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**Toongabbie Bioenergy / Biorefining  
Visual Impact Assessment**

374 Henderson Road, Toongabbie  
Lot 4 on PS835778Y

Our reference – 20437

10 April 2024

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## Introduction

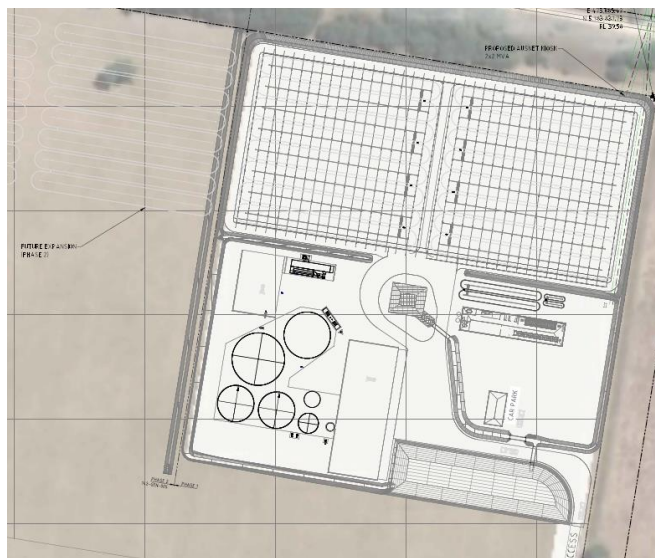
Crowther & Sadler have been engaged to provide planning services to assist with a Planning Application for the use and development of a Renewable Energy Facility ('REF') at Hendersons Road, Toongabbie.

This Visual Impact Assessment has been prepared to accompany the Planning Application submission, and provides a broad overview of the landscape surrounding the proposed REF site.

## Development Site

The subject land is formally described as Lot 4 on Plan of Subdivision 835778Y which has an area of approximately 48.55 hectares.

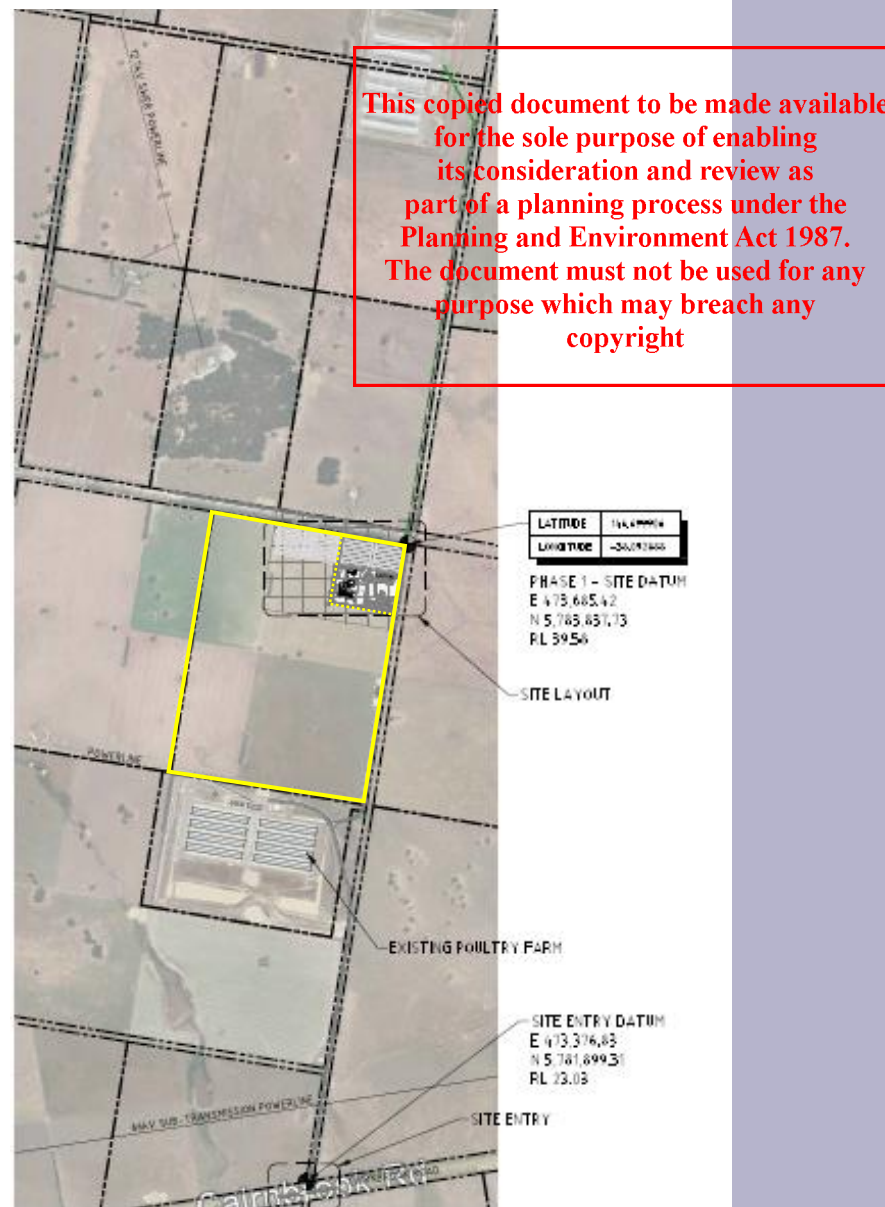
The proposed REF seeks only to occupy approximately 5 hectares within the north-eastern section of the subject land.



(Right)  
Extract from Site Plan, with dashed line showing extent of subject land to be occupied by proposed REF.

(Left)  
Enlargement of proposed REF

Source: C-Loop  
Dwg. No. 142-GEN-001



## Statutory Framework

Unlike for renewable energy facilities which utilise wind or solar energy, or produce renewable hydrogen, the Victorian Government has not published guidelines to establish criteria for evaluating the merits of a waste-to-energy facility.

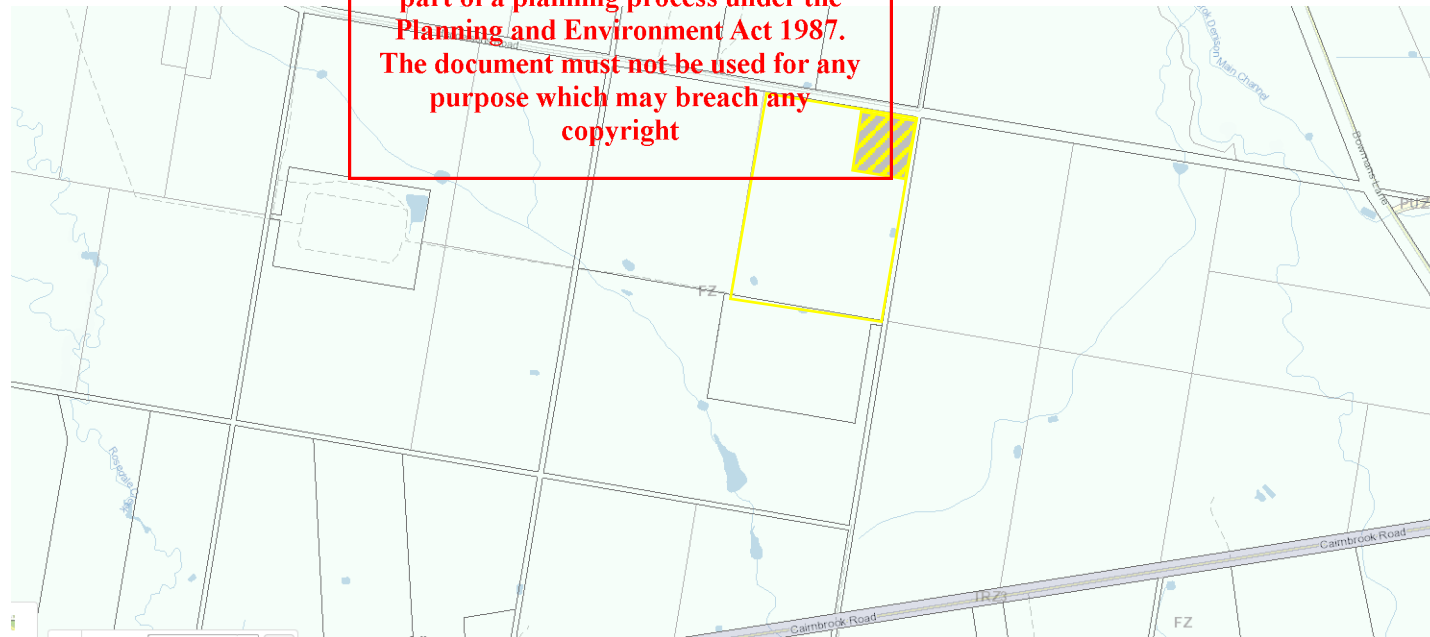
Statutory guidance is therefore limited to the Particular Provisions relating to Renewable Energy Facility (other than wind energy facility) as provided at Clause 53.13. Application requirements of this Clause call for consideration of proposed facilities in the context of the surrounding area and from key public view points. The Decision Guidelines at Clause 53.13-3 require the Responsible Authority to consider, as appropriate, the effect of the proposal on the surrounding area, and the impact on significant views, including visual corridors and sightlines.

The site's inclusion within the Farming Zone warrants consideration of the design and siting issues highlighted within the Decision Guidelines to the Zone at Clause 35.07-6.

This Assessment has been prepared for the express purpose of assisting the responsible authority with the assessment of these considerations.

*(Right)  
Extract from Zone  
mapping, with hatching  
showing extent of  
subject land to be  
occupied by proposed  
REF*

Source: VicPlan



## Methodology

The preparation of this document has involved the following information gathering activities:

- Desktop review of the subject land and surrounding context based on Planning Scheme maps, aerial photography, and contour information available through State Government mapping applications.
- Inspections of the subject land and immediate surrounds undertaken in April 2023 and January 2024. This included capturing appropriately geo-referenced images to enable analysis of likely viewsheds from key viewpoints within the public realm.
- Description and analysis of the existing landscape character and visual environment to determine a baseline for the visual assessment.
- Mapping viewsheds from key locations to determine the viewing distances, including an analysis of the extent to which the proposed REF will feature within the composition of the view.
- Undertaking a visual impact assessment using the grading matrix established by the NSW Department for Transport *Guideline for landscape character and visual impact assessment* (June 2023) ('the Guideline'). This assessment considers visual sensitivity and the magnitude of the visual change.

This Guideline establishes a framework to measure impact based on the combination of:

- The **sensitivity** of the existing area or view to change; and
- The **magnitude** (scale, contrast, quality, distance) of the proposal on that area or view.

Visual sensitivity is a measure of how critically a change to the existing landscape is viewed from different areas, based on the number of people affected, land use, and the distance of the viewer from the proposal.

Magnitude refers to the physical scale of the project, how distant it is, and the visual contrast it presents to the existing condition.

- High magnitude applies when a proposal has a high visual contrast to the surrounding landscape, with little or no natural screening or integration through topography or vegetation;
- Moderate magnitude occurs where a proposal remains visible and contrasts with the viewed landscape, with some degree of integration apparent.
- When a proposal blends in with its existing viewed landscape due to a high level of integration through form, shape, pattern, line, texture or colour, the magnitude is low. Effective screening through topography and vegetation also mitigates magnitude.

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Visual impact refers to the change in appearance of the landscape as a result of development (EPHC, 2010). Visual impact is the combined effect of visual sensitivity and visual magnitude. The Guideline includes a matrix for the assessment of various combinations of these two factors resulting in high, moderate and low overall visual impacts.

		Magnitude			
		High	Moderate	Low	Negligible
Sensitivity	High	High	High-Moderate	Moderate	Negligible
	Moderate	High-Moderate	Moderate	Moderate-low	Negligible
	Low	Moderate	Moderate-low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible
		Negligible	Negligible	Negligible	Negligible

*Landscape character and visual impact rating matrix - Transport for NSW, 2023 (p.12)*

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## Viewing distances

This Assessment has also had regard for the viewing distance framework established in the *South West Victoria Landscape Assessment Study* (DPCD, 2012). This framework establishes there are four tiers to be considered:

**Immediate foreground:** Features within the immediate environment of the observer, and extends to approximately 800m;

**Foreground:** Features within up to 1.6km of the observer;

**Middle ground:** Features within 1.6km to 6.0km of the observer; and

**Background:** Features more than 6km (to infinity) from the observer.

The **foreground** view is the most sensitive to change, and development within this plane can affect the viewer's experience and the significance of a view the most dramatically. The detail of the landscape is more pronounced within this view plane.

Alterations within the landscape within the **middle ground** are less distinctive.

Within the **background** view, shapes may remain evident up to the 16km mark, but beyond that distance alterations within the landscape become obscure.

Where foreground views occur immediately adjacent to road corridors, viewlines are considered to be of less significance.

A viewer's experience of a view is also affected by weather variations, topography and vegetation within the viewshed.

Viewing locations included within this Assessment were determined using the following selection considerations:

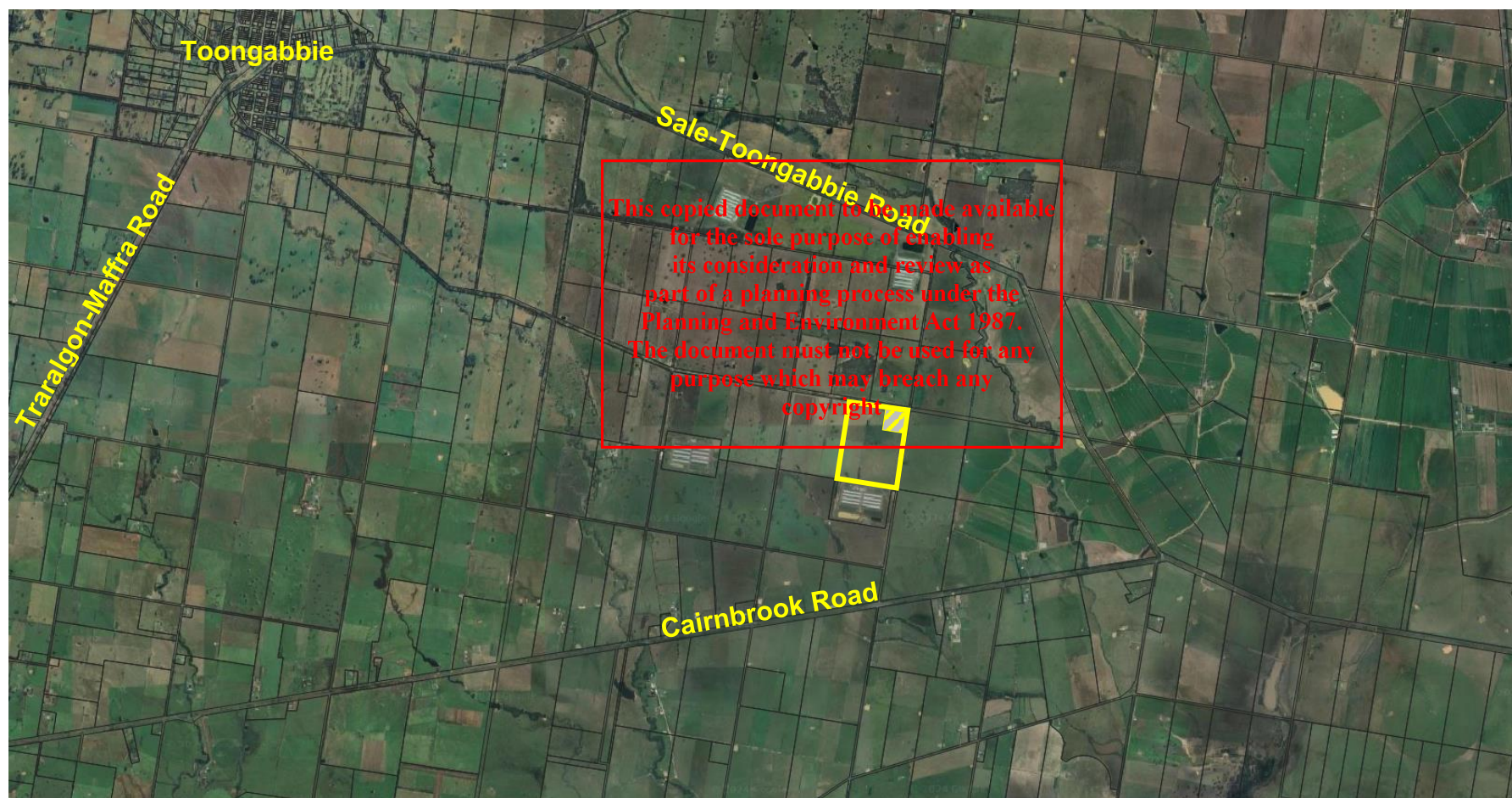
- The viewing location is within the public realm, on public land.
- The viewing location is easily accessible, typically by vehicle
- The viewing location is able to be replicated for validation purposes

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Aerial photographs specific to each viewshed have been prepared, with coloured radial lines identifying the transition from foreground view (red), to the middle ground (orange) and the background (yellow) view extents.

**Assessment area**

The development site is located within an established agricultural area, approximately 7km south-east of the township of Toongabbie. The site has frontage to Hendersons Road to the north, with the main roads within the vicinity being Cairnbrook Road (to the south), Sale-Toongabbie Road (to the north), and Traralgon-Maffra Road (to the west).



Locality Plan, highlighting main roads within the vicinity of the subject land (Source: Google Earth)

## Viewshed sites

Sites selected for viewshed analysis were determined in accordance with the criteria outlined on Page 4 of this assessment.

Whilst Traralgon-Maffra Road is identified as the major road to the west of the precinct, the angle likely to be travelled by drivers, together with the presence of roadside vegetation was excluded from this analysis.

River Road, the north-south connection between Cairnbrook Road and the township of Toongabbie, was determined a more appropriate site for the purposes of this analysis.



A total of twenty-two viewsheds were selected for analysis, as depicted in the image above.

## Landscape character

Key site characteristics immediately observable within the assessment area include:

- Flat landform with minimal topographical variation;
- Corridors of vegetation adjoining the majority of roadsides;
- Riparian vegetation adjoining waterways;
- Scattered rural buildings; and
- Established agricultural activities, including intensive agricultural uses within the immediate vicinity.

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## Viewshed A



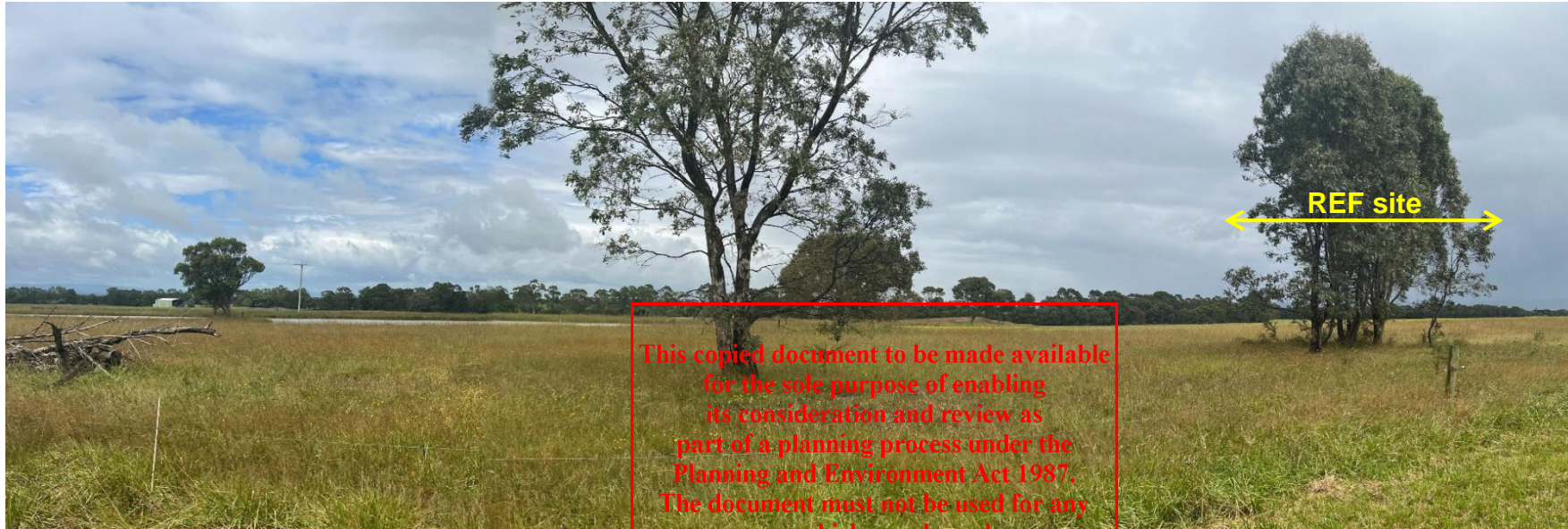
Sensitivity	Magnitude	Impact
Negligible	Low	Negligible

### Observations:

- Site within middle ground viewing distance
- Limited viewing time due to direction of travel
- Riparian vegetation along waterway will obscure views of site below the prevailing tree canopy
- Low traffic volumes
- Existing agricultural buildings visible



## Viewshed B



Sensitivity	Magnitude	Impact
Negligible	Low	Negligible

### Observations:

- Site within middle ground viewing distance
- Limited viewing time due to direction of travel
- Scattered trees within foreground
- Riparian vegetation along waterway will obscure views of site below the prevailing tree canopy
- Low traffic volumes



## Viewshed C



Sensitivity	Magnitude	Impact
Low	Low	Low

### Observations:

- Site within middle ground viewing distance
- Limited viewing time due to direction of travel on 100km/hr road
- Riparian vegetation along waterway, together with roadside vegetation within Graham Road will obscure views of site below the prevailing tree canopy



## Viewshed D



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Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site just beyond foreground viewing distance
- Limited viewing time due to direction of travel on 100km/hr road
- Site completely obscured by roadside vegetation in Graham Road
- Existing Broiler Farm buildings visible



## Viewshed E



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Sensitivity	Magnitude	Impact
Moderate	High	High-Moderate

### Observations:

- Site within immediate foreground viewing distance
- Minimal traffic utilising Henderson Road or Graham Road
- Existing Broiler Farm structures visible in foreground
- Image taken through gap in Graham Road roadside vegetation.



## Viewshed F



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Sensitivity	Magnitude	Impact
Moderate	Moderate	Moderate

### Observations:

- Site just beyond immediate foreground viewing distance
- Minimal traffic utilising Henderson Road
- Existing Broiler Farm structures visible in foreground
- Perimeter planting and roadside vegetation provide some screening for eastbound traffic



## Viewshed G



Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site within background viewing distance, at which point variations in the landscape are imperceptible.
- No visibility of the subject land.



## Viewshed H



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Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site within background viewing distance, at which point variations in the landscape are imperceptible.
- No visibility of the subject land.
- Scattered vegetation and roadside vegetation observable across viewshed.





## Viewshed I



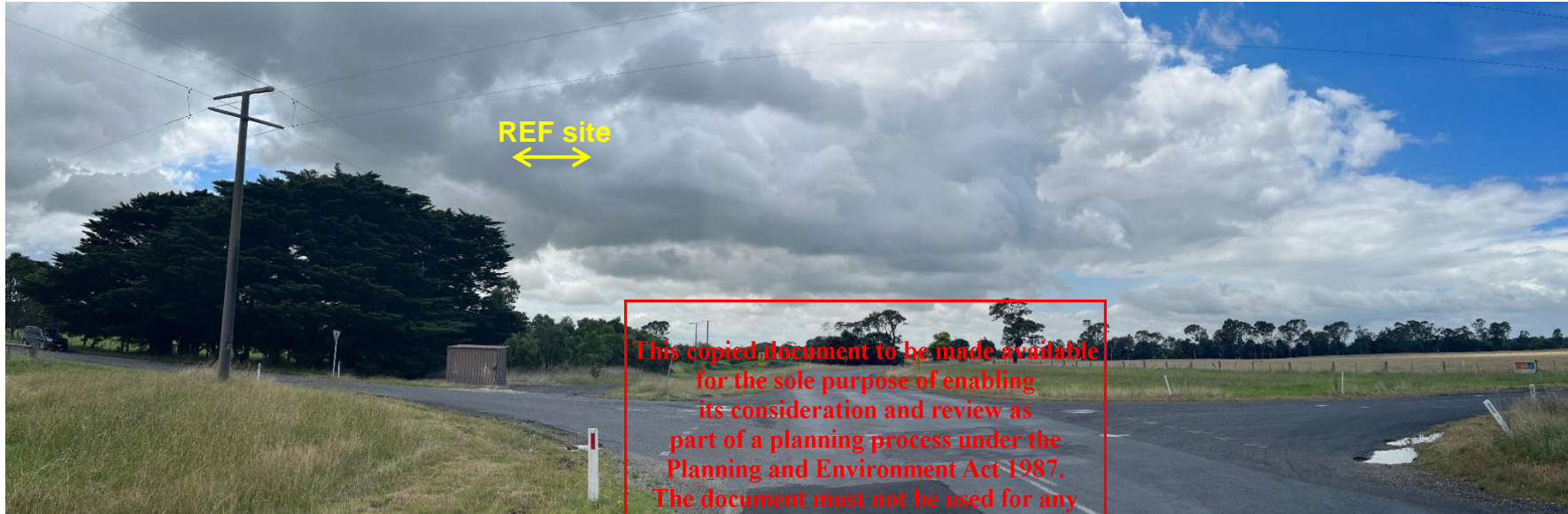
Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site within background viewing distance, at which point variations in the landscape are imperceptible.
- No visibility of the subject land.
- Scattered vegetation and roadside vegetation observable across viewshed.



## Viewshed J



Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site within background viewing distance, at which point variations in the landscape are imperceptible.
- No visibility of the subject land.
- Scattered vegetation and roadside vegetation observable across viewshed.
- 100km/hr road



## Viewshed K



Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site just beyond background viewing distance, at which point variations in the landscape are imperceptible.
- No visibility of the subject land, due largely to perimeter plantings and shelter belts.
- 100km/hr road with higher traffic volumes



## Viewshed L



Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site within middle ground viewing distance, at which point variations in the landscape are less distinctive.
- No visibility of the subject land, due largely to perimeter plantings and shelter belts.
- 100km/hr road with higher traffic volumes



## Viewshed M



Sensitivity	Magnitude	Impact
Moderate	Low	Moderate-Low

### Observations:

- Site just beyond limit of foreground view
- Limited viewing time due to direction of travel on 100km/hr road with higher traffic volumes
- Site visible in peripheral view of eastbound vehicles
- Site partially obscured by Broiler Farm structures



## Viewshed N



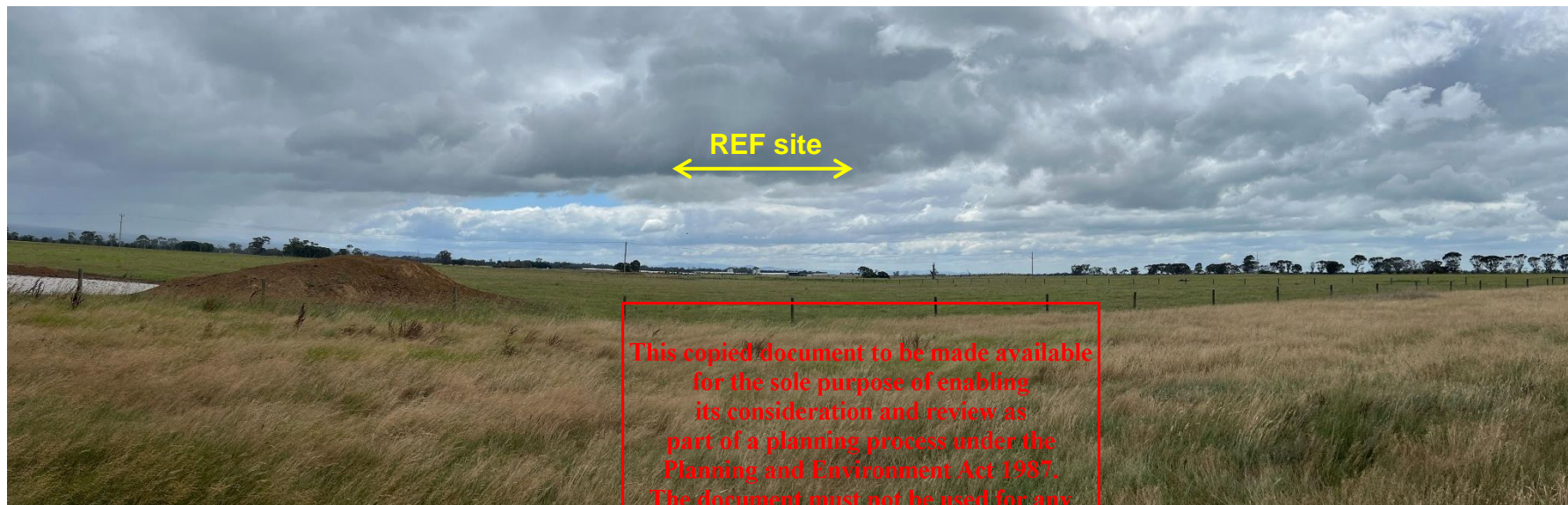
Sensitivity	Magnitude	Impact
Moderate	Low	Moderate-Low

### Observations:

- Site just beyond limit of foreground view
- Limited viewing time due to direction of travel on 100km/hr road with higher traffic volumes
- Site likely to be visible to passengers only
- Site partially obscured by Broiler Farm structures



## Viewshed O



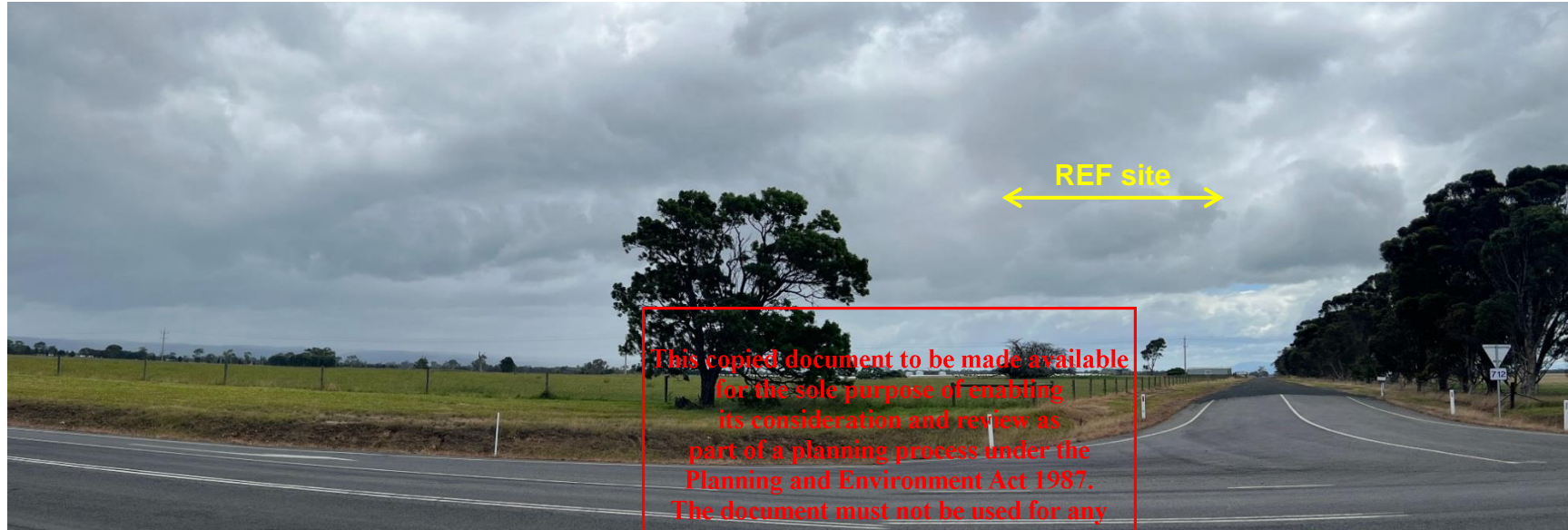
Sensitivity	Magnitude	Impact
Moderate	Moderate	Moderate

### Observations:

- Site just beyond limit of foreground view
- Limited viewing time due to direction of travel on 100km/hr road with higher traffic volumes
- Site likely to be visible to passengers only
- Site partially obscured by Broiler Farm structures
- Scattered vegetation observed



## Viewshed P



Sensitivity	Magnitude	Impact
Moderate	Moderate	Moderate

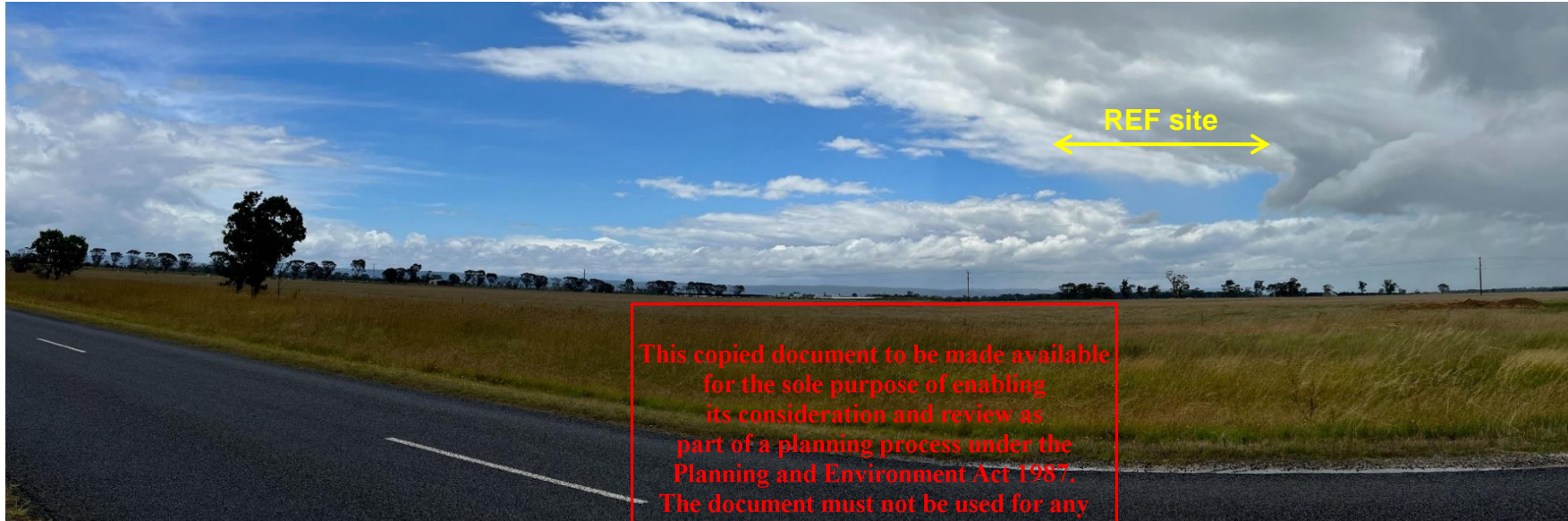
### Observations:

- Site just beyond limit of foreground view
- Not visible to driver, despite proximity, due to direction of vehicle travel
- 100km/hr road with higher traffic volumes
- Site partially obscured by Broiler Farm structures, with some vegetation observed





## Viewshed Q



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Sensitivity	Magnitude	Impact
Moderate	Low	Moderate-Low

### Observations:

- Site just beyond limit of foreground view
- Not visible to driver, despite proximity, due to direction of vehicle travel
- 100km/hr road with higher traffic volumes
- Fleeting visibility for passengers
- Broiler farm structures within viewshed.
- Site obscured by roadside vegetation



## Viewshed R



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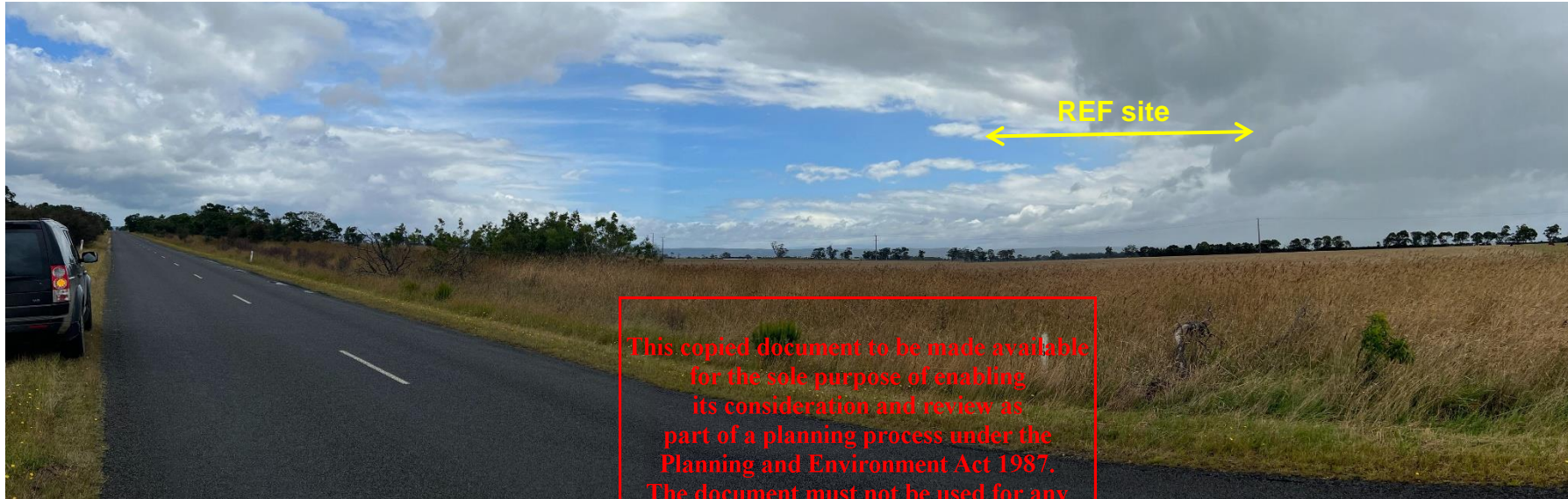
Sensitivity	Magnitude	Impact
Moderate	Low	Moderate-Low

### Observations:

- Site just beyond limit of foreground view
- Not visible to driver, despite proximity, due to direction of vehicle travel
- 100km/hr road with higher traffic volumes
- Fleeting visibility for passengers
- Broiler farm structures within viewshed.
- Site will only be visible above canopy of roadside vegetation



## Viewshed S



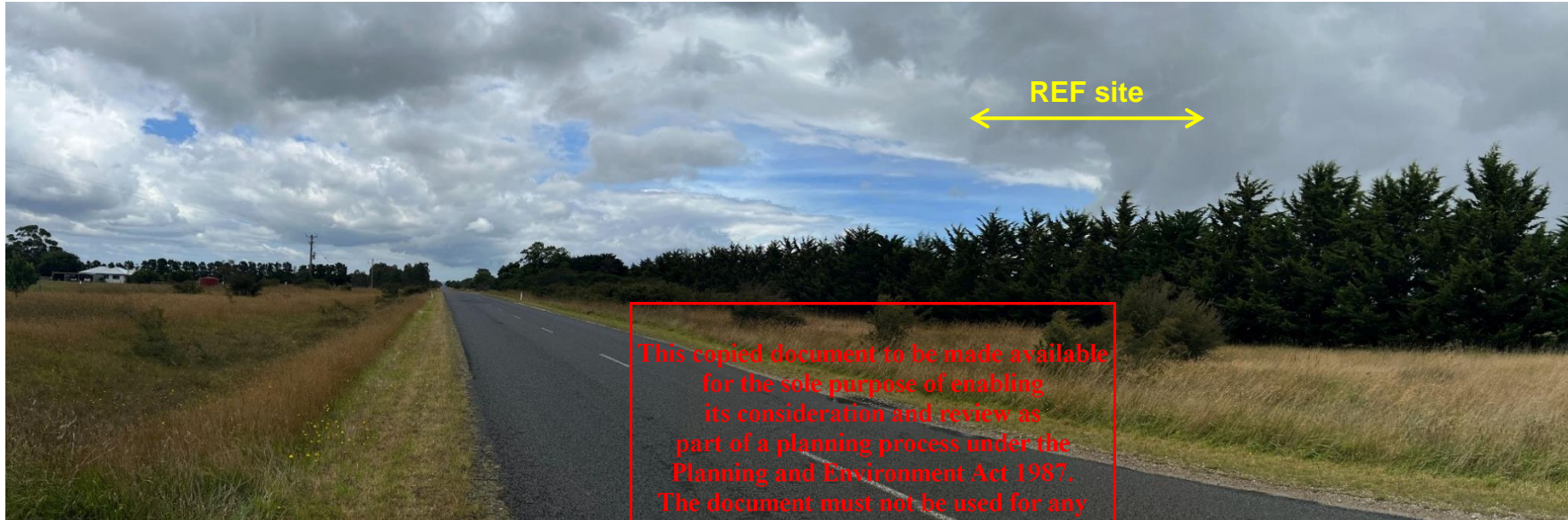
Sensitivity	Magnitude	Impact
Moderate	Low	Moderate-Low

### Observations:

- Site just beyond limit of foreground view
- Limited visibility for westbound traffic
- 100km/hr road with higher traffic volumes
- Broiler farm structures within viewshed.
- Site will only be visible above canopy of roadside vegetation



## Viewshed T



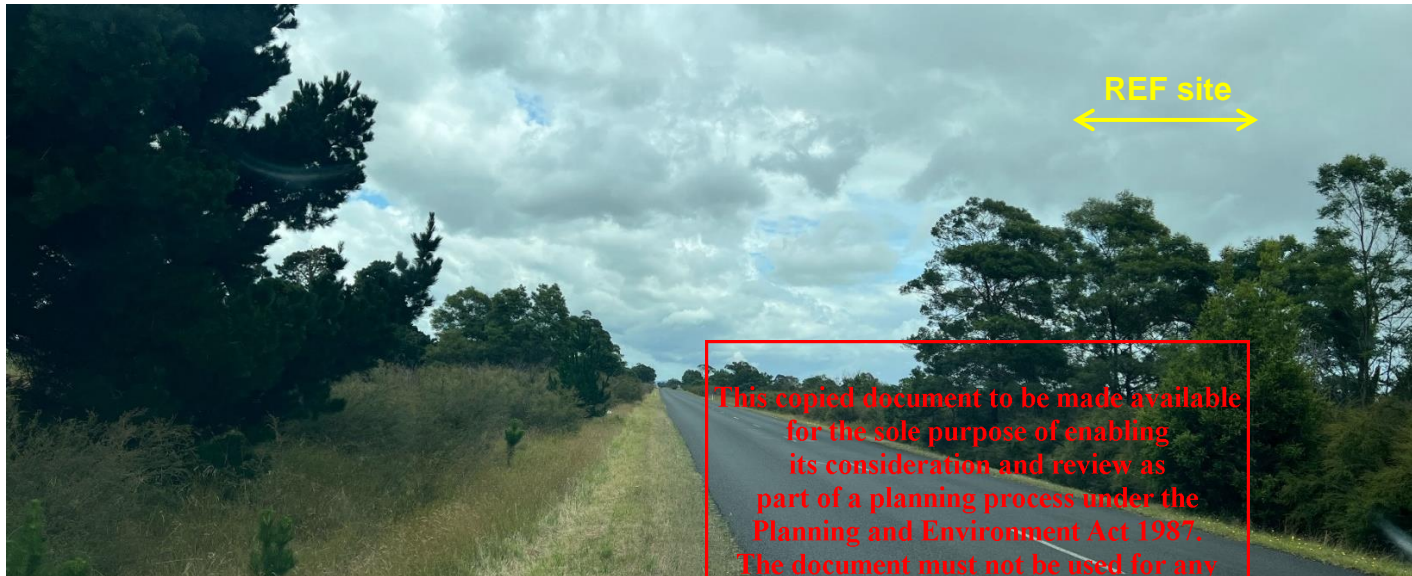
Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site within middle ground view
- Roadside shelter belts (conifers) obscure all views of site
- 100km/hr road with higher traffic volumes



## Viewshed U



Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site within middle ground view
- No visibility of site due to roadside and riparian vegetation screening all views
- 100km/hr road with higher traffic volumes



## Viewshed V



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Sensitivity	Magnitude	Impact
Negligible	Negligible	Negligible

### Observations:

- Site just inside the background view extent
- Viewshed interrupted by riparian and roadside vegetation which will largely obscure alterations within the landscape.
- 100km/hr road with higher traffic volumes

