <p>While the site will have security lighting, it will be positioned so not to create light spill, which is thought to be unlikely in any case due to the existing industrial buildings and proposed noise wall.</p> <p>A noise assessment has been undertaken and attenuation recommended by the assessment has been incorporated to the design.</p> <p>Assessments of ecological, Aboriginal cultural heritage, contamination, hazard, and traffic have also been undertaken. Recommendations to</p>

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Decision Making Criteria

Evaluation of Proposal

	<p>reduce the risks/impacts identified by these assessments have been incorporated into the design and will be adopted in operation of the site. Subsequently, each assessment has found that the impacts of the development are negligible or are acceptable with the implementation of recommendations.</p> <p>Further information on these assessments and their recommendations can be found in section 7.</p>
The effect that nearby industries may have on the proposed use.	<p>Nearby industry is expected to have minimal impact on the proposed BESS as their operations are largely consistent with and not expected interfere with the operation of the BESS. None of the assessments that have been undertaken as part of developing this proposal have found that the existing conditions will be of material detriment to the development or operation of the BESS.</p>
The drainage of the land / Stormwater discharge	<p>A point for a newly established legal point of discharge has been identified in consultation with Whittlesea City Council. The site drainage will be directed to a stormwater detention basin for treatment, prior to discharge to Edgars Creek.</p> <p>Further information can be found in section 4.16 which outlines the design of the stormwater infrastructure for the site.</p>
The availability of and connection to services.	<p>The BESS can be readily connected to all required services.</p>
The effect of traffic to be generated on roads.	<p>A traffic impact assessment has found that additional traffic to be generated by the operation of TTB will be negligible to the existing traffic network. The assessment found that while the road network does experience some existing congestion, the additional traffic to be generated during the construction of this proposal can be managed through implementation of a traffic management plan.</p> <p>The use and development is not expected to have a significant impact on the current and future development and operation of the transport system.</p> <p>Further information can be found in section 7.2 which details the traffic impact assessment.</p>
The interim use of those parts of the land not required for the proposed use.	<p>The land not required for the use will primarily be grassed and regularly mown for maintenance purposes. The land surrounding Edgars Creek will form part of the riparian margin and AusNet has had discussions with Council about contributing towards the revegetation of the riparian margin.</p>
Any natural or cultural values on or near the land.	<p>There will not be any native vegetation removal as part of the development. An Aboriginal Cultural Heritage Management Plan (CHMP) has been prepared in light of the site's proximity to Edgars Creek, however assessment have found that the site and waterway are already heavily disturbed. The CHMP makes recommendations for the construction of the site, which will be incorporated into the site Construction Environmental Management Plan.</p>
Streetscape character	<p>The proposed development is situated within an area that is industrial in nature and therefore the proposal is in keeping with the existing streetscape.</p>
Built form	<p>The BESS will be of a similar scale as the surrounding industrial buildings, which vary in height from approximately 6 – 9.2m tall.</p>

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Decision Making Criteria	Evaluation of Proposal
Landscape treatment	The noise walls will provide screening for much of the BESS facility and create an appearance similar in nature to the existing streetscape. AusNet has discussed with Council the opportunity for further landscaping along Edgars Creek, in support of the creek regeneration, and has offered to contribute to landscaping the section of Edgars Creek that runs through the Site.
Parking and site access	Parking and access have been designed in response to the forecast needs of the site. During construction, parking and laydown areas will be provided in the area that the Maintenance Building will be constructed, as well as using existing parking at TTS, for works within TTS. The number of parking spaces has been allocated according to the total maximum number of construction personnel.
Loading and service areas	During operations and maintenance, it is expected up to five people will be on-site at one time. Therefore, five car parking spaces have been allocated alongside the Maintenance Building. A Traffic Impact Assessment has assessed parking, as well as traffic impacts, access and vehicle turning and determined that suitable provision has been made and that traffic impacts can be managed. See section 7.2 for further detail.
Outdoor storage	The Maintenance Building will be the primary location for storage of spares parts and maintenance materials. Any outdoor storage would be temporary in nature. Outdoor bins would have lids so not to attract vermin and other pests.
Lighting	While the site will have security lighting, it will be positioned so not to create light spill, which is thought to be unlikely in any case due to the existing industrial buildings and proposed noise wall.

5.6.2 Urban Floodway Zone (UFZ)

A small area along Edgars Creek at the north of the site is within the UFZ. No earthworks will occur within the UFZ. The overhead lines that traverse the UFZ will not be changed as a result of the proposal and there will be no new poles constructed within the UFZ.

5.7 Overlays

5.7.1 Land Subject to Inundation Overlay (LSIO)

The stormwater connection and outlet Edgars Creek and the underground electricity cables near the northern boundary are both within areas that the LSIO applies. The line connection to the High Voltage Transformers will also traverse the LSIO, however it will be entirely above ground.

A hydrological assessment was completed by Beca on 22 May 2022. The purpose was to identify any impacts resulting from the proposed BESS project works adjacent to the Edgars Creek floodplain, and to provide appropriate mitigation strategies such that the requirements of the LSIO are satisfied.

A baseline flood model was developed using TUFLOW to assess the impact of the project works, validated against the extents within the Whittlesea Planning Scheme. The results of the baseline modelling found that while the overall Site is subject to flooding during a significant storm event, the proposed works will not affect flows during the 1% AEP flood event. As such, the proposed works meet the requirements of the LSIO.

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Further details of this assessment can be found in Section 7.1 and Appendix D – Hydraulic Impact Assessment.

5.7.2 Development Contributions Plan Overlay 3 (DCPO3)

The DCPO3 applies to the entire property. The Whittlesea Drainage Infrastructure Development Contributions Plan (DCP) is applicable to the Site. The rate set for the DCP (2022-23) is \$2.37 per square metre of total site area and \$4.35 per square metre of additional impervious floor area. AusNet has confirmed that it will meet any obligations to make payments under this DCP.

5.8 Particular Provisions

The following particular provisions also apply to the site.

Clause	Assessment against guidelines
<p>Clause 52.05 Signs</p> <p>The purpose of this clause is:</p> <ul style="list-style-type: none"> To regulate the development of land for signs and associated structures To ensure signs are compatible with the amenity and visual appearance of an area, including the existing or desired future character. To ensure signs do not contribute to excessive visual clutter or visual disorder. To ensure that signs do not cause loss of amenity or adversely affect the natural or built environment or the safety, appearance, or efficiency of a road. 	<p>Project identification and safety signage will be erected at the Pelmet Crescent site entrance. This signage will not be more than 8 square metres and will therefore comply with the requirements of 52.05-12 and will not trigger the requirement for a planning permit.</p> <p>ADVERTISED PLAN</p>
<p>Clause 52.06 Car Parking</p> <p>The purpose of this clause is:</p> <ul style="list-style-type: none"> To ensure that car parking is provided in accordance with the Municipal Planning Strategy and the Planning Policy Framework. To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality. To support sustainable transport alternatives to the motor car. To promote the efficient use of car parking spaces through the consolidation of car parking facilities. To ensure that car parking does not adversely affect the amenity of the locality. To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use. 	<p>During construction, up to 30 staff are anticipated to be working on site. During maintenance and operation phase, up to 5 staff may be operating from the site at any one time.</p> <p>A total of 30 parking spaces are proposed to be provided at the BESS site during construction and there are already 35 parks at TTS which are currently underutilised and will provide sufficient parking for workers undertaking construction within TTS.</p> <p>While 52.06 does not specify a number of parking spaces for utility installations the proposed allowance is expected to be sufficient based on expected site attendance. The total number of car parking spaces provided at any phase is equal to the total number of staff associated with the project i.e. 30 spaces during construction and 5 car parking spaces during the maintenance and operation phase. Allowing for 30 spaces during construction reflects the worst-case scenario, that all construction staff attend site at the same time, all drive to the site individually.</p>

Clause	Assessment against guidelines
	<p>Car parking spaces will be constructed in accordance with the dimensions required under Clause 52.06-9 of the Whittlesea Planning Scheme (i.e. a minimum 2.6m wide x 4.9m long accessed from a 6.4m wide aisle).</p> <p>Further detail can be found in section 7.2.</p>
<p>Clause 52.17 Native Vegetation</p> <p>The purpose of this clause is:</p> <ul style="list-style-type: none"> • Avoid the removal, destruction, or lopping of native vegetation. • Minimise impacts from the removal, destruction, or lopping of native vegetation that cannot be avoided. • Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy, or lop native vegetation. 	<p>An ecology assessment undertaken by NGH (Appendix G – Ecology Assessment) determined that while EVC 68 Creek line Grassy Woodland is present along the banks of Edgars Creek, no native vegetation removal will be required to facilitate the development. Therefore, there is no planning permit trigger under Clause 52.17 – Native Vegetation of the <i>Planning and Environment Act 1987</i>.</p>

5.9 Responsible Authority

As per Clause 72.01-1, as of November 2020, the Minister for Planning is the responsible authority for processing applications relating to any:

Utility installation used to:

- *Transmit or distribute electricity.*
- *Store electricity if the installed capacity is 1 megawatt or greater.*

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5.10 Referrals

5.10.1 Clause 66.02 - Use and Development Referrals

AusNet Services

Pursuant to Clause 66.02-7 (Major electricity line or easement) any application to construct a building or construct or carry out works on land within 60 meters of a major electricity transmission line or an electricity transmission easement is required to be referred to the relevant electricity transmission authority as a determining referral authority. The BESS is within 60m of the TTS therefore a referral will be required to AusNet Services.

Victorian WorkCover Authority

Pursuant to Clause 66.02-7 (Industry, utility installation or warehouse), applications may be referred to the Victorian WorkCover Authority, as a determining authority, where a fire protection quantity (FPQ) under the Dangerous Goods (Storage and Handling) Regulations 2012 is exceeded. As the FPQ for lithium-ion does not apply to batteries that are in use, the site is not considered to exceed any FPQ and the application is not required to be referred to the Victorian WorkCover Authority.

From time-to-time spare batteries might be stored on site, which could result in the FPQ limit for lithium ion being exceeded. If this situation were to arise, all requirements of the dangerous goods legislation would be followed.

No other referrals will be required in accordance with 66.02

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5.10.2 Clause 66.03 - Referral of Permit Applications under other state standard provisions

Melbourne Water

In accordance with the LSIO, the BESS must be referred to the relevant floodplain management authority, which is Melbourne Water for this site.

5.11 Other Legislation

Other relevant legislation and any implications for the proposal is summarised in the following table.

Legislation	Relevance	Implications
Aboriginal Heritage Act 2006 / Aboriginal Heritage Regulations 2018	The primary legislation providing for the protection of Aboriginal cultural heritage and Aboriginal intangible heritage in Victoria. The purpose of the <i>Aboriginal Heritage Regulations 2018</i> is to prescribe the circumstances in which a cultural heritage management plan is required for an activity.	The proposed activity is a high impact activity, and the activity Area is in an area of cultural heritage sensitivity, as defined under the <i>Aboriginal Heritage Regulations 2018</i> . Accordingly, a mandatory Cultural Heritage Management Plan was prepared by NGH Pty Ltd. The assessment found no Aboriginal cultural heritage or areas likely to contain Aboriginal cultural heritage; therefore, there is no requirement to consider avoidance, minimisation, or management of Aboriginal cultural heritage places.
Heritage Act 2017	The purpose of the <i>Heritage Act 2017</i> is to provide for the protection and conservation of the cultural heritage of Victoria. The <i>Heritage Act 2017</i> creates a framework to identify the most important non-Aboriginal heritage in Victoria.	The site does not contain any items listed on the Victorian Heritage Register; therefore, no approval has been sought under <i>Heritage Act 2017</i> .
Water Act 1989	Provides the legal framework for managing Victoria's water resources. The main purpose of the Water Act is to: promote the equitable and efficient use of water resources; make sure water resources are conserved and properly managed and increase community involvement in conserving and managing water resources.	As the proposed development will include development within the bed of Edgars Creek, a Works on Waterways approval will be sought from Melbourne Water, prior to construction. This approval will be sought following issue of the planning permit.
Catchment and Land Protection Act 1994 (CaLP Act)	Under the CaLP Act, control of declared noxious weeds and pest animals will require ongoing management prior, during and post construction. Additionally, developments on land sited within a Special Water Supply Catchment Area must be	The site is not known to host to any new and emerging weeds, and it is not considered likely that construction activities will pose significant risk of introduction of any new and emerging weeds and therefore require any specific prevention methods. Construction activities will employ typical hygiene practices for reducing and spreading

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Legislation	Relevance	Implications
	referred to the relevant water board or water supply authority.	weeds and pathogens and will be included in the project Construction Environmental Management Plan. The site is not within a Special Water Supply Catchment and therefore referral to a water board or water supply authority will not be required.
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (Commonwealth)	The Australian Government's key piece of environmental legislation providing for the protection of the environment, especially matters of national environmental significance and conservation of heritage.	The ecological assessment undertaken by NGH (Appendix G – Ecology Assessment) found that the project is unlikely to impact on any species or communities listed under the EPBC Act. Therefore, referral under the EPBC Act is not required.
Flora and Fauna Guarantee Act 1988 (FFG Act)	Seeks to promote the conservation of Victoria's native flora and fauna. Pursuant to section 4B of the Act, a proponent is required to give proper consideration to the objectives of the Act, insofar as is consistent with the proper exercise of its functions. In addition to the public authority duty, a permit is required to 'take' (including remove or destroy) any FFG Act listed protected flora from public land.	No FFG listed vegetation will be impacted by the proposal. The development proposal will be contained within privately owned land. A protected flora permit will not be required.
Environment Protection Act 2017 (EP Act)	The EP Act ensures that Victoria's focus for environment protection and human health are from a prevention-based approach. The EP Act focuses on the general environmental duty which requires all Victorians to take reasonable and practical steps to reduce the human and environmental health risks of their activities.	A Development Licence, Operating Licence, Permit or Registration is not required under the EP Act. As per the recommendation of the environmental site assessment, the topsoil in the area of the BESS footprint will be removed prior to construction commencing. All imported fill materials to be disposed off-site will be classified as Reportable Priority Waste (Category C) with asbestos and disposed at an appropriately licensed landfill, via a transport permission and waste-tracking, all in accordance with the requirements of the Environment Protection Regulations 2021. AusNet Services will also have an obligation to Discharge its General Environmental Duty to minimise the risk of harm to human health and the environment as a result of pollution and waste relating to this proposal. A wide range of environmental assessments have been undertaken and the development has adopted

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Legislation	Relevance	Implications
		a range of mitigating measures to reduce risks, including safety systems, stormwater treatment and design amendments to avoid impacts to Edgars Creek and native vegetation. Further, a Construction Environmental Management Plan will be developed to prevent and minimise potential harm during the construction phase of the project.
Occupational Health and Safety Regulations 2017	Seeks to protect the health, safety and welfare of employees and other people at work.	A notification under the Occupational Health and Safety Regulations 2017 is not required.
Dangerous Goods Act 1985 & Dangerous Goods (Storage and Handling) Regulations 2012	Aims to keep people and property safe from dangerous goods and explosives.	<p>A licence under the Dangerous Goods Act 1985 is not required.</p> <p>Section 3.2 of the Worksafe Code of Practice for Storage and Handling of Dangerous Goods 2022 states that the regulations do not apply to batteries that are in use, therefore the project is exempt from the requirements of this Act.</p> <p>Should spare batteries be required to be stored on-site, all dangerous goods legislative requirements would be followed.</p>

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6 Stakeholder Engagement

6.1 Department of Environment, Land, Water, and Planning (DELWP)

6.1.1 Pre-Lodgement

Two meetings were held with DELWPs Energy Team prior to lodgement of the planning permit application:

- An initial project briefing on the 9th of December 2021
- A Preapplication Meeting on the 14th of July 2022

Michael Juttner, Manager - Development Approvals and Design attended both meetings. Feedback provided by DELWP in the preapplication meeting and how this feedback has been addressed by the application is summarised in the table below.

Table 6. Addressing Pre-Application Meeting Requests

Issue	Description of Request	Application Response
Disposal of Contaminated Soils	That the legislative requirements for disposal of contaminated soils is outlined in the planning application report.	Disposal of contaminated soils will be conducted in accordance with the requirements of the Environment Protection Act 2017. Further detail on these requirements is contained within section 7.6. These requirements will also be documented in the Construction Environmental Management Plan.
Noise Assessment	That the noise assessment be based on the BESS operating at its full capacity for all assessment periods (i.e., day, evening, and night) in order to assess the “worst case” noise scenario.	The requirements have been incorporated into the noise assessment and noise attenuation has been recommended to maintain noise to an acceptable level. All assumptions of the noise model have been outlined in section 5.1.3 of the Noise Assessment (see Appendix F – Noise Modelling).
Water tanks	That the planning application report includes details of water available for use in a fire event.	Two water storage tanks, with a total capacity of at least 288kL are to be located near the entrance of the site for use in the event of a fire. These tanks have been sized according to the amount of water expected to be required in the event of a fire. Further details are provided in section 7.8.
Fire Water	That details for the management of run-off of water in the event of a fire be provided in the planning application report.	Water used to put out a fire would be captured by the Site stormwater system which directs water to a retention pond in the southwest of the site. The stormwater infrastructure, including the retention pond has been sized to accommodate the operation of 2 hydrants for 4hrs, which is considered a sufficient volume to address a fire event. In the event of a fire, the discharge to Edgars Creek would be closed to prevent any contaminated water from entering Edgars Creek. Following resolution of the emergency event, the treatment pond would be pumped out and, if required, cleaned prior to being reinstated. Further details are provided in section 7.8.

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Issue	Description of Request	Application Response
WorkCover Authority Referral	That the planning application report include assessment of the potential requirement for the application to be referred to the WorkCover Authority.	Pursuant to Clause 66.02-7 applications 'To use land for an industry, utility installation or warehouse may be referred to the Victorian WorkCover Authority if a fire protection quantity under the Dangerous Goods (Storage and Handling) Regulations 2012 is exceeded. As the fire protection quantity for lithium-ion does not apply to batteries that are in use, the site is not considered to exceed any fire protection quantity. Therefore, the application is not required to be referred to the Victorian WorkCover Authority. From time-to-time batteries might be stored on site, which could result in the FPQ limit for lithium-ion being exceeded. If this situation were to arise, all requirements of the dangerous goods legislation would be followed.
Access	The access from Pelmet Crescent is via a land parcel separate to the main development, though also owned by AusNet. How will the access from Pelmet Crescent be maintained in perpetuity?	In order to ensure access to the site is maintained in perpetuity, AusNet is planning to seek a consolidation of the parcels so that the main BESS facility and its access it on the same parcel of land.

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6.1.2 Post Lodgement

Following lodgement of the application, DELWP requested further information (dated 7 September 2022). This request required further information/clarification with regard to several items. Each of these items were addressed in a letter of response dated 19 October 2022. A brief description of each of these items and the response is included below:

- A clerical error regarding lots on the application form – a revised application form was submitted
- Confirmation of works within the UFZ – further design review confirmed there will not be any works within the UFZ and this planning report has been updated to reflect that.
- Confirmation of whether a planning permit is required for any new easements – no planning permit will be required as any new easement will be registered in gross under the Land Transfer Act 1958.
- Amended plans to provide further elevations – the development plans were updated with additional dimensions and new plans were prepared for the Switch Rooms and Maintenance Building.
- Clarification regarding the noise assessment – The noise assessment and planning report were updated to clarify that the noise model represents operation of the BESS at full capacity.
- Request that the approved CHMP be provided to DELWP – the approved CHMP was provided as part of the response to the RFI.

6.2 Whittlesea City Council

AusNet held several discussions with City of Whittlesea personnel during preparation of the concept design for the BESS. These discussions were primarily in relation to:

- The connection for the stormwater discharge – Council advised that a connection could not be made to the existing network and that a new point of discharge would need to be located within to property along

the downstream half of Edgars Creek. In response, the project has located the new discharge point within the area instructed by Council. The new Stormwater connection will be designed in accordance with Melbourne Water requirements.

- Plans for Edgars Creek – during which Council outlined rehabilitation plans for the Creek and AusNet offered to contribute to the future landscaping of the section of Edgars Creek that runs through the Site.
- Community engagement – plans for community engagement were shared with Council in advance to notification letters being distributed. A summary of engagement, following door-knocking was also provided to Council.

6.3 Fire Rescue Victoria

Fire Rescue Victoria (FRV) was consulted with during the preparation of the Fire Hazard & Risk Assessment. A meeting was held with FRV on the 18 May 2022. At this meeting, the initial risk assessment and the (then current) BESS layout was presented to FRV. The following table provides a summary of the key discussion points and design response.

Issue	Description	Design Response
Secondary access	The option of a second access to the south of the BESS was discussed. It was explained that the existing Melbourne Water access is not suitable and is not suitable for upgrade. FRV requested that the risk assessment include discussion of the effects of a fire on the proposed Pelmet Crescent entrance.	The existing Melbourne Water access is not suitable for emergency vehicle access. The track is currently not wide enough, or of appropriate grade or finish for emergency vehicles. Upgrade of the track was ruled out due its proximity to the creek. Additionally, access via this track would be unreliable due to possible inundation in rain events. The Fire Hazard & Risk Assessment has considered the risk of only one site access and considering the layout, likely weather conditions and likely fire behaviour, one access has been assessed as acceptable.
Fire facilities	FRV indicated that the required number of hydrants and the proposed tank size are to be determined by the design team and justified in the risk assessment.	The assessment has determined that two water storage tanks, with a total capacity of at least 288kL will be required, along with two hydrants. This equipment has been sized/selected according to the response expected to be required in the event of a fire.
Big Battery Fire	AusNet confirmed that the findings of the big battery fire investigation had been taken into account in the proposed design and construction of the facility.	The findings of the review of the big battery fire have been incorporated in the design and operating requirements of the BESS.
Wind conditions	FRV raised concern regarding possible wind conditions that might push fire north and prevent access to the site entrance, booster and pumps.	The prevailing weather has been reviewed as part of the Fire Hazard & Risk Assessment. The assessment found that the site is unlikely to experience conditions that would result in a fire blocking the site entrance due to the layout, likely fire behaviour and prevailing wind direction.

Issue	Description	Design Response
Fire Fighting Water Runoff	FRV expressed concern about firefighting water runoff and the need for containment and treatment.	Water used to put out a fire would be captured by the Site stormwater system which directs water to a retention pond in the southwest of the site. The stormwater infrastructure, including the retention pond has been sized to accommodate the operation of 2 hydrants for 4hrs, which is considered a sufficient volume to address a fire event. In the event of a fire, the discharge to Edgars Creek would be closed to prevent any contaminated water from entering Edgars Creek. Following resolution of the emergency event, the treatment pond would be pumped out and, if required, cleaned prior to being reinstated.

FRV agreed that the meeting and minutes will satisfy the stakeholder consultation process and that the risk assessment will replace the performance-based design Brief normally required for building projects.

Each of the items discussed in the meeting have been assessed in the Fire Hazard and Risk Assessment report. The report concludes that design of the BESS units is acceptable and covers all fire initiation and fire spread risks to an acceptable level.

6.4 Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation

As the site is almost entirely within an area of designated Aboriginal Cultural Heritage Sensitivity (due to its location within 200m of a waterway), a Cultural Heritage Management Plan has been developed in consultation with representatives of the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (Wurundjeri). Two meetings were held with Wurundjeri:

- Establishment Meeting, 17 February 2022 – Introduction of the project, presentation of desktop assessment, Geotechnical Report
- Post standard assessment meeting/conditions meeting, 1 March 2022 – Presentation of survey results, including that Edgars Creek is not in its natural alignment and the activity area is significantly disturbed, agreement of CHMP conditions and that a complex assessment was not required.

The CHMP was undergoing finalisation at the time this application was submitted. The CHMP was submitted 1 August 2022.

6.5 Adjoining Landowners

During April and May 2022, members of the AusNet stakeholder engagement team conducted discussions with adjoining landowners/occupiers to the site. An information flyer (see Appendix H – Project Information Flyer) was distributed to all businesses within the area bound by Edgars Road, Metropolitan Ring Road, High Street and Mahoneys Road (see Figure 25).

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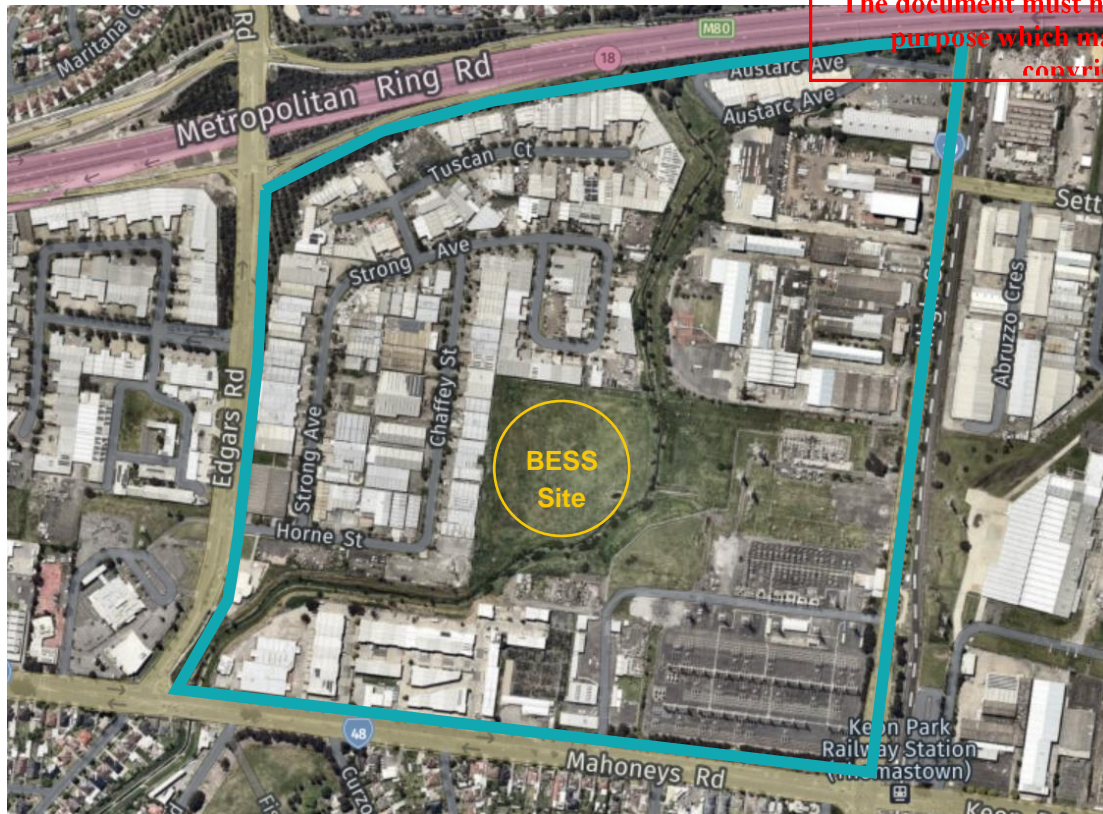


Figure 25. Landowner/Occupier Engagement Area (green line).

The flyer included information on what a BESS is, what the project involves, when it will be built and contact information as well as a map showing the proposed site. Door knocking to these businesses was undertaken to introduce the project and team and as an opportunity for people to ask questions or express concerns.

Overall, sentiment towards the project was neutral or positive. A summary of feedback received, and project responses is summarised in Table 7. AusNet has committed to keeping adjoining business informed of project progress.

Table 7. Landowner/Occupier Feedback

Issue	Feedback	Project Response
Trucks	Truck movements on Strong Avenue are already high, consider accessing Pelmet Cres via Chaffey St.	While the approved route for large vehicles to Pelmet Crescent is via Strong Avenue, other vehicles (e.g. construction staff) could use Strong Avenue. These details will be confirmed in the Construction Environmental Management Plan. Further detail on the traffic impact assessment is contained in section 7.2.
Safety	A number of questions were received with regard to fire risk	AusNet acknowledges the concern related to the risk of fire. A hazard and risk assessment has been undertaken as part of preparation of the concept design. Each of the recommendations made by the assessment have been adopted by the project. The hazard and risk assessment concluded that the design of the BESS units is acceptable and covers all fire initiation and fire spread risks to an acceptable level. Further detail on the hazard and risk assessment is contained in section 7.8.

Issue	Feedback	Project Response
Pest control	Questions from food wholesalers relating to management of rodents.	Project personnel explained to concerned landowners/occupiers that the BESS footprint will be cleared and developed as compacted gravel and/or concrete hardstand. The site will be maintained regularly so that it is kept clear of grass/weeds. The site will not store products or materials that will attract vermin. Should maintenance personnel identify signs of the presence of rodents on-site, pest control actions will be undertaken.
Noise	Generally, those engaged with were not concerned about additional noise from construction or operations, stating the area is already generally loud due to the industrial nature of the area.	<p>The noise assessment that has been undertaken has taken into consideration existing noise conditions to determine noise criteria for the development.</p> <p>Noise mitigation measures identified in the noise assessment have been adopted by the project.</p> <p>The noise assessment is further described in section 7.3.</p>

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7 Summary of Environmental Assessments

7.1 Hydraulic Impact Assessment

While the majority of the works have been designed to avoid areas where the Urban Floodway Zone (UFZ) and Land Subject to Inundation Overlay (LSIO) apply, there are some minor assets within areas subject to the LSIO:

- Stormwater outlet and connection – these assets will be within an area to which the LSIO applies and trigger the requirement for a planning permit and assessment against the requirements of the overlay
- Underground power cables – Underground cables proposed to be installed to the east of the Pelmet Crescent access will be within the extents of the LSIO. While these assets are expected to meet the exemption requirements of the LSIO (underground power cables that do not alter the topography of the land), they have been considered in the hydraulic assessment, for completeness
- Overhead lines – While some overhead lines traverse areas subject to the LSIO and UFZ, as these lines are aboveground, without poles in the area of the LSIO and UFZ, they will not impact flood behaviour, and therefore have not been considered as part of the hydraulic assessment.

A hydraulic impact assessment has been completed to address the requirements of the LSIO (Appendix D – Hydraulic Impact Assessment). The assessment established the current flood flow behaviour of the Edgars Creek waterway and assessed the impact of the proposed BESS and associated structures on the flood flow characteristics.

The assessment found that while the Site is subject to flooding during a significant storm event, that the location of the majority of the proposed works remains unaffected by flooding during the 1% AEP flood event. Whilst the stormwater outlet and connection and some underground cables would be within the flood extents it was assessed that these items would not have influence on the flood behaviour and therefore the proposed development meets the requirements of the LSIO of the Whittlesea Planning Scheme.

7.2 Traffic Impact Assessment

A traffic impact assessment was conducted by Beca on in June 2022 (Appendix C – Traffic Impact Assessment).

The assessment of effects with respect to traffic impact indicates:

- Month 1 is critical for heavy vehicle traffic, month 6 is critical for light vehicle traffic and overall traffic associated with construction
- A peak of 66 light vehicle movements and 22 heavy vehicle movements are expected to and from the site during primary works (including month 6) and month 1 respectively.

The traffic impact assessment found that that the design of the existing accessway generally meets the requirements of the planning scheme. The car parking spaces will be designed in accordance with Clause 52.06-9 of the Planning Scheme. Gradients, urban design, safety, and landscaping requirements will be adhered to through the detailed design stage of the facility. Car parking will be provided to meet the demands of the site for each of the construction and operational phases of the activity.

Overall, the transportation effects of this proposal are acceptable during the construction phase and are expected to be negligible moving forward under the operational phase, therefore there are no transportation reasons which preclude approval of this development.

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7.3 Noise Modelling

Noise from the site associated with the equipment must comply with the requirements of Part 1 of the EPA Victoria Publication 1826 Noise limit and assessment protocol for the control of noise from commercial, industrial and trade premises and entertainment venues.

A noise assessment to predict the likelihood of compliance was undertaken by Marshall Day, dated 11 October 2022 (Appendix F – Noise Modelling).

Initially, noise criteria were determined and then a noise model was prepared to predict noise as the nearest sensitive receivers.

Noise Criteria

Noise criteria was determined based on noise measurements of the local area, combined with the requirements of Publication 1826. The dominant noise source during the measurements was traffic noise during the day, and noise from crickets and intermittent traffic during the night. The noise measurements indicate that the existing TTS likely complies with the environmental noise criteria, under the meteorological and operational conditions at the time of the survey. However, there is likely to be variation in the site operations throughout the year and therefore further measurements are recommended during the detailed design process.

Noise Modelling

The noise modelling process involved the development of a 3-dimensional computer model in the environmental noise modelling program SoundPLAN v8.2, to predict noise levels from the proposal. Noise data was attributed to each piece of noise generating equipment as per supplier data and AS 60076.10: 2009 Power transformers – Part 10: Determination of sound levels. The supplier data for the battery units was based on interpolated data as measurements of the actual intended configuration is not yet available.

The noise model has incorporated sound data representative of the battery units operating at full capacity.

The battery equipment supplier has undertaken analysis considering Melbourne meteorological conditions for the 10 hottest consecutive days on historical record, for an assumed worst case operating profile of two full charge/discharge cycles of the system per day (i.e. the battery at full operational capacity).

A full charge/discharge cycle duration is four hours.

Findings

The noise model ran two scenarios (one without mitigation and one with mitigation) and estimated noise levels at the nearest noise sensitive receivers. The modelling found that without attenuation, the site would likely meet noise criteria for Day and Evening periods, though would exceed criteria for the Night period. The model found that the introduction of noise walls and enclosures around the HV transformers would noticeably reduce noise levels at all receiver locations, with only marginal exceedances at two receiver locations during the Night period. The assessment summary notes that the noise levels calculated by the model are considered conservative and that these could be lower than predicted. Project Response

The design for the project has incorporated the noise walls and transformer enclosures, as per the recommendations of the noise assessment. The noise walls will be installed within the fenced site area which means they will not be accessible for graffiti or other vandalism.

In order to further refine the noise assessment, it is intended that:

- Further measurements of the area are undertaken in order to validate the measurements used to determine the noise criteria
- Once available, the noise model is updated with measured noise data of the battery units.

7.4 Cultural Heritage Management Plan

A Cultural Heritage Management Plan (CHMP) has been prepared by NGH Pty Ltd. It is a mandatory CHMP, commissioned to fulfil the requirements of the *Aboriginal Heritage Act 2006*. The proposed activity is a high impact activity under Regulation (46)(1) of the *Aboriginal Heritage Regulations 2018*. The Activity Area is in an area of cultural heritage sensitivity under Regulation (26) (waterways – Edgars Creek) of the *Aboriginal Heritage Regulations 2018*.

A standard assessment found no Aboriginal cultural heritage or areas likely to contain Aboriginal cultural heritage, and therefore, there is no requirement to consider avoidance, minimisation, or management of Aboriginal cultural heritage places. The Activity is therefore not considered likely to have any cumulative impact on the Aboriginal cultural heritage of the geographical region.

The CHMP was undergoing finalisation at the time this application was submitted. It is anticipated that the CHMP was submitted the 1 August 2022. The CHMP includes a number of mitigation measures, each which will be adopted by the project.

7.5 Ecological Assessment

An ecological assessment of the site was undertaken by NGH Pty Ltd on the 18th of July 2022 (Appendix G – Ecology Assessment). The assessment found that the site is largely occupied by non-native vegetation, with the exception of the riparian margins of Edgars Creek which were classified as EVC 68 Creek line Grassy Woodland, shown in Figure 26 and Figure 27.



Figure 26. EVC 68 Creek line Grassy Woodland. Source: NGH (2021).

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Figure 27. EVC 68 Creek line Grassy Woodland. Source: NGH (2021).

The development was sited in order to avoid native vegetation impacts and it has been assessed that there is no native vegetation removal required for the proposed works and therefore no planning permit trigger under Clause 52.17 – Native Vegetation of the WPS.

NGH also found that:

- No FFG or EPBC listed vegetation communities occur on site
- No threatened flora or fauna were observed
- The Grey-headed Flying Fox has a moderate likelihood of foraging in this area; however, the proposal will have a low impact for this species
- The Hardhead and Spotted Harrier were determined to be low-moderate likelihood of foraging in this area; however, the proposal will have a low impact for these two birds
- The Yarra Pygmy Perch, Growling Grass Frog, Dwarf Galaxias and Eastern Snake-necked Turtle have a moderate or low-moderate possibility of occurring on site due to the waterway connection through Edgars Creek
- The proposal is likely to have a low impact in these species but as Edgars Creek connects to other creeks and streams in Port Phillip Catchment.

NGH recommended a number of mitigation measures and conclusions which will be adopted by the project, these are summarised below:

- Fence off all native vegetation on Edgars Creek at the crossing point for the duration of construction
- Erect signage to say 'no-go zones' tree protection areas
- Take steps to avoid unnecessary harm or injury to wildlife
- Sediment control measures should prevent surface water runoff carrying sediment into Edgars Creek for the duration of construction
- Sediment control can include sediment fencing using geotextile fabric which should remain in-situ until vegetation has re-established post construction.

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7.6 Contamination Report

An Environmental Site Investigation was undertaken by GeoPollution Management on 8th March 2022 (Appendix E – Contamination Report). The contamination report aimed to determine the environmental quality of the site subterrain and the existence of any associated potential risks (environmental or health) at the site. The assessment aimed to ascertain whether the proposed works area, is suitable, from an environmental soil quality perspective, for the proposed utility infrastructure use.

The report made the following findings:

- There is a low risk of potential on-site (property) sources of contamination to impact the site
- The contaminants, including asbestos-containing materials (ACM) occur in pockets of the heterogeneous imported fill material across the site. The likelihood of excavating contaminated material is considered to be high
- Restrictions apply to the reuse or off-site disposal of excavated soil, due to the contaminants detected.
- The risk of harm from exposure to the soil by workers or site occupiers, under the current condition of the site, is considered moderate to high, the latter based on the presence of ACM materials.

The following recommendations were made by GeoPollution Management:

- No further environmental site assessment is required for the proposed commercial/industrial land use
- The site may be remediated, by removal of ACM fragments, via clean-up of the imported fill, either scraping of all surface fill and/or via hand picking, if necessary, without further investigation. The status of the site should be confirmed by site inspection. Validation testing will be required if less than the entire imported fill is removed from the site
- All imported fill materials to be disposed off-site will be classified as Reportable Priority Waste (Category C) with asbestos. The waste soil designated for excavation must be disposed off-site to an appropriately licensed landfill, in accordance with EPA regulations and requirements. All "Reportable Priority Waste" (RPW) must have a transport permission and be tracked using EPA's digital tool, Waste Tracker
- Standard health and safety measures shall be implemented during loading and transport, as required by the Occupational Health and Safety Regulations (2017) and Worksafe Vic (2018)
- Minimum levels of personal protection should include:
 - Long sleeved shirt and trousers, gloves (for protection against dermal contact)
 - Eye protection as appropriate
 - Safety boots, safety vest
 - Hard hats
 - Respirator
 - Half-face filter respirator fitted with a class P1 or P2 filter cartridge, or a class P1 or P2 disposable respirator appropriate for asbestos.

All of the above recommendations will be adopted by the project.

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7.7 Visual Impact

The proposed BESS is expected to have minimal visual impact due to its location adjacent the existing Thomastown Terminal Station and the surrounding industrial development.

The highest and most prominent features of the BESS are likely to be the noise walls. The walls will be approximately 10m in height and have a non-reflective flat grey appearance, similar to concrete. The industrial buildings that back on to the western and northern boundaries of the site range in height, though are typically between 6-9.2m high. The existing Thomastown Terminal Station and surrounding infrastructure varies in height, though much of the infrastructure is at least 10m in height, and some transmission towers are up to 38m tall. The new poles, to be installed as part of the BESS project will be approximately 10-12m high, similar in height to existing poles. A summary of each of the views is provided, below:

- High Street – The BESS site is set back over 370m from High Street. The majority of High Street is fronted by electrical infrastructure, the majority of which is concentrated and significantly obscures any view of the BESS site. The clearest view of the site is to the north of the existing Thomastown Terminal Station; however this view is obscured due to many transmission poles and towers

- Mahoneys Road – Views from Mahoneys Road are largely obscured by existing development. The most prominent view of the development will likely be of the high voltage transformers and associated infrastructure (including noise walls). However, these are not anticipated to be highly visible as it will be in the backdrop of the existing infrastructure and set back at least 150m
- Thomastown Business Park – located at 44 Mahoney’s Road, Thomastown, the business park backs onto the southern end of the site, The BESS is not anticipated to be highly visible as it will be screened by the noise walls. The BESS is in keeping with the character of the existing industrial development, from which this view will be visible, and is therefore not expected to have a significant impact or be out of keeping with the surrounding area
- Chaffey Street – Views of the BESS from Chaffey Street will be generally blocked due to existing industrial buildings. 2 Chaffey Street is currently used for storage and does not have a building developed on it. This property is to the south of the primary development footprint of the BESS and therefore it is unlikely that it will be easily visible from this location. The enclosed high voltage transformers and associated infrastructure, to be located towards TTS, may be visible from this location, however as there is a setback of at least 250m and as these will be behind existing electrical infrastructure, it is unlikely to have a prominent visual impact.
- Pelmet Crescent – This location is considered to be the viewpoint with the most unobscured views of the BESS. As the site entrance aligns with the internal access road, the views of the control room, battery units and maintenance room are expected to be periphery in nature. Additionally, the BESS is considered to be in keeping with the character of the existing industrial development, from which this view will be visible. Due to the periphery nature of the view and as the BESS is in keeping with the existing character of the area it is not expected to have a visual impact.

Figure 28 illustrates a range of viewpoints around the site. Each of the photos have been taken in the direction of the proposed BESS and demonstrate that the proposal will not have a significant visual impact within the existing environment.

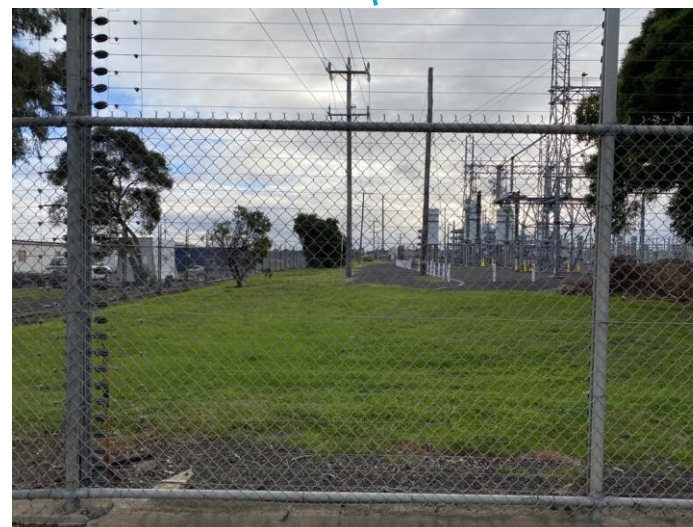
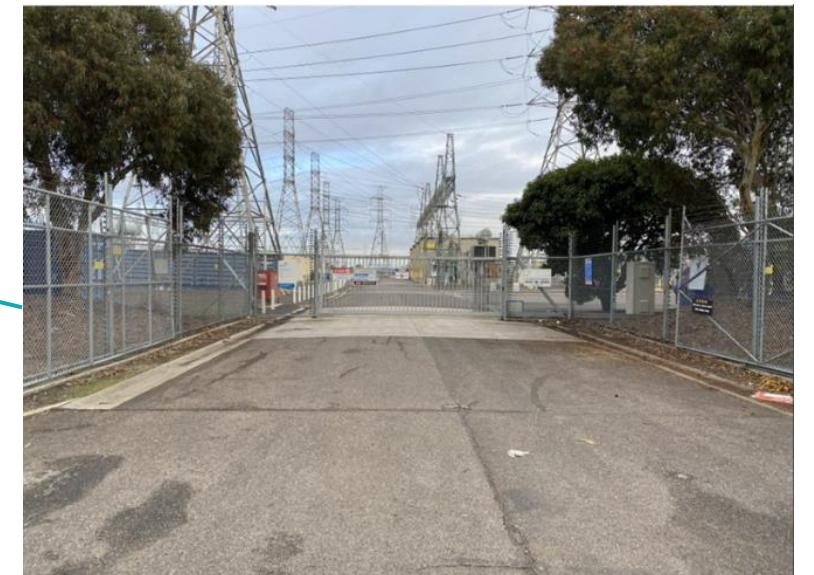
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Figure 28. Views of development site. Aerial Image Source: NearMap (2022).



7.8 Fire Hazard and Risk Assessment

NJM Design were engaged to undertake a fire hazard and risk assessment for the proposed BESS (see Appendix I – Fire Hazard & Risk Assessment).

The report identifies and reviews the primary fire risks associated with the BESS, including taking into consideration the findings of Energy Safe Victoria's review of the fire at the Victorian Big Battery.

In accordance with the review findings, the design of the BESS is incorporating a wide range of protection mechanisms to mitigate the fire risk of the proposal, including:

- The battery units will incorporate a battery management system as well as an alarm system within the facility to enable early warning of faults. The batteries will be monitored such that if there is a fault or electrical runaway the system will be shut down
- A fire protection system (including hydrants and water tanks) will be provided consistent with the requirements of AS 2419.1-2005: Fire hydrant installations, and the recommendations of the review of the fire at the Victorian Big Battery
- The battery containers will contain venting or pressure relief to prevent explosions
- Dangerous goods will not be stored on the site
- The transformers will be adequately separated from the battery units
- The battery units are separated from adjacent properties by over 10m. The batteries are arranged such that two units are adjacent to each other and the group of two units of batteries are separated by 2.5m. The main rows of units will be separated by a noise wall with an inherent fire resistance
- The batteries will have greater than a 4m vertical clearance
- The facility has a security fence such that only permitted vehicles can access the site.
- The site has a safe access road direct from Pelmet Crescent from which the access road then goes around and within the facility. The access point is remote from the battery units such that a fire in the batteries will not cause the access point to be compromised
- A 6m wide road will be constructed around and within the facility and will be constructed to satisfy FRV Guidelines
- The road access and hardstand will be kept clear at all times
- The facility is in a relatively flat area free of vegetation. The closest vegetation is over 40m away and is not classified vegetation based on AS3595.

Considering the above mitigation and protection measures, the fire hazard and risk assessment concluded that:

- The design of the BESS units is acceptable and covers all fire initiation and fire spread risks to an acceptable level
- Based on the AS5139 Risk Methodology the risk of a fire would be considered rare and the risk level Very Low
- The proposed installation procedures and units have design requirements that address the issues raised by the Victorian Big Battery (VBB) fire
- The risk of fire development and spread is no worse than that posed by existing utility infrastructure in the community or the adjacent buildings in the community
- Fire spread to adjacent allotments would not be predicted to occur
- Fire brigade intervention is considered not to be affected by a fire based on the preliminary fire modelling results presented within this report
- In order for the site entrance to be affected by a fire there would need to be a fire within the adjacent units as well as a wind from south or southwest which is not the predominant direction. The boosters and brigade access are separated from the battery units and transformers and hence the predicted fire size is not large enough to block the entrance to the site even with the wind in the correct direction

- The firefighting water will be sufficient for 4 hours supply based on at least 2 hydrants. The hydrants will be located such that all areas can be covered by at least 2 hydrants
- The other parts of the infrastructure such as the transformers and control room do not present a significant fire risk or higher hazard than other kiosk type transformers and small buildings in the community that do not require particular fire safety provisions.

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8 Conclusion

AusNet Transmission Group Pty Ltd propose to install a 300 MW/600 MWh BESS at 15 High Street, with access via 27 Pelmet Crescent, Thomastown.

The purpose of the BESS is to improve electricity reliability and network stability by drawing energy from the electricity grid during off-peak periods for battery storage and dispatching energy to the grid during peak periods.

The BESS will contribute towards the Victorian State Governments renewable energy goals and will result in a number of community benefits, including the capacity to provide energy to households and the creation of jobs for up to 30 staff during the construction phase.

Several environmental assessments were undertaken to inform design and assess potential environmental impacts of the project. The recommendations and mitigation measures of these assessments have been adopted by the project in order to reduce potential environmental impacts. The assessments have found that the project will not have any significant direct or cumulative impacts on the environment or surrounding area.

This application has found the proposal is in keeping with the intentions of the City of Whittlesea's SPPF and MSS, and that the project contributes to the implementation of the strategic directives of the Whittlesea Planning Scheme. The project is consistent with the objectives of the applicable zones and overlays.

In summary, the proposed BESS is considered appropriate for the subject Site and is consistent with the statutory planning framework as well as the energy goals of the Victorian Government. Therefore, it is submitted that it is appropriate that DELWP grant planning approval for the proposed BESS.

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Appendix B – Development Plans

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Appendix C – Traffic Impact Assessment

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Appendix D – Hydraulic Impact Assessment

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Appendix E – Contamination Report

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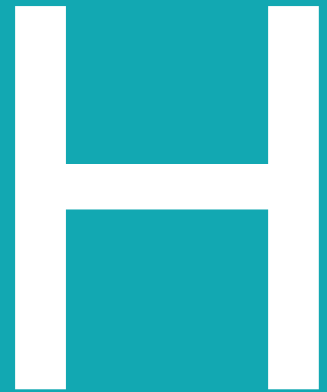
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Appendix G – Ecology Assessment

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Appendix I – Fire Hazard & Risk Assessment

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