

Bushfire Impact Assessment

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Agenda



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- Impact assessment method overview
- Existing conditions for bushfire
- Modes of potential impact
- Bushfires and transmission lines
- Summary

Impact assessment method overview

Impact assessment phases

Existing conditions

Risk screening

Impact assessment & mitigation

Considerations

Bushfire landscape for study area:

- Topography & landform
- Vegetation
- Fire weather
- Climate change
- Fire history
- Values at risk
- Bushfire management arrangements
- Bushfire ignitions & transmission infrastructure

Potential consequences of bushfire on assets & values:

- Economic
- Settlement
- Cultural
- Land use

Potential impact of Project on bushfire activity:

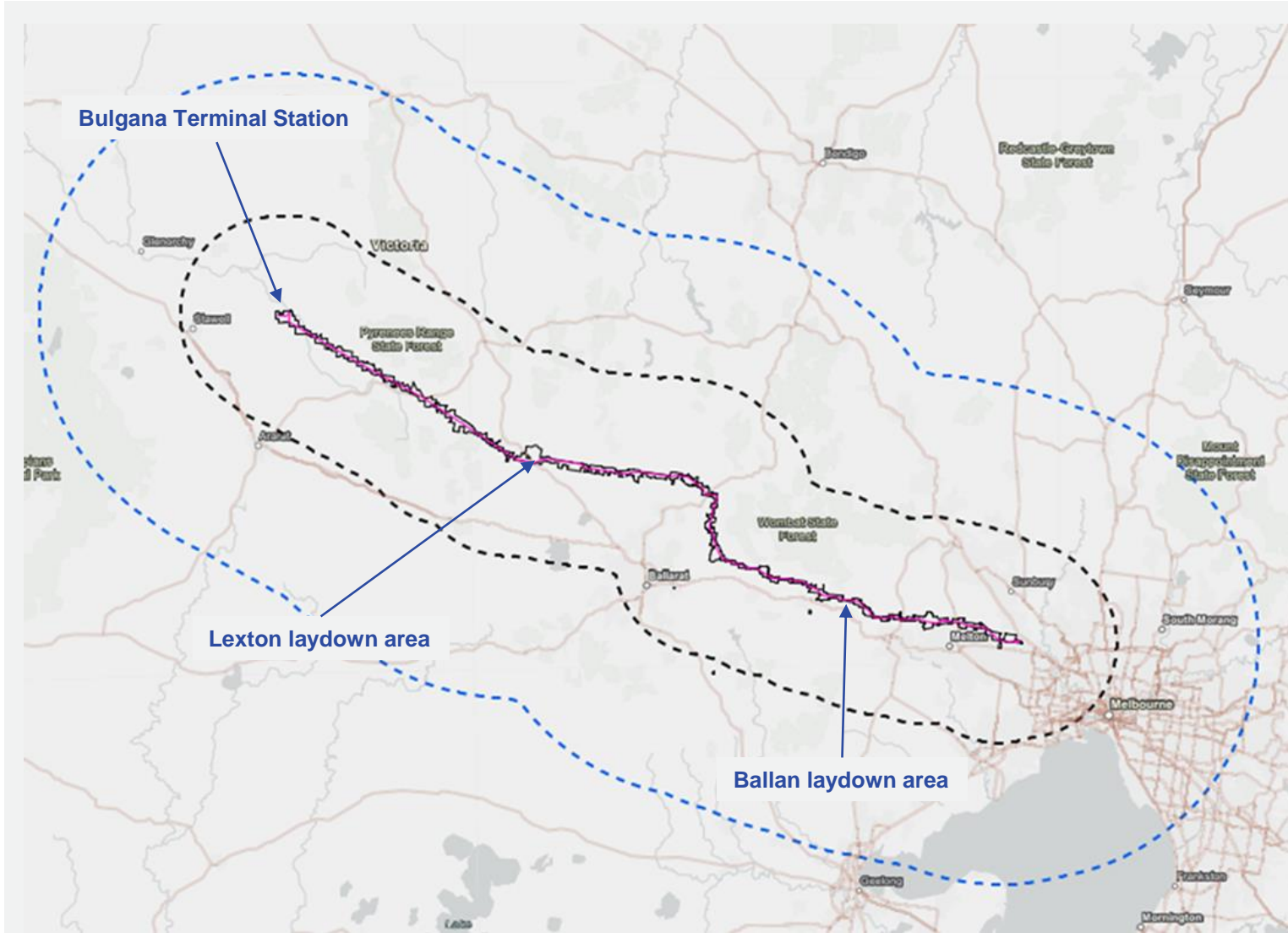
- On-site bushfire ignition
 - Fire suppression
 - Bushfire fuel management
 - Access and egress
- Potential impact of landscape fire (or "offsite ignition") on the Project
- Modelling of bushfire in the landscape surrounding the Project
- Mitigations for potential impacts
- Residual impact assessment

Geographic domains

Proposed Route, Project Land and up to 50km study area around the Proposed Route

← **Community & stakeholder consultation** →

Study area



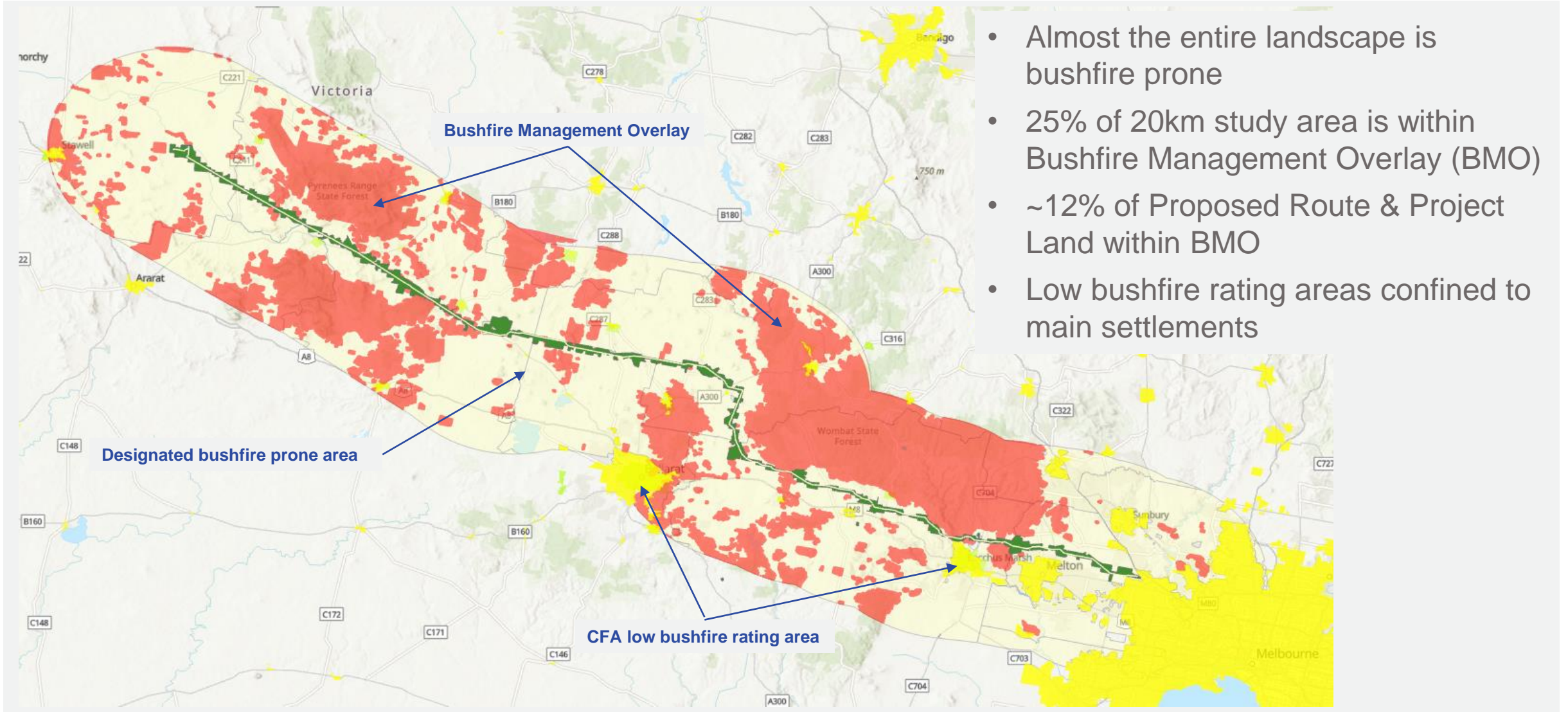
Focus of bushfire assessment:

- Proposed Route – transmission line easement
- Project Land – land parcels on which any works are undertaken
- 20/50km *study area* surrounding the Project Land

Bushfire existing conditions



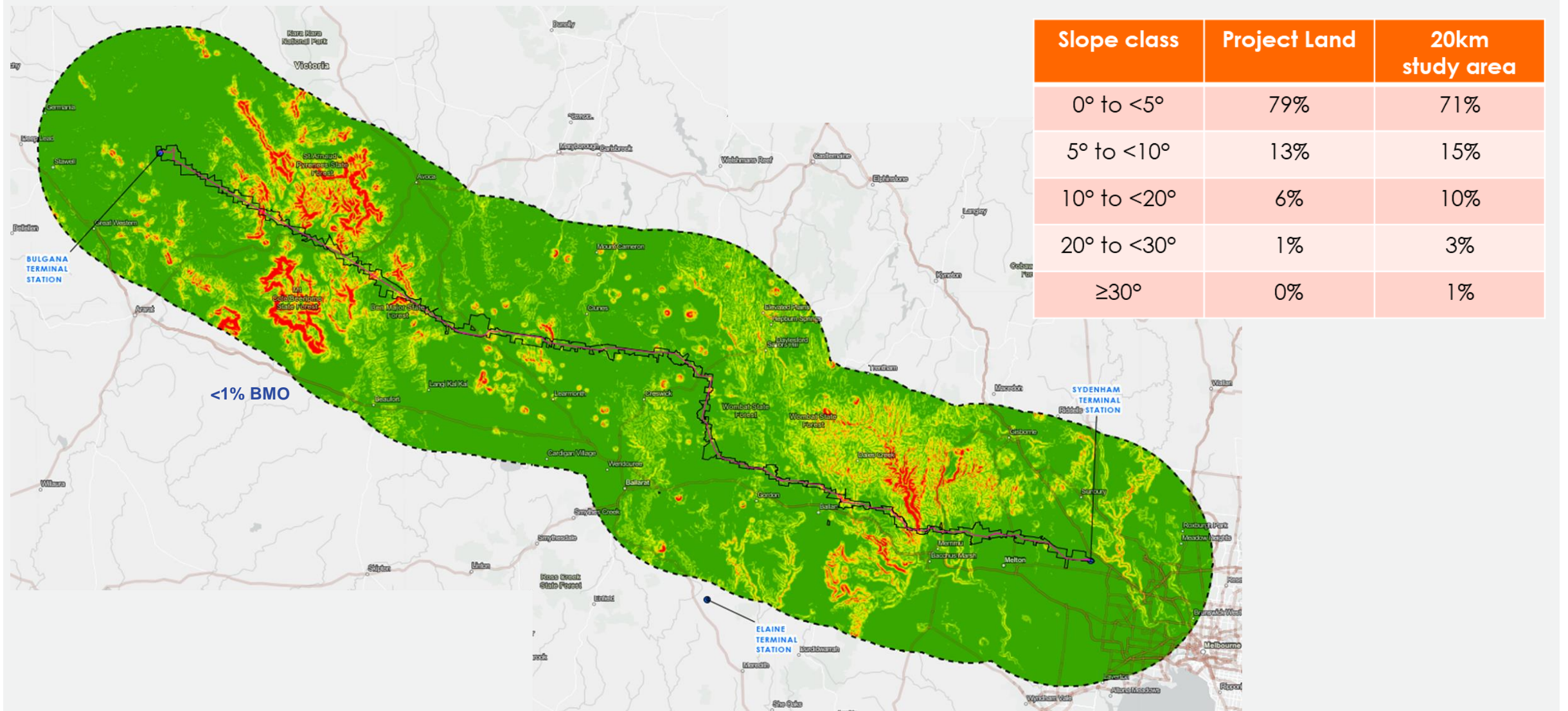
Landscape fire characteristics



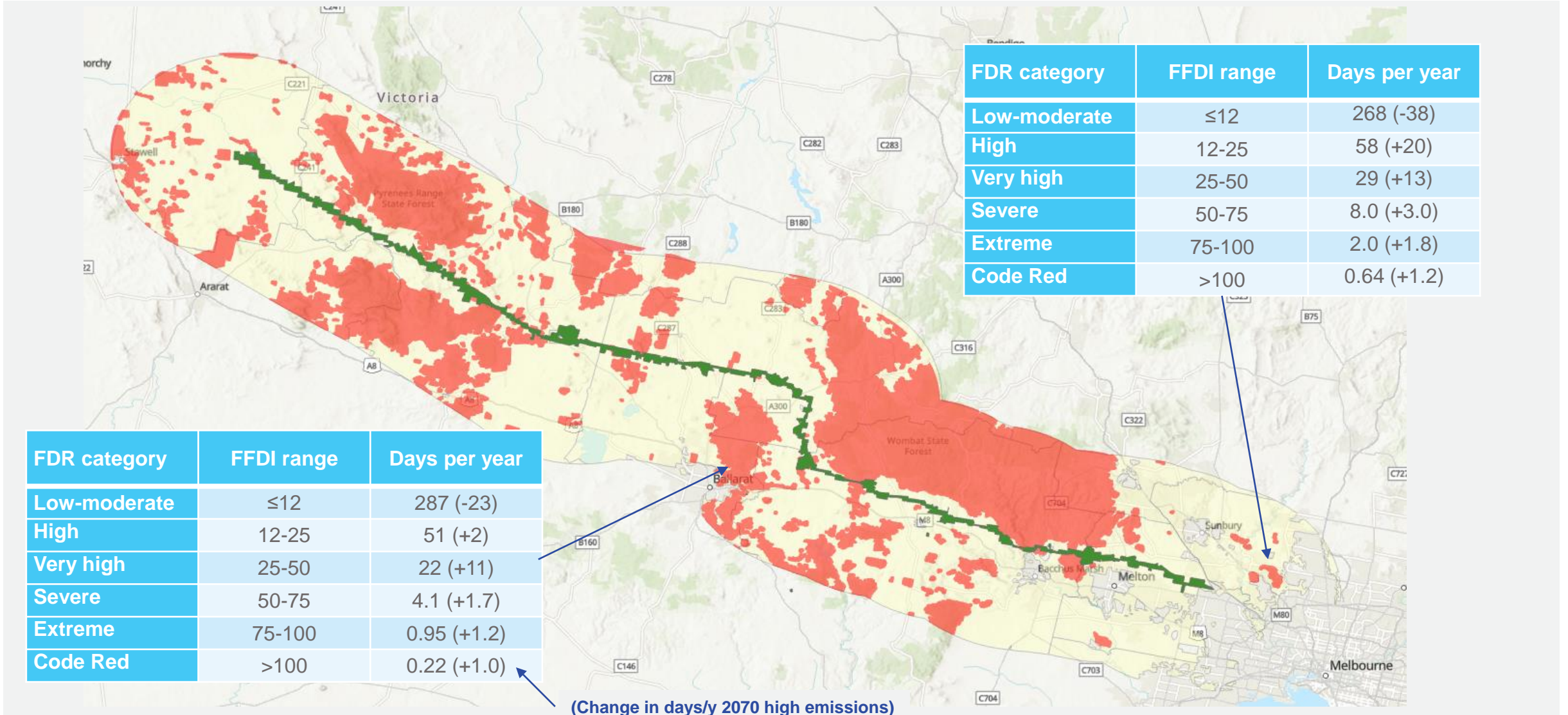
Bushfire fuel characteristics



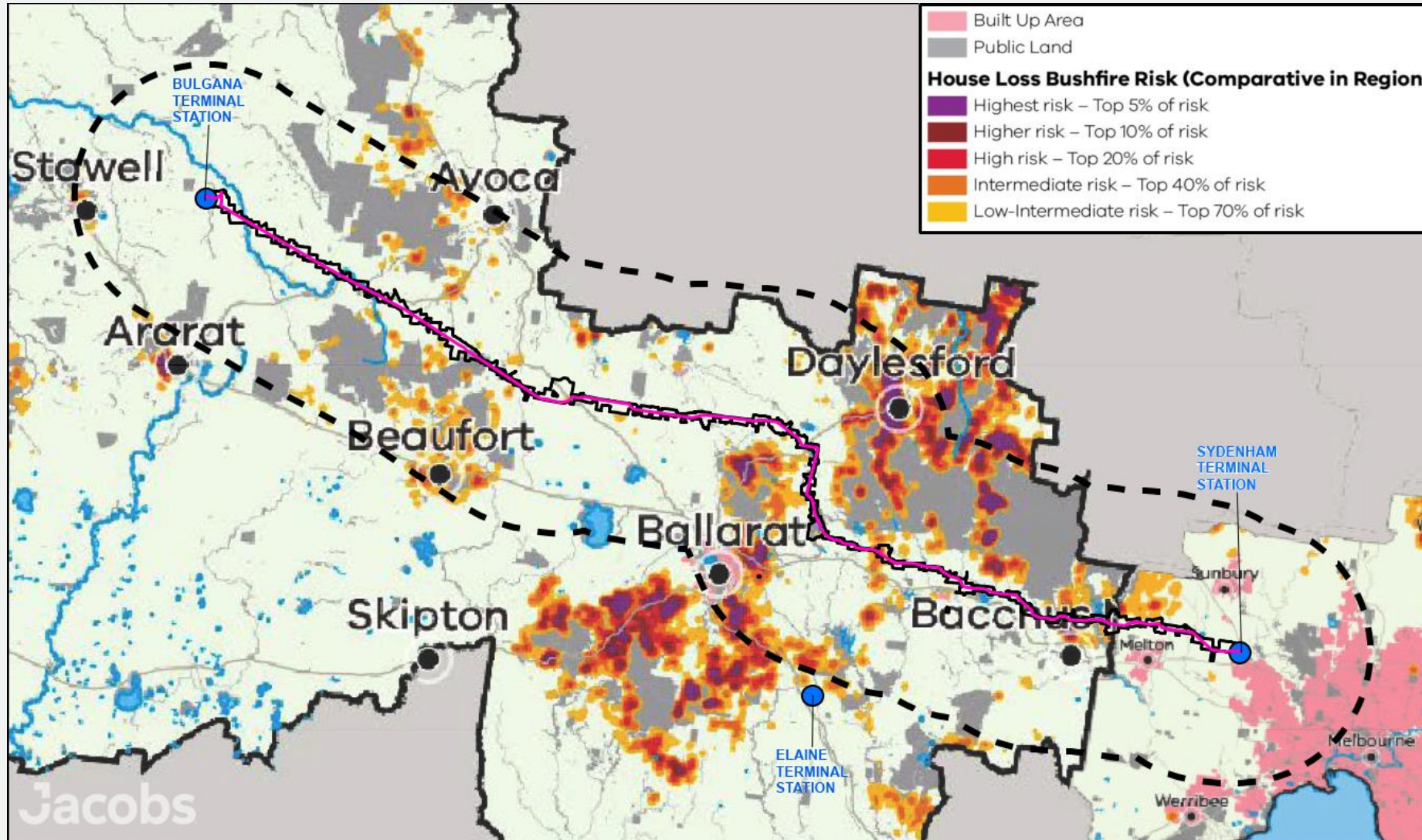
Slope



Fire weather & climate change



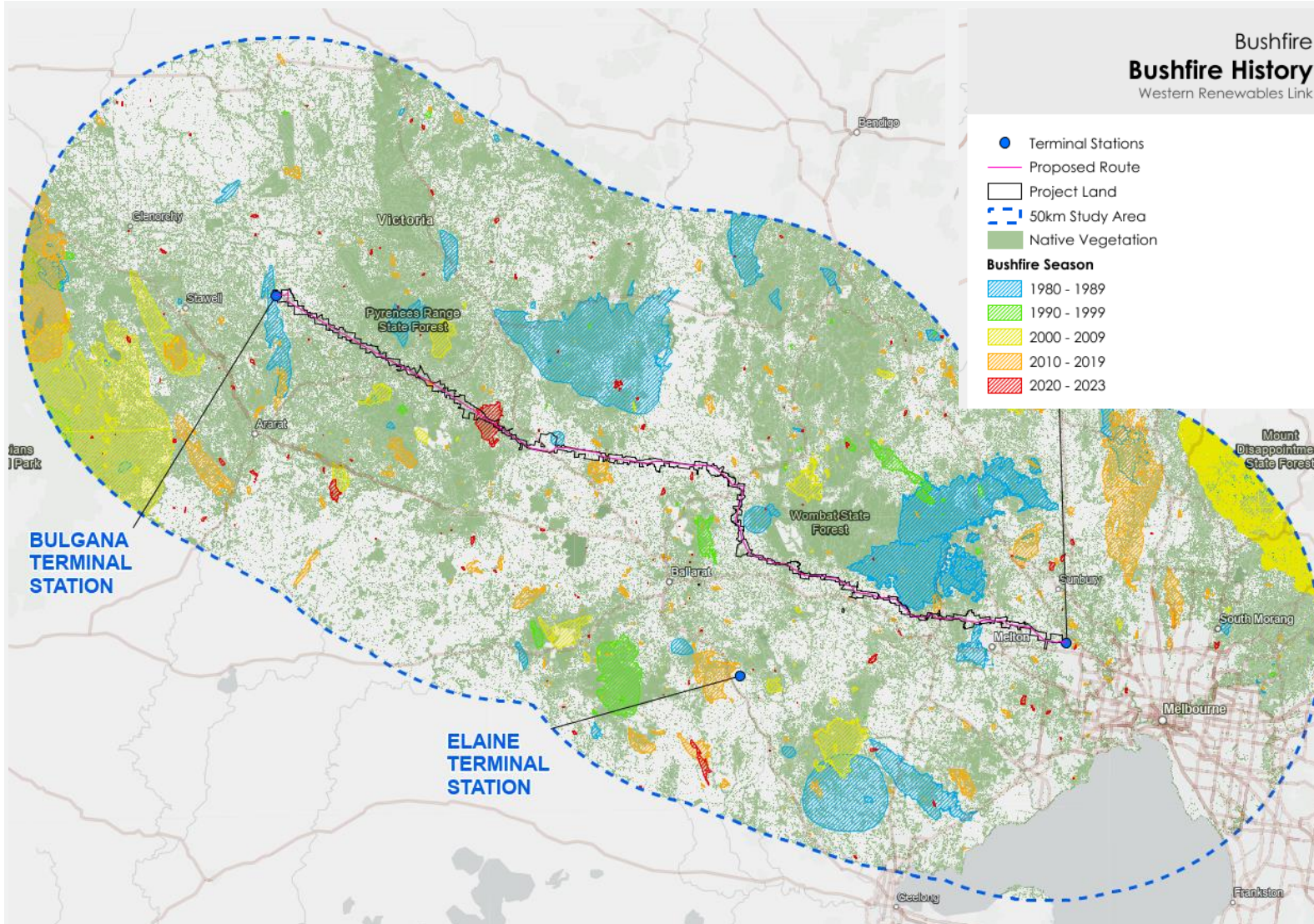
Existing landscape house loss risk



Bushfire risk in the landscapes within the study area is driven by the proximity of:

- Residential development
- Native forests & plantations

Fire history (1980-2023)



Within 50km study area:

- Average 12 bushfires per year (1980-2023)
- Average fire size ~1300ha

Within Project Land:

- Six fires since 1980
- Total area burnt ~760ha / 3.5%

Modes of potential bushfire impact



Modes of potential bushfire impact

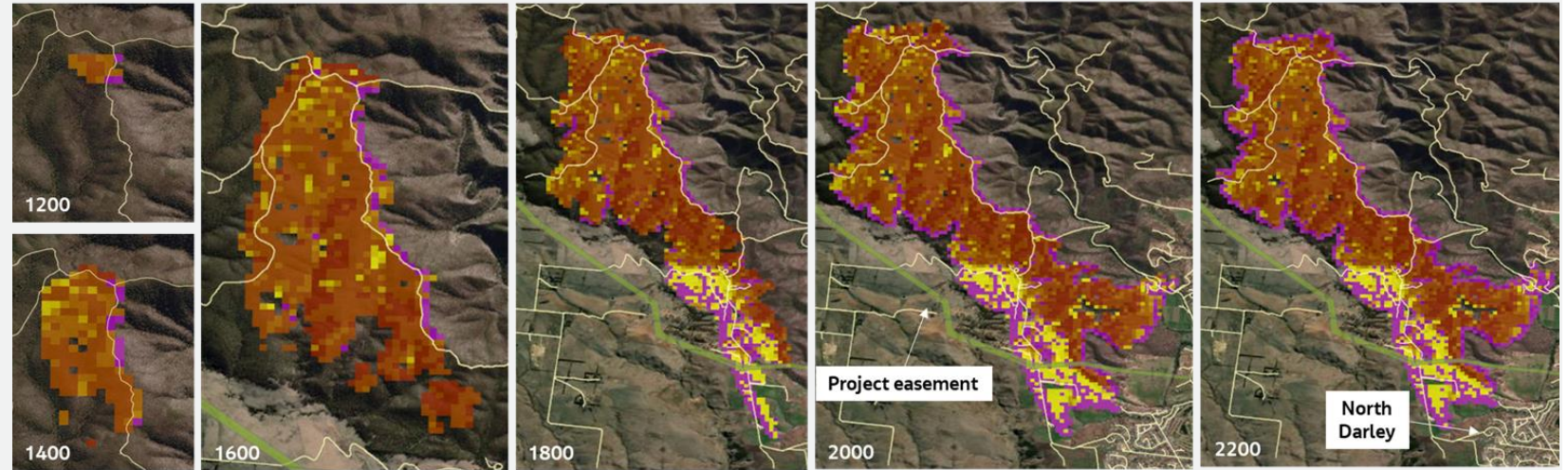
- **On-site ignition:** construction, operation & / or decommissioning of the Project leads to ignition and escape of a fire
- **Off-site ignition:** landscape fire damages infrastructure & / or disrupts electricity transmission
- **Fire suppression:** presence of towers and transmission powerlines disrupts aerial and ground-based fire suppression (including access to fire water, backburning)
- **Bushfire fuel management:** infrastructure disrupts (or aids) bushfire fuel management activities (e.g., prescribed burning, fire break preparation)
- **Access and egress:** Project infrastructure disrupts egress of people towards lower bushfire risk areas and access of fire services to fire grounds



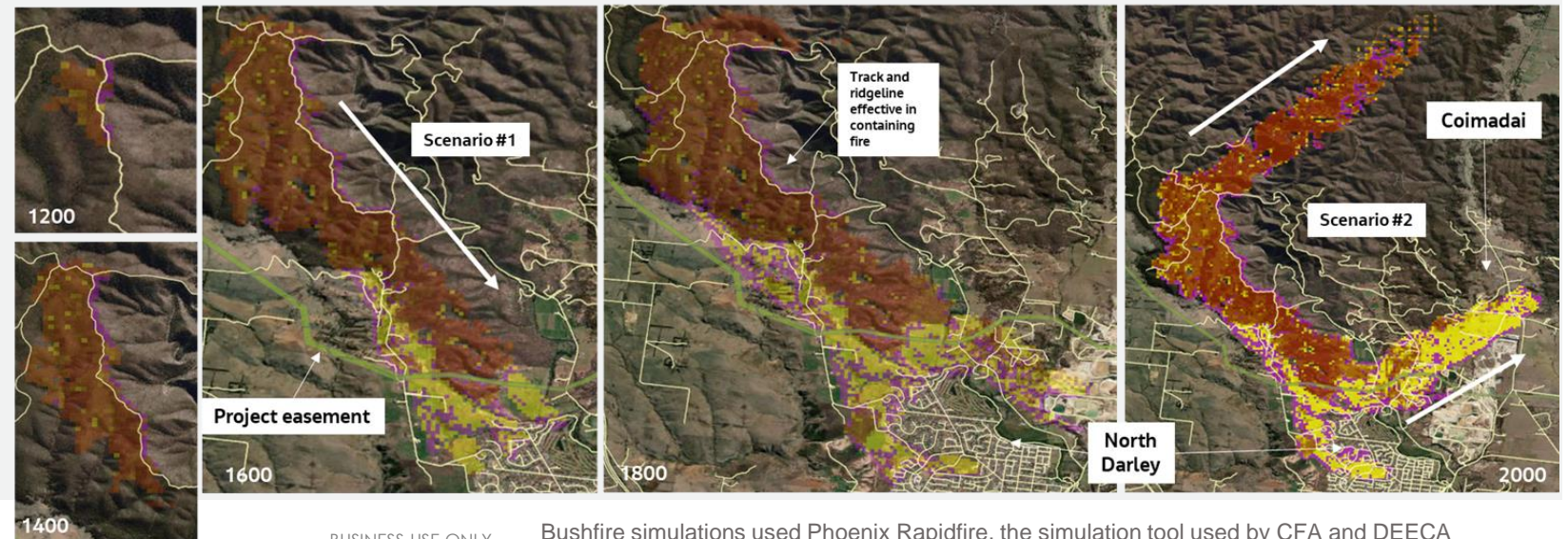
Investigating potential bushfire impacts

- Bushfire simulation – fire behaviour modelling

Maximum FFDI = 75

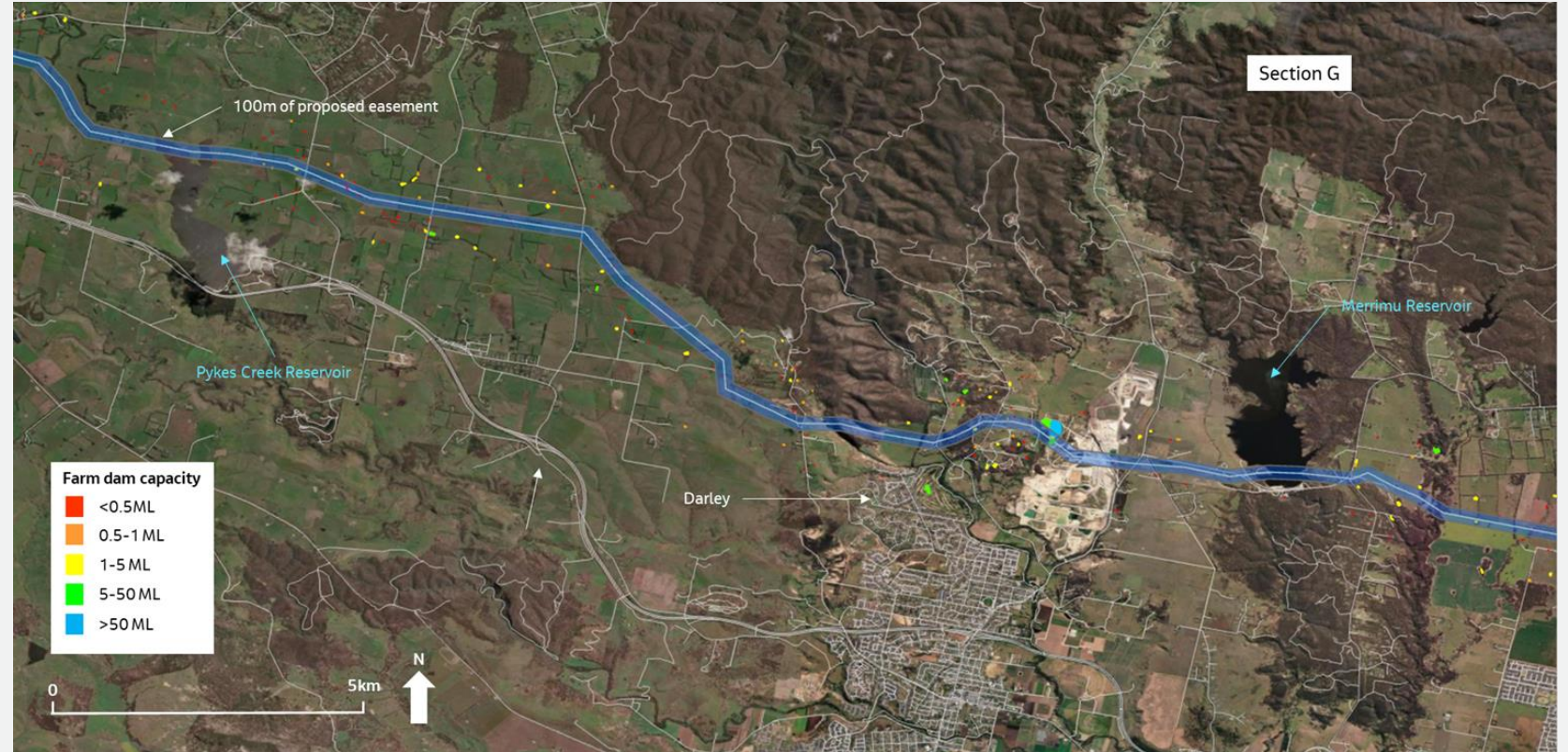


Maximum FFDI = 130



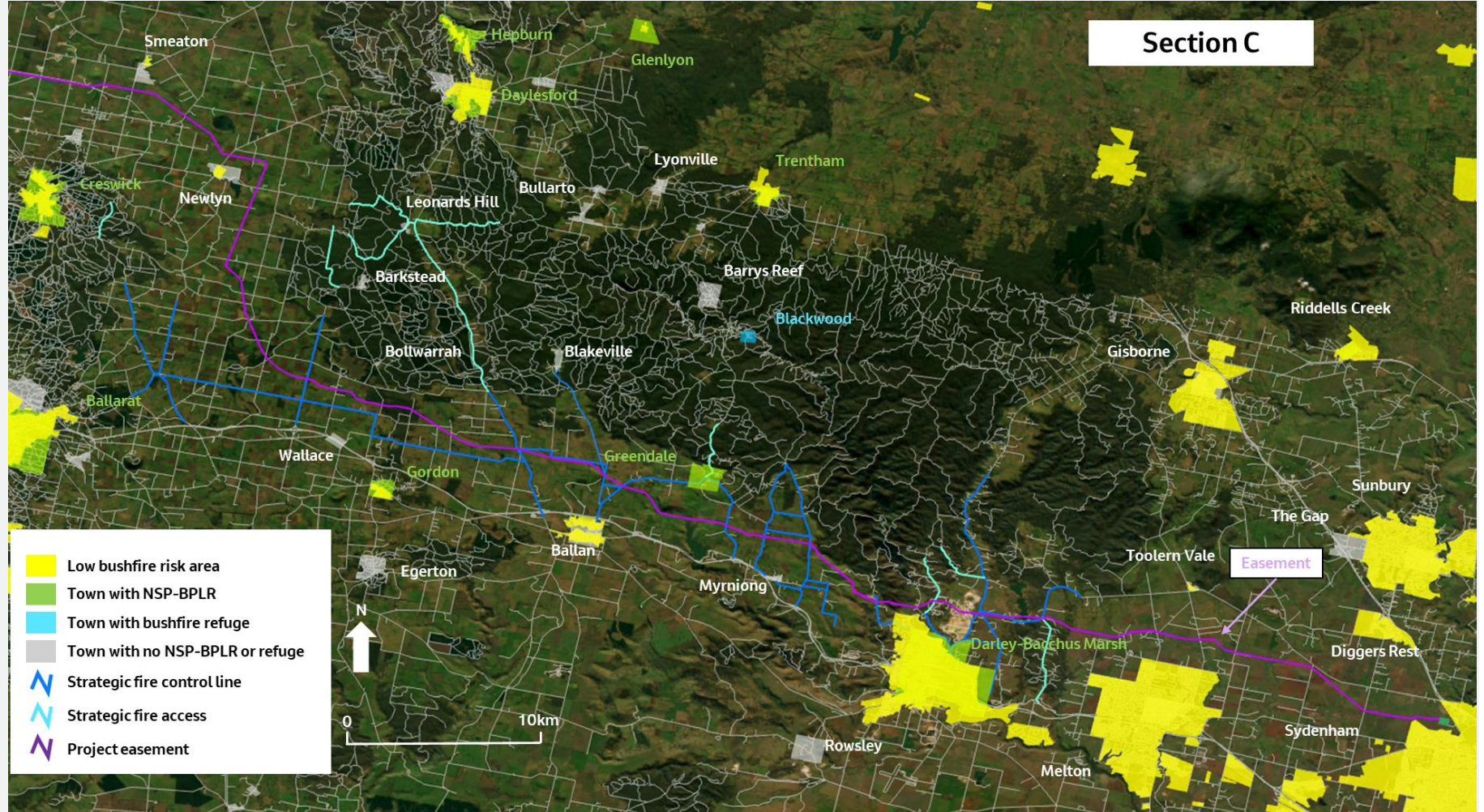
Investigating potential bushfire impacts

- Analysis of access to in-field fire water supplies



Investigating potential bushfire impacts

- Egress and access analysis



Bushfires and transmission lines



Bushfire safety and transmission lines

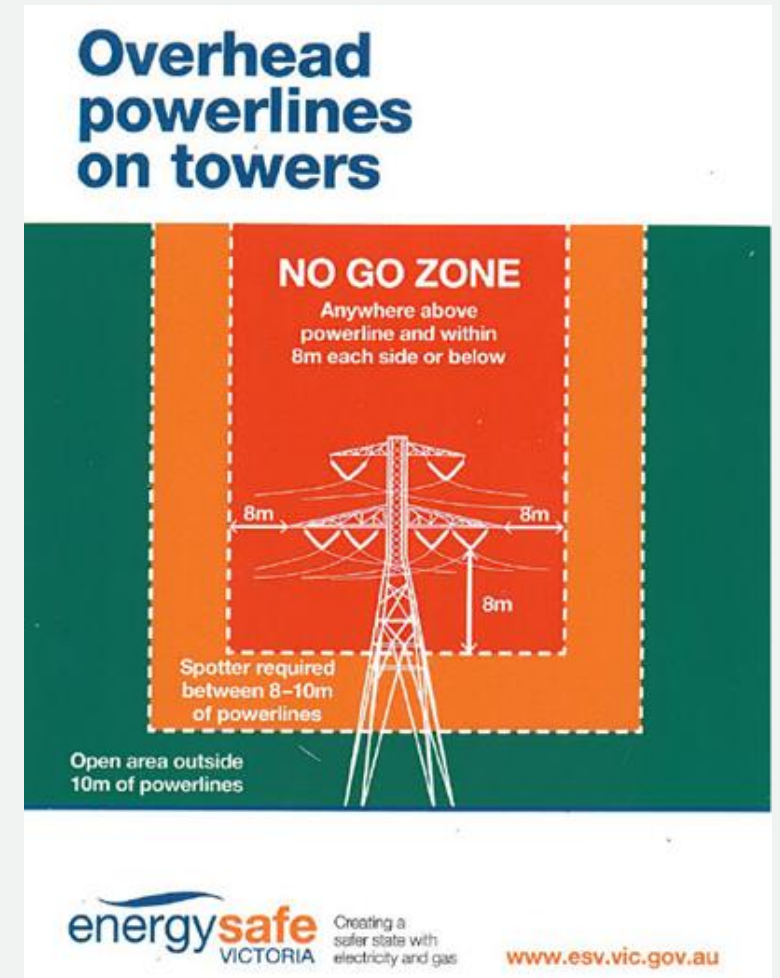
- *Electricity Safety Act 1998* requirements:
 - Electricity Safety Management Scheme
 - Bushfire Mitigation & Vegetation Management Plans
 - Comprehensive monitoring & audit system
 - Transmission lines stay clear of vegetation
 - Bushfire and human safety risks reduced as far as reasonably practicable
- Designed to applicable Australian Standards – for structural integrity – to address wind and lightning:
 - AS/NZS 7000 Overhead line design
 - AS/NZS 1170.2 Structural design – wind actions
- Protection systems disconnect power within 50ms of an earth connection
- Transmission line operating temperature is too low to ignite grass or other bushfire fuels



No reported bushfires from transmission lines in Victoria in last 40+ years even following wind-related structural failure events

Transmission lines and bushfire responses

- Aerial bushfire responses:
 - Access to major in-field fire water supplies unimpeded
 - Aircraft operate under CASA visual flight rules
 - Pilots highly trained and familiar with hazards presented by transmission lines
- CFA has Standard Operating Procedure for safe working near powerlines
 - $\geq 20\text{m}$ clearance from fallen transmission line (until declared safe)
 - Appliances to be $\geq 8\text{m}$ from transmission line
 - Operations near transmission lines guided by risk management & safety officer
- Fire intensity reduced as fire moves through cleared easement in forest & plantation areas. No change in pasture or cropland.
 - Fire moves through easement quickly (1-2 minutes for grassfire)



500kV transmission lines have $\geq 15\text{m}$ ground clearance

Summary



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- Key question for the Bushfire impact assessment: *will the Project will materially alter the existing bushfire vulnerabilities / risk?*
- Many landscapes and communities surrounding Project Land are highly vulnerable to bushfires – Proposed Route largely avoids higher risk areas
- Potential impacts of on and off-site ignitions bushfire are very effectively mitigated through the design, construction and operation of the transmission infrastructure.
- Most mitigations for the Project already apply across Victoria's transmission network:
 - AusNet has obligation to ensure the safe operation of their transmission network
 - Effectiveness of existing mitigation suite explain why transmission infrastructure has not featured in catastrophic fire incidents in Victoria

