

NOVEMBER 2021

Proposed route overview



Delivered by

AusNet
services

mondo

Purpose

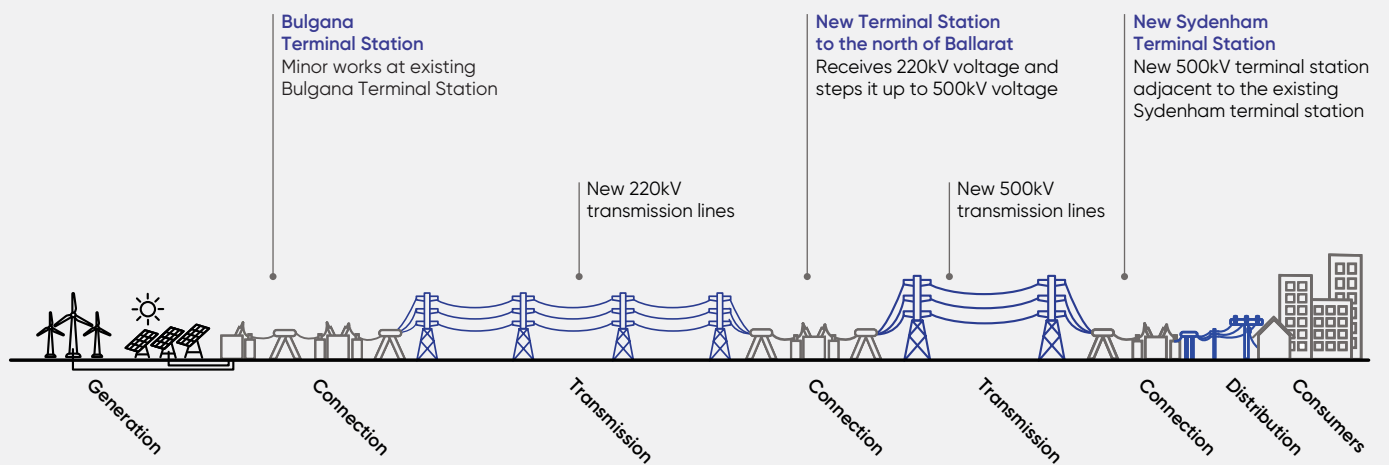
This document outlines the proposed route for the Western Victoria Transmission Network Project (WVTNP). The proposed route has been identified based on a range of technical investigations, landholder, community and stakeholder input, and constructability and technical aspects. Information is provided about how the route was selected and where alternatives are still being assessed.



What is proposed to be built?

The WVTNP is a proposed new 190km transmission line starting at Bulgana, near Stawell in Victoria's west, and connecting to Sydenham in Melbourne's north-west, via the existing Waubra terminal station and a new terminal station to the north of Ballarat. The project scope proposes a 220kV transmission line from Bulgana to north of Ballarat, and a 500kV transmission line from north of Ballarat to Sydenham.

Western Victoria Transmission Network Project



New overhead double circuit 220kV transmission line between the existing Bulgana Terminal Station and a new terminal station to the north of Ballarat.

From there to the proposed new terminal station at Sydenham, a new overhead double circuit 500kV high voltage transmission line.

Not to scale



Why is the WVTNP being built?

A new transmission line is required to deliver renewable energy from wind and solar farms in western Victoria, a key renewable energy zone, to homes across Victoria and into the National Electricity Market. This project is urgently needed to reduce congestion on the existing transmission network and to help unlock significant amounts of clean electricity for Victorians.

Planning and approvals

AusNet Services is currently preparing the Environment Effects Statement (EES) for the project. This is a complex project which will be developed over several years with ongoing engagement with landholders, communities, industry and government during that time. The project requires detailed technical investigations, planning and approvals before construction may commence.

For more information on the EES process, please see Page 18 of this document.

Community and stakeholder input

Community and stakeholder feedback, combined with the findings of technical studies, field surveys and investigations, have informed the selection of the proposed route and alternatives.

The community and stakeholders have provided important input that we have considered in identifying the proposed route including their concerns about impacts to:



Large areas of forested public land and other areas of significant vegetation including grasslands that have high environmental and Aboriginal cultural heritage values.



Landscape and visual amenity for residents and to tourist areas.



Sites of Aboriginal cultural heritage significance.



Urban and built-up areas, urban growth areas, rural residential subdivisions and more densely populated areas.



Productive agricultural land.



Heritage sites including Avenues of Honour and historic homesteads.



'Biolinks' created by Landcare and other community groups.



Communities and stakeholders along the corridor have also provided feedback that the route should utilise existing linear infrastructure corridors, such as the Ballarat to Horsham transmission line and Western Freeway.



Input has been provided from some communities that underground construction should be considered. More information about underground construction is available in the Underground Construction Summary on the [WV TNP website](#).

Steps to identifying the proposed route

Narrowing down the area of interest

Area of interest

A broad geographical area was investigated during 2020 to understand the constraints and opportunities to identify corridors for further investigation.

Multiple corridors

Based on constraints and opportunities in the area of interest, multiple corridors were identified for further investigation in February 2021.

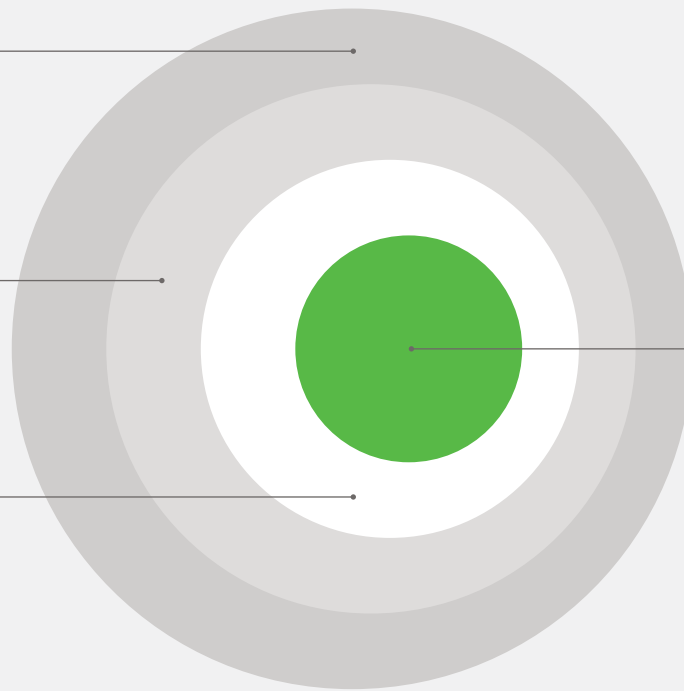
Corridor

The least constrained single corridor was identified based on additional assessment, including advice from technical specialists, in June 2021.



Route

Based on the findings from technical studies, field surveys, investigations, and community and stakeholder feedback, a proposed route was identified in November 2021.



Proposed route overview



Proposed route

The map on pages 8 and 9 shows the proposed route for the WVTNP transmission line from Bulgana to Sydenham. There are many factors specific to the project corridor, region and communities that have been taken into account in selecting the proposed route, including agriculture and other land uses, visual and landscape changes, Aboriginal cultural heritage places, threatened flora and fauna and other community concerns.

The proposed route aims to avoid environmental, cultural and social impacts as far as possible, while considering constructability and technical aspects. Where impacts are unavoidable, such as the transmission line being visible or going through farmland, the proposed route aims to minimise the impact in line with the route selection criteria.

An interactive map of the proposed route is available on the [WVTNP website](#).

Alternatives

There are three points on the proposed route where alternatives are being considered. They are Hepburn Lagoon, Darley and Melton Aerodrome. Further technical assessment and community and stakeholder consultation will be undertaken to identify the alternative route, design, structure and / or construction methodology that most effectively addresses the constraints and potential impacts at those points.

Landholders

Comprehensive consultation with landholders with properties within the proposed route will be undertaken over the coming months to understand landholder requirements, property specific issues and concerns, and to discuss the required easement, tower and access track locations.

Community

Community information sessions will continue to share study findings and information with communities along the proposed route, and to gather feedback from these communities.

Route selection criteria

The route selection criteria are designed to avoid, or minimise where avoidance is not possible, environmental, social and cultural impacts of the project.

While route selection is a primary means of avoiding and minimising impacts, additional mitigation measures will be recommended by each of the technical specialists undertaking the specialist studies for the EES, to further avoid and minimise impacts along the route.

In summary, the criteria applied to identify the proposed route include:

- Maximise distance to houses and other sensitive facilities, with a target separation of at least 300m.
- Follow existing transmission line easements where possible and where houses or other infrastructure have not been built up to the edge of the easement.
- Avoid registered Aboriginal cultural heritage sites and culturally significant places, where known.
- Avoid registered historic heritage sites (Victorian Heritage Register and Victorian Heritage Inventory).
- Use natural terrain and existing vegetation to screen the transmission line from views from houses and public viewing areas.
- Avoid areas protected by significant landscape overlays.
- Align route at the back/rear of properties to reduce impacts on land use, including agriculture and land access.
- Avoid severing or separating large areas of properties that could impact on the existing land use, including agriculture.
- Minimise impacts to existing aerodrome operations.
- Avoid windbreak plantings and shelter belts or use design to reduce impact where unavoidable.
- Avoid large tracts of native vegetation where practicable.
- Preferentially avoid highly erosive soils and areas subject to landslip.
- Avoid reservoirs and large waterbodies where overhead lines may limit recreation and management activities.
- Maintain straight lines and avoid acute angles of more than 45 degrees.
- Consider transmission network diversity (geographic distribution of grid infrastructure).



Ongoing work

Ongoing technical studies, field surveys and community and landholder engagement aim to ensure the potential impacts of the project on affected properties are fully understood and avoided where possible.

The next steps will focus on micro-siting towers, design modifications in response to land use requirements, and making small adjustments to the design to minimise impacts on properties.

Where ongoing investigations and engagement find something unanticipated, and design cannot manage the impact appropriately, alternative routes may be considered in that area.

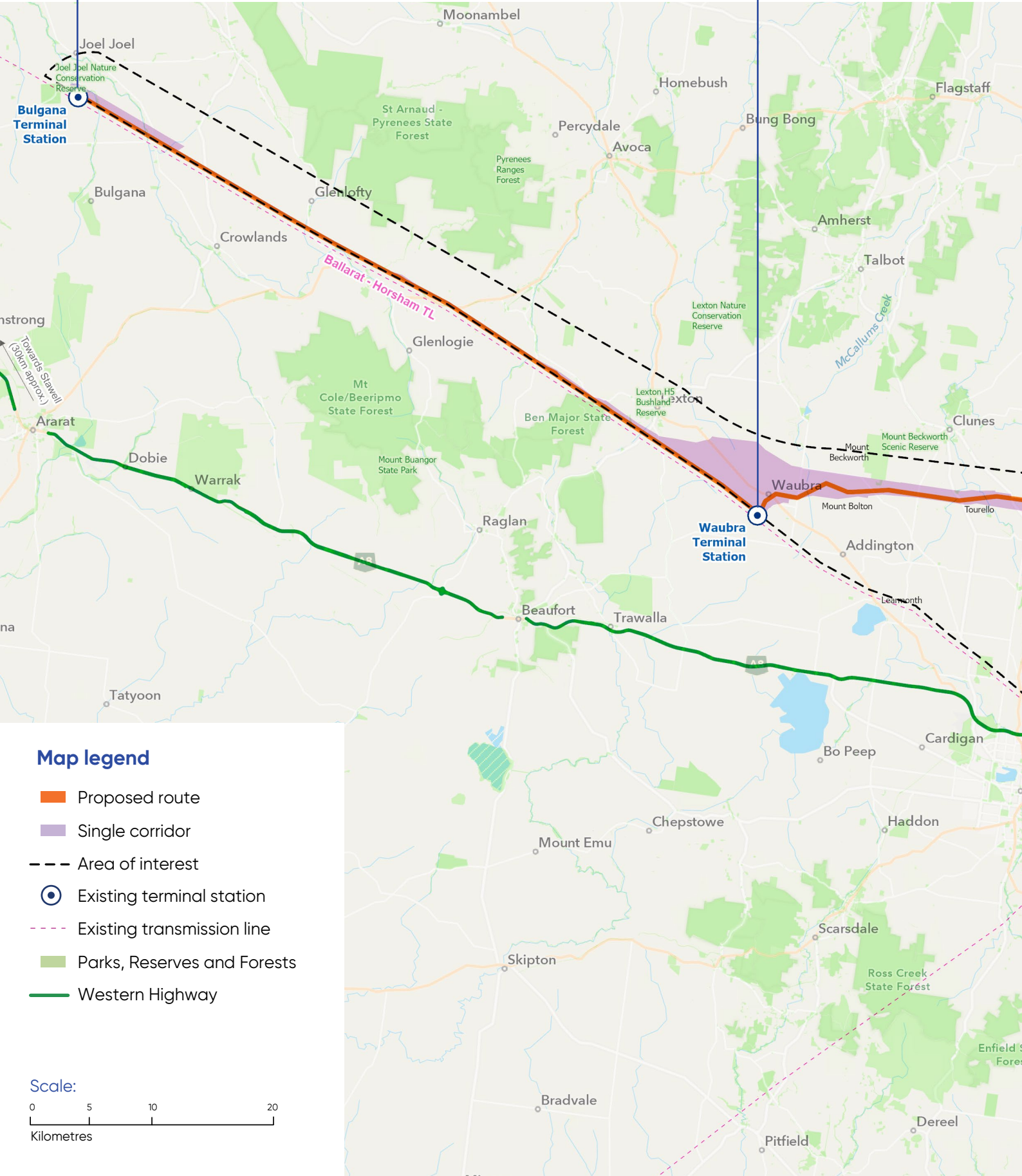
Easement

The transmission line, including towers, will be located in a 40 to 60m wide easement for 220kV transmission lines, and a 70 to 100m wide easement for 500kV transmission lines. Along the length of the 190km proposed route, a separation of 300m or more is provided for houses where possible. On farms, design and placement of towers will be used to minimise impacts to land use and maximise the operation of higher vehicles and equipment through height clearances under the transmission line conductors/wires.

Proposed route map

Section 01
Bulgana to Waubra

Section 02
Waubra to Glendonald



Map legend

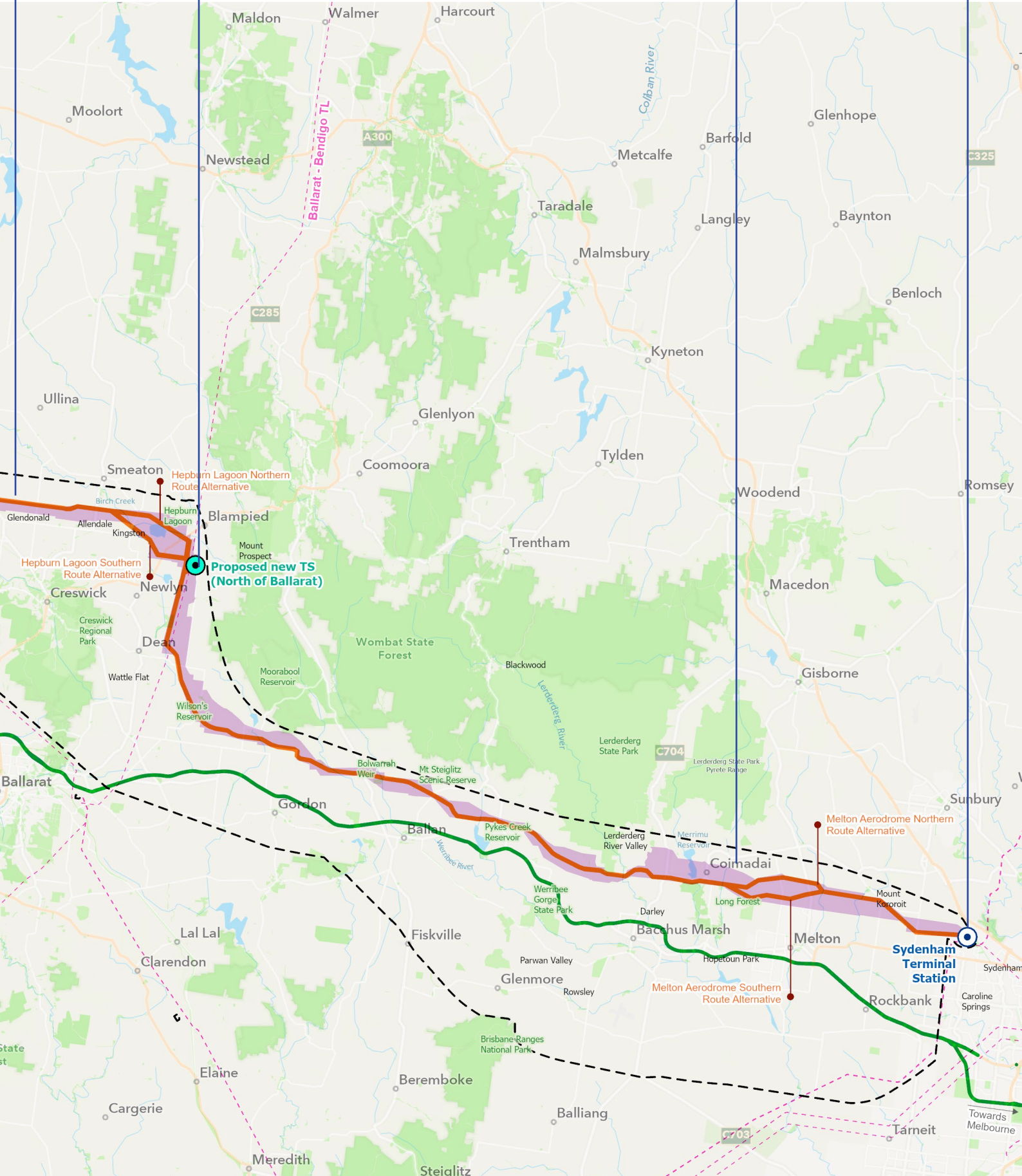
- Proposed route
- Single corridor
- Area of interest
- Existing terminal station
- Existing transmission line
- Parks, Reserves and Forests
- Western Highway

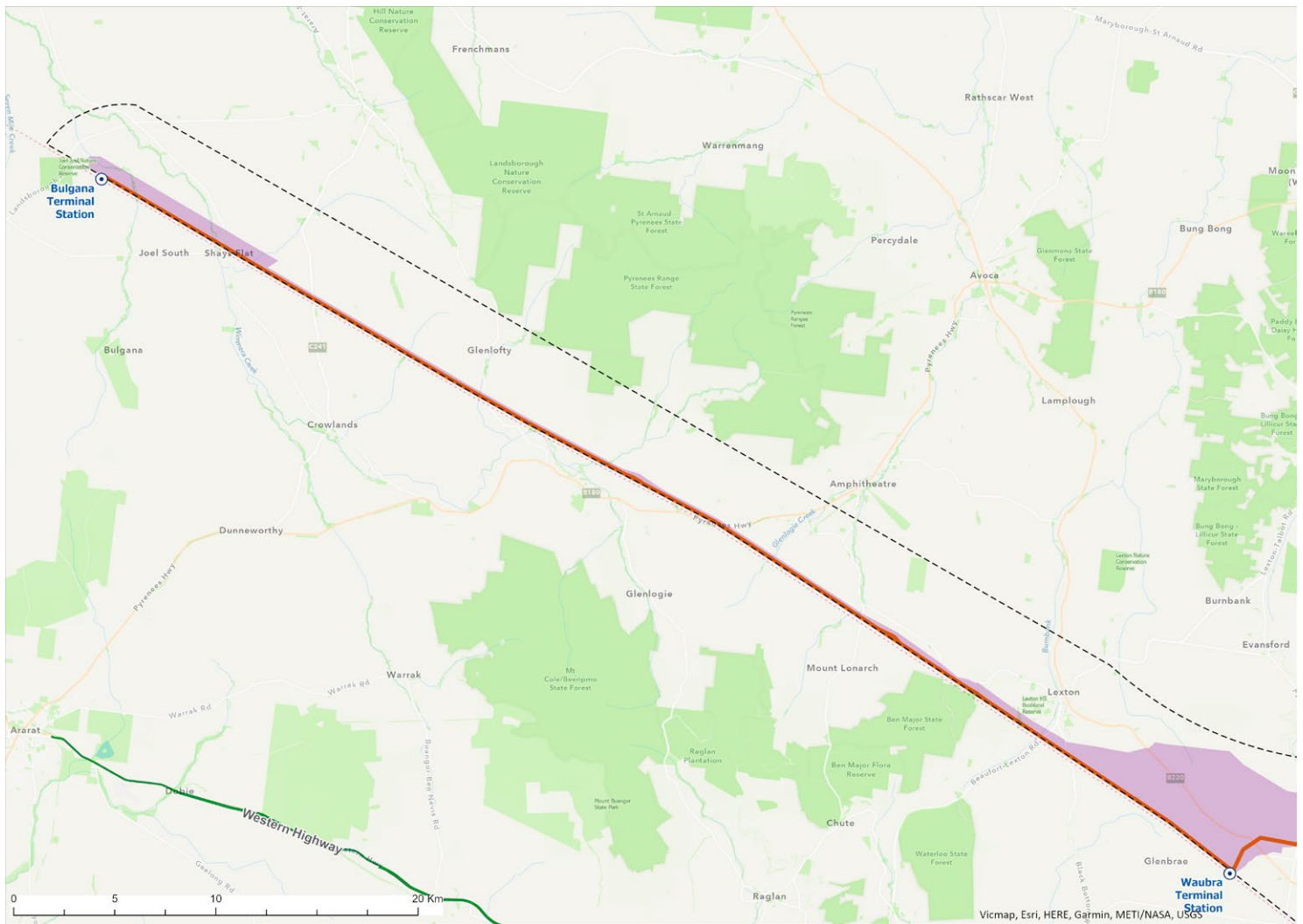
Scale:
0 5 10 20
Kilometres

Section 03
Glendonald to
Mount Prospect

Section 04
Mount Prospect
to Long Forest

Section 05
Long Forest to
Sydenham



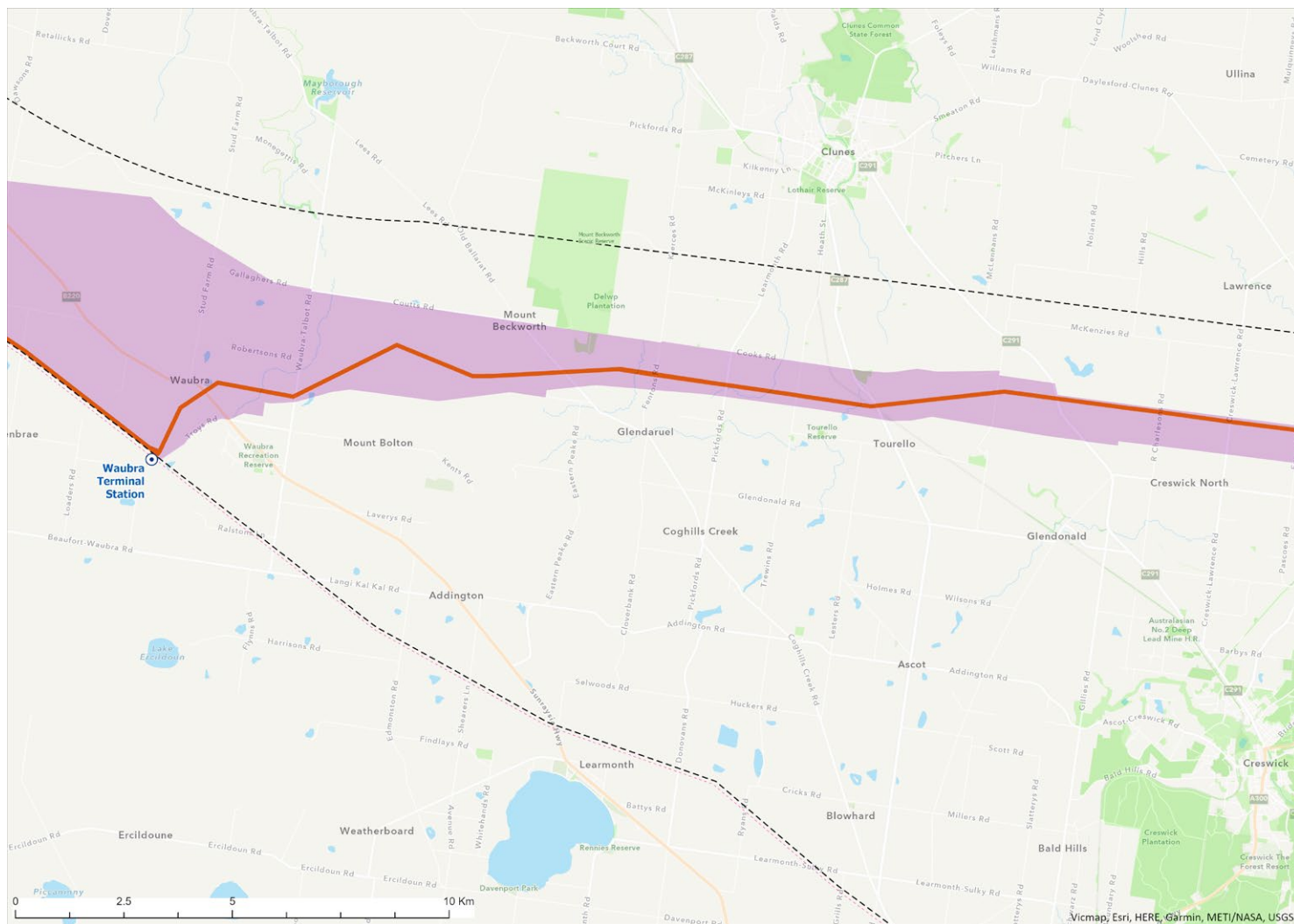


Section 1 – Bulgana to Waubra

The proposed route from Bulgana to Waubra runs to the north of the existing Ballarat to Horsham transmission line. The land use in this section is broad scale cropping and grazing, on generally large properties. There are areas of potential Aboriginal cultural heritage sensitivity and known patches of habitat for threatened species such as the Commonwealth-listed Golden Sun Moth. At the eastern end of this section the existing transmission line and the proposed route traverse the Lexton Bushland Reserve.

The proposed route responds to the route selection criteria as follows:

- The proposed route can run parallel to the existing transmission line in this section because houses have not been built up to the edge of the existing easement.
- By running parallel to the existing transmission line, the existing easement can be partially used for the WVTNP, which reduces the width of the new easement required. Using some of the existing easement reduces the impact to farmland, Aboriginal cultural heritage and native vegetation and habitat.

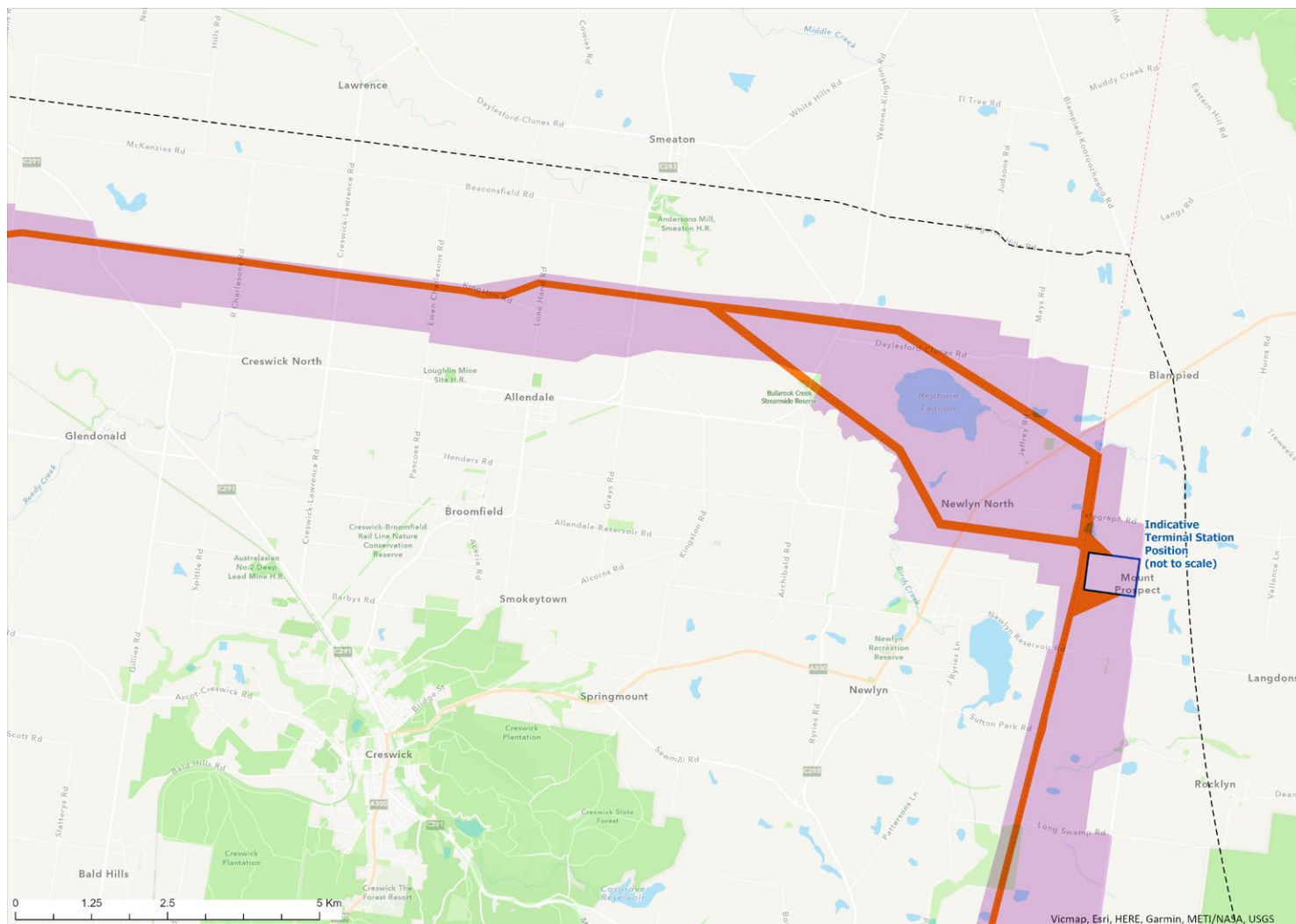


Section 2 – Waubra to Glendonald

The proposed route between Waubra and Glendonald traverses broadacre cropping and irrigated cropping in some areas. Granite outcrops are a feature of volcanic landscapes in the area with Mount Bolton and Mount Beckworth recognised as outstanding features that provide visual interest in the landscape.

The proposed route responds to the route selection criteria as follows:

- The proposed route avoids volcanic cones, recognised places of Aboriginal cultural heritage significance and sites protected by significant landscape overlays.
- The natural terrain has been used to screen the proposed route from views from Mount Bolton (Mount Bolton and associated granite outcrops are protected by a significant landscape overlay). The proposed route has also been aligned to protect views from Mount Beckworth Road.



Section 3 – Glendonald to Mount Prospect

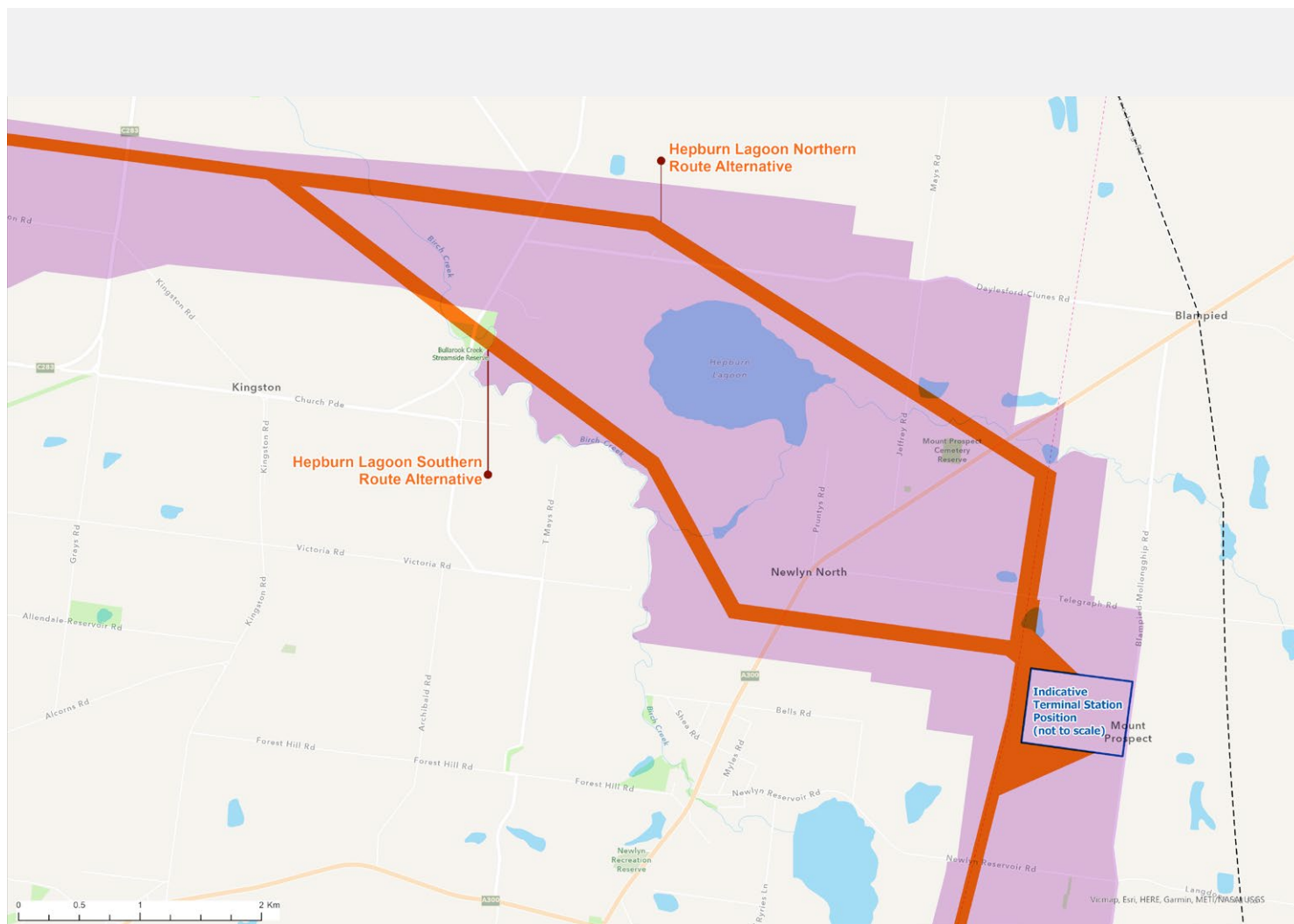
The proposed route from Glendonald to Mount Prospect runs through the Central Goldfields region, north of the Creswick Regional Park. The route follows Three-Chain Road which turns into Kingston Road. At Lone Hand Road the route runs northeast to property boundaries, which it follows east to Hepburn Lagoon and Mount Prospect.

Farm sizes are smaller in this section, with potatoes the predominant crops. This section includes historic gold mining sites that are included in the Victorian Heritage Inventory. It is understood that these sites may be considered, amongst others in the area, for inclusion in a proposed nomination of the Central Victorian Goldfields to the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage List.

An indicative area for the terminal station to the north of Ballarat has been identified on the proposed route. The area shown is representative of the area of land required, however there may be changes depending on the layout and orientation of the final terminal station design which requires it to be in a different position on the property. The land size of the terminal station will be approximately 400 x 600m.

The proposed route responds to the route selection criteria as follows:

- The proposed route maximises distances to houses passing north of Allendale and Kingston and south of Smeaton.
- To reduce impact on farming, the proposed route largely runs parallel and adjacent to roads, following property boundaries and avoiding windbreak plantings where possible.
- Sites listed on the Victorian Heritage Inventory, heritage overlays and the Kingston Avenue of Honour are avoided.



Hepburn Lagoon alternatives

Two alternative routes are under consideration at Hepburn Lagoon.

1. Northern proposed route
2. Southern proposed route

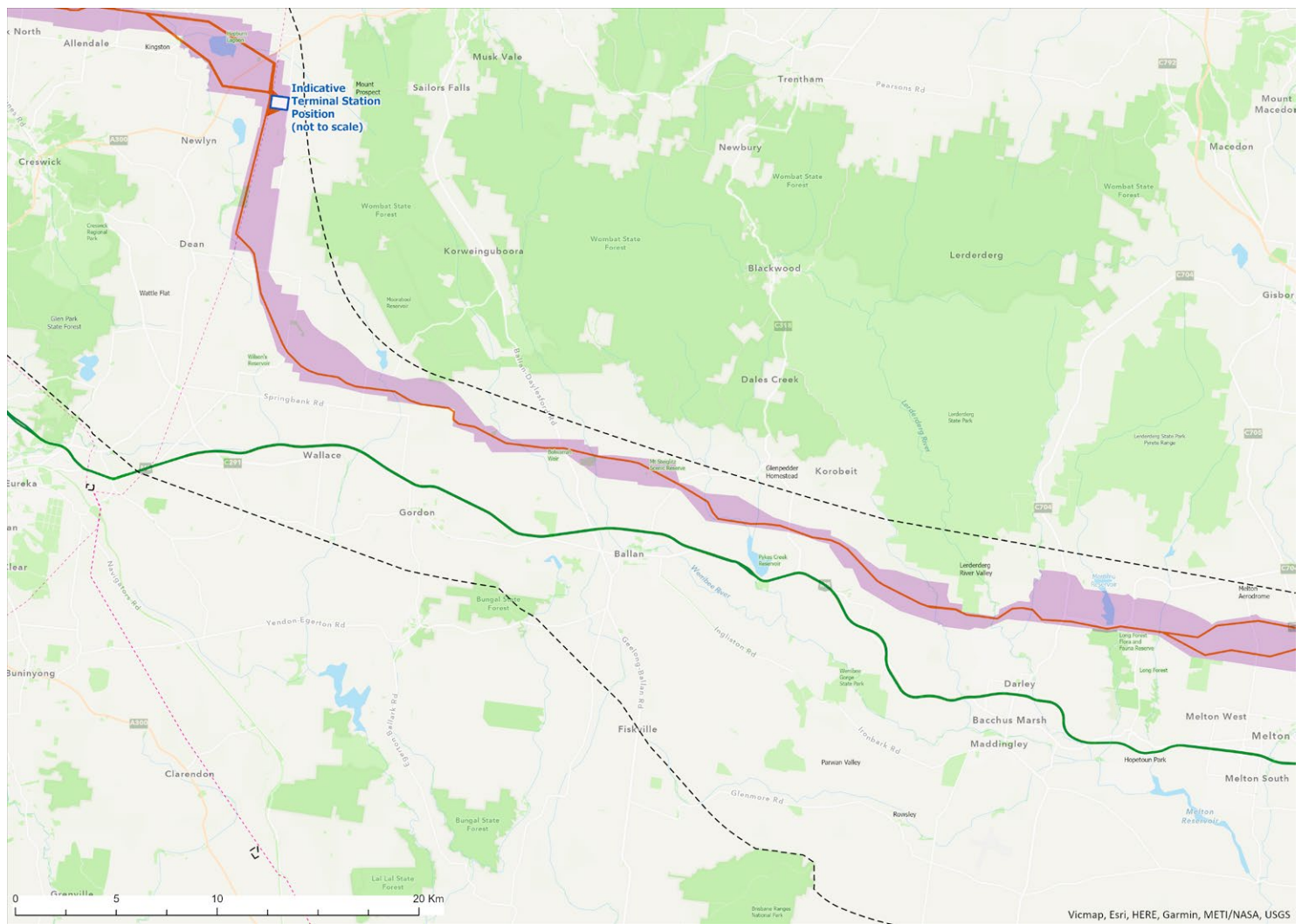
Hepburn Lagoon is a flooded volcanic caldera (crater lake) with a crater 1.2km wide and a tuff ring 15m high. The volcanic crater and surrounds are identified as having a high potential for Aboriginal cultural heritage values and artefact discoveries. The lagoon is also a popular fishing spot and a scenic area with associated tourism and social values. North of the area, the Daylesford-Clunes Road is a tourist route with views towards the Hepburn Lagoon. Numerous species of water bird have been identified at Hepburn Lagoon and nearby wetlands. The southern route alternative goes outside the single corridor in a small section to maximise the distance to existing dwellings in this area.

Further studies and assessment are required to understand how the alternatives compare in relation to:

- Aboriginal cultural heritage values.
- Agricultural practices.
- Visual impact from the Daylesford-Clunes Road.
- Risk of bird collision with the transmission lines.

The findings of these studies along with community consultation will inform the alternative selected at Hepburn Lagoon.

Alternative	Advantages	Disadvantages
Northern	<ul style="list-style-type: none"> ✓ Further away from houses and Birch Creek. ✓ Bird collision risk may be lower for the northern route if birds fly to the lagoon from wetlands to the south before returning to the south (flight paths are being investigated). 	<ul style="list-style-type: none"> ✗ Potential for Aboriginal cultural heritage artefacts and values to be present.
Southern	<ul style="list-style-type: none"> ✓ Topography (tuff ring along southern side of lagoon) may assist with screening the transmission line from views to Hepburn Lagoon from the Daylesford-Clunes Road. 	<ul style="list-style-type: none"> ✗ Potential for Aboriginal cultural heritage artefacts and values to be present. ✗ Follows Birch Creek for a longer line length which is a designated waterway and in sections has been revegetated to improve the health of the waterway.



Section 4 – Mount Prospect to Long Forest

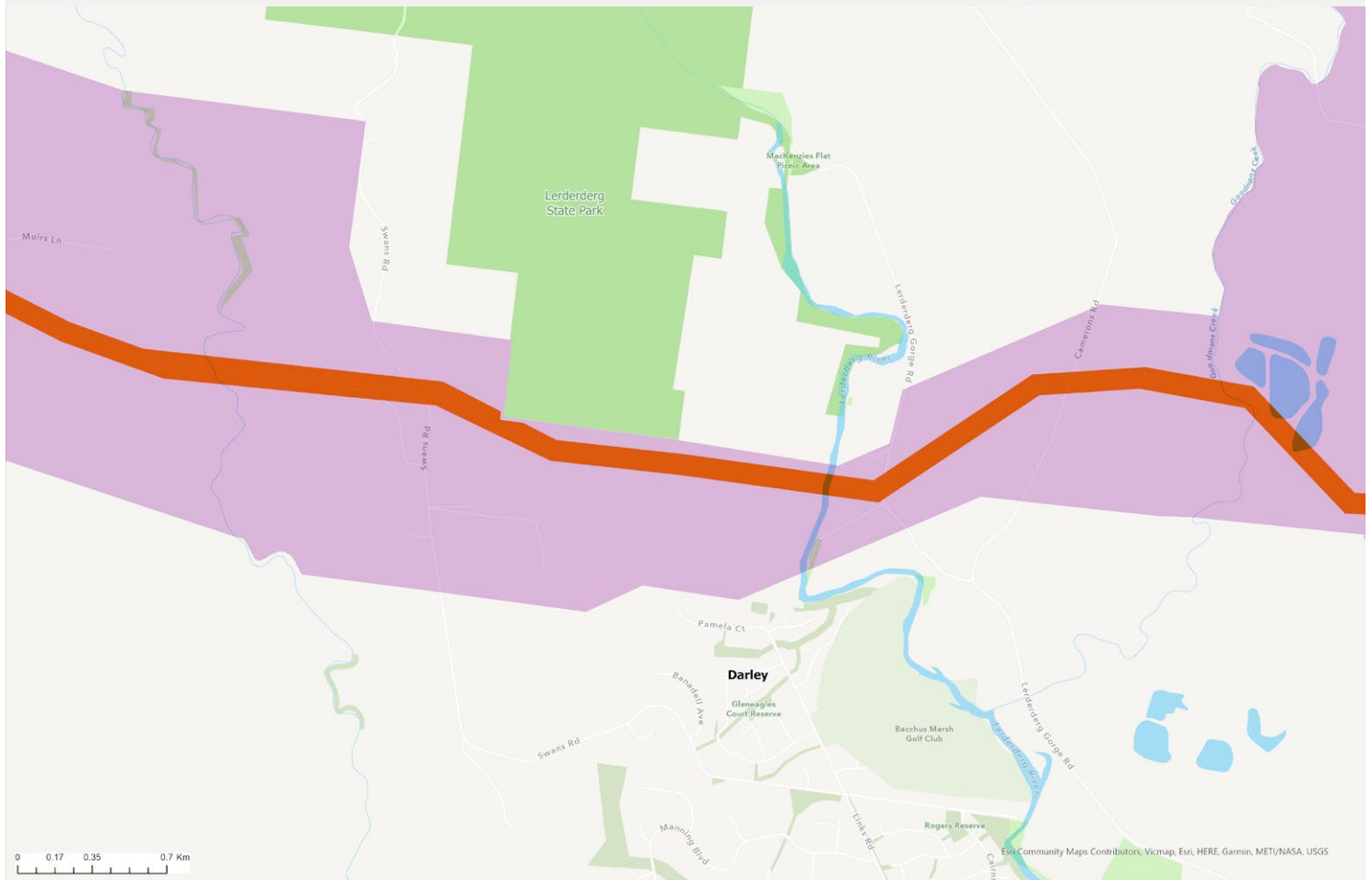
The proposed route runs from Mount Prospect to Long Forest, south of Wombat State Forest and along the southern boundary of the Lerderderg State Park. The route runs parallel to the existing 220kV Ballarat to Bendigo transmission line in a north-south direction from Mount Prospect to Dean, before heading in an easterly direction, north of Myrniong and Darley, through the existing quarry to Long Forest, south of the Merrimu Reservoir.

The area from Mount Prospect to Springbank and surrounds is intensively farmed for potatoes. Further east, the land use transitions to rural-residential living. There are areas of bushland on freehold land south of Wombat State Forest (near Bolwarrah) which have high quality habitat for threatened species and other native fauna including koalas. This area of bushland could not be avoided without impacting on houses and land use. Impacts however have been minimised through route selection in this area.

Aboriginal cultural heritage values exist throughout this section and are considered significant in parts, including in the Lerderderg River valley and other incised watercourse valleys in the Darley area. Historic heritage artefacts have been identified in the Darley area from a camp used by soldiers during World War II. Long Forest has very high biodiversity values.

The proposed route responds to the route selection criteria as follows:

- The proposed route follows the existing Ballarat to Bendigo 220kV transmission line for as long as possible to reduce impacts on land use.
- The proposed route is aligned with internal fences, cultivated paddocks and paddock headland areas, where practicable to reduce impact on agriculture.
- The proposed route crosses bushland on freehold land, south of Wombat State Forest (near Bolwarrah), in a section where some vegetation clearance has occurred, minimising the length of the transmission line in native vegetation and clearing required. The proposed route through this bushland maximises the distance of the transmission line from houses, noting that the density of houses progressively increases with proximity to the town of Gordon.
- The proposed route follows the Diggers Rest–Coimadai Road (avoiding the Coimadai Avenue of Honour), between Long Forest and the Merrimu Reservoir, minimising disturbance to flora and fauna within Long Forest and views from the Coimadai picnic ground and lookout across the Merrimu Reservoir.
- Sites listed on the Victorian Heritage Register, Victorian Heritage Inventory and protected by heritage overlays are avoided. Further investigation is required of other areas not listed on heritage registers, such as the Darley army camp area, to understand the extent of the sites and ability to avoid impacts through design.
- The proposed route has been positioned in the landscape, utilising natural terrain to screen or backdrop the proposed route from areas protected by a heritage overlay in the local planning scheme.
- Areas susceptible to landslips and erosive soils are avoided.
- The proposed route aims to reduce impact on the existing quarry by traversing areas where we understand the quarry resources have been exhausted, as far as practicable.



Darley alternatives

Darley residents have provided feedback that alternatives should be considered through this area.

There are many constraints in this area including challenging terrain, threatened flora and potential habitat for threatened fauna, and potential for Aboriginal cultural heritage. The proposed route avoids and minimises impacts to these values through the narrow area between Darley and the Lerderderg State Park, a proposed National Park.

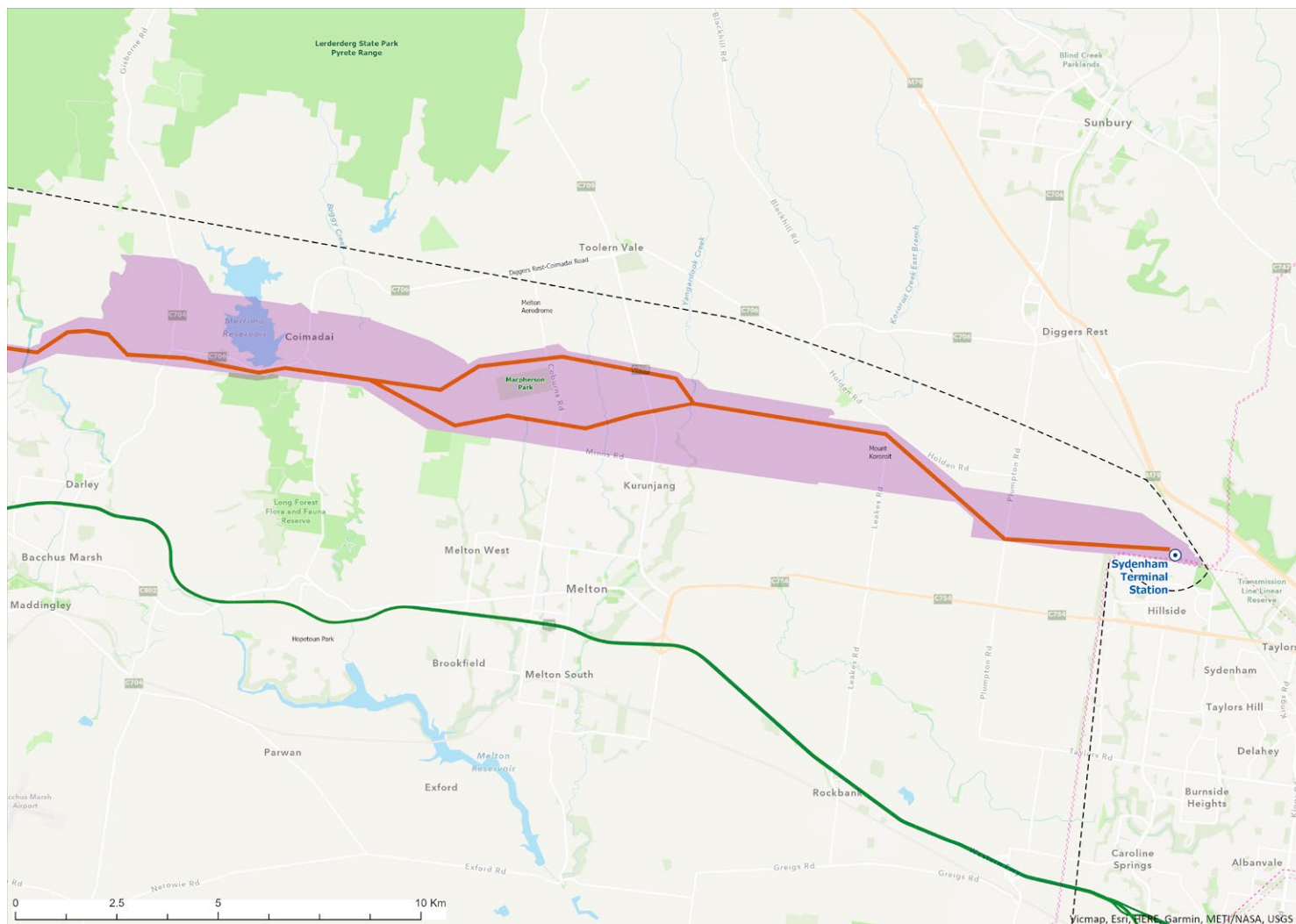
Due to the proximity of the township of Darley to the Lerderderg State Park, the hilly terrain and the constraints in the area, there is the potential an overhead transmission line in this section would result in a high landscape and visual impact for the town's residents when looking toward the Lerderderg State Park.

Different designs, structures and construction methodologies, including underground construction, are being considered at Darley to minimise the impacts.

Further studies including landscape and visual assessment and consultation with the Darley community and stakeholders will be undertaken on design options in this area.



View from Telford Park, across Darley towards the Lerderderg Ranges



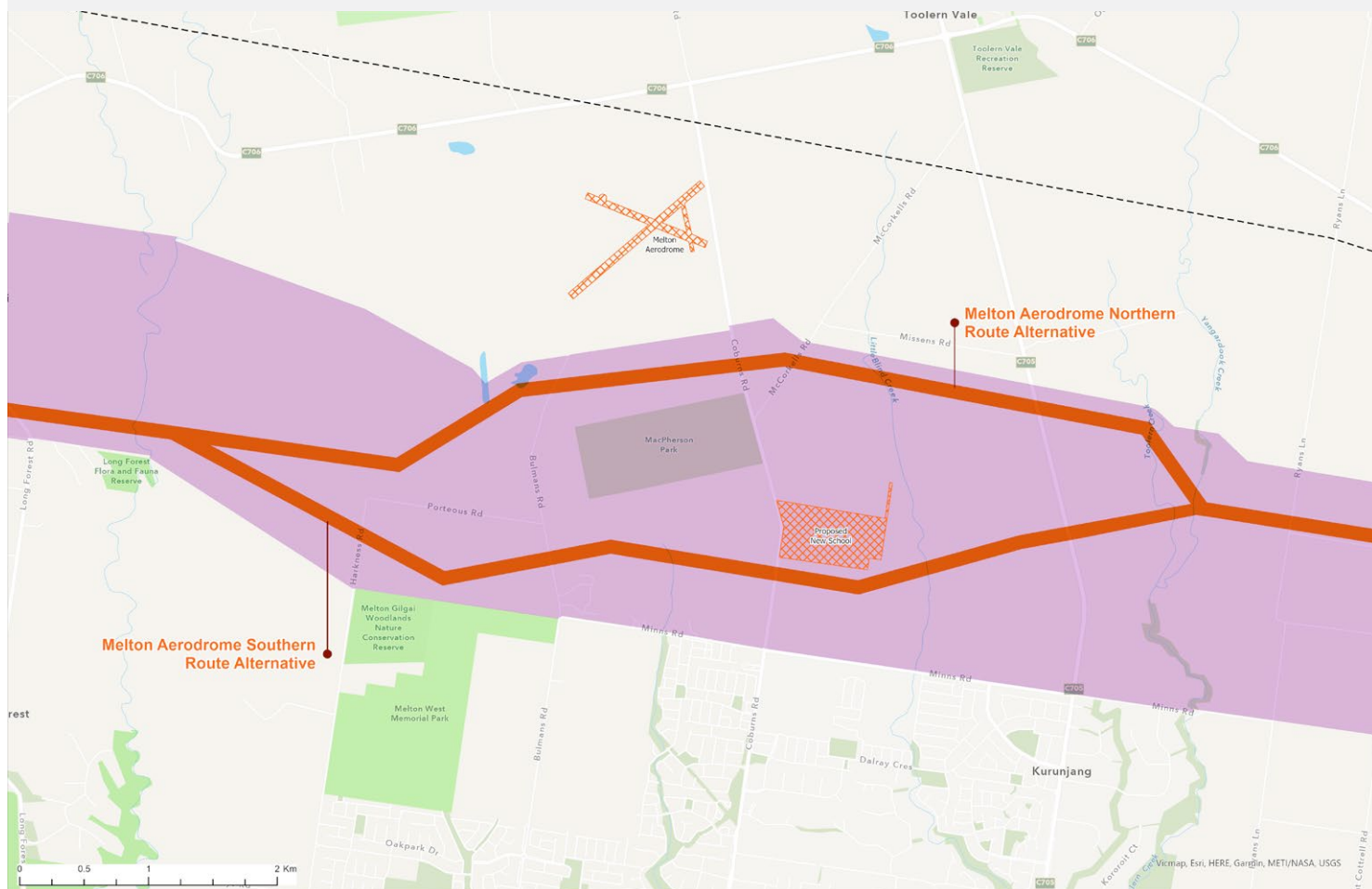
Section 5 – Long Forest to Sydenham

The proposed route runs from Long Forest to Sydenham south of the privately owned Melton Aerodrome and north of the Urban Growth Boundary, through the peri-urban, Melton local government area.

Patches of native grasslands in the area are of significant conservation value, listed as threatened by the Commonwealth and State governments. The grasslands support threatened species such as the Golden Sun Moth and Striped Legless Lizard. Mount Kororoit is a volcanic cone protected by a significant landscape overlay and valued by the local community. The area has important extractive (quarry and mining) areas close to Melbourne which are priorities for the State Government given the proximity to the growing housing market in Melbourne. There are other major projects proposed in the area including the Western Outer Metropolitan Ring Gas Pipeline, the Outer Metropolitan Ring Road (road and rail) and the Melton Renewable Energy Hub.

The proposed route responds to the route selection criteria and advice from stakeholders as follows:

- The proposed route avoids recognised places of Aboriginal cultural heritage significance and sites protected by significant landscape overlays.
- Maximises distance of the transmission line to existing houses, including maintaining a distance of up to 300m where practicable.
- Avoids MacPherson Park at Melton.
- Avoids the proposed new school at Melton.
- Minimises impact on existing operations at the Melton Aerodrome.
- The proposed route runs north of Mount Kororoit to maximise the extractive industry interest area.



Melton Aerodrome alternatives

Melton Aerodrome is a privately owned, aerodrome which hosts ultra-light and light aircraft operations, and aircraft maintenance. To ensure safety during take-off or landing, the routes have been developed and design will be in accordance with the Civil Aviation Advisory Publication No. 92-1(1) *Guidelines for Aeroplane Landing Areas*, July 1992.

1. Northern proposed alternative

This route runs close to the existing runways at Melton Aerodrome. Based on preliminary advice from the aviation specialist for the project, towers must be lower than 44.5m to maintain safe operations at the aerodrome. The towers may also need to be closer together to achieve the required ground clearances.

2. Southern proposed alternative

This route provides more distance between the transmission line and the Melton Aerodrome but is closer to existing houses, the Urban Growth Boundary and the proposed new Christian College. This route

avoids the proposed new school site and is more than 300m from the school buildings shown on the masterplan for the site. Existing vegetation is expected to partially or completely screen the transmission line in views from the built-up area to the south of the proposed route, reducing or avoiding impact on the houses south of the Urban Growth Boundary.

Consultation with the Department of Education, Melton Aerodrome owner, Melton Council and the community, along with the aviation impact assessment for the Melton Aerodrome will inform selection of the least constrained route through this area.

Alternative	Advantages	Disadvantages
Northern	<ul style="list-style-type: none"> ✓ Shorter towers should avoid impact to existing operations of the aerodrome. ✓ Further away from existing houses, the Urban Growth Boundary and proposed Christian College. 	<ul style="list-style-type: none"> ✗ Potential future expansion of the aerodrome may be impacted.
Southern	<ul style="list-style-type: none"> ✓ The route and design should avoid impacts to the existing operations and future expansion of the aerodrome. 	<ul style="list-style-type: none"> ✗ The transmission line will be close to and visible from and near the proposed Christian College.



Have your say

Landholders

If you are a landholder with a property within the proposed route, your dedicated Land Liaison Officer will be your main point of contact for all matters relating to the project, the proposed route and your property.

Community

Other community members can provide feedback on the proposed route by calling 1300 360 795 or via email info@westvictnp.com.au.

Community input is central to the EES and approval process for the WVTNP. Important information provided by landholders and the community helps to inform the development and design of the project.

When the EES is submitted, the document will be exhibited for public comment for at least 30 business days. During this time, you can have your say by making a written submission on the EES. Interested stakeholders and persons may also make a submission at the public hearing which follows. Generally, only people who have made a written submission during the exhibition period may make a submission at the public hearing.

The EES Scoping Requirements are available on the DELWP website (https://www.planning.vic.gov.au/data/assets/pdf_file/0020/506504/WVTNP-EES-Scoping-Requirements-final.pdf)

Information about planning panels and hearings is available on the DELWP website (<https://www.planning.vic.gov.au/panels-and-committees/planning-panel-guides/planning-panel-faqs>).

The community and stakeholder consultation plan for the WVTNP EES, is available on the DELWP website (<https://www.planning.vic.gov.au/environment-assessment/browse-projects/projects/western-victoria-transmission-network-project>).

Environment Effects Statement (EES)

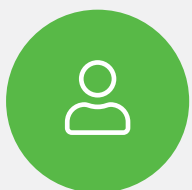
The EES will outline the existing environmental, cultural, land use and social values within the project area and the potential impacts of the project. The EES will describe the proposed project design, technology and construction method, opportunities to maximise the benefits of the project and measures recommended

to avoid and minimise impacts on landholders and communities.

You can read more about the EES and approvals processes in the Environmental and key project approvals fact sheet available on the [WVTNP website](#). Information about the Environment

Effects Act 1978 (Vic) and EES process is also available on the DELWP website (www.planning.vic.gov.au/environment-assessment/what-is-the-ees-process-in-victoria).

Next steps



Dec 2021 - ongoing

Land Liaison Officers will contact all identified landholders on the proposed route and will work closely with them over the coming months to understand their particular land use and requirements. In consultation with landholders, the alignment of the transmission line easement, tower and access track locations will be determined.



November 2021

Webinars on the proposed route and how it was selected will be held to provide an opportunity for the community to give feedback on the proposed route and ask questions directly of the technical specialists working on the project. More information on dates is available on the [WVTNP website](#).



December 2021

In-person community information sessions on the proposed route, underground construction, agriculture, bushfire, visual impact, the EES, planning and design will be held to provide an opportunity for the community to ask questions directly of the technical specialists working on the project. More information on dates and locations is available on the [WVTNP website](#).



2022



Further technical studies, including impact assessment and recommendations of additional mitigation measures and selection of alternatives.

2022

Submission of the Environment Effects Statement for the WVTNP to the Department of Environment, Land, Water and Planning.



WVTNP information

 www.westvictnp.com.au
 1300 360 795
 info@westvictnp.com.au




Ballarat PO Box
PO Box 638, Ballarat VIC 3353

Information straight to your inbox

Sign up for information straight to your inbox at the WVTNP website www.westvictnp.com.au.

Complaints

If you have a query, a compliment or a complaint, you can let us know by using the online enquiry form on www.westvictnp.com.au. Or you can let us know by:

 1300 360 795
 info@westvictnp.com.au
 PO Box 638, Ballarat VIC 3353

Feedback

You can provide feedback on this document via our website www.westvictnp.com.au or by calling 1300 360 795 or by emailing info@westvictnp.com.au

Other sources of information

Australian Energy Infrastructure Commissioner

(www.aeic.gov.au) including information about how to make a complaint, best industry practice and resources for landholders.

Australian Energy Market Operator

(www.aemo.com.au) including information on the Regulatory Investment Test for Transmission (RIT-T) process for this project.

Environment Effects Statement Process in Victoria

(www.planning.vic.gov.au/environment-assessment/what-is-the-ees-process-in-victoria) including information about the environment assessment process managed by DELWP.

Energy Safe Victoria

(www.esv.vic.gov.au) including information about the safe design and operation of high voltage transmission networks in Victoria.

Essential Services Commission

(www.esc.vic.gov.au) including information about the regulation of transmission licenses in Victoria.

The information in this document is for reference only – it is not designed to be, nor should it be regarded, as professional or legal advice. You should seek appropriate independent professional and/or legal advice where appropriate and before making any decisions based on material in this document. The information is an overview (in summary form) and does not purport to be complete. This document, and the information in this document, will not form the basis of any contract or commitment. AusNet Services does not guarantee or warrant the accuracy, completeness, or currency of the information provided and AusNet Services, its directors, officers, employees, agents and advisers disclaim all liability and responsibility (including for negligence) for any direct or indirect loss or damage which may be suffered by any recipient through use or reliance on anything contained in or omitted from this document.



**Western Victoria
Transmission
Network Project**

Delivered by

AusNet
services

mondo