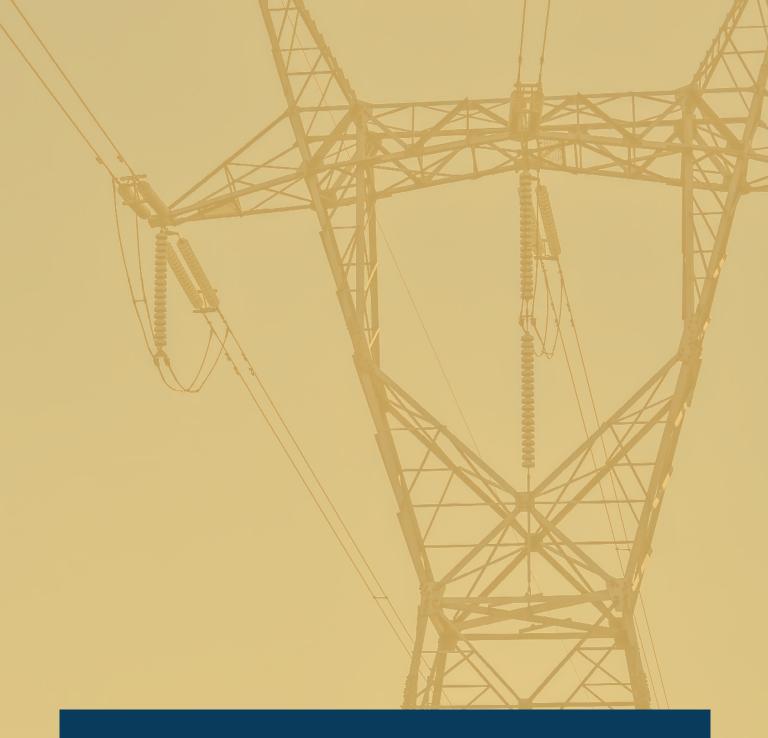


Report on the Draft Corridor for VNI West

October 2023



Transmission Company Victoria ABN 70 665 119 068



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VNI West Draft Corridor Public Report

1. Introduction

VNI West is a project to build a new transmission line between Victoria and New South Wales. It will harness clean, low-cost electricity from renewable energy zones (REZs) in both states and improve the reliability and security of electricity supply as ageing coal-fired power stations are retired.

AEMO Victorian Planning (AVP) and Transgrid (the New South Wales transmission planner) are completing the early planning and regulatory investment process for the proposed new 500 kV overhead transmission line, which will run from the Dinawan terminal station in New South Wales to Bulgana in Victoria, where it will connect to Western Renewables Link (WRL) near to the existing Bulgana Terminal Station (Figure 1).

Transmission Company Victoria (TCV) was established by AVP to progress planning and early works for the Victorian components of VNI West.

AECOM Australia Pty Ltd (AECOM) was engaged by TCV to identify environmental, planning and technical constraints and cultural values associated with the area of interest

An Environmental Constraints Summary Report was released in July 2023 for the area of interest. Environmental and technical constraints were identified based on detailed desktop analysis and expert workshops, along with information gathered through community and stakeholder engagement. Since the release of that report, TCV has continued working with communities within the area of interest to further refine the area of interest to identify a narrower corridor.

The Draft Corridor for Victorian component of VNI West has been identified following feedback from Traditional Owners, landholders, community members, government agencies and stakeholders, as well as data from ongoing technical, engineering and environmental assessments. The corridor refinement process is discussed later in this report.

The Draft Corridor TCV has identified narrows the broader area of interest down from the approximate 5km - 50 km width to an area approximately 2 kilometres wide along most of the route with wider areas in several locations where flexibility is needed in relation to connection points or to consider options. In particular:

- there are corridor options in the south to provide flexibility for connection into the WRL project at Bulgana
- a wider area has been maintained in the north to provide flexibility for crossing the Murray River and connecting with the New South Wales component of the project.

Transgrid has similarly identified a draft corridor option from the Murray River crossing point to Dinawan in New South Wales.

TCV originally planned to identify and release a 500 m -1 km corridor. However, after assessment of available data and inputs from stakeholder engagement, a wider corridor has been maintained to provide greater flexibility and to ensure TCV identifies the best route with the least impact on communities.

The Draft Corridor is shown and discussed in detail in Section 3 of this report.

The final easement required for the project will typically be 70 m -120 m wide within the Draft Corridor and will be determined after further conversations with landholders and Traditional Owners, studies and consideration of inputs from stakeholders.

In the near future, TCV will refer the Draft Corridor to the Victorian Minister for Planning to consider whether an *Environment Effects Statement (EES)* will be required for the project under the Environment Effects Act 1978 and

to the Commonwealth Minister to determine whether approval is required under the *Environment Protection* and *Biodiversity Conservation Act 1999*.

VNI West cannot proceed without environmental and planning approval from the State and Commonwealth Governments, which will require comprehensive environmental assessments and stakeholder engagement over the next 12–18 months.

Draft corridor for the VNI West project



Figure 1: VNI West Project Area

Why does Victoria need VNI West?



VNI West will harness clean, low-cost electricity from renewable energy zones in Victoria and New South Wales and improve the reliability and security of electricity supply in both states.



VNI West is needed, because Australia's ageing coal-fired generators are exiting the market after decades of great service. And more than that, their age and the economics of the electricity market are accelerating these closures.



It will harness more than 3.4 GW of renewable generation in the Murray River and Western Victorian renewable energy zones.



We need projects like VNI West to connect these new and diverse sources of renewable electricity with Australian homes and businesses.



Existing transmission cannot be relied upon, because the geographic location of generation has changed.



VNI West is forecast to deliver approximately \$1.4 billion in net benefits and will deliver significant savings for consumers.



The lowest cost replacement for coal generation is renewable energy from the sun and the wind – backed up by batteries, gas and hydro to smooth the bumps in production.



VNI West is a transformative transmission project that will play a critical role in meeting the Victorian Government's renewable energy targets.



2. Route Refinement process



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).



Analysing the options

AEMO and Transgrid commenced a Regulatory Investment Test for Transmission (RIT-T) in 2019 which is an economic cost-benefit test to establish the business case for the project and confirm that the investment, ultimately paid for by consumers, will deliver sizable economic benefits. The various technical options were initially analysed in order to find a preferred option that maximises the net market benefits for consumers while meeting the power system needs.

In recognition that the RIT-T process is an economic cost benefit analysis which does not take into account social and environmental considerations, AEMO incorporated environmental and social considerations through a multi-criteria analysis (MCA).

The MCA was carried out to identify 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. The results of the MCA, market modelling and information received through the Regulatory Investment Test for Transmission (RIT-T) process informed the final option recommendation which outperformed other options in key land, environment and planning assessment criteria.

2



Identifying a preferred option

The 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 north west Victoria, including locations for connecting the project into the existing network.

We are here

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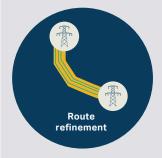


Identifying Constraints

The next step was to identify a Draft Corridor that will 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 aerodomes, significant heritage sites, RAMSAR wetlands, conservation parks and recreation reserves and areas of high ecological value. A significant buffer distance from towns was also adopted. The overall approach adopted to refine the broad area of interest down to a narrower Draft Corridor is further discussed in Section 3.

Next step





Working with Landholders and Traditional Owners

Through direct engagement with landholders,
Traditional Owners and other stakeholders within
the Draft Corridor, TCV will build its understanding
of how the land is used today to verify location
constraints, and discuss how to minimise land-use and
environmental impacts through planning and design. A
comprehensive environmental assessment is required
under Government regulation and further environmental
and technical evaluation will be carried out across the
corridor over 12-18 months.



6

Micrositing the final easement

TCV will work directly with landholders, Traditional Owners and other stakeholders to find the best location for the transmission alignment to minimise impacts to farming operations, agriculture, cultural values and communities. Input from consultation together with the results of environmental and technical studies will provide important input into the siting of the final alignment within a 70m-120m wide transmission easement. Construction is scheduled to commence from 2026 once all State and Commonwealth Government planning approvals have been obtained.

3. Draft Corridor

The Draft Corridor selected by TCV from the broader area of interest is shown in **Figure 2**. The Draft Corridor is also shown on the <u>Social pinpoint</u> map on the TCV website to enable stakeholders who provided inputs to the area of interest refinement process to locate their comments in relation to the Draft Corridor.

The overall approach adopted to refine the broad area of interest down to a narrower Draft Corridor was based on the principle of 'avoidance' of sensitive environmental, social and cultural values wherever possible.

If engineering, technical and financial criteria were the only criteria used to locate infrastructure, the transmission lines would be primarily straight lines over the shortest distance between connection points.

Instead, TCV has made a commitment to minimise impacts on environmental, social and cultural values wherever possible. This avoidance approach has resulted in a refined Draft Corridor which seeks to navigate constraints and minimise potential impacts as shown in **Figure 3**. Darker areas on the figure are considered to be more constrained compared to lighter areas.

Desktop assessments of the area of interest were conducted by seventeen environmental and technical specialists including:

- · cultural heritage
- · agriculture
- air quality
- aviation
- bushfire
- contaminated land
- · ecology and biodiversity
- economics
- electromagnetic field (EMF)
- · greenhouse gas and climate change
- · groundwater
- · historic heritage
- · land use and planning
- landscape and visual impact assessment (LVIA)
- · noise and vibration
- surface water
- traffic and transport.

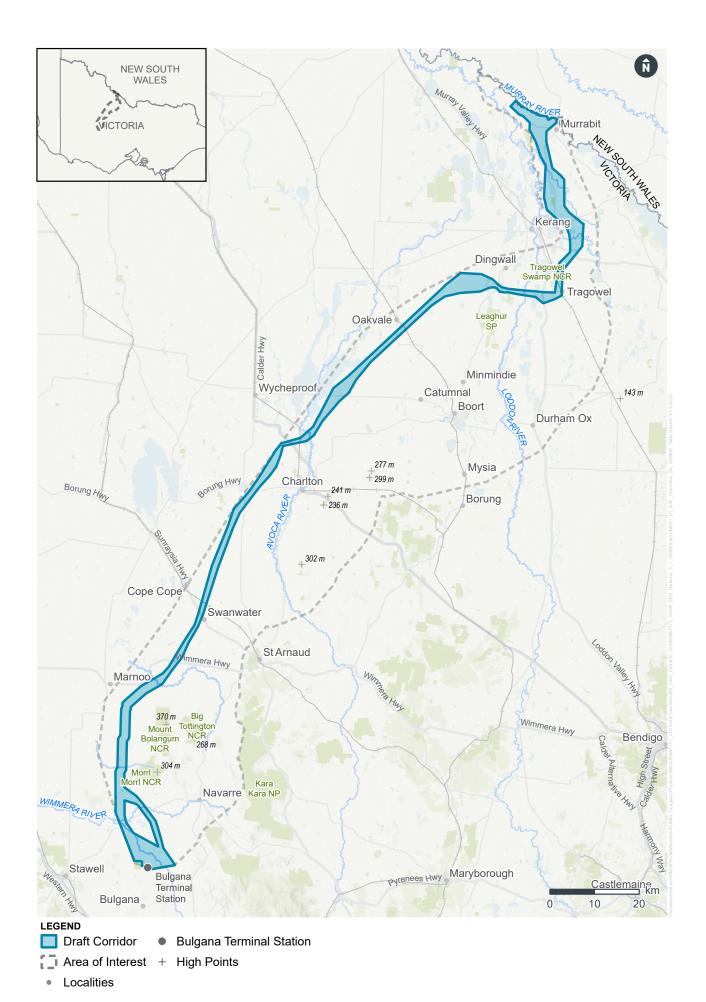


Figure 2: Draft Corridor for VNI West

Desktop assessments investigated environmental and technical constraints which included:



Places of Aboriginal cultural heritage significance



Proximity to dwellings, schools and hospitals



Overall length required for the transmission route and number of landowners impacted



Biodiversity and threatened habitat, including conservation and flora reserves



Incompatible land uses such as transport networks, airfields and airports



Reducing the number of transmission line angle deviations where possible



Existing and future land use including agriculture and infrastructure requirements



Geography and topography of the land, including terrain and waterbodies



Accessibility for renewable energy developers

Data and information was gathered from publicly available sources, private data, community engagement, including an interactive map where stakeholders could pinpoint issues they wished to raise, stakeholder discussions, including seeking inputs from Traditional Owners, and information gathered from other projects. Specialists in the relevant environmental and technical fields made an initial assessment of the level of constraint each assessment factor represented for the location of transmission infrastructure. For example, National Parks and populated areas such as townships were considered to be a significant constraint and areas to be avoided. Conversely, areas remote from townships, houses, parks and reserves, significant vegetation and the like were considered to provide better opportunities to identify areas where potential environmental and social impacts could be minimised.

Potential constraints within the area of interest were initially identified through collaborative workshops involving AECOM's engineering design team and planning and environment specialists and advisors.

TCV released AECOM's **Environmental Constraints Summary Report** in July 2023. Since then, TCV has continued to engage with the community to identify other constraints and opportunities to minimise impacts. The TCV project team attended community sessions throughout the region, talking with farmers, other landholders and community members within the area of interest seeking further input into the corridor refinement process.

Community members were encouraged to add constraints and opportunities to an online social pinpoint map which was also available at community meetings. The map enabled community members to make comments at specific geographic locations and was used to seek community insights on key constraints and opportunities to minimise impacts in the area of interest for consideration in the route refinement process. TCV has also held On Country Days with Traditional Owners as a starting point to seeking their views and further the

understanding of cultural heritage sensitivity, particularly regarding the intangible aspects of cultural values. Additionally, TCV holds regular Council roundtables with municipalities in the area of interest and has engaged with a variety of State Government agencies seeking their inputs. An overview of the engagement undertaken by TCV is included in **Section 4**.

Based on inputs from the local community, key stakeholder groups, Traditional Owners and assessments conducted by specialist environmental and planning advisors, a 'heat map' was developed to help visualise the environmental and planning constraints and cultural values identified within the area of interest, as shown in **Figure 3**. It should be noted that some constraints or values could not be visualised in a spatial sense or were not included in the 'heat map' due to their sensitivity, for example, areas of cultural sensitivity or burial sites which are of spiritual significance to Traditional Owners. These were, however, considered during the corridor refinement process.

Based on all these inputs, TCV has developed a Draft Corridor which aims to avoid the identified environmental and planning constraints and values where possible, at the same time delivering the highest net benefits to the consumer and maintaining technical design feasibility. Flexibility exists within the Draft Corridor to allow for direct collaboration with landholders, Traditional Owners, and key stakeholders on the 'micro-siting' of infrastructure to minimise impacts and disruption as project planning progresses.

The main environmental, cultural, social, agricultural and technical constraints which were considered when narrowing the wider area of interest down to a Draft Corridor are discussed below in the following sections:

- southern region
- south central region
- north central region
- · northern region.

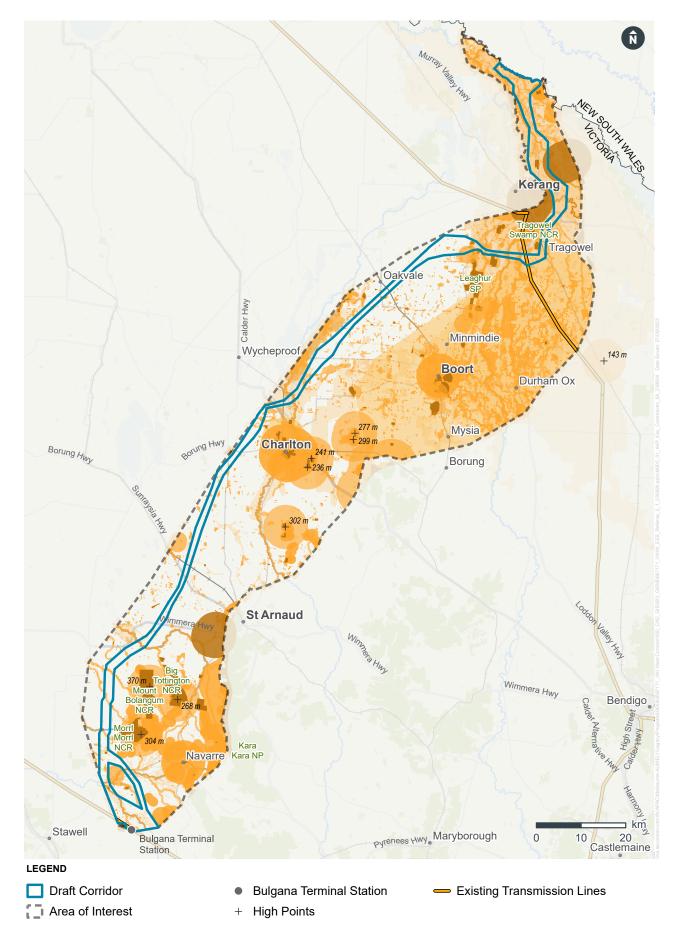


Figure 3: Key constraints and cultural values within the Draft Corridor and area of interest



3.1 Southern Region

The southern region of the area of interest covers the area generally between Bulgana and Charlton. **Figure 4** shows the key environmental and planning constraints and cultural values in the southern section of the area of interest and the location of the Draft Corridor in relation to the constraints. Key considerations in selecting the Draft Corridor included:

- minimising impacts on visual amenity from parks and
- maximising distances from populated areas
- avoiding steep or hilly topography
- potential risk to transmission infrastructure from bushfires associated with heavily timbered regions
- existing farming operations and infrastructure in the region
- various river/creek crossings
- one heritage registered property, 'The Woolshed, Tottington Homestead and Stone Cottage', located between two southern conservation reserves
- avoiding sensitive cultural values around Joel Joel NCR, Greens Creek, Wimmera River, Heifer Station Creek and Wattle Creek.

The southernmost point of the Draft Corridor has two potential components to the west and east of the area continue consideration of a range of constraints in this area around the Wimmera River near Bulgana. It is noted that this area of the corridor does traverse some areas of cultural sensitivity and ecological values along the Wimmera River and has a wind farm development in the western area. These areas and sensitive locations will be actively avoided where possible when assessing potential alignments within the Draft Corridor and during the detailed design phase of the project.

The Draft Corridor is located to the west of a number of conservation reserves as shown in **Figure 4**. While placing transmission infrastructure within these reserves was not a consideration due to their level of sensitivity, it was also considered that any potential corridors in the east of the area of interest had the potential to be visible from these reserves and may impact on habitat connectivity through wildlife corridors between the parks. Consideration also needed to be given to maximising the distance from the township of Navarre and to scenic high points within Morrl Morrl NCR, Mount Bolangum NCR, Big Tottington NCR and Kara Kara National Park.

Hilly terrain in the far eastern part of this region would make access and construction works more difficult as well as potentially having greater visual impact if infrastructure was located in elevated areas. Potential crossing locations for the Wimmera River and the Avon River were assessed based on key criteria including Traditional Owner input on cultural sensitivity and sites of ecological value and visual amenity. A final crossing point will be determined after more detailed assessments are completed as part of the overall planning approvals process.

North of the Avon River, the area of interest is primarily used for cropping and is relatively clear of significant tracts of vegetation. Constraints within this area which have been avoided where possible include:

Proximity to farm houses

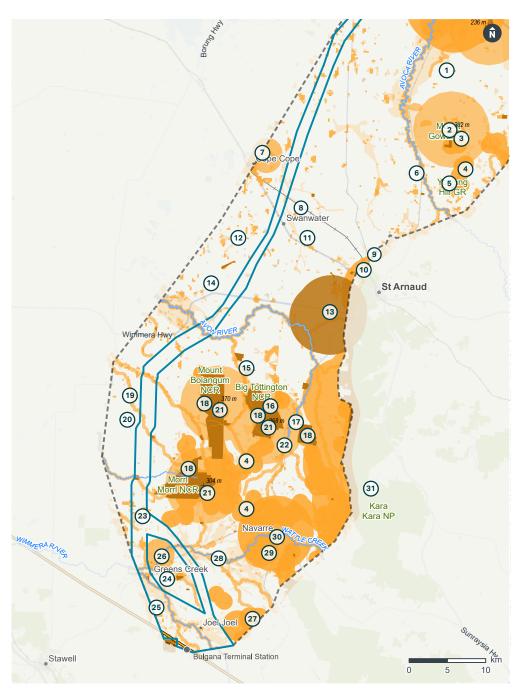
- proximity to farm houses
- small areas of remnant vegetation interspersed amongst pastureland
- endangered Ecological Vegetation Classes (EVCs)
- small wetlands
- protected aerodrome buffer areas.

In places where the Draft Corridor does intersect with constraints, there is flexibility within the corridor to design and locate the easement and infrastructure to minimise impacts. Consideration will be given to minimising impacts on farming activities in this region by micro-siting of infrastructure during the design phase of the project in consultation with landholders.

The eastern side of the southern section of the area of interest has considerably more constraints than the western side. These include:

- townships such as St Arnaud and Navarre
- CASA certified St Arnaud airport with its required safety buffers
- a topographic high point at Mt Gowar, which would have unencumbered views of transmission infrastructure if located in this area.

The Draft Corridor crosses the freight rail line near Cope Cope in an area that provides an appropriate safety buffer from the Cope Cope aerodome before traversing a primarily agricultural area at the western edge of the area of interest, maximising the distance from the township of Charlton.



- Flooding: Flood prone areas along the Avoca River
- 2 Visual Impact: Topographic high point at Mt Gowar
- 3 Land Use: Coonooer Bridge Wind Farm (operating)
- 4 Engineering: Steep topography in this area is incompatible with transmission line infrastructure
- 5 Land Use: Yawong Wind Farm (operating)
- 6 Ecology: Streamside reserves are home to remnant native vegetation
- 7 Aviation: Buffer recommended from Cope Cope Airport
- 8 Infrastructure: Yelta freight railway line
- 9 Land Use: Land zoned as Rural Living Zone
- Land Use: St Arnaud township, 5km buffer recommended

- 11 Land Use: Swanwater Homestead Ruins Heritage Overlav
- 12 Ecology: Scattered areas of high Strategic Biodiversity Value present in this area
- 13 Aviation: CASA Certified St Arnaud Airport
- Agriculture: Crop farming more likely in this general area as opposed to grazing
- Land Use: Sand and gravel quarries (active extractive industry work authorities)
- 16 Ecology: EPBC Act listed Swift Parrot habitat
- 17 Flooding: Flood prone areas present along the Avon River
- 18 Ecology: Parks and reserves with high Strategic Biodiversity Values, home to native flora and fauna
- (19) Cultural Heritage: Registered sites of Aboriginal cultural heritage sensitivity are more likely within 200m of a waterway
- 20 Land Use: Wallaloo Golf Course
- 21 Visual Impact: Scenic high points present within parks and
- 23 Historic Heritage: Victorian Heritage Register listed "the Woolshed, Tottington Homestead"
- 23 Ecology: Scattered areas of high Strategic Biodiversity Value present in this area
- Cultural Heritage: Registered areas of cultural heritage present surrounding Greens Creek
- Land Use: Proposed location for Watta Wella Renewable Energy Project
- **Aviation:** Buffer recommended from unnamed airfied
- 27 Property: High frequency of dwellings
- 28 Flooding: Wattle Creek/Heifer Station Creek and distributaries are flood prone
- Aviation: Buffer recommended from Navarre Airport
- 30 Land Use: Navarre township, 5km buffer recommended
- Visual Impact: 5km buffer recommended from Karra Karra National Park

Figure 4: Key constraints and cultural values avoided within the southern region of the Area of Interest



3.2 South Central Region

The south-central segment of the area of interest, which covers the area generally between Swanwater and Catumnal, has a number of environmental and planning constraints and cultural values which are different to those displayed in the southern section of the area. In particular, this area has constraints and cultural values related to the larger townships of Charlton and Boort, cultural sensitivity, ecological values and flood prone land.

Figure 5 shows the key environmental and planning constraints and cultural values present in the southcentral region surrounding the township of Charlton. The constraints in this region include:

- presence of topographic high points and sensitive viewsheds
- · locations of scattered cultural sensitivity
- ecologically sensitive wetlands
- areas of remnant native vegetation along streamside reserves
- existing infrastructure in the region
- · areas prone to inundation
- the township of Charlton
- aerodromes
- Glenloth railway station and small township
- · Avoca River and wetlands.

The Draft Corridor in this region was influenced by the central location of the township of Charlton. There are also sensitive areas south and east of Charlton including flood prone areas, ecological and culturally sensitive locations along the Avoca River and proximity to topographic high points at Mt Gowar, Yowang Hills, Mt Buckrabanyule and within Wychitella NCR (which is outside of the area of interest).

It is noted that meaningful engagement with Traditional Owners and landholders will be required to better understand these cultural values and sensitivities in this area as the reference design progresses.

The Draft Corridor is proximal to Wooroonook Lake on its western boundary but does not intersect the Lake and Mt Jeffcott, a high point and popular recreation area is several kilometres to the west of the Draft Corridor.

A conservative 5 km visual impact buffer from topographic high points was adopted throughout the area of interest, wherever possible, to preserve the visual amenity of the parks and surrounding landscape.

Land use in this south-central region is primarily dryland cropping and grazing, transitioning to more irrigated agriculture north of Wychitella NCR. Based on technical studies and stakeholder inputs, it was determined that the west of the area of interest had comparatively fewer constraints due to flatter terrain and less intensive farming activities. As a result, the corridor has been aligned with the western border of the area of interest. This allows for greatest separation between the Draft Corridor and the township of Charlton, known aerodromes and topographic high points to the east of Charlton. Consideration will be given to minimising impacts on farming activities in this region by micrositing of infrastructure during the design phase of the project in consultation with landholders.

In instances where the Draft Corridor does intersect small parcels of remnant native vegetation, there is flexibility to locate transmission infrastructure around any sensitive values in the detailed design phase of the project.

North of Charlton, the western boundary of the area of interest is characterised by a concentration of areas of high ecological value, cultural sensitivity, flood prone areas associated with the Avoca River and a contiguous grouping of wetlands. As a result, the Draft Corridor moves inland from the western boundary to areas displaying fewer environmental and cultural sensitivities and progresses north through relatively less constrained areas from an environmental, planning and cultural values perspective. The Draft Corridor does traverse some areas with concentrations of houses such as in Glenloth East however there is flexibility within the corridor to locate infrastructure so as to maximise the distance from individual homes.

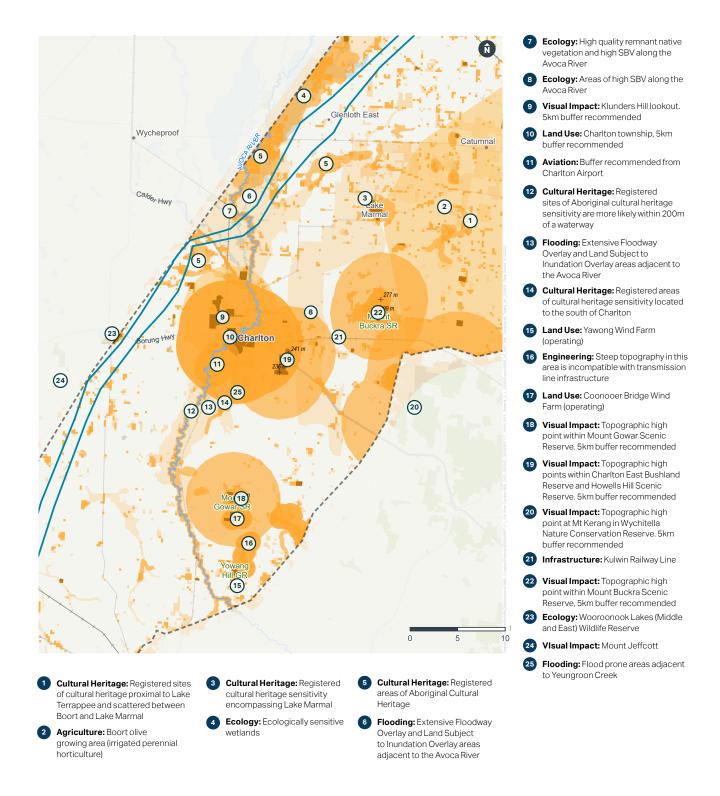


Figure 5: Key environmental and planning constraints and cultural values avoided within the south-central region of the Area of Interest



3.3 North Central Region

The north-central segment of the area of interest, which covers the area generally between Charlton and Kerang, has a number of environmental and planning constraints and cultural values influencing the location of transmission infrastructure which are different to those displayed in the southern and south-central sections of the area.

In particular, the north central region of the area of interest enters the Goulburn Murray Irrigation District (GMID), where agricultural activity shifts from the dryland cropping and grazing further south into more intensive irrigated agriculture. The key environmental and planning constraints and cultural values in this region as shown in **Figure 6** include:

- cultural sensitivity and archaeological significance throughout the area
- irrigated farming operations associated with the GMID with equipment which potentially conflicts with transmission infrastructure
- wetlands and significant ecology and biodiversity values
- aerodromes
- expansive floodplains across the Loddon River catchment area
- · significant parks and wildlife reserves
- Kerang and Boort townships
- · existing 220kV transmission line.

As the Draft Corridor moves from north of Charlton into the Loddon River area, the terrain and the absence of material environmental and planning constraints and cultural values enables the corridor to progress in a relatively straight line for some distance.

Further north, the area of interest encounters intensive agricultural land uses within the GMID, the Loddon River floodplain and highly sensitive cultural values surrounding Boort and the Loddon River. To reduce potential impacts on these sensitive areas, the Draft Corridor traverses the western border of the area of interest. Stakeholder input from water authorities, the community and technical specialists indicated that remaining on the western edge of the area of interest was significantly better than locating infrastructure further to the east where more intensive irrigated agriculture predominates, and with generally smaller landholdings than in the western section of the area of interest. Consideration will be given to minimising impacts on farming activities in this region by micro-siting of infrastructure during the design phase of the project in consultation with landholders.

The Draft Corridor heads north along the western edge of the area of interest for some distance before turning east to cross the Loddon River floodplain which is unavoidable before turning north towards the New South Wales border to the Murray River crossing and the New South Wales connection point. This region of the area of interest includes the existing 220kV transmission line running between Bendigo and Kerang. It is proposed that the new terminal station for the VNI West project be located in close proximity to the existing 220kV transmission line as this will reduce the works required on the existing line.

Most of the area of interest in the north-central region is subject to periodic flooding and extended periods of inundation, with floodwaters persisting for up to three months in some areas. Whilst flooding is not expected to impact the viability of transmission infrastructure, it does have the potential to require more complex engineering approaches where flood prone areas are unavoidable. The Loddon River floodplain is within this north central region and within this floodplain, there are multiple series of wetlands, including those along Bannagher and Pennyroyal Creeks with native vegetation along streamside reserves and registered places of cultural sensitivity along waterways.

The Draft Corridor crossing of the Loddon River floodplain traverses a comparatively lower distance of floodplain to any alternative crossings in the region south of Kerang. The identification of the crossing also had regard to inputs from Traditional Owners who identified numerous areas of intangible cultural value and other locations of significance such as culturally modified trees and artifact scatters. These areas include:

- Dry Lake
- Tragowel Swamp and Two Mile Swamp
- the region between Boort and Lake Meran
- the area of the Loddon River floodplain located to the east of Leaghur State Park
- the Great Spectacle Lakes complex.

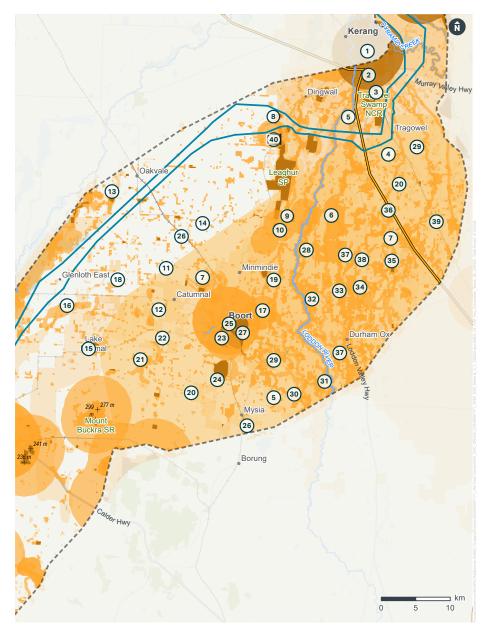
It is noted that meaningful engagement with Traditional Owners will be required to better understand these cultural values as the reference design progresses.

Consideration was given to the width and extent of the Loddon River and its tributaries throughout this area. From a technical perspective, the preference was to traverse this area over the shortest required distance to reduce the number of spans required over creeks and rivers to avoid the need for more complex construction. Consideration was also given to identifying the location of the new terminal station which the existing 220kV line will connect into.

Several aerodromes were identified in this region of the area of interest. Kerang Airport is the only CASA Certified Aerodrome and, although located outside of the area of interest, its Obstacle Limitation Surface (OLS) extends into the area of interest and was therefore considered when selecting the Draft Corridor. An OLS is a conceptual (imaginary) surface associated with a runway, which identifes the lower limits of the aerodrome airspace above which objects become obstacles to aircraft operations.

The remaining aerodromes are not certified and are located on farm properties. The OLS from an aerodrome located on a farm property near the Great Spectacle Lakes complex extends into the Draft Corridor, however the width of the Draft Corridor in this area allows for siting of transmission infrastructure to safely traverse any aerodrome constraints.





- Land Use: CASA Certified Kerang Airport, 4.8km OLS buffer required
- 2 Engineering: Existing terminal station
- 3 Land Use: Cluster of approved Solar Farm properties
- 4 Land Use: Tragowel Solar Farm (approved not yet constructed)
- 5 Flooding: Extensive area of floodplains across the Loddon River catchment area. Affected area spans from Kerang to Mysia
- 6 Ecology: Network of ecologically sensitive wetlands along Bannagher Creek
- 7 Ecology: Scattered wetlands

- Cultural Heritage: Cultural heritage sensitivity encompasses the Great Spectacle Lakes Complex
- 9 Ecology: Black Box wetland and woodland habitat
- Land Use: Cluster of private aerodromes
- 11 Ecology: Roadside reserves scattered throughout this area support remnant native vegetation
- 12 Agriculture: Irrigated grazing and cropping activities outside the GMID in this area
- 13 Ecology: High Strategic Biodiversity Values at Griffith Lagoon NCR
- 14 Land Use: Vegetation Protection Overlays exist in this area

- 15 Cultural Heritage: Registered cultural heritage sensitivity encompassing Lake Marmal
- 16 Cultural Heritage: Registered areas of Aboriginal Cultural Heritage
- 17 Aviation: Buffer recommended from Boort 3 (Wright Field)
 Airport
- 18 Ecology: Roadside reserves scattered throughout this area support remnant native yeaetation
- Land Use: Comparatively smaller farming lots and a high frequency of residential homes are present surrounding Minmindie and to the east of Boort.
- 20 Agriculture: Higher GMW impact area

- Cultural Heritage: Registered sites of cultural heritage proximal to Lake Terrappee and scattered between Boort and Lake Marmal
- Agriculture: Boort Estate olive grove (irrigated perennial horticulture)
- **Aviation:** Boort 1 (Biggin Hill) Airport assumed OLS
- 24 Cultural Heritage: High frequency of registered cultural heritage sensitivity surrounding Woolshed Swamp
- 25 Land Use: Boort town centre, 5km buffer recommended
- Infrastructure: Robinvale Railway Line
 - Aboriginal Cultural Heritage: Significant levels of cultural heritage sensitivity encompassing Boort and surrounding areas
- 28 Cultural Heritage: Cultural heritage sensitivity associated with existing and historic waterways along the lower Loddon River catchment
- 29 Agriculture: Goulburn Murray Irrigation District stretches from the NSW border to Boort, supporting hundreds of farms in the region
- Cultural Heritage: High frequency of registered Aboriginal cultural heritage places along Kinypanial Creek
- 41 Land Use: Avoid Public Conservation and Recreation Zoning, as defined under the Victorian Planning Scheme, along the Loddon River
- **Ecology:** Large contiguous areas with Strategic Biodiversity Values over 95/100
- 33 Cultural Heritage: Cultural heritage sensitivity associated with existing and historic waterways along the lower Loddon River catchment
- Ecology: Stream-side reserves and roadside reserves scattered throughout the AOI support remnant native vegetation
- **Ecology:** Areas with Strategic Biodiversity Values above 90/100 east of Loddon Vale
- 36 Engineering: Existing 200 kV transmission line
- 37 Engineering: Unfavourable soil conditions over the Loddon River flood plain
- 38 Agriculture: This broader area houses intensive farming activities (including horticulture, irrigated pastures and irrigated cropping)
- 39 Infrastructure: Piangil Railway Line
- 40 Aviation: Buffer recommended from private airstrip

Figure 6: Key environmental and planning constraints and environmental values avoided within the north-central region of the Area of Interest





3.4 Northern Region

The northern region of the area of interest covers the area generally between Kerang and the New South Wales border at the Murray River and has a number of environmental and planning constraints and cultural values which differ to those displayed further to the south.

The key environmental and planning constraints and cultural values influencing the location of transmission infrastructure in the northern region of the area of interest are shown in **Figure 7** and include:

- cultural sensitivity and archaeological significance throughout the area
- widespread ecology and biodiversity values
- proposed solar farm and wind farm developments
- aerodromes
- irrigated farming operations associated with the GMID
- Loddon River floodplain
- proximity to Ramsar listed Kerang Wetlands
- Murrabit township
- sensitivities associated with the Murray River crossing point for the connection to the New South Wales component of the project.

The northern region of the area of interest is highly sensitive from an ecological, land use and flooding perspective, as well as being the most densely populated region in the Draft Corridor. The GMID extends from Boort to the New South Wales border. Consideration has been given to minimising impacts on irrigated farming infrastructure in this region by micro-siting of infrastructure during the design phase of the project in consultation with landholders and water authorities.

Attempting to avoid constraints to the extent practical in the northern region of the Draft Corridor has resulted in a number of deviations in the Draft Corridor. Deviations have been adopted to avoid wetlands, registered areas of cultural heritage and areas of high Strategic Biodiversity Value as well as attempting to locate the Draft Corridor as far as possible from existing dwellings and other buildings. Plumptons Wildlife Reserve will also be avoided during the detailed design phase.

Two uncertified aerodromes are located within this region of the area of interest. Robins Aviation is located north-east of Kerang and services the local area with the aerial application of fertilizers and other agricultural chemicals. Due to its commercial significance to the region, a conservative protection buffer has been applied to support the safe arrival and departure of aircraft to this aerodrome. Although the buffer extends into the Draft Corridor, the width of the corridor has been maintained sufficiently wide to enable safe passage of transmission infrastructure through the area. Koodrook Airport is also located in this region, south-east of Murrabit and the Draft Corridor has been located to enable the safe location of transmission infrastructure in relation to this aerodrome.

The northern end of the corridor is deliberately wide to allow flexibility in the selection of the connection to the New South Wales section of VNI West, which is being developed by Transgrid. In the area close to the Murray River, the township of Murrabit was avoided, however it is recognised that a higher density of properties exist along the Murray River and this will be considered in further refinement of the corridor and the final design of the infrastructure within this area.

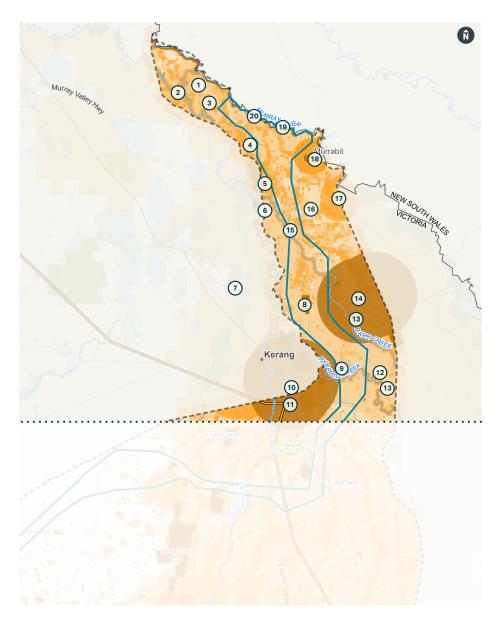


Figure 7: Key environmental and planning constraints and cultural values avoided within the northern region of the Area of Interest

- 1 Agriculture: Goulburn Murray Irrigation District stretches from the NSW border to Boort, supporting hundreds of farms in the area
- Aboriginal cultural heritage:
 Registered areas of Aboriginal cultural heritage sensitivity adjacent to the Little Murray River and at Pental Island
- 3 Flooding: Extended flooding event in 2011 and again in 2022, resulting in prolonged road closures
- Flooding: Area subject to LSIO overlay
- **Ecology:** Area with Strategic Biodiversity Values over 95/100
- 6 Cultural Heritage: Registered areas of cultural heritage sensitivity adjacent to the Loddon River
- **Ecology:** RAMSAR listed Kerang Wetlands
- 8 Ecology: Plumptons Wildlife Reserve
- Flooding: Area prone to flooding and long periods of innundation
- **Land Use:** CASA Certified Kerang Airport, 4.8km OLS buffer required
- **Engineering:** Existing terminal station
- 12 Cultural Heritage: Cultural heritage sensitivity adjacent to Pyramid Creek
- 13 Land use and planning: Avoid Public Conservation and Recreation Zoning, as defined under the Victorian Planning Scheme, over Pyramid Creek and Barr Creek
- **Aviation:** OLS protected area surrounding Robin's Aviation airstrip
- (5) Cultural Heritage: Registered areas of cultural heritage present adjacent to Barr Creek
- **Ecology:** High Strategic Biodiversity Values in this area
- **Aviation:** Buffer recommended from Koondrook (Riversdale) Airport
- 18 Land Use: Murrabit town centre
- 19 Land Use: High frequency of residences along the Murray Rive
- 20 Ecology: Streamside reserves along the Murray River support remnant native vegetation



3.5 Draft Corridor refinement summary

Environment, planning and technical constraints were identified through extensive desktop assessments, collaborative workshops, discussions with Traditional Owners and key stakeholders within the area of interest. Through analysis of key constraints and local considerations, such as ecology and biodiversity, cultural sensitivity, impacts on agriculture, visual impacts, proximity to parks, reserves and settlements, it was identified that the areas further west and north within the area of interest displayed the least environmental constraints relative to other possible corridors in the central and eastern areas. The Draft Corridor adopted by TCV for further detailed investigation:

Avoids National Parks including Big Tottington NCR, Kara Kara National Park, Morrl Morrl NCR and Mount Bolangum NCR.

Avoids ecologically sensitive waterways between Minmindie and Loddon Vale, including the Loddon River and its associated tributaries.

Avoids major townships such as Boort, Charlton and Kerang.

Minimises impacts to GMW irrigation infrastructure and the GMID.

Avoids areas of registered cultural sensitivity surrounding Boort and Durham Ox.

Avoids proximity to visually sensitive high points to the extent possible.

Minimises the extent of intersection across the Loddon River floodplain which features an extensive network of minor waterways including drainage and irrigation channels and avoids locating infrastruc-ture in these challenging areas as much as possible.

Avoids areas of steep or hilly topography which are incompatible with transmission infrastructure.

Avoids areas of registered and intangible cultural values present surrounding Boort, Lake Marmal, along the Loddon River and across the Loddon River floodplain.

Minimises the impact on the intensive horticulture farms.



4. Engagement Overview

TCV acknowledges the importance of consultation and is committed to working closely with stakeholders, Traditional Owners, community members and landholders. TCV has undertaken a regional communications and engagement program to learn more about the communities and land in the areas of interest and the Draft Corridor. Community meetings have provided opportunities for people to ask questions and provide feedback to the project team.

Discussions with community stakeholders including local Councils and Traditional Owners commenced during the early stages of the project. Following the release of the area of interest in May 2023, TCV has focused on building connections with the communities that could be impacted by this critical infrastructure. Local feedback is essential to identifying constraints and locating the transmission infrastructure. This feedback provides local knowledge and experience in relation to environmental, cultural, social and land use considerations that are taken into account through the route refinement process.

The following engagement activities have helped to inform the route refinement process to date:

- interactive online map open to community comments
- constraints workshops with key stakeholders
- · community events and information sessions
- council and stakeholder briefings and workshops
- discussions with Traditional Owners and On Country Days
- feedback received through the project hotline and inbox.

Submissions received during the additional Consultation Report period prior to the release of the PACR were also considered throughout this process.

Figure 8 provides an overview of the engagement activities.



inbox

calls enquiries

Figure 8: Overview of engagement



4.1 Stakeholder engagement

TCV has engaged early and consistently throughout the project with a range of agencies and stakeholders including:

- government (including regulators, policy makers, and Local Government Areas)
- · regional partnership associations
- industry associations
- · special interest groups
- · consumer representatives.

The purpose of this engagement was to keep stakeholders informed of key project milestones, capture stakeholder feedback and respond to enquiries. Regular meetings with Councils and stakeholders provided important insights and an opportunity to address issues and questions about community impacts.





4.2 Traditional Owner engagement

As a part of the consultation process for VNI West, the project team continues to hold discussions with Traditional Owner groups to improve understanding of relevant local sites or intangible cultural values sensitivities which need to be considered. The discussions also consider how VNI West may be able to provide positive outcomes and opportunities for all impacted Traditional Owner groups.

TCV acknowledges the ever-increasing demands placed on Traditional Owners to engage in a range of projects and the impacts these projects have on their capacity to have meaningful input. The level of Traditional Owner participation on the project to datet has been guided by these groups regarding their ability to engage as the route refinement process has progressed. Some groups have been constrained in their capacity to feed into the process, with only preliminary discussions held to date. Ongoing meaningful engagement with all Traditional Owners is planned in future to enhance inputs. The route refinement process is ongoing, and TCV will continue to work with all Traditional Owners to ensure meaningful input into the process.

These activities are detailed further below, and outputs of this consultation to date are outlined further in Section 5.3.



4.2.1 Early inputs

The project commenced meeting with Traditional Owner groups in late 2022. Meetings and consultation sessions have been facilitated with a number of impacted Traditional Owners throughout the RIT-T options assessment process and since the release of the PACR. The preferred option identified in the PACR, known as Option 5A crosses the lands of a number of Traditional Owner groups, including two Registered Aboriginal Parties, Barengi Gadjin Land Council and Djaara, as well as the lands of two other Traditional Owner groups, Wamba Wemba and Barapa Barapa. Refer to Figure 9.

Since the publication of the PACR, TCV has held discussions with **four** Traditional Owners groups and **69** individuals across **12** engagement activities. For Barapa Barapa and Wamba Wemba Tradtional Owners, this has meant a number of small group workshops with Elders and family representatives, as well as a a series of On Country Days. Barengi Gadjin staff and members have also contributed via small group workshops, On Country Days and targeted meetings with TCV's planning team to work collaboratively on corridor identification. Engagement with Djaara has involved initial meetings with staff and representatives and a preliminary On Country Day. It is acknowledged that Land Councils and Registered Aboriginal Parties must engage with their broader groups and that this process takes time.

The route refinement process is ongoing, and we will continue to work with all Traditional Owners to ensure meaningful input into the process.

Meetings and workshops with Traditional Owners immediately after the release of the preferred area of interest focussed on how the project can minimise its impact on both tangible and intangible cultural values, as well as maximising opportunities for Traditional Owners to be part of the process of route refinement.

4.2.2 On Country Days

All Traditional Owner groups within the area of interest identified the importance of holding On Country Days for Traditional Owners to meet the project team and visit specific areas of cultural significance to the Traditional Owners. On Country Days were held between May and August 2023 with all groups. These activities provided an opportunity for the project to build its understanding of the cultural significance of the Country within the area of interest and identify specific areas of cultural significance where impacts should be avoided or mitigated. TCV will continue to work with all Traditional Owner groups to further refine the route and to ensure that potential impacts on areas of cultural significance are avoided or minimised. It is anticipated that this will include further On Country Days as well as planning meetings and site visits with Traditional Owners throughout the route refinement process.

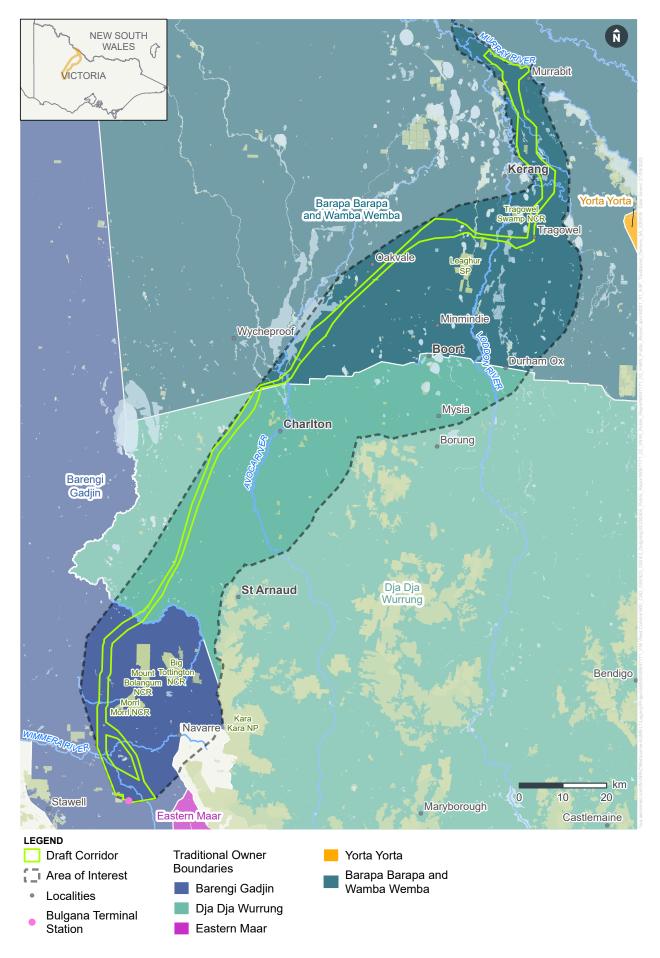


Figure 9: Traditional Owner Boundaries





4.3 Community engagement

4.3.1 Stakeholder workshops

In June 2023, six workshops were held to seek inputs from local community stakeholders and help inform the route refinement process. Sessions were held in Stawell, St Arnaud, Wycheproof, Boort and Kerang, and a further session was held solely online via webinar.

The workshops brought together over 50 key community stakeholders to provide in-depth feedback on the project area of interest. Workshop participants shared considerable local knowledge and insights around social, environmental, agricultural, and cultural factors and identified opportunities for the consideration of the VNI West project team.

These items are outlined in Section 5.0.

4.3.2 Community Events

TCV hosted five community events in July 2023, attended by a total of 393 landholders and community members. The events were held in Kerang, Boort, Charlton, St Arnaud and Navarre.

The purpose of these community events was to:

- continue to raise awareness of the project and project need
- inform community members of the project timeline and upcoming activities
- seek community feedback on constraints/ opportunities within the area of interest to inform the route refinement process
- provide information on key topics of interest
- identify and address community concerns and questions.

Community events were held in a market hall style format, consisting of a series of booths providing information on different topics including landholder engagement, environmental impacts and the route refinement process.

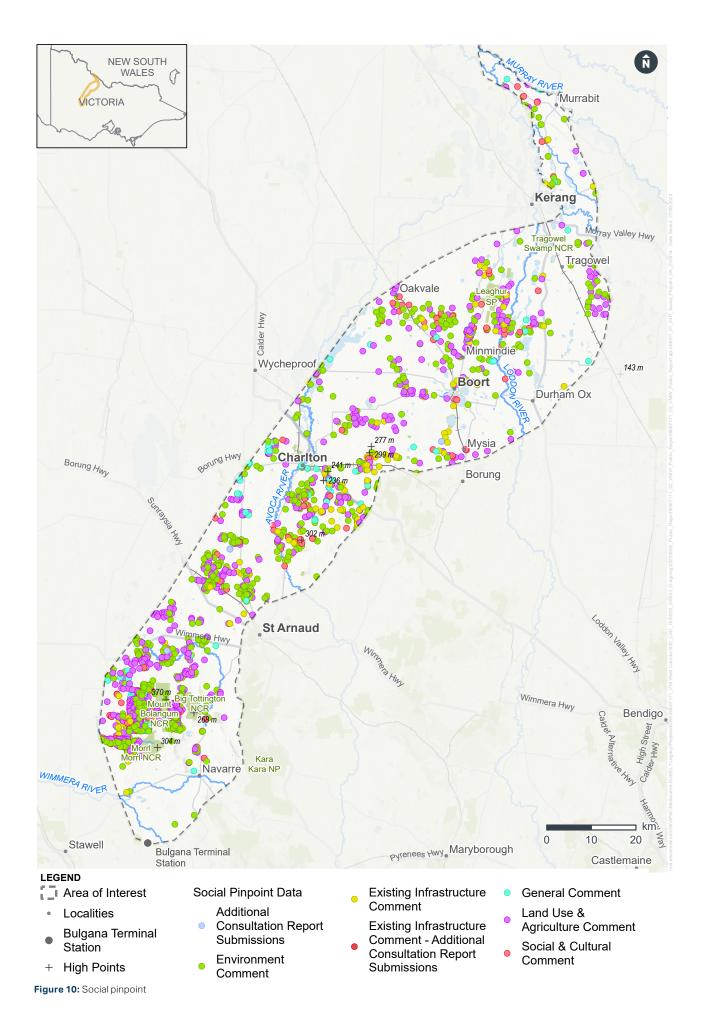
Each event was attended by senior representatives from the project team, VicGrid, technical specialists and subject matter experts. Project team members were available to attendees for Q&A and general discussion.

4.3.3 Interactive map

An interactive map on the TCV website was open for public comment between 26 May to 2 August 2023. The purpose of the interactive map was to seek community insight on key constraints and opportunities in the area of interest for consideration in the route refinement process. Participants were able to submit comments through this online tool or call the project team to add comments.

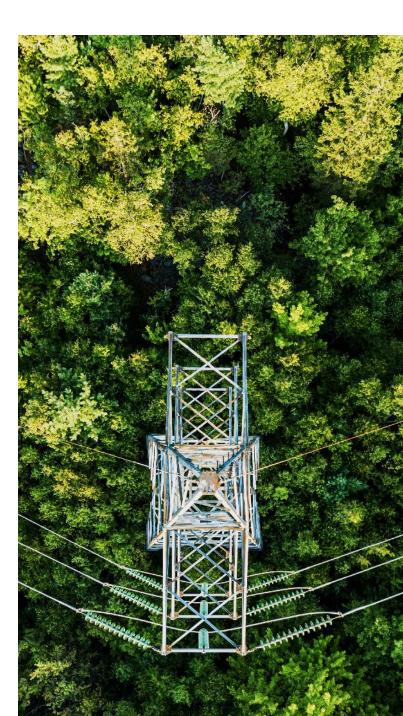
In total, stakeholders and community members visited the map 4,009 times. 201 users provided a total of 2326 comments. The interactive map was promoted through project updates, social media, newspapers and at community events.

Users were able to provide feedback on any subject, with pre-defined comment options for issues of land use & agriculture, environment, social & cultural values, existing infrastructure and "general" matters. Refer to **Figure 10**.



5. Key themes

Community members, Traditional Owner groups, landholders and stakeholders provided numerous valuable insights for consideration in the route refinement process. These local environmental issues and constraints were added to the information found from publicly available databases and other sources. Some examples of community inputs are outlined below.





5.1 Land use and agriculture

The engagement process highlighted important considerations relating to land use and agriculture. Feedback primarily noted the importance of minimising impacts to prime agricultural land. Constraints identified include:

- · areas of irrigated agriculture
- properties with strict biosecurity requirements
- existing farming infrastructure such as sheds, silos, paddocks and stock yards
- properties utilising aerial technology (including drones and planes)
- agricultural industries that could be negatively impacted by the project
- feedback also noted concerns on land devaluation, compensation, decreased productivity, easement restrictions, division of land, fire safety, land access and impact during construction.

Examples of specific issues raised by the community which assisted with selection of the Draft Corridor included:

- particular areas within the GMID with irrigation infrastructure which may be incompatible with transmission lines
- the intensive agricultural activities such as a high technology feedlots, for example, near Charlton.



5.2 Environment

Areas of ecological value were identified across the area of interest using known data and with community input identifying areas of localised habitat values and revegetation not identified on publicly available databases. These included:

- locations that support populations of rare or threatened native plants and animals or old growth trees
- remnant patches of vegetation such as native grasslands in areas largely cleared for agriculture
- local roads and streams with important remnant vegetation
- potential disruption of natural water flows across the floodplain
- significant wetland and floodplain areas.

Important native flora and fauna species within the area were also identified through community input. Examples of a wide range of species identified shown on the right of page.

Examples of specific issues raised by the community which assisted with selection of the Draft Corridor include:

- areas where significant amounts of private and public investment have been made to improve natural values such as shelterbelts, corridor planting and large-scale revegetation and private land protected or maintained for conservation including sites north of St Arnaud, west of Mysia and other locations throughout the corridor
- areas of protected vegetation particularly in areas surrounding Lakes Meran, Leaghur and Minmindie
- areas throughout the corridor containing Buloke trees, Box trees and endangered orchids
- areas of vegetation where species such as Wedge Tailed Eagles have been sighted
- areas prone to flooding which were not shown in flood maps including areas to the south of Charlton, along the Avon River, east of Tragowel and along the Waranga Western Channel to the west of Mysia.



• Golden Sun Moth



- Downy Swainson-Pea
- Grey Billy Button



- Fat Tailed Dunnart
- Brush-Tailed Phascogale
- Rakali



- · Lace Monitor
- Growling Grass Frog
- Australasian Bittern Frog
- Tree Goanna Varanus



- Swift Parrot
- Grey Crowned Babbler
- Brolga
- · Magpie Goose
- The Powerful Owl
- Barking Owl
- Kite Hawks
- Brown Falcons
- Tawney Frog Mouth Owls
- Cuckooshrikes
- Kestrels
- Diamond Firetails
- Wedge Tailed Eagles
- Plains Wanderer
- Southern Boobooks
- Curlews





5.3 Aboriginal Cultural and Historic Heritage

Areas significant to Traditional Owners were identified through discussions with Traditional Owner groups and through the input into the interactive map. Historic heritage, including local heritage sites were also identified. These were added to data on known sites of cultural significance, other cultural sites and locations of artefacts.

Sites of aboriginal cultural significance may include:

- · culturally modified trees
- oven mounds
- burial sites.

Traditional Owners emphasised the importance of intangible cultural values such as spiritual connection with the land, waterways and vegetation, in addition to sites containing artefacts. The Traditional Owners passed on knowledge of important areas including around the wetlands south of Kerang, areas around Boort, Leaghur State Park in the centre of the corridor and sections of the Wimmera River in the south.

Sites of historic heritage within the area of interest include:

- War memorials
- · sites of local heritage importance
- European heritage sites including original settlements, school sites, old homesteads, and historic hotels.

Sites of tourism were also noted, with some comments expressing concerns that transmission lines would impact visual amenity and thereby negatively affect tourism, including hilly areas south of Charlton and around Morrl Morrl NCR, Mount Bolangum NCR, Big Tottington NCR and Kara Kara National Park.





5.4 Infrastructure

Community feedback also identified existing or planned infrastructure which could act as a constraint to the location of transmission infrastructure. Examples include:

- buildings
- · mobile phone towers
- · pipelines and underground cables
- social infrastructure
- train lines and roads
- · residential areas and residences
- · agricultural infrastructure
- fire breaks and water points, fire stations
- · tourism infrastructure
- · weather stations
- · underground artesian wells
- · gun clubs
- quarries and mines.

Feedback highlighted the importance of minimising impacts to existing infrastructure, particularly townships, residences and existing agricultural infrastructure such as sheds and silos.

Examples of specific issues raised by the community which assisted with selection of the Draft Corridor included:

- maximising the distance between transmission infrastructure and townships and individual rural residences
- several private aerodromes in the Kerang area not shown on maps which require defined clearances to transmission infrastructure to ensure safety
- existing and potential renewable energy developments where VNI West provides opportunities for connection points, particularly in the areas around Kerang, which could enhance local employment.



5.5 Social

Feedback highlighted numerous social considerations, including impacts to the broader community as opposed to individual landholders. Examples of feedback received include:

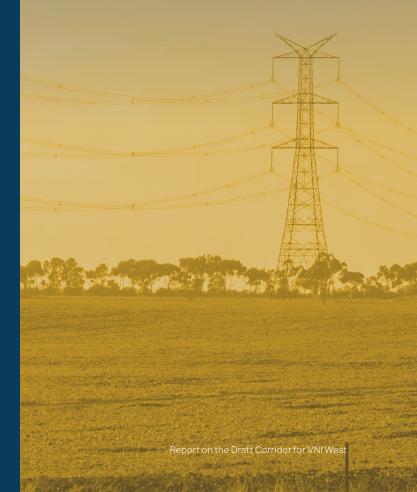
- avoidance of industries that are vital to local economies, for example, key tourism hot spots such as parks and reserves, the olive industry near Boort and the large feedlot near Charlton
- concerns around the visual impact of the project on the landscape including localised impacts on residents
- other features identified across the landscape that may constrain the project route included local vantage points, lookouts, hiking trails and recreational areas such as campsites
- · concerns around the impaired ability to fight bushfires
- potential impact of EMF on farm equipment and human health.

6. Conclusion and next steps

The overall approach adopted to refine the broad area of interest down to a narrower Draft Corridor was based on the principle of 'avoidance' of sensitive environmental, cultural and social values wherever possible, including minimising impacts on farming operations.

The Draft Corridor has attempted to avoid areas of sensitivity and constraints to the maximum extent possible whilst delivering the highest net benefits to the electricity consumer and maintaining technical design feasibility. The Draft Corridor is generally 2 kilometres in width, in some areas the corridor is wider, namely at its southern and northernmost points to allow flexibility at connection points. Flexibility exists within the Draft Corridor to allow for direct collaboration with landholders and key stakeholders on the 'micro-siting' of infrastructure as project planning progresses.

In the next stage of the project, TCV will continue to engage with the community to provide information and seek input into important considerations such as opportunities for community benefit and ongoing route refinement.



Landholder engagement is now underway, and TCV's landholder liaison team is working with landholders in the Draft Corridor. A landholder liaison is appointed as the key contact for each potentially impacted landholder within the Draft Corridor and will answer their questions on important issues, such as land access protocols, compensation, easements and transmission design options to minimise the impact of the VNI West infrastructure on farm operations. In some instances, the TCV landholder liason team will request access to properties for environmental field studies where environmental values have been identified. Surveys are planned on public and private land within the Draft Corridor from October 2023. The terms of land access, including biosecurity requirements, will be negotiated with the landholder and agreed before any field surveys commence.

In coming months, TCV will refer the refined Draft Corridor to the Victorian Minister for Planning to consider whether an Environment Effects Statement (EES) will be required for the project. The EES is a rigorous and consultative regulatory process to comprehensively assess the potential environmental, cultural and social impacts of the project VNI West cannot proceed without planning approval from the State and Commonwealth Governments. This will require comprehensive environmental and technical studies over the next 12 – 18 months and continuing, extensive stakeholder engagement

The corridor refinement process has benefited from the important insights provided by landholders, communities and Traditional Owners to date. TCV will continue to engage as work progresses to identify the optimal route for the project that minimises potential impacts to agriculture, the environment, communities and cultural values.

Through ongoing studies including social, environmenta and geotechnical investigations, and continued consultation with stakeholders including directly impacted landholders, the Draft Corridor will be further refined to identify the final alignment which will be within a 70 m-120 m wide transmission easement. The final easement will be defined as part of the reference design for the project and assessed as part of the EES over the next 12-18 months



