

Preferred Easement Report

Victoria - New South Wales
Interconnector West Project 2024



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1. Introduction

The Victoria-New South Wales Interconnector (VNI) West Project (the Project) is a proposed new transmission line between Victoria and New South Wales. VNI West will harness clean, low-cost electricity from Renewable Energy Zones (REZs) in both states to maintain the reliability and security of electricity supply as ageing coal-fired power stations are retired and energy demand continues to grow. The proposed new overhead 500 kV double circuit transmission line will run from the Dinawan substation in New South Wales to Bulgana in Victoria, where it will connect to Western Renewables Link (WRL) via a new terminal station.

Transgrid will be responsible for developing the New South Wales component from the Murray River to the Dinawan substation, with Transmission Company Victoria (TCV) being responsible for developing the Victorian component of the Project.

The purpose of this report is to provide information on the Preferred Easement for the VNI West Project for the Victorian component from Bulgana to the Murray River. The report details the process and criteria used to narrow the Draft Corridor to identify the Preferred Easement and outlines the constraints that were identified and considered along each section.



2. Route Refinement process

The VNI West evaluation process has been ongoing since 2019, with early development activities focused on the regulatory requirements, market analysis and financial considerations. Once the need for the Project was established, the process has involved narrowing down a broad Area of Interest to a Draft Corridor and subsequently a Preferred Easement. A high-level overview of the process to date and next steps is shown below.

An Environmental Constraints Summary Report was released in July 2023 which outlined the findings of an environmental and technical constraints assessment of a broad Area of Interest (approximately 50 kilometres wide). The Area of Interest was assessed with a view to narrowing the Project area down to a Draft Corridor (approximately 2 kilometres wide) which was selected on the basis of minimising potential impacts on the environment and communities. A Report on the Draft Corridor was published by TCV in October 2023 and provided details on the location of the Draft Corridor, the environmental and technical criteria adopted to refine the Area of Interest to the corridor and outlining the community engagement activities undertaken to assist in the refinement process.

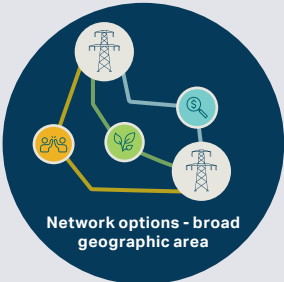
Since the release of the October 2023 report, TCV has conducted further "existing conditions" environmental and technical assessments within the Draft Corridor with the intention of identifying a Preferred Easement for the transmission line. In addition, extensive community engagement activities were conducted, including community meetings, engagement with individuals and groups of landholders, local councils, interest groups and Traditional Owners including On-Country days.



1

Establishing the need for the project

In 2018, AEMO's Integrated System Plan (ISP) identified the need for new transmission to increase connection between the power grids in New South Wales and Victoria, and to link renewable generators with the National Electricity Market (NEM).

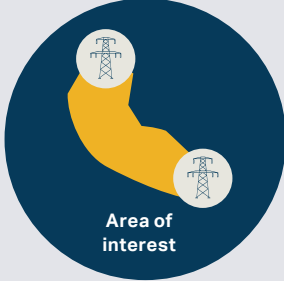


2

Analysing the options

AEMO and Transgrid commenced a Regulatory Investment Test for Transmission (RIT-T) in 2019. This economic cost-benefit test established the business case for the Project and confirmed that the investment, ultimately paid for by consumers, will deliver sizable economic benefits. Extensive stakeholder consultation helped inform an initial analysis of the various technical options, to find a preferred option that maximises the net market benefits for consumers while meeting the power system needs.

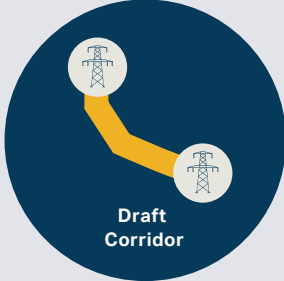
Environmental and social considerations were incorporated through a multi-criteria analysis (MCA). The MCA identified constraints and opportunities which ranked options against project-specific objectives. The assessment criteria focused on critical social, environmental, cultural and engineering factors, in addition to technical and cost-benefit considerations.



3

Identifying a preferred option

The results of the MCA, market modelling and information received through the RIT-T process informed the final option recommendation. Preferred Option 5A was identified and described in the final RIT-T report, the Project Assessment Conclusions Report (PACR), published in May 2023. It established the broad 5km - 50km wide Area of Interest for the Project in northwest Victoria, including locations for connecting the Project into the existing network.



4

Identifying constraints

The next step was to identify a Draft Corridor that would minimise impacts to communities and to environmentally and culturally sensitive areas. Constraints and cultural values within the area of interest that must or should be avoided were identified based on detailed desktop analysis and expert workshops, along with information gathered through community and stakeholder engagement. Areas identified as those to be avoided include aerodromes, significant heritage sites and values, RAMSAR wetlands, conservation parks and recreation reserves and areas of high ecological value. A 5km buffer distance from towns was also adopted. The overall approach adopted to refine the broad area of interest down to a narrower Draft Corridor with an average width of 2 km is further discussed in Section 3.

Next step

6

Refining the Preferred Easement

TCV will work directly with landholders, Traditional Owners and the community to finalise a transmission alignment within the Preferred Easement to minimise impacts to farming operations, agriculture, cultural values and the environment. Input from consultation, together with the results of environmental and technical studies and the regulated EES assessment will inform the final alignment design including the location of infrastructure such as towers. Construction is scheduled to commence from 2026 pending State and Commonwealth Government approvals.

We are here

5

Working with Landholders and Traditional Owners

Working with Landholders

TCV has worked with landholders to build our understanding of how the land is used, potential project impacts and to verify location constraints and sensitivities. Landholders have emphasised the importance of minimising impacts to farm productivity, day-to-day operations, and plans for future investment. Landholder feedback is important to help determine a final design including the location of transmission infrastructure, with the least-possible impact to agriculture and farm operations.

Working with Traditional Owners

Direct engagement with Traditional Owners is key to building our understanding and appreciation of cultural heritage sensitivity, including the intangible aspects of cultural heritage. Traditional Owners have emphasised the importance of connection with the land, waterways and vegetation. These considerations are important in designing a route that minimises cultural heritage impacts while balancing land use, environmental and other constraints.

Working with Communities

Local communities have shared information including local knowledge relating to ecology and wildlife, cultural, social, land use considerations and local conditions that is not available on existing databases and is important to TCV to take this into account through the route refinement process.



2.1 Consultation

TCV acknowledges the importance of consultation to help identify and confirm constraints and identify the best possible outcome for project design, and is committed to working closely with community members, Traditional Owners, landholders, and other stakeholders.

Discussions with stakeholders including local Councils, communities and Traditional Owners commenced during the early stages of project development. Following the release of the Area of Interest in May 2023, TCV focused on building connections with communities and landholders that could be impacted by this critical infrastructure, seeking their input to inform project planning and design.

Local community and landholders have shared information based on their knowledge and experience in relation to environmental, cultural, social and land use considerations, and this has been considered through the route refinement process.

VNI West's development to date has been informed by the outcomes of a range of engagement activities including:

- Community events and information sessions
- Meetings and discussions with landholders
- Community Reference Group meetings
- Council and stakeholder briefings and workshops
- Interactive online map open to community comments
- Constraints workshops with key stakeholders and community members
- Discussions with Traditional Owners and On-Country days
- Feedback received via the Project hotline and inbox
- Inputs from the Technical Reference Group (TRG) appointed to oversee preparation of the EES



2.2 How feedback has influenced the route refinement

As TCV developed the Preferred Easement, every effort was made to avoid constraints and sensitivities, while considering how best to reduce any other potential impacts. Specific local knowledge was critical to this process, providing information which may have otherwise been overlooked.

TCV worked directly with landholders to understand how existing and future farm practices, and agriculture more broadly, could be potentially impacted by the Project. There was discussion on how these impacts could be minimised through design and planning by locating the easement in a way which did not inhibit the particular type of farming being conducted in that area, for example, not interrupting the run of lateral irrigators along a paddock.

Other examples of how the Preferred Easement was informed by feedback include the following:

- Information on several private airstrips which could potentially conflict with transmission infrastructure. In some cases, farmers identified that small airstrips were used annually for the application of agricultural products necessary to protect crop yields.
- Landholder advice on a property in the North Central section of the easement housing habitat for an endangered species population.
- Concerns about the potential health effects of Electro Magnetic Fields (EMF) expressed by residents throughout the region which helped inform adoption of a 300-metre buffer from all residences to alleviate this concern.
- Areas of cultural heritage sensitivity in areas such as areas of the Wimmera River, Teddywaddy and Meering West that were known locally.
- Areas such as Glenloth East and Murrabit West where likely expansion of intensive irrigation activity may occur.
- Input from local bird watchers and local landowners on observed flora and fauna.
- Specific landholdings being managed for important nature conservation which would be compromised by vegetation clearance.
- Future development plans on large agricultural properties.
- Landholders around Charlton, Glenloth East, Tragowel and Kerang providing information on areas of flooding in the 2022 floods which did not appear on public databases and maps.

Landholder engagement

Regular ongoing engagement with over **500** landholders including

- 2,024** Phone calls
- 3,329** Emails and texts
- 770** Meetings

Community and landholder information sessions

17 events attended by over **1,000** people

Interactive map

2,326 comments from **201** stakeholders

Community Reference Group

5 meetings to date with **18** community representatives

Constraints mapping workshops

6 workshops **51** attendees

Traditional Owner discussions

Regular ongoing engagement with **4** Traditional Owner groups

Council engagement

Regular ongoing engagement with councils **4**

Stakeholder roundtables

Ongoing meetings with key stakeholders including **22** regular attendees from AEIC, VicGrid, councils and development associations

Hotlines and inbox

28 calls **72** enquiries

3.

Environmental and Technical Assessments

Since completion of the regulatory process establishing the need for the VNI West Project, TCV has been progressively refining the proposed location of the Project. The objective of the process was to identify an easement which was technically feasible and minimised potential impacts on communities, the environment, cultural heritage values and existing uses of the land including farming and agriculture. It is recognised that some level of impact from a project of this scale and linear extent is unavoidable and that trade-offs are inevitable. To this end, an evaluation framework to assess constraints was developed to ensure consistency of approach.

The evaluation framework for assessing options which has been consistently applied through each stage of the process and used to narrow the Draft Corridor and select the Preferred Easement is shown here.

Evaluation Framework

Environmental Impacts



Parks and Reserves

Avoid: Location of infrastructure in national parks, nature conservation reserves, wildlife reserves, Ramsar listed wetlands and other protected areas.



Vegetation and Native Vegetation Removal

Avoid Where Practicable: Removal, destruction or lopping of native vegetation present in private land and along streamside and roadside reserves, minimizing impacts where avoidance is not possible. Avoid or minimise intersection with areas of DCCEEW modelled endangered Ecological Vegetation Classes (EVCs).



Wildlife Habitats

Avoid Where Practicable: Minimise potential impact to local wildlife and habitats, such as:

- Wetlands used for breeding or nesting by Brolgas and other waterbird species wherever practicable.
- DCCEEW modelled current wetlands wherever practicable.
- Areas housing any known Victorian Biodiversity Atlas (VBA) threatened sensitive fauna records and associated habitat values.



Surface Water

Avoid Where Practicable: Waterway crossings and works adjacent to waterways wherever practicable.



Waterways and Riparian Areas

Avoid Where Practicable: For waterways and riparian areas, maintain a 30m setback from project infrastructure and construction related activities, where practicable.



Threatened Flora and Fauna

Avoid Where Practicable: Threatened flora and fauna species listed under the EPBC Act and FFG Act.

Planning



Victorian Planning Scheme Zones

Avoid Where Practicable:

- Rural Living Zones (RLZ)
- General Residential Zone (GRZ)
- Low Density Residential Zone (LDRZ)
- Township Zone (TZ)
- Public Use Zones (PUZ)
- Public Conservation and Recreation Zones (PCRZ)
- Public Park and Recreation Zones (PPRZ)
- Residential Growth Zone (RGZ)
- Neighbourhood Residential Zone (NRZ)



Overlays

Avoid Where Practicable:

- Bushfire Management Overlay (BMO)
- Environmental Significance Overlays (ESO)
- Vegetation Protection Overlays (VPO)
- Floodway Overlay (FO)/Rural Floodway Overlay (RFO)
- Heritage Overlay (HO)
- Airport Environs Overlay (AEO)
- Significant Landscape Overlay (SLO).



Proximity to dwellings

Avoid: Australian Energy Infrastructure Commissioner's 2022 Annual Report recommends a minimum setback of 300 metres from residences for 500 kV transmission lines.

Health and Safety



Bushfire risk

Avoid Where Practicable: High bushfire risk areas (heavily wooded areas, sloped topography) where practicable.



Noise and Vibration and Air Quality

Avoid: Placing infrastructure in proximity to sensitive receptors such as houses and schools.

Social



Landscape and Visual Impacts

Avoid Where Practicable: Proximity to known topographic high points, townships, parks, reserves and other recreational or public use areas wherever practicable.

Heritage



Aboriginal cultural heritage and values

Avoid: Assessment against known Aboriginal Cultural Heritage Register and Information System (ACHRIS) registered Aboriginal Cultural Heritage areas as well as identified areas of important cultural sensitivity.

Avoid Where Practicable: Minimise impact and disturbance to places and mapped areas of cultural sensitivity.



Historic Heritage

Avoid Where Practicable: Places of historic heritage as listed in the Victorian Heritage Register and National Heritage List.

Land Use



Existing Land Use

Avoid Where Practicable: Known sensitive land uses including agricultural development, housing, waterways and established land use such as townships and parks.



Proposed Developments

Avoid Where Practicable: Conflicts with proposed agriculture infrastructure and surrounding known and sufficiently developed renewable projects.



Agriculture

Avoid Where Practicable: Impacts to cropping and other farm activities, such as the operation of existing lateral move irrigators.

This evaluation framework was applied to identify potential environmental, social, and technical constraints to the development of transmission line infrastructure and is a widely accepted approach for assessing project options. The evaluation framework was applied consistently and progressively to:

- Identify potential constraints within the broader Area of Interest.
- Inform selection of the transmission line Draft Corridor within the Area of Interest; and,
- Identify the Preferred Easement for the Project, generally within or proximal to the Draft Corridor.

The evaluation framework included several environmental values such as National Parks and Ramsar listed wetlands which were deemed to represent ‘fatal flaws’ for the location of infrastructure and to be totally avoided, while other constraints were classified as ‘avoid where practicable’. In addition, a minimum five- kilometre separation distance from larger townships such as Boort, Charlton and Kerang, and from sensitive high points within the corridor, was applied wherever possible.

The approach provided a consistent and comprehensive framework that incorporated environmental, social, and technical considerations. The approach adopted for selecting the Preferred Easement was to avoid as many of the identified constraints as possible. For example, every effort was made to maximise the distance from houses, avoid remnant vegetation, culturally sensitive areas and parks and minimise disruption to existing land uses. This included working with farmers to, wherever possible, locate the easement in locations which did not inhibit the type of farming taking place in any given area.

As outlined in Section 2, there has been extensive community engagement, and the learnings from this have been considered alongside the technical assessments conducted to determine the Preferred Easement.



3.1 Environment Effects Statement (EES)

The Commonwealth Government determined that the Project required approval under the Environment Protection and Biodiversity Conservation Act 1999. Under a bilateral agreement between the Commonwealth and Victorian Governments, it was agreed that the Victorian EES process would form the basis of the environmental assessment and used to also inform the Commonwealth Minister’s decision on the Project.

An EES will be completed for the Project, based on detailed environmental and technical studies to assess potential impacts. It is possible that the findings of the EES studies will lead to changes to the Preferred Easement.

As part of the EES process, a Technical Reference Group (TRG) was convened by the Department of Transport and Planning comprising Government agencies, Councils and Traditional Owner groups. The TRG will provide oversight and advice to TCV on all aspects of the EES, including scoping of technical studies, reviewing the studies and ensuring that the EES meets the Minister’s assessment criteria prior to public exhibition.

The Draft Scoping Requirements for the EES are currently being finalised by the Minister for Planning. It is anticipated that the environmental and technical studies which will be conducted to assess the Preferred Easement will include:

Agriculture	Greenhouse gas and climate change
Air quality	Groundwater
Aviation	Historic heritage
Bushfire	Land use and planning
Contaminated land	Landscape and visual impact
Cultural heritage	Noise and vibration
Ecology and biodiversity	Social impacts
Economic impacts	Surface water
Electromagnetic fields	Traffic and transport

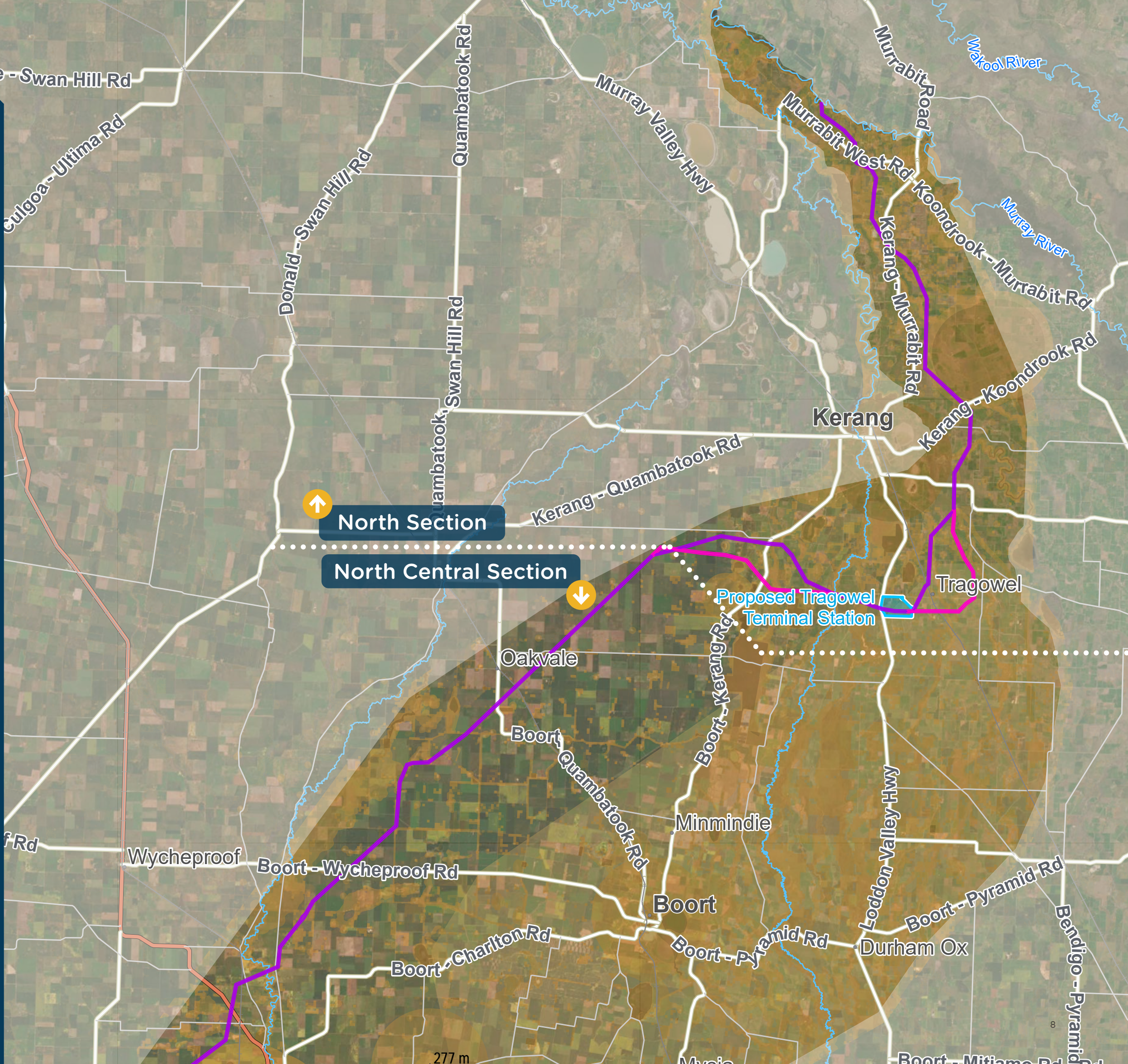
The Preferred Easement is not the final or approved easement for the VNI West Project. Based on the results and findings of the technical studies, the easement is subject to change throughout the EES process.

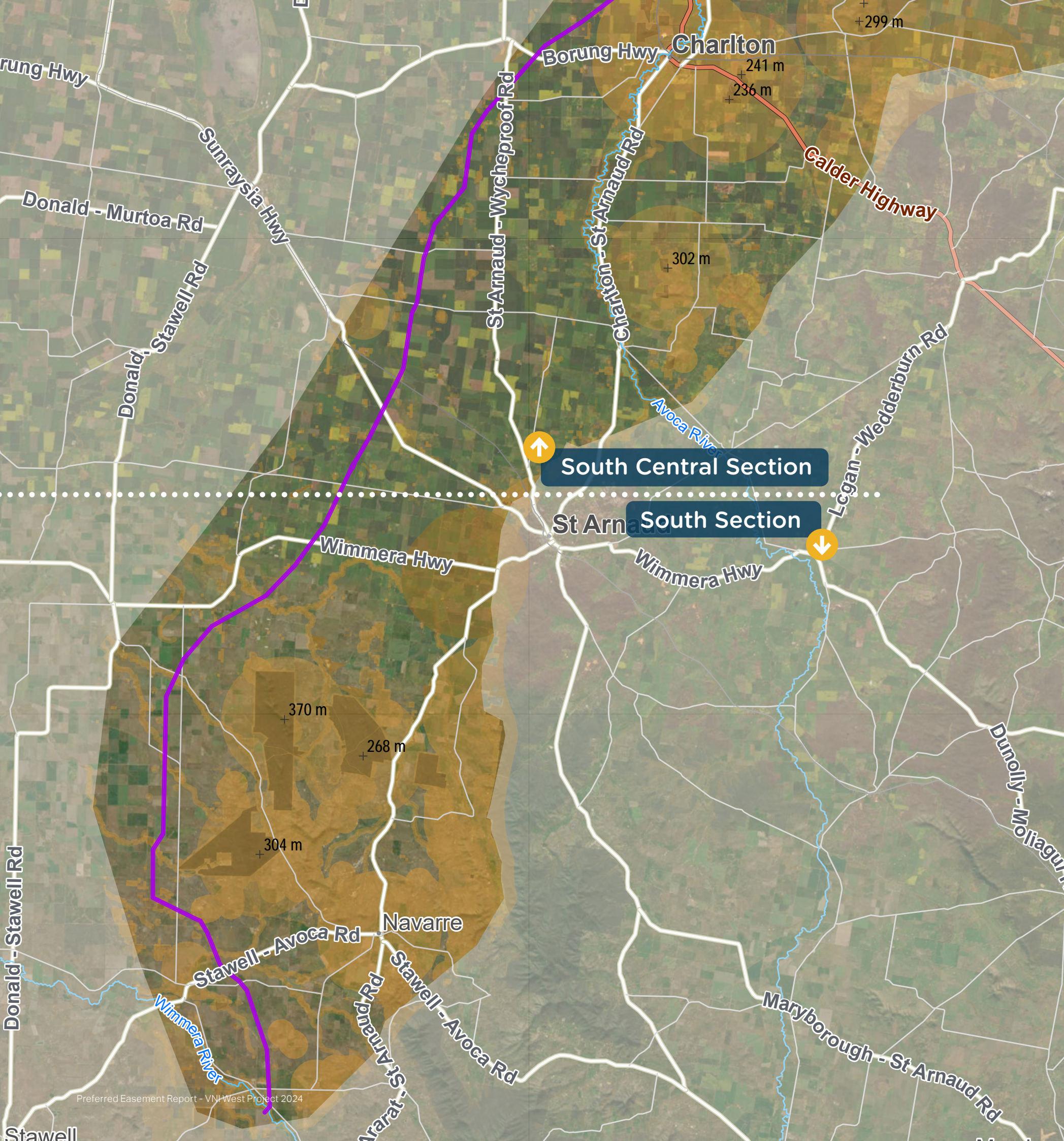
4. Preferred Easement

The Preferred Easement is identified as the least constrained location for the 500 kV transmission line infrastructure, reflecting consultation and assessments completed to date as detailed in this report. It is approximately 240 kilometres in length and 70 metres wide, except for two locations where the easement widens to accommodate additional infrastructure for transpositions, as outlined below.

A survey area of approximately 270 metres in width, which includes the Preferred Easement and 100 metres either side of the easement, has been identified to extend the scope of potential impact assessments to be conducted as part of the EES. This survey area has been adopted to ensure that areas outside of the easement which may have temporary construction disturbance such as laydown areas for equipment, and the associated potential impacts can also be captured and assessed as part of ongoing technical studies during the EES process. In some instances, EES studies will cover wider areas than the proposed 270 metres depending on the type of impact. For example, the landscape and visual impact assessment will consider visual effects of towers at sensitive locations some distance from the actual easement.

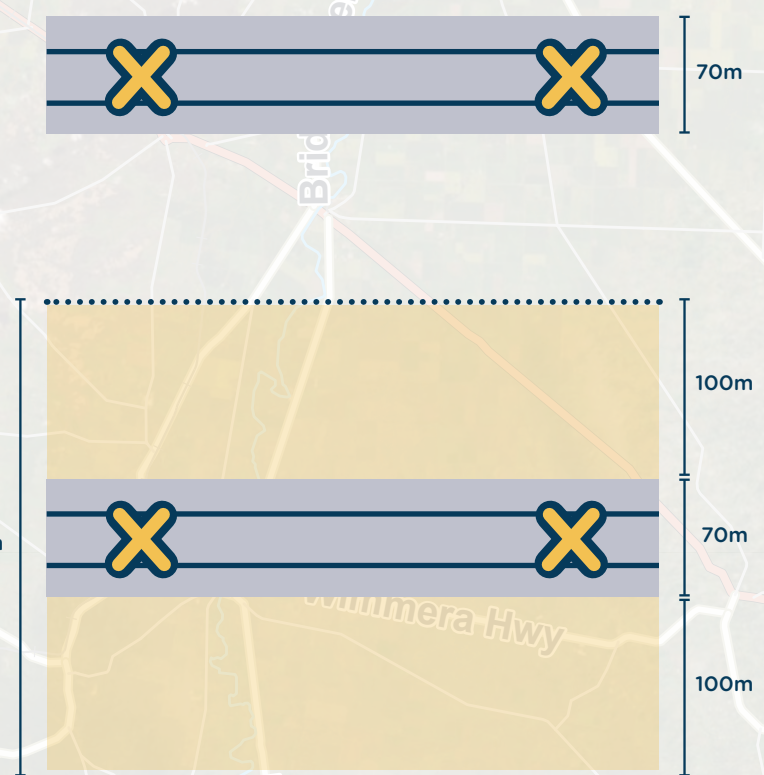
TCV acknowledges that flexibility is required to find an optimal route for the Project, and that findings from the engagement and environmental studies conducted to support the Project approvals may necessitate the location of infrastructure in areas proximal to the Preferred Easement. It is important that surveys assess areas either side of the Preferred Easement in the event a change in the location of the easement in a particular location is required because of the assessment work.





There are several areas where the Preferred Easement is located close to but outside of the original Draft Corridor. This has occurred because of study findings and stakeholder engagement conducted since release of the Draft Corridor identifying constraints or alternatives requiring further assessment.

The key constraints which informed selection of the Preferred Easement are described (by region) in the sections below.







 Transmission towers	 Transmission lines
 Easement area	 Survey area

Figure 1: Easement vs Survey Area

Alternatives

There are two locations at Tragowel and Meering West where further environmental, social and planning studies are required to better inform the selection of a single Preferred Easement (refer to Figures 3 and 4).

In Tragowel, an alternative easement to the Preferred Easement is under consideration as a result of feedback received from several community events and from a number of landholders expressing a willingness to host the infrastructure on their land. To ensure that there is a transparent and thorough assessment of both potential easements, and that the community can be further and fully consulted, TCV has elected to carry both easement options into the EES process.

In Meering West, sensitivities associated with the Great Spectacle Lakes Complex Wildlife Reserve were identified within the original Draft Corridor after ongoing assessments and landholder inputs. These included existing lakes and wetlands, ecological values and cultural heritage considerations. As a result, the Preferred Easement is

located outside but proximal to the original Draft Corridor in the general area between Meering West and Dingwall. Due to the complexities of values in the area, and the need for further technical studies to better delineate sensitivities and potential impacts, both easement options will be assessed through the EES process.

As technical studies and further community engagement is undertaken, it is possible that one of the alternative easements in Tragowel or Meering West proves to be more highly constrained or have greater impacts than the other. In this event, it may not be necessary to fully assess both options through the EES. Alternatively, if both potential easements prove to be feasible and with comparable levels of potential impact, both easements may be fully assessed through the entire EES process. TCV will continue to consult with landholders in these areas throughout this assessment process.

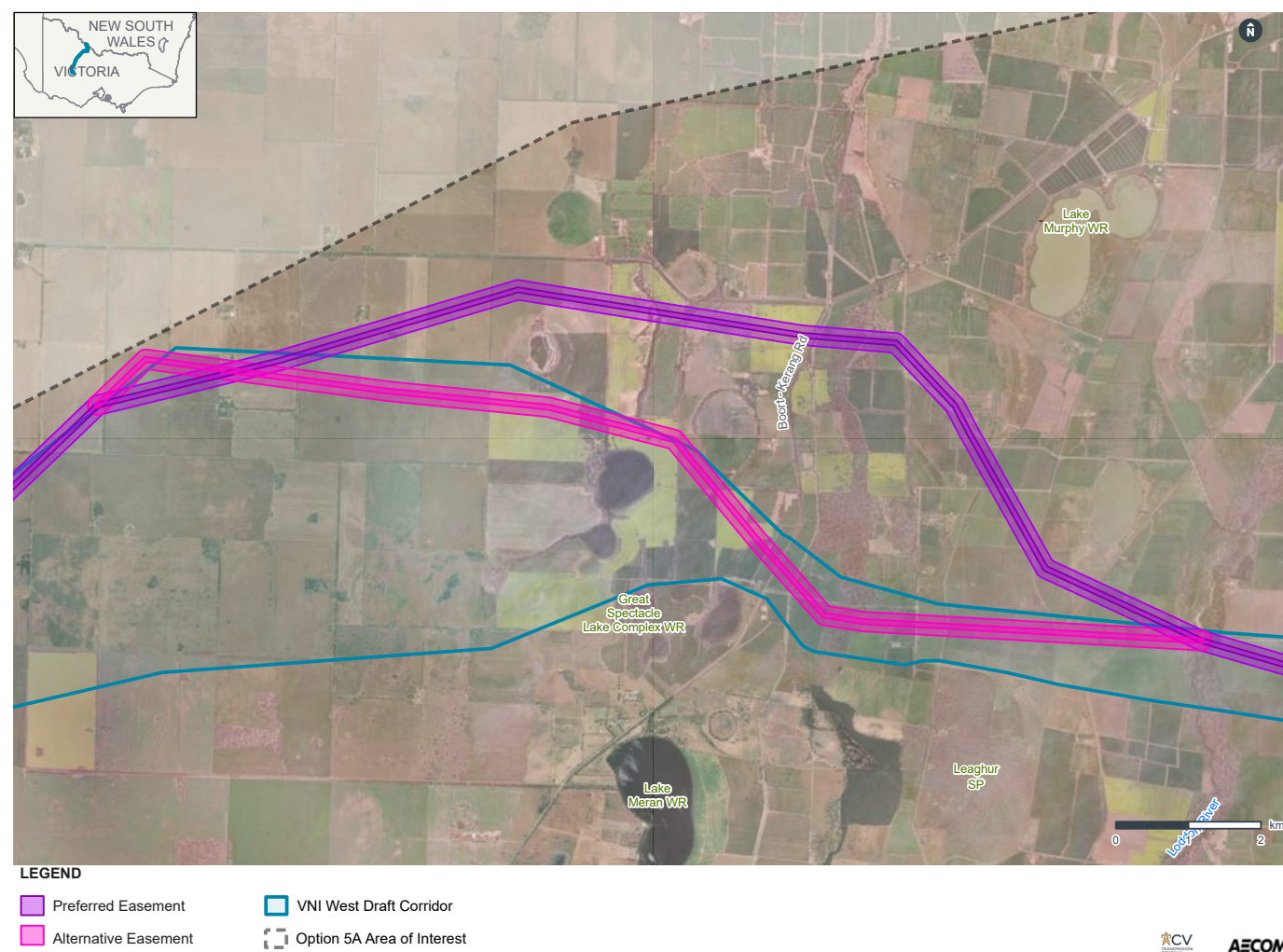


Figure 2: Easement Options at Meering West

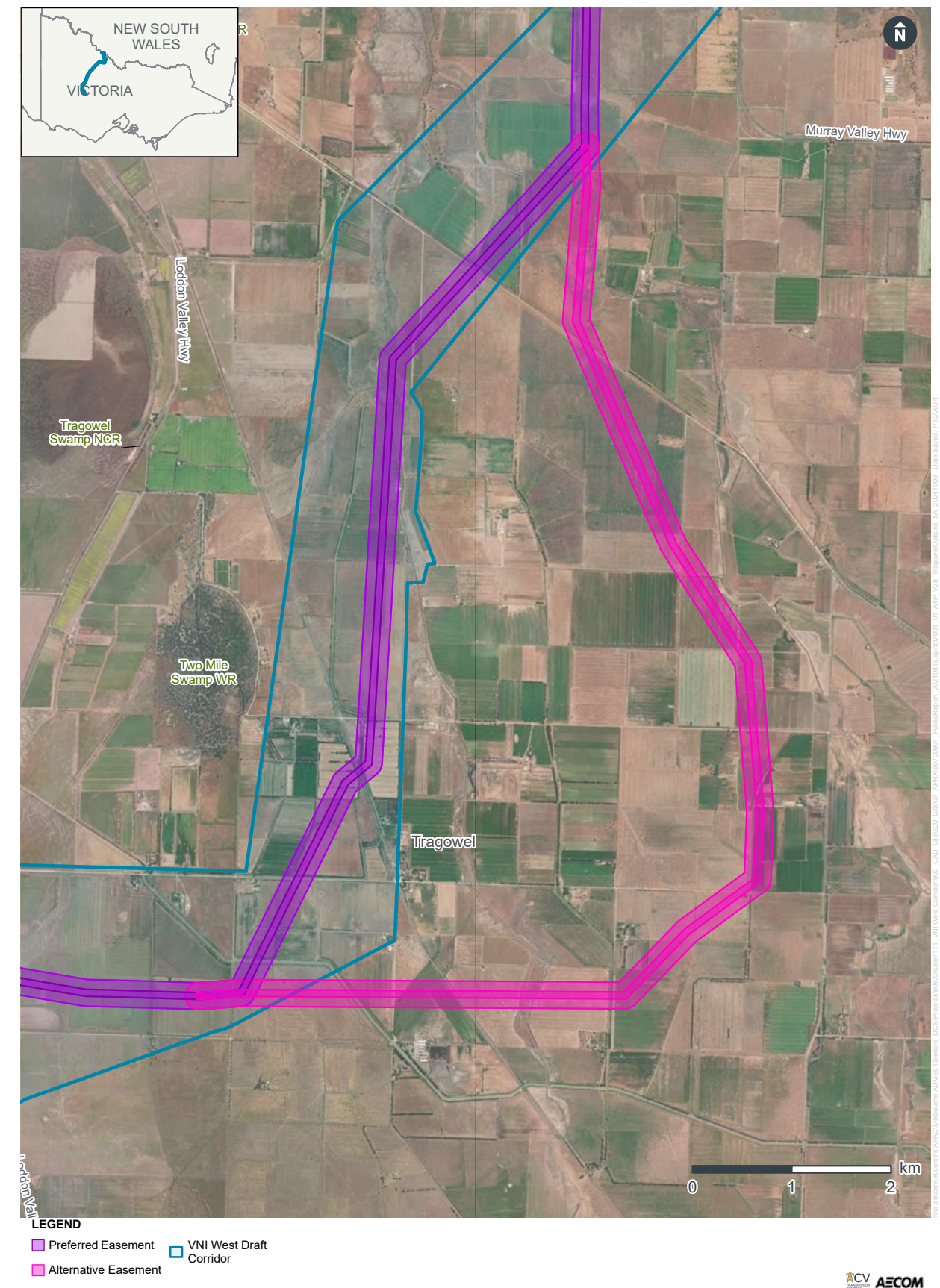


Figure 3: Easement Options at Tragowel

Terminal Station Infrastructure

The VNI West Project will require a new terminal station in the northern region of the Project area due to the requirement for the 500 kV line to interface with the existing Bendigo-Kerang 220 kV transmission line.

Early studies were undertaken to identify a potential location for the proposed terminal station. This occurred early in the VNI West planning process as the terminal station is the starting point for the transmission lines. The Preferred Easement and location of infrastructure such as towers could not commence without certainty about the terminal station location.

TCV assessed a number of potential locations in the vicinity of where the terminal station was required which were large enough to house a 500 / 220 kV terminal station. Studies were conducted including environmental, cultural heritage, and flooding assessments. The sites were assessed for their environmental and technical suitability prior to selection of the least constrained site. As flooding is an issue throughout the region, detailed flood modelling was undertaken for the preferred site to inform the terminal station design and ensure that potential impacts such as diversion of surface water flows would not create unacceptable impacts.

Key attributes considered in identifying an appropriate site with consideration of distance to existing sensitive land uses, accessibility from a major road, level of disturbance of the land with minimal environmental values, and proximity to the Murray River Renewable Energy Zone.

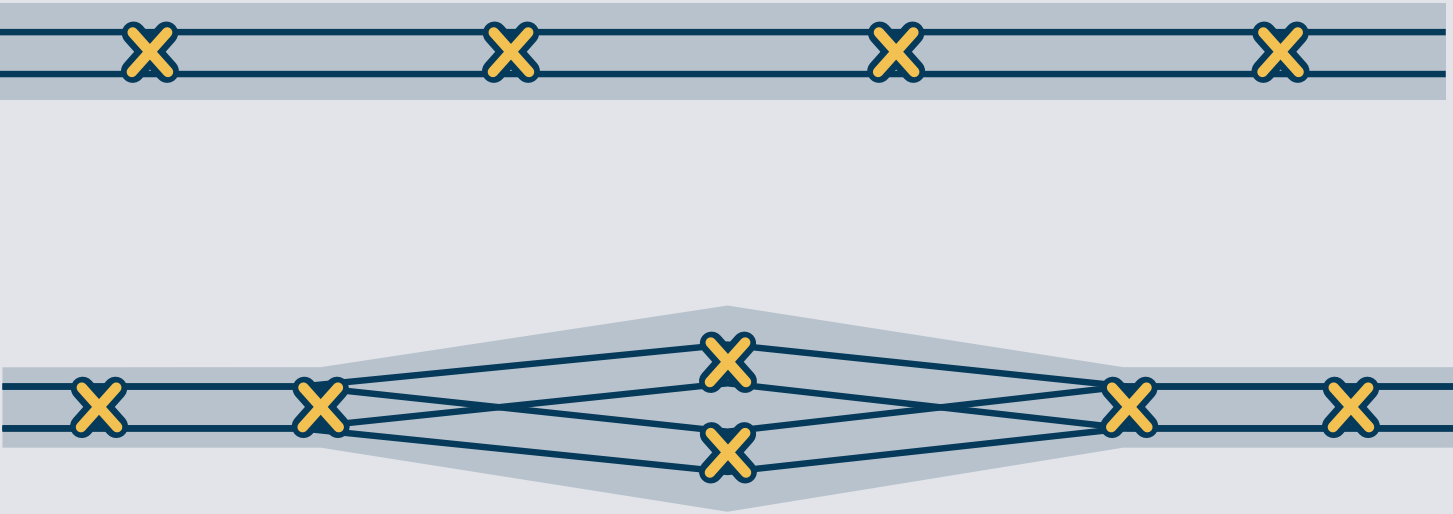
Based on the technical and environmental assessments of all options, TCV acquired 156 Tragowel Road, Tragowel in early January 2024 as the most appropriate location to house the proposed terminal station.

The suitability of the proposed Tragowel Terminal Station site will be fully assessed as part of both the EES and Commonwealth environmental approvals process.

The following sections of this report outline the constraints and rationale for selection of the Preferred Easement in each section of the Project area.

Transposition Locations

Transposition locations are required for longer transmission lines in order to balance the electrical load of the line. At roughly every third of the transmission line, the conductors (lines) are crossed over to meet the technical requirements of the line and improve electrical efficiency for the system. Two smaller, single-circuit towers are placed side by side to facilitate this. In the VNI West Preferred Easement design, transposition locations are required near Swanwater and Glenloth. The details including the dimensions of this wider section will be finalised as part of the Project’s detailed design, however the approximate area is anticipated to be less than 170 metres wide and approximately 900 metres long.



Transmission towers

Transmission lines

Easement area

Figure 4: Transposition Location Example



4.1 Northern Region

The northern region of the Preferred Easement runs from the Murray River, where the Project will cross into New South Wales and connect with the Transgrid portion of the Project to the Great Spectacle Lakes Complex Wildlife Reserve in the vicinity of Meering West.

Consultation in this area highlighted complexities including higher density of housing and intensive development due to proximity to Kerang township, associated social infrastructure such as distribution power lines and a number of airfields in the area. Further constraints include ecology and proximity to the Kerang Ramsar site as the easement heads south from the Murray River. A summary of the key constraints which have informed selection of the Preferred Easement and have been avoided wherever possible in this region include:

- Known dwellings (maintaining minimum 300 metre distance)
- Airstrips and airfield.
- Water channels
- Existing lateral irrigation systems
- Animal husbandry operations including emu, poultry, and piggery
- Flood prone areas
- Areas of remnant vegetation, wildlife reserves, and endangered and sensitive ecological vegetation classes
- Dry lakes
- Areas of known solar and wind farm development
- Areas of Cultural Heritage sensitivity
- Potential Brolga and other waterbird habitats
- DCCEEW modelled current wetlands, including those that provide potential habitat for Brolgas and other waterbird species

Based on an assessment of these constraints, the Preferred Easement and alternative easement through the northern region, are shown in Figures 5 and 7. While transmission towers can be in flood prone areas, the Loddon River floodplain is highly constrained in relation to locating infrastructure and contains many areas of remnant vegetation, cultural heritage,

wetlands and habitats for Brolgas and other waterbird species.

In Figure 5, the Preferred Easement traverses from the Murray River to Murrabit West. The location of the easement in this area has required careful consideration of many constraints including, a higher density of residential development with the attendant objective of maintaining a minimum 300 metres from these dwellings. Considerations included existing and planned lateral irrigation systems, DCCEEW modelled ecological vegetation classes, and cultural heritage values along the Murray River.

Engagement with community and landholders resulted in the Murray River crossing point being located west of Henry Lane in Benjeroop. Through separate studies in NSW, Transgrid also determined that this location was suitable for the connection into New South Wales transmission network.

The high density of dwellings towards Murrabit and Gonn Crossing meant that location of the Preferred Easement in these areas could not satisfy the project Evaluation Criteria, in particular, buffer distances from dwellings and the likelihood of more material impacts of significant mature vegetation and cultural heritage values. On this basis, the Preferred Easement is located in the western end of the Draft Corridor where it is possible to maintain the minimum 300 metre distance from known dwellings and minimise ecological and cultural impacts.

The Preferred Easement follows a route that minimises potential impacts to these land uses while heading northwest towards Murrabit West. The easement in this area entails a slight diversion outside of the Draft Corridor after consultation with potentially impacted landholders in this area.

As shown in Figure 5, the Preferred Easement maintains a minimum clearance of 300 metres from private dwellings. An aviation study was conducted in this area to ensure that the Preferred Easement maintains adequate clearances from Kerang Airport and a substantial private aviation business to the east of Kerang. The Preferred Easement diverts around a large area of DCCEEW modelled wetlands and endangered ecological vegetation classes while still maximising separation from

North Section

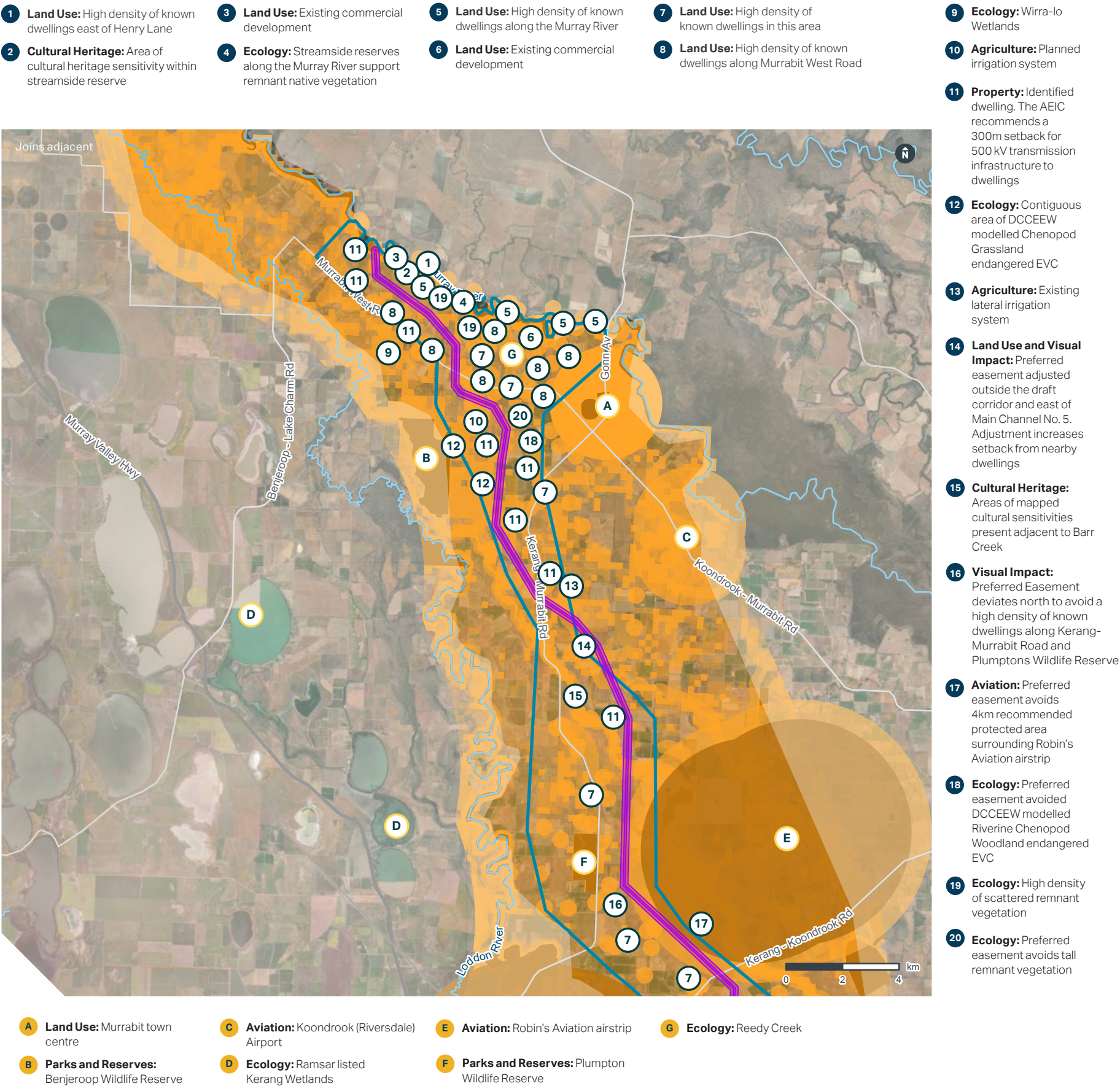
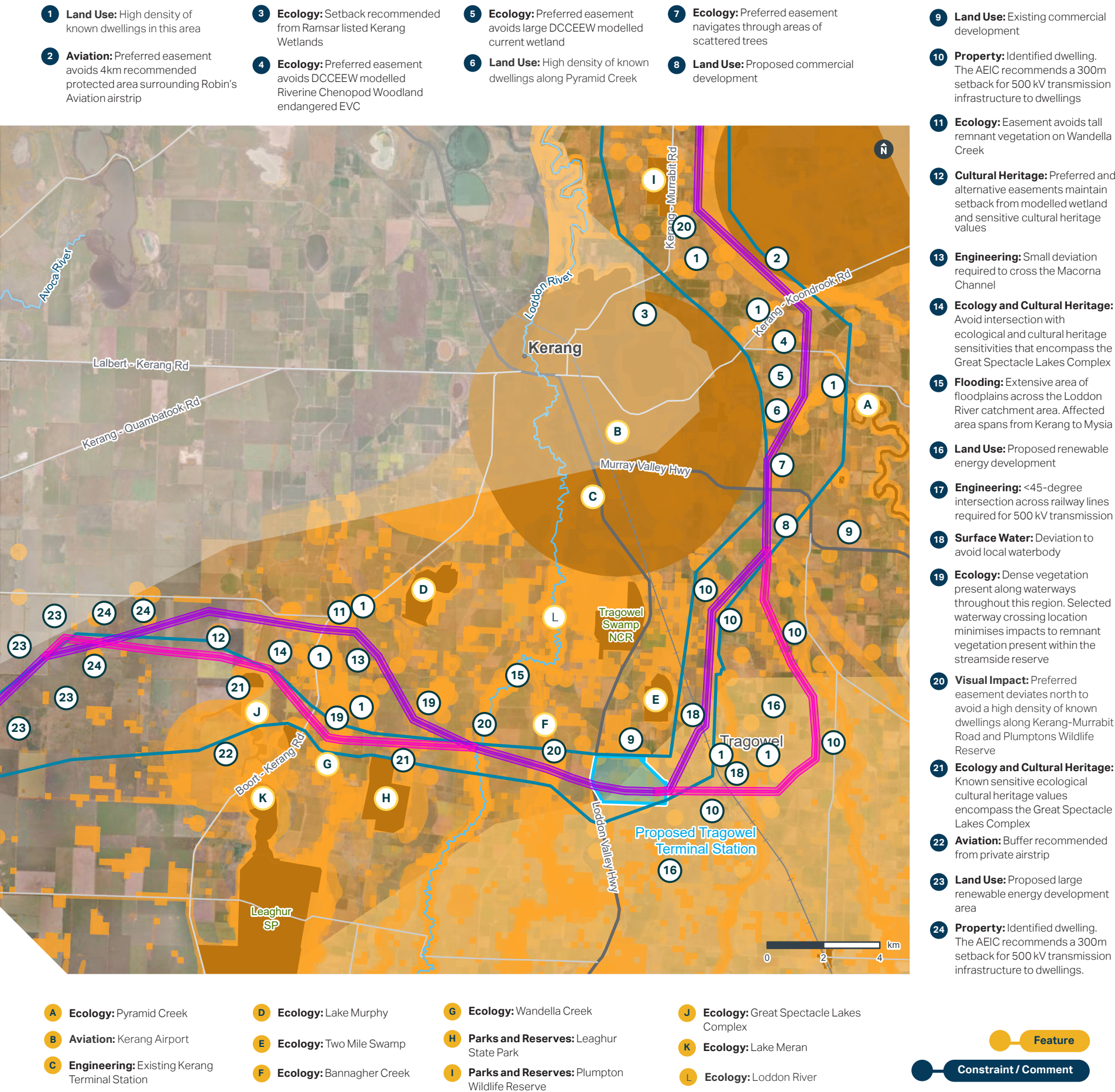


Figure 5: Northern Region (1/2)





4.2 North Central Region

The north-central region of the Preferred Easement runs from the Great Spectacle Lakes Complex Wildlife Reserve to the Avoca River.

Community and interest group inputs in this area highlighted the importance of minimising impact on social, ecological and cultural heritage around the Great Spectacle Lake Complex. Sharing of knowledge about the future expansion of the Glenloth lateral irrigation development allowed this to be considered in when determining the Preferred Easement. A summary of the key constraints which have informed selection of the Preferred Easement and have been avoided wherever possible in this region include:

- Known dwellings
- Existing and proposed Glenloth lateral irrigation systems
- Sensitive ecological vegetation classes, remnant vegetation, and scattered trees
- Areas of known endangered species habitats
- Areas covered by a Bushfire Management Overlay
- DCCEEW modelled wetlands
- Quambatook Bushland Reserve
- Wind turbines at Meering West Wind Farm
- Brolga and other bird habitat buffer areas around wetland habitats
- Minimising impact to cultural heritage areas of significance north of Great Spectacle Lake

Based on an assessment of these constraints, the Preferred Easement through the north-central region is shown in Figures 7 and 8.

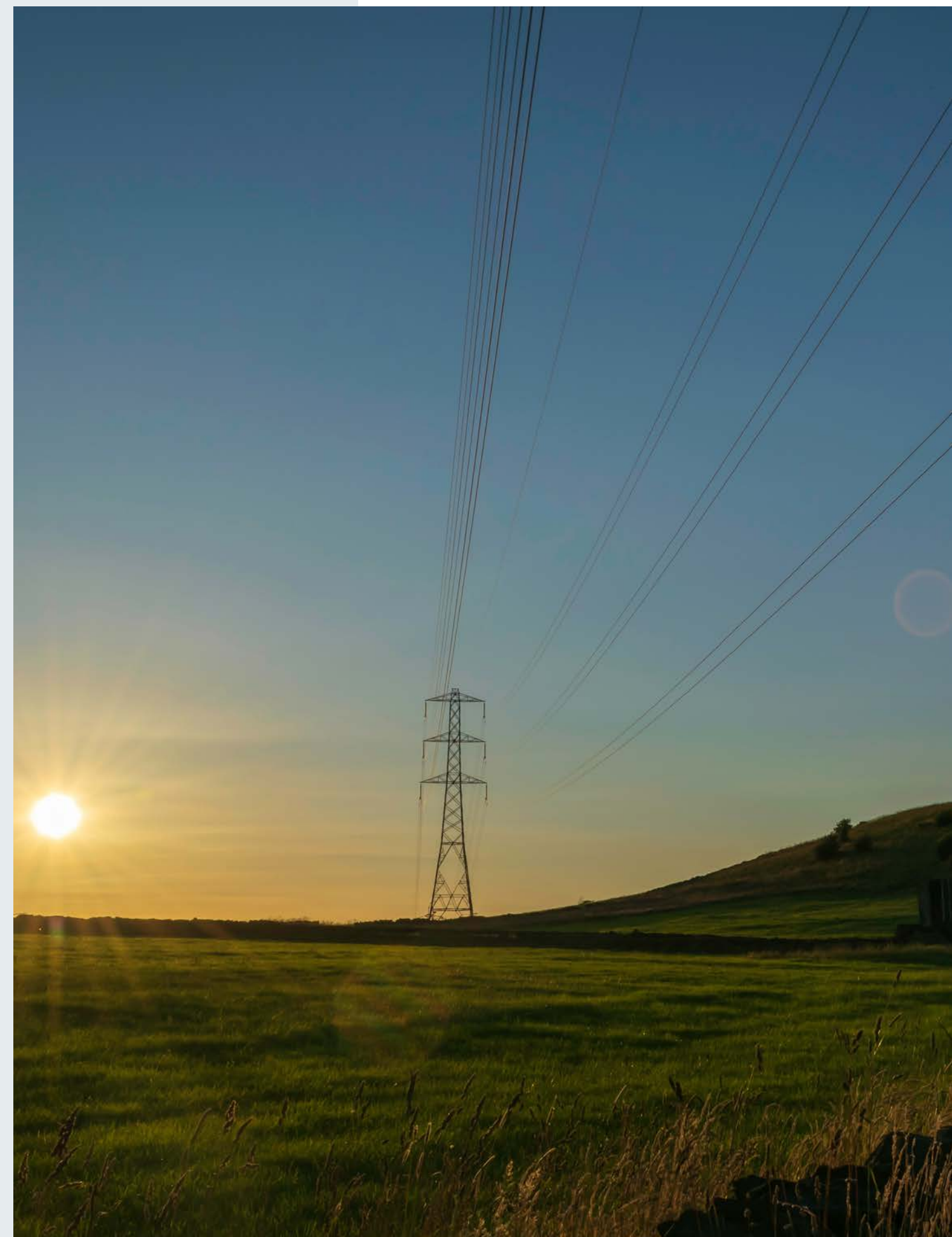
The route heads in a south-westerly direction from Meering West. In this area, the Preferred Easement is located to consider the high density of dwellings and agricultural businesses. The Meering West Wind Farm is in the early stages of planning and TCV will continue to work closely with the wind farm proponent to ensure that the Preferred Easement minimises impacts on all landholders in the area.

As indicated in Figure 8, the Glenloth area is characterised by several existing and planned lateral and flood irrigation systems. Location of transmission infrastructure in this area would have restricted the ability to operate these lateral systems effectively; the area is also constrained by wetlands and other ecological values presenting challenges in locating the easement. Ongoing engagement in the area enabled the Preferred Easement to be located so the lateral irrigation systems could be avoided. In the Glenloth East area, the Preferred Easement was located to preserve a minimum distance of 300 metres from all known existing dwellings.

A transposition location will be required in the area south of Boort-Weir Road, where the easement widens to accommodate two transposition towers side by side (refer to Figure 4 for description of transposition towers).

An area near the southwestern border of the Draft Corridor was identified through community engagement as habitat for an endangered species. The Preferred Easement deviates around this area to avoid impacts on remnant vegetation patches and individual large trees important as habitat for this species.

To cross the Avoca River, a crossing point was selected for the Preferred Easement which minimised impact to remnant vegetation in the streamside reserve. After crossing the Avoca River, the easement continues southwest towards Glenloth East and navigates through several areas to minimise the impacts on DCCEEW modelled ecological vegetation classes and high-quality remnant vegetation.



- 1

Property: Identified dwelling. The AEIC recommends a 300m setback for 500 kV transmission infrastructure to dwellings.
- 2

Ecology and Cultural Heritage: Known sensitive ecological and cultural heritage values encompass the Great Spectacle Lakes Complex
- 3

Land Use: Proposed large renewable energy development area
- 4

Aviation: Buffer recommended from private airstrip
- 5

Ecology: Preferred easement located to minimise impacts to scattered remnant vegetation
- 6

Ecology: Preferred easement avoids patches of remnant vegetation in this area
- 7

Ecology: Dense vegetation present along waterways throughout this region. Selected waterway crossing location minimises impacts to remnant vegetation present within the streamside reserve
- 8

Flooding: Extensive area of floodplains across the Loddon River catchment area. Affected area spans from Kerang to Mysia
- 9

Surface Water: Deviation to avoid local waterbody
- 10

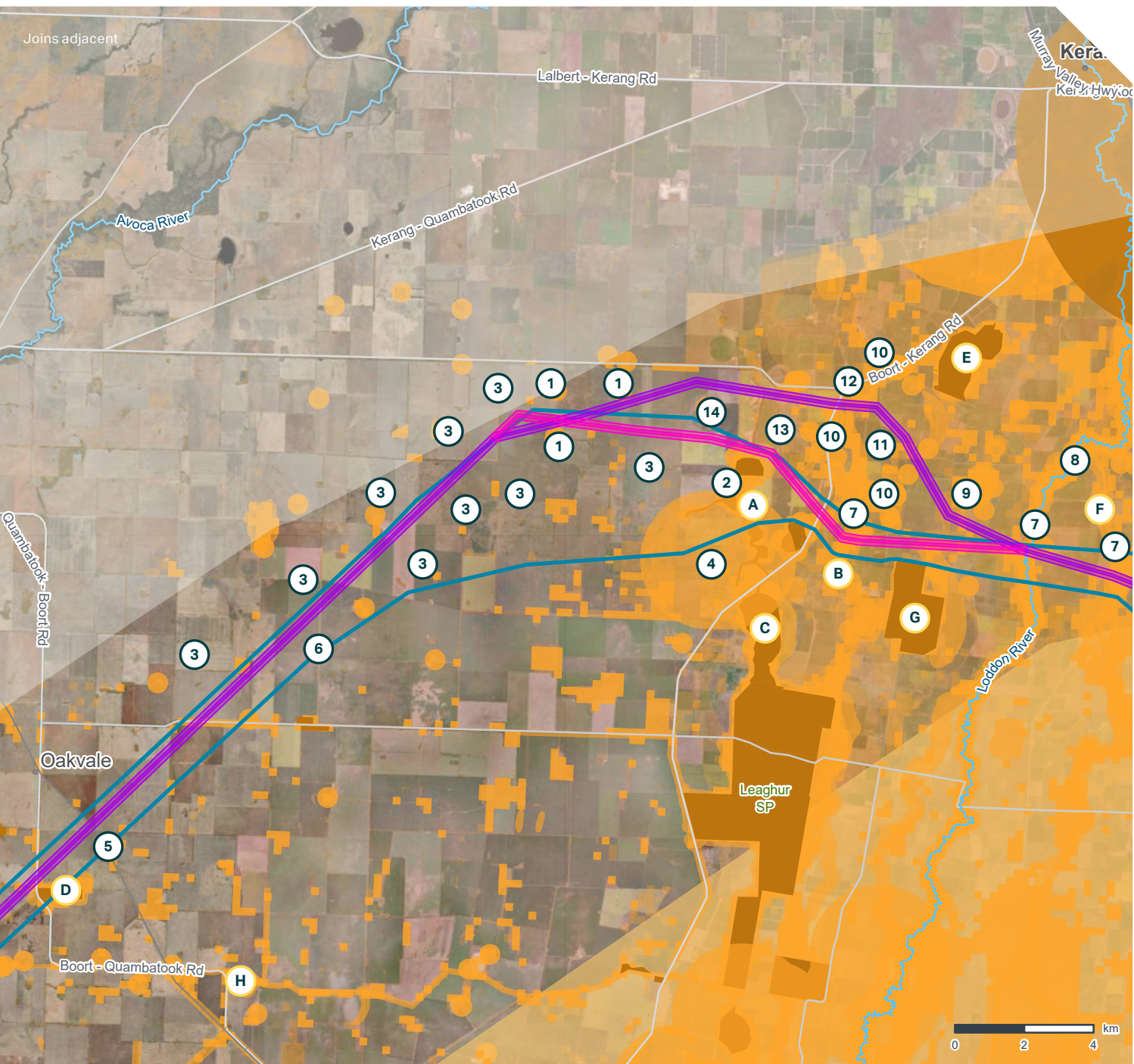
Visual Impact: High density of known dwellings in this area
- 11

Engineering: Small deviation required to cross the Macorna Channel
- 12

Ecology: Easement avoids tall remnant vegetation on Wandella Creek
- 13

Ecology and Cultural Heritage: Avoid intersection with ecological and cultural heritage sensitivities that encompass the Great Spectacle Lakes Complex
- 14

Cultural Heritage: Preferred and alternative easements maintain setback from modelled wetland to minimise impacts to sensitive cultural heritage values



- A

Ecology: Great Spectacle Lakes Complex
- B

Ecology: Wandella Creek
- C

Ecology: Lake Meran
- D

Parks and Reserves: Quambatook Bushland Reserve
- E

Ecology: Lake Murphy
- F

Ecology: Bannagher Creek
- G

Ecology: Leaghur State Park
- H

Ecology: Gredgwin Bushland Reserve

- 1

Land Use: High density of existing lateral irrigation systems
- 2

Ecology: Selected waterway crossing avoids tall remnant vegetation
- 3

Ecology, Surface Water and Cultural Heritage: Large contiguous area of DCCEEW modelled current wetlands, modelled flood plain and mapped area of cultural heritage sensitivity associated with the Avoca River floodplain
- 4

Land Use: Preferred easement deviates to avoid impacts to known existing and proposed lateral irrigation systems in the area
- 5

Ecology: Preferred easement avoids patch of remnant vegetation
- 6

Visual Impact: Concentration of known dwellings
- 7

Property: Identified dwelling. The AEIC recommends a 300m setback for 500 kV transmission infrastructure to dwellings
- 8

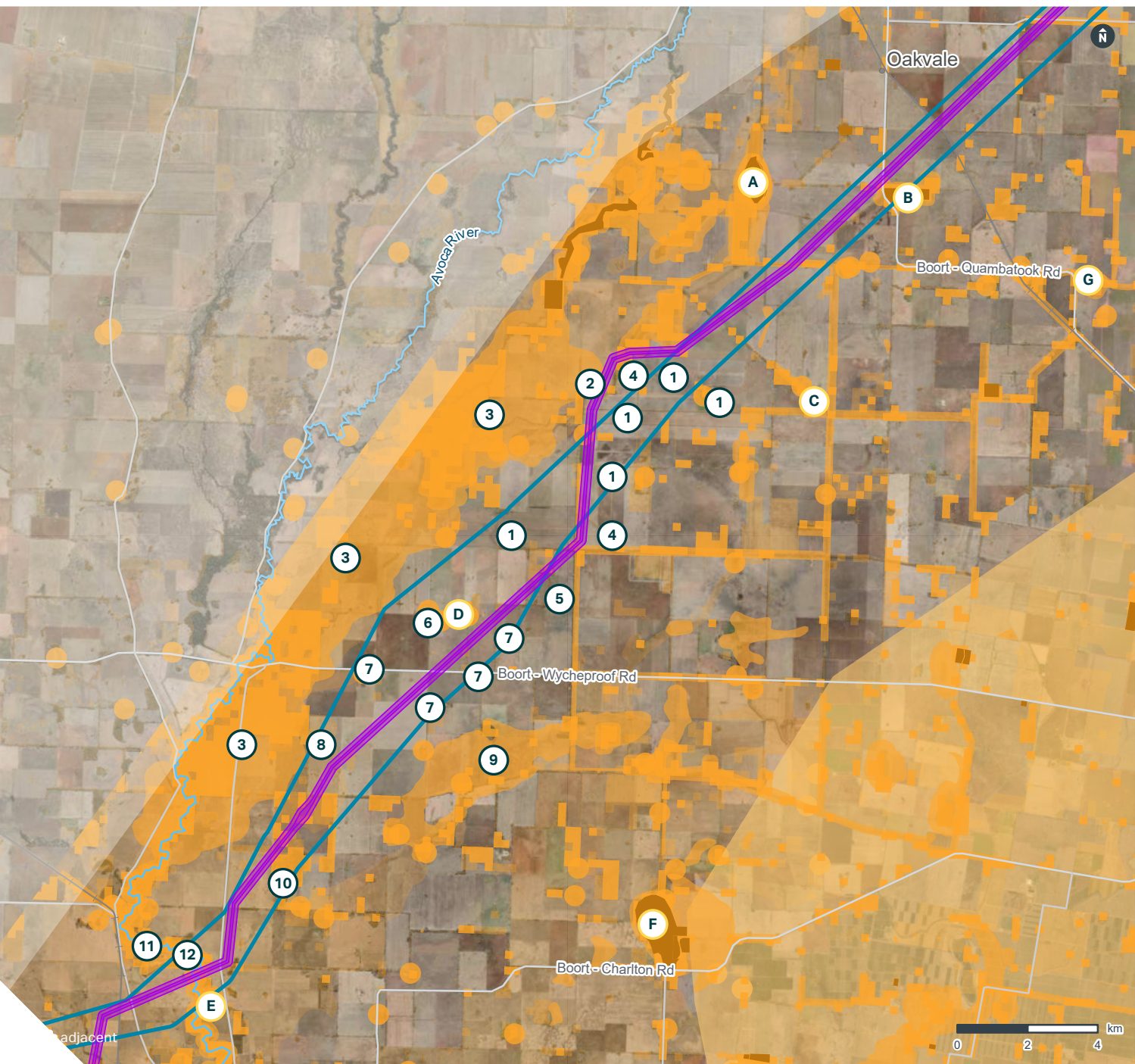
Ecology: Identified habitat of Inland Carpet Pythons
- 9

Cultural Heritage: Registered areas of cultural heritage
- 10

Ecology: High quality remnant native vegetation in this area
- 11

Ecology: High quality remnant native vegetation along the Avoca River
- 12

Ecology: Preferred easement located to minimise impacts to remnant vegetation present within streamside reserve



- A

Parks and Reserves: Griffith Lagoon Nature Conservation Reserve
- B

Parks and Reserves: Quambatook Bushland Reserve
- C

Parks and Reserves: Marmal Flora Reserve
- D

Land Use: Glenloth East Fire Station
- E

Ecology: Avoca River
- F

Ecology: Lake Marmal
- G

Ecology: Gredgwin Bushland Reserve

Figure 7: North Central Region (1/2)

Figure 8: North Central Region (2/2)



4.3 South Central Region

The south-central region of the Preferred Easement runs from the Avoca River crossing to the Sunraysia Highway.

A summary of the key constraints which have informed selection of the Preferred Easement and have been avoided wherever possible in this region include:

- Cope Cope Airport
- St Arnaud Water Reservoir
- Localised important high points
- Wooroonook Lakes and identified potential Brolga habitat
- Identified seasonal creeks on private property
- Potential historic places
- Sensitive ecological vegetation classes, remnant vegetation, and scattered trees
- Identified known areas of cultural heritage sensitivity, including a concentration of sensitive landforms west of Charlton
- DCCEEW modelled current wetlands
- Remnant vegetation within streamside reserve along the Avoca River north of Teddywaddy

Based on an assessment of these constraints, the Preferred Easement through the south-central region and is shown in Figures 9 and 10.

As a result of further investigations and stakeholder inputs in this section of the Project area, the Preferred Easement is located adjacent to the original Draft Corridor in the Teddywaddy area and west of Charlton. This was based on consideration of a number of constraints existing in close proximity to each other which resulted in limited options being available to locate the Preferred Easement. These included the presence of dwellings, historic homes, flora and fauna sensitivities including high-quality remnant vegetation and ecological vegetation classes, proximity to several high

points and cultural heritage sensitivities.

East of Wooroonook the Preferred Easement is located to minimise impacts on environment and social constraints.

The Preferred Easement deviates east to maintain a minimum clearance distance of 300 metres from known dwellings, and to avoid an area of DCCEEW modelled ecological vegetation classes, and areas of cultural heritage sensitivity and then traverses south adjacent to Swanwater Road, north of the Sunraysia Highway.

The Preferred Easement avoids the St Arnaud Water Reservoir which is located north of the Sunraysia Highway and continues south towards the Avon River.

A transposition location will be required in the area south of the St Arnaud Water Reservoir where the easement widens to accommodate two transposition towers side by side (refer to Figure 4 for description of transposition towers).



- 1

Ecology: High quality remnant native vegetation along the Avoca River
- 2

Cultural Heritage: Areas of mapped cultural sensitivities
- 3

Engineering: <45-degree intersection across railway lines recommended for 500 kV transmission
- 4

Land Use: Concentration of known dwellings
- 5

Ecology and Cultural Heritage: Known sensitive ecological and cultural heritage values in this area
- 6

Visual Impact: Identified dwelling. The AEIC recommends a 300m setback for 500 kV transmission infrastructure to dwellings
- 7

Ecology and Cultural Heritage:: Preferred easement avoids areas of remnant vegetation, known cultural sensitivity, localised high points and historic heritage
- 8

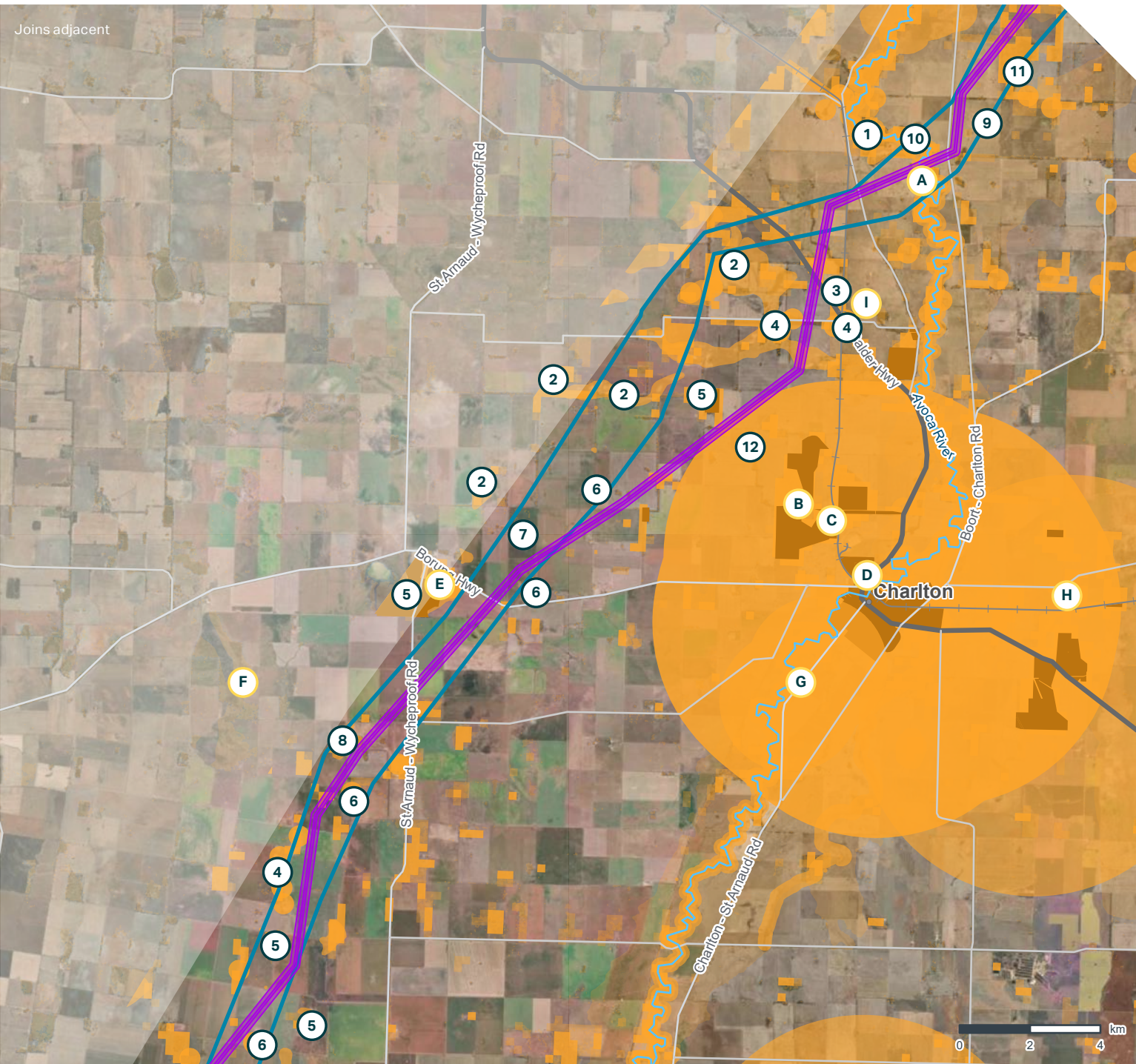
Ecology: Preferred easement avoids a series of DCCEEV modelled current wetlands
- 9

Ecology: Preferred easement deviated to avoid scattered remnant trees and minimise vegetation impacts along Glenloth Road
- 10

Ecology: Preferred easement located to minimise impacts to remnant vegetation present within streamside reserve
- 11

Ecology: High quality remnant native vegetation in this area
- 12

Land Use: 5km buffer recommended from Charlton township



- A

Ecology: Avoca River
- B

Land Use: Charlton Golf Club
- C

Visual Impact: Topographic high point at Mt Doboobetic and Klunders Hill lookout, 5km buffer recommended
- D

Land Use: Charlton township
- E

Ecology: Wooroonook Lakes (Middle and East) Wildlife Reserve
- F

Visual Impact: Mount Jeffcott
- G

Aviation: Charlton Airport
- H

Visual Impact: Topographic high points within Charlton East Bushland Reserve and Howells Hill Scenic Reserve. 5km buffer recommended
- I

Land Use: Teddywaddy

Figure 9: South Central Region (1/2)

- 1

Ecology and Cultural Heritage: Known sensitive ecological and cultural heritage values in this area
- 2

Property: Identified dwelling. The AEIC recommends a 300m setback for 500 kV transmission infrastructure to dwellings.
- 3

Land Use: Preferred easement deviated to run parallel with Swanwater Road
- 4

Engineering: <45-degree intersection across railway lines recommended for 500 kV transmission
- 5

Land Use: Deviation to avoid St Arnaud Water Reservoir
- 6

Engineering: Preferred easement widens to accommodate transposition location
- 7

Ecology : Preferred easement navigates through scattered trees in paddocks to minimise the need for vegetation clearing



- A

Aviation: Cope Cope Airport
- B

Land Use: St Arnaud Water Reservoir
- C

Transport: Swanwater Railway Station
- D

Heritage: Swanwater homestead and cemetery complex historic heritage place
- E

Land Use: Bayena Road

Figure 10: South Central Region (2/2)



4.4 Southern Region

The VNI West Project is required to connect the new 500 kV double circuit transmission line into the new Bulgana Terminal Station, established as part of the Western Renewables Link (WRL) Project, in the southern region of the Preferred Easement.

The key constraints within this area have been largely drawn from the existing mapped and publicly available knowledge of this region. The local knowledge we could obtain during consultation has been considered, in particular in regard to aerial operational activities of this area.

Community and interest group inputs in this area also highlighted the ecological and cultural heritage values around the Wimmera River in the south of the region.

A summary of the key constraints which have informed selection of the Preferred Easement and have been avoided wherever possible in this region include:

- Proximity to Joel Joel township and fire station
- Concentration of dwellings north of Landsborough Road, proximity of township of Landsborough West and known dwellings
- Known existing and proposed private airstrips as discussed with landowners including near Greens Creek
- Areas of dense vegetation and endangered ecological vegetation classes
- Concentration of registered Cultural Heritage along the Wimmera River
- Areas of known high ecological value, presence of brolga and other waterbird habitat, Bolangum Flora Reserve, and other nature reserves
- DCCEEW modelled current wetlands
- Scattered trees
- Remnant vegetation along the Avon River
- Areas of known renewable energy developments, including Watta Wella Wind Farm

Based on an assessment of these constraints, the Preferred Easement through the southern region is shown in Figures 11 and 12.

The Anderson Creek and Avon River crossings for the Preferred Easement occur in the region west of Mount Bolangum Nature Conservation Reserve. The crossing locations were identified to minimise impacts on remnant vegetation and cultural heritage sensitivity. North of the Avon River, the Preferred Easement deviates to minimise impacts to a DCCEEW modelled wetland.

As shown in Figure 12, the area north of Greens Creek is characterised by several small reserves and river crossings. The Preferred Easement navigates between Bolangum Flora Reserve and a small private airstrip and scattered vegetation before diverting to the north at an appropriate distance from the airstrip. The easement crosses Richardson River at a point which minimises impacts to existing vegetation and avoids Willaring Streamside Reserve.

The western option of the Draft Corridor in the southern region is highly constrained due to the proposed Watta Wella Wind Farm development, which is well progressed through the planning approvals process. Additional constraints include the presence of remnant native vegetation along the Wimmera River, known dwellings and cultural heritage sensitivity. Based on the proposed wind turbine arrangement and sensitivities along the western corridor in this section, locating a transmission line easement that could maintain safe operation of both the transmission line and wind farm was complex and highly constrained.

The Wimmera River crossing was identified at a point where the vegetation is comparatively less dense than the surrounding streamside reserve and minimises potential impacts to identified cultural heritage sensitivity along the river and waterways. North of the river crossing there are known dwellings where the objective was to maintain a minimum 300 metres setback which has been achievable. The Preferred Easement has also been able to avoid areas of remnant native vegetation north of Greens Creek in this area.



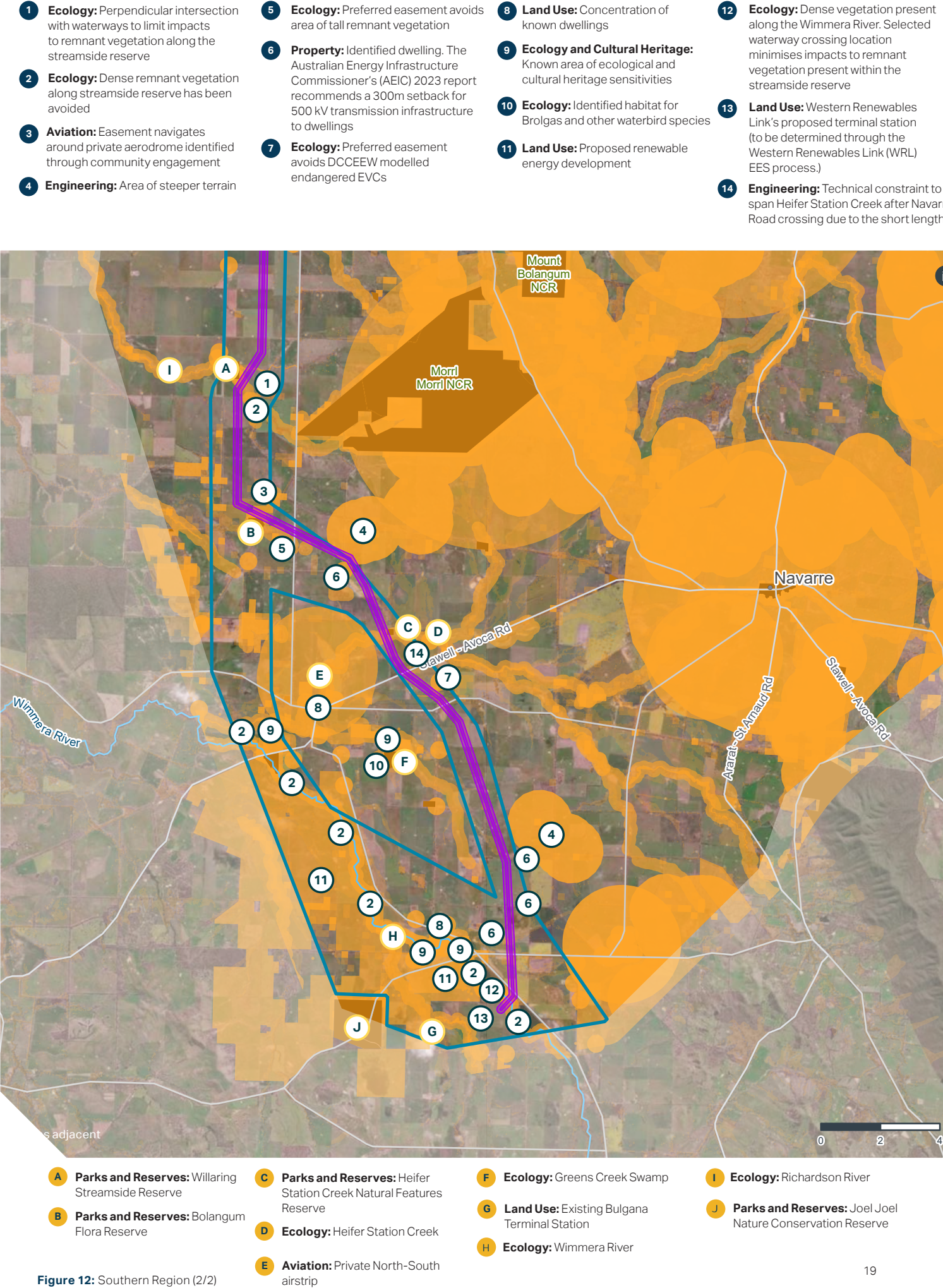
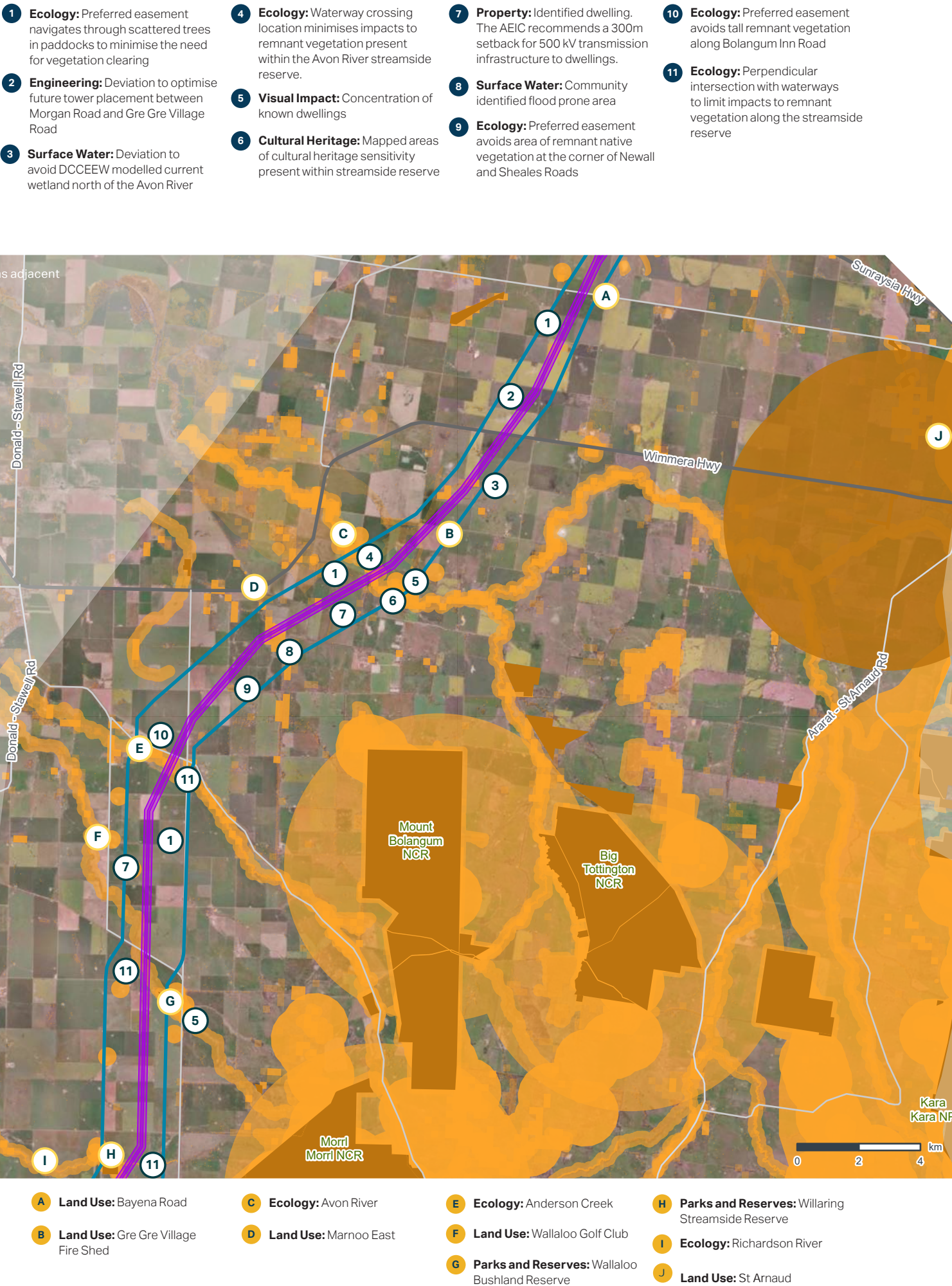


Figure 11: Southern Region (1/2)

Figure 12: Southern Region (2/2)

5. Next Steps

In the next stage of the Project, TCV will work to identify a final transmission infrastructure alignment within the Preferred Easement which will minimise impacts to people, businesses, the environment and farming activity as far as possible.

Working directly with landholders

- Engagement with landholders within the Preferred Easement is an important part of developing a final design, and TCV’s landholder liaisons will collaborate with individuals to minimise impacts to their farms and businesses as much as possible. Discussions are important and can influence on-the-ground design details, including the final location for transmission infrastructure such as towers.
- During this phase, TCV will begin discussions regarding construction planning, pending outcomes of the environmental approvals process. Potential impacts during construction will be considered as part of the EES studies, and TCV will work with landholders to identify how impact from construction can be minimised and/or mitigated.

Technical impact assessments and studies

- The Preferred Easement and the two alternative routes at Tragowel and Meering West will be the subject of further assessment under the EES.
- A range of expert studies will be undertaken to inform the EES, including agriculture, social, economic and environmental assessments. TCV will also carry out studies to support other project approvals such as Cultural Heritage Management Plans.
- The EES will be based on a reference design for the Project including the Preferred Easement and the proposed location of the infrastructure for both the terminal station, transmission lines and towers.

Community engagement and consultation

- TCV will continue to actively engage with local communities, stakeholders, Traditional Owners and landholders impacted by the Project to provide information about the investigations and assessments taking place under the EES, and opportunities to provide comments.
- An important opportunity for input to the EES process is consultation by the Victorian Department of Transport and Planning on the Draft Scoping Requirements, a public exhibition and consultation process that will allow the community to make formal submissions on matters which should be investigated. TCV encourages the community to provide input through this process to ensure that the EES is comprehensive in its coverage.
- Once finalised, the EES will be placed on public exhibition where submissions can be made by the community.

Final Project design

- Following completion of the EES process, and in the event of a favourable assessment of the EES by the Minister for Planning and the Commonwealth Government, TCV would progress with obtaining any other secondary approvals required for the Project.
- The final alignment including the detailed design of transmission infrastructure within the final easement would reflect the findings of EES assessments, engineering studies and input from the landholders. The EES will include an Environmental Management Framework (EMF) which contains all of the mitigation measures committed to by TCV which need to be given effect through the detailed design and operational phase of the Project.

