



# **Electrical Safety (Electric Line Clearance) Management Plan**

Western Port Site

2024 - 2025

Document No. WENG01-E038P

## VERSION HISTORY

| Rev | Reason   | Owner            | Authorised By                            | Date       |
|-----|--|------------------|--|------------|
| 1.0 | Initial Issue                                    | Charlie Anderson | Ron Bange<br>Western Port Assets Manager | 30/11/2021 |
| 2.0 | Revised to include Pole Inspection & Replacement | Charlie Anderson | Ron Bange<br>Western Port Assets Manager | 08/01/2024 |
| 3.0 | Revised to address feedback comments from ESV    | Glenn Toy        | Ron Bange<br>Western Port Assets Manager | 24/06/24   |

## AMMENDMENTS IN THIS VERSION

| No. | Amendment Summary  | Amended By |
|-----|--|------------|
| 1   | Plan reformatted and added to Bluescope Standard Template  | Glenn Toy  |
| 2   | Added Section "Preparation of Management Plan"   | Glenn Toy  |
| 3   | Added detail of site boundary including summary of land use  | Glenn Toy  |
| 4   | Added detail on Non Bluescope Overhead Lines managed by others on Bluescope Land                               | Glenn Toy  |
| 5   | Added details on Management of Native Vegetation on Bluescope Land   | Glenn Toy  |
| 6   | Added detail on management of vegetation near power lines  | Glenn Toy  |
| 7   | Added section on required qualifications and procedure for working near Overhead Power Lines on Bluescope Land | Glenn Toy  |
| 8   | Amended Clearance Calculations for 33kV  | Glenn Toy  |
| 9   | Removed reference to Voltage Levels not covered or managed under this plan                                     | Glenn Toy  |
| 10  | Added CFA Bushfire Classifications   | Glenn Toy  |

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## SCOPE

The objective of this document is to ensure that there are procedures and processes at BlueScope's Western Port site to comply with the Electricity Safety (Electric Line Clearance) Regulations 2020 (Electrical Line Clearance) via existing inspection and maintenance routines.

## References

| Doc No.      | Document Title   |
|--------------|--|
|              | Electrical Safety Act 1998 (Page 6 Guidance for the Electric Line Clearance Regulations 2020)                      |
|              | Electricity Safety (Electric Line Clearance) Regulations 2020  |
|              | Electricity Safety (General) Regulations 2019.   |
|              | Electricity Safety (Electric Line Clearance) Regulations 2020 and Electric Line Clearance Management Plan Guidance |
|              | Guidelines to the Electricity Safety (Electric Line Clearance) Regulations 2020                                    |
|              | Australian Standard AS4373-2007 Pruning of Amenity Trees   |
|              | Electrical Safety Rules for Vegetation Management Work Near Overhead Powerlines by Non-Electrical Workers.         |
|              | The Blue Book 2022   |
| WENV-009     | Bluescope Western Port Biodiversity Management Plan  |
| H79747       | Bluescope Western Port Vegetation and Grass Management Drawing   |
| WPRO-003P    | General Site Conditions for Contractors  |
| WENG01-E027P | High Voltage Safety Rules  |
| WOHS01-09P   | Safe Systems of Work Procedure   |

## Management of the Plan

The Electric Line Clearance Plan must reviewed and audited each year to identify any deficiencies in the plan and updated before 31 March each year. It must be available upon request from Energy Safe Victoria.

The document has been added to Bluescope's internal Quality document System with a compulsory annual review initiated in February each year. This review will include an audit of the effectiveness of the plan for the previous twelve months and capture any improvements or updates. The revised plan will be circulated for approval from the Western Port Electrical Safety Executive Committee and the Western Port Assets Manager.

## PREPARATION OF MANAGEMENT PLAN

|                    |  |
|--------------------|--|
| Specified Operator | Bluescope Pty. Ltd. – Western Port       |
| Responsible Person | Ron Bange                                |
| Position           | Western Port Assets Manager              |
| Office Address     | 28 Bayview Road Hastings, Victoria, 3915 |
| Postal Address     | 28 Bayview Road Hastings, Victoria, 3915 |
| Telephone          | 03 5958 6147                             |

|   |  |
|---|--|
| Person Responsible for Plan Preparation | Glenn Toy                                |
| Position                                | Principal Electrical Engineer            |
| Office Address                          | 28 Bayview Road Hastings, Victoria, 3915 |
| Postal Address                          | 28 Bayview Road Hastings, Victoria, 3915 |
| Telephone                               | 03 5958 6016                             |

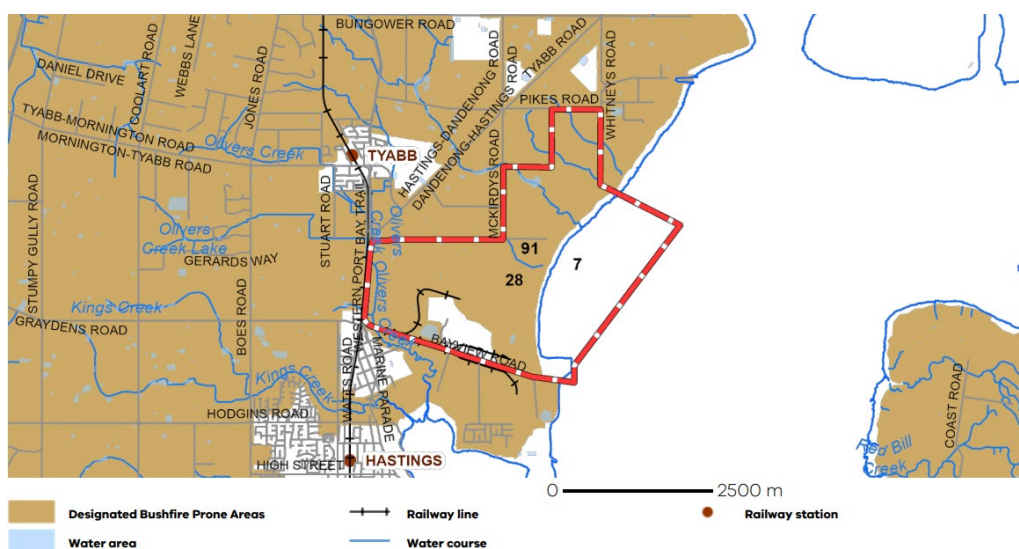
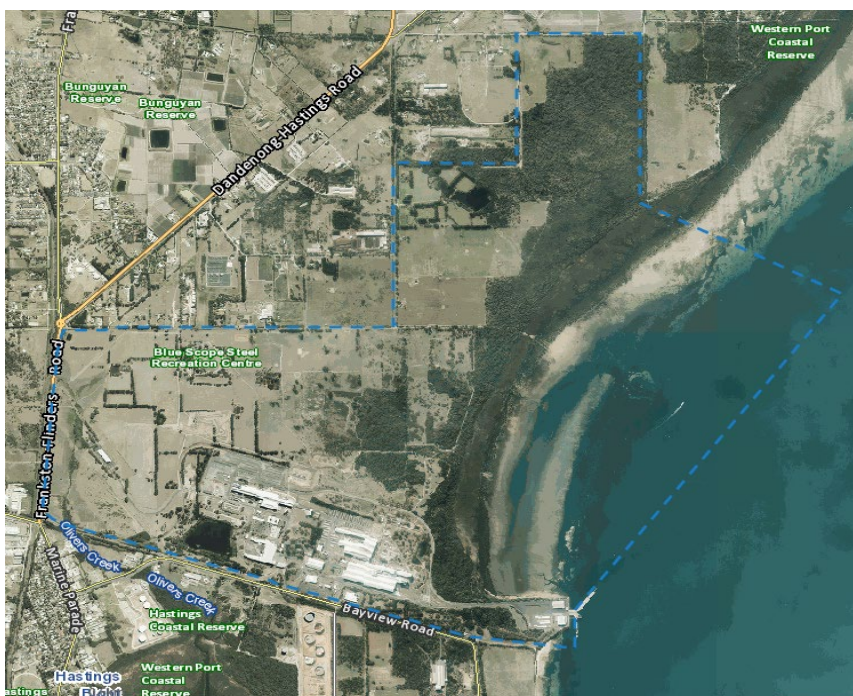
|  |  |
|--|--|
| Person Responsible for Plan Implementation | Charlie Anderson                         |
| Position                                   | High Voltage Supervisor                  |
| Office Address                             | 28 Bayview Road Hastings, Victoria, 3915 |
| Postal Address                             | 28 Bayview Road Hastings, Victoria, 3915 |
| Telephone                                  | 03 5979 6411                             |

|                                      |   |
|--------------------------------------|---|
| Emergency contact for Tree Clearance | Western Port Gate House (Attended 24 Hours / 7 Days)<br>03 5979 6106 / 03 5979 6111 |
|--------------------------------------|---|

# GENERAL SITE INSTALLATION

## Site Boundary

The Site Plan shows the overall area of the Western Port Site. Bluescope owned land covers the Steel Plant located on Bayview Road, the HCP Building on Frankston Flinders Road, the Bluescope Recreation Centre on McKirdys Road and all surrounding Farmland extending to Pike’s Road to the North.



The CFA have classified the footprint of the Steel Works to be a Low Fire Hazard area (LBRA) and all surrounding farmland and the Bluescope Wharf site as a High Bushfire Prone Area (HRBA). The current CFA rating is to be confirmed during the annual plan review. CFA Map shown in Appendix A.

## Non Bluescope Overhead Line

On the Western Port site, there are overhead lines owned and managed by others being the Ausnet 220kV power lines and the United Energy 22kV Power Lines. The Ausnet power lines are located on easements on the site and are clearly marked in red on the site drawing below. The United Energy lines are marked in orange. These lines are managed by the respective utility provider and are not included in the Bluescope Western Port Electricity Safety (Electric Line Clearance) Plan. Ausnet and United Energy will coordinate the cutting of trees any overhead lines.



## Bluescope Owned and Managed Overhead Lines

The only overhead Bluescope owned overhead line assets (outside of designated substations) are the 33 kV lines/poles between the MS220 substation and the SY33 substation shown in yellow on the site map. Single Line drawings are available to record all HV cabling on site including the overhead lines specific to this plan.

As indigenous vegetation regrowth can occur anywhere on site, all areas where overhead lines are situated can be considered as areas where indigenous tree removal can occur. All electric line clearance work completed under this procedure is on Bluescope land, therefore notification and consultation is not required.



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## VEGETATION MANAGEMENT AND MINIMUM LINE CLEARANCE

The nature of the Westernport site allows compliance with Code of Practice minimum clearance space to be met by providing a clearance corridor along the path of all overhead powerlines. The corridor extends five metres either side of all powerlines and any vegetation within the corridor is kept below 1 metre in height.

The vegetation has been cleared away from the poles and overhead lines. From the 12 spans, the largest span is between poles 38 and 36, which is a 90m span across the Haul Road. The other spans are around 70m.

### Management of Indigenous Vegetation

Bluescope Western Port is located adjacent to a Ramsar wetland site and consequently indigenous vegetation is protected under various state and commonwealth legislation. Dedicated conservation areas have been created to allow indigenous vegetation to prosper.

Vegetation that is identified as having significance cultural, environmental, historical or ecological purpose are managed in accordance with the site's Biodiversity Management Plan (WENV-009).

In some instances, native flora and land must be cleared. Additionally, some trees may need to be removed if they present a risk to assets and infrastructure. In such times that removal of vegetation is required, consultation with the Site Environmental Engineer, or delegate, is required. Removal and clearing of trees is carefully considered and Tree and Vegetation Removal Permits are to be acquired from the Mornington Peninsula Shire Council where relevant.

### Management of Vegetation near Power Lines

This site employ grounds crew (managed by external facility management provide Spotless) who maintain the entire site including the vegetation around the poles. This is implemented by an SAP maintenance program that would flag that maintenance is due. The timing can be reduced when a high growth period exists.

Appendix B shows the Site Lawns and Vegetation Map that is included as part of the maintenance schedule, which has marked the required clearance zones to be maintained around the 33kV Overhead Lines.

Any work carried out by the ground crew; they are not permitted to encroach the Safe Approach Distances as stated in the Blue Book 2022.

### Visual Inspection

The High Voltage department are required to out visual checks of the lines and the poles, once every 6 weeks, which includes a written report section on the condition of the lines and poles plus the clearance of vegetation. Any anomalies would be reported, and a work order raised to rectify the problem. This work is managed in the Plant SAP maintenance system on a reoccurring schedule.



| HIGH VOLTAGE SUBSTATION INSPECTION<br>CHECKLIST – WEEK SIX |              |   |              |
|--|--------------|---|--------------|
| INSPECTED BY   |              | DATE  | / /          |
| <b>MS220 CABLE TUNNEL</b>                                  |              |   |              |
| <i>Inspection Item</i>                                     | <i>Check</i> | <i>Inspection Item</i>                      | <i>Check</i> |
| Check general condition-cables, trays etc.                 |              | Lighting ( <u>inc. emergency lighting</u> ) |              |
| <i>Comments</i>  |              |   |              |
|  |              |   |              |
| <b>33kV LINES</b>  |              |   |              |
| <i>Inspection Item</i>                                     | <i>Check</i> | <i>Inspection Item</i>                      | <i>Check</i> |
| Inspect lines & poles.                                     |              | Check vegetation clear of lines.            |              |
| <i>Comments</i>  |              |   |              |
|  |              |   |              |
| <b>SY33 CABLE TUNNEL (SY33 to FSM Basement)</b>            |              |   |              |
| <i>Inspection Item</i>                                     | <i>Check</i> | <i>Inspection Item</i>                      | <i>Check</i> |
| Check general condition-cables, trays etc.                 |              | Lighting ( <u>inc. emergency lighting</u> ) |              |
| <i>Comments</i>  |              |   |              |
|  |              |   |              |
| <b>CAPACITOR BANKS</b>                                     |              |   |              |
| <i>Inspection Item</i>                                     | <i>Check</i> | <i>Inspection Item</i>                      | <i>Check</i> |

## Qualifications & Procedures

All personnel clearing vegetation near overhead lines will be engaged or under the supervision of the BlueScope HV Electrical Supervisor using an approved SSW permit (Safe Systems of Work). All SSW are to be approved for use as required by Western Ports Safe System of Work Procedure (WOHS01-09P).

At Bluescope this is managed via the procedure WPRO-003P General Conditions for Contractors which describes the procedures for ensuring contractors have the required qualifications and competencies to safely work on site. Anybody found to be completing work without the appropriate training or qualification will be instructed to stop work immediately whilst the situation is investigated, and the appropriate corrective action is taken.

Qualified personnel engaged in tree/vegetation clearing activities must comply with the Electricity Safety (Installations) Regulations, the Blue Book, site procedures and be assessed competent for the removal of vegetation. They must have a safe work method statement and job safety assessment completed prior to commencing work on clearing vegetation on or near live overhead power lines.

All personnel working in the proximity of overhead lines shall understand the limits. Personnel shall also be appropriately trained and competent and where necessary have an electrical authorised spotter.

## External Contractors

Bluescope engages external specialist for any maintenance work that is complete in the vicinity of Overhead Power Lines on site (with the exception of grounds maintenance performed outside the Safe Approach Distances as defined in the Blue Book and internal High Voltage Safety Rules WENG01-E027P). This work includes, but is not limited to:

- Line Washing
- Pole Inspections
- Pole / Hardware Replacement
- Tree removal

Bluescope can provide a complete list of these contractors with relevant qualifications upon request.

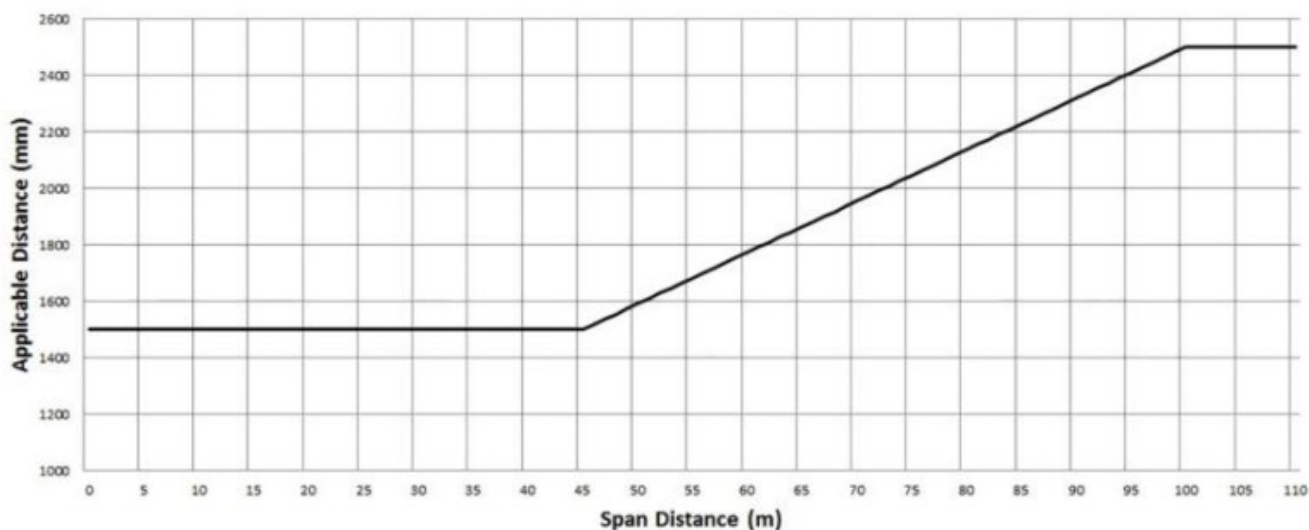
## Record Keeping

All records will be kept on the SAP maintenance system for a minimum of 7 years including the time dated photos and the reason that the tree or branch was removed.

## CLEARANCE CALCULATIONS

Refer Electrical Safety (Electric Line Clearance) Regulations 2020 Schedule 1, Claus 3 and 26.

### UNINSULATED HIGH VOLTAGE ELECTRIC LINE (OTHER THAN A 66 000 VOLT ELECTRIC LINE) IN LOW BUSHFIRE RISK AREA



#### Graph 3 Formula

The formula by which the applicable distance for the middle 2 thirds of an electric line span to which clause 26 applies is calculated as follows:

For  $0 < SD \leq 45$ ,  $AD = 1500$  mm

For  $45 < SD \leq 100$ ,  $AD = 1500 + ((SD - 45) \times (1000 \div 55))$

For  $100 < SD$ ,  $AD = 2500$  mm

Where:

SD = Span Distance

AD = Applicable Distance

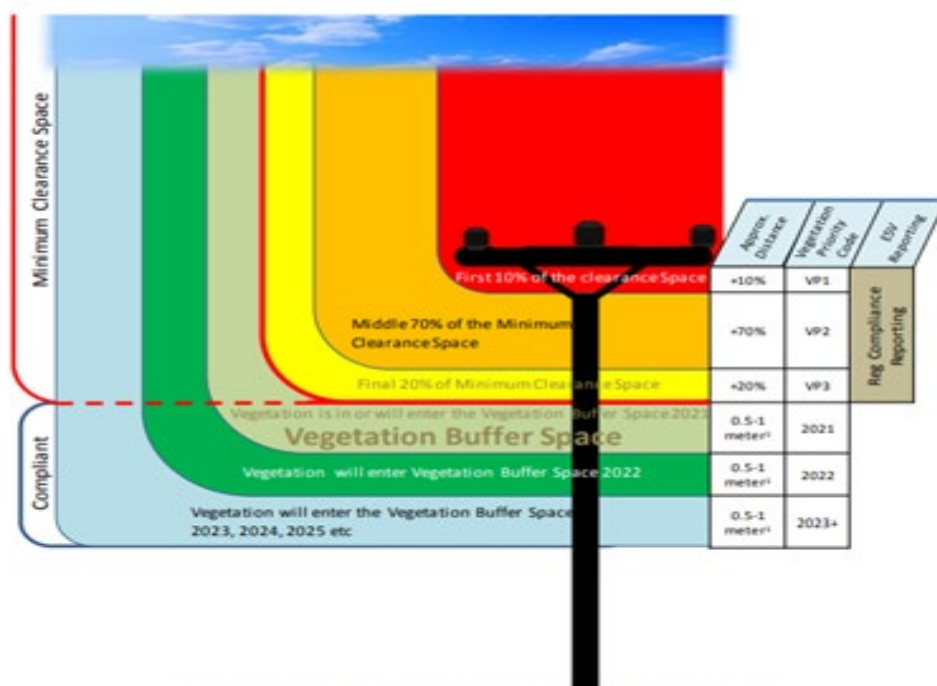
The maximum span of 90m has been used.

$$= 1500 + ((SD - 45) \times (1000 / 55))$$

$$= 1500 + (45 \times 18.18)$$

$$= 2,318.1 \text{ mm sway}$$

5m clearance will be used at Bluescope to maintain vegetation clear of powerlines.



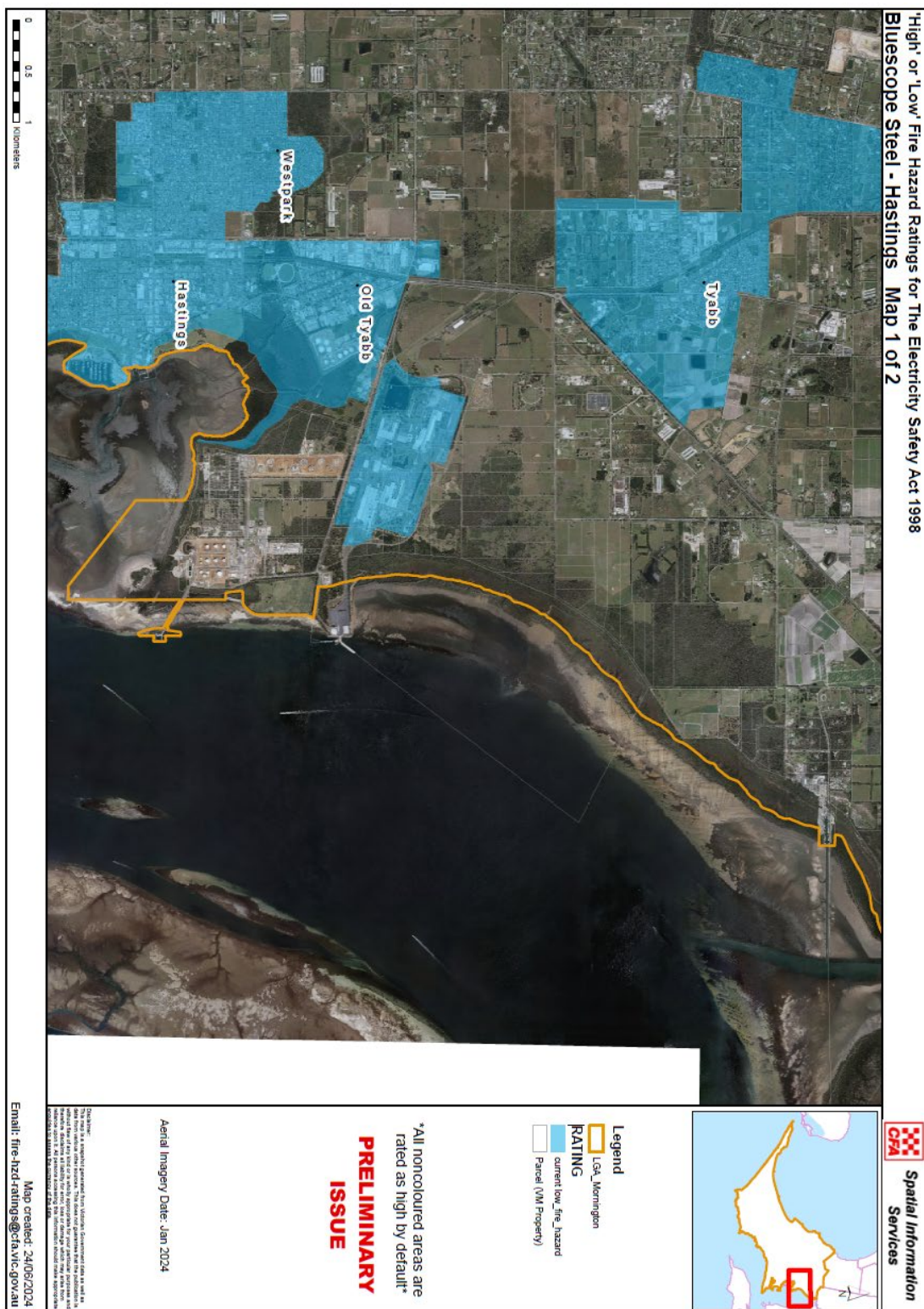
**Figure 13: Vegetation buffer zone Clearance Spaces**

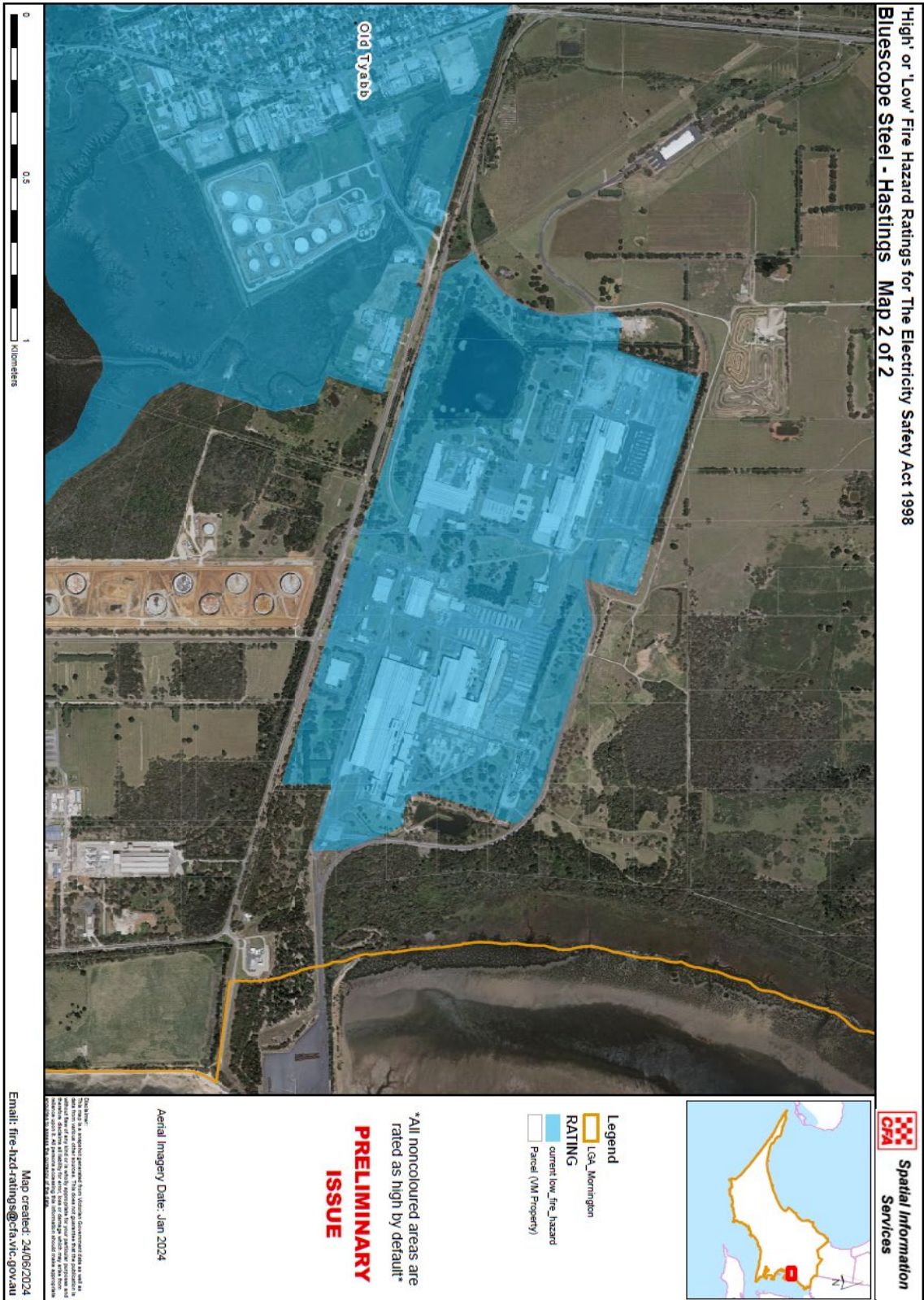
The aim of the vegetation cutting activity is to maintain a cyclic vegetation cutting program, based on the results of the annual vegetation inspection program.

The aim of vegetation management is to cut the vegetation prior to the vegetation entering the vegetation buffer space, using a two-year cutting cycle. Out of cycle cutting shall be carried out to maintain the minimum clearance space at locations where sufficient cutting cannot be achieved using the two-year cutting cycle.

An additional distance shall be cut to cater for vegetation regrowth, determined by considering the species type and the prevailing conditions to ensure that the vegetation remains outside the minimum clearance space at least until the next planned annual inspection. The application of appropriate pruning standards may over-ride simplistic calculated re-growth assumptions. The allowance for sag and sway (SAS) for each individual span, based on conductor type, stringing, span length, temperature and wind speed in accordance with the requirements of AS 7000 Overhead line design. The Minimum Clearance Space (MCS) shall be determined for each span, and recorded in the VMS database, by adding an allowance for sag and sway (SAS) to the applicable distance (AD), if not already included in the applicable distance:  $MCS = AD + SAS$ . Quality assessment sample audits shall be conducted to provide assurance that the process has achieved the desired cutting quality (distance).

# Appendix A – CFA Bushfire Rating Drawings





# Appendix B - Site Lawns and Vegetation Map

